

BALLUFF

**PRODUCTS
FOR EFFICIENT
AUTOMATION**

Products and
Services



B *innovating automation*

RFID, Machine Vision and Optical Identification,
Human Machine Interfaces

3

Innovative solutions

TO MEET YOUR AUTOMATION NEEDS

**Steel and
Metallurgical
Industry**

Life Science

**Semiconductor
Industry**

Metal Working



Plastics, Rubber
and Tires

Mobility

Packaging,
Foods and Beverages

Energy Generation



INNOVATIVE SOLUTIONS FOR ANY REQUIREMENT

To give you an overview of our range of offerings we have condensed our product portfolio into five volumes. This overview provides a list of topics contained in each volume.

1



Sensors 1

- Inductive Sensors
- Capacitive Sensors
- Photoelectric Sensors
- Magnetic Sensors
- Mechanical Cam Switches

2



Sensors 2

- Ultrasonic Sensors
- Magnetically Coded Sensors
- Magnetostrictive Sensors
- Inclination Sensors
- Pressure Sensors
- Temperature Sensors
- Flow Sensors
- Condition Monitoring Sensors

3

4

5



- RFID
- Machine Vision and Optical Identification
- Human Machine Interfaces



- Safety
- Industrial Networking
- Software and System Solutions
- Power Supplies



- Connectivity
- Accessories

Do you need more details? Our Product Finder at www.balluff.com provides you with product-specific information, including technical drawings, data sheets, user guides and more for each individual product. All items are available for download.



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RFID



- 12 RFID System UHF (860/960 MHz) BIS U
- 64 RFID System HF (13.56 MHz) BIS M
- 310 RFID System LF (70/455 kHz) BIS C
- 396 RFID System LF (125 kHz) BIS L

504

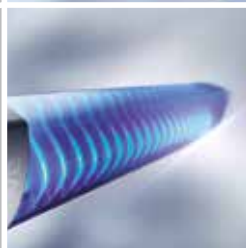
MACHINE VISION AND
OPTICAL IDENTIFICATION



- 508 Machine Vision
- 584 Optical Identification

562

HUMAN MACHINE INTERFACES



- 566 SmartLight – LED stack lights
- 574 Displays
- 580 Industrial Controller

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Automatic identification and tracking in production

RFID – RADIO FREQUENCY IDENTIFICATION



innovating automation



Our BIS industrial RFID systems provide an overview in a modern production facility. Objects can be automatically identified and traced using RFID. To do this, a data carrier that functions as a memory is attached to the object to be identified. The data is transferred between data carrier and read/write head and via the processor unit to the controller.

Balluff offers a broad selection of innovative products for the low frequency (LF), high frequency (HF) and ultra-high frequency (UHF) range. With the BIS V frequency-independent processor unit, all systems can be flexibly combined with each other.

Your Balluff solutions

- RFID system HF (13.56 MHz) BIS M
- RFID system LF (70/455 kHz) BIS C
- RFID system LF (125 kHz) BIS L
- RFID system UHF (860/960 MHz) BIS U

RFID



12

**RFID SYSTEM UHF
(860/960 MHz) BIS U**

- 14 UHF data carriers (860/960 MHz)
- 26 UHF read/write heads and antennas (860/960 MHz)
- 32 UHF processor units (860/960 MHz)
- 60 UHF read/write heads (860/960 MHz)
with integrated processor unit
- 62 Portable UHF read/write units (860/960 MHz)



64

**RFID-SYSTEM HF
(13.56 MHz) BIS M**

- 66 HF data carriers (13.56 MHz)
- 112 HF read/write heads and antennas (13.56 MHz)
- 192 HF processor units (13.56 MHz)
- 224 HF read/write heads (13.56 MHz)
with integrated processor unit
- 306 HF communication modules (13.56 MHz)
- 308 Portable HF read/write units (13.56 MHz)



310

**RFID-SYSTEM LF
(70/455 KHZ) BIS C**

- 312 LF data carriers (70/455 kHz)
- 334 LF read/write heads and antennas (70/455 kHz)
- 362 LF data couplers (70/455 kHz)
- 366 LF processor units (70/455 kHz)
- 388 LF read/write heads (70/455 kHz)
with integrated processor unit
- 390 Portable LF read/write units (70/455kHz)



396

**RFID-SYSTEM LF
(125 KHZ) BIS L**

- 398 LF data carriers (125 kHz)
- 408 LF read/write heads and antennas (125 kHz)
- 422 LF processor units (125 kHz)
- 440 LF read/write heads (125 kHz)
with integrated processor unit
- 484 Portable LF read/write units (125 kHz)



486

**BASICS AND
GLOSSARY**



Continuous transmission security
and data transparency

RFID SYSTEM UHF (860/960 MHz) BIS U



The BIS U UHF systems from Balluff ensure data transparency and traceability of your automation processes. UHF is a standard technology for identification solutions covering all processes. They help to achieve fast detection of tag information and continuous transmission security. By querying decentrally stored product- and process-data, UHF is a central component of traceability applications. Our UHF BIS U systems provide permanent data transparency in your entire delivery chain.

Features

- Problem-free integration in applications via globally used standard interfaces
- Corresponds to the global standard ISO 18000-6C and EPC Gen2 Class1
- Flexible use due to a wide range of different combinations of data carriers and antennas
- Ranges up to 6 m and more
- Bulk capture for simultaneous scanning of many data carriers (tags)
- Suitable for attachment to traditional control systems via bus interfaces and higher level IT systems
- Complete tailored system solutions realizable
- Many accessories for integration into a variety of applications



Europe: 865-868 MHz		BIS013P BIS U-142-06/CA-M8-GY		
America/Asia: 902-928 MHz	BIS0178 BIS U-142-A0/C1M-GY		BIS013R BIS U-142-07/CA-M8-GY	
Worldwide: 860-960 MHz				
Product Group	UHF (860...960 MHz)	UHF (860...960 MHz)	UHF (860...960 MHz)	
Working frequency	902...928 MHz	865...868 MHz	902...928 MHz	
Dimension	Ø 17.2 x 14 mm	Ø 22 x 26 mm	Ø 22 x 26 mm	
Memory type	EEPROM	EEPROM	EEPROM	
User data, read/write	512 Bit	512 Bit	512 Bit	
EPC memory, read/write	96 Bit	96 Bit	96 Bit	
TID memory, read-only	64 Bit	96 Bit	96 Bit	
Antenna type	Dipole	Dipole	Dipole	
Installation	on metal	on metal	on metal	
Storage temperature	-25...95 °C	-25...95 °C	-25...95 °C	
Storage temperature temporary	—	—	—	
Ambient temperature	-25...85 °C	-25...85 °C	-25...85 °C	
Housing material	PA 12, GF30	Steel, Data carrier: PA 12-GF30 gray, coated	Steel, Data carrier: PA 12-GF30 gray, coated	
IP rating	IP68	IP68	IP68	
Approval/Conformity	CE, WEEE, EAC	CE, WEEE, EAC	CE, WEEE, EAC	
Productview	Page 22	Page 22	Page 22	



	BIS00NL BIS U-100-01/CA		BIS00RC BIS U-100-02/CA		
	BIS00WH BIS U-101-04/CA			BIS0174 BIS U-103-M2/CAM	BIS0172 BIS U-108-M2/CAM
	UHF (860...960 MHz)	UHF (860...960 MHz)	UHF (860...960 MHz)	UHF (860...960 MHz)	UHF (860...960 MHz)
	860...960 MHz	840...960 MHz	840...960 MHz	860...940 MHz	860...940 MHz
	51.5 x 6.4 x 51.5 mm	37.2 x 7 x 127 mm	37.2 x 7 x 127 mm	25 x 12.85 x 110 mm	15 x 12.5 x 80 mm
	EEPROM	EEPROM	EEPROM	EEPROM	EEPROM
	512 Bit	512 Bit	512 Bit	512 Bit	512 Bit
	240 Bit	96 Bit	96 Bit	128 Bit	128 Bit
	64 Bit	96 Bit	96 Bit	96 Bit	96 Bit
	Dipole	Dipole	Dipole	Dipole	Dipole
	metal-free (clear zone)	metal-free (clear zone)	metal-free (clear zone)	on metal	on metal
	-40...85 °C	-40...85 °C	-40...85 °C	-40...85 °C	-40...85 °C
	—	—	—	—	—
	-20...85 °C	-40...85 °C	-40...85 °C	-40...85 °C	-40...85 °C
	ABS	PA 12, GF30	PA 12, GF30	ABS	ABS
	IP68	IP67	IP67	IP68	IP68
	CE, WEEE, EAC	CE, WEEE, EAC	CE, WEEE, EAC	CE, RoHS, EAC, WEEE	CE, RoHS, EAC, WEEE
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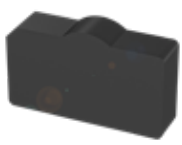
Europe: 865-868 MHz				
America/Asia: 902-928 MHz				
Worldwide: 860-960 MHz	BIS0173 BIS U-109-M2/CAM	BIS018F BIS U-112-M4/CAA	BIS018H BIS U-113-M4/CAA	
Product Group	UHF (860...960 MHz)	UHF (860...960 MHz)	UHF (860...960 MHz)	
Working frequency	860...930 MHz	860...960 MHz	860...960 MHz	
Dimension	48 x 12.6 x 51 mm	29.3 x 19.2 x 66.2 mm	38.1 x 19 x 51.3 mm	
Memory type	EEPROM	EEPROM	EEPROM	
User data, read/write	512 Bit	0 Bit	0 Bit	
EPC memory, read/write	128 Bit	96 Bit	96 Bit	
TID memory, read-only	96 Bit	48 Bit	48 Bit	
Antenna type	Dipole	Dipole	Dipole	
Installation	on metal	metal-free (clear zone)	metal-free (clear zone)	
Storage temperature	-40...85 °C	-40...85 °C	-40...85 °C	
Storage temperature temporary	—	—	—	
Ambient temperature	-40...85 °C	-40...85 °C	-40...85 °C	
Housing material	ABS	PVDF	PVDF	
IP rating	IP68	IP67	IP67	
Approval/Conformity	CE, RoHS, EAC, WEEE	CE, WEEE	CE, WEEE	
Productview	Page 22	Page 22	Page 23	



		BISO1CJ BIS U-180-A0/COM-HT			
			BISO1CK BIS U-180-A0/C1M-HT		
	BISO16M BIS U-111-M2/CAA			BISO0WF BIS U-101-04/CA-HT	BISO0WC BIS U-102-05/CA-HT
	UHF (860...960 MHz)	UHF (860...960 MHz)	UHF (860...960 MHz)	UHF (860...960 MHz)	UHF (860...960 MHz)
	860...960 MHz	866...868 MHz	902...928 MHz	860...960 MHz	860...960 MHz
	54 x 0.84 x 85.7 mm	5.95 x 1.3 x 57.1 mm	5.95 x 1.3 x 57.1 mm	51.5 x 6.4 x 51.5 mm	52 x 11.5 x 128 mm
	EEPROM	EEPROM	EEPROM	EEPROM	EEPROM
	512 Bit	512 Bit	512 Bit	512 Bit	512 Bit
	128 Bit	96 Bit	96 Bit	240 Bit	240 Bit
	96 Bit	96 Bit	96 Bit	64 Bit	64 Bit
	Dipole	Dipole	Dipole	Dipole	Dipole
	metal-free (clear zone)	on metal	on metal	metal-free (clear zone)	metal-free (clear zone)
	-25...50 °C	—	—	-40...85 °C	-40...85 °C
	—	-20...225 °C 1x12 h	-20...225 °C 1x12 h	220 °C 1x1000 h, 1500x30 min	220 °C 1x1000 h, 1500x30 min
	-25...50 °C	-20...85 °C	-20...85 °C	-40...85 °C	-40...85 °C
	PVC	Epoxy-resin/fiberglass, Flame-retarding	Epoxy-resin/fiberglass, Flame-retarding	PPS	PPS
	IP68	IP68	IP68	IP68	IP68
	CE, WEEE, EAC	CE, WEEE, EAC	CE, WEEE, EAC	CE, WEEE, EAC	CE, WEEE, EAC
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Europe: 865-868 MHz	BIS01CF BIS U-104-A0/COM-HT		BIS01CH BIS U-105-A0/COM-HT	
America/Asia: 902-928 MHz		BIS01CM BIS U-104-A0/C1M-HT		
Worldwide: 860-960 MHz				
Product Group	UHF (860...960 MHz)	UHF (860...960 MHz)	UHF (860...960 MHz)	
Working frequency	866...868 MHz	902...928 MHz	866...868 MHz	
Dimension	7.8 x 2.7 x 6.8 mm	7.8 x 2.7 x 6.8 mm	7.8 x 3.1 x 13.1 mm	
Memory type	EEPROM	EEPROM	EEPROM	
User data, read/write	512 Bit	512 Bit	512 Bit	
EPC memory, read/write	96 Bit	96 Bit	96 Bit	
TID memory, read-only	96 Bit	96 Bit	96 Bit	
Antenna type	Dipole	Dipole	Dipole	
Installation	on metal	on metal	on metal	
Storage temperature	—	—	—	
Storage temperature temporary	-20...235 °C 1x700 h	-20...235 °C 1x700 h	-20...235 °C 1x700 h	
Ambient temperature	-20...85 °C	-20...85 °C	-20...85 °C	
Housing material	Ceramic	Ceramic	Ceramic	
IP rating	IP68	IP68	IP68	
Approval/Conformity	CE, WEEE, EAC	CE, WEEE, EAC	CE, WEEE, EAC	
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			BIS01AU BIS U-157-N9/C0M		
	BIS01CN BIS U-105-A0/C1M-HT			BIS01AT BIS U-157-N9/C1M	
		BIS0163 BIS U-150-N4/CAA			BIS0166 BIS U-153-M0/CAA
	UHF (860...960 MHz)	UHF (860...960 MHz)	UHF (860...960 MHz)	UHF (860...960 MHz)	UHF (860...960 MHz)
	902...928 MHz	860...960 MHz	865...868 MHz	902...928 MHz	860...960 MHz
	7.8 x 3.1 x 13.1 mm	20 x 44.45 mm	22.5 x 1.65 x 50 mm	22.5 x 1.65 x 50 mm	9 x 113 mm
	EEPROM	EEPROM	EEPROM	EEPROM	EEPROM
	512 Bit	0 Bit	1024 Bit	1024 Bit	32 Bit
	96 Bit	128 Bit	448 Bit	448 Bit	128 Bit
	96 Bit	64 Bit	96 Bit	96 Bit	96 Bit
	Dipole	Dipole	Dipole	Dipole	Dipole
	on metal	metal-free (clear zone)	on metal	on metal	metal-free (clear zone)
	—	-20...80 °C	-30...85 °C	-30...85 °C	-20...80 °C
	-20...235 °C 1x700 h	—	—	—	—
	-20...85 °C	-20...80 °C	-30...85 °C	-30...85 °C	-20...80 °C
	Ceramic	Paper	PET	PET	Paper
	IP68	—	—	—	—
	CE, WEEE, EAC	CE, WEEE, EAC	CE, REACH regulation (EU), RoHS	CE, REACH regulation (EU), RoHS	CE, WEEE, EAC
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Europe: 865-868 MHz				
America/Asia: 902-928 MHz				
Worldwide: 860-960 MHz	BIS0167 BIS U-154-M0/CAA	BIS0169 BIS U-156-M0/CAA	BIS0164 BIS U-151-M2/CAA	
Product Group	UHF (860...960 MHz)	UHF (860...960 MHz)	UHF (860...960 MHz)	
Working frequency	860...960 MHz	860...960 MHz	860...960 MHz	
Dimension	15 x 97 mm	53 x 53 mm	54 x 34 mm	
Memory type	EEPROM	EEPROM	EEPROM	
User data, read/write	32 Bit	32 Bit	512 Bit	
EPC memory, read/write	128 Bit	128 Bit	128 Bit	
TID memory, read-only	96 Bit	96 Bit	96 Bit	
Antenna type	Dipole	Dipole	Dipole	
Installation	metal-free (clear zone)	metal-free (clear zone)	metal-free (clear zone)	
Storage temperature	-40...85 °C	-40...85 °C	-40...85 °C	
Storage temperature temporary	—	—	—	
Ambient temperature	-40...85 °C	-40...85 °C	-40...85 °C	
Housing material	Paper	Paper	Paper	
IP rating	—	—	—	
Approval/Conformity	CE, WEEE, EAC	CE, WEEE, EAC	CE, WEEE, EAC	
Productview	Page 24	Page 24	Page 24	



	BIS016E BIS U-158-A0/COM-HT		BIS016F BIS U-158-A0/C1M-HT		
	BIS0168 BIS U-155-M2/CAA			BIS016H BIS U-159-M2/CAA	
	UHF (860...960 MHz)	UHF (860...960 MHz)	UHF (860...960 MHz)	UHF (860...960 MHz)	
	860...960 MHz	865...868 MHz	902...928 MHz	850...960 MHz	
	27 x 97 mm	25 x 1.65 x 88 mm	25 x 1.65 x 88 mm	23 x 1 x 100 mm	
	EEPROM	EEPROM	EEPROM	EEPROM	
	512 Bit	512 Bit	512 Bit	512 Bit	
	128 Bit	96 Bit	96 Bit	128 Bit	
	96 Bit	96 Bit	96 Bit	96 Bit	
	Dipole	Dipole	Dipole	Dipole	
	metal-free (clear zone)	on metal	on metal	metal-free (clear zone)	
	-40...85 °C	-25...95 °C	-25...95 °C	-40...85 °C	
	—	160 °C 3x30 min	160 °C 3x30 min	—	
	-40...85 °C	-30...70 °C	-30...70 °C	-25...70 °C	
	Paper	PEN	PEN	PET	
	—	IP67	IP67	IP68	
	CE, WEEE, EAC	CE, REACH regulation (EU), RoHS, WEEE	CE, REACH regulation (EU), RoHS, WEEE	CE, REACH regulation (EU), RoHS, WEEE	
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Sensors

RFID

Machine Vision and Optical Identification

Human Machine Interfaces

Safety

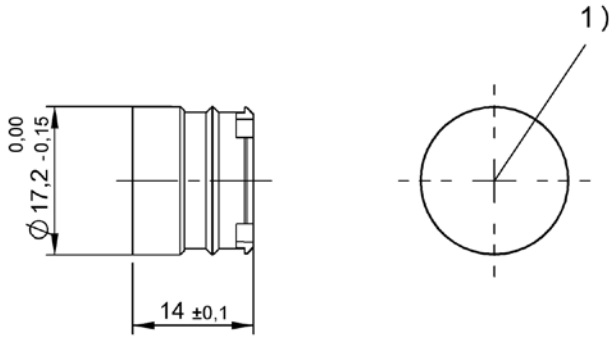
Industrial Networking

Software and System Solutions

Power Supply

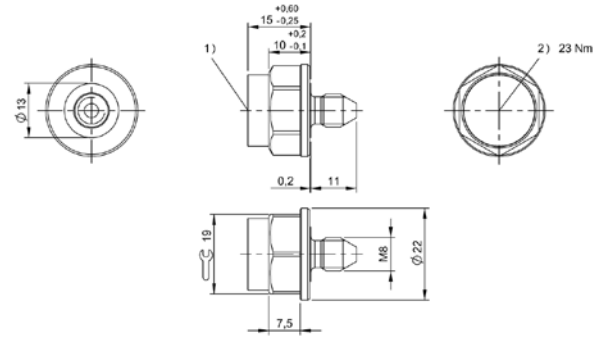
Connectivity

Accessories



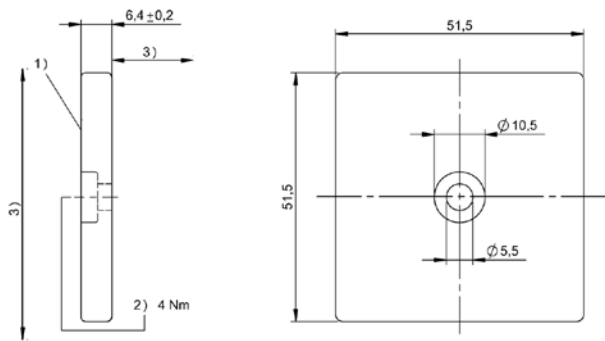
1) Sensing surface

BISO178



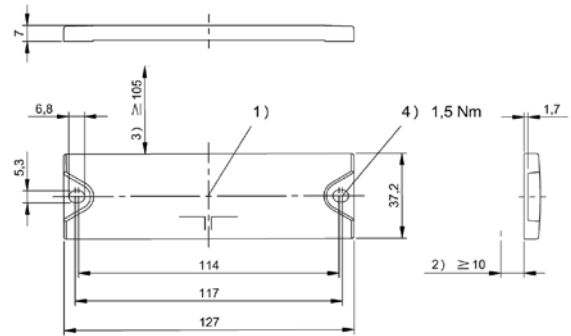
1) Sensing surface, 2) Tightening torque

BISO13P, BISO13R



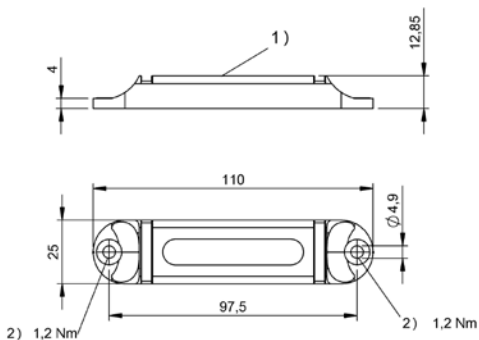
1) Sensing surface, 2) Tightening torque, 3) see R/W head table

BISO0WH, BISO0WF



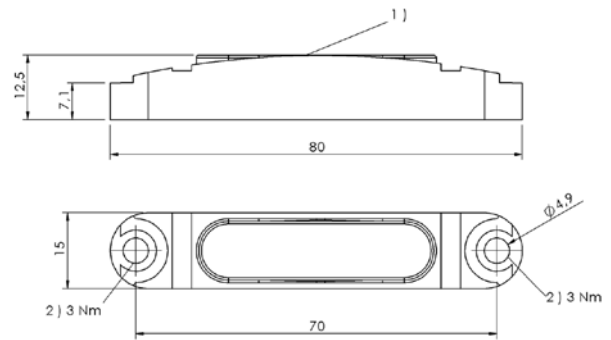
1) Sensing surface, 2) Clear zone, 3) Clear zone surrounding, 4) Tightening torque

BISO0NL, BISO0RC



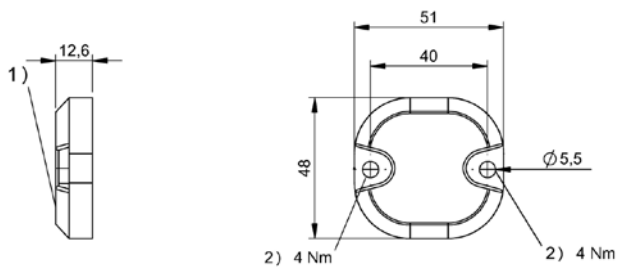
1) Sensing surface, 2) Tightening torque

BISO174



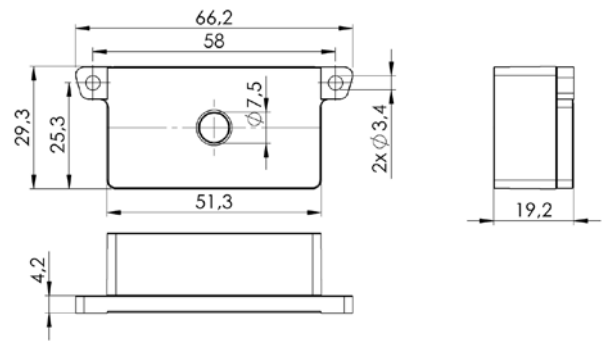
1) Sensing surface, 2) Tightening torque

BISO172

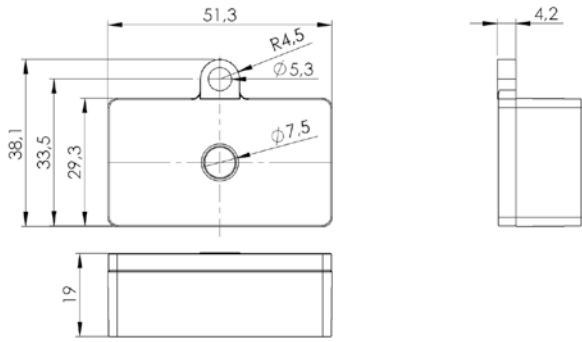


1) Sensing surface, 2) Tightening torque

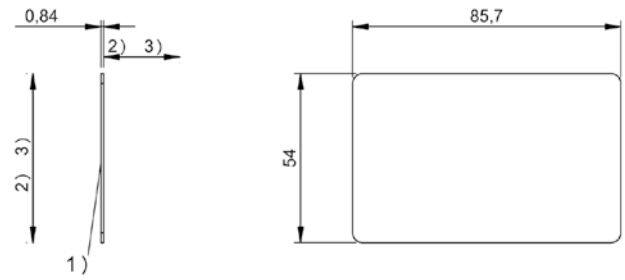
BISO173



BISO18F

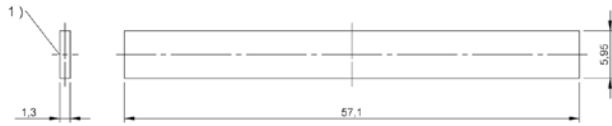


BISO18H



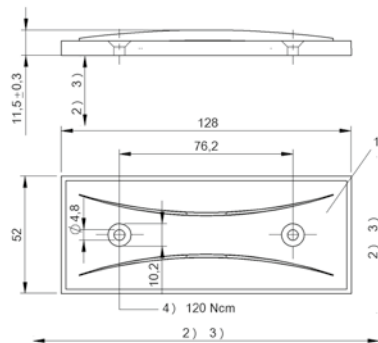
1) Sensing surface, 2) Clear zone, 3) see corresponding R/W head

BISO16M



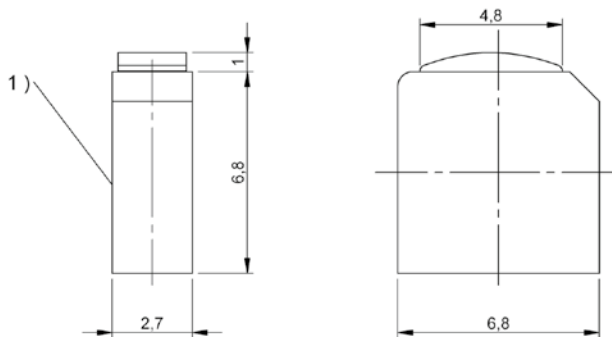
1) Sensing surface

BISO1CJ, BISO1CK



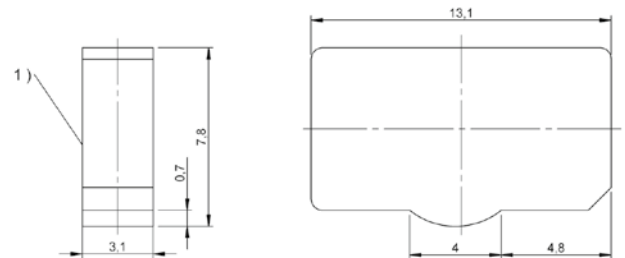
1) Sensing surface, 2) Clear zone, 3) see corresponding R/W head, 4) Tightening torque

BISO0WC



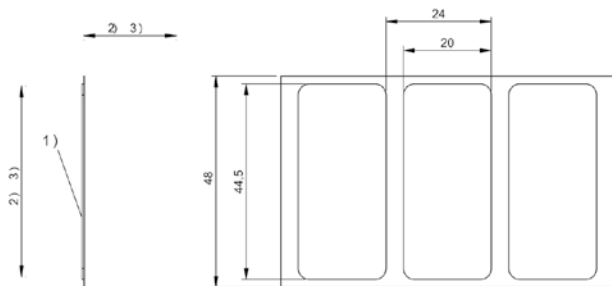
1) Sensing surface

BISO1CF, BISO1CM



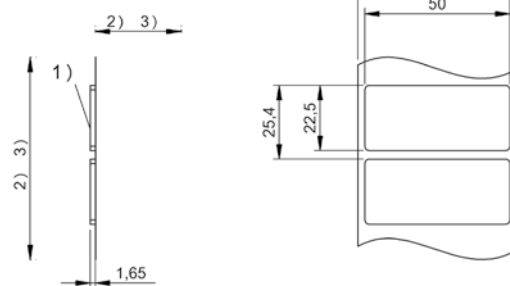
1) Sensing surface

BISO1CH, BISO1CN



1) Sensing surface, 2) Clear zone, 3) see corresponding R/W head

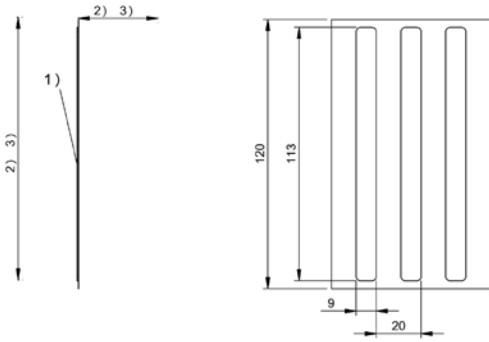
BISO163



1) Sensing surface, 2) Clear zone, 3) see corresponding R/W head

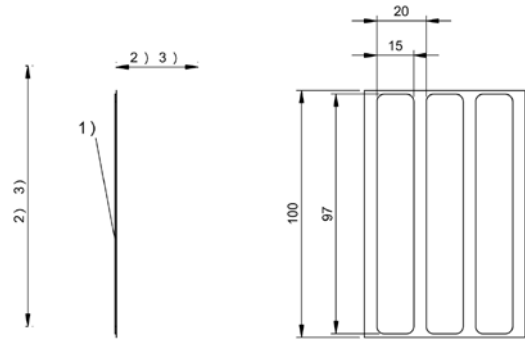
BISO1AU, BISO1AT

24 | RFID | UHF (860/960 MHz)



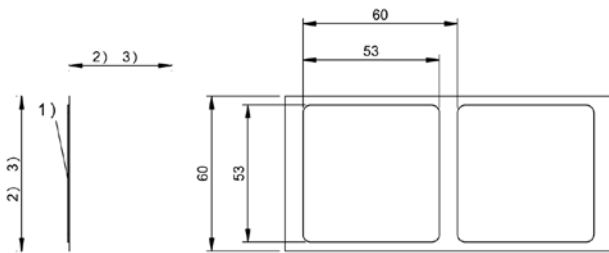
1) Sensing surface, 2) Clear zone, 3) see corresponding R/W head

BISO166



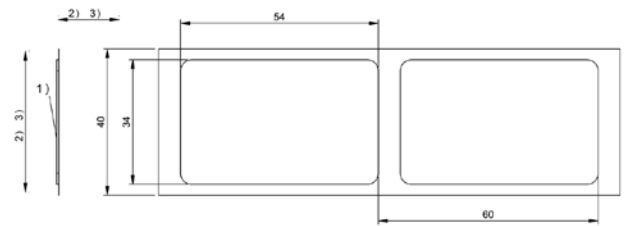
1) Sensing surface, 2) Clear zone, 3) see corresponding R/W head

BISO167



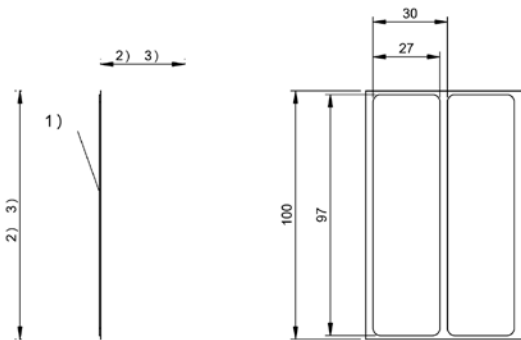
1) Sensing surface, 2) Clear zone, 3) see corresponding R/W head

BISO169



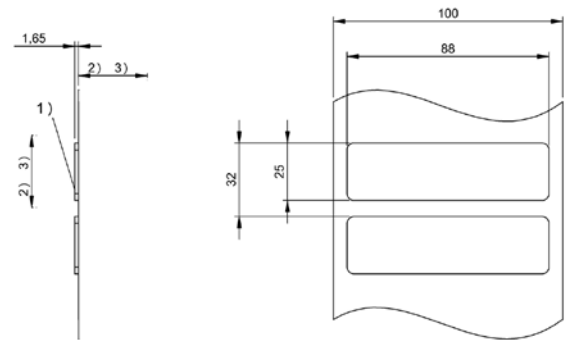
1) Sensing surface, 2) Clear zone, 3) see corresponding R/W head

BISO164



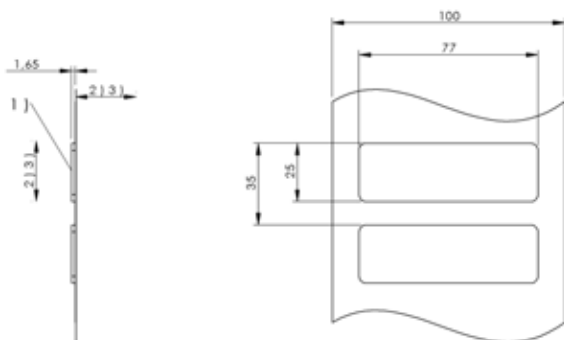
1) Sensing surface, 2) Clear zone, 3) see corresponding R/W head

BISO168



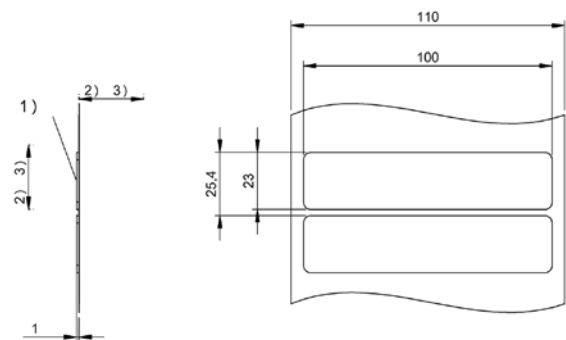
1) Sensing surface, 2) Clear zone, 3) see corresponding R/W head

BISO16E



1) Sensing surface, 2) Clear zone, 3) see corresponding R/W head

BISO16F



1) Sensing surface, 2) Clear zone, 3) see corresponding R/W head

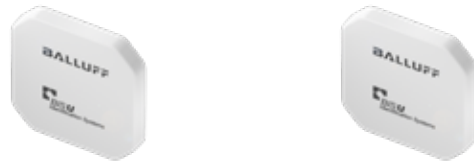
BISO16H



Europe: 865...868 MHz	BIS015Z BIS VU-320-C0-S4		
USA/Canada/Mexico: 902...928 MHz		BIS015Y BIS VU-320-C1-S4	
China: 920.5...924.5 MHz			
South Korea: 917...921 MHz			
Japan: 916.8...92.4 MHz			
Australia: 920.25...925.75 MHz			
Product Group	UHF (860...960 MHz)	UHF (860...960 MHz)	
Radio license	Europe	USA, Canada, Mexico	
Dimension	130 x 50.5 x 130 mm	130 x 50.5 x 130 mm	
Antenna type	Patch	Patch	
Polarization	circular	circular	
Output power adjustable	5 dBm...24 dBm (3.2 mW...250 mW)	7 dBm...26 dBm (5 mW...400 mW)	
Connection	M12x1-Male, 4-pole, A-coded	M12x1-Male, 4-pole, A-coded	
Housing material	PC ABS, zinc, die-cast, (connector)	PC ABS, zinc, die-cast, (connector)	
Interface	RS485	RS485	
Operating voltage U_b	24 V DC LPS Class 2	24 V DC LPS Class 2	
Ambient temperature	-20...55 °C	-20...55 °C	
Protection degree	IP67	IP67	
Approval/Conformity	CE, ETSI EN 302 208, UL Listed	FCC Part 15, IC RSS-210, UL Listed	
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	BIS018Z BIS VU-320-C2-S4			
		BIS0190 BIS VU-320-C4-S4		
			BIS0191 BIS VU-320-C5-S4	
				BIS0192 BIS VU-320-C7-S4
	UHF (860...960 MHz)	UHF (860...960 MHz)	UHF (860...960 MHz)	UHF (860...960 MHz)
	China	South Korea	Japan	Australia
	130 x 50.5 x 130 mm	130 x 50.5 x 130 mm	130 x 50.5 x 130 mm	130 x 50.5 x 130 mm
	Patch	Patch	Patch	Patch
	circular	circular	circular	circular
	5 dBm...24 dBm (3.2 mW...250 mW)	7 dBm...26 dBm (5 mW...400 mW)	7 dBm...25 dBm (5 mW...320 mW)	7 dBm...26 dBm (5 mW...400 mW)
	M12x1-Male, 4-pole, A-coded	M12x1-Male, 4-pole, A-coded	M12x1-Male, 4-pole, A-coded	M12x1-Male, 4-pole, A-coded
	PC ABS, zinc, die-cast, (connector)	PC ABS, zinc, die-cast, (connector)	PC ABS, zinc, die-cast, (connector)	PC ABS, zinc, die-cast, (connector)
	RS485	RS485	RS485	RS485
	24 V DC LPS Class 2	24 V DC LPS Class 2	24 V DC LPS Class 2	24 V DC LPS Class 2
	-20...55 °C	-20...55 °C	-20...55 °C	-20...55 °C
	IP67	IP67	IP67	IP67
	CMIIT-Radio Transmiss. Equipm., UL Listed	KC, UL Listed	ARIB T106, MIC Specified Radio Equipment, UL Listed	AS/NZS 4268, UL Listed
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Europe: 865...868 MHz	BIS00P0 BIS U-301-C0-TNCB		
America/Asia: 902...928 MHz		BIS00TY BIS U-301-C1-TNCB	
Product Group	UHF (860...960 MHz)	UHF (860...960 MHz)	
Working frequency	865...868 MHz	902...928 MHz	
Dimension	133 x 18.4 x 133 mm	133 x 18.4 x 133 mm	
Antenna type	Patch	Patch	
Polarization	circular	circular	
Connection	—	—	
Housing material	PC	PC	
Ambient temperature	-30...70 °C	-30...70 °C	
Protection degree	IP67	IP67	
Approval/Conformity	—	—	
Productview	Page 30	Page 30	



BIS01AW BIS U-303-C0-TNCB			
	BIS01AY BIS U-303-C1-TNCB		
UHF (860...960 MHz)	UHF (860...960 MHz)		
865...868 MHz	902...928 MHz		
300 x 49 x 300 mm	300 x 49 x 300 mm		
Patch	—		
right hand circular	right hand circular		
TNC-Female	TNC-Female		
Aluminum, Antenna hood: Polymer blend	Aluminum, Antenna hood: Polymer blend		
-20...55 °C	-20...55 °C		
IP67	IP67		
CE, WEEE	FCC, WEEE		
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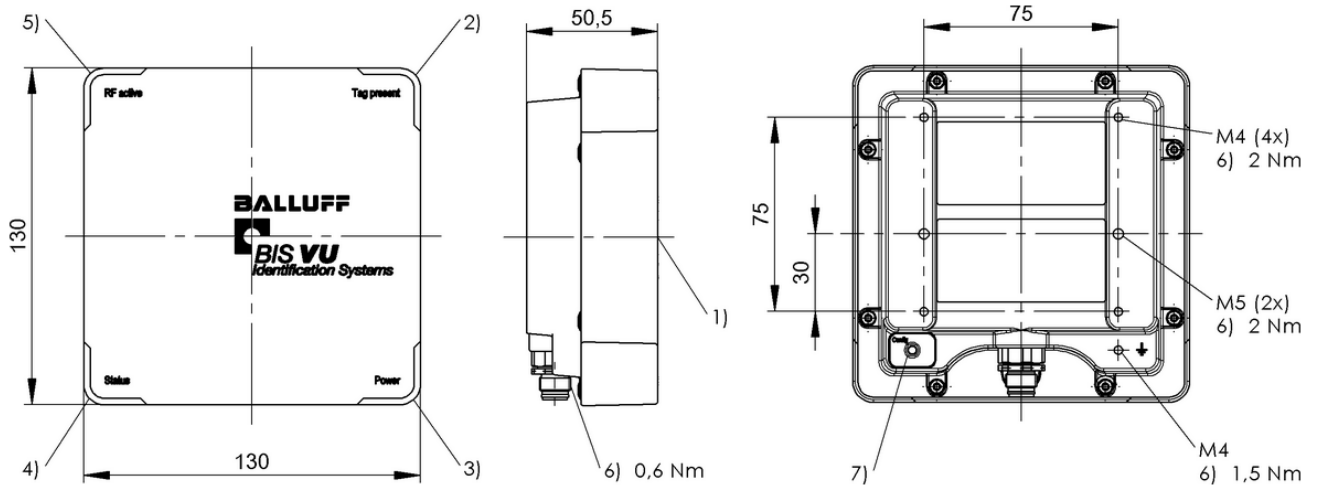
Industrial Networking

Software and
System Solutions

Power Supply

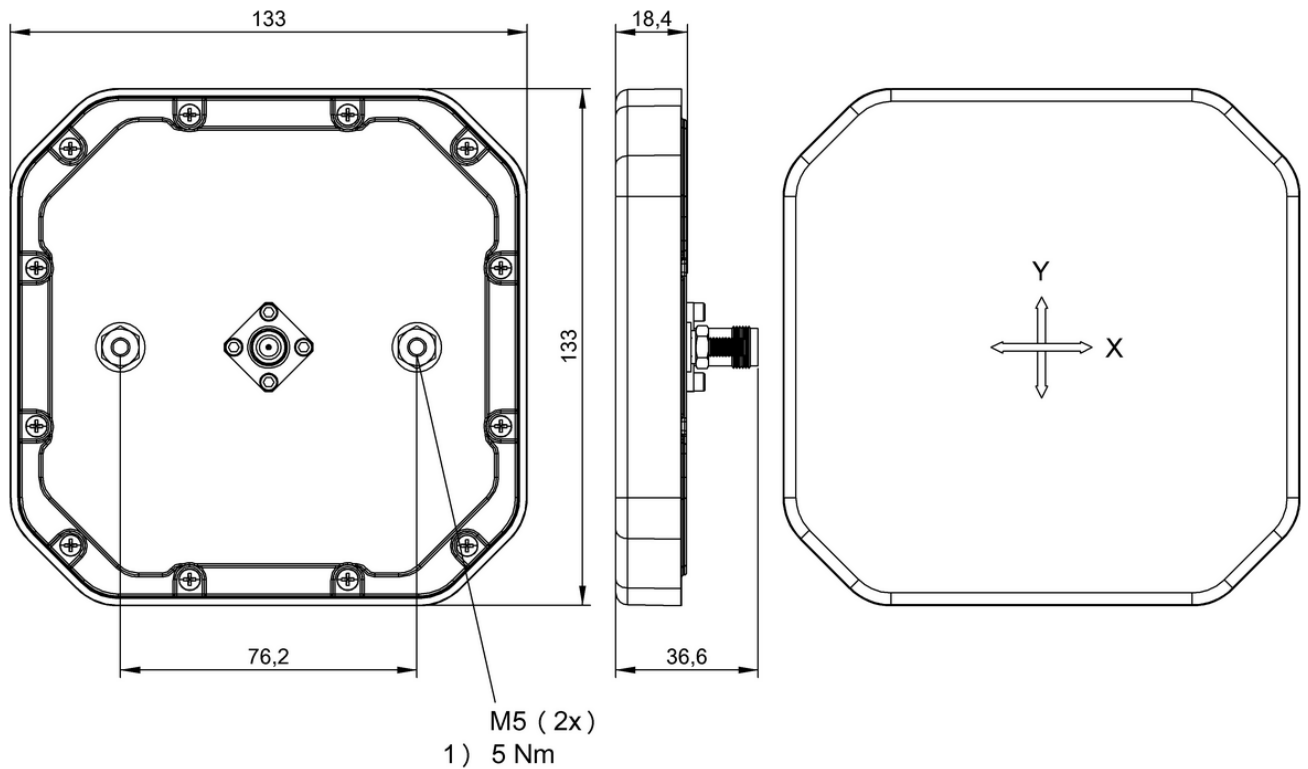
Connectivity

Accessories



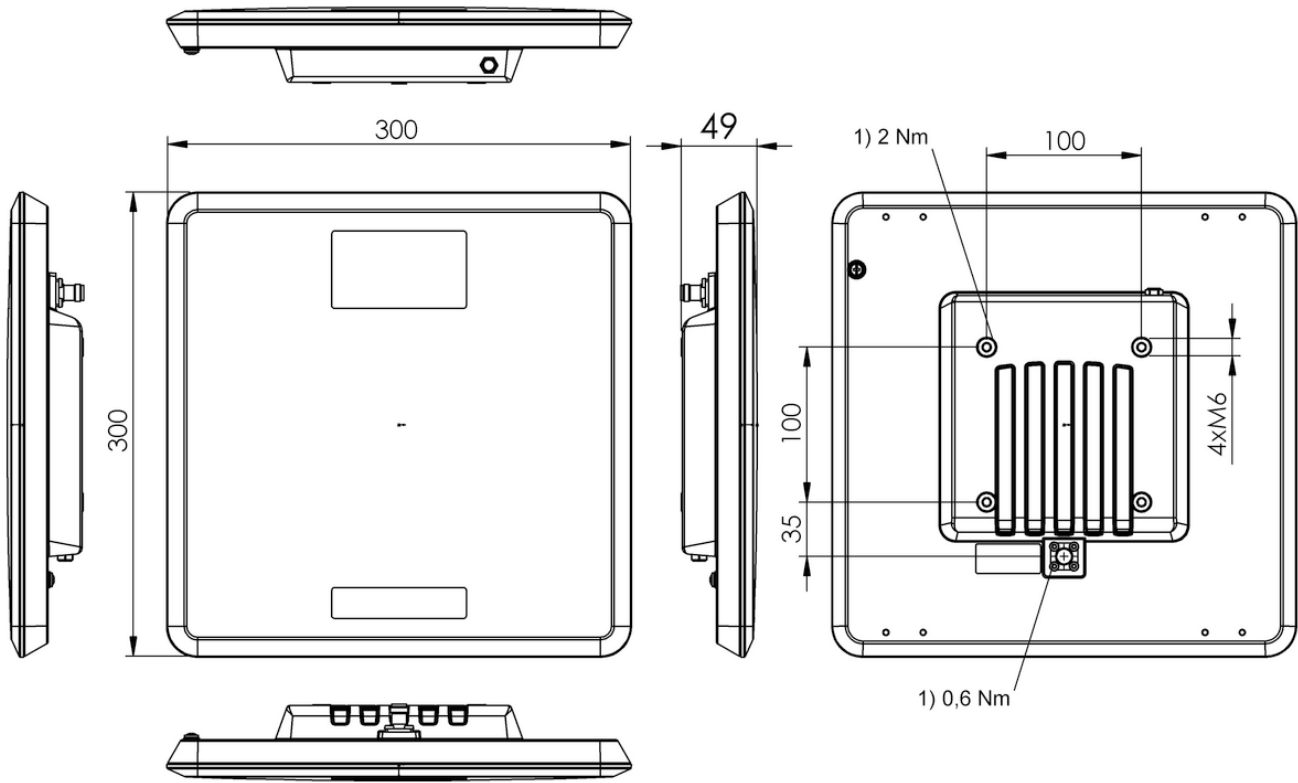
1) Sensing surface, 2) LED (Tag present), 3) LED (Power), 4) LED (Status), 5) LED (RF active), 6) Tightening torque, 7) Button (Config)

BIS015Z, BIS015Y, BIS018Z, BIS0190, BIS0191, BIS0192



1) Tightening torque

BIS00P0, BIS00TY



1) Tightening torque

BIS01AW, BIS01AY



Profibus DP Slave galvanically isolated	BIS00T3 BIS V-6102-019-C001	
Ethernet/IP		
Product Group	Multi-Frequency Processor	
Working frequency	865...868 MHz, 902...928 MHz, 920.5...924.5 MHz, 917...921 MHz, 916.8...920.4 MHz, 920.25...925.75 MHz	
Interface	Profibus DP Slave galvanically isolated	
Supported RFID technologies	LF 125 kHz (BIS VL), HF 13.56 MHz (BIS VM), UHF 860/960 MHz (BIS VU)	
Number of connectable R/W heads / antennas	4	
Output power adjustable	—	
Operating voltage U_b	24 V DC LPS Class 2	
Housing material	Zinc, Die casting	
Ambient temperature	0...60 °C	
IP rating	IP65, with connector	
Approval/Conformity	CE, EAC, cULus, WEEE	
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	BIS012E BIS V-6102-019-C101		
		BIS012F BIS V-6106-034-C002	BIS0122 BIS V-6106-034-C004
	Multi-Frequency Processor	Multi-Frequency Processor	Multi-Frequency Processor
	865...868 MHz, 902...928 MHz, 920.5...924.5 MHz, 917...921 MHz, 916.8...920.4 MHz, 920.25...925.75 MHz	865...868 MHz, 902...928 MHz, 920.5...924.5 MHz, 917...921 MHz, 916.8...920.4 MHz, 920.25...925.75 MHz	865...868 MHz, 902...928 MHz, 920.5...924.5 MHz, 917...921 MHz, 916.8...920.4 MHz, 920.25...925.75 MHz
	Profibus DP Slave galvanically isolated	Ethernet/IP	Ethernet/IP
	LF 125 kHz (BIS VL), LF 70/455 kHz (BIS C), HF 13.56 MHz (BIS VM), UHF 860/960 MHz (BIS VU)	LF 125 kHz (BIS VL), HF 13.56 MHz (BIS VM), UHF 860/960 MHz (BIS VU)	LF 125 kHz (BIS VL), HF 13.56 MHz (BIS VM), UHF 860/960 MHz (BIS VU)
	4	4	4
	—	—	—
	24 V DC LPS Class 2	24 V DC LPS Class 2	24 V DC LPS Class 2
	Zinc, Die casting	Zinc, Die casting	Zinc, Die casting
	0...60 °C	0...60 °C	0...60 °C
	IP65, with connector	IP65, with connector	IP65, with connector
	CE, EAC, cULus, WEEE	CE, EAC, cULus, WEEE	CE, EAC, cULus, WEEE
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Ethernet/IP	BIS014C BIS V-6106-034-C102	
Product Group	Multi-Frequency Processor	
Working frequency	865...868 MHz, 902...928 MHz, 920.5...924.5 MHz, 917...921 MHz, 916.8...920.4 MHz, 920.25...925.75 MHz	
Interface	Ethernet/IP	
Supported RFID technologies	LF 125 kHz (BIS VL), LF 70/455 kHz (BIS C), HF 13.56 MHz (BIS VM), UHF 860/960 MHz (BIS VU)	
Number of connectable R/W heads / antennas	4	
Output power adjustable	—	
Operating voltage Ub	24 V DC LPS Class 2	
Housing material	Zinc, Die casting	
Ambient temperature	0...60 °C	
IP rating	IP65, with connector	
Approval/Conformity	CE, EAC, cULus, WEEE	
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BIS0146 BIS V-6106-034-C104	BIS0186 BIS V-6107-039-C005	BIS018J BIS V-6107-039-C006
Multi-Frequency Processor	Multi-Frequency Processor	Multi-Frequency Processor
865...868 MHz, 902...928 MHz, 920.5...924.5 MHz, 917...921 MHz, 916.8...920.4 MHz, 920.25...925.75 MHz	865...868 MHz, 902...928 MHz, 920.5...924.5 MHz, 917...921 MHz, 916.8...920.4 MHz, 920.25...925.75 MHz	865...868 MHz, 902...928 MHz, 920.5...924.5 MHz, 917...921 MHz, 916.8...920.4 MHz, 920.25...925.75 MHz
Ethernet/IP	Ethernet TCP/IP, USB	Ethernet TCP/IP, USB
LF 125 kHz (BIS VL), LF 70/455 kHz (BIS C), HF 13.56 MHz (BIS VM), UHF 860/960 MHz (BIS VU)	LF 125 kHz (BIS VL), HF 13.56 MHz (BIS VM), UHF 860/960 MHz (BIS VU)	LF 125 kHz (BIS VL), HF 13.56 MHz (BIS VM), UHF 860/960 MHz (BIS VU)
4	4	4
—	—	—
24 V DC LPS Class 2	24 V DC LPS Class 2	24 V DC LPS Class 2
Zinc, Die casting	Zinc, Die casting	Zinc, Die casting
0...60 °C	0...60 °C	0...60 °C
IP65, with connector	IP65, with connector	IP65, with connector
CE, EAC, cULus, WEEE	CE, EAC, cULus, WEEE	CE, EAC, cULus, WEEE
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TCP/IP, USB	BIS01AA BIS V-6107-039-C007	
Product Group	Multi-Frequency Processor	
Working frequency	865...868 MHz, 902...928 MHz, 920.5...924.5 MHz, 917...921 MHz, 916.8...920.4 MHz, 920.25...925.75 MHz	
Interface	TCP/IP, USB	
Supported RFID technologies	LF 125 kHz (BIS VL), HF 13.56 MHz (BIS VM), UHF 860/960 MHz (BIS VU)	
Number of connectable R/W heads / antennas	4	
Output power adjustable	—	
Operating voltage U_b	24 V DC LPS Class 2	
Housing material	Zinc, Die casting	
Ambient temperature	0...60 °C	
IP rating	IP65, with connector	
Approval/Conformity	CE, EAC, cULus, WEEE	
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BIS0187 BIS V-6107-039-C105	BIS018K BIS V-6107-039-C106	BIS01AC BIS V-6107-039-C107
Multi-Frequency Processor	Multi-Frequency Processor	Multi-Frequency Processor
865...868 MHz, 902...928 MHz, 920.5...924.5 MHz, 917...921 MHz, 916.8...920.4 MHz, 920.25...925.75 MHz	865...868 MHz, 902...928 MHz, 920.5...924.5 MHz, 917...921 MHz, 916.8...920.4 MHz, 920.25...925.75 MHz	865...868 MHz, 902...928 MHz, 920.5...924.5 MHz, 917...921 MHz, 916.8...920.4 MHz, 920.25...925.75 MHz
Ethernet TCP/IP, USB	Ethernet TCP/IP, USB	TCP/IP, USB
LF 125 kHz (BIS VL), LF 70/455 kHz (BIS C), HF 13.56 MHz (BIS VM), UHF 860/960 MHz (BIS VU)	LF 125 kHz (BIS VL), LF 70/455 kHz (BIS C), HF 13.56 MHz (BIS VM), UHF 860/960 MHz (BIS VU)	LF 125 kHz (BIS VL), LF 70/455 kHz (BIS C), HF 13.56 MHz (BIS VM), UHF 860/960 MHz (BIS VU)
4	4	4
—	—	—
24 V DC LPS Class 2	24 V DC LPS Class 2	24 V DC LPS Class 2
Zinc, Die casting	Zinc, Die casting	Zinc, Die casting
0...60 °C	0...60 °C	0...60 °C
IP65, with connector	IP65, with connector	IP65, with connector
CE, EAC, cULus, WEEE	CE, EAC, cULus, WEEE	CE, EAC, cULus, WEEE
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Profinet I/O (IRT), Profinet I/O (IRT) 2-port switch	BIS013U BIS V-6108-048-C002	
Product Group	Multi-Frequency Processor	
Working frequency	865...868 MHz, 902...928 MHz, 920.5...924.5 MHz, 917...921 MHz, 916.8...920.4 MHz, 920.25...925.75 MHz	
Interface	Profinet I/O (IRT), Profinet I/O (IRT) 2-port switch	
Supported RFID technologies	LF 125 kHz (BIS VL), HF 13.56 MHz (BIS VM), UHF 860/960 MHz (BIS VU)	
Number of connectable R/W heads / antennas	4	
Output power adjustable	—	
Operating voltage U_b	24 V DC LPS Class 2	
Housing material	Zinc, Die casting	
Ambient temperature	0...60 °C	
IP rating	IP65, with connector	
Approval/Conformity	CE, EAC, cULus, WEEE	
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BIS01AE BIS V-6108-048-C007	BIS013W BIS V-6108-048-C102	BIS01AF BIS V-6108-048-C107
Multi-Frequency Processor	Multi-Frequency Processor	Multi-Frequency Processor
865...868 MHz, 902...928 MHz, 920.5...924.5 MHz, 917...921 MHz, 916.8...920.4 MHz, 920.25...925.75 MHz	865...868 MHz, 902...928 MHz, 920.5...924.5 MHz, 917...921 MHz, 916.8...920.4 MHz, 920.25...925.75 MHz	865...868 MHz, 902...928 MHz, 920.5...924.5 MHz, 917...921 MHz, 916.8...920.4 MHz, 920.25...925.75 MHz
Profinet I/O (IRT), Profinet I/O (IRT) 2-port switch	Profinet I/O (IRT), Profinet I/O (IRT) 2-port switch	Profinet I/O (IRT), Profinet I/O (IRT) 2-port switch
LF 125 kHz (BIS VL), HF 13.56 MHz (BIS VM), UHF 860/960 MHz (BIS VU)	LF 125 kHz (BIS VL), LF 70/455 kHz (BIS C), HF 13.56 MHz (BIS VM), UHF 860/960 MHz (BIS VU)	LF 125 kHz (BIS VL), LF 70/455 kHz (BIS C), HF 13.56 MHz (BIS VM), UHF 860/960 MHz (BIS VU)
4	4	4
—	—	—
24 V DC LPS Class 2	24 V DC LPS Class 2	24 V DC LPS Class 2
Zinc, Die casting	Zinc, Die casting	Zinc, Die casting
0...60 °C	0...60 °C	0...60 °C
IP65, with connector	IP65, with connector	IP65, with connector
CE, EAC, cULus, WEEE	CE, EAC, cULus, WEEE	CE, EAC, cULus, WEEE
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EtherCAT	BIS00U9 BIS V-6110-063-C002	
Product Group	Multi-Frequency Processor	
Working frequency	865...868 MHz, 902...928 MHz, 920.5...924.5 MHz, 917...921 MHz, 916.8...920.4 MHz, 920.25...925.75 MHz	
Interface	EtherCAT	
Supported RFID technologies	LF 125 kHz (BIS VL), HF 13.56 MHz (BIS VM), UHF 860/960 MHz (BIS VU)	
Number of connectable R/W heads / antennas	4	
Output power adjustable	—	
Operating voltage U_b	24 V DC LPS Class 2	
Housing material	Zinc, Die casting	
Ambient temperature	0...60 °C	
IP rating	IP65, with connector	
Approval/Conformity	CE, EAC, cULus, WEEE	
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BIS0147 BIS V-6110-063-C102		
Multi-Frequency Processor		
865...868 MHz, 902...928 MHz, 920.5...924.5 MHz, 917...921 MHz, 916.8...920.4 MHz, 920.25...925.75 MHz		
EtherCAT		
LF 125 kHz (BIS VL), LF 70/455 kHz (BIS C), HF 13.56 MHz (BIS VM), UHF 860/960 MHz (BIS VU)		
4		
—		
24 V DC LPS Class 2		
Zinc, Die casting		
0...60 °C		
IP65, with connector		
CE, EAC, cULus, WEEE		
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Europe: 865...868 MHz	BIS00M7 BIS U-6020-053-104-00-ST26	
USA/Canada/Mexico: 902...928 MHz		
China: 920.5...924.5 MHz		
Product Group	UHF (860...960 MHz)	
Working frequency	865...868 MHz	
Interface	RS232	
Supported RFID technologies	UHF 860/960 MHz (BIS U)	
Number of connectable R/W heads / antennas	4	
Output power adjustable	17 dBm...33 dBm (50 mW...2 W)	
Operating voltage Ub	19.2...28.8 VDC	
Housing material	Steel, Aluminum, coated	
Ambient temperature	-20...55 °C	
IP rating	IP65, with connector	
Approval/Conformity	CE, ETSI EN 302 208, EAC, WEEE	
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	BIS013J BIS U-6026-034-114-06-ST35		
		BIS018N BIS U-6026-034-124-06-ST35	BIS012R BIS U-6027-060-124-06-ST27
	UHF (860...960 MHz)	UHF (860...960 MHz)	UHF (860...960 MHz)
	902...928 MHz	920.5...924.5 MHz	920.5...924.5 MHz
	EtherNet/IP galvanically isolated	EtherNet/IP galvanically isolated	Ethernet TCP/IP
	UHF 860/960 MHz (BIS U)	UHF 860/960 MHz (BIS U)	UHF 860/960 MHz (BIS U)
	4	4	4
	17 dBm...30 dBm (50 mW...1 W)	17 dBm...31.5 dBm (50 mW...1.4 W)	17 dBm...31.5 dBm (50 mW...1.4 W)
	19.2...28.8 VDC	19.2...28.8 VDC	19.2...28.8 VDC
	Steel, Aluminum, coated	Steel, Aluminum, coated	Steel, Aluminum, coated
	-20...55 °C	-20...55 °C	-20...55 °C
	IP65, with connector	IP65, with connector	IP65, with connector
	FCC Part 15, IC RSS-247, WEEE, cULus, EAC	CMIIT-Radio Transmiss. Equipm., WEEE, cULus	CMIIT-Radio Transmiss. Equipm., WEEE, cULus
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Europe: 865...868 MHz		
USA/Canada: 902...928 MHz		
South Korea: 917...921 MHz	BIS00UR BIS U-6027-060-144-06-ST27	
Australia: 920.25...925.75 MHz		
Product Group	UHF (860...960 MHz)	
Working frequency	917...921 MHz	
Interface	Ethernet TCP/IP	
Supported RFID technologies	UHF 860/960 MHz (BIS U)	
Number of connectable R/W heads / antennas	4	
Output power adjustable	17 dBm...30 dBm (50 mW...1 W)	
Operating voltage Ub	19.2...28.8 VDC	
Housing material	Steel, Aluminum, coated	
Ambient temperature	-20...55 °C	
IP rating	IP65, with connector	
Approval/Conformity	KC, WEEE, EAC	
Productview	Page 56	



	BIS00ZU BIS U-6028-048-104-06-ST28		BIS00ZW BIS U-6028-048-114-06-ST28
BIS014H BIS U-6027-060-174-06-ST27			
UHF (860...960 MHz)	UHF (860...960 MHz)		UHF (860...960 MHz)
920.25...925.75 MHz	865...868 MHz		902...928 MHz
Ethernet TCP/IP	Profinet galvanically isolated		Profinet galvanically isolated
UHF 860/960 MHz (BIS U)	UHF 860/960 MHz (BIS U)		UHF 860/960 MHz (BIS U)
4	4		4
17 dBm...30 dBm (50 mW...1 W)	17 dBm...31.5 dBm (50 mW...1.4 W)		17 dBm...30 dBm (50 mW...1 W)
19.2...28.8 VDC	19.2...28.8 VDC		19.2...28.8 VDC
Steel, Aluminum, coated	Steel, Aluminum, coated		Steel, Aluminum, coated
-20...55 °C	-20...55 °C		-20...55 °C
IP65, with connector	IP65, with connector		IP65, with connector
AS/NZS 4268, WEEE	CE, ETSI EN 302 208, WEEE, EAC, cULus		FCC Part 15, IC RSS-247, WEEE, cULus, EAC
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Europe: 865...868 MHz		
USA/Canada: 902...928 MHz		
Brazil: 915...928 MHz		
China: 920.5...924.5 MHz	BIS017J BIS U-6028-048-124-06-ST28	
Product Group	UHF (860...960 MHz)	
Working frequency	920.5...924.5 MHz	
Interface	Profinet galvanically isolated	
Supported RFID technologies	UHF 860/960 MHz (BIS U)	
Number of connectable R/W heads / antennas	4	
Output power adjustable	17 dBm...31.5 dBm (50 mW...1.4 W)	
Operating voltage Ub	19.2...28.8 VDC	
Housing material	Steel, Aluminum, coated	
Ambient temperature	-20...55 °C	
IP rating	IP65, with connector	
Approval/Conformity	CMIIT-Radio Transmiss. Equipm., cULus, WEEE, EAC	
Productview	Page 57	



		BIS0193 BIS U-6127-081-104-06-ST36	
			BIS0194 BIS U-6127-081-114-06-ST36
	BIS0152 BIS U-6028-048-134-06-ST28		
	UHF (860...960 MHz)	UHF (860...960 MHz)	UHF (860...960 MHz)
	915.25...927.75 MHz	865...868 MHz	902...928 MHz
	Profinet galvanically isolated	Ethernet TCP/IP	Ethernet TCP/IP
	UHF 860/960 MHz (BIS U)	UHF 860/960 MHz (BIS U)	UHF 860/960 MHz (BIS U)
	4	4	4
	17 dBm...30 dBm (50 mW...1 W)	7 dBm...30 dBm (5 mW...1 W)	7 dBm...30 dBm (5 mW...1 W)
	19.2...28.8 VDC	19.2...28.8 VDC LPS Class 2	19.2...28.8 VDC LPS Class 2
	Steel, Aluminum, coated	Stainless steel, Aluminum, coated	Stainless steel, Aluminum, coated
	-20...55 °C	-20...55 °C	-20...55 °C
	IP65, with connector	IP65, with connector	IP65, with connector
	Anatel 442/2006, Anatel 506/2008, WEEE	CE, ETSI EN 302 208, UL Listed, EAC, WEEE	FCC Part 15, IC RSS-210, UL Listed, WEEE, EAC
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Europe: 865...868 MHz		
USA: 902...928 MHz	BIS00Z3 BIS U-620-068-111-00-S115	
Product Group	UHF (860...960 MHz)	
Working frequency	902...928 MHz	
Interface	RS232	
Supported RFID technologies	UHF 860/960 MHz (BIS U)	
Number of connectable R/W heads / antennas	1	
Output power adjustable	10 dBm...27 dBm (10 mW...500 mW)	
Operating voltage U_b	19.2...28.8 VDC	
Housing material	Aluminum	
Ambient temperature	-20...50 °C	
IP rating	IP65, with connector	
Approval/Conformity	FCC Part 15, WEEE, EAC	
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	BIS00Z0 BIS U-626-069-101-06-ST32		
		BIS00YZ BIS U-626-069-111-06-ST31	BIS00YY BIS U-626-069-111-06-ST32
	UHF (860...960 MHz)	UHF (860...960 MHz)	UHF (860...960 MHz)
	865...868 MHz	902...928 MHz	902...928 MHz
	Industrial Ethernet / Ethernet TCP/IP / MOD-BUS TCP	Industrial Ethernet / Ethernet TCP/IP / MOD-BUS TCP	Industrial Ethernet / Ethernet TCP/IP / MOD-BUS TCP
	UHF 860/960 MHz (BIS U)	UHF 860/960 MHz (BIS U)	UHF 860/960 MHz (BIS U)
	1	1	1
	10 dBm...27 dBm (10 mW...500 mW)	10 dBm...27 dBm (10 mW...500 mW)	10 dBm...27 dBm (10 mW...500 mW)
	19.2...28.8 VDC	19.2...28.8 VDC	19.2...28.8 VDC
	Aluminum	Aluminum	Aluminum
	-20...50 °C	-20...50 °C	-20...50 °C
	IP65, with connector	IP65, with connector	IP65, with connector
	CE, ETSI EN 302 208, EAC, WEEE	FCC Part 15, WEEE, EAC	FCC Part 15, WEEE, EAC
	Page 59	Page 59	Page 59

Sensors

RFID

Machine Vision and Optical Identification

Human Machine Interfaces

Safety

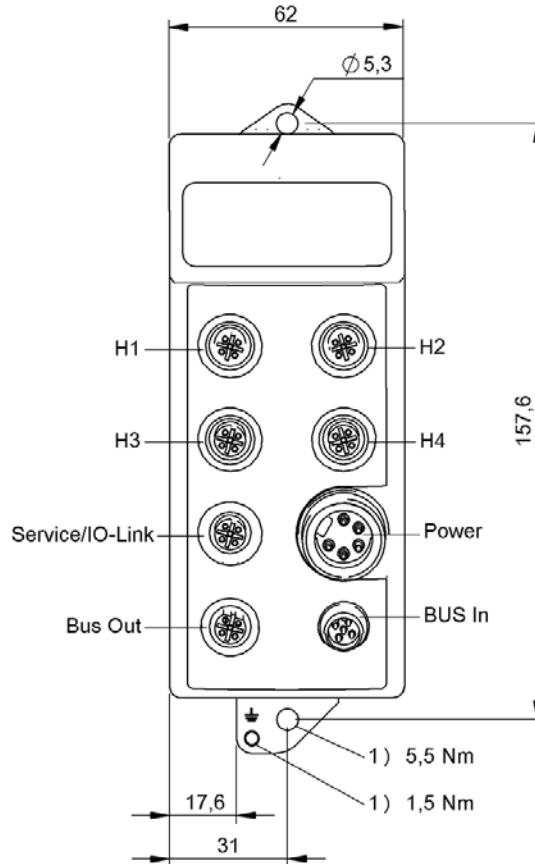
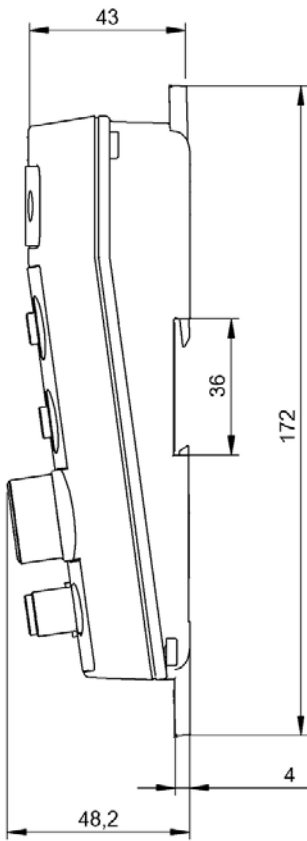
Industrial Networking

Software and System Solutions

Power Supply

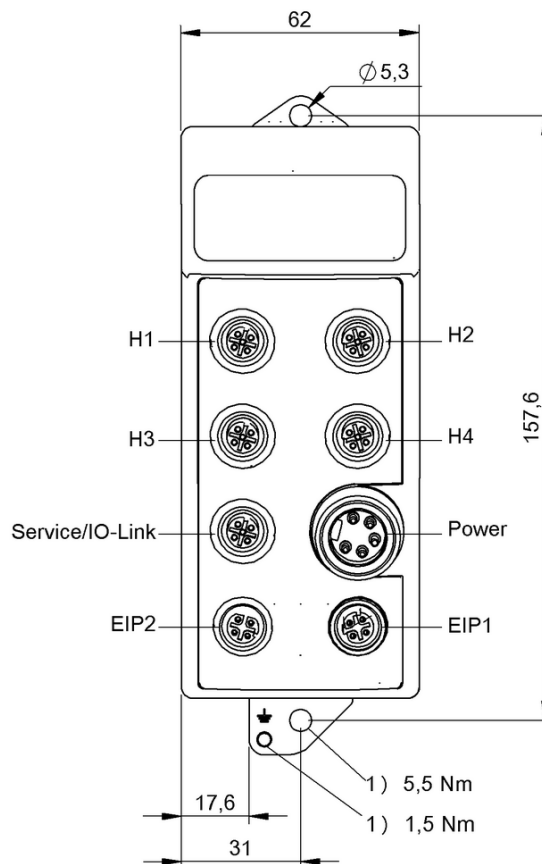
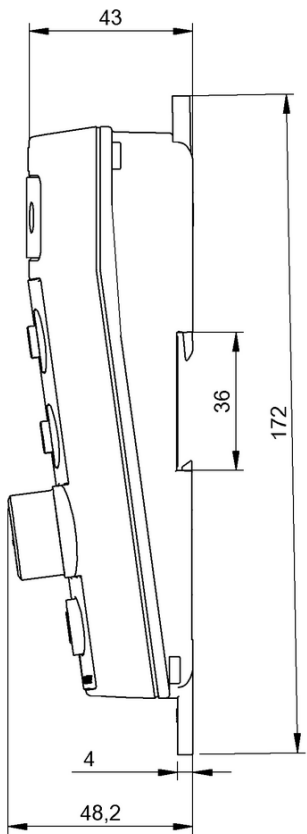
Connectivity

Accessories



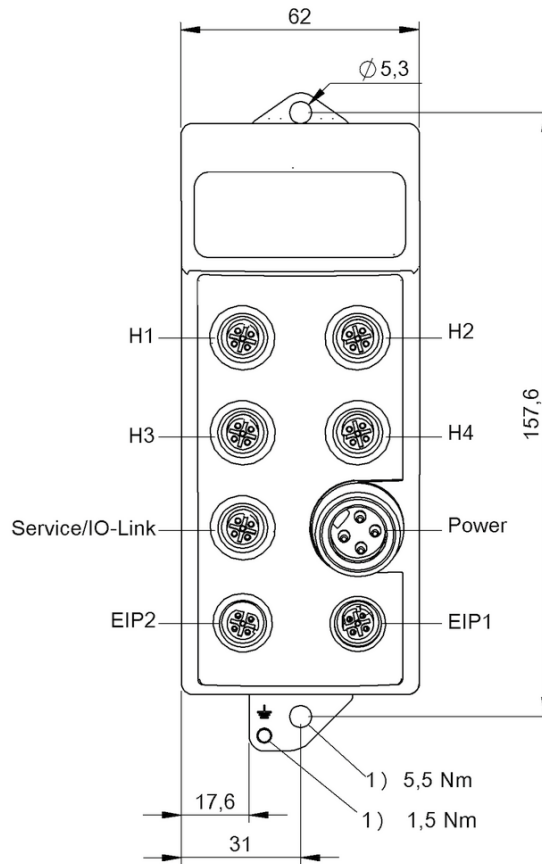
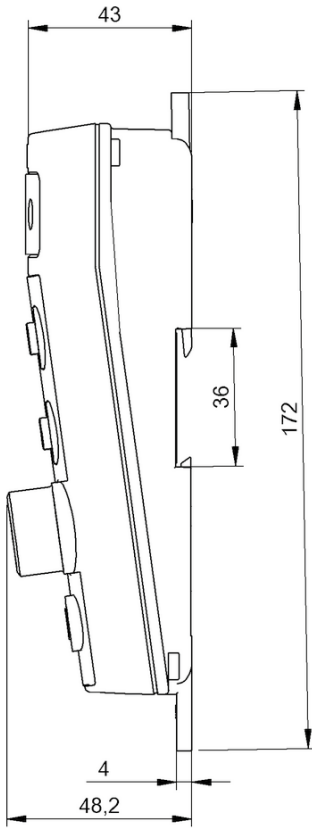
1) Tightening torque

BISO0T3, BISO12E



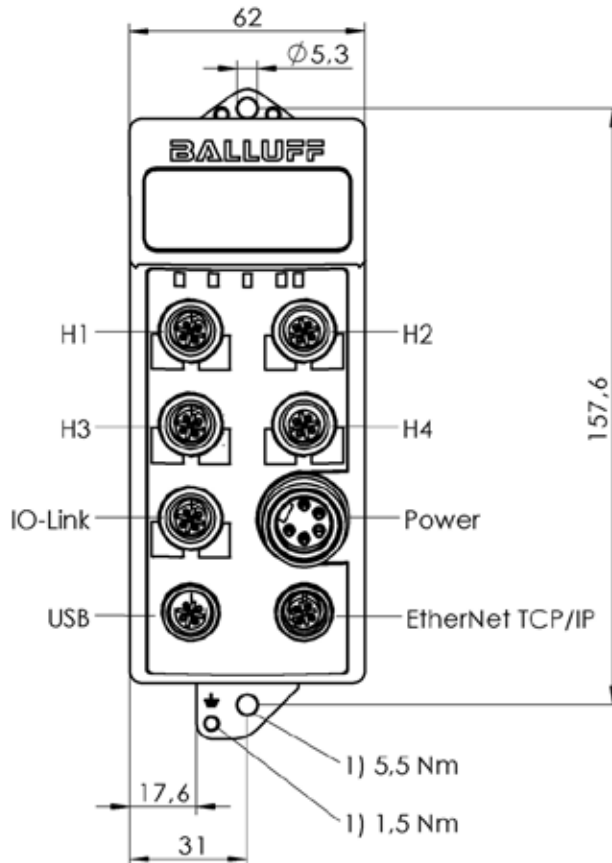
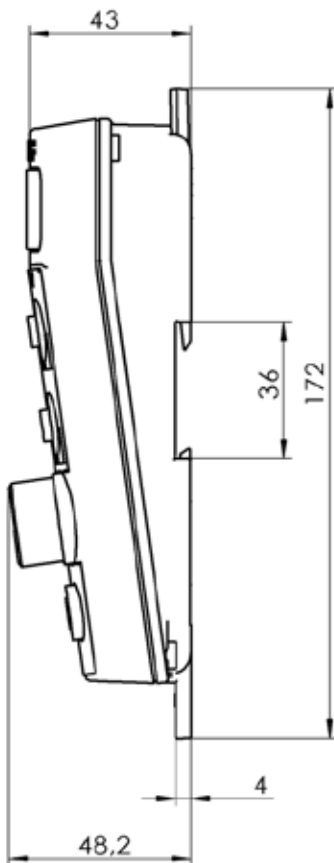
1) Tightening torque

BISO12F, BISO14C



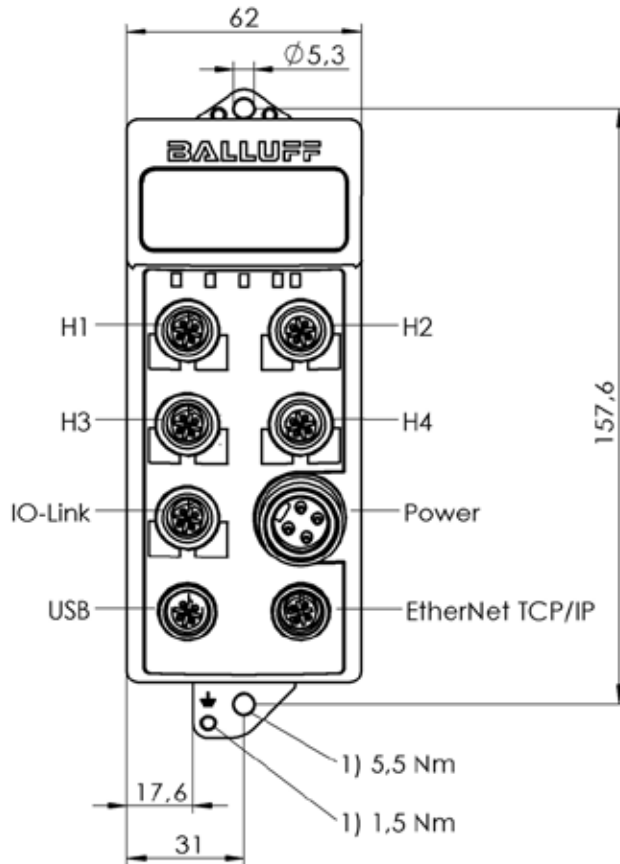
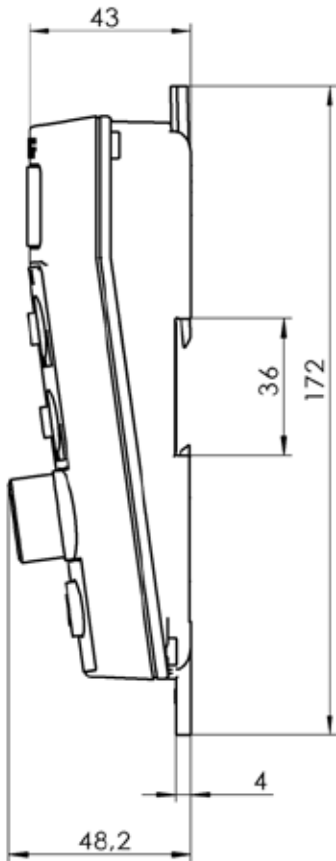
1) Tightening torque

BIS0122, BIS0146



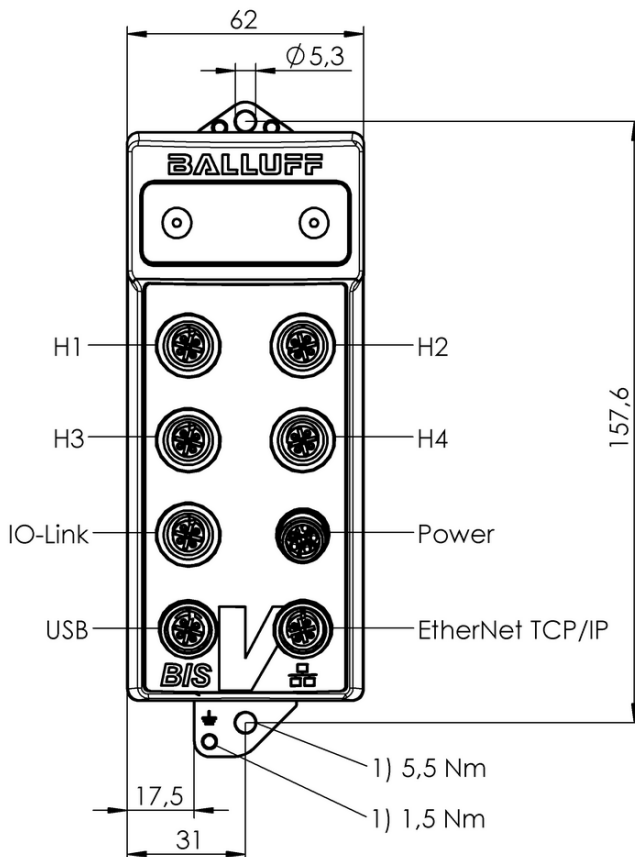
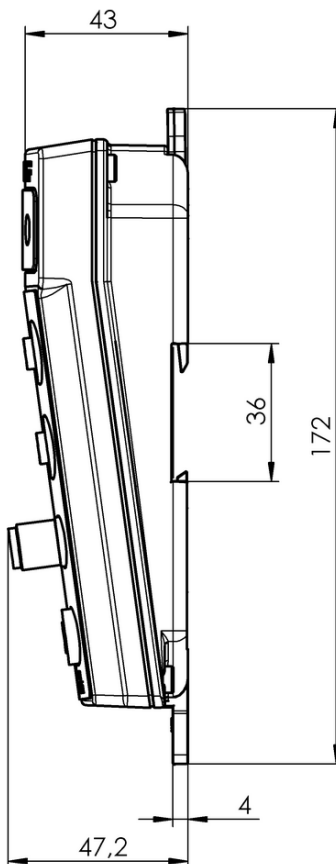
1) Tightening torque

BIS0186, BIS0187



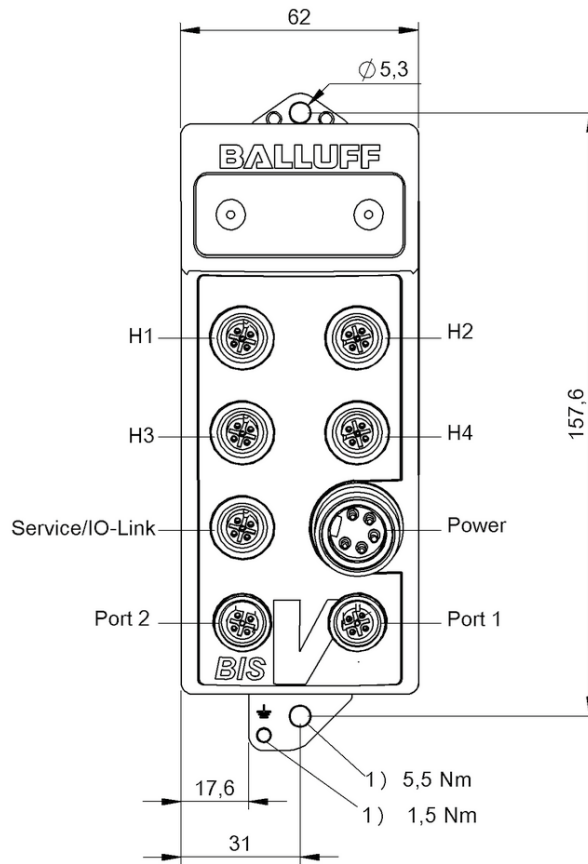
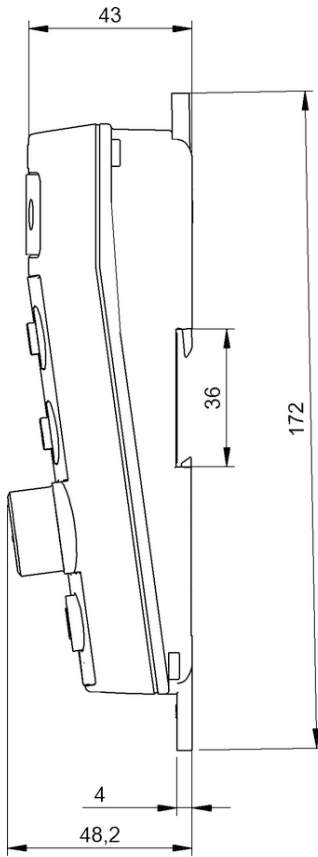
1) Tightening torque

BIS018J, BIS018K



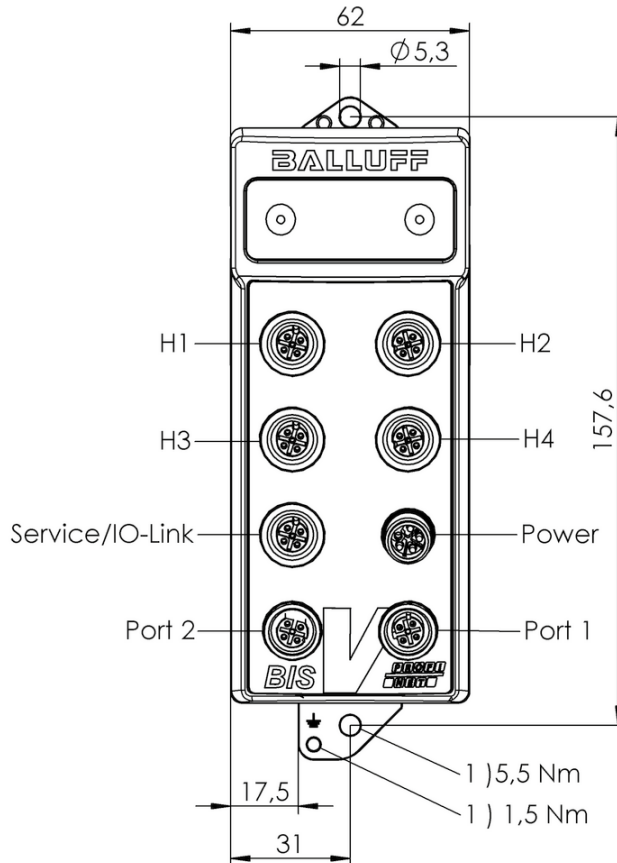
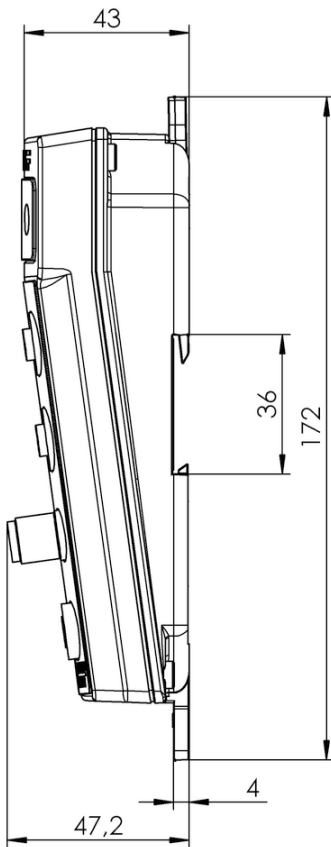
1) Tightening torque

BIS01AA, BIS01AC



1) Tightening torque

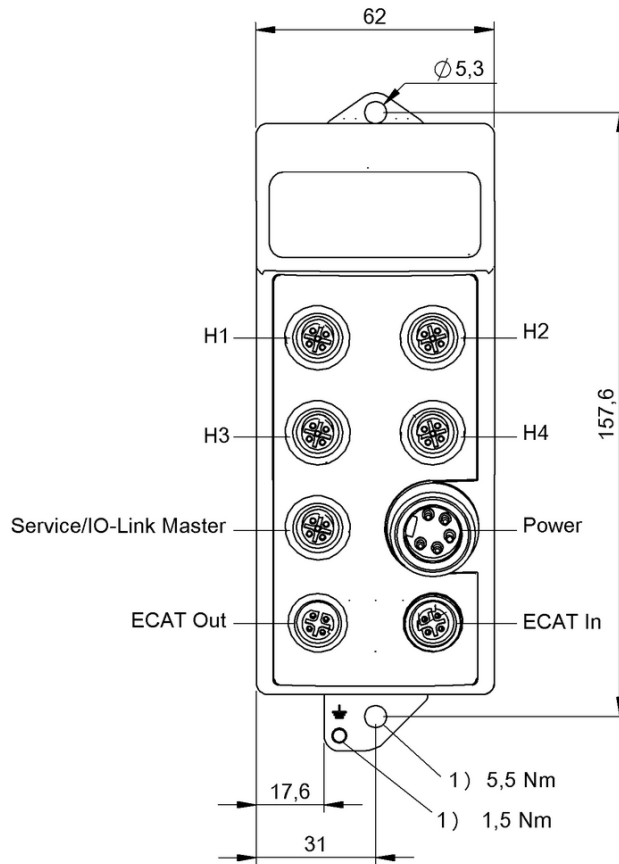
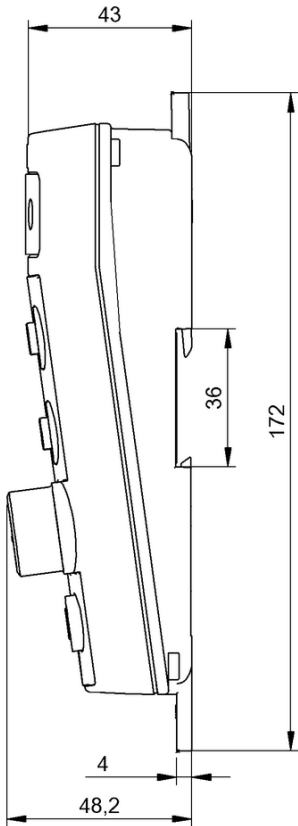
BISO13U, BISO13W



1) Tightening torque

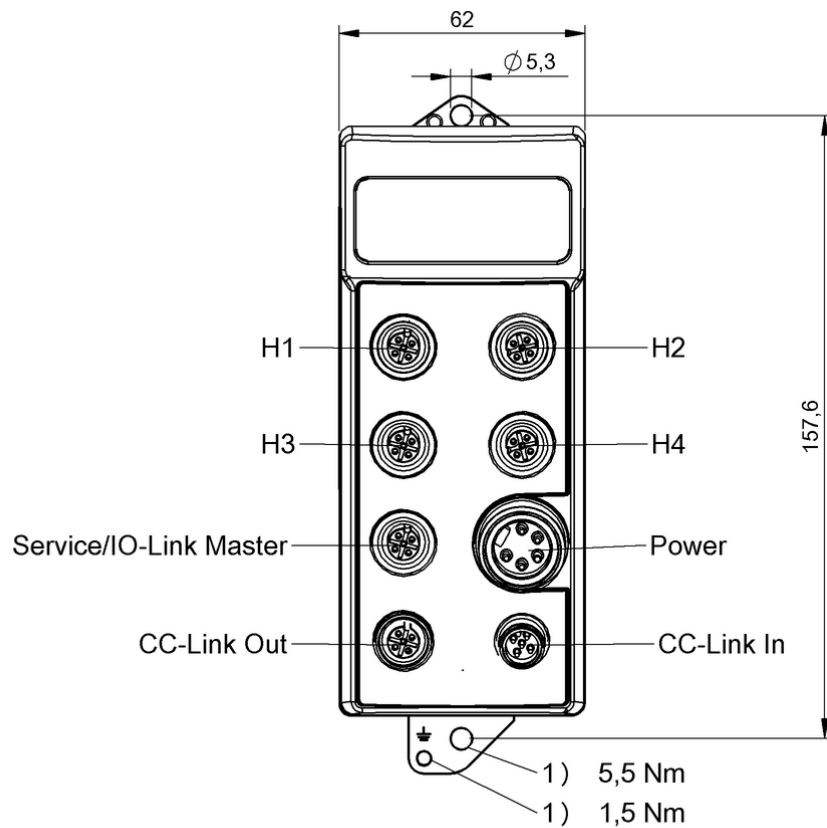
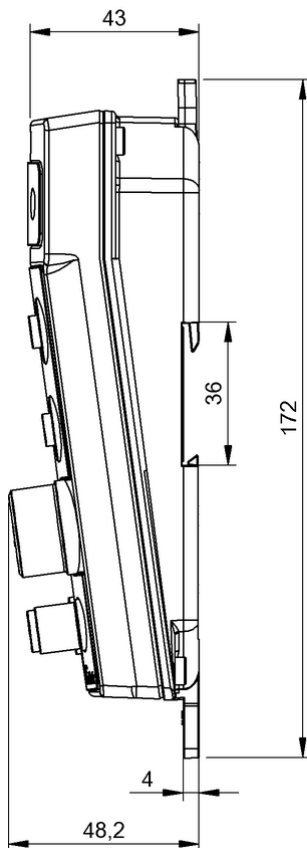
BISO1AE, BISO1AF

Do you need more details? Our Product Finder at www.balluff.com provides you with product-specific information, including technical drawings, data sheets, user guides and more for each individual product. All items are available for download.



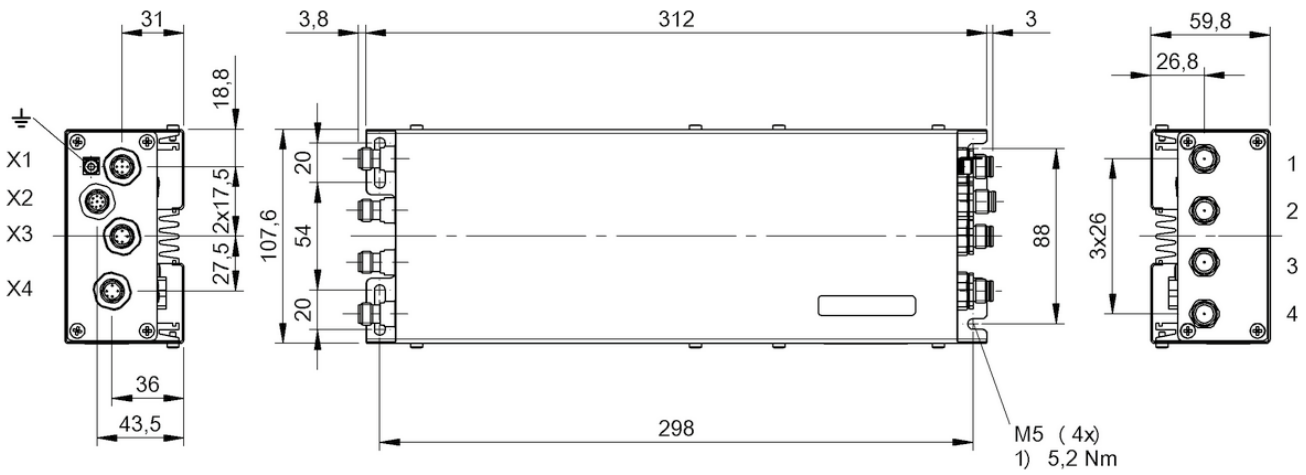
1) Tightening torque

BISO009, BISO147

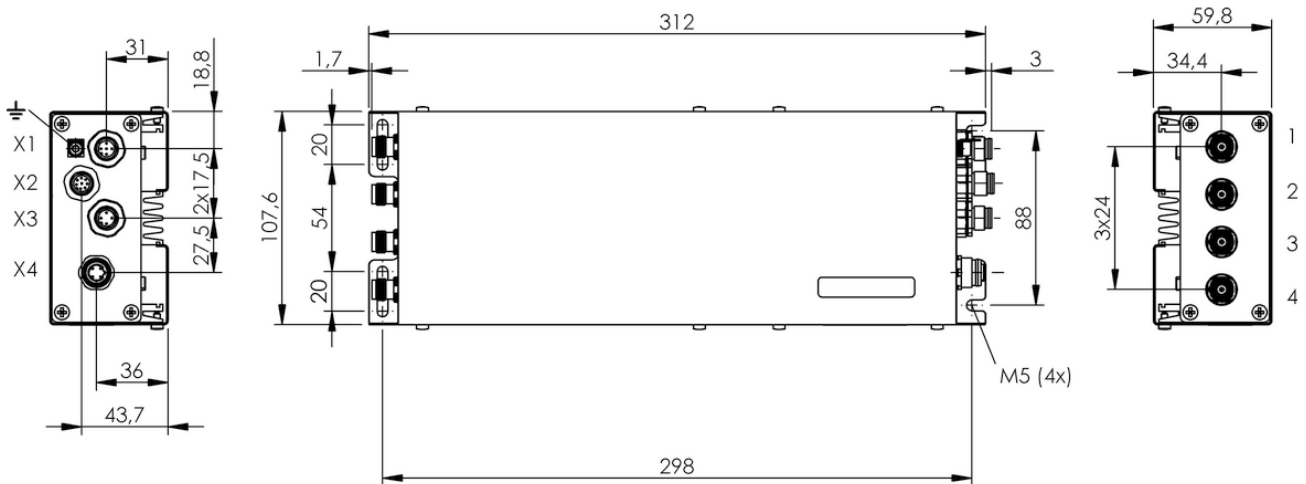


1) Tightening torque

BISO10P, BISO14E

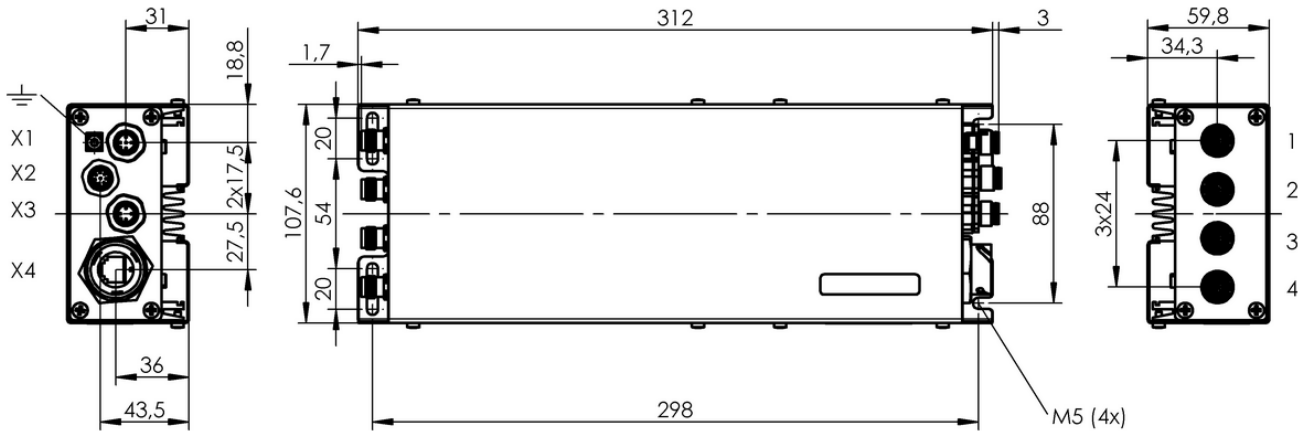


BISO007

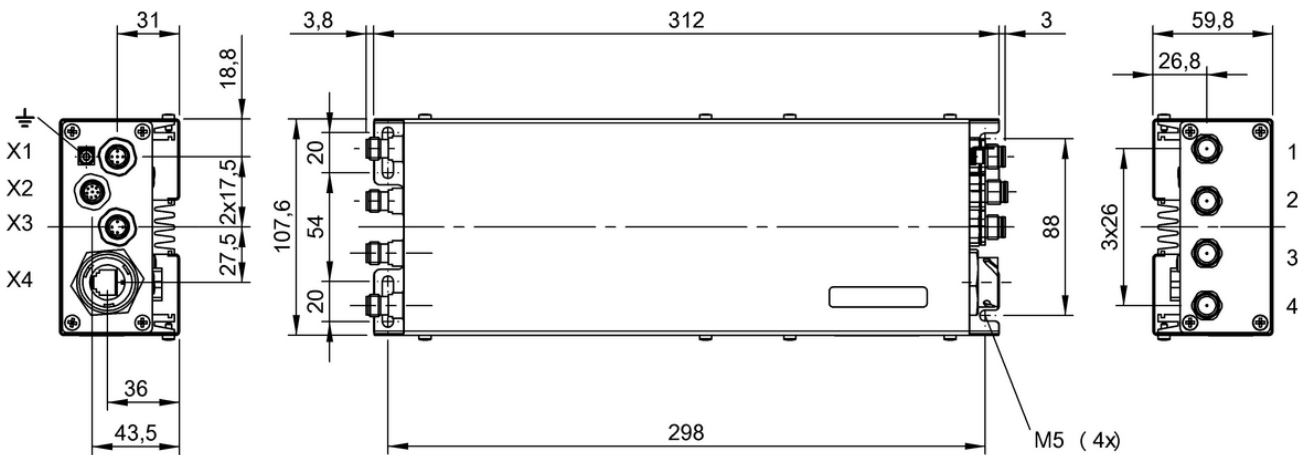


BISO13J, BISO18N

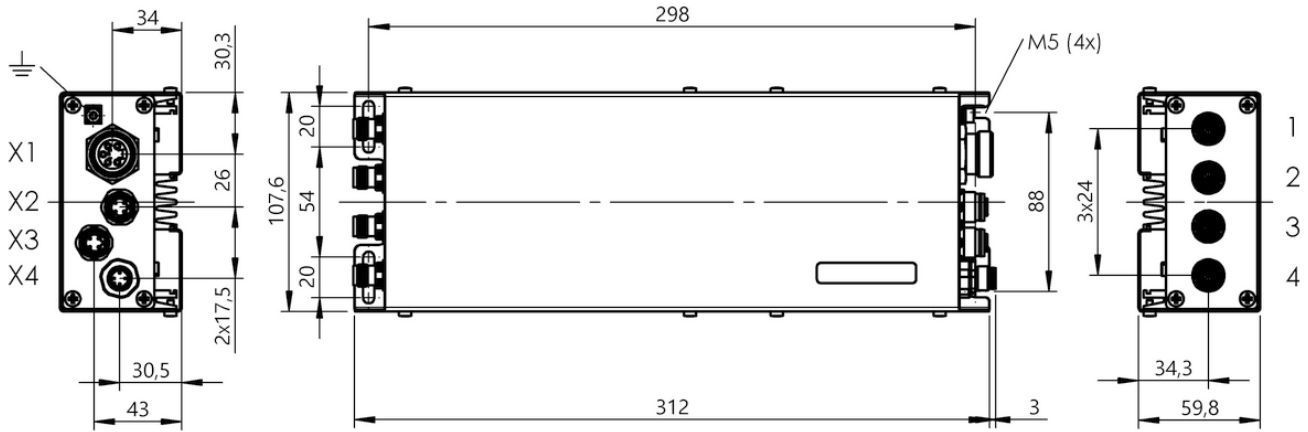
Do you need more details? Our Product Finder at www.balluff.com provides you with product-specific information, including technical drawings, data sheets, user guides and more for each individual product. All items are available for download.



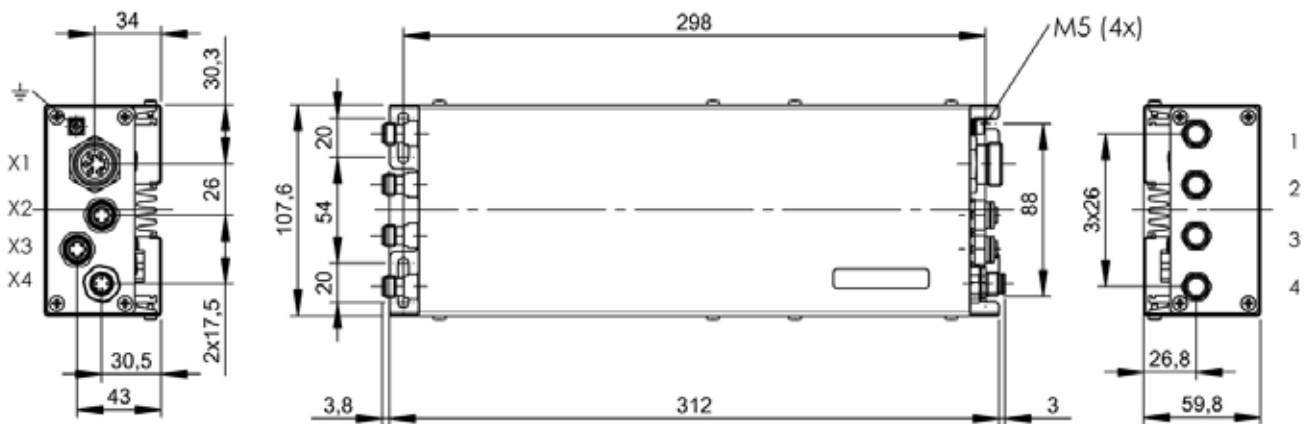
BISO12R



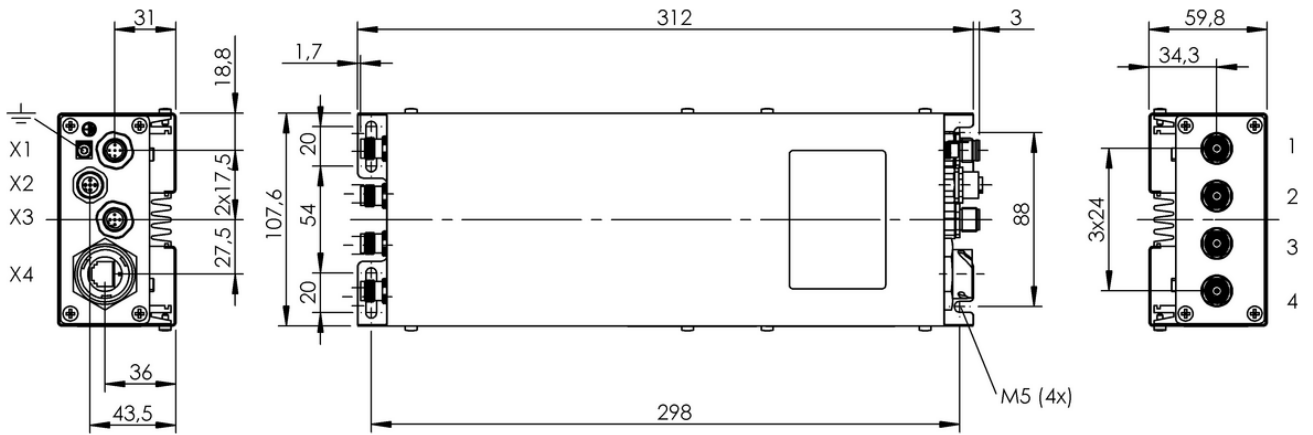
BISO00R, BISO14H



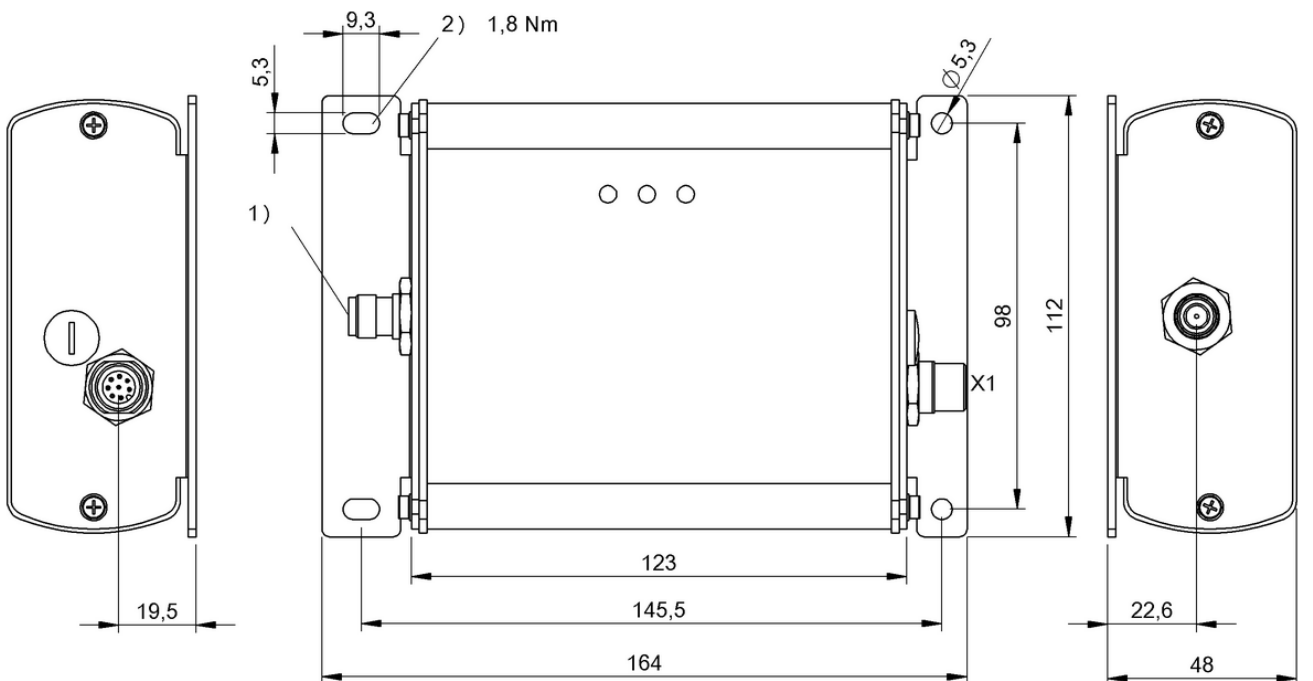
BIS00ZU, BIS00ZW, BIS017J



BIS0152

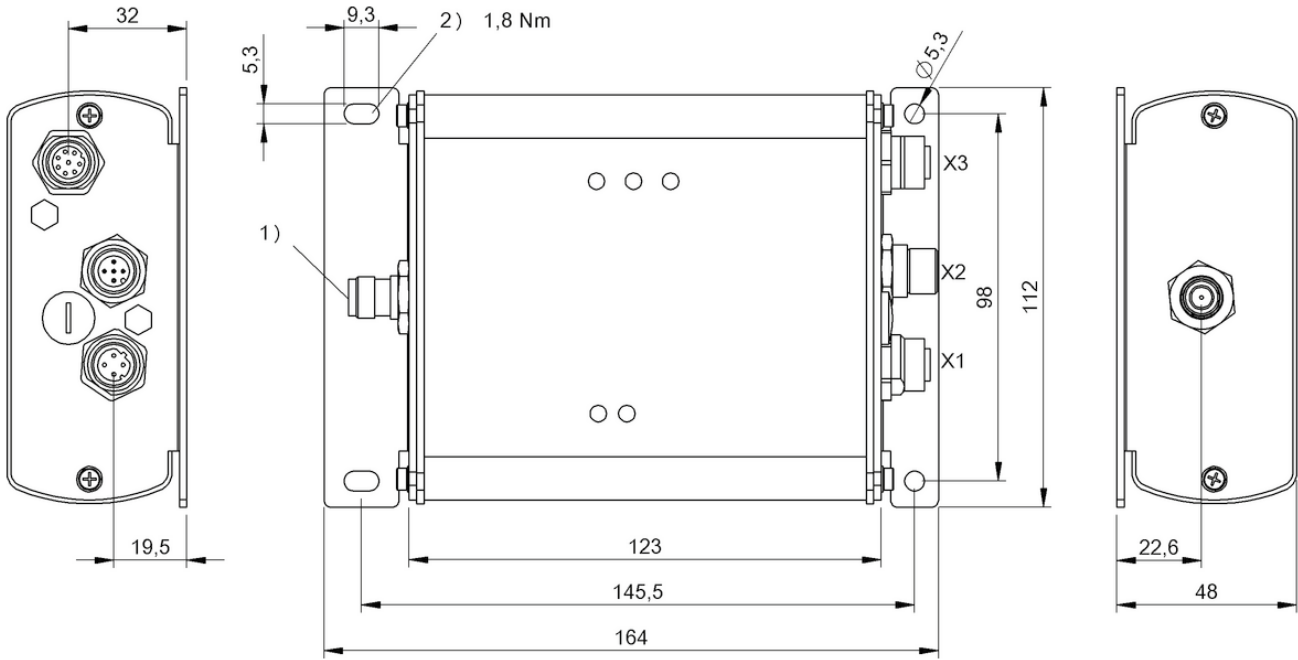


BIS0193, BIS0194



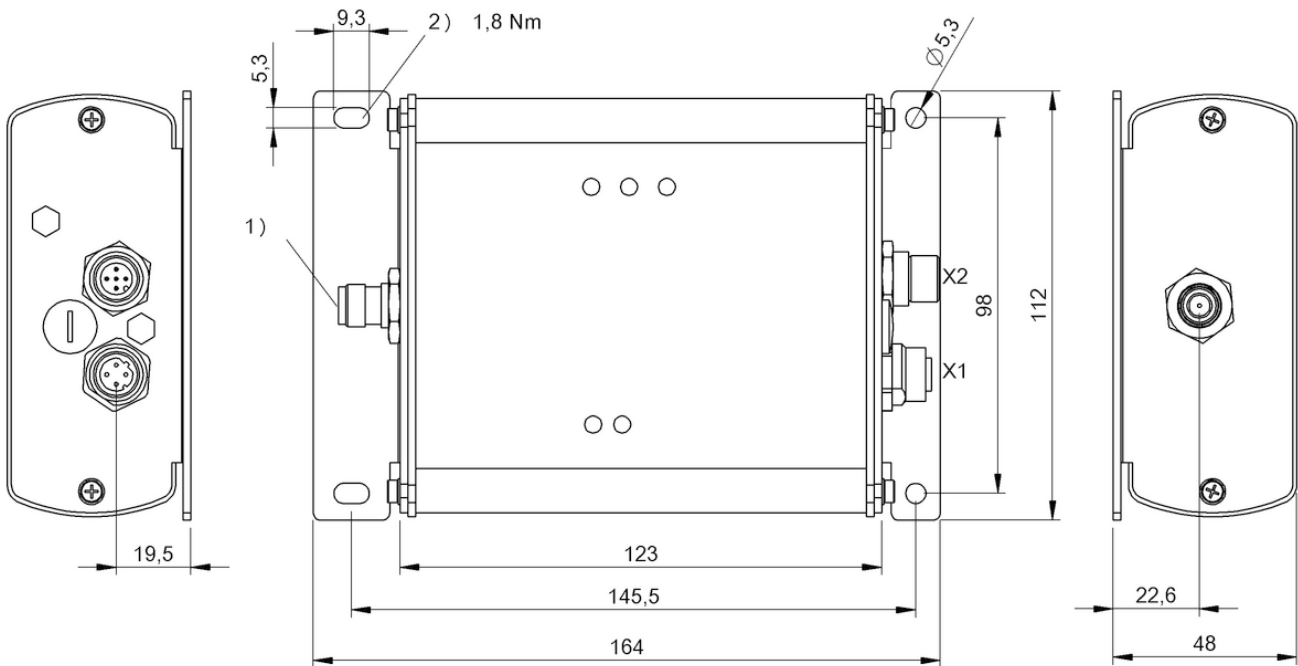
1) Antenna, 2) Tightening torque

BIS0023



1) Antenna, 2) Tightening torque

BISO0Z0, BISO0YY



1) Antenna, 2) Tightening torque

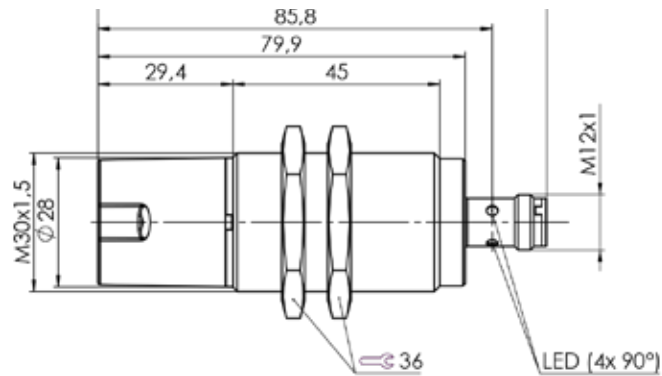
BISO0YZ



Europa: 865,6-867,6 MHz	BISO1E4 BIS U-4A7-082-01C-07-S4		
USA/Kanada: 902...928 MHz		BISO1E8 BIS U-4A7-082-11C-07-S4	
China 920,5...924,5 MHz			
Product Group	UHF (860...960 MHz)	UHF (860...960 MHz)	
Radio license	Europa	USA	
Dimension	Ø 30 x 98 mm	Ø 30 x 98 mm	
Antenna type	Patch	Patch	
Polarization	zirkular	Zirkular	
Output power adjustable	-9.25...+13.75 dBmERP	-7...+16 dBmEIRP	
Connection	Built-in connector M12, 4-pole, A-coded	Built-in connector M12, 4-pole, A-coded	
Housing material PC	Stainless steel, PBT	Stainless steel,, PBT	
Interface	IO-Link 1.1, COM 3	IO-Link 1.1, COM 3	
Prozessdaten IN	32 Byte	32 Byte	
Process data OUT	32 Byte	32 Byte	
Process data	24 V DC LPS Class 2	24 V DC LPS Class 2	
Ambient temperature	0°...+70°C	0°...+70°C	
Protection degree	IP68 / IP69K	IP68 / IP69K	
Approval/Conformity	CE, ETSI EN 302 208, cULus, EAC, WEEE	FCC Part 15, IC RSS-210, cULus, WEEE, EAC	



	BIS01E9 BIS U-4A7-082-21C-07-S4
	UHF (860...960 MHz)
	China
	Ø 30 x 98 mm
	Patch
	zirkular
	-9.25...+13.75 dBmERP
	Built-in connector M12, 4-pole, A-coded
	Stainless steel,, PBT
	IO-Link 1.1, COM 3
	32 Byte
	32 Byte
	24 V DC LPS Class 2
	0°...+70°C
	IP68 / IP69K
	CMIIT-Radio Transmiss. Equipm., cULus, WEEE



BIS01E4, BIS01E8, BIS01E9



PORTABLE UHF READ/WRITE UNITS (860/960 MHz)

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provides you with product-specific information,

including technical drawings, data sheets, user guides and more for each individual product.

All items are available for download.



High transmission speed for large volumes of data

RFID SYSTEM HF (13.56 MHz) BIS M

The RFID system BIS M supports global ISO standards and scores with a high transmission speed for large volumes of data. Through various combination options of data carriers and read/write heads, the system can be used for a variety of applications. The system is ideal, for example, in close-range parts tracking or for applications in production control such as palletizing or recording data on the workpiece.

Features

- 4-pin standard wiring and IO-Link components
- In combination with passive data carriers of average ranges up to a max. of 400 mm
- Seamless integration in applications through global RFID standards ISO 15693 and ISO 14443A
- All bus systems commonly used on a global basis available
- Easy, fast commissioning
- Balluff high-speed components (up to eight times faster than ISO 15693)
- Customer-specific developments
- A variety of accessories for an easy integration available at all places of use



	BIS018Y BIS M-113-03/L	
Product Group	HF (13.56 MHz)	
Dimension	Ø 4.35 x 3.6 mm	
Antenna type	round	
UID serial number, read-only	8 Byte	
Memory type	EEPROM	
Supported data carrier types	DIN ISO 15693	
User data, read/write	112 Byte	
Storage temperature	-40...85 °C	
Storage temperature temporary	—	
Ambient temperature	-40...85 °C	
Housing material	Epoxy-resin/fiberglass PVC	
Protection degree	IPx8	
Installation	metal-free (clear zone) on metal flush in metal	
Approval/Conformity	CE	
Productview	Page 106	

Suitable read/write head with max. read/write working distance

Installation	flush in metal*	on metal	metal-free (clear zone)	
BIS M-302				
BIS M-305				
BIS M-402-xxx-002				
BIS M-402-xxx-007				
BIS M-410				
BIS M-411				
BIS M-449		0-5.5	0-6	
BIS M-451				
BIS VM-330				
BIS VM-343-401				
BIS VM-346-401				
BIS VM-348-401				
BIS VM-349-401		0-5.5	0-6	

Dimensions in mm

* Installation on request



BIS00UC BIS M-116-03/A	BIS00UE BIS M-116-08/A	BIS00YL BIS M-130-03/L
HF (13.56 MHz)	HF (13.56 MHz)	HF (13.56 MHz)
Ø 6 x 1 mm	Ø 6 x 1 mm	Ø 7.9 x 4.9 mm
round	round	round
8 Byte	8 Byte	8 Byte
EEPROM	EEPROM	EEPROM
DIN ISO 15693	DIN ISO 14443	DIN ISO 15693
112 Byte	160 Byte	112 Byte
-20...90 °C	-20...90 °C	-40...85 °C
—	—	—
0...50 °C	0...50 °C	-20...85 °C
Epoxy-resin/fiberglass	Epoxy-resin/fiberglass	ABS, black
IP67	IP67	IP68
metal-free (clear zone) on metal flush in metal	metal-free (clear zone) on metal	metal-free (clear zone) on metal flush in metal
CE	CE	CE
Page 106	Page 106	Page 106

flush in metal	on metal	metal-free (clear zone)	flush in metal	on metal*	metal-free (clear zone)	flush in metal	on metal	metal-free (clear zone)
		0-7			0-7			
	0-4	0-7.5						
		0-3			0-3			0-9
								0-17
						0-2	0-5.5	0-20
0-2	0-3	0-4.5						0-6
1.3-2.5	0-4	0-6.5						
0-2	0-3	0-4.5				0-2	0-5.5	0-6
		0-3.5			0-3.5	0-3	0-6	0-6.5
		0-3.5			0-3.5	0-3	0-6	0-6.5
0-2	0-3	0-5						
1.3-2.5	0-4	0-6.5						



	BIS00YJ BIS M-130-10/L	
Product Group	HF (13.56 MHz)	
Dimension	Ø 7.9 x 4.9 mm	
Antenna type	round	
UID serial number, read-only	4 Byte	
Memory type	EEPROM	
Supported data carrier types	DIN ISO 14443	
User data, read/write	736 Byte	
Storage temperature	-40...85 °C	
Storage temperature temporary	—	
Ambient temperature	-20...85 °C	
Housing material	ABS, black	
Protection degree	IP68	
Installation	metal-free (clear zone) on metal flush in metal	
Approval/Conformity	CE	
Productview	Page 106	

Suitable read/write head with max. read/write working distance

Installation	flush in metal	on metal	metal-free (clear zone)
BIS M-302			
BIS M-304			
BIS M-305			
BIS M-307		0-7	0-5
BIS M-400-xxx-001			
BIS M-400-xxx-002			
BIS M-400-xxx-401			
BIS M-402-xxx-002			0-4.5
BIS M-402-xxx-004			
BIS M-404-xxx-401			
BIS M-408-045-001			0-6.5
BIS M-410			0-6
BIS M-411			0-6.5
BIS M-414	0-1	0-3	0-2
BIS M-449			
BIS VM-305			
BIS VM-306			
BIS VM-307	0-7		0-5
BIS VM-330	0-1	0-3	0-2
BIS VM-332			
BIS VM-333			
BIS VM-343-401	0-1.5	0-4	0-2.5
BIS VM-344-401			
BIS VM-345-401			
BIS VM-346-401	0-1.5	0-4	0-2.5
BIS VM-348-401			
BIS VM-349-401			

Dimensions in mm



BIS00YK BIS M-130-07/L	BIS01A1 BIS M-103-03/L-SA1	BIS01A0 BIS M-122-21/A
HF (13.56 MHz)	HF (13.56 MHz)	HF (13.56 MHz)
Ø 7.9 x 4.9 mm	Ø 8.1 x 4.9 mm	Ø 10 x 4.5 mm
round	round	round
8 Byte	8 Byte	8 Byte
EEPROM	EEPROM	EEPROM
DIN ISO 15693	DIN ISO 15693	DIN ISO 15693
992 Byte	112 Byte	32 Byte
-40...85 °C	-40...85 °C	-25...85 °C
—	—	—
-20...85 °C	-20...85 °C	-25...70 °C
ABS, black	PEEK, Natural	PA 12, PU potting
IP68	IP68	IP67
metal-free (clear zone) on metal flush in metal	metal-free (clear zone)	metal-free (clear zone) on metal flush in metal
CE	CE, WEEE, EAC	CE
Page 106	Page 106	Page 106

flush in metal	on metal	metal-free (clear zone)	flush in metal	on metal	metal-free (clear zone)	flush in metal	on metal	metal-free (clear zone)
						0-5.5		0-7.5
						0-3.5		0-5.5
	0-8	0-10				0-3.5		0-5.5
						0-3.5		0-5.5
						0-5.5		0-11.5
						0-3.5		0-4.5
								0-7.5
		0-9				0-3.5		0-6.5
						0-3.5		0-6.5
						0-2	0-4	0-4.5
		0-13					0-7.5	0-9.5
		0-12						
		0-13						
0-2	0-4	0-4.5				0-2	0-3.5	0-4
						0-4.5	0-6.5	0-6.5
						0-3.5		0-5.5
						0-3.5		
0-8		0-10				0-3.5		0-5.5
0-2	0-4	0-4.5				0-2	0-3.5	0-4
						0-3	0-5	0-5.5
								0-8.5
0-2.5	0-5	0-5				0-2	0-3	0-3.5
							0-7.5	
0-2.5	0-5	0-5				0-2	0-3	0-3.5
						0-3.5		0-5.5
						0-4.5	0-6.5	0-6.5



	BIS0048 BIS M-122-01/A	
Product Group	HF (13.56 MHz)	
Dimension	Ø 10 x 4.5 mm	
Antenna type	round	
UID serial number, read-only	4 Byte	
Memory type	EEPROM	
Supported data carrier types	DIN ISO 14443	
User data, read/write	752 Byte	
Storage temperature	-25...85 °C	
Storage temperature temporary	—	
Ambient temperature	-25...70 °C	
Housing material	PA 12, PU potting	
Protection degree	IP67	
Installation	metal-free (clear zone) flush in metal	
Approval/Conformity	CE	
Productview	Page 106	

Suitable read/write head with max. read/write working distance

Installation	flush in metal	on metal	metal-free (clear zone)
BIS M-300			
BIS M-302			0-7
BIS M-304			0-5
BIS M-305			0-5
BIS M-307			0-5
BIS M-400-xxx-001			0-9.5
BIS M-400-xxx-002			0-5
BIS M-400-xxx-401			
BIS M-402-xxx-002			0-5
BIS M-402-xxx-004			0-5
BIS M-404-xxx-401			
BIS M-405-xxx-001			
BIS M-408-045-001			
BIS M-414			
BIS M-449			
BIS VM-300			
BIS M-302			
BIS M-304			
BIS VM-305			0-5
BIS VM-306			
BIS VM-307			0-5
BIS VM-330			
BIS VM-332			
BIS VM-333			
BIS VM-343-401			
BIS VM-344-401			
BIS VM-345-401			
BIS VM-346-401			
BIS VM-348-401			
BIS VM-349-401			

Dimensions in mm

* Installation on request



BIS004A BIS M-122-02/A	BIS019C BIS M-1R1-02/L	BIS0040 BIS M-105-01/A
HF (13.56 MHz)	HF (13.56 MHz)	HF (13.56 MHz)
Ø 10 x 4.5 mm	Ø 10.1 x 4.5 mm	Ø 11.98 x 6 mm
round	round	round
8 Byte	8 Byte	4 Byte
FRAM	FRAM	EEPROM
DIN ISO 15693	DIN ISO 15693	DIN ISO 14443
2000 Byte	2000 Byte	752 Byte
-25...85 °C	-25...85 °C	-25...85 °C
—	—	—
-25...70 °C	-25...85 °C	-25...70 °C
PA 12, PU potting	PEEK, GF30	Epoxy resin-glass fiber, GF
IP67	IP68	IP67
metal-free (clear zone) on metal flush in metal	metal-free (clear zone) on metal flush in metal	metal-free (clear zone) on metal flush in metal
CE	CE	CE
Page 106	Page 106	Page 106

flush in metal	on metal	metal-free (clear zone)*	flush in metal	on metal	metal-free (clear zone)*	flush in metal	on metal	metal-free (clear zone)
								0-9
0-6		0-9	0-7	0-8		0-5		0-7
0-5		0-7	0-6.5	0-7		0-5		0-5
0-5		0-7				0-4		0-6
0-5		0-7				0-4		0-6
0-7		0-13						0-7
0-5		0-6				0-5		0-6
		0-9						
0-5		0-8				0-4		0-6
0-5		0-8				0-4		0-6
0-3.5	0-5.5	0-6						
								0-7
	0-9	0-11						
0-3.5	0-5	0-5.5						
0-6	0-8	0-8						
								0-9
			0-7	0-8				
			0-6.5	0-7				
0-5		0-7				0-4		0-6
0-5						0-5		
0-5		0-7				0-4		0-6
0-3.5	0-5	0-5.5						
0-4.5	0-6.5	0-7						
		0-10						
0-3.5	0-4.5	0-5						
	0-9	0-1						
0-3.5	0-4.5	0-5						
0-5		0-7						
0-6	0-8	0-8						



	BIS0042 BIS M-105-02/A	
Product Group	HF (13.56 MHz)	
Dimension	Ø 11.98 x 6 mm	
Antenna type	round	
UID serial number, read-only	8 Byte	
Memory type	FRAM	
Supported data carrier types	DIN ISO 15693	
User data, read/write	2000 Byte	
Storage temperature	-25...85 °C	
Storage temperature temporary	—	
Ambient temperature	-25...70 °C	
Housing material	Epoxy resin-glass fiber, GF	
Protection degree	IP67	
Installation	metal-free (clear zone) on metal flush in metal	
Approval/Conformity	CE	
Productview	Page 106	

Suitable read/write head with max. read/write working distance

Installation	flush in metal	on metal	metal-free (clear zone)
BIS M-300			0-11
BIS M-302	0-6		0-9
BIS M-304	0-6		0-7
BIS M-305	0-4		0-8
BIS M-307	0-6		0-8
BIS M-400-xxx-001			0-11
BIS M-400-xxx-002			0-9
BIS M-400-xxx-401			0-13
BIS M-402-xxx-002			0-6
BIS M-402-xxx-004	0-4		0-6
BIS M-404-xxx-401	0-6		0-8
BIS M-404-xxx-401	0-6	0-8	0-8.5
BIS M-405-xxx-001			0-11
BIS M-408-045-001		0-11	0-13
BIS M-410			
BIS M-411			
BIS M-414	0-5	0-6	0-6.5
BIS M-449	0-7	0-9.5	0-10
BIS M-451			
BIS VM-300			0-11
BIS VM-301			
BIS M-302			
BIS M-304			
BIS VM-305	0-6		0-8
BIS VM-306	0-6		
BIS VM-307	0-6		0-8
BIS VM-330	0-5	0-6	0-6.5
BIS VM-332	0-6	0-8	0-8.5
BIS VM-333			0-13
BIS VM-343-401	0-4	0-5	0-5.5
BIS VM-344-401			0-11
BIS VM-345-401			
BIS VM-346-401	0-4	0-5	0-5.5
BIS VM-348-401	0-5		0-7
BIS VM-349-401	0-7	0-9.5	0-10
BIS M-410			

Dimensions in mm

* Installation on request



BIS00YH BIS M-131-10/L	BIS019E BIS M-1R2-02/L	BIS01CE BIS M-107-03/L
HF (13.56 MHz)	HF (13.56 MHz)	HF (13.56 MHz)
Ø 12 x 6.4 mm	Ø 15.3 x 4.5 mm	Ø 16 x 3 mm
round	round	round
4 Byte	8 Byte	8 Byte
EEPROM	FRAM	EEPROM
DIN ISO 14443	DIN ISO 15693	DIN ISO 15693
736 Byte	2000 Byte	112 Byte
-40...85 °C	-25...85 °C	—
—	—	-40...85 °C 1x1000 h
-20...85 °C	-25...85 °C	-25...85 °C
ABS	PEEK, GF30	PPS
IP68	IP68	IP68
metal-free (clear zone) on metal flush in metal	metal-free (clear zone) on metal flush in metal	metal-free (clear zone)
CE	CE	CE, WEEE, EAC
Page 107	Page 107	Page 107

flush in metal	on metal	metal-free (clear zone)*	flush in metal	on metal	metal-free (clear zone)*	flush in metal	on metal	metal-free (clear zone)
			0-11 0-10	0-12 0-10				0-28
	0-8	0-10						0-17
		0-9						
		0-13 0-12 0-13						0-11
0-2	0-4	0-4.5						0-25
			0-11 0-10	0-12 0-10				0-18
								0-16
								0-30
								0-15
		0-5						



	BIS0044 BIS M-110-02/L	
Product Group	HF (13.56 MHz)	
Dimension	Ø 20 x 2.8 mm	
Antenna type	round	
UID serial number, read-only	8 Byte	
Memory type	FRAM	
Supported data carrier types	DIN ISO 15693	
User data, read/write	2000 Byte	
Storage temperature	-25...85 °C	
Storage temperature temporary	—	
Ambient temperature	-25...85 °C	
Housing material	PA 6	
Protection degree	IP68	
Installation	metal-free (clear zone) on metal flush in metal	
Approval/Conformity	CE	
Productview	Page 107	

Suitable read/write head with max. read/write working distance

Installation	flush in metal	on metal	metal-free (clear zone)
BIS M-300			0-22
BIS M-301			0-32
BIS M-302			0-16
BIS M-304			0-14
BIS M-305			0-13
BIS M-307			0-13
BIS M-340			0-90
BIS M-371-000-A01			0-70
BIS M-372-000-A01			0-115
BIS M-373-000-A01			
BIS M-400-xxx-001			0-20
BIS M-400-xxx-002			0-15
BIS M-400-xxx-401			0-18
BIS M-401			0-30
BIS M-402-xxx-002			0-15
BIS M-402-xxx-004			0-15
BIS M-404-xxx-401			0-10
BIS M-405-xxx-001			0-20
BIS M-408-045-001			0-23
BIS M-410			
BIS M-411			0-45
BIS M-451			0-12
BIS VM-300		0-5	
BIS VM-301		0-32	
BIS M-302			
BIS M-304			
BIS VM-305		0-13	
BIS VM-307		0-13	
BIS VM-332		0-10	
BIS VM-333		0-18	
BIS VM-344-401		0-22	
BIS VM-345-401	0-5	0-22	
BIS VM-348-401		0-12	
BIS VM-349-401	0-5	0-12	
BIS M-371-000-A01			
BIS M-372-000-A01			
BIS M-373-000-A01			
BIS M-410			
BIS M-411			

Dimensions in mm, * Installation on request



BIS00YF BIS M-132-03/L	BIS00YC BIS M-132-10/L	BIS0143 BIS M-128-03/L
HF (13.56 MHz)	HF (13.56 MHz)	HF (13.56 MHz)
Ø 24.9 x 4.8 mm	Ø 24.9 x 4.8 mm	Ø 26 x 6 mm
round	round	round
8 Byte	4 Byte	8 Byte
EEPROM	EEPROM	EEPROM
DIN ISO 15693	DIN ISO 14443	DIN ISO 15693
112 Byte	736 Byte	112 Byte
-40...85 °C	-40...85 °C	-25...85 °C
—	—	—
-20...85 °C	-20...85 °C	-25...70 °C
ABS, black	ABS, black	Epoxy-resin/fiberglass
IP68	IP68	IP67
metal-free (clear zone)	metal-free (clear zone)	metal-free (clear zone)
CE	CE	CE
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flush in metal	on metal	metal-free (clear zone)*	flush in metal	on metal	metal-free (clear zone)	flush in metal	on metal	metal-free (clear zone)
		0-100 0-160 0-160						0-27 0-21 0-13
		0-48 0-80			0-15 0-26			
								0-13 0-21
		0-100 0-160 0-160 0-48 0-80			0-15 0-26			

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	BIS003Y BIS M-101-01/L	
Product Group	HF (13.56 MHz)	
Dimension	Ø 30 x 1 mm	
Antenna type	round	
UID serial number, read-only	4 Byte	
Memory type	EEPROM	
Supported data carrier types	DIN ISO 14443	
User data, read/write	752 Byte	
Storage temperature	-25...85 °C	
Storage temperature temporary	—	
Ambient temperature	-25...70 °C	
Housing material	Epoxy resin-glass fiber, GF	
Protection degree	IP67	
Installation	metal-free (clear zone)	
Approval/Conformity	CE	
Productview	Page 107	

Suitable read/write head with max. read/write working distance

Installation	flush in metal	on metal	metal-free (clear zone)
BIS M-300			0-22
BIS M-301			0-34
BIS M-302			0-16
BIS M-304			0-14
BIS M-340			
BIS M-371-000-A01			
BIS M-372-000-A01			
BIS M-400-xxx-001			0-20
BIS M-400-xxx-002			0-15
BIS M-400-xxx-401			
BIS M-401			0-28
BIS M-402-xxx-002			0-14
BIS M-402-xxx-004			0-15
BIS M-404-xxx-401			
BIS M-405-xxx-001			0-12
BIS M-406-045-001			
BIS M-408-045-001			
BIS M-410			
BIS M-411			
BIS M-449			
BIS M-4006-001			
BIS M-4008-001			
BIS VM-300			0-15
BIS VM-301			0-15
BIS VM-332			
BIS VM-333			
BIS VM-344-401			
BIS VM-345-401			
BIS VM-349-401			
BIS M-410			
BIS M-411			

Dimensions in mm

* Installation on request



BIS0045 BIS M-111-02/L	BIS00Y8 BIS M-134-10/L	BIS003Z BIS M-102-01/L
HF (13.56 MHz)	HF (13.56 MHz)	HF (13.56 MHz)
Ø 30 x 2.8 mm	Ø 49.8 x 5.3 mm	Ø 50 x 1 mm
round	round	round
8 Byte	4 Byte	4 Byte
FRAM	EEPROM	FRAM
DIN ISO 15693	DIN ISO 14443	DIN ISO 14443
2000 Byte	736 Byte	752 Byte
-25...85 °C	-40...85 °C	-25...85 °C
—	—	—
-25...85 °C	-20...85 °C	-25...70 °C
PA 6	ABS, black	Epoxy resin-glass fiber, GF
IP68	IP68	IP67
metal-free (clear zone) on metal flush in metal	metal-free (clear zone)	metal-free (clear zone)
CE	CE	CE
Page 107	Page 108	Page 108

flush in metal	on metal	metal-free (clear zone)	flush in metal	on metal	metal-free (clear zone)	flush in metal	on metal	metal-free (clear zone)
		0-28						0-32
		0-45						0-45
		0-20						0-20
								0-18
		0-140						
		0-120						
		0-175						
		0-28						0-28
		0-20						0-18
		0-21						
		0-40						0-45
		0-18						
		0-28						0-28
		0-28						
						0-32		
		0-67				0-56		
		3-13						
		0-52						
		0-52						
0-28	0-18	0-10						0-32
0-45	0-30							0-45
0-21								
0-28	0-18	0-10						
0-28								
3-13								



	BIS0046 BIS M-112-02/L	
Product Group	HF (13.56 MHz)	
Dimension	Ø 50 x 3.3 mm	
Antenna type	round	
UID serial number, read-only	8 Byte	
Memory type	FRAM	
Supported data carrier types	DIN ISO 15693	
User data, read/write	2000 Byte	
Storage temperature	-25...85 °C	
Storage temperature temporary	140 °C 1x100 h, -40 °C...90 °C 1x1000 h	
Ambient temperature	-25...85 °C	
Housing material	PA 6	
Protection degree	IP68	
Installation	metal-free (clear zone)	
Approval/Conformity	CE	
Productview	Page 108	

Suitable read/write head with max. read/write working distance

Installation	flush in metal	on metal	metal-free (clear zone)
BIS M-300			0-44
BIS M-301			0-70
BIS M-302			0-30
BIS M-304			
BIS M-305			
BIS M-307			
BIS M-340			0-170
BIS M-341			35-90
BIS M-371-000-A01			0-150
BIS M-372-000-A01			0-235
BIS M-373-000-A01			0-270
BIS M-400-xxx-001			0-38
BIS M-400-xxx-002			0-28
BIS M-400-xxx-401			0-30
BIS M-401			0-60
BIS M-402-xxx-002			
BIS M-402-xxx-004			
BIS M-404-xxx-401			
BIS M-405-xxx-001			0-38
BIS M-406-045-001			0-38
BIS M-408-045-001			0-40
BIS M-414			
BIS M-449			
BIS M-4006-001			0-80
BIS M-4008-001			0-80
BIS VM-300			0-44
BIS VM-301			0-70
BIS VM-305			
BIS VM-307			
BIS VM-330			
BIS VM-332			
BIS VM-333			0-30
BIS VM-341-001			35-90
BIS VM-341-401			0-100
BIS VM-343-401			
BIS VM-344-401			0-44
BIS VM-345-401			0-45
BIS VM-346-401			
BIS VM-349-401			
Dimensions in mm			



BIS00NW BIS M-143-02/A-M8	BIS0100 BIS M-143-02/A-M8-SA2	BIS00NU BIS M-143-02/A-M6
HF (13.56 MHz)	HF (13.56 MHz)	HF (13.56 MHz)
Ø 22 x 21 mm	Ø 21 x 21 mm	Ø 21 x 21 mm
round	round	round
8 Byte	8 Byte	8 Byte
FRAM	FRAM	FRAM
DIN ISO 15693	DIN ISO 15693	DIN ISO 15693
2000 Byte	2000 Byte	2000 Byte
-25...95 °C	-25...95 °C	-25...95 °C
—	—	—
-25...70 °C	-25...70 °C	-25...70 °C
Steel, data carrier: PA 12-GF30	Steel, data carrier: PA 12-GF30	Steel, data carrier: PA 12-GF30
IP68, IPx9K	IP68, IPx9K	IP68, IPx9K
on metal	on metal	on metal
CE	CE	CE
Page 108	Page 108	Page 108

flush in metal	on metal	metal-free (clear zone)	flush in metal	on metal	metal-free (clear zone)	flush in metal	on metal	metal-free (clear zone)
	0-13			0-13			0-13	
	0-13			0-13			0-13	
	0-12			0-12			0-12	
	0-12			0-12			0-12	
	0-23			0-23			0-23	
	0-13			0-13			0-13	
	0-12			0-12			0-12	
	0-13			0-13			0-13	
	0-16			0-16			0-16	
	0-9			0-9			0-9	
	0-9			0-9			0-9	
	0-9,5			0-9,5			0-9,5	
	0-13			0-13			0-13	
	0-13			0-13			0-13	
	0-7			0-7			0-7	
	0-10			0-10			0-10	
	0-18			0-18			0-18	
	0-18			0-18			0-18	
	0-13			0-13			0-13	
	0-12			0-12			0-12	
	0-12			0-12			0-12	
	0-7			0-7			0-7	
	0-9,5			0-9,5			0-9,5	
	0-13			0-13			0-13	
	0-23			0-23			0-23	
	0-7,5			0-7,5			0-7,5	
	0-13			0-13			0-13	
	0-16			0-16			0-16	
	0-7,5			0-7,5			0-7,5	
	0-10			0-10			0-10	

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	BIS00M8 BIS M-140-02/A-M8
Product Group	HF (13.56 MHz)
Dimension	Ø 22 x 31 mm
Antenna type	round
UID serial number, read-only	8 Byte
Memory type	FRAM
Supported data carrier types	DIN ISO 15693
User data, read/write	2000 Byte
Storage temperature	-25...95 °C
Storage temperature temporary	—
Ambient temperature	-25...70 °C
Housing material	Steel, data carrier: PA 12-GF30
Protection degree	IP68, IPx9K
Installation	on metal
Approval/Conformity	CE
Productview	Page 108

Suitable read/write head with max. read/write working distance

Installation	flush in metal	on metal	metal-free (clear zone)
BIS M-300		0-22	
BIS M-302		0-17	
BIS M-305		0-17	
BIS M-307		0-16	
BIS M-341		0-46	
BIS M-371-000-A01			
BIS M-372-000-A01			
BIS M-373-000-A01			
BIS M-400-xxx-001		0-22	
BIS M-400-xxx-002			
BIS M-400-xxx-401			
BIS M-401		0-32	
BIS M-402-xxx-002			
BIS M-402-xxx-004			
BIS M-404-xxx-401			
BIS M-405-xxx-001		0-22	
BIS M-408-045-001		0-22	
BIS M-414		0-9	
BIS M-449		0-13	
BIS M-4006-001			
BIS M-4008-001			
BIS VM-300		0-22	
BIS VM-305		0-17	
BIS VM-307		0-16	
BIS VM-330			
BIS VM-332			
BIS VM-333			
BIS VM-341-001		0-46	
BIS VM-341-401			
BIS VM-343-401			
BIS VM-344-401		0-22	
BIS VM-345-401			
BIS VM-346-401			
Dimensions in mm			



BIS00M9 BIS M-140-02/A-M6	BIS0119 BIS M-142-20/A-M6-GY	
HF (13.56 MHz)	HF (13.56 MHz)	
Ø 22 x 31 mm	Ø 22 x 26 mm	
round	round	
8 Byte	8 Byte	
FRAM	FRAM	
DIN ISO 15693	DIN ISO 15693	
2000 Byte	8192 Byte	
-25...95 °C	-25...95 °C	
—	—	
-25...70 °C	-25...70 °C	
Steel, data carrier: PA 12-GF30	Steel, data carrier: PA 12-GF30 gray	
IP68, IPx9K	IP68, IPx9K	
on metal	on metal	
CE	CE	
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flush in metal	on metal*	metal-free (clear zone)*	flush in metal	on metal	metal-free (clear zone)	flush in metal	on metal	metal-free (clear zone)
	0-22							
	0-17							
	0-17							
	0-16							
	0-46							
				0-50				
				0-65				
				0-65				
	0-22							
	0-32							
	0-22							
	0-22							
	0-9							
	0-13							
				0-38				
				0-38				
	0-22							
	0-17							
	0-16							
	0-46							
				0-40				
				0-7.5				
	0-22							
				0-22				
				0-7.5				



	BIS004E BIS M-125-01/L	
Product Group	HF (13.56 MHz)	
Dimension	30 x 6 x 30 mm	
Antenna type	round	
UID serial number, read-only	4 Byte	
Memory type	EEPROM	
Supported data carrier types	DIN ISO 14443	
User data, read/write	752 Byte	
Storage temperature	-25...85 °C	
Storage temperature temporary	—	
Ambient temperature	-25...70 °C	
Housing material	PBT	
Protection degree	IP67	
Installation	metal-free (clear zone) on metal	
Approval/Conformity	CE	
Productview	Page 109	

Suitable read/write head with max. read/write working distance

Installation	flush in metal	on metal*	metal-free (clear zone)*
BIS M-300			
BIS M-301			
BIS M-302			
BIS M-304			
BIS M-305			
BIS M-341			
BIS M-371-000-A01			
BIS M-372-000-A01			
BIS M-373-000-A01			
BIS M-400-xxx-001			
BIS M-400-xxx-002			
BIS M-400-xxx-401			
BIS M-401			
BIS M-404-xxx-401			
BIS M-405-xxx-001			
BIS M-410			
BIS M-449			
BIS M-458-045-001			
BIS M-4006-001			
BIS M-4006-002			
BIS M-4008-001			
BIS VM-300			
BIS VM-301			
BIS VM-305			
BIS VM-332			
BIS VM-333			
BIS VM-341-001			
BIS VM-341-401			
BIS VM-343-401			
BIS VM-344-401			
BIS VM-345-401			
BIS VM-349-401			

Dimensions in mm, * Installation on request



BIS0043 BIS M-108-02/L	BIS011F BIS M-108-11/A	
HF (13.56 MHz)	HF (13.56 MHz)	
32 x 11 x 52 mm	32 x 11 x 52 mm	
round	round	
8 Byte	8 Byte	
FRAM	FRAM	
DIN ISO 15693	DIN ISO 15693 (High Memory)	
2000 Byte	8192 Byte	
-25...85 °C	-25...85 °C	
—	—	
-25...70 °C	-25...70 °C	
PBT, GF	PBT, GF	
IP67	IP67	
metal-free (clear zone) on metal flush in metal	metal-free (clear zone) on metal	
CE	CE	
Page 109	Page 109	

flush in metal	on metal*	metal-free (clear zone)*	flush in metal	on metal	metal-free (clear zone)	flush in metal	on metal	metal-free (clear zone)
0-16		0-30						
		0-45						
0-12		0-20						
0-10		0-18						
0-11		0-17						
0-50		20-60						
		0-110						
		0-160						
		0-185						
0-16		0-28						
0-12		0-20						
0-13	0-15	0-21						
		0-40						
0-6	0-8	0-11	0-5	0-6	0-6.5			
0-16		0-28						
		0-40						
0-7	0-9.5	0-13						
			11-18	0-28	0-36			
10-19	0-32	0-52						
			11-18	0-28	0-36			
10-19	0-32	0-52						
0-16		0-30						
		0-45						
0-11		0-17						
0-6	0-8	0-11	0-5	0-6	0-6.5			
0-13	0-15	0-21						
14-25		20-60						
14-20	0-36	0-64	11-20	0-30	0-42			
0-16		0-30		0-15	0-18			
		0-28			0-18			
0-7	0-9.5	0-13						



	BIS0111 BIS M-108-20/A	
Product Group	HF (13.56 MHz)	
Dimension	32 x 11 x 52 mm	
Antenna type	round	
UID serial number, read-only	8 Byte	
Memory type	FRAM	
Supported data carrier types	DIN ISO 15693	
User data, read/write	8192 Byte	
Storage temperature	-25...85 °C	
Storage temperature temporary	—	
Ambient temperature	-25...70 °C	
Housing material	PBT, GF	
Protection degree	IP67	
Installation	metal-free (clear zone) on metal flush in metal	
Approval/Conformity	CE	
Productview	Page 109	

Suitable read/write head with max. read/write working distance

Installation	flush in metal	on metal	metal-free (clear zone)	
BIS M-301			0-45	
BIS M-371-000-A01			0-100	
BIS M-372-000-A01			0-150	
BIS M-373-000-A01			0-150	
BIS M-400-xxx-401	0-13	0-15	0-21	
BIS M-404-xxx-401				
BIS M-4006-001				
BIS M-4008-001	11-18	0-28	0-36	
BIS VM-301			0-50	
BIS VM-332				
BIS VM-333	0-13	0-15	0-21	
BIS VM-341-401				
BIS VM-344-401	0-16		0-30	
BIS VM-345-401			0-28	
Dimensions in mm				



BIS011E BIS M-108-13/A	BIS011A BIS M-108-14/A	
HF (13.56 MHz)	HF (13.56 MHz)	
32 x 11 x 52 mm	32 x 11 x 52 mm	
round	round	
8 Byte	8 Byte	
FRAM	FRAM	
DIN ISO 15693 (High Memory)	DIN ISO 15693 (High Memory)	
32768 Byte	65536 Byte	
-25...85 °C	-25...85 °C	
—	—	
-25...70 °C	-25...70 °C	
PBT, GF	PBT, GF	
IP67	IP67	
metal-free (clear zone) on metal flush in metal	metal-free (clear zone) on metal flush in metal	
CE	CE	
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flush in metal	on metal	metal-free (clear zone)	flush in metal	on metal	metal-free (clear zone)			
0-5	0-6	0-6.5	0-5	0-6	0-6.5			
11-18	0-28	0-36	11-18	0-28	0-36			
11-18	0-28	0-36	11-18	0-28	0-36			
0-5	0-6	0-6.5	0-5	0-6	0-6.5			
11-20	0-30	0-42	11-20	0-30	0-42			
	0-15	0-18		0-15	0-18			
		0-18			0-18			



	BIS00Y5 BIS M-135-03/L	
Product Group	HF (13.56 MHz)	
Dimension	51.5 x 6.4 x 51.5 mm	
Antenna type	round	
UID serial number, read-only	8 Byte	
Memory type	EEPROM	
Supported data carrier types	DIN ISO 15693	
User data, read/write	112 Byte	
Storage temperature	-40...85 °C	
Storage temperature temporary	—	
Ambient temperature	-20...85 °C	
Housing material	ABS, black	
Protection degree	IP68	
Installation	metal-free (clear zone)	
Approval/Conformity	CE	
Productview	Page 109	

Suitable read/write head with max. read/write working distance

Installation	flush in metal	on metal	metal-free (clear zone)
BIS M-371-000-A01			10-205
BIS M-372-000-A01			0-300
BIS M-373-000-A01			0-340
BIS M-400-xxx-001			0-50
BIS M-408-045-001			0-48
BIS M-410			0-68
BIS M-411			0-110
BIS M-371-000-A01			10-205
BIS M-372-000-A01			0-300
BIS M-373-000-A01			0-340
BIS M-400-xxx-001			0-50
BIS M-408-045-001			0-48
BIS M-410			0-68
BIS M-411			0-110

Dimensions in mm



	BISO0Y3 BIS M-135-07/L	BISO0Y6 BIS M-135-02/L	BISO0W9 BIS M-136-03/L
	HF (13.56 MHz)	HF (13.56 MHz)	HF (13.56 MHz)
	51.5 x 6.4 x 51.5 mm	51.5 x 6.4 x 51.5 mm	52 x 11.5 x 128 mm
	round	round	round
	8 Byte	8 Byte	8 Byte
	EEPROM	FRAM	EEPROM
	DIN ISO 15693	DIN ISO 15693	DIN ISO 15693
	992 Byte	2000 Byte	112 Byte
	-40...85 °C	-40...85 °C	-40...85 °C
	—	—	—
	-20...85 °C	-20...85 °C	-20...85 °C
	ABS, black	ABS, black	ABS, black
	IP68	IP68	IP68
	metal-free (clear zone)	metal-free (clear zone)	metal-free (clear zone)
	CE	CE	CE
	Page 109	Page 109	Page 109

	flush in metal	on metal	metal-free (clear zone)	flush in metal	on metal	metal-free (clear zone)	flush in metal	on metal	metal-free (clear zone)
						25-140			15-210
						0-230			0-350
						0-230			0-370
			23-46			0-60			
			11-75			0-100			
						25-140			15-210
						0-230			0-350
						0-230			0-370
			23-46			0-60			
			11-75			0-100			



	BIS00Y9 BIS M-133-02/A	
Product Group	HF (13.56 MHz)	
Dimension	Ø 30 x 9.7 mm	
Antenna type	round	
UID serial number, read-only	8 Byte	
Memory type	FRAM	
Supported data carrier types	DIN ISO 15693	
User data, read/write	2000 Byte	
Storage temperature	-40...130 °C	
Storage temperature temporary	—	
Ambient temperature	-40...85 °C	
Housing material	PA, black	
Protection degree	IP67	
Installation	metal-free (clear zone) on metal	
Approval/Conformity	CE	
Productview	Page 109	

Suitable read/write head with max. read/write working distance

Installation	flush in metal	on metal	metal-free (clear zone)
BIS M-300			
BIS M-340			
BIS M-351			
BIS M-371-000-A01			0-70
BIS M-372			
BIS M-400-xxx-001			
BIS M-408-045-001			
BIS M-410			0-32
BIS M-411			38-52
BIS M-451			
BIS M-458-045-001			
BIS M-4006-001			0-55
BIS M-4006-002			
BIS M-4008-001		0-45	0-55
BIS M-4008-002			
BIS VM-300			
BIS VM-343-401			
BIS VM-344-401			
BIS VM-346-401			
BIS VM-351-001			
BIS VM-351-401			
BIS M-410			0-32
BIS M-411			38-52
BIS M-4006-001			0-55
BIS M-4008-001		0-45	0-55

Dimensions in mm

** Combined with metal mounting plate BAM012M



	BIS00LC BIS M-107-03/L-H200	BIS004F BIS M-150-02/A	BIS004H BIS M-151-02/A
	HF (13.56 MHz)	HF (13.56 MHz)	HF (13.56 MHz)
	22 x 6.5 x 40 mm	22 x 6.5 x 40 mm	22 x 6.5 x 40 mm
	round	Rod	Rod
	8 Byte	8 Byte	8 Byte
	EEPROM	FRAM	FRAM
	DIN ISO 15693	DIN ISO 15693	DIN ISO 15693
	112 Byte	2000 Byte	2000 Byte
	-25...85 °C	-25...85 °C	-25...85 °C
	200 °C 1x1000 h	-25...130 °C 1x1000 h	-25...130 °C 1x1000 h
	-25...70 °C	-25...70 °C	-25...70 °C
	PPS, GF40, with EP potting	PPS, GF40, with EP potting	PPS, GF40, with EP potting
	IP67	IP67	IP67
	metal-free (clear zone) on metal	metal-free (clear zone) on metal	metal-free (clear zone) on metal
	CE	CE	CE
	Page 109	Page 109	Page 110

	flush in metal	on metal	metal-free (clear zone)**	flush in metal	on metal	metal-free (clear zone)**	flush in metal	on metal	metal-free (clear zone)**
		0-13	0-27 0-100		0-65	0-65		0-65	0-65
		0-13 0-12	0-27 0-25		0-65 0-42	0-65 0-42		0-65 0-38	0-65 0-38
					0-60	0-60		0-65	0-65
		0-13	0-13		0-60 0-27 0-7	0-60 0-27 0-7		0-65	0-65
		0-13	0-13		0-27 0-7 0-65 0-52	0-27 0-7 0-65 0-52		0-65 0-52	0-65 0-52



	BIS011M BIS M-155-11/A	
Produktgruppe	HF (13.56 MHz)	
Abmessung	22 x 9.7 x 40 mm	
Antennenform	Rod	
UID Seriennummer, nur lesbar	8 Byte	
Speichertyp	FRAM	
Unterstützte Datenträgertypen	DIN ISO 15693 (High Memory)	
Nutzerdaten, lesen/schreiben	8192 Byte	
Lagertemperatur	-25...85 °C	
Lagertemperatur temporär	-25...130 °C 1x1000 h	
Umgebungstemperatur	-25...70 °C	
Gehäusematerial	PPS, GF40, with EP potting	
Schutzart	—	
Einbau	metal-free (clear zone) on metal	
Zulassung/Konformität	CE	
Zeichnung	Page 110	

Suitable read/write head with max. read/write working distance

Montage	flush in metal	on metal	metal-free (clear zone)**
BIS M-4006-002		0-42	0-42
BIS M-4008-002		0-42	0-42
BIS VM-351-401		0-50	0-50
BIS VM-355-401		0-34	0-34

Dimensions in mm

** Combined with metal mounting plate BAM012M



BIS012J BIS M-156-11/A	BIS0112 BIS M-156-20/A	
HF (13.56 MHz)	HF (13.56 MHz)	
22 x 9.7 x 40 mm	22 x 9.7 x 40 mm	
Rod	Rod	
8 Byte	8 Byte	
FRAM	FRAM	
DIN ISO 15693 (High Memory)	DIN ISO 15693	
8192 Byte	8192 Byte	
-25...85 °C	-25...85 °C	
-25...130 °C 1x1000 h	-25...130 °C 1x1000 h	
-25...70 °C	-25...70 °C	
PPS, GF40, with EP potting	PPS, GF40, with PU potting	
—	—	
metal-free (clear zone) on metal	metal-free (clear zone) on metal	
CE	CE	
Page 110	Page 110	

flush in metal	on metal	metal-free (clear zone)**	flush in metal	on metal	metal-free (clear zone)**	flush in metal	on metal	metal-free (clear zone)**
	0-42	0-42		0-68	0-68			
	0-42	0-42		0-68	0-68			
	0-42	0-42		0-70	0-70			
	0-30	0-30		0-45	0-45			



	BIS011Z BIS M-155-13/A	
Product Group	HF (13.56 MHz)	
Dimension	22 x 9.7 x 40 mm	
Antenna type	Rod	
UID serial number, read-only	8 Byte	
Memory type	FRAM	
Supported data carrier types	DIN ISO 15693 (High Memory)	
User data, read/write	32768 Byte	
Storage temperature	-25...85 °C	
Storage temperature temporary	-25...130 °C 1x1000 h	
Ambient temperature	-25...70 °C	
Housing material	PPS, GF40, with EP potting	
Protection degree	—	
Installation	metal-free (clear zone) on metal	
Approval/Conformity	CE	
Productview	Page 110	

Suitable read/write head with max. read/write working distance

Installation	flush in metal	on metal	metal-free (clear zone)**
BIS M-4006-002		0-42	0-42
BIS M-4008-002		0-42	0-42
BIS VM-351-401		0-50	0-50
BIS VM-355-401		0-34	0-34

Dimensions in mm

** Combined with metal mounting plate BAM012M



	BIS012K BIS M-156-13/A	BIS011N BIS M-155-14/A	BIS012L BIS M-156-14/A
	HF (13.56 MHz)	HF (13.56 MHz)	HF (13.56 MHz)
	22 x 9.7 x 40 mm	22 x 9.7 x 40 mm	22 x 9.7 x 40 mm
	Rod	Rod	Rod
	8 Byte	8 Byte	8 Byte
	FRAM	FRAM	FRAM
	DIN ISO 15693 (High Memory)	DIN ISO 15693 (High Memory)	DIN ISO 15693 (High Memory)
	32768 Byte	65536 Byte	65536 Byte
	-25...85 °C	-25...85 °C	-25...85 °C
	-25...130 °C 1x1000 h	-25...130 °C 1x1000 h	-25...130 °C 1x1000 h
	-25...70 °C	-25...70 °C	-25...70 °C
	PPS, GF40, with EP potting	PPS, GF40, with EP potting	PPS, GF40, with EP potting
	—	—	—
	metal-free (clear zone) on metal	metal-free (clear zone) on metal	metal-free (clear zone) on metal
	CE	CE	CE
	Page 110	Page 110	Page 110

	flush in metal	on metal	metal-free (clear zone)**	flush in metal	on metal	metal-free (clear zone)**	flush in metal	on metal	metal-free (clear zone)**
		0-42	0-42		0-42	0-42		0-42	0-42
		0-42	0-42		0-42	0-42		0-42	0-42
		0-42	0-42		0-50	0-50		0-42	0-42
		0-30	0-30		0-34	0-34		0-30	0-30



	BIS00P3 BIS M-153-02/A	
Product Group	HF (13.56 MHz)	
Dimension	40 x 22 x 80 mm	
Antenna type	Rod	
UID serial number, read-only	8 Byte	
Memory type	FRAM	
Supported data carrier types	DIN ISO 15693	
User data, read/write	2000 Byte	
Storage temperature	-25...85 °C	
Storage temperature temporary	—	
Ambient temperature	-25...85 °C	
Housing material	POM	
Protection degree	—	
Installation	metal-free (clear zone) on metal flush in metal	
Approval/Conformity	CE	
Productview	Page 110	

Suitable read/write head with max. read/write working distance

Installation	flush in metal	on metal	metal-free (clear zone)**
BIS M-351			0-100
BIS M-451			0-100
BIS M-458-045-001			0-54
BIS M-4006-002			0-100
BIS M-4008-002			0-100
BIS VM-351-001	0-100		
BIS VM-351-401	0-100	0-100	
BIS VM-355-401	0-60	0-60	

Dimensions in mm

** Combined with metal mounting plate BAM012M



	BIS011W BIS M-153-11/A	BIS011Y BIS M-153-13/A	BIS011U BIS M-153-14/A
	HF (13.56 MHz)	HF (13.56 MHz)	HF (13.56 MHz)
	40 x 22 x 80 mm	40 x 22 x 80 mm	40 x 22 x 80 mm
	Rod	Rod	Rod
	8 Byte	8 Byte	8 Byte
	FRAM	FRAM	FRAM
	DIN ISO 15693 (High Memory)	DIN ISO 15693 (High Memory)	DIN ISO 15693 (High Memory)
	8192 Byte	32768 Byte	65536 Byte
	-25...85 °C	-25...85 °C	-25...85 °C
	—	—	—
	-25...85 °C	-25...85 °C	-25...85 °C
	POM	POM	POM
	—	—	—
	metal-free (clear zone) on metal	metal-free (clear zone) on metal	metal-free (clear zone) on metal
	CE	CE	CE
	Page 110	Page 110	Page 110

	flush in metal	on metal	metal-free (clear zone)	flush in metal	on metal	metal-free (clear zone)	flush in metal	on metal	metal-free (clear zone)
			0-55			0-55			0-55
			0-55			0-55			0-55
		0-60							
				0-60				0-60	
		0-36		0-36				0-36	



	BIS00YE BIS M-132-03/L-HT	
Product Group	HF (13.56 MHz)	
Dimension	Ø 24.9 x 4.8 mm	
Antenna type	round	
UID serial number, read-only	8 Byte	
Memory type	EEPROM	
Supported data carrier types	DIN ISO 15693	
User data, read/write	112 Byte	
Storage temperature	-40...220 °C	
Storage temperature temporary	—	
Ambient temperature	-40...85 °C	
Housing material	PPS	
Protection degree	IP68	
Installation	metal-free (clear zone)	
Approval/Conformity	CE, Ecolab	
Productview	Page 107	

Suitable read/write head with max. read/write working distance

Installation	flush in metal	on metal	metal-free (clear zone)	
BIS M-300			0-30	
BIS M-371-000-A01			0-100	
BIS M-372-000-A01			0-145	
BIS M-373-000-A01			0-155	
BIS M-400-xxx-001			0-30	
BIS M-400-xxx-002			0-24	
BIS M-401			0-50	
BIS M-402-xxx-002			0-20	
BIS M-406-045-001				
BIS M-408-045-001				
BIS M-410				
BIS M-411			0-70	
BIS M-4006-001			0-60	
BIS M-4008-001			0-60	
BIS VM-300			0-30	
BIS VM-341-401				
BIS VM-344-401			0-30	
BIS VM-345-401			0-34	
BIS M-371-000-A01				
BIS M-372-000-A01				
BIS M-400-xxx-001				
BIS M-406-045-001				
BIS M-410				
BIS M-411				

Dimensions in mm



BIS00YA BIS M-132-10/L-HT	BIS00Y7 BIS M-134-10/L-HT	BIS018P BIS M-137-10/L-HT
HF (13.56 MHz)	HF (13.56 MHz)	HF (13.56 MHz)
Ø 24.9 x 4.8 mm	Ø 49.8 x 5.3 mm	Ø 49.8 x 5.3 mm
round	round	round
4 Byte	4 Byte	4 Byte
EEPROM	EEPROM	EEPROM
DIN ISO 14443	DIN ISO 14443	DIN ISO 14443
736 Byte	736 Byte	736 Byte
-40...220 °C	-40...220 °C	-40...220 °C
—	—	—
-40...85 °C	-40...85 °C	-40...85 °C
PPS	PPS	PPS
IP68	IP68	IP68
metal-free (clear zone)	metal-free (clear zone)	metal-free (clear zone)
CE, Ecolab	CE, Ecolab	CE
Page 107	Page 108	Page 110

flush in metal	on metal	metal-free (clear zone)	flush in metal	on metal	metal-free (clear zone)	flush in metal	on metal	metal-free (clear zone)
		0-40 0-30						
					0-24			0-24
					0-24			0-24
		0-15 0-22			0-36 0-60			0-36 0-60
		0-40 0-30						
					0-24			0-24
					0-24			0-24
		0-15 0-22			0-36 0-60			0-36 0-60



	BIS00Y4 BIS M-135-03/L-HT	
Product Group	HF (13.56 MHz)	
Dimension	51.5 x 6.4 x 51.5 mm	
Antenna type	round	
UID serial number, read-only	8 Byte	
Memory type	EEPROM	
Supported data carrier types	DIN ISO 15693	
User data, read/write	112 Byte	
Storage temperature	-40...220 °C	
Storage temperature temporary	—	
Ambient temperature	-40...85 °C	
Housing material	PPS	
Protection degree	IP68	
Installation	metal-free (clear zone)	
Approval/Conformity	CE, Ecolab	
Productview	Page 109	

Suitable read/write head with max. read/write working distance

Installation	flush in metal	on metal	metal-free (clear zone)
BIS M-300			0-42
BIS M-371-000-A01			10-205
BIS M-372-000-A01			0-300
BIS M-373-000-A01			0-340
BIS M-400-xxx-001			0-42
BIS M-401			0-75
BIS M-406-045-001			0-42
BIS M-408-045-001			0-48
BIS M-410			0-70
BIS M-411			0-125
BIS M-4006-001			0-90
BIS M-4008-001			0-90
BIS VM-300			0-42
BIS VM-341-401			0-120
BIS VM-344-401			0-42
BIS VM-345-401			0-52

Dimensions in mm



BIS018R BIS M-138-03/L-HT	BIS00Y2 BIS M-135-07/L-HT	BIS018T BIS M-138-07/L-HT
HF (13.56 MHz)	HF (13.56 MHz)	HF (13.56 MHz)
51.5 x 6.4 x 51.5 mm	51.5 x 6.4 x 51.5 mm	51.5 x 6.4 x 51.5 mm
round	round	round
8 Byte	8 Byte	8 Byte
EEPROM	EEPROM	EEPROM
DIN ISO 15693	DIN ISO 15693	DIN ISO 15693
112 Byte	992 Byte	992 Byte
-40...220 °C	-40...220 °C	-40...220 °C
—	—	—
-40...85 °C	-40...85 °C	-40...85 °C
PPS	PPS	PPS
IP68	IP68	IP68
metal-free (clear zone)	metal-free (clear zone)	metal-free (clear zone)
CE	CE, Ecolab	CE
Page 110	Page 109	Page 110

flush in metal	on metal	metal-free (clear zone)	flush in metal	on metal	metal-free (clear zone)	flush in metal	on metal	metal-free (clear zone)
		0-42						
		10-205			10-135			10-135
		0-300			0-190			0-190
		0-340			0-215			0-215
		0-42						
		0-75						
		0-42						
		0-48						
		0-70			23-46			23-46
		0-125			11-75			11-75
		0-90			0-65			0-65
		0-90			0-65			0-65
		0-42						
		0-120						
		0-42						
		0-52						



	BIS00Y1 BIS M-136-03/L-HT	
Product Group	HF (13.56 MHz)	
Dimension	52 x 11.5 x 128 mm	
Antenna type	round	
UID serial number, read-only	8 Byte	
Memory type	EEPROM	
Supported data carrier types	DIN ISO 15693	
User data, read/write	112 Byte	
Storage temperature	-40...220 °C	
Storage temperature temporary	—	
Ambient temperature	-40...85 °C	
Housing material	PPS	
Protection degree	IP68	
Installation	metal-free (clear zone)	
Approval/Conformity	CE, Ecolab	
Productview	Page 109	

Suitable read/write head with max. read/write working distance

Installation	flush in metal	on metal	metal-free (clear zone)	
BIS M-300				
BIS M-352				
BIS M-458-045-001				
BIS M-4006-001			0-95	
BIS M-4006-002				
BIS M-4008-001			0-95	
BIS M-4008-002				
BIS VM-351-401				
BIS VM-352				
BIS VM-355-401				
Dimensions in mm				



	BISO198 BIS M-157-17/A-SA1	BIS00NZ BIS M-191-02/A	BISO180 BIS M-127-02/A-SA1
	HF (13.56 MHz)	HF (13.56 MHz)	HF (13.56 MHz)
	9 x 5.3 x 39 mm	24 x 21 x 24 mm	40 x 23 x 28 mm
	Rod	Rod	round
	8 Byte	8 Byte	8 Byte
	EEPROM	FRAM	FRAM
	DIN ISO 15693	DIN ISO 15693	DIN ISO 15693
	208 Byte	2000 Byte	2000 Byte
	-25...85 °C	-25...85 °C	-25...85 °C
	120 °C 1x100 h, -40 °C...90 °C 1x1000 h, 140 °C 1x10 h	—	—
	-25...85 °C	-25...70 °C	-25...70 °C
	PEEK	PBT, PU potted	PA 12 Cast aluminum
	IP68	IP67	IP67
	—	metal-free (clear zone)	metal-free (clear zone) on metal flush in metal
	CE, WEEE, EAC	CE	CE
	Page 110	Page 110	Page 111

	flush in metal	on metal	metal-free (clear zone)	flush in metal	on metal	metal-free (clear zone)	Combined with BISO18E
						0-22	
						0-25	
						0-55	
						0-55	
						0-25	
						0-17	
						0-15	



	BIS0176 BIS M-127-02/A	
Product Group	HF (13.56 MHz)	
Dimension	93 x 43.3 x 57.2 mm	
Antenna type	round	
UID serial number, read-only	8 Byte	
Memory type	FRAM	
Supported data carrier types	DIN ISO 15693	
User data, read/write	2000 Byte	
Storage temperature	-25...85 °C	
Storage temperature temporary	—	
Ambient temperature	-25...70 °C	
Housing material	PA 12 Cast aluminum	
Protection degree	IP67	
Installation	metal-free (clear zone) on metal flush in metal	
Approval/Conformity	CE	
Productview	Page 111	

Passender Schreib-/Lesekopf mit max. Arbeitsabstand Lesen/Schreiben

Montage	Combined with BIS0189			
BIS M-300				
BIS M-351				
BIS M-352				
BIS M-451				
BIS M-458-045-001				
BIS M-4006-002				
BIS M-4008-002				
BIS VM-301				
Dimensions in mm				



BISO17F BIS M-157-17/A	BIS00M2 BIS M-152-03/A	BIS00L8 BIS M-106-03/L
HF (13.56 MHz)	HF (13.56 MHz)	HF (13.56 MHz)
Ø 2.12 x 12 mm	Ø 4 x 22.2 mm	Ø 18 x 15 mm
Rod	Rod	round
8 Byte	8 Byte	8 Byte
EEPROM	EEPROM	EEPROM
DIN ISO 15693	DIN ISO 15693	DIN ISO 15693
208 Byte	112 Byte	112 Byte
-25...85 °C	-25...85 °C	10...126 °C
120 °C 1x100 h, -40 °C...90 °C 1x1000 h, 140 °C 1x10 h	120 °C 1x100 h, -40 °C...90 °C 1x1000 h	—
-25...85 °C	-25...85 °C	10...70 °C
Glass, transparent	Glass, transparent	Glass
IP68	IP68	IP68
metal-free (clear zone)	metal-free (clear zone)	metal-free (clear zone)
CE	CE	CE
Page 111	Page 111	Page 111

flush in metal	on metal	metal-free (clear zone)	flush in metal	on metal	metal-free (clear zone)	flush in metal	on metal	metal-free (clear zone)
								0-32
		0-17			0-30			
					0-17			
					0-30			
					0-18			
					0-35			
					0-35			
								0-32



	BIS00KM BIS M-115-03/A	
Product Group	HF (13.56 MHz)	
Dimension	25 x 3 x 65 mm	
Antenna type	round	
UID serial number, read-only	8 Byte	
Memory type	EEPROM	
Supported data carrier types	DIN ISO 15693	
User data, read/write	112 Byte	
Storage temperature	-30...60 °C	
Storage temperature temporary	—	
Ambient temperature	-25...50 °C	
Housing material	Epoxy-resin/fiberglass PVC	
Protection degree	IP65	
Installation	metal-free (clear zone)	
Approval/Conformity	CE	
Productview	Page 111	

Suitable read/write head with max. read/write working distance

Installation	flush in metal	on metal	metal-free (clear zone)
BIS M-300			0-18
BIS M-301			0-38
BIS M-371-000-A01			0-85
BIS M-400-xxx-001			0-24
BIS M-400-xxx-002			0-17
BIS M-401			0-44
BIS M-402-xxx-002			0-14
BIS M-405			
BIS M-406-045-001			0-18
BIS VM-300			0-18
BIS VM-344-401			0-18

Dimensions in mm

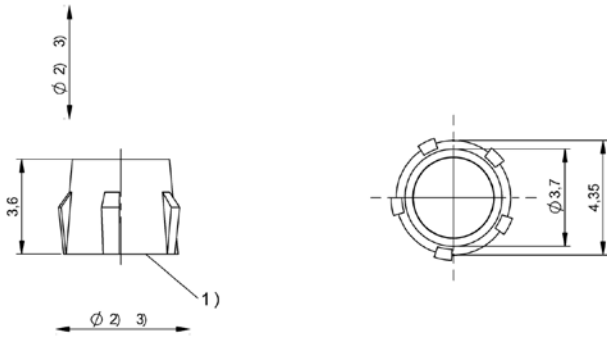
* Installation on request



	BIS00N5 BIS M-115-07/A-SA1	BIS01CA BIS M-1L4-03/L-D015	BIS012H BIS M-1L4-03/L-D018
	HF (13.56 MHz)	HF (13.56 MHz)	HF (13.56 MHz)
	25 x 3 x 65 mm	—	1 x 20 x 20 mm
	round	round	round
	8 Byte	8 Byte	8 Byte
	EEPROM	EEPROM	EEPROM
	DIN ISO 15693	DIN ISO 15693	DIN ISO 15693
	992 Byte	112 Byte	112 Byte
	-30...60 °C	-25...85 °C	-20...80 °C
	—	—	—
	-25...50 °C	-25...85 °C	0...50 °C
	Epoxy-resin/fiberglass PVC	PET	PET, transparent
	IP65	IP20	IP20
	metal-free (clear zone)	metal-free (clear zone) on metal	metal-free (clear zone) on metal
	CE	CE, WEEE, EAC	CE
	Page 111	Page 111	Page 111

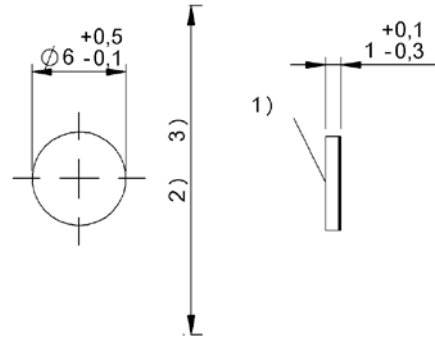
	flush in metal	on metal	metal-free (clear zone)*	flush in metal	on metal	metal-free (clear zone)	flush in metal	on metal*	metal-free (clear zone)
									0-18

106 | RFID | HF (13.56 MHz)



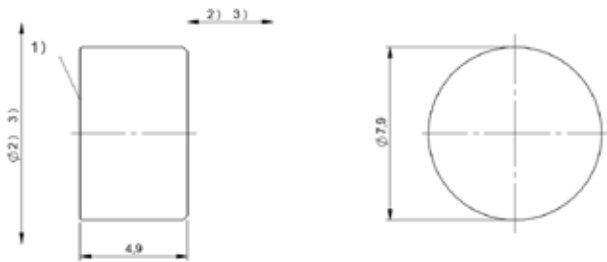
1) Sensing surface, 2) Clear zone, 3) see corresponding R/W head

BISO18Y



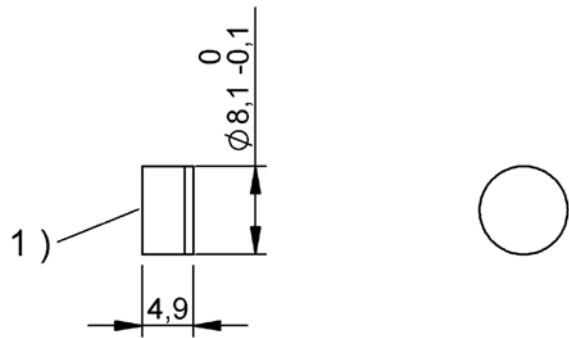
1) Sensing surface, 2) Clear zone, 3) see corresponding R/W head

BISO00C, BISO00E



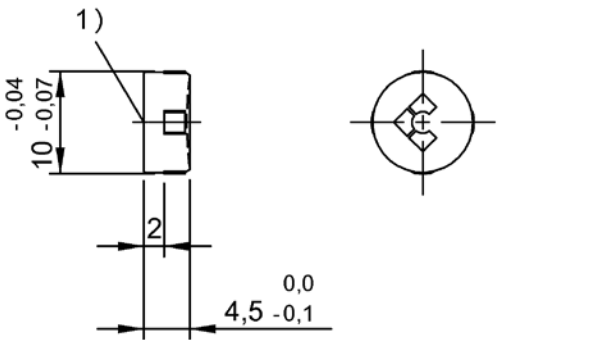
1) Sensing surface, 2) Clear zone, 3) see corresponding R/W head

BISO00YL, BISO00YJ, BISO00YK



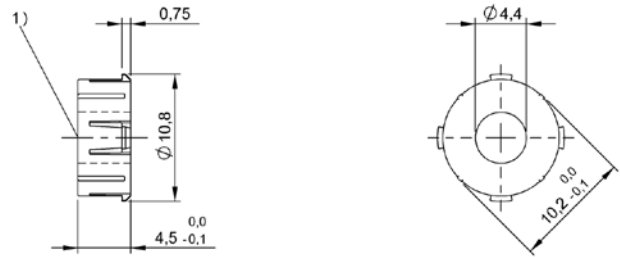
1) Sensing surface

BISO1A1



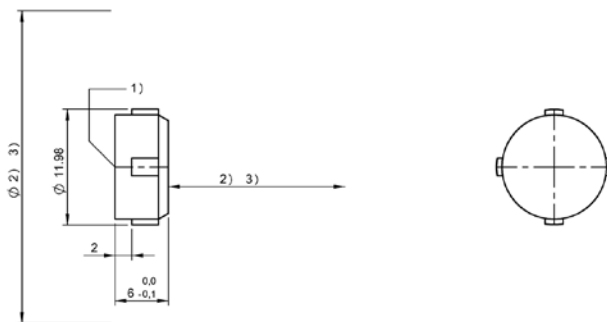
1) Sensing surface

BISO1A0, BISO048, BISO04A



1) Sensing surface

BISO19C



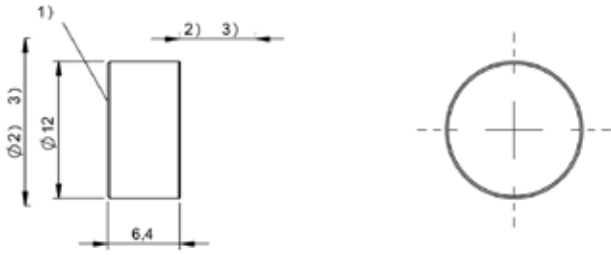
1) Sensing surface, 2) Clear zone, 3) see corresponding R/W head

BISO040



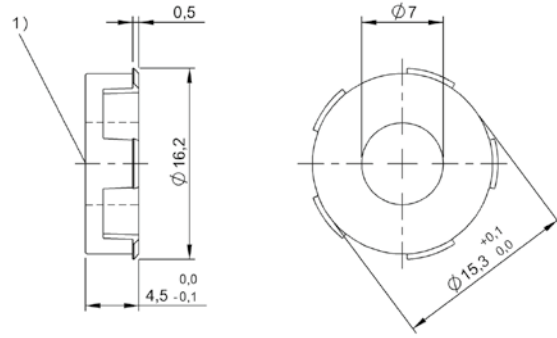
1) Sensing surface

BISO042



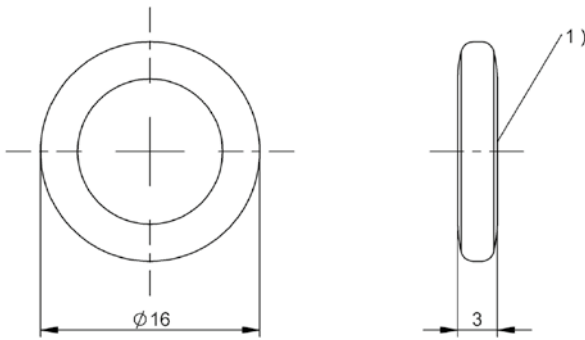
1) Sensing surface, 2) Clear zone, 3) see corresponding R/W head

BISO0YH



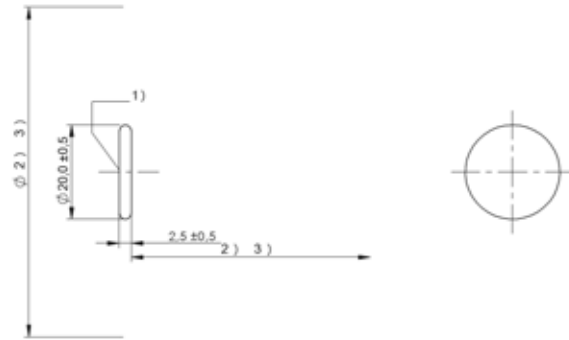
1) Sensing surface

BIS019E



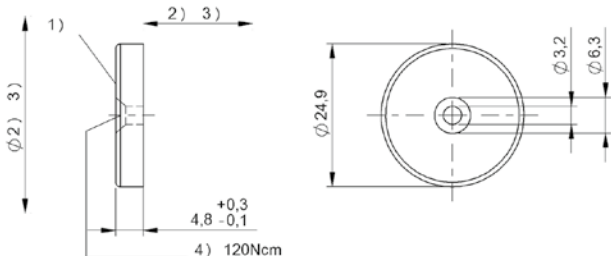
1) Sensing surface

BISO1CE



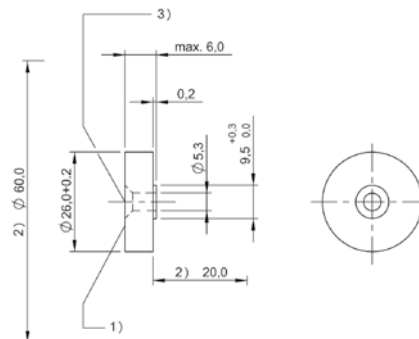
1) Sensing surface, 2) Clear zone, 3) see corresponding R/W head

BIS0044



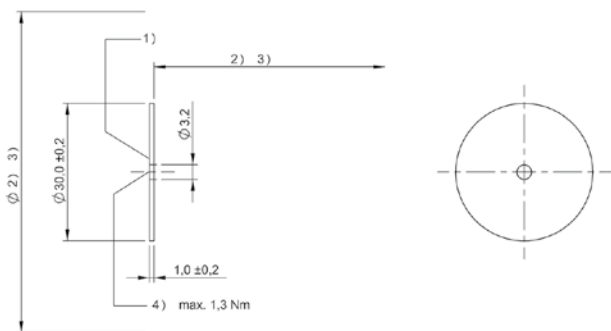
1) Sensing surface, 2) Clear zone, 3) see corresponding R/W head, 4) Tightening torque

BISO0YF, BISO0YC, BISO0YE, BISO0YA



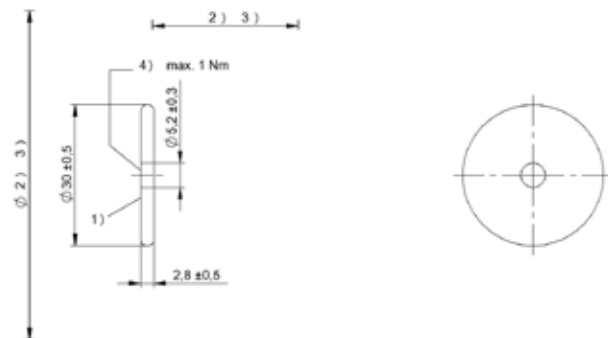
1) Sensing surface, 2) Clear zone, 3) Tightening torque max. 2.5 Nm

BIS0143



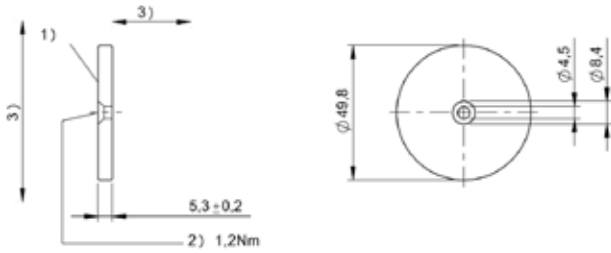
1) Sensing surface, 2) Clear zone, 3) see corresponding R/W head, 4) Tightening torque

BISO03Y



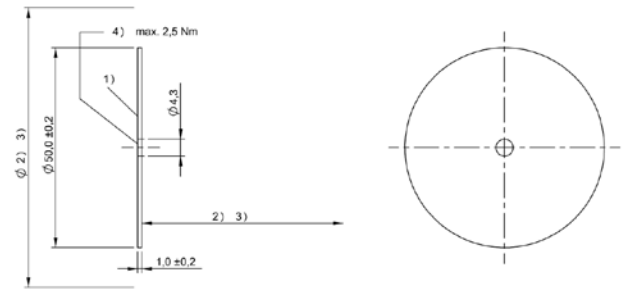
1) Sensing surface, 2) Clear zone, 3) see corresponding R/W head, 4) Tightening torque

BISO045



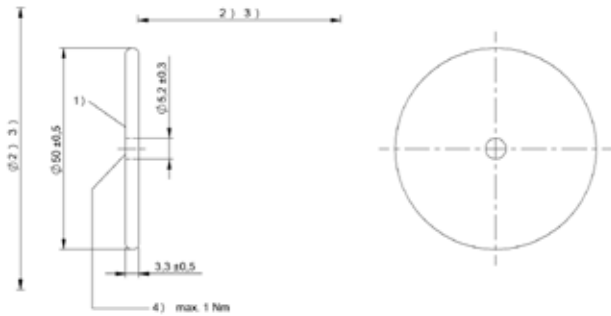
1) Sensing surface, 2) Tightening torque, 3) see R/W head table

BISO0Y8, BISO0Y7



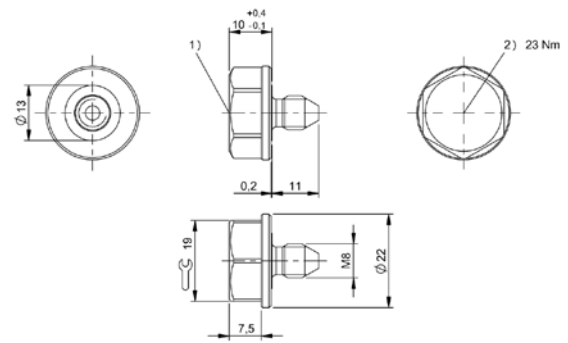
1) Sensing surface, 2) Clear zone, 3) see corresponding R/W head, 4) Tightening torque

BISO03Z



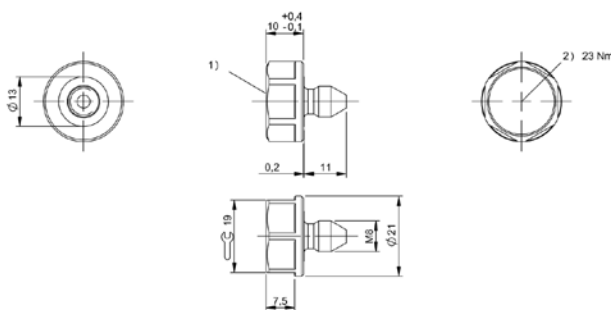
1) Sensing surface, 2) Clear zone, 3) see corresponding R/W head, 4) Tightening torque

BISO046



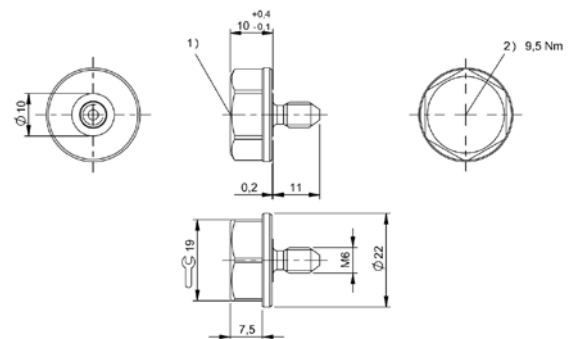
1) Sensing surface, 2) Tightening torque

BISO0NW



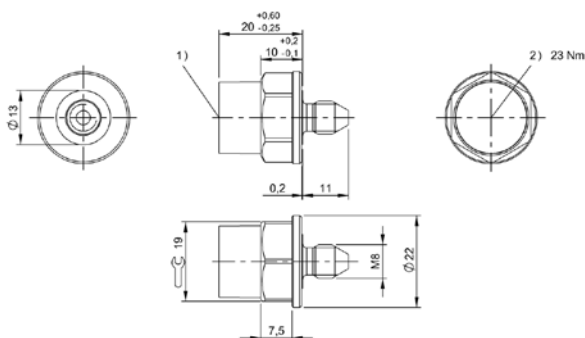
1) Sensing surface, 2) Tightening torque

BISO100



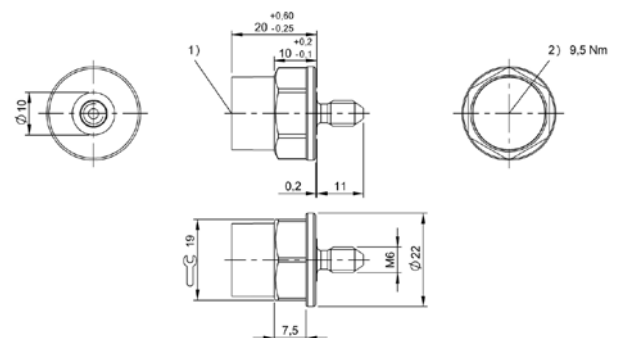
1) Sensing surface, 2) Tightening torque

BISO0NU



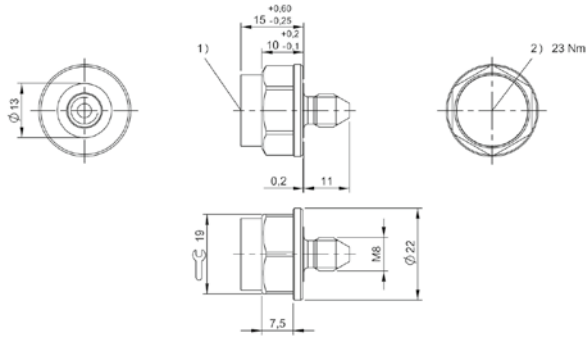
1) Sensing surface, 2) Tightening torque

BISO0M8



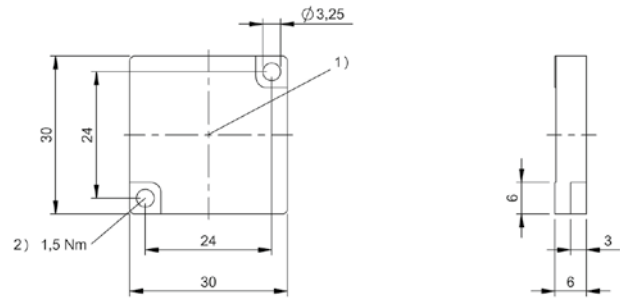
1) Sensing surface, 2) Tightening torque

BISO0M9



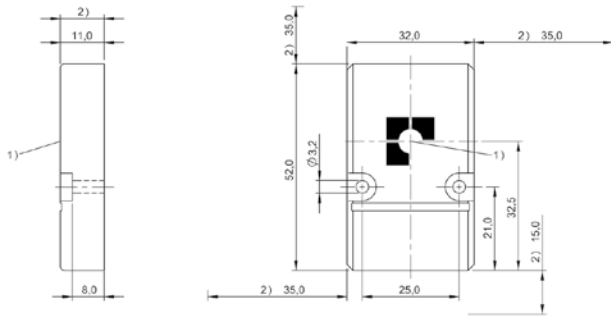
1) Sensing surface, 2) Tightening torque

BISO119



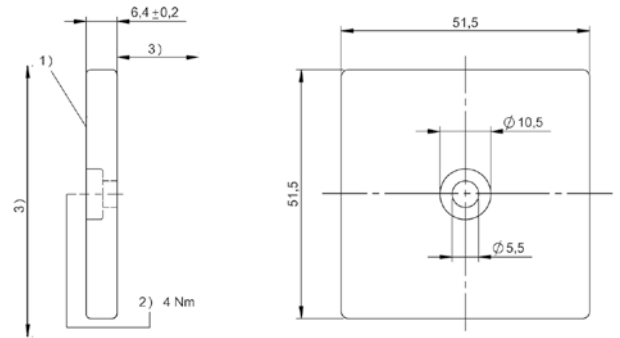
1) Sensing surface, 2) Tightening torque

BIS004E



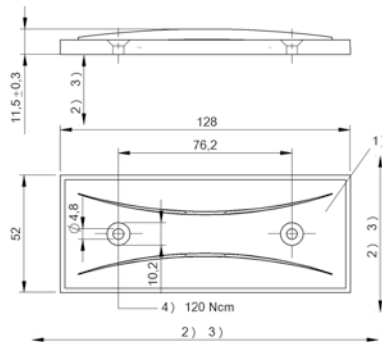
1) Sensing surface, 2) Clear zone

BISO043, BIS011F, BIS0111, BIS011E, BIS011A



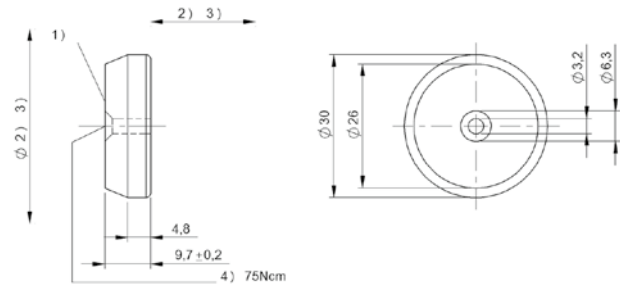
1) Sensing surface, 2) Tightening torque, 3) see R/W head table

BIS00Y5, BIS00Y3, BIS00Y6, BIS00Y4, BIS00Y2



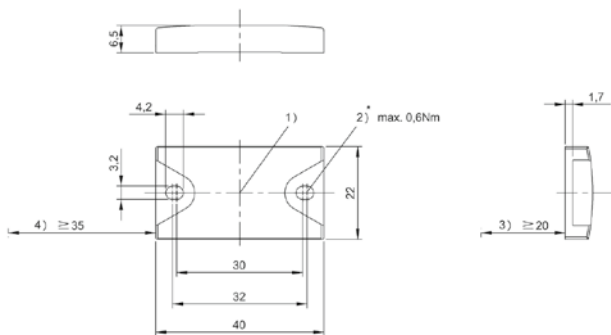
1) Sensing surface, 2) Clear zone, 3) see corresponding R/W head, 4) Tightening torque

BISO0W9, BIS00Y1



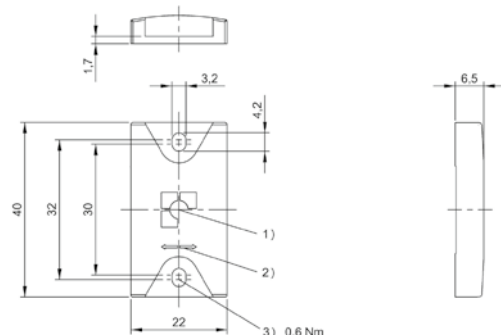
1) Sensing surface, 2) Clear zone, 3) see corresponding R/W head, 4) Tightening torque

BIS00Y9



1) Sensing surface, 2) Tightening torque, 3) Clear zone, 4) Clear zone surrounding

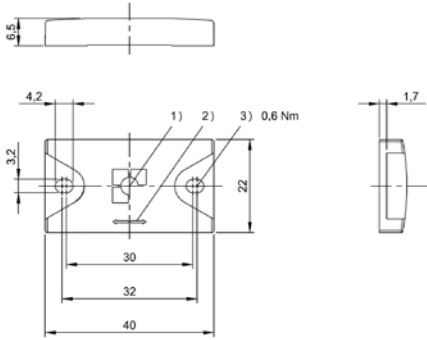
BISO0LC



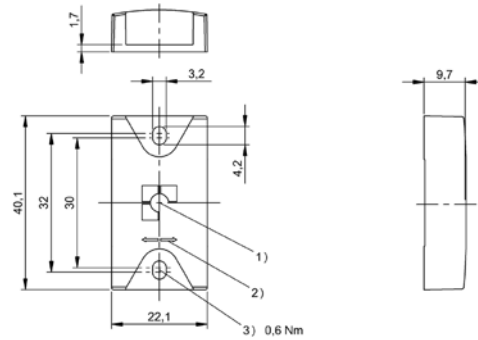
1) Sensing surface, 2) Read/write axis, 3) Tightening torque

BISO04F

110 I RFID | HF (13.56 MHz)

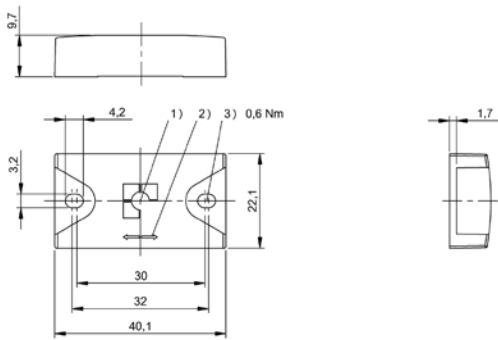


1) Sensing surface, 2) Read/write axis, 3) Tightening torque



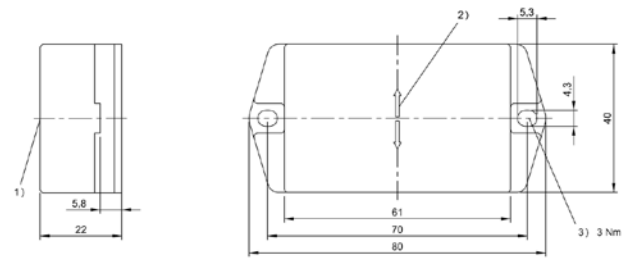
1) Sensing surface, 2) Read/write axis, 3) Tightening torque

BIS004H



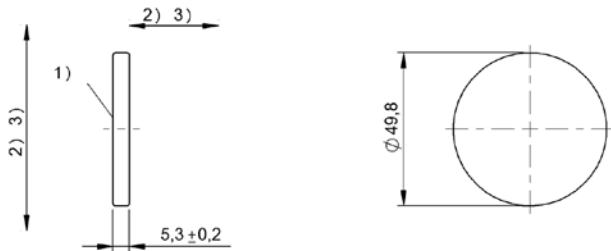
1) Sensing surface, 2) Read/write axis, 3) Tightening torque

BISO11M, BISO11Z, BISO11N



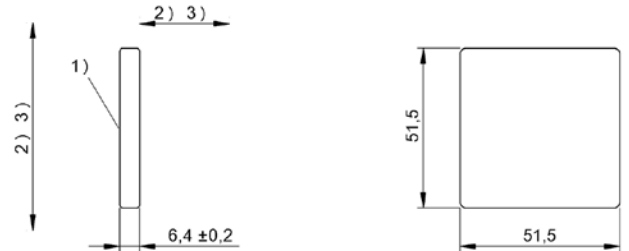
1) Sensing surface, 2) Read/write axis, 3) Tightening torque

BISO12J, BISO112, BISO12K, BISO12L



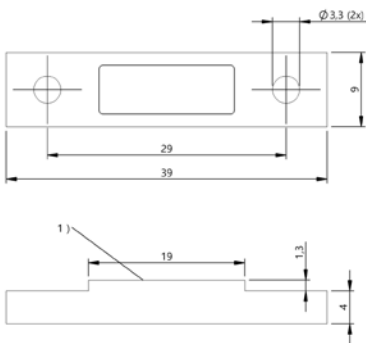
1) Sensing surface, 2) Clear zone, 3) see R/W head table

BISO0P3, BISO11W, BISO11Y, BISO11U



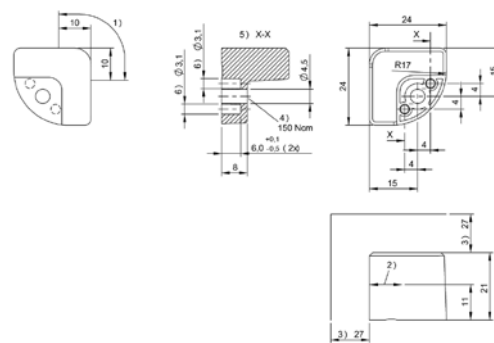
1) Sensing surface, 2) Clear zone, 3) see R/W head table

BIS018P



1) Sensing surface

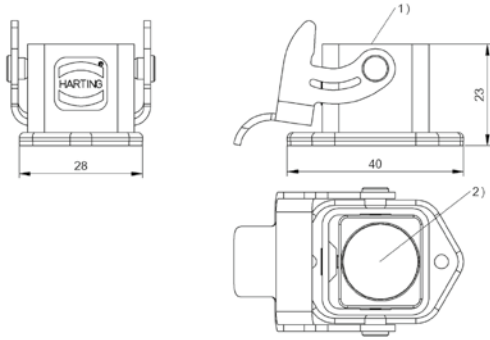
BISO18R, BISO18T



1) Read/write range, 2) Read/write axis, 3) Clear zone, 4) Tightening torque, 5) Cut-out, 6) see remarks

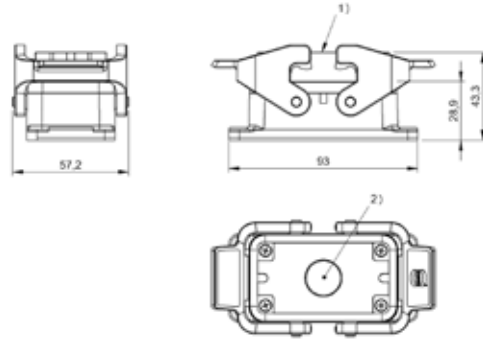
BIS0198

BISO0NZ



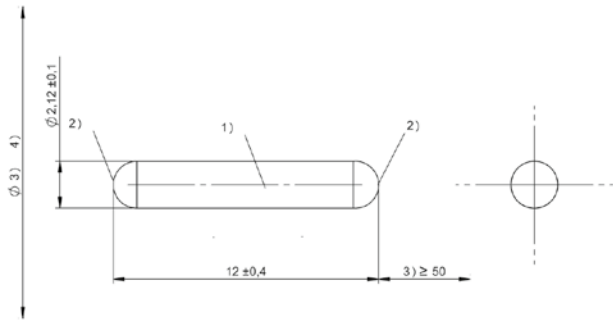
1) Sensing surface, 2) Data carrier

BISO180



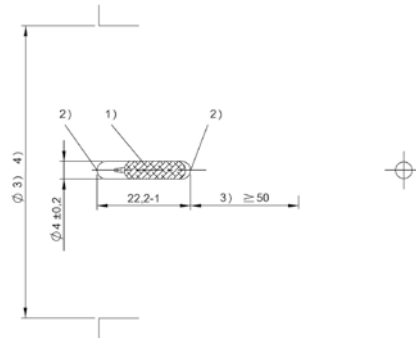
1) Sensing surface, 2) Data carrier

BISO176



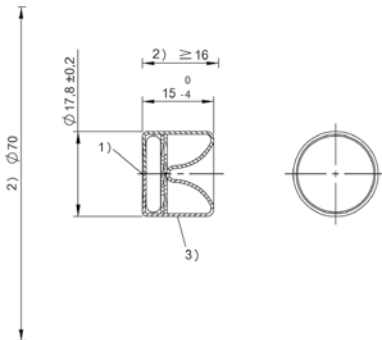
1) Sensing surface parallel, 2) Sensing surface axial, 3) Clear zone, 4) see corresponding R/W head

BISO17F



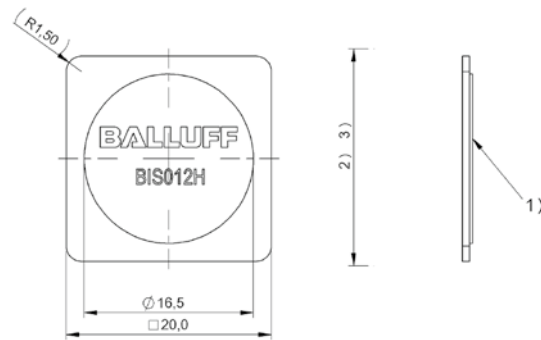
1) Sensing surface parallel, 2) Sensing surface axial, 3) Clear zone, 4) see corresponding R/W head

BISO0M2



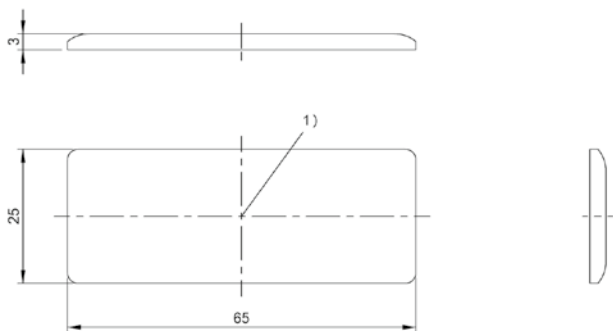
1) Sensing surface, 2) Clear zone, 3) Glass

BISO0L8



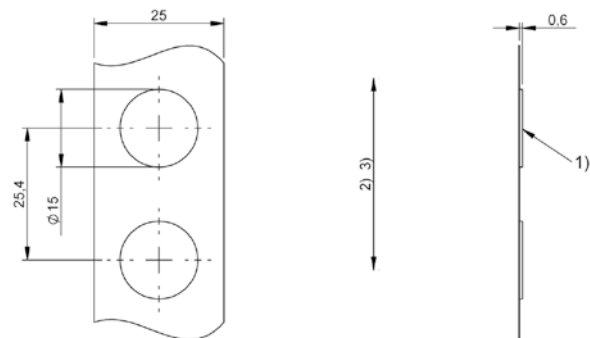
1) Sensing surface, 2) Clear zone, 3) see corresponding R/W head

BISO12H



1) Sensing surface

BISO0KM, BISO0N5



1) Sensing surface, 2) Clear zone, 3) see corresponding R/W head

BISO1CA

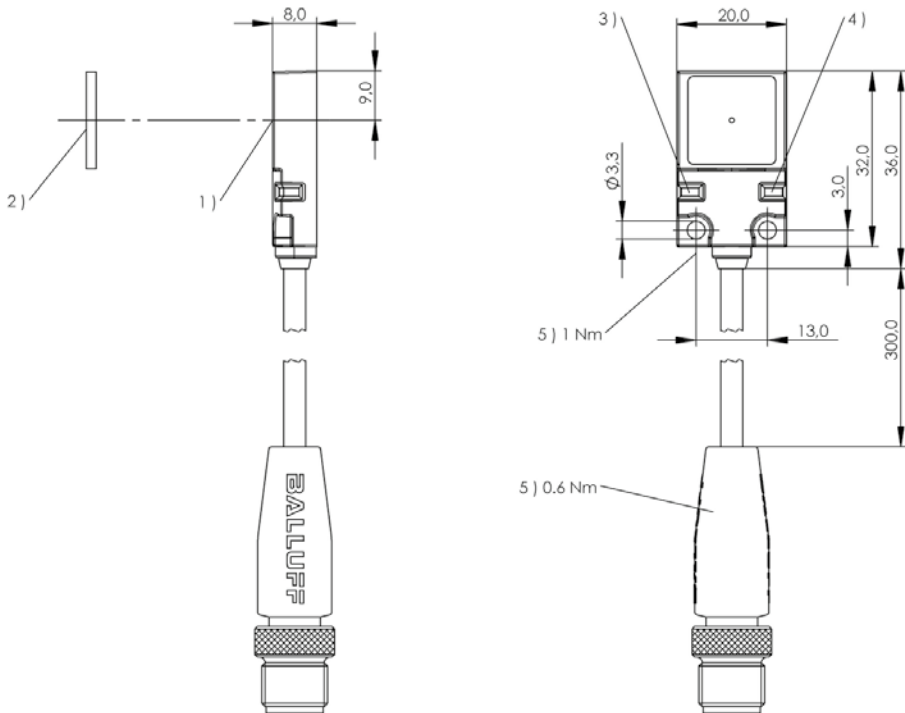


For processor units BIS V-6...	BIS0197 BIS VM-349-401-S4
Product Group	HF (13.56 MHz)
Dimension	20 x 8 x 32 mm
Installation	metal-free (clear zone) on metal flush in metal
Antenna type	round
Supported data carrier types	DIN ISO 15693, DIN ISO 15693 (High Memory)
Connection	Male, 4-pin
Housing material	Zinc, die-cast
Ambient temperature	0...80 °C
Protection degree	IP67
Approval/Conformity	CE, FCC Part 15, IC RSS-210, UL Listed

Appropriate data carrier

	BIS0042			BIS0043			BIS0044		BIS0045		BIS018Y			
Data carrier distance to metal	>20	>0	>0	>20	>0	>0	>25	>0	>25			>20	>0	
Data carrier clear zone	>100	>100	>0	>100	>100	>0	>100	>100	>100			>100	>100	
Working distance for writing	0-10	0-9.5	0-7	0-13	0-9.5	0-7	0-12	0-5	3-13			0-6	0-5.5	
Working distance for reading	0-10	0-9.5	0-7	0-13	0-9.5	0-7	0-12	0-5	3-13			0-6	0-5.5	
Offset at distance														
	0	±5	±5	±5	±9	±8	±7	±7	±5			0	±5	±4
	2	±5	±5	±5	±9	±8	±7	±7	±5			2	±5	±4
	4	±5	±5	±4.5	±9	±8	±6	±7	±4	±9		2.5	±4	±3.5
	5	±4.5	±4	±4	±9	±7	±5	±7	±2	±9		3	±4	±3.5
	6	±4.5	±4	±4	±8	±7	±5	±6		±8		4	±4	±3.5
	7	±4.5	±4	±2	±8	±7	±1.5	±6		±8		5	±4	±2
	8	±4.5	±4		±8	±7		±6		±8		5.5	±2	±2
	9	±2	±2		±8	±4		±6		±8		6	±2	
	9.5	±2	±2		±8	±4		±6		±8		6.5		
	10	±1			±8			±6		±8		7		
	12				±3			±3		±3		8		
	13				±3					±3		9		
	15											9.5		
	20											10		

Dimensions in mm



1) Sensing surface, 2) Data carrier, 3) LED (Power), 4) LED (CP), 5) Tightening torque

BIS00UC			BIS004A			BIS00NU BIS00NW BIS0100		
>20	>0	>0	>20	>0	>0	>0		
>100	>100	>0	>100	>100	>0	>100		
0-6.5	0-4	1.3-2.5	0-8	0-8	0-6	0-10		
0-6.5	0-4	1.3-2.5	0-8	0-8	0-6	0-10		
±4	±4		±5	±4.5	±4	±6		
±4	±4	±2	±5	±4.5	±4	±6		
±3	±3	±0.5	±5	±4.5	±3	±6		
±3	±3		±5	±4.5	±3	±6		
±3	±2		±5	±4.5	±3	±6		
±3			±4	±4	±3	±5		
±2			±4	±4	±2	±5		
±2			±4	±4	±2	±5		
±2			±4	±4		±5		
			±4	±4		±5		
			±2	±2		±5		
						±3		
						±3		
						±3		

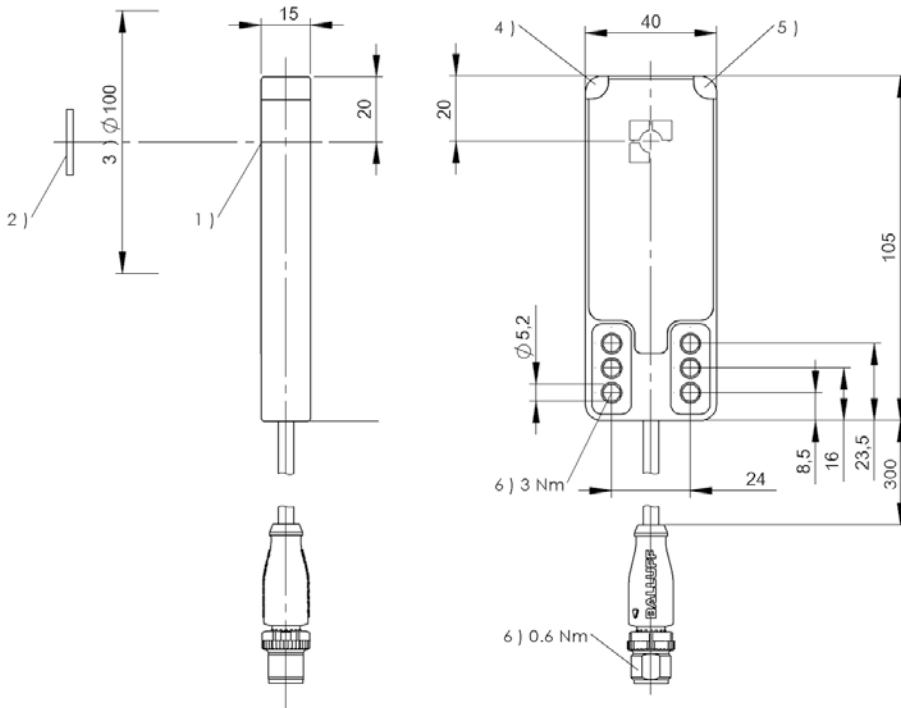


For processor units BIS V-6...	BIS0133 BIS VM-345-401-S4
Product Group	HF (13.56 MHz)
Dimension	40 x 15 x 105 mm
Installation	metal-free (clear zone)
Antenna type	round
Supported data carrier types	DIN ISO 15693, DIN ISO 15693 (High Memory)
Connection	Male, 4-pin
Housing material	Zinc, die-cast
Ambient temperature	0...70 °C
Protection degree	IP67
Approval/Conformity	CE, UL-FILE E227256, Vol.X1, BIS, FCC, IC

Appropriate data carrier

	BIS0043 BIS0111	BIS011F BIS011E BIS011A BIS0139	BIS004A	BIS00YE	BIS00Y4		BIS0044	BIS0045	BIS0046		BIS0119	BIS00NU BIS00NW BIS0100
Data carrier distance to metal	>50	>50	>10 >0	>25	>50		>50 >0	>50	>50		>0	>0
Data carrier clear zone	>200	>200	>60 >60	>100	>200		>200 >200	>200	>200		>100	>100
Working distance for writing	0-28	0-18	0-11 0-9	0-34	0-52		0-22 0-5	0-28	0-45		0-22	0-16
Working distance for reading	0-28	0-18	0-11 0-9	0-34	0-52		0-22 0-5	0-28	0-45		0-22	0-16
Offset at distance												
	0 ±16	±14	±8 ±8	±20	±30		0 ±14 ±7	±16	±26		0 ±13	±10
	4 ±16	±14	±8 ±8	±20	±30		4 ±14 ±6	±16	±26		5 ±13	±10
	8 ±16	±14	±7 ±6	±20	±30		5 ±14 ±3	±16	±26		10 ±13	±9
	9 ±16	±14	±7 ±4	±20	±30		10 ±14	±16	±26		13 ±10	±8
	10 ±16	±14	±7	±20	±30		15 ±12	±14	±26		16 ±10	±4
	11 ±14	±11	±4	±18	±30		18 ±10	±14	±26		18 ±10	
	15 ±14	±11		±18	±30		20 ±10	±14	±26		20 ±10	
	18 ±14	±5		±18	±30		22 ±6	±12	±24		22 ±6	
	22 ±12			±15	±28		24	±12	±24		24	
	25 ±12			±15	±28		28	±9	±24		28	
	28 ±9			±15	±28		30		±24		30	
	32			±8	±28		31		±24		31	
	35				±28		35		±24		35	
	40				±28		40		±24		40	
	42				±24		43		±15		43	
	45				±24		45		±15		45	
	48				±24		48				48	
	50				±24		52				52	
	52				±10		60				60	

Dimensions in mm



1) Sensing surface, 2) Data carrier, 3) Clear zone, 4) LED (Power), 5) LED (CP), 6) Tightening torque

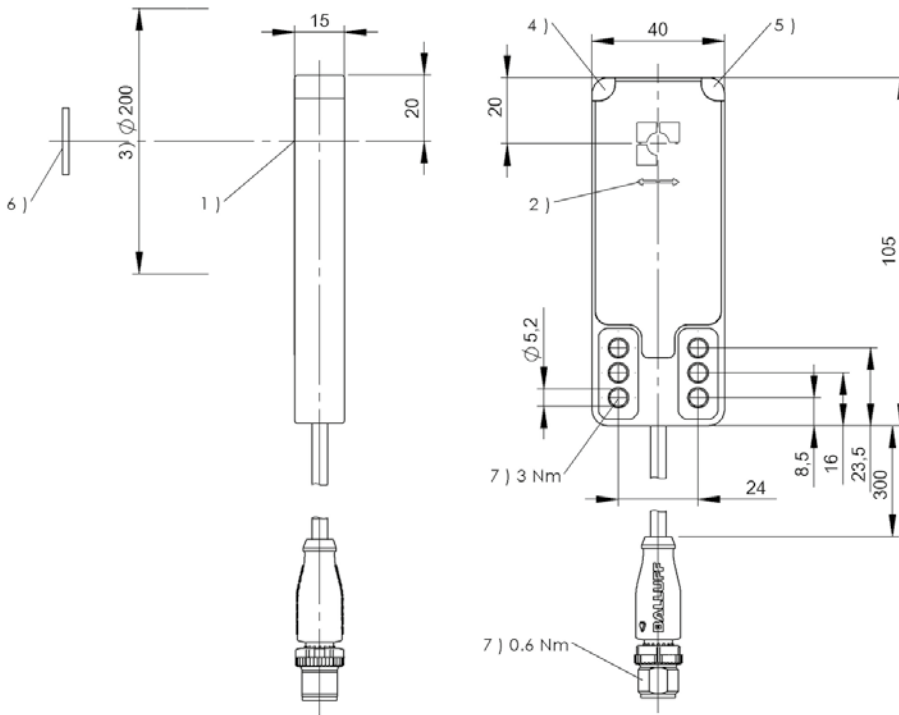


For processor units BIS V-6...	BISO131 BIS VM-355-401-S4
Product Group	HF (13.56 MHz)
Dimension	40 x 15 x 105 mm
Installation	metal-free (clear zone)
Antenna type	Rod
Supported data carrier types	DIN ISO 15693, DIN ISO 15693 (High Memory)
Connection	Male, 4-pin
Housing material	Zinc, die-cast
Ambient temperature	0...70 °C
Protection degree	IP67
Approval/Conformity	CE, UL-FILE E227256, Vol.X1, BIS, FCC, IC

Appropriate data carrier

	BISO04F				BISO04H					BISO0M2		BISO0P3					
Data carrier clear zone A	>200	>200	>200	>200	>200	>200	>200	>200		>200	>200	>240	>240	>240	>240		
Data carrier clear zone B	>200	>200	>200	>200	>200	>200	>200	>200		>200	>200	>480	>480	>480	>480		
Data carrier clear zone C										>50	>50	>50	>50	>0	>0		
Metallic mounting surface 40 x 22 mm	0-45	0-45			0-45	0-45											
Metallic mounting surface > 200 x 200 mm			0-45	0-45			0-45	0-45									
Working distance for writing	0-45	0-45	0-45	0-45	0-45	0-45	0-45	0-45		0-25	0-25	0-60	0-60	0-60	0-60		
Working distance for reading	0-45	0-45	0-45	0-45	0-45	0-45	0-45	0-45		0-25	0-25	0-60	0-60	0-60	0-60		
Offset at distance	X	Y	X	Y	X	Y	X	Y		X	Y	X	Y	X	Y		
	0	±50	±24	±50	±24	±24	±50	±24	±50		0	±32	±16	±80	±36	±80	±36
	5	±50	±24	±50	±24	±24	±50	±24	±50		5	±32	±16	±80	±36	±80	±36
	12	±50	±24	±50	±24	±24	±50	±24	±50		10	±32	±16	±80	±36	±80	±36
	15	±50	±24	±50	±24	±24	±50	±24	±50		13	±30	±14	±80	±36	±80	±36
	18	±50	±24	±50	±24	±24	±50	±24	±50		15	±30	±14	±80	±36	±80	±36
	20	±50	±24	±50	±24	±24	±50	±24	±50		20	±30	±14	±80	±36	±80	±36
	22	±40	±20	±40	±20	±20	±40	±20	±40		25	±15	±8	±75	±30	±75	±30
	25	±40	±20	±40	±20	±20	±40	±20	±40		30			±75	±30	±75	±30
	30	±40	±20	±40	±20	±20	±40	±20	±40		36			±75	±30	±75	±30
	32	±40	±20	±40	±20	±20	±40	±20	±40		40			±75	±30	±75	±30
	35	±40	±20	±40	±20	±20	±40	±20	±40		42			±75	±30	±75	±30
	40	±38	±18	±38	±18	±18	±38	±18	±38		50			±75	±30	±75	±30
	45	±20	±10	±20	±10	±10	±20	±10	±20		52			±55	±25	±55	±25
	50										60			±20	±10	±20	±10
	52										75						
	60										83						
	65										100						

Dimensions in mm



1) Sensing surface, 2) Read/write axis, 3) Clear zone, 4) LED (Power), 5) LED (CP), 6) Data carrier, 7) Tightening torque

BIS011W BIS011Y BIS011U				BIS017F				BIS011M BIS011Z BIS011N				BIS012J BIS012K BIS012L				BIS0112				BIS00NZ		
>240	>240	>200	>200	>200	>200	>200	>200	>200	>200	>200	>200	>200	>200	>200	>200	>200	>200	>200	>200	>27	>27	
>480	>480	>200	>200	>200	>200	>200	>200	>200	>200	>200	>200	>200	>200	>200	>200	>200	>200	>200	>200	>27	>27	
>50	>50	>50	>50																			
0-36	0-36	0-15	0-15	0-34	0-34	0-34	0-34	0-30	0-30	0-30	0-30	0-45	0-45	0-45	0-45	0-25	0-25					
0-36	0-36	0-15	0-15	0-34	0-34	0-34	0-34	0-30	0-30	0-30	0-30	0-45	0-45	0-45	0-45	0-25	0-25					
X	Y	X	Y	X	Y	X	Y	X	Y	X	Y	X	Y	X	Y	X	Y					
±50	±26	±20	±11	0	±38	±18	±40	±18	±20	±40	±20	±40	0	±24	±55	±20	±48	0	±30	±20		
±50	±26	±20	±11	5	±38	±18	±40	±18	±20	±40	±20	±40	5	±24	±55	±20	±48	5	±30	±20		
±50	±26	±17	±9	10	±38	±18	±40	±18	±20	±40	±20	±40	10	±24	±55	±20	±48	10	±30	±20		
±50	±26	±14	±7	15	±38	±18	±40	±18	±17	±38	±17	±38	15	±24	±55	±20	±48	15	±25	±15		
±50	±26	±8	±3	18	±35	±15	±40	±18	±17	±38	±17	±38	20	±24	±55	±20	±48	20	±15	±10		
±50	±26			20	±35	±15	±40	±18	±17	±38	±17	±38	25	±20	±50	±16	±38	25	±5	±5		
±40	±20			22	±35	±15	±35	±16	±15	±30	±15	±30	30	±20	±50	±16	±38	27				
±35	±17			25	±35	±15	±35	±16	±7	±16	±7	±16	35	±20	±50	±16	±38	35				
±20	±10			30	±27	±12	±35	±16	±7	±16	±7	±16	40	±18	±40	±16	±38	40				
				34	±15	±8	±15	±8					45	±10	±20	±10	±20	42				
				36									50					50				
				39									54					57				
				42									56					60				
				50									60					65				
				52									70					70				
				60									75					75				
				65									80									

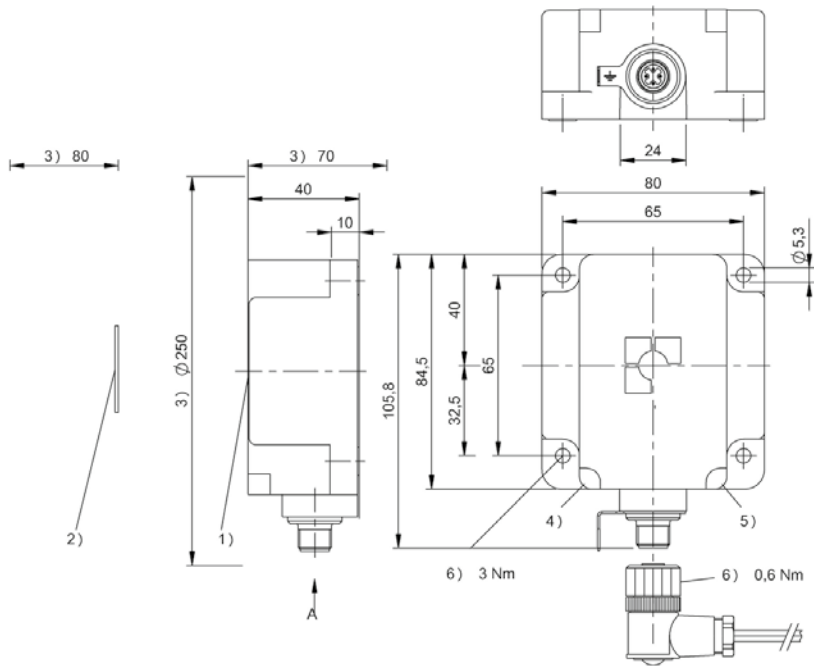


For processor units BIS V-6...	BIS00T0 BIS VM-301-001-S4
Product Group	HF (13.56 MHz)
Dimension	80 x 40 x 84.5 mm
Installation	metal-free (clear zone)
Antenna type	round
Supported data carrier types	DIN ISO 14443, DIN ISO 15693
Connection	Male, 4-pin
Housing material	PBT
Ambient temperature	0...70 °C
Protection degree	IP67
Approval/Conformity	CE, UL-FILE E227256, Vol.X1, BIS

Appropriate data carrier

	BIS003Y			BIS003Z			BIS0043		BIS0044		BIS0045		BIS0046		BIS0047		BIS00L8		BIS0111	
Data carrier distance to metal	>50	>10	>5	>50	>25	>10	>50	>20	>50	>30	>50	>30	>50	>30	>80	>1	0	>50		
Data carrier clear zone	>200	>60	>50	>200	>150	>150	>200	>60	>200	>100	>200	>100	>200	>100	>250	>70	>70	>200		
Working distance for writing	0-34	0-20	0-15	0-45	0-43	0-35	0-45	8-22	0-32	0-20	0-45	0-30	0-70	0-45	0-50	0-32	0-32	0-50		
Working distance for reading	0-34	0-20	0-15	0-45	0-43	0-35	0-45	8-22	0-32	0-20	0-45	0-30	0-70	0-45	0-50	0-32	0-32	0-50		
Offset at distance																				
0	±22	±18	±14	±30	±24	±18	±32	±20	±28	±20	±32	±22	±40	±25	±30	±30	±25	±30		
5	±22	±18	±14	±30	±24	±18	±32	±20	±28	±20	±32	±22	±40	±25	±30	±30	±25	±30		
9	±22	±18	±14	±30	±24	±18	±32	±20	±28	±18	±32	±22	±40	±25	±30	±30	±25	±30		
12	±22	±18	±10	±30	±24	±18	±32	±18	±24	±18	±32	±22	±40	±25	±30	±25	±25	±30		
15	±22	±18	±10	±30	±24	±18	±32	±18	±24	±15	±32	±20	±40	±25	±30	±25	±25	±30		
16	±22	±16	±8	±30	±24	±18	±32	±18	±24	±15	±32	±20	±40	±25	±30	±25	±25	±30		
18	±22	±16	±6	±30	±24	±18	±32	±16	±24	±12	±32	±18	±40	±25	±30	±25	±22	±30		
20	±22	±16	±4	±30	±24	±18	±32	±16	±24	±8	±32	±16	±40	±25	±30	±25	±22	±30		
22	±20	±10		±30	±24	±15	±25	±14	±20		±25	±14	±40	±22	±30	±25	±22	±25		
25	±15	±10		±30	±24	±15	±25		±20		±25	±12	±40	±22	±30	±25	±22	±25		
30	±15	±4		±30	±20	±12	±25		±12		±25	±10	±40	±22	±28	±20	±17	±25		
32	±8			±30	±18	±8	±20		±12		±20		±40	±22	±24	±20	±17	±25		
35	±4			±30	±16	±4	±20				±20		±40	±20	±22			±25		
40				±24	±10		±20				±20		±40	±20	±18			±25		
43				±20	±4		±12				±12		±35	±15	±14			±25		
45				±16			±12				±12		±35	±12	±12			±25		
50				±4									±35		±4			±5		
52													±35							
60													±30							
65													±30							
70													±20							

Dimensions in mm



1) Sensing surface, 2) Data carrier, 3) Clear zone, 4) LED (Power), 5) LED (CP), 6) Tightening torque

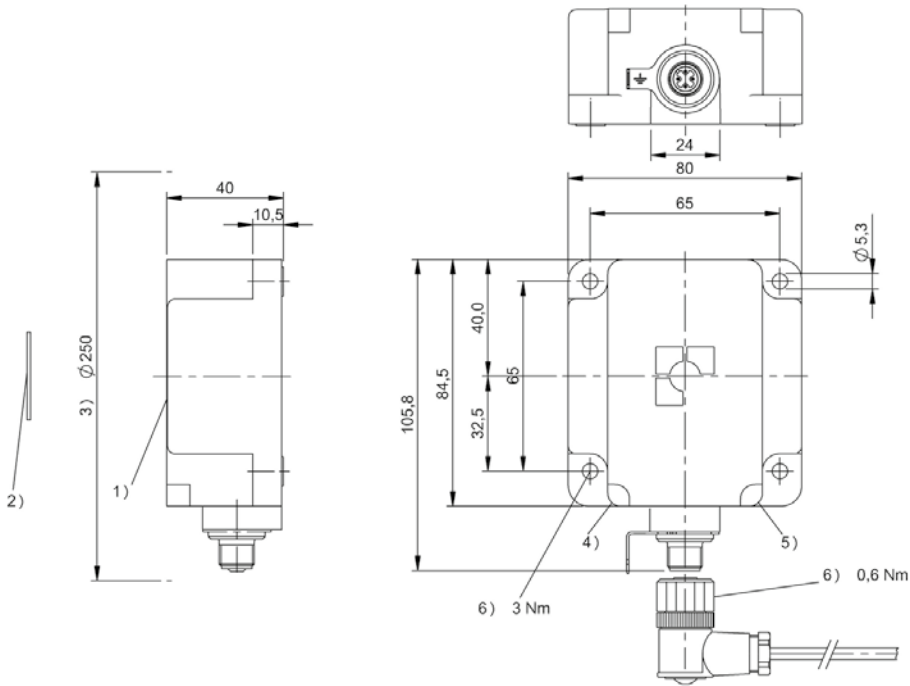


For processor units BIS V-6...	BIS0130 BIS VM-341-401-S4
Product Group	HF (13.56 MHz)
Dimension	80 x 40 x 84.5 mm
Installation	metal-free (clear zone)
Antenna type	round
Supported data carrier types	DIN ISO 15693, DIN ISO 15693 (High Memory)
Connection	Male, 4-pin
Housing material	PBT
Ambient temperature	0...70 °C
Protection degree	IP67
Approval/Conformity	CE, UL-FILE E227256, Vol.X1, BIS

Appropriate data carrier

	BIS0043			BIS011F BIS011E BIS011A BIS0139			BIS0046	BIS00Y4		BIS0119	
Data carrier distance to metal	>50	>0	>0	>50	>0	>0	>50	>50		>0	
Data carrier clear zone	>200	>200	>0	>200	>200	>0	>200	>200		>100	
Working distance for writing	0-64	0-36	14-20	0-42	0-30	11-20	0-100	0-120		0-40	
Working distance for reading	0-64	0-36	14-20	0-42	0-30	11-20	0-100	0-120		0-40	
Offset at distance											
	0	±40	±25		±30	±24		±50		0	±30
	8	±40	±25		±30	±24		±50		5	±30
	11	±40	±25		±30	±24	±25	±50		10	±30
	14	±40	±25	±20	±30	±24	±25	±50		12	±25
	16	±40	±25	±20	±30	±24	±9	±50		15	±25
	18	±40	±25	±10	±30	±24	±9	±50		16	±25
	20	±40	±25	±10	±30	±24	±9	±50		18	±25
	25	±36	±22		±25	±20		±50		20	±25
	30	±36	±22		±25	±10		±50		22	±25
	36	±36	±10		±25			±50		25	±25
	40	±36			±25			±50		30	±25
	42	±30			±5			±50		32	±20
	50	±30						±50		36	±20
	60	±30						±45		40	±15
	64	±15						±45		43	
	80							±45		45	
	90							±45		50	
	100							±20		52	
	110									60	
	120									65	

Dimensions in mm



1) Sensing surface, 2) Data carrier, 3) Clear zone, 4) LED (Power), 5) LED (CP), 6) Tightening torque

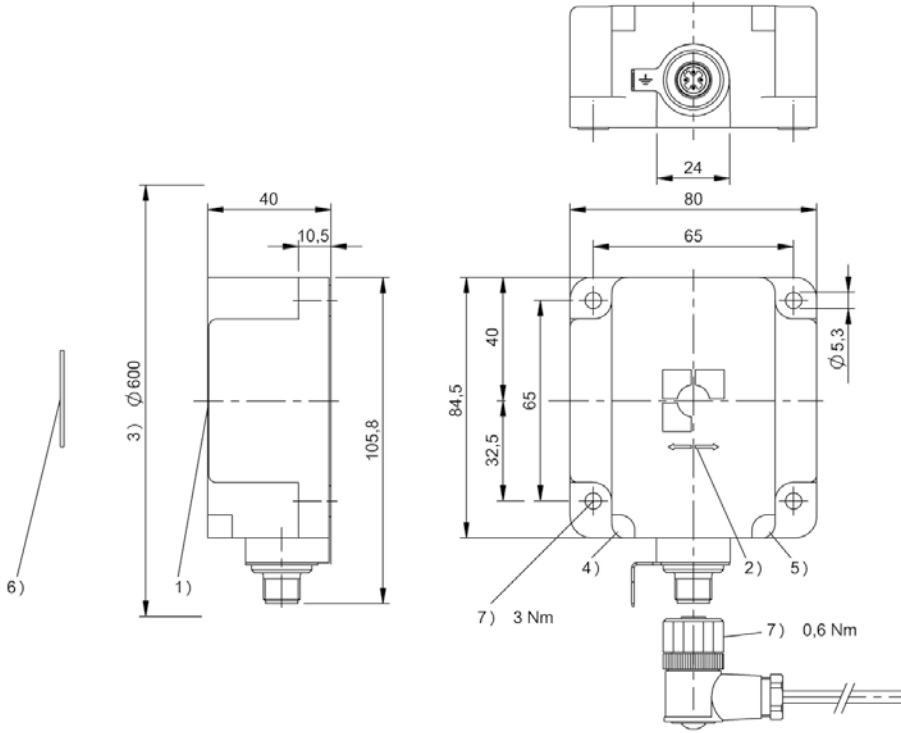


For processor units BIS V-6...	BIS012Z BIS VM-351-401-S4
Product Group	HF (13.56 MHz)
Dimension	80 x 40 x 84.5 mm
Installation	metal-free (clear zone)
Antenna type	Rod
Supported data carrier types	DIN ISO 15693, DIN ISO 15693 (High Memory)
Connection	Male, 4-pin
Housing material	PBT
Ambient temperature	0...70 °C
Protection degree	IP67
Approval/Conformity	CE, UL-FILE E227256, Vol.X1, BIS

Appropriate data carrier

	BIS004F				BIS004H					BIS00M2		BIS00P3				
Data carrier clear zone A	>200	>200	>200	>200	>200	>200	>200	>200		>200	>200	>240	>240	>240	>240	
Data carrier clear zone B	>200	>200	>200	>200	>200	>200	>200	>200		>200	>200	>480	>480	>480	>480	
Data carrier clear zone C										>50	>50	>50	>50	>0	>0	
Metallic mounting surface 40 x 22 mm	0-52	0-52			0-52	0-52										
Metallic mounting surface > 200 x 200 mm			0-52	0-52			0-52	0-52								
Working distance for writing	0-52	0-52	0-52	0-52	0-52	0-52	0-52	0-52		0-36	0-36	0-100	0-100	0-100	0-100	
Working distance for reading	0-52	0-52	0-52	0-52	0-52	0-52	0-52	0-52		0-36	0-36	0-100	0-100	0-100	0-100	
Offset at distance	X	Y	X	Y	X	Y	X	Y		X	Y	X	Y	X	Y	
	0	±60	±25	±60	±25	±25	±60	±25	±60	0	±45	±23	±110	±50	±120	±50
	5	±60	±25	±60	±25	±25	±60	±25	±60	5	±45	±23	±110	±50	±120	±50
	12	±60	±25	±60	±25	±25	±60	±25	±60	10	±45	±23	±110	±50	±120	±50
	15	±60	±25	±60	±25	±25	±60	±25	±60	15	±45	±23	±110	±50	±120	±50
	18	±60	±25	±60	±25	±25	±60	±25	±60	20	±40	±20	±110	±50	±120	±50
	20	±60	±25	±60	±25	±25	±60	±25	±60	25	±40	±20	±100	±50	±100	±50
	22	±60	±25	±60	±25	±25	±60	±25	±60	30	±36	±18	±100	±50	±100	±50
	25	±60	±25	±60	±25	±25	±60	±25	±60	36	±20	±10	±100	±50	±100	±50
	30	±60	±25	±60	±25	±25	±60	±25	±60	40			±100	±50	±100	±50
	32	±50	±25	±50	±25	±25	±50	±25	±50	45			±100	±50	±100	±50
	35	±50	±25	±50	±25	±25	±50	±25	±50	50			±100	±50	±100	±50
	40	±50	±20	±50	±20	±20	±50	±20	±50	60			±80	±35	±80	±35
	45	±25	±20	±25	±20	±20	±25	±20	±25	70			±80	±35	±80	±35
	50	±25	±20	±25	±20	±20	±25	±20	±25	80			±80	±35	±80	±35
	52	±25	±8	±25	±8	±8	±25	±8	±25	90			±80	±35	±80	±35
	60									100			±35	±15	±80	±35
	65									110					±25	±15

Dimensions in mm



1) Sensing surface, 2) Read/write axis, 3) Clear zone, 4) LED (Power), 5) LED (CP), 6) Data carrier, 7) Tightening torque

BIS011W BIS011Y BIS011U				BIS017F				BIS011M BIS011Z BIS011N				BIS012J BIS012K BIS012L				BIS0112				BIS00NZ			
>240	>240	>200	>200	>200	>200	>200	>200	>200	>200	>200	>200	>200	>200	>200	>200	>200	>200	>200	>200	>27	>27	>27	>27
>480	>480	>200	>200	>200	>200	>200	>200	>200	>200	>200	>200	>200	>200	>200	>200	>200	>200	>200	>200	>27	>27	>27	>27
>50	>50	>50	>50																				
0-60	0-60	0-25	0-25	0-40	0-40	0-50	0-50	0-42	0-42	0-42	0-42	0-70	0-70	0-54	0-54	0-57	0-57	0-27	0-27				
0-60	0-60	0-25	0-25	0-40	0-40	0-50	0-50	0-42	0-42	0-42	0-42	0-70	0-70	0-54	0-54	0-57	0-57	0-27	0-27				
X	Y	X	Y	X	Y	X	Y	X	Y	X	Y	X	Y	X	Y	X	Y	X	Y				
±70	±30	±35	±21	0	±50	±24	±55 ±28	±25	±50	±25	±50	0	±34	±80	±30 ±60	0	±70	±35	±40 ±20				
±70	±30	±35	±21	5	±50	±24	±55 ±28	±25	±50	±25	±50	5	±34	±80	±30 ±60	5	±70	±35	±40 ±20				
±70	±30	±35	±21	12	±50	±24	±55 ±28	±25	±50	±25	±50	10	±34	±80	±30 ±60	10	±70	±35	±40 ±20				
±70	±30	±33	±19	15	±50	±24	±55 ±28	±25	±45	±25	±45	15	±34	±80	±30 ±60	15	±70	±35	±30 ±18				
±70	±30	±23	±13	18	±50	±24	±55 ±28	±22	±45	±22	±45	20	±34	±80	±30 ±60	20	±70	±35	±30 ±18				
±60	±30	±7	±5	20	±50	±24	±55 ±28	±22	±45	±22	±45	25	±30	±75	±25 ±52	25	±60	±30	±25 ±15				
±60	±30			22	±40	±22	±50 ±25	±22	±45	±22	±45	30	±30	±75	±25 ±52	27	±60	±30	±5				
±60	±30			25	±40	±22	±50 ±25	±22	±45	±22	±45	35	±30	±75	±25 ±52	35	±60	±30					
±60	±30			30	±40	±22	±50 ±25	±19	±36	±19	±36	40	±30	±75	±25 ±52	40	±60	±30					
±50	±25			32	±40	±22	±40 ±20	±19	±36	±19	±36	45	±27	±65	±20 ±45	45	±50	±25					
±50	±25			35	±40	±22	±40 ±20	±19	±36	±19	±36	50	±27	±65	±20 ±45	50	±50	±25					
±15	±10			40	±20	±10	±40 ±20	±10	±18	±10	±18	54	±27	±65	±12 ±22	57	±30	±15					
				42			±40 ±20	±10	±18	±10	±18	60	±27	±65		60							
				50			±20 ±10					65	±20	±40		65							
				52								70	±20	±40		70							
				60								75				75							
				65								80											

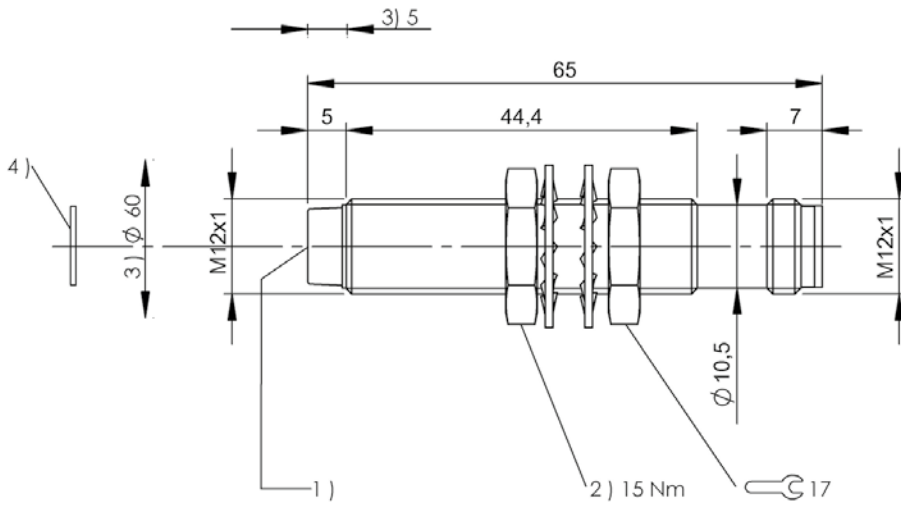


For processor units BIS V-6...	BIS013H BIS VM-348-401-S4
Product Group	HF (13.56 MHz)
Dimension	Ø 12 x 65 mm
Installation	metal-free (clear zone)
Antenna type	round
Supported data carrier types	DIN ISO 15693, DIN ISO 15693 (High Memory)
Connection	Male, 4-pin
Housing material	Brass, nuts nickel plated brass
Ambient temperature	0...70 °C
Protection degree	IP67
Approval/Conformity	CE, FCC Part 15, IC RSS-210, UL-FILE E227256, Vol.X1, BIS

Appropriate data carrier

	BIS0042		BIS004A		BIS0044		BIS00UC		
Data carrier distance to metal	>50	>0	>50	>0	>50		>50	>0	>0
Data carrier clear zone	>200	>0	>200	>0	>200		>200	>200	>0
Working distance for writing	0-7	0-5	0-7	0-5	0-12		0-5	0-3	0-2
Working distance for reading	0-7	0-5	0-7	0-5	0-12		0-5	0-3	0-2
Offset at distance									
	0	±5	±3	±4.5	±3	±7	±4	±2.5	±2
	1	±5	±3	±4.5	±3	±7	±4	±2.5	±1
	2	±5	±3	±4.5	±3	±7	±4	±2	
	3	±4.5	±2.5	±4	±2.5	±7	±3	±1	
	4	±4.5	±2.5	±4	±2.5	±7	±3		
	5	±4.5	±1	±4	±1	±6	±1.5		
	6	±4.5		±4		±6			
	7	±2.5		±2		±6			
	8					±6			
	10					±3			
	12					±3			
	18								

Dimensions in mm



1) Sensing surface, 2) Tightening torque, 3) Clear zone, 4) Data carrier

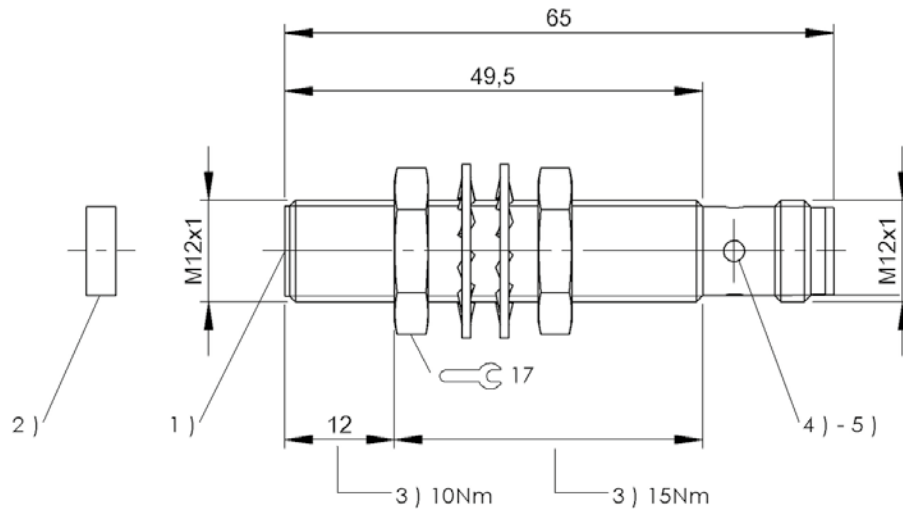


For processor units BIS V-6...	BISO15M BIS VM-330-401-S4
Product Group	HF (13.56 MHz)
Dimension	Ø 12 x 65 mm
Installation	metal-free (clear zone) on metal flush in metal
Antenna type	round
Supported data carrier types	DIN ISO 15693, DIN ISO 15693 (High Memory)
Connection	Male, 4-pin
Housing material	Brass, nuts brass with white bronze
Ambient temperature	0...70 °C
Protection degree	IP67
Approval/Conformity	CE, FCC Part 15, IC RSS-210, UL-FILE E227256, Vol.X1, BIS

Appropriate data carrier

	BIS0042			BIS00UC			BIS004A			BIS00YL			BIS00YK			BIS00NU BIS00NW BIS0100	
Data carrier distance to metal	>20	>0	>0	>20	>0	>0	>20	>0	>0	>20	>0	>0	>20	>0	>0	>0	
Data carrier clear zone	>100	>100	>0	>100	>100	>0	>100	>100	>0	>100	>100	>0	>100	>100	>0	>100	
Working distance for writing	0-6.5	0-6	0-5	0-4.5	0-3	0-2	0-5.5	0-5	0-3.5	0-6	0-5.5	0-2	0-4.5	0-4	0-2	0-7	
Working distance for reading	0-6.5	0-6	0-5	0-4.5	0-3	0-2	0-5.5	0-5	0-3.5	0-6	0-5.5	0-2	0-4.5	0-4	0-2	0-7	
Offset at distance																	
	0	±4	±3.5	±3.5	±2.5	±2.5	±2	±3	±3	±2.5	±3.5	±3.5	±2	±3.5	±3	±2	0 ±4.5
	1	±4	±3.5	±3.5	±2.5	±2.5	±2	±3	±3	±2.5	±3.5	±3.5	±2	±3.5	±3	±2	2 ±4.5
	2	±4	±3.5	±3.5	±2.5	±2	±1	±3	±3	±2.5	±3.5	±3.5	±1	±3.5	±3	±1	3 ±4
	3	±3	±3	±2.5	±2	±1		±2	±2	±2	±3	±3		±3	±2		4 ±4
	3.5	±3	±3	±2.5	±2			±2	±2	±1	±3	±3		±2	±1		5 ±4
	4	±3	±3	±2.5	±2			±2	±2		±3	±3		±2	±1		7 ±1.5
	4.5	±3	±3	±1.5	±1			±1	±1		±2	±2		±2			9
	5	±3	±3	±1.5				±1	±1		±2	±2					10
	5.5	±2	±2					±1			±2	±2					15
	6	±2	±2								±2						20
	6.5	±2															25

Dimensions in mm



1) Sensing surface, 2) Data carrier, 3) Tightening torque, 4) LED (CP), 5) LED (Power)

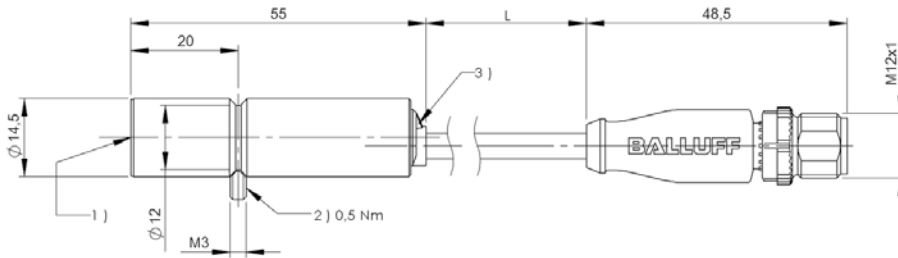


For processor units BIS V-6...	BIS013Z BIS VM-343-401-S4
Product Group	HF (13.56 MHz)
Dimension	Ø 14.5 x 55 mm
Installation	metal-free (clear zone) on metal flush in metal
Antenna type	round
Supported data carrier types	DIN ISO 15693, DIN ISO 15693 (High Memory)
Connection	Male, 4-pole, 0.30 m, PU
Housing material	Brass
Ambient temperature	0...70 °C
Protection degree	IP67
Approval/Conformity	CE, UL-FILE E227256, Vol.X1, BIS, FCC, IC

Appropriate data carrier

	BIS0042			BIS00UC BIS00UE		BIS004A			BIS00YL			BIS00YK			
Data carrier distance to metal	>50	>0	>0	>50		>50	>0	>0	>50	>0	>0	>50	>0	>0	
Data carrier clear zone	>200	>200	>0	>200		>200	>200	>0	>200	>200	>0	>200	>200	>0	
Working distance for writing	0-5.5	0-5	0-4	0-3.5		0-5	0-4.5	0-3.5	0-6.5	0-6	0-3	0-5	0-5	0-2.5	
Working distance for reading	0-5.5	0-5	0-4	0-3.5		0-5	0-4.5	0-3.5	0-6.5	0-6	0-3	0-5	0-5	0-2.5	
Offset at distance															
	0	±3.5	±3	±2.5	±3		±3.5	±3	±2.5	±4	±3.5	±3	±3	±3	±2.5
	1	±3.5	±3	±2.5	±3		±3.5	±3	±2.5	±4	±3.5	±3	±3	±3	±2.5
	2	±3.5	±3	±2.5	±3		±3.5	±3	±2.5	±4	±3.5	±2	±3	±3	±2
	2.5	±3	±2.5	±2	±2		±3	±2.5	±2	±3	±3	±1	±2.5	±2.5	±1
	3	±3	±2.5	±2	±2		±3	±2.5	±1	±3	±3	±1	±2.5	±2.5	
	3.5	±3	±2.5	±1	±1		±3	±2.5	±1	±3	±3		±2.5	±2.5	
	4	±3	±2.5	±1			±3	±1.5		±3	±3		±2	±2	
	4.5	±2	±1.5				±2	±1.5		±3	±3		±1	±1	
	5	±2	±1.5				±2			±3	±3		±1	±1	
	5.5	±2								±2	±2				
	6									±2	±2				
	6.5									±2					

Dimensions in mm



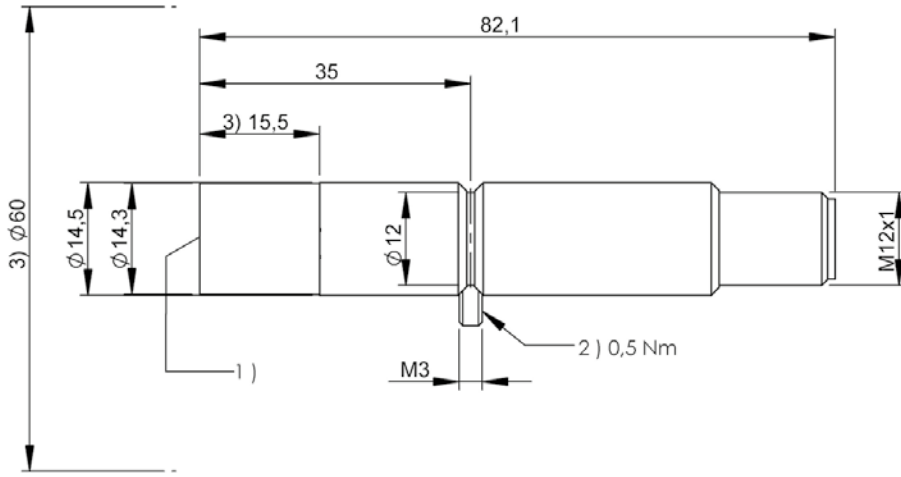
1) Sensing surface, 2) Tightening torque, 3) Function indicator

	BIS00LC	BIS0119	BIS00NU BIS00NW BIS0100
	>25	>0	>0
	>100	>100	>100
	0-7	0-7.5	0-7.5
	0-7	0-7.5	0-7.5
	0 ±4	±5	±5
	2 ±4	±5	±5
	4 ±3.5	±5	±4.5
	5 ±3.5	±4	±4
	6 ±2	±4	±4
	7 ±2	±2.5	±2
	7.5	±2.5	±2
	10		
	14		
	16		
	18		
	20		



For processor units BIS V-6...	BIS019U BIS VM-343-501/05-S115
Product Group	HF (13.56 MHz)
Dimension	Ø 14.5 x 82.1 mm
Installation	metal-free (clear zone)
Antenna type	round
Supported data carrier types	DIN ISO 15693, DIN ISO 15693 (High Memory), LF 70/455 kHz
Connection	Male, 8-pin
Housing material	Brass
Ambient temperature	0...70 °C
Protection degree	IP67
Approval/Conformity	CE, UL-FILE E227256, Vol.X1, BIS

Appropriate data carriers on request

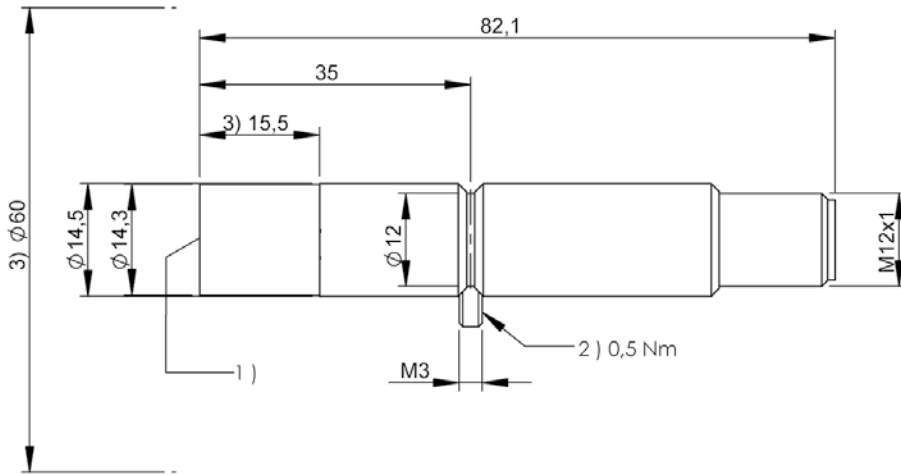


1) Sensing surface, 2) Tightening torque



For processor units BIS V-6...	BIS019W BIS VM-343-501/10-S115
Product Group	HF (13.56 MHz)
Dimension	Ø 14.5 x 82.1 mm
Installation	metal-free (clear zone)
Antenna type	round
Supported data carrier types	DIN ISO 15693, DIN ISO 15693 (High Memory), LF 70/455 kHz
Connection	Male, 8-pin
Housing material	Brass
Ambient temperature	0...70 °C
Protection degree	IP67
Approval/Conformity	CE, UL-FILE E227256, Vol.X1, BIS

Appropriate data carriers on request



1) Sensing surface, 2) Tightening torque

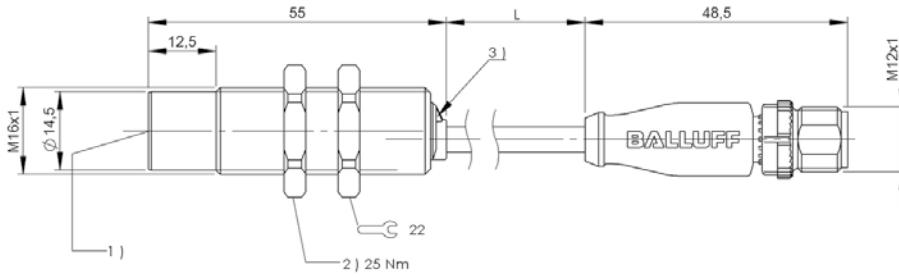


For processor units BIS V-6...	BISO140 BIS VM-346-401-S4
Product Group	HF (13.56 MHz)
Dimension	Ø 16 x 55 mm
Installation	metal-free (clear zone) on metal flush in metal
Antenna type	round
Supported data carrier types	DIN ISO 15693, DIN ISO 15693 (High Memory)
Connection	0.30 m, PU
Housing material	Brass
Ambient temperature	0...70 °C
Protection degree	IP67
Approval/Conformity	CE, UL-FILE E227256, Vol.X1, BIS, FCC, IC

Appropriate data carrier

	BISO042			BISO0UC BISO0UE		BISO04A			BISO0YL			BISO0YK		
Data carrier distance to metal	>50	>0	>0	>50		>50	>0	>0	>50	>0	>0	>50	>0	>0
Data carrier clear zone	>200	>200	>0	>200		>200	>200	>0	>200	>200	>0	>200	>200	>0
Working distance for writing	0-5.5	0-5	0-4	0-3.5		0-5	0-4.5	0-3.5	0-6.5	0-6	0-3	0-5	0-5	0-2.5
Working distance for reading	0-5.5	0-5	0-4	0-3.5		0-5	0-4.5	0-3.5	0-6.5	0-6	0-3	0-5	0-5	0-2.5
Offset at distance														
	0	±3.5	±3	±2.5	±3	±3.5	±3	±2.5	±4	±3.5	±3	±3	±3	±2.5
	1	±3.5	±3	±2.5	±3	±3.5	±3	±2.5	±4	±3.5	±3	±3	±3	±2.5
	2	±3.5	±3	±2.5	±3	±3.5	±3	±2.5	±4	±3.5	±2	±3	±3	±2
	2.5	±3	±2.5	±2	±2	±3	±2.5	±2	±3	±3	±1	±2.5	±2.5	±1
	3	±3	±2.5	±2	±2	±3	±2.5	±1	±3	±3	±1	±2.5	±2.5	
	3.5	±3	±2.5	±1	±1	±3	±2.5	±1	±3	±3		±2.5	±2.5	
	4	±3	±2.5	±1		±3	±1.5		±3	±3		±2	±2	
	4.5	±2	±1.5			±2	±1.5		±3	±3		±1	±1	
	5	±2	±1.5			±2			±3	±3		±1	±1	
	5.5	±2							±2	±2				
	6								±2	±2				
	6.5								±2					

Dimensions in mm



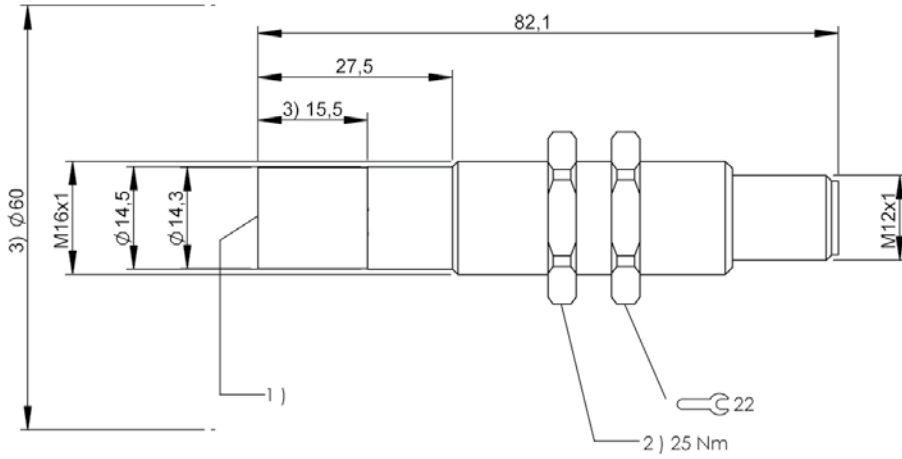
1) Sensing surface, 2) Tightening torque, 3) Function indicator

	BIS00LC	BIS0119	BIS00NU BIS00NW BIS0100
	>25	>0	>0
	>100	>100	>100
	0-7	0-7.5	0-7.5
	0-7	0-7.5	0-7.5
	0 ±4	±5	±5
	2 ±4	±5	±5
	4 ±3.5	±5	±4.5
	5 ±3.5	±4	±4
	6 ±2	±4	±4
	7 ±2	±2.5	±2
	7.5	±2.5	±2
	10		
	14		
	16		
	18		
	20		



For processor units BIS V-6...	BIS019Y BIS VM-346-501/05-S115
Product Group	HF (13.56 MHz)
Dimension	Ø 16 x 82.1 mm
Installation	metal-free (clear zone)
Antenna type	round
Supported data carrier types	DIN ISO 15693, DIN ISO 15693 (High Memory), LF 70/455 kHz
Connection	Male, 8-pin
Housing material	Brass
Ambient temperature	0...70 °C
Protection degree	IP67
Approval/Conformity	CE, UL-FILE E227256, Vol.X1, BIS

Appropriate data carriers on request

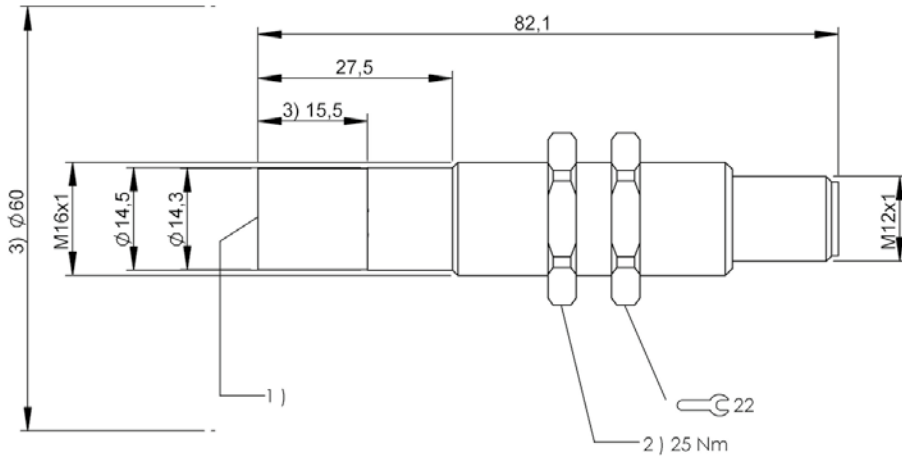


1) Sensing surface, 2) Tightening torque



For processor units BIS V-6...	BIS019Z BIS VM-346-501/10-S115
Product Group	HF (13.56 MHz)
Dimension	Ø 16 x 82.1 mm
Installation	metal-free (clear zone)
Antenna type	round
Supported data carrier types	DIN ISO 15693, DIN ISO 15693 (High Memory), LF 70/455 kHz
Connection	Male, 8-pin
Housing material	Brass
Ambient temperature	0...70 °C
Protection degree	IP67
Approval/Conformity	CE, UL-FILE E227256, Vol.X1, BIS

Appropriate data carriers on request



1) Sensing surface, 2) Tightening torque

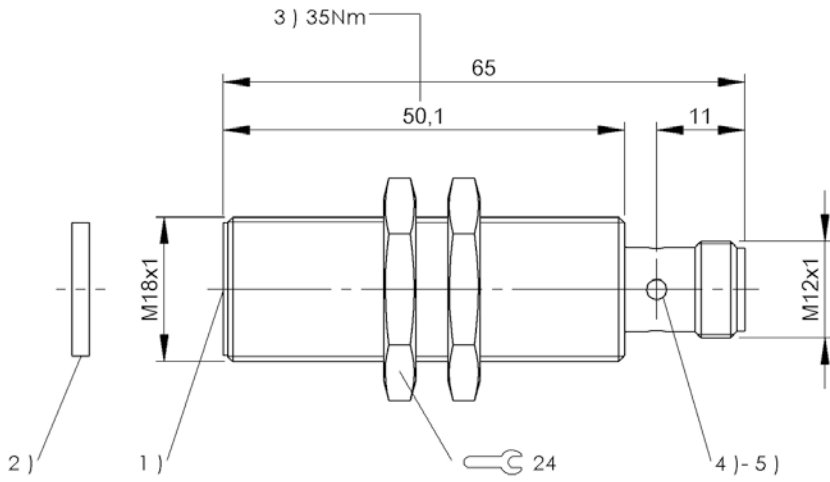


For processor units BIS V-6...	BIS015P BIS VM-332-401-S4
Product Group	HF (13.56 MHz)
Dimension	Ø 18 x 65 mm
Installation	metal-free (clear zone) on metal flush in metal
Antenna type	round
Supported data carrier types	DIN ISO 15693, DIN ISO 15693 (High Memory)
Connection	Male, 4-pin
Housing material	Brass, nuts brass with white bronze
Ambient temperature	0...70 °C
Protection degree	IP67
Approval/Conformity	CE, FCC Part 15, IC RSS-210, UL-FILE E227256, Vol.X1, BIS

Appropriate data carrier

	BIS0042			BIS0043			BIS011F BIS011E BIS011A BIS0139			BIS004A			BIS0143		
Data carrier distance to metal	>20	>0	>0	>20	>0	>0	>20	>0	>0	>20	>0	>0	>20		
Data carrier clear zone	>100	>100	>0	>100	>100	>0	>100	>100	>0	>100	>100	>0	>100		
Working distance for writing	0-8.5	0-8	0-6	0-11	0-8	0-6	0-6.5	0-6	0-5	0-7	0-6.5	0-4.5	0-13		
Working distance for reading	0-8.5	0-8	0-6	0-11	0-8	0-6	0-6.5	0-6	0-5	0-7	0-6.5	0-4.5	0-13		
Offset at distance															
	0	±5	±5	±4	±8	±8	±7	±8	±8	±7	±4.5	±4	±3.5	±8	
	2	±5	±5	±4	±8	±8	±7	±8	±8	±7	±4.5	±4	±3.5	±8	
	4	±4.5	±4	±3	±8	±7	±6	±7	±7	±6	±4	±3	±2.5	±8	
	4.5	±4.5	±4	±3	±8	±7	±4	±7	±6	±3	±3.5	±3	±1.5	±8	
	5	±4.5	±4	±3	±8	±7	±4	±7	±6	±3	±3.5	±3		±8	
	6	±4	±3	±2	±7	±5	±1	±4	±3		±3.5	±2		±7	
	6.5	±4	±3		±7	±5		±4			±2	±2		±7	
	7	±4	±3		±7	±5					±2			±7	
	8	±2	±2		±7	±4								±7	
	8.5	±2			±7									±7	
	10				±7									±7	
	11				±4									±4	
	13													±4	

Dimensions in mm



1) Sensing surface, 2) Data carrier, 3) Tightening torque, 4) LED (CP), 5) LED (Power)

	BIS0044	BIS00NU BIS00NW BIS0100
	>25	>0
	>100	>100
	0-10	0-9.5
	0-10	0-9.5
	0 ±6	±5
	2 ±6	±5
	4 ±6	±5
	5 ±6	±5
	6 ±5	±4
	7 ±5	±4
	8 ±5	±4
	9.5 ±3	±2
	10 ±3	
	12	
	15	
	20	
	25	

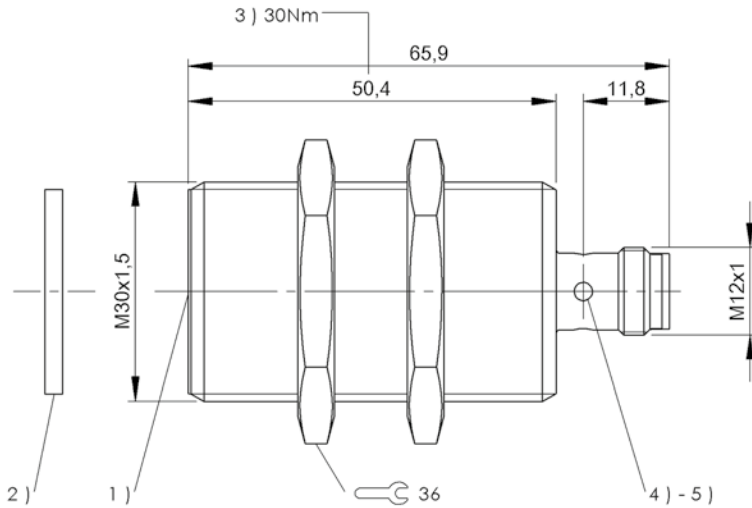


For processor units BIS V-6...	BIS015K BIS VM-333-401-S4
Product Group	HF (13.56 MHz)
Dimension	Ø 30 x 65.9 mm
Installation	metal-free (clear zone) on metal flush in metal
Antenna type	round
Supported data carrier types	DIN ISO 15693, DIN ISO 15693 (High Memory)
Connection	Male, 4-pin
Housing material	Brass, nuts brass with white bronze
Ambient temperature	0...70 °C
Protection degree	IP67
Approval/Conformity	CE, FCC Part 15, IC RSS-210, UL-FILE E227256, Vol.X1, BIS

Appropriate data carrier

	BIS0042	BIS0043 BIS0111			BIS004A	BIS0143		BIS0044	BIS0045	
Data carrier distance to metal	>20	>25	>0	>0	>20	>20		>25	>25	
Data carrier clear zone	>100	>100	>100	>0	>100	>100		>100	>100	
Working distance for writing	0-13	0-21	0-15	0-13	0-10	0-21		0-18	0-21	
Working distance for reading	0-13	0-21	0-15	0-13	0-10	0-21		0-18	0-21	
Offset at distance										
	0 ±8	±13	±10	±10	±7	±12		0 ±9	±13	
	5 ±8	±13	±10	±10	±7	±12		5 ±9	±13	
	8 ±8	±13	±10	±9	±6	±12		10 ±9	±13	
	10 ±7	±13	±8	±8	±4	±12		13 ±8	±12	
	13 ±4	±12	±8	±3		±11		15 ±8	±12	
	15	±12	±3			±11		16 ±4	±11	
	18	±11				±10		18 ±4	±11	
	20	±5				±5		20	±5	
	21	±5				±5		21	±5	
	25							25		
	30							30		

Dimensions in mm



1) Sensing surface, 2) Data carrier, 3) Tightening torque, 4) LED (CP), 5) LED (Power)

BIS0046		BIS00NU BIS00NW BIS0100		BIS011A	
>50		>0		>20	
>150		>100		>100	
0-30		0-13		0-15	
0-30		0-13		0-15	
±20		±9		0	±11
±20		±9		5	±11
±20		±7		10	±10
±18		±3		12	±8
±18				13	±8
±18				15	±4
±18				18	
±18				20	
±16				21	
±16				25	
±8				30	

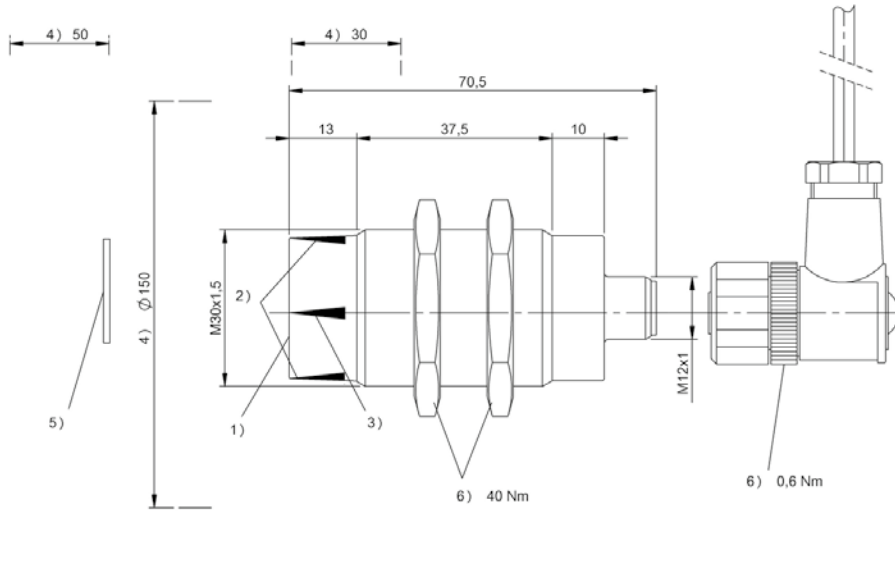


For processor units BIS V-6...	BIS00RF BIS VM-300-001-S4
Product Group	HF (13.56 MHz)
Dimension	Ø 30 x 70.5 mm
Installation	metal-free (clear zone)
Antenna type	round
Supported data carrier types	DIN ISO 14443, DIN ISO 15693
Connection	Male, 4-pin
Housing material	Brass, nuts brass with white bronze
Ambient temperature	0...70 °C
Protection degree	IP67
Approval/Conformity	CE, FCC Part 15, IC RSS-210, UL-FILE E227256, Vol.X1, BIS

Appropriate data carrier

	BIS003Y			BIS003Z			BIS0040		BIS0042		BIS0043			BIS0044			
Data carrier distance to metal	>25	>10	>5	>50	>15	>10	>20	>5	>20	>5	>25	>0		>25	>10	>5	
Data carrier clear zone	>100	>60	>50	>150	>90	>70	>100	>100	>100	>100	>100	>0		>100	>60	>50	
Working distance for writing	0-22	0-20	0-15	0-32	0-22	0-12	0-9	0-9	0-11	0-11	0-30	0-16		0-22	0-16	0-10	
Working distance for reading	0-22	0-20	0-15	0-32	0-22	0-12	0-9	0-9	0-11	0-11	0-30	0-16		0-22	0-16	0-10	
Offset at distance																	
	0	±15	±12	±8	±20	±15	±6	±7	±6	±10	±7	±18	±10	0	±14	±8	±7
	5	±15	±12	±8	±20	±15	±6	±7	±6	±8	±7	±18	±10	5	±14	±8	±7
	9	±15	±10	±6	±20	±15	±5	±2	±1	±5	±3	±18	±8	8	±12	±6	±2
	12	±15	±8	±4	±20	±15	±4					±16	±6	10	±12	±6	±2
	15	±15	±8	±4	±20	±12						±16	±6	12	±12	±5	
	16	±12	±6		±20	±10						±16	±4	15	±12	±4	
	18	±12	±6		±20	±8						±16		16	±10	±2	
	20	±12	±4		±20	±6						±16		18	±10		
	22	±4			±18	±4						±14		20	±10		
	25				±14							±14		22	±6		
	30				±10							±10		25			
	32				±4									30			
	35													32			
	40													35			
	43													40			
	45													42			
	50													44			

Dimensions in mm



1) Sensing surface, 2) LED (CP), 3) LED (Power), 4) Clear zone, 5) Data carrier, 6) Tightening torque

BIS0045			BIS0046			BIS00YE		BIS00Y4		BIS00LC		BIS00M9 BIS00M8		BIS00NU BIS00NW BIS0100	
>25	>10	>5	>50	>15	>10	>25	>0	>50		>25	>0	>0		>0	
>100	>60	>50	>150	>90	>70	>100	>100	>150		>100	>100	>100		>100	
0-28	0-18	0-10	0-44	0-25	0-15	0-30	0-8	0-42		0-27	0-13	0-22		0-13	
0-28	0-18	0-10	0-44	0-25	0-15	0-30	0-8	0-42		0-27	0-13	0-22		0-13	
±16	±10	±7	±25	±18	±15	±18	±8	±30		0	±16	±10	±13		±10
±16	±10	±7	±25	±18	±15	±18	±6	±30		5	±16	±10	±13		±10
±14	±8	±2	±25	±16	±12	±18	±3	±30		10	±16	±7	±13		±9
±14	±8	±2	±25	±16	±12	±18		±30		13	±14	±5	±11		±5
±14	±7		±24	±15	±10	±16		±28		15	±14		±11		
±14	±6		±24	±14	±8	±16		±28		18	±14		±11		
±14	±3		±24	±12		±16		±28		20	±14		±7		
±14	±2		±24	±12		±16		±28		22	±12		±7		
±14			±24	±10		±16		±28		25	±12				
±12			±22	±8		±16		±24		27	±5				
±12			±22	±6		±16		±24		30					
			±22			±10		±24		32					
			±16					±24		35					
			±16					±24		40					
			±16					±5		43					
			±10					±5		45					
			±5							50					

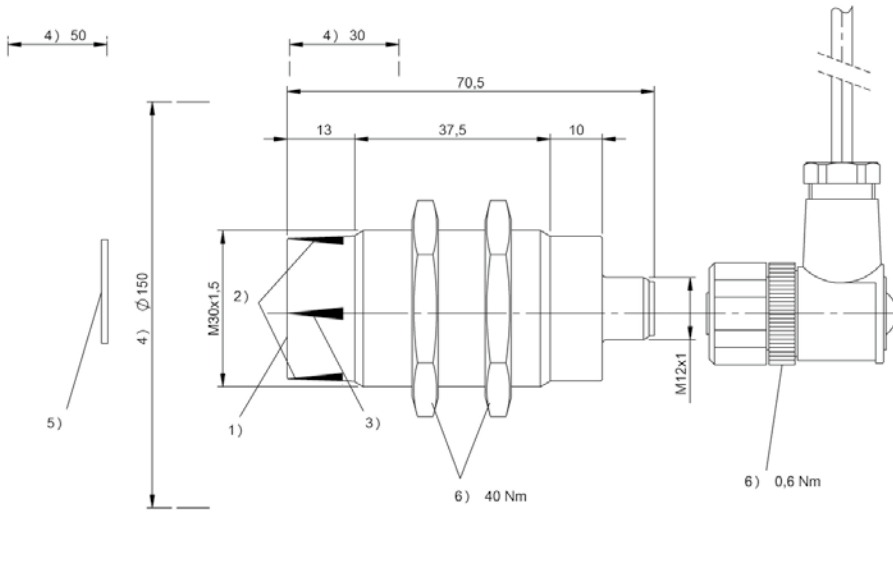


For processor units BIS V-6...	BISO132 BIS VM-344-401-S4
Product Group	HF (13.56 MHz)
Dimension	Ø 30 x 70.5 mm
Installation	metal-free (clear zone)
Antenna type	round
Supported data carrier types	DIN ISO 15693, DIN ISO 15693 (High Memory)
Connection	Male, 4-pin
Housing material	Brass, nuts nickel plated brass, nuts brass with white bronze
Ambient temperature	0...70 °C
Protection degree	IP67
Approval/Conformity	CE, FCC Part 15, IC RSS-210, UL-FILE E227256, Vol.X1, BIS

Appropriate data carrier

	BIS0042		BIS00LC		BIS0043 BIS0111		BIS011F BIS011E BIS011A BIS0139		BIS0044			BIS0045				
Data carrier distance to metal	>20	>5	>25	>0	>25	>0	>25	>0	>25	>10	>5	>25	>10	>5		
Data carrier clear zone	>100	>100	>100	>100	>100	>0	>100	>100	>100	>60	>50	>100	>60	>50		
Working distance for writing	0-11	0-11	0-27	0-13	0-30	0-16	0-18	0-15	0-22	0-16	0-10	0-28	0-18	0-10		
Working distance for reading	0-11	0-11	0-27	0-13	0-30	0-16	0-18	0-15	0-22	0-16	0-10	0-28	0-18	0-10		
Offset at distance	0	±10	±7	±16	±10	±18	±10	±12	±11	0	±14	±8	±7	±16	±10	±7
	5	±8	±7	±16	±10	±18	±10	±12	±11	5	±14	±8	±7	±16	±10	±7
	9	±5	±3	±16	±7	±18	±8	±11	±10	8	±12	±6	±2	±14	±8	±2
	13			±14	±5	±16	±6	±10	±9	10	±12	±6	±2	±14	±8	±2
	15			±14		±16	±6	±10	±5	12	±12	±5		±14	±7	
	16			±14		±16	±4	±5		15	±12	±4		±14	±6	
	18			±14		±16		±5		16	±10	±2		±14	±3	
	20			±14		±16				18	±10			±14	±2	
	22			±12		±14				20	±10			±14		
	25			±12		±14				22	±6			±12		
	27			±5		±10				25				±12		
	32									30						
	35									32						
	40									35						
	43									40						
	45									42						
	50									44						

Dimensions in mm



1) Sensing surface, 2) LED (CP), 3) LED (Power), 4) Clear zone, 5) Data carrier, 6) Tightening torque

BIS0046			BIS00YE		BIS00Y4		BIS00M9 BIS00M8		BIS00NU BIS00NW BIS0100	
>50	>15	>10	>25	>0	>50		>0	>0		
>150	>90	>70	>100	>100	>150		>100	>100		
0-44	0-25	0-15	0-30	0-8	0-42		0-22	0-13		
0-44	0-25	0-15	0-30	0-8	0-42		0-22	0-13		
±25	±18	±15	±18	±8	±30		0 ±13	±10		
±25	±18	±15	±18	±6	±30		5 ±13	±10		
±25	±16	±12	±18	±3	±30		10 ±13	±9		
±25	±16	±12	±18		±30		12 ±11	±5		
±24	±15	±10	±16		±28		13 ±11	±5		
±24	±14	±8	±16		±28		15 ±11			
±24	±12		±16		±28		18 ±11			
±24	±12		±16		±28		20 ±7			
±24	±10		±16		±28		22 ±7			
±22	±8		±16		±24		28			
±22	±6		±16		±24		30			
±22			±10		±24		32			
±16					±24		35			
±16					±24		40			
±16					±5		43			
±10					±5		45			
±5							50			

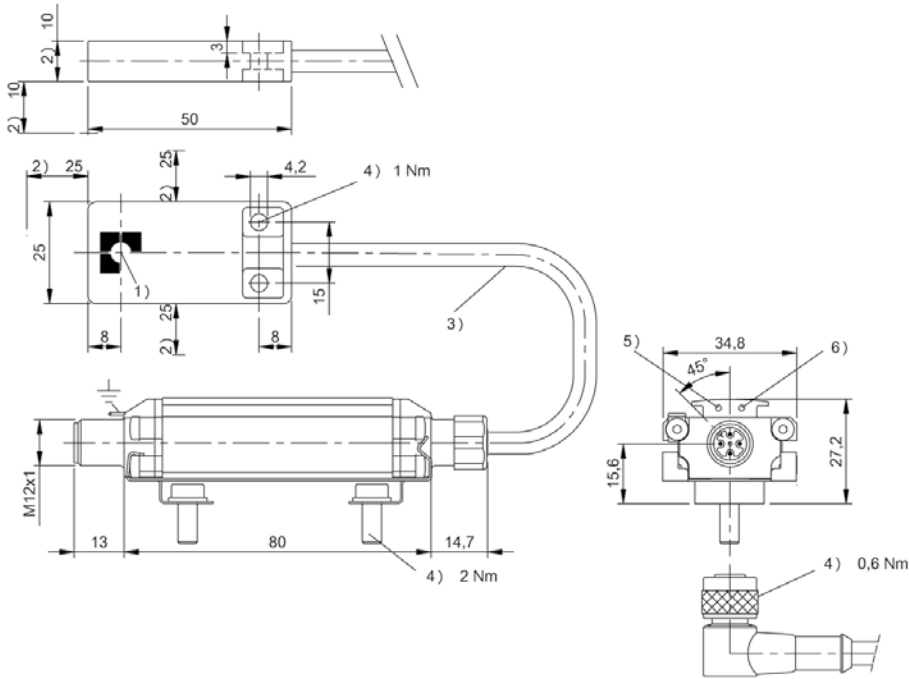


For processor units BIS V-6...	BIS00T9 BIS VM-305-001-S4
Product Group	HF (13.56 MHz)
Dimension	25 x 10 x 50 mm
Installation	metal-free (clear zone)
Antenna type	round
Supported data carrier types	DIN ISO 14443, DIN ISO 15693
Connection	Connector, 4-pin, 0.50 m, PU
Housing material	ABS, GF16, interface aluminum
Ambient temperature	0...70 °C
Protection degree	IP67
Approval/Conformity	CE, UL-FILE E227256, Vol.X1, BIS

Appropriate data carrier

	BIS0040		BIS0042		BIS0044		BIS0048		BIS004A		BIS0043		BIS00M9 BIS00M8		BIS00NU BIS00NW BIS0100	
Data carrier distance to metal	>10	>0	>10	>0	>25	>10	>0	>10	>0	>25	>0	>0	>0	>0	>0	
Data carrier clear zone	>60	>0	>60	>0	>80	>60	>0	>60	>0	>100	>0	>100	>100	>100	>100	
Working distance for writing	0-6	0-4	0-8	0-6	0-13	0-5	0-4	0-7	0-5	0-17	0-11	0-17	0-17	0-12	0-12	
Working distance for reading	0-6	0-4	0-8	0-6	0-13	0-5	0-4	0-7	0-5	0-17	0-11	0-17	0-17	0-12	0-12	
Offset at distance																
	0	±3	±3	±4	±4	±6	±3	±3	±4	±3	0	±12	±8	±10	±7	
	5	±2		±4	±2	±6	±2		±3	±2	5	±12	±8	±10	±7	
	9					±4					8	±12	±6	±10	±6	
	12					±2					10	±12	±6	±9	±6	
	15										11	±8	±4	±9	±3	
	16										12	±8		±9	±3	
	18										15	±8		±4		
	20										17	±4		±4		

Dimensions in mm



1) Sensing surface, 2) Clear zone, 3) Cable length see text, 4) Tightening torque, 5) LED (Power), 6) LED (CP)

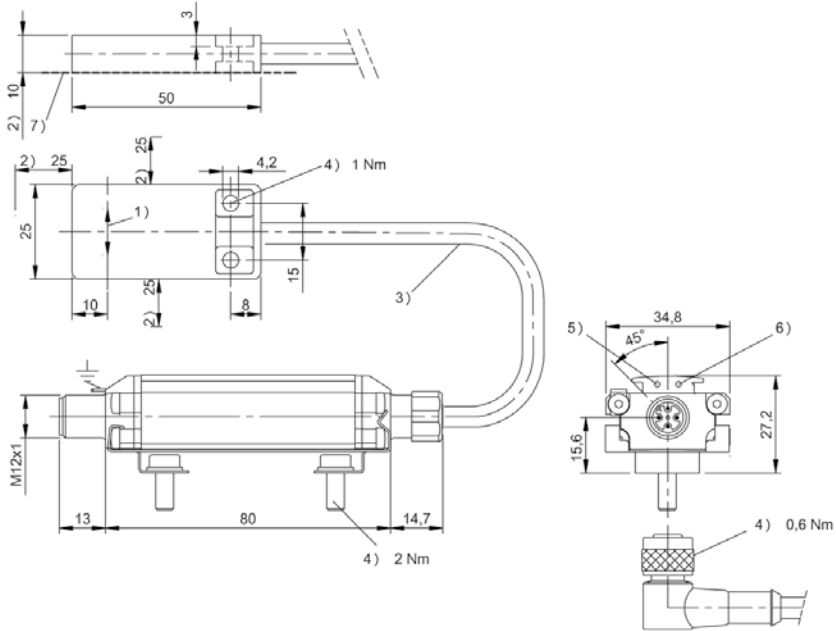


For processor units BIS V-6...	BIS00T6 BIS VM-352-001-S4
Product Group	HF (13.56 MHz)
Dimension	25 x 10 x 50 mm
Installation	metal-free (clear zone)
Antenna type	Rod
Supported data carrier types	DIN ISO 15693
Connection	Connector, 4-pin, 0.50 m, PU
Housing material	ABS, GF16, interface aluminum
Ambient temperature	0...70 °C
Protection degree	IP67
Approval/Conformity	CE, UL-FILE E227256, Vol.X1, BIS

Appropriate data carrier

	BIS00NZ		BIS017F	
Data carrier clear zone A	>27	>27	>200	>200
Data carrier clear zone B	>27	>27	>200	>200
Data carrier clear zone C			>50	>50
Metallic mounting surface 40 × 22 mm				
Metallic mounting surface > 200 × 200 mm				
Working distance for writing	0-22	0-22	0-17	0-17
Working distance for reading	0-22	0-22	0-17	0-17
Offset at distance	X	Y	X	Y
	0 ±25	±5	0 ±22	±9
	5 ±25	±5	5 ±22	±9
	10 ±25	±5	10 ±19	±8
	15 ±25	±5	15 ±12	±6
	20 ±15	±5	17 ±3	±2
	22 ±15	±5	20	

Dimensions in mm



1) Sensing surface, 2) Clear zone, 3) Cable length see text, 4) Tightening torque, 5) LED (Power), 6) LED (CP), 7) Mounting on steel

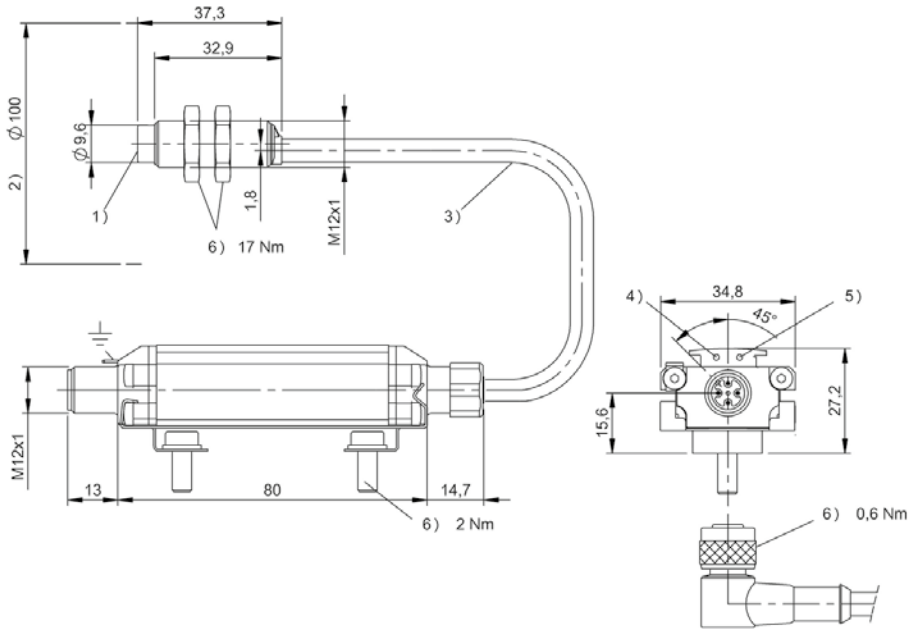


For processor units BIS V-6...	BIS00T7 BIS VM-306-001-S4
Product Group	HF (13.56 MHz)
Dimension	Ø 12 x 37.3 mm
Installation	metal-free (clear zone)
Antenna type	round
Supported data carrier types	DIN ISO 14443, DIN ISO 15693
Connection	Male, 4-pin, 0.50 m, PU
Housing material	Brass, Interface aluminum, nickel plate
Ambient temperature	0...70 °C
Protection degree	IP67
Approval/Conformity	CE, UL-FILE E227256, Vol.X1, BIS

Appropriate data carrier

	BIS0040	BIS0042	BIS0048	BIS004A
Data carrier distance to metal	>10	>10	>10	>10
Data carrier clear zone	>60	>60	>60	>60
Working distance for writing	0-5	0-6	0-4	0-5
Working distance for reading	0-5	0-6	0-4	0-5
Offset at distance				
	0 ±2	±2	±2	±2
	2 ±2	±2	±2	±2
	4 ±1	±1	±1	±1
	5 ±1	±1		±1
	6 ±1	±1		

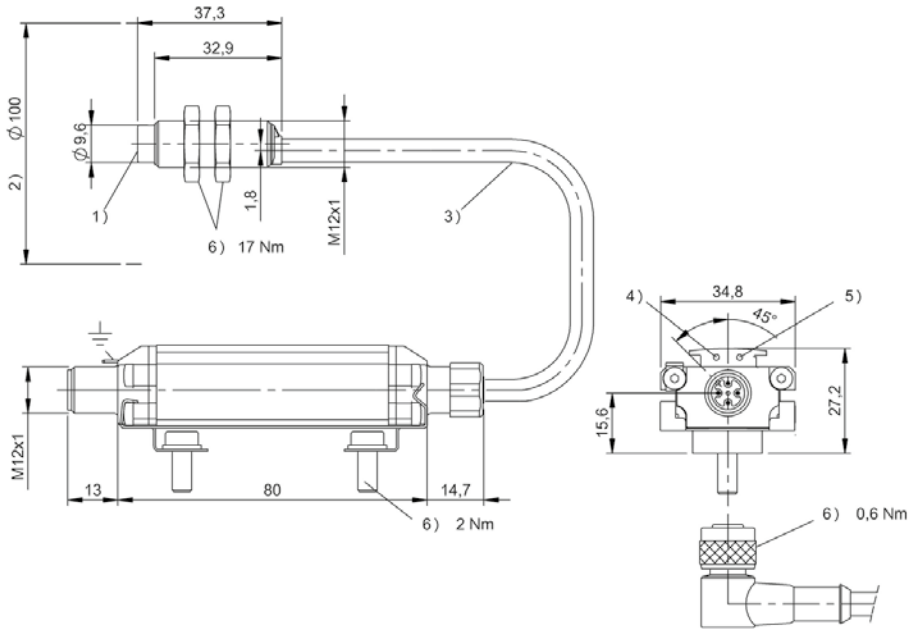
Dimensions in mm



1) Sensing surface, 2) Clear zone, 3) Cable length see text, 4) LED (Power), 5) LED (CP), 6) Tightening torque



For processor units BIS V-6...	BIS01CU BIS VM-309-001-S4
Product Group	HF (13.56 MHz)
Antenna type	round
Supported data carrier types	DIN ISO 14443, DIN ISO 15693
Protection degree	IP67
Approval/Conformity	CE, cULus, EAC, WEEE



1) Active area, 2) Free zone, 3) Cable length see text, 4) LED (Power), 5) LED (CP), 6) Tightening torque

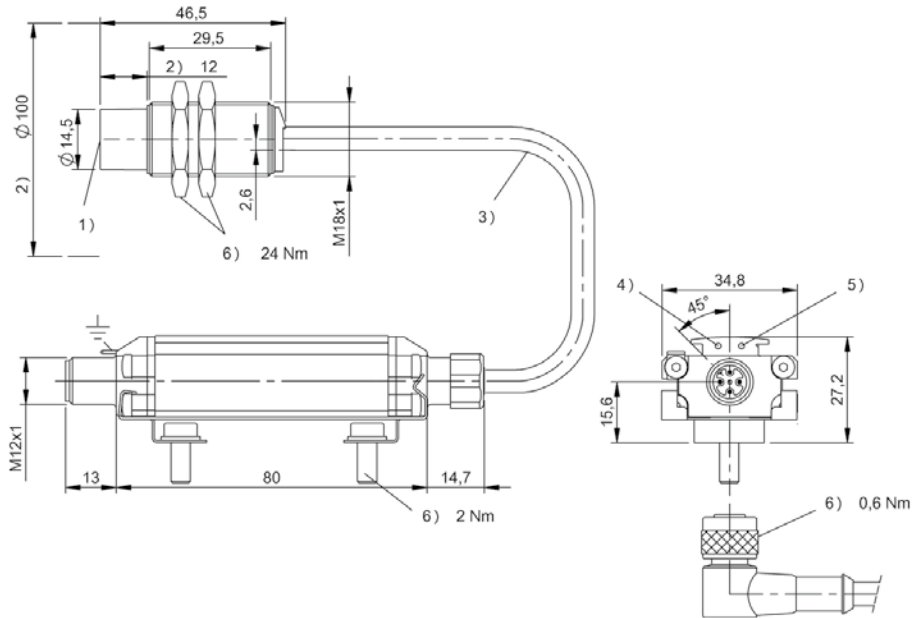


For processor units BIS V-6...	BIS00T8 BIS VM-307-001-S4
Product Group	HF (13.56 MHz)
Dimension	Ø 12 x 37.3 mm
Installation	metal-free (clear zone)
Antenna type	round
Supported data carrier types	DIN ISO 14443, DIN ISO 15693
Connection	Connector, 4-pin, 0.50 m, PU
Housing material	Brass, interface aluminum
Ambient temperature	0...70 °C
Protection degree	IP67
Approval/Conformity	CE, UL-FILE E227256, Vol.X1, BIS

Appropriate data carrier

	BIS0040		BIS0042		BIS0044		BIS0048		BIS004A		BIS00YK		BIS00M9 BIS00M8		BIS00NU BIS00NW BIS0100	
Data carrier distance to metal	>10	>0	>10	>0	>25		>10	>0	>10	>0		>10	>0	>0		>0
Data carrier clear zone	>60	>0	>60	>0	>80		>60	>0	>60	>0		>60	>60	>100		>100
Working distance for writing	0-6	0-4	0-8	0-6	0-13		0-5	0-4	0-7	0-5		0-10	0-8	0-16		0-12
Working distance for reading	0-6	0-4	0-8	0-6	0-13		0-5	0-4	0-7	0-5		0-10	0-8	0-16		0-12
Offset at distance																
	0	±3	±3	±4	±4	±6		±3	±3	±4	±3	0	±7	±5	±9	±7
	5	±2		±4	±2	±6		±2		±3	±2	5	±7	±5	±9	±7
	9					±4						7	±6	±4	±9	±6
	12					±2						8	±6	±2	±9	±6
	15											10	±3		±8	±6
	16											12			±8	±3
	18											14			±8	
	20											16			±3	

Dimensions in mm



1) Sensing surface, 2) Clear zone, 3) Cable length see text, 4) LED (Power), 5) LED (CP), 6) Tightening torque

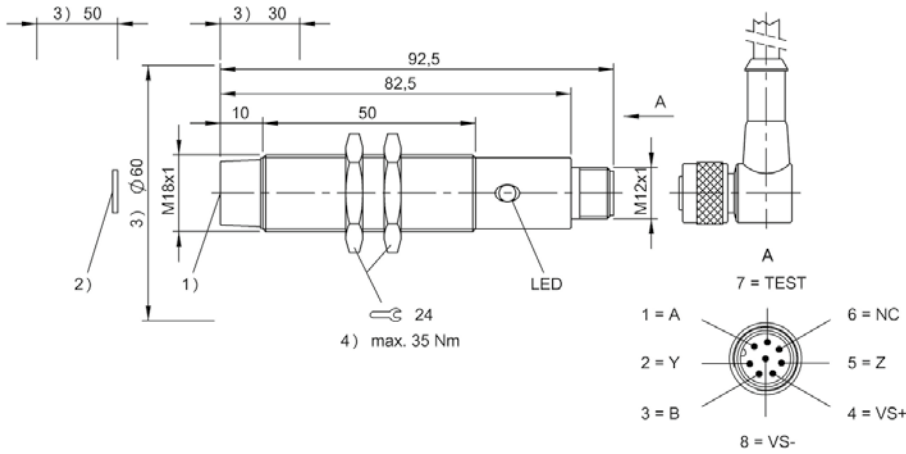


For processor units BIS M-60...	BIS0057 BIS M-302-001-S115
Product Group	HF (13.56 MHz)
Dimension	Ø 18 x 92.5 mm
Installation	metal-free (clear zone)
Antenna type	round
Supported data carrier types	DIN ISO 14443, DIN ISO 15693
Connection	Male, 8-pin
Housing material	Brass, nuts nickel plated brass
Ambient temperature	0...70 °C
Protection degree	IP67
Approval/Conformity	CE, FCC Part 15, IC RSS-210, UL-FILE E227256, Vol.X1, BIS

Appropriate data carrier

	BIS003Y			BIS003Z			BIS0040		BIS0042		BIS0048		BIS004A		BIS0043		
Data carrier distance to metal	>25	>10	>5	>50	>25	>10	>10	>0	>10	>0	>10	>0	>10	>0	>25	>0	
Data carrier clear zone	>60	>50	>50	>60	>50	>50	>60	>0	>60	>0	>60	>0	>60	>0	>60	>0	
Working distance for writing	0-16	0-15	0-10	0-20	0-18	0-10	0-7	0-5	0-9	0-6	0-7	0-5	0-9	0-6	0-20	0-12	
Working distance for reading	0-16	0-15	0-10	0-20	0-18	0-10	0-7	0-5	0-9	0-6	0-7	0-5	0-9	0-6	0-20	0-12	
Offset at distance	0	±10	±8	±4	±18	±14	±8	±5	±4	±5	±5	±4	±3	±4	±3	±14	±10
	5	±10	±8	±4	±18	±14	±6	±4	±3	±5	±3.5	±3	±2	±3	±2	±12	±8
	9	±10	±7	±2	±16	±12	±4			±3.5						±12	±6
	12	±8	±6		±14	±8										±10	±4
	15	±7	±4		±12	±6										±10	
	16	±4			±10	±4										±7	
	18				±8	±4										±7	
	20				±4											±5	
	22																
	25																
	30																

Dimensions in mm



1) Sensing surface, 2) Data carrier, 3) Clear zone, 4) Tightening torque

BIS0044			BIS0045			BIS0046			BIS00M9 BIS00M8		BIS00NU BIS00NW BIS0100		BIS00UC BIS00UE		BIS019C		BIS019E		
>25	>10	>5	>25	>10	>5	>50	>25	>20	>0	>100	>0	>60	>10	>100	>0	>0	>0	>0	
0-16	0-12	0-8	0-20	0-12	0-5	0-30	0-22	0-12	0-17	0-13	0-7	0-8	0-7	0-7	0-12	0-11	0-12	0-11	
0-16	0-12	0-8	0-20	0-12	0-5	0-30	0-22	0-12	0-17	0-13	0-7	0-8	0-7	0-12	0-11				
±8	±6	±4	±12	±8	±7	±20	±16	±14	0	±10	±8	±4	±6	±4.5	±7	±6	±6	±6	
±8	±6	±4	±12	±8	±4	±20	±16	±14	5	±10	±8	±4	±6	±4.5	±7	±6	±6	±6	
±6	±5		±10	±6		±18	±16	±10	7	±10	±7	±4	±5.5	±4	±7	±6	±6.5	±5.5	
±4	±3		±10	±4		±18	±14	±6	8	±10	±7		±3	±2	±6.5	±5.5	±6.5	±5.5	
±4			±10			±18	±14		10	±9	±7		±3		±6.5	±5.5	±6.5	±5.5	
±3			±5			±16	±12		13	±9	±4				±6.5	±5.5	±6.5	±5.5	
			±5			±16	±12		14	±9					±6.5	±3	±6.5	±3	
						±16	±12		17	±4					±3	±3	±3	±3	
						±12	±8		22						±3				
						±12			25										
						±8			30										

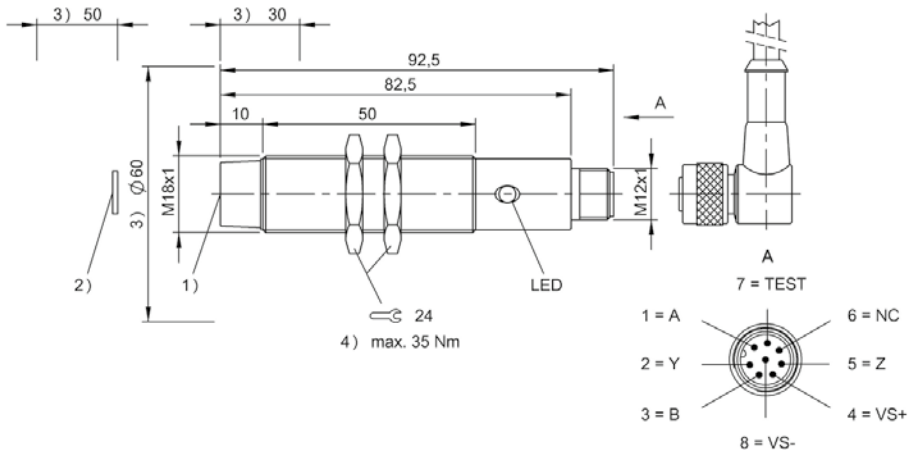


For processor unit BIS00EP	BISO059 BIS M-302-003-S115
Product Group	HF (13.56 MHz)
Dimension	Ø 18 x 92.5 mm
Installation	metal-free (clear zone)
Antenna type	round
Supported data carrier types	DIN ISO 14443, DIN ISO 15693
Connection	Male, 8-pin
Housing material	Brass, nuts nickel plated brass
Ambient temperature	0...70 °C
Protection degree	IP67
Approval/Conformity	CE, FCC Part 15, IC RSS-210, UL-FILE E227256, Vol.X1, BIS

Appropriate data carrier

	BIS003Y			BIS003Z			BIS0040		BIS0042		BIS0048		BIS004A		BIS0043		
Data carrier distance to metal	>25	>10	>5	>50	>25	>10	>10	>0	>10	>0	>10	>0	>10	>0	>25	>0	
Data carrier clear zone	>60	>50	>50	>60	>50	>50	>60	>0	>60	>0	>60	>0	>60	>0	>60	>0	
Working distance for writing	0-16	0-15	0-10	0-20	0-18	0-10	0-7	0-5	0-9	0-6	0-7	0-5	0-9	0-6	0-20	0-12	
Working distance for reading	0-16	0-15	0-10	0-20	0-18	0-10	0-7	0-5	0-9	0-6	0-7	0-5	0-9	0-6	0-20	0-12	
Offset at distance	0	±10	±8	±4	±18	±14	±8	±5	±4	±5	±5	±4	±3	±4	±3	±14	±10
	5	±10	±8	±4	±18	±14	±6	±4	±3	±5	±3.5	±3	±2	±3	±2	±12	±8
	9	±10	±7	±2	±16	±12	±4			±3.5						±12	±6
	12	±8	±6		±14	±8										±10	±4
	15	±7	±4		±12	±6										±10	
	16	±4			±10	±4										±7	
	18				±8	±4										±7	
	20				±4											±5	
	22																
	25																
	30																

Dimensions in mm



1) Sensing surface, 2) Data carrier, 3) Clear zone, 4) Tightening torque

BIS0044			BIS0045			BIS0046			BIS00M9 BIS00M8		BIS00NU BIS00NW BIS0100		BIS00UC BIS00UE		BIS019C		BIS019E	
>25	>10	>5	>25	>10	>5	>50	>25	>20	>0	>0	>10	>0	>0	>0	>0	>0		
>80	>50	>50	>80	>50	>50	>150	>90	>70	>100	>100	>60	>100	>0	>100	>0	>0		
0-16	0-12	0-8	0-20	0-12	0-5	0-30	0-22	0-12	0-17	0-13	0-7	0-8	0-7	0-12	0-11	0-11		
0-16	0-12	0-8	0-20	0-12	0-5	0-30	0-22	0-12	0-17	0-13	0-7	0-8	0-7	0-12	0-11	0-11		
±8	±6	±4	±12	±8	±7	±20	±16	±14	0	±10	±8	±4	±6	±4.5	±7	±6		
±8	±6	±4	±12	±8	±4	±20	±16	±14	5	±10	±8	±4	±6	±4.5	±7	±6		
±6	±5		±10	±6		±18	±16	±10	7	±10	±7	±4	±5.5	±4	±7	±6		
±4	±3		±10	±4		±18	±14	±6	8	±10	±7		±3	±2	±6.5	±5.5		
±4			±10			±18	±14		10	±9	±7		±3		±6.5	±5.5		
±3			±5			±16	±12		13	±9	±4				±6.5	±5.5		
			±5			±16	±12		14	±9					±6.5	±3		
			±5			±16	±12		17	±4					±3	±3		
						±12	±8		22						±3			
						±12			25									
						±8			30									

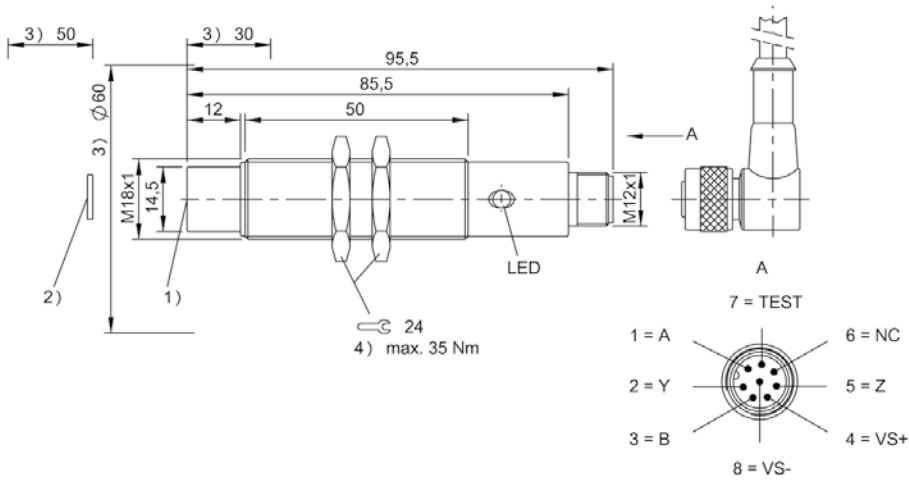


For processor units BIS M-60...	BIS005A BIS M-304-001-S115
Product Group	HF (13.56 MHz)
Dimension	Ø 18 x 95.5 mm
Installation	metal-free (clear zone)
Antenna type	round
Supported data carrier types	DIN ISO 14443, DIN ISO 15693
Connection	Male, 8-pin
Housing material	Brass, nuts nickel plated brass
Ambient temperature	0...70 °C
Protection degree	IP67
Approval/Conformity	CE, FCC Part 15, IC RSS-210, UL-FILE E227256, Vol.X1, BIS

Appropriate data carrier

	BIS003Y			BIS003Z			BIS0040		BIS0042		BIS0048		BIS004A		BIS0043		
Data carrier distance to metal	>25	>10	>5	>50	>25	>10	>10	>0	>10	>0	>10	>0	>10	>0	>25	>0	
Data carrier clear zone	>60	>50	>50	>60	>50	>50	>60	>0	>60	>0	>60	>0	>60	>0	>60	>0	
Working distance for writing	0-14	0-10	0-8	0-18	0-15	0-10	0-5	0-5	0-7	0-6	0-5	0-4	0-7	0-5	0-18	0-10	
Working distance for reading	0-14	0-10	0-8	0-18	0-15	0-10	0-5	0-5	0-7	0-6	0-5	0-4	0-7	0-5	0-18	0-10	
Offset at distance																	
	0	±10	±8	±4	±18	±14	±8	±5	±4	±5	±5	±4	±2	±4	±3	±14	±10
	5	±10	±8	±4	±18	±14	±6	±4	±3	±5	±3.5	±3		±3	±2	±12	±8
	9	±10	±7		±16	±12	±4			±3						±12	±6
	12	±8			±14	±8										±10	
	15				±12	±6										±10	
	16				±10											±7	
	18				±8											±5	

Dimensions in mm



1) Sensing surface, 2) Data carrier, 3) Clear zone, 4) Tightening torque

BIS0044			BIS019C		BIS019E	
>25	>10	>5	>0	>0	>0	>0
>80	>50	>50	>100	>0	>100	>0
0-14	0-10	0-8	0-7	0-6.5	0-10	0-10
0-14	0-10	0-8	0-7	0-6.5	0-10	0-10
±8	±6	±4	0	±5	±5	±6.5
±8	±6	±4	2	±5	±5	±6.5
±6	±5		5	±4	±4	±6.5
±4			6	±2	±2	±6
			7	±2		±6
			8			±6
			10			±2

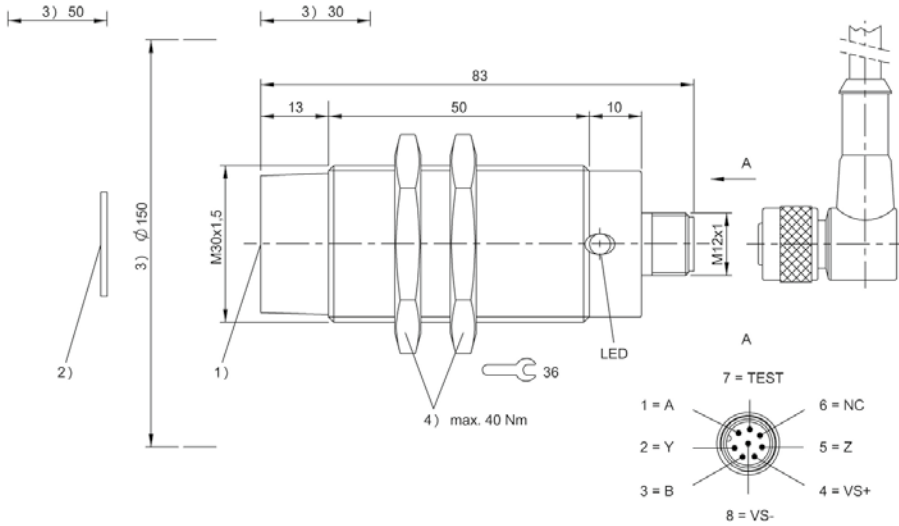


For processor units BIS M-60...	BIS0053 BIS M-300-001-S115
Product Group	HF (13.56 MHz)
Dimension	Ø 30 x 83 mm
Installation	metal-free (clear zone)
Antenna type	round
Supported data carrier types	DIN ISO 14443, DIN ISO 15693
Connection	Male, 8-pin
Housing material	Brass, nuts nickel plated brass
Ambient temperature	0...70 °C
Protection degree	IP67
Approval/Conformity	CE, FCC Part 15, IC RSS-210, UL-FILE E227256, Vol.X1, BIS

Appropriate data carrier

	BIS003Y			BIS003Z			BIS0040		BIS0042		BIS0043		BIS0044				
Data carrier distance to metal	>25	>10	>5	>50	>15	>10	>20	>5	>20	>5	>25	>0	>25	>10	>5		
Data carrier clear zone	>100	>60	>50	>150	>90	>70	>100	>100	>100	>100	>100	>0	>100	>60	>50		
Working distance for writing	0-22	0-20	0-15	0-32	0-22	0-12	0-9	0-9	0-11	0-11	0-30	0-16	0-22	0-16	0-10		
Working distance for reading	0-22	0-20	0-15	0-32	0-22	0-12	0-9	0-9	0-11	0-11	0-30	0-16	0-22	0-16	0-10		
Offset at distance	0	±15	±12	±8	±20	±15	±6	±7	±6	±10	±7	±18	±10	0	±14	±8	±7
	5	±15	±12	±8	±20	±15	±6	±7	±6	±8	±7	±18	±10	5	±14	±8	±7
	9	±15	±10	±6	±20	±15	±5	±2	±1	±5	±3	±18	±8	8	±12	±6	±2
	12	±15	±8	±4	±20	±15	±4					±16	±6	10	±12	±6	±2
	15	±15	±8	±4	±20	±12						±16	±6	12	±12	±5	
	16	±12	±6		±20	±10						±16	±4	15	±12	±4	
	18	±12	±6		±20	±8						±16		16	±10	±2	
	20	±12	±4		±20	±6						±16		18	±10		
	22	±4			±18	±4						±14		20	±10		
	25				±14							±14		22	±6		
	30				±10							±10		25			
	32				±4									30			
														32			
														35			
														40			
														42			

Dimensions in mm



1) Sensing surface, 2) Data carrier, 3) Clear zone, 4) Tightening torque

BIS0045			BIS0046			BIS00YE		BIS00Y4		BIS00LC			BIS00M9 BIS00M8		BIS00NU BIS00NW BIS0100	
>25	>10	>5	>50	>15	>10	>25	>0	>50		>25	>0	>0	>0	>0	>0	>0
>100	>60	>50	>150	>90	>70	>100	>100	>150		>100	>100	>100	>100	>100	>100	>100
0-28	0-18	0-10	0-44	0-25	0-15	0-30	0-8	0-42		0-27	0-13	0-22	0-22	0-22	0-22	0-13
0-28	0-18	0-10	0-44	0-25	0-15	0-30	0-8	0-42		0-27	0-13	0-22	0-22	0-22	0-22	0-13
±16	±10	±7	±25	±18	±15	±18	±8	±30		0	±16	±10	±13	±13	±10	±10
±16	±10	±7	±25	±18	±15	±18	±6	±30		5	±16	±10	±13	±13	±10	±10
±14	±8	±2	±25	±16	±12	±18	±3	±30		10	±16	±7	±13	±13	±9	±9
±14	±8	±2	±25	±16	±12	±18		±30		13	±14	±5	±11	±11	±5	±5
±14	±7		±24	±15	±10	±16		±28		15	±14		±11	±11		
±14	±6		±24	±14	±8	±16		±28		18	±14		±11	±11		
±14	±3		±24	±12		±16		±28		20	±14		±7	±7		
±14	±2		±24	±12		±16		±28		22	±12		±7	±7		
±14			±24	±10		±16		±28		25	±12					
±12			±22	±8		±16		±24		27	±5					
±12			±22	±6		±16		±24								
			±22			±10		±24								
			±16					±24								
			±16					±24								
			±16					±5								
			±10					±5								

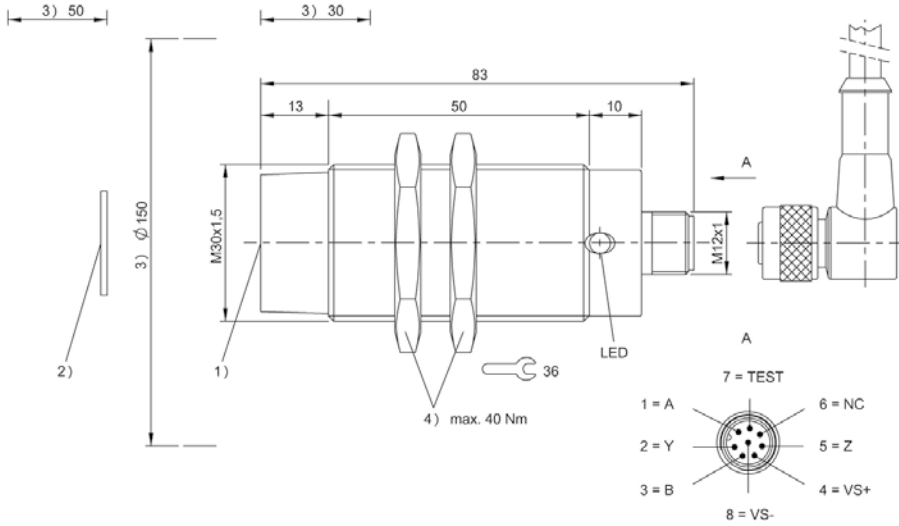


For processor unit BISO0EP	BISO054 BIS M-300-003-S115
Product Group	HF (13.56 MHz)
Dimension	Ø 30 x 83 mm
Installation	metal-free (clear zone)
Antenna type	round
Supported data carrier types	DIN ISO 14443, DIN ISO 15693
Connection	Male, 8-pin
Housing material	Brass, nuts nickel plated brass
Ambient temperature	0...70 °C
Protection degree	IP67
Approval/Conformity	CE, FCC Part 15, IC RSS-210, UL-FILE E227256, Vol.X1, BIS

Appropriate data carrier

	BISO03Y			BISO03Z			BISO040		BISO042		BISO043		BISO044				
Data carrier distance to metal	>25	>10	>5	>50	>15	>10	>20	>5	>20	>5	>25	>0	>25	>10	>5		
Data carrier clear zone	>100	>60	>50	>150	>90	>70	>100	>100	>100	>100	>100	>0	>100	>60	>50		
Working distance for writing	0-22	0-20	0-15	0-32	0-22	0-12	0-9	0-9	0-11	0-11	0-30	0-16	0-22	0-16	0-10		
Working distance for reading	0-22	0-20	0-15	0-32	0-22	0-12	0-9	0-9	0-11	0-11	0-30	0-16	0-22	0-16	0-10		
Offset at distance	0	±15	±12	±8	±20	±15	±6	±7	±6	±10	±7	±18	±10	0	±14	±8	±7
	5	±15	±12	±8	±20	±15	±6	±7	±6	±8	±7	±18	±10	5	±14	±8	±7
	9	±15	±10	±6	±20	±15	±5	±2	±1	±5	±3	±18	±8	8	±12	±6	±2
	12	±15	±8	±4	±20	±15	±4					±16	±6	10	±12	±6	±2
	15	±15	±8	±4	±20	±12						±16	±6	12	±12	±5	
	16	±12	±6		±20	±10						±16	±4	15	±12	±4	
	18	±12	±6		±20	±8						±16		16	±10	±2	
	20	±12	±4		±20	±6						±16		18	±10		
	22	±4			±18	±4						±14	±18	20	±10		
	25				±14							±14		22	±6		
	30				±10							±10		25			
	32				±4									30			

Dimensions in mm



1) Sensing surface, 2) Data carrier, 3) Clear zone, 4) Tightening torque

BIS0045			BIS0046			BIS00YE		BIS00Y4		BIS00LC			BIS00M9 BIS00M8		BIS00NU BIS00NW BIS0100	
>25	>10	>5	>50	>15	>10	>25	>0	>50		>25	>0	>0	>0	>0		
>100	>60	>50	>150	>90	>70	>100	>100	>150		>100	>100	>100	>100	>100		
0-28	0-18	0-10	0-44	0-25	0-15	0-30	0-8	0-42		0-27	0-13	0-22	0-22	0-13		
0-28	0-18	0-10	0-44	0-25	0-15	0-30	0-8	0-42		0-27	0-13	0-22	0-22	0-13		
±16	±10	±7	±25	±18	±15	±18	±8	±30	0	±16	±10	±13	±13	±10		
±16	±10	±7	±25	±18	±15	±18	±6	±30	5	±16	±10	±13	±13	±10		
±14	±8	±2	±25	±16	±12	±18	±3	±30	10	±16	±7	±13	±13	±9		
±14	±8	±2	±25	±16	±12	±18		±30	13	±14	±5	±11	±11	±5		
±14	±7		±24	±15	±10	±16		±28	15	±14		±11	±11			
±14	±6		±24	±14	±8	±16		±28	18	±14		±11	±11			
±14	±3		±24	±12		±16		±28	20	±14		±7	±7			
±14	±2		±24	±12		±16		±28	22	±12		±7	±7			
±14			±24	±10		±16		±28	25	±12						
±12			±22	±8		±16		±24	27	±5						
±12			±22	±6		±16		±24								
			±22			±10		±24								

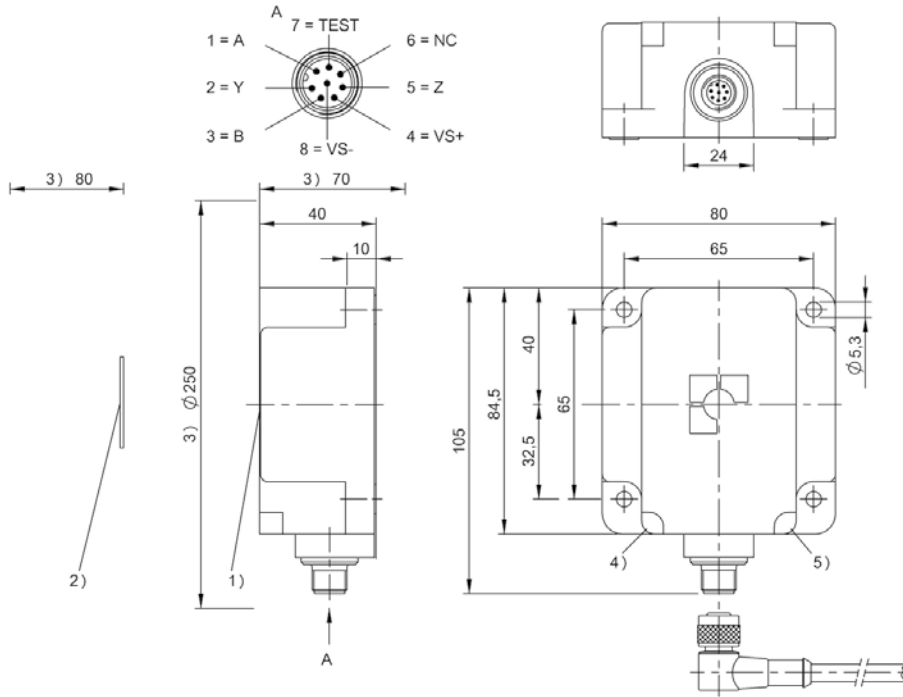


For processor units BIS M-60...	BIS0055 BIS M-301-001-S115
Product Group	HF (13.56 MHz)
Dimension	80 x 40 x 84.5 mm
Installation	metal-free (clear zone)
Antenna type	round
Supported data carrier types	DIN ISO 14443, DIN ISO 15693
Connection	Male, 8-pin
Housing material	PBT
Ambient temperature	0...70 °C
Protection degree	IP67
Approval/Conformity	CE, FCC Part 15, IC RSS-210, UL-FILE E227256, Vol.X1, BIS

Appropriate data carrier

	BIS003Y			BIS003Z			BIS0043 BIS0111			BIS0044		BIS0045		BIS0046		BIS0047		BIS00L8	
Data carrier distance to metal	>50	>10	>5	>50	>25	>10	>50	>20	>50	>30	>50	>30	>50	>30	>80		>1	0	
Data carrier clear zone	>200	>60	>50	>200	>150	>150	>200	>60	>200	>100	>200	>100	>200	>100	>250		>70	>70	
Working distance for writing	0-34	0-20	0-15	0-45	0-43	0-35	0-45	8-22	0-32	0-20	0-45	0-30	0-70	0-45	0-50		0-32	0-32	
Working distance for reading	0-34	0-20	0-15	0-45	0-43	0-35	0-45	8-22	0-32	0-20	0-45	0-30	0-70	0-45	0-50		0-32	0-32	
Offset at distance	0	±22	±18	±14	±30	±24	±18	±32	±20	±28	±20	±32	±22	±40	±25	±30		±30	±25
	5	±22	±18	±14	±30	±24	±18	±32	±20	±28	±20	±32	±22	±40	±25	±30		±30	±25
	9	±22	±18	±14	±30	±24	±18	±32	±20	±28	±18	±32	±22	±40	±25	±30		±30	±25
	12	±22	±18	±10	±30	±24	±18	±32	±18	±24	±18	±32	±22	±40	±25	±30		±25	±25
	15	±22	±18	±10	±30	±24	±18	±32	±18	±24	±15	±32	±20	±40	±25	±30		±25	±25
	16	±22	±16	±8	±30	±24	±18	±32	±18	±24	±15	±32	±20	±40	±25	±30		±25	±25
	18	±22	±16	±6	±30	±24	±18	±32	±16	±24	±12	±32	±18	±40	±25	±30		±25	±22
	20	±22	±16	±4	±30	±24	±18	±32	±16	±24	±8	±32	±16	±40	±25	±30		±25	±22
	22	±20	±10		±30	±24	±15	±25	±14	±20		±25	±14	±40	±22	±30		±25	±22
	25	±15	±10		±30	±24	±15	±25		±20		±25	±12	±40	±22	±30		±25	±22
	30	±15	±4		±30	±20	±12	±25		±12		±25	±10	±40	±22	±28		±20	±17
	32	±8			±30	±18	±8	±20		±12		±20		±40	±22	±24		±20	±17
	35	±4			±30	±16	±4	±20				±20		±40	±20	±22			
	40				±24	±10		±20				±20		±40	±20	±18			
	43				±20	±4		±12				±12		±35	±15	±14			
	45				±16			±12				±12		±35	±12	±12			
	50				±4									±35		±4			

Dimensions in mm



1) Sensing surface, 2) Data carrier, 3) Clear zone, 4) LED (Power), 5) LED (TP)

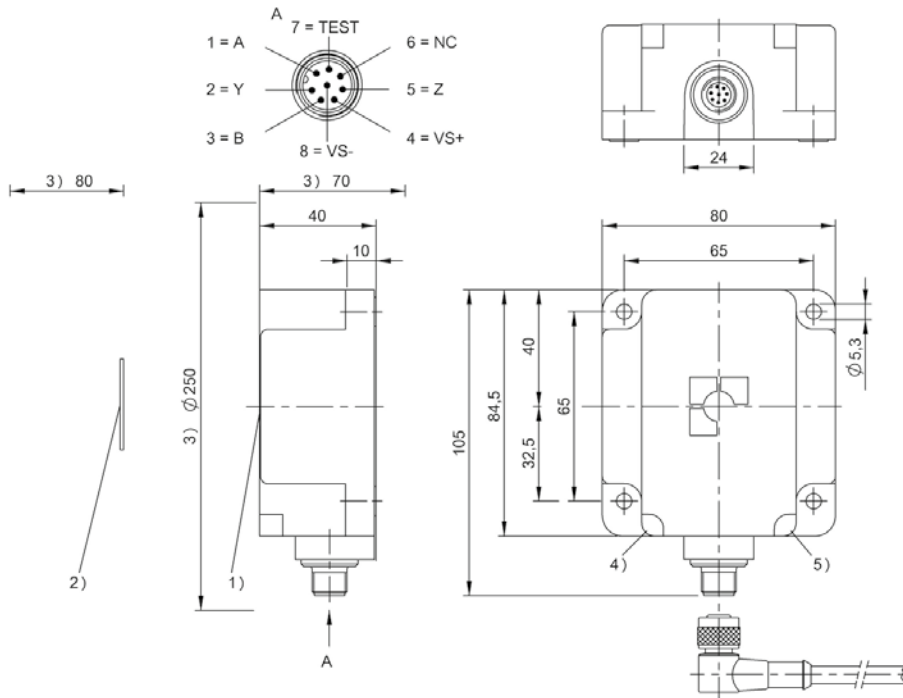


For processor unit BIS00EP	BIS0056 BIS M-301-003-S115
Product Group	HF (13.56 MHz)
Dimension	80 x 40 x 84.5 mm
Installation	metal-free (clear zone)
Antenna type	round
Supported data carrier types	DIN ISO 14443, DIN ISO 15693
Connection	Male, 8-pin
Housing material	PBT
Ambient temperature	0...70 °C
Protection degree	IP67
Approval/Conformity	CE, FCC Part 15, IC RSS-210, UL-FILE E227256, Vol.X1, BIS

Appropriate data carrier

	BIS003Y			BIS003Z			BIS0043 BIS0111		BIS0044	BIS0045		BIS0046		BIS0047	BIS00L8			
Data carrier distance to metal	>50	>10	>5	>50	>25	>10	>50	>20	>50	>30	>50	>30	>50	>30	>80	>1	0	
Data carrier clear zone	>200	>60	>50	>200	>150	>150	>200	>60	>200	>100	>200	>100	>200	>100	>250	>70	>70	
Working distance for writing	0-34	0-20	0-15	0-45	0-43	0-35	0-45	8-22	0-32	0-20	0-45	0-30	0-70	0-45	0-50	0-32	0-32	
Working distance for reading	0-34	0-20	0-15	0-45	0-43	0-35	0-45	8-22	0-32	0-20	0-45	0-30	0-70	0-45	0-50	0-32	0-32	
Offset at distance																		
	0	±22	±18	±14	±30	±24	±18	±32	±20	±28	±20	±32	±22	±40	±25	±30	±30	±25
	5	±22	±18	±14	±30	±24	±18	±32	±20	±28	±20	±32	±22	±40	±25	±30	±30	±25
	9	±22	±18	±14	±30	±24	±18	±32	±20	±28	±18	±32	±22	±40	±25	±30	±30	±25
	12	±22	±18	±10	±30	±24	±18	±32	±18	±24	±18	±32	±22	±40	±25	±30	±25	±25
	15	±22	±18	±10	±30	±24	±18	±32	±18	±24	±15	±32	±20	±40	±25	±30	±25	±25
	16	±22	±16	±8	±30	±24	±18	±32	±18	±24	±15	±32	±20	±40	±25	±30	±25	±25
	18	±22	±16	±6	±30	±24	±18	±32	±16	±24	±12	±32	±18	±40	±25	±30	±25	±22
	20	±22	±16	±4	±30	±24	±18	±32	±16	±24	±8	±32	±16	±40	±25	±30	±25	±22
	22	±20	±10		±30	±24	±15	±25	±14	±20		±25	±14	±40	±22	±30	±25	±22
	25	±15	±10		±30	±24	±15	±25		±20		±25	±12	±40	±22	±30	±25	±22
	30	±15	±4		±30	±20	±12	±25		±12		±25	±10	±40	±22	±28	±20	±17
	32	±8			±30	±18	±8	±20		±12		±20		±40	±22	±24	±20	±17
	35	±4			±30	±16	±4	±20				±20		±40	±20	±22		
	40				±24	±10		±20				±20		±40	±20	±18		
	43				±20	±4		±12				±12		±35	±15	±14		
	45				±16			±12				±12		±35	±12	±12		
	50				±4									±35		±4		

Dimensions in mm



1) Sensing surface, 2) Data carrier, 3) Clear zone, 4) LED (Power), 5) LED (TP)

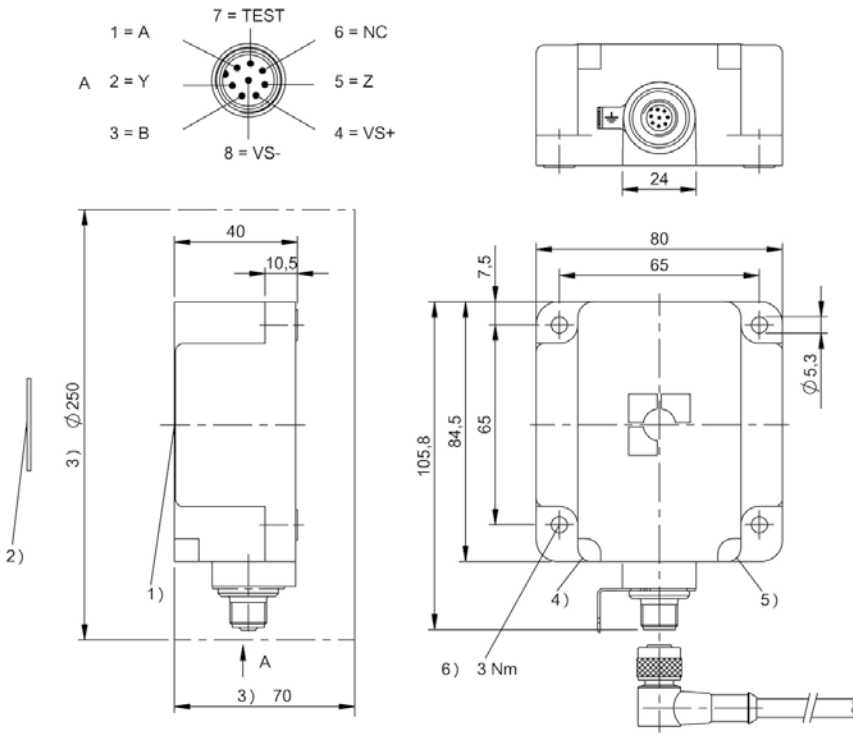


For processor units BIS M-60...	BIS00M6 BIS M-341-001-S115
Product Group	HF (13.56 MHz)
Dimension	80 x 40 x 84.5 mm
Installation	metal-free (clear zone)
Antenna type	round
Supported data carrier types	DIN ISO 14443, DIN ISO 15693
Connection	Male, 8-pin
Housing material	PBT
Ambient temperature	0...70 °C
Protection degree	IP67
Approval/Conformity	CE, FCC Part 15, IC RSS-210, UL-FILE E227256, Vol.X1, BIS

Appropriate data carrier

	BIS0046		BIS0043		BIS00M9 BIS00M8		BIS00NU BIS00NW BIS0100	
Data carrier distance to metal	>50		>50	>0	>0		>0	
Data carrier clear zone	>200		>200	>0	>100		>100	
Working distance for writing	35-90		20-60	0-50	0-46		0-23	
Working distance for reading	35-90		20-60	0-50	0-46		0-23	
Offset at distance								
	0			±30	0	±33		±25
	5			±30	5	±33		±25
	9			±30	10	±33		±25
	12			±30	12	±33		±20
	15			±30	16	±33		±20
	16			±30	20	±30		±20
	18			±30	23	±30		±10
	20			±35	25	±30		
	22			±35	30	±30		
	25			±35	35	±24		
	30			±35	40	±24		
	35	±55		±30	46	±8		
	40	±55		±30	50			
	45	±55		±30	55			
	50	±55		±30	60			
	60	±55		±30	65			
	70	±40			70			
	80	±40			80			
	90	±20			90			

Dimensions in mm



1) Sensing surface, 2) Data carrier, 3) Clear zone, 4) LED (Power), 5) LED (TP)

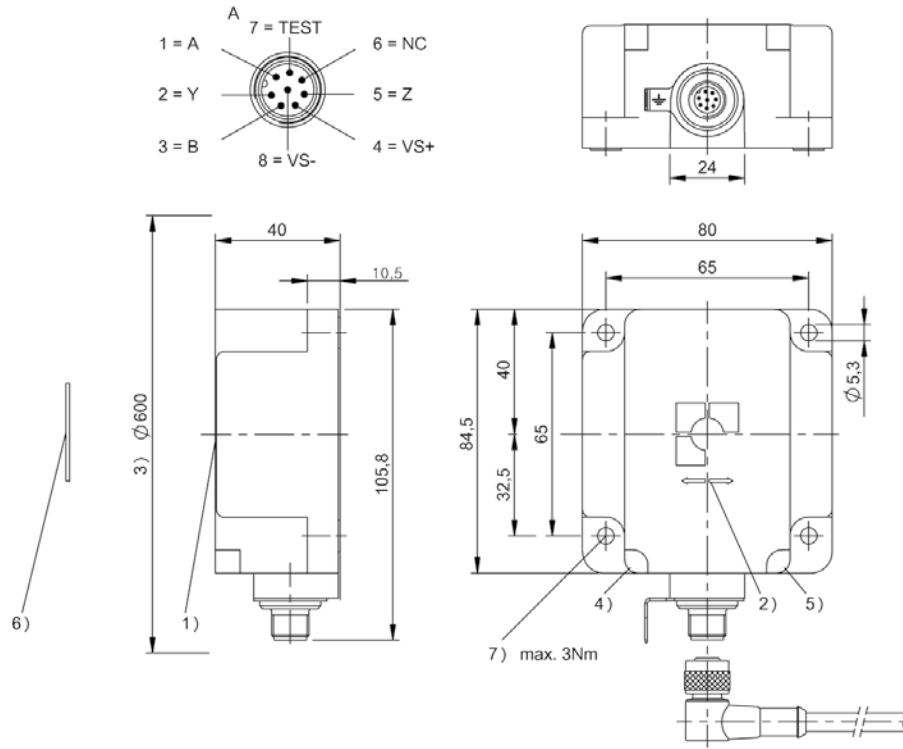


For processor units BIS M-60...	BIS005C BIS M-351-001-S115
Product Group	HF (13.56 MHz)
Dimension	80 x 40 x 84.5 mm
Installation	metal-free (clear zone)
Antenna type	Rod
Supported data carrier types	DIN ISO 14443, DIN ISO 15693
Connection	Male, 8-pin
Housing material	PBT
Ambient temperature	0...70 °C
Protection degree	IP67
Approval/Conformity	CE, FCC Part 15, IC RSS-210, UL-FILE E227256, Vol.X1, BIS

Appropriate data carrier

	BIS004F				BIS004H				BIS00M2				BIS00P3				
Data carrier clear zone A	>200	>200	>200	>200	>200	>200	>200	>200	>200	>200	>10	>10	>240	>240	>240	>240	
Data carrier clear zone B	>200	>200	>200	>200	>200	>200	>200	>200	>200	>200	>50	>50	>480	>480	>480	>480	
Data carrier clear zone C									>50	>50	>2	>2	>50	>50	0	0	
Metallic mounting surface 40 x 22 mm	0-52	0-52			0-52	0-52											
Metallic mounting surface > 200 x 200 mm			0-65	0-65			0-65	0-65									
Working distance for writing	0-52	0-52	0-65	0-65	0-52	0-52	0-65	0-65	0-30	0-30	15-30	15-30	0-100	0-100	0-90	0-90	
Working distance for reading	0-52	0-52	0-65	0-65	0-52	0-52	0-65	0-65	0-30	0-30	15-30	15-30	0-100	0-100	0-90	0-90	
Offset at distance	X	Y	X	Y	X	Y	X	Y	X	Y	X	Y	X	Y	X	Y	
	0	±60	±25	±65	±26	±25	±60	±26	±65	±35	±20			±100	±20	±100	±20
	5	±60	±25	±65	±26	±25	±60	±26	±65	±35	±20			±100	±20	±100	±20
	12	±60	±25	±65	±25	±25	±60	±25	±65	±35	±20			±100	±20	±100	±20
	15	±60	±25	±65	±25	±25	±60	±25	±65	±35	±20	±35	±15	±100	±20	±100	±20
	18	±60	±25	±65	±25	±25	±60	±25	±65	±35	±20	±35	±15	±100	±20	±100	±20
	20	±60	±25	±65	±25	±25	±60	±25	±65	±20	±12	±28	±15	±80	±20	±80	±20
	22	±60	±25	±65	±25	±25	±60	±25	±65	±20	±12	±28	±15	±80	±20	±80	±20
	25	±60	±25	±65	±25	±25	±60	±25	±65					±80	±20	±80	±20
	30	±60	±25	±65	±25	±25	±60	±25	±65					±80	±20	±80	±20
	32	±50	±25	±65	±25	±25	±50	±25	±65					±80	±20	±80	±20
	35	±50	±25	±65	±25	±25	±50	±25	±65					±80	±20	±80	±20
	40	±50	±20	±50	±25	±20	±50	±25	±50					±65	±20	±65	±20
	45	±25	±20	±50	±25	±20	±25	±25	±50					±65	±20	±65	±20
	50	±25	±20	±50	±25	±20	±25	±25	±50					±65	±20	±65	±20
	52	±25	±8	±25	±25	±8	±25	±25	±25					±50	±20	±50	±20
	60			±25	±10			±10	±25					±40	±20		
	65			±25	±10			±10	±25								

Dimensions in mm



1) Sensing surface, 2) Read/write axis, 3) Clear zone, 4) LED (Power), 5) LED (TP), 6) Data carrier on steel, 7) Tightening torque

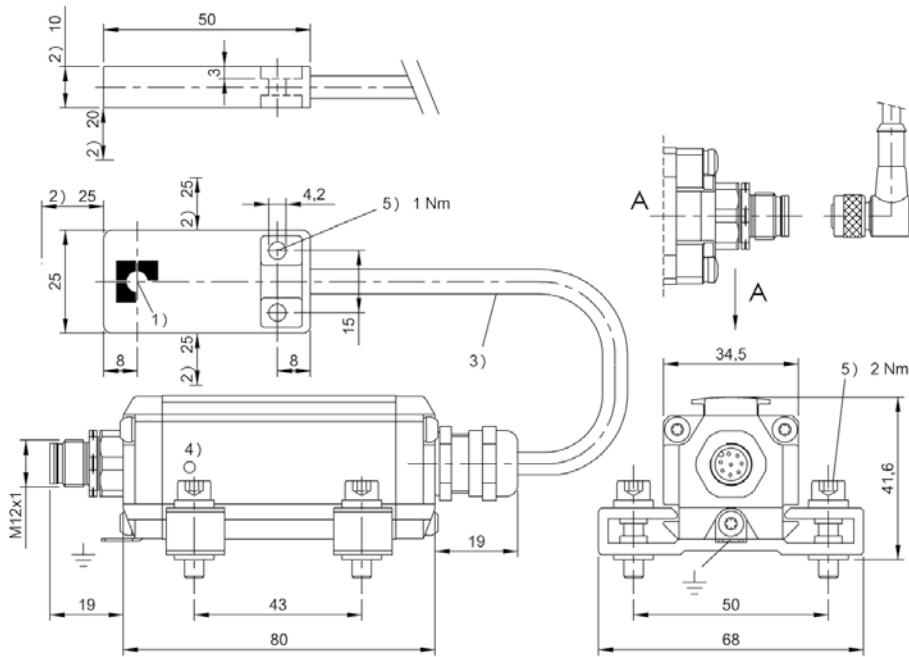


For processor units BIS M-60...	BISO0NK BIS M-305-001-S115
Product Group	HF (13.56 MHz)
Dimension	25 x 10 x 50 mm
Installation	metal-free (clear zone)
Antenna type	round
Supported data carrier types	DIN ISO 14443, DIN ISO 15693
Connection	Plug, 8-pin, 0.50 m, PU
Housing material	ABS, GF16, interface aluminum
Ambient temperature	0...70 °C
Protection degree	IP67
Approval/Conformity	CE, UL-FILE E227256, Vol.X1, BIS, FCC, IC

Appropriate data carrier

	BIS0040		BIS0042		BIS0044		BIS0048		BIS004A		BIS0043		BIS00M9 BIS00M8		BIS00NU BIS00NW BIS0100		BIS00UC				
Data carrier distance to metal	>10	>0	>10	>0	>25		>10	>0	>10	>0		>25	>0	>0			>10	>0			
Data carrier clear zone	>60	>0	>60	>0	>80		>60	>0	>60	>0		>100	>0	>100			>60	>60			
Working distance for writing	0-6	0-4	0-8	0-6	0-13		0-5	0-4	0-7	0-5		0-17	0-11	0-17			0-7.5	0-4			
Working distance for reading	0-6	0-4	0-8	0-6	0-13		0-5	0-4	0-7	0-5		0-17	0-11	0-17			0-7.5	0-4			
Offset at distance																					
	0	±3	±3	±4	±4	±6		±3	±3	±4	±3	0	±12	±8	±10		±7		0	±5	±3.5
	5	±2		±4	±2	±6		±2		±3	±2	5	±12	±8	±10		±7		2	±5	±3.5
	9					±4						8	±12	±6	±10		±6		3	±4	±3
	12					±2						10	±12	±6	±9		±6		4	±4	±1
	15											11	±8	±4	±9		±3		5	±4	
	16											12	±8		±9		±3		6	±4	
	18											15	±8		±4				7.5	±1.5	
	20											17	±4		±4				10		

Dimensions in mm



1) Sensing surface, 2) Clear zone, 3) Cable length see text, 4) LED function indicator, 5) Tightening torque

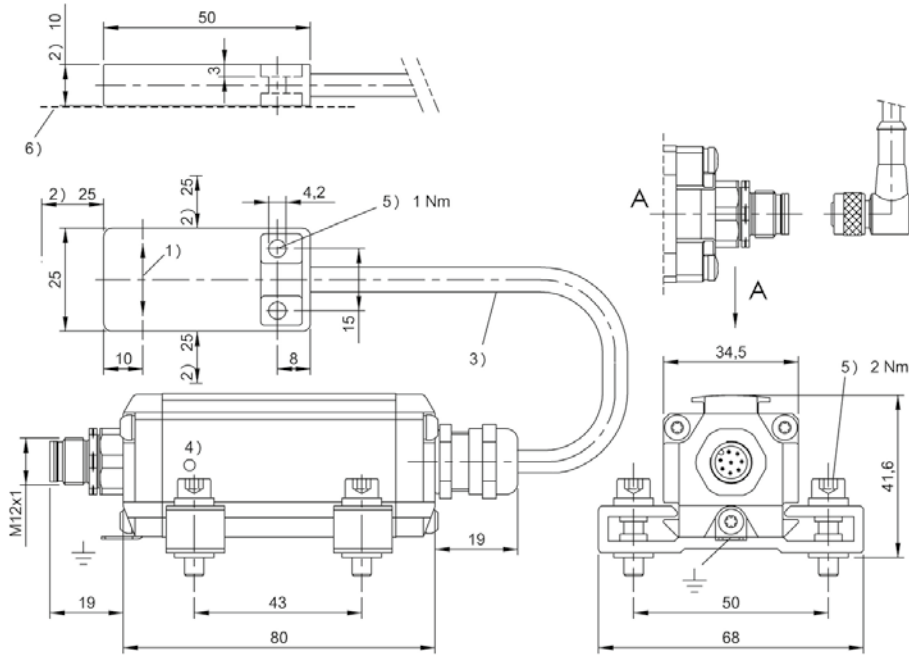


For processor units BIS M-60...	BIS00NY BIS M-352-001-S115
Product Group	HF (13.56 MHz)
Dimension	25 x 10 x 50 mm
Installation	metal-free (clear zone)
Antenna type	Rod
Supported data carrier types	DIN ISO 14443, DIN ISO 15693
Connection	Plug, 8-pin, 0.50 m, PU
Housing material	ABS, GF16, interface aluminum
Ambient temperature	0...70 °C
Protection degree	IP67
Approval/Conformity	CE, UL-FILE E227256, Vol.X1, BIS, FCC, IC

Appropriate data carrier

	BIS00NZ		BIS017F		BIS00M2			
Data carrier clear zone A	>27	>27	>200	>200	>200	>200	>200	>200
Data carrier clear zone B	>27	>27	>200	>200	>200	>200	>200	>200
Data carrier clear zone C			>50	>50	>50	>50	>0	>0
Metallic mounting surface 40 x 22 mm								
Metallic mounting surface > 200 x 200 mm								
Working distance for writing	0-22	0-22	0-17	0-17	0-17	0-17	0-20	0-20
Working distance for reading	0-22	0-22	0-17	0-17	0-17	0-17	0-20	0-20
Offset at distance	X	Y	X	Y	X	Y	X	Y
	0	±25 ±5	0	±22 ±9	±22	±10	±25	±12
	5	±25 ±5	5	±22 ±9	±22	±10	±25	±12
	10	±25 ±5	10	±19 ±8	±20	±9	±25	±12
	15	±25 ±5	15	±12 ±6	±16	±7	±22	±10
	20	±15 ±5	17	±3 ±2	±5	±3	±18	±8
	22	±15 ±5	20				±8	±4

Dimensions in mm



1) Read/write axis, 2) Clear zone, 3) Cable length see text, 4) LED function indicator, 5) Tightening torque, 6) Mounting on steel

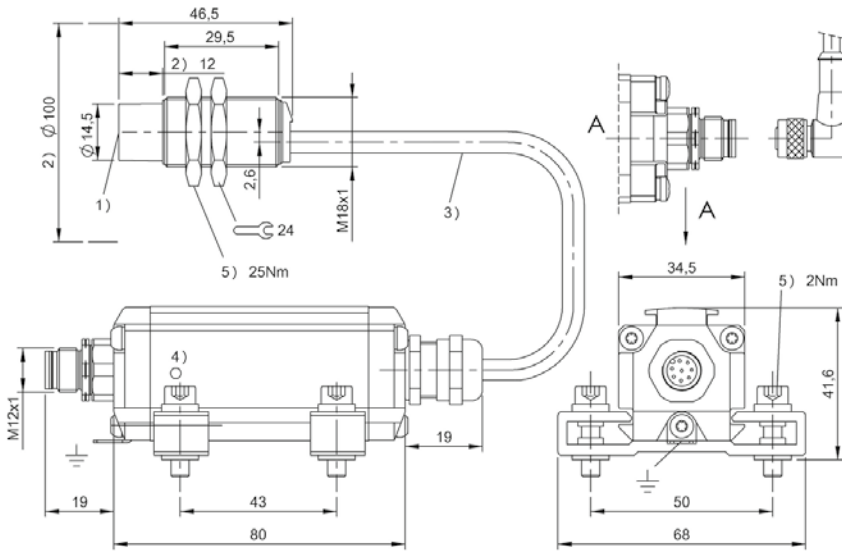


For processor units BIS M-60...	BIS00P2 BIS M-307-001-S115
Product Group	HF (13.56 MHz)
Dimension	Ø 18 x 46.5 mm
Installation	metal-free (clear zone)
Antenna type	round
Supported data carrier types	DIN ISO 14443, DIN ISO 15693
Connection	Plug, 8-pin, 0.50 m, PU
Housing material	Brass, interface aluminum
Ambient temperature	0...70 °C
Protection degree	IP67
Approval/Conformity	CE, UL-FILE E227256, Vol.X1, BIS, FCC, IC

Appropriate data carrier

	BIS0040		BIS0042		BIS0044		BIS0048		BIS004A		BIS00YK		BIS00M9 BIS00M8		BIS00NU BIS00NW BIS0100	
Data carrier distance to metal	>10	>0	>10	>0	>25		>10	>0	>10	>0	>10	>0	>0		>0	
Data carrier clear zone	>60	>0	>60	>0	>80		>60	>0	>60	>0	>60	>60	>100		>100	
Working distance for writing	0-6	0-4	0-8	0-6	0-13		0-5	0-4	0-7	0-5	0-10	0-8	0-16		0-12	
Working distance for reading	0-6	0-4	0-8	0-6	0-13		0-5	0-4	0-7	0-5	0-10	0-8	0-16		0-12	
Offset at distance																
	0	±3	±3	±4	±4	±6	±3	±3	±4	±3	0	±7	±5	±9		±7
	5	±2		±4	±2	±6	±2		±4	±2	5	±7	±5	±9		±7
	9					±4					7	±6	±4	±9		±6
	12					±2					8	±6	±2	±9		±6
	15										10	±3		±8		±6
	16										12			±8		±3
	18										14			±8		
	20										16			±3		

Dimensions in mm



1) Sensing surface, 2) Clear zone, 3) Cable length see text, 4) LED function indicator, 5) Tightening torque



For processor units BIS M-62... For processor units BIS V-6... with BIS014N	BIS00WM BIS M-371-000-A01
Product Group	HF (13.56 MHz)
Dimension	113.4 x 42.4 x 118 mm
Installation	metal-free (clear zone)
Antenna type	round
Supported data carrier types	DIN ISO 14443, DIN ISO 15693
Connection	Connector, RCA
Housing material	PA
Ambient temperature	-20...50 °C
Protection degree	IP65
Approval/Conformity	CE

Appropriate data carrier

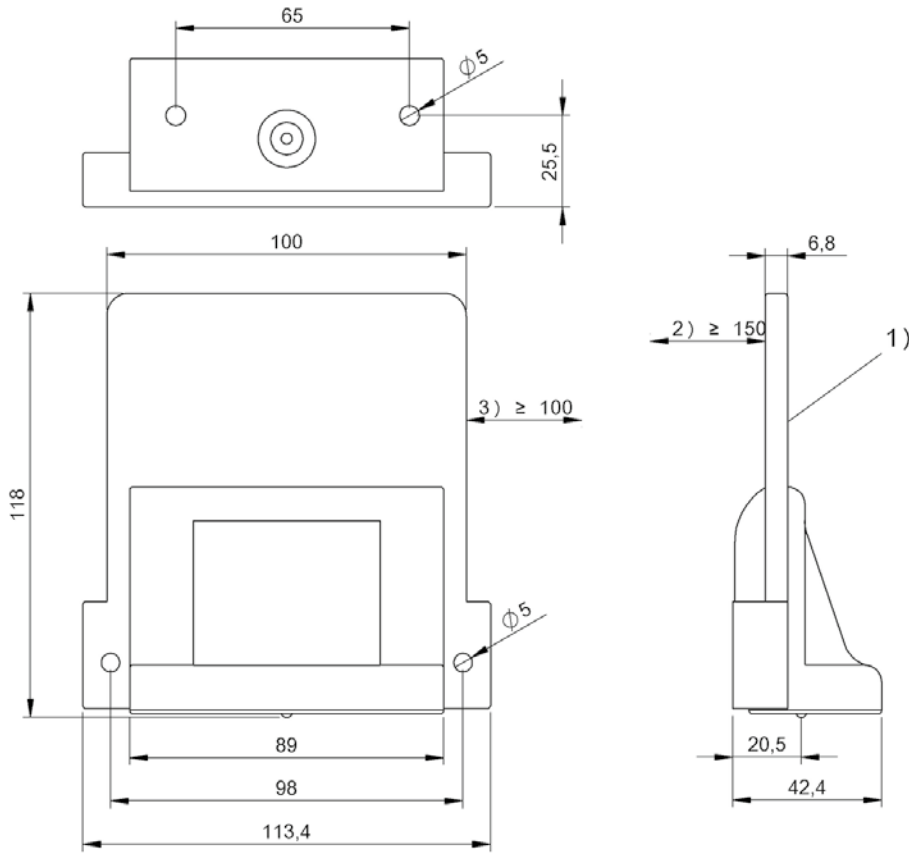
	BIS0043	BIS0111	BIS0044	BIS0045	BIS0046	BIS0119	BIS00YF
Data carrier distance to metal	>40	>40	>40	>40	>40	>0	>25
Data carrier clear zone	>230	>230	>220	>230	>250	>120	>230
Working distance for writing	0-110	0-100	0-70	0-120	0-150	0-50	0-100
Working distance for reading	0-110	0-100	0-70	0-120	0-150	0-50	0-100
Offset at distance							
	0 ±40	±40	±40	±40	±40	0 ±30	0 ±75
	20 ±40	±40	±40	±40	±40	5 ±30	20 ±75
	40 ±40	±40	±40	±40	±40	15 ±30	30 ±75
	60 ±40	±40	±40	±40	±40	28 ±30	40 ±75
	70 ±40	±40	±25	±40	±40	35 ±30	50 ±70
	100 ±40	±25		±40	±40	50 ±20	70 ±70
	110 ±25			±40	±40		100 ±25
	120			±25	±40		
	150				±25		

Dimensions in mm

Appropriate data carrier

	BIS00YE	BIS00YA	BIS00Y9	BIS00Y6	BIS00Y5	BIS00Y4	BIS00Y2
Data carrier distance to metal	>25	>25	>40	>40	>40	>40	>40
Data carrier clear zone	>230	>230	>230	>250	>250	>250	>250
Working distance for writing	0-100	0-40	0-70	25-140	10-205	10-205	10-135
Working distance for reading	0-100	0-40	0-70	25-140	10-205	10-205	10-135
Offset at distance							
	0 ±75	±30	±40	50 ±75	±75	±75	±75
	20 ±75	±30	±40	75 ±75	±75	±75	±75
	30 ±75	±30	±40	100 ±75	±75	±75	±75
	40 ±75	±20	±40	120 ±75	±75	±75	±75
	50 ±70		±40	135 ±75	±75	±75	±25
	70 ±70		±25	140 ±25	±75	±75	
	100 ±25			190	±75	±75	
				205	±25	±25	

Dimensions in mm



1) Sensing surface, 2) Clear zone, 3) Clear zone surrounding



For processor units BIS M-62... For processor units BIS V-6... with BIS014N	BIS00WL BIS M-372-000-A01
Product Group	HF (13.56 MHz)
Dimension	200 x 42.4 x 218 mm
Installation	metal-free (clear zone)
Antenna type	round
Supported data carrier types	DIN ISO 14443, DIN ISO 15693
Connection	Connector, RCA
Housing material	PA
Ambient temperature	-20...50 °C
Protection degree	IP65
Approval/Conformity	CE

Appropriate data carrier

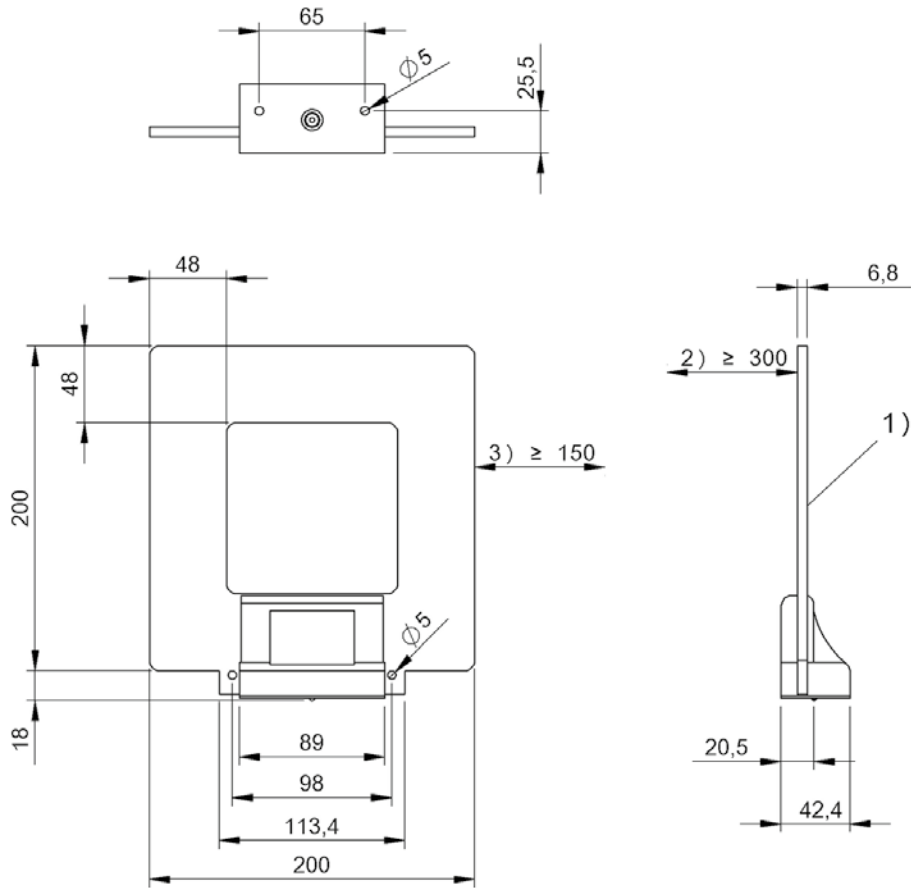
	BIS0043	BIS0111	BIS0044	BIS0045	BIS0046		BIS0119		BIS00YF
Data carrier distance to metal	>45	>45	>45	>45	>45		>0		>45
Data carrier clear zone	>430	>430	>420	>430	>450		>420		>430
Working distance for writing	0-160	0-150	0-115	0-175	0-235		0-65		0-160
Working distance for reading	0-160	0-150	0-115	0-175	0-235		0-65		0-160
Offset at distance									
	0 ±75	±75	±50	±75	±75		0 ±50		0 ±100
	25 ±75	±75	±50	±75	±75		20 ±50		20 ±100
	50 ±75	±75	±50	±75	±75		37 ±50		30 ±100
	80 ±75	±75	±50	±75	±75		65 ±30		40 ±100
	100 ±75	±75	±50	±75	±75		80		60 ±100
	115 ±75	±75	±30	±75	±75		100		90 ±100
	135 ±75	±75		±75	±75		115		115 ±50
	150 ±75	±50		±75	±75				130 ±50
	160 ±50			±75	±75				145 ±50
	175			±50	±75				160 ±25

Dimensions in mm

Appropriate data carrier

	BIS00YE	BIS00YA	BIS00Y9		BIS00Y6	BIS00Y5	BIS00Y4	BIS00Y2
Data carrier distance to metal	>45	>45	>45		>45	>45	>45	>45
Data carrier clear zone	>430	>430	>430		>450	>450	>450	>450
Working distance for writing	0-145	0-30	0-115		0-230	0-300	0-300	0-190
Working distance for reading	0-145	0-30	0-115		0-230	0-300	0-300	0-190
Offset at distance								
	0 ±100	±50	±75		0 ±100	±100	±100	±100
	20 ±100	±50	±75		50 ±100	±100	±100	±100
	30 ±100	±30	±75		100 ±100	±100	±100	±100
	40 ±100		±75		150 ±100	±100	±100	±100
	60 ±100		±75		190 ±100	±100	±100	±50
	90 ±100		±75		230 ±50	±100	±100	
	115 ±50		±50		250	±100	±100	
	130 ±50				300	±50	±50	
	145 ±25							
	160							

Dimensions in mm



1) Sensing surface, 2) Clear zone, 3) Clear zone surrounding

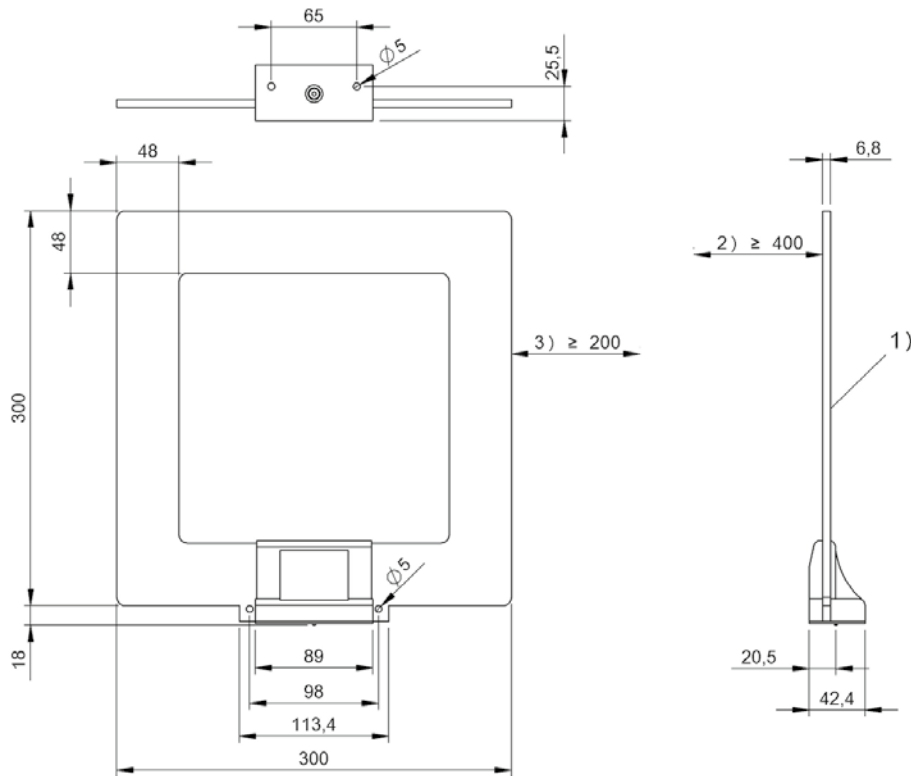


For processor units BIS M-62... For processor units BIS V-6... with BIS014N	BIS00WK BIS M-373-000-A01
Product Group	HF (13.56 MHz)
Dimension	300 x 42.4 x 318 mm
Installation	metal-free (clear zone)
Antenna type	round
Supported data carrier types	DIN ISO 14443, DIN ISO 15693
Connection	Connector, RCA
Housing material	PA
Ambient temperature	-20...50 °C
Protection degree	IP65
Approval/Conformity	CE

Appropriate data carrier

	BIS00YF	BIS00YE	BIS00Y5	BIS00Y4	BIS00W9
Working distance for writing	0-195	0-185	0-320	0-355	0-360
Working distance for reading	0-195	0-185	0-320	0-355	0-360

Dimensions in mm



1) Sensing surface, 2) Clear zone, 3) Clear zone surrounding

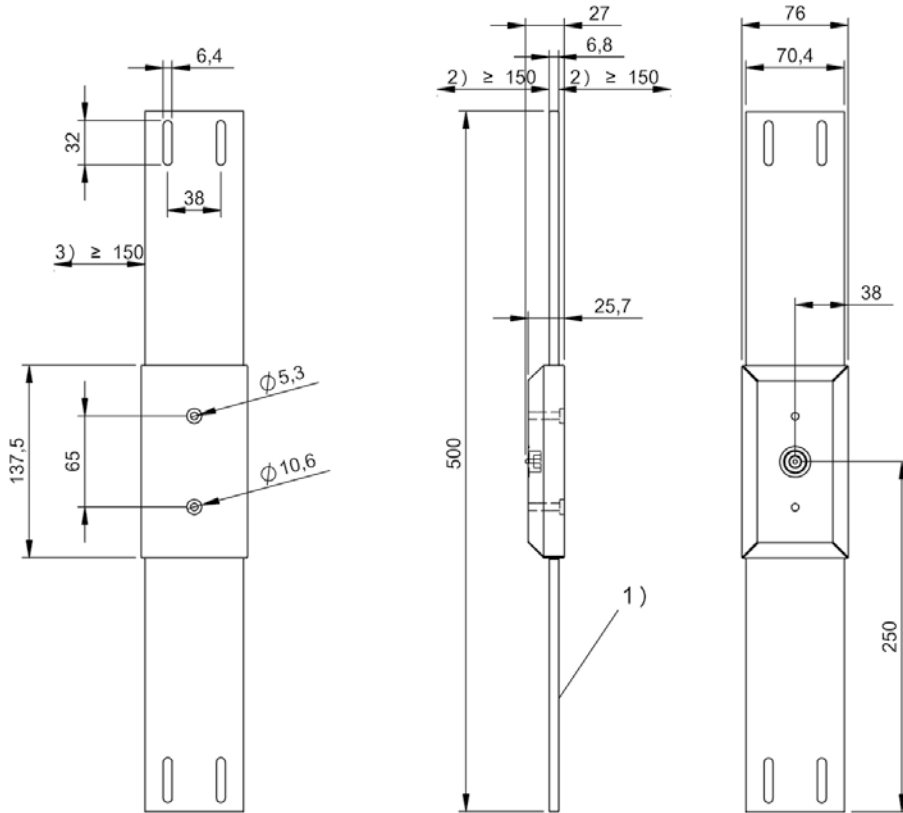


For processor units BIS M-62... For processor units BIS V-6... with BIS014N	BISO0WN BIS M-370-000-A02
Product Group	HF (13.56 MHz)
Dimension	500 x 27 x 76 mm
Installation	metal-free (clear zone)
Antenna type	round
Supported data carrier types	DIN ISO 14443, DIN ISO 15693
Connection	Connector, RCA
Housing material	PA
Ambient temperature	-20...50 °C
Protection degree	IP65
Approval/Conformity	CE

Appropriate data carrier

	BIS00Y7	BIS00Y6	BIS00Y5	BIS00Y4	BIS00Y2	BIS00Y1
Working distance for writing	0-48	10-95	0-135	0-130	15-95	0-100
Working distance for reading	0-48	10-95	0-135	0-130	15-95	0-100

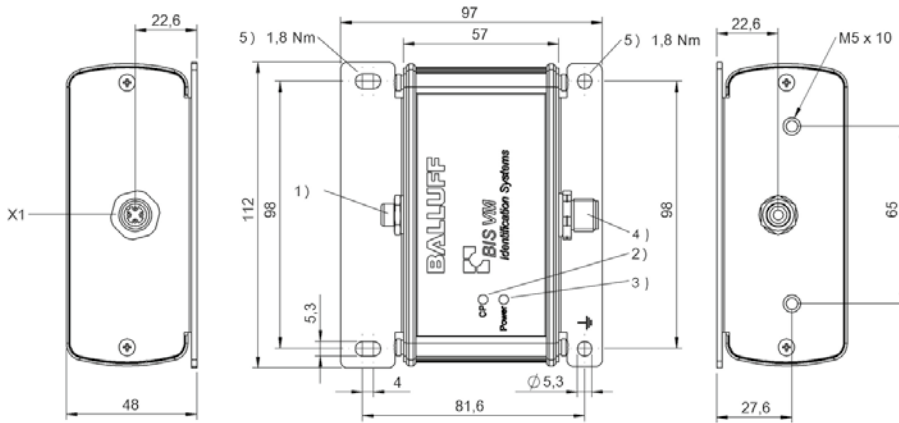
Dimensions in mm



1) Sensing surface, 2) Clear zone, 3) Clear zone surrounding



For antennas BIS M-37...	BIS014N BIS VM-920
Product Group	HF (13.56 MHz)
Dimension	112 x 48 x 97 mm
Connection	Male, 4-pin
Housing material	Aluminum
Ambient temperature	-20...50 °C
Protection degree	IP65
Approval/Conformity	CE



1) Antenna connection, 2) LED (CP), 3) LED (Power), 4) Read head connection X1, 5) Tightening torque



For read/write heads BIS VM (HF 13.56 MHz), BIS VL (LF 125 kHz) and BIS VU (UHF 860...960 MHz)	BIS013U BIS V-6108-048-C002	
Product Group	Multi-Frequency Processor	
Interface	Profinet I/O (IRT), Profinet I/O (IRT) 2-port switch	
IO-Link-Master-Port	max. 500 mA	
Supported RFID technologies	LF 125 kHz (BIS VL), HF 13.56 MHz (BIS VM), UHF 860...960 MHz (BIS VU)	
Number of connectable R/W heads / antennas	4	
Operating voltage U_b	24 V DC LPS Class 2	
Housing material	Zinc, Die casting	
Ambient temperature	0...60 °C	
IP rating	IP65, with connector	
Approval/Conformity	CE, EAC, cULus, WEEE	
Connection	2x M12x1-Female, 4-pin, D-coded 7/8"-Male, 5-pin	
Productview	Page 211	

* Use adapter **BIS0FCK** to connect read/write heads **BIS C (LF 70/455 kHz)**.



BIS01AE BIS V-6108-048-C007	BIS013W * BIS V-6108-048-C102	BIS01AF * BIS V-6108-048-C107
Multi-Frequency Processor	Multi-Frequency Processor	Multi-Frequency Processor
Profinet I/O (IRT), Profinet I/O (IRT) 2-port switch	Profinet I/O (IRT), Profinet I/O (IRT) 2-port switch	Profinet I/O (IRT), Profinet I/O (IRT) 2-port switch
max. 500 mA	max. 500 mA	max. 500 mA
LF 125 kHz (BIS VL), HF 13.56 MHz (BIS VM), UHF 860...960 MHz (BIS VU)	LF 125 kHz (BIS VL), LF 70/455 kHz (BIS C), HF 13.56 MHz (BIS VM), UHF 860...960 MHz (BIS VU)	LF 125 kHz (BIS VL), LF 70/455 kHz (BIS C), HF 13.56 MHz (BIS VM), UHF 860...960 MHz (BIS VU)
4	4	4
24 V DC LPS Class 2	24 V DC LPS Class 2	24 V DC LPS Class 2
Zinc, Die casting	Zinc, Die casting	Zinc, Die casting
0...60 °C	0...60 °C	0...60 °C
IP65, with connector	IP65, with connector	IP65, with connector
CE, EAC, cULus, WEEE	CE, EAC, cULus, WEEE	CE, EAC, cULus, WEEE
2x M12x1-Female, 4-pin, D-coded M12x1-Male, 5-pin	2x M12x1-Female, 4-pin, D-coded 7/8"-Male, 5-pin	2x M12x1-Female, 4-pin, D-coded M12x1-Male, 5-pin
Page 211	Page 211	Page 211



For read/write heads BIS VM (HF 13.56 MHz), BIS VL (LF 125 kHz) and BIS VU (UHF 860...960 MHz)	BIS00T3 BIS V-6102-019-C001	
Product Group	Multi-Frequency Processor	
Interface	Profibus DP Slave galvanically isolated	
IO-Link-Master-Port	max. 500 mA	
Supported RFID technologies	LF 125 kHz (BIS VL), HF 13.56 MHz (BIS VM), UHF 860...960 MHz (BIS VU)	
Number of connectable R/W heads / antennas	4	
Operating voltage U_b	24 V DC LPS Class 2	
Housing material	Zinc, Die casting	
Ambient temperature	0...60 °C	
IP rating	IP65, with connector	
Approval/Conformity	CE, EAC, cULus, WEEE	
Connection	M12x1-Male, 5-pin, B-coded M12x1-Female, 5-pin, B-coded 7/8"-Male, 5-pin	
Productview	Page 212	

* Use adapter **BISOFC** to connect read/write heads **BIS C (LF 70/455 kHz)**.



	BIS012E * BIS V-6102-019-C101	BIS01AA BIS V-6107-039-C007	BIS01AC * BIS V-6107-039-C107
	Multi-Frequency Processor	Multi-Frequency Processor	Multi-Frequency Processor
	Profibus DP Slave galvanically isolated	TCP/IP, USB	TCP/IP, USB
	max. 500 mA	max. 1.700 mA	max. 1.700 mA
	LF 125 kHz (BIS VL), LF 70/455 kHz (BIS C), HF 13.56 MHz (BIS VM), UHF 860...960 MHz (BIS VU)	LF 125 kHz (BIS VL), HF 13.56 MHz (BIS VM), UHF 860...960 MHz (BIS VU)	LF 125 kHz (BIS VL), LF 70/455 kHz (BIS C), HF 13.56 MHz (BIS VM), UHF 860...960 MHz (BIS VU)
	4	4	4
	24 V DC LPS Class 2	24 V DC LPS Class 2	24 V DC LPS Class 2
	Zinc, Die casting	Zinc, Die casting	Zinc, Die casting
	0...60 °C	0...60 °C	0...60 °C
	IP65, with connector	IP65, with connector	IP65, with connector
	CE, EAC, cULus, WEEE	CE, EAC, cULus, WEEE	CE, EAC, cULus, WEEE
	M12x1-Male, 5-pin, B-coded M12x1-Female, 5-pin, B-coded 7/8"-Male, 5-pin	M12x1-Female, 4-pin, D-coded M12x1-Female, 5-pin, A-coded M12x1-Male, 5-pin	M12x1-Female, 4-pin, D-coded M12x1-Female, 5-pin, A-coded M12x1-Male, 5-pin
	Page 212	Page 210	Page 210



For read/write heads BIS VM (HF 13.56 MHz), BIS VL (LF 125 kHz) and BIS VU (UHF 860...960 MHz)	BIS0186 BIS V-6107-039-C005	
Product Group	Multi-Frequency Processor	
Interface	Ethernet TCP/IP, USB	
IO-Link-Master-Port	max. 1.700 mA	
Supported RFID technologies	LF 125 kHz (BIS VL), HF 13.56 MHz (BIS VM), UHF 860...960 MHz (BIS VU)	
Number of connectable R/W heads / antennas	4	
Operating voltage U_b	24 V DC LPS Class 2	
Housing material	Zinc, Die casting	
Ambient temperature	0...60 °C	
IP rating	IP65, with connector	
Approval/Conformity	CE, EAC, cULus, WEEE	
Connection	M12x1-Female, 4-pin, D-coded M12x1-Female, 5-pin, A-coded 7/8"-Male, 5-pin	
Productview	Page 212	

* Use adapter **BISOFCK** to connect read/write heads **BIS C (LF 70/455 kHz)**.



BIS018J BIS V-6107-039-C006	BIS0187 * BIS V-6107-039-C105	BIS018K * BIS V-6107-039-C106
Multi-Frequency Processor	Multi-Frequency Processor	Multi-Frequency Processor
Ethernet TCP/IP, USB	Ethernet TCP/IP, USB	Ethernet TCP/IP, USB
max. 1.700 mA	max. 1.700 mA	max. 1.700 mA
LF 125 kHz (BIS VL), HF 13.56 MHz (BIS VM), UHF 860...960 MHz (BIS VU)	LF 125 kHz (BIS VL), LF 70/455 kHz (BIS C), HF 13.56 MHz (BIS VM), UHF 860...960 MHz (BIS VU)	LF 125 kHz (BIS VL), LF 70/455 kHz (BIS C), HF 13.56 MHz (BIS VM), UHF 860...960 MHz (BIS VU)
4	4	4
24 V DC LPS Class 2	24 V DC LPS Class 2	24 V DC LPS Class 2
Zinc, Die casting	Zinc, Die casting	Zinc, Die casting
0...60 °C	0...60 °C	0...60 °C
IP65, with connector	IP65, with connector	IP65, with connector
CE, EAC, cULus, WEEE	CE, EAC, cULus, WEEE	CE, EAC, cULus, WEEE
M12x1-Female, 4-pin, D-coded M12x1-Female, 5-pin, A-coded 7/8"-Male, 4-pin	M12x1-Female, 4-pin, D-coded M12x1-Female, 5-pin, A-coded 7/8"-Male, 5-pin	M12x1-Female, 4-pin, D-coded M12x1-Female, 5-pin, A-coded 7/8"-Male, 4-pin
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For read/write heads BIS VM (HF 13.56 MHz), BIS VL (LF 125 kHz) and BIS VU (UHF 860...960 MHz)	BIS012F BIS V-6106-034-C002	
Product Group	Multi-Frequency Processor	
Interface	Ethernet/IP	
IO-Link-Master-Port	max. 500 mA	
Supported RFID technologies	LF 125 kHz (BIS VL), HF 13.56 MHz (BIS VM), UHF 860...960 MHz (BIS VU)	
Number of connectable R/W heads / antennas	4	
Operating voltage U_b	24 V DC LPS Class 2	
Housing material	Zinc, Die casting	
Ambient temperature	0...60 °C	
IP rating	IP65, with connector	
Approval/Conformity	CE, EAC, cULus, WEEE	
Connection	2x M12x1-Female, 4-pin, D-coded 7/8"-Male, 5-pin	
Productview	Page 213	

* Use adapter **BISOFC** to connect read/write heads **BIS C (LF 70/455 kHz)**.



BIS0122 BIS V-6106-034-C004	BIS014C * BIS V-6106-034-C102	BIS0146 BIS V-6106-034-C104
Multi-Frequency Processor	Multi-Frequency Processor	Multi-Frequency Processor
Ethernet/IP	Ethernet/IP	Ethernet/IP
max. 500 mA	max. 500 mA	max. 500 mA
LF 125 kHz (BIS VL), HF 13.56 MHz (BIS VM), UHF 860...960 MHz (BIS VU)	LF 125 kHz (BIS VL), LF 70/455 kHz (BIS C), HF 13.56 MHz (BIS VM), UHF 860...960 MHz (BIS VU)	LF 125 kHz (BIS VL), LF 70/455 kHz (BIS C), HF 13.56 MHz (BIS VM), UHF 860...960 MHz (BIS VU)
4	4	4
24 V DC LPS Class 2	24 V DC LPS Class 2	24 V DC LPS Class 2
Zinc, Die casting	Zinc, Die casting	Zinc, Die casting
0...60 °C	0...60 °C	0...60 °C
IP65, with connector	IP65, with connector	IP65, with connector
CE, EAC, cULus, WEEE	CE, EAC, cULus, WEEE	CE, EAC, cULus, WEEE
2x M12x1-Female, 4-pin, D-coded 7/8"-Male, 4-pin	2x M12x1-Female, 4-pin, D-coded 7/8"-Male, 5-pin	2x M12x1-Female, 4-pin, D-coded 7/8"-Male, 4-pin
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For read/write heads BIS VM (HF 13.56 MHz), BIS VL (LF 125 kHz) and BIS VU (UHF 860...960 MHz)	BIS00U9 BIS V-6110-063-C002	
Product Group	Multi-Frequency Processor	
Interface	EtherCAT	
IO-Link-Master-Port	max. 500 mA	
Supported RFID technologies	LF 125 kHz (BIS VL), HF 13.56 MHz (BIS VM), UHF 860...960 MHz (BIS VU)	
Number of connectable R/W heads / antennas	4	
Operating voltage U_b	24 V DC LPS Class 2	
Housing material	Zinc, Die casting	
Ambient temperature	0...60 °C	
IP rating	IP65, with connector	
Approval/Conformity	CE, EAC, cULus, WEEE	
Connection	2x M12x1-Female, 4-pin, D-coded 7/8"-Male, 5-pin	
Productview	Page 214	

* Use adapter **BIS0FCK** to connect read/write heads **BIS C (LF 70/455 kHz)**.



	BIS0147 BIS V-6110-063-C102	BIS010P BIS V-6111-073-C003	BIS014E * BIS V-6111-073-C103
	Multi-Frequency Processor	Multi-Frequency Processor	Multi-Frequency Processor
	EtherCAT	CC-Link	CC-Link
	max. 500 mA	max. 500 mA	max. 500 mA
	LF 125 kHz (BIS VL), LF 70/455 kHz (BIS C), HF 13.56 MHz (BIS VM), UHF 860...960 MHz (BIS VU)	LF 125 kHz (BIS VL), HF 13.56 MHz (BIS VM)	LF 125 kHz (BIS VL), LF 70/455 kHz (BIS C), HF 13.56 MHz (BIS VM)
	4	4	4
	24 V DC LPS Class 2	24 V DC LPS Class 2	24 V DC LPS Class 2
	Zinc, Die casting	Zinc, Die casting	Zinc, Die casting
	0...60 °C	0...60 °C	0...60 °C
	IP65, with connector	IP65, with connector	IP65, with connector
	CE, EAC, cULus, WEEE	CE, EAC, cULus, WEEE	CE, EAC, cULus, WEEE
	2x M12x1-Female, 4-pin, D-coded 7/8"-Male, 5-pin	M12x1-Male, 5-pin, A-coded M12x1-Female, 5-pin, A-coded 7/8"-Male, 5-pin	M12x1-Male, 5-pin, A-coded M12x1-Female, 5-pin, A-coded 7/8"-Male, 5-pin
	Page 214	Page 215	Page 215



For read/write heads BIS M-3xx-001...	BIS00N1 BIS M-6000-007-050-00-ST15	
Product Group	HF (13.56 MHz)	
Interface	RS232	
Supported RFID technologies	HF 13.56 MHz (BIS M)	
Number of connectable R/W heads / antennas	2	
Operating voltage U _b	19.2...28.8 VDC	
Housing material	ABS	
Ambient temperature	0...60 °C	
Protection degree	IP65 with connector	
Approval/Conformity	CE, cULus	
Connection	Male, 4-pole Male, 5-pole	
Productview	Page 215	



	BIS00J0 BIS M-6000-007-050-00-ST24	BIS00L7 BIS M-6008-048-050-06-ST23	BIS00EW BIS M-6002-019-050-03-ST11
	HF (13.56 MHz)	HF (13.56 MHz)	HF (13.56 MHz)
	RS232	Profinet I/O (IRT), Profinet I/O (IRT) 2 port Switch	Profibus DP Slave galvanically isolated
	HF 13.56 MHz (BIS M)	HF 13.56 MHz (BIS M)	HF 13.56 MHz (BIS M)
	2	2	2
	19.2...28.8 VDC	19.2...28.8 VDC	19.2...28.8 VDC
	ABS	ABS	ABS
	0...60 °C	0...60 °C	0...60 °C
	IP65 with connector	IP65 with connector	IP65 with connector
	CE, UL-FILE E227256, Vol.X1, BIS	CE, UL-FILE E227256, Vol.X1, BIS	CE, UL-FILE E227256, Vol.X1, BIS
	Male, 5-pole, B-coded Male, 5-pole	Female, 4-pole, D-coded M12x1-Female, 4-pole, D-coded Male, 5-pole	Male, 5-pole, B-coded M12x1-Female, 5-pole, B-coded Male, 5-pole
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Sensors

RFID

Machine Vision and
Optical Identification

Human Machine
Interfaces

Safety

Industrial Networking

Software and
System Solutions

Power Supply

Connectivity

Accessories



For read/write heads BIS M-3xx-001...	BIS00F0 BIS M-6022-019-050-03-ST14	
For read/write heads BIS M-3xx-003...		
Product Group	HF (13.56 MHz)	
Interface	Profibus DP Slave galvanically isolated	
Supported RFID technologies	HF 13.56 MHz (BIS M)	
Number of connectable R/W heads / antennas	2	
Operating voltage U_b	19.2...28.8 VDC	
Housing material	Aluminum, die-cast	
Ambient temperature	0...60 °C	
Protection degree	IP65 with connector	
Approval/Conformity	CE, UL-FILE E227256, Vol.X1, BIS	
Connection	Male, 5-pole, B-coded M12x1-Female, 5-pole, B-coded Male, 5-pole	
Productview	Page 217	



		BIS00F2 BIS M-6026-034-050-06-ST19	BIS00LY BIS M-699-052-050-03-ST11
	BIS00EP BIS M-407-039-003-06-S115		
	HF (13.56 MHz)	HF (13.56 MHz)	HF (13.56 MHz)
	Ethernet TCP/IP	Ethernet/IP	CC-Link
	HF 13.56 MHz (BIS M)	HF 13.56 MHz (BIS M)	HF 13.56 MHz (BIS M)
	1	2	2
	19.2...28.8 VDC	19.2...28.8 VDC	21.6...26.4 VDC Supports only LPS/Class 2
	Aluminum	Aluminum, die-cast	Aluminum, die-cast
	0...60 °C	0...60 °C	0...55 °C
	IP67 with connector	IP65 with connector	IP65 with connector
	CE, UL-FILE E227256, Vol.X1, BIS	CE, UL-FILE E227256, Vol.X1, BIS	CE, CLPA, UL-FILE E227256, Vol.X1, BIS
	Female, 4-pole, D-coded Male, 5-pole	Female, 4-pole, D-coded Male, 5-pole	Male, 5-pole Female, 5-pole Male, 5-pole
	Page 218	Page 218	Page 219



For read/write heads BIS M-37x-000...	BIS00ZJ BIS M-620-068-A01-00-S115	
Product Group	HF (13.56 MHz)	
Interface	RS232	
Supported RFID technologies	HF 13.56 MHz (BIS M)	
Number of connectable R/W heads / antennas	1	
Operating voltage U _b	19.2...28.8 VDC	
Housing material	Aluminum	
Ambient temperature	-20...50 °C	
Protection degree	IP65 with connector	
Approval/Conformity	CE, UL-FILE E227256, Vol.X1, BIS	
Connection	M12x1 connector, 8-pin	
Productview	Page 219	



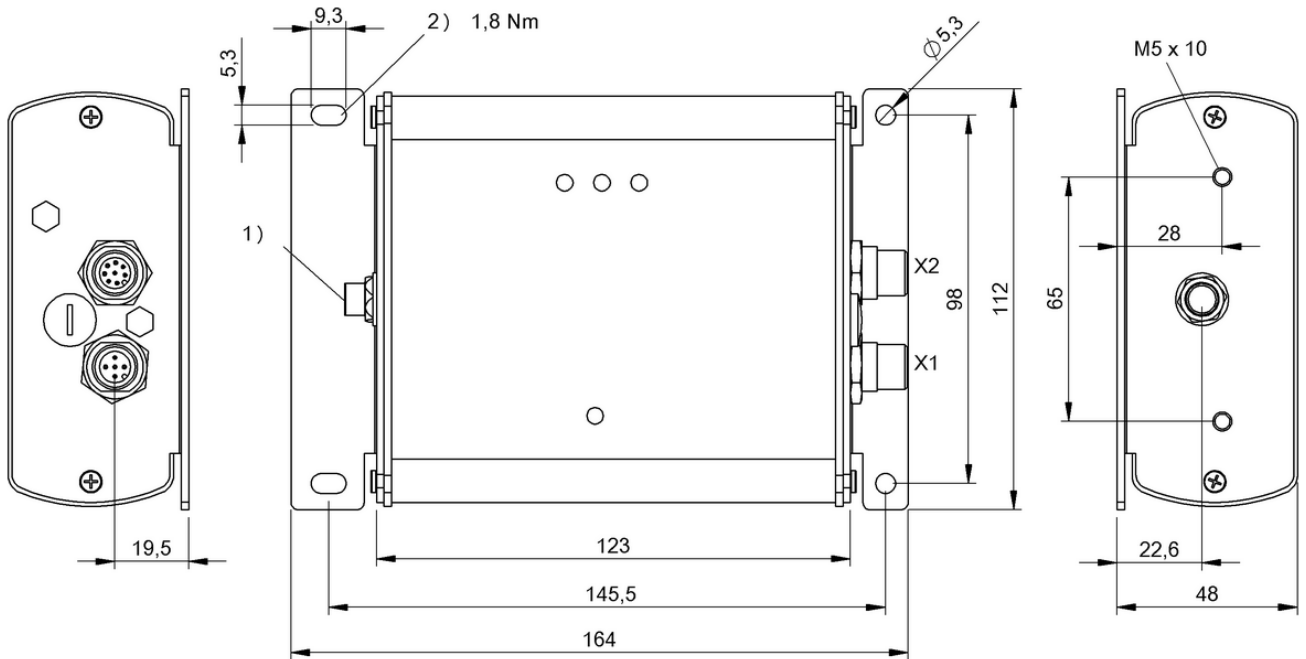
BIS00ZH BIS M-620-068-A01-00-ST29	BIS011P BIS M-628-075-A01-03-ST34	BIS00ZF BIS M-622-070-A01-03-ST33
HF (13.56 MHz)	HF (13.56 MHz)	HF (13.56 MHz)
RS232	Profinet galvanically isolated	Profibus DP Slave galvanically isolated
HF 13.56 MHz (BIS M)	HF 13.56 MHz (BIS M)	HF 13.56 MHz (BIS M)
1	1	1
19.2...28.8 VDC	19.2...28.8 VDC	19.2...28.8 VDC
Aluminum	Aluminum	Aluminum
-20...50 °C	-20...50 °C	-20...50 °C
IP65 with connector	IP65 with connector	IP65 with connector
CE, UL-FILE E227256, Vol.X1, BIS	CE, UL-FILE E227256, Vol.X1, BIS	CE, UL-FILE E227256, Vol.X1, BIS
M12x1 connector, 8-pin	2x M12x1-Female, 4-pole, D-coded M12x1-Male, 5-pole	M12x1-Male, 5-pole, B-coded M12x1-Female, 5-pole, B-coded M12x1-Male, 5-pole
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For read/write heads BIS M-37x-000...	BIS00ZC BIS M-626-069-A01-06-ST31	
Product Group	HF (13.56 MHz)	
Interface	Industrial Ethernet/Ethernet TCP/IP/MODBUS TCP	
Supported RFID technologies	HF 13.56 MHz (BIS M)	
Number of connectable R/W heads / antennas	1	
Operating voltage U _b	19.2...28.8 VDC	
Housing material	Aluminum	
Ambient temperature	-20...50 °C	
Protection degree	IP65 with connector	
Approval/Conformity	CE, UL-FILE E227256, Vol.X1, BIS	
Connection	M12x1-Female, 4-pole, D-coded M12x1-Male, 5-pole	
Productview	Page 221	

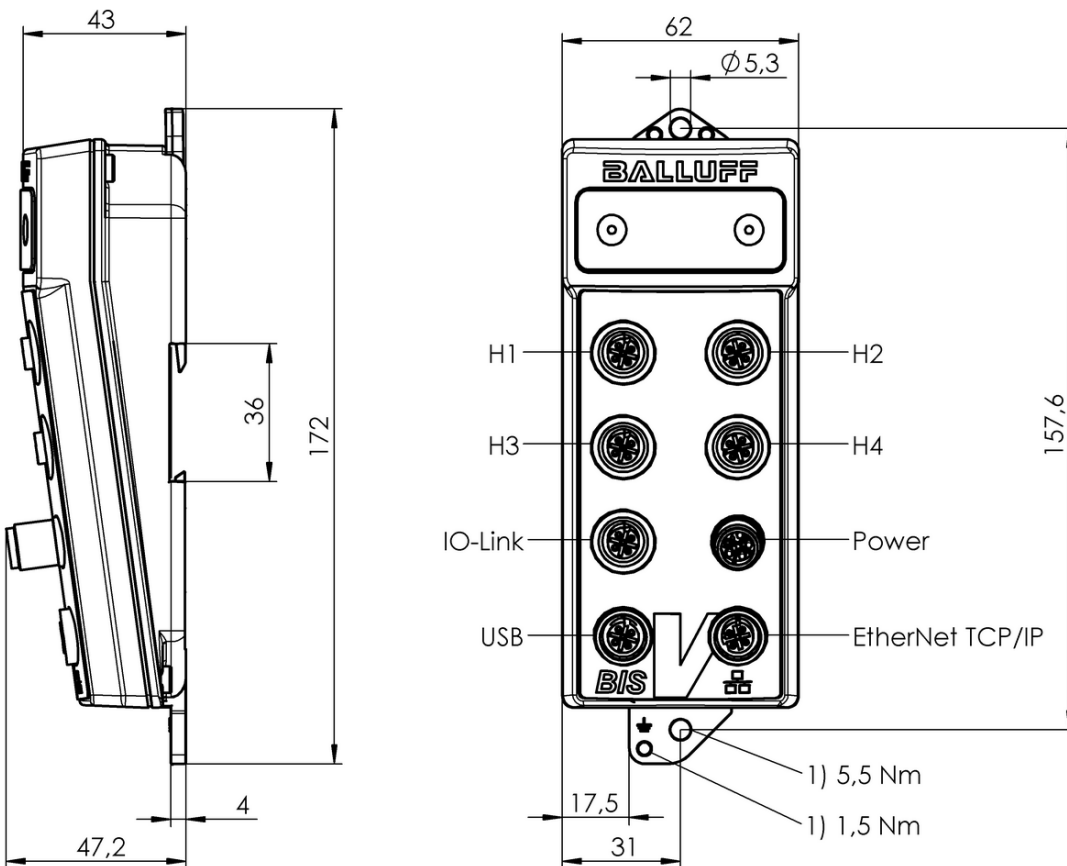


BIS00ZA BIS M-626-069-A01-06-ST32	BIS00ZE BIS M-623-071-A01-03-ST30	
HF (13.56 MHz)	HF (13.56 MHz)	
Industrial Ethernet/Ethernet TCP/IP/MODBUS TCP	DeviceNet galvanically isolated	
HF 13.56 MHz (BIS M)	HF 13.56 MHz (BIS M)	
1	1	
19.2...28.8 VDC	19.2...28.8 VDC	
Aluminum	Aluminum	
-20...50 °C	-20...50 °C	
IP65 with connector	IP65 with connector	
CE, UL-FILE E227256, Vol.X1, BIS	CE, UL-FILE E227256, Vol.X1, BIS	
M12x1-Female, 4-pole, D-coded M12x1-Male, 5-pole	M12x1-Male, 5-pole M12x1-Male, 8-pole	
Page 222	Page 210	



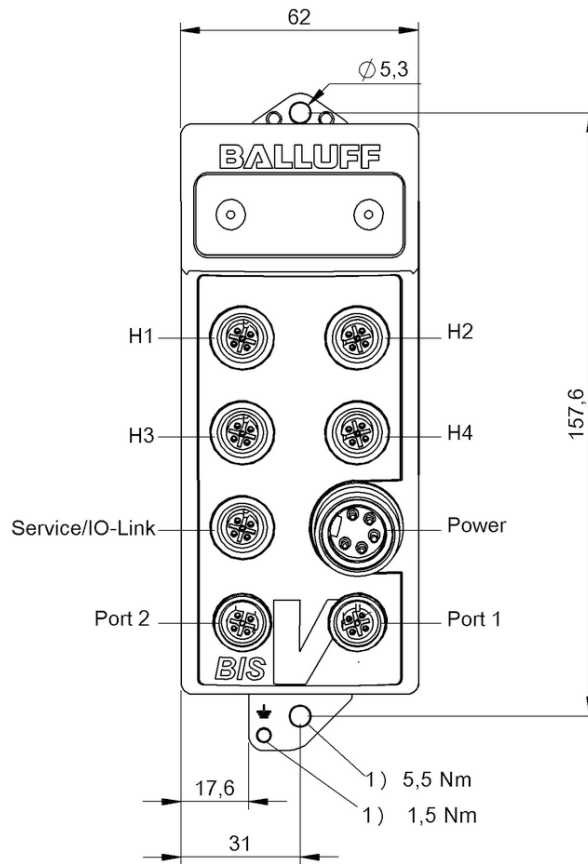
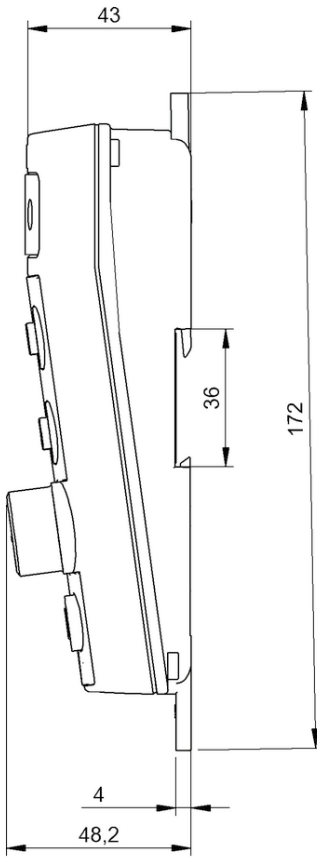
1) Antenna, 2) Tightening torque

BIS00ZE



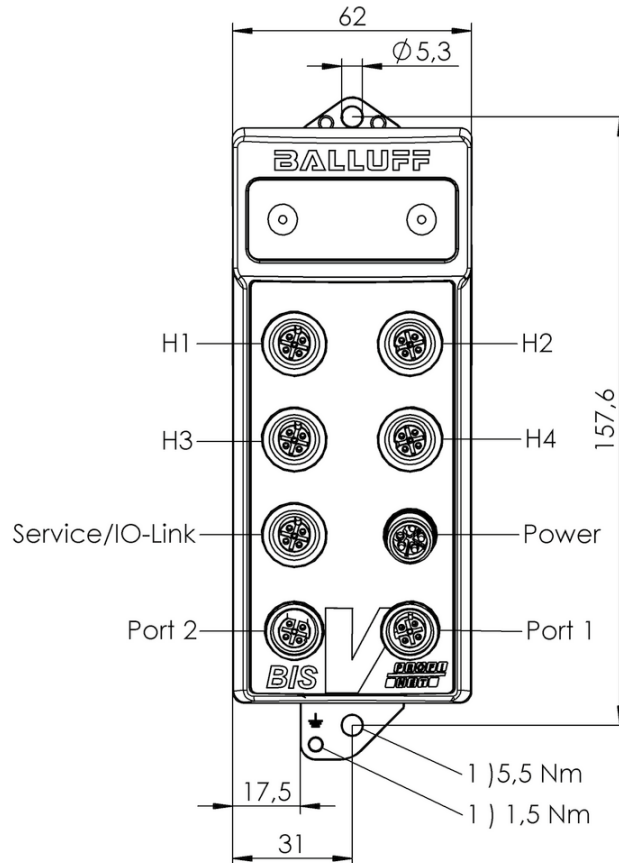
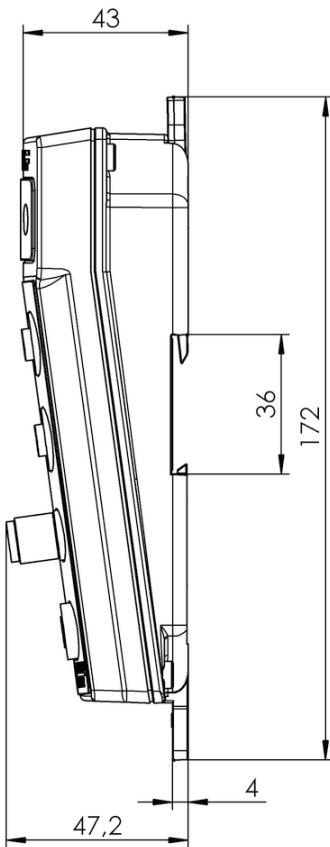
1) Tightening torque

BIS01AA, BIS01AC



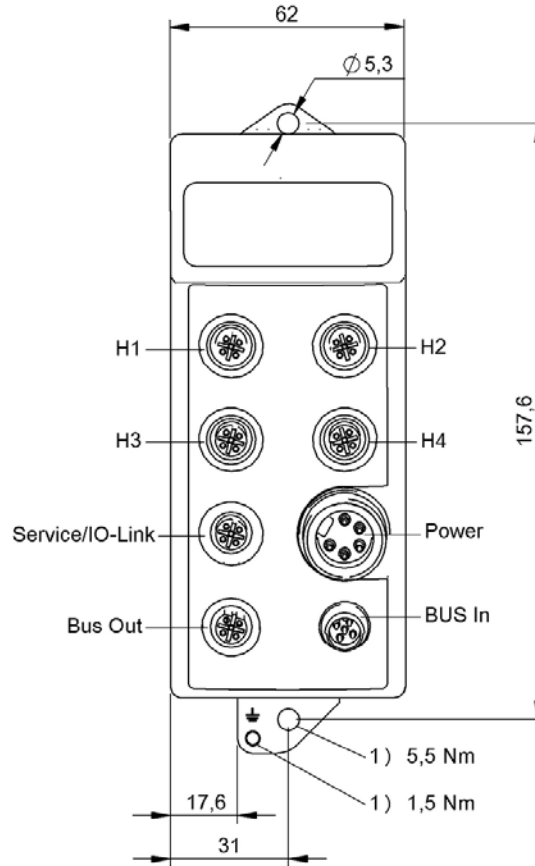
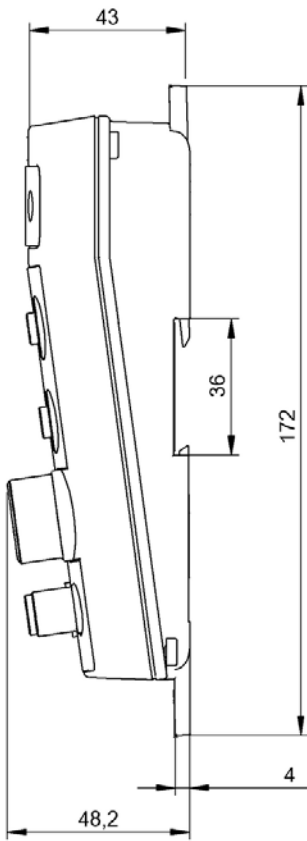
1) Tightening torque

BISO13U, BISO13W



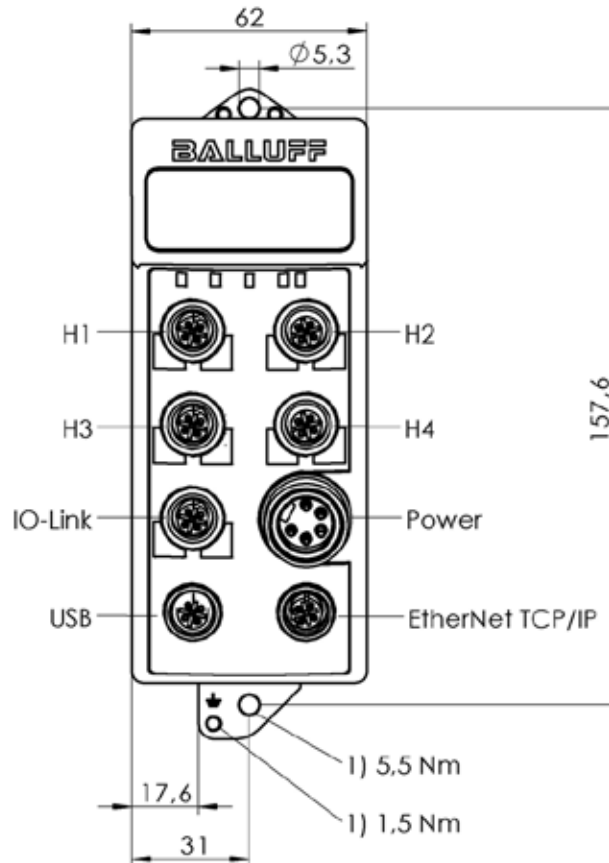
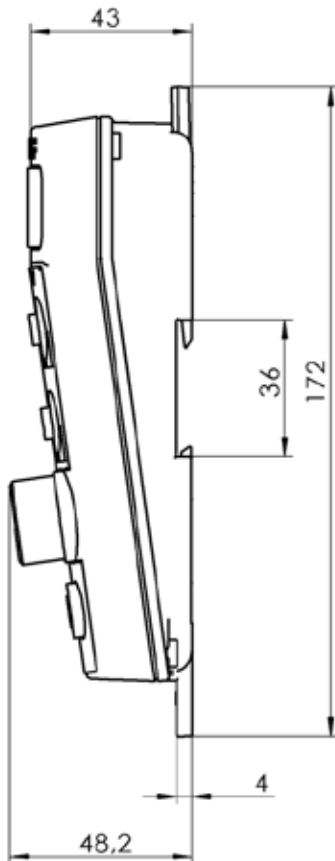
1) Tightening torque

BISO1AE, BISO1AF



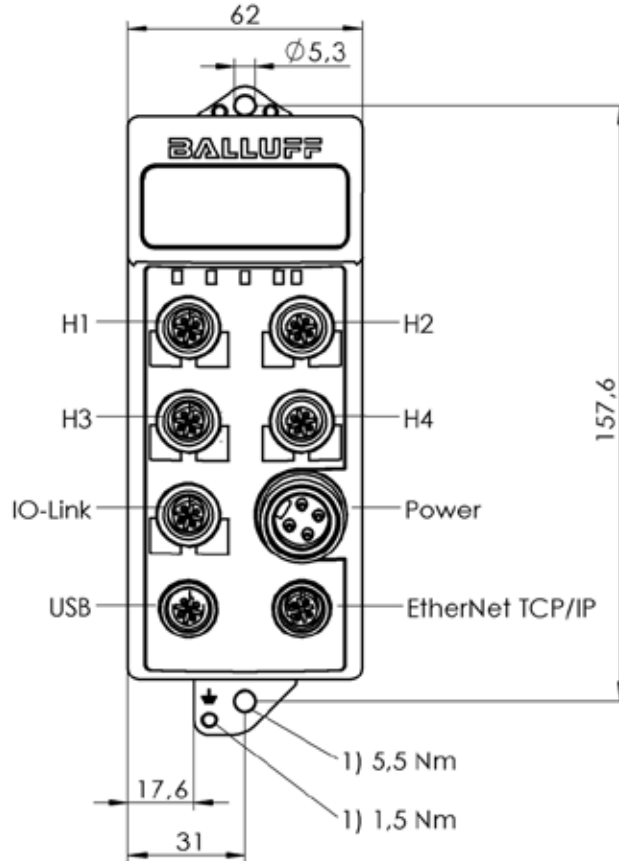
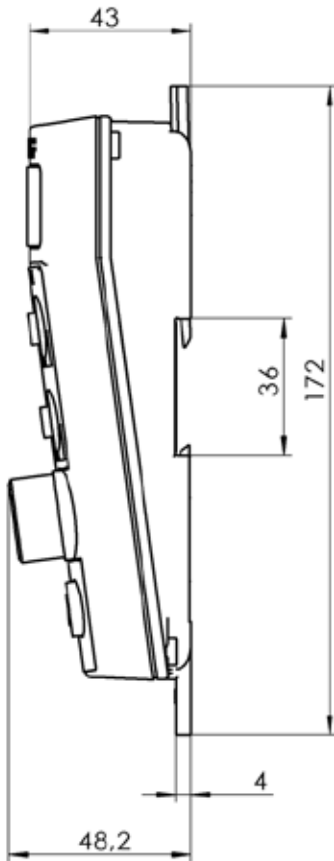
1) Tightening torque

BIS00T3, BIS012E



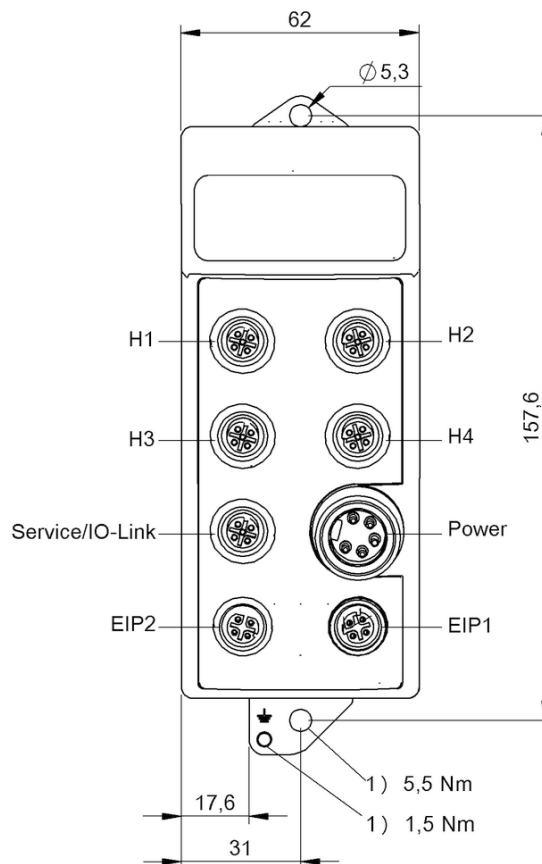
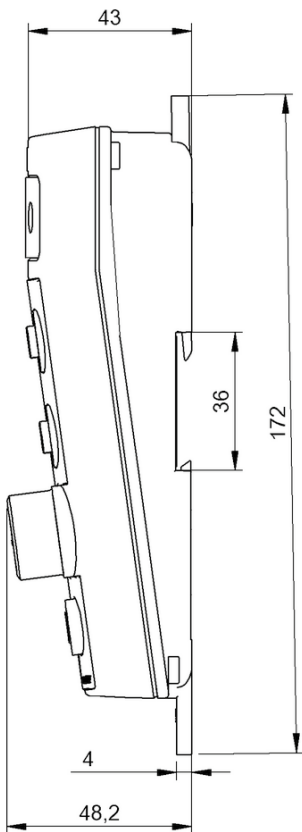
1) Tightening torque

BIS0186, BIS0187



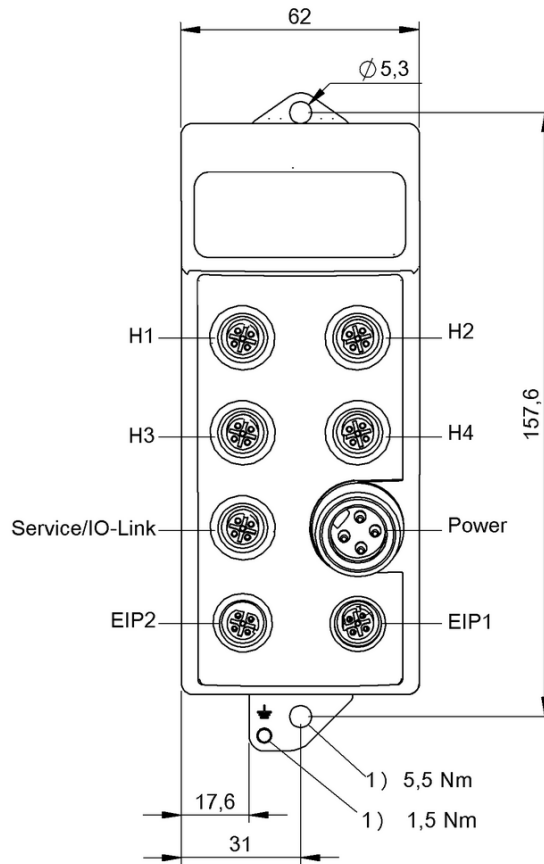
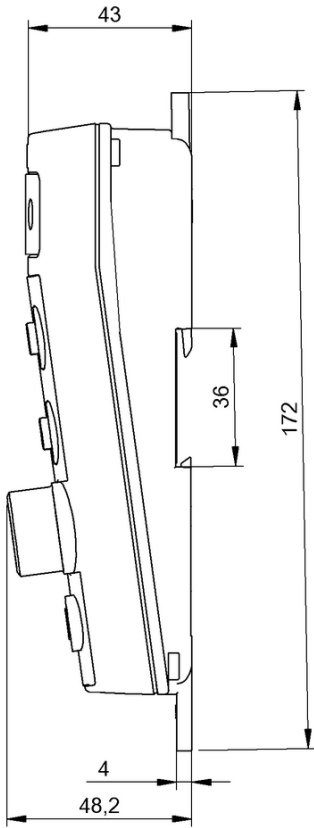
1) Tightening torque

BISO18J, BISO18K



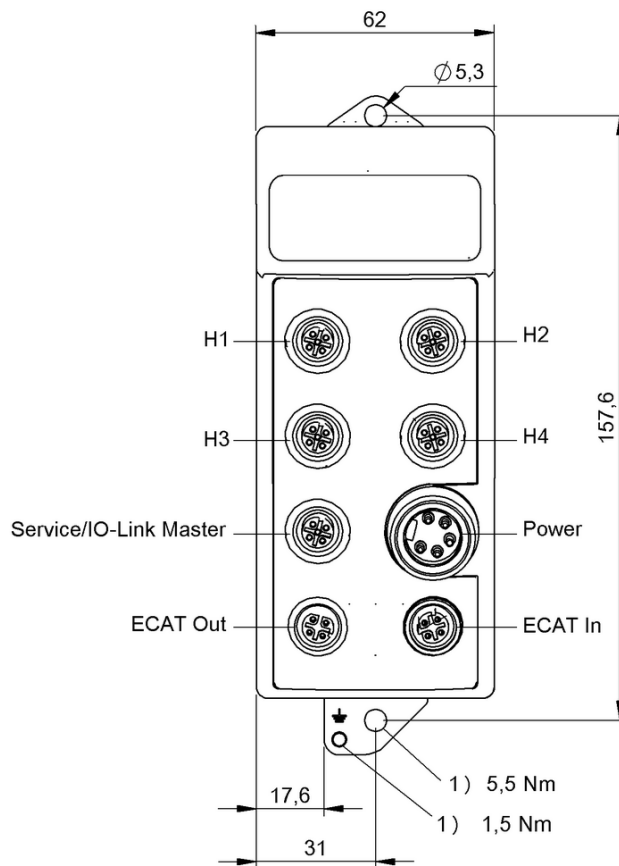
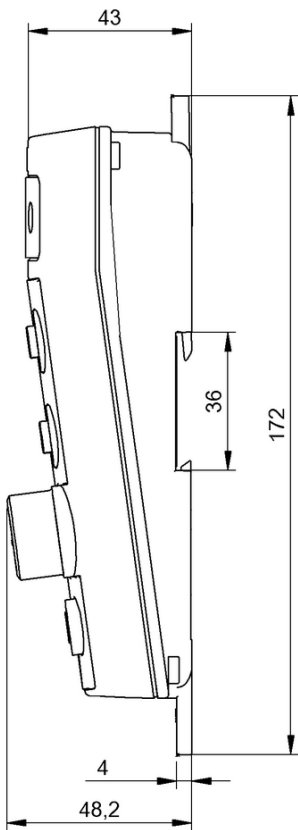
1) Tightening torque

BISO12F, BISO14C



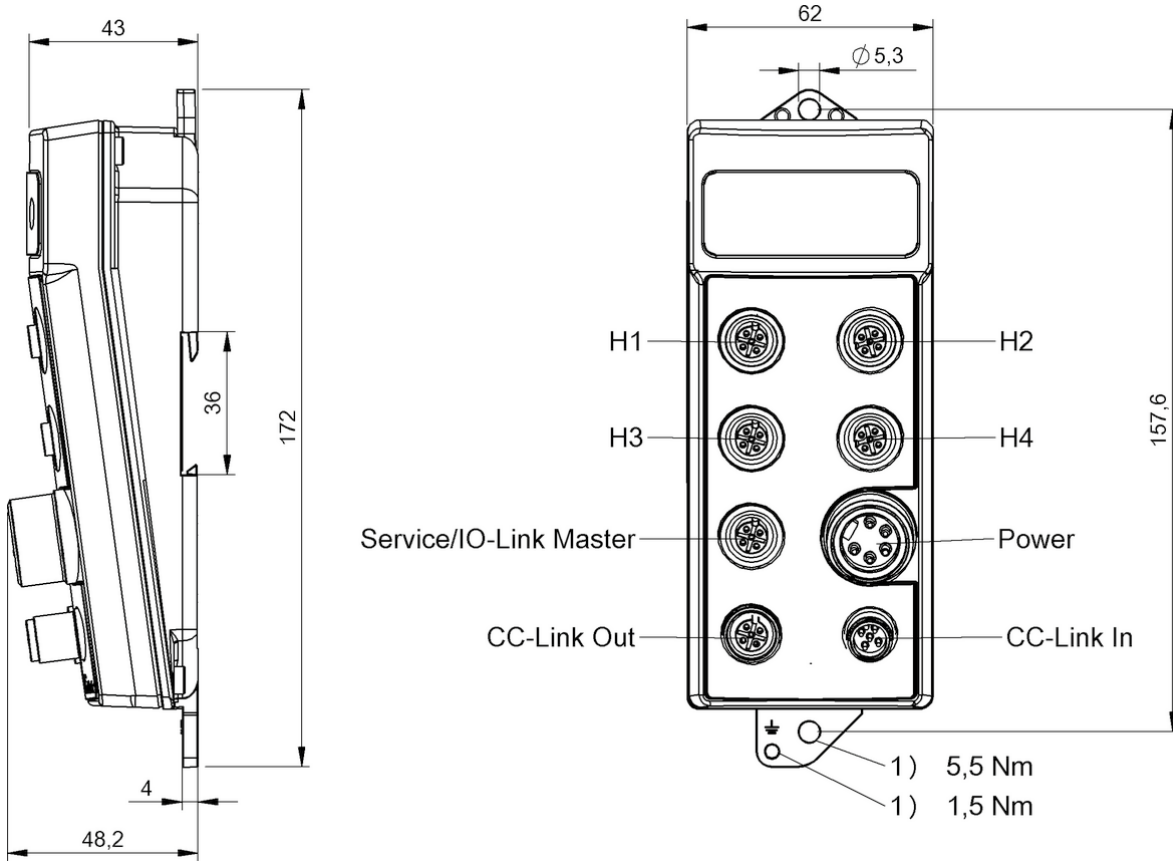
1) Tightening torque

BIS0122, BIS0146



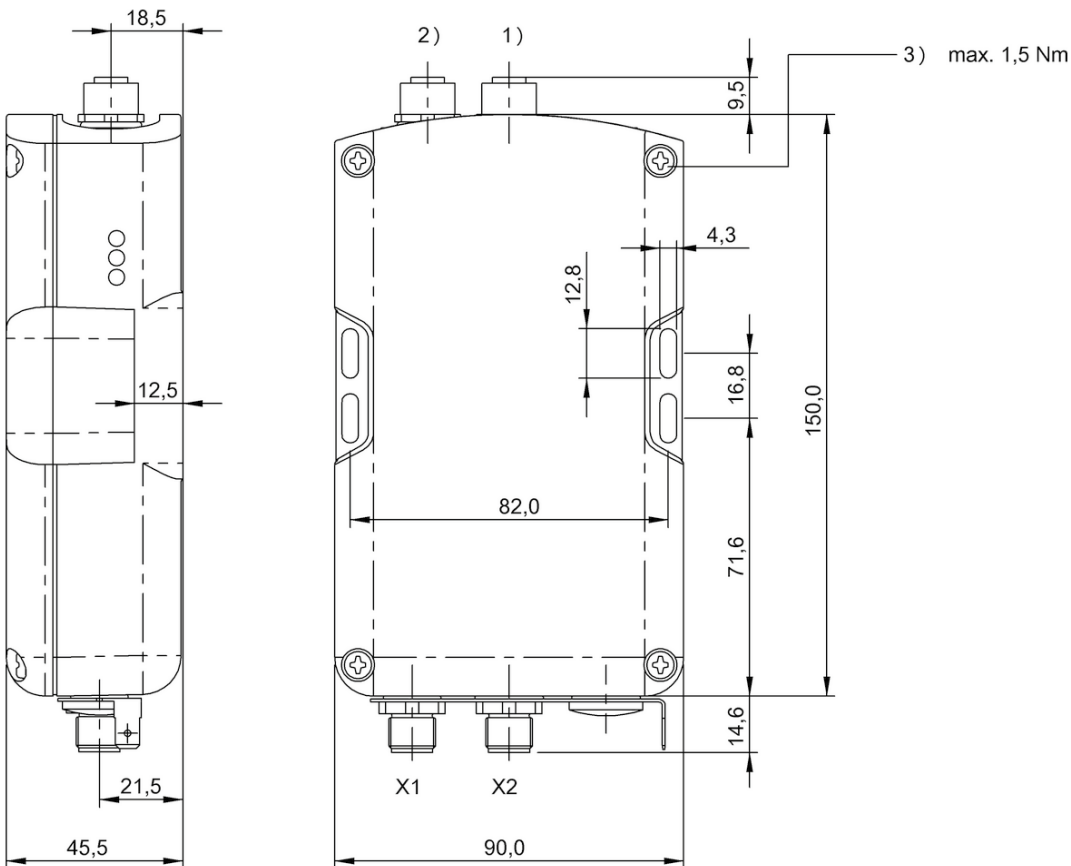
1) Tightening torque

BIS00U9, BIS0147



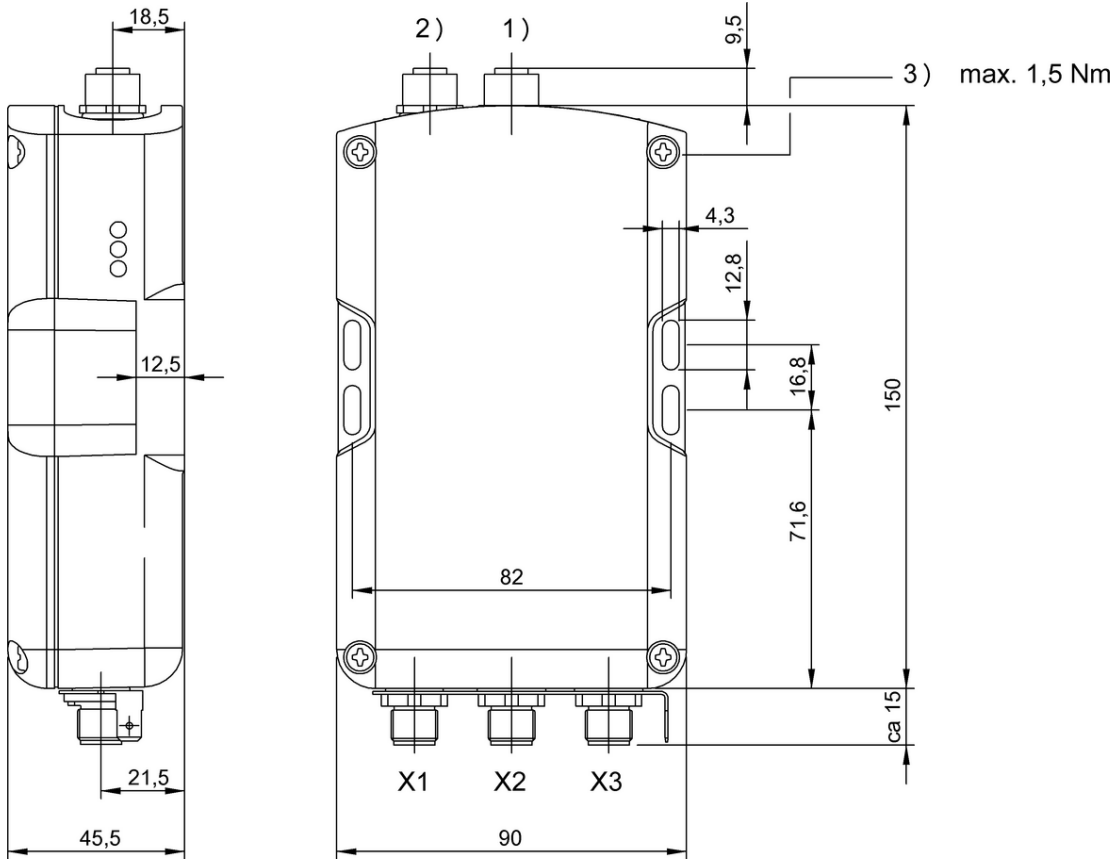
1) Tightening torque

BIS010P, BIS014E



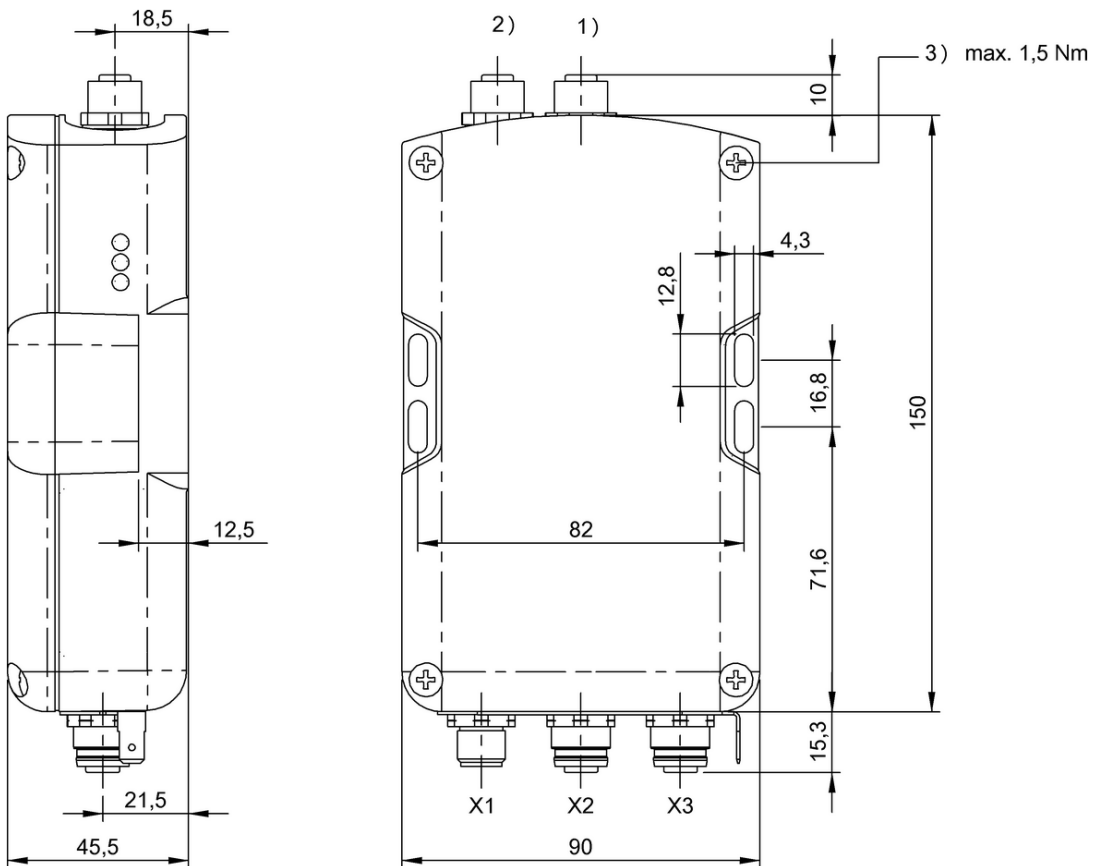
1) Head 1, 2) Head 2, 3) Tightening torque

BISO0N1



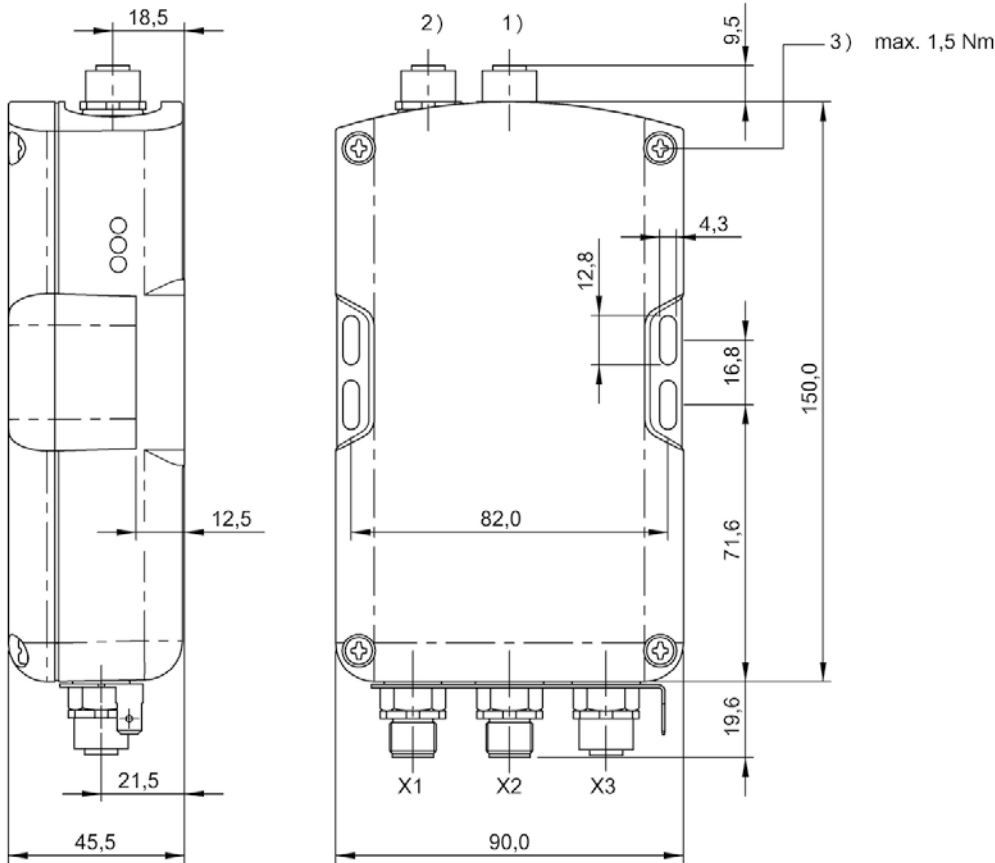
1) Head 1, 2) Head 2, 3) Tightening torque

BIS00J0



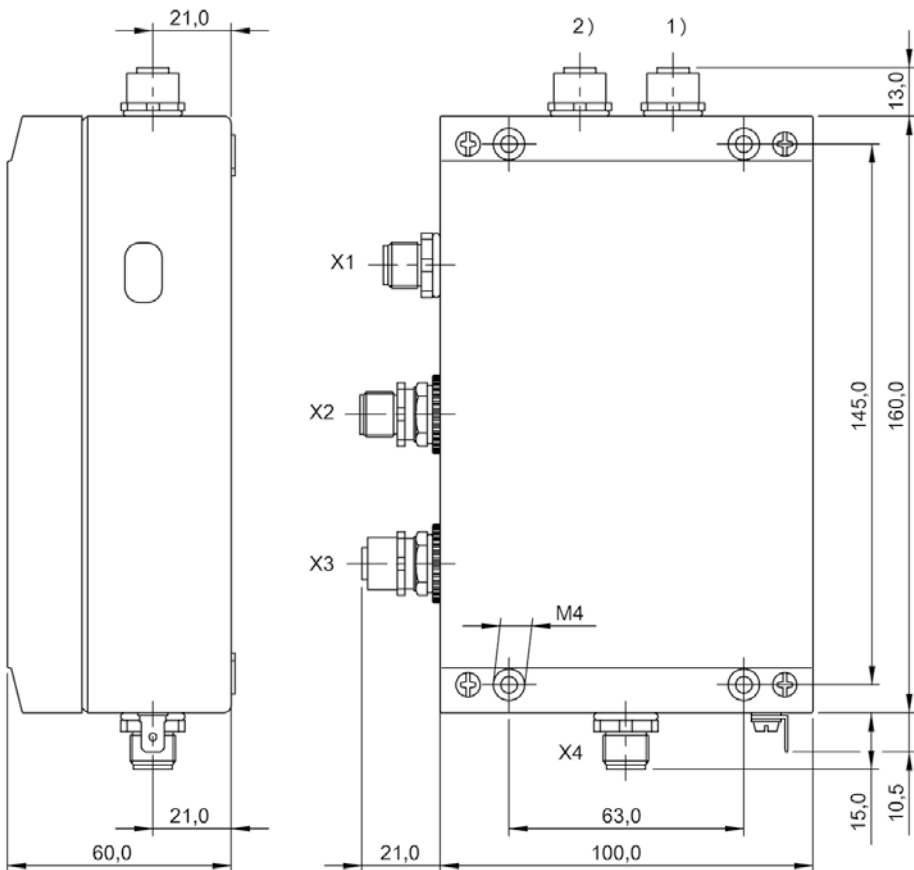
1) Head 1, 2) Head 2, 3) Tightening torque

BIS00L7



1) Head 1, 2) Head 2, 3) Tightening torque

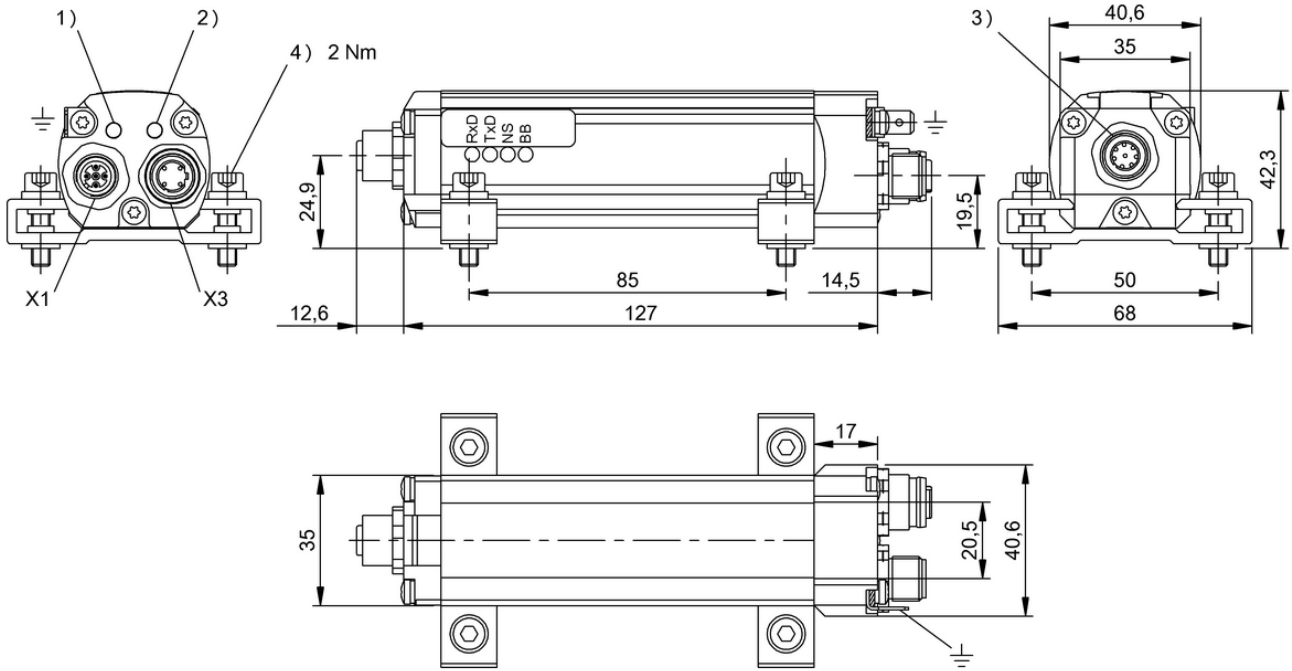
BISO0EW



1) Head 1, 2) Head 2

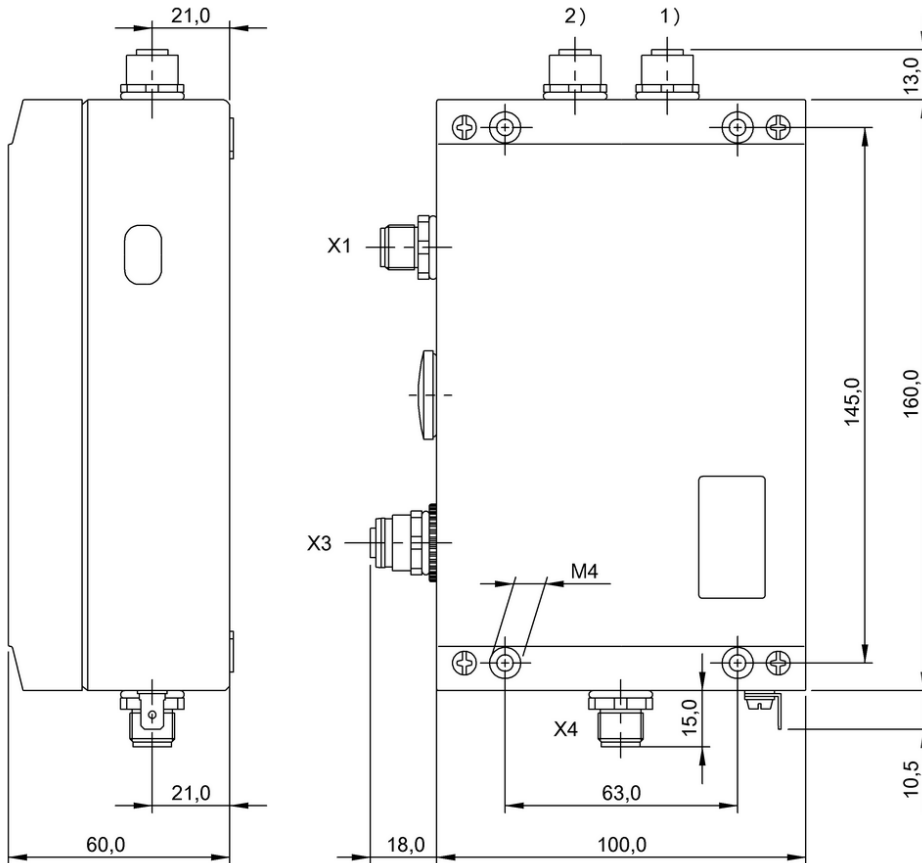
BISO0FO

Do you need more details? Our Product Finder at www.balluff.com provides you with product-specific information, including technical drawings, data sheets, user guides and more for each individual product. All items are available for download.



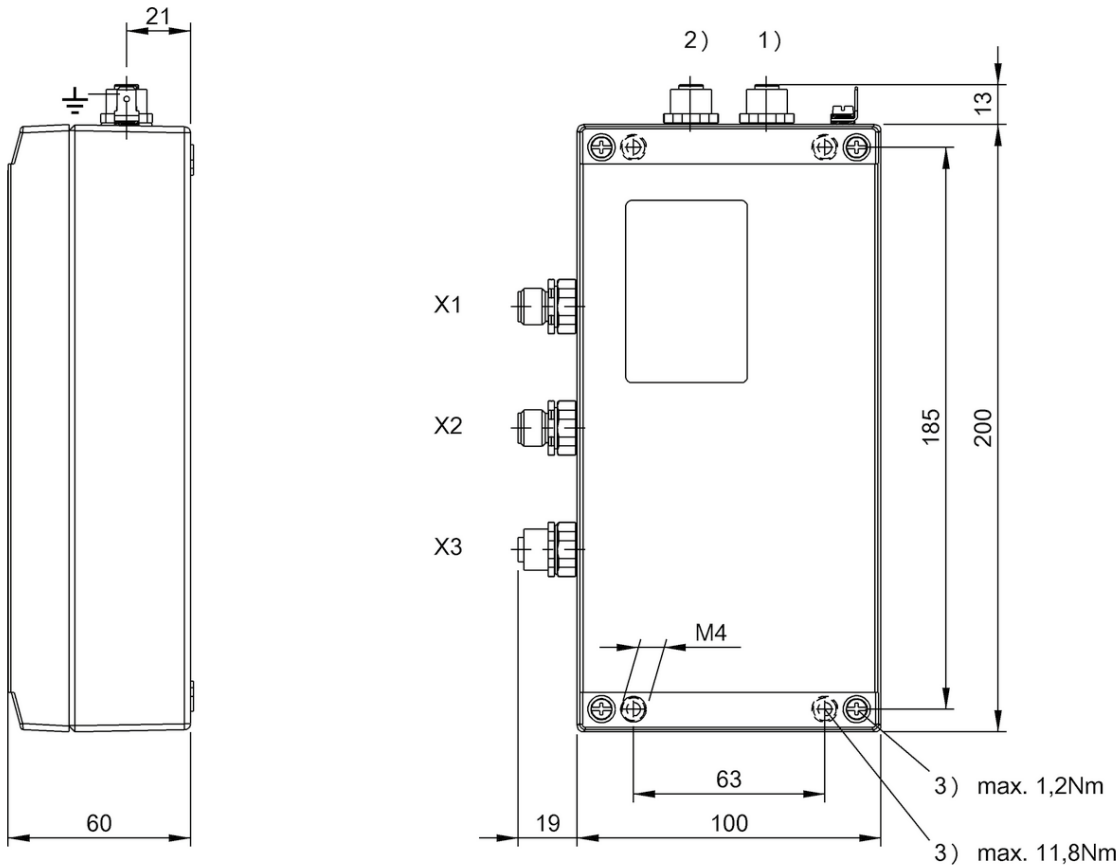
1) LED1 Ethernet Status, 2) LED2 Ethernet Status, 3) Head, 4) Tightening torque

BIS00EP



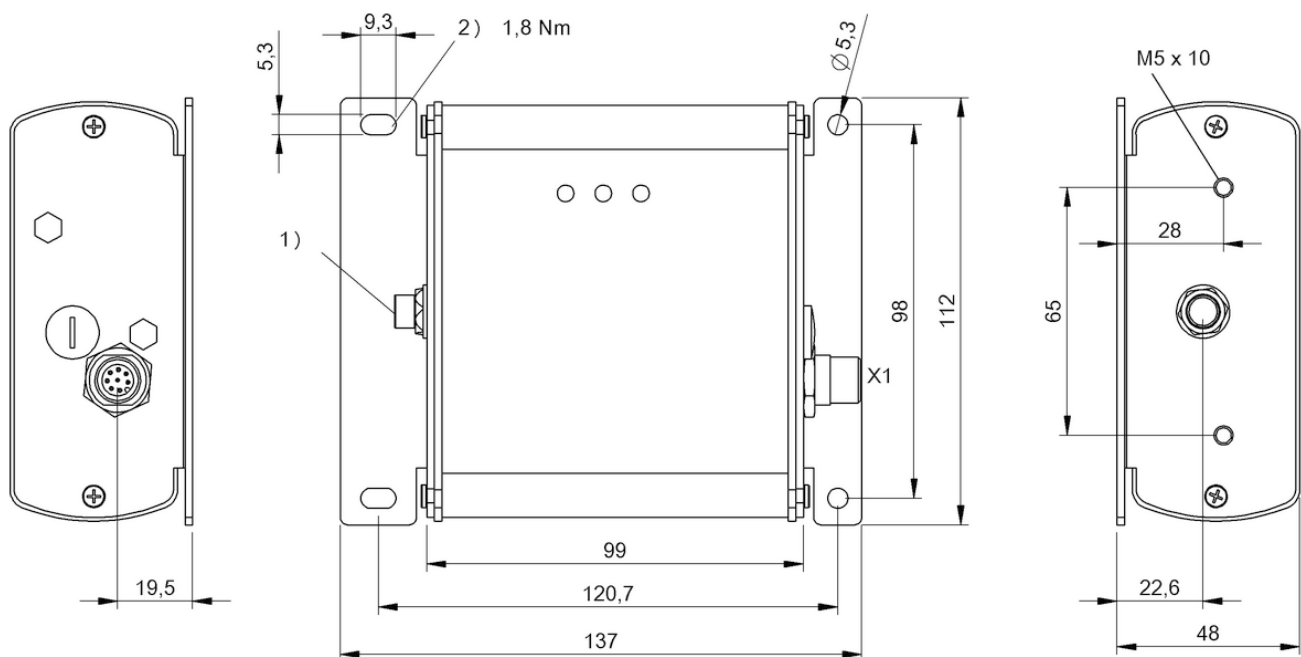
1) Head 1, 2) Head 2

BIS00F2



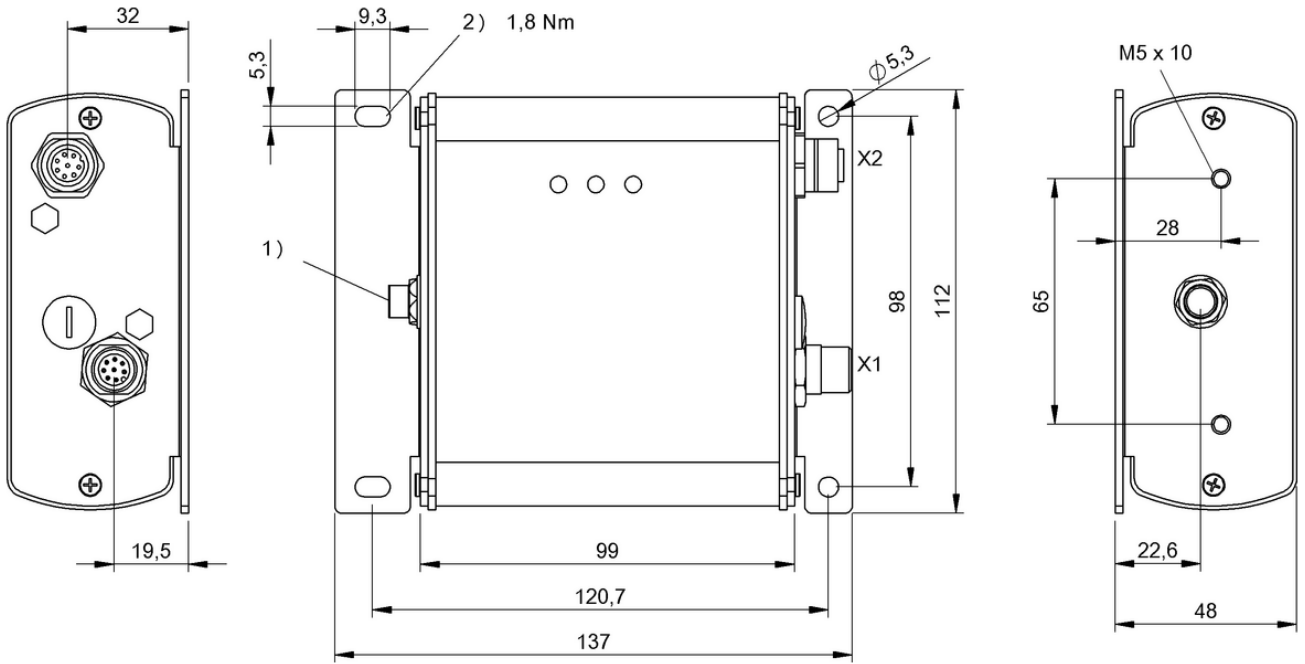
1) Head 1, 2) Head 2, 3) Tightening torque

BIS00LY



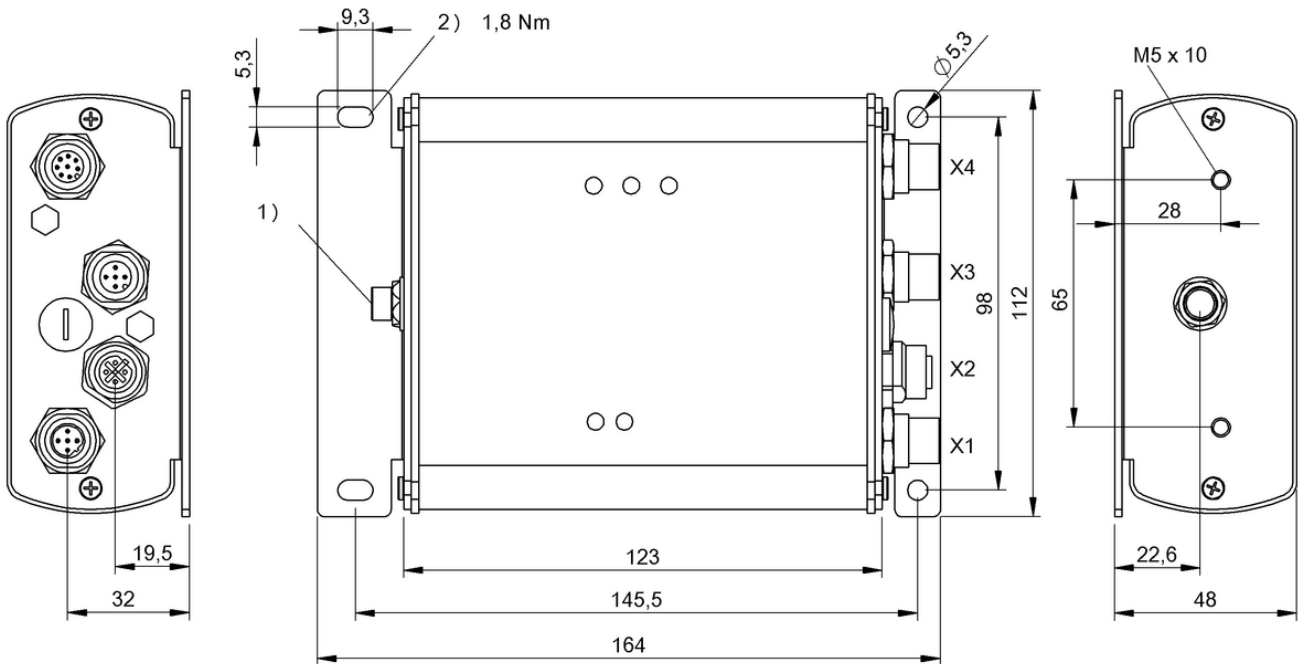
1) Antenna, 2) Tightening torque

BIS00ZJ



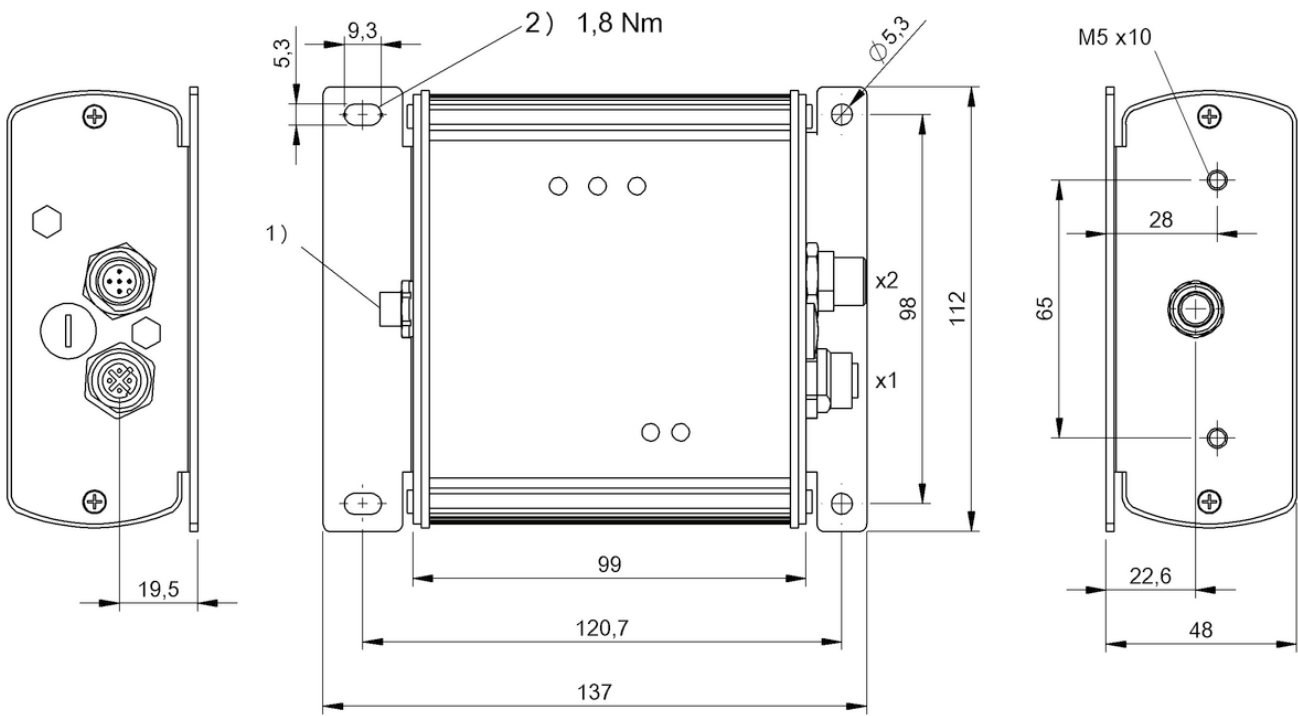
1) Antenna, 2) Tightening torque

BISO00ZH



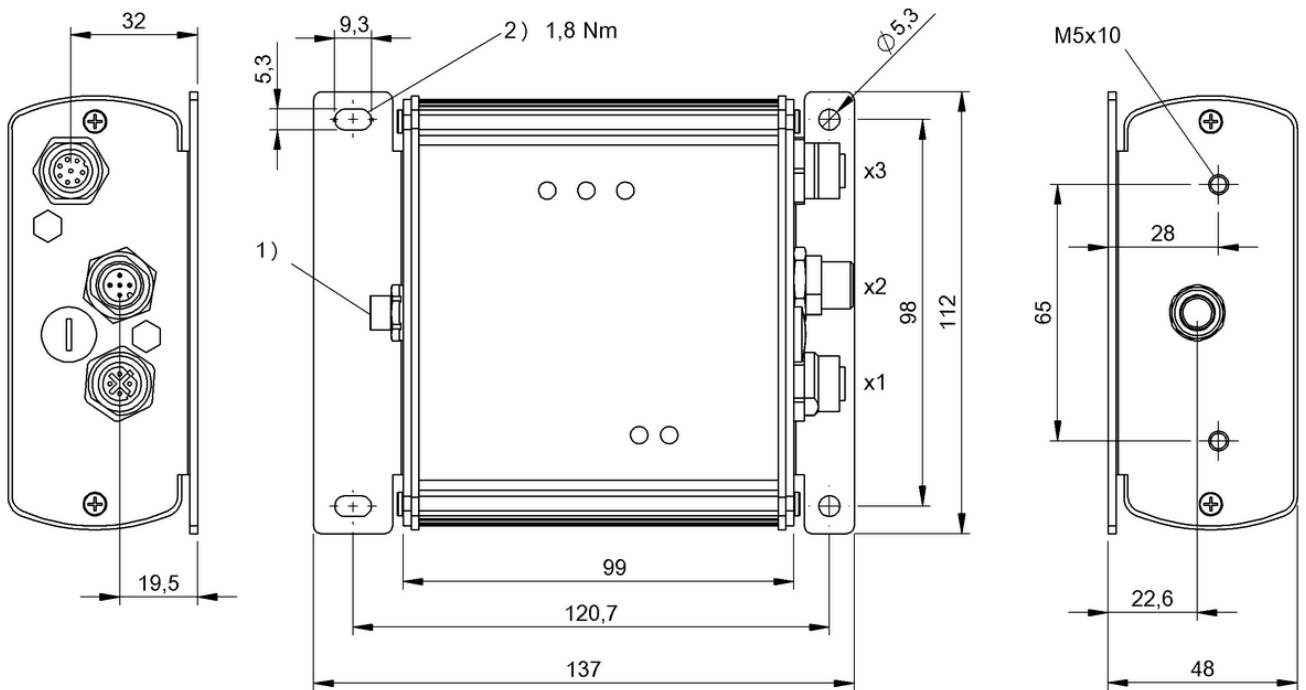
1) Antenna, 2) Tightening torque

BISO00ZF



1) Antenna, 2) Tightening torque

BIS00ZC



1) Antenna, 2) Tightening torque

BISO0ZA

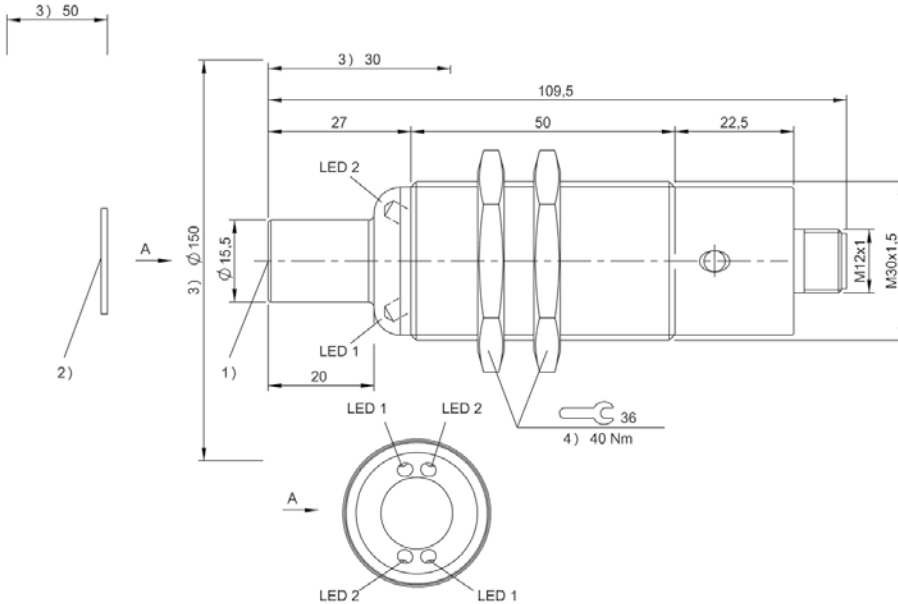


	BIS00EK BIS M-400-007-002-00-S115
Product Group	HF (13.56 MHz)
Dimension	Ø 30 x 109.5 mm
Installation	metal-free (clear zone)
Antenna type	round
Supported data carrier types	DIN ISO 14443, DIN ISO 15693
Connection	Connector, M12x1 connector, 8-pin
Housing material	Brass, nuts nickel plated brass
Interface	RS232
Operating voltage Ub	19.2...26.4 VDC
Ambient temperature	0...70 °C
Protection degree	IP67
Approval/Conformity	CE, FCC Part 15, IC RSS-210, UL-FILE E227256, Vol.X1, BIS

Appropriate data carrier

	BIS003Y			BIS003Z			BIS0040		BIS0042		BIS0048		BIS004A		BIS0043		
Data carrier distance to metal	>25	>10	>5	>50	>25	>10	>10	>0	>10	>0	>10	>0	>10	>0	>25	>0	
Data carrier clear zone	>60	>50	>50	>60	>50	>50	>60	>0	>60	>0	>60	>0	>60	>0	>60	>0	
Working distance for writing	0-15	0-12	0-9	0-18	0-18	0-10	0-6	0-5	0-9	0-5	0-5	0-4	0-6	0-5	0-20	0-12	
Working distance for reading	0-15	0-12	0-9	0-18	0-18	0-10	0-6	0-5	0-9	0-5	0-5	0-4	0-6	0-5	0-20	0-12	
Offset at distance																	
	0	±9	±6	±4	±16	±12	±4	±5	±4	±6	±4	±4	±3	±4	±3	±14	±10
	5	±9	±6	±4	±16	±12	±4	±4	±2	±6	±2	±3		±3	±2	±14	±8
	9	±8	±4	±2	±12	±10	±2			±2						±12	±6
	12	±6	±2		±8	±5										±10	±4
	15	±4			±8	±5										±10	
	16				±7	±3										±7	
	18				±6	±2										±7	
	20															±7	
	22																
	25																

Dimensions in mm



1) Sensing surface, 2) Data carrier, 3) Clear zone, 4) Tightening torque

	BIS0044			BIS0045			BIS0046				BIS00YE	BIS00NU BIS00NW BIS0100
	>25	>15	>5	>25	>10	>5	>50	>25	>20		>25	>0
	>80	>50	>50	>80	>50	>50	>150	>90	>70		>100	>100
	0-15	0-10	0-6	0-20	0-12	0-5	0-28	0-18	0-10		0-24	0-12
	0-15	0-10	0-6	0-20	0-12	0-5	0-28	0-18	0-10		0-24	0-12
	±8	±6	±4	±12	±8	±7	±20	±14	±14		0 ±14	±7
	±8	±6	±4	±12	±8	±4	±20	±14	±14		5 ±14	±7
	±6	±5		±10	±6		±18	±14	±10		10 ±14	±6
	±4			±10	±4		±18	±12	±6		12 ±12	±2
	±4			±10			±18	±12			15 ±12	
				±7			±16	±10			20 ±12	
				±7			±16	±8			24 ±6	
				±7			±16				30	
							±12				35	
							±12				40	

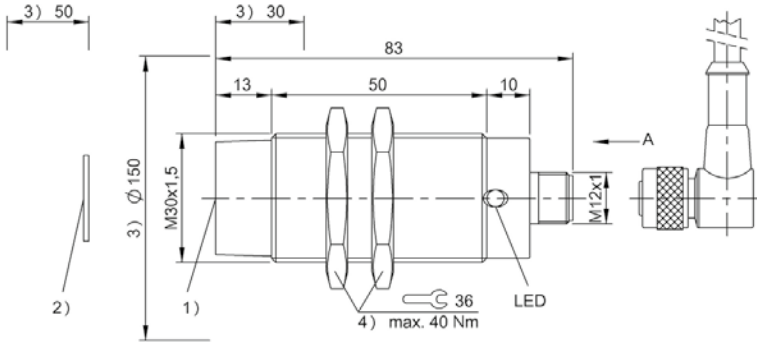


	BIS00EJ BIS M-400-007-001-00-S115
Product Group	HF (13.56 MHz)
Dimension	Ø 30 x 83 mm
Installation	metal-free (clear zone)
Antenna type	round
Supported data carrier types	DIN ISO 14443, DIN ISO 15693
Connection	Connector, M12x1 connector, 8-pin
Housing material	Brass, nuts nickel plated brass
Interface	RS232
Operating voltage U_b	19.2...26.4 VDC
Ambient temperature	0...70 °C
Protection degree	IP67
Approval/Conformity	CE, UL-FILE E227256, Vol.X1, BIS, FCC, IC

Appropriate data carrier

	BIS003Y			BIS003Z			BIS0040		BIS0042		BIS0043		BIS0044			BIS0045				
Data carrier distance to metal	>25	>10	>5	>50	>15	>10	>20	>5	>20	>5	>25	>0	>25	>10	>5	>25	>10	>5		
Data carrier clear zone	>100	>60	>50	>150	>90	>70	>100	>100	>100	>100	>100	>0	>100	>60	>50	>100	>60	>50		
Working distance for writing	0-20	0-15	0-12	0-28	0-20	0-12	0-7	0-6	0-11	0-7	0-28	0-16	0-20	0-15	0-8	0-28	0-18	0-10		
Working distance for reading	0-20	0-15	0-12	0-28	0-20	0-12	0-7	0-6	0-11	0-7	0-28	0-16	0-20	0-15	0-8	0-28	0-18	0-10		
Offset at distance																				
	0																			
	5	±14	±10	±6	±20	±15	±6	±7	±6	±9	±6	±16	±10	0	±12	±8	±6	±16	±10	±7
	9	±14	±10	±6	±20	±15	±6	±7	±6	±8	±6	±16	±10	2	±12	±8	±5	±16	±10	±7
	12	±14	±8	±4	±20	±15	±3			±5		±14	±8	5	±12	±8	±5	±16	±10	±7
	15	±10	±4	±2	±20	±13	±2					±14	±6	7	±10	±6	±4	±14	±8	±2
	16	±10	±2		±20	±10						±14	±6	8	±10	±6	±2	±14	±8	±2
	18	±8			±18	±3						±14	±4	9	±10	±6		±14	±8	±2
	20	±6			±16							±14		10	±8	±4		±14	±7	±1
	22	±5			±15							±14		12	±8	±4		±14	±7	
	25				±15							±12		13	±8	±2		±14	±6	
	30				±10							±12		15	±8	±2		±14	±6	
	32													16	±5			±14	±3	
	35													18	±5			±14	±2	
	40													20	±5			±14		
	43													22				±12		
	45													25				±12		
	50													27				±6		
	52													28				±6		
	60													30						
	65													35						
	70													38						
														45						

Dimensions in mm



1) Sensing surface, 2) Data carrier, 3) Clear zone, 4) Tightening torque

BIS0046			BIS0048		BIS004A		BIS00LC			BIS00M9 BIS00M8		BIS00NU BIS00NW BIS0100		BIS0143			BIS00YE		BIS00Y7		BIS00Y5		BIS00Y4				
>50	>15	>10	>20	>20	>0	>0	>25	>0	>0	>0	>0	>25	>25	>0	>25	>50	>50	>150	>90	>70	>100	>100	>0	>25	>0	>100	>100
0-38	0-25	0-15	0-9.5	0-13	0-7	0-7	0-27	0-13	0-22	0-13	0-13	0-27	0-30	0-8	0-24	0-50	0-42	0-38	0-25	0-15	0-9.5	0-13	0-7	0-27	0-13	0-22	0-13
0-38	0-25	0-15	0-9.5	0-13	0-7	0-7	0-27	0-13	0-22	0-13	0-13	0-27	0-30	0-8	0-24	0-50	0-42	0-38	0-25	0-15	0-9.5	0-13	0-7	0-27	0-13	0-22	0-13
±22	±16	±13	±9	±10	±7	±10	0	±16	±10	±13	±10	0	±18	±18	±8	±18	±30	±22	±16	±13	±9	±10	±7	0	±16	±10	±13
±22	±16	±13	±9	±10	±7	±10	5	±16	±10	±13	±10	5	±18	±18	±8	±18	±30	±22	±16	±13	±8	±10	±7	5	±16	±10	±13
±22	±16	±13	±8	±10	±6	±10	10	±16	±7	±13	±9	7	±18	±18	±6	±18	±30	±22	±16	±13	±8	±10	±6	10	±16	±7	±13
±22	±14	±10	±7	±8	±1	±13	13	±14	±5	±11	±5	8	±18	±18	±3	±18	±30	±22	±14	±10	±7	±8	±1	13	±14	±5	±11
±22	±14	±10	±1	±8		15	±14		±11			10	±18	±18		±18	±30	±22	±14	±10	±1	±8		15	±14		±11
±22	±14	±10	±1	±8		18	±14		±11			15	±16	±18		±16	±30	±22	±14	±10	±1	±8		18	±14		±11
±20	±13	±8		±8		20	±14		±7			20	±16	±18		±16	±30	±20	±13	±8		±8		20	±14		±7
±20	±13	±8		±3		22	±12		±7			24	±10	±16		±5	±25	±20	±13	±8		±3		22	±12		±7
±20	±12	±6		±3		25	±12					25	±10	±16			±25	±20	±12	±6		±3		25	±12		
±20	±12	±6				27	±5					27	±5	±5			±25	±20	±12	±6				27	±5		
±20	±10					30						30		±5			±25	±20	±10					30			
±20	±10					32						35					±25	±20	±10					32			
±20	±8					35						40					±25	±20	±8					35			
±20	±6					40						42					±5	±24	±6					40			
±20	±4					43						45					±5	±24	±4					43			
±16						45						50					±5	±24						45			
±16						50						40						±24						50			
±16						52						42						±24						52			
±10						60						45						±24						60			
±5						65						50						±24						65			
						70						55						±24						70			

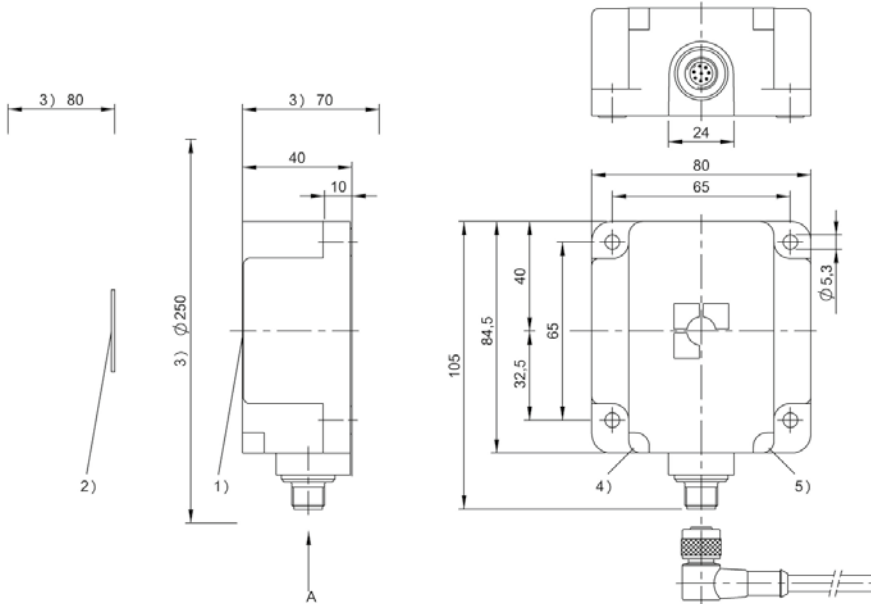


	BIS00EM BIS M-401-007-001-00-S115
Product Group	HF (13.56 MHz)
Dimension	80 x 40 x 84.5 mm
Installation	metal-free (clear zone)
Antenna type	round
Supported data carrier types	DIN ISO 14443, DIN ISO 15693
Connection	Connector, M12x1 connector, 8-pin
Housing material	PBT
Interface	RS232
Operating voltage U_b	19.2...26.4 VDC
Ambient temperature	0...70 °C
Protection degree	IP67
Approval/Conformity	CE, FCC Part 15, IC RSS-210, UL-FILE E227256, Vol.X1, BIS

Appropriate data carrier

	BIS003Y			BIS003Z			BIS0047	BIS0043	BIS0044	BIS0045	BIS0046					
Data carrier distance to metal	>50	>25	>10	>50	>25	>10	>80	>50	>20	>50	>30	>50	>30			
Data carrier clear zone	>200	>150	>150	>200	>150	>150	>250	>200	>60	>200	>100	>200	>100			
Working distance for writing	0-28	0-25	0-20	0-45	0-40	0-34	0-50	0-40	0-18	0-30	0-18	0-40	0-25	0-60	0-35	
Working distance for reading	0-28	0-25	0-20	0-45	0-40	0-34	0-50	0-40	0-18	0-30	0-18	0-40	0-25	0-60	0-35	
Offset at distance																
	0	±22	±18	±12	±30	±24	±16	±30	±30	±16	±25	±18	±30	±20	±35	±25
	5	±22	±18	±12	±30	±24	±16	±30	±30	±16	±25	±18	±30	±20	±35	±25
	9	±22	±18	±10	±30	±24	±16	±30	±30	±16	±25	±15	±30	±20	±35	±25
	12	±22	±16	±8	±30	±24	±14	±30	±25	±16	±20	±15	±25	±20	±35	±25
	15	±22	±16	±8	±30	±24	±14	±30	±25	±16	±20	±12	±25	±18	±35	±25
	16	±20	±15	±6	±30	±20	±12	±30	±25	±16	±20	±12	±25	±18	±35	±25
	18	±20	±13	±4	±30	±20	±10	±30	±25	±14	±20	±8	±25	±16	±35	±25
	20	±20	±12	±2	±30	±20	±10	±30	±25	±20			±25	±14	±35	±25
	22	±16	±8		±24	±18	±8	±30	±20	±15			±20	±12	±35	±22
	25	±12	±4		±24	±18	±8	±30	±20	±15			±20	±10	±35	±22
	30				±24	±15	±6	±28	±20	±10			±20		±35	±22
	32				±20	±12	±4	±24	±15	±10			±15		±35	±22
	35				±20	±10		±22	±15				±15		±35	±20
	40				±15	±5		±18	±15				±15		±35	
	43				±8			±14							±25	
	45				±5			±12							±25	
	50							±4							±25	
	52														±25	
	60														±25	

Dimensions in mm



1) Sensing surface, 2) Data carrier, 3) Clear zone, 4) LED (Power), 5) LED (TP)

	BIS00M9 BIS00M8	BIS00NU BIS00NW BIS0100		BIS00YE	BIS00Y4
	>0	>0		>50	>50
	>100	>100		>200	>200
	0-32	0-16		0-50	0-75
	0-32	0-16		0-50	0-75
	±25	±24	0	±30	±50
	±25	±24	5	±30	±50
	±25	±20	10	±30	±50
	±25	±14	15	±30	±50
	±25	±4	20	±30	±50
	±25	±4	25	±28	±50
	±25		30	±28	±50
	±25		35	±28	±50
	±20		40	±28	±50
	±20		45	±10	±45
	±15		50	±10	±45
	±15		55		±45
			60		±45
			65		±35
			70		±35
			75		±35
			80		
			85		
			90		

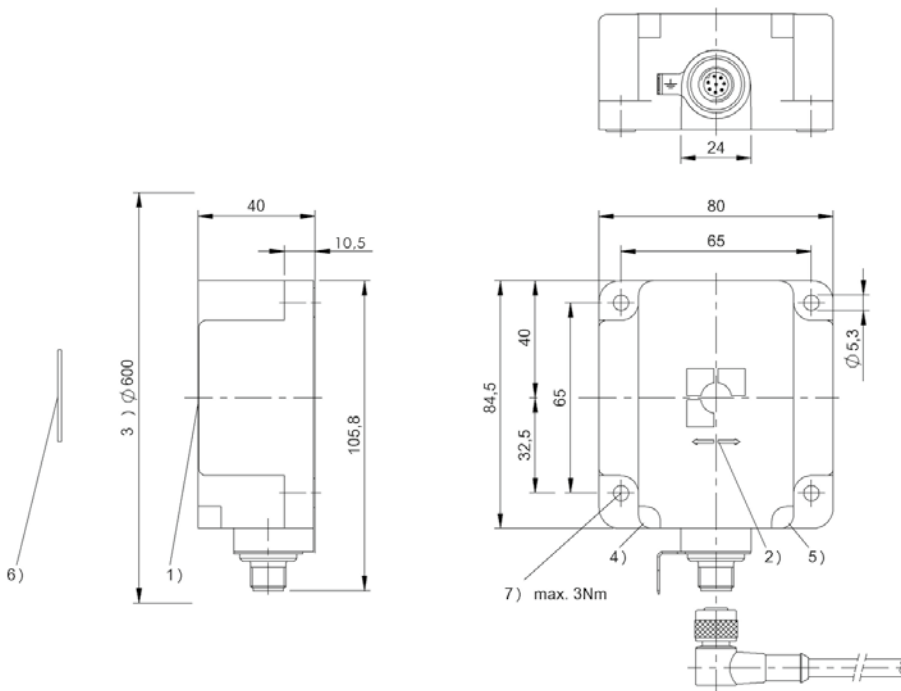


	BIS00ER BIS M-451-007-001-00-S115
Product Group	HF (13.56 MHz)
Dimension	80 x 40 x 84.5 mm
Installation	metal-free (clear zone)
Antenna type	Rod
Supported data carrier types	DIN ISO 14443, DIN ISO 15693
Connection	Connector, M12x1 connector, 8-pin
Housing material	PBT
Interface	RS232
Operating voltage U_b	19.2...26.4 VDC
Ambient temperature	0...70 °C
Protection degree	IP67
Approval/Conformity	CE, FCC Part 15, IC RSS-210, UL-FILE E227256, Vol.X1, BIS

Appropriate data carrier

	BIS004F				BIS004H				BIS00M2				BIS00P3		
	>200	>200	>200	>200	>200	>200	>200	>200	>200	>200	>200	>10	>10	>240	>240
Data carrier clear zone A	>200	>200	>200	>200	>200	>200	>200	>200	>200	>200	>200	>10	>10	>240	>240
Data carrier clear zone B	>200	>200	>200	>200	>200	>200	>200	>200	>200	>200	>200	>50	>50	>480	>480
Data carrier clear zone C												>2	>2	>50	>50
Metallic mounting surface 40 x 22 mm	0-52	0-52			0-52	0-52									
Metallic mounting surface > 200 x 200 mm			0-65	0-65			0-65	0-65							
Working distance for writing	0-52	0-52	0-65	0-65	0-52	0-52	0-65	0-65		0-30	0-30	15-30	15-30	0-100	0-100
Working distance for reading	0-52	0-52	0-65	0-65	0-52	0-52	0-65	0-65		0-30	0-30	15-30	15-30	0-100	0-100
Offset at distance	X	Y	X	Y	X	Y	X	Y	X	Y	X	Y	X	Y	
	0 ±60	±25	±65	±26	±25	±60	±26	±65	0	±35	±20			±60	±20
	5 ±60	±25	±65	±26	±25	±60	±26	±65	5	±35	±20			±60	±20
	12 ±60	±25	±65	±25	±25	±60	±25	±65	10	±35	±20			±60	±20
	15 ±60	±25	±65	±25	±25	±60	±25	±65	15	±35	±20	±35	±15	±60	±20
	18 ±60	±25	±65	±25	±25	±60	±25	±65	20	±35	±20	±35	±15	±60	±20
	20 ±60	±25	±65	±25	±25	±60	±25	±65	25	±20	±12	±28	±15	±60	±20
	22 ±60	±25	±65	±25	±25	±60	±25	±65	30	±20	±12	±28	±15	±60	±20
	25 ±60	±25	±65	±25	±25	±60	±25	±65	35					±60	±20
	30 ±60	±25	±65	±25	±25	±60	±25	±65	40					±60	±20
	32 ±50	±25	±65	±25	±25	±50	±25	±65	45					±60	±20
	35 ±50	±25	±65	±25	±25	±50	±25	±65	50					±60	±20
	40 ±50	±20	±50	±25	±20	±50	±25	±50	60					±60	±20
	45 ±25	±20	±50	±25	±20	±25	±25	±50	70					±60	±20
	50 ±25	±20	±50	±25	±20	±25	±25	±50	80					±60	±20
	52 ±25	±8	±25	±25	±8	±25	±25	±25	90					±40	±20
	60		±25	±10			±10	±25	100					±40	±20
	65		±25	±10			±10	±25							

Dimensions in mm



1) Sensing surface, 2) Read/write axis, 3) Clear zone, 4) LED (Power), 5) LED (TP), 6) Data carrier on steel, 7) Tightening torque

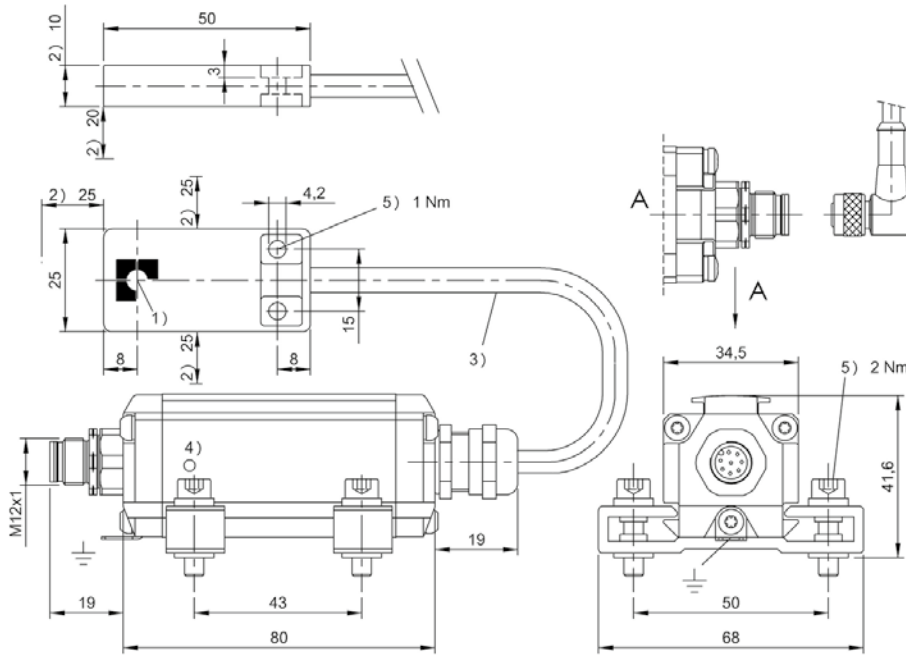


	BIS00RU BIS M-402-007-004-00-S115
Product Group	HF (13.56 MHz)
Dimension	25 x 10 x 50 mm
Installation	metal-free (clear zone)
Antenna type	round
Supported data carrier types	DIN ISO 14443, DIN ISO 15693
Connection	Connector, M12x1 connector, 8-pin, 0.50 m, PU
Housing material	ABS, GF16, interface aluminum
Interface	RS232
Operating voltage U_b	19.2...26.4 VDC
Ambient temperature	0...70 °C
Protection degree	IP67
Approval/Conformity	CE, UL-FILE E227256, Vol.X1, BIS, FCC, IC

Appropriate data carrier

	BIS0040		BIS0042		BIS0044		BIS0048		BIS004A		BIS00NU BIS00NW BIS0100		BIS003Y	
Data carrier distance to metal	>10	>0	>10	>0	>25		>10	>0	>10	>0		>0		>25
Data carrier clear zone	>60	>0	>60	>0	>80		>60	>0	>60	>0		>100		>100
Working distance for writing	0-6	0-4	0-8	0-6	0-15		0-5	0-4	0-8	0-5		0-9		0-15
Working distance for reading	0-6	0-4	0-8	0-6	0-15		0-5	0-4	0-8	0-5		0-9		0-15
Offset at distance														
	0	±4	±3	±5	±4	±8		±4	±3	±4	±4	0	±6	±11
	5	±2		±5	±2	±8		±2		±4	±2	5	±6	±11
	9					±6						7	±6	±9
	12					±4						9	±4	±9
	15					±4						12		±9
	16											15		±5

Dimensions in mm



1) Sensing surface, 2) Clear zone, 3) Cable length see text, 4) LED function indicator, 5) Tightening torque

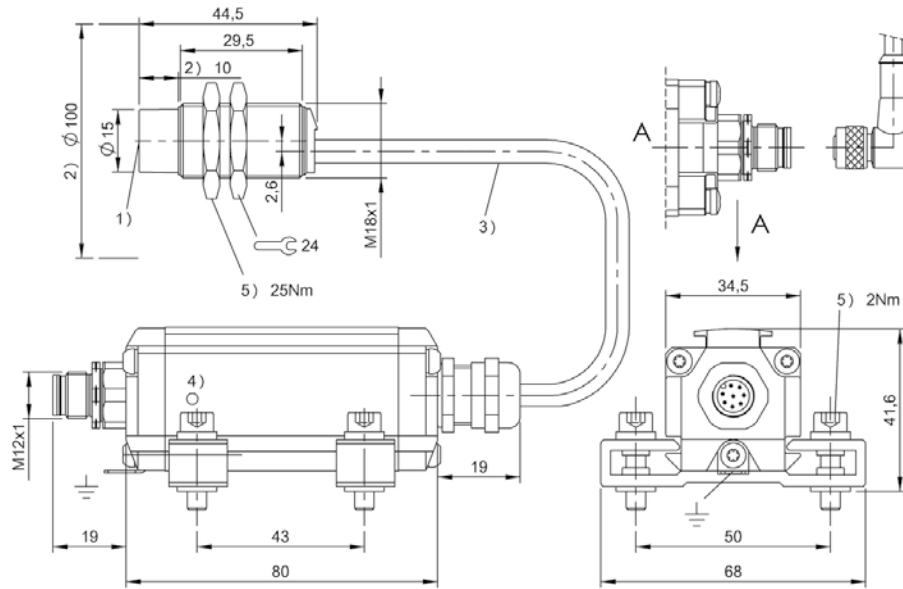


	BIS00EN BIS M-402-007-002-00-S115
Product Group	HF (13.56 MHz)
Dimension	Ø 18 x 44.5 mm
Installation	metal-free (clear zone)
Antenna type	round
Supported data carrier types	DIN ISO 14443, DIN ISO 15693
Connection	Connector, M12x1 connector, 8-pin, 0.50 m, PU
Housing material	Brass, interface aluminum
Interface	RS232
Operating voltage U_b	19.2...26.4 VDC
Ambient temperature	0...70 °C
Protection degree	IP67
Approval/Conformity	CE, UL-FILE E227256, Vol.X1, BIS, FCC, IC

Appropriate data carrier

	BIS0040		BIS0042		BIS0048		BIS004A		BIS0044			BIS003Y		BIS0045	
Data carrier distance to metal	>10	>0	>10	>0	>10	>0	>10	>0	>25			>25		>25	
Data carrier clear zone	>60	>0	>60	>0	>60	>0	>60	>0	>80			>100		>100	
Working distance for writing	0-6	0-4	0-8	0-6	0-5	0-4	0-8	0-5	0-15			0-14		0-18	
Working distance for reading	0-6	0-4	0-8	0-6	0-5	0-4	0-8	0-5	0-15			0-14		0-18	
Offset at distance	0	±3	±3	±4	±3	±3	±2	±4	±3	±7		0	±10		±12
	5	±2		±3	±2	±2		±3	±2	±7		5	±10		±12
	9									±5		10	±9		±11
	12									±3		14	±5		±10
	15									±3		15			±10
	16											18			±5

Dimensions in mm



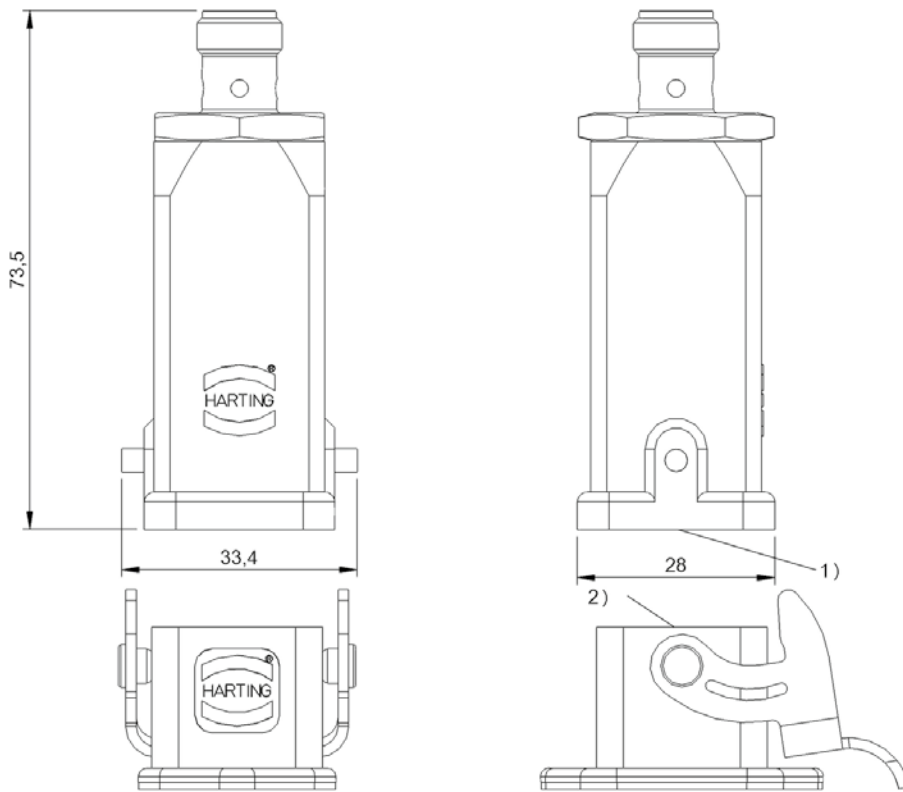
1) Sensing surface, 2) Clear zone, 3) Cable length, 4) LED function indicator, 5) Tightening torque

BIS00YL	BIS00YK	BIS00YE	BIS00NU BIS00NW BIS0100
>25	>25	>25	>0
>100	>100	>100	>100
0-9	0-9	0-20	0-9
0-9	0-9	0-20	0-9
±6	±6	±12	±6
±6	±6	±12	±6
±5	±5	±12	±6
±1	±1	±12	±4
		±12	
		±10	



IO-Link, 10 bytes process data length	BIS018E BIS M-404-045-401-07-S4-SA1
Product Group	HF (13.56 MHz)
Dimension	28 x 60 x 33.4 mm
Installation	metal-free (clear zone) on metal flush in metal
Antenna type	round
Supported data carrier types	DIN ISO 15693, DIN ISO 15693 (High Memory)
Connection	Connector, M12x1 connector, 4-pin
Housing material	Die casting Brass nickel plated, nuts nickel plated brass
Interface	IO-Link 1.1
Operating voltage U_b	18...30 VDC Supports only LPS/Class 2
Ambient temperature	0...70 °C
Protection degree	IP67
Approval/Conformity	CE, FCC Part 15, IC RSS-210

Use with data carrier **BIS0180** only



1) Sensing surface, 2) Data carrier



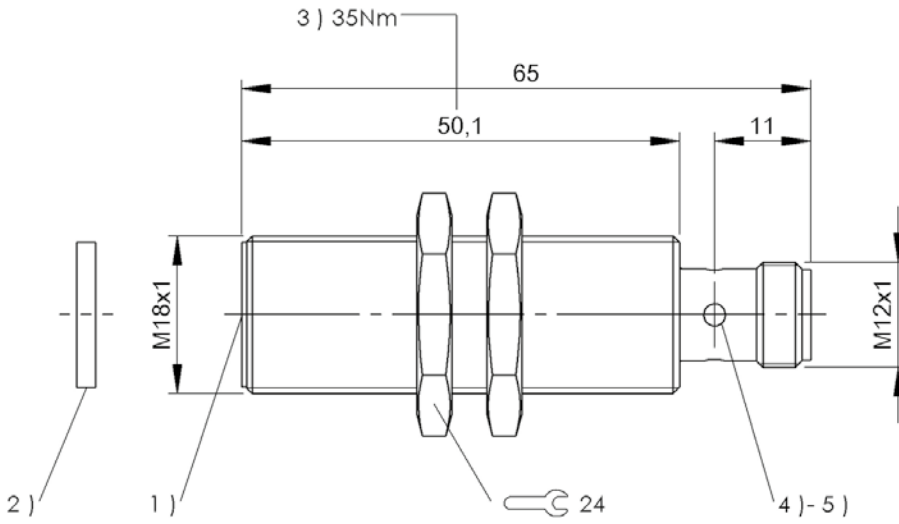
IO-Link, 10 bytes process data length	BIS015R BIS M-404-045-401-07-S4
Product Group	HF (13.56 MHz)
Dimension	Ø 18 x 65 mm
Installation	metal-free (clear zone) on metal flush in metal
Antenna type	round
Supported data carrier types	DIN ISO 15693, DIN ISO 15693 (High Memory)
Connection	Connector, M12x1 connector, 4-pin
Housing material	Brass, nuts nickel plated brass
Interface	IO-Link 1.1
Operating voltage U _b	18...30 VDC Supports only LPS/Class 2
Ambient temperature	0...70 °C
Protection degree	IP67
Approval/Conformity	CE, FCC Part 15, IC RSS-210

Use with **IO-Link master** only

Appropriate data carrier

	BIS0042			BIS0043			BIS011F BIS011E BIS011A BIS0139			BIS004A			BIS0143		
Data carrier distance to metal	>20	>0	>0	>20	>0	>0	>20	>0	>0	>20	>0	>0	>20		
Data carrier clear zone	>100	>100	>0	>100	>100	>0	>100	>100	>0	>100	>100	>0	>100		
Working distance for writing	0-8.5	0-8	0-6	0-11	0-8	0-6	0-6.5	0-6	0-5	0-6	0-5.5	0-3.5	0-13		
Working distance for reading	0-8.5	0-8	0-6	0-11	0-8	0-6	0-6.5	0-6	0-5	0-6	0-5.5	0-3.5	0-13		
Offset at distance															
	0	±5	±5	±4	±8	±8	±7	±8	±8	±7	±4.5	±4	±3.5	±8	
	2	±5	±5	±4	±8	±8	±7	±8	±8	±7	±4.5	±4	±3	±8	
	3.5	±4.5	±4	±3	±8	±7	±6	±7	±7	±6	±4	±3	±1.5	±8	
	4	±4.5	±4	±3	±8	±7	±6	±7	±7	±6	±4	±3		±8	
	4.5	±4.5	±4	±3	±8	±7	±4	±7	±6	±3	±3.5	±3		±8	
	5	±4.5	±4	±3	±8	±7	±4	±7	±6	±3	±3.5	±2		±8	
	5.5	±4	±3	±2	±7	±5	±1	±4	±3		±2	±2		±7	
	6	±4	±3	±2	±7	±5	±1	±4	±3		±2			±7	
	6.5	±4	±3		±7	±5		±4						±7	
	7	±4	±3		±7	±5								±7	
	8	±2	±2		±7	±4								±7	
	8.5	±2			±7									±7	
	10				±7									±7	
	11				±4									±4	
	13													±4	

Dimensions in mm



1) Sensing surface, 2) Data carrier, 3) Tightening torque, 4) LED (CP), 5) LED (Power)

	BIS0044	BIS00NU BIS00NW BIS0100
	>25	>0
	>100	>100
	0-10	0-9.5
	0-10	0-9.5
	0 ±6	±5
	2 ±6	±5
	4 ±6	±5
	5 ±6	±5
	6 ±5	±4
	7 ±5	±4
	8 ±5	±4
	9.5 ±3	±2
	10 ±3	
	12	
	15	
	20	
	25	
	30	
	35	



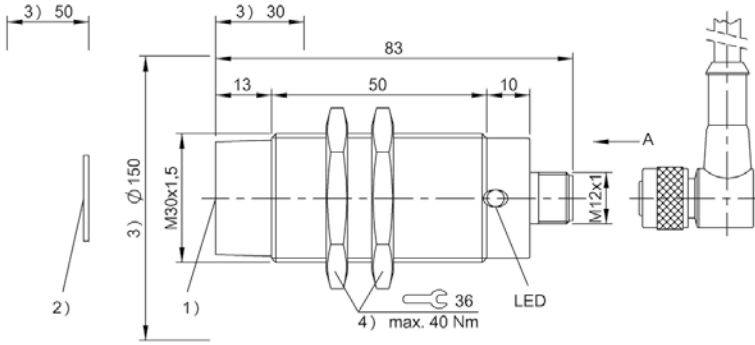
IO-Link, 10 bytes process data length	BIS00LH BIS M-400-045-001-07-S4
Product Group	HF (13.56 MHz)
Dimension	Ø 30 x 83 mm
Installation	metal-free (clear zone)
Antenna type	round
Supported data carrier types	DIN ISO 14443, DIN ISO 15693
Connection	Connector, M12x1 connector, 4-pin
Housing material	Brass, nuts nickel plated brass
Interface	IO-Link 1.1
Operating voltage U _b	18...30 VDC Supports only LPS/Class 2
Ambient temperature	0...70 °C
Protection degree	IP67
Approval/Conformity	CE, UL-FILE E227256, Vol.X1, BIS, FCC, IC

Use with **IO-Link master** only

Appropriate data carrier

	BIS003Y			BIS003Z			BIS0040		BIS0042		BIS0043		BIS0044			BIS0045			
Data carrier distance to metal	>25	>10	>5	>50	>15	>10	>20	>5	>20	>5	>25	>0	>25	>10	>5	>25	>10	>5	
Data carrier clear zone	>100	>60	>50	>150	>90	>70	>100	>100	>100	>100	>100	>0	>100	>60	>50	>100	>60	>50	
Working distance for writing	0-20	0-15	0-12	0-28	0-20	0-12	0-7	0-6	0-11	0-7	0-28	0-16	0-20	0-15	0-8	0-28	0-18	0-10	
Working distance for reading	0-20	0-15	0-12	0-28	0-20	0-12	0-7	0-6	0-11	0-7	0-28	0-16	0-20	0-15	0-8	0-28	0-18	0-10	
Offset at distance																			
0																			
5	±14	±10	±6	±20	±15	±6	±7	±6	±9	±6	±16	±10	0	±12	±8	±6	±16	±10	±7
9	±14	±10	±6	±20	±15	±6	±7	±6	±8	±6	±16	±10	2	±12	±8	±5	±16	±10	±7
12	±14	±8	±4	±20	±15	±3			±5		±14	±8	5	±12	±8	±5	±16	±10	±7
15	±10	±4	±2	±20	±13	±2					±14	±6	7	±10	±6	±4	±14	±8	±2
16	±10	±2		±20	±10						±14	±6	8	±10	±6	±2	±14	±8	±2
18	±8			±18	±3						±14	±4	9	±10	±6		±14	±8	±2
20	±6			±16							±14		10	±8	±4		±14	±7	±1
22	±5			±15							±14		12	±8	±4		±14	±7	
25				±15							±12		13	±8	±2		±14	±6	
30				±10							±12		15	±8	±2		±14	±6	
32													16	±5			±14	±3	
35													18	±5			±14	±2	
40													20	±5			±14		
43													22				±12		
45													25				±12		
50													27				±6		
52													28				±6		
60													30						
65													35						
70													38						
													45						

Dimensions in mm



1) Sensing surface, 2) Data carrier, 3) Clear zone, 4) Tightening torque

BIS0046		BIS0048		BIS004A		BIS00LC		BIS00M9 BIS00M8		BIS00NU BIS00NW BIS0100		BIS0143		BIS00YE		BIS00Y7		BIS00Y5		BIS00Y4	
>50	>15	>10	>20	>20	>0	>25	>0	>0	>0	>25	>25	>0	>25	>50	>50	>50	>150	>150	>150	>150	>150
>150	>90	>70	>100	>100	>0	>100	>100	>100	>100	>100	>100	>100	>100	>100	>100	>100	>100	>150	>150	>150	>150
0-38	0-25	0-15	0-9.5	0-13	0-7	0-27	0-13	0-22	0-13	0-27	0-30	0-8	0-24	0-50	0-42	0-50	0-50	0-50	0-50	0-42	0-42
0-38	0-25	0-15	0-9.5	0-13	0-7	0-27	0-13	0-22	0-13	0-27	0-30	0-8	0-24	0-50	0-42	0-50	0-50	0-50	0-50	0-42	0-42
±22	±16	±13	±9	±10	±7	0	±16	±10	±13	±10	0	±18	±18	±8	±18	±30	±30	±30	±30	±30	±30
±22	±16	±13	±9	±10	±7	5	±16	±10	±13	±10	5	±18	±18	±8	±18	±30	±30	±30	±30	±30	±30
±22	±16	±13	±8	±10	±6	10	±16	±7	±13	±9	7	±18	±18	±6	±18	±30	±30	±30	±30	±30	±30
±22	±14	±10	±7	±8	±1	13	±14	±5	±11	±5	8	±18	±18	±3	±18	±30	±30	±30	±30	±30	±30
±22	±14	±10	±1	±8		15	±14		±11		10	±18	±18		±18	±30	±30	±30	±30	±30	±30
±22	±14	±10	±1	±8		18	±14		±11		15	±16	±18		±16	±30	±30	±30	±30	±30	±28
±20	±13	±8		±8		20	±14		±7		20	±16	±18		±16	±30	±30	±30	±30	±30	±28
±20	±13	±8		±3		22	±12		±7		24	±10	±16		±5	±25	±24	±25	±25	±24	±24
±20	±12	±6		±3		25	±12				25	±10	±16			±25	±24	±25	±25	±24	±24
±20	±12	±6				27	±5				27	±5	±5			±25	±24	±25	±25	±24	±24
±20	±10					30					30		±5			±25	±24	±25	±25	±24	±24
±20	±10					32					35					±25	±24	±25	±25	±24	±24
±20	±8					35					40					±25	±5	±25	±25	±5	±5
±20	±6					40					42					±5	±5	±5	±5	±5	±5
±20	±4					43					45					±5		±5	±5		
±16						45					50					±5		±5	±5		
±16						50					40										
±16						52					42										
±10						60					45										
±5						65					50										
						70					55										



IO-Link, 10 bytes process data length	BIS015T BIS M-400-045-401-07-S4
Product Group	HF (13.56 MHz)
Dimension	Ø 30 x 65.9 mm
Installation	metal-free (clear zone) on metal flush in metal
Antenna type	round
Supported data carrier types	DIN ISO 15693, DIN ISO 15693 (High Memory)
Connection	Connector, M12x1 connector, 4-pin
Housing material	Brass, nuts nickel plated brass
Interface	IO-Link 1.1
Operating voltage U_b	18...30 VDC Supports only LPS/Class 2
Ambient temperature	0...70 °C
Protection degree	IP67
Approval/Conformity	CE, FCC Part 15, IC RSS-210

Use with **IO-Link master** only

Appropriate data carrier

	BIS0042		BIS0043 BIS0111			BIS004A		BIS0143		BIS0044		BIS0045		BIS0046	
Data carrier distance to metal	>20		>25	>0	>0	>20		>20		>25		>25		>50	
Data carrier clear zone	>100		>100	>100	>0	>100		>100		>100		>100		>150	
Working distance for writing	0-13		0-21	0-15	0-13	0-9		0-21		0-18		0-21		0-30	
Working distance for reading	0-13		0-21	0-15	0-13	0-9		0-21		0-18		0-21		0-30	
Offset at distance															
	0	±8	±13	±10	±10	±7		±12		0	±9	±13		±20	
	5	±8	±13	±10	±10	±7		±12		5	±9	±13		±20	
	8	±8	±13	±10	±9	±6		±12		10	±9	±13		±20	
	9	±7	±13	±8	±8	±4		±12		13	±8	±12		±18	
	10	±7	±13	±8	±8			±12		15	±8	±12		±18	
	13	±4	±12	±8	±3			±11		16	±4	±11		±18	
	15		±12	±3				±11		18	±4	±11		±18	
	18		±11					±10		20		±5		±18	
	20		±5					±5		21		±5		±16	
	21		±5					±5		25				±16	
	30									30				±8	

Dimensions in mm

	BISO0NU	BISO0NW	BISO100
	>0		
	>100		
	0-13		
	0-13		
	±9		
	±9		
	±7		
	±3		



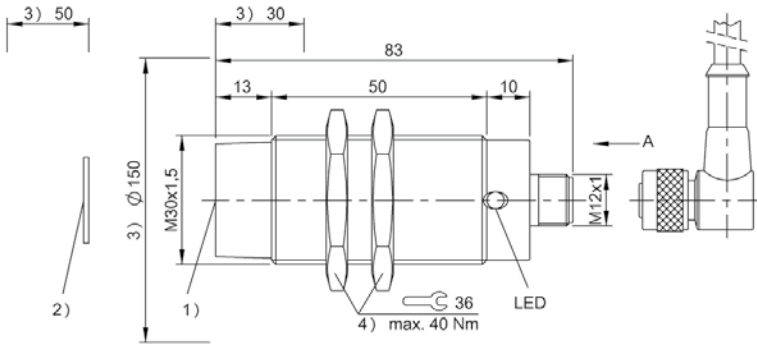
IO-Link, 32 bytes process data length	BIS0108 BIS M-400-072-001-07-S4
Product Group	HF (13.56 MHz)
Dimension	Ø 30 x 83 mm
Installation	metal-free (clear zone)
Antenna type	round
Supported data carrier types	DIN ISO 14443, DIN ISO 15693
Connection	Connector, M12x1 connector, 4-pin
Housing material	Brass, nuts nickel plated brass
Interface	IO-Link 1.1
Operating voltage U_b	18...30 VDC Supports only LPS/Class 2
Ambient temperature	0...70 °C
Protection degree	IP67
Approval/Conformity	CE, UL-FILE E227256, Vol.X1, BIS, FCC, IC

Use with **IO-Link master** only

Appropriate data carrier

	BIS003Y			BIS003Z			BIS0040		BIS0042		BIS0043		BIS0044			BIS0045			
Data carrier distance to metal	>25	>10	>5	>50	>15	>10	>20	>5	>20	>5	>25	>0	>25	>10	>5	>25	>10	>5	
Data carrier clear zone	>100	>60	>50	>150	>90	>70	>100	>100	>100	>100	>100	>0	>100	>60	>50	>100	>60	>50	
Working distance for writing	0-20	0-15	0-12	0-28	0-20	0-12	0-7	0-6	0-11	0-7	0-28	0-16	0-20	0-15	0-8	0-28	0-18	0-10	
Working distance for reading	0-20	0-15	0-12	0-28	0-20	0-12	0-7	0-6	0-11	0-7	0-28	0-16	0-20	0-15	0-8	0-28	0-18	0-10	
Offset at distance																			
0																			
5	±14	±10	±6	±20	±15	±6	±7	±6	±9	±6	±16	±10	0	±12	±8	±6	±16	±10	±7
9	±14	±10	±6	±20	±15	±6	±7	±6	±8	±6	±16	±10	2	±12	±8	±5	±16	±10	±7
12	±14	±8	±4	±20	±15	±3			±5		±14	±8	5	±12	±8	±5	±16	±10	±7
15	±10	±4	±2	±20	±13	±2					±14	±6	7	±10	±6	±4	±14	±8	±2
16	±10	±2		±20	±10						±14	±6	8	±10	±6	±2	±14	±8	±2
18	±8			±18	±3						±14	±4	9	±10	±6		±14	±8	±2
20	±6			±16							±14		10	±8	±4		±14	±7	±1
22	±5			±15							±14		12	±8	±4		±14	±7	
25				±15							±12		13	±8	±2		±14	±6	
30				±10							±12		15	±8	±2		±14	±6	
32													16	±5			±14	±3	
35													18	±5			±14	±2	
40													20	±5			±14		
43													22				±12		
45													25				±12		
50													27				±6		
52													28				±6		
60													30						
65													35						
70													38						
													45						

Dimensions in mm



1) Sensing surface, 2) Data carrier, 3) Clear zone, 4) Tightening torque

BIS0046			BIS0048		BIS004A		BIS00LC			BIS00M9 BIS00M8		BIS00NU BIS00NW BIS0100		BIS0143			BIS00YE		BIS00Y7		BIS00Y5		BIS00Y4		
>50	>15	>10	>20	>20	>0	>0	>25	>0	>0	>0		>25	>25	>0	>25	>50	>50								
>150	>90	>70	>100	>100	>0	>0	>100	>100	>100	>100		>100	>100	>100	>100	>150	>150								
0-38	0-25	0-15	0-9.5	0-13	0-7	0-7	0-27	0-13	0-22	0-13		0-27	0-30	0-8	0-24	0-50	0-42								
0-38	0-25	0-15	0-9.5	0-13	0-7	0-7	0-27	0-13	0-22	0-13		0-27	0-30	0-8	0-24	0-50	0-42								
±22	±16	±13	±9	±10	±7	0	±16	±10	±13	±10		0	±18	±18	±8	±18	±30	±30							
±22	±16	±13	±9	±10	±7	5	±16	±10	±13	±10		5	±18	±18	±8	±18	±30	±30							
±22	±16	±13	±8	±10	±6	10	±16	±7	±13	±9		7	±18	±18	±6	±18	±30	±30							
±22	±14	±10	±7	±8	±1	13	±14	±5	±11	±5		8	±18	±18	±3	±18	±30	±30							
±22	±14	±10	±1	±8		15	±14		±11			10	±18	±18		±18	±30	±30							
±22	±14	±10	±1	±8		18	±14		±11			15	±16	±18		±16	±30	±28							
±20	±13	±8		±8		20	±14		±7			20	±16	±18		±16	±30	±28							
±20	±13	±8		±3		22	±12		±7			24	±10	±16		±5	±25	±24							
±20	±12	±6		±3		25	±12					25	±10	±16			±25	±24							
±20	±12	±6				27	±5					27	±5	±5			±25	±24							
±20	±10					30						30		±5			±25	±24							
±20	±10					32						35					±25	±24							
±20	±8					35						40					±25	±5							
±20	±6					40						42					±5	±5							
±20	±4					43						45					±5								
±16						45						50					±5								
±16						50						40													
±16						52						42													
±10						60						45													
±5						65						50													
						70						55													



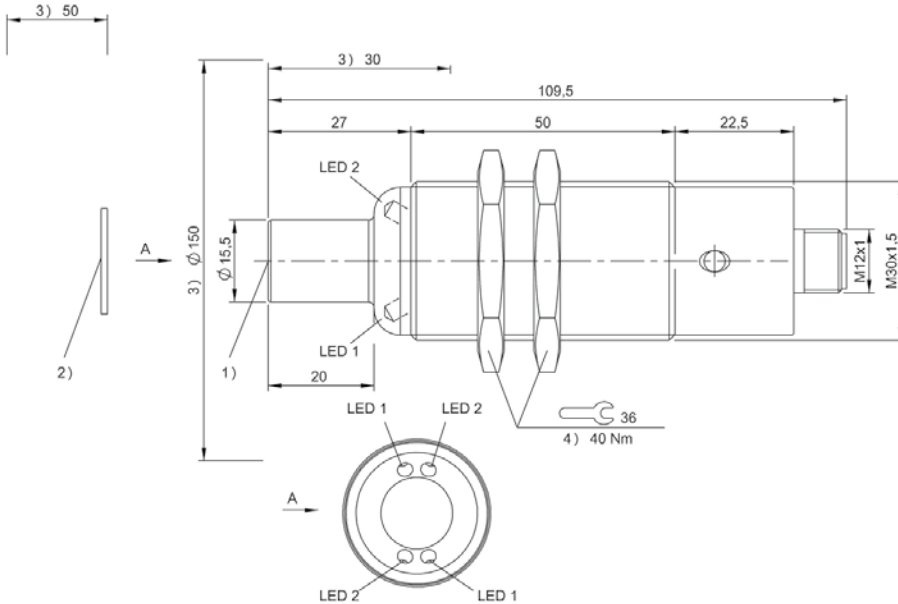
IO-Link, 10 bytes process data length	BIS00LJ BIS M-400-045-002-07-S4
Product Group	HF (13.56 MHz)
Dimension	Ø 30 x 109.5 mm
Installation	metal-free (clear zone)
Antenna type	round
Supported data carrier types	DIN ISO 14443, DIN ISO 15693
Connection	Connector, M12x1 connector, 4-pin
Housing material	Brass, nuts nickel plated brass
Interface	IO-Link 1.1
Operating voltage U _b	18...30 VDC Supports only LPS/Class 2
Ambient temperature	0...70 °C
Protection degree	IP67
Approval/Conformity	CE, FCC Part 15, IC RSS-210, UL-FILE E227256, Vol.X1, BIS

Use with **IO-Link master** only

Appropriate data carrier

	BIS003Y			BIS003Z			BIS0040		BIS0042		BIS0048		BIS004A		BIS0043		
Data carrier distance to metal	>25	>10	>5	>50	>25	>10	>10	>0	>10	>0	>10	>0	>10	>0	>25	>0	
Data carrier clear zone	>60	>50	>50	>60	>50	>50	>60	>0	>60	>0	>60	>0	>60	>0	>60	>0	
Working distance for writing	0-15	0-12	0-9	0-18	0-18	0-10	0-6	0-5	0-9	0-5	0-5	0-4	0-6	0-5	0-20	0-12	
Working distance for reading	0-15	0-12	0-9	0-18	0-18	0-10	0-6	0-5	0-9	0-5	0-5	0-4	0-6	0-5	0-20	0-12	
Offset at distance																	
	0	±9	±6	±4	±16	±12	±4	±5	±4	±6	±4	±4	±3	±4	±3	±14	±10
	5	±9	±6	±4	±16	±12	±4	±4	±2	±6	±2	±3		±3	±2	±14	±8
	9	±8	±4	±2	±12	±10	±2			±2						±12	±6
	12	±6	±2		±8	±5										±10	±4
	15	±4			±8	±5										±10	
	16				±7	±3										±7	
	18				±6	±2										±7	
	20															±7	
	22																
	25																

Dimensions in mm



1) Sensing surface, 2) Data carrier, 3) Clear zone, 4) Tightening torque

BIS0044			BIS0045			BIS0046			BIS00YE			BIS00NU BIS00NW BIS0100		
>25	>15	>5	>25	>10	>5	>50	>25	>20	>25	>0				
>80	>50	>50	>80	>50	>50	>150	>90	>70	>100	>100				
0-15	0-10	0-6	0-20	0-12	0-5	0-28	0-18	0-10	0-24	0-12				
0-15	0-10	0-6	0-20	0-12	0-5	0-28	0-18	0-10	0-24	0-12				
±8	±6	±4	±12	±8	±7	±20	±14	±14	0 ±14	±7				
±8	±6	±4	±12	±8	±4	±20	±14	±14	5 ±14	±7				
±6	±5		±10	±6		±18	±14	±10	10 ±14	±6				
±4			±10	±4		±18	±12	±6	12 ±12	±2				
±4			±10			±18	±12		15 ±12					
			±7			±16	±10		20 ±12					
			±7			±16	±8		24 ±6					
			±7			±16			30					
						±12			35					
						±12			40					



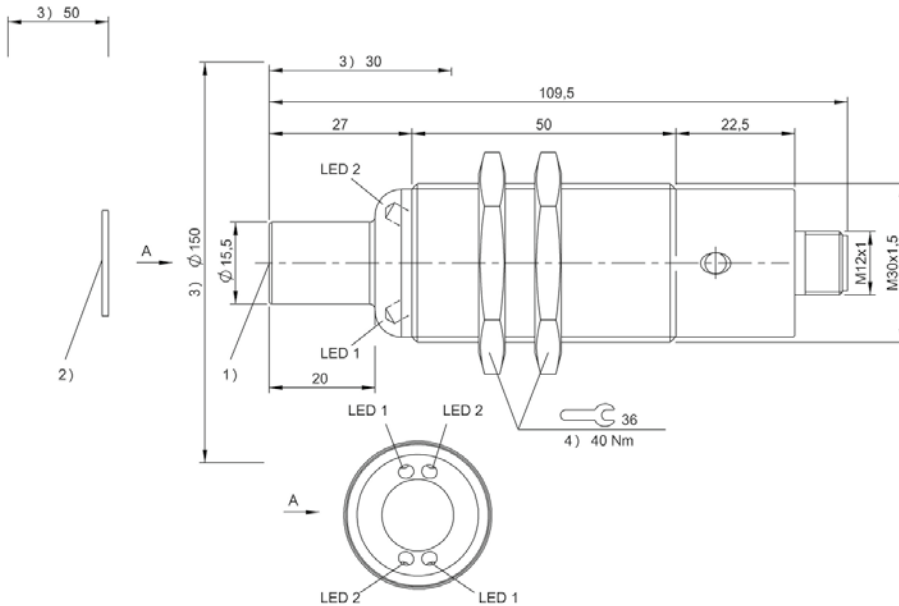
IO-Link, 32 bytes process data length	BIS0104 BIS M-400-072-002-07-S4
Product Group	HF (13.56 MHz)
Dimension	Ø 30 x 109.5 mm
Installation	metal-free (clear zone)
Antenna type	round
Supported data carrier types	DIN ISO 14443, DIN ISO 15693
Connection	Connector, M12x1 connector, 4-pin
Housing material	Brass, nuts nickel plated brass
Interface	IO-Link 1.1
Operating voltage Ub	18...30 VDC Supports only LPS/Class 2
Ambient temperature	0...70 °C
Protection degree	IP67
Approval/Conformity	CE, FCC Part 15, IC RSS-210, UL-FILE E227256, Vol.X1, BIS

Use with **IO-Link master** only

Appropriate data carrier

	BIS003Y			BIS003Z			BIS0040		BIS0042		BIS0048		BIS004A		BIS0043		
Data carrier distance to metal	>25	>10	>5	>50	>25	>10	>10	>0	>10	>0	>10	>0	>10	>0	>25	>0	
Data carrier clear zone	>60	>50	>50	>60	>50	>50	>60	>0	>60	>0	>60	>0	>60	>0	>60	>0	
Working distance for writing	0-15	0-12	0-9	0-18	0-18	0-10	0-6	0-5	0-9	0-5	0-5	0-4	0-6	0-5	0-20	0-12	
Working distance for reading	0-15	0-12	0-9	0-18	0-18	0-10	0-6	0-5	0-9	0-5	0-5	0-4	0-6	0-5	0-20	0-12	
Offset at distance																	
	0	±9	±6	±4	±16	±12	±4	±5	±4	±6	±4	±4	±3	±4	±3	±14	±10
	5	±9	±6	±4	±16	±12	±4	±4	±2	±6	±2	±3		±3	±2	±14	±8
	9	±8	±4	±2	±12	±10	±2			±2						±12	±6
	12	±6	±2		±8	±5										±10	±4
	15	±4			±8	±5										±10	
	16				±7	±3										±7	
	18				±6	±2										±7	
	20															±7	
	22																
	25																

Dimensions in mm



1) Sensing surface, 2) Data carrier, 3) Clear zone, 4) Tightening torque

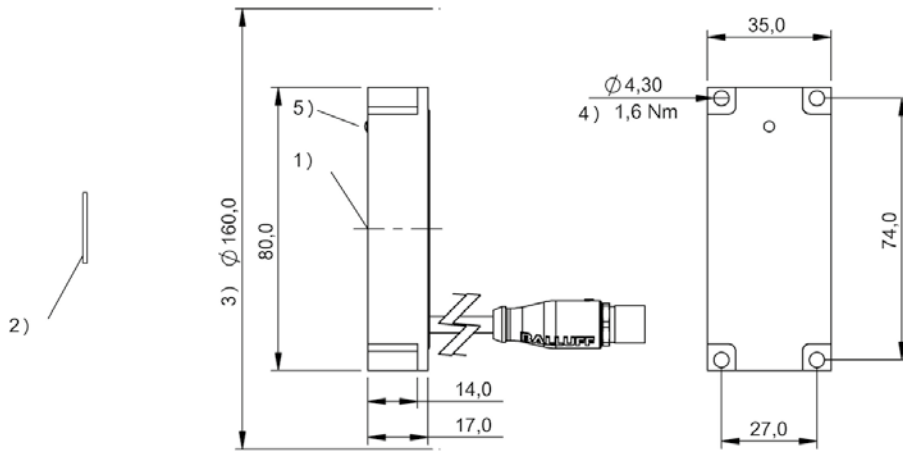
BIS0044			BIS0045			BIS0046			BIS00YE			BIS00NU BIS00NW BIS0100		
>25	>15	>5	>25	>10	>5	>50	>25	>20	>25	>0		>25	>15	>5
>80	>50	>50	>80	>50	>50	>150	>90	>70	>100	>100		>100	>50	>50
0-15	0-10	0-6	0-20	0-12	0-5	0-28	0-18	0-10	0-24	0-12		0-24	0-12	0-12
0-15	0-10	0-6	0-20	0-12	0-5	0-28	0-18	0-10	0-24	0-12		0-24	0-12	0-12
±8	±6	±4	±12	±8	±7	±20	±14	±14	0 ±14	±7		0 ±14	±7	±7
±8	±6	±4	±12	±8	±4	±20	±14	±14	5 ±14	±7		5 ±14	±7	±7
±6	±5		±10	±6		±18	±14	±10	10 ±14	±6		10 ±14	±6	±6
±4			±10	±4		±18	±12	±6	12 ±12	±2		12 ±12	±2	±2
±4			±10			±18	±12		15 ±12			15 ±12		
			±7			±16	±10		20 ±12			20 ±12		
			±7			±16	±8		24 ±6			24 ±6		
			±7			±16			30			30		
						±12			35			35		
						±12			40			40		



IO-Link, 10 bytes process data length	BIS0155 BIS M-405-045-008-07-S4
Product Group	HF (13.56 MHz)
Dimension	35 x 17 x 80 mm
Installation	metal-free (clear zone)
Antenna type	round
Supported data carrier types	DIN ISO 14443, DIN ISO 15693
Connection	Connector, M12x1 connector, 4-pin, 0.30 m
Housing material	ABS
Interface	IO-Link 1.1
Operating voltage U_b	18...30 VDC Supports only LPS/Class 2
Ambient temperature	0...70 °C
Protection degree	IP67
Approval/Conformity	CE, UL-FILE E227256, Vol.X1, BIS

Use with **IO-Link master** only

Appropriate data carrier on request



1) Sensing surface, 2) Data carrier, 3) Clear zone, 4) Tightening torque, 5) LED Power



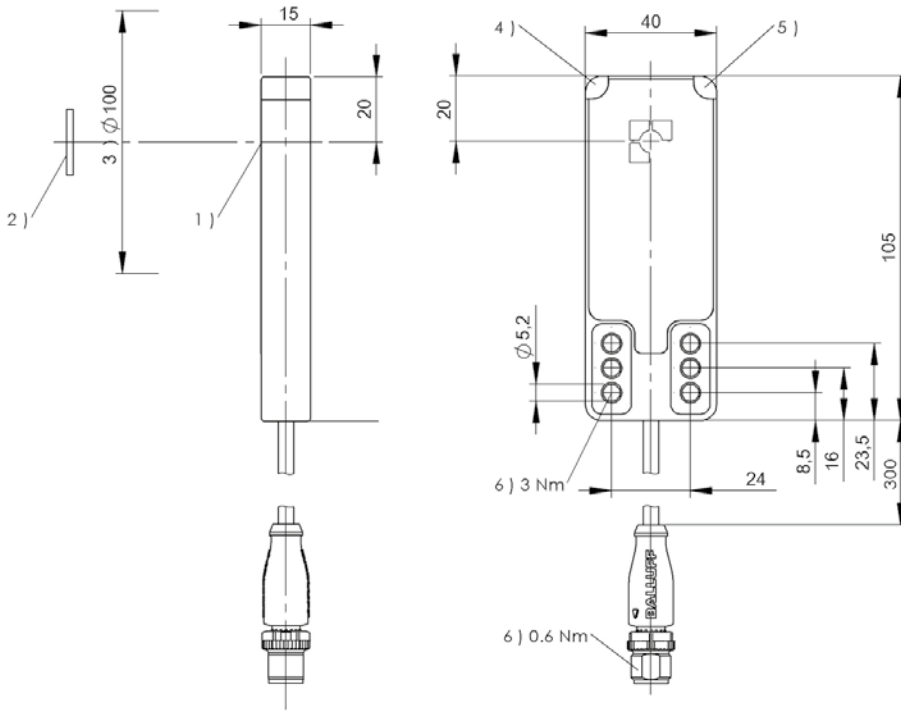
IO-Link, 10 bytes process data length	BISO14J BIS M-408-045-001-07-S4
Product Group	HF (13.56 MHz)
Dimension	40 x 15 x 105 mm
Installation	metal-free (clear zone)
Antenna type	round
Supported data carrier types	DIN ISO 14443, DIN ISO 15693
Connection	Connector, M12x1 connector, 4-pin
Housing material	Zinc, die-cast
Interface	IO-Link 1.1
Operating voltage U_b	18...30 VDC Supports only LPS/Class 2
Ambient temperature	0...70 °C
Protection degree	IP67
Approval/Conformity	CE, FCC Part 15, IC RSS-210

Use with **IO-Link master** only

Appropriate data carrier

	BISO042		BISO04A		BISO044		BISO045		BISO143		BISO0M9 BISO0M8		BISO0NU BISO0NW BISO100	
Data carrier distance to metal	>10	>0	>10	>0	>25	>25	>25	>25	>25	>25	>0	>0	>0	>0
Data carrier clear zone	>60	>60	>60	>60	>100	>100	>100	>100	>100	>100	>100	>100	>100	>100
Working distance for writing	0-13	0-11	0-11	0-9	0-23	0-23	0-28	0-26	0-26	0-26	0-22	0-22	0-13	0-13
Working distance for reading	0-13	0-11	0-11	0-9	0-23	0-23	0-28	0-26	0-26	0-26	0-22	0-22	0-13	0-13
Offset at distance	0	±10	±8	±8	±8	±8	±15	±16	±15	±15	0	±13	±10	±10
	4	±10	±8	±8	±8	±8	±15	±16	±15	±15	5	±13	±10	±10
	5	±10	±8	±8	±7	±7	±15	±16	±15	±15	10	±13	±9	±9
	6	±9	±7	±7	±7	±7	±15	±16	±15	±15	13	±11	±5	±5
	7	±9	±7	±7	±7	±6	±15	±16	±15	±15	15	±11		
	8	±9	±7	±7	±6	±6	±15	±16	±15	±15	18	±11		
	9	±9	±7	±7	±6	±3	±15	±16	±15	±15	20	±7		
	10	±7	±4	±4	±4		±15	±16	±15	±15	22	±7		
	11	±7	±4	±4	±4		±12	±15	±13	±13	25			
	13	±4					±12	±15	±13	±13	28			
	15						±12	±15	±13	±13	30			
	20						±12	±15	±13	±13	32			
	23						±5	±10	±5	±5	35			
	25							±10	±5	±5	40			
	26							±5	±5	±5	43			
	28							±5			45			

Dimensions in mm



1) Sensing surface, 2) Data carrier, 3) Clear zone, 4) LED (Power), 5) LED (CP), 6) Tightening torque

	BIS00YK	BIS0046	BIS00Y5	BIS00Y4	BIS00LC	
	>10	>25	>50	>50	>25	>0
	>60	>100	>200	>200	>100	>100
	0-13	0-40	0-48	0-48	0-25	0-12
	0-13	0-40	0-48	0-48	0-25	0-12
	0	±9	±25	±26	±30	±15 ±10
	5	±9	±25	±26	±30	±15 ±10
	10	±8	±25	±26	±30	±15 ±8
	12	±4	±25	±26	±30	±13 ±2
	13	±4	±25	±26	±30	±13
	15		±25	±26	±30	±13
	18		±25	±26	±30	±13
	20		±25	±26	±30	±13
	25		±23	±24	±25	±5
	30		±20	±24	±25	
	36		±20	±24	±25	
	40		±10	±24	±25	
	45			±5	±10	
	48			±5	±10	
	55					
	60					



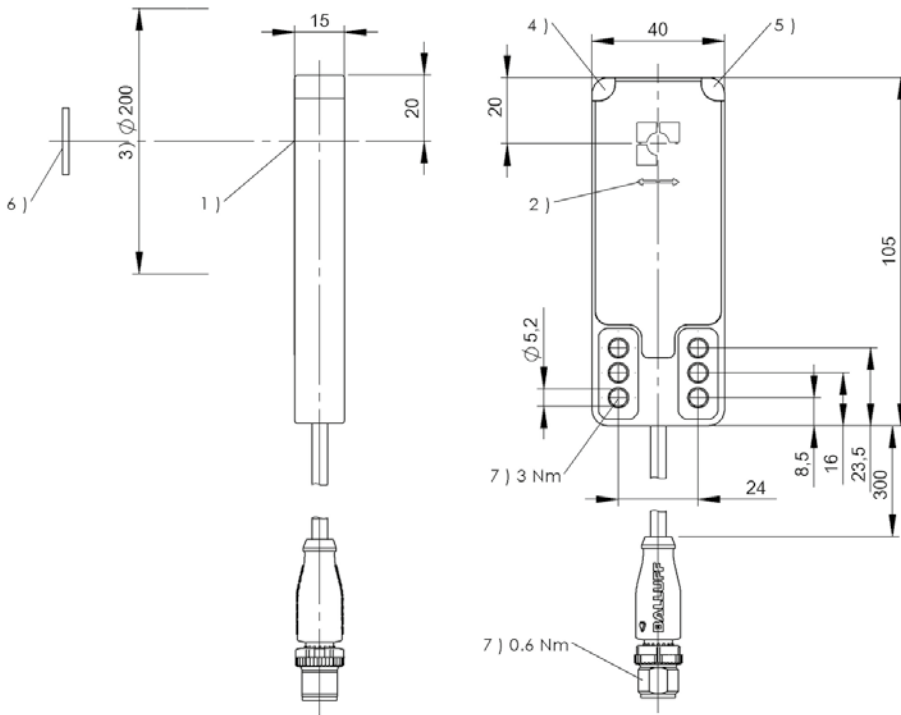
IO-Link, 10 bytes process data length	BISO14K BIS M-458-045-001-07-S4
Product Group	HF (13.56 MHz)
Dimension	40 x 15 x 105 mm
Installation	metal-free (clear zone)
Antenna type	Rod
Supported data carrier types	DIN ISO 14443, DIN ISO 15693
Connection	Connector, M12x1 connector, 4-pin
Housing material	Zinc, die-cast
Interface	IO-Link 1.1
Operating voltage U_b	18...30 VDC Supports only LPS/Class 2
Ambient temperature	0...70 °C
Protection degree	IP67
Approval/Conformity	CE, FCC Part 15, IC RSS-210

Use with **IO-Link master** only

Appropriate data carrier

	BISO04F				BISO04H				BISO0M2		BISO0P3				BISO0NZ		
Data carrier clear zone A	>200	>200	>200	>200	>200	>200	>200	>200	>200	>200	>240	>240	>240	>240	>27	>27	
Data carrier clear zone B	>200	>200	>200	>200	>200	>200	>200	>200	>200	>200	>480	>480	>480	>480	>27	>27	
Data carrier clear zone C											>50	>50	>50	>50	>0	>0	
Metallic mounting surface 40 x 22 mm	0-38	0-38			0-38	0-38											
Metallic mounting surface > 200 x 200 mm			0-42	0-42			0-34	0-34									
Working distance for writing	0-38	0-38	0-42	0-42	0-38	0-38	0-34	0-34	0-18	0-18	0-54	0-54	0-54	0-54	0-25	0-25	
Working distance for reading	0-38	0-38	0-42	0-42	0-38	0-38	0-34	0-34	0-18	0-18	0-54	0-54	0-54	0-54	0-25	0-25	
Offset at distance	X	Y	X	Y	X	Y	X	Y	X	Y	X	Y	X	Y	X	Y	
0	±43	±18	±45	±21	±20	±40	±17	±35	0	±22	±12	±60	±30	±60	±30	±30	±20
5	±43	±18	±45	±21	±20	±40	±17	±35	5	±22	±12	±60	±30	±60	±30	±30	±20
10	±43	±18	±45	±21	±20	±40	±17	±35	10	±21	±10	±60	±30	±60	±30	±30	±20
15	±40	±17	±43	±20	±18	±35	±15	±33	15	±16	±8	±55	±27	±55	±27	±25	±15
20	±40	±17	±43	±20	±18	±35	±15	±33	16	±5	±2	±55	±27	±55	±27	±15	±10
30	±35	±15	±40	±18	±15	±30	±13	±28	18	±5	±2	±55	±27	±55	±27	±5	±5
34	±18	±5	±24	±12	±5	±10	±5	±10	30			±55	±27	±55	±27		
38	±18	±5	±24	±12	±5	±10			35			±50	±25	±50	±25		
40			±24	±12					40			±50	±25	±50	±25		
42			±15	±8					45			±35	±17	±35	±17		
50									50			±35	±17	±35	±17		
60									54			±15	±7	±15	±7		

Dimensions in mm



1) Sensing surface, 2) Read/write axis, 3) Clear zone, 4) LED (Power), 5) LED (CP), 6) Data carrier, 7) Tightening torque



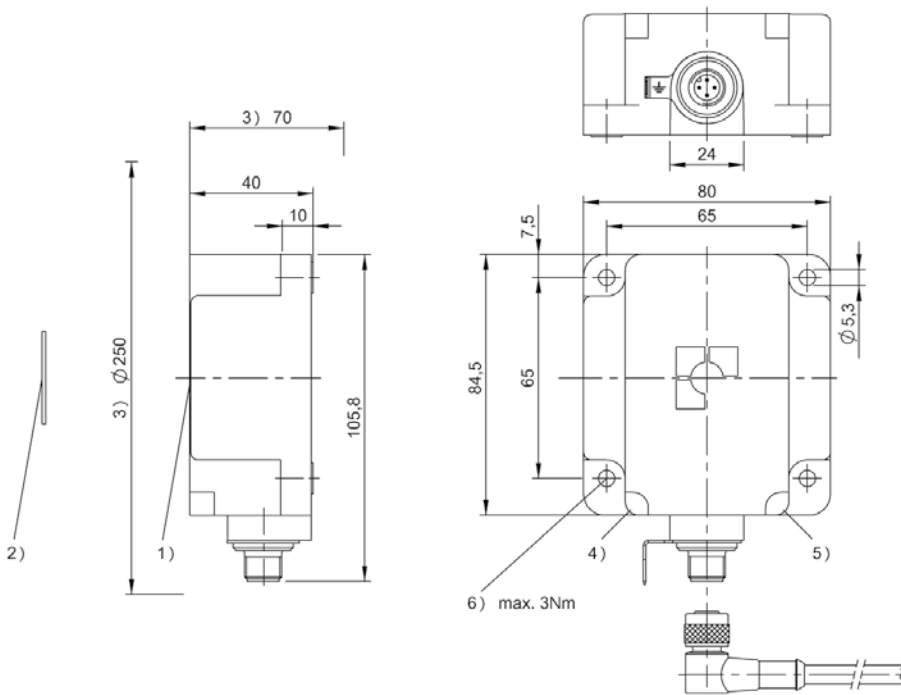
IO-Link, 10 bytes process data length	BIS00LK BIS M-401-045-001-07-S4
Product Group	HF (13.56 MHz)
Dimension	80 x 40 x 84.5 mm
Installation	metal-free (clear zone)
Antenna type	round
Supported data carrier types	DIN ISO 14443, DIN ISO 15693
Connection	Connector, M12x1 connector, 4-pin
Housing material	PBT
Interface	IO-Link 1.1
Operating voltage U_b	18...30 VDC Supports only LPS/Class 2
Ambient temperature	0...70 °C
Protection degree	IP67
Approval/Conformity	CE, FCC Part 15, IC RSS-210, UL-FILE E227256, Vol.X1, BIS

Use with **IO-Link master** only

Appropriate data carrier

	BIS003Y			BIS003Z			BIS0047	BIS0043		BIS0044		BIS0045		BIS0046		
Data carrier distance to metal	>50	>25	>10	>50	>25	>10	>80	>50	>20	>50	>30	>50	>30	>50	>30	
Data carrier clear zone	>200	>150	>150	>200	>150	>150	>250	>200	>60	>200	>100	>200	>100	>200	>100	
Working distance for writing	0-28	0-25	0-20	0-45	0-40	0-34	0-50	0-40	0-18	0-30	0-18	0-40	0-25	0-60	0-35	
Working distance for reading	0-28	0-25	0-20	0-45	0-40	0-34	0-50	0-40	0-18	0-30	0-18	0-40	0-25	0-60	0-35	
Offset at distance																
	0	±22	±18	±12	±30	±24	±16	±30	±30	±16	±25	±18	±30	±20	±35	±25
	5	±22	±18	±12	±30	±24	±16	±30	±30	±16	±25	±18	±30	±20	±35	±25
	9	±22	±18	±10	±30	±24	±16	±30	±30	±16	±25	±15	±30	±20	±35	±25
	12	±22	±16	±8	±30	±24	±14	±30	±25	±16	±20	±15	±25	±20	±35	±25
	15	±22	±16	±8	±30	±24	±14	±30	±25	±16	±20	±12	±25	±18	±35	±25
	16	±20	±15	±6	±30	±20	±12	±30	±25	±16	±20	±12	±25	±18	±35	±25
	18	±20	±13	±4	±30	±20	±10	±30	±25	±14	±20	±8	±25	±16	±35	±25
	20	±20	±12	±2	±30	±20	±10	±30	±25		±20		±25	±14	±35	±25
	22	±16	±8		±24	±18	±8	±30	±20		±15		±20	±12	±35	±22
	25	±12	±4		±24	±18	±8	±30	±20		±15		±20	±10	±35	±22
	30				±24	±15	±6	±28	±20		±10		±20		±35	±22
	32				±20	±12	±4	±24	±15		±10		±15		±35	±22
	35				±20	±10		±22	±15				±15		±35	±20
	40				±15	±5		±18	±15				±15		±35	
	43				±8			±14							±25	
	45				±5			±12							±25	
	50							±4							±25	
	52														±25	
	60														±25	

Dimensions in mm



1) Sensing surface, 2) Data carrier, 3) Clear zone, 4) LED (Power), 5) LED (TP), 6) Tightening torque

BIS00M9 BIS00M8		BIS00NU BIS00NW BIS0100		BIS00YE		BIS00Y4	
>0	>0	>0	>0	>50	>50	>50	>50
>100	>100	>100	>100	>200	>200	>200	>200
0-32	0-16	0-16	0-16	0-50	0-50	0-75	0-75
0-32	0-16	0-16	0-16	0-50	0-50	0-75	0-75
±25	±24	±24	0	±30	±30	±50	±50
±25	±24	±24	5	±30	±30	±50	±50
±25	±20	±20	10	±30	±30	±50	±50
±25	±14	±14	15	±30	±30	±50	±50
±25	±4	±4	20	±30	±30	±50	±50
±25	±4	±4	25	±28	±28	±50	±50
±25			30	±28	±28	±50	±50
±25			35	±28	±28	±50	±50
±20			40	±28	±28	±50	±50
±20			45	±10	±10	±45	±45
±15			50	±10	±10	±45	±45
±15			55			±45	±45
			60			±45	±45
			65			±35	±35
			70			±35	±35
			75			±35	±35
			80				
			85				
			90				



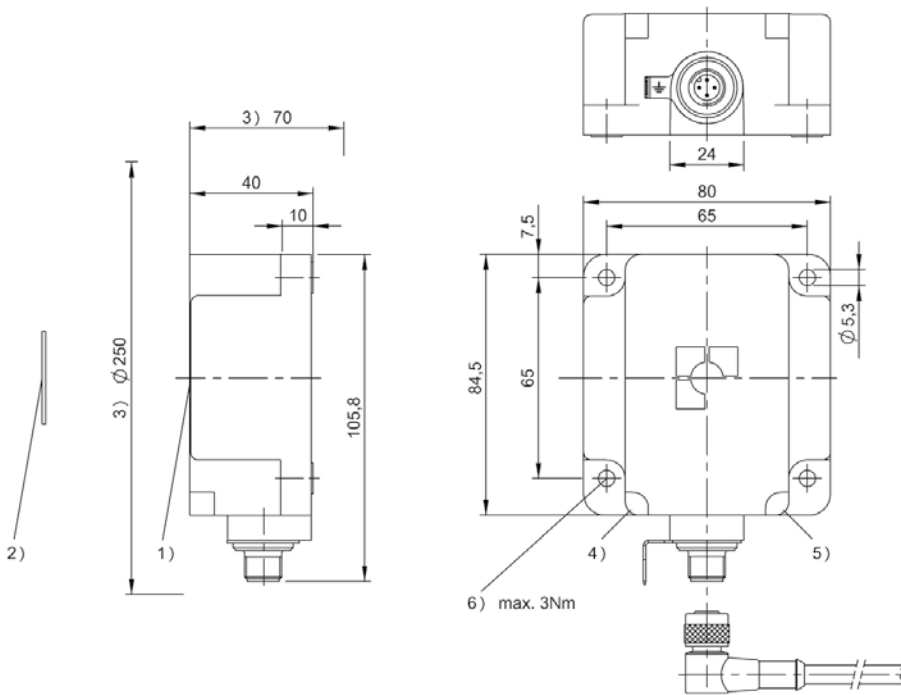
IO-Link, 32 bytes process data length	BIS0102 BIS M-401-072-001-07-S4
Product Group	HF (13.56 MHz)
Dimension	80 x 40 x 84.5 mm
Installation	metal-free (clear zone)
Antenna type	round
Supported data carrier types	DIN ISO 14443, DIN ISO 15693
Connection	Connector, M12x1 connector, 4-pin
Housing material	PBT
Interface	IO-Link 1.1
Operating voltage U_b	18...30 VDC Supports only LPS/Class 2
Ambient temperature	0...70 °C
Protection degree	IP67
Approval/Conformity	CE, FCC Part 15, IC RSS-210, UL-FILE E227256, Vol.X1, BIS

Use with **IO-Link master** only

Appropriate data carrier

	BIS003Y			BIS003Z			BIS0047	BIS0043		BIS0044		BIS0045		BIS0046		
Data carrier distance to metal	>50	>25	>10	>50	>25	>10	>80	>50	>20	>50	>30	>50	>30	>50	>30	
Data carrier clear zone	>200	>150	>150	>200	>150	>150	>250	>200	>60	>200	>100	>200	>100	>200	>100	
Working distance for writing	0-28	0-25	0-20	0-45	0-40	0-34	0-50	0-40	0-18	0-30	0-18	0-40	0-25	0-60	0-35	
Working distance for reading	0-28	0-25	0-20	0-45	0-40	0-34	0-50	0-40	0-18	0-30	0-18	0-40	0-25	0-60	0-35	
Offset at distance																
	0	±22	±18	±12	±30	±24	±16	±30	±30	±16	±25	±18	±30	±20	±35	±25
	5	±22	±18	±12	±30	±24	±16	±30	±30	±16	±25	±18	±30	±20	±35	±25
	9	±22	±18	±10	±30	±24	±16	±30	±30	±16	±25	±15	±30	±20	±35	±25
	12	±22	±16	±8	±30	±24	±14	±30	±25	±16	±20	±15	±25	±20	±35	±25
	15	±22	±16	±8	±30	±24	±14	±30	±25	±16	±20	±12	±25	±18	±35	±25
	16	±20	±15	±6	±30	±20	±12	±30	±25	±16	±20	±12	±25	±18	±35	±25
	18	±20	±13	±4	±30	±20	±10	±30	±25	±14	±20	±8	±25	±16	±35	±25
	20	±20	±12	±2	±30	±20	±10	±30	±25		±20		±25	±14	±35	±25
	22	±16	±8		±24	±18	±8	±30	±20		±15		±20	±12	±35	±22
	25	±12	±4		±24	±18	±8	±30	±20		±15		±20	±10	±35	±22
	30				±24	±15	±6	±28	±20		±10		±20		±35	±22
	32				±20	±12	±4	±24	±15		±10		±15		±35	±22
	35				±20	±10		±22	±15				±15		±35	±20
	40				±15	±5		±18	±15				±15		±35	
	43				±8			±14							±25	
	45				±5			±12							±25	
	50							±4							±25	
	52														±25	
	60														±25	

Dimensions in mm



1) Sensing surface, 2) Data carrier, 3) Clear zone, 4) LED (Power), 5) LED (TP), 6) Tightening torque

BIS00M9 BIS00M8		BIS00NU BIS00NW BIS0100		BIS00YE		BIS00Y4	
>0	>0			>50	>50		
>100	>100			>200	>200		
0-32	0-16			0-50	0-75		
0-32	0-16			0-50	0-75		
±25	±24		0	±30	±50		
±25	±24		5	±30	±50		
±25	±20		10	±30	±50		
±25	±14		15	±30	±50		
±25	±4		20	±30	±50		
±25	±4		25	±28	±50		
			30	±28	±50		
			35	±28	±50		
			40	±28	±50		
			45	±10	±45		
			50	±10	±45		
			55		±45		
			60		±45		
			65		±35		
			70		±35		
			75		±35		
			80				
			85				
			90				



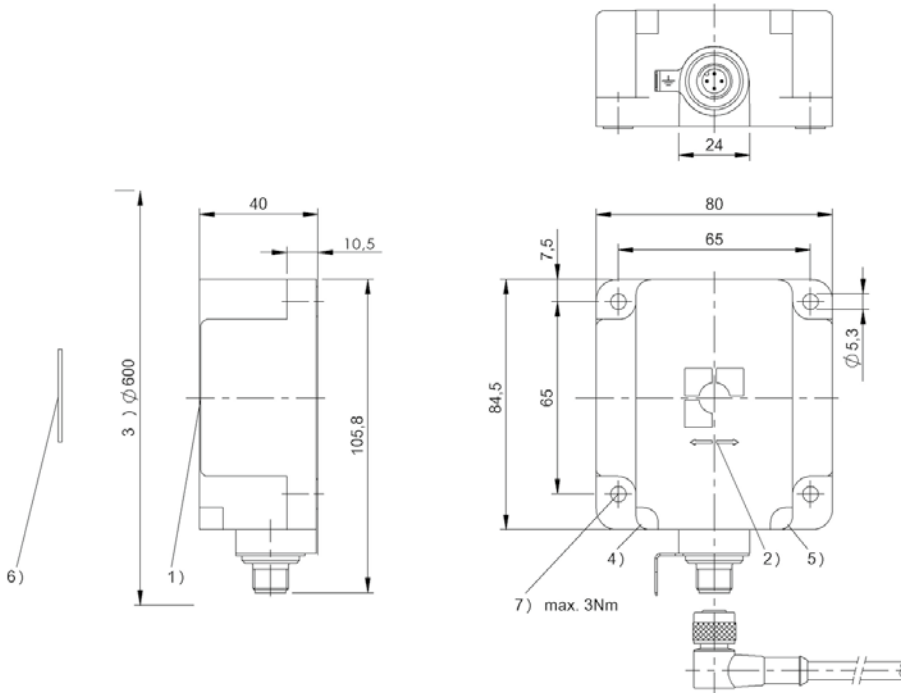
IO-Link, 10 bytes process data length	BIS00LM BIS M-451-045-001-07-S4
Product Group	HF (13.56 MHz)
Dimension	80 x 40 x 84.5 mm
Installation	metal-free (clear zone)
Antenna type	Rod
Supported data carrier types	DIN ISO 14443, DIN ISO 15693
Connection	Connector, M12x1 connector, 4-pin
Housing material	PBT
Interface	IO-Link 1.1
Operating voltage U_b	18...30 VDC Supports only LPS/Class 2
Ambient temperature	0...70 °C
Protection degree	IP67
Approval/Conformity	CE, FCC Part 15, IC RSS-210, UL-FILE E227256, Vol.X1, BIS

Use with **IO-Link master** only

Appropriate data carrier

	BIS004F				BIS004H				BIS00M2				BIS00P3	
Data carrier clear zone A	>200	>200	>200	>200	>200	>200	>200	>200	>200	>200	>10	>10	>240	>240
Data carrier clear zone B	>200	>200	>200	>200	>200	>200	>200	>200	>200	>200	>50	>50	>480	>480
Data carrier clear zone C									>50	>50	>2	>2	>50	>50
Metallic mounting surface 40 × 22 mm	0-52	0-52			0-52	0-52								
Metallic mounting surface > 200 × 200 mm			0-65	0-65			0-65	0-65						
Working distance for writing	0-52	0-52	0-65	0-65	0-52	0-52	0-65	0-65	0-30	0-30	15-30	15-30	0-100	0-100
Working distance for reading	0-52	0-52	0-65	0-65	0-52	0-52	0-65	0-65	0-30	0-30	15-30	15-30	0-100	0-100
Offset at distance	X	Y	X	Y	X	Y	X	Y	X	Y	X	Y	X	Y
	0 ±60	±25	±65	±26	±25	±60	±26	±65	0 ±35	±20			±60	±20
	5 ±60	±25	±65	±26	±25	±60	±26	±65	5 ±35	±20			±60	±20
	12 ±60	±25	±65	±25	±25	±60	±25	±65	10 ±35	±20			±60	±20
	15 ±60	±25	±65	±25	±25	±60	±25	±65	15 ±35	±20	±35	±15	±60	±20
	18 ±60	±25	±65	±25	±25	±60	±25	±65	20 ±35	±20	±35	±15	±60	±20
	20 ±60	±25	±65	±25	±25	±60	±25	±65	25 ±20	±12	±28	±15	±60	±20
	22 ±60	±25	±65	±25	±25	±60	±25	±65	30 ±20	±12	±28	±15	±60	±20
	25 ±60	±25	±65	±25	±25	±60	±25	±65	35				±60	±20
	30 ±60	±25	±65	±25	±25	±60	±25	±65	40				±60	±20
	32 ±50	±25	±65	±25	±25	±50	±25	±65	45				±60	±20
	35 ±50	±25	±65	±25	±25	±50	±25	±65	50				±60	±20
	40 ±50	±20	±50	±25	±20	±50	±25	±50	60				±60	±20
	45 ±25	±20	±50	±25	±20	±25	±25	±50	70				±60	±20
	50 ±25	±20	±50	±25	±20	±25	±25	±50	80				±60	±20
	52 ±25	±8	±25	±25	±8	±25	±25	±25	90				±40	±20
	60		±25	±10			±10	±25	100				±40	±20
	65		±25	±10			±10	±25						

Dimensions in mm



1) Sensing surface, 2) Read/write axis, 3) Clear zone, 4) LED (Power), 5) LED (TP), 6) Data carrier on steel, 7) Tightening torque



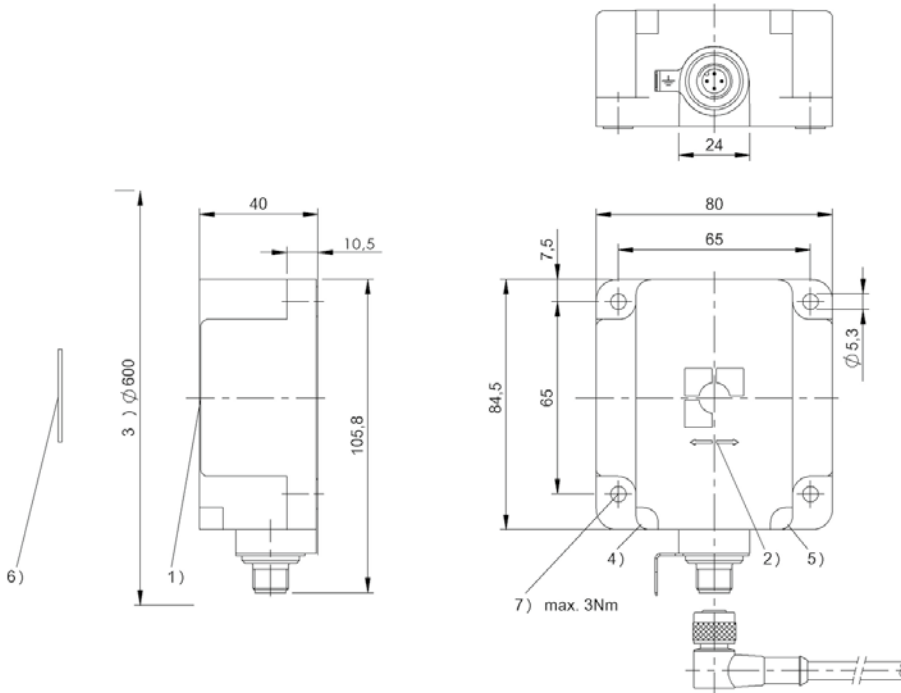
IO-Link, 32 bytes process data length	BIS0103 BIS M-451-072-001-07-S4
Product Group	HF (13.56 MHz)
Dimension	80 x 40 x 84.5 mm
Installation	metal-free (clear zone)
Antenna type	Rod
Supported data carrier types	DIN ISO 14443, DIN ISO 15693
Connection	Connector, M12x1 connector, 4-pin
Housing material	PBT
Interface	IO-Link 1.1
Operating voltage U_b	18...30 VDC Supports only LPS/Class 2
Ambient temperature	0...70 °C
Protection degree	IP67
Approval/Conformity	CE, FCC Part 15, IC RSS-210, UL-FILE E227256, Vol.X1, BIS

Use with **IO-Link master** only

Appropriate data carrier

	BIS004F				BIS004H				BIS00M2				BIS00P3	
Data carrier clear zone A	>200	>200	>200	>200	>200	>200	>200	>200	>200	>200	>10	>10	>240	>240
Data carrier clear zone B	>200	>200	>200	>200	>200	>200	>200	>200	>200	>200	>50	>50	>480	>480
Data carrier clear zone C									>50	>50	>2	>2	>50	>50
Metallic mounting surface 40 x 22 mm	0-52	0-52			0-52	0-52								
Metallic mounting surface > 200 x 200 mm			0-65	0-65			0-65	0-65						
Working distance for writing	0-52	0-52	0-65	0-65	0-52	0-52	0-65	0-65	0-30	0-30	15-30	15-30	0-100	0-100
Working distance for reading	0-52	0-52	0-65	0-65	0-52	0-52	0-65	0-65	0-30	0-30	15-30	15-30	0-100	0-100
Offset at distance	X	Y	X	Y	X	Y	X	Y	X	Y	X	Y	X	Y
	0 ±60	±25	±65	±26	±25	±60	±26	±65	0 ±35	±20			±60	±20
	5 ±60	±25	±65	±26	±25	±60	±26	±65	5 ±35	±20			±60	±20
	12 ±60	±25	±65	±25	±25	±60	±25	±65	10 ±35	±20			±60	±20
	15 ±60	±25	±65	±25	±25	±60	±25	±65	15 ±35	±20	±35	±15	±60	±20
	18 ±60	±25	±65	±25	±25	±60	±25	±65	20 ±35	±20	±35	±15	±60	±20
	20 ±60	±25	±65	±25	±25	±60	±25	±65	25 ±20	±12	±28	±15	±60	±20
	22 ±60	±25	±65	±25	±25	±60	±25	±65	30 ±20	±12	±28	±15	±60	±20
	25 ±60	±25	±65	±25	±25	±60	±25	±65	35				±60	±20
	30 ±60	±25	±65	±25	±25	±60	±25	±65	40				±60	±20
	32 ±50	±25	±65	±25	±25	±50	±25	±65	45				±60	±20
	35 ±50	±25	±65	±25	±25	±50	±25	±65	50				±60	±20
	40 ±50	±20	±50	±25	±20	±50	±25	±50	60				±60	±20
	45 ±25	±20	±50	±25	±20	±25	±25	±50	70				±60	±20
	50 ±25	±20	±50	±25	±20	±25	±25	±50	80				±60	±20
	52 ±25	±8	±25	±25	±8	±25	±25	±25	90				±40	±20
	60		±25	±10			±10	±25	100				±40	±20
	65		±25	±10			±10	±25						

Dimensions in mm



1) Sensing surface, 2) Read/write axis, 3) Clear zone, 4) LED (Power), 5) LED (TP), 6) Data carrier on steel, 7) Tightening torque



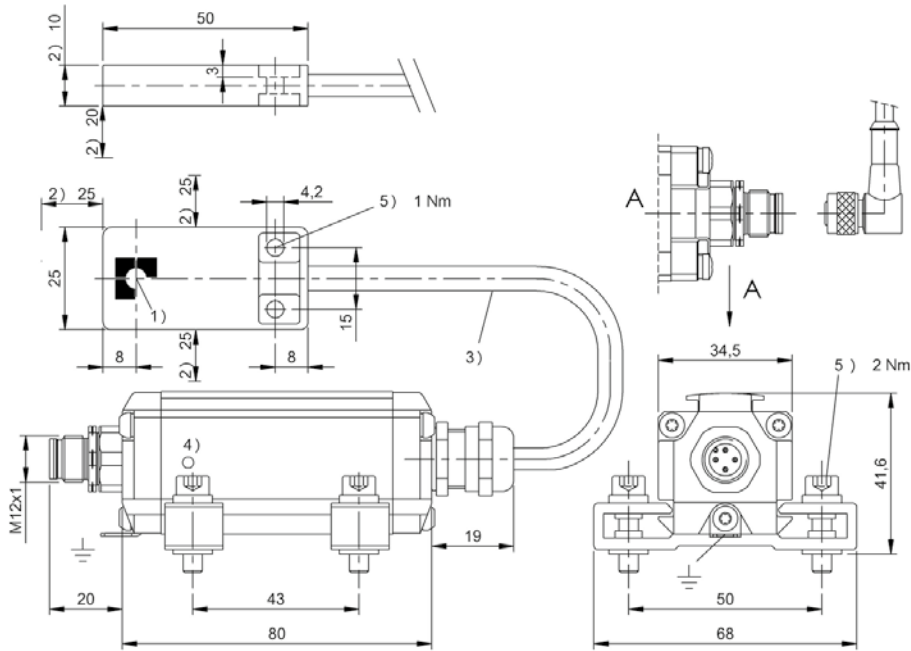
IO-Link, 10 bytes process data length	BIS00M1 BIS M-402-045-004-07-S4
Product Group	HF (13.56 MHz)
Dimension	25 x 10 x 50 mm
Installation	metal-free (clear zone)
Antenna type	round
Supported data carrier types	DIN ISO 14443, DIN ISO 15693
Connection	Connector, M12x1 connector, 4-pin, 0.50 m, PU
Housing material	ABS, GF16, interface aluminum
Interface	IO-Link 1.1
Operating voltage U_b	18...30 VDC Supports only LPS/Class 2
Ambient temperature	0...70 °C
Protection degree	IP67
Approval/Conformity	CE, UL-FILE E227256, Vol.X1, BIS

Use with **IO-Link master** only

Appropriate data carrier

	BIS0040		BIS0042		BIS0044		BIS0048		BIS004A		BIS00NU BIS00NW BIS0100		BIS003Y	
Data carrier distance to metal	>10	>0	>10	>0	>25		>10	>0	>10	>0		>0		>25
Data carrier clear zone	>60	>0	>60	>0	>80		>60	>0	>60	>0		>100		>100
Working distance for writing	0-6	0-4	0-8	0-6	0-15		0-5	0-4	0-8	0-5		0-9		0-15
Working distance for reading	0-6	0-4	0-8	0-6	0-15		0-5	0-4	0-8	0-5		0-9		0-15
Offset at distance														
	0	±4	±3	±5	±4	±8		±4	±3	±4	±4	0	±6	±11
	5	±2		±5	±2	±8		±2		±4	±2	5	±6	±11
	9					±6						7	±6	±9
	12					±4						9	±4	±9
	15					±4						12		±9
	16											15		±5

Dimensions in mm



1) Sensing surface, 2) Clear zone, 3) Cable length see text, 4) LED function indicator, 5) Tightening torque



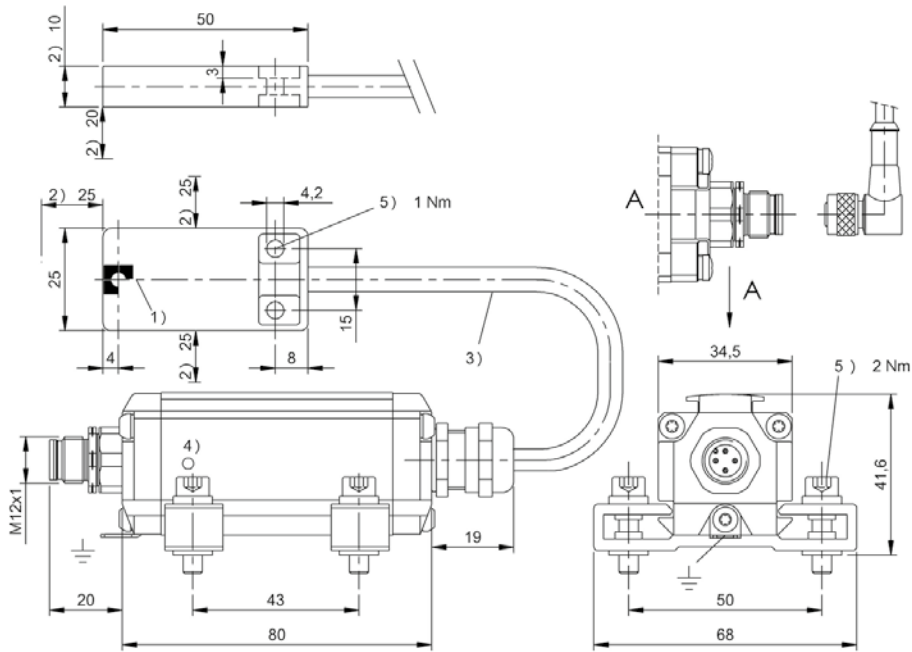
IO-Link, 10 bytes process data length	BISO126 BIS M-402-045-007-07-S4
Product Group	HF (13.56 MHz)
Dimension	25 x 10 x 50 mm
Installation	metal-free (clear zone)
Antenna type	Rod
Supported data carrier types	DIN ISO 14443, DIN ISO 15693
Connection	Connector, M12x1 connector, 4-pin, 0.50 m, PU
Housing material	ABS, GF16, interface aluminum
Interface	IO-Link 1.1
Operating voltage U_b	18...30 VDC Supports only LPS/Class 2
Ambient temperature	0...70 °C
Protection degree	IP67
Approval/Conformity	CE, UL-FILE E227256, Vol.X1, BIS

Use with **IO-Link master** only

Appropriate data carrier

	BISO0UC	BISO0UE
Data carrier distance to metal	>10	
Data carrier clear zone	>60	
Working distance for writing	0-3	
Working distance for reading	0-3	
Offset at distance		
	0	±5
	1	±5
	2	±5
	3	±2
	15	
	16	

Dimensions in mm



1) Sensing surface, 2) Clear zone, 3) Cable length see text, 4) LED function indicator, 5) Tightening torque



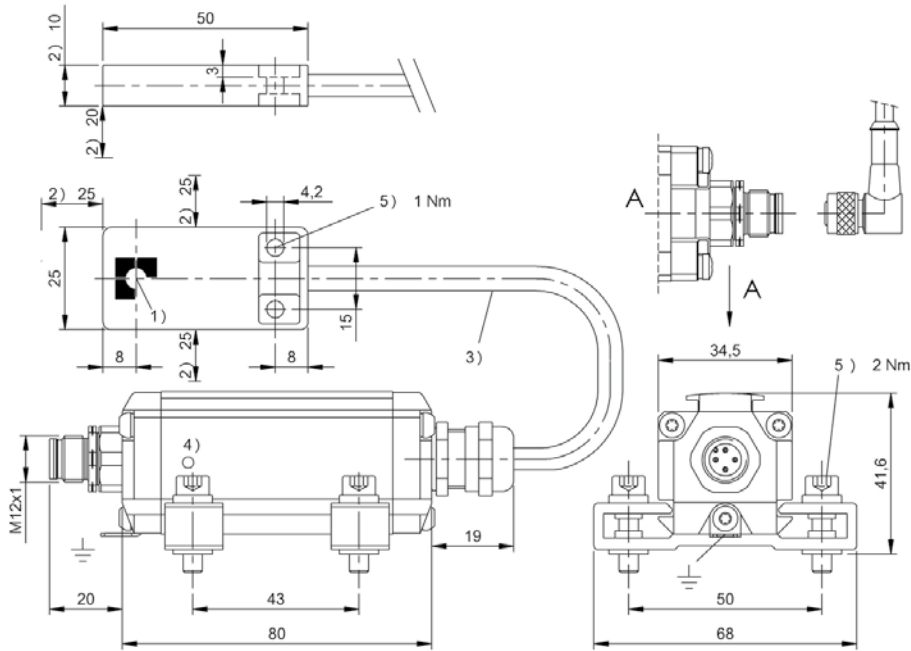
IO-Link, 32 bytes process data length	BIS0106 BIS M-402-072-004-07-S4
Product Group	HF (13.56 MHz)
Dimension	25 x 10 x 50 mm
Installation	metal-free (clear zone)
Antenna type	round
Supported data carrier types	DIN ISO 14443, DIN ISO 15693
Connection	Connector, M12x1 connector, 4-pin, 0.50 m, PU
Housing material	ABS, GF16, interface aluminum
Interface	IO-Link
Operating voltage U_b	18...30 VDC Supports only LPS/Class 2
Ambient temperature	0...70 °C
Protection degree	IP67
Approval/Conformity	CE, UL-FILE E227256, Vol.X1, BIS

Use with **IO-Link master** only

Appropriate data carrier

	BIS0040		BIS0042		BIS0044		BIS0048		BIS004A		BIS00NU BIS00NW BIS0100			BIS003Y	
Data carrier distance to metal	>10	>0	>10	>0	>25		>10	>0	>10	>0		>0		>25	
Data carrier clear zone	>60	>0	>60	>0	>80		>60	>0	>60	>0		>100		>100	
Working distance for writing	0-6	0-4	0-8	0-6	0-15		0-5	0-4	0-8	0-5		0-9		0-15	
Working distance for reading	0-6	0-4	0-8	0-6	0-15		0-5	0-4	0-8	0-5		0-9		0-15	
Offset at distance															
	0	±4	±3	±5	±4	±8		±4	±3	±4	±4	0	±6		±11
	5	±2		±5	±2	±8		±2		±4	±2	5	±6		±11
	9					±6						7	±6		±9
	12					±4						9	±4		±9
	15					±4						12			±9
	16											15			±5

Dimensions in mm



1) Sensing surface, 2) Clear zone, 3) Cable length see text, 4) LED function indicator, 5) Tightening torque



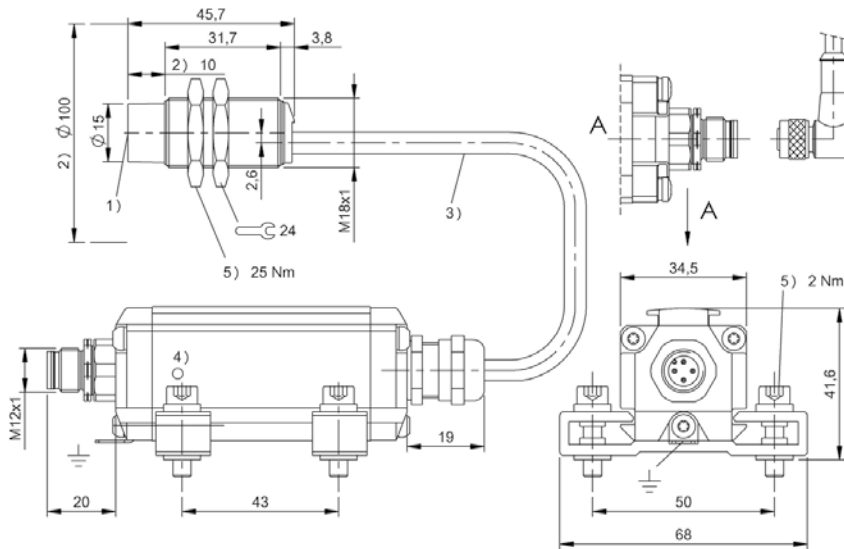
IO-Link, 10 bytes process data length	BIS00LW BIS M-402-045-002-07-S4
Product Group	HF (13.56 MHz)
Dimension	Ø 18 x 45.5 mm
Installation	metal-free (clear zone)
Antenna type	round
Supported data carrier types	DIN ISO 14443, DIN ISO 15693
Connection	Connector, M12x1 connector, 4-pin, 0.50 m, PU
Housing material	Brass, interface aluminum
Interface	IO-Link 1.1
Operating voltage U_b	18...30 VDC Supports only LPS/Class 2
Ambient temperature	0...70 °C
Protection degree	IP67
Approval/Conformity	CE, UL-FILE E227256, Vol.X1, BIS

Use with **IO-Link master** only

Appropriate data carrier

	BIS0040		BIS0042		BIS0048		BIS004A		BIS0044		BIS003Y		BIS0045	
Data carrier distance to metal	>10	>0	>10	>0	>10	>0	>10	>0	>25		>25	>25		
Data carrier clear zone	>60	>0	>60	>0	>60	>0	>60	>0	>80		>100	>100		
Working distance for writing	0-6	0-4	0-8	0-6	0-5	0-4	0-8	0-5	0-15		0-14	0-18		
Working distance for reading	0-6	0-4	0-8	0-6	0-5	0-4	0-8	0-5	0-15		0-14	0-18		
Offset at distance	0	±3	±3	±4	±3	±2	±4	±3	±7		0	±10	±12	
	5	±2		±3	±2	±2	±3	±2	±7		5	±10	±12	
	9								±5		10	±9	±11	
	12								±3		14	±5	±10	
	15								±3		15		±10	
	16										18		±5	

Dimensions in mm



1) Sensing surface, 2) Clear zone, 3) Cable length see text, 4) LED function indicator, 5) Tightening torque

BIS00YL	BIS00YK	BIS00YE	BIS00NU BIS00NW BIS0100
>25	>25	>25	>0
>100	>100	>100	>100
0-9	0-9	0-20	0-9
0-9	0-9	0-20	0-9
±6	±6	±12	±6
±6	±6	±12	±6
±5	±5	±12	±6
±1	±1	±12	±4
		±12	
		±10	



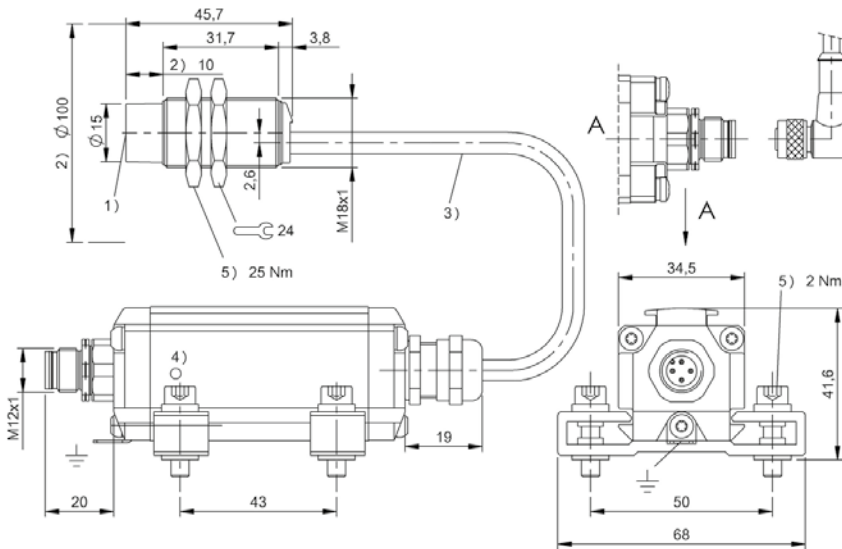
IO-Link, 32 bytes process data length	BIS0105 BIS M-402-072-002-07-S4
Product Group	HF (13.56 MHz)
Dimension	Ø 18 x 45.5 mm
Installation	metal-free (clear zone)
Antenna type	round
Supported data carrier types	DIN ISO 14443, DIN ISO 15693
Connection	Connector, M12x1 connector, 4-pin, 0.50 m, PU
Housing material	Brass, interface aluminum
Interface	IO-Link
Operating voltage U_b	18...30 VDC Supports only LPS/Class 2
Ambient temperature	0...70 °C
Protection degree	IP67
Approval/Conformity	CE, UL-FILE E227256, Vol.X1, BIS

Use with **IO-Link master** only

Appropriate data carrier

	BIS0040		BIS0042		BIS0048		BIS004A		BIS0044			BIS003Y		BIS0045	
Data carrier distance to metal	>10	>0	>10	>0	>10	>0	>10	>0	>25			>25	>25		
Data carrier clear zone	>60	>0	>60	>0	>60	>0	>60	>0	>80			>100	>100		
Working distance for writing	0-6	0-4	0-8	0-6	0-5	0-4	0-8	0-5	0-15			0-14	0-18		
Working distance for reading	0-6	0-4	0-8	0-6	0-5	0-4	0-8	0-5	0-15			0-14	0-18		
Offset at distance	0	±3	±3	±4	±3	±3	±2	±4	±3	±7		0	±10	±12	
	5	±2		±3	±2	±2		±3	±2	±7		5	±10	±12	
	9									±5		10	±9	±11	
	12									±3		14	±5	±10	
	15									±3		15		±10	
	16											18		±5	

Dimensions in mm



1) Sensing surface, 2) Clear zone, 3) Cable length see text, 4) LED function indicator, 5) Tightening torque

BIS00YL	BIS00YK	BIS00YE	BIS00NU BIS00NW BIS0100
>25	>25	>25	>0
>100	>100	>100	>100
0-9	0-9	0-20	0-9
0-9	0-9	0-20	0-9
±6	±6	±12	±6
±6	±6	±12	±6
±5	±5	±12	±6
±1	±1	±12	±4
		±12	
		±10	

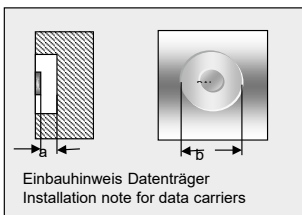


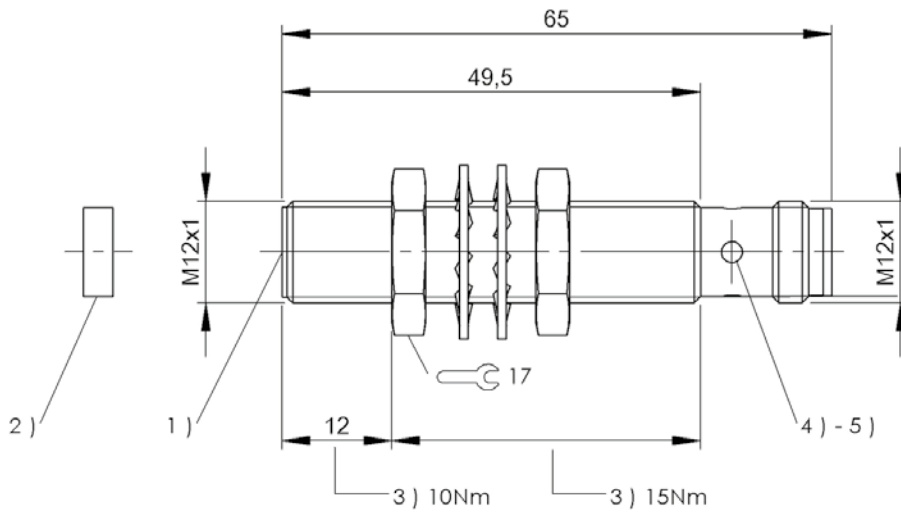
IO-Link, 10 Byte process data length	BIS01E5 BIS M-4A3-082-401-07-S4
Product Group	HF (13.56 MHz)
Antenna type	round
Supported data carrier types	DIN ISO 15693, DIN ISO 15693 (High Memory)
Process data IN	10 bytes
Process data OUT	10 bytes
IP rating	IP67
Approval/Conformity	CE, FCC Part 15, IC RSS-210, WEEE, EAC, cULus

Appropriate data carrier

	BIS00UC			BIS018Y			BIS01A1		
Data carrier distance to metal	>20	>0	>0	>20	>0	>0	>20	>0	>0
Data carrier clear zone	>100	>100	>0	>100	>100	>0	>100	>100	>0
Working distance for writing	0-5,5	0-3,5	0-2,5	0-4	0-3,5	0-2	0-5	0-4	
Working distance for reading	0-5,5	0-3,5	0-2,5	0-4	0-3,5	0-2	0-5	0-4	
Offset at distance									
	0	±3,5	±2,5	±2	±2,5	±2,5	±2	±3	±3
	2	±3,5	±2,5	±2	±2,5	±2,5	±1,5	±3	±3
	3	±3,5	±2,5	±1,5	±2	±2		±3	±2,5
	3,5	±3,5	±2,5		±2	±2		±3	±2,5
	4	±3	±2		±1,5			±3	±2
	4,5	±3						±2	
	5,5	±2,5							

Dimensions in mm





1) LED 4x on circumference, 2) Power/Status, 3) Tightening torque, 4) Sensing surface

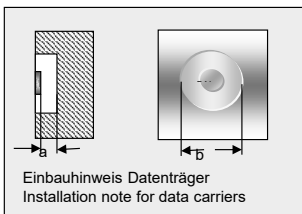


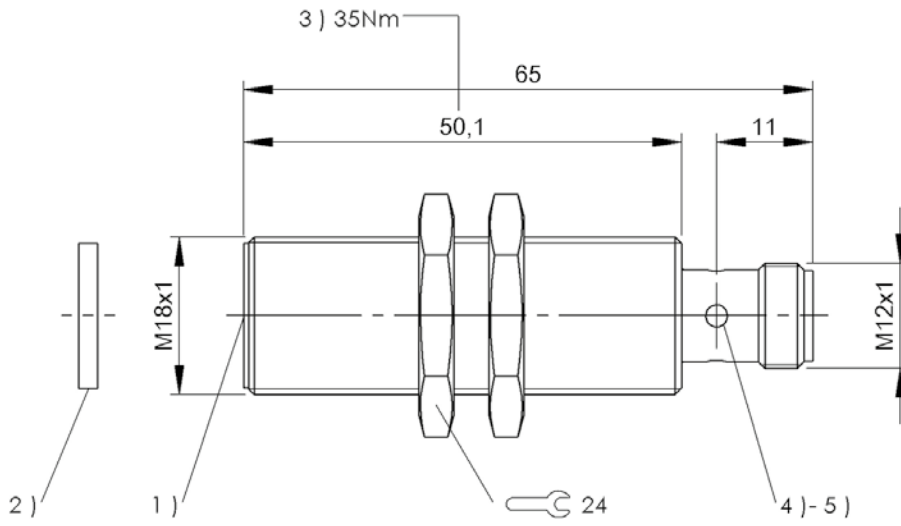
IO-Link, 10 Byte process data length	BIS01E6 BIS M-4A6-082-401-07-S4
Product Group	HF (13.56 MHz)
Antenna type	round
Supported data carrier types	DIN ISO 15693, DIN ISO 15693 (High Memory)
Process data IN	10 bytes
Process data OUT	10 bytes
IP rating	IP67
Approval/Conformity	CE, FCC Part 15, IC RSS-210, WEEE, EAC, cULus

Appropriate data carrier

	BIS01A1			BIS00YE			BIS0044			BIS00UC		
Data carrier distance to metal	>20	>0	>0	>20	>0	>0	>20	>0	>0	>20	>0	>0
Data carrier clear zone	>100	>100	>0	>100	>100	>0	>100	>100	>0	>100	>100	>0
Working distance for writing	0-7	0-7,5		0-16			0-17			0-9	0-5,5	0-4
Working distance for reading	0-7	0-7,5		0-16			0-17			0-9	0-5,5	0-4
Offset at distance												
	0	±5	±5	±10			±9			±5	±3	±3,5
	2	±5	±5	±10			±9			±5	±3	±3,5
	3	±5	±5	±10			±9			±5	±3	±3
	4	±5	±5	±10			±9			±5	±2,5	±2,5
	4,5	±5	±5	±10			±9			±5	±2,5	
	5	±4,5	±4,5	±10			±9			±4,5	±2,5	
	5,5	±4,5	±4,5	±10			±9			±4,5	±2	
	6	±4	±4,5	±10			±9			±4,5		
	6,5	±3,5	±4,5	±10			±9			±4,5		
	7		±4	±10			±9			±4,5		
	7,5		±3,5	±10			±9			±4,5		
	9			±10			±9			±3,5		
	10			±9,5			±8,5					
	16			±7,5			±7					

Dimensions in mm





1) LED 4x on circumference, 2) Power/Status, 3) Tightening torque, 4) Sensing surface

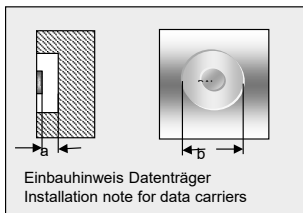


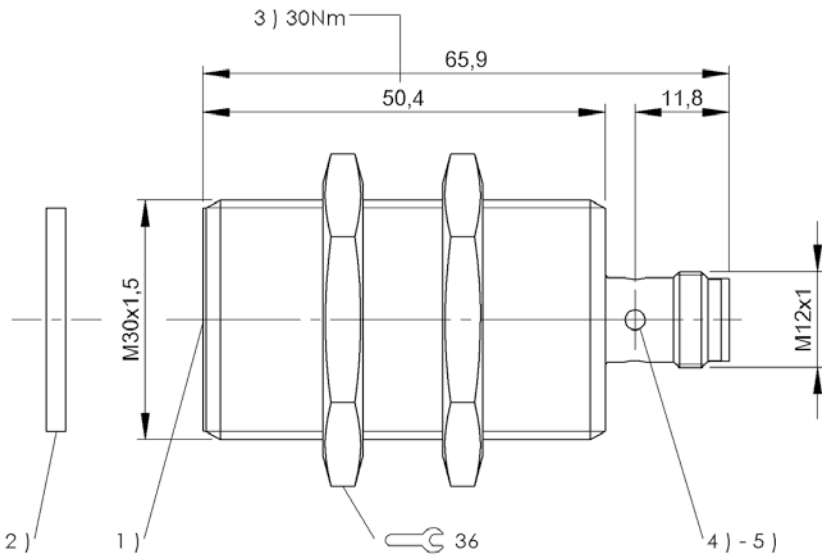
IO-Link, 10 Byte process data length	BIS01E7 BIS M-4A7-082-401-07-S4
Product Group	HF (13.56 MHz)
Antenna type	round
Supported data carrier types	DIN ISO 15693, DIN ISO 15693 (High Memory)
Process data IN	10 bytes
Process data OUT	10 bytes
IP rating	IP67
Approval/Conformity	CE, FCC Part 15, IC RSS-210, WEEE, EAC, cULus

Appropriate data carrier

	BIS01CA			BIS00YE			BIS0044			BIS0045		
Data carrier distance to metal	>20	>0	>0	>20	>0	>0	>20	>0	>0	>20	>0	>0
Data carrier clear zone	>100	>100	>0	>100	>100	>0	>100	>100	>0	>100	>100	>0
Working distance for writing	0-11,5	0-10		0-30			0-28			0-36		
Working distance for reading	0-11,5	0-10		0-30			0-28			0-36		
Offset at distance												
	0	±8	±7	±16						±18		
	2	±8	±7	±16			±15			±18		
	3,5	±8	±7	±16			±15			±18		
	4	±8	±7	±16			±15			±18		
	4,5	±8	±7	±16			±15			±18		
	5	±8	±7	±16			±15			±18		
	5,5	±8	±7	±16			±15			±18		
	6	±8	±7	±16			±15			±18		
	6,5	±8	±7	±16			±15			±18		
	7	±8	±7	±16			±15			±18		
	8	±7,5	±6,5	±16			±15			±18		
	9	±7,5	±6,5	±16			±15			±18		
	10	±7,5	±5,5	±16			±15			±18		
	11	±6		±16			±15			±18		
	20			±15			±14			±18		
	28			±15			±11,5			±18		
	30			±13						±16		
										±14		

Dimensions in mm





1) LED 4x on circumference, 2) Power/Status, 3) Tightening torque, 4) Sensing surface

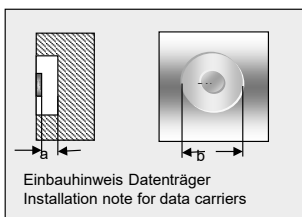


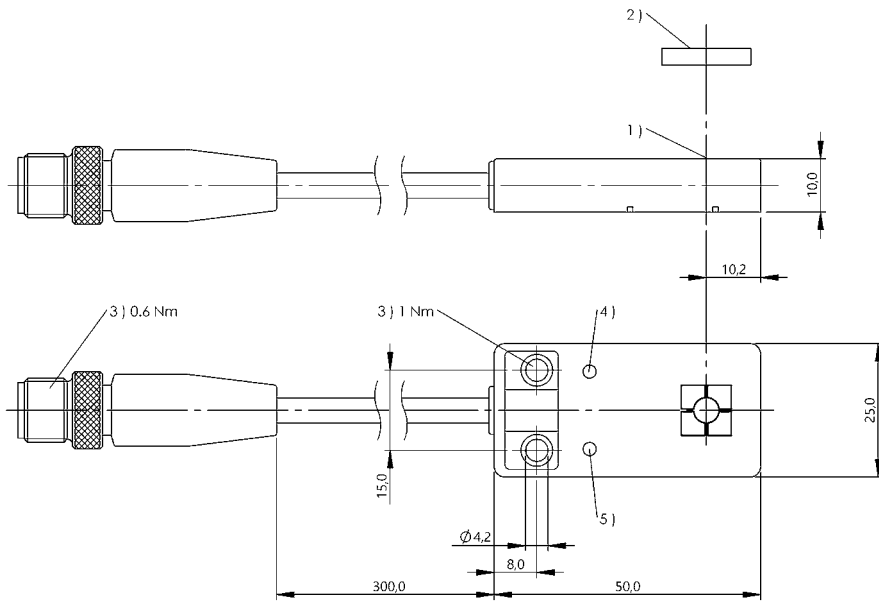
IO-Link, 10 Byte process data length	BIS01E2 BIS M-4A9-082-401-07-PU1-0,3
Product Group	HF (13.56 MHz)
Antenna type	round
Supported data carrier types	DIN ISO 15693, DIN ISO 15693 (High Memory)
Process data IN	10 bytes
Process data OUT	10 bytes
IP rating	IP68, IP69K
Approval/Conformity	CE, FCC Part 15, IC RSS-210, WEEE, Ecolab

Appropriate data carrier

	BIS01CA			BIS00YE			BIS0044			BIS0045		
Data carrier distance to metal	>20	>0	>0	>20	>0	>0	>20	>0	>0	>20	>0	>0
Data carrier clear zone	>100	>100	>0	>100	>100	>0	>100	>100	>0	>100	>100	>0
Working distance for writing	0-9	0-8,5		0-20			0-20			0-26		
Working distance for reading	0-9	0-8,5		0-20			0-20			0-26		
Offset at distance												
	0	±6,5	±6,5	±12			±11			±13		
	2	±6,5	±6,5	±12			±11			±13		
	3,5	±5,5	±5,5	±12			±11			±13		
	4	±5,5	±5,5	±12			±11			±13		
	4,5	±5,5	±5,5	±12			±11			±13		
	5	±5,5	±5,5	±12			±11			±13		
	5,5	±4	±4	±9			±11			±13		
	6	±4	±4	±9			±11			±13		
	6,5	±4	±4	±9			±11			±13		
	7	±4	±4	±9			±11			±13		
	8,5	±4	±3	±9			±11			±13		
	9	±3		±9			±11			±13		
	10			±9			±11			±13		
	11			±9			±9			±12		
	20			±9			±9			±12		
	26									±10		

Dimensions in mm





1) Sensing surface, 2) Data carrier, 3) Tightening torque, 4) LED function indicator, 5) LED function indicator

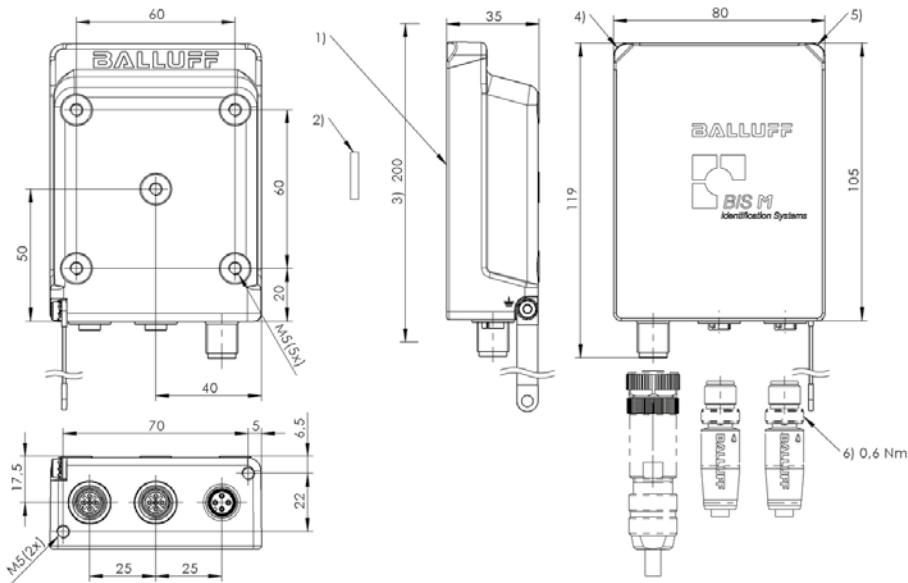


Profinet	BIS0179 BIS M-4008-048-001-ST4
Product Group	HF (13.56 MHz)
Dimension	80 x 35 x 119 mm
Installation	metal-free (clear zone) on metal flush in metal
Antenna type	round
Supported data carrier types	DIN ISO 15693, DIN ISO 15693 (High Memory)
Connection	2x M12x1-Female, 4-pole, D-coded M12x1-Male, 4-pole, A-coded
Housing material	Zinc, die-cast
Interface	Profinet I/O (IRT), Profinet I/O (IRT) 2 port Switch
Operating voltage U _b	24 V DC LPS Class 2
Ambient temperature	0...70 °C
Protection degree	IP67
Approval/Conformity	CE

Appropriate data carrier

	BIS0043			BIS011F BIS011E BIS011A BIS0139				BIS0045	BIS0046		BIS0119	BIS00NU BIS00NW BIS0100	
Data carrier distance to metal	>50	>0	>0	>50	>0	>0	>50		>50		>0	>0	
Data carrier clear zone	>200	>200	>0	>200	>200	>0	>200		>200		>100	>100	
Working distance for writing	0-52	0-32	10-19	0-36	0-28	11-18	0-52		0-80		0-38	0-18	
Working distance for reading	0-52	0-32	10-19	0-36	0-28	11-18	0-52		0-80		0-38	0-18	
Offset at distance													
	0	±32	±25		±27	±22			±32		0	±27	±22
	5	±32	±25		±27	±22			±32		5	±27	±22
	10	±32	±25	±20	±27	±22			±32		10	±27	±20
	11	±32	±22	±20	±25	±20	±18		±32		15	±25	±18
	12	±32	±22	±20	±25	±20	±18		±32		18	±25	±10
	16	±32	±22	±15	±25	±20	±15		±32		20	±25	
	17	±32	±22	±15	±25	±20	±2		±32		25	±22	
	18	±32	±22	±8	±25	±20	±2		±32		30	±22	
	19	±32	±22	±8	±25	±20			±32		35	±10	
	20	±32	±22		±25	±20			±32		38	±10	
	25	±28	±15		±22	±15			±28		40		
	28	±28	±15		±22	±1			±28		45		
	30	±28	±15		±22				±28		50		
	32	±28	±10		±5				±28		55		
	36	±28			±5				±28		60		
	40	±28							±28		65		
	50	±12							±12		70		
	52	±6							±6		75		
	65										80		
	75								±20		85		
	80								±5		90		

Dimensions in mm



1) Sensing surface, 2) Data carrier, 3) Clear zone, 4) LED (Power), 5) LED (CP), 6) Tightening torque

	BIS00YE	BIS00Y9	BIS00Y4	BIS00Y2
	>50	>50 >0	>50	>50
	>200	>200 >200	>200	>200
	0-60	0-55 0-45	0-90	0-65
	0-60	0-55 0-45	0-90	0-65
	0 ±35	±32 ±27	±50	±36
	10 ±35	±32 ±27	±50	±36
	20 ±35	±32 ±27	±50	±36
	30 ±30	±30 ±25	±50	±33
	40 ±30	±30 ±20	±45	±33
	45 ±20	±24 ±5	±45	±25
	50 ±20	±24	±45	±25
	55 ±20	±10	±45	±25
	60 ±10		±45	±25
	65		±30	±10
	70		±30	
	75		±30	
	80		±30	
	85		±20	
	90		±20	
	100			
	110			
	120			
	130			
	140			
	150			

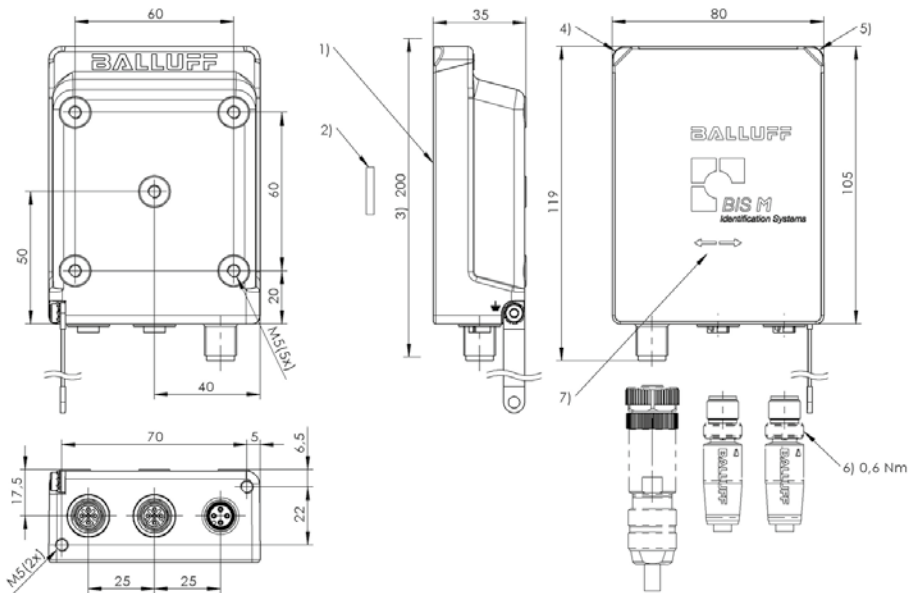


Profinet	BIS017A BIS M-4008-048-002-ST4
Product Group	HF (13.56 MHz)
Dimension	80 x 35 x 119 mm
Installation	metal-free (clear zone) on metal flush in metal
Antenna type	Rod
Supported data carrier types	DIN ISO 15693, DIN ISO 15693 (High Memory)
Connection	2x M12x1-Female, 4-pole, D-coded M12x1-Male, 4-pole, A-coded
Housing material	Zinc, die-cast
Interface	Profinet I/O (IRT), Profinet I/O (IRT) 2 port Switch
Operating voltage U _b	24 V DC LPS Class 2
Ambient temperature	0...70 °C
Protection degree	IP67
Approval/Conformity	CE

Appropriate data carrier

	BIS004F				BIS004H				BIS00M2		BIS00P3				BIS011W BIS011Y BIS011U BIS013E			
	>200	>200	>200	>200	>200	>200	>200	>200	>200	>200	>240	>240	>240	>240	>240	>240		
Data carrier clear zone A	>200	>200	>200	>200	>200	>200	>200	>200	>200	>200	>240	>240	>240	>240	>240	>240		
Data carrier clear zone B	>200	>200	>200	>200	>200	>200	>200	>200	>200	>200	>480	>480	>480	>480	>480	>480		
Data carrier clear zone C									>50	>50	>50	>50	>0	>0	>50	>50		
Metallic mounting surface 40 x 22 mm	0-65	0-65			0-65	0-65												
Metallic mounting surface > 200 x 200 mm			0-60	0-60			0-45	0-45										
Working distance for writing	0-65	0-65	0-60	0-60	0-65	0-65	0-45	0-45	0-35	0-35	0-100	0-100	0-100	0-100	0-55	0-55		
Working distance for reading	0-65	0-65	0-60	0-60	0-65	0-65	0-45	0-45	0-35	0-35	0-100	0-100	0-100	0-100	0-55	0-55		
Offset at distance																		
Offset at distance	X	Y	X	Y	X	Y	X	Y	X	Y	X	Y	X	Y	X	Y		
0	±70	±30	±65	±30	±30	±70	±25	±50	0	±44	±22	0	±100	±40	±100	±40	±65	±30
5	±70	±30	±65	±30	±30	±70	±25	±50	5	±44	±22	5	±100	±40	±100	±40	±65	±30
10	±70	±30	±65	±30	±30	±70	±25	±50	10	±44	±22	10	±100	±40	±100	±40	±65	±30
15	±70	±30	±65	±30	±30	±70	±25	±50	15	±40	±20	20	±100	±40	±100	±40	±65	±30
20	±70	±30	±65	±30	±30	±70	±25	±50	20	±40	±20	25	±100	±40	±100	±40	±60	±25
25	±65	±25	±60	±25	±25	±65	±20	±40	25	±32	±18	30	±100	±40	±100	±40	±60	±25
30	±65	±25	±60	±25	±25	±65	±20	±40	30	±32	±18	40	±100	±40	±100	±40	±60	±25
35	±65	±25	±60	±25	±25	±65	±20	±40	35	±10	±3	50	±80	±35	±80	±35	±30	±20
40	±65	±25	±60	±25	±25	±65	±15	±30	40			55	±80	±35	±80	±35	±20	±10
45	±40	±20	±40	±20	±20	±40	±5	±5	45			60	±80	±35	±80	±35		
50	±40	±20	±40	±20	±20	±40			50			70	±80	±35	±80	±35		
55	±40	±20	±40	±20	±20	±40			55			75	±80	±35	±80	±35		
60	±40	±20	±40	±20	±20	±40			60			80	±80	±35	±80	±35		
65	±20	±10			±10	±20			80			95	±55	±25	±55	±25		
70									95			100	±30	±10	±30	±10		

Dimensions in mm



1) Sensing surface, 2) Data carrier, 3) Clear zone, 4) LED (Power), 5) LED (CP), 6) Tightening torque, 7) Read/write axis

	BIS011M BIS011Z BIS011N BIS013C				BIS012J BIS012K BIS012L BIS013F				BIS0117				BIS0112				BIS00NZ					
	>200	>200	>200	>200	>200	>200	>200	>200	>200	>200	>200	>200	>200	>200	>200	>200	>27	>27	>27	>27		
	>200	>200	>200	>200	>200	>200	>200	>200	>200	>200	>200	>200	>200	>200	>200	>200	>27	>27	>27	>27		
	0-42	0-42			0-42	0-42			0-68	0-68			0-68	0-68					0-30	0-30		
			0-42	0-42			0-42	0-42			0-68	0-68			0-58	0-58	0-55	0-55				
	0-42	0-42	0-42	0-42	0-42	0-42	0-42	0-42	0-68	0-68	0-68	0-68	0-68	0-68	0-58	0-58	0-55	0-55	0-30	0-30		
	0-42	0-42	0-42	0-42	0-42	0-42	0-42	0-42	0-68	0-68	0-68	0-68	0-68	0-68	0-58	0-58	0-55	0-55	0-30	0-30		
	X	Y	X	Y	X	Y	X	Y	X	Y	X	Y	X	Y	X	Y	X	Y	X	Y		
0	±45	±25	±45	±25	±25	±45	±45	±25	0	±75	±32	±75	±32	±75	±32	±60	±28	0	±65	±28	±44	±24
5	±45	±25	±45	±25	±25	±45	±45	±25	5	±75	±32	±75	±32	±75	±32	±60	±28	5	±65	±28	±44	±24
10	±45	±25	±45	±25	±25	±45	±45	±25	10	±75	±32	±75	±32	±75	±32	±60	±28	10	±65	±28	±44	±24
15	±45	±25	±45	±25	±25	±45	±45	±25	15	±75	±32	±75	±32	±75	±32	±60	±28	15	±65	±28	±38	±21
20	±45	±25	±45	±25	±25	±45	±45	±25	20	±75	±32	±75	±32	±75	±32	±60	±28	20	±65	±28	±38	±21
25	±30	±18	±30	±18	±18	±30	±30	±18	25	±70	±28	±70	±28	±70	±28	±55	±25	25	±55	±25	±25	±15
30	±30	±18	±30	±18	±18	±30	±30	±18	30	±70	±28	±70	±28	±70	±28	±55	±25	30	±55	±25	±8	±5
35	±30	±18	±30	±18	±18	±30	±30	±18	35	±70	±28	±70	±28	±70	±28	±55	±25	35	±55	±25		
40	±20	±10	±20	±10	±10	±20	±20	±10	40	±70	±28	±70	±28	±70	±28	±55	±25	40	±55	±25		
42	±10	±5	±10	±5	±5	±10	±10	±5	45	±50	±25	±50	±25	±50	±25	±35	±18	45	±40	±20		
45									50	±50	±25	±50	±25	±50	±25	±35	±18	50	±40	±20		
50									55	±50	±25	±50	±25	±50	±25	±35	±18	55	±5	±5		
55									58	±50	±25	±50	±25	±50	±25	±15	±5	60				
60									65	±50	±25	±50	±25	±50	±25			65				
65									68	±20	±10	±20	±10	±20	±10			70				

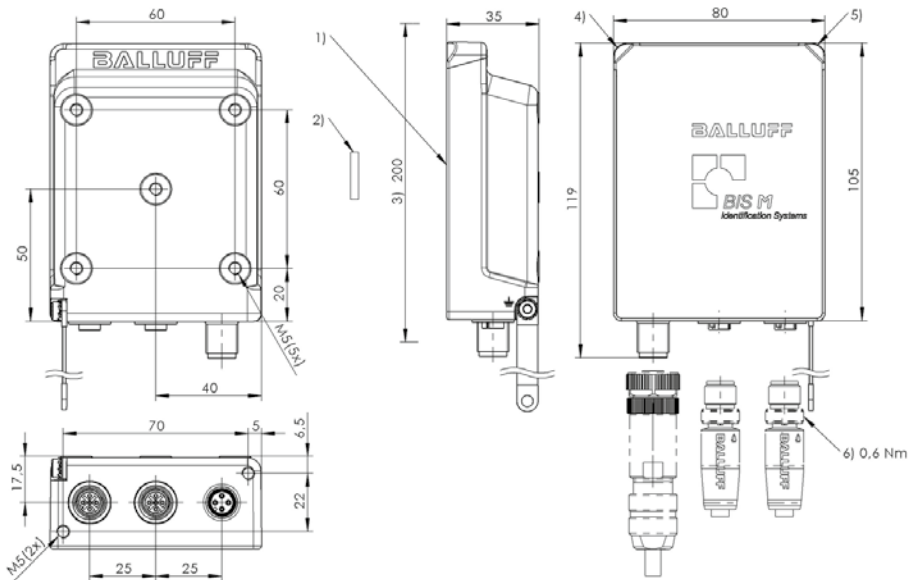


Ethernet/IP	BIS018A BIS M-4006-034-001-ST4
Product Group	HF (13.56 MHz)
Dimension	80 x 35 x 119 mm
Installation	metal-free (clear zone) on metal flush in metal
Antenna type	round
Supported data carrier types	DIN ISO 15693, DIN ISO 15693 (High Memory)
Connection	2x M12x1-Female, 4-pole, D-coded M12x1-Male, 4-pole
Housing material	Zinc, die-cast
Interface	Ethernet/IP, Ethernet/IP 2 port Switch
Operating voltage U_b	24 V DC LPS Class 2
Ambient temperature	0...70 °C
Protection degree	IP67
Approval/Conformity	CE

Appropriate data carrier

	BIS0043			BIS011F BIS011E BIS011A BIS0139				BIS0045	BIS0046		BIS0119	BIS00NU BIS00NW BIS0100	
Data carrier distance to metal	>50	>0	>0	>50	>0	>0	>50		>50		>0	>0	
Data carrier clear zone	>200	>200	>0	>200	>200	>0	>200		>200		>100	>100	
Working distance for writing	0-52	0-32	10-19	0-36	0-28	11-18	0-52		0-80		0-38	0-18	
Working distance for reading	0-52	0-32	10-19	0-36	0-28	11-18	0-52		0-80		0-38	0-18	
Offset at distance													
	0	±32	±25		±27	±22		±32		±42	0	±27	±22
	5	±32	±25		±27	±22		±32		±42	5	±27	±22
	10	±32	±25	±20	±27	±22		±32		±42	10	±27	±20
	11	±32	±22	±20	±25	±20	±18	±32		±42	15	±25	±18
	12	±32	±22	±20	±25	±20	±18	±32		±42	18	±25	±10
	16	±32	±22	±15	±25	±20	±15	±32		±42	20	±25	
	17	±32	±22	±15	±25	±20	±2	±32		±42	25	±22	
	18	±32	±22	±8	±25	±20	±2	±32		±42	30	±22	
	19	±32	±22	±8	±25	±20		±32		±42	35	±10	
	20	±32	±22		±25	±20		±32		±42	38	±10	
	25	±28	±15		±22	±15		±28		±42	40		
	28	±28	±15		±22	±1		±28		±42	45		
	30	±28	±15		±22			±28		±42	50		
	32	±28	±10		±5			±28		±38	55		
	36	±28			±5			±28		±38	60		
	40	±28						±28		±38	65		
	50	±12						±12		±38	70		
	52	±6						±6		±38	75		

Dimensions in mm



1) Sensing surface, 2) Data carrier, 3) Clear zone, 4) LED (Power), 5) LED (CP), 6) Tightening torque

	BIS00YE	BIS00Y9	BIS00Y4	BIS00Y2
	>50	>50 >0	>50	>50
	>200	>200 >200	>200	>200
	0-60	0-55 0-45	0-90	0-65
	0-60	0-55 0-45	0-90	0-65
	0 ±35	±32 ±27	±50	±36
	10 ±35	±32 ±27	±50	±36
	20 ±35	±32 ±27	±50	±36
	30 ±30	±30 ±25	±50	±33
	40 ±30	±30 ±20	±45	±33
	45 ±20	±24 ±5	±45	±25
	50 ±20	±24	±45	±25
	55 ±20	±10	±45	±25
	60 ±10		±45	±25
	65		±30	±10
	70		±30	
	75		±30	
	80		±30	
	85		±20	
	90		±20	
	100			
	110			
	120			

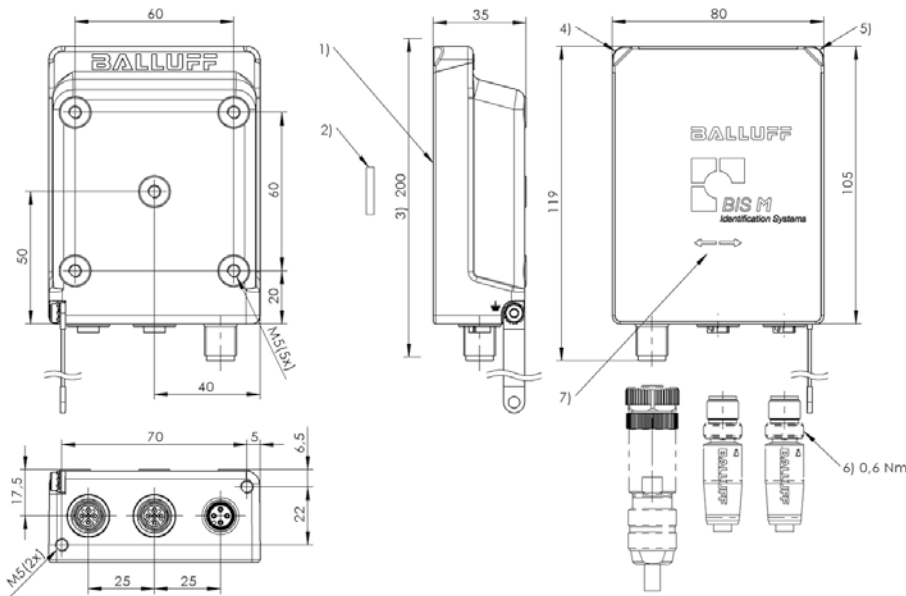


Ethernet/IP	BIS018C BIS M-4006-034-002-ST4
Product Group	HF (13.56 MHz)
Dimension	80 x 35 x 119 mm
Installation	metal-free (clear zone) on metal flush in metal
Antenna type	Rod
Supported data carrier types	DIN ISO 15693, DIN ISO 15693 (High Memory)
Connection	2x M12x1-Female, 4-pole, D-coded M12x1-Male, 4-pole
Housing material	Zinc, die-cast
Interface	Ethernet/IP, Ethernet/IP 2 port Switch
Operating voltage U_b	24 V DC LPS Class 2
Ambient temperature	0...70 °C
Protection degree	IP67
Approval/Conformity	CE

Appropriate data carrier

	BIS004F				BIS004H				BIS00M2		BIS00P3				BIS011W BIS011Y BIS011U BIS013E				
Data carrier clear zone A	>200	>200	>200	>200	>200	>200	>200	>200	>200	>200	>240	>240	>240	>240	>240	>240			
Data carrier clear zone B	>200	>200	>200	>200	>200	>200	>200	>200	>200	>200	>480	>480	>480	>480	>480	>480			
Data carrier clear zone C									>50	>50	>50	>50	>0	>0	>50	>50			
Metallic mounting surface 40 x 22 mm	0-65	0-65			0-65	0-65													
Metallic mounting surface > 200 x 200 mm			0-60	0-60			0-45	0-45											
Working distance for writing	0-65	0-65	0-60	0-60	0-65	0-65	0-45	0-45	0-35	0-35	0-100	0-100	0-100	0-100	0-55	0-55			
Working distance for reading	0-65	0-65	0-60	0-60	0-65	0-65	0-45	0-45	0-35	0-35	0-100	0-100	0-100	0-100	0-55	0-55			
Offset at distance	X	Y	X	Y	X	Y	X	Y	X	Y	X	Y	X	Y	X	Y			
	0	±70	±30	±65	±30	±30	±70	±25	±50	0	±44	±22	0	±100	±40	±100	±40	±65	±30
	5	±70	±30	±65	±30	±30	±70	±25	±50	5	±44	±22	5	±100	±40	±100	±40	±65	±30
	10	±70	±30	±65	±30	±30	±70	±25	±50	10	±44	±22	10	±100	±40	±100	±40	±65	±30
	15	±70	±30	±65	±30	±30	±70	±25	±50	15	±40	±20	20	±100	±40	±100	±40	±65	±30
	20	±70	±30	±65	±30	±30	±70	±25	±50	20	±40	±20	25	±100	±40	±100	±40	±60	±25
	25	±65	±25	±60	±25	±25	±65	±20	±40	25	±32	±18	30	±100	±40	±100	±40	±60	±25
	30	±65	±25	±60	±25	±25	±65	±20	±40	30	±32	±18	40	±100	±40	±100	±40	±60	±25
	35	±65	±25	±60	±25	±25	±65	±20	±40	35	±10	±3	50	±80	±35	±80	±35	±30	±20
	40	±65	±25	±60	±25	±25	±65	±15	±30	40			55	±80	±35	±80	±35	±20	±10
	45	±40	±20	±40	±20	±20	±40	±5	±5	45			60	±80	±35	±80	±35		
	50	±40	±20	±40	±20	±20	±40			50			70	±80	±35	±80	±35		
	55	±40	±20	±40	±20	±20	±40			55			75	±80	±35	±80	±35		
	60	±40	±20	±20	±10	±20	±40			60			80	±80	±35	±80	±35		
	65	±20	±10			±10	±20			80			95	±55	±25	±55	±25		
	70									95			100	±30	±10	±30	±10		
	75									100			110						
	80									110			120						

Dimensions in mm



1) Sensing surface, 2) Data carrier, 3) Clear zone, 4) LED (Power), 5) LED (CP), 6) Tightening torque, 7) Read/write axis

	BIS011M BIS011Z BIS011N BIS013C				BIS012J BIS012K BIS012L BIS013F				BIS0117				BIS0112				BIS00NZ					
	>200	>200	>200	>200	>200	>200	>200	>200	>200	>200	>200	>200	>200	>200	>200	>200	>27	>27	>27	>27		
	>200	>200	>200	>200	>200	>200	>200	>200	>200	>200	>200	>200	>200	>200	>200	>200	>27	>27	>27	>27		
	0-42	0-42			0-42	0-42			0-68	0-68			0-68	0-68					0-30	0-30		
			0-42	0-42			0-42	0-42			0-68	0-68			0-58	0-58		0-55	0-55			
			0-42	0-42			0-42	0-42			0-68	0-68			0-58	0-58		0-55	0-55	0-30	0-30	
			0-42	0-42			0-42	0-42			0-68	0-68			0-58	0-58		0-55	0-55	0-30	0-30	
	X	Y	X	Y	X	Y	X	Y	X	Y	X	Y	X	Y	X	Y	X	Y	X	Y		
0	±45	±25	±45	±25	±25	±45	±45	±25	0	±75	±32	±75	±32	±75	±32	±60	±28	0	±65	±28	±44	±24
5	±45	±25	±45	±25	±25	±45	±45	±25	5	±75	±32	±75	±32	±75	±32	±60	±28	5	±65	±28	±44	±24
10	±45	±25	±45	±25	±25	±45	±45	±25	10	±75	±32	±75	±32	±75	±32	±60	±28	10	±65	±28	±44	±24
15	±45	±25	±45	±25	±25	±45	±45	±25	15	±75	±32	±75	±32	±75	±32	±60	±28	15	±65	±28	±38	±21
20	±45	±25	±45	±25	±25	±45	±45	±25	20	±75	±32	±75	±32	±75	±32	±60	±28	20	±65	±28	±38	±21
25	±30	±18	±30	±18	±18	±30	±30	±18	25	±70	±28	±70	±28	±70	±28	±55	±25	25	±55	±25	±25	±15
30	±30	±18	±30	±18	±18	±30	±30	±18	30	±70	±28	±70	±28	±70	±28	±55	±25	30	±55	±25	±8	±5
35	±30	±18	±30	±18	±18	±30	±30	±18	35	±70	±28	±70	±28	±70	±28	±55	±25	35	±55	±25		
40	±20	±10	±20	±10	±10	±20	±20	±10	40	±70	±28	±70	±28	±70	±28	±55	±25	40	±55	±25		
42	±10	±5	±10	±5	±5	±10	±10	±5	45	±50	±25	±50	±25	±50	±25	±35	±18	45	±40	±20		
45									50	±50	±25	±50	±25	±50	±25	±35	±18	50	±40	±20		
50									55	±50	±25	±50	±25	±50	±25	±35	±18	55	±5	±5		
55									58	±50	±25	±50	±25	±50	±25	±15	±5	60				
60									65	±50	±25	±50	±25	±50	±25			65				
65									68	±20	±10	±20	±10	±20	±10			70				
70									75									75				
75									80													

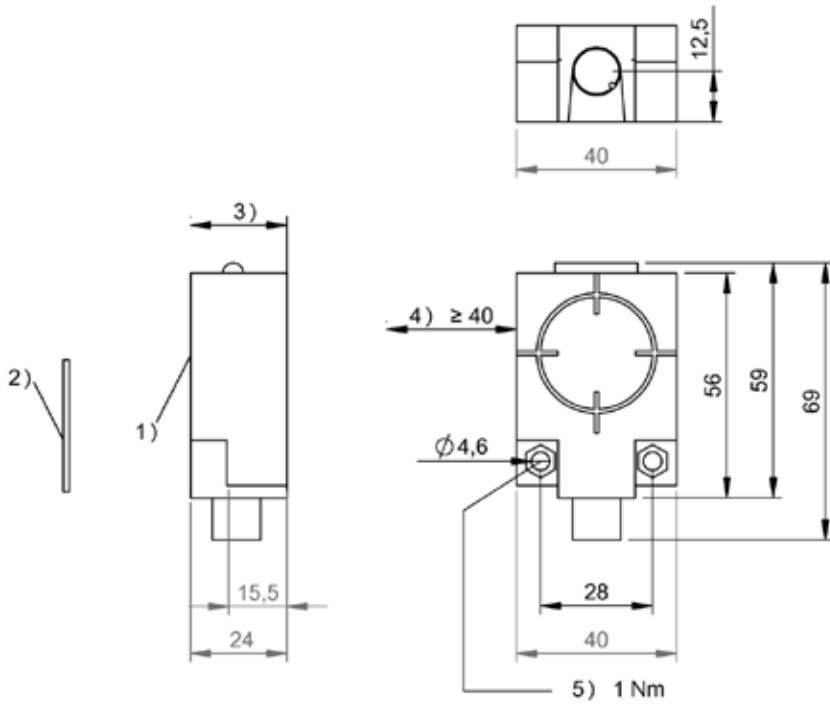


USB	BIS00W4 BIS M-410-068-001-09-S72
Product Group	HF (13.56 MHz)
Dimension	40 x 24 x 56 mm
Installation	metal-free (clear zone)
Antenna type	round
Supported data carrier types	DIN ISO 14443, DIN ISO 15693
Connection	Connector, M12x1 connector, 5-pin
Housing material	PC, with PU potting
Interface	USB 2.0
Operating voltage U_b	5 V DC
Ambient temperature	-20...50 °C
Protection degree	IP67
Approval/Conformity	CE, UL-FILE E227256, Vol.X1, BIS

Appropriate data carrier

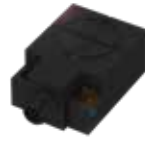
	BIS00YL	BIS00YK	BIS00YH	BIS00YF	BIS00YE		BIS00YC	BIS00YA	
Data carrier distance to metal	>10	>10	>10	>25	>25		>25	>25	
Data carrier clear zone	>60	>60	>60	>100	>100		>100	>100	
Working distance for writing	0-17	0-12	0-5	0-48	0-40		0-15	0-15	
Working distance for reading	0-17	0-12	0-5	0-48	0-40		0-15	0-15	
Offset at distance									
	0 ±15	±12	±10	±30	±25		0 ±15	±15	
	2 ±15	±12	±10	±30	±25		5 ±15	±15	
	4 ±15	±12	±7.5	±30	±25		10 ±12	±12	
	5 ±15	±12	±5	±30	±25		15 ±8	±8	
	10 ±14	±10		±30	±25		20		
	12 ±12	±5		±25	±20		25		
	15 ±12			±25	±20		30		
	17 ±7			±25	±20		32		
	20			±25	±20		36		
	25			±25	±20		40		
	30			±25	±20		45		
	35			±20	±12		50		
	40			±20	±12		55		
	45			±12			60		
	48			±12			65		
	75						68		
	80						75		

Dimensions in mm



1) Sensing surface, 2) Data carrier, 3) Clear zone, 4) Clear zone surrounding, 5) Tightening torque

BIS00Y9		BIS00Y8		BIS00Y7		BIS00Y6		BIS00Y5		BIS00Y4		BIS00Y3		BIS00Y2		BIS0043	
>25	>50	>50	>50	>50	>50	>50	>50	>50	>50	>50	>50	>50	>50	>50	>50	>25	>120
>100	>150	>150	>150	>150	>150	>150	>150	>150	>150	>150	>150	>150	>150	>150	>150	>150	>150
0-32	0-32	0-32	0-36	0-36	0-60	0-60	0-68	0-70	0-70	23-46	23-46	23-46	23-46	23-46	23-46	0-40	0-40
0-32	0-32	0-32	0-36	0-36	0-60	0-60	0-68	0-70	0-70	23-46	23-46	23-46	23-46	23-46	23-46	0-40	0-40
±20	±22	±25	±25	±25	0 ±35	±40	±40	±44	±44							0 ±22	
±20	±22	±25	±25	±25	5 ±35	±40	±40	±44	±44							5 ±22	
±20	±22	±25	±25	±25	10 ±35	±40	±40	±44	±44							10 ±22	
±16	±20	±25	±25	±25	15 ±35	±40	±40	±44	±44							15 ±22	
±16	±20	±25	±25	±25	20 ±35	±40	±40	±44	±44							20 ±22	
±10	±12	±20	±20	±20	23 ±30	±32	±32	±32	±32	±24	±24	±24	±24			25 ±20	
±10	±12	±20	±20	±20	30 ±30	±32	±32	±32	±32	±24	±24	±24	±24			30 ±20	
±8	±8	±12	±12	±12	32 ±30	±32	±32	±32	±32	±18	±18	±18	±18			35 ±20	
		±12	±12	±12	35 ±30	±32	±32	±32	±32	±18	±18	±18	±18			40 ±10	
					40 ±30	±32	±32	±32	±32	±18	±18	±18	±18				
					46 ±24	±32	±32	±32	±32	±10	±10	±10	±10				
					50 ±24	±32	±32	±32	±32								
					55 ±16	±24	±24	±25	±25								
					60 ±16	±24	±24	±25	±25								
					65	±15	±15	±15	±15								
					68	±15	±15	±15	±15								
					70			±15	±15								



Subnet 16 (RS485)	BIS00W1 BIS M-410-067-001-04-S92
Product Group	HF (13.56 MHz)
Dimension	40 x 24 x 56 mm
Installation	metal-free (clear zone)
Antenna type	round
Supported data carrier types	DIN ISO 14443, DIN ISO 15693
Connection	Connector, M12x1 connector, 5-pin
Housing material	PC, with PU potting
Interface	Subnet 16 (RS485)
Operating voltage U_b	10...30 VDC
Ambient temperature	-20...50 °C
Protection degree	IP67
Approval/Conformity	CE, UL-FILE E227256, Vol.X1, BIS

* Use with **BIS Z-GW-001...** only

Appropriate data carrier

	BIS00YL	BIS00YK	BIS00YH	BIS00YF	BIS00YE		BIS00YC	BIS00YA	
Data carrier distance to metal	>10	>10	>10	>25	>25		>25	>25	
Data carrier clear zone	>60	>60	>60	>100	>100		>100	>100	
Working distance for writing	0-17	0-12	0-5	0-48	0-40		0-15	0-15	
Working distance for reading	0-17	0-12	0-5	0-48	0-40		0-15	0-15	
Offset at distance									
	0 ±15	±12	±10	±30	±25		0 ±15	±15	
	2 ±15	±12	±10	±30	±25		5 ±15	±15	
	4 ±15	±12	±7,5	±30	±25		10 ±12	±12	
	5 ±15	±12	±5	±30	±25		15 ±8	±8	
	10 ±14	±10		±30	±25		20		
	12 ±12	±5		±25	±20		25		
	15 ±12			±25	±20		30		
	17 ±7			±25	±20		32		
	20			±25	±20		36		
	25			±25	±20		40		
	30			±25	±20		45		
	35			±20	±12		50		
	40			±20	±12		55		
	45			±12			60		
	48			±12			65		
	75						68		
	80						75		

Dimensions in mm

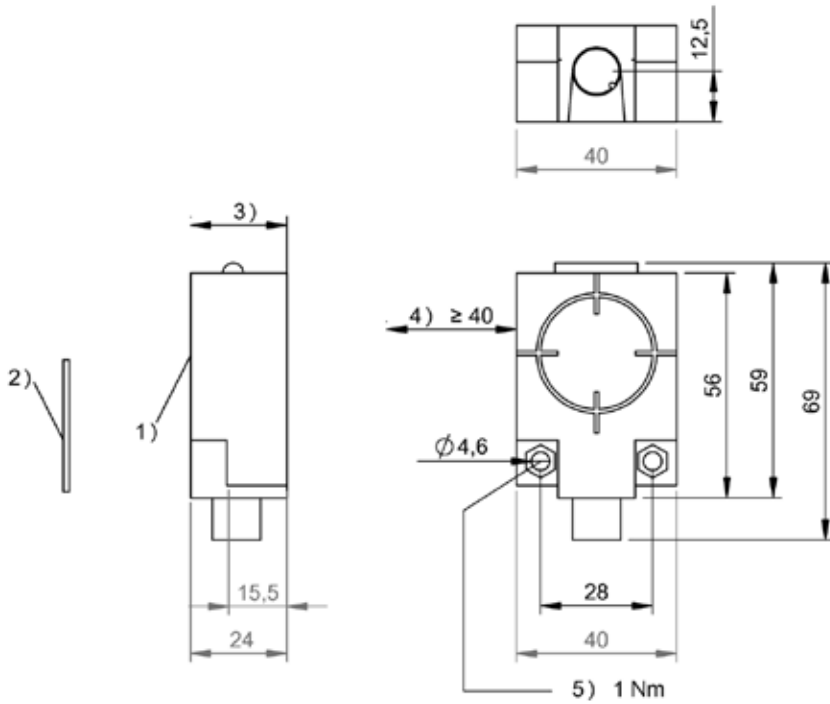


RS422	BIS00W3 BIS M-410-068-001-02-S115
Product Group	HF (13.56 MHz)
Dimension	40 x 24 x 56 mm
Installation	metal-free (clear zone)
Antenna type	round
Supported data carrier types	DIN ISO 14443, DIN ISO 15693
Connection	Connector, M12x1 connector, 8-pin
Housing material	PC, with PU potting
Interface	RS422
Operating voltage U_b	10...30 VDC
Ambient temperature	-20...50 °C
Protection degree	IP67
Approval/Conformity	CE, UL-FILE E227256, Vol.X1, BIS

Appropriate data carrier

	BIS00YL	BIS00YK	BIS00YH	BIS00YF	BIS00YE		BIS00YC	BIS00YA	
Data carrier distance to metal	>10	>10	>10	>25	>25		>25	>25	
Data carrier clear zone	>60	>60	>60	>100	>100		>100	>100	
Working distance for writing	0-17	0-12	0-5	0-48	0-40		0-15	0-15	
Working distance for reading	0-17	0-12	0-5	0-48	0-40		0-15	0-15	
Offset at distance									
	0 ±15	±12	±10	±30	±25		0 ±15	±15	
	2 ±15	±12	±10	±30	±25		5 ±15	±15	
	4 ±15	±12	±7.5	±30	±25		10 ±12	±12	
	5 ±15	±12	±5	±30	±25		15 ±8	±8	
	10 ±14	±10		±30	±25		20		
	12 ±12	±5		±25	±20		25		
	15 ±12			±25	±20		30		
	17 ±7			±25	±20		32		
	20			±25	±20		36		
	25			±25	±20		40		
	30			±25	±20		45		
	35			±20	±12		50		
	40			±20	±12		55		
	45			±12			60		
	48			±12			65		
	75						68		
	80						75		

Dimensions in mm



1) Sensing surface, 2) Data carrier, 3) Clear zone, 4) Clear zone surrounding, 5) Tightening torque

BIS00Y9		BIS00Y8		BIS00Y7		BIS00Y6		BIS00Y5		BIS00Y4		BIS00Y3		BIS00Y2		BIS0043	
>25	>50	>50	>50	>50	>50	>50	>50	>50	>50	>50	>50	>50	>50	>50	>50	>25	>120
>100	>150	>150	>150	>150	>150	>150	>150	>150	>150	>150	>150	>150	>150	>150	>150	0-40	0-40
0-32	0-32	0-32	0-36	0-36	0-60	0-60	0-68	0-70	0-70	23-46	23-46	23-46	23-46	23-46	23-46	0-40	0-40
0-32	0-32	0-32	0-36	0-36	0-60	0-60	0-68	0-70	0-70	23-46	23-46	23-46	23-46	23-46	23-46	0-40	0-40
±20	±22	±25	±25	±25	0 ±35	±40	±40	±44	±44							0 ±22	
±20	±22	±25	±25	±25	5 ±35	±40	±40	±44	±44							5 ±22	
±20	±22	±25	±25	±25	10 ±35	±40	±40	±44	±44							10 ±22	
±16	±20	±25	±25	±25	15 ±35	±40	±40	±44	±44							15 ±22	
±16	±20	±25	±25	±25	20 ±35	±40	±40	±44	±44							20 ±22	
±10	±12	±20	±20	±20	23 ±30	±32	±32	±32	±32	±24	±24	±24	±24			25 ±20	
±10	±12	±20	±20	±20	30 ±30	±32	±32	±32	±32	±24	±24	±24	±24			30 ±20	
±8	±8	±12	±12	±12	32 ±30	±32	±32	±32	±32	±18	±18	±18	±18			35 ±20	
		±12	±12	±12	35 ±30	±32	±32	±32	±32	±18	±18	±18	±18			40 ±10	
					40 ±30	±32	±32	±32	±32	±18	±18	±18	±18				
					46 ±24	±32	±32	±32	±32	±10	±10	±10	±10				
					50 ±24	±32	±32	±32	±32								
					55 ±16	±24	±24	±25	±25								
					60 ±16	±24	±24	±25	±25								
					65	±15	±15	±15	±15								
					68	±15	±15	±15	±15								
					70			±15	±15								

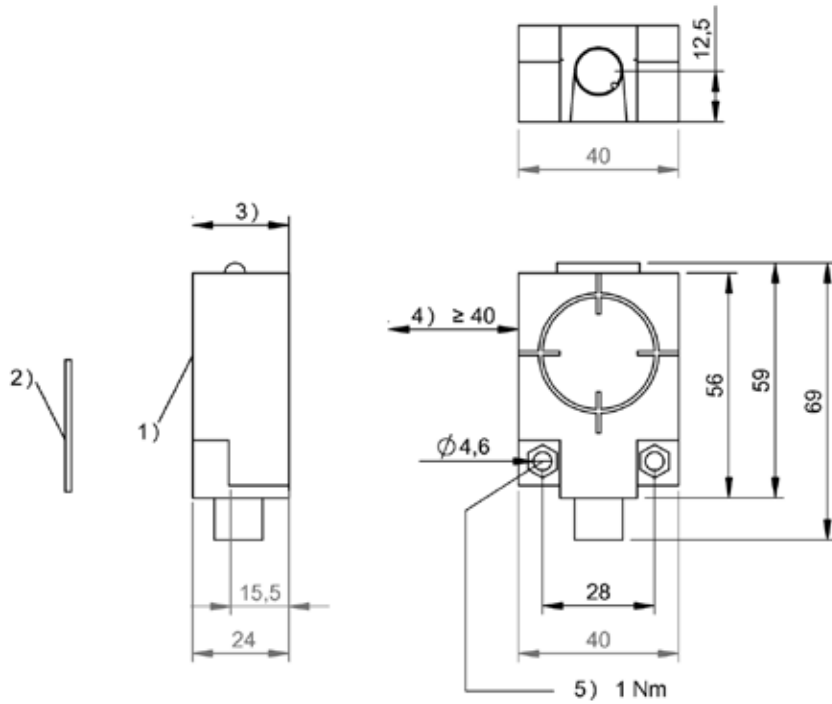


RS232	BIS00W2 BIS M-410-068-001-00-S115
Product Group	HF (13.56 MHz)
Dimension	40 x 24 x 56 mm
Installation	metal-free (clear zone)
Antenna type	round
Supported data carrier types	DIN ISO 14443, DIN ISO 15693
Connection	Connector, M12x1 connector, 8-pin
Housing material	PC, with PU potting
Interface	RS232
Operating voltage U_b	10...30 VDC
Ambient temperature	-20...50 °C
Protection degree	IP67
Approval/Conformity	CE, UL-FILE E227256, Vol.X1, BIS

Appropriate data carrier

	BIS00YL	BIS00YK	BIS00YH	BIS00YF	BIS00YE		BIS00YC	BIS00YA	
Data carrier distance to metal	>10	>10	>10	>25	>25		>25	>25	
Data carrier clear zone	>60	>60	>60	>100	>100		>100	>100	
Working distance for writing	0-17	0-12	0-5	0-48	0-40		0-15	0-15	
Working distance for reading	0-17	0-12	0-5	0-48	0-40		0-15	0-15	
Offset at distance									
	0 ±15	±12	±10	±30	±25		0 ±15	±15	
	2 ±15	±12	±10	±30	±25		5 ±15	±15	
	4 ±15	±12	±7.5	±30	±25		10 ±12	±12	
	5 ±15	±12	±5	±30	±25		15 ±8	±8	
	10 ±14	±10		±30	±25		20		
	12 ±12	±5		±25	±20		25		
	15 ±12			±25	±20		30		
	17 ±7			±25	±20		32		
	20			±25	±20		36		
	25			±25	±20		40		
	30			±25	±20		45		
	35			±20	±12		50		
	40			±20	±12		55		
	45			±12			60		
	48			±12			65		
	75						68		
	80						75		

Dimensions in mm



1) Sensing surface, 2) Data carrier, 3) Clear zone, 4) Clear zone surrounding, 5) Tightening torque

BIS00Y9		BIS00Y8		BIS00Y7		BIS00Y6		BIS00Y5		BIS00Y4		BIS00Y3		BIS00Y2		BIS0043	
>25	>50	>50	>50	>50	>50	>50	>50	>50	>50	>50	>50	>50	>50	>50	>50	>25	>120
>100	>150	>150	>150	>150	>150	>150	>150	>150	>150	>150	>150	>150	>150	>150	>150	>150	>150
0-32	0-32	0-32	0-36	0-36	0-60	0-60	0-68	0-70	0-70	23-46	23-46	23-46	23-46	23-46	23-46	0-40	0-40
0-32	0-32	0-32	0-36	0-36	0-60	0-60	0-68	0-70	0-70	23-46	23-46	23-46	23-46	23-46	23-46	0-40	0-40
±20	±22	±25	±25	±25	0 ±35	±40	±40	±44	±44							0 ±22	0 ±22
±20	±22	±25	±25	±25	5 ±35	±40	±40	±44	±44							5 ±22	5 ±22
±20	±22	±25	±25	±25	10 ±35	±40	±40	±44	±44							10 ±22	10 ±22
±16	±20	±25	±25	±25	15 ±35	±40	±40	±44	±44							15 ±22	15 ±22
±16	±20	±25	±25	±25	20 ±35	±40	±40	±44	±44							20 ±22	20 ±22
±10	±12	±20	±20	±20	23 ±30	±32	±32	±32	±32	±24	±24	±24	±24	±24	±24	25 ±20	25 ±20
±10	±12	±20	±20	±20	30 ±30	±32	±32	±32	±32	±24	±24	±24	±24	±24	±24	30 ±20	30 ±20
±8	±8	±12	±12	±12	32 ±30	±32	±32	±32	±32	±18	±18	±18	±18	±18	±18	35 ±20	35 ±20
		±12	±12	±12	35 ±30	±32	±32	±32	±32	±18	±18	±18	±18	±18	±18	40 ±10	40 ±10
					40 ±30	±32	±32	±32	±32	±18	±18	±18	±18	±18	±18		
					46 ±24	±32	±32	±32	±32	±10	±10	±10	±10	±10	±10		
					50 ±24	±32	±32	±32	±32								
					55 ±16	±24	±24	±25	±25								
					60 ±16	±24	±24	±25	±25								
					65	±15	±15	±15	±15								
					68	±15	±15	±15	±15								
					70			±15	±15								

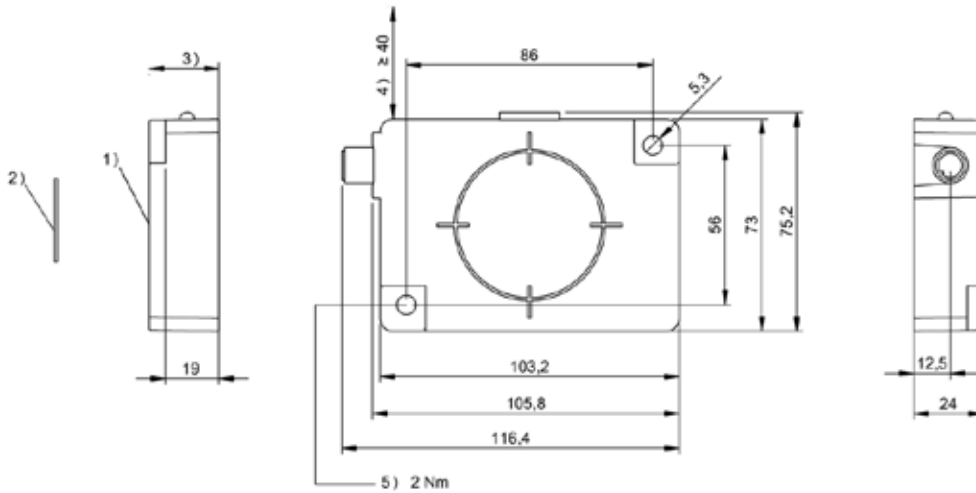


USB	BIS00W8 BIS M-411-068-001-09-S72
Product Group	HF (13.56 MHz)
Dimension	75 x 24 x 105 mm
Installation	metal-free (clear zone)
Antenna type	round
Supported data carrier types	DIN ISO 14443, DIN ISO 15693
Connection	Connector, M12x1 connector, 5-pin
Housing material	PC, with PU potting
Interface	USB 2.0
Operating voltage U_b	5 V DC
Ambient temperature	-20...50 °C
Protection degree	IP67
Approval/Conformity	CE, UL-FILE E227256, Vol.X1, BIS

Appropriate data carrier

	BIS00YL	BIS00YK	BIS00YF	BIS00YE		BIS00YC	BIS00YA	BIS00Y9	
Data carrier distance to metal	>10	>10	>25	>25		>25	>25	>25	
Data carrier clear zone	>60	>60	>100	>100		>100	>100	>100	
Working distance for writing	0-20	0-13	0-80	0-70		0-26	0-22	38-52	
Working distance for reading	0-20	0-13	0-80	0-70		0-26	0-22	38-52	
Offset at distance									
	0 ±22	±22	±50	±42		0 ±20	±20		
	5 ±22	±22	±50	±42		5 ±20	±20		
	9 ±19	±20	±50	±42		10 ±20	±20		
	12 ±19	±12	±50	±42		15 ±20	±20		
	13 ±19	±5	±50	±42		20 ±15	±15		
	15 ±19		±50	±42		22 ±15	±10		
	20 ±14		±50	±42		26 ±15			
	22		±40	±39		30			
	26		±40	±39		38		±25	
	30		±40	±39		40		±25	
	35		±40	±39		45		±25	
	40		±40	±39		50		±25	
	45		±35	±36		52		±25	
	50		±35	±36		56			
	60		±35	±36		60			
	65		±30	±28		70			
	70		±30	±28		80			
	75		±30			90			
	80		±30			100			
	90					110			

Dimensions in mm



1) Sensing surface, 2) Data carrier, 3) Clear zone, 4) Clear zone surrounding, 5) Tightening torque

BIS00Y8	BIS00Y7	BIS00Y6	BIS00Y5	BIS00Y4	BIS00Y3	BIS00Y2	BIS0044	BIS0045
>50	>50	>50	>50	>50	>50	>50	>25	>25
>150	>150	>150	>150	>150	>150	>150	>100	>100
0-56	0-60	0-100	0-110	0-125	11-95	11-75	0-45	0-67
0-56	0-60	0-100	0-110	0-125	11-95	11-75	0-45	0-67
±35	±32	0 ±50	±62	±65			0 ±30	±40
±35	±32	5 ±50	±62	±65			5 ±30	±40
±35	±32	11 ±50	±62	±65	±52	±50	10 ±30	±40
±35	±32	15 ±50	±62	±65	±52	±50	15 ±28	±40
±35	±32	20 ±50	±62	±65	±52	±50	20 ±28	±40
±30	±30	25 ±50	±62	±65	±52	±50	25 ±28	±38
±30	±30	30 ±50	±62	±65	±52	±50	30 ±28	±38
±30	±30	35 ±50	±58	±65	±48	±42	35 ±25	±38
±30	±30	40 ±50	±58	±65	±48	±42	40 ±25	±38
±30	±30	45 ±50	±58	±62	±48	±42	45 ±10	±35
±30	±25	50 ±50	±58	±62	±48	±42	50	±35
±25	±25	55 ±50	±58	±62	±48	±42	55	±35
±25	±20	60 ±50	±58	±62	±48	±35	60	±35
±25	±20	75 ±45	±52	±62	±44	±35	67	±10
	±20	85 ±45	±52	±58	±44		70	
		95 ±45	±52	±58	±40		75	
		100 ±45	±52	±58			80	
		110	±48	±58			85	
		120		±58			90	
		125		±50			95	



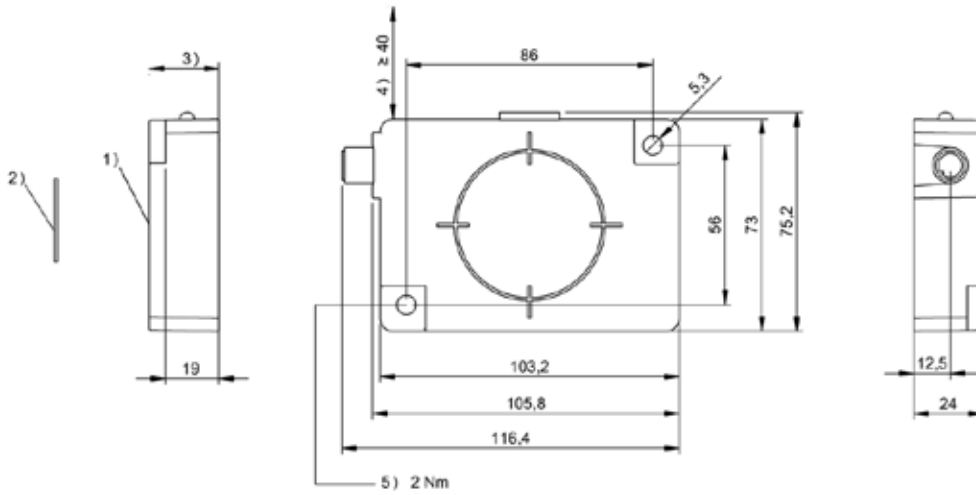
Subnet 16 (RS485)	BIS00W5 BIS M-411-067-001-04-S92
Product Group	HF (13.56 MHz)
Dimension	75 x 24 x 105 mm
Installation	metal-free (clear zone)
Antenna type	round
Supported data carrier types	DIN ISO 14443, DIN ISO 15693
Connection	Connector, M12x1 connector, 5-pin
Housing material	PC, with PU potting
Interface	Subnet 16 (RS485)
Operating voltage U_b	10...30 VDC
Ambient temperature	-20...50 °C
Protection degree	IP67
Approval/Conformity	CE, UL-FILE E227256, Vol.X1, BIS

* Use with **BIS Z-GW-001...** only

Appropriate data carrier

	BIS00YL	BIS00YK	BIS00YF	BIS00YE		BIS00YC	BIS00YA	BIS00Y9	
Data carrier distance to metal	>10	>10	>25	>25		>25	>25	>25	
Data carrier clear zone	>60	>60	>100	>100		>100	>100	>100	
Working distance for writing	0-20	0-13	0-80	0-70		0-26	0-22	38-52	
Working distance for reading	0-20	0-13	0-80	0-70		0-26	0-22	38-52	
Offset at distance									
	0 ±22	±22	±50	±42		0 ±20	±20		
	5 ±22	±22	±50	±42		5 ±20	±20		
	9 ±19	±20	±50	±42		10 ±20	±20		
	12 ±19	±12	±50	±42		15 ±20	±20		
	13 ±19	±5	±50	±42		20 ±15	±15		
	15 ±19		±50	±42		22 ±15	±10		
	20 ±14		±50	±42		26 ±15			
			±40	±39		30			
			±40	±39		38		±25	
			±40	±39		40		±25	
			±40	±39		45		±25	
			±40	±39		50		±25	
			±35	±36		52		±25	
			±35	±36		56			
			±35	±36		60			
			±30	±28		70			
			±30	±28		80			
			±30			90			
			±30			100			
						110			

Dimensions in mm



1) Sensing surface, 2) Data carrier, 3) Clear zone, 4) Clear zone surrounding, 5) Tightening torque

BIS00Y8	BIS00Y7	BIS00Y6	BIS00Y5	BIS00Y4	BIS00Y3	BIS00Y2	BIS0044	BIS0045
>50	>50	>50	>50	>50	>50	>50	>25	>25
>150	>150	>150	>150	>150	>150	>150	>100	>100
0-56	0-60	0-100	0-110	0-125	11-95	11-75	0-45	0-67
0-56	0-60	0-100	0-110	0-125	11-95	11-75	0-45	0-67
±35	±32	0 ±50	±62	±65			0 ±30	±40
±35	±32	5 ±50	±62	±65			5 ±30	±40
±35	±32	11 ±50	±62	±65	±52	±50	10 ±30	±40
±35	±32	15 ±50	±62	±65	±52	±50	15 ±28	±40
±35	±32	20 ±50	±62	±65	±52	±50	20 ±28	±40
±30	±30	25 ±50	±62	±65	±52	±50	25 ±28	±38
±30	±30	30 ±50	±62	±65	±52	±50	30 ±28	±38
±30	±30	35 ±50	±58	±65	±48	±42	35 ±25	±38
±30	±30	40 ±50	±58	±65	±48	±42	40 ±25	±38
±30	±30	45 ±50	±58	±62	±48	±42	45 ±10	±35
±30	±25	50 ±50	±58	±62	±48	±42	50	±35
±25	±25	55 ±50	±58	±62	±48	±42	55	±35
±25	±20	60 ±50	±58	±62	±48	±35	60	±35
±25	±20	75 ±45	±52	±62	±44	±35	67	±10
	±20	85 ±45	±52	±58	±44		70	
		95 ±45	±52	±58	±40		75	
		100 ±45	±52	±58			80	
		110	±48	±58			85	
		120		±58			90	
		125		±50			95	

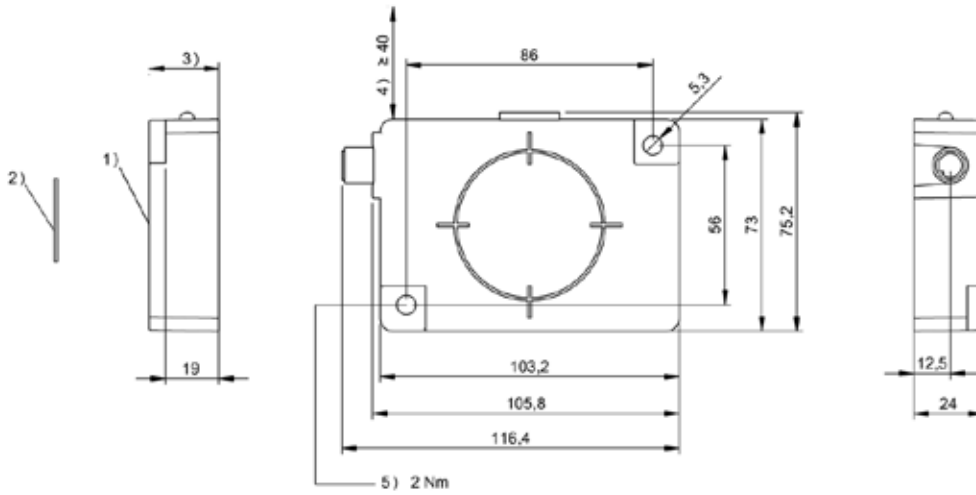


RS422	BIS00W7 BIS M-411-068-001-02-S115
Product Group	HF (13.56 MHz)
Dimension	75 x 24 x 105 mm
Installation	metal-free (clear zone)
Antenna type	round
Supported data carrier types	DIN ISO 14443, DIN ISO 15693
Connection	Connector, M12x1 connector, 8-pin
Housing material	PC, with PU potting
Interface	RS422
Operating voltage U_b	10...30 VDC
Ambient temperature	-20...50 °C
Protection degree	IP67
Approval/Conformity	CE, UL-FILE E227256, Vol.X1, BIS

Appropriate data carrier

	BIS00YL	BIS00YK	BIS00YF	BIS00YE		BIS00YC	BIS00YA	BIS00Y9	
Data carrier distance to metal	>10	>10	>25	>25		>25	>25	>25	
Data carrier clear zone	>60	>60	>100	>100		>100	>100	>100	
Working distance for writing	0-20	0-13	0-80	0-70		0-26	0-22	38-52	
Working distance for reading	0-20	0-13	0-80	0-70		0-26	0-22	38-52	
Offset at distance									
	0 ±22	±22	±50	±42		0 ±20	±20		
	5 ±22	±22	±50	±42		5 ±20	±20		
	9 ±19	±20	±50	±42		10 ±20	±20		
	12 ±19	±12	±50	±42		15 ±20	±20		
	13 ±19	±5	±50	±42		20 ±15	±15		
	15 ±19		±50	±42		22 ±15	±10		
	20 ±14		±50	±42		26 ±15			
	22		±40	±39		30			
	26		±40	±39		38		±25	
	30		±40	±39		40		±25	
	35		±40	±39		45		±25	
	40		±40	±39		50		±25	
	45		±35	±36		52		±25	
	50		±35	±36		56			
	60		±35	±36		60			
	65		±30	±28		70			
	70		±30	±28		80			
	75		±30			90			
	80		±30			100			
	90					110			

Dimensions in mm



1) Sensing surface, 2) Data carrier, 3) Clear zone, 4) Clear zone surrounding, 5) Tightening torque

BIS00Y8	BIS00Y7	BIS00Y6	BIS00Y5	BIS00Y4	BIS00Y3	BIS00Y2	BIS0044	BIS0045
>50	>50	>50	>50	>50	>50	>50	>25	>25
>150	>150	>150	>150	>150	>150	>150	>100	>100
0-56	0-60	0-100	0-110	0-125	11-95	11-75	0-45	0-67
0-56	0-60	0-100	0-110	0-125	11-95	11-75	0-45	0-67
±35	±32	0 ±50	±62	±65			0 ±30	±40
±35	±32	5 ±50	±62	±65			5 ±30	±40
±35	±32	11 ±50	±62	±65	±52	±50	10 ±30	±40
±35	±32	15 ±50	±62	±65	±52	±50	15 ±28	±40
±35	±32	20 ±50	±62	±65	±52	±50	20 ±28	±40
±30	±30	25 ±50	±62	±65	±52	±50	25 ±28	±38
±30	±30	30 ±50	±62	±65	±52	±50	30 ±28	±38
±30	±30	35 ±50	±58	±65	±48	±42	35 ±25	±38
±30	±30	40 ±50	±58	±65	±48	±42	40 ±25	±38
±30	±30	45 ±50	±58	±62	±48	±42	45 ±10	±35
±30	±25	50 ±50	±58	±62	±48	±42	50	±35
±25	±25	55 ±50	±58	±62	±48	±42	55	±35
±25	±20	60 ±50	±58	±62	±48	±35	60	±35
±25	±20	75 ±45	±52	±62	±44	±35	67	±10
	±20	85 ±45	±52	±58	±44		70	
		95 ±45	±52	±58	±40		75	
		100 ±45	±52	±58			80	
		110	±48	±58			85	
		120		±58			90	
		125		±50			95	

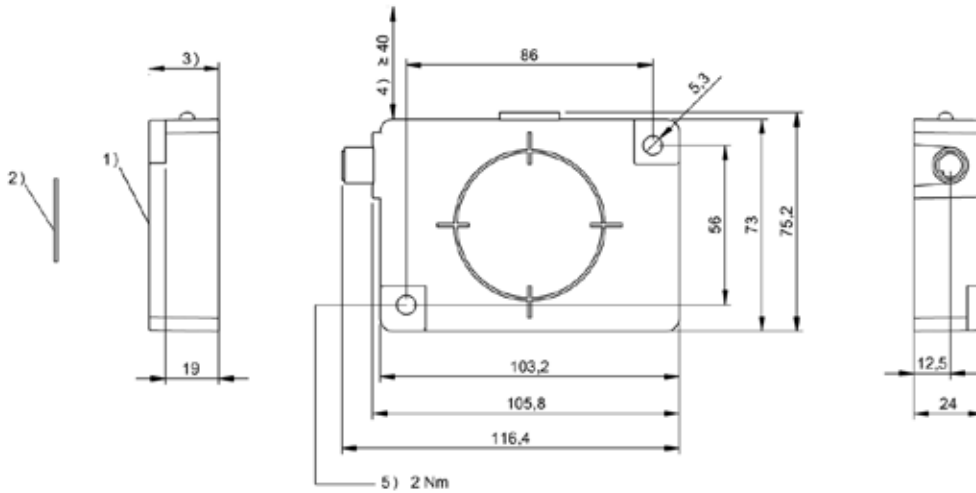


RS232	BIS00W6 BIS M-411-068-001-00-S115
Product Group	HF (13.56 MHz)
Dimension	75 x 24 x 105 mm
Installation	metal-free (clear zone)
Antenna type	round
Supported data carrier types	DIN ISO 14443, DIN ISO 15693
Connection	Connector, M12x1 connector, 8-pin
Housing material	PC, with PU potting
Interface	RS232
Operating voltage U_b	10...30 VDC
Ambient temperature	-20...50 °C
Protection degree	IP67
Approval/Conformity	CE, UL-FILE E227256, Vol.X1, BIS

Appropriate data carrier

	BIS00YL	BIS00YK	BIS00YF	BIS00YE		BIS00YC	BIS00YA	BIS00Y9	
Data carrier distance to metal	>10	>10	>25	>25		>25	>25	>25	
Data carrier clear zone	>60	>60	>100	>100		>100	>100	>100	
Working distance for writing	0-20	0-13	0-80	0-70		0-26	0-22	38-52	
Working distance for reading	0-20	0-13	0-80	0-70		0-26	0-22	38-52	
Offset at distance									
	0 ±22	±22	±50	±42		0 ±20	±20		
	5 ±22	±22	±50	±42		5 ±20	±20		
	9 ±19	±20	±50	±42		10 ±20	±20		
	12 ±19	±12	±50	±42		15 ±20	±20		
	13 ±19	±5	±50	±42		20 ±15	±15		
	15 ±19		±50	±42		22 ±15	±10		
	20 ±14		±50	±42		26 ±15			
	22		±40	±39		30			
	26		±40	±39		38		±25	
	30		±40	±39		40		±25	
	35		±40	±39		45		±25	
	40		±40	±39		50		±25	
	45		±35	±36		52		±25	
	50		±35	±36		56			
	60		±35	±36		60			
	65		±30	±28		70			
	70		±30	±28		80			
	75		±30			90			
	80		±30			100			
	90					110			

Dimensions in mm

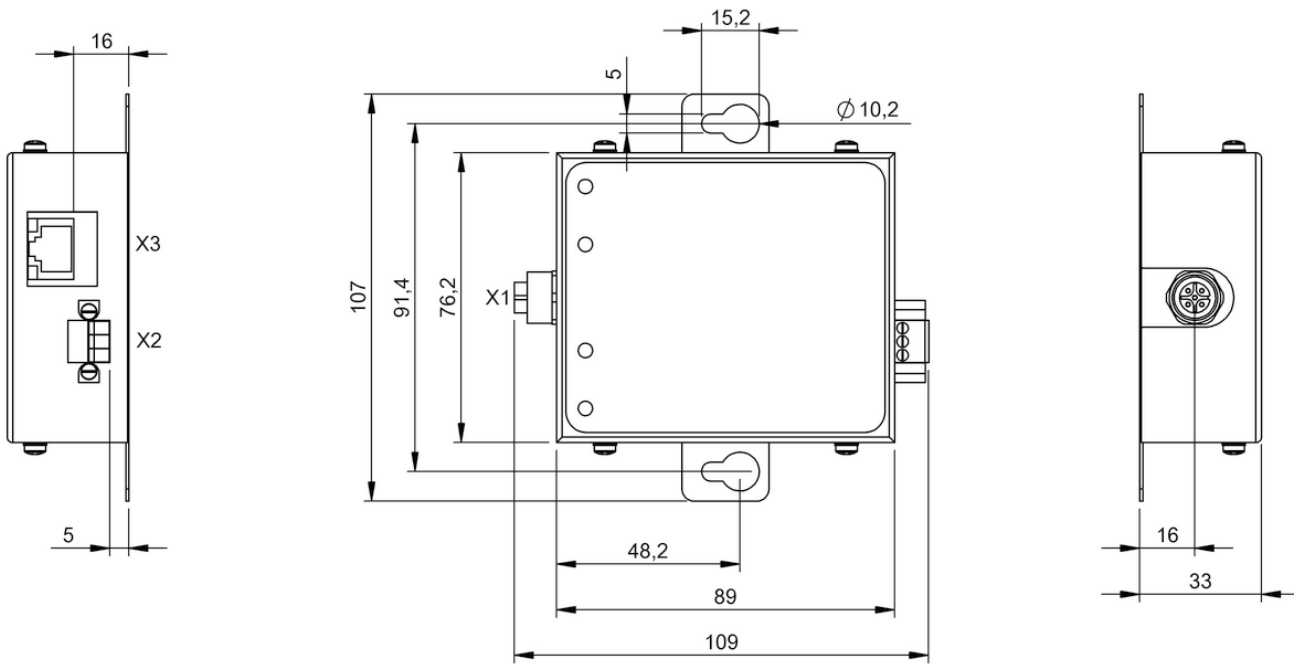


1) Sensing surface, 2) Data carrier, 3) Clear zone, 4) Clear zone surrounding, 5) Tightening torque

BIS00Y8	BIS00Y7	BIS00Y6	BIS00Y5	BIS00Y4	BIS00Y3	BIS00Y2	BIS0044	BIS0045
>50	>50	>50	>50	>50	>50	>50	>25	>25
>150	>150	>150	>150	>150	>150	>150	>100	>100
0-56	0-60	0-100	0-110	0-125	11-95	11-75	0-45	0-67
0-56	0-60	0-100	0-110	0-125	11-95	11-75	0-45	0-67
±35	±32	0 ±50	±62	±65			0 ±30	±40
±35	±32	5 ±50	±62	±65			5 ±30	±40
±35	±32	11 ±50	±62	±65	±52	±50	10 ±30	±40
±35	±32	15 ±50	±62	±65	±52	±50	15 ±28	±40
±35	±32	20 ±50	±62	±65	±52	±50	20 ±28	±40
±30	±30	25 ±50	±62	±65	±52	±50	25 ±28	±38
±30	±30	30 ±50	±62	±65	±52	±50	30 ±28	±38
±30	±30	35 ±50	±58	±65	±48	±42	35 ±25	±38
±30	±30	40 ±50	±58	±65	±48	±42	40 ±25	±38
±30	±30	45 ±50	±58	±62	±48	±42	45 ±10	±35
±30	±25	50 ±50	±58	±62	±48	±42	50	±35
±25	±25	55 ±50	±58	±62	±48	±42	55	±35
±25	±20	60 ±50	±58	±62	±48	±35	60	±35
±25	±20	75 ±45	±52	±62	±44	±35	67	±10
	±20	85 ±45	±52	±58	±44		70	
		95 ±45	±52	±58	±40		75	
		100 ±45	±52	±58			80	
		110	±48	±58			85	
		120		±58			90	
		125		±50			95	



	BAE00JJ BIS Z-GW-001-IND
Dimension	107 x 33 x 109 mm
Interface	Industrial Ethernet / MODBUS TCP
Auxiliary interfaces	Subnet 16 (RS485)
Housing material	Aluminum, die-cast
Ambient temperature	-20...50 °C
Protection degree	IP30
Approval/Conformity	CE, FCC Part 15
Productview	Page 307





PORTABLE HF READ/ WRITE UNITS (13.56 MHz)

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Tool identification even at short ranges

RFID SYSTEM LF (70/455 KHZ) BIS C

Especially high-performing and flexible are the BIS C low-frequency RFID systems with reliable tool identification in coolant- and lubricant-heavy machining centers. Exact positioning is not always necessary: Many data carriers can be dynamically read and described in passing.

The LF RFID system (70/455 kHz) is also the first choice for tool identification over short ranges. Other areas of use are tool transport with conveyor systems, FTS and pallet transport systems as well as assembly technology and resource organization.

Features

- Great variety of data carriers and read/write heads for very diverse applications and difficult operating conditions
- Wear-free, maintenance-free and insensitive to dirt
- High noise immunity and assured data transfer with special checking software in the processor units
- All bus systems commonly used on a global basis available
- Memory capacity up to 8 kB



	BIS000T BIS C-121-04/L	
Product Group	LF (70/455 kHz)	
Dimension	Ø 9 x 4.5 mm	
Antenna type	round	
Memory type	EEPROM	
User data, read/write	511 Byte	
Storage temperature	-30...85 °C	
Storage temperature temporary	—	
Ambient temperature	0...70 °C	
Housing material	Epoxy-resin/fiberglass	
Protection degree	IP68	
Installation	metal-free (clear zone) on metal flush in metal	
Approval/Conformity	CE, UL-FILE E227256, Vol.X1, BIS	
Productview	Page 330	

Suitable read/write head with max. read/write working distance

Installation	flush in metal	on metal*	metal-free (clear zone)
BIS C-300	0-2		0-3
BIS C-302	0-1.5		0-2.5
BIS C-305	0-2		0-3
BIS C-306	0-2		0-3
BIS C-322	0-2		0-3
BIS C-325	0-2		0-3

Dimensions in mm

* Installation on request



BIS0011 BIS C-122-04/L	BIS015W BIS C-122-05/L	BIS0015 BIS C-122-11/L
LF (70/455 kHz)	LF (70/455 kHz)	LF (70/455 kHz)
Ø 10 x 4.5 mm	Ø 10 x 4.5 mm	Ø 10 x 4.5 mm
round	round	round
EEPROM	EEPROM	EEPROM
511 Byte	1023 Byte	2047 Byte
-30...85 °C	-30...85 °C	-30...85 °C
—	—	120 °C
0...70 °C	0...70 °C	-30...70 °C
Epoxy-resin/fiberglass	Epoxy-resin/fiberglass	Epoxy-resin/fiberglass
IP68	IP68	IP68
metal-free (clear zone) on metal flush in metal	metal-free (clear zone) on metal flush in metal	metal-free (clear zone) on metal flush in metal
CE, UL-FILE E227256, Vol.X1, BIS	CE, UL-FILE E227256, Vol.X1, BIS	CE, UL-FILE E227256, Vol.X1, BIS
Page 330	Page 330	Page 330

flush in metal	on metal*	metal-free (clear zone)	flush in metal	on metal*	metal-free (clear zone)	flush in metal	on metal*	metal-free (clear zone)
0-2.5		0-3	0-2.5		0-3	0-2.5		0-3
0-2		0-2.5	0-2		0-2.5	0-2		0-2.5
0-2.5		0-3	0-2.5		0-3	0-2.5		0-3
0-2.5		0-3	0-2.5		0-3	0-2.5		0-3
0-2.5		0-3	0-2.5		0-3	0-2.5		0-3
0-4.5		0-5	0-4.5		0-5	0-4.5		0-5



	BIS0004 BIS C-103-05/A	
Product Group	LF (70/455 kHz)	
Dimension	Ø 12 x 8 mm	
Antenna type	round	
Memory type	EEPROM	
User data, read/write	1023 Byte	
Storage temperature	-30...85 °C	
Storage temperature temporary	120 °C	
Ambient temperature	-30...70 °C	
Housing material	Epoxy-resin/fiberglass	
Protection degree	IP68	
Installation	metal-free (clear zone) on metal flush in metal	
Approval/Conformity	CE, UL-FILE E227256, Vol.X1, BIS	
Productview	Page 330	

Suitable read/write head with max. read/write working distance

Installation	flush in metal	on metal*	metal-free (clear zone)	
BIS C-300	0-3.5		0-4	
BIS C-302	0-3		0-3.5	
BIS C-305	0-5		0-6	
BIS C-306	0-3.5		0-4	
BIS C-310				
BIS C-315				
BIS C-319				
BIS C-322	0-5		0-6	
BIS C-323				
BIS C-324				
BIS C-325	0-4.5		0-5	
BIS C-326				

Dimensions in mm

* Installation on request



BIS0009 BIS C-105-05/A	BIS001E BIS C-130-05/L	BIS0002 BIS C-100-05/A
LF (70/455 kHz)	LF (70/455 kHz)	LF (70/455 kHz)
Ø 12 x 6 mm	Ø 15.98 x 7 mm	Ø 16 x 10.5 mm
round	round	round
EEPROM	EEPROM	EEPROM
1023 Byte	1023 Byte	1023 Byte
-30...85 °C	-30...85 °C	-20...85 °C
120 °C	—	—
-30...70 °C	-30...70 °C	0...70 °C
Epoxy-resin/fiberglass	Epoxy-resin/fiberglass	PA 6.6
IP68	IP68	IP68
metal-free (clear zone) on metal flush in metal	metal-free (clear zone)	metal-free (clear zone) on metal flush in metal
CE, UL-FILE E227256, Vol.X1, BIS	CE, UL-FILE E227256, Vol.X1, BIS	CE, UL-FILE E227256, Vol.X1, BIS
Page 330	Page 330	Page 330

flush in metal	on metal*	metal-free (clear zone)	flush in metal	on metal*	metal-free (clear zone)	flush in metal	on metal*	metal-free (clear zone)
0-3.5		0-4	0-4		0-4	0-4		0-4
0-3		0-3.5	0-3.5		0-4	0-4		0-4
0-5		0-6			0-7	0-4		0-4
0-3.5		0-4	0-4		0-4	0-4		0-4
					0-11			
					0-18			
			0-6		0-13			
0-5		0-6			0-7	0-4		0-4
					0-11			
					0-11			
0-5		0-6	0-4		0-4	0-4		0-4
					0-13			



	BIS0019 BIS C-128-05/L	
Product Group	LF (70/455 kHz)	
Dimension	Ø 26 x 6 mm	
Antenna type	round	
Memory type	EEPROM	
User data, read/write	1023 Byte	
Storage temperature	-30...85 °C	
Storage temperature temporary	120 °C	
Ambient temperature	-30...70 °C	
Housing material	Epoxy-resin/fiberglass	
Protection degree	IP68	
Installation	metal-free (clear zone)	
Approval/Conformity	CE, UL-FILE E227256, Vol.X1, BIS	
Productview	Page 330	

Suitable read/write head with max. read/write working distance

Installation	flush in metal	on metal*	metal-free (clear zone)
BIS C-305			0-6
BIS C-310	0-8		0-13
BIS C-315			0-18
BIS C-322			0-6
BIS C-323	0-8		0-13
BIS C-324	0-8		0-13
BIS C-326			0-15

Dimensions in mm

* Installation on request



BIS001C BIS C-128-11/L	BIS0006 BIS C-104-11/A	BIS0007 BIS C-104-32/A
LF (70/455 kHz)	LF (70/455 kHz)	LF (70/455 kHz)
Ø 26 x 6 mm	Ø 30 x 35 mm	Ø 30 x 35 mm
round	round	round
EEPROM	EEPROM	EEPROM
2047 Byte	2047 Byte	8192 Byte
-30...85 °C	-30...85 °C	-30...85 °C
120 °C	—	—
-30...70 °C	-30...70 °C	-30...70 °C
Epoxy-resin/fiberglass	Brass	Brass
IP68	IP67	IP67
metal-free (clear zone) on metal flush in metal	metal-free (clear zone) on metal flush in metal	metal-free (clear zone) on metal flush in metal
CE, UL-FILE E227256, Vol.X1, BIS	CE, UL-FILE E227256, Vol.X1, BIS	CE, UL-FILE E227256, Vol.X1, BIS
Page 330	Page 330	Page 330

flush in metal	on metal*	metal-free (clear zone)	flush in metal	on metal	metal-free (clear zone)*	flush in metal	on metal	metal-free (clear zone)*
		0-6						
0-8		0-13	1-11	0-12		1-11	0-12	
		0-18	1-13	0-14		1-13	0-14	
		0-6						
0-8		0-13	1-11	0-12		1-11	0-12	
0-8		0-13	1-11	0-12		1-11	0-12	
		0-15						



	BIS000M BIS C-117-05/A	
Product Group	LF (70/455 kHz)	
Dimension	Ø 30 x 16 mm	
Antenna type	round	
Memory type	EEPROM	
User data, read/write	1023 Byte	
Storage temperature	-30...85 °C	
Storage temperature temporary	—	
Ambient temperature	-30...70 °C	
Housing material	PBT	
Protection degree	IP68	
Installation	metal-free (clear zone)	
Approval/Conformity	CE, UL-FILE E227256, Vol.X1, BIS	
Productview	Page 331	

Suitable read/write head with max. read/write working distance

Installation	flush in metal	on metal*	metal-free (clear zone)
BIS C-300			
BIS C-305	1-8		0-10
BIS C-306			
BIS C-310	1-12		0-13
BIS C-315	0-15		0-22
BIS C-319	0-13		0-16
BIS C-322	1-8		0-10
BIS C-323	1-12		0-13
BIS C-324			0-13
BIS C-325			
BIS C-326			

Dimensions in mm

* Installation on request



Use in vacuum



Use in vacuum

BIS000N BIS C-117-05/L	BIS00J4 BIS C-140-05/L-M6	BIS00J2 BIS C-140-05/L-M8
LF (70/455 kHz)	LF (70/455 kHz)	LF (70/455 kHz)
Ø 30 x 16 mm	Ø 22 x 21 mm	Ø 22 x 21 mm
round	round	round
EEPROM	EEPROM	EEPROM
1023 Byte	1023 Byte	1023 Byte
-30...85 °C	-25...95 °C	-25...95 °C
—	—	—
-30...70 °C	-25...70 °C	-25...70 °C
PBT	Steel, PA 12, GF30	Steel, PA 12, GF30
IP68	—	—
metal-free (clear zone)	metal-free (clear zone) on metal flush in metal	metal-free (clear zone) on metal flush in metal
CE, UL-FILE E227256, Vol.X1, BIS	CE, UL-FILE E227256, Vol.X1, BIS	CE, UL-FILE E227256, Vol.X1, BIS
Page 331	Page 331	Page 331

flush in metal	on metal*	metal-free (clear zone)	flush in metal	on metal*	metal-free (clear zone)*	flush in metal	on metal*	metal-free (clear zone)*
			0-3			0-3		
		0-7	0-4.5			0-4.5		
			0-3			0-3		
		0-13	0-7			0-7		
		0-18						
0-8		0-15						
		0-7						
		0-13	0-7			0-7		
		0-13	0-7			0-7		
			0-5			0-5		
		0-18						



Use in vacuum

	BIS00L9 BIS C-140-11/L-M10	
Product Group	LF (70/455 kHz)	
Dimension	Ø 22 x 21 mm	
Antenna type	round	
Memory type	EEPROM	
User data, read/write	2047 Byte	
Storage temperature	-25...95 °C	
Storage temperature temporary	—	
Ambient temperature	-25...70 °C	
Housing material	Steel, PA 12, GF30	
Protection degree	—	
Installation	metal-free (clear zone) on metal flush in metal	
Approval/Conformity	CE, UL-FILE E227256, Vol.X1, BIS	
Productview	Page 331	

Suitable read/write head with max. read/write working distance

Installation	flush in metal	on metal*	metal-free (clear zone)*	
BIS C-300	0-3			
BIS C-305	0-4.5			
BIS C-306	0-3			
BIS C-310	0-7			
BIS C-315				
BIS C-319				
BIS C-322				
BIS C-323	0-7			
BIS C-324	0-7			
BIS C-325	0-5			
BIS C-327				

Dimensions in mm

* Installation on request



Use in vacuum



BIS00J1 BIS C-140-11/L-M8	BIS000C BIS C-108-05/L	BIS000H BIS C-108-11/L
LF (70/455 kHz)	LF (70/455 kHz)	LF (70/455 kHz)
Ø 22 x 21 mm	32 x 11 x 52 mm	32 x 11 x 52 mm
round	round	round
EEPROM	EEPROM	EEPROM
2047 Byte	1023 Byte	2047 Byte
-25...95 °C	-30...85 °C	-30...85 °C
—	—	—
-25...70 °C	-30...70 °C	-30...70 °C
Steel, PA 12, GF30	PBT	PBT
—	IP68	IP68
metal-free (clear zone) on metal flush in metal	metal-free (clear zone) on metal flush in metal	metal-free (clear zone) on metal flush in metal
CE, UL-FILE E227256, Vol.X1, BIS	CE, UL-FILE E227256, Vol.X1, BIS	CE, UL-FILE E227256, Vol.X1, BIS
Page 331	Page 331	Page 331

flush in metal	on metal*	metal-free (clear zone)*	flush in metal	on metal*	metal-free (clear zone)			
0-3								
0-4.5					0-6			0-6
0-3								
0-7			0-5		0-12	0-5		0-12
			0-10		2-16	0-10		2-16
			0-11		0-14	0-11		0-14
					0-6			0-6
0-7					0-12			0-12
0-7					0-12			0-12
0-5								
					0-8			0-8



	BIS000K BIS C-108-32/L	
Product Group	LF (70/455 kHz)	
Dimension	32 x 11 x 52 mm	
Antenna type	round	
Memory type	EEPROM	
User data, read/write	8192 Byte	
Storage temperature	-30...85 °C	
Storage temperature temporary	—	
Ambient temperature	-30...70 °C	
Housing material	PBT	
Protection degree	IP68	
Installation	metal-free (clear zone) on metal flush in metal	
Approval/Conformity	CE, UL-FILE E227256, Vol.X1, BIS	
Productview	Page 331	

Suitable read/write head with max. read/write working distance

Installation	flush in metal	on metal*	metal-free (clear zone)
BIS C-305			0-6
BIS C-310	0-5		0-12
BIS C-315	0-10		2-16
BIS C-319	0-11		0-14
BIS C-322			0-6
BIS C-323			0-12
BIS C-324			0-12
BIS C-327			0-8

Dimensions in mm

* Installation on request



BIS0017 BIS C-127-05/L		
LF (70/455 kHz)		
53 x 4.8 x 85 mm		
round		
EEPROM		
1023 Byte		
-20...60 °C		
—		
0...60 °C		
ABS		
IP65		
metal-free (clear zone)		
CE, UL-FILE E227256, Vol.X1, BIS		
Page 331		

flush in metal*	on metal*	metal-free (clear zone)						
		10-30						



	BIS0028 BIS C-150-05/A	
Product Group	LF (70/455 kHz)	
Dimension	40 x 22 x 80 mm	
Antenna type	Rod	
Memory type	EEPROM	
User data, read/write	1023 Byte	
Storage temperature	-30...85 °C	
Storage temperature temporary	—	
Ambient temperature	-30...70 °C	
Housing material	POM	
Protection degree	IP68	
Installation	on metal	
Approval/Conformity	CE, UL-FILE E227256, Vol.X1, BIS	
Productview	Page 331	

Suitable read/write head with max. read/write working distance

Installation	flush in metal	on metal	metal-free (clear zone)	
BIS C-300				
BIS C-305				
BIS C-306				
BIS C-310				
BIS C-315				
BIS C-319				
BIS C-322				
BIS C-323				
BIS C-324				
BIS C-325				
BIS C-326				
BIS C-351		0-45		

Dimensions in mm

* Installation on request



BIS002A BIS C-150-11/A	BIS002E BIS C-150-32/A	BIS0021 BIS C-134-11/L
LF (70/455 kHz)	LF (70/455 kHz)	LF (70/455 kHz)
40 x 22 x 80 mm	40 x 22 x 80 mm	25 x 11 x 25 mm
Rod	Rod	round
EEPROM	EEPROM	EEPROM
2047 Byte	8192 Byte	2047 Byte
-30...85 °C	-30...85 °C	-30...85 °C
—	—	—
-30...70 °C	-30...70 °C	-30...70 °C
POM	POM	PA 6.6, GF30, PU potting
IP68	IP68	IP68
on metal	on metal	metal-free (clear zone) flush in metal
CE, UL-FILE E227256, Vol.X1, BIS	CE, UL-FILE E227256, Vol.X1, BIS	CE, UL-FILE E227256, Vol.X1, BIS
Page 331	Page 331	Page 332

flush in metal	on metal	metal-free (clear zone)	flush in metal	on metal	metal-free (clear zone)	flush in metal	on metal	metal-free (clear zone)
						0-3		0-6
						0-3		0-10
								0-16
								0-12
								0-6
								0-10
								0-10
								0-4
								0-12
	0-45			0-45				



	BIS002K BIS C-190-05/L	
Product Group	LF (70/455 kHz)	
Dimension	34 x 35 x 34 mm	
Antenna type	round	
Memory type	EEPROM	
User data, read/write	1023 Byte	
Storage temperature	-30...85 °C	
Storage temperature temporary	—	
Ambient temperature	-30...70 °C	
Housing material	PBT	
Protection degree	IP68	
Installation	metal-free (clear zone)	
Approval/Conformity	CE, UL-FILE E227256, Vol.X1, BIS	
Productview	Page 354	

Suitable read/write head with max. read/write working distance

Installation	flush in metal	on metal	metal-free (clear zone)
BIS C-300			
BIS C-302			
BIS C-306			
BIS C-310			0-11
BIS C-315			0-20
BIS C-319			
BIS C-323			0-11
BIS C-324			0-11
BIS C-325			
BIS C-326			0-18
BIS C-327			

Dimensions in mm

* Installation on request



BIS002N BIS C-190-32/L	BIS002P BIS C-191-05/L	
LF (70/455 kHz)	LF (70/455 kHz)	
34 x 35 x 34 mm	24 x 21 x 24 mm	
round	round	
EEPROM	EEPROM	
8192 Byte	1023 Byte	
-30...85 °C	-30...85 °C	
—	—	
-30...70 °C	-30...70 °C	
PBT	PBT	
IP68	IP68	
metal-free (clear zone)	metal-free (clear zone)	
CE, UL-FILE E227256, Vol.X1, BIS	CE, UL-FILE E227256, Vol.X1, BIS	
Page 354	Page 354	

flush in metal	on metal	metal-free (clear zone)	flush in metal	on metal	metal-free (clear zone)	flush in metal	on metal	metal-free (clear zone)
					0-3.5			
					0-3			
					0-3.5			
		0-11			0-10			
		0-20						
					0-11			
		0-11			0-9			
		0-11			0-10			
					0-3.5			
		0-18						
		0-8						



	BIS002Y BIS C-122-04/L-ZC1	
Product Group	LF (70/455 kHz)	
Dimension	Ø 15 x 50 mm	
Antenna type	round	
Memory type	EEPROM	
User data, read/write	511 Byte	
Storage temperature	-30...85 °C	
Storage temperature temporary	—	
Ambient temperature	0...70 °C	
Housing material	POM, EP	
Protection degree	IP68	
Installation	metal-free (clear zone) on metal flush in metal	
Approval/Conformity	CE, UL-FILE E227256, Vol.X1, BIS	
Productview	Page 354	

Suitable read/write head with max. read/write working distance

Installation	flush in metal	on metal	metal-free (clear zone)*
BIS C-300			
BIS C-302			
BIS C-305			
BIS C-306			
BIS C-310			
BIS C-315			
BIS C-319			
BIS C-322	0-2.5		
BIS C-323			
BIS C-324			
BIS C-325	0-2.5		
BIS C-326			

Dimensions in mm

* Installation on request



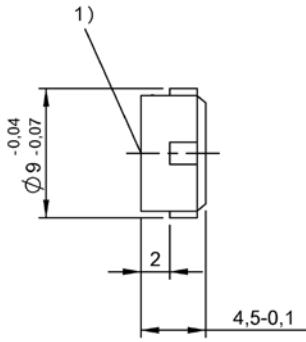
Use in vacuum



BIS001H BIS C-130-05/L-SA1	BIS001Y BIS C-131-05/L	
LF (70/455 kHz)	LF (70/455 kHz)	
Ø 15.5 x 7 mm	Ø 125 x 7 mm	
round	round	
EEPROM	EEPROM	
1023 Byte	1023 Byte	
-30...85 °C	-30...85 °C	
—	—	
-30...70 °C	-30...70 °C	
PBT	POM	
IP68	IP67	
metal-free (clear zone)	metal-free (clear zone)	
CE, UL-FILE E227256, Vol.X1, BIS	CE, UL-FILE E227256, Vol.X1, BIS	
Page 354	Page 354	

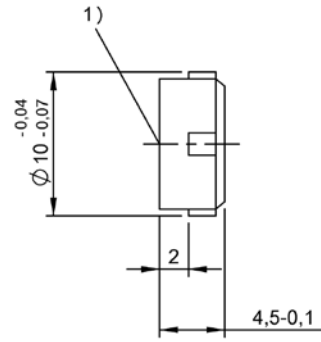
flush in metal	on metal*	metal-free (clear zone)*	flush in metal	on metal*	metal-free (clear zone)	flush in metal*	on metal*	metal-free (clear zone)*
0-4		0-4						
		0-4						
0-6		0-7						
0-4		0-4						
0-8		0-8						
		0-8						
0-7		0-13						
		0-7						
0-8								
0-8								
0-4		0-8						
		0-12						

330 I RFID I LF (70/455 kHz)



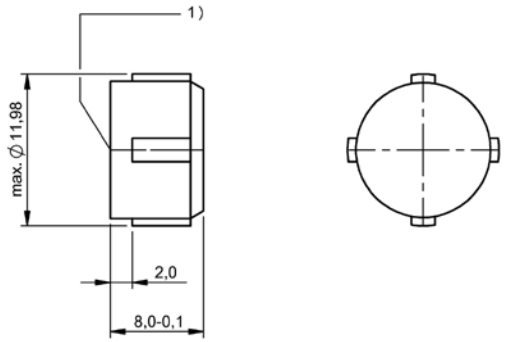
1) Sensing surface

BISO00T



1) Sensing surface

BISO011, BISO15W, BISO015



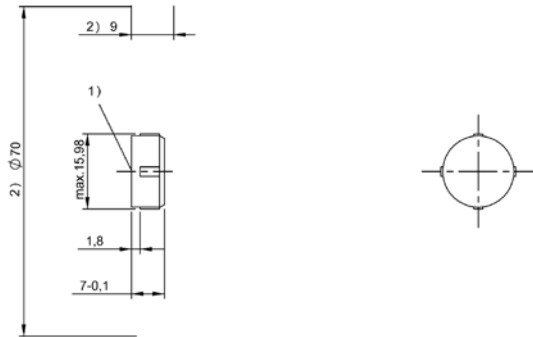
1) Sensing surface

BISO004



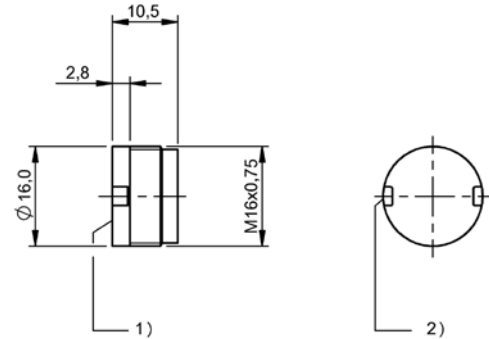
1) Sensing surface

BISO009



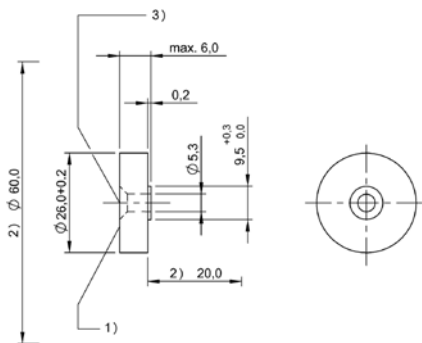
1) Sensing surface, 2) Clear zone

BISO01E



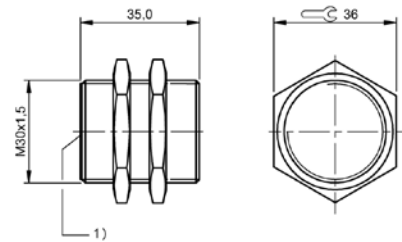
1) Sensing surface, 2) For mounting key 710691

BISO002



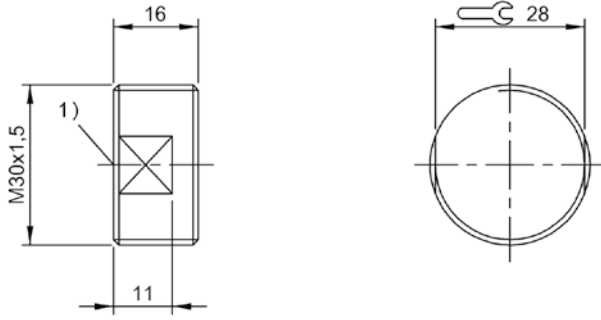
1) Sensing surface, 2) Clear zone, 3) Tightening torque max. 2.5 Nm

BISO019, BISO01C



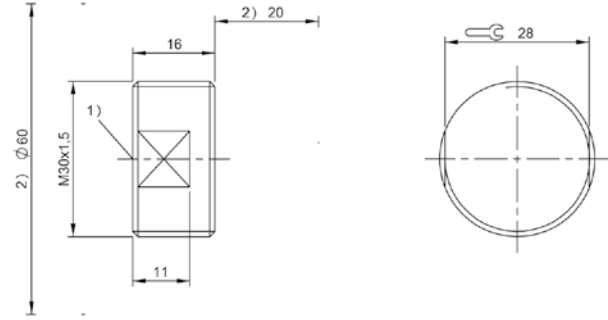
1) Sensing surface

BISO006, BISO007



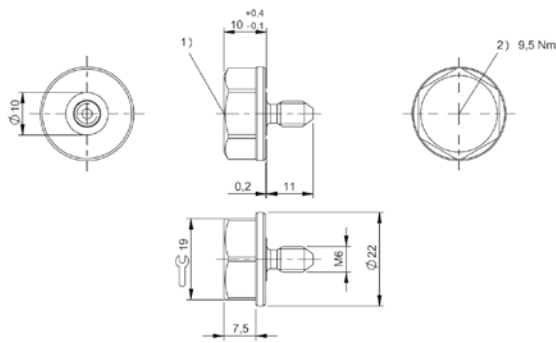
1) Sensing surface

BISO00M



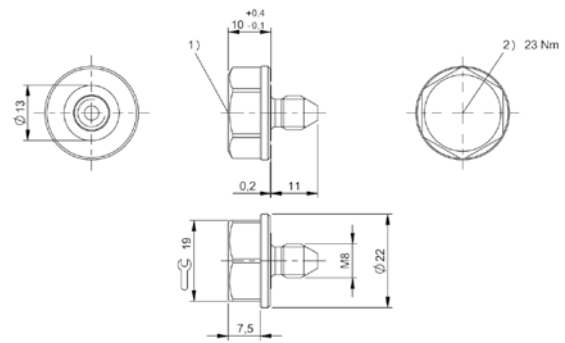
1) Sensing surface, 2) Clear zone

BISO00N



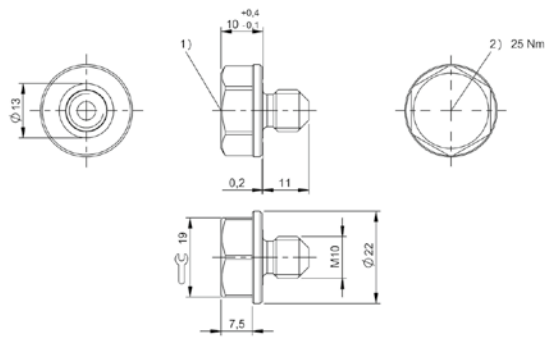
1) Sensing surface, 2) Tightening torque

BISO0J4



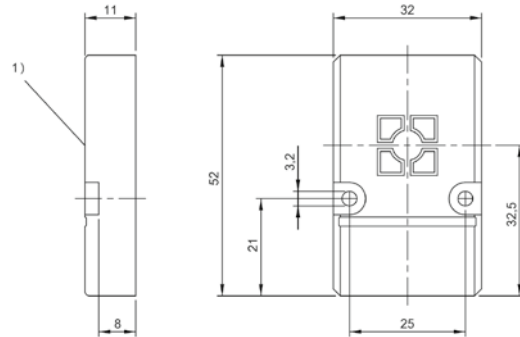
1) Sensing surface, 2) Tightening torque

BISO0J2, BISO0J1



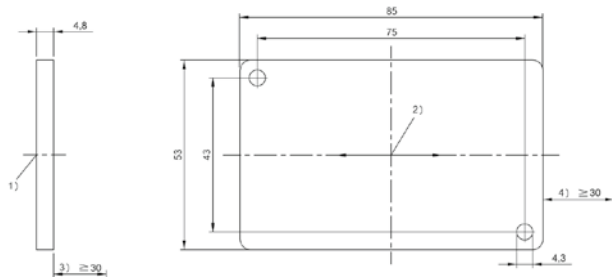
1) Sensing surface, 2) Tightening torque

BISO0L9



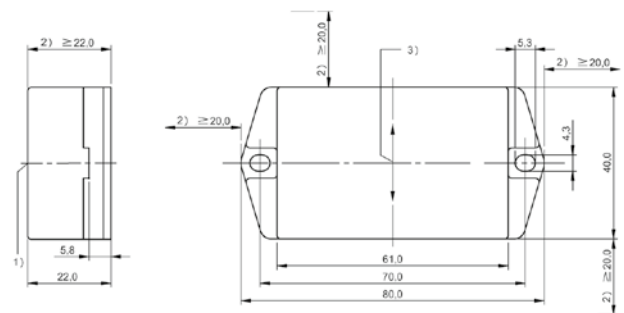
1) Sensing surface

BISO00C, BISO00H, BISO00K



1) Sensing surface, 2) Read/write axis, 3) Clear zone, 4) Clear zone surrounding

BISO017



1) Sensing surface, 2) Clear zone, 3) Read/write axis

BISO028, BISO02A, BISO02E

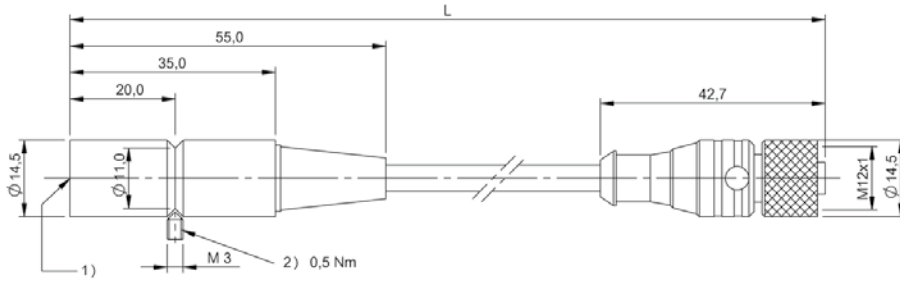


1 m cable PU	BIS00P5 BIS C-300-PU1-01
2 m cable PU	BIS0138 BIS C-300-PU1-02
5 m cable PU	BIS005Z BIS C-300-PU1-05
10 m cable PU	BIS00P6 BIS C-300-PU1-10
Product Group	LF (70/455 kHz)
Dimension	Ø 14.5 x 35 mm
Installation	metal-free (clear zone) on metal flush in metal
Antenna type	round
Connection	M12x1-Female
Housing material	Brass
Storage temperature	-20...85 °C
Ambient temperature	0...70 °C
Protection degree	IP67
Approval/Conformity	CE, UL-FILE E227256, Vol.X1, BIS

Appropriate data carrier

	BIS0002	BIS0004	BIS0009	BIS000T	BIS0011	BIS001E	BIS0021	BIS001H	BIS002P
Data carrier distance to metal	flush	flush	flush	flush	flush	flush metal-free	flush	metal-free	metal-free
Working distance for writing	0-4	0-3.5	0-3.5	0-2	0-2.5	0-4 0-4	0-3	0-4	0-3.5
Working distance for reading	0-4	0-3.5	0-3.5	0-2	0-2.5	0-4 0-4	0-3	0-4	0-3.5
Offset at distance									
	1 ±3	±3	±3	±2	±2.5	±3.5 ±5	±4	±5	±4
	3 ±2	±2	±2			±3 ±4		±4	±3

Dimensions in mm



1) Sensing surface, 2) Tightening torque

	BIS00J4	BIS00J2	BIS00L9	BIS00J1
	metal-free	metal-free	metal-free	metal-free
	0-3	0-3	0-3	0-3
	0-3	0-3	0-3	0-3
	±3.5	±3.5	±3.5	±3.5
	±2	±2	±2	±2

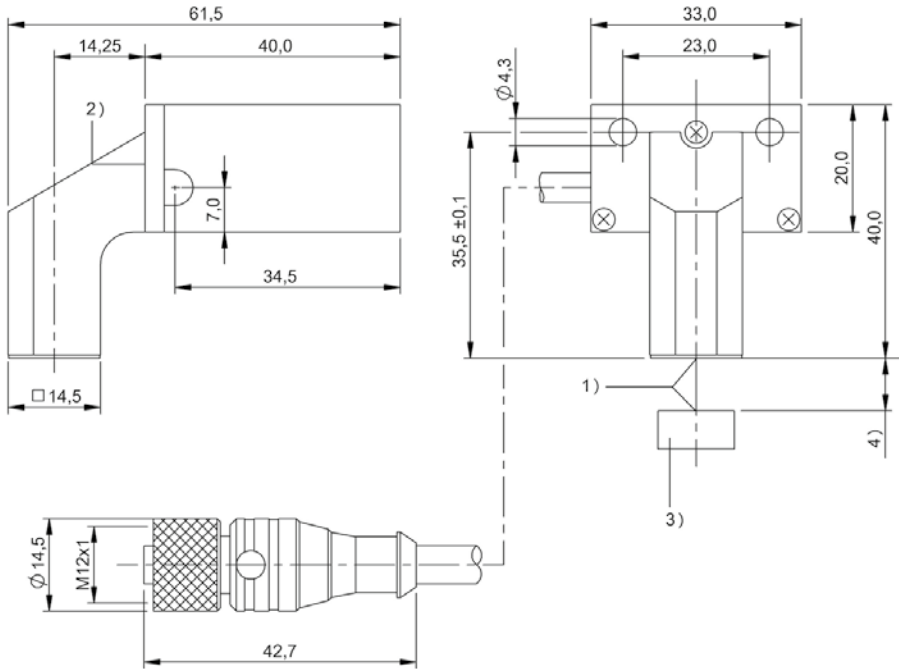


5 m cable PU	BIS00PA BIS C-302-PU1-05
10 m cable PU	BIS00P9 BIS C-302-PU1-10
Product Group	LF (70/455 kHz)
Dimension	40 x 33 x 61.5 mm
Installation	metal-free (clear zone) on metal flush in metal
Antenna type	round
Connection	M12x1-Female
Housing material	Aluminum, PA 6.6
Storage temperature	-20...85 °C
Ambient temperature	0...70 °C
Protection degree	IP67
Approval/Conformity	CE, UL-FILE E227256, Vol.X1, BIS

Appropriate data carrier

	BIS0002	BIS0004	BIS0009	BIS000T	BIS0011	BIS001E	BIS001H	BIS002P
Data carrier distance to metal	flush	flush	flush	flush	flush	flush metal-free	metal-free	metal-free
Working distance for writing	0-4	0-3	0-3	0-1.5	0-2	0-3.5 0-4	0-4	0-3
Working distance for reading	0-4	0-3	0-3	0-1.5	0-2	0-3.5 0-4	0-4	0-3
Offset at distance	1 ±3	±3	±3	±1.5	±2	±3 ±5	±5	±4
	3 ±2	±1.5	±1.5			±2 ±3	±3	±2

Dimensions in mm



1) Sensing surface, 2) Mounting surface, 3) Data carrier, 4) Read range

BIS00J4	BIS00J2	BIS00L9	BIS00J1
metal-free	metal-free	metal-free	metal-free
0-3	0-3	0-3	0-3
0-3	0-3	0-3	0-3
±3.5	±3.5	±3.5	±3.5
±2	±2	±2	±2

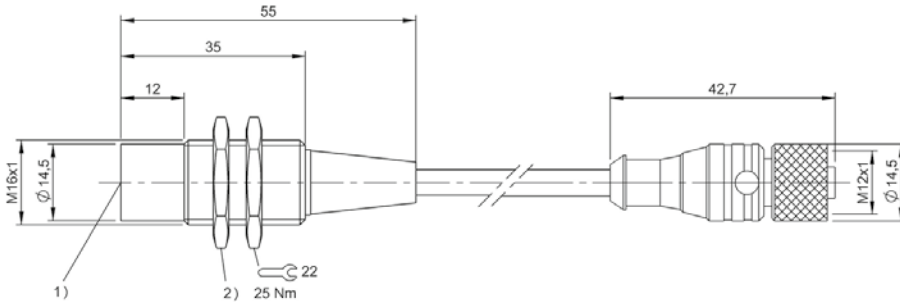


1 m cable PU	BIS00PC BIS C-306-PU1-01
10 m cable PU	BIS00PE BIS C-306-PU1-10
Product Group	LF (70/455 kHz)
Dimension	Ø 16 x 35 mm
Installation	metal-free (clear zone) on metal flush in metal
Antenna type	round
Connection	M12x1-Female
Housing material	Brass
Storage temperature	-20...85 °C
Ambient temperature	0...70 °C
Protection degree	IP67
Approval/Conformity	CE, UL-FILE E227256, Vol.X1, BIS

Appropriate data carrier

	BIS0002	BIS0004	BIS0009	BIS000T	BIS0011	BIS001E	BIS0021	BIS001H	BIS002P	
Data carrier distance to metal	flush	flush	flush	flush	flush	flush metal-free	flush	metal-free	metal-free	
Working distance for writing	0-4	0-3.5	0-3.5	0-2	0-2.5	0-4	0-4	0-3	0-4	0-3.5
Working distance for reading	0-4	0-3.5	0-3.5	0-2	0-2.5	0-4	0-4	0-3	0-4	0-3.5
Offset at distance	1 ±3	±3	±3	±2	±2.5	±3.5	±5	±4	±5	±4
	3 ±2	±2	±2			±3	±4		±4	±3

Dimensions in mm



1) Sensing surface, 2) Tightening torque

	BIS00J4	BIS00J2	BIS00L9	BIS00J1
	metal-free	metal-free	metal-free	metal-free
	0-3	0-3	0-3	0-3
	0-3	0-3	0-3	0-3
	±3.5	±3.5	±3.5	±3.5
	±2	±2	±2	±2

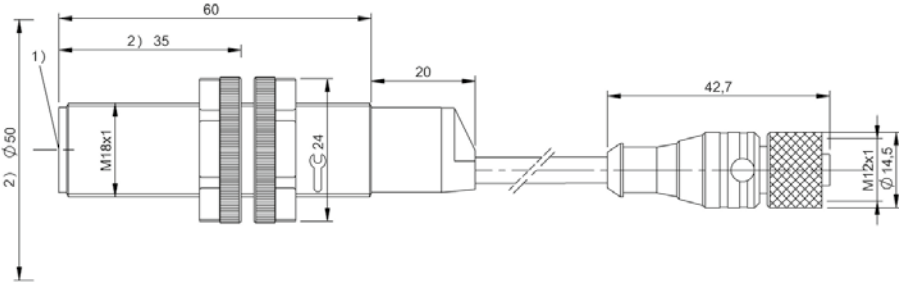


1 m cable PU	BIS0077 BIS C-319-PU1-01
5 m cable PU	BIS0078 BIS C-319-PU1-05
10 m cable PU	BIS0079 BIS C-319-PU1-10
Product Group	LF (70/455 kHz)
Dimension	Ø 18 x 80 mm
Installation	metal-free (clear zone)
Antenna type	round
Connection	M12x1-Female
Housing material	PBT, blue, nuts PA 6.6 black
Storage temperature	-20...85 °C
Ambient temperature	0...70 °C
Protection degree	IP67
Approval/Conformity	CE, UL-FILE E227256, Vol.X1, BIS

Appropriate data carrier

	BIS000C BIS000H BIS000K	BIS000N	BIS001E BIS001H	BIS0021	BIS002P
Data carrier distance to metal	metal-free	metal-free	metal-free	metal-free	metal-free
Working distance for writing	0-14	0-15	0-13	0-12	0-11
Working distance for reading	0-14	0-15	0-13	0-12	0-11
Offset at distance					
	1 ±12	±13	±9	±9	±9
	3 ±12	±12	±9	±9	±9
	5 ±11	±12	±9	±9	±9
	7 ±11	±11	±8.5	±8.5	±8
	10 ±9	±10	±7.5	±7.5	

Dimensions in mm



1) Sensing surface, 2) Clear zone

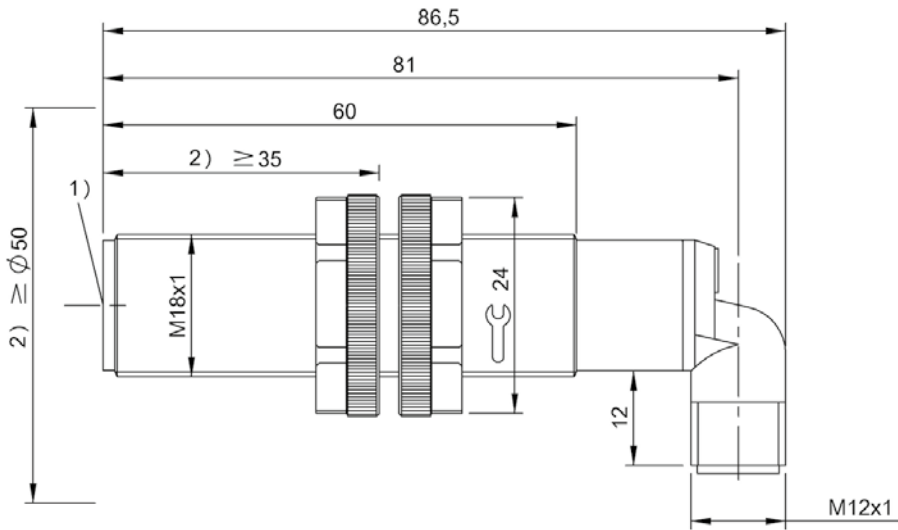


For 5 m cable	BIS007A BIS C-319/05-S4
For 10 m cable	BIS007C BIS C-319/10-S4
Product Group	LF (70/455 kHz)
Dimension	Ø 18 x 86.5 mm
Installation	metal-free (clear zone)
Antenna type	round
Connection	M12x1 male
Housing material	PBT, blue, nuts PA 6.6 black
Storage temperature	-20...85 °C
Ambient temperature	0...70 °C
Protection degree	IP67
Approval/Conformity	CE, UL-FILE E227256, Vol.X1, BIS

Appropriate data carrier

	BIS000C BIS000H BIS000K	BIS000N	BIS001E BIS001H	BIS0021	BIS002P
Data carrier distance to metal	metal-free	metal-free	metal-free	metal-free	metal-free
Working distance for writing	0-14	0-15	0-13	0-12	0-11
Working distance for reading	0-14	0-15	0-13	0-12	0-11
Offset at distance					
	1 ±12	±13	±9	±9	±9
	3 ±12	±12	±9	±9	±9
	5 ±11	±12	±9	±9	±9
	7 ±11	±11	±8.5	±8.5	±8
	10 ±9	±10	±7.5	±7.5	

Dimensions in mm



1) Sensing surface, 2) Clear zone

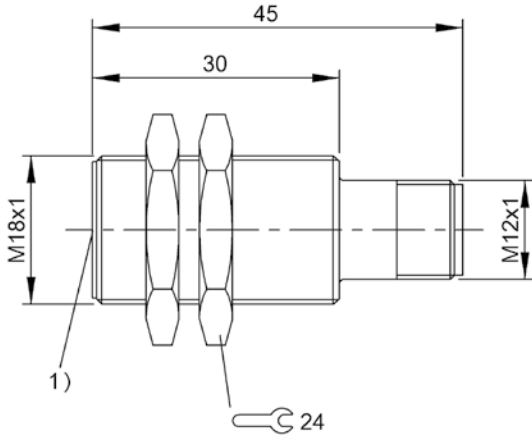


For 1 m cable	BIS007P BIS C-325/01-S4
For 5 m cable	BIS007R BIS C-325/05-S4
For 10 m cable	BIS007T BIS C-325/10-S4
Product Group	LF (70/455 kHz)
Dimension	Ø 18 x 45 mm
Installation	metal-free (clear zone) on metal flush in metal
Antenna type	round
Connection	M12x1 male
Housing material	Stainless steel (1.4571), stainless steel (1.4571)
Storage temperature	-20...85 °C
Ambient temperature	0...70 °C
Protection degree	IP67
Approval/Conformity	CE, UL-FILE E227256, Vol.X1, BIS

Appropriate data carrier

	BIS0002	BIS0011 BIS002Y BIS015W BIS0015	BIS001E	BIS001H	BIS0021	BIS002P	BIS00J2
Data carrier distance to metal	flush	flush	metal-free	metal-free	metal-free	metal-free	auf Metall
Working distance for writing	0-4	0-2.5	0-4	0-3	0-4	0-3	0-5
Working distance for reading	0-4	0-2.5	0-4	0-8	0-4	0-3.5	0-5
Offset at distance							
	1 ±3.5	±2.5	±4	±4	±4	±4	
	2						±3
	3 ±3		±2	±2	±2	±2	
	4						±2

Dimensions in mm



1) Sensing surface

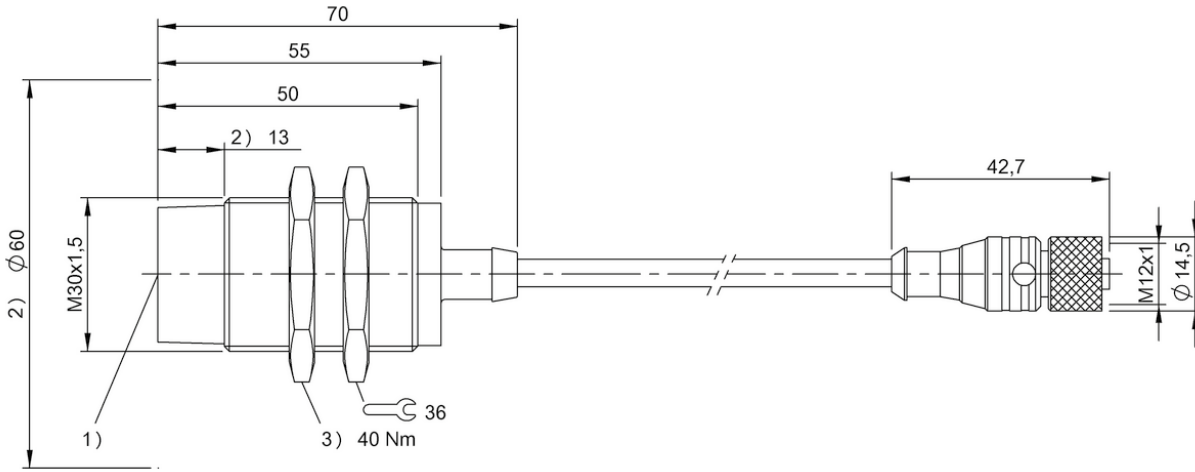


1 m cable PU	BIS00PF BIS C-310-PU1-01
5 m cable PU	BIS00PH BIS C-310-PU1-05
10 m cable PU	BIS00PJ BIS C-310-PU1-10
Product Group	LF (70/455 kHz)
Dimension	Ø 30 x 70 mm
Installation	metal-free (clear zone)
Antenna type	round
Connection	M12x1-Female
Housing material	Brass
Storage temperature	-20...85 °C
Ambient temperature	0...70 °C
Protection degree	IP67
Approval/Conformity	CE, UL-FILE E227256, Vol.X1, BIS

Appropriate data carrier

	BIS0006		BIS0007		BIS000C BIS000H BIS000K		BIS000M		BIS000N		BIS0019		BIS001C		BIS001E	
Data carrier distance to metal	flush	metal-free	flush	metal-free	metal-free		flush		metal-free		flush	metal-free	flush	metal-free	metal-free	
Working distance for writing	1-11	0-12	1-11	0-12	0-12		1-12		0-13		0-8	0-13	0-8	0-13	0-11	
Working distance for reading	1-11	0-12	1-11	0-12	0-12		1-12		0-13		0-8	0-13	0-8	0-13	0-11	
Offset at distance																
	1	±7.5	±7.5	±7.5	±7.5	±10	±7.5		±11		±8	±10	±8	±10	±9	
	3	±7	±7	±7	±7	±9	±7.5		±10		±7	±10	±7	±10	±8	
	5	±7	±7	±7	±7	±9	±7		±10		±6.5	±9	±6.5	±9	±7	
	7	±7	±7	±7	±7	±8.5	±6.5		±9.5		±5.5	±9	±5.5	±9	±5	
	10															

Dimensions in mm



1) Sensing surface, 2) Clear zone, 3) Tightening torque

	BIS001H	BIS0021	BIS002K BIS002N	BIS002P
	metal-free	metal-free	metal-free	metal-free
	0-8	0-10	0-11	0-10
	0-8	0-10	0-11	0-10
	±6.5	±9	±10	±8
	±6	±8	±9	±7.5
	±5.5	±7	±9	±7
		±4	±8	±6.5
			±6.5	

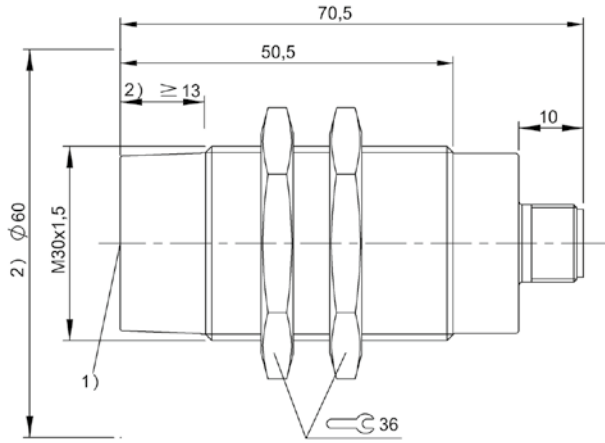


For 1 m cable	BIS007J BIS C-323/01-S4
For 5 m cable	BIS007K BIS C-323/05-S4
For 10 m cable	BIS007L BIS C-323/10-S4
Product Group	LF (70/455 kHz)
Dimension	Ø 30 x 70.5 mm
Installation	metal-free (clear zone)
Antenna type	round
Connection	M12x1 male
Housing material	1.4305 stainless steel
Storage temperature	-20...85 °C
Ambient temperature	0...70 °C
Protection degree	IP67
Approval/Conformity	CE, UL-FILE E227256, Vol.X1, BIS

Appropriate data carrier

	BIS0006 BIS0007		BIS000C BIS000H BIS000K		BIS000M		BIS000N		BIS0019 BIS001C		BIS001E		BIS001H		BIS0021	
Data carrier distance to metal	flush	metal-free	metal-free		flush	metal-free		flush	metal-free	flush	metal-free	flush	metal-free			
Working distance for writing	1-11	0-12	0-12		1-12	0-13		0-8	0-13	0-11		0-8	0-10			
Working distance for reading	1-11	0-12	0-12		1-12	0-13		0-8	0-13	0-11		0-8	0-10			
Offset at distance																
	1	±7.5	±7.5	±10		±7.5	±11	±8	±10	±9		±6.5	±9			
	3	±7	±7	±9		±7.5	±10	±7	±10	±8		±6	±8			
	5	±7	±7	±9		±7	±10	±6.5	±9	±7		±5.5	±7			
	7	±7	±7	±8.5		±6.5	±9.5	±5.5	±9	±5			±4			
	10															

Dimensions in mm



1) Sensing surface, 2) Clear zone

	BIS0026	BIS002K BIS002N	BIS002P
	metal-free	metal-free	metal-free
	0-9	0-11	0-9
	0-9	0-11	0-9
	±8	±10	±8
	±7	±9	±7.5
	±5	±9	±7
		±8	±6.5
		±6.5	

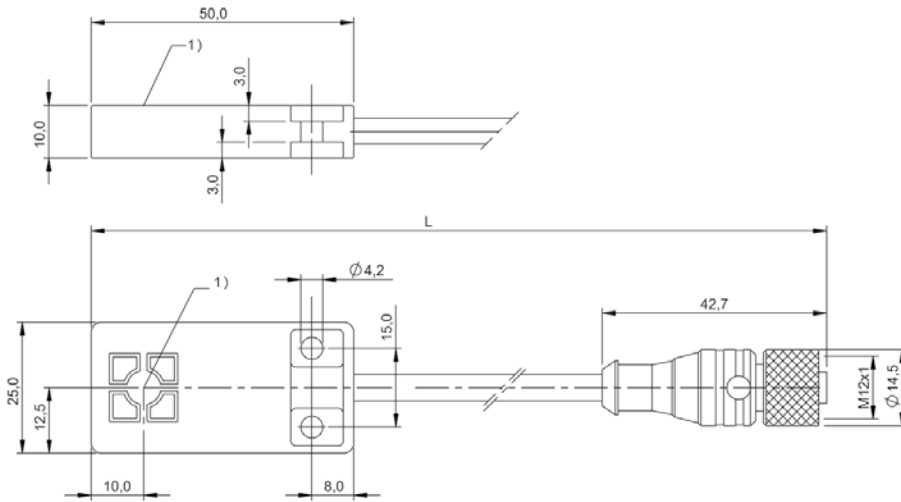


1 m cable PU	BIS0066 BIS C-305-PU1-01
5 m cable PU	BIS0067 BIS C-305-PU1-05
10 m cable PU	BIS0068 BIS C-305-PU1-10
Product Group	LF (70/455 kHz)
Dimension	25 x 10 x 50 mm
Installation	metal-free (clear zone) on metal flush in metal
Antenna type	round
Connection	M12x1-Female
Housing material	ABS, GF16
Storage temperature	-20...85 °C
Ambient temperature	0...70 °C
Protection degree	IP67
Approval/Conformity	CE, UL-FILE E227256, Vol.X1, BIS

Appropriate data carrier

	BIS0002	BIS0004 BIS0009	BIS000C BIS000H BIS000K	BIS000M		BIS000N	BIS000T	BIS0011	BIS0019
Data carrier distance to metal	flush	flush	metal-free	flush	metal-free	metal-free	flush	flush	metal-free
Freizone Datenträger									
Working distance for writing	0-4	0-5	0-6	1-8	0-10	0-7	0-2	0-2.5	0-6
Working distance for reading	0-4	0-5	0-6	1-8	0-10	0-7	0-2	0-2.5	0-6
Offset at distance									
	1 ±3	±4	±8	±5	±6	±8.5	±2	±3	±8
	3 ±2	±3	±7	±4	±6	±7.5		±2	±7
	5		±5	±5	±6	±6			±5
	7			±2	±5	±4			
	10				±3				

Dimensions in mm



1) Sensing surface

	BIS001E BIS001H	BIS0021	BIS00J4 BIS00J2
	metal-free	metal-free	metal-free
	0-7	0-6	0-4.5
	0-7	0-6	0-4.5
	±5	±5	±4.5
	±5	±5	±3.5
	±4	±4	
	±2		

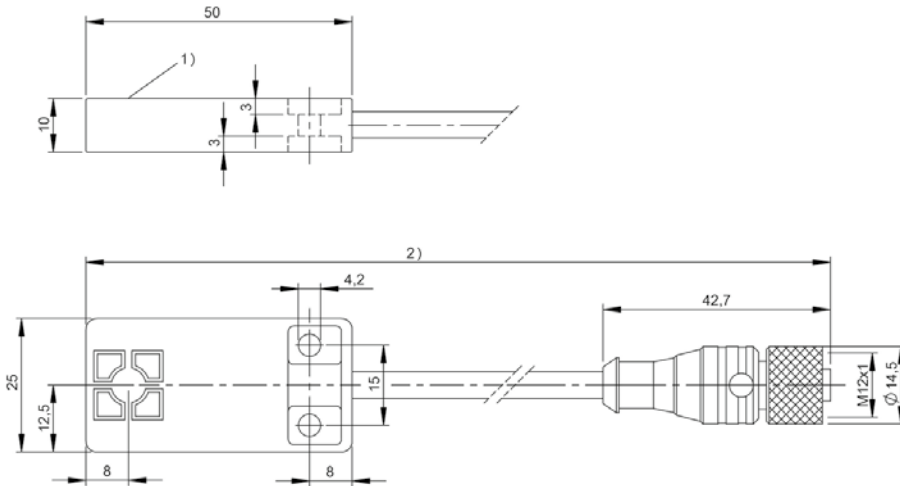


5 m cable PU	BIS007H BIS C-322-PU1-05
Product Group	LF (70/455 kHz)
Dimension	25 x 10 x 50 mm
Installation	metal-free (clear zone) on metal flush in metal
Antenna type	round
Connection	M12x1-Female
Housing material	ABS, GF16
Storage temperature	-20...85 °C
Ambient temperature	0...70 °C
Protection degree	IP67
Approval/Conformity	CE, UL-FILE E227256, Vol.X1, BIS

Appropriate data carrier

	BIS0002	BIS0004 BIS0009	BIS000C BIS000H BIS000J BIS000K	BIS000M	BIS000N	BIS000T	BIS0011	BIS002Y	
Data carrier distance to metal	flush	flush	metal-free	flush	metal-free	metal-free	flush	flush	flush
Working distance for writing	0-4	0-5	0-6	1-8	0-10	0-7	0-2	0-2.5	0-2.5
Working distance for reading	0-4	0-5	0-6	1-8	0-10	0-7	0-2	0-2.5	0-2.5
Offset at distance	0.7								
	1 ±3	±4	±8	±5	±6	±8.5	±2	±3	±3
	3 ±2	±3	±7	±4	±6	±7.5		±2	±2
	4 ±2								
	5		±5	±3	±6	±6			
	7				±5	±4			
	10				±3				

Dimensions in mm



1) Sensing surface, 2) Cable length see text

	BIS0019	BIS001E BIS001H	BIS0021
	metal-free	metal-free	metal-free
	0-6	0-7	0-6
	0-6	0-7	0-6
	±8	±5	±5
	±7	±5	±5
	±5	±4	±4
		±2	

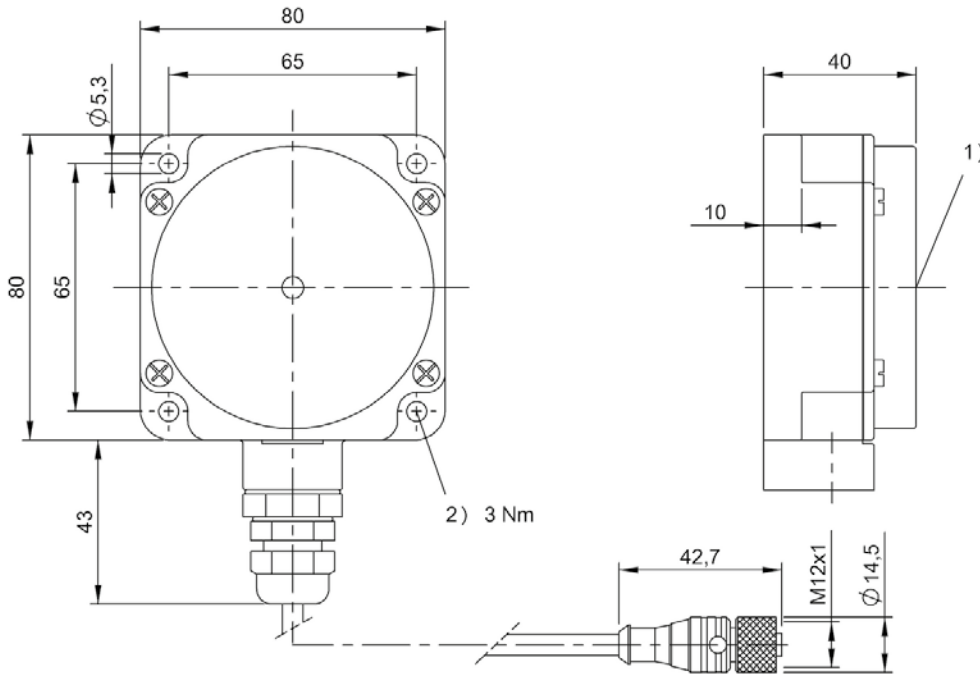


1 m cable PU	BIS00PK BIS C-315-PU1-01
5 m cable PU	BIS00PL BIS C-315-PU1-05
10 m cable PU	BIS00PM BIS C-315-PU1-10
Product Group	LF (70/455 kHz)
Dimension	80 x 40 x 80 mm
Installation	metal-free (clear zone) on metal flush in metal
Antenna type	round
Connection	M12x1-Female
Housing material	Brass
Storage temperature	-20...85 °C
Ambient temperature	0...70 °C
Protection degree	IP67
Approval/Conformity	CE, UL-FILE E227256, Vol.X1, BIS

Appropriate data carrier

	BIS0006 BIS0007	BIS000C BIS000H BIS000K	BIS000M	BIS000N	BIS0017	BIS0019 BIS001C	BIS001E	BIS001H	
Data carrier distance to metal	flush	metal-free	flush	metal-free	metal-free	metal-free	metal-free	metal-free	
Freizone Datenträger									
Working distance for writing	1-13	2-16	0-15	0-18	10-30	0-18	0-18	0-8	
Working distance for reading	1-13	2-16	0-15	0-18	10-30	0-18	0-18	0-8	
Offset at distance									
	1 ±15		±15	±17		±17	±16	±6.5	
	2	±15							
	3 ±14	±14	±15	±17		±17	±16	±6	
	5 ±11	±12	±14	±17		±17	±16	±5.5	
	7 ±10	±11	±12	±15		±15	±14		
	10 ±8	±8	±12	±15	±30	±15	±14		
	15			±14	±27	±14	±11		
	20				±20				

Dimensions in mm



1) Sensing surface, 2) Tightening torque

	BIS0021	BIS002K BIS002N
	metal-free	metal-free
	0-16	0-20
	0-16	0-20
	±16	±18
	±16	±18
	±16	±18
	±14	±18
	±12	±18
		±16

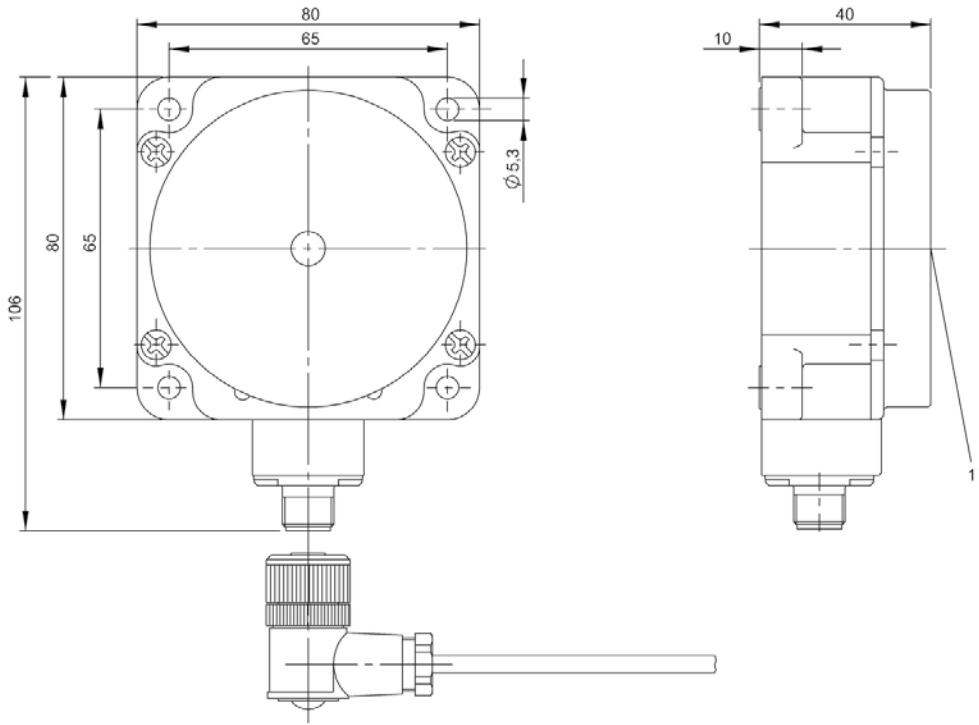


For 5 m cable	BIS006Y BIS C-315/05-S4
For 10 m cable	BIS006Z BIS C-315/10-S4
Product Group	LF (70/455 kHz)
Dimension	80 x 40 x 80 mm
Installation	metal-free (clear zone) on metal flush in metal
Antenna type	round
Connection	M12x1 male
Housing material	PBT
Storage temperature	-20...85 °C
Ambient temperature	0...70 °C
Protection degree	IP67
Approval/Conformity	CE, UL-FILE E227256, Vol.X1, BIS

Appropriate data carrier

	BIS0006 BIS0007	BIS000C BIS000H BIS000K	BIS000M	BIS000N	BIS0017	BIS0019 BIS001C	BIS001E	BIS001H
Data carrier distance to metal	flush	metal-free	flush	metal-free	metal-free	metal-free	metal-free	metal-free
Working distance for writing	1-13	2-16	0-15	0-18	10-30	0-18	0-18	0-8
Working distance for reading	1-13	2-16	0-15	0-18	10-30	0-18	0-18	0-8
Offset at distance								
	1 ±15		±15	±17		±17	±16	±6.5
	2	±15						
	3 ±14	±14	±15	±17		±17	±16	±6
	5 ±11	±12	±14	±17		±17	±16	±5.5
	7 ±10	±11	±12	±15		±15	±14	
	10 ±8	±8	±12	±15	±30	±15	±14	
	15			±14	±27	±14	±11	
	20				±20			

Dimensions in mm



1) Sensing surface

	BIS0021	BIS002K BIS002N
	metal-free	metal-free
	0-16	0-20
	0-16	0-20
	±16	±18
	±16	±18
	±16	±18
	±14	±18
	±12	±18
		±16

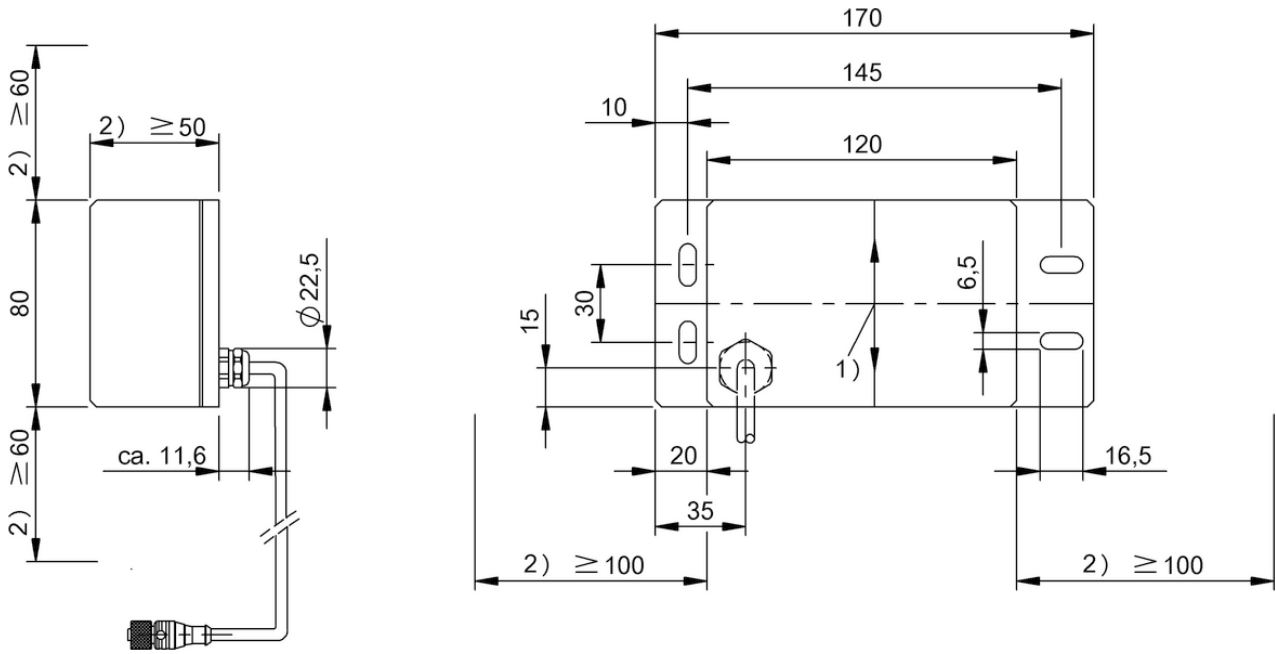


5 m cable PU	BIS00PN BIS C-351-PU1-05
10 m cable PU	BIS00PP BIS C-351-PU1-10
Product Group	LF (70/455 kHz)
Dimension	80 x 50 x 170 mm
Installation	metal-free (clear zone)
Antenna type	Rod
Connection	M12x1-Female
Housing material	POM, mounting plate aluminum
Storage temperature	-20...85 °C
Ambient temperature	0...70 °C
Protection degree	IP67
Approval/Conformity	CE, UL-FILE E227256, Vol.X1, BIS

Appropriate data carrier

	BIS0028	BIS002A	BIS002E
Data carrier distance to metal	metal-free		
Working distance for writing	0-45		
Working distance for reading	0-45		
Offset at distance			
	1	±15	
	2	±15	
	3	±15	
	4	±15	
	5	±15	
	6	±15	
	10	±15	
	20	±15	

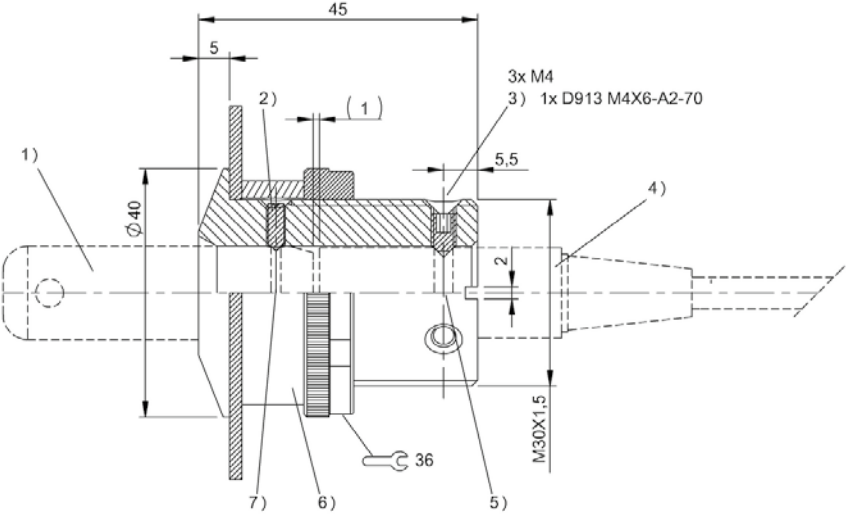
Dimensions in mm



1) Sensing surface, 2) Clear zone



	BAM012C BIS C-300-ZA1
Product Group	LF (70/455 kHz)
Dimension	Ø 40 x 45 mm
Installation	—
Antenna type	—
Connection	—
Housing material	—
Storage temperature	-20...85 °C
Ambient temperature	0...70 °C
Protection degree	—
Approval/Conformity	CE



1) Data carrier, 2) Spring-loaded compression piece, 3) Threaded pin, 4) Read/write head, 5) Notch in read/write head, 6) Spacer ring, 7) Notch in data carrier



0.7 m cable	BIS00JA BIS C-380-01/10-00,7	
1 m cable		
1,5 m cable		
5 m cable		
Style 1	M12x1	
Style 2	M30x1.5	
Antenna type	round	
Storage temperature	-20...85 °C	
Ambient temperature	0...70 °C	
Housing material	Brass, nuts nickel plated brass	
Protection degree	IP67	
Installation	metal-free (clear zone)	
Approval/Conformity	CE	
Productview	Page 364	

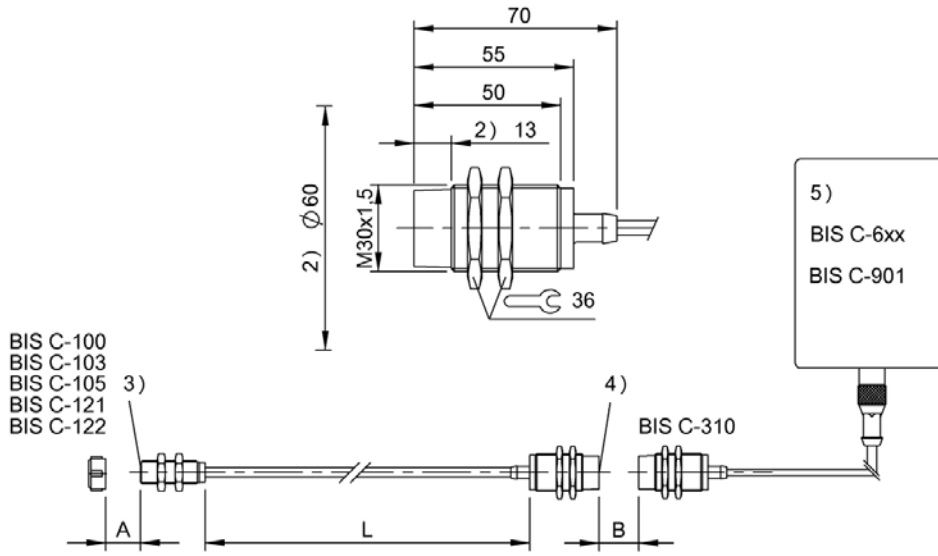
Appropriate data carrier

	BIS0002 BIS0004 BIS0009 BIS000T BIS0011	
Installation	flush	
Appropriate read/write head	BIS00P5	
	BIS005Z	
	BIS00P6	

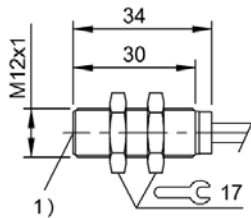


	BIS00JJ BIS C-380-06/06-01	BIS00JP BIS C-380-10/10-01
	BIS00JK BIS C-380-06/06-01,5	
	BIS00N9 BIS C-380-06/06-05	BIS00JR BIS C-380-10/10-05
	M16x1	M30x1.5
	M16x1	M30x1.5
	round	round
	-20...85 °C	-20...85 °C
	0...70 °C	0...70 °C
	Brass, nuts nickel plated brass	Brass, nuts nickel plated brass
	IP67	IP67
	metal-free (clear zone) on metal flush in metal	metal-free (clear zone)
	CE	CE
	Page 364	Page 365

	BIS0002 BIS0004 BIS0009 BIS000T BIS0011	BIS000N BIS001E BIS C-104-xx/A BIS C-108-xx/L BIS C-128-xx/L
	flush	metal-free
	BIS00P5	BIS00PF
	BIS005Z	BIS00PH
	BIS00P6	BIS00PJ

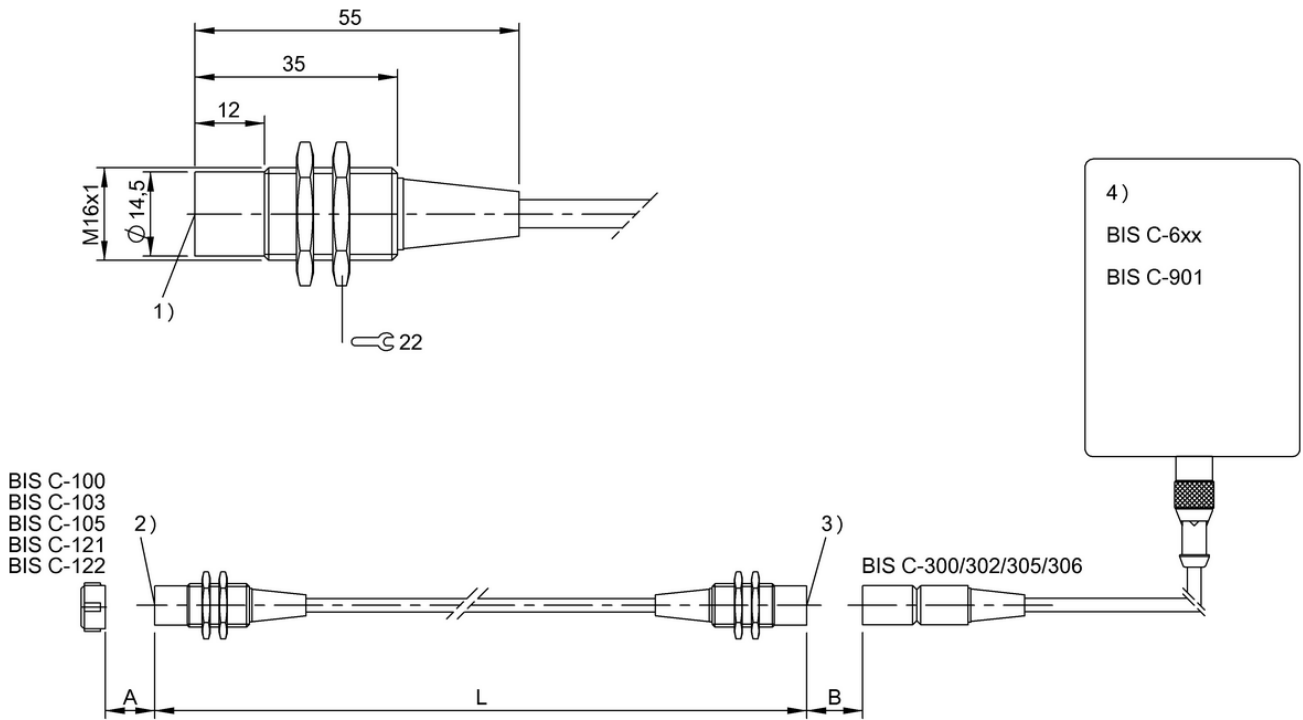


6)



1) Sensing surface, 2) Clear zone, 3) Active surface data carrier, 4) Active surface R/W head, 5) Processor or converter, 6) see remarks

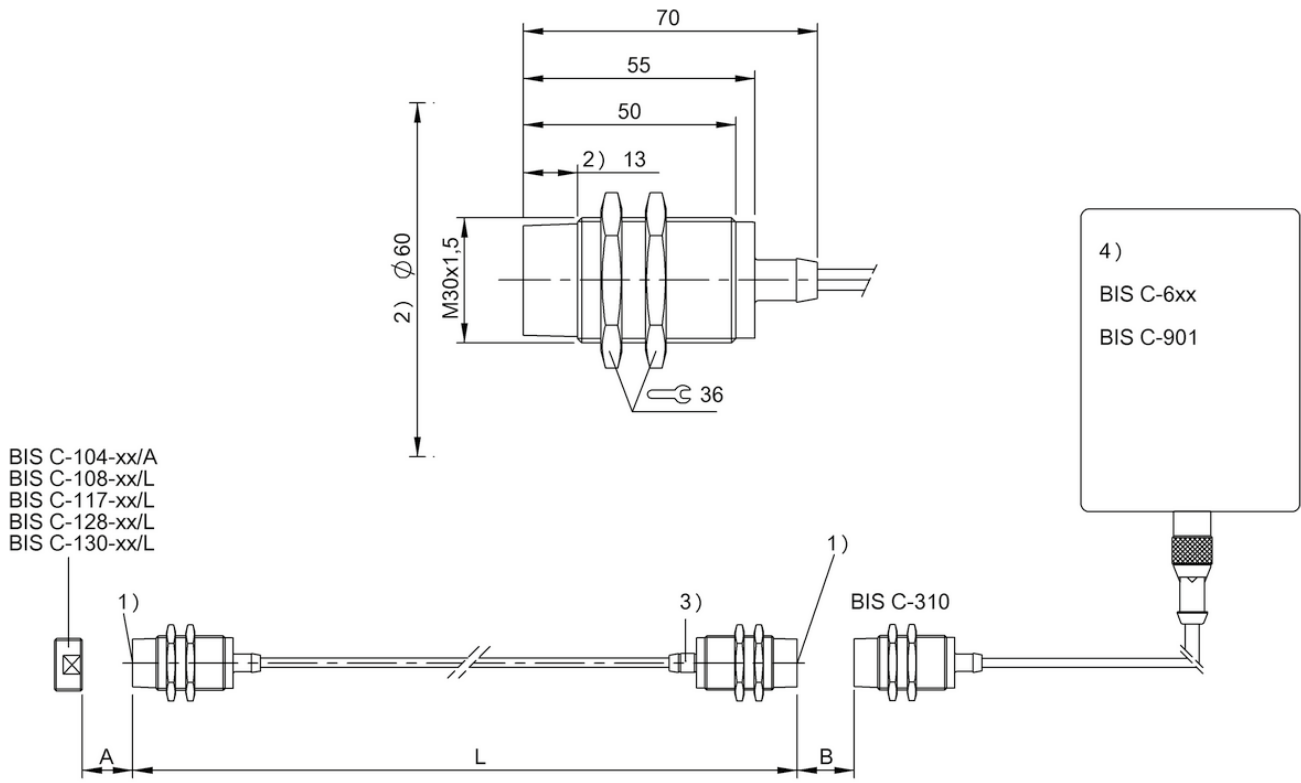
BIS00JA



5)

1) Sensing surface, 2) Active surface data carrier, 3) Active surface R/W head, 4) Processor or converter, 5) see remarks

BIS00JJ, BIS00JK, BIS00N9



5)

1) Sensing surface, 2) Clear zone, 3) Yellow marking, 4) Processor or converter, 5) see remarks

BIS00JP, BIS00JR



	BIS013W BIS V-6108-048-C102	
Product Group	Multi-Frequency Processor	
Interface	Profinet I/O (IRT), Profinet I/O (IRT) 2-port switch	
Supported RFID technologies	LF 125 kHz (BIS VL), LF 70/455 kHz (BIS C), HF 13.56 MHz (BIS VM), UHF 860/960 MHz (BIS VU)	
Number of connectable R/W heads / antennas	4	
Operating voltage U _b	24 V DC LPS Class 2	
Housing material	Zinc, Die casting	
Ambient temperature	0...60 °C	
IP rating	IP65, with connector	
Approval/Conformity	CE, EAC, cULus, WEEE	
Connection	2x M12x1-Female, 4-pin, D-coded 7/8"-Male, 5-pin	
Productview	Page 378	



BIS012E BIS V-6102-019-C101	BIS0187 BIS V-6107-039-C105	BIS018K BIS V-6107-039-C106
Multi-Frequency Processor	Multi-Frequency Processor	Multi-Frequency Processor
Profibus DP Slave galvanically isolated	Ethernet TCP/IP, USB	Ethernet TCP/IP, USB
LF 125 kHz (BIS VL), LF 70/455 kHz (BIS C), HF 13.56 MHz (BIS VM), UHF 860/960 MHz (BIS VU)	LF 125 kHz (BIS VL), LF 70/455 kHz (BIS C), HF 13.56 MHz (BIS VM), UHF 860/960 MHz (BIS VU)	LF 125 kHz (BIS VL), LF 70/455 kHz (BIS C), HF 13.56 MHz (BIS VM), UHF 860/960 MHz (BIS VU)
4	4	4
24 V DC LPS Class 2	24 V DC LPS Class 2	24 V DC LPS Class 2
Zinc, Die casting	Zinc, Die casting	Zinc, Die casting
0...60 °C	0...60 °C	0...60 °C
IP65, with connector	IP65, with connector	IP65, with connector
CE, EAC, cULus, WEEE	CE, EAC, cULus, WEEE	CE, EAC, cULus, WEEE
M12x1-Male, 5-pin, B-coded M12x1-Female, 5-pin, B-coded 7/8"-Male, 5-pin	M12x1-Female, 4-pin, D-coded M12x1-Female, 5-pin, A-coded 7/8"-Male, 5-pin	M12x1-Female, 4-pin, D-coded M12x1-Female, 5-pin, A-coded 7/8"-Male, 4-pin
Page 378	Page 379	Page 379



	BIS014C BIS V-6106-034-C102	
Product Group	Multi-Frequency Processor	
Interface	Ethernet/IP	
Supported RFID technologies	LF 125 kHz (BIS VL), LF 70/455 kHz (BIS C), HF 13.56 MHz (BIS VM), UHF 860/960 MHz (BIS VU)	
Number of connectable R/W heads / antennas	4	
Operating voltage Ub	24 V DC LPS Class 2	
Housing material	Zinc, Die casting	
Ambient temperature	0...60 °C	
IP rating	IP65, with connector	
Approval/Conformity	CE, EAC, cULus, WEEE	
Connection	2x M12x1-Female, 4-pin, D-coded 7/8"-Male, 5-pin	
Productview	Page 380	



BIS0146 BIS V-6106-034-C104	BIS0147 BIS V-6110-063-C102	BIS014E BIS V-6111-073-C103
Multi-Frequency Processor	Multi-Frequency Processor	Multi-Frequency Processor
Ethernet/IP	EtherCAT	CC-Link
LF 125 kHz (BIS VL), LF 70/455 kHz (BIS C), HF 13.56 MHz (BIS VM), UHF 860/960 MHz (BIS VU)	LF 125 kHz (BIS VL), LF 70/455 kHz (BIS C), HF 13.56 MHz (BIS VM), UHF 860/960 MHz (BIS VU)	LF 125 kHz (BIS VL), LF 70/455 kHz (BIS C), HF 13.56 MHz (BIS VM)
4	4	4
24 V DC LPS Class 2	24 V DC LPS Class 2	24 V DC LPS Class 2
Zinc, Die casting	Zinc, Die casting	Zinc, Die casting
0...60 °C	0...60 °C	0...60 °C
IP65, with connector	IP65, with connector	IP65, with connector
CE, EAC, cULus, WEEE	CE, EAC, cULus, WEEE	CE, EAC, cULus, WEEE
2x M12x1-Female, 4-pin, D-coded 7/8"-Male, 4-pin	2x M12x1-Female, 4-pin, D-coded 7/8"-Male, 5-pin	M12x1-Male, 5-pin, A-coded M12x1-Female, 5-pin, A-coded 7/8"-Male, 5-pin
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	BIS008U BIS C-600-007-650-00-KL1	
Product Group	LF (70/455 kHz)	
Interface	RS232	
Supported RFID technologies	LF 70/455 kHz (BIS C)	
Number of connectable R/W heads / antennas	2	
Operating voltage U _b	19.2...28.8 VDC	
Housing material	ABS	
Ambient temperature	0...60 °C	
IP rating	IP65 with read/write head	
Approval/Conformity	CE, cULus, EAC, WEEE	
Connection	Terminal strip, 19-pin	
Productview	Page 382	



	BIS00K3 BIS C-6008-048-650-06-ST23	BIS00K4 BIS C-6028-048-050-06-ST22	BIS00TU BIS C-6028-048-050-06-ST28
	LF (70/455 kHz)	LF (70/455 kHz)	LF (70/455 kHz)
	Profinet I/O (IRT), Profinet I/O (IRT) 2-port switch	Profinet	Profinet
	LF 70/455 kHz (BIS C)	LF 70/455 kHz (BIS C)	LF 70/455 kHz (BIS C)
	2	2	2
	19.2...28.8 VDC	19.2...28.8 VDC	19.2...28.8 VDC
	ABS	Aluminum, Die casting	Aluminum, Die casting
	0...60 °C	0...60 °C	0...60 °C
	IP65, with connector	IP65, with connector	IP65, with connector
	CE, cULus, EAC, WEEE	CE, cULus, EAC, WEEE	CE, cULus, EAC, WEEE
	Female, 4-pin, D-coded M12x1-Female, 4-pin, D-coded Male, 5-pin	2x RJ45-Female, 8-pin Male, 5-pin	Female, 4-pin, D-coded M12x1-Female, 4-pin, D-coded Male, 5-pin
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Sensors

RFID

Machine Vision and
Optical Identification

Human Machine
Interfaces

Safety

Industrial Networking

Software and
System Solutions

Power Supply

Connectivity

Accessories



	BIS009F BIS C-6002-019-654-03-ST11	
Product Group	LF (70/455 kHz)	
Interface	Profinet DP Slave galvanically isolated	
Supported RFID technologies	LF 70/455 kHz (BIS C)	
Number of connectable R/W heads / antennas	1	
Operating voltage U_b	19.2...28.8 VDC	
Housing material	ABS	
Ambient temperature	0...60 °C	
IP rating	IP65 with read/write head	
Approval/Conformity	CE, cULus, EAC, WEEE	
Connection	Male, 5-pin, B-coded M12x1-Female, 5-pin, B-coded Male, 5-pin	
Productview	Page 384	



BIS009L BIS C-6002-028-650-03-KL2	BIS0099 BIS C-6002-019-650-03-KL2	BIS009A BIS C-6002-019-650-03-ST11
LF (70/455 kHz)	LF (70/455 kHz)	LF (70/455 kHz)
Profibus DP Slave galvanically isolated	Profibus DP Slave galvanically isolated	Profibus DP Slave galvanically isolated
LF 70/455 kHz (BIS C)	LF 70/455 kHz (BIS C)	LF 70/455 kHz (BIS C)
1	2	2
19.2...28.8 VDC	19.2...28.8 VDC	19.2...28.8 VDC
ABS	ABS	ABS
0...60 °C	0...60 °C	0...60 °C
IP65 with read/write head	IP65 with read/write head	IP65 with read/write head
CE, cULus, EAC, WEEE	CE, cULus, EAC, WEEE	CE, cULus, EAC, WEEE
Terminal strip, 19-pin	Terminal strip, 19-pin	Male, 5-pin, B-coded M12x1-Female, 5-pin, B-coded Male, 5-pin
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	BIS009J BIS C-6002-019-655-03-ST11	
Product Group	LF (70/455 kHz)	
Interface	Profibus DP Slave galvanically isolated	
Supported RFID technologies	LF 70/455 kHz (BIS C)	
Number of connectable R/W heads / antennas	2	
Operating voltage U_b	19.2...28.8 VDC	
Housing material	ABS	
Ambient temperature	0...60 °C	
IP rating	IP65 with read/write head	
Approval/Conformity	CE, cULus, EAC, WEEE	
Connection	Male, 5-pin, B-coded M12x1-Female, 5-pin, B-coded Male, 5-pin	
Productview	Page 385	



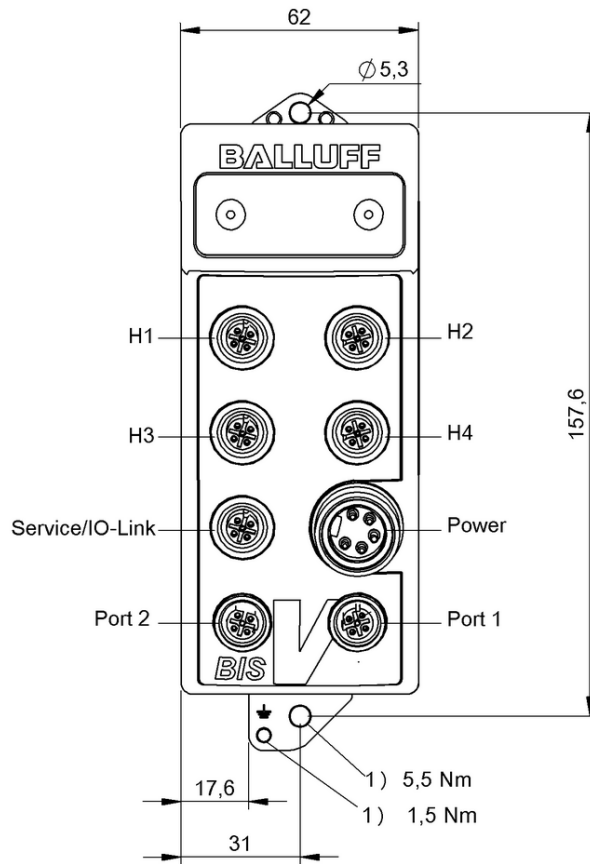
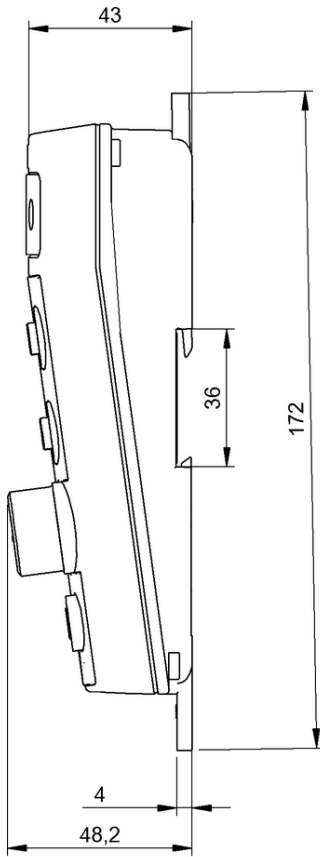
BIS009M BIS C-6002-028-650-03-ST11	BIS00A4 BIS C-602-019-650-03-KL2	BIS00AL BIS C-6022-019-050-03-ST10
LF (70/455 kHz)	LF (70/455 kHz)	LF (70/455 kHz)
Profibus DP Slave galvanically isolated	Profibus DP Slave galvanically isolated	Profibus DP Slave galvanically isolated
LF 70/455 kHz (BIS C)	LF 70/455 kHz (BIS C)	LF 70/455 kHz (BIS C)
2	2	2
19.2...28.8 VDC	19.2...28.8 VDC	19.2...28.8 VDC
ABS	ABS	Aluminum, Die casting
0...60 °C	0...60 °C	0...60 °C
IP65 with read/write head	IP65 with read/write head	IP65, with connector
CE, cULus, EAC, WEEE	CE, cULus, EAC, WEEE	CE, cULus, EAC, WEEE
Male, 5-pin, B-coded M12x1-Female, 5-pin, B-coded Male, 5-pin	Terminal strip, 19-pin	2x Female, 12-pin Male, 5-pin
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	BIS00AM BIS C-6022-019-050-03-ST14	
Product Group	LF (70/455 kHz)	
Interface	Profibus DP Slave galvanically isolated	
Supported RFID technologies	LF 70/455 kHz (BIS C)	
Number of connectable R/W heads / antennas	2	
Operating voltage U_b	19.2...28.8 VDC	
Housing material	Aluminum, Die casting	
Ambient temperature	0...60 °C	
IP rating	IP65, with connector	
Approval/Conformity	CE, cULus, EAC, WEEE	
Connection	Male, 5-pin, B-coded M12x1-Female, 5-pin, B-coded Male, 5-pin	
Productview	Page 386	

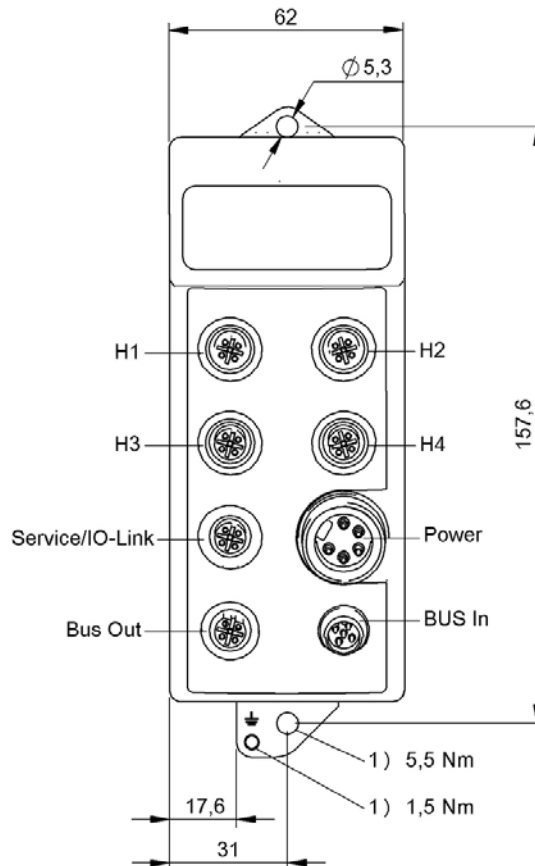
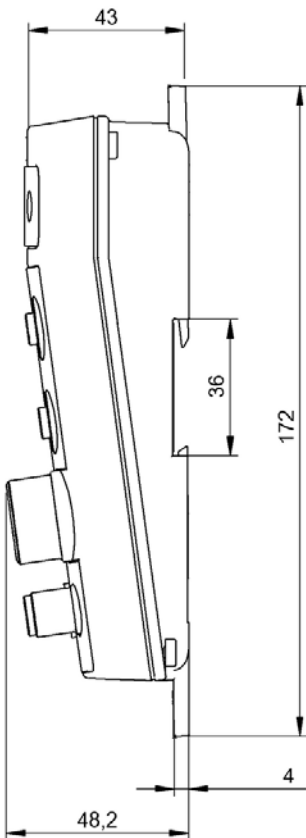


BIS00AY BIS C-6027-039-050-06-ST19	BIS00AU BIS C-6026-034-050-06-ST19	
LF (70/455 kHz)	LF (70/455 kHz)	
Ethernet TCP/IP	Ethernet/IP	
LF 70/455 kHz (BIS C)	LF 70/455 kHz (BIS C)	
2	2	
19.2...28.8 VDC	19.2...28.8 VDC	
Aluminum, Die casting	Aluminum, Die casting	
0...60 °C	0...60 °C	
IP65, with connector	IP65, with connector	
CE, cULus, EAC, WEEE	CE, cULus, EAC, WEEE	
Female, 4-pin, D-coded Male, 5-pin	Female, 4-pin, D-coded Male, 5-pin	
Page 387	Page 387	



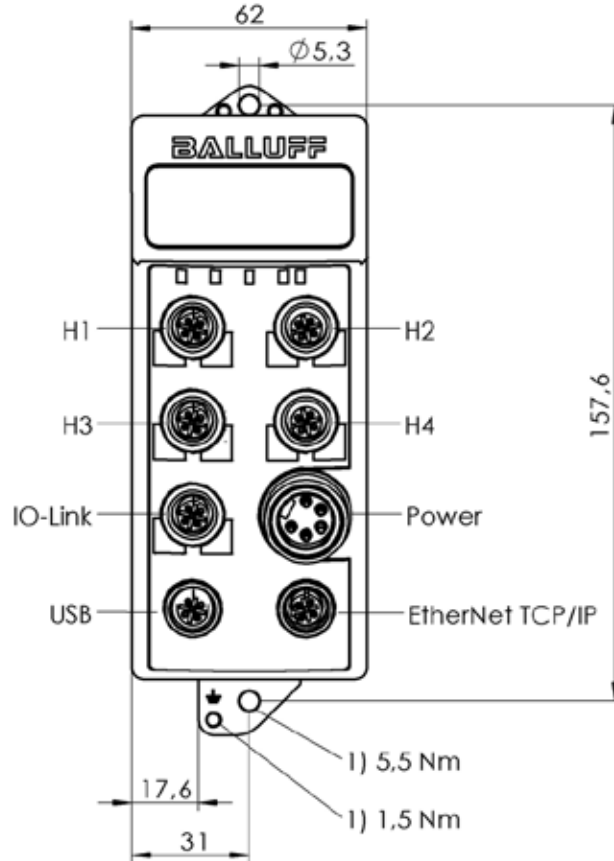
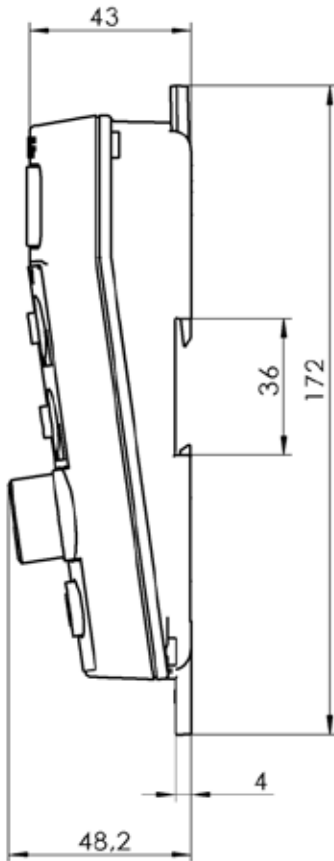
1) Tightening torque

BIS013W



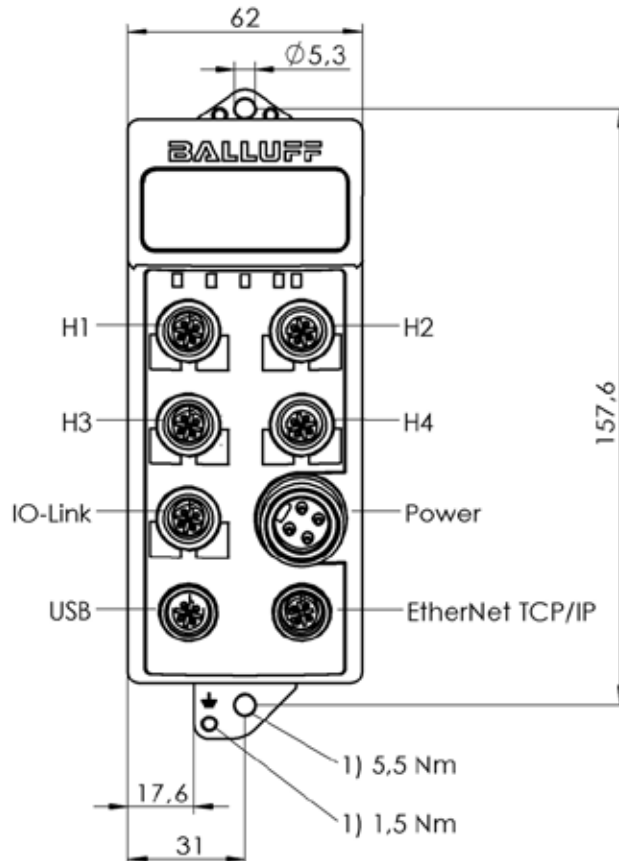
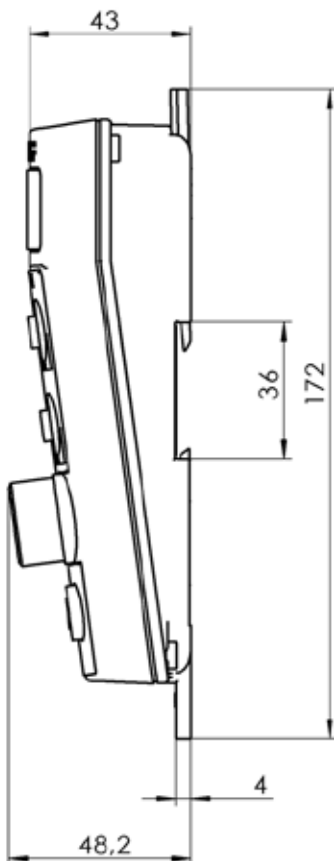
1) Tightening torque

BIS012E



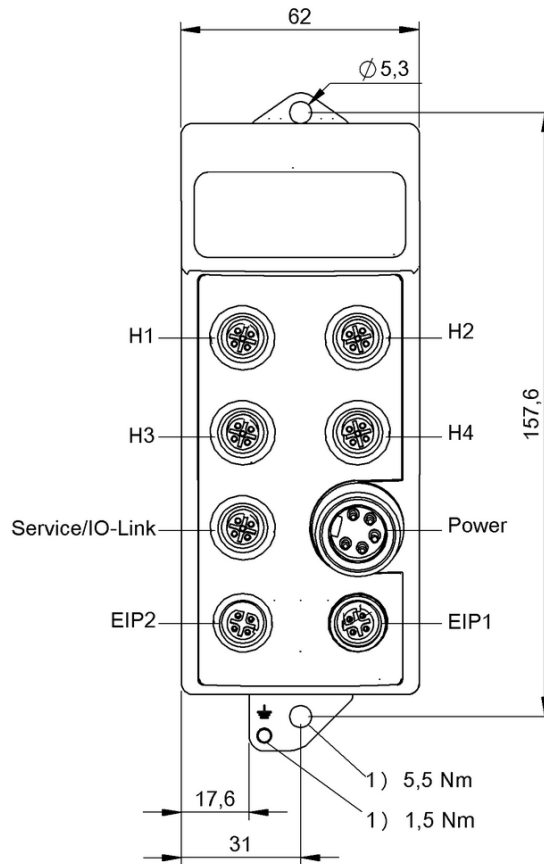
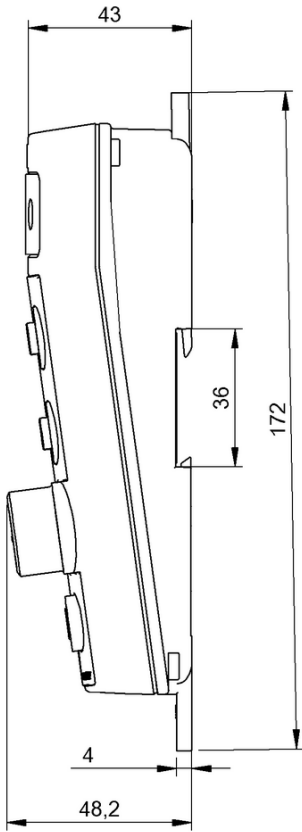
1) Tightening torque

BIS0187



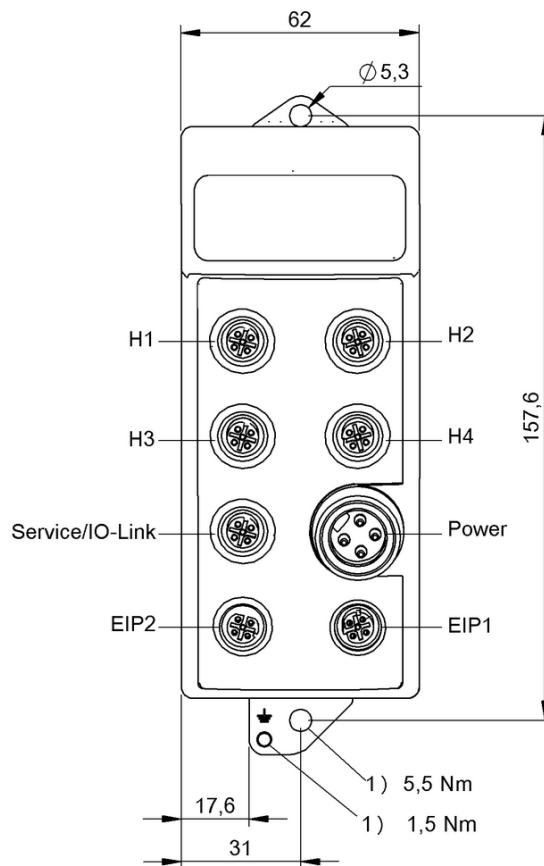
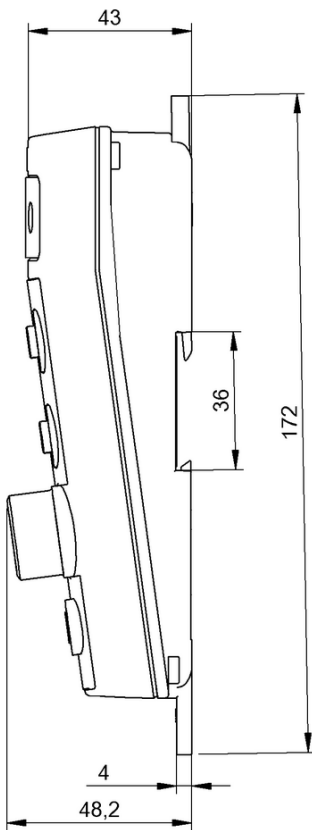
1) Tightening torque

BIS018K



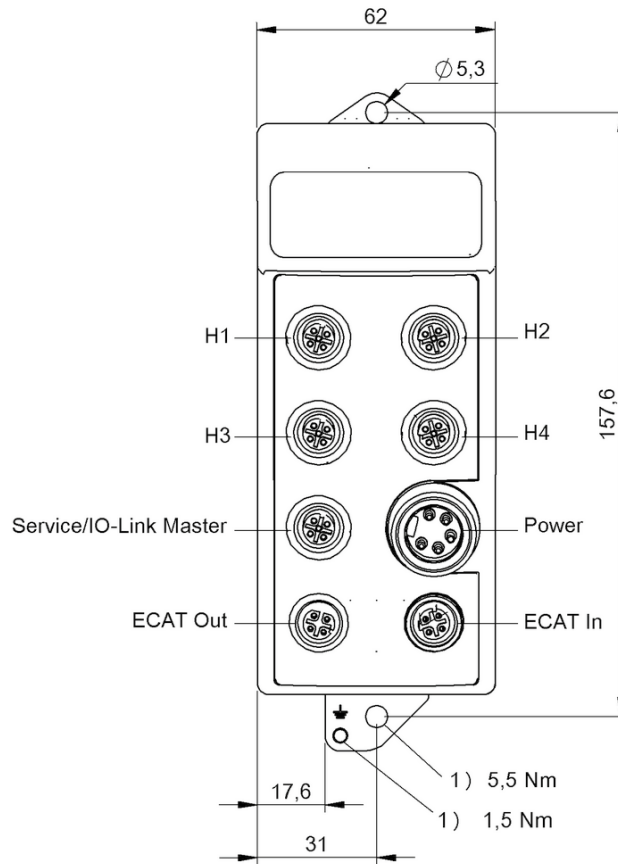
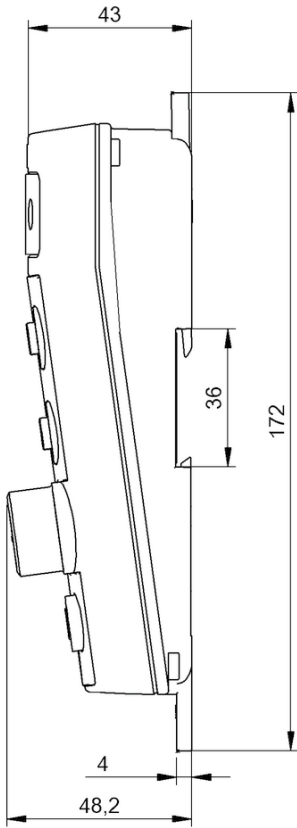
1) Tightening torque

BIS014C



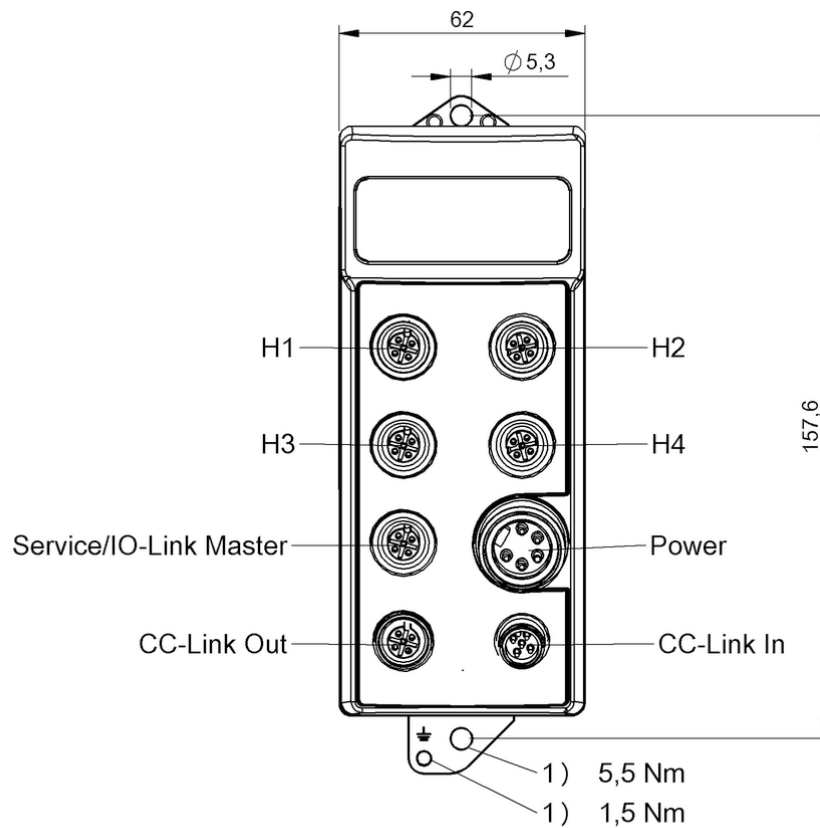
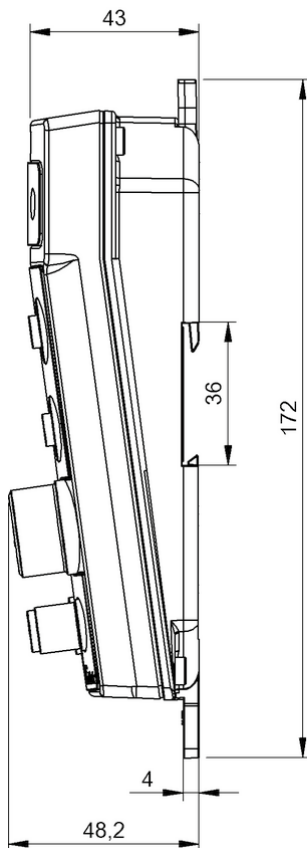
1) Tightening torque

BIS0146



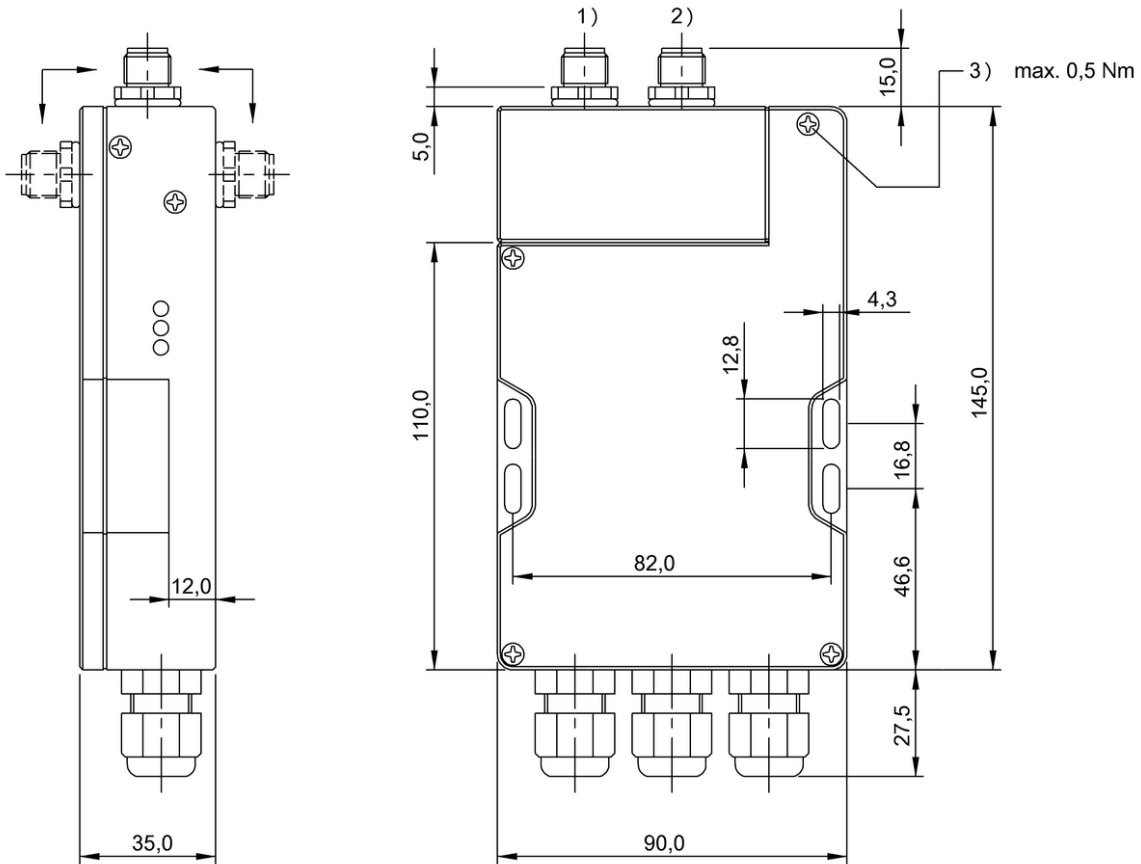
1) Tightening torque

BISO147



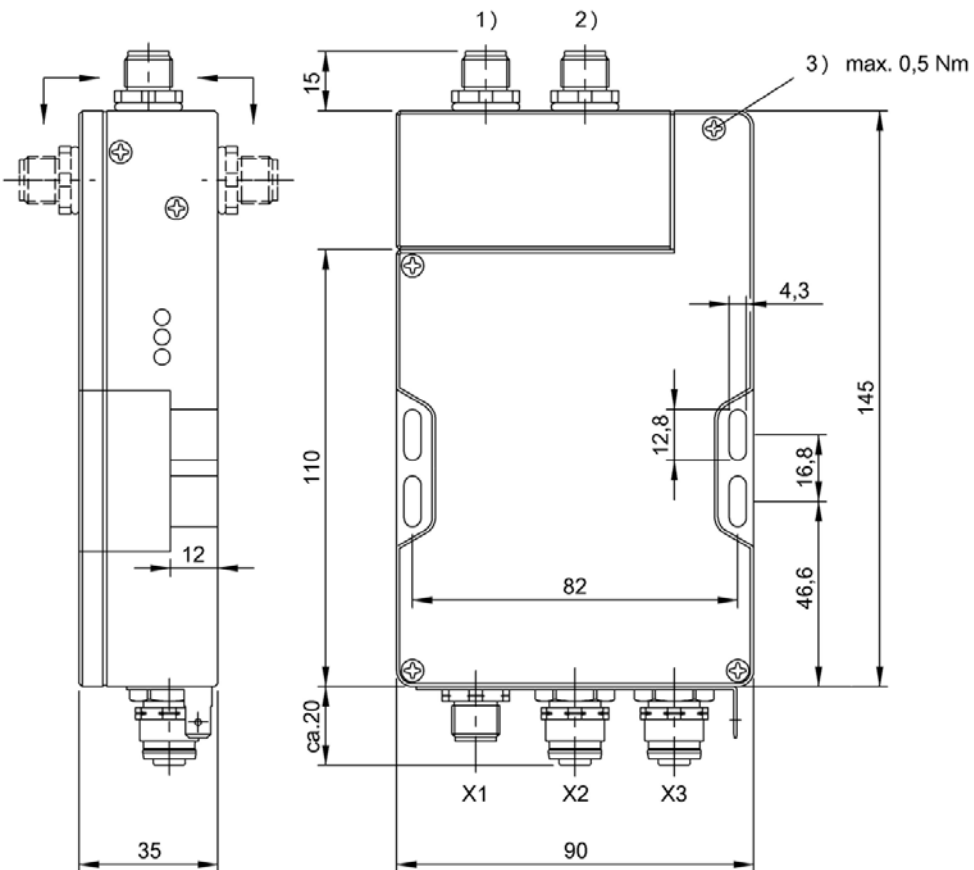
1) Tightening torque

BISO14E



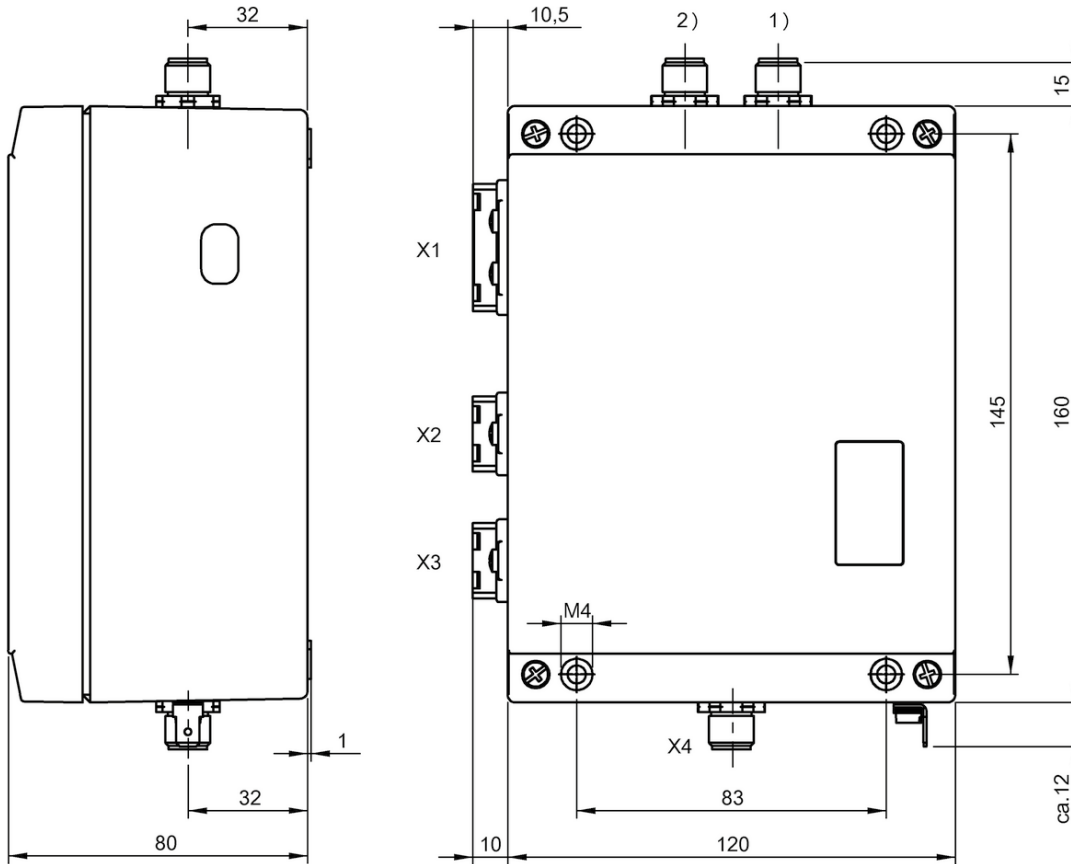
1) Head 1, 2) Head 2, 3) Tightening torque

BIS008U



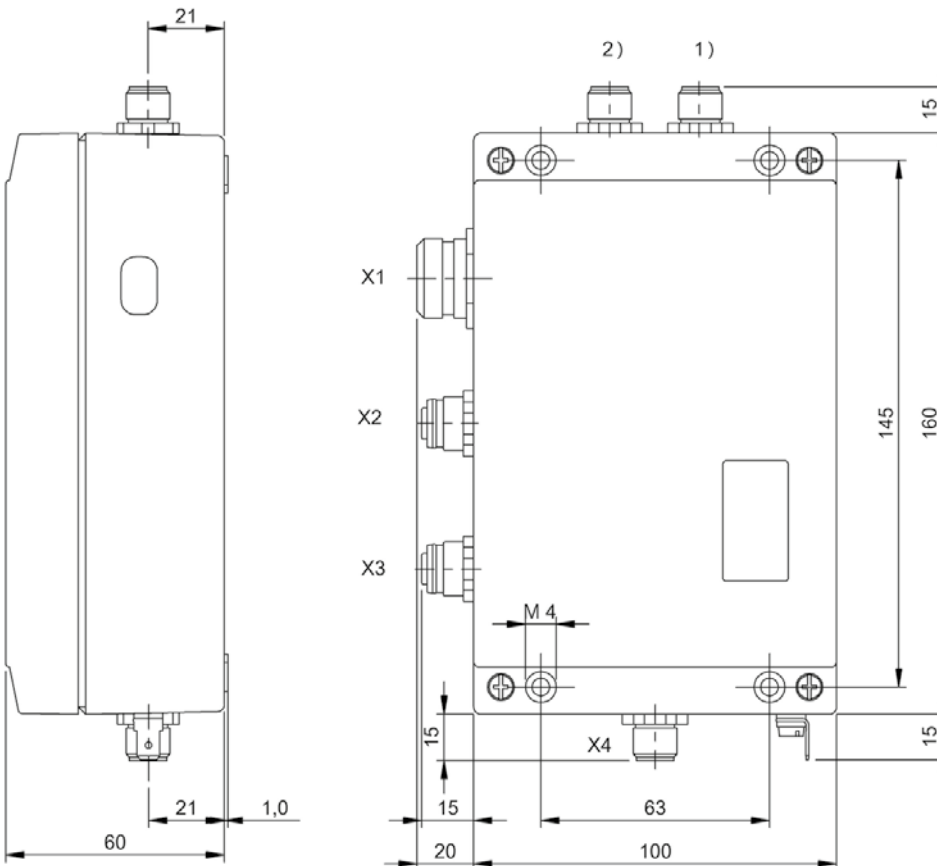
1) Head 1, 2) Head 2, 3) Tightening torque

BIS00K3



1) Head 1, 2) Head 2

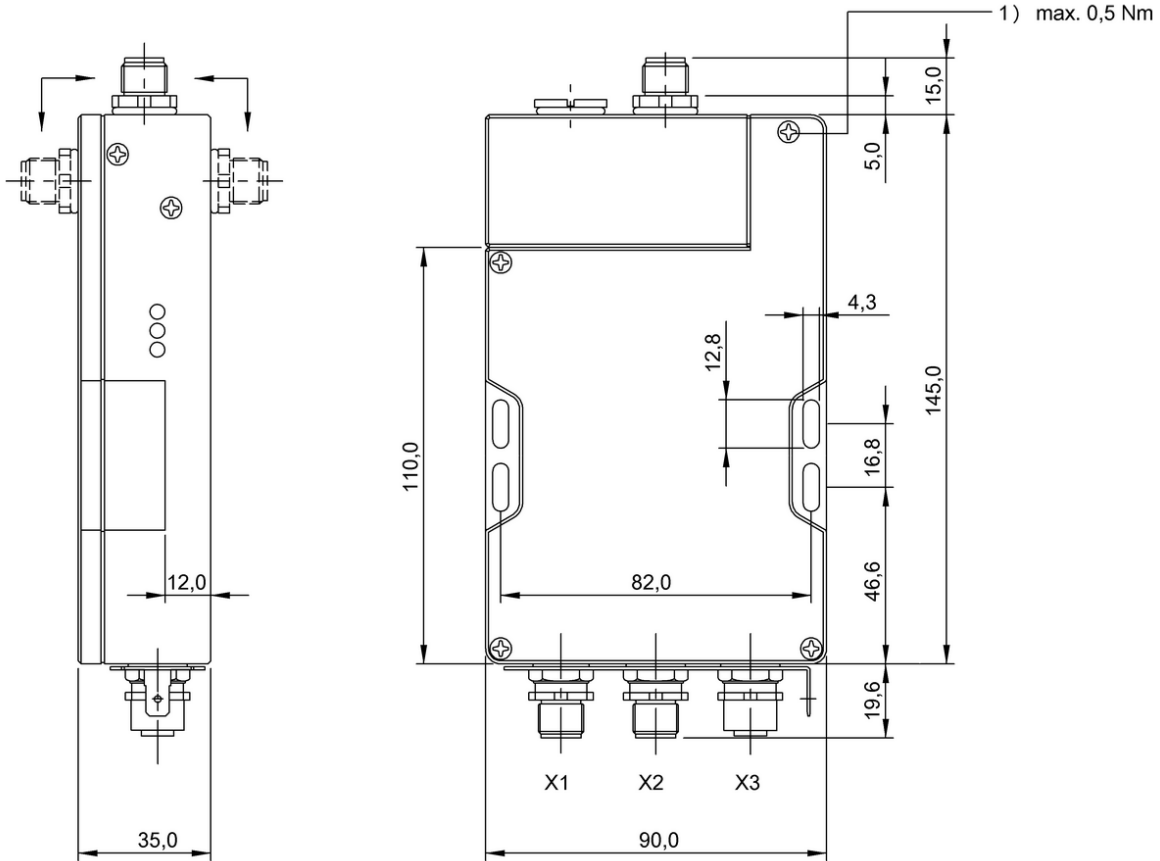
BISO0K4



1) Head 1, 2) Head 2

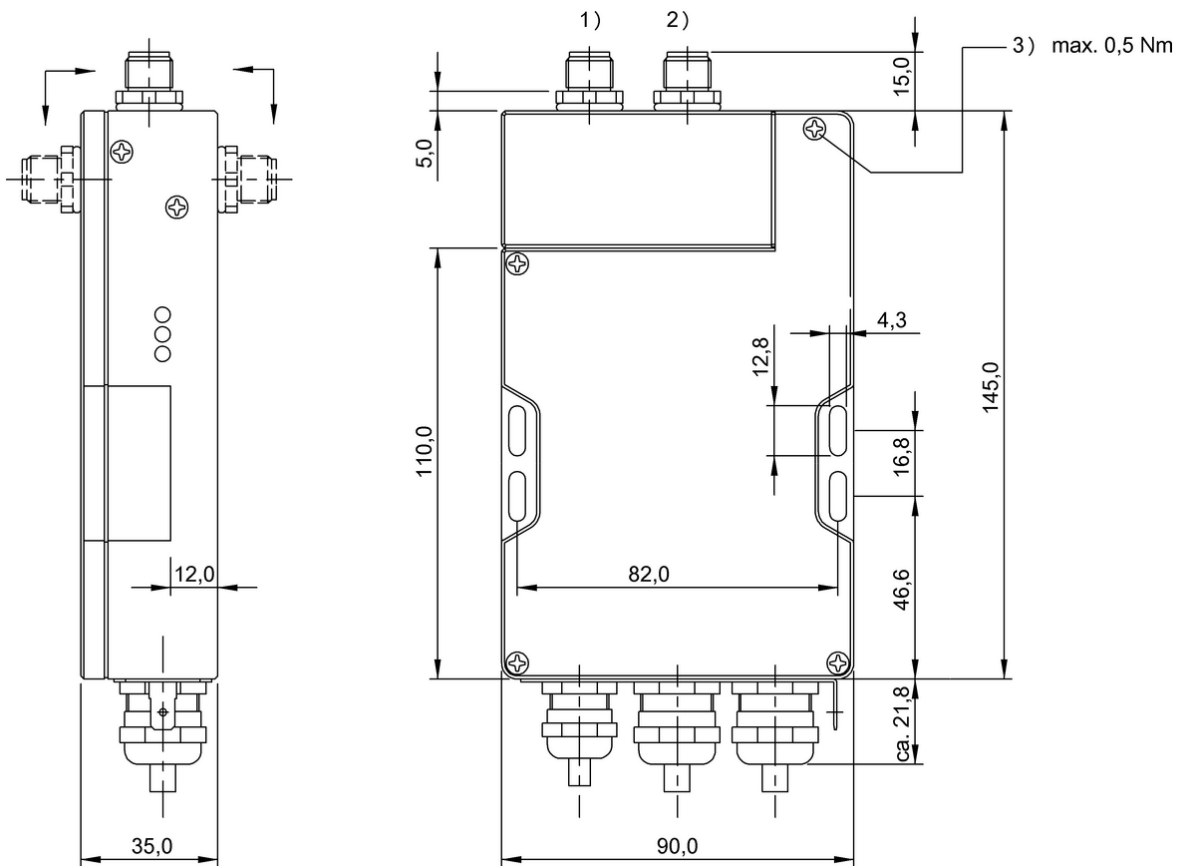
BISO0TU

Do you need more details? Our Product Finder at www.balluff.com provides you with product-specific information, including technical drawings, data sheets, user guides and more for each individual product. All items are available for download.



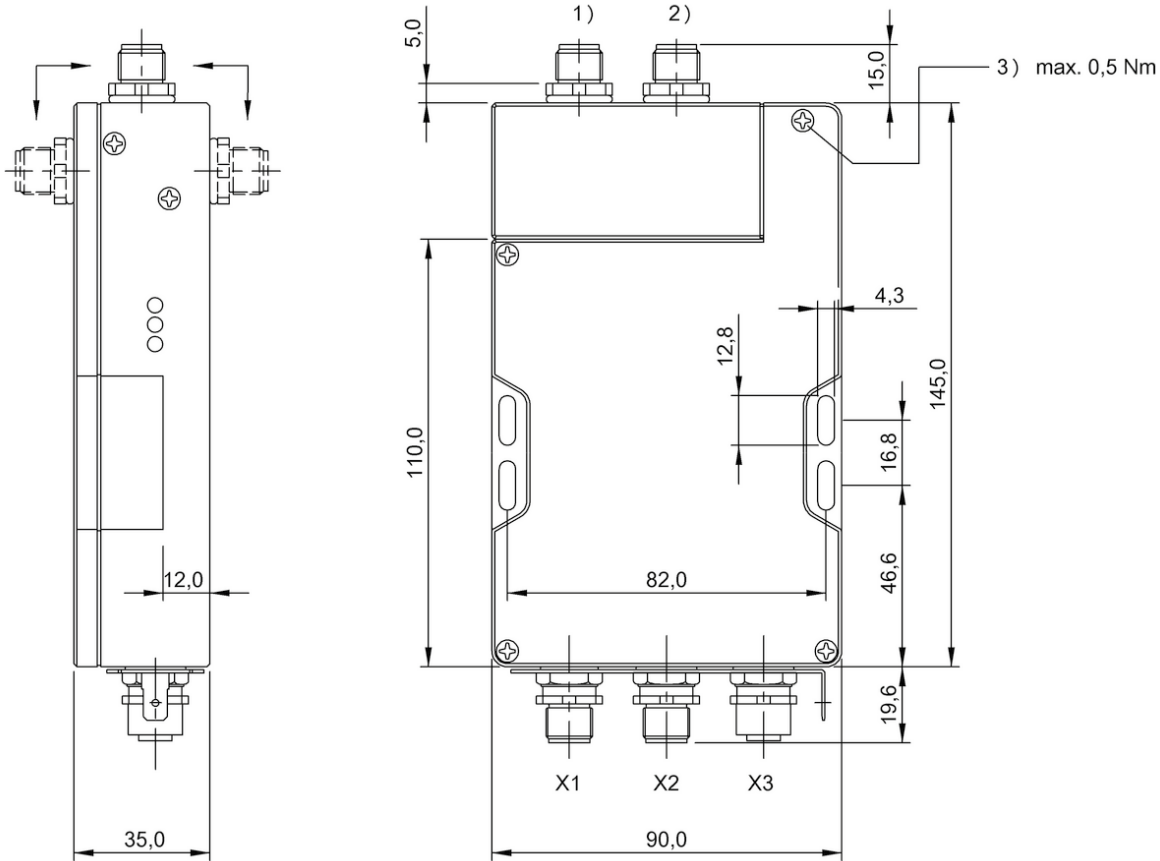
1) Tightening torque

BIS009F



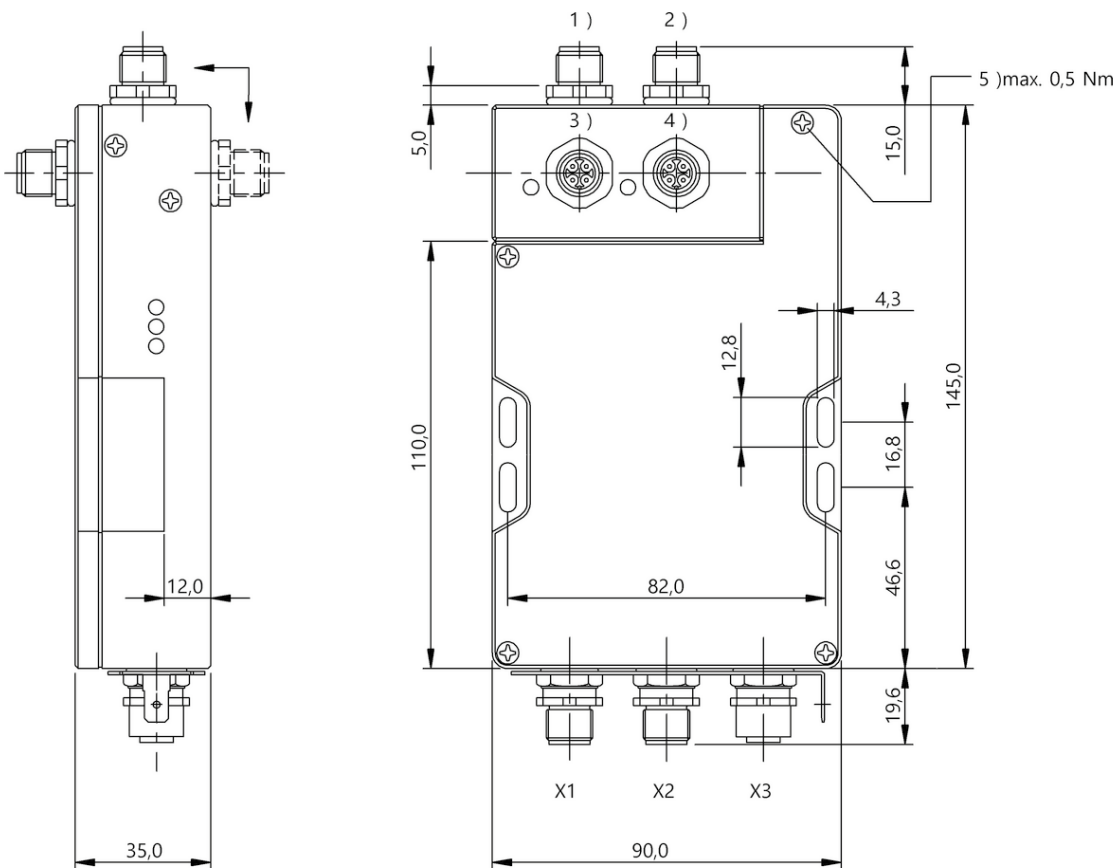
1) Head 1, 2) Head 2, 3) Tightening torque

BIS009L, BIS0099, BIS00A4



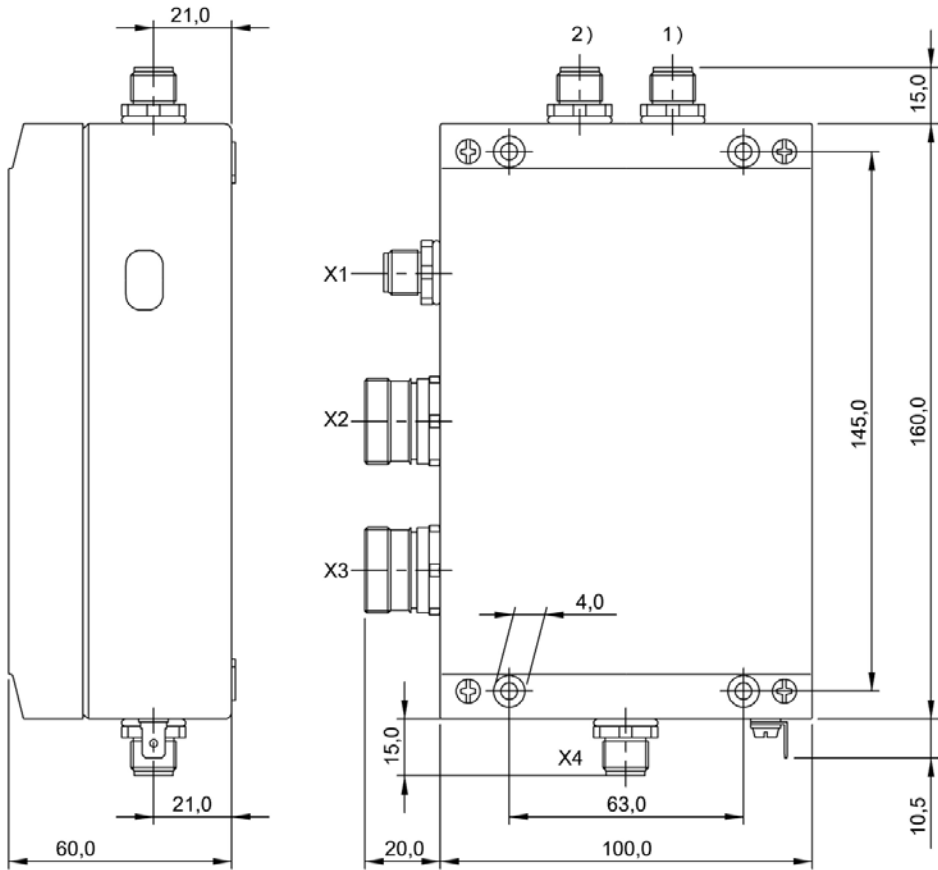
1) Head 1, 2) Head 2, 3) Tightening torque

BISO09A, BISO09M



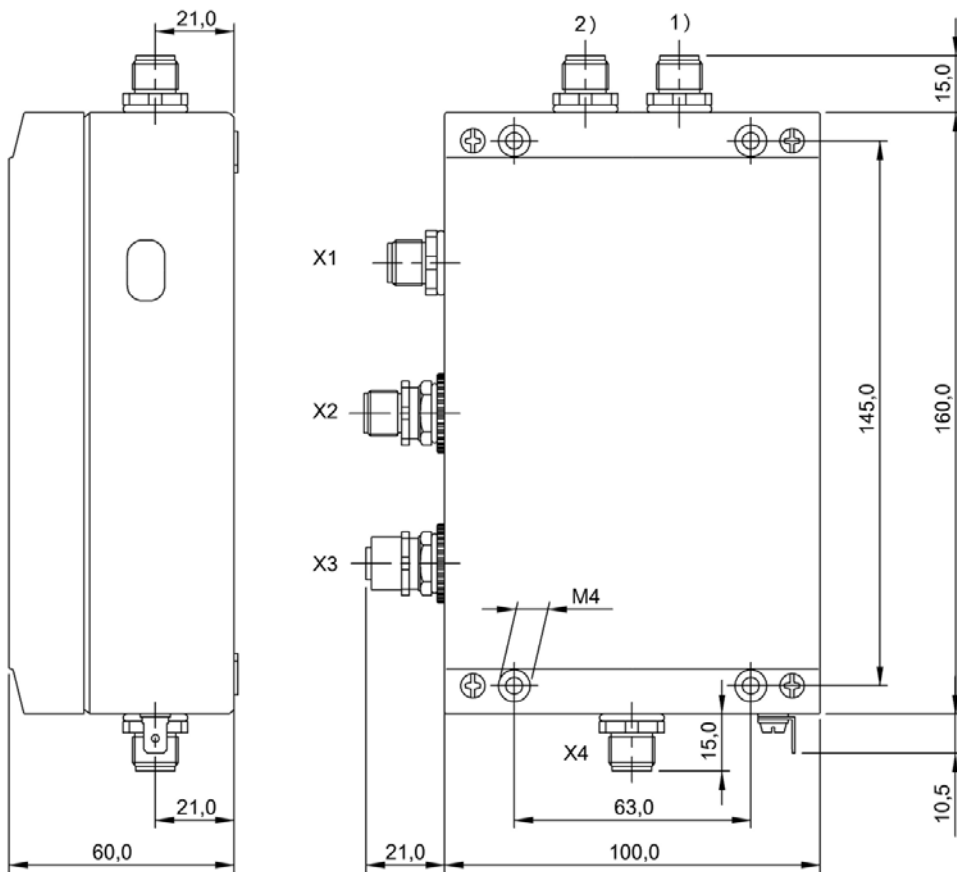
1) Head 1.1, 2) Head 2.1, 3) Head 1.2, 4) Head 2.2, 5) Tightening torque

BISO09J



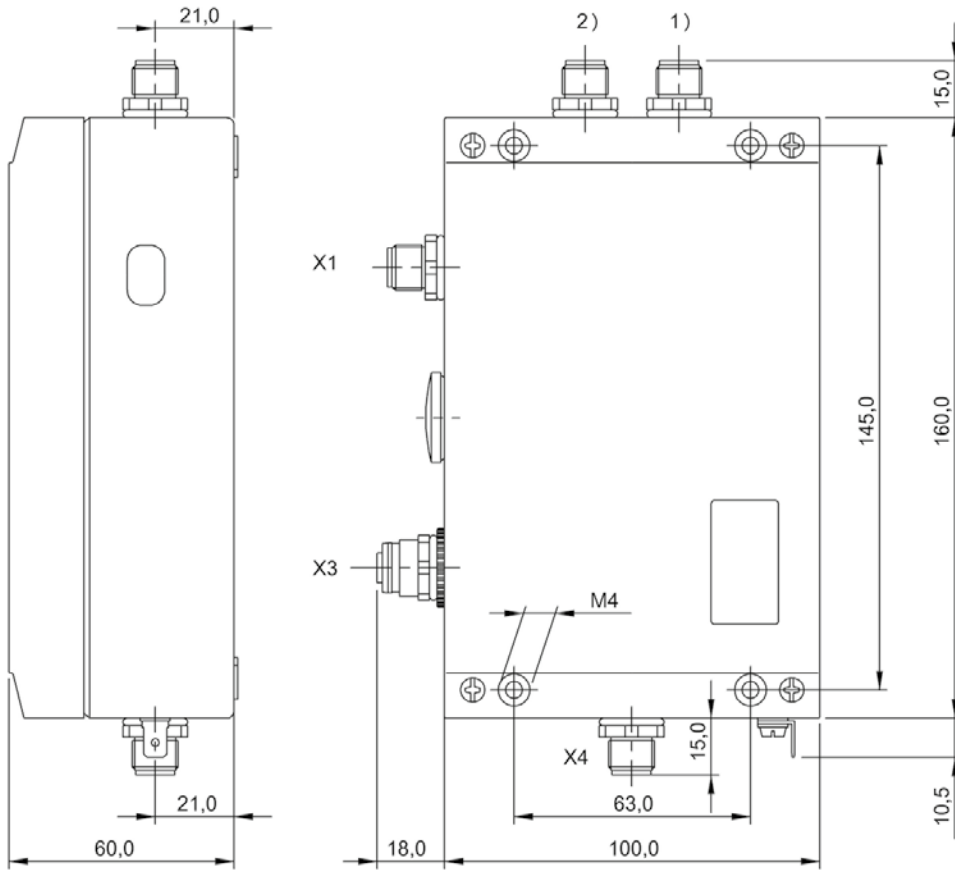
1) Head 1, 2) Head 2

BIS00AL



1) Head 1, 2) Head 2

BIS00AM



1) Head 1, 2) Head 2

BIS00AY, BIS00AU

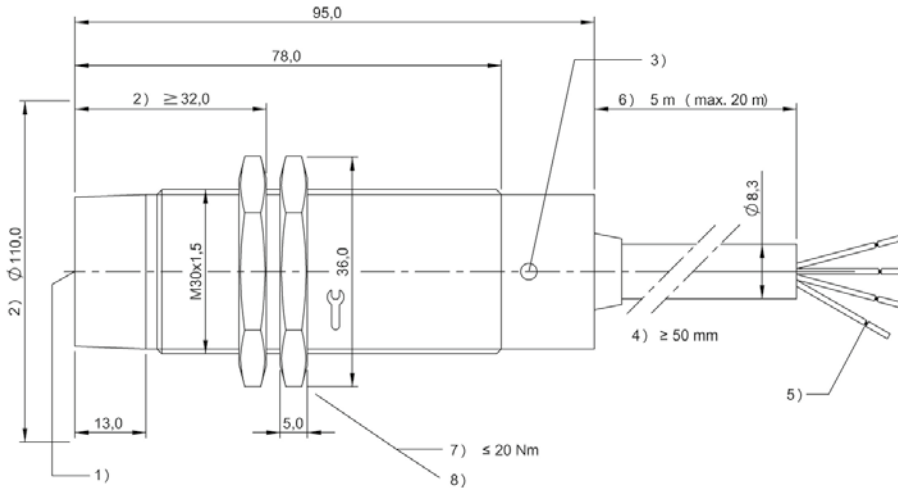


5 m cable PU	BIS00H6 BIS C-60R-001-08P-PU-05
10 m cable PU	BIS00H7 BIS C-60R-001-08P-PU-10
20 m cable PU	BIS00H8 BIS C-60R-001-08P-PU-20
Product Group	LF (70/455 kHz)
Dimension	Ø 30 x 95 mm
Installation	metal-free (clear zone)
Antenna type	round
Connection	Cable (shielded), 11-pin
Housing material	Brass
Interface	8 Bit parallel
Ambient temperature	0...50 °C
Protection degree	IP67
Approval/Conformity	CE

Appropriate data carrier

	BIS000T		BIS0011		BIS0004		BIS001E		BIS0002		BIS0019		BIS000M		BIS000N	
Data carrier distance to metal	flush	metal-free	metal-free		flush	metal-free	flush	metal-free	flush	metal-free	metal-free		flush		metal-free	
Working distance for reading	0-3	0-5	1-5		0-4	1-5	0-5	1-8	0-5	1-6	3-12		1-8		1-8	
Offset at distance																
	1	±2	±3	±3		±4	±2.5	±3	±4	±2.5	±3		±5		±7	
	3	±2	±3	±3		±2.5	±2.5	±3	±5	±3	±3	±7	±5		±7	
	5		±3	±3			±2.5	±3	±5	±3	±3	±6	±5		±7	
	7							±5			±5		±5		±6	

Dimensions in mm



1) Sensing surface, 2) Clear zone, 3) data valid, 4) Cable bending radius, 5) strip, 6) standard length, 7) Tightening torque, 8) see remarks

BIS000C		BIS0006	
flush	metal-free	flush	
0-6	1-8	1-8	
±7	±7	±4	
±7	±7	±4	
±6	±7	±4	
	±6	±4	



	BAE004C BIS C-720-01-03	BAE0088 BIS C-810-0-003	
Product Group	LF (70/455 kHz)	LF (70/455 kHz)	
Product name	Read / write gun	Standard	
Dimension	90 x 85 x 200 mm	97 x 55 x 232 mm	
Antenna type	—	—	
Use	for all C-85x with jack plug Ø6.3 mm	for all C-85x with jack plug Ø6.3 mm	
Display	—	LCD display 20 characters/4 lines	
Keypad	—	32 keys, alphanumeric (4x8)	
Operating voltage U _b	—	2.4 V DC rechargeable battery pack NiMH	
Storage temperature	-20...70 °C	—	
Ambient temperature	0...50 °C	0...50 °C	
Protection degree	IP40	IP40	
Approval/Conformity	CE	CE	
Productview	Page 394	Page 394	



	BAE0094 BIS C-850	BAE0095 BIS C-851	BAE0096 BIS C-852	BAE0097 BIS C-853
	LF (70/455 kHz)	LF (70/455 kHz)	LF (70/455 kHz)	LF (70/455 kHz)
	Read / write heads	Read / write heads	Read / write heads	Read / write heads
	—	Ø 14.5 x 94 mm	Ø 30 x 97 mm	27 x 27 x 72 mm
	—	round	round	Rod
	—	—	—	—
	—	—	—	—
	—	—	—	—
	—	-20...85 °C	-20...85 °C	-20...60 °C
	—	0...70 °C	0...70 °C	0...60 °C
	IP67	IP67	IP67	IP67
	CE	CE	CE	CE
	Seite 395	Page 395	Page 395	Page 395



PORTABLE LF READ/WRITE UNITS (70/455KHZ)

Do you need more details?

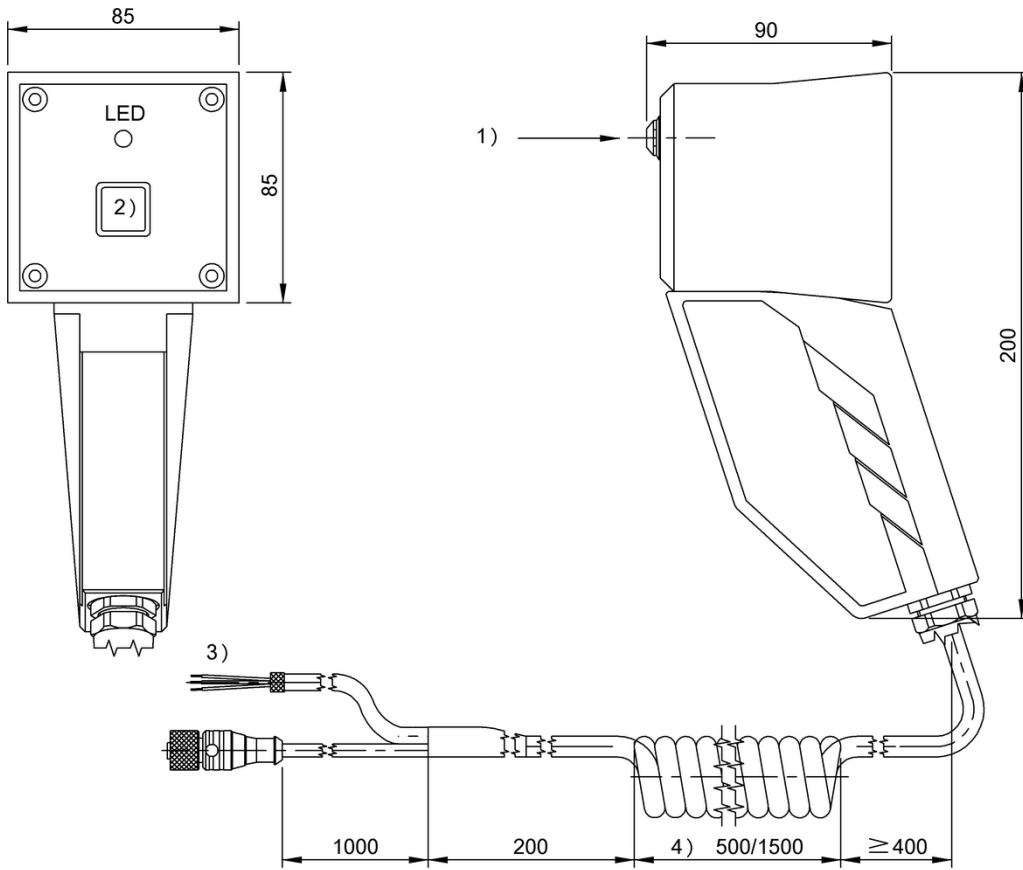
Our Product Finder at www.balluff.com

provides you with product-specific information,

including technical drawings, data sheets, user guides and more for each individual product.

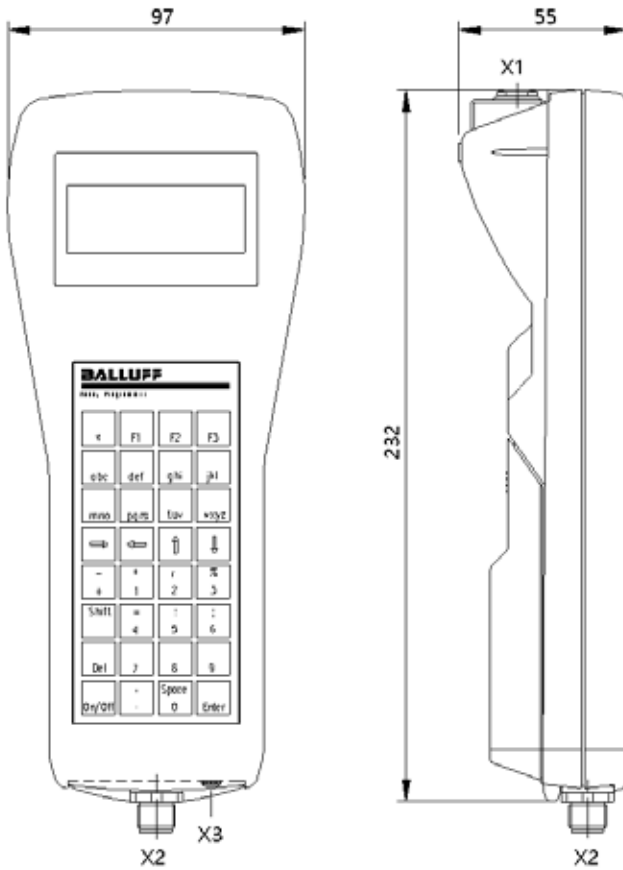
All items are available for download.

394 | RFID | LF (70/455 kHz)

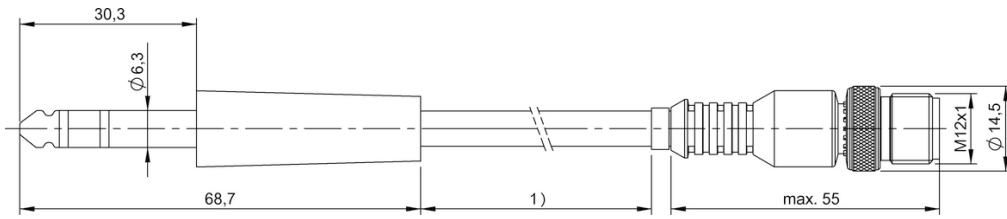


1) see remarks, 2) Button, 3) see connection diagram, 4) Spiral length retracted/extended

BAE004C

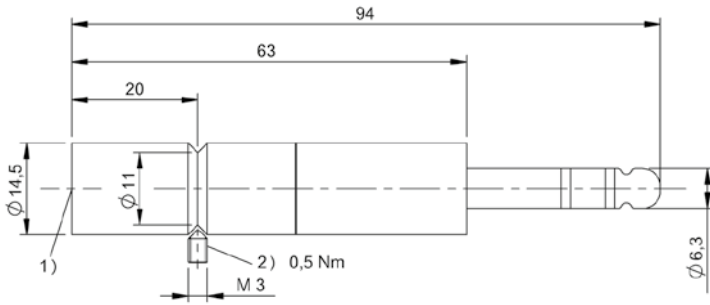


BAE0088



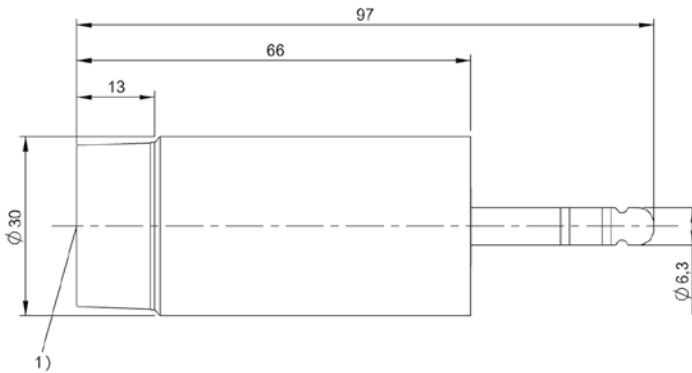
1) Cable length see text

BAE0094



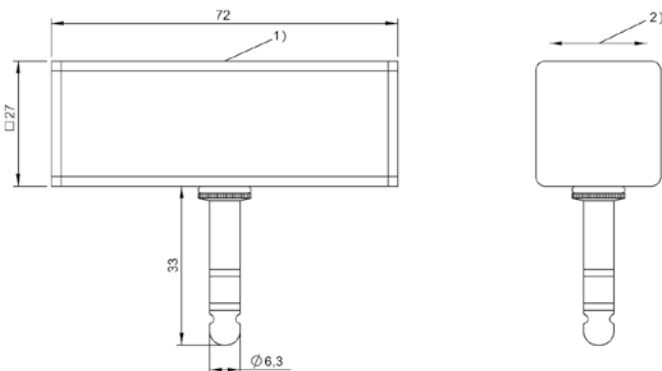
1) Sensing surface, 2) Tightening torque

BAE0095



1) Sensing surface

BAE0096



1) Sensing surface, 2) Read/write axis

BAE0097



Cost-effective solution
for simple identification tasks

RFID-SYSTEM LF (125 KHZ) BIS L



Our low-frequency RFID systems BIS L are suitable for applications that involve only the identification and require less data processing. For example, often only a (read-only) code is required for tracing. The 125-kHz systems function reliably up to ranges of 100 mm and are relatively neutral with respect to materials such as water, textiles, wood and aluminum.

Features

- Data carrier memory limited to 192 bytes
- For sending smaller quantities of data
- Wide range of data carriers
- Unique ID with 5 bytes, read-only
- Read-only data carriers available (protection against manipulation)



	BIS0038 BIS L-101-05/L-R0	
Product Group	LF (125 kHz)	
Dimension	Ø 30 x 1.6 mm	
UID serial number, read-only	5 Byte	
User data, read/write	—	
Memory type	EEPROM	
Antenna type	round	
Installation	metal-free (clear zone) on metal flush in metal	
Storage temperature	-40...95 °C	
Storage temperature temporary	—	
Ambient temperature	-25...85 °C	
Housing material	Epoxy resin-glass fiber, GF	
Protection degree	IP67	
Approval/Conformity	CE	
Productview	Page 407	

Suitable read/write head with max. read/write working distance

Installation	flush in metal	on metal	metal-free (clear zone)
BIS L-40x-xxx-001	0-18	0-24	0-40
BIS L-40x-xxx-002			0-27
BIS L-40x-xxx-003			
BIS L-40x-xxx-004			0-27
BIS VL-300	10-30	10-35	0-50
BIS VL-301	20-40	20-45	0-70
BIS VL-302	10-20	10-20	0-30
BIS VL-304	10-20	10-20	0-30
BIS VL-306			

Dimensions in mm

* Installation on request



BIS003C BIS L-102-05/L-R0	BIS003F BIS L-103-05/L-R0	
LF (125 kHz)	LF (125 kHz)	
Ø 50 x 1.6 mm	Ø 12.4 x 2 mm	
5 Byte	5 Byte	
—	—	
EEPROM	EEPROM	
round	round	
metal-free (clear zone) on metal flush in metal	metal-free (clear zone) on metal flush in metal	
-40...95 °C	—	
—	-40...130 °C 1x1000 h	
-25...85 °C	-25...85 °C	
Epoxy resin-glass fiber, GF	PPS, EP	
IP67	IP68	
CE	CE	
Page 407	Page 407	

flush in metal	on metal	metal-free (clear zone)	flush in metal	on metal	metal-free (clear zone)			
0-28	0-32	0-55			0-20			
					0-16			
					0-11			
					0-16			
15-40	15-45	0-70	3-10	3-12	0-25			
25-55	25-60	0-100						
10-20	10-25	0-40	3-8	4-10	0-15			
10-20	10-25	0-40	3-8	4-10	0-15			
					0-7			



	BIS003R BIS L-200-03/L	
Product Group	LF (125 kHz)	
Dimension	Ø 20 x 1.6 mm	
UID serial number, read-only	5 Byte	
User data, read/write	—	
Memory type	PROM	
Antenna type	round	
Installation	metal-free (clear zone) on metal flush in metal	
Storage temperature	-40...95 °C	
Storage temperature temporary	—	
Ambient temperature	-40...85 °C	
Housing material	Epoxy resin-glass fiber, GF	
Protection degree	IP67	
Approval/Conformity	CE	
Supported data carrier types	EM4_02	
Productview	Page 407	

Suitable read/write head with max. read/write working distance

Installation	flush in metal	on metal	metal-free (clear zone)
BIS L-40x-xxx-001	5-12	0-15	0-30
BIS L-40x-xxx-002			0-23
BIS L-40x-xxx-003			
BIS L-40x-xxx-004			0-23
BIS VL-300	10-20	10-25	0-40
BIS VL-301	20-50	20-50	0-70
BIS VL-302	8-15	8-15	0-25
BIS VL-304	8-15	8-15	0-25
BIS VL-306			

Dimensions in mm

* Installation on request



	BIS003T BIS L-201-03/L	BIS003U BIS L-202-03/L	BIS003W BIS L-203-03/L
	LF (125 kHz)	LF (125 kHz)	LF (125 kHz)
	Ø 30 x 1.6 mm	Ø 50 x 1.6 mm	Ø 12.4 x 2 mm
	5 Byte	5 Byte	5 Byte
	—	—	—
	PROM	PROM	PROM
	round	round	round
	metal-free (clear zone) on metal flush in metal	metal-free (clear zone) on metal flush in metal	metal-free (clear zone) on metal flush in metal
	-40...95 °C	-40...95 °C	—
	—	—	-40...130 °C 1x1000 h
	-40...85 °C	-40...85 °C	-25...85 °C
	Epoxy resin-glass fiber, GF	Epoxy resin-glass fiber, GF	PPS, EP
	IP67	IP67	IP68
	CE	CE	CE
	EM4_02	EM4_02	EM4_02
	Page 407	Page 407	Page 407

	flush in metal	on metal	metal-free (clear zone)	flush in metal	on metal	metal-free (clear zone)	flush in metal	on metal	metal-free (clear zone)
	0-18	0-24	0-40 0-23	0-28	0-32	0-55			0-20
									0-16
									0-11
			0-27						0-16
	10-30	10-35	0-50	15-40	15-45	0-70	3-10	3-12	0-25
	20-40	20-45	0-70	25-55	25-60	0-100			
	10-20	10-20	0-30	10-20	10-25	0-40	3-8	4-10	0-15
	10-20	10-20	0-30	10-20	10-25	0-40	3-8	4-10	0-15
									0-7



	BIS0033 BIS L-100-01/L	
Product Group	LF (125 kHz)	
Dimension	Ø 20 x 1.6 mm	
UID serial number, read-only	4 Byte	
User data, read/write	192 Byte	
Memory type	EEPROM	
Antenna type	round	
Installation	metal-free (clear zone) on metal flush in metal	
Storage temperature	-40...95 °C	
Storage temperature temporary	—	
Ambient temperature	-25...85 °C	
Housing material	Epoxy resin-glass fiber, GF	
Protection degree	IP67	
Approval/Conformity	CE	
Supported data carrier types	Hitag1	
Productview	Page 407	

Suitable read/write head with max. read/write working distance

Installation	flush in metal	on metal	metal-free (clear zone)
BIS VL-300	10-20	10-20	0-30
BIS VL-301	15-25	15-30	0-40
BIS VL-302	8-15	8-15	0-20
BIS VL-304	8-15	8-15	0-20
BIS VL-306			

Dimensions in mm

* Installation on request



	BIS0034 BIS L-100-05/L	BIS0036 BIS L-101-01/L	BIS0037 BIS L-101-05/L
	LF (125 kHz)	LF (125 kHz)	LF (125 kHz)
	Ø 20 x 1.6 mm	Ø 30 x 1.6 mm	Ø 30 x 1.6 mm
	4 Byte	4 Byte	4 Byte
	192 Byte	192 Byte	192 Byte
	EEPROM	EEPROM	EEPROM
	round	round	round
	metal-free (clear zone) on metal flush in metal	metal-free (clear zone) on metal flush in metal	metal-free (clear zone) on metal flush in metal
	-40...95 °C	-40...95 °C	-40...95 °C
	—	—	—
	-25...85 °C	-25...85 °C	-25...85 °C
	Epoxy resin-glass fiber, GF	Epoxy resin-glass fiber, GF	Epoxy resin-glass fiber, GF
	IP67	IP67	IP67
	CE	CE	CE
	HitagS	Hitag1	HitagS
	Page 407	Page 407	Page 407

	flush in metal	on metal	metal-free (clear zone)	flush in metal	on metal	metal-free (clear zone)	flush in metal*	on metal*	metal-free (clear zone)*
				10-30	10-30	0-40			
				15-35	15-40	0-55			
				10-20	10-20	0-25			
				10-20	10-20	0-25			
			0-12						



	BIS0039 BIS L-102-01/L	
Product Group	LF (125 kHz)	
Dimension	Ø 50 x 1.6 mm	
UID serial number, read-only	4 Byte	
User data, read/write	192 Byte	
Memory type	EEPROM	
Antenna type	round	
Installation	metal-free (clear zone) on metal flush in metal	
Storage temperature	-40...95 °C	
Storage temperature temporary	—	
Ambient temperature	-25...85 °C	
Housing material	Epoxy resin-glass fiber, GF	
Protection degree	IP67	
Approval/Conformity	CE	
Supported data carrier types	Hitag1	
Productview	Page 407	

Suitable read/write head with max. read/write working distance

Installation	flush in metal	on metal	metal-free (clear zone)
BIS VL-300	15-40	15-40	0-55
BIS VL-301	20-50	20-50	0-70
BIS VL-302	10-20	10-25	0-30
BIS VL-304	10-20	10-25	0-30
BIS VL-306			

Dimensions in mm

* Installation on request



	BIS003A BIS L-102-05/L	BIS003E BIS L-103-05/L	BIS00KR BIS L-140-05/L-M8
	LF (125 kHz)	LF (125 kHz)	LF (125 kHz)
	Ø 50 x 1.6 mm	Ø 12.4 x 2 mm	Ø 22 x 21 mm
	4 Byte	4 Byte	4 Byte
	192 Byte	192 Byte	192 Byte
	EEPROM	EEPROM	PROM
	round	round	round
	metal-free (clear zone) on metal flush in metal	metal-free (clear zone) on metal flush in metal	metal-free (clear zone) on metal flush in metal
	-40...95 °C	—	-25...95 °C
	—	-40...130 °C 1x1000 h	—
	-25...85 °C	-25...85 °C	-25...85 °C
	Epoxy resin-glass fiber, GF	PPS, EP	Steel, PA 12, GF30
	IP67	IP68	—
	CE	CE	CE
	HitagS	HitagS	HitagS
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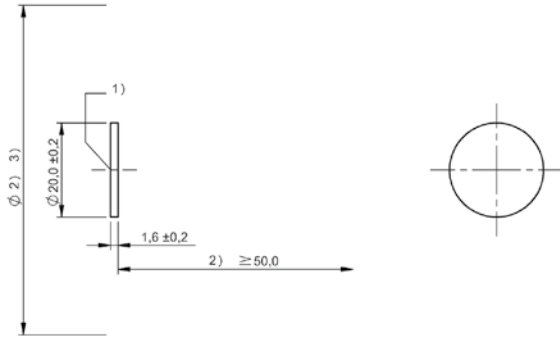
	flush in metal	on metal	metal-free (clear zone)	flush in metal	on metal	metal-free (clear zone)	flush in metal*	on metal*	metal-free (clear zone)*
	15-40	15-45	0-70						
	25-55	25-60	0-100						
	10-20	10-25	0-40						
	10-20	10-25	0-40						
						0-7			



	BIS003N BIS L-150-05/A
Product Group	LF (125 kHz)
Dimension	Ø 3.15 x 13.3 mm
UID serial number, read-only	4 Byte
User data, read/write	192 Byte
Memory type	EEPROM
Antenna type	Rod
Installation	metal-free (clear zone) on metal flush in metal
Storage temperature	—
Storage temperature temporary	-40...90 °C 1x1000 h
Ambient temperature	-40...85 °C
Housing material	Glass, transparent
Protection degree	IP68
Approval/Conformity	CE
Supported data carrier types	HitagS
Productview	Page 407

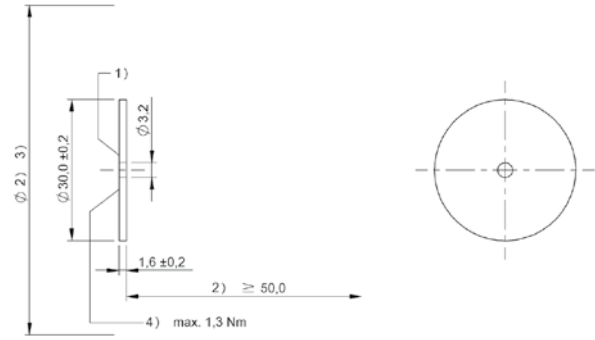
Suitable read/write head with max. read/write working distance

Installation	flush in metal	on metal	metal-free (clear zone)
BIS VL-301			0-32
BIS VL-350	0-24	0-24	0-17
Dimensions in mm			



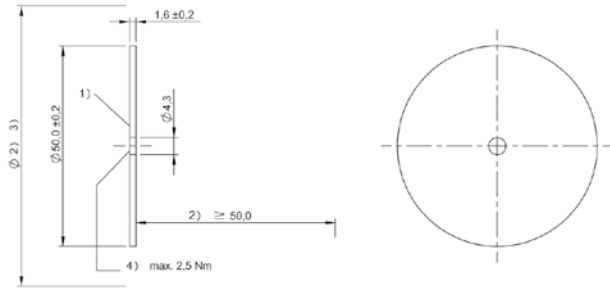
1) Sensing surface, 2) Clear zone, 3) see corresponding R/W head

BISO03R, BISO033, BISO034



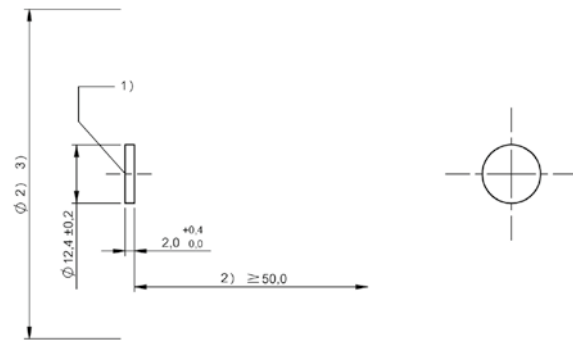
1) Sensing surface, 2) Clear zone, 3) see corresponding R/W head, 4) Tightening torque

BISO03B, BISO03T, BISO036, BISO037



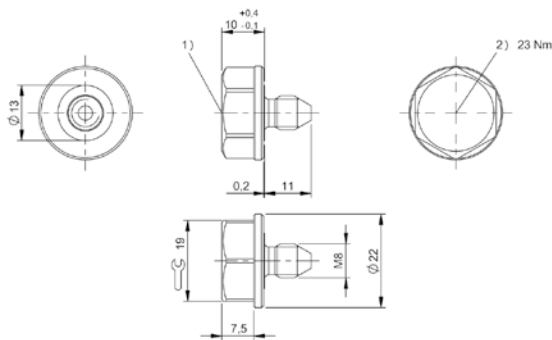
1) Sensing surface, 2) Clear zone, 3) see corresponding R/W head, 4) Tightening torque

BISO03C, BISO03U, BISO039, BISO03A



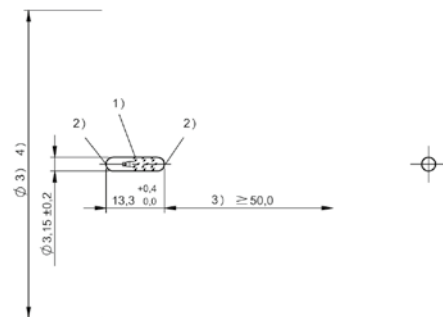
1) Sensing surface, 2) Clear zone, 3) see corresponding R/W head

BISO03F, BISO03W, BISO03E



1) Sensing surface, 2) Tightening torque

BISO0KR



1) Sensing surface parallel, 2) Sensing surface axial, 3) Clear zone, 4) see corresponding R/W head

BISO03N

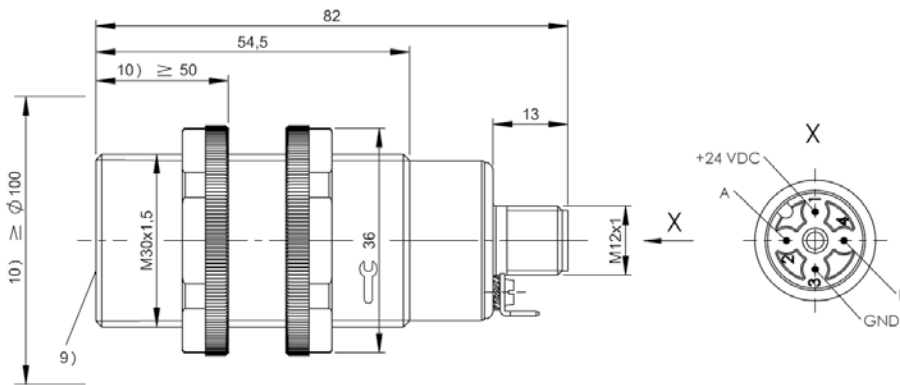


	BIS00UL BIS VL-300-001-S4
Product Group	LF (125 kHz)
Dimension	Ø 30 x 82 mm
Installation	metal-free (clear zone)
Antenna type	round
Connection	M12x1 connector, 4-pin
Housing material	PVDF, nuts PA 6.6
Interface	—
Operating voltage U _b	—
Storage temperature	-20...85 °C
Ambient temperature	0...70 °C
Protection degree	IP67
Approval/Conformity	CE

Appropriate data carrier

	BIS0033			BIS0036			BIS0039			BIS003R			BIS003T BIS0038			
Data carrier distance to metal	metal-free	on metal	flush in metal	metal-free	on metal	flush in metal	metal-free	on metal	flush in metal	metal-free	on metal	flush in metal	metal-free	on metal	flush in metal	
Data carrier clear zone																
Working distance for writing	0-30	10-20	10-20	0-40	10-30	10-30	0-55	15-40	15-40							
Working distance for reading	0-30	10-20	10-20	0-40	10-30	10-30	0-55	15-40	15-40	0-40	10-25	10-20	0-50	10-35	10-30	
Offset at distance																
	0	±18		±28			±30			±20			±28			
	3	±18		±28			±30			±20			±28			
	7	±18		±28			±30			±20			±28			
	8	±18		±28			±30			±20			±28			
	10	±18	±8	±8	±28	±15	±13	±30		±20	±15	±10	±28	±20	±17	
	12	±18	±8	±8	±28	±15	±13	±30		±20	±15	±10	±28	±20	±17	
	15	±18	±5	±5	±28	±15	±10	±30	±20	±20	±20	±10	±10	±28	±20	±17
	18	±18	±2	±2	±28	±15	±10	±30	±20	±18	±20	±10	±10	±28	±20	±17
	20	±18	±0	±0	±28	±15	±10	±30	±20	±15	±20	±10	±0	±28	±20	±17
	25	±18			±28	±10	±5	±30	±15	±15	±20	±0		±28	±20	±15
	30	±18			±28	±0	±0	±30	±15	±10	±20			±28	±15	±0
	35				±28			±30	±15	±0	±20			±28	±0	
	40				±28			±30	±0		±20			±28		
	45							±30						±28		
	50							±30						±28		
	55							±0								
	60															
	70															

Dimensions in mm



9) Sensing surface, 10) Clear zone

BIS003U BIS003C			BIS003W BIS003F		
metal-free	on metal	flush in metal	metal-free	on metal	flush in metal
0-70	15-45	15-40	0-25	3-12	3-10
±35			±15		
±35			±15	±12	±9
±35			±15	±12	±8
±35			±15	±12	±8
±35			±15	±9	±7
±35			±15	±0	
±35	±25	±20	±15		
±35	±25	±20	±15		
±35	±25	±20	±15		
±35	±20	±20	±13		
±35	±20	±20			
±35	±15	±15			
±35	±12	±0			
±35	±0				
±35					
±35					
±35					
±35					

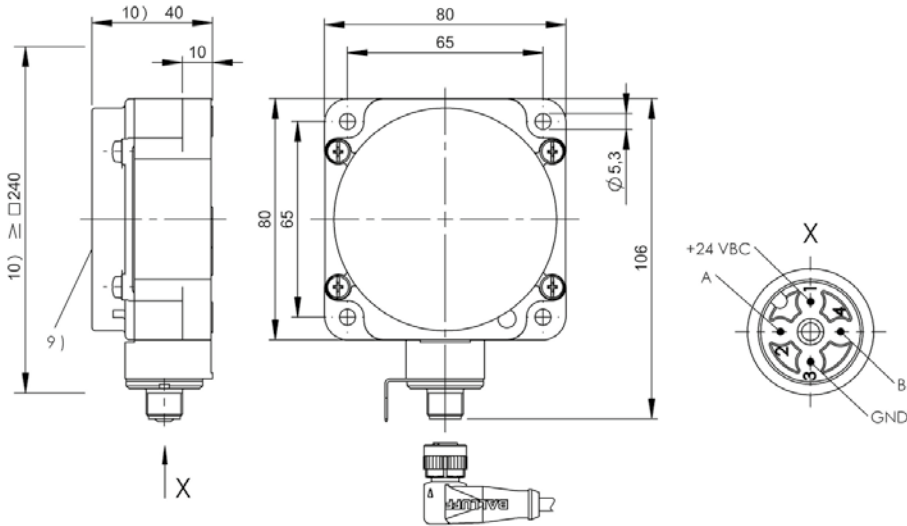


	BIS00U6 BIS VL-301-001-S4
Product Group	LF (125 kHz)
Dimension	80 x 80 x 40 mm
Installation	metal-free (clear zone)
Antenna type	round
Connection	M12x1 connector, 4-pin
Housing material	PBT
Interface	—
Operating voltage U_b	—
Storage temperature	-20...85 °C
Ambient temperature	0...70 °C
Protection degree	IP67
Approval/Conformity	CE

Appropriate data carrier

	BIS0033			BIS0036			BIS0039			BIS003N BIS017H	BIS003R			
Data carrier distance to metal	metal-free	on metal	flush in metal	metal-free	on metal	flush in metal	metal-free	on metal	flush in metal	metal-free	metal-free	on metal	flush in metal	
Data carrier clear zone														
Working distance for writing	0-40	15-30	15-25	0-55	15-40	15-35	0-70	20-50	20-50	0-32		0-70	20-50	20-50
Working distance for reading	0-40	15-30	15-25	0-55	15-40	15-35	0-70	20-50	20-50	0-32				
Offset at distance														
	0	±30		±35			±40			±24		±40		
	3	±30		±35			±40			±24		±40		
	7	±30		±35			±40			±24		±40		
	8	±30		±35			±40			±24		±40		
	10	±30		±35			±40			±24		±40		
	12	±30		±35			±40			±24		±40		
	15	±30	±20	±15	±35	±20	±20	±40		±24		±40		
	18	±30	±15	±10	±35	±20	±20	±40		±24		±40		
	20	±30	±15	±10	±35	±20	±20	±40	±25	±22	±24	±40	±25	±22
	25	±30	±10	±0	±35	±20	±15	±40	±25	±22	±24	±40	±25	±22
	30	±30	±0		±35	±20	±15	±40	±25	±22	±24	±40	±25	±22
	35	±30			±35	±15	±0	±40	±20	±15		±40	±20	±15
	40	±30			±35	±0		±40	±15	±15		±40	±15	±15
	45				±35			±40	±15	±10		±40	±15	±10
	50				±35			±40	±0	±0		±40	±0	±0
	55				±35			±40				±40		
	60							±40				±40		
	70							±40				±40		

Dimensions in mm



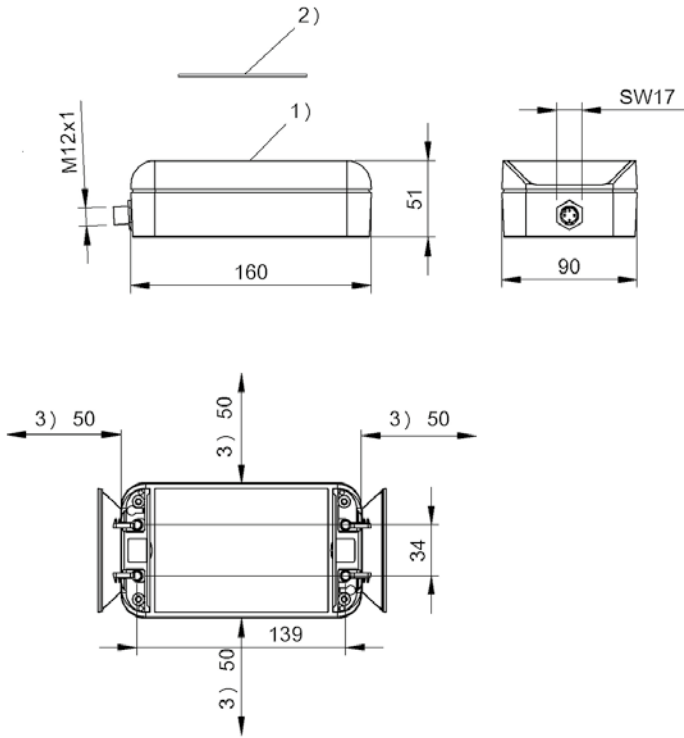
9) Sensing surface, 10) Clear zone

BIS003T BIS0038			BIS003U BIS003C		
metal-free	on metal	flush in metal	metal-free	on metal	flush in metal
0-70	20-45	20-40	0-100	25-60	25-55
±40			±45		
±40			±45		
±40			±45		
±40			±45		
±40			±45		
±40			±45		
±40			±45		
±40	±24	±20	±45	±30	±30
±40	±24	±20	±45	±30	±30
±40	±20	±20	±45	±30	±25
±40	±20	±15	±45	±30	±25
±40	±18	±0	±45	±25	±20
±40	±0		±45	±20	±20
±40			±45	±10	±0
±40			±45	±0	
±40			±45		
±40			±45		



	BIS015U BIS VL-308-001-S4
Product Group	LF (125 kHz)
Dimension	90 x 51 x 160 mm
Installation	metal-free (clear zone)
Antenna type	round
Connection	M12x1 connector, 4-pin
Housing material	ABS
Interface	—
Operating voltage U_b	—
Storage temperature	-20...85 °C
Ambient temperature	0...70 °C
Protection degree	IP67
Approval/Conformity	CE

Suitable data carriers on request



1) Sensing surface, 2) Data carrier, 3) Clear zone

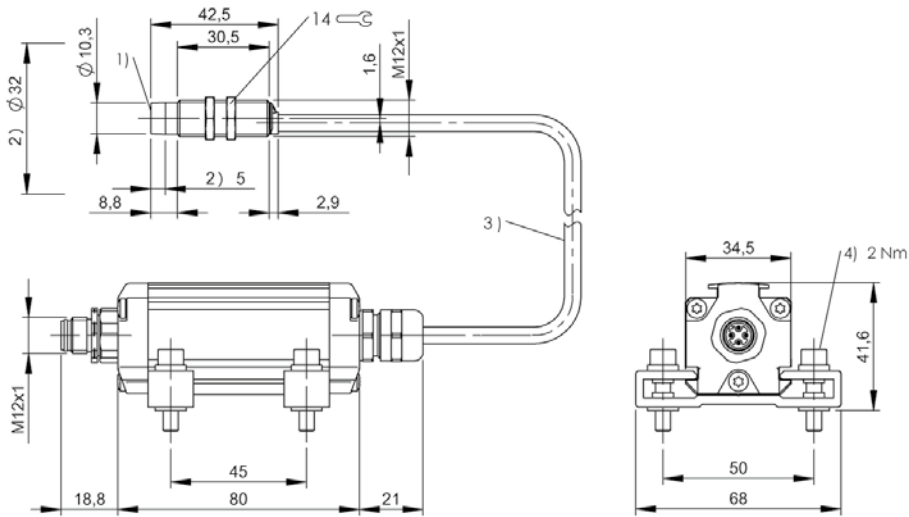


		BISO00J BIS VL-306-001-S4
Product Group		LF (125 kHz)
Dimension		Ø 12 x 42.5 mm
Installation		metal-free (clear zone)
Antenna type		round
Connection		M12x1-Male, 4-pole, 0.50 m, PU1
Housing material		Brass, interface aluminum
Interface		—
Operating voltage U_b		—
Storage temperature		-20...85 °C
Ambient temperature		0...70 °C
Protection degree		IP67
Approval/Conformity		CE

Appropriate data carrier

	BISO034	BISO03E	BISO03W BISO03F
Data carrier distance to metal	metal-free	metal-free	metal-free
Data carrier clear zone			
Working distance for writing	0-12	0-7	
Working distance for reading	0-12	0-7	0-7
Offset at distance			
	0 ±7	±4	±4
	3 ±7	±4	±4
	7 ±7	±4	±2
	8 ±7		
	10 ±7		
	12 ±7		
	15		
	18		
	20		
	25		
	30		
	35		
	40		

Dimensions in mm



1) Sensing surface, 2) Clear zone, 3) Cable length see text, 4) Tightening torque

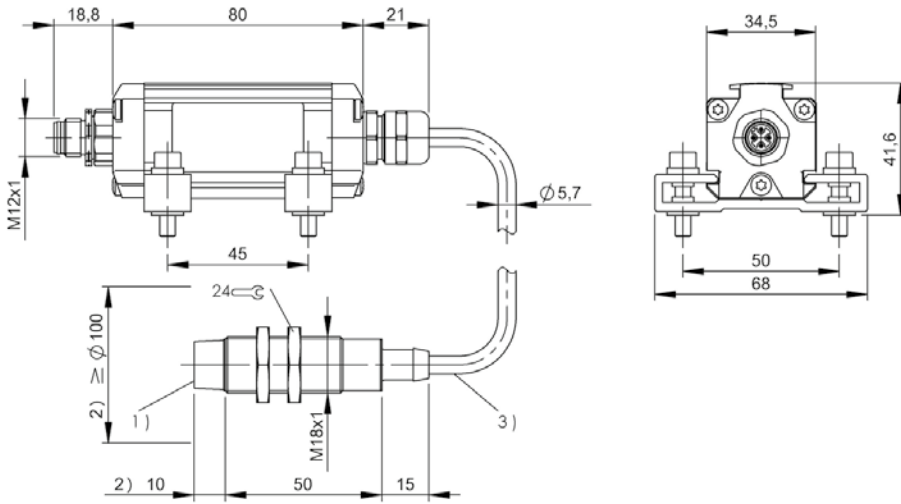


	BIS00UF BIS VL-302-001-S4
Product Group	LF (125 kHz)
Dimension	Ø 18 x 75 mm
Installation	metal-free (clear zone)
Antenna type	round
Connection	M12x1-Male, 4-pole, 0.50 m, PVC
Housing material	Brass, interface aluminum
Interface	—
Operating voltage U_b	—
Storage temperature	-20...85 °C
Ambient temperature	0...70 °C
Protection degree	IP67
Approval/Conformity	CE

Appropriate data carrier

	BIS0033			BIS0036			BIS0039				BIS003R			BIS003T BIS0038				
Data carrier distance to metal	metal-free	on metal	flush in metal	metal-free	on metal	flush in metal	metal-free	on metal	flush in metal		metal-free	on metal	flush in metal	metal-free	on metal	flush in metal		
Data carrier clear zone																		
Working distance for writing	0-20	8-15	8-15	0-25	10-20	10-20	0-30	10-25	10-20									
Working distance for reading	0-20	8-15	8-15	0-25	10-20	10-20	0-30	10-25	10-20		0-25	8-15	8-15	0-30	10-20	10-20		
Offset at distance																		
	0	±10		±12			±15				0	±13		±15				
	3	±10		±12			±15				3	±13		±15				
	7	±10		±12			±15				4	±13		±15				
	8	±10	±6	±6	±12		±15				8	±13	±8	±6	±15			
	10	±10	±5	±5	±12	±10	±8	±15	±15	±10	10	±13	±8	±6	±15	±10	±10	
	12	±10	±4	±4	±12	±10	±8	±15	±15	±10	12	±13	±8	±6	±15	±10	±10	
	15	±10	±0	±0	±12	±5	±5	±15	±15	±5	15	±13	±0	±0	±15	±10	±8	
	18	±10			±12	±0	±0	±15	±10	±0	18	±13			±15	±0	±0	
	20	±10			±12	±0	±0	±15	±10	±0	20	±13			±15	±0	±0	
	25				±12			±15	±0		25	±13			±15			
	30							±15			30				±15			
	35										35							
	40										40							

Dimensions in mm



1) Sensing surface, 2) Clear zone, 3) Cable length

BIS003U BIS003C			BIS003W BIS003F		
metal-free	on metal	flush in metal	metal-free	on metal	flush in metal
0-40	10-25	10-20	0-15	4-10	3-8
±20			±6		
±20			±6		±5
±20			±6	±7	±4
±20			±6	±6	±3
±20	±15	±8	±6	±5	
±20	±15	±8	±6		
±20	±15	±6	±6		
±20	±10	±0			
±20	±10	±0			
±20	±0				
±20					
±20					
±20					

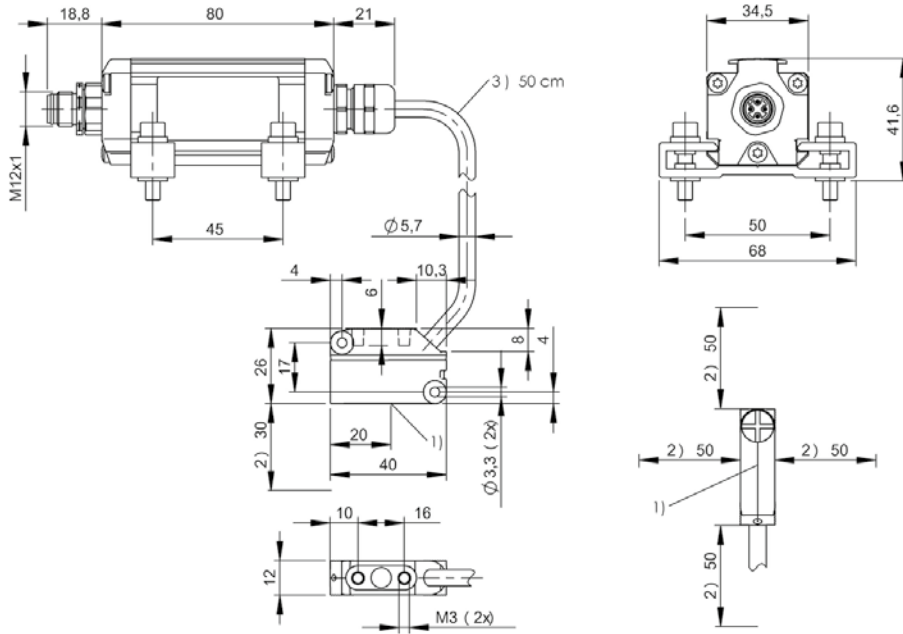


	BIS00UK BIS VL-350-001-S4
Product Group	LF (125 kHz)
Dimension	12 x 26 x 40 mm
Installation	metal-free (clear zone)
Antenna type	Rod
Connection	M12x1-Male, 4-pole, 0.50 m, PU
Housing material	ABS, GF16, interface aluminum
Interface	—
Operating voltage U _b	—
Storage temperature	-20...85 °C
Ambient temperature	0...70 °C
Protection degree	IP67
Approval/Conformity	CE

Appropriate data carrier

Data carrier distance to metal	BIS003N		
	metal-free	on metal	flush in metal
Data carrier clear zone			
Working distance for writing	0-17	0-24	0-24
Working distance for reading	0-17	0-24	0-24
Offset at distance			
	0 ±18	±20	±20
	3 ±18	±20	±20
	7 ±18	±20	±20
	8 ±18	±20	±20
	10 ±18	±20	±20
	12 ±10	±20	±20
	15 ±10	±20	±20
	18	±14	±14
	20	±14	±14
	25	±14	±14

Dimensions in mm



1) Sensing surface, 2) Clear zone, 3) Cable length

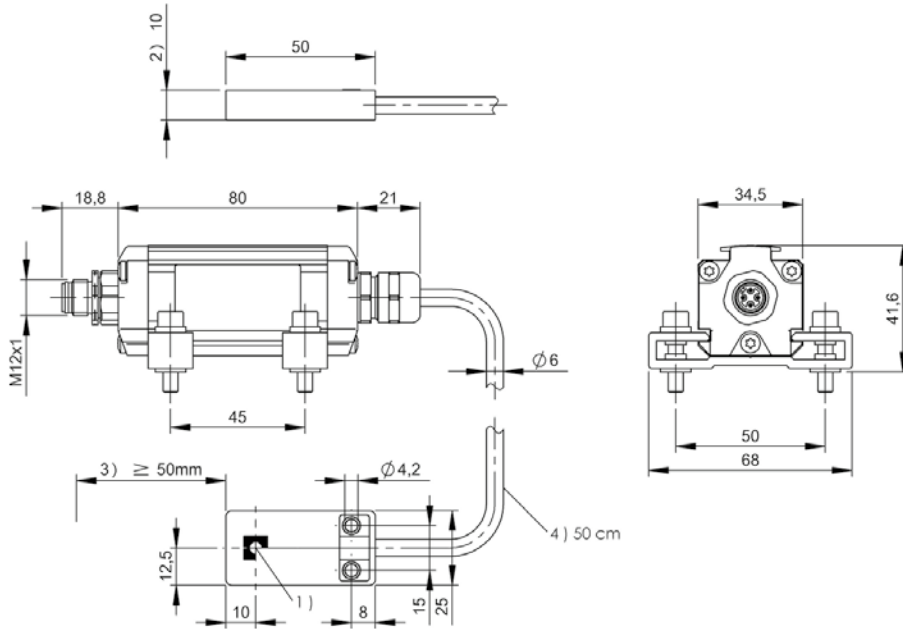


	BIS00UH BIS VL-304-001-S4
Product Group	LF (125 kHz)
Dimension	25 x 10 x 50 mm
Installation	metal-free (clear zone)
Antenna type	round
Connection	M12x1-Male, 4-pole, 0.50 m, PU
Housing material	ABS, GF16, interface aluminum
Interface	—
Operating voltage U_b	—
Storage temperature	-20...85 °C
Ambient temperature	0...70 °C
Protection degree	IP67
Approval/Conformity	CE

Appropriate data carrier

	BIS0033			BIS0036			BIS0039				BIS003R			BIS003T BIS0038			
Data carrier distance to metal	metal-free	on metal	flush in metal	metal-free	on metal	flush in metal	metal-free	on metal	flush in metal		metal-free	on metal	flush in metal	metal-free	on metal	flush in metal	
Data carrier clear zone																	
Working distance for writing	0-20	8-15	8-15	0-25	10-20	10-20	0-30	10-25	10-20								
Working distance for reading	0-20	8-15	8-15	0-25	10-20	10-20	0-30	10-25	10-20		0-25	8-15	8-15	0-30	10-20	10-20	
Offset at distance																	
	0	±10		±12			±15				0	±13		±15			
	3	±10		±12			±15				3	±13		±15			
	7	±10		±12			±15				4	±13		±15			
	8	±10	±6	±6	±12		±15				8	±13	±8	±6	±15		
	10	±10	±5	±5	±12	±10	±8	±15	±15	±10	10	±13	±8	±6	±15	±10	±10
	12	±10	±3	±3	±12	±10	±8	±15	±15	±10	12	±13	±8	±6	±15	±10	±10
	15	±10	±0	±0	±12	±5	±5	±15	±15	±5	15	±13	±0	±0	±15	±10	±8
	18	±10			±12	±0	±0	±15	±10	±0	18	±13			±15	±0	±0
	20	±10			±12	±0	±0	±15	±10	±0	20	±13			±15	±0	±0
	25				±12			±15	±0		25	±13			±15		
	30							±15			30				±15		
	35										35						
	40										40						

Dimensions in mm



1) Sensing surface, 2) Clear zone, 3) Clear zone surrounding, 4) Cable length

BIS003U BIS003C			BIS003W BIS003F		
metal-free	on metal	flush in metal	metal-free	on metal	flush in metal
0-40	10-25	10-20	0-15	4-10	3-8
±20			±6		
±20			±6		±5
±20			±6	±7	±3
±20			±6	±6	±3
±20	±15	±8	±6	±5	
±20	±15	±8	±6		
±20	±15	±6	±6		
±20	±10	±0			
±20	±10	±0			
±20	±0				
±20					
±20					
±20					



For read/write heads BIS VM (HF 13.56 MHz), BIS VL (LF 125 kHz) and BIS VU (UHF 860...960 MHz)	BIS013U BIS V-6108-048-C002	
Product Group	Multi-Frequency Processor	
Interface	Profinet I/O (IRT), Profinet I/O (IRT) 2-port switch	
IO-Link-Master-Port	max. 500 mA	
Supported RFID technologies	LF 125 kHz (BIS VL), HF 13.56 MHz (BIS VM), UHF 860...960 MHz (BIS VU)	
Number of connectable R/W heads / antennas	4	
Operating voltage U_b	24 V DC LPS Class 2	
Housing material	Zinc, Die casting	
Ambient temperature	0...60 °C	
IP rating	IP65, with connector	
Approval/Conformity	CE, EAC, cULus, WEEE	
Connection	2x M12x1-Female, 4-pin, D-coded 7/8"-Male, 5-pin	
Productview	Page 472	

* Use adapter **BIS0FCK** to connect read/write heads **BIS C (LF 70/455 kHz)**.



BIS01AE BIS V-6108-048-C007	BIS013W * BIS V-6108-048-C102	BIS01AF * BIS V-6108-048-C107
Multi-Frequency Processor	Multi-Frequency Processor	Multi-Frequency Processor
Profinet I/O (IRT), Profinet I/O (IRT) 2-port switch	Profinet I/O (IRT), Profinet I/O (IRT) 2-port switch	Profinet I/O (IRT), Profinet I/O (IRT) 2-port switch
max. 500 mA	max. 500 mA	max. 500 mA
LF 125 kHz (BIS VL), HF 13.56 MHz (BIS VM), UHF 860...960 MHz (BIS VU)	LF 125 kHz (BIS VL), LF 70/455 kHz (BIS C), HF 13.56 MHz (BIS VM), UHF 860...960 MHz (BIS VU)	LF 125 kHz (BIS VL), LF 70/455 kHz (BIS C), HF 13.56 MHz (BIS VM), UHF 860...960 MHz (BIS VU)
4	4	4
24 V DC LPS Class 2	24 V DC LPS Class 2	24 V DC LPS Class 2
Zinc, Die casting	Zinc, Die casting	Zinc, Die casting
0...60 °C	0...60 °C	0...60 °C
IP65, with connector	IP65, with connector	IP65, with connector
CE, EAC, cULus, WEEE	CE, EAC, cULus, WEEE	CE, EAC, cULus, WEEE
2x M12x1-Female, 4-pin, D-coded M12x1-Male, 5-pin	2x M12x1-Female, 4-pin, D-coded 7/8"-Male, 5-pin	2x M12x1-Female, 4-pin, D-coded M12x1-Male, 5-pin
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For read/write heads BIS VM (HF 13.56 MHz), BIS VL (LF 125 kHz) and BIS VU (UHF 860...960 MHz)	BIS00T3 BIS V-6102-019-C001	
Product Group	Multi-Frequency Processor	
Interface	Profibus DP Slave galvanically isolated	
IO-Link-Master-Port	max. 500 mA	
Supported RFID technologies	LF 125 kHz (BIS VL), HF 13.56 MHz (BIS VM), UHF 860...960 MHz (BIS VU)	
Number of connectable R/W heads / antennas	4	
Operating voltage U_b	24 V DC LPS Class 2	
Housing material	Zinc, Die casting	
Ambient temperature	0...60 °C	
IP rating	IP65, with connector	
Approval/Conformity	CE, EAC, cULus, WEEE	
Connection	M12x1-Male, 5-pin, B-coded M12x1-Female, 5-pin, B-coded 7/8"-Male, 5-pin	
Productview	Page 472	

* Use adapter **BISOFC** to connect read/write heads **BIS C (LF 70/455 kHz)**.



	BIS012E * BIS V-6102-019-C101	BIS01AA BIS V-6107-039-C007	BIS01AC * BIS V-6107-039-C107
	Multi-Frequency Processor	Multi-Frequency Processor	Multi-Frequency Processor
	Profibus DP Slave galvanically isolated	TCP/IP, USB	TCP/IP, USB
	max. 500 mA	max. 1.700 mA	max. 1.700 mA
	LF 125 kHz (BIS VL), LF 70/455 kHz (BIS C), HF 13.56 MHz (BIS VM), UHF 860...960 MHz (BIS VU)	LF 125 kHz (BIS VL), HF 13.56 MHz (BIS VM), UHF 860...960 MHz (BIS VU)	LF 125 kHz (BIS VL), LF 70/455 kHz (BIS C), HF 13.56 MHz (BIS VM), UHF 860...960 MHz (BIS VU)
	4	4	4
	24 V DC LPS Class 2	24 V DC LPS Class 2	24 V DC LPS Class 2
	Zinc, Die casting	Zinc, Die casting	Zinc, Die casting
	0...60 °C	0...60 °C	0...60 °C
	IP65, with connector	IP65, with connector	IP65, with connector
	CE, EAC, cULus, WEEE	CE, EAC, cULus, WEEE	CE, EAC, cULus, WEEE
	M12x1-Male, 5-pin, B-coded M12x1-Female, 5-pin, B-coded 7/8"-Male, 5-pin	M12x1-Female, 4-pin, D-coded M12x1-Female, 5-pin, A-coded M12x1-Male, 5-pin	M12x1-Female, 4-pin, D-coded M12x1-Female, 5-pin, A-coded M12x1-Male, 5-pin
	Page 472	Page 210	Page 210



For read/write heads BIS VM (HF 13.56 MHz), BIS VL (LF 125 kHz) and BIS VU (UHF 860...960 MHz)	BIS0186 BIS V-6107-039-C005	
Product Group	Multi-Frequency Processor	
Interface	Ethernet TCP/IP, USB	
IO-Link-Master-Port	max. 1.700 mA	
Supported RFID technologies	LF 125 kHz (BIS VL), HF 13.56 MHz (BIS VM), UHF 860...960 MHz (BIS VU)	
Number of connectable R/W heads / antennas	4	
Operating voltage U_b	24 V DC LPS Class 2	
Housing material	Zinc, Die casting	
Ambient temperature	0...60 °C	
IP rating	IP65, with connector	
Approval/Conformity	CE, EAC, cULus, WEEE	
Connection	M12x1-Female, 4-pin, D-coded M12x1-Female, 5-pin, A-coded 7/8"-Male, 5-pin	
Productview	Page 473	

* Use adapter **BISOFCK** to connect read/write heads **BIS C (LF 70/455 kHz)**.



BIS018J BIS V-6107-039-C006	BIS0187 * BIS V-6107-039-C105	BIS018K * BIS V-6107-039-C106
Multi-Frequency Processor	Multi-Frequency Processor	Multi-Frequency Processor
Ethernet TCP/IP, USB	Ethernet TCP/IP, USB	Ethernet TCP/IP, USB
max. 1.700 mA	max. 1.700 mA	max. 1.700 mA
LF 125 kHz (BIS VL), HF 13.56 MHz (BIS VM), UHF 860...960 MHz (BIS VU)	LF 125 kHz (BIS VL), LF 70/455 kHz (BIS C), HF 13.56 MHz (BIS VM), UHF 860...960 MHz (BIS VU)	LF 125 kHz (BIS VL), LF 70/455 kHz (BIS C), HF 13.56 MHz (BIS VM), UHF 860...960 MHz (BIS VU)
4	4	4
24 V DC LPS Class 2	24 V DC LPS Class 2	24 V DC LPS Class 2
Zinc, Die casting	Zinc, Die casting	Zinc, Die casting
0...60 °C	0...60 °C	0...60 °C
IP65, with connector	IP65, with connector	IP65, with connector
CE, EAC, cULus, WEEE	CE, EAC, cULus, WEEE	CE, EAC, cULus, WEEE
M12x1-Female, 4-pin, D-coded M12x1-Female, 5-pin, A-coded 7/8"-Male, 4-pin	M12x1-Female, 4-pin, D-coded M12x1-Female, 5-pin, A-coded 7/8"-Male, 5-pin	M12x1-Female, 4-pin, D-coded M12x1-Female, 5-pin, A-coded 7/8"-Male, 4-pin
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For read/write heads BIS VM (HF 13.56 MHz), BIS VL (LF 125 kHz) and BIS VU (UHF 860...960 MHz)	BIS012F BIS V-6106-034-C002	
Product Group	Multi-Frequency Processor	
Interface	Ethernet/IP	
IO-Link-Master-Port	max. 500 mA	
Supported RFID technologies	LF 125 kHz (BIS VL), HF 13.56 MHz (BIS VM), UHF 860...960 MHz (BIS VU)	
Number of connectable R/W heads / antennas	4	
Operating voltage U_b	24 V DC LPS Class 2	
Housing material	Zinc, Die casting	
Ambient temperature	0...60 °C	
IP rating	IP65, with connector	
Approval/Conformity	CE, EAC, cULus, WEEE	
Connection	2x M12x1-Female, 4-pin, D-coded 7/8"-Male, 5-pin	
Productview	Page 436	

* Use adapter **BISOFC** to connect read/write heads **BIS C (LF 70/455 kHz)**.



BIS0122 BIS V-6106-034-C004	BIS014C * BIS V-6106-034-C102	BIS0146 BIS V-6106-034-C104
Multi-Frequency Processor	Multi-Frequency Processor	Multi-Frequency Processor
Ethernet/IP	Ethernet/IP	Ethernet/IP
max. 500 mA	max. 500 mA	max. 500 mA
LF 125 kHz (BIS VL), HF 13.56 MHz (BIS VM), UHF 860...960 MHz (BIS VU)	LF 125 kHz (BIS VL), LF 70/455 kHz (BIS C), HF 13.56 MHz (BIS VM), UHF 860...960 MHz (BIS VU)	LF 125 kHz (BIS VL), LF 70/455 kHz (BIS C), HF 13.56 MHz (BIS VM), UHF 860...960 MHz (BIS VU)
4	4	4
24 V DC LPS Class 2	24 V DC LPS Class 2	24 V DC LPS Class 2
Zinc, Die casting	Zinc, Die casting	Zinc, Die casting
0...60 °C	0...60 °C	0...60 °C
IP65, with connector	IP65, with connector	IP65, with connector
CE, EAC, cULus, WEEE	CE, EAC, cULus, WEEE	CE, EAC, cULus, WEEE
2x M12x1-Female, 4-pin, D-coded 7/8"-Male, 4-pin	2x M12x1-Female, 4-pin, D-coded 7/8"-Male, 5-pin	2x M12x1-Female, 4-pin, D-coded 7/8"-Male, 4-pin
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Sensors

RFID

Machine Vision and
Optical Identification

Human Machine
Interfaces

Safety

Industrial Networking

Software and
System Solutions

Power Supply

Connectivity

Accessories



For read/write heads BIS VM (HF 13.56 MHz), BIS VL (LF 125 kHz) and BIS VU (UHF 860...960 MHz)	BIS00U9 BIS V-6110-063-C002	
Product Group	Multi-Frequency Processor	
Interface	EtherCAT	
IO-Link-Master-Port	max. 500 mA	
Supported RFID technologies	LF 125 kHz (BIS VL), HF 13.56 MHz (BIS VM), UHF 860...960 MHz (BIS VU)	
Number of connectable R/W heads / antennas	4	
Operating voltage U_b	24 V DC LPS Class 2	
Housing material	Zinc, Die casting	
Ambient temperature	0...60 °C	
IP rating	IP65, with connector	
Approval/Conformity	CE, EAC, cULus, WEEE	
Connection	2x M12x1-Female, 4-pin, D-coded 7/8"-Male, 5-pin	
Productview	Page 437	

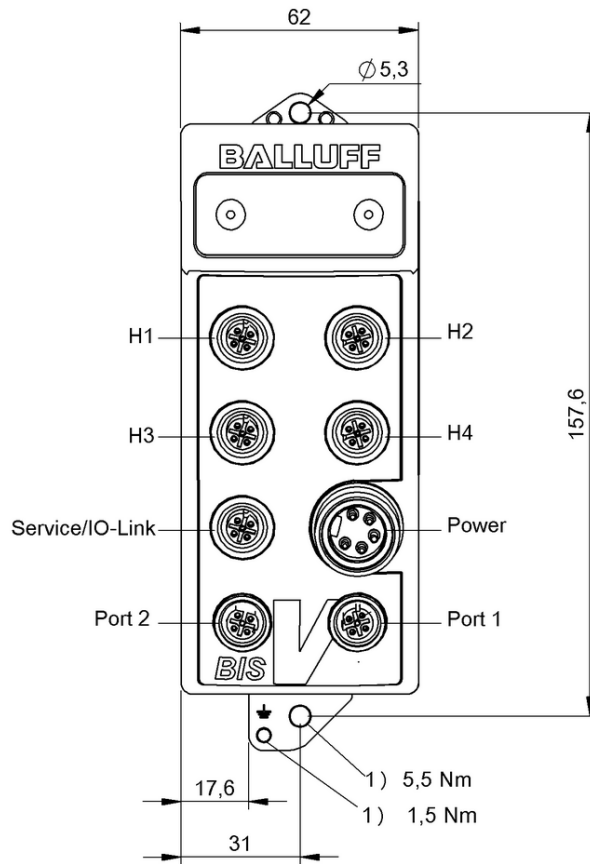
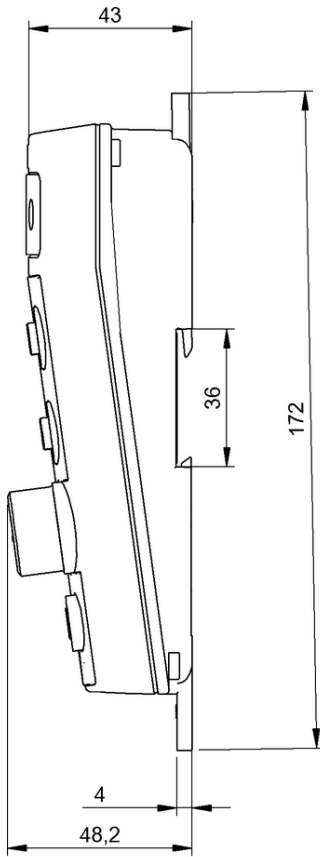
* Use adapter **BIS0FCK** to connect read/write heads **BIS C (LF 70/455 kHz)**.



	BIS0147 BIS V-6110-063-C102	BIS010P BIS V-6111-073-C003	BIS014E * BIS V-6111-073-C103
	Multi-Frequency Processor	Multi-Frequency Processor	Multi-Frequency Processor
	EtherCAT	CC-Link	CC-Link
	max. 500 mA	max. 500 mA	max. 500 mA
	LF 125 kHz (BIS VL), LF 70/455 kHz (BIS C), HF 13.56 MHz (BIS VM), UHF 860...960 MHz (BIS VU)	LF 125 kHz (BIS VL), HF 13.56 MHz (BIS VM)	LF 125 kHz (BIS VL), LF 70/455 kHz (BIS C), HF 13.56 MHz (BIS VM)
	4	4	4
	24 V DC LPS Class 2	24 V DC LPS Class 2	24 V DC LPS Class 2
	Zinc, Die casting	Zinc, Die casting	Zinc, Die casting
	0...60 °C	0...60 °C	0...60 °C
	IP65, with connector	IP65, with connector	IP65, with connector
	CE, EAC, cULus, WEEE	CE, EAC, cULus, WEEE	CE, EAC, cULus, WEEE
	2x M12x1-Female, 4-pin, D-coded 7/8"-Male, 5-pin	M12x1-Male, 5-pin, A-coded M12x1-Female, 5-pin, A-coded 7/8"-Male, 5-pin	M12x1-Male, 5-pin, A-coded M12x1-Female, 5-pin, A-coded 7/8"-Male, 5-pin
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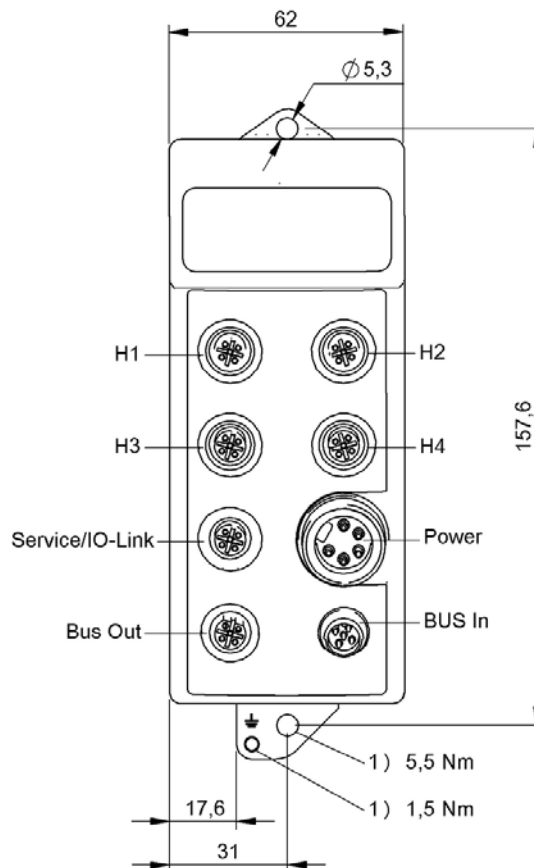
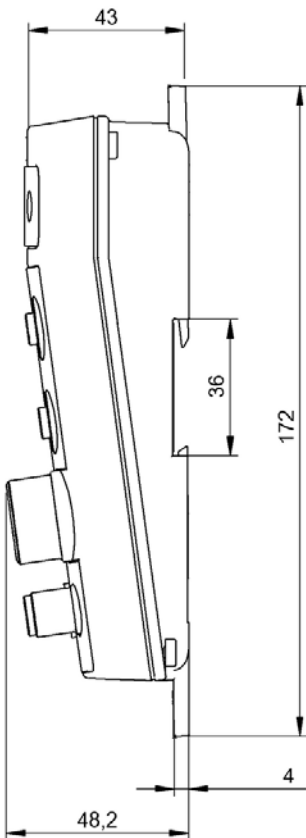


For read/write heads BIS L-400-043...	BAE003U BIS Z-EL-001-ETHERNET	
Product Group	LF (125 kHz)	
Interface	Ethernet TCP/IP	
Supported RFID technologies	LF 125 kHz (BIS L, Easy Loop)	
Number of connectable R/W heads / antennas	16	
Operating voltage U_b	19.2...28.8 VDC	
Housing material	ABS	
Ambient temperature	0...60 °C	
Protection degree	IP65 with connector	
Approval/Conformity	CE	
Connection	Female, 4-pole, D-coded Male, 5-pole	
Productview	Page 438	



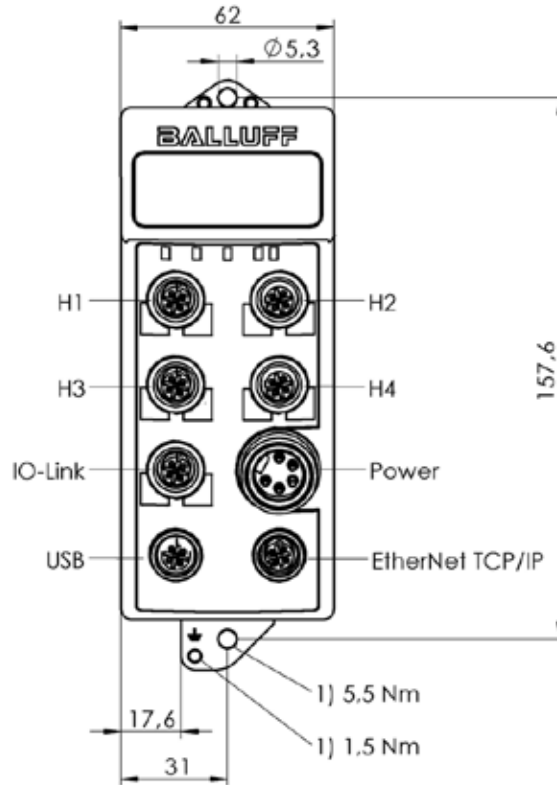
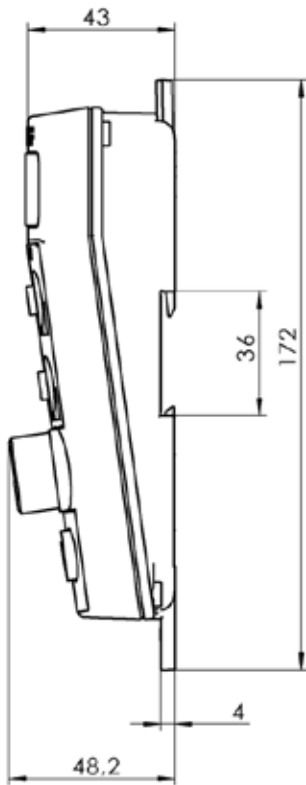
1) Tightening torque

BIS013U, BIS013W



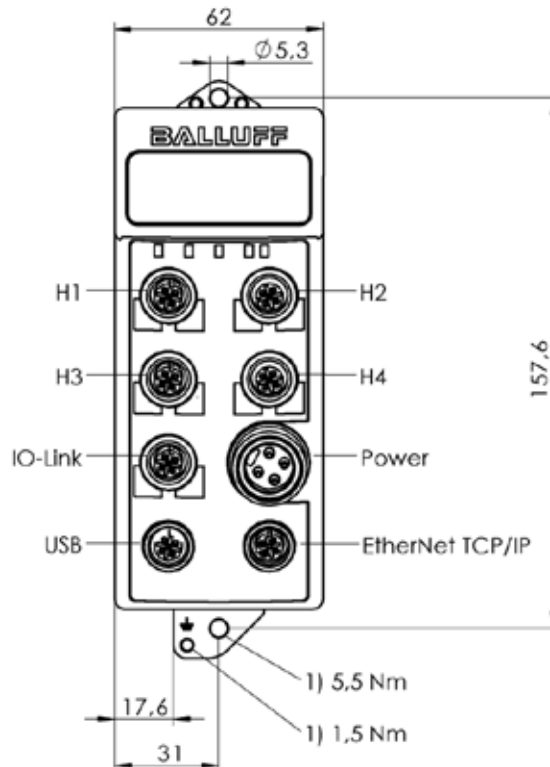
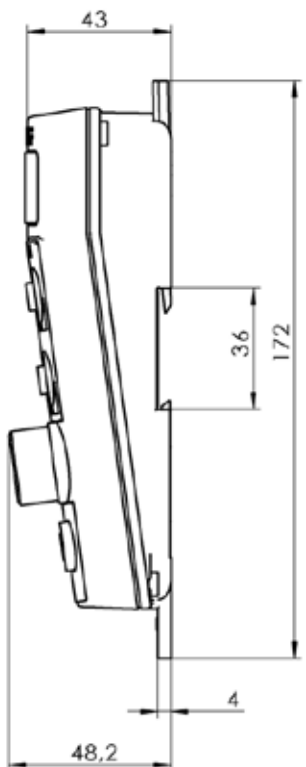
1) Tightening torque

BIS00T3, BIS012E



1) Tightening torque

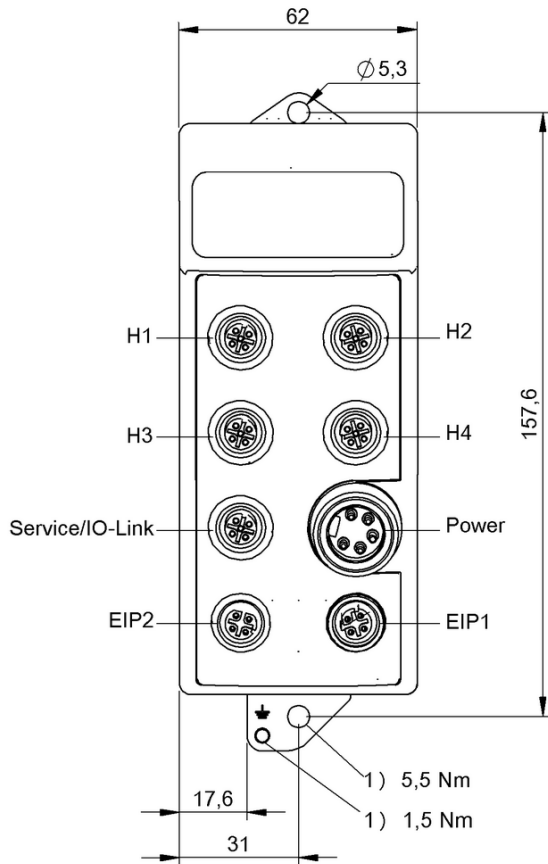
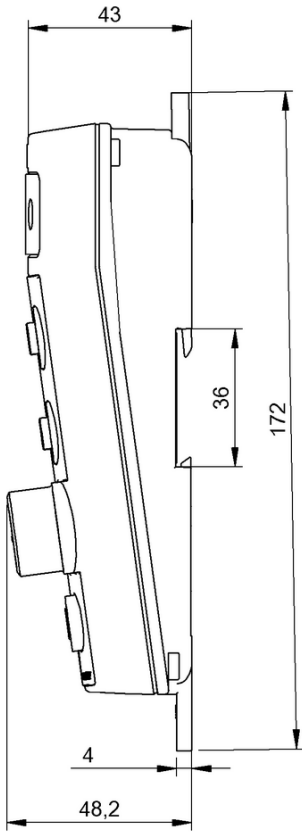
BIS0186, BIS0187



1) Tightening torque

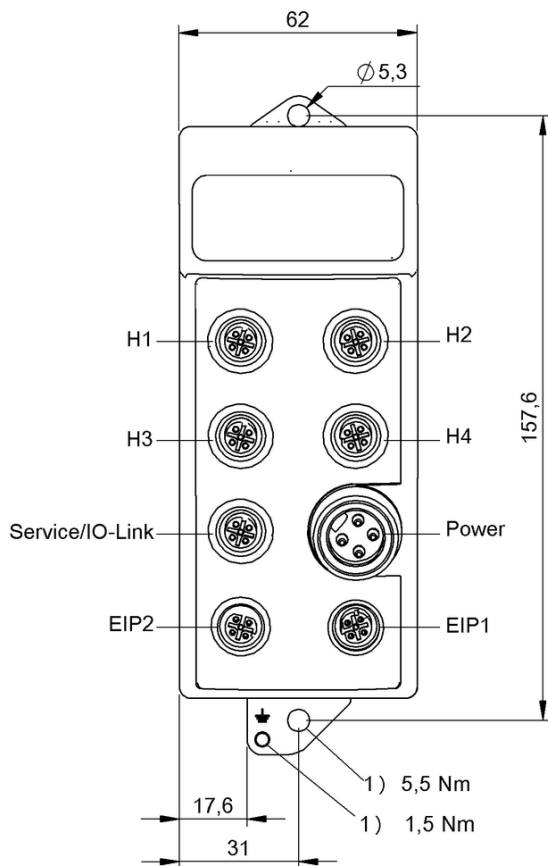
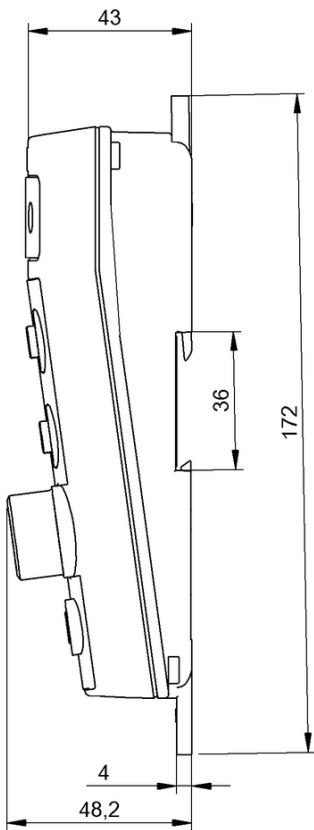
BIS018J, BIS018K

Do you need more details? Our Product Finder at www.balluff.com provides you with product-specific information, including technical drawings, data sheets, user guides and more for each individual product. All items are available for download.



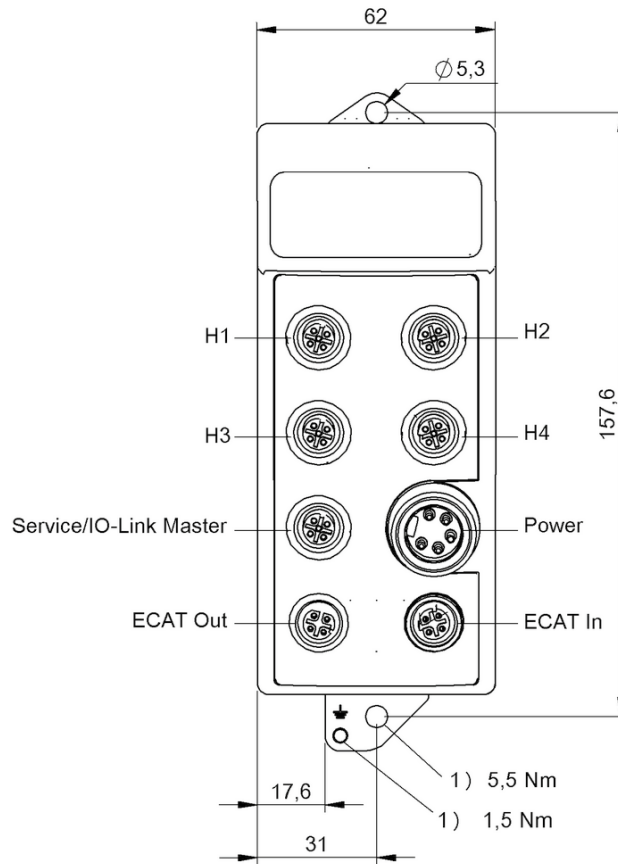
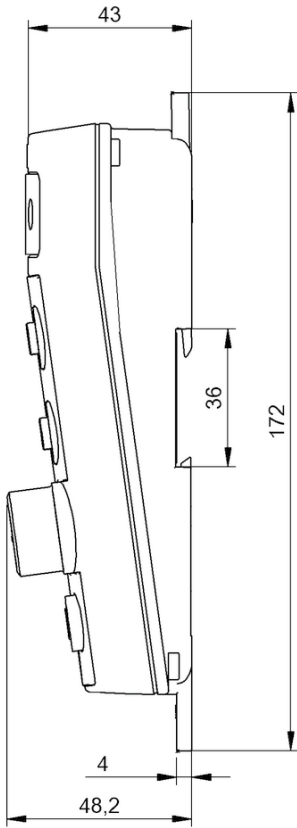
1) Tightening torque

BIS012F, BIS014C



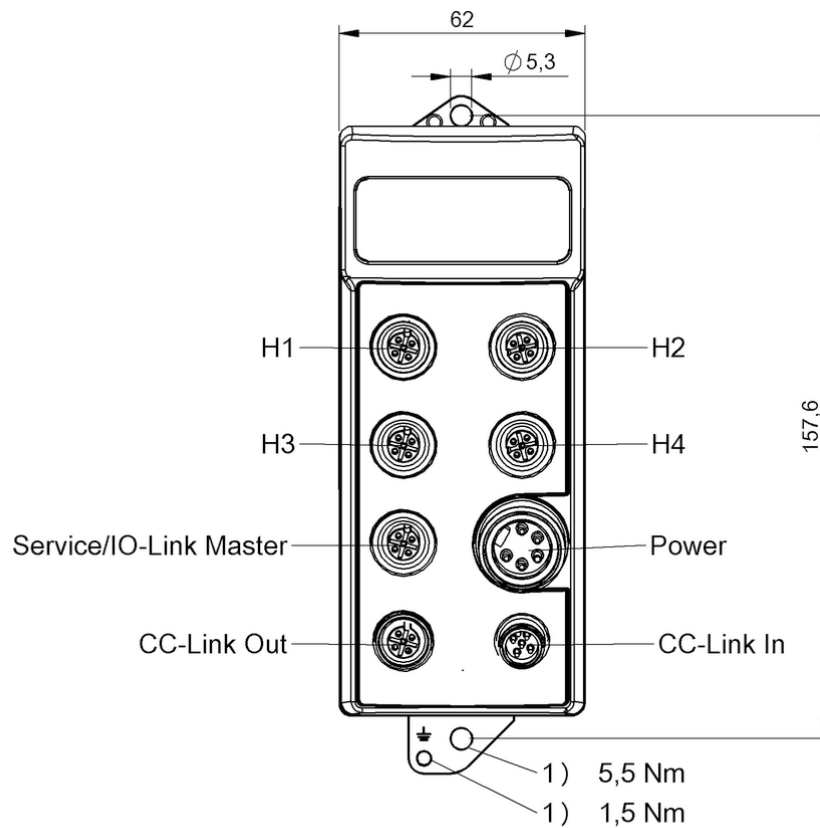
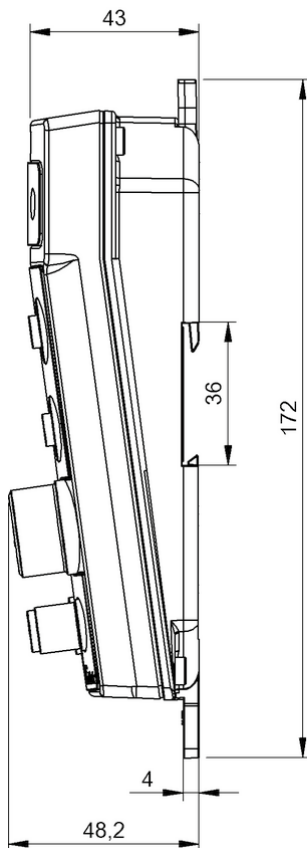
1) Tightening torque

BIS0122, BIS0146



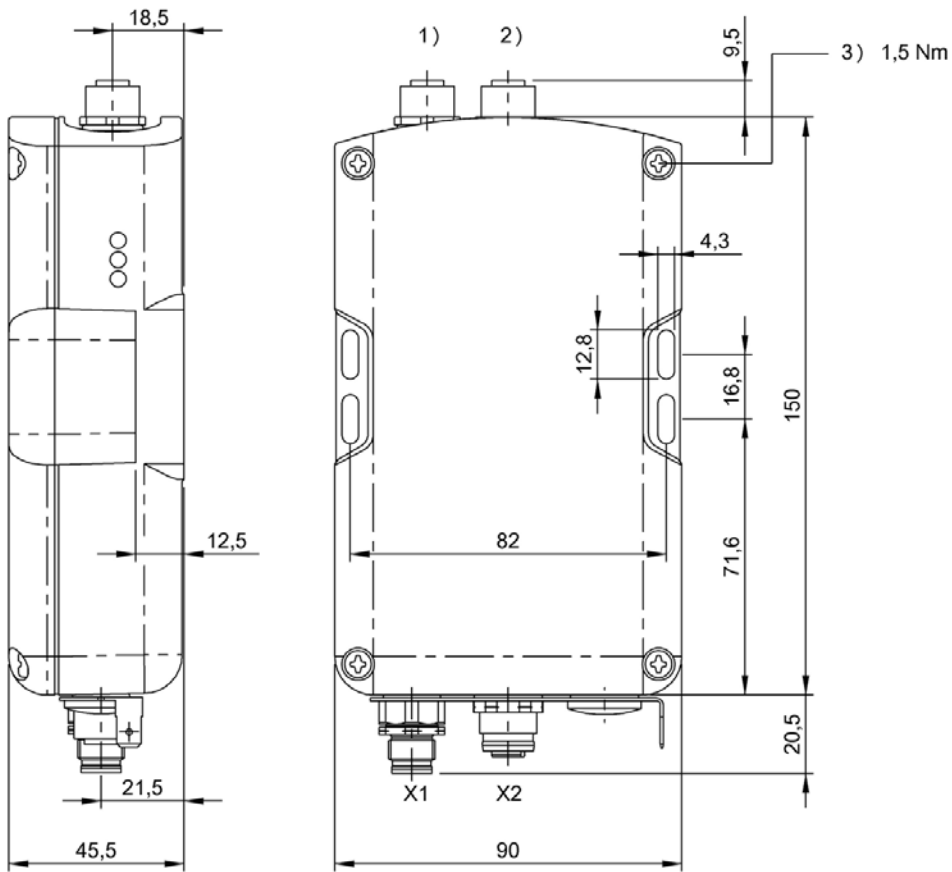
1) Tightening torque

BIS00U9, BIS0147



1) Tightening torque

BIS010P, BIS014E



1) Line 1, 2) Line 2, 3) Tightening torque

BAE003U

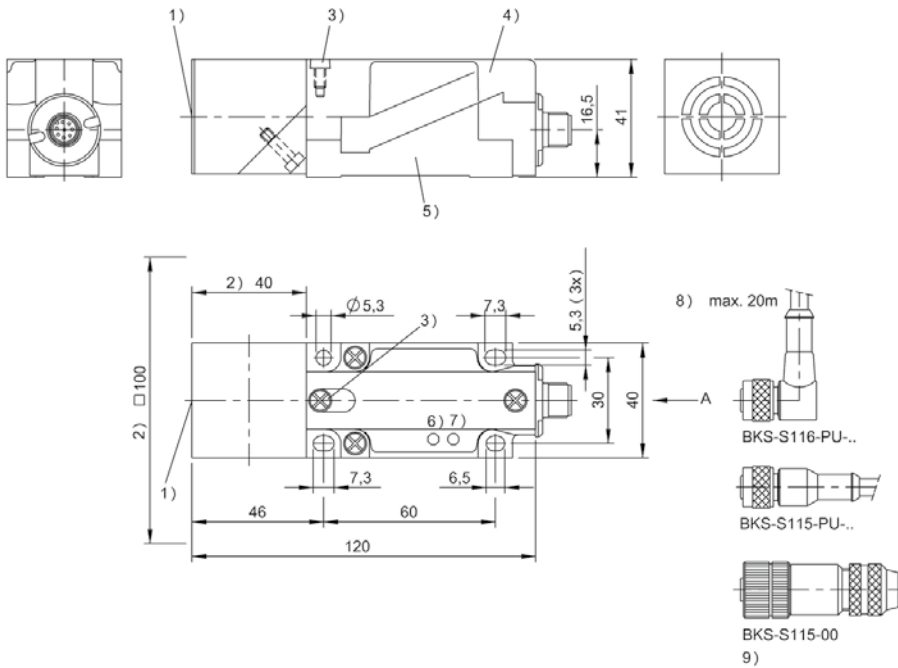


	BIS00C5 BIS L-400-035-001-00-S115
Product Group	LF (125 kHz)
Dimension	40 x 41 x 120 mm
Installation	metal-free (clear zone)
Antenna type	round
Connection	Connector, M12x1 connector, 8-pin
Housing material	PBT
Interface	RS232
Operating voltage U_b	19.2...26.4 VDC
Ambient temperature	0...70 °C
Protection degree	IP67
Approval/Conformity	CE, UL-FILE E227256, Vol.X1, BIS

Appropriate data carrier

	BIS003R BIS0035			BIS003T BIS0038			BIS003U BIS003C			BIS003W BIS003F	
	metal-free	on metal	flush in metal	metal-free	on metal	flush in metal	metal-free	on metal	flush in metal	metal-free	
Data carrier distance to metal											
Data carrier clear zone											
Working distance for writing	0-30	0-15	5-12	0-40	0-24	0-18	0-55	0-32	0-28	0-20	
Working distance for reading											
Offset at distance											
	0	±15	±10		±20	±12	±10	±30	±20	±18	±10
	3	±15	±10		±20	±12	±10	±30	±20	±18	±10
	5	±15	±10	±10	±20	±12	±10	±30	±20	±18	±10
	8	±15	±10	±7	±20	±12	±10	±30	±20	±18	±10
	10	±15	±10	±7	±20	±12	±10	±30	±20	±18	±10
	12	±15	±8	±7	±20	±12	±10	±30	±20	±18	±10
	15	±15	±8		±20	±12	±10	±30	±20	±18	±10
	18	±15			±20	±12	±10	±30	±20	±14	
	20	±15			±20	±12		±30	±20	±14	
	24	±15			±20	±10		±30	±20	±12	
	28				±20			±30	±14	±12	
	30				±20			±30	±14		
	32				±20			±30	±14		
	35				±20			±30			
	40							±30			

Dimensions in mm



1) Sensing surface, 2) Clear zone, 3) Locking screw, 4) Module unit, 5) Mounting base, 6) Power, 7) Tag present, 8) Cable length, 9) no cable

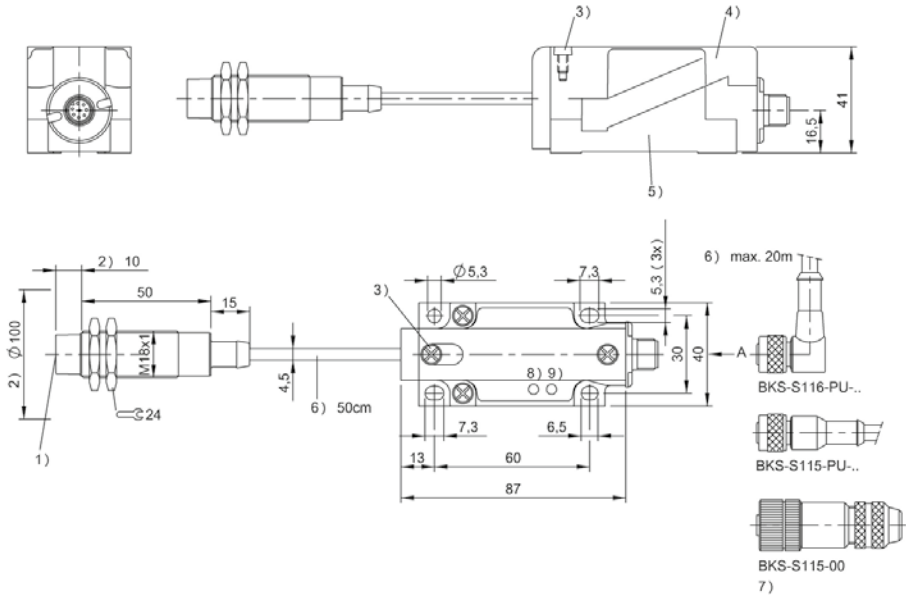


BIS00C7 BIS L-400-035-002-00-S115	
Product Group	LF (125 kHz)
Dimension	Ø 18 x 75 mm
Installation	metal-free (clear zone)
Antenna type	round
Connection	Connector, M12x1 connector, 8-pin, 0.50 m, PU
Housing material	Brass, interface PBT
Interface	RS232
Operating voltage U_b	19.2...26.4 VDC
Ambient temperature	0...70 °C
Protection degree	IP67
Approval/Conformity	CE, UL-FILE E227256, Vol.X1, BIS

Appropriate data carrier

	BIS003R BIS0035	BIS003T BIS0038	BIS003W BIS003F
Data carrier distance to metal	metal-free	metal-free	metal-free
Data carrier clear zone			
Working distance for writing			
Working distance for reading	0-23	0-27	0-16
Offset at distance			
	0 ±12	±15	±8
	3 ±12	±15	±8
	7 ±12	±15	±8
	8 ±12	±15	±8
	10 ±12	±15	±8
	12 ±12	±15	±4
	15 ±12	±15	±4
	18	±15	
	20	±15	
	25	±6	

Dimensions in mm



1) Sensing surface, 2) Clear zone, 3) Locking screw, 4) Module unit, 5) Mounting base, 6) Cable length, 7) no cable, 8) Power, 9) Tag present

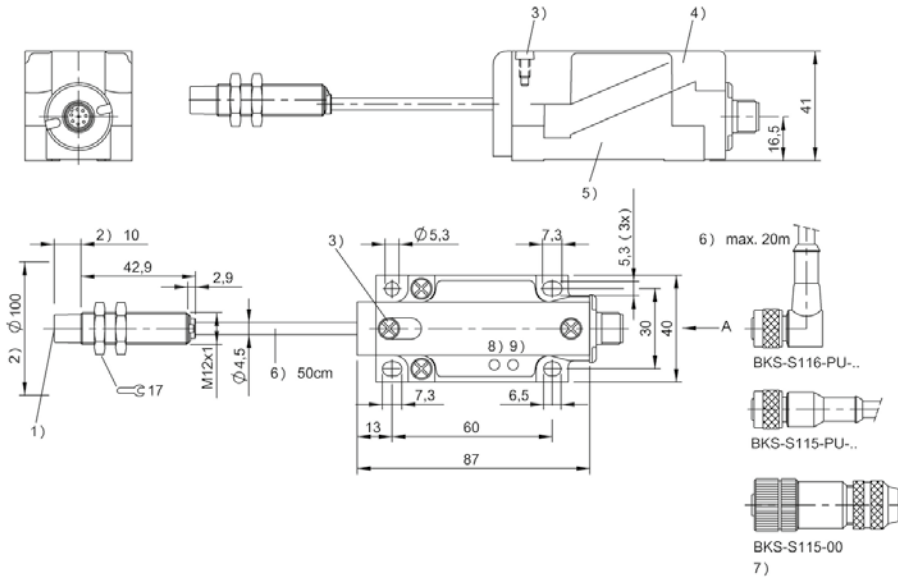


	BIS00C9 BIS L-400-035-003-00-S115
Product Group	LF (125 kHz)
Dimension	Ø 12 x 53 mm
Installation	metal-free (clear zone)
Antenna type	round
Connection	Connector, M12x1 connector, 8-pin, 0.50 m, PU
Housing material	Brass, interface PBT
Interface	RS232
Operating voltage U_b	19.2...26.4 VDC
Ambient temperature	0...70 °C
Protection degree	IP67
Approval/Conformity	CE, UL-FILE E227256, Vol.X1, BIS

Appropriate data carrier

	BIS003W	BIS003F
Data carrier distance to metal	metal-free	
Data carrier clear zone		
Working distance for writing		
Working distance for reading	0-11	
Offset at distance		
	0	±6
	3	±6
	7	±4
	8	±4
	10	±2

Dimensions in mm



1) Sensing surface, 2) Clear zone, 3) Locking screw, 4) Module unit, 5) Mounting base, 6) Cable length, 7) no cable, 8) Power, 9) Tag present



BIS00CC BIS L-400-035-004-00-S115	
Product Group	LF (125 kHz)
Dimension	25 x 10 x 50 mm
Installation	metal-free (clear zone)
Antenna type	round
Connection	Connector, M12x1 connector, 8-pin, 0.50 m, PU
Housing material	ABS, interface PBT
Interface	RS232
Operating voltage U_b	19.2...26.4 VDC
Ambient temperature	0...70 °C
Protection degree	IP67
Approval/Conformity	CE, UL-FILE E227256, Vol.X1, BIS

Appropriate data carrier

	BIS003R BIS0035	BIS003T BIS0038	BIS003W BIS003F
Data carrier distance to metal	metal-free	metal-free	metal-free
Data carrier clear zone			
Working distance for writing			
Working distance for reading	0-23	0-27	0-16
Offset at distance			
	0 ±12	±15	±8
	3 ±12	±15	±8
	7 ±12	±15	±8
	8 ±12	±15	±8
	10 ±12	±15	±8
	12 ±12	±15	±4
	15 ±12	±15	±4
	18 ±8	±15	
	20 ±8	±15	
	25	±6	

Dimensions in mm

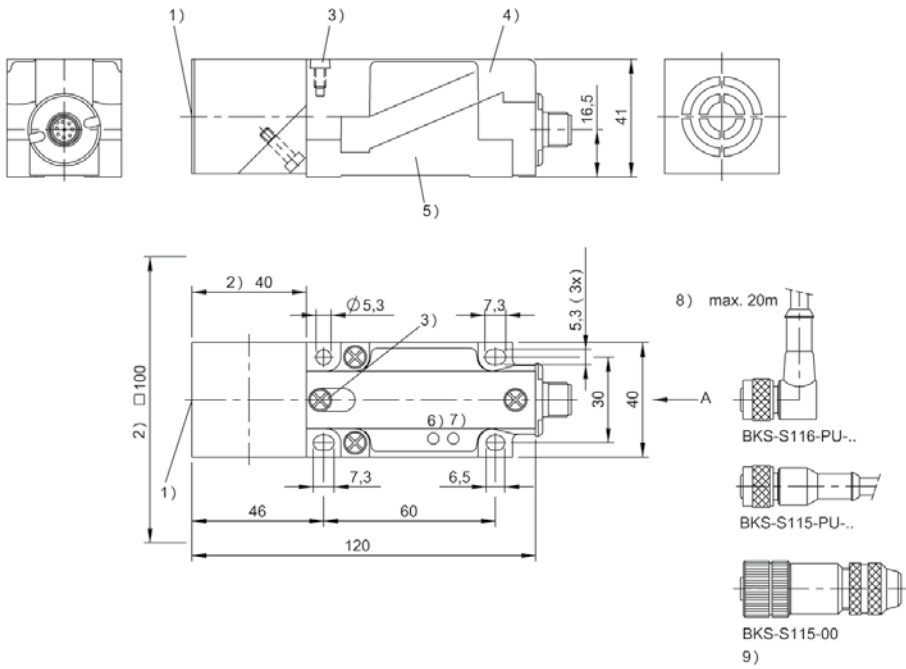


	BIS00C6 BIS L-400-035-001-02-S115
Product Group	LF (125 kHz)
Dimension	40 x 41 x 120 mm
Installation	metal-free (clear zone)
Antenna type	round
Connection	Connector, M12x1 connector, 8-pin
Housing material	PBT
Interface	RS422
Operating voltage U_b	19.2...26.4 VDC
Ambient temperature	0...70 °C
Protection degree	IP67
Approval/Conformity	CE, UL-FILE E227256, Vol.X1, BIS

Appropriate data carrier

	BIS003R BIS0035			BIS003T BIS0038			BIS003U BIS003C			BIS003W BIS003F	
Data carrier distance to metal	metal-free	on metal	flush in metal	metal-free	on metal	flush in metal	metal-free	on metal	flush in metal	metal-free	
Data carrier clear zone											
Working distance for writing											
Working distance for reading	0-30	0-15	5-12	0-40	0-24	0-18	0-55	0-32	0-28	0-20	
Offset at distance											
	0	±15	±10		±20	±12	±10	±30	±20	±18	±10
	3	±15	±10		±20	±12	±10	±30	±20	±18	±10
	5	±15	±10	±10	±20	±12	±10	±30	±20	±18	±10
	8	±15	±10	±7	±20	±12	±10	±30	±20	±18	±10
	10	±15	±10	±7	±20	±12	±10	±30	±20	±18	±10
	12	±15	±8	±7	±20	±12	±10	±30	±20	±18	±10
	15	±15	±8		±20	±12	±10	±30	±20	±18	±10
	18	±15			±20	±12	±10	±30	±20	±14	
	20	±15			±20	±12		±30	±20	±14	
	24	±15			±20	±10		±30	±20	±12	
	28				±20			±30	±14	±12	
	30				±20			±30	±14		
	32				±20			±30	±14		
	35				±20			±30			
	40							±30			

Dimensions in mm



1) Sensing surface, 2) Clear zone, 3) Locking screw, 4) Module unit, 5) Mounting base, 6) Power, 7) Tag present, 8) Cable length, 9) no cable



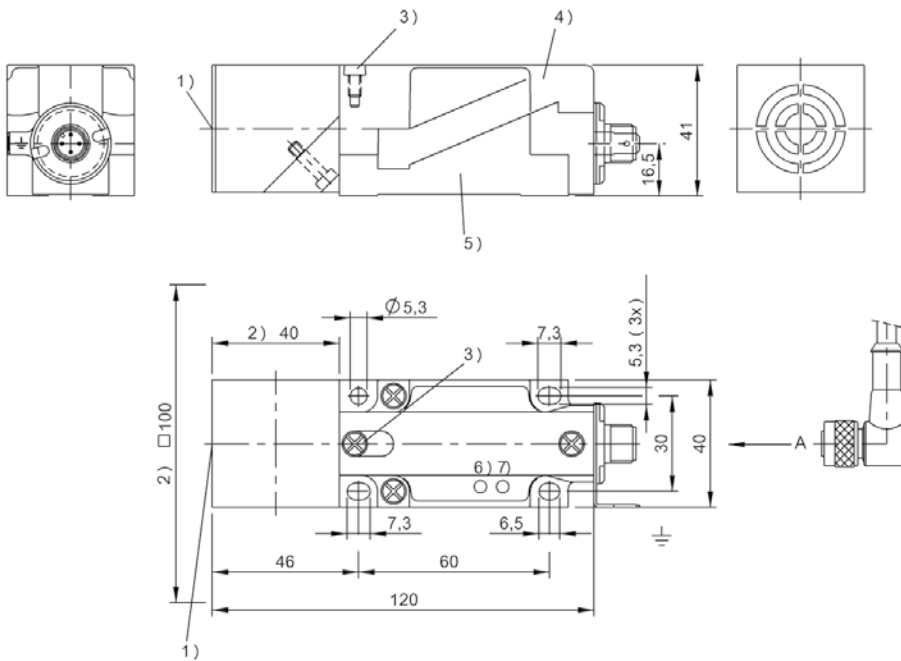
IO-Link, 10 Bytes process data length	BIS00CZ BIS L-409-045-001-07-S4
Product Group	LF (125 kHz)
Dimension	40 x 41 x 120 mm
Installation	metal-free (clear zone)
Antenna type	round
Connection	Connector, M12x1 connector, 4-pin
Housing material	PBT
Interface	IO-Link
Operating voltage U _b	18...30 VDC
Ambient temperature	0...70 °C
Protection degree	IP67
Approval/Conformity	CE, UL-FILE E227256, Vol.X1, BIS

Nur mit **IO-Link-Master** verwenden

Appropriate data carrier

	BIS003R BIS0035			BIS003T BIS0038			BIS003U BIS003C			BIS003W BIS003F	
	metal-free	on metal	flush in metal	metal-free	on metal	flush in metal	metal-free	on metal	flush in metal	metal-free	
Data carrier distance to metal											
Data carrier clear zone											
Working distance for writing											
Working distance for reading	0-30	0-15	5-12	0-40	0-24	0-18	0-55	0-32	0-28	0-20	
Offset at distance											
	0	±15	±10		±20	±12	±10	±30	±20	±18	±10
	3	±15	±10		±20	±12	±10	±30	±20	±18	±10
	5	±15	±10	±10	±20	±12	±10	±30	±20	±18	±10
	8	±15	±10	±7	±20	±12	±10	±30	±20	±18	±10
	10	±15	±10	±7	±20	±12	±10	±30	±20	±18	±10
	12	±15	±8	±7	±20	±12	±10	±30	±20	±18	±10
	15	±15	±8		±20	±12	±10	±30	±20	±18	±10
	18	±15			±20	±12	±10	±30	±20	±14	
	20	±15			±20	±12		±30	±20	±14	
	24	±15			±20	±10		±30	±20	±12	
	28				±20			±30	±14	±12	
	30				±20			±30	±14		
	32				±20			±30	±14		
	35				±20			±30			
	40							±30			

Dimensions in mm



1) Sensing surface, 2) Clear zone, 3) Locking screw, 4) Module unit, 5) Mounting base, 6) Power, 7) Tag present



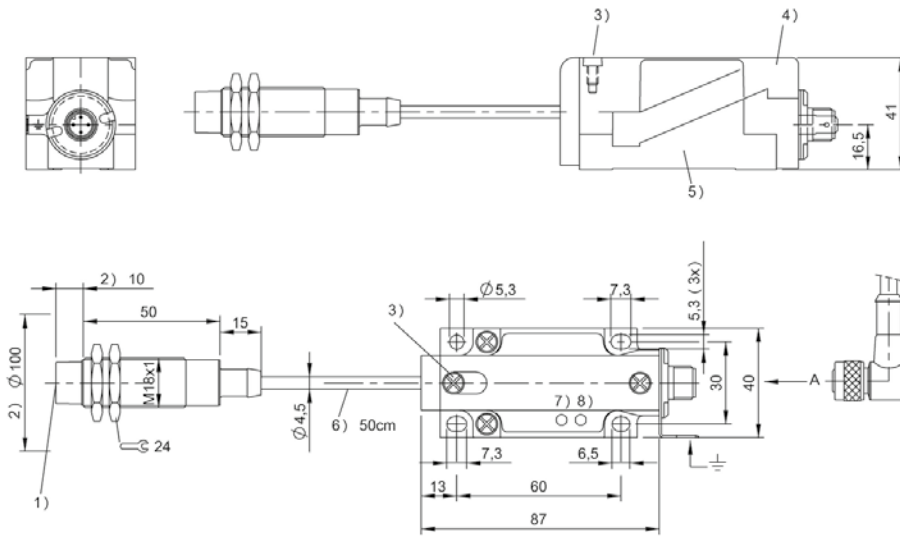
IO-Link, 10 Bytes process data length	BIS00E0 BIS L-409-045-002-07-S4
Product Group	LF (125 kHz)
Dimension	Ø 18 x 75 mm
Installation	metal-free (clear zone)
Antenna type	round
Connection	Connector, M12x1 connector, 4-pin, 0.50 m, PU
Housing material	Brass, interface PBT
Interface	IO-Link
Operating voltage U_b	18...30 VDC
Ambient temperature	0...70 °C
Protection degree	IP67
Approval/Conformity	CE, UL-FILE E227256, Vol.X1, BIS

Use with **IO-Link master** only

Appropriate data carrier

	BIS003R BIS0035	BIS003T BIS0038	BIS003W BIS003F
Data carrier distance to metal	metal-free	metal-free	metal-free
Data carrier clear zone			
Working distance for writing			
Working distance for reading	0-23	0-27	0-16
Offset at distance			
	0 ±12	±15	±8
	3 ±12	±15	±8
	7 ±12	±15	±8
	8 ±12	±15	±8
	10 ±12	±15	±8
	12 ±12	±15	±4
	15 ±12	±15	±4
	18	±15	
	20	±15	
	25	±6	

Dimensions in mm



1) Sensing surface, 2) Clear zone, 3) Locking screw, 4) Module unit, 5) Mounting base, 6) Cable length, 7) Power, 8) Tag present



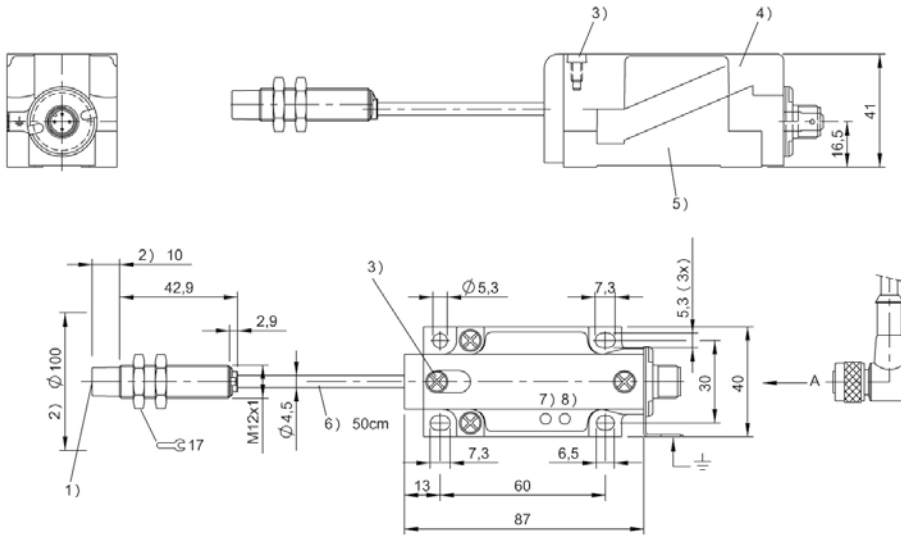
IO-Link, 10 Bytes process data length	BISO0E1 BIS L-409-045-003-07-S4
Product Group	LF (125 kHz)
Dimension	Ø 12 x 53 mm
Installation	metal-free (clear zone)
Antenna type	round
Connection	Connector, M12x1 connector, 4-pin, 0.50 m, PU
Housing material	Brass, interface PBT
Interface	IO-Link
Operating voltage U _b	18...30 VDC
Ambient temperature	0...70 °C
Protection degree	IP67
Approval/Conformity	CE, UL-FILE E227256, Vol.X1, BIS

Use with **IO-Link master** only

Appropriate data carrier

	BISO03W	BISO03F
Data carrier distance to metal	metal-free	
Data carrier clear zone		
Working distance for writing		
Working distance for reading	0-11	
Offset at distance		
	0	±6
	3	±6
	7	±4
	8	±4
	10	±2

Dimensions in mm



1) Sensing surface, 2) Clear zone, 3) Locking screw, 4) Module unit, 5) Mounting base, 6) Cable length, 7) Power, 8) Tag present



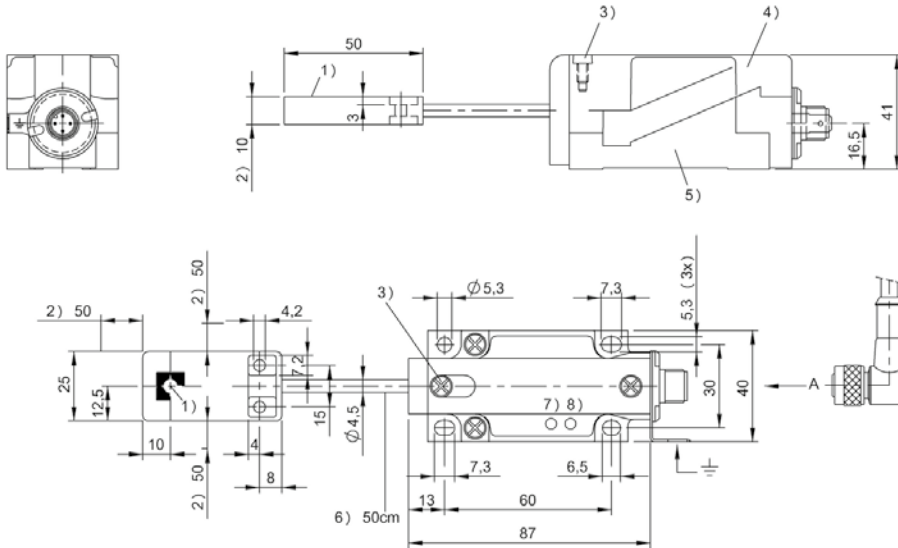
IO-Link, 10 Bytes process data length	BIS00E2 BIS L-409-045-004-07-S4
Product Group	LF (125 kHz)
Dimension	25 x 10 x 50 mm
Installation	metal-free (clear zone)
Antenna type	round
Connection	Connector, M12x1 connector, 4-pin, 0.50 m, PU
Housing material	ABS, interface PBT
Interface	IO-Link
Operating voltage U_b	18...30 VDC
Ambient temperature	0...70 °C
Protection degree	IP67
Approval/Conformity	CE, UL-FILE E227256, Vol.X1, BIS

Use with **IO-Link master** only

Appropriate data carrier

	BIS003R BIS0035	BIS003T BIS0038	BIS003W BIS003F
Data carrier distance to metal	metal-free	metal-free	metal-free
Data carrier clear zone			
Working distance for writing			
Working distance for reading	0-23	0-27	0-16
Offset at distance			
	0 ±12	±15	±8
	3 ±12	±15	±8
	7 ±12	±15	±8
	8 ±12	±15	±8
	10 ±12	±15	±8
	12 ±12	±15	±4
	15 ±12	±15	±4
	18 ±8	±15	
	20 ±8	±15	
	25	±6	

Dimensions in mm



1) Sensing surface, 2) Clear zone, 3) Locking screw, 4) Module unit, 5) Mounting base, 6) Cable length, 7) Power, 8) Tag present



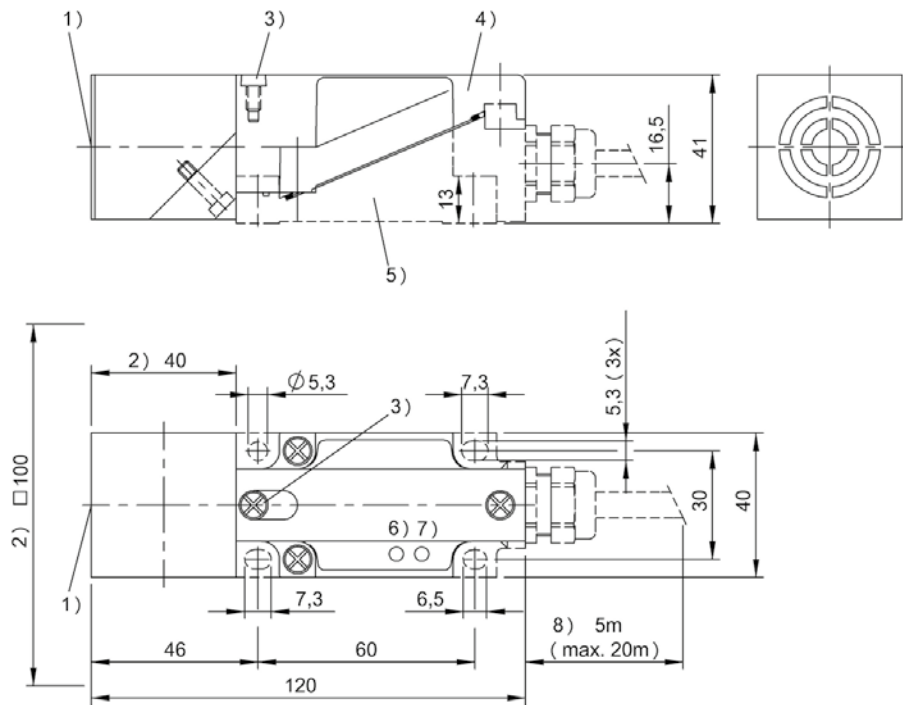
	BIS00CM BIS L-405-033-001-05-MU
Product Group	LF (125 kHz)
Dimension	40 x 41 x 120 mm
Installation	metal-free (clear zone)
Antenna type	round
Connection	—
Housing material	PBT
Interface	parallel
Operating voltage U_b	19.2...26.4 VDC
Ambient temperature	0...70 °C
Protection degree	IP67
Approval/Conformity	CE, UL-FILE E227256, Vol.X1, BIS

Use with **IO-Link master** only

Appropriate data carrier

	BIS003R BIS0035			BIS003T BIS0038			BIS003U BIS003C			BIS003W BIS003F	
	metal-free	on metal	flush in metal	metal-free	on metal	flush in metal	metal-free	on metal	flush in metal	metal-free	
Data carrier distance to metal											
Data carrier clear zone											
Working distance for writing											
Working distance for reading	0-30	0-15	5-12	0-40	0-24	0-18	0-55	0-32	0-28	0-20	
Offset at distance											
	0	±15	±10		±20	±12	±10	±30	±20	±18	±10
	3	±15	±10		±20	±12	±10	±30	±20	±18	±10
	5	±15	±10	±10	±20	±12	±10	±30	±20	±18	±10
	8	±15	±10	±7	±20	±12	±10	±30	±20	±18	±10
	10	±15	±10	±7	±20	±12	±10	±30	±20	±18	±10
	12	±15	±8	±7	±20	±12	±10	±30	±20	±18	±10
	15	±15	±8		±20	±12	±10	±30	±20	±18	±10
	18	±15			±20	±12	±10	±30	±20	±14	
	20	±15			±20	±12		±30	±20	±14	
	24	±15			±20	±10		±30	±20	±12	
	28				±20			±30	±14	±12	
	30				±20			±30	±14		
	32				±20			±30	±14		
	35				±20			±30			
	40							±30			

Dimensions in mm



1) Sensing surface, 2) Clear zone, 3) Locking screw, 4) Module unit, 5) Mounting base, 6) Power, 7) Tag present, 8) standard length

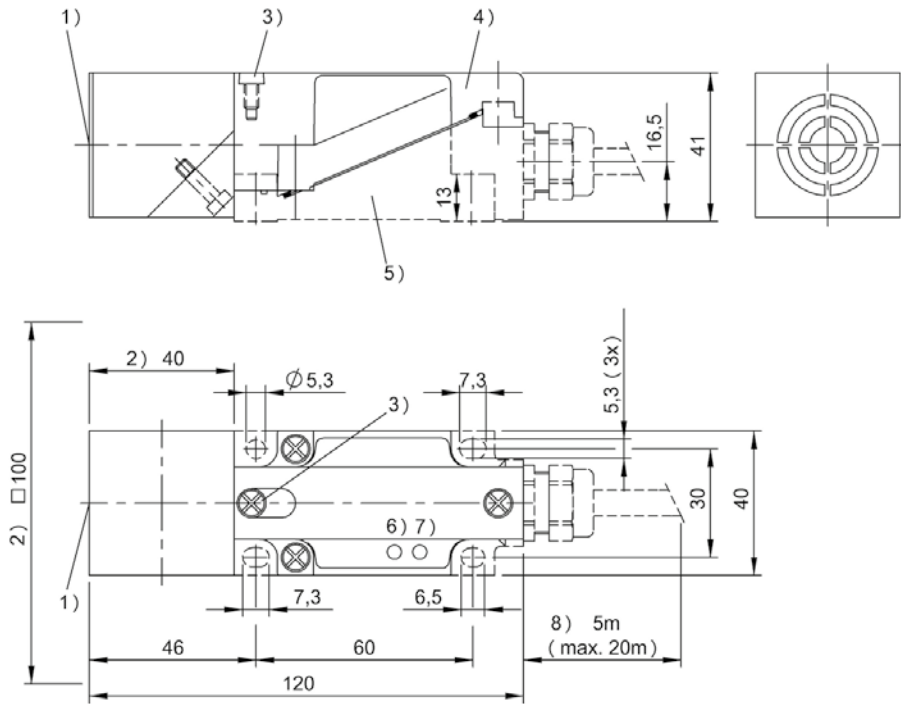


	BIS00CT BIS L-405-037-001-05-MU
Product Group	LF (125 kHz)
Dimension	40 x 41 x 120 mm
Installation	metal-free (clear zone)
Antenna type	round
Connection	—
Housing material	PBT
Interface	parallel
Operating voltage U_b	19.2...26.4 VDC
Ambient temperature	0...70 °C
Protection degree	IP67
Approval/Conformity	CE, UL-FILE E227256, Vol.X1, BIS

Appropriate data carrier

	BIS003R BIS0035			BIS003T BIS0038			BIS003U BIS003C			BIS003W BIS003F	
	metal-free	on metal	flush in metal	metal-free	on metal	flush in metal	metal-free	on metal	flush in metal	metal-free	
Data carrier distance to metal											
Data carrier clear zone											
Working distance for writing											
Working distance for reading	0-30	0-15	5-12	0-40	0-24	0-18	0-55	0-32	0-28	0-20	
Offset at distance											
	0	±15	±10		±20	±12	±10	±30	±20	±18	±10
	3	±15	±10		±20	±12	±10	±30	±20	±18	±10
	5	±15	±10	±10	±20	±12	±10	±30	±20	±18	±10
	8	±15	±10	±7	±20	±12	±10	±30	±20	±18	±10
	10	±15	±10	±7	±20	±12	±10	±30	±20	±18	±10
	12	±15	±8	±7	±20	±12	±10	±30	±20	±18	±10
	15	±15	±8		±20	±12	±10	±30	±20	±18	±10
	18	±15			±20	±12	±10	±30	±20	±14	
	20	±15			±20	±12		±30	±20	±14	
	24	±15			±20	±10		±30	±20	±12	
	28				±20			±30	±14	±12	
	30				±20			±30	±14		
	32				±20			±30	±14		
	35				±20			±30			
	40							±30			

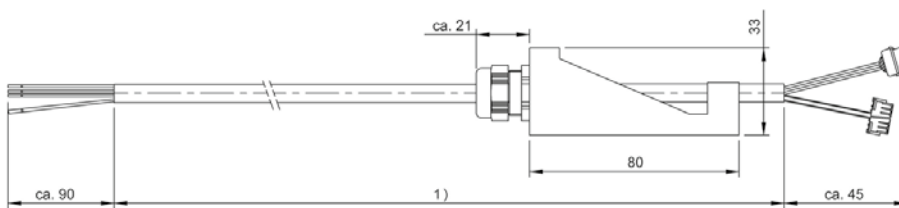
Dimensions in mm



1) Sensing surface, 2) Clear zone, 3) Locking screw, 4) Module unit, 5) Mounting base, 6) Power, 7) Tag present, 8) standard length



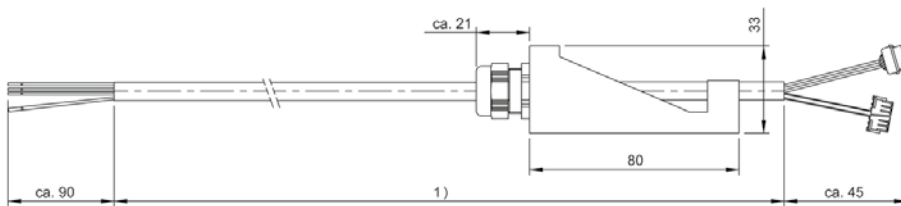
	BCC00R2 BIS L-503-PU1-05
Product Group	LF (125 kHz)
Dimension	—
Installation	—
Antenna type	—
Connection	Cable with connector housing, 5.00 m, PU
Housing material	PBT
Interface	parallel
Operating voltage U_b	—
Ambient temperature	—
Protection degree	IP65
Approval/Conformity	CE



1) Cable length see text



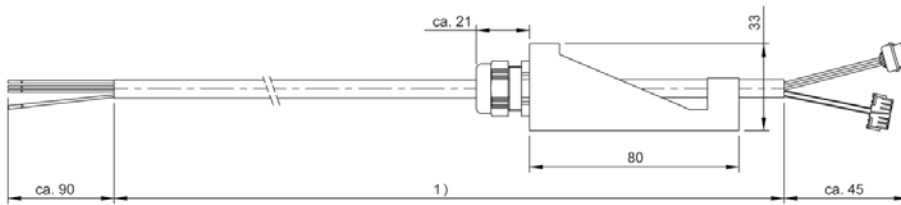
		BCC00R3 BIS L-503-PU1-10
Produktgruppe		LF (125 kHz)
Abmessung		—
Einbau		—
Antennenform		—
Anschluss		Cable with connector housing, 10.00 m, PU
Gehäusematerial		PBT
Schnittstelle		parallel
Betriebsspannung Ub		—
Umgebungstemperatur		—
Schutzart		IP67
Zulassung/Konformität		CE



1) Cable length see text



	BCC00R4 BIS L-503-PU1-15
Product Group	LF (125 kHz)
Dimension	—
Installation	—
Antenna type	—
Connection	Cable with connector housing, 15.00 m, PU
Housing material	PBT
Interface	parallel
Operating voltage U_b	—
Ambient temperature	—
Protection degree	IP65
Approval/Conformity	CE



1) Cable length see text

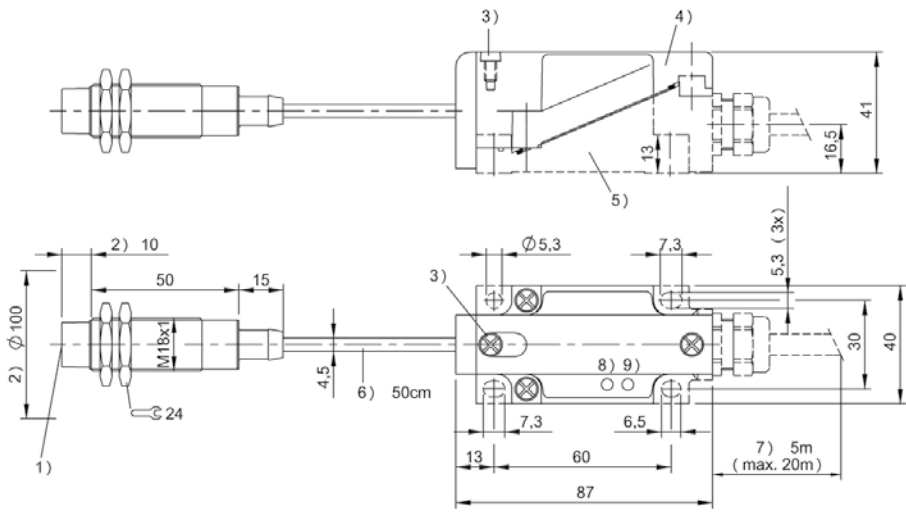


	BIS00CN BIS L-405-033-002-05-MU
Product Group	LF (125 kHz)
Dimension	Ø 18 x 75 mm
Installation	metal-free (clear zone)
Antenna type	round
Connection	0.50 m, PU
Housing material	Brass, interface PBT
Interface	parallel
Operating voltage U_b	19.2...26.4 VDC
Ambient temperature	0...70 °C
Protection degree	IP67
Approval/Conformity	CE, UL-FILE E227256, Vol.X1, BIS

Appropriate data carrier

	BIS003R BIS0035	BIS003T BIS0038	BIS003W BIS003F
Data carrier distance to metal	metal-free	metal-free	metal-free
Data carrier clear zone			
Working distance for writing			
Working distance for reading	0-23	0-27	0-16
Offset at distance			
	0 ±12	±15	±8
	3 ±12	±15	±8
	7 ±12	±15	±8
	8 ±12	±15	±8
	10 ±12	±15	±8
	12 ±12	±15	±4
	15 ±12	±15	±4
	18	±15	
	20	±15	
	25	±6	

Dimensions in mm



1) Sensing surface, 2) Clear zone, 3) Locking screw, 4) Module unit, 5) Mounting base, 6) Cable length, 7) standard length, 8) Power, 9) Tag present

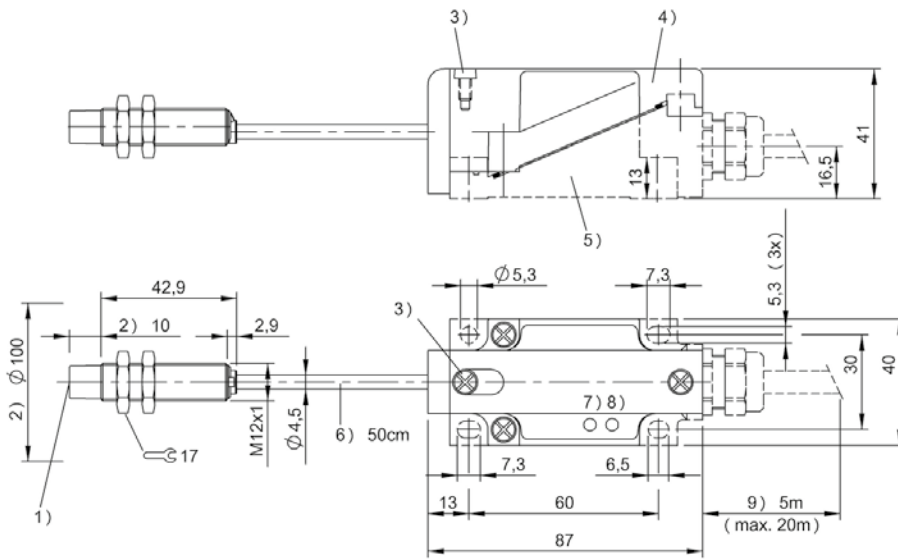


		BIS00CP BIS L-405-033-003-05-MU
Product Group	LF (125 kHz)	
Dimension	Ø 12 x 53 mm	
Installation	metal-free (clear zone)	
Antenna type	round	
Connection	0.50 m, PU	
Housing material	Brass, interface PBT	
Interface	parallel	
Operating voltage U _b	19.2...26.4 VDC	
Ambient temperature	0...70 °C	
Protection degree	IP67	
Approval/Conformity	CE, UL-FILE E227256, Vol.X1, BIS	

Appropriate data carrier

	BIS003W	BIS003F
Data carrier distance to metal	metal-free	
Data carrier clear zone		
Working distance for writing		
Working distance for reading	0-11	
Offset at distance		
	0	±6
	3	±6
	7	±4
	8	±4
	10	±2

Dimensions in mm



1) Sensing surface, 2) Clear zone, 3) Locking screw, 4) Module unit, 5) Mounting base, 6) Cable length, 7) standard length, 8) Power, 9) Tag present

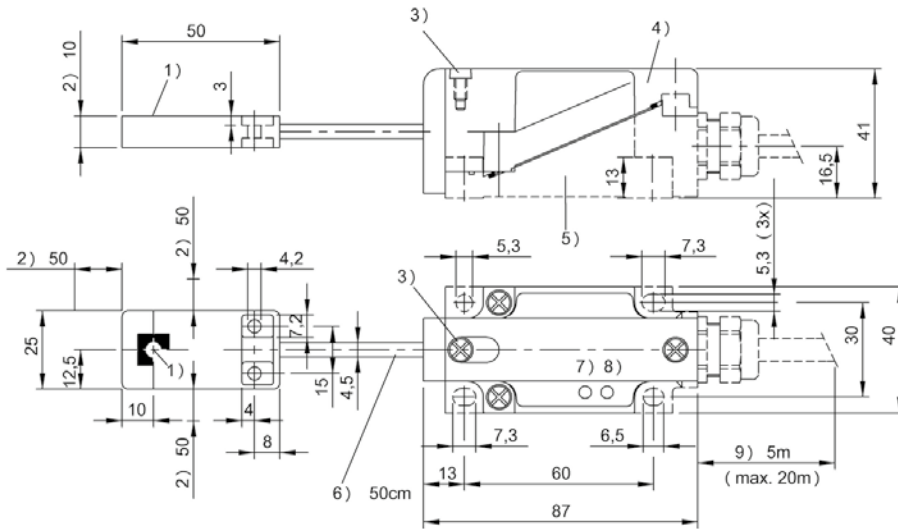


BIS00CR BIS L-405-033-004-05-MU	
Product Group	LF (125 kHz)
Dimension	25 x 10 x 50 mm
Installation	metal-free (clear zone)
Antenna type	round
Connection	0.50 m, PU
Housing material	ABS, interface PBT
Interface	parallel
Operating voltage U_b	19.2...26.4 VDC
Ambient temperature	0...70 °C
Protection degree	IP67
Approval/Conformity	CE, UL-FILE E227256, Vol.X1, BIS

Appropriate data carrier

	BIS003R BIS0035	BIS003T BIS0038	BIS003W BIS003F
Data carrier distance to metal	metal-free	metal-free	metal-free
Data carrier clear zone			
Working distance for writing			
Working distance for reading	0-23	0-27	0-16
Offset at distance			
	0 ±12	±15	±8
	3 ±12	±15	±8
	7 ±12	±15	±8
	8 ±12	±15	±8
	10 ±12	±15	±8
	12 ±12	±15	±4
	15 ±12	±15	±4
	18 ±8	±15	
	20 ±8	±15	
	25	±6	

Dimensions in mm



1) Sensing surface, 2) Clear zone, 3) Locking screw, 4) Module unit, 5) Mounting base, 6) Cable length, 7) Power, 8) Tag present, 9) standard length

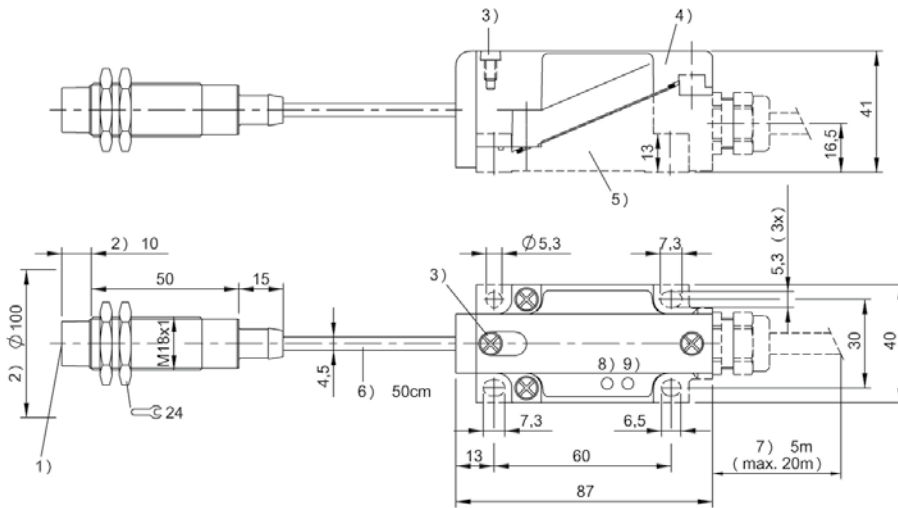


	BIS00CU BIS L-405-037-002-05-MU
Product Group	LF (125 kHz)
Dimension	Ø 18 x 75 mm
Installation	metal-free (clear zone)
Antenna type	round
Connection	0.50 m, PU
Housing material	Brass, interface PBT
Interface	parallel
Operating voltage U_b	19.2...26.4 VDC
Ambient temperature	0...70 °C
Protection degree	IP67
Approval/Conformity	CE, UL-FILE E227256, Vol.X1, BIS

Appropriate data carrier

	BIS003R BIS0035	BIS003T BIS0038	BIS003W BIS003F
Data carrier distance to metal	metal-free	metal-free	metal-free
Data carrier clear zone			
Working distance for writing			
Working distance for reading	0-23	0-27	0-16
Offset at distance			
	0 ±12	±15	±8
	3 ±12	±15	±8
	7 ±12	±15	±8
	8 ±12	±15	±8
	10 ±12	±15	±8
	12 ±12	±15	±4
	15 ±12	±15	±4
	18	±15	
	20	±15	
	25	±6	

Dimensions in mm



1) Sensing surface, 2) Clear zone, 3) Locking screw, 4) Module unit, 5) Mounting base, 6) Cable length, 7) standard length, 8) Power, 9) Tag present

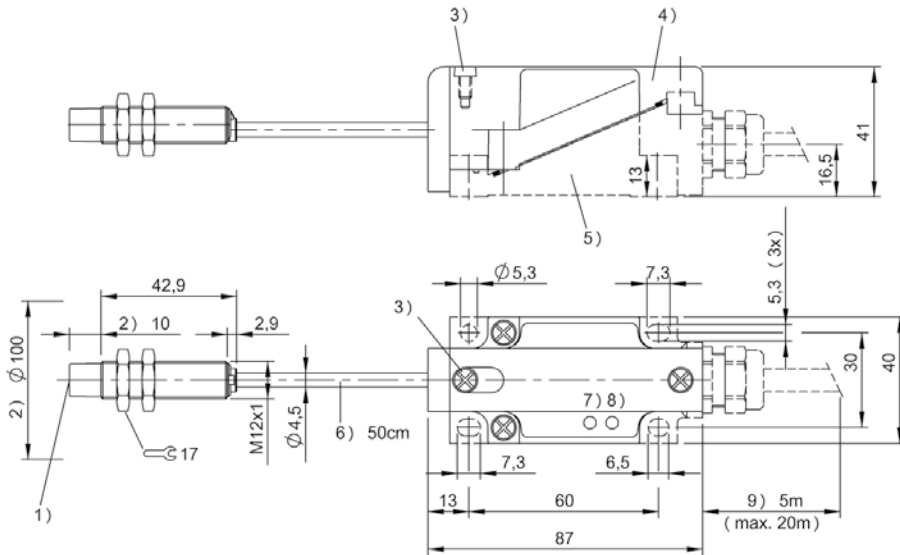


	BIS00CW BIS L-405-037-003-05-MU
Product Group	LF (125 kHz)
Dimension	Ø 12 x 53 mm
Installation	metal-free (clear zone)
Antenna type	round
Connection	0.50 m, PU
Housing material	Brass, interface PBT
Interface	parallel
Operating voltage U_b	19.2...26.4 VDC
Ambient temperature	0...70 °C
Protection degree	IP67
Approval/Conformity	CE, UL-FILE E227256, Vol.X1, BIS

Appropriate data carrier

	BIS003W	BIS003F
Data carrier distance to metal	metal-free	
Data carrier clear zone		
Working distance for writing		
Working distance for reading	0-11	
Offset at distance		
	0	±6
	3	±6
	7	±4
	8	±4
	10	±2

Dimensions in mm



1) Sensing surface, 2) Clear zone, 3) Locking screw, 4) Module unit, 5) Mounting base, 6) Cable length, 7) Power, 8) Tag present, 9) standard length

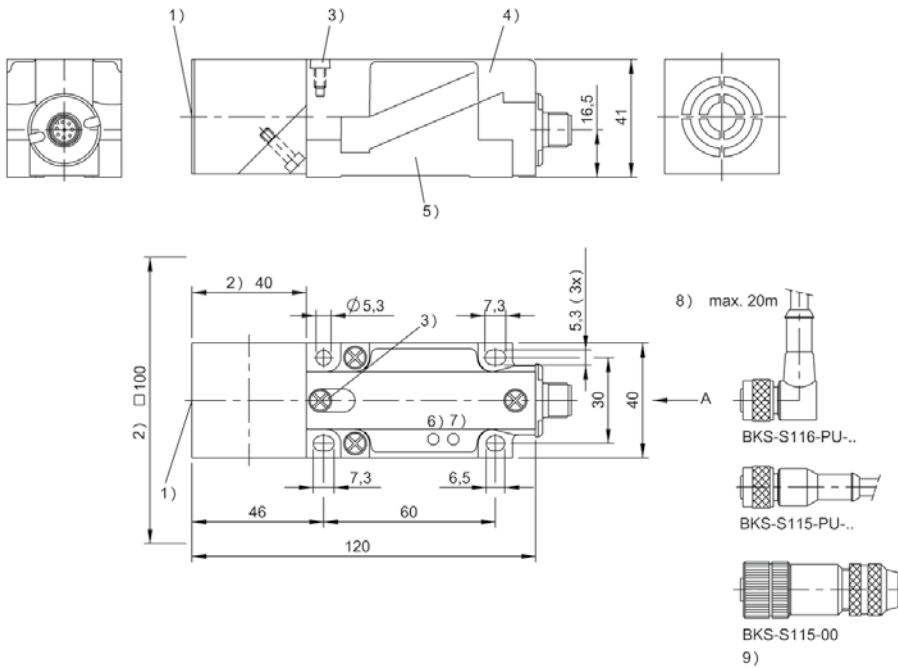


For processor units BAE003W and BAE003U (Easy Loop)	BIS00CH BIS L-400-043-001-02-S115
Product Group	LF (125 kHz)
Dimension	40 x 41 x 120 mm
Installation	metal-free (clear zone)
Antenna type	round
Connection	Connector, M12x1 connector, 8-pin
Housing material	PBT
Interface	RS422 (Easy Loop)
Operating voltage U_b	19.2...26.4 VDC
Ambient temperature	0...70 °C
Protection degree	IP67
Approval/Conformity	CE, UL-FILE E227256, Vol.X1, BIS

Appropriate data carrier

	BIS003R BIS0035			BIS003T BIS0038			BIS003U BIS003C			BIS003W BIS003F	
	metal-free	on metal	flush in metal	metal-free	on metal	flush in metal	metal-free	on metal	flush in metal	metal-free	
Data carrier distance to metal											
Data carrier clear zone											
Working distance for writing											
Working distance for reading	0-30	0-15	5-12	0-40	0-24	0-18	0-55	0-32	0-28	0-20	
Offset at distance											
	0	±15	±10		±20	±12	±10	±30	±20	±18	±10
	3	±15	±10		±20	±12	±10	±30	±20	±18	±10
	5	±15	±10	±10	±20	±12	±10	±30	±20	±18	±10
	8	±15	±10	±7	±20	±12	±10	±30	±20	±18	±10
	10	±15	±10	±7	±20	±12	±10	±30	±20	±18	±10
	12	±15	±8	±7	±20	±12	±10	±30	±20	±18	±10
	15	±15	±8		±20	±12	±10	±30	±20	±18	±10
	18	±15			±20	±12	±10	±30	±20	±14	
	20	±15			±20	±12		±30	±20	±14	
	24	±15			±20	±10		±30	±20	±12	
	28				±20			±30	±14	±12	
	30				±20			±30	±14		
	32				±20			±30	±14		
	35				±20			±30			
	40							±30			

Dimensions in mm



1) Sensing surface, 2) Clear zone, 3) Locking screw, 4) Module unit, 5) Mounting base, 6) Power, 7) Tag present, 8) Cable length, 9) no cable

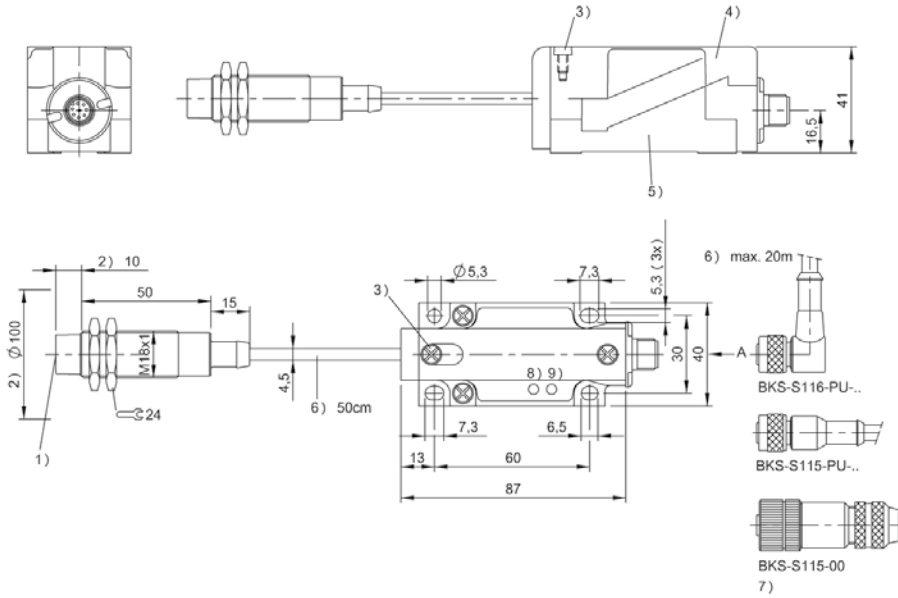


For processor units BAE003W and BAE003U (Easy Loop)	BIS00CJ BIS L-400-043-002-02-S115
Product Group	LF (125 kHz)
Dimension	Ø 18 x 75 mm
Installation	metal-free (clear zone)
Antenna type	round
Connection	Connector, M12x1 connector, 8-pin, 0.50 m, PU
Housing material	Brass, interface PBT
Interface	RS422 (Easy Loop)
Operating voltage U_b	19.2...26.4 VDC
Ambient temperature	0...70 °C
Protection degree	IP67
Approval/Conformity	CE, UL-FILE E227256, Vol.X1, BIS

Appropriate data carrier

	BIS003R BIS0035	BIS003T BIS0038	BIS003W BIS003F
Data carrier distance to metal	metal-free	metal-free	metal-free
Data carrier clear zone			
Working distance for writing			
Working distance for reading	0-23	0-27	0-16
Offset at distance			
	0 ±12	±15	±8
	3 ±12	±15	±8
	7 ±12	±15	±8
	8 ±12	±15	±8
	10 ±12	±15	±8
	12 ±12	±15	±4
	15 ±12	±15	±4
	18	±15	
	20	±15	
	25	±6	

Dimensions in mm



1) Sensing surface, 2) Clear zone, 3) Locking screw, 4) Module unit, 5) Mounting base, 6) Cable length, 7) no cable, 8) Power, 9) Tag present



For processor units BAE003W and BAE003U (Easy Loop)	BIS00CK BIS L-400-043-003-02-S115
Product Group	LF (125 kHz)
Dimension	Ø 12 x 53 mm
Installation	metal-free (clear zone)
Antenna type	round
Connection	Connector, M12x1 connector, 8-pin, 0.50 m, PU
Housing material	Brass, interface PBT
Interface	RS422 (Easy Loop)
Operating voltage U_b	19.2...26.4 VDC
Ambient temperature	0...70 °C
Protection degree	IP67
Approval/Conformity	CE, UL-FILE E227256, Vol.X1, BIS

Appropriate data carrier

	BIS003W	BIS003F
Data carrier distance to metal	metal-free	
Data carrier clear zone		
Working distance for writing		
Working distance for reading	0-11	
Offset at distance		
	0	±6
	3	±6
	7	±4
	8	±4
	10	±2

Dimensions in mm

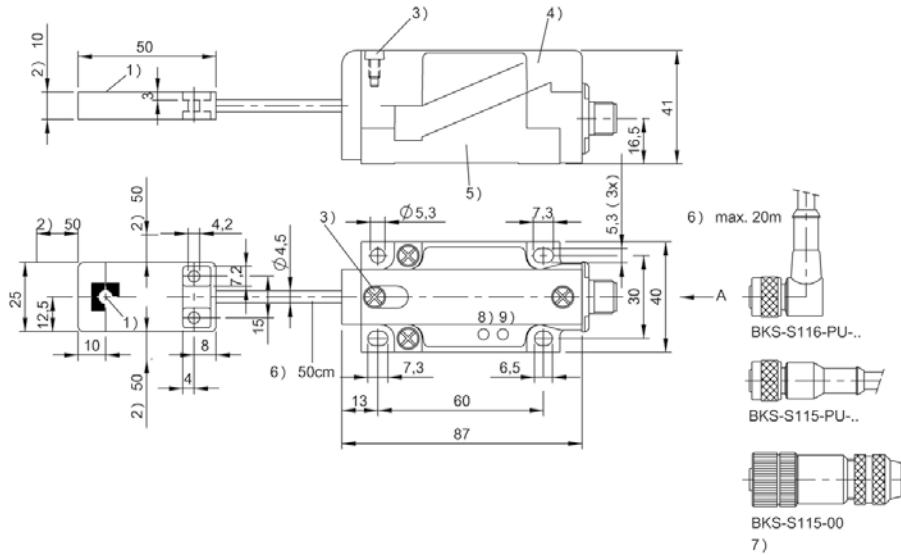


For processor units BAE003W and BAE003U (Easy Loop)	BIS00CL BIS L-400-043-004-02-S115
Product Group	LF (125 kHz)
Dimension	25 x 10 x 50 mm
Installation	metal-free (clear zone)
Antenna type	round
Connection	Connector, M12x1 connector, 8-pin, 0.50 m, PU
Housing material	ABS, interface PBT
Interface	RS422 (Easy Loop)
Operating voltage U_b	19.2...26.4 VDC
Ambient temperature	0...70 °C
Protection degree	IP67
Approval/Conformity	CE, UL-FILE E227256, Vol.X1, BIS

Appropriate data carrier

	BIS003R BIS0035	BIS003T BIS0038	BIS003W BIS003F
Data carrier distance to metal	metal-free	metal-free	metal-free
Data carrier clear zone			
Working distance for writing			
Working distance for reading	0-23	0-27	0-16
Offset at distance			
	0 ±12	±15	±8
	3 ±12	±15	±8
	7 ±12	±15	±8
	8 ±12	±15	±8
	10 ±12	±15	±8
	12 ±12	±15	±4
	15 ±12	±15	±4
	18 ±8	±15	
	20 ±8	±15	
	25	±6	

Dimensions in mm



1) Sensing surface, 2) Clear zone, 3) Locking screw, 4) Module unit, 5) Mounting base, 6) Cable length, 7) no cable, 8) Power, 9) Tag present



LF HANDHELD DEVICES (125 KHZ)

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provides you with product-specific information,

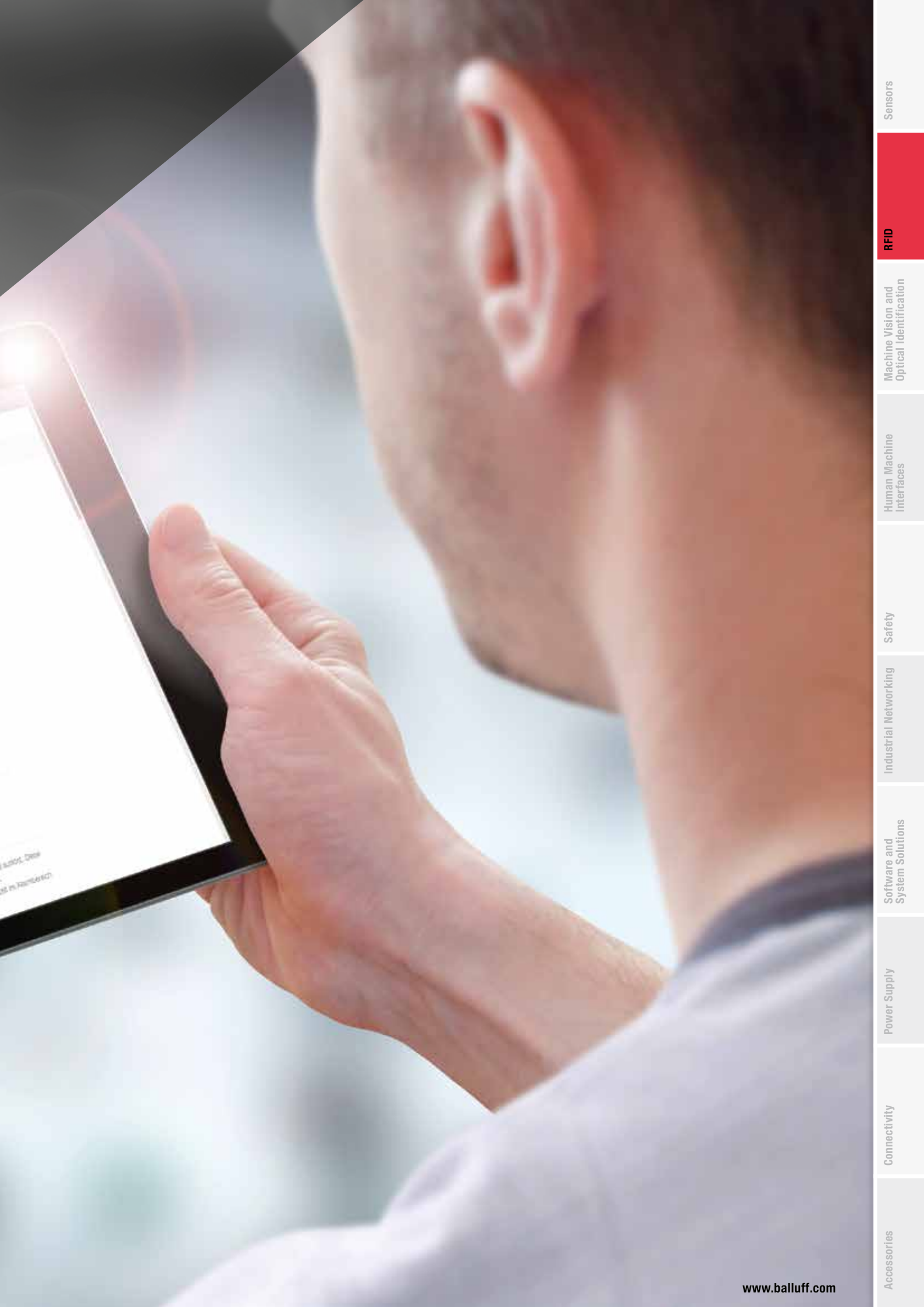
including technical drawings, data sheets, user guides and more for each individual product.

All items are available for download.

RFID

BASICS AND GLOSSARY





...sicht, Des
... in Fachbereich

Accessories

Connectivity

Power Supply

Software and
System Solutions

Industrial Networking

Safety

Human Machine
Interfaces

Machine Vision and
Optical Identification

RFID

Sensors

Adhesive label	Self-adhesive RFID data carrier
Air interface	Air gap between the data carrier and (read/)write head through which the data and energy are transmitted.
Autoclave compatible	Capable of being thermally treated in the pressure area of a gas-tight, closable pressure container. The object is to sterilize materials or cure materials in this pressure container, the so-called autoclave, to vulcanize tires and belts and compress fiber composites. Selected data carriers are suitable for use in autoclaves.
BIS C	Balluff RFID product group which describes low frequency (LF) RFID solutions operating at 70/455 kHz. These products are traditionally used for tool identification (Tool-ID).
BIS L/VL	Balluff RFID product group which describes low frequency (LF) RFID solutions operating at 125 kHz. These are suited for simple identification tasks.
BIS M/VM	Balluff RFID product group which describes high frequency (HF) RFID solutions, operating at 13.56 MHz. It supports ISO standards (e.g. DIN ISO 15693, DIN ISO 14443A) and is suitable for a variety of applications.
BIS U/VU	Balluff RFID product group which describes ultra-high frequency (UHF) system solutions operating at 860 to 960 MHz. Especially suited for applications in which long read distances and multi-tagging are required.
BIS V	Designation for a Balluff RFID processor/controller unit. This version supports read heads/antennas from the product families BIS VL, BIS C, BIS VM, BIS VU and IO-Link.
Charger, charging cradle	Accessory for the handheld programmer, the handy programmer, and the handheld device.
Checksum	Information written to the data carrier as 2 bytes. 2 bytes per block are lost. A detailed listing is contained in the manual for the processor unit.
Clear zone (RFID)	Area free of metal around the data carrier, to achieve a prescribed read/write distance.
Code present	Message indicating that the data carrier is within the detection range of the read/write head. The data can now be read and written.
Configuration file (GSD, GSDML, EDS, ...)	File (driver file) for incorporating fieldbus components into the controller. The file contains the fieldbus-specific settings.

Clamp	Mechanical accessory for mounting read/write heads, data couplers and processor units. Includes mounting brackets, mounting plates, and mounting bases.
CRC Check	Cyclic redundancy check. This is a procedure for determining a check value for data in order to detect errors in transmission or saving.
Data bolt	Data carrier which is integrated into a threaded body. The threaded body is available in various thread sizes, screw sizes and materials. Also referred to as databolt.
Data coupler RFID	Data transmitter which uses induction to send data over a short air gap, thereby eliminating a double mechanical interface.
Data carrier	Electronic data storage device as part of an RFID system for data of any kind. Can be read or programmed by computers, peripherals or automation equipment. Also referred to as a tag. For use in industrial applications there are data carriers in various forms (round, rectangular, special form factors), made of various materials and with different antenna technologies.
Data carrier chip	Memory chip in a data carrier which defines the memory capacity and memory structure.
DIN ISO 14443	International series of standards for non-contact chip cards. These are used in identification systems and access control, but also for payment applications such as credit cards, public transportation tickets etc. Operates at a frequency of 13.56 MHz.
DIN ISO 15693	International series of standards for non-contact chip cards, access control and payment applications. Operates at a frequency of 13.56 MHz and is the prevailing standard in automation.
Docking station	Device for connecting portable devices such as an RFID handheld device to a fixed power source. Also called a docking station.
Dynamic read mode	Operating mode of an RFID solution: The processor unit accepts the read/write request from the control system and stores the information regardless of whether there is a data carrier in the active range of the read/write head. As soon as a data carrier enters the active range of the read/write head, the job is executed. This is also known simply as dynamic mode.
Easy loop ID	BIS L system approach with the ability to connect up to 16 read heads to a higher level system through a single processor unit.
Easy Tool-ID	Workaround for machine tools that do not have an integrated tool ID function. Consists of a tool stand with integrated read/write head, a processor unit, a microcontroller and the power supply.

E-Kanban	A system which uses various technologies for controlling the use of components and materials in the manufacturing process. In the electronic version, so-called E-Kanban, RFID data carriers and barcodes replace conventional kanban instruments such as cards. The result is a faster information flow.
Ferrite antenna	Rod shaped inductive antenna for receiving RFID signals. It is built into the data carrier as well as the read/write head and has a polarizing and directional characteristic. When the end of a ferrite bar is pointed at the transmitter, the receiving field strength and thereby the read distance between data carrier and read/write head is reduced. The data carrier and read/write head must therefore be calibrated to each other.
Flush installation	Specification for sensor/read-write head installation to indicate whether the sensor or read/write head may be embedded in metal up to the active surface. This is a function of its design and ensures flawless operation. The switching distance/range is less than for differently constructed sensors/read-write heads of the same size.
Handheld RFID reader/writer Handheld programmer, Handy programmer	Device for portable writing and reading data carriers. Available for the various technologies LF (low frequency), HF (high frequency), UHF (ultra-high frequency). Ideal for use in harsh environments. Data is transmitted over optional WLAN, Bluetooth or a wired USB connection.
HF	High frequency of 13.56 MHz. Especially suited for use of RFID technology at close range up to 400 mm. The energy transmission of this high-frequency identification system is by means of a magnetic field using inductive coupling.
High memory	Data carriers with a memory capacity > 8K. The performance specifications from applications in automation also require high speed data transmission. Both can be achieved using selected components.
High-speed data carrier	RFID memory which was developed for applications in which it must provide the data to the controller system time-optimized. In combination with the associated read/write heads two to three times the read speed can be achieved compared with applications compliant with the DIN ISO 15693 standard.
High-temperature data carrier	RFID data carrier for temperature-resistant use in industrial environments at temperatures up to 220 °C (storage temperature).
Hollow taper shank (HSK)	Tool holder used in machine tools. Integration into the tool is extremely simple thanks to the standardized size for installation in hollow shank tapers HSK in accordance with DIN 68871-A and steep tapers SK in accordance with ISO/DIS 12164-1.
LF	Low frequency (70 kHz or 125 KHz). The power in LF identification systems is transmitted via a magnetic field by means of inductive coupling. Appropriate for use in difficult conditions such as metal surroundings.
Metal-free installation	Installation/mounting specification, generally defines an installation situation needed for proper function without the use of metallic materials in order to achieve defined data sheet values.

Mifare	World's most often used contactless chip card technology. Complies with ISO-Standards ISO 7816 and ISO 14443A.
Mounting bracket/base/plate	Mechanical accessory for mounting read/write heads, data couplers and processor units. Examples are clamping holders or mounting brackets.
Mold ID	System solution for automated managing of injection molding tools in the plastics industry.
NFC	Near field communication: An international transmission standard based on RFID for contactless exchange of data using electromagnetic induction and loosely coupled coils over short distances of a few centimeters and a data transfer rate of maximum 424 kBit/s.
Non-flush mounting	Specification for installing sensors or read/write heads which do not have a metal housing surrounding their sensing face. These can be recognized by their "caps". This design ensure flawless sensor function. The switching distance/range and permissible offset are greater than for flush mount sensors or read/write heads of the same size.
Offset	Positioning tolerance between the read/write head and the data carrier
Pistol grip	Accessory for the handheld programmer, the handy programmer, and the handheld device.
Processor unit	Essential component of an RFID system which is used for signal processing and preparation. Usually used or combined with an integrated interface for connecting to the controller/ PC system. It is also referred to as a controller.
Process data buffer	In processor units connecting multiple read/write heads the process data buffer is divided into read/write head-specific areas. Process data is the data which is obtained from a technical process by means of a read/write head. The process data represents the current status.
Reader chip	Memory chip in a data carrier which defines the memory capacity and memory structure.
Read head	The part of an RFID system that supplies the data carrier with power and reads the data stored on it. The read head then passes the data to a processor unit which further processes the data.
Read/write head	Part of an RFID system that supplies the data carrier with power and reads the data stored on it and stores new data. The read head then passes the data to a processor unit which further processes the data.
Read/write time data carrier	Time a data carrier requires for detecting/transmitting data. Comprised of: Data carrier detection + read/write time of the data blocks taken together. The read/write time varies with the data carrier type (FRAM, EEPROM) and the transmission standard.

RFID	Radio frequency identification: Communication technology for non-contact and automatic identification of objects (including merchandise, goods, people, animals using radio waves).
RFID data carriers	Electronic data storage medium as part of an RFID system. It can be read and, in specific configurations, also written. Also called a transponder.
Rod antenna	Rod shaped inductive antenna for receiving RFID signals (ferrite antenna). It is built into the data carrier as well as the read/write head and has a polarizing and directional characteristic. When the end of a ferrite bar is pointed at the transmitter, the receiving field strength and thereby the read distance between data carrier and read/write head is reduced. The data carrier and read/write head must therefore be calibrated to each other
Round antenna	Device for receiving RFID signals. In contrast to the bar/ferrite antenna it has no polarizing or directional effect. The electrostatic lobe is distributed evenly around the antenna. The round antenna is used both in data carriers and in the read/write head. Therefore these need to be tuned to each other.
Service interface	Connection point for various devices. For service purposes it sends device-specific setting data and is not suitable or standardized as a process interface.
Simultaneous operation	Multiple read/write heads are read by a processor unit (controller) simultaneously.
Slow tag detection	Data carrier detection whereby the antenna on the read/write head is switched on for detection only every 200 ms.
Static read mode	Mode of operation of an RFID system. The data carrier remains in place in front of the read/write head. This enables a greater read/write distance than in dynamic mode.
Subnet 16	Special solution approach for systematic wiring and for operating multiple read/write heads with a gateway component.
Tag	Electronic data storage device used as part of an RFID system for data of any kind. Can be read or programmed by computers, peripherals or automation equipment. For use in industrial applications there are data carriers in various forms (round, rectangular, special form factors), made of various materials and with different antenna technologies. Also referred to as a data carrier.
Taper (SK)	Standardized form of a tool holder for clamping various tools in the main spindle of a machine tool. The taper is standardized in DIN ISO 7388 Part 1. The main field of application is in milling machines.

Tool ID	Identification of tools and tool data for automated detection, traceability of tool data in the area of machine tools. Data carriers and read/write heads are generally installed in metallic surroundings. The requirements for read distance and installation conditions are generally high.
UHF	Ultra high frequency (865 to 960 MHz). The power transmission in UHF identification systems takes place by means of electromagnetic waves as in the classic radio systems. Appropriate for use over larger distances (several meters).
UID	Unique identifier for RFID data carriers. Each number is assigned only once.
Workpiece identification	Identification of workpieces, semi- and finished products or workpiece carriers. The requirements vary depending on the materials used. Compared with tool identification the requirements for read distance are generally low to moderate. "Dynamic reading" operating mode is often used.

RFID SYSTEMS HF (13.56 MHz) BIS M
RFID SYSTEMS LF (70/455 kHz) BIS C
RFID SYSTEMS LF (125 kHz) BIS L

Mounting

Flush in steel

The sensing surface can be mounted on the surface of steel so that it is even with adjacent areas.

Non-flush on steel

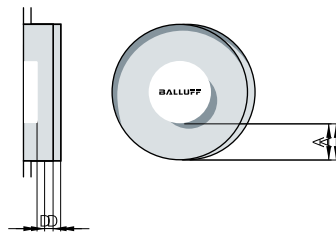
The sensing surface must not be in contact or surrounded by steel.

Non-metal

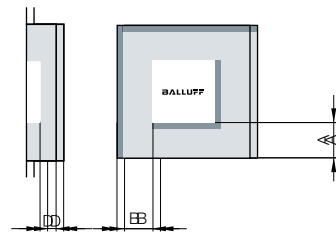
The entire clear zone must remain free of any type of metal.

Mounting in steel

To reach the specified read/write distance, the data carrier in the metallic environment must be mounted within a certain metal-free clear zone.



Round data carriers



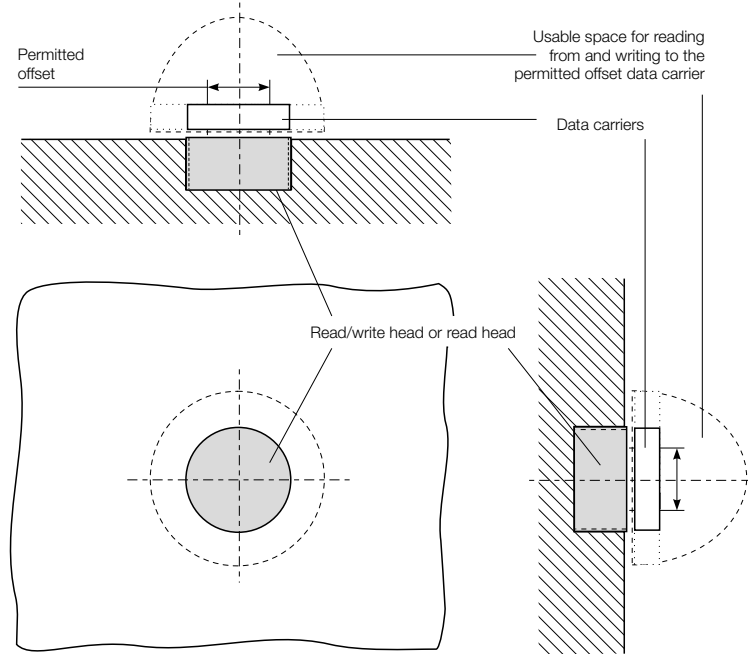
Block-style data carriers

For further information see data sheets of read/write heads on www.balluff.com

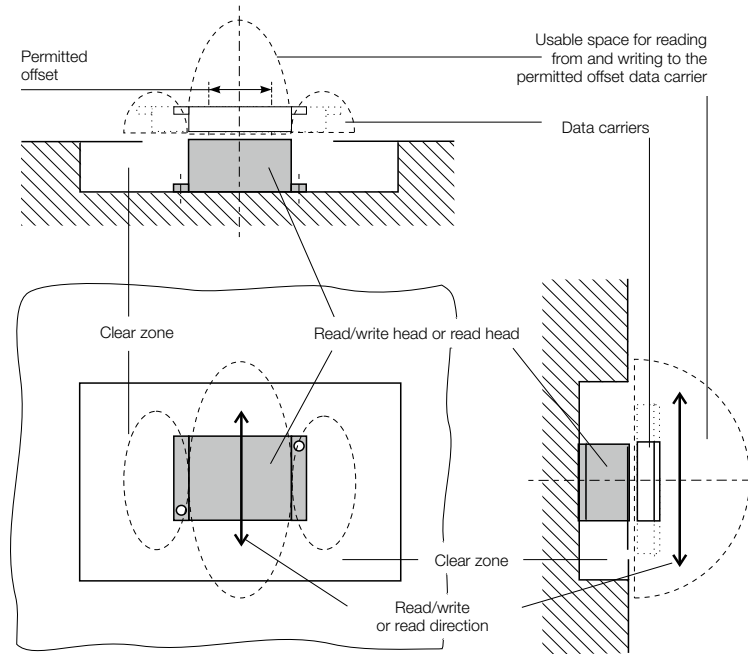
Spatial arrangement of read/write head or read head and data carrier

The key to reliable data exchange between the read/write head or read head and the data carrier is maintaining sufficient dwell time of the data carrier within a specified spatial distance from the read/write head or read head.

For a static read/write or read operation, the data carrier comes to a complete stop in front of the read/write or read head; This enables a larger distance between the two.



For dynamic operation the data carrier is read or programmed on the fly as it moves past the read/write head or read head. The shorter distance is necessary in order to achieve as large a read/write path or read path as possible. Each read/write head or read head has certain data carriers which can be used with it (the pairing is based on physical size and antenna field configuration).



Sensors

RFID

Machine Vision and Optical Identification

Human Machine Interfaces

Safety

Industrial Networking

Software and System Solutions

Power Supply

Connectivity

Accessories

RFID SYSTEMS HF (13.56 MHz) BIS M

Read times BIS M-1xx-0x
and BIS M-1xx-20

EEPROM – data carrier with 16 byte blocks		FRAM – data carrier with 16 byte blocks	
Bytes	Read time	Bytes	Read time
0 to 15	20 ms	0 to 15	30 ms
For each additional started 16 bytes add additional	10 ms	For each additional started 16 bytes add additional	15 ms

Read times for BIS M-1xx-1x
and BIS VM-3xx-401-S4

FRAM – data carrier with 64 byte blocks	
Bytes	Read time
0 to 63	14 ms
For each additional started 64 bytes add additional	6 ms

Write times BIS M-1xx-0x
and BIS M-1xx-20

EEPROM – data carrier with 16 byte blocks		FRAM – data carrier with 16 byte blocks	
Bytes	Read time	Bytes	Read time
0 to 15	40 ms	0 to 15	60 ms
For each additional started 16 bytes add additional	30 ms	For each additional started 16 bytes add additional	40 ms

Write times for BIS M-1xx-1x
and BIS VM-3xx-401-S4

FRAM – data carrier with 64 byte blocks	
Bytes	Read time
0 to 63	30 ms
For each additional started 64 bytes add additional	15 ms

Write/read cycles

Data carriers	Memory type	Write cycles	Read cycles	Data retention time
112 bytes	EEPROM	100000	Unlimited	10 years
160 bytes	EEPROM	100000	Unlimited	10 years
736 bytes	EEPROM	100000	Unlimited	10 years
752 bytes	EEPROM	100000	Unlimited	10 years
992 bytes	EEPROM	100000	Unlimited	10 years
2,000 bytes	FRAM	Unlimited	Unlimited	10 years
8,192 bytes	FRAM	Unlimited	Unlimited	10 years
32,768 bytes	FRAM	Unlimited	Unlimited	10 years
65,536 bytes	FRAM	Unlimited	Unlimited	10 years
131,072 bytes	FRAM	Unlimited	Unlimited	10 years

Minimum distance between two data carriers

	BIS M-122-01/L, BIS M-122-02/L	BIS M-110-02/L	BIS M-101-01/A, BIS M-111-02/A	BIS M-102-01/L, BIS M-112-02/L	BIS M-105-01/A, BIS M-105-02/A	BIS M-108-02/A	BIS M-120-01/L	BIS M-151-02/A, BIS M-150-02/A
BIS M-300		>100	>100	>150	>100	>100		
BIS M-301		>200	>200	>200	>100	>200	>250	
BIS M-302, BIS VM-307	>100	>100	>100	>100	>100	>100		
BIS M-304	>100	>100	>100	>100	>100	>100		
BIS M-400-007-001-00-S115		>100	>100	>150	>100	>100		
BIS M-401-007-001-00-S115		>200	>200	>200	>100	>200	>250	
BIS M-400-007-002-00-S115	>100	>100	>100	>100	>100	>100		
BIS M-351, BIS VM-351								>250
BIS M-451-007-001-00-S115								>250

Dimensions in mm

Minimum distance between two read/write heads

BIS M-300	200
BIS M-301	600
BIS M-351/BIS VM-351	600
BIS M-302/BIS VM-307	100
BIS M-304	100
BIS M-400-007-001-00-S115	200
BIS M-401-007-001-00-S115	600
BIS M-451-007-001-00-S115	600
BIS M-400-007-002-00-S115	100
BIS M-410-007-002-00-S115	200
BIS M-411-007-002-00-S115	300
BIS VM-305-001-S4	100
BIS VM-341-401-S4	600
BIS VM-343-401-S4	50
BIS VM-344-401-S4	200
BIS VM-345-401-S4	200
BIS VM-346-401-S4	50
BIS VM-348-401-S4	50
BIS VM-352-001-S4	100
BIS VM-355-401-S4	200

Dimensions in mm

Installation in aluminum

With clear zone, static operation

When installing components in aluminum, provide clear zones for trouble-free operation. In static operation, the depth of the clear zone in aluminum of at least 10 mm must be observed, Figure 1. Clear zone dimension A corresponds to the diameter of the larger communication partner (data carrier or read/write head) plus the maximum possible offset (see information for read/write head), Figure 2. In combination with the read/write heads BIS C-318, 327, 328, 350, 351 and 355, dimension B and C is calculated over the length and width of the larger communication partner (data carrier or read/write head) plus the maximum possible offset (see information for read/write head), Figure 3.

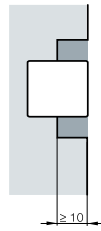


Fig. 1

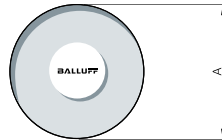


Fig. 2

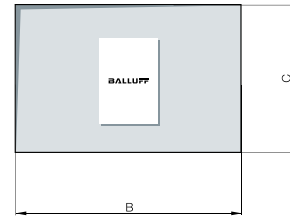


Fig. 3

With clear zone, dynamic operation

In dynamic operation, the depth of the clear zone in aluminum also has to be at least 10 mm, Figure 1. Clear zone dimension A corresponds to twice the diameter of the larger communication partner and the equivalent of the diameter of the smaller communication partner. Clear zone dimension C corresponds to the diameter of the larger communication partner plus the corresponding maximum offset (see information for read/write head), Figure 4. In combination with the read/write heads BIS C-318, 327, 328, 350, 351 and 355, dimension B is calculated from twice the read/write distance (see information about read/write heads) plus the width of the data carrier. Clear zone dimension C corresponds to the read/write head length plus the corresponding maximum offset (see specification for read/write head), Figure 5.

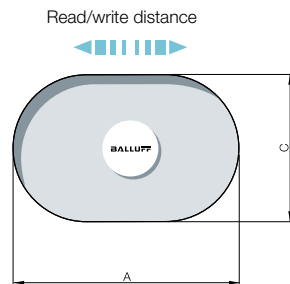


Fig. 4

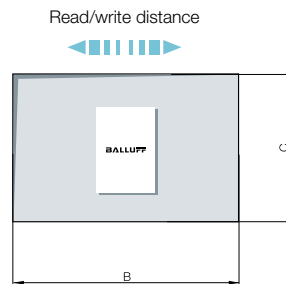


Fig. 5

Read/write cycles

Data carriers	Memory type	Coding	Write cycles up to 30 °C	Write cycles up to 70 °C	Read cycles	Memory organization
511 bytes	EEPROM	-04	1000000	500000	Unlimited	32-byte blocks
1023 bytes	EEPROM	-05	1000000	500000	Unlimited	32-byte blocks
2047 bytes	EEPROM	-11	1000000	500000	Unlimited	64-byte blocks
8 kbytes	FRAM	-32	Unlimited	Unlimited	Unlimited	64-byte blocks

Read times in static mode

For double read and compare:

Data carrier with 32 bytes per block		Data carrier with 64 bytes per block	
Bytes	Read time	Bytes	Read time
From 0 to 31	110 ms	From 0 to 63	220 ms
For each additional started 32 bytes add additional	120 ms	For each additional started 64 bytes add additional	230 ms
From 0 to 255	= 950 ms	From 0 to 2047	= 7350 ms

Write times in static mode

Includes checking and comparing:

Data carrier with 32 bytes per block		Data carrier with 64 bytes per block	
Bytes	Write time [ms]	Bytes	Write time [ms]
From 0 up to 31	110 + n × 10	From 0 up to 63	220 + n × 10
≥ 32	y × 120 + n × 10		y × 230 + n × 10
From 0 up to 255	= max. 3510	From 0 up to 2047	= max. 27830

n = Number of contiguous bytes to write

y = Number of blocks to process

Read times in dynamic operation

Read times within the 1st block for double read and compare:

Data carrier with 32 bytes per block		Data carrier with 64 bytes per block	
Bytes	Read time	Bytes	Read time
From 0 up to 3	14 ms	From 0 up to 3	14 ms
For all additional bytes	3.5 ms	For all additional bytes	3.5 ms
From 0 up to 31	112 ms	From 0 up to 64	224 ms

The times indicated apply after the data carrier has been detected. If the tag has not been recognized, an additional 30 ms must be added to allow for creating the energy field necessary to recognize the data carrier.

Memory organization

Memory size up to 1023 bytes = 32 bytes per block

Memory size 2047 bytes and larger = 64 bytes per block

Maximum speed

To calculate the permitted speed in which the data carrier and head move relative to each other, the static distance values are used. The permissible speed is:

$$V_{\text{max.perm.}} = \frac{\text{Path}}{\text{Time}} = \frac{2 \times |\text{offset value}|}{\text{Processing time}}$$

The offset value is dependent on the read/write distance actually used in the system.

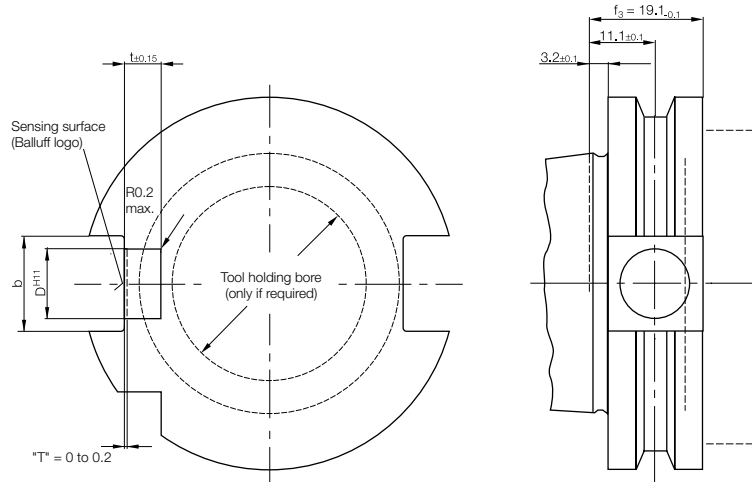
$$\text{Processing time} = \text{Data carrier response time} + \text{Read/write time of first block to be read} + n^1 \times \text{Read/write time for additional started blocks}$$

n¹ = number of started blocks

Installation in taper SK

Data Carriers	BIS C-122			BIS C-103			BIS C-105		
Taper DIN 69871-A	D ^{H11}	t ±0.15	rpm _{max}	DH11	t ±0.15	rpm _{max}	D ^{H11}	t ± 0.15	rpm _{max}
No. 30	10	4.65	90000	12	8.15	68000	12	6.15	68000
No. 40	10	4.65	75000	12	8.15	54000	12	6.15	54000
No. 45	10	4.65	66000	12	8.15	43000	12	6.15	43000
No. 50	10	4.65	59000	12	8.15	33000	12	6.15	33000

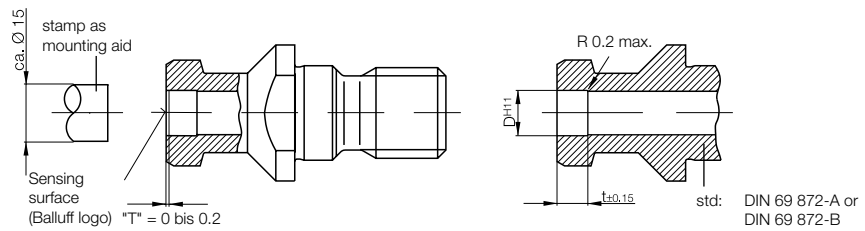
Dimensions in mm



Installation in retention knob

Data Carriers	BIS C-122		BIS C-103		BIS C-105	
Taper DIN 69871-A	D ^{H11}	t ±0.15	D ^{H11}	t ±0.15	D ^{H11}	t ±0.15
No. 30						
No. 40	10	4.65				
No. 45	10	4.65	12	8.15	12	6.15
No. 50	10	4.65	12	8.15	12	6.15

Dimensions in mm



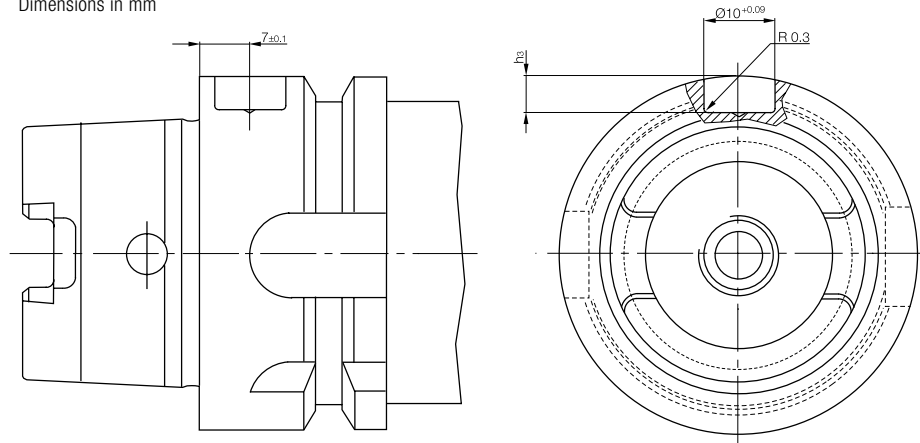
Installation:

1. Degrease gluing surfaces.
2. Apply a bead of glue approximately 3 mm wide around the perimeter of the data carrier housing (recommended glue e.g. LOCTITE Hysol 1C or UHU-Plus endfest 300), observe manufacturer's processing instructions
3. Press in data carrier housing manually, observe dimension "T"
4. Remove excess glue
5. Allow to cure

Installation in hollow shank taper HSK

Data Carriers	BIS C-122	
HSK Form A ISO/DIN 12164-1	$h_{3+0,20}$	rpm _{max}
32	5.4	96000
49	5.2	80000
50	5.1	75000
63	5	65000
80	4.9	57000
100	4.9	48000

Dimensions in mm



Mechanical strength

Data carriers and read/write heads BIS C-1xx, BIS C-3xx	
Shock load	100 g/6 ms per EN 60068-2-27 and 100 g/2 ms per EN 60068-2-29
Vibration	20 g, 10...2000 Hz per EN 60068-2-6

Values apply to data carriers BIS C-1xx and read/write heads BIS C-3xx except for the non-potted read/write heads BIS C-350, BIS C-351, BIS C-352 and BIS C-355.

Processor units and non-potted read/write heads BIS C-6xxx, BIS C-350, BIS C-351, BIS C-352, BIS C-355	
Shock load	15 g/11 ms per EN 60068-2-27 and 15 g/6 ms per EN 60068-2-29
Vibration	5 g, 10...150 Hz per EN 60068-2-6

RFID SYSTEMS LF (125 KHZ) BIS L

**easy loop®
communication module**

easy loop® provides compact read heads and a communication module for simple connection to the controller at minimal cost for extending BIS L systems. Prefabricated cable and connectors for fast, proper connections. No need to configure addresses.

Install the BIS L simply by connecting up to eight read heads on each of two lines with the easy loop® interface. One cable is all you need for the simple installation of BIS L, a separate power supply is not necessary. All processor units function independently to allow dynamic operation: Data is transferred reliably when the data carrier passes by.

Read times BIS L-1xx

Serial number detection typically 110 ms*

Data carrier with 4 byte blocks	
Bytes	Read time
From 0 to 3	180 ms
For each additional started 4 bytes add additional	90 ms

Read times BIS L-1xx

Serial number detection = reading data carriers = typically 100 ms*

Write times BIS L-1xx

Data carrier with 4 byte blocks	
Bytes	Write time
From 0 to 3	305 ms
For each additional started 4 bytes add additional	215 ms

*Only applies to the parameter type and output of the serial number.

All information is provided as general values. Deviations are possible depending on the application and combination of read/write head and data carrier.

Minimum distance between two data carriers

	BIS L-100-01/L	BIS L-101-01/L	BIS L-102-01/L	BIS L-103-05/L	BIS L-200-03/L	BIS L-100-05/L-RO	BIS L-201-03/L	BIS L-101-05/L-RO	BIS L-202-03/L	BIS L-102-05/L-RO	BIS L-203-03/L	BIS L-103-05/L-RO	BIS L-150-05/A
BIS VL-300-001-S4	250	300	400	250	250	250	300	300	400	400	250	250	
BIS VL-301-001-S4	300	400	500	350	350	350	400	400	500	500	350	350	
BIS VL-302-001-S4	300	400	500	350	350	350	400	400	500	500	350	350	
BIS VL-304-001-S4	150	200	200	180	180	180	200	200	250	250	180	180	
BIS VL-306-001-S4	80			50							50		
BIS VL-350-001-S4													50

Dimensions in mm

Minimum distance between two read/write heads

BIS VL-300-001-S4	400
BIS VL-301-001-S4	800
BIS VL-302-001-S4	200
BIS VL-304-001-S4	200
BIS VL-306-001-S4	100
BIS VL-350-001-S4	100

Dimensions in mm



Image processing devices for reliable detection and recording

MACHINE VISION AND OPTICAL IDENTIFICATION.

 *innovating automation*



The demands on modern production equipment are high: they must be extremely productive and flexible – while achieving maximum quality. Our Balluff Vision Solutions are designed precisely to meet these requirements. They reliably detect error, verify quality and are suitable for reliable reading and verification of codes. They scan objects, 1D and 2D barcodes, and plain text.

The sensors are extremely flexible – for parts checking in assembly or parts tracking in production. Their standardized interface means the devices are simple to integrate and easy to use.

Your Balluff solutions

- Machine vision
- Optical identification

MACHINE VISION AND OPTICAL IDENTIFICATION



508 MACHINE VISION

- 510 BAI BVS – Balluff Vision Solutions
- 512 SmartCamera
- 516 Industrial cameras
- 522 BVS Cockpit Software and SmartVision Controller
- 526 BVS-E Universal vision sensor
- 530 BVS-E Advanced vision sensor
- 534 BVS E Infrared vision sensor
- 538 BVS-E Standard vision sensor



542 OPTICAL IDENTIFICATION

- 544 SmartCamera Identification
- 548 Handheld-Code-Reader BVS HS-P
- 552 Code-Reader BVS E Identification



556

**BASICS AND
GLOSSARY**



Quality assurance with
industrial grade image processing

MACHINE VISION



Machine Vision from Balluff ensures quality and flexibility in modern production facilities. Through the use of industrial image processing our machine vision products provide reliable defect detection and, thereby, ensure exact quality control. All functions of the sensors can be flexibly combined.

Features

- High cost-effectiveness and potential for cost reduction
- Less scrap thanks to early defect detection
- High system uptime when changing batches

BAI BVS – Balluff Vision Solutions

BVS-COCKPIT NO EXPERTISE REQUIRED

The BVS Cockpit user interface makes it easy to access all functions. You can intuitively set up our cameras with no prior knowledge. In short: our camera concept is designed for everyone.



Configuration

Individual tools are combined into an inspection program. A program includes the camera setting, image processing tools and definition of the results data.

Monitor

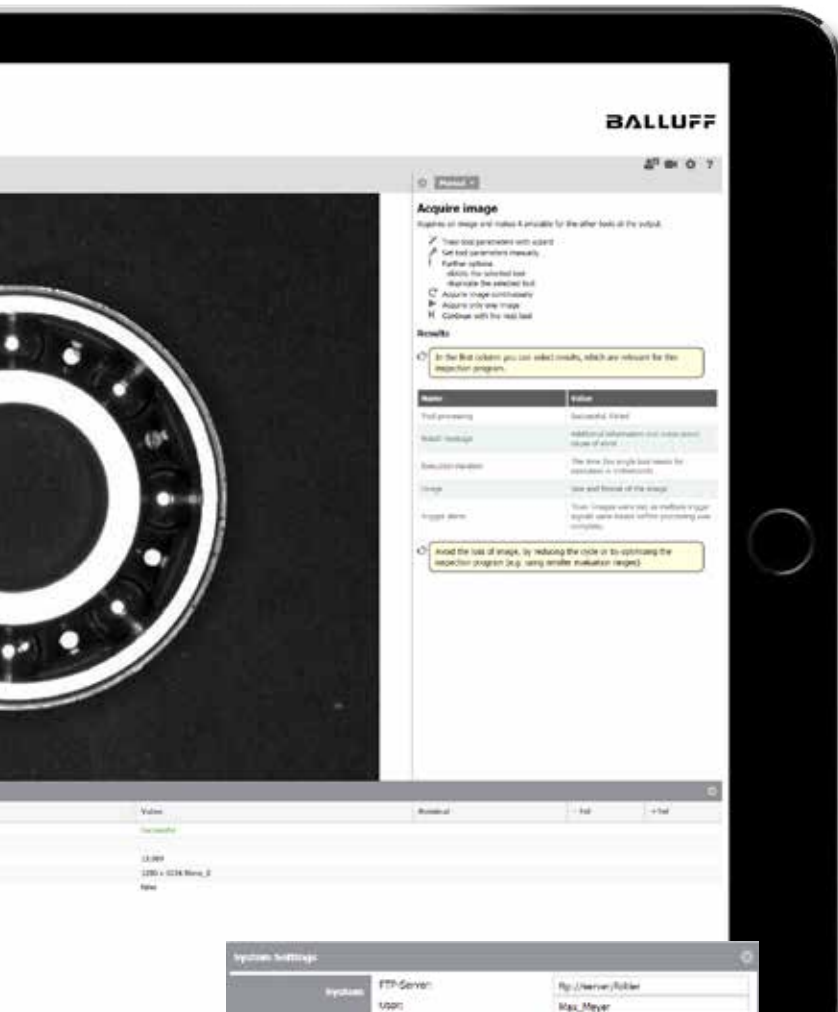
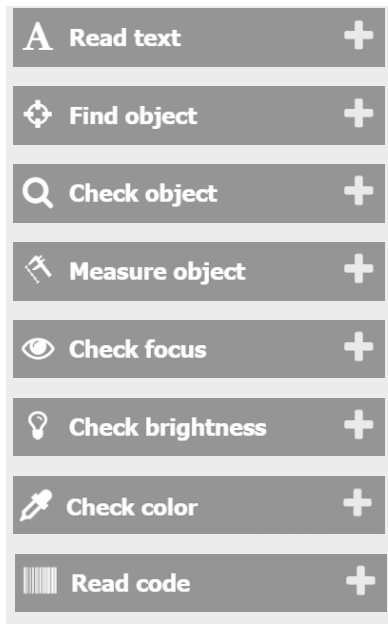
The monitor shows you the current inspection program. The SmartCamera can store up to 100 inspection programs which you can select individually either directly or through the controller.

Statistics

While the camera is performing an inspection you can access the statistics, view the entire production quality and analyze the results parameters statistically and in timely fashion. Just a click lets you switch from a graph point to the associated inspection display in Monitor mode.

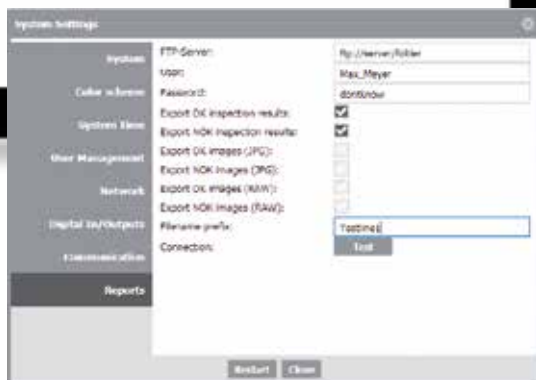
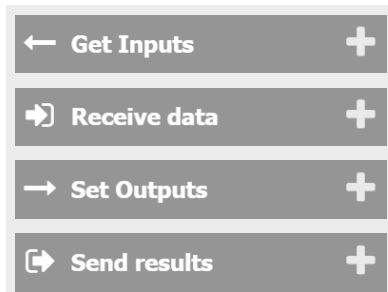
Image processing tools

Simple to use, flexible and reliable. The SmartCamera offers intuitive operation and simple to use tools which are based on industry-standard HALCON basic algorithms – all of which ensures you of fast and reliable solutions.



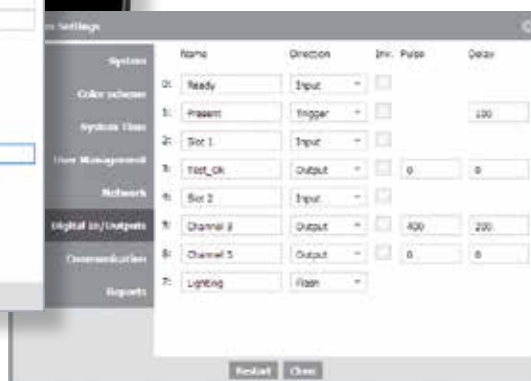
Interface tools

Results can be passed dynamically to the appropriate interface for the particular industrial system.



Store test reports

You can automatically create a results report in XML-format after each inspection and save the associated images to an FTP server. The storage condition can be defined with filter settings (ok/nok).



Definition of inputs and outputs

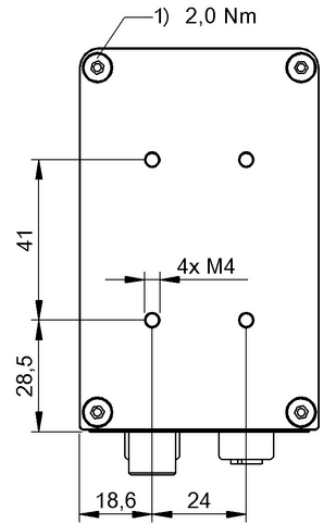
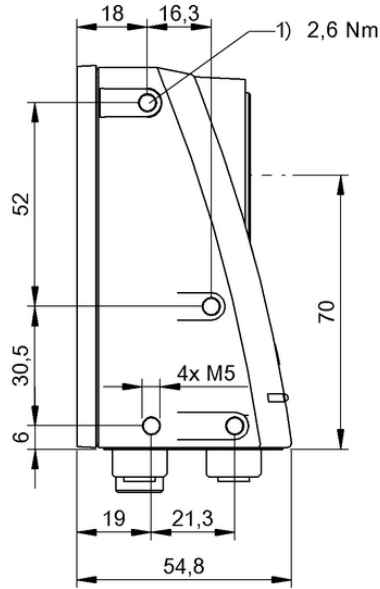
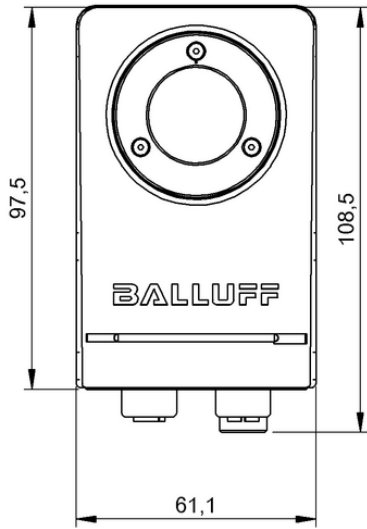
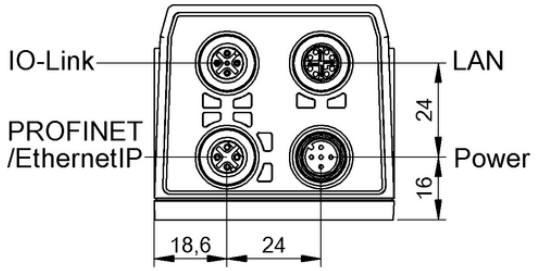
Up to eight digital channels are assigned to electrical connector pins by type, function and time behavior.



	BVS003P BVS SL-C1280Z00-07-000	BVS003R BVS SL-C1280Z00-07-001	BVS003T BVS SL-M1280Z00-07-000	
Application	Object tracking, code+text analysis, Object verification	Object tracking	Object tracking, code+text analysis, Object verification	
Image resolution	1280 x 1024 pixels	1280 x 1024 pixels	1280 x 1024 pixels	
Sensor type Vision	CMOS 1/1,8" color global shutter	CMOS 1/1,8" color global shutter	CMOS 1/1.8" monochrome global shutter	
Housing material	Aluminum, Painted	Aluminum, Painted	Aluminum, Painted	
Dimension	65 x 40 x 99.5 mm	65 x 40 x 99.5 mm	65 x 40 x 99.5 mm	
Switching output	6x IO configurable	6x IO configurable	6x IO configurable	
Interface	LAN (Gigabit Ethernet), Ethernet TCP/UDP, RS232	LAN (Gigabit Ethernet), Ethernet TCP/UDP, RS232	LAN (Gigabit Ethernet), Ethernet TCP/UDP, RS232	
Operating voltage U_b	19.2...26 VDC	19.2...26 VDC	19.2...26 VDC	
Ambient temperature	0...55 °C	0...55 °C	0...55 °C	
Approval/Conformity	CE, EAC, WEEE	CE, EAC, WEEE	CE, EAC, WEEE	
Protection degree	IP67, with protective tube	IP67, with protective tube	IP67, with protective tube	
Productview	Page 514	Page 514	Page 514	

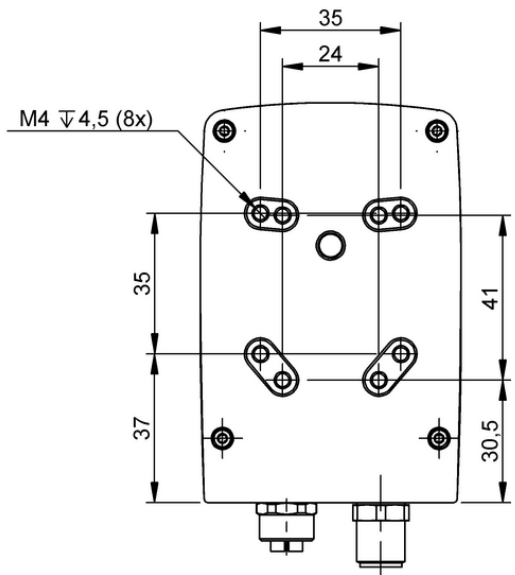
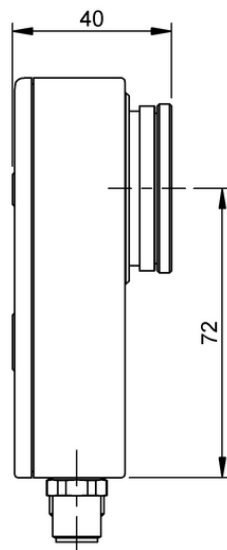
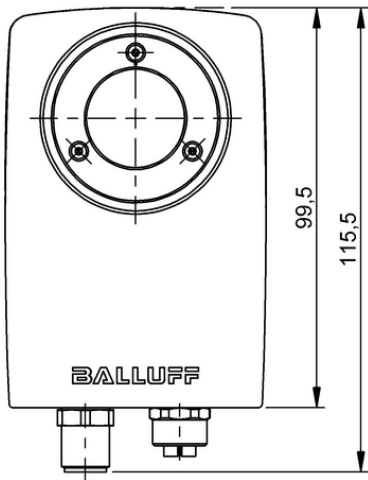
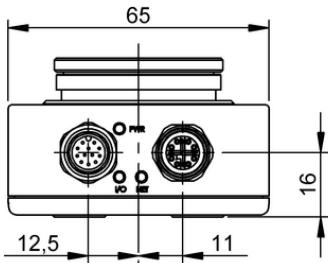


	BVS003U BVS SL-M1280Z00-07-001	BVS002F BVS SC-C1280Z00-30-000	BVS002C BVS SC-M1280Z00-07-000	BVS002A BVS SC-M1280Z00-30-000	BVS0033 BVS SC-M1280Z00-30-020
	Object tracking	Object tracking, code+text analysis, Object verification	Object tracking, code+text analysis, Object verification	Object tracking, code+text analysis, Object verification	Object tracking, code+text analysis, Object verification, Hdevelop interface
	1280 x 1024 pixels	1280 x 1024 pixels	1280 x 1024 pixels	1280 x 1024 pixels	1280 x 1024 pixels
	CMOS 1/1.8" monochrome global shutter	CMOS 1/1,8" color global shutter	CMOS 1/1.8" monochrome global shutter	CMOS 1/1.8" monochrome global shutter	CMOS 1/1.8" monochrome global shutter
	Aluminum, Painted	Aluminum, Painted	Aluminum, Painted	Aluminum, Painted	Aluminum, Painted
	65 x 40 x 99.5 mm	62 x 55 x 110 mm	62 x 55 x 110 mm	62 x 55 x 110 mm	62 x 55 x 110 mm
	6x IO configurable	2x IO configurable	8x IO configurable	2x IO configurable	2x IO configurable
	LAN (Gigabit Ethernet), Ethernet TCP/UDP, RS232	LAN (Gigabit Ethernet), Profinet / EtherNet/IP, IO-Link	LAN (Gigabit Ethernet)	LAN (Gigabit Ethernet), Profinet / EtherNet/IP, IO-Link	LAN (Gigabit Ethernet), Profinet / EtherNet/IP, IO-Link
	19.2...26 VDC	19.2...28.8 VDC	19.2...28.8 VDC	19.2...28.8 VDC	19.2...28.8 VDC
	0...55 °C	0...55 °C	0...55 °C	0...55 °C	0...55 °C
	CE, EAC, WEEE	CE, cULus, WEEE, EAC	CE, cULus, WEEE, EAC	CE, cULus, WEEE, EAC	CE, cULus, WEEE, EAC
	IP67, with protective tube	IP67, with protective tube	IP67, with protective tube	IP67, with protective tube	IP67, with protective tube
	Page 514	Page 514	Page 515	Page 514	Page 514

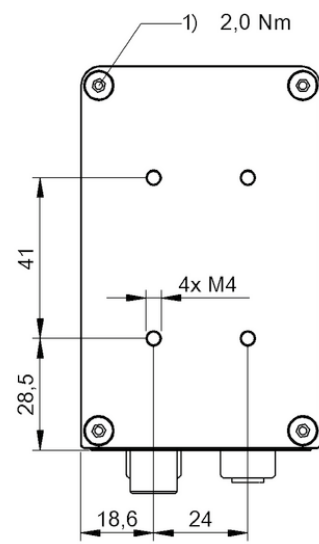
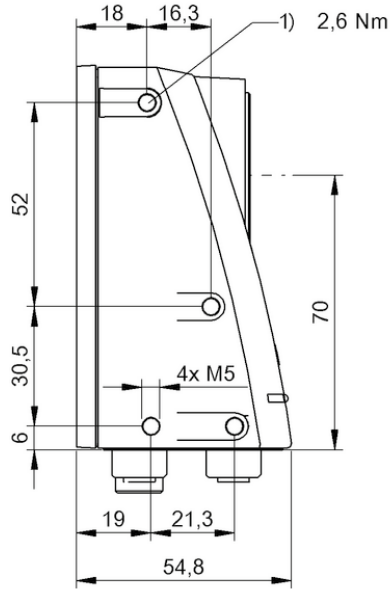
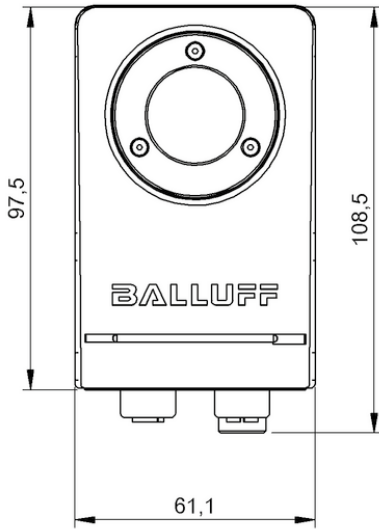
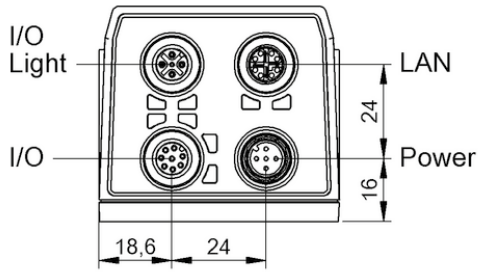


1) Tightening torque

BVS002F, BVS002A, BVS0033



BVS003P, BVS003R, BVS003T, BVS003U



1) Tightening torque

BVS002C



	BVS003C BVS CA-GX0-0016ZC-111C41-XAS2	BVS003A BVS CA-GX0-0016ZG-112C41-XAS2	BVS0035 BVS CA-GX0-0124AC-111C41-XAS2	
Version	GigE Vision industrial camera	GigE Vision industrial camera	GigE Vision industrial camera	
Interface	Gigabit Ethernet, PoE	Gigabit Ethernet, PoE	Gigabit Ethernet, PoE	
Lens mount	C-Mount	C-Mount	C-Mount	
Dimension	40 x 40 x 68.7 mm	40 x 40 x 68.7 mm	40 x 40 x 68.7 mm	
Sensor type Vision	1/2.9" global shutter CMOS	1/2.9" global shutter CMOS	1.1" global shutter CMOS	
Sensor chip	Sony IMX273	Sony IMX273	Sony IMX304	
Image resolution	1.6 MP (1456 x 1088 pixels)	1.6 MP (1456 x 1088 pixels)	12.4 MP (4112 x 3008 pixels)	
Housing material	Aluminum	Aluminum	Aluminum	
Image formats	BayerRG8, BayerRG10, BayerRG12, BayerRG16, BayerRG12Packed, BayerRG12p	Mono8, Mono10, Mono12, Mono14, Mono16, Mono12Packed, Mono12p	BayerRG8, BayerRG10, BayerRG12, BayerRG16, BayerRG12Packed, BayerRG12p	
Operating voltage Ub	11...25 VDC, PoE	11...25 VDC, PoE	11...25 VDC, PoE	
Ambient temperature	0...45 °C	0...45 °C	0...45 °C	
Approval/Conformity	CE, EAC, WEEE, cULus	CE, EAC, WEEE, cULus	CE, EAC, WEEE, cULus	
Protection degree	IP67	IP67	IP67	
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	BVS0034 BVS CA-GX0-0124AG-112C41-XAS2	BVS0039 BVS CA-GX0-0032AC-111C41-XAS2	BVS0038 BVS CA-GX0-0032AG-112C41-XAS2	BVS0037 BVS CA-GX0-0051AC-111C41-XAS2	BVS0036 BVS CA-GX0-0051AG-112C41-XAS2
	GigE Vision industrial camera	GigE Vision industrial camera	GigE Vision industrial camera	GigE Vision industrial camera	GigE Vision industrial camera
	Gigabit Ethernet, PoE	Gigabit Ethernet, PoE	Gigabit Ethernet, PoE	Gigabit Ethernet, PoE	Gigabit Ethernet, PoE
	C-Mount	C-Mount	C-Mount	C-Mount	C-Mount
	40 x 40 x 68.7 mm	40 x 40 x 68.7 mm	40 x 40 x 68.7 mm	40 x 40 x 68.7 mm	40 x 40 x 68.7 mm
	1.1" global shutter CMOS	1/1.8" global shutter CMOS	1/1.8" global shutter CMOS	2/3" global shutter CMOS	2/3" global shutter CMOS
	Sony IMX304	Sony IMX265	Sony IMX265	Sony IMX264	Sony IMX264
	12.4 MP (4112 x 3008 pixels)	3.2 MP (2064 x 1544 pixels)	3.2 MP (2064 x 1544 pixels)	5.1 MP (2464 x 2056 pixels)	5.1 MP (2464 x 2056 pixels)
	Aluminum	Aluminum	Aluminum	Aluminum	Aluminum
	Mono8, Mono10, Mono12, Mono14, Mono16, Mono12Packed, Mono12p	BayerRG8, BayerRG10, BayerRG12, BayerRG16, BayerRG12Packed, BayerRG12p	Mono8, Mono10, Mono12, Mono14, Mono16, Mono12Packed, Mono12p	BayerRG8, BayerRG10, BayerRG12, BayerRG16, BayerRG12Packed, BayerRG12p	Mono8, Mono10, Mono12, Mono14, Mono16, Mono12Packed, Mono12p
	11...25 VDC, PoE	11...25 VDC, PoE	11...25 VDC, PoE	11...25 VDC, PoE	11...25 VDC, PoE
	0...45 °C	0...45 °C	0...45 °C	0...45 °C	0...45 °C
	CE, EAC, WEEE, cULus	CE, EAC, WEEE, cULus	CE, EAC, WEEE, cULus	CE, EAC, WEEE, cULus	CE, EAC, WEEE, cULus
	IP67	IP67	IP67	IP67	IP67
	Page 520	Page 520	Page 520	Page 520	Page 520

Sensors

RFID

Machine Vision and Optical Identification

Human Machine Interfaces

Safety

Industrial Networking

Software and System Solutions

Power Supply

Connectivity

Accessories



	BVS003N BVS CA-SF2-0016ZC-111121-XAS2	BVS003M BVS CA-SF2-0016ZG-112121-XAS2	BVS003F BVS CA-SF2-0124AC-111121-XAS2
Version	USB3 Vision industrial camera	USB3 Vision industrial camera	USB3 Vision industrial camera
Interface	USB 2.0 / 3.0	USB 2.0 / 3.0	USB 2.0 / 3.0
Lens mount	C-Mount	C-Mount	C-Mount
Dimension	40 x 40 x 50.9 mm	40 x 40 x 50.9 mm	40 x 40 x 50.9 mm
Sensor type Vision	1/2.9" global shutter CMOS	1/2.9" global shutter CMOS	1.1" global shutter CMOS
Sensor chip	Sony IMX273	Sony IMX273	Sony IMX304
Image resolution	1.6 MP (1456 x 1088 pixels)	1.6 MP (1456 x 1088 pixels)	12.4 MP (4112 x 3008 pixels)
Housing material	Aluminum	Aluminum	Aluminum
Image formats	BayerRG8, BayerRG10, BayerRG12, BayerRG16, RGB8Packed, BGR8Packed, BGRA8Packed, BGR10V2Packed, YUV422Packed, YUV422_YUYVPacked, YUV444Packed, RGB8, BGR8, BGRa8, RGB10p32, YUV422_8_UYVY, YUV422_8_UYV, YUV411_8_UYVYYY, BayerRG12p	Mono8, Mono10, Mono12, Mono14, Mono16, Mono12p	BayerRG8, BayerRG10, BayerRG12, BayerRG16, RGB8Packed, BGR8Packed, BGRA8Packed, BGR10V2Packed, YUV422Packed, YUV422_YUYVPacked, YUV444Packed, RGB8, BGR8, BGRa8, RGB10p32, YUV422_8_UYVY, YUV422_8_UYV, YUV411_8_UYVYYY, BayerRG12p
Operating voltage Ub	11...25 VDC	11...25 VDC	11...25 VDC
Ambient temperature	0...45 °C	0...45 °C	0...45 °C
Approval/Conformity	CE, EAC, WEEE, ULus	CE, EAC, WEEE, ULus	CE, EAC, WEEE, ULus
Protection degree	IP30	IP30	IP30
Productview	Page 520	Page 520	Page 520



	BVS003E BVS CA-SF2-0124AG-112121-XAS2	BVS003L BVS CA-SF2-0032AC-111121-XAS2	BVS003K BVS CA-SF2-0032AG-112121-XAS2	BVS003J BVS CA-SF2-0051AC-111121-XAS2	BVS003H BVS CA-SF2-0051AG-112121-XAS2
	USB3 Vision industrial camera	USB3 Vision industrial camera	USB3 Vision industrial camera	USB3 Vision industrial camera	USB3 Vision industrial camera
	USB 2.0 / 3.0	USB 2.0 / 3.0	USB 2.0 / 3.0	USB 2.0 / 3.0	USB 2.0 / 3.0
	C-Mount	C-Mount	C-Mount	C-Mount	C-Mount
	40 x 40 x 50.9 mm	40 x 40 x 50.9 mm	40 x 40 x 50.9 mm	40 x 40 x 50.9 mm	40 x 40 x 50.9 mm
	1.1" global shutter CMOS	1/1.8" global shutter CMOS	1/1.8" global shutter CMOS	2/3" global shutter CMOS	2/3" global shutter CMOS
	Sony IMX304	Sony IMX265	Sony IMX265	Sony IMX264	Sony IMX264
	12.4 MP (4112 x 3008 pixels)	3.2 MP (2064 x 1544 pixels)	3.2 MP (2064 x 1544 pixels)	5.1 MP (2464 x 2056 pixels)	5.1 MP (2464 x 2056 pixels)
	Aluminum	Aluminum	Aluminum	Aluminum	Aluminum
	Mono8, Mono10, Mono12, Mono14, Mono16, Mono12p	BayerRG8, BayerRG10, BayerRG12, BayerRG16, RGB8Packed, BGR8Packed, BGR8Packed, BGR10V2Packed, YUV422Packed, YUV422_YUYVPacked, YUV444Packed, RGB8, BGR8, BGRa8, RGB10p32, YUV422_8_UYVY, YUV422_8_UYVY, YUV422_8_UYV8_UYV, YUV411_8_UYVYYY, BayerRG12p	Mono8, Mono10, Mono12, Mono14, Mono16, Mono12p	BayerRG8, BayerRG10, BayerRG12, BayerRG16, RGB8Packed, BGR8Packed, BGR8Packed, BGR10V2Packed, YUV422Packed, YUV422_YUYVPacked, YUV444Packed, RGB8, BGR8, BGRa8, RGB10p32, YUV422_8_UYVY, YUV422_8_UYVY, YUV422_8_UYV8_UYV, YUV411_8_UYVYYY, BayerRG12p	Mono8, Mono10, Mono12, Mono14, Mono16, Mono12p
	11...25 VDC	11...25 VDC	11...25 VDC	11...25 VDC	11...25 VDC
	0...45 °C	0...45 °C	0...45 °C	0...45 °C	0...45 °C
	CE, EAC, WEEE, ULus	CE, EAC, WEEE, ULus	CE, EAC, WEEE, ULus	CE, EAC, WEEE, ULus	CE, EAC, WEEE, ULus
	IP30	IP30	IP30	IP30	IP30
	Page 520	Page 520	Page 520	Page 520	Page 520

Sensors

RFID

Machine Vision and Optical Identification

Human Machine Interfaces

Safety

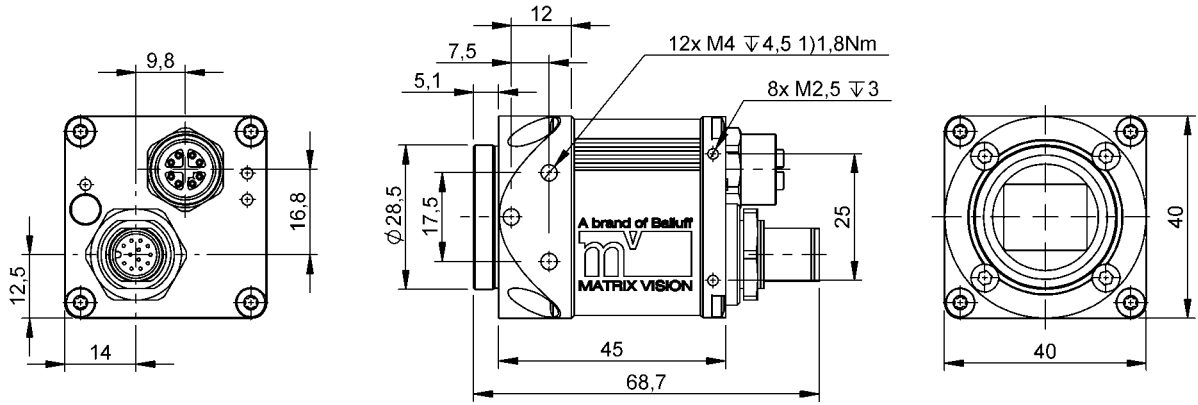
Industrial Networking

Software and System Solutions

Power Supply

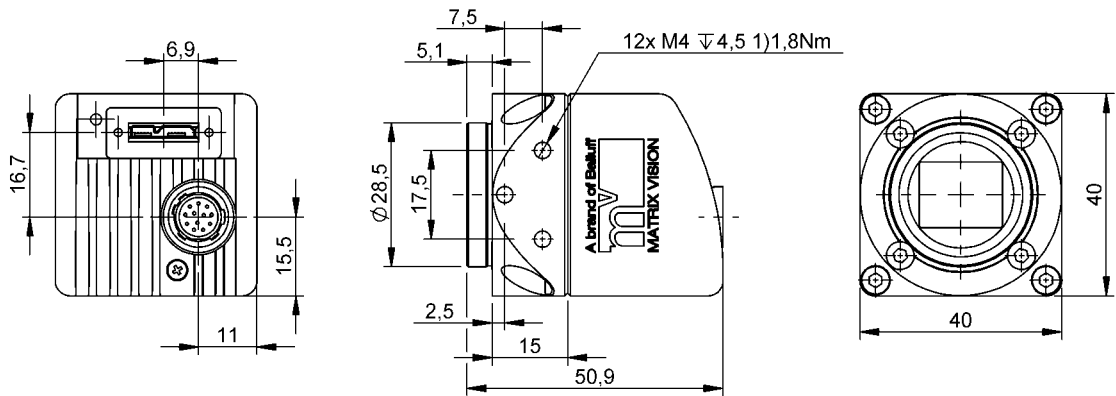
Connectivity

Accessories



1) Tightening torque

BVS003C, BVS003A, BVS0035, BVS0034, BVS0039, BVS0038, BVS0037, BVS0036



1) Tightening torque

BVS003N, BVS003M, BVS003F, BVS003E, BVS003L, BVS003K, BVS003J, BVS003H

Short description	
Software type	
Use	
Software version	
Scope of delivery	
System requirements - CPU	
System requirements - RAM	
Supported web browsers	
Supported operating systems	
Productview	



	BAI000Z BAI BVS-CA-EPC-001	BAE0103 BAE PD-VS-014-05
	BVS Cockpit Software	SmartVision Controller
	Configuration software for industrial cameras BVS CA	—
	—	Accessories for industrial cameras
	—	—
	Software on USB stick, License dongle (HALCON 13.0.2) on USB stick	USB stick with HALCON license, Mounting material
	Dual Core 2 GHz	—
	2 GB	—
	Mozilla Firefox (Version 24), Google Chrome (Version 32.0), Windows Internet Explorer (Version 10)	—
	Windows 7 (64 bit) or higher	—
		Page 524

Sensors

RFID

Machine Vision and
Optical Identification

Human Machine
Interfaces

Safety

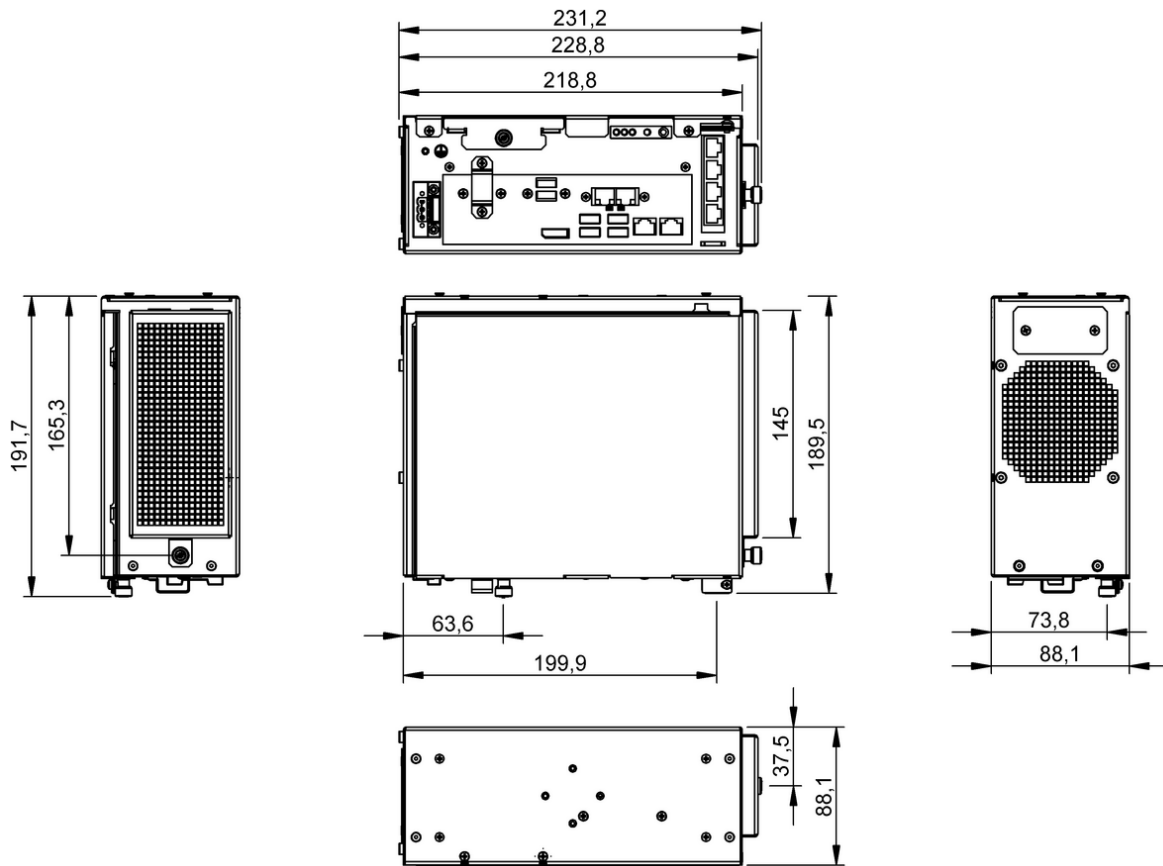
Industrial Networking

Software and
System Solutions

Power Supply

Connectivity

Accessories



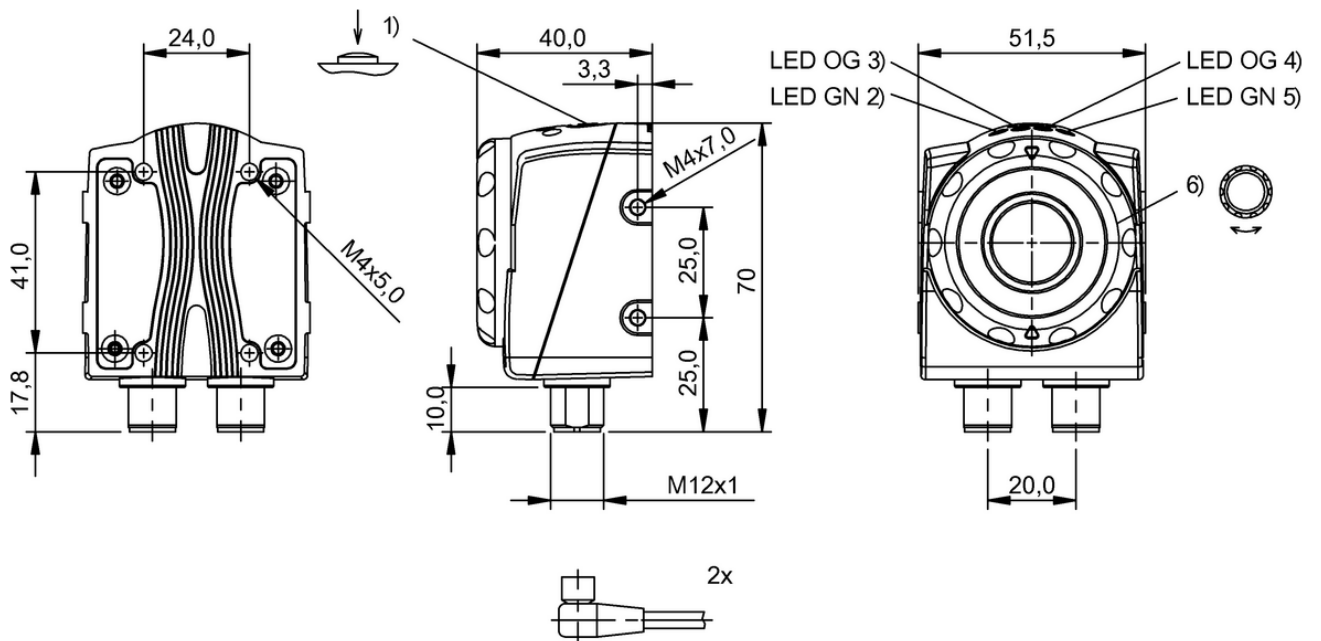
BAE0103



	BVS001F BVS UR-3-105-E	BVS001H BVS UR-3-101-E	BVS001J BVS UR-3-103-E	
Sensor type Vision	CMOS image sensor black-white	CMOS image sensor black-white	CMOS image sensor black-white	
Image resolution	VGA 640 x 480 pixels	VGA 640 x 480 pixels	VGA 640 x 480 pixels	
Detection rate typ.	3...40 Hz	3...40 Hz	3...40 Hz	
Application	360° detection, Barcode-, 2D-, OCR identification	360° detection, Barcode-, 2D-, OCR identification	360° detection, Barcode-, 2D-, OCR identification	
Range	50...1000 mm	50...1000 mm	50...1000 mm	
Field of view	34 x 25 mm ... 676 x 507 mm	24 x 18 mm ... 480 x 360 mm	16 x 12 mm ... 320 x 240 mm	
Focal length	6.0 mm	8.0 mm	12.0 mm	
Light type	Infrared	Infrared	Infrared	
Housing material	Aluminum, die-cast ABS	Aluminum, die-cast ABS	Aluminum, die-cast ABS	
Dimension	51.5 x 70 x 40 mm	51.5 x 70 x 40 mm	51.5 x 70 x 40 mm	
Switching output	3x PNP normally open (NO)	3x PNP normally open (NO)	3x PNP normally open (NO)	
Interface	RS232 (9.6...115.2 kBaud)	RS232 (9.6...115.2 kBaud)	RS232 (9.6...115.2 kBaud)	
Connection 1	M12x1-Male, 8-pole, A-coded	M12x1-Male, 8-pole, A-coded	M12x1-Male, 8-pole, A-coded	
Connection 2	M12x1-Male, 4-pole, D-coded	M12x1-Male, 4-pole, D-coded	M12x1-Male, 4-pole, D-coded	
Operating voltage U _b	22...26 VDC	22...26 VDC	22...26 VDC	
Ambient temperature	-10...55 °C	-10...55 °C	-10...55 °C	
Approval/Conformity	CE, cULus	CE, cULus	CE, cULus	
Protection degree	IP54	IP54	IP54	
Productview	Page 528	Page 528	Page 528	



	BVS001K BVS UR-3-107-E	BVS001L BVS UR-3-005-E	BVS001M BVS UR-3-001-E	BVS001N BVS UR-3-003-E	BVS001P BVS UR-3-007-E
	CMOS image sensor black-white	CMOS image sensor black-white	CMOS image sensor black-white	CMOS image sensor black-white	CMOS image sensor black-white
	VGA 640 x 480 pixels	VGA 640 x 480 pixels	VGA 640 x 480 pixels	VGA 640 x 480 pixels	VGA 640 x 480 pixels
	3...40 Hz	3...40 Hz	3...40 Hz	3...40 Hz	3...40 Hz
	360° detection, Barcode-, 2D-, OCR identification	360° detection, Barcode-, 2D-, OCR identification	360° detection, Barcode-, 2D-, OCR identification	360° detection, Barcode-, 2D-, OCR identification	360° detection, Barcode-, 2D-, OCR identification
	230...1000 mm	50...1000 mm	50...1000 mm	50...1000 mm	50...1000 mm
	55 x 42 mm ... 240 x 180 mm	34 x 25 mm ... 676 x 507 mm	24 x 18 mm ... 480 x 360 mm	16 x 12 mm ... 320 x 240 mm	43 x 32 mm ... 240 x 180 mm
	16.0 mm	6.0 mm	8.0 mm	12.0 mm	16.0 mm
	Infrared	LED, red light	LED, red light	LED, red light	LED, red light
	Aluminum, die-cast ABS	Aluminum, die-cast ABS	Aluminum, die-cast ABS	Aluminum, die-cast ABS	Aluminum, die-cast ABS
	51.5 x 70 x 40 mm	51.5 x 70 x 40 mm	51.5 x 70 x 40 mm	51.5 x 70 x 40 mm	51.5 x 70 x 40 mm
	3x PNP normally open (NO)	3x PNP normally open (NO)	3x PNP normally open (NO)	3x PNP normally open (NO)	3x PNP normally open (NO)
	RS232 (9.6...115.2 kBaud)	RS232 (9.6...115.2 kBaud)	Ethernet 10/100 Base T	Ethernet 10/100 Base T	Ethernet 10/100 Base T
	M12x1-Male, 8-pole, A-coded	M12x1-Male, 8-pole, A-coded	M12x1-Male, 8-pole, A-coded	M12x1-Male, 8-pole, A-coded	M12x1-Male, 8-pole, A-coded
	M12x1-Male, 4-pole, D-coded	M12x1-Male, 4-pole, D-coded	M12x1-Male, 4-pole, D-coded	M12x1-Male, 4-pole, D-coded	M12x1-Male, 4-pole, D-coded
	22...26 VDC	22...26 VDC	22...26 VDC	22...26 VDC	22...26 VDC
	-10...55 °C	-10...55 °C	-10...55 °C	-10...55 °C	-10...55 °C
	CE, cULus	CE, cULus	CE, cULus	CE, cULus	CE, cULus
	IP54	IP54	IP54	IP54	IP54
	Page 528	Page 528	Page 528	Page 528	Page 528



1) Teach-in reference image, 2) Operating voltage, 3) Output 1 active, 4) Output 2 active, 5) Connection with PC, 6) Focus

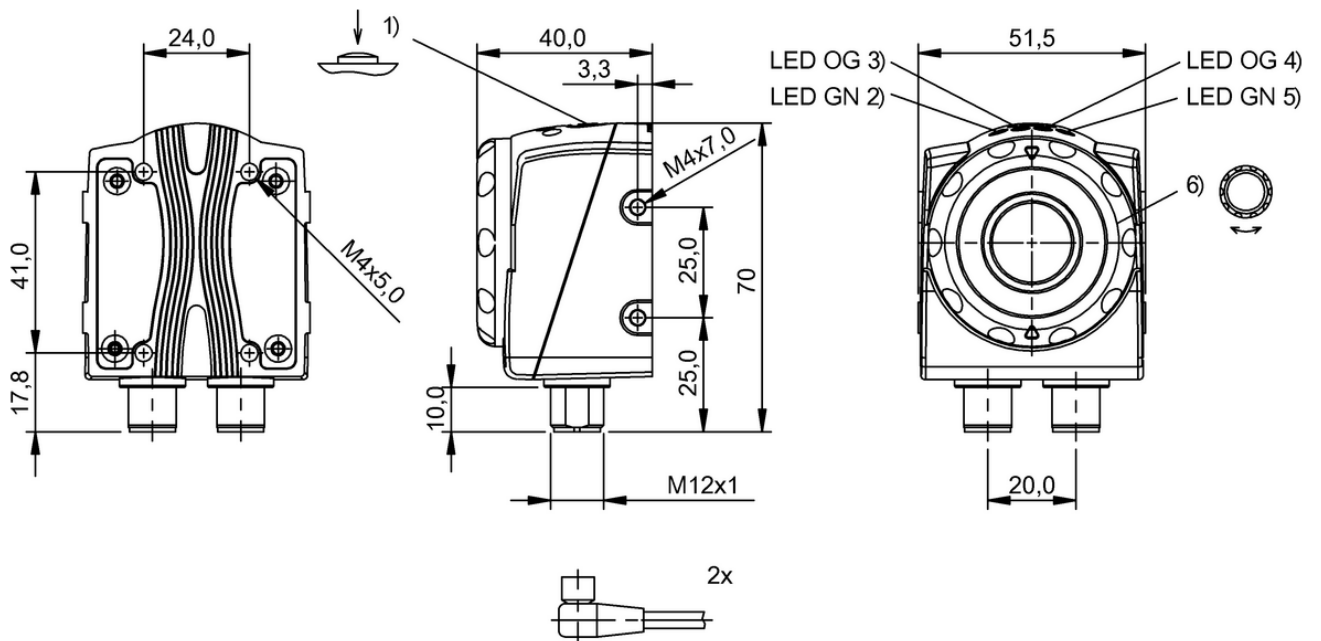
BVS001F, BVS001H, BVS001J, BVS001K, BVS001L, BVS001M, BVS001N, BVS001P



	BVS0016 BVS 0I-3-155-E	BVS0015 BVS 0I-3-151-E	BVS0017 BVS 0I-3-153-E	
Sensor type Vision	CMOS image sensor black-white	CMOS image sensor black-white	CMOS image sensor black-white	
Image resolution	VGA 640 x 480 pixels	VGA 640 x 480 pixels	VGA 640 x 480 pixels	
Detection rate typ.	3...50 Hz	3...50 Hz	3...50 Hz	
Application	360° detection	360° detection	360° detection	
Range	50...1000 mm	50...1000 mm	50...1000 mm	
Field of view	34 x 25 mm ... 676 x 507 mm	24 x 18 mm ... 480 x 360 mm	16 x 12 mm ... 320 x 240 mm	
Focal length	6.0 mm	8.0 mm	12.0 mm	
Light type	Infrared	Infrared	Infrared	
Housing material	Aluminum, die-cast ABS	Aluminum, die-cast ABS	Aluminum, die-cast ABS	
Dimension	51.5 x 70 x 40 mm	51.5 x 70 x 40 mm	51.5 x 70 x 40 mm	
Switching output	3x PNP normally open (NO)	3x PNP normally open (NO)	3x PNP normally open (NO)	
Interface	Ethernet 10/100 Base T	Ethernet 10/100 Base T	Ethernet 10/100 Base T	
Connection 1	M12x1-Male, 8-pole, A-coded	M12x1-Male, 8-pole, A-coded	M12x1-Male, 8-pole, A-coded	
Connection 2	M12x1-Male, 4-pole, D-coded	M12x1-Male, 4-pole, D-coded	M12x1-Male, 4-pole, D-coded	
Operating voltage U _b	22...26 VDC	22...26 VDC	22...26 VDC	
Ambient temperature	-10...55 °C	-10...55 °C	-10...55 °C	
Approval/Conformity	cULus, CE	cULus, CE	cULus, CE	
Protection degree	IP54	IP54	IP54	
Productview	Page 532	Page 532	Page 532	



	BVS0018 BVS 0I-3-157-E	BVS000L BVS 0I-3-055-E	BVS000J BVS 0I-3-051-E	BVS000K BVS 0I-3-053-E	BVS000W BVS 0I-3-057-E
	CMOS image sensor black-white	CMOS image sensor black-white	CMOS image sensor black-white	CMOS image sensor black-white	CMOS image sensor black-white
	VGA 640 x 480 pixels	VGA 640 x 480 pixels	VGA 640 x 480 pixels	VGA 640 x 480 pixels	VGA 640 x 480 pixels
	3...50 Hz	3...40 Hz	3...40 Hz	3...40 Hz	3...40 Hz
	360° detection	360° detection	360° detection	360° detection	360° detection
	180...1000 mm	50...1000 mm	50...1000 mm	50...1000 mm	180...1000 mm
	43 x 32 mm ... 240 x 180 mm	34 x 25 mm ... 676 x 507 mm	24 x 18 mm ... 480 x 360 mm	16 x 12 mm ... 320 x 240 mm	43 x 32 mm ... 240 x 180 mm
	16.0 mm	6.0 mm	8.0 mm	12.0 mm	16.0 mm
	Infrared	LED, red light	LED, red light	LED, red light	LED, red light
	Aluminum, die-cast ABS	Aluminum, die-cast ABS	Aluminum, die-cast ABS	Aluminum, die-cast ABS	Aluminum, die-cast ABS
	51.5 x 70 x 40 mm	51.5 x 70 x 40 mm	51.5 x 70 x 40 mm	51.5 x 70 x 40 mm	51.5 x 70 x 40 mm
	3x PNP normally open (NO)	3x PNP normally open (NO)	3x PNP normally open (NO)	3x PNP normally open (NO)	3x PNP normally open (NO)
	Ethernet 10/100 Base T	Ethernet 10/100 Base T	Ethernet 10/100 Base T	Ethernet 10/100 Base T	Ethernet 10/100 Base T
	M12x1-Male, 8-pole, A-coded	M12x1-Male, 8-pole, A-coded	M12x1-Male, 8-pole, A-coded	M12x1-Male, 8-pole, A-coded	M12x1-Male, 8-pole, A-coded
	M12x1-Male, 4-pole, D-coded	M12x1-Male, 4-pole, D-coded	M12x1-Male, 4-pole, D-coded	M12x1-Male, 4-pole, D-coded	M12x1-Male, 4-pole, D-coded
	22...26 VDC	22...26 VDC	22...26 VDC	22...26 VDC	22...26 VDC
	-10...55 °C	-10...55 °C	-10...55 °C	-10...55 °C	-10...55 °C
	cULus, CE	cULus, CE	cULus, CE	cULus, CE	CE, cULus
	IP54	IP54	IP54	IP54	IP54
	Page 532	Page 532	Page 532	Page 532	Page 532



1) Teach-in reference image, 2) Operating voltage, 3) Output 1 active, 4) Output 2 active, 5) Connection with PC, 6) Focus

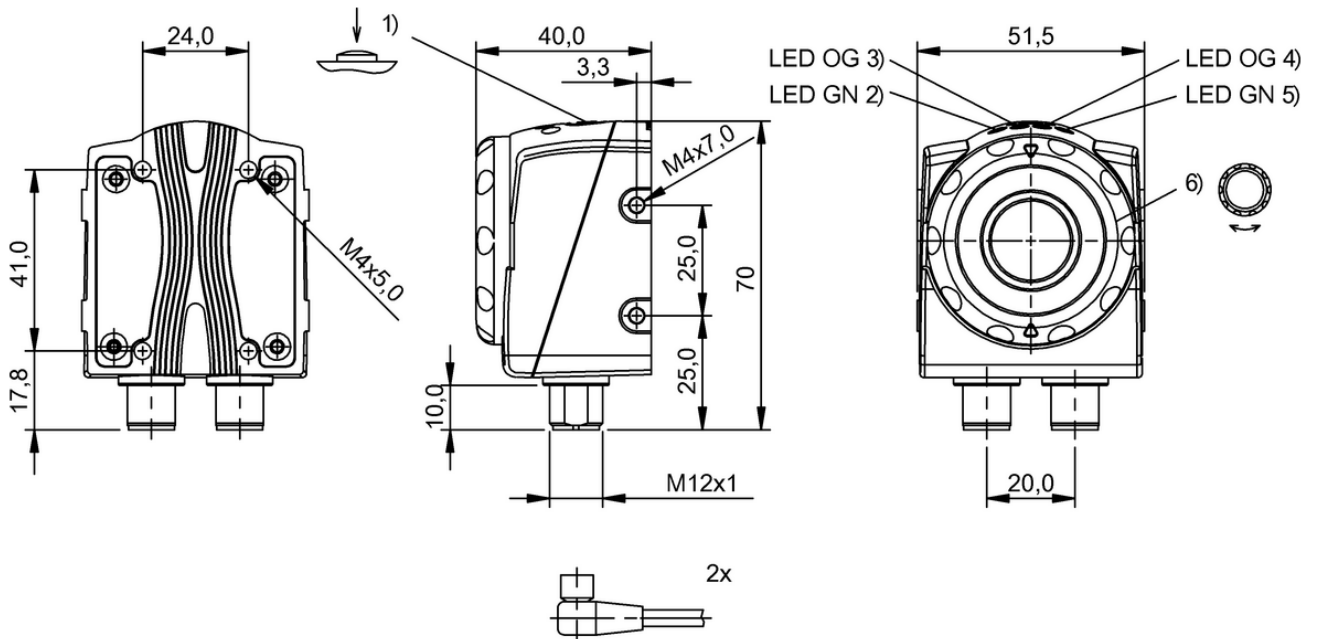
BVS0016, BVS0015, BVS0017, BVS0018, BVS000L, BVS000J, BVS000K, BVS000W



	BVS0013 BVS 0I-3-105-E	
Sensor type Vision	CMOS image sensor black-white	
Image resolution	VGA 640 x 480 pixels	
Detection rate typ.	3...15 Hz	
Range	50...1000 mm	
Field of view	34 x 25 mm ... 676 x 507 mm	
Focal length	6.0 mm	
Light type	Infrared	
Housing material	Aluminum, die-cast ABS	
Dimension	51.5 x 70 x 40 mm	
Switching output	3x PNP normally open (NO)	
Interface	Ethernet 10/100 Base T	
Connection 1	M12x1-Male, 8-pole, A-coded	
Connection 2	M12x1-Male, 4-pole, D-coded	
Operating voltage U _b	22...26 VDC	
Ambient temperature	-10...55 °C	
Approval/Conformity	CE, cULus	
Protection degree	IP54	
Productview	Page 536	



	BVS0014 BVS 0I-3-101-E	BVS0012 BVS 0I-3-103-E
	CMOS image sensor black-white	CMOS image sensor black-white
	VGA 640 x 480 pixels	VGA 640 x 480 pixels
	3...15 Hz	3...15 Hz
	50...1000 mm	50...1000 mm
	24 x 18 mm ... 480 x 360 mm	16 x 12 mm ... 320 x 240 mm
	8.0 mm	12.0 mm
	Infrared	Infrared
	Aluminum, die-cast ABS	Aluminum, die-cast ABS
	51.5 x 70 x 40 mm	51.5 x 70 x 40 mm
	3x PNP normally open (NO)	3x PNP normally open (NO)
	Ethernet 10/100 Base T	Ethernet 10/100 Base T
	M12x1-Male, 8-pole, A-coded	M12x1-Male, 8-pole, A-coded
	M12x1-Male, 4-pole, D-coded	M12x1-Male, 4-pole, D-coded
	22...26 VDC	22...26 VDC
	-10...55 °C	-10...55 °C
	cULus, CE	cULus, CE
	IP54	IP54
	Page 536	Page 536



1) Teach-in reference image, 2) Operating voltage, 3) Output 1 active, 4) Output 2 active, 5) Connection with PC, 6) Focus

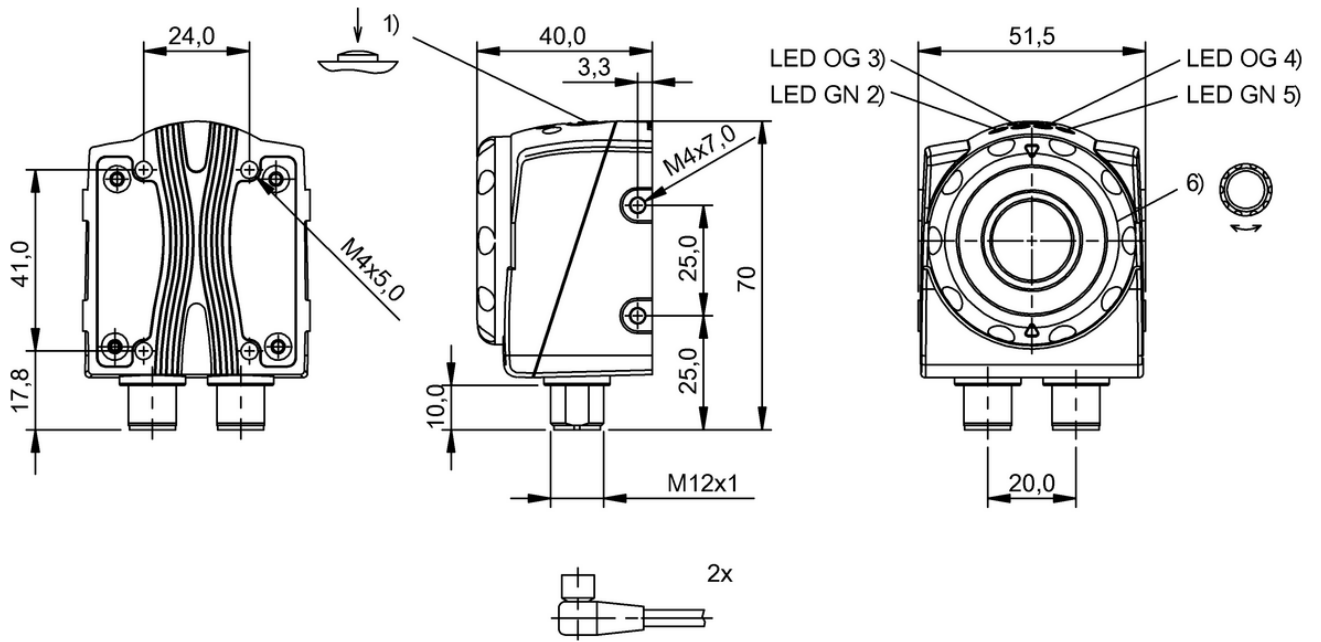
BVS0013, BVS0014, BVS0012



	BVS000E BVS 0I-3-005-E	
Sensor type Vision	CMOS image sensor black-white	
Image resolution	VGA 640 x 480 pixels	
Detection rate typ.	3...15 Hz	
Range	50...1000 mm	
Field of view	34 x 25 mm ... 676 x 507 mm	
Focal length	6.0 mm	
Light type	LED, red light	
Housing material	Aluminum, die-cast ABS	
Dimension	51.5 x 70 x 40 mm	
Switching output	3x PNP normally open (NO)	
Interface	Ethernet 10/100 Base T	
Connection 1	M12x1-Male, 8-pole, A-coded	
Connection 2	M12x1-Male, 4-pole, D-coded	
Operating voltage U _b	22...26 VDC	
Ambient temperature	-10...55 °C	
Approval/Conformity	cULus, CE	
Protection degree	IP54	
Productview	Page 540	



BVS0003 BVS 0I-3-001-E	BVS0005 BVS 0I-3-003-E
CMOS image sensor black-white	CMOS image sensor black-white
VGA 640 x 480 pixels	VGA 640 x 480 pixels
3...15 Hz	3...15 Hz
50...1000 mm	50...1000 mm
24 x 18 mm ... 480 x 360 mm	16 x 12 mm ... 320 x 240 mm
8.0 mm	12.0 mm
LED, red light	LED, red light
Aluminum, die-cast ABS	Aluminum, die-cast ABS
51.5 x 70 x 40 mm	51.5 x 70 x 40 mm
3x PNP normally open (NO)	3x PNP normally open (NO)
Ethernet 10/100 Base T	Ethernet 10/100 Base T
M12x1-Male, 8-pole, A-coded	M12x1-Male, 8-pole, A-coded
M12x1-Male, 4-pole, D-coded	M12x1-Male, 4-pole, D-coded
22...26 VDC	22...26 VDC
-10...55 °C	-10...55 °C
cULus, CE	cULus, CE
IP54	IP54
Page 540	Page 540



1) Teach-in reference image, 2) Operating voltage, 3) Output 1 active, 4) Output 2 active, 5) Connection with PC, 6) Focus

BVS000E, BVS0003, BVS0005



Secure identification and decoding of objects

OPTICAL IDENTIFICATION



Optical identification via 1D and 2D barcodes is an established way to identify components and objects and precisely manage systems and processes. Our broad range of offerings in this area includes stationary barcode readers, mobile handheld readers and accessories for standard and industrial grade applications.

The most important benefits

- Reliable traceability of products and assembly
- Application areas: control supply processes (e.g., Kanban system), production control, optical tool identification
- Simple startup

Barcodes	
2D codes	
Application	
Image resolution	
Sensor type Vision	
Housing material	
Dimension	
Switching output	
Interface	
Operating voltage U_b	
Ambient temperature	
Approval/Conformity	
IP rating	
Productview	



BVS0029 BVS SC-M1280Z00-30-010	BVS003W BVS SL-M1280Z00-07-010
GS1 Databar, GS1-128, UPC-A, UPC-E, EAN-8, EAN-13, 2/5 Industrial, 2/5 Interleaved, Codabar, Code 128, Code 39, Code 93, MSI, UPC-A, UPC-E	GS1 Databar, GS1-128, UPC-A, UPC-E, EAN-8, EAN-13, 2/5 Industrial, 2/5 Interleaved, Codabar, Code 128, Code 39, Code 93, MSI, UPC-A, UPC-E
Aztec Code, Data Matrix ECC 200, GS1 Aztec Code, GS1 Data Matrix, GS1 QR Code, Micro QR Code, PDF 417, QR code	Aztec Code, Data Matrix ECC 200, GS1 Aztec Code, GS1 Data Matrix, GS1 QR Code, Micro QR Code, PDF 417, QR code
Object tracking, code+text analysis	Object tracking, code+text analysis
1280 x 1024 pixels	1280 x 1024 pixels
CMOS 1/1.8" monochrome global shutter	CMOS 1/1.8" monochrome global shutter
Aluminum, Painted	Aluminum, Painted
62 x 55 x 110 mm	65 x 40 x 99.5 mm
2x IO configurable	6x IO configurable
LAN (Gigabit Ethernet), Profinet / EtherNet/IP, IO-Link	LAN (Gigabit Ethernet), Ethernet TCP/UDP, RS232
19.2...28.8 VDC	19.2...26 VDC
0...55 °C	0...55 °C
CE, cULus, WEEE, EAC	CE, EAC, WEEE
IP67, with protective tube	IP67, with protective tube
Page 546	Page 546

Sensors

RFID

Machine Vision and Optical Identification

Human Machine Interfaces

Safety

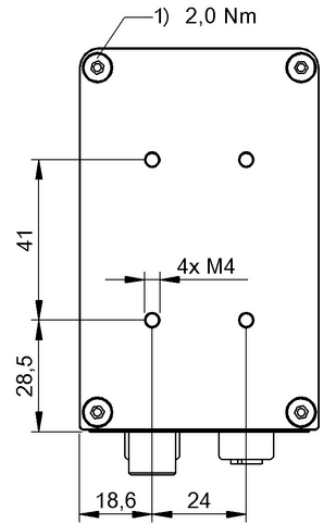
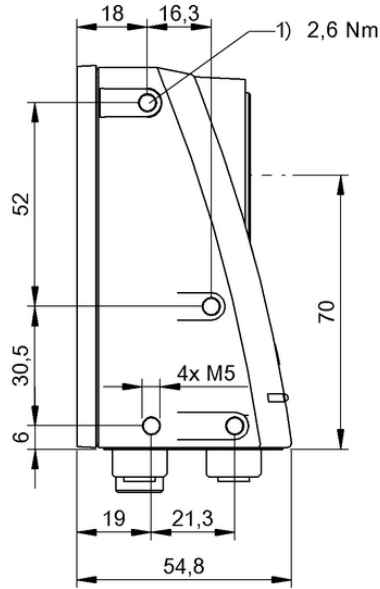
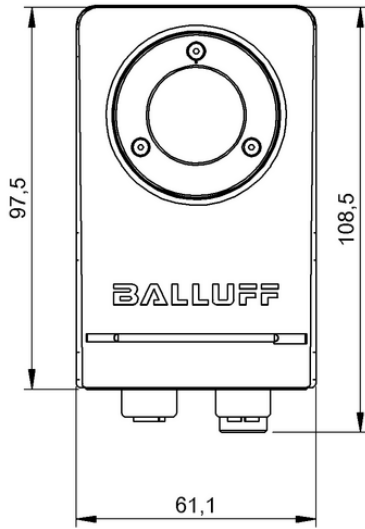
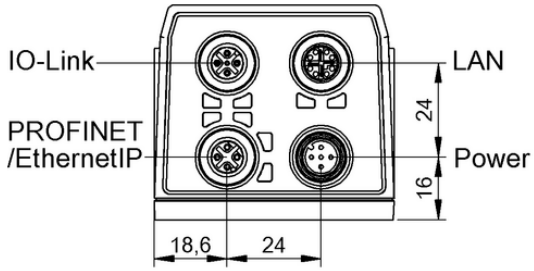
Industrial Networking

Software and System Solutions

Power Supply

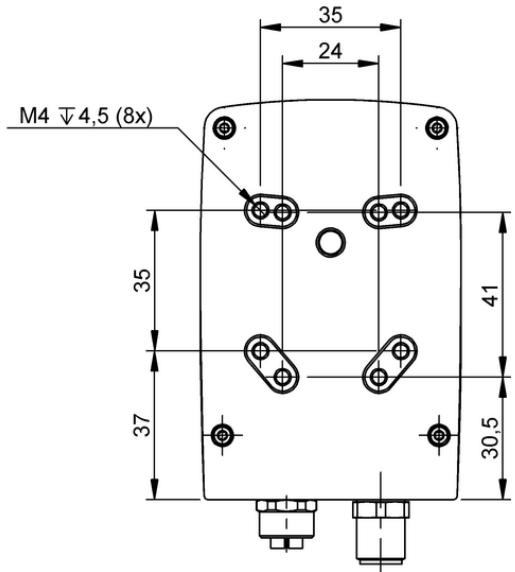
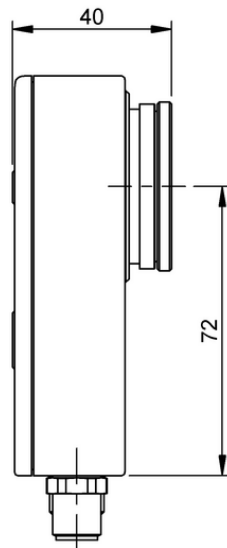
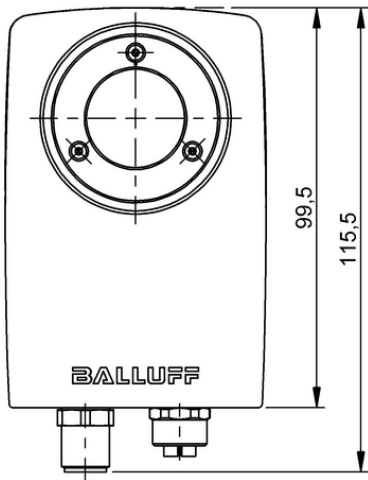
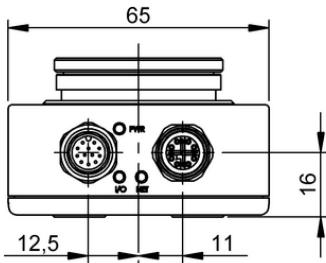
Connectivity

Accessories



1) Tightening torque

BVS0029



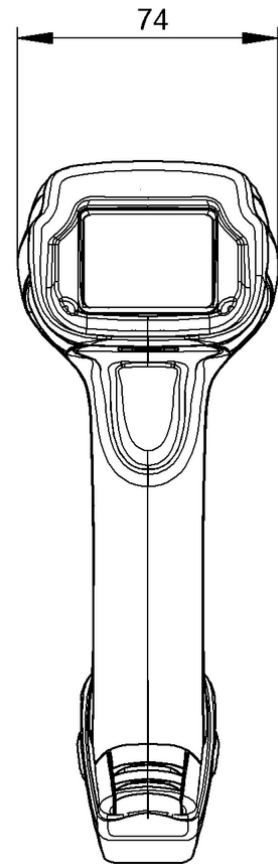
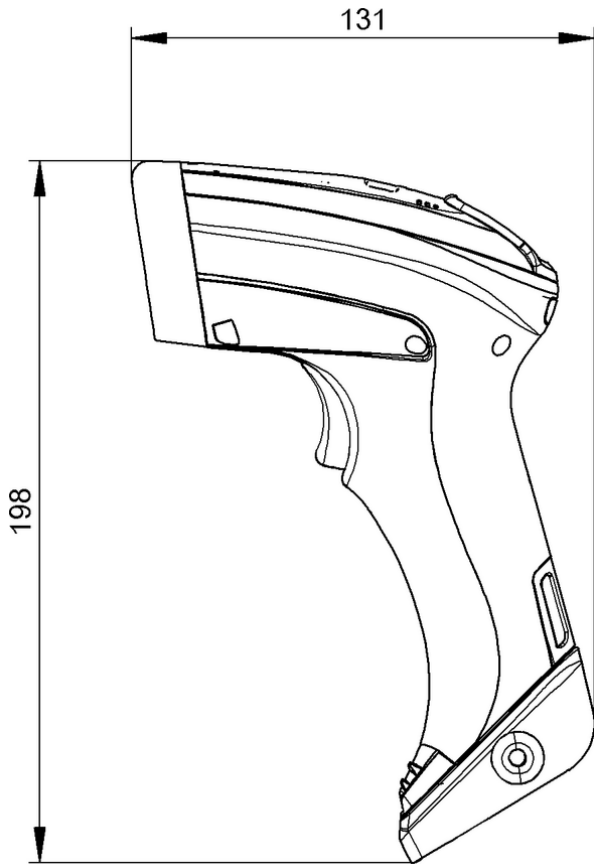
BVS003W



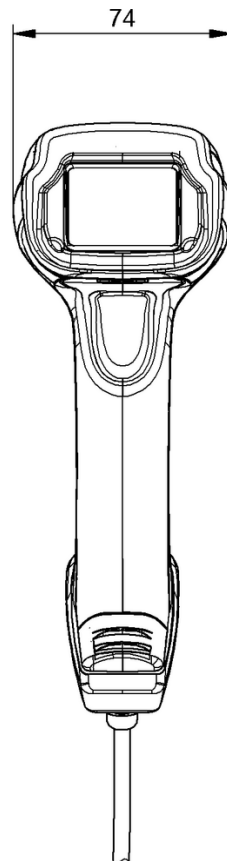
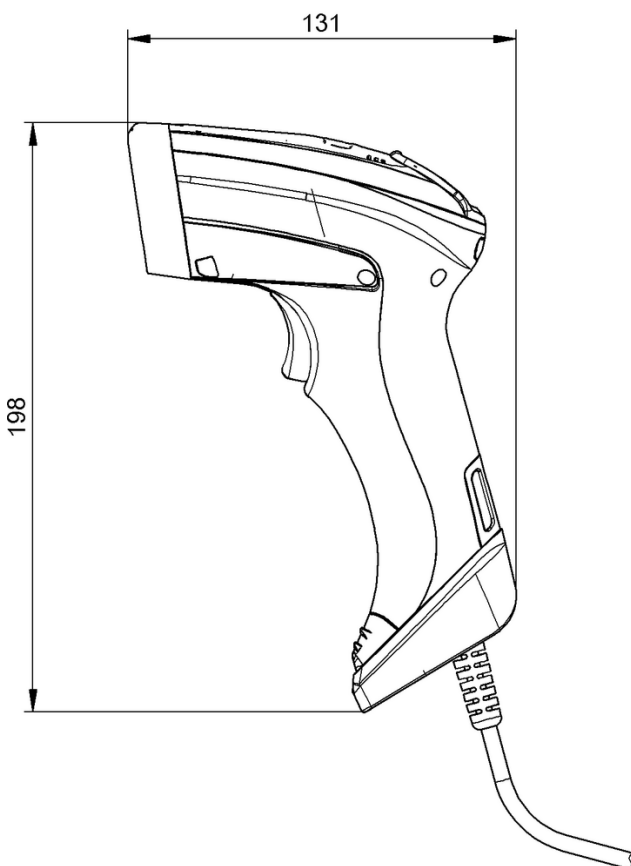
	BVS0017 BVS HS-PB-DPW-MZ-01	
Drop protection	≥ 50 drops, 2.0 m on concrete	
Barcodes	GS1 Databar linear codes UPC/EAN (A, E, 13, 8) UPC/EAN with P2/ P5 Addons UPC/ EAN Coupons ISBN Code128 EAN128 ISBT128 Code39 Code39 Full ASCII Code39 CIP Code 32 Codabar Interleaved 2 of 5 IATA Industrial 2 of 5 standard 2 of 5 Code11 MSI Plessey Code 93 Follet 2/5	
2D codes	Aztec Code, China Han Xin Code, China Sensible Code, Data Matrix, Maxicode, Micro QR Code, QR code	
Stacked codes	Micro PDF417, Macro PDF, GS1 DataBar Stacked, GS1 DataBar Expanded Stacked, PDF417, GS1 DataBar Stacked Omnidir, GS1 DataBar Composites, EAN/JAN Composites, UPC A/E Composites	
Read distance	Datamatrix: 2...10.5 cm at 10 mil, Datamatrix: 2.6...5.2 cm at 4 mil, Code 39: 1.2...9.0 cm at 5 mil, Code 39: 2.5...7.8 cm at 2.5 mil	
Light type illumination	LED White light	
Interface	Bluetooth 2.0 (2.4 GHz)	
Protection degree	IP65	
Productview	Page 550	



BVS001Y BVS HS-PB-HDW-MZ-01	BVS001T BVS HS-PC-DPW-MA-01	BVS001U BVS HS-PC-HDW-MA-01
≥ 50 drops, 2.0 m on concrete	≥ 50 drops, 2.0 m on concrete	≥ 50 drops, 2.0 m on concrete
GS1 Databar linear codes UPC/EAN (A, E, 13, 8) UPC/EAN with P2/ P5 Addons UPC/ EAN Coupons ISBN Code128 EAN128 ISBT128 Code39 Code39 Full ASCII Code39 CIP Code 32 Codabar Interleaved 2 of 5 IATA Industrial 2 of 5 standard 2 of 5 Code11 MSI Plessey Code 93 Follet 2/5	GS1 Databar linear codes UPC/EAN (A, E, 13, 8) UPC/EAN with P2/ P5 Addons UPC/ EAN Coupons ISBN Code128 EAN128 ISBT128 Code39 Code39 Full ASCII Code39 CIP Code 32 Codabar Interleaved 2 of 5 IATA Industrial 2 of 5 standard 2 of 5 Code11 MSI Plessey Code 93 Follet 2/5	GS1 Databar linear codes UPC/EAN (A, E, 13, 8) UPC/EAN with P2/ P5 Addons UPC/ EAN Coupons ISBN Code128 EAN128 ISBT128 Code39 Code39 Full ASCII Code39 CIP Code 32 Codabar Interleaved 2 of 5 IATA Industrial 2 of 5 standard 2 of 5 Code11 MSI Plessey Code 93 Follet 2/5
Aztec Code, China Han Xin Code, China Sensible Code, Data Matrix, Maxicode, Micro QR Code, QR code	Aztec Code, China Sensible Code, Data Matrix, Maxicode, Micro QR Code, QR code	Aztec Code, China Sensible Code, Data Matrix, Maxicode, Micro QR Code, QR code
GS1 DataBar Expanded Stacked, GS1 DataBar Stacked Omnidir, GS1 DataBar Stacked, Macro PDF, GS1 DataBar Composites, EAN/JAN Composites, Micro PDF417, UPC A/E Composites, PDF417	PDF417, Macro PDF, GS1 DataBar Stacked Omnidir, GS1 DataBar Composites, GS1 DataBar Stacked, GS1 DataBar Expanded Stacked, Micro PDF417, UPC A/E Composites, EAN/JAN Composites	Micro PDF417, GS1 DataBar Composites, Macro PDF, GS1 DataBar Stacked, GS1 DataBar Expanded Stacked, GS1 DataBar Stacked Omnidir, PDF417
Datamatrix: 2...20 cm at 10 mil, Datamatrix: 2...6 cm at 4 mil, Code 39: 3...110 cm at 40 mil, Code 39: 2...6 cm at 2.5 mil	Datamatrix: 2...10.5 cm at 10 mil, Code 39: 2.5...7.8 cm at 2.5 mil, Code 39: 1.2...9.0 cm at 5 mil, Datamatrix: 2.6...5.2 cm at 4 mil	Code 39: 2...6 cm at 2.5 mil, Code 39: 3...110 cm at 40 mil, Datamatrix: 2...6 cm at 4 mil, Datamatrix: 2...20 cm at 10 mil
LED White light	LED White light	LED White light
Bluetooth 2.0 (2.4 GHz)	RS232/ USB	RS232/ USB
IP65	IP65	IP65
Page 550	Page 550	Page 550



BVS001Z, BVS001Y



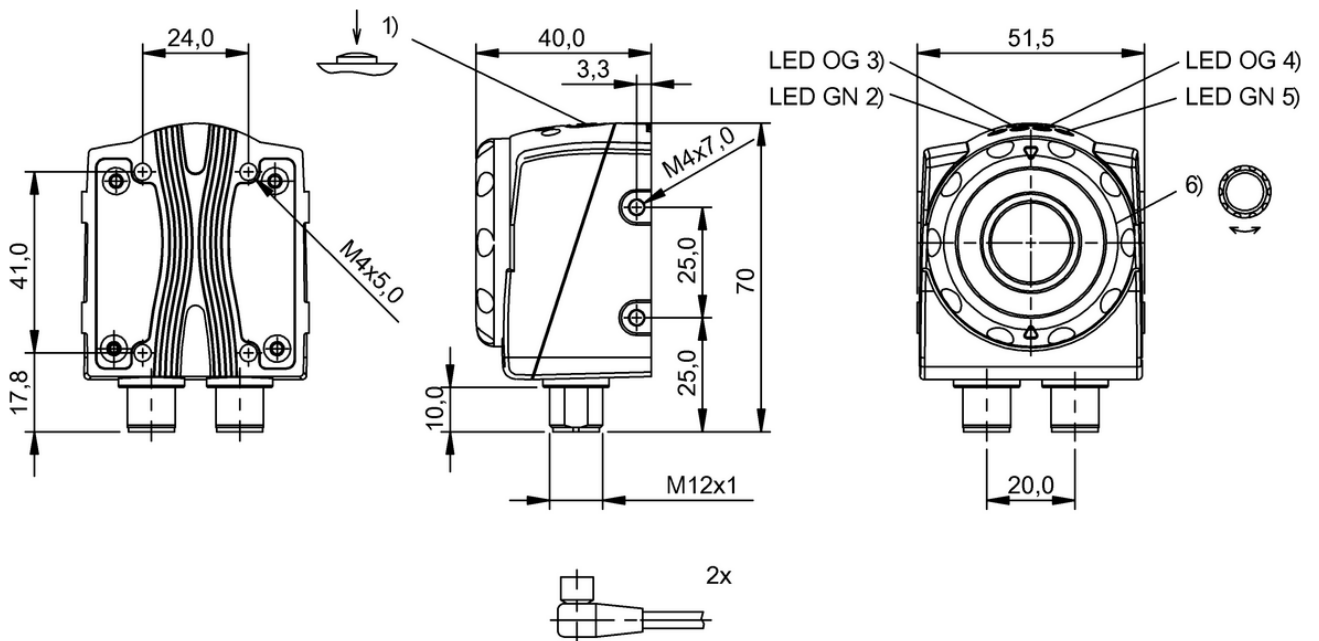
BVS001T, BVS001U



	BVS001C BVS ID-3-105-E	BVS0019 BVS ID-3-101-E	BVS001A BVS ID-3-103-E	
Barcodes	Interleaved 2-of-5, Code 39, Code 128, Pharmaco- code, Codabar, EAN 8, EAN 13, UPC-E, UPC-A	Interleaved 2-of-5, Code 39, Code 128, Pharmaco- code, Codabar, EAN 8, EAN 13, UPC-E, UPC-A	Interleaved 2-of-5, Code 39, Code 128, Pharmaco- code, Codabar, EAN 8, EAN 13, UPC-E, UPC-A	
2D codes	Data Matrix ECC 200, QR code, Mini QR	Data Matrix ECC 200, QR code, Mini QR	Data Matrix ECC 200, QR code, Mini QR	
Stacked codes	PDF417	PDF417	PDF417	
Application	Multi-Code-Reading, Verifying character strings	Multi-Code-Reading, Verifying character strings	Multi-Code-Reading, Verifying character strings	
Image resolution	VGA 640 x 480 pixels	VGA 640 x 480 pixels	VGA 640 x 480 pixels	
Sensor type Vision	CMOS image sensor black-white	CMOS image sensor black-white	CMOS image sensor black-white	
Range	50...1000 mm	50...1000 mm	50...1000 mm	
Field of view	34 x 25 mm ... 676 x 507 mm	24 x 18 mm ... 480 x 360 mm	16 x 12 mm ... 320 x 240 mm	
Focal length	6.0 mm	8.0 mm	12.0 mm	
Light type	Infrared	Infrared	Infrared	
Housing material	Aluminum, die-cast ABS	Aluminum, die-cast ABS	Aluminum, die-cast ABS	
Dimension	51.5 x 70 x 40 mm	51.5 x 70 x 40 mm	51.5 x 70 x 40 mm	
Switching output	3x PNP normally open (NO)	3x PNP normally open (NO)	3x PNP normally open (NO)	
Interface	Ethernet 10/100 Base T, RS232 (9.6...115.2 kBaud)	Ethernet 10/100 Base T, RS232 (9.6...115.2 kBaud)	Ethernet 10/100 Base T, RS232 (9.6...115.2 kBaud)	
Connection 1	M12x1-Male, 8-pole, A-coded	M12x1-Male, 8-pole, A-coded	M12x1-Male, 8-pole, A-coded	
Connection 2	M12x1-Male, 4-pole, D-coded	M12x1-Male, 4-pole, D-coded	M12x1-Male, 4-pole, D-coded	
Operating voltage Ub	22...26 VDC	22...26 VDC	22...26 VDC	
Ambient temperature	-10...55 °C	-10...55 °C	-10...55 °C	
Approval/Conformity	cULus, CE	cULus, CE	cULus, CE	
Protection degree	IP54	IP54	IP54	
Productview	Page 554	Page 554	Page 554	



	BVS001R BVS ID-3-005-E	BVS0001 BVS ID-3-001-E	BVS000T BVS ID-3-003-E	BVS000Y BVS ID-3-007-E	
	Interleaved 2-of-5, Code 39, Code 128, Pharmaco- code, Codabar, EAN 8, EAN 13, UPC-E, UPC-A	Interleaved 2-of-5, Code 39, Code 128, Pharma- code, Codabar, EAN 8, EAN 13, UPC-E, UPC-A	Interleaved 2-of-5, Code 39, Code 128, Pharma- code, Codabar, EAN 8, EAN 13, UPC-E, UPC-A	Interleaved 2-of-5, Code 39, Code 128, Pharma- code, Codabar, EAN 8, EAN 13, UPC-E, UPC-A	
	Data Matrix ECC 200, QR code, Mini QR	Data Matrix ECC 200, QR code, Mini QR	Data Matrix ECC 200, QR code, Mini QR	Data Matrix ECC 200, QR code, Mini QR	
	PDF417	PDF417	PDF417	PDF417	
	Multi-Code-Reading, Verifying character strings	Multi-Code-Reading, Verifying character strings	Multi-Code-Reading, Verifying character strings	Multi-Code-Reading, Verifying character strings	
	VGA 640 x 480 pixels	VGA 640 x 480 pixels	VGA 640 x 480 pixels	VGA 640 x 480 pixels	
	CMOS image sensor black-white	CMOS image sensor black-white	CMOS image sensor black-white	CMOS image sensor black-white	
	50...1000 mm	50...1000 mm	50...1000 mm	150...1000 mm	
	34 x 25 mm ... 676 x 507 mm	24 x 18 mm ... 480 x 360 mm	16 x 12 mm ... 320 x 240 mm	43 x 32 mm ... 240 x 180 mm	
	6.0 mm	8.0 mm	12.0 mm	16.0 mm	
	LED, red light	LED, red light	LED, red light	LED, red light	
	Aluminum, die-cast ABS	Aluminum, die-cast ABS	Aluminum, die-cast ABS	Aluminum, die-cast ABS	
	51.5 x 70 x 40 mm	51.5 x 70 x 40 mm	51.5 x 70 x 40 mm	51.5 x 70 x 40 mm	
	3x PNP normally open (NO)	3x PNP normally open (NO)	3x PNP normally open (NO)	3x PNP normally open (NO)	
	RS232 (9.6...115.2 kBaud), RS232 (9.6...115.2 kBaud)	Ethernet 10/100 Base T, RS232 (9.6...115.2 kBaud)	Ethernet 10/100 Base T, RS232 (9.6...115.2 kBaud)	Ethernet 10/100 Base T, RS232 (9.6...115.2 kBaud)	
	M12x1-Male, 8-pole, A-coded	M12x1-Male, 8-pole, A-coded	M12x1-Male, 8-pole, A-coded	M12x1-Male, 8-pole, A-coded	
	M12x1-Male, 4-pole, D-coded	M12x1-Male, 4-pole, D-coded	M12x1-Male, 4-pole, D-coded	M12x1-Male, 4-pole, D-coded	
	22...26 VDC	22...26 VDC	22...26 VDC	22...26 VDC	
	-10...55 °C	-10...55 °C	-10...55 °C	-10...55 °C	
	CE, cULus	cULus, CE	CE, cULus	CE, cULus	
	IP54	IP54	IP54	IP54	
	Page 554	Page 554	Page 554	Page 554	



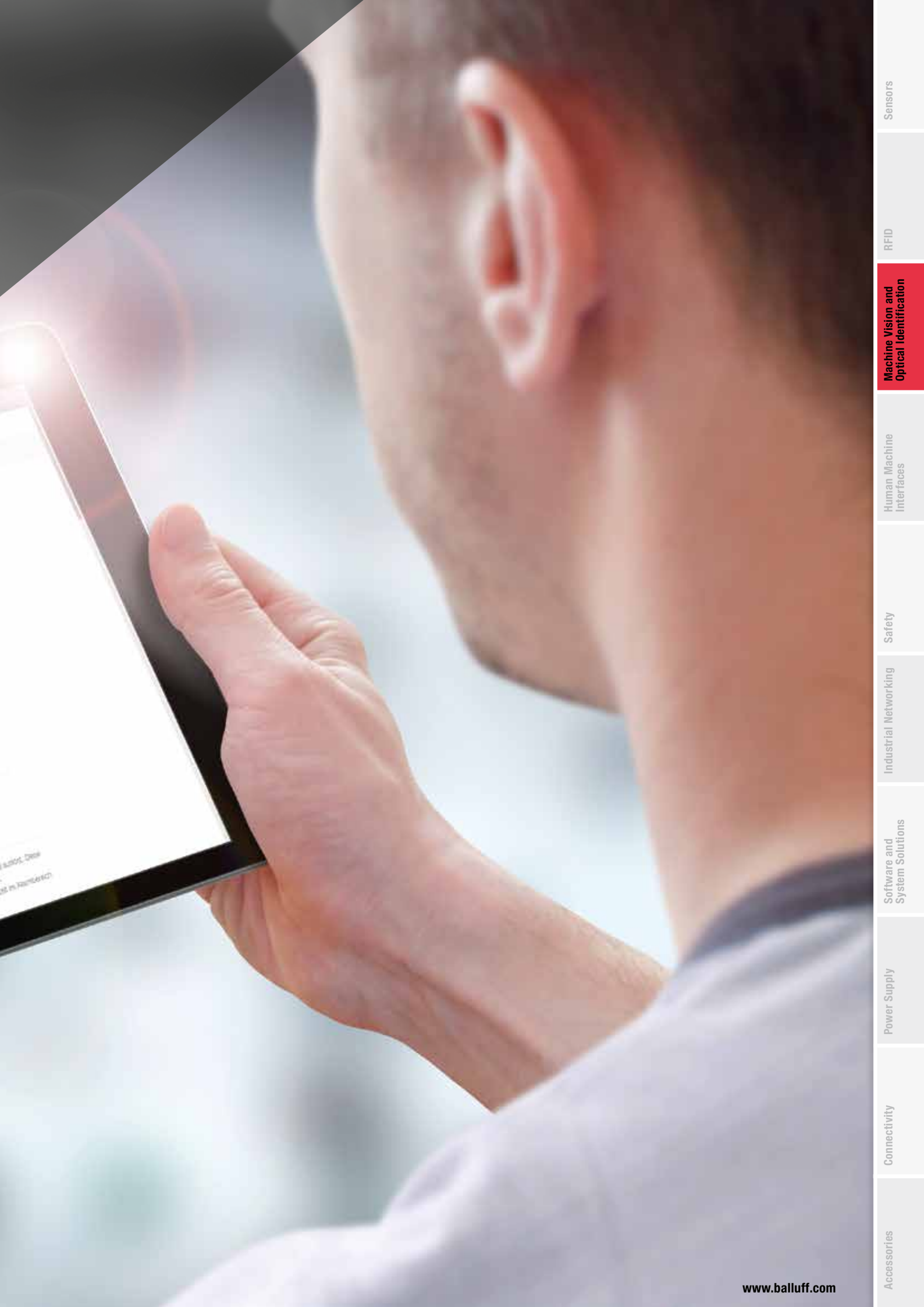
1) Teach-in reference image, 2) Operating voltage, 3) Output 1 active, 4) Output 2 active, 5) Connection with PC, 6) Focus

BVS001C, BVS0019, BVS001A, BVS001R, BVS0001, BVS000T, BVS000Y

Machine Vision and Optical Identification

BASICS AND GLOSSARY





Accessories

Connectivity

Power Supply

Software and
System Solutions

Industrial Networking

Safety

Human Machine
Interfaces

RFID

Sensors

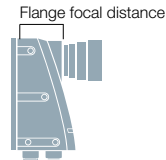
**Machine Vision and
Optical Identification**

Working distance

Working distance describes the distance between camera and sharply focused object in the image. Any given lens has a minimum and maximum working distance. Objects placed closer to the camera than the minimum working distance or farther than the maximum working distance can no longer be brought to focus in the image.

Flange focal distance

Distance between the lens and the image sensor in a camera.



Resolution (image processing)

Number of image points (pixels) on an image sensor.

Evaluation region

Image area which is evaluated by a camera or vision sensor.

Image processing

Technology which deals with image capture and evaluation.

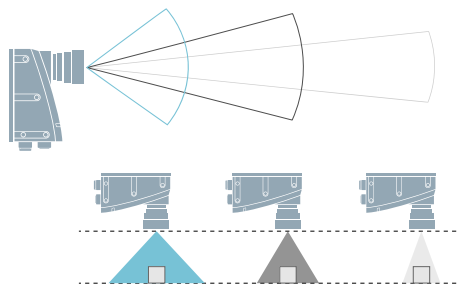
Aperture

Opening in a camera through which the light enters. Closing the aperture causes a darker image. The wider the aperture opening, the lighter the image.



Focal length

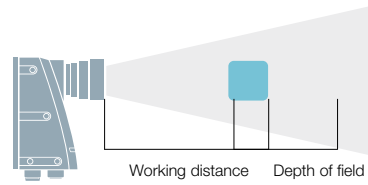
Distance between an optical lens and the focal point in millimeters. This distance together with the reading distance/working distance defines the reading field/field of view of a camera or visual sensor.



Focus	The clear and sharply defined condition of an image.
Maximum frame rate	Expressed in frames per second, the maximum possible number of images which a camera can capture
Inspection	Sequence of a test protocol in the environment of use.
Inspection program	Test protocol which is stored in image processing systems. The inspection program includes, for example, a learned reference image, the tools which test one or more evaluation areas in the digital image of an object, and the functions associated with the digital outputs.
Readable code	Type of barcode which a camera/vision sensor can read and evaluate.
Reading distance (optical identification)	Maximum distance at which the camera/vision sensor/code reader can reliably read a code of a certain size.
Lens	Optical system that forms an image on an image sensor from the rays of light passing through it. We distinguish lenses by their construction (C-mount, S-mount, liquid lens) and focal length (6 mm, 8 mm etc.).
Pixel	Smallest element of a digital image generated by an image sensor. The larger the number of pixels, the finer and sharper the image resolution.
Pixel size	The physical size of a pixel on an image sensor expressed in micrometers.
PEO (power over Ethernet)	Standardized procedure by which cameras are powered over a network cable.

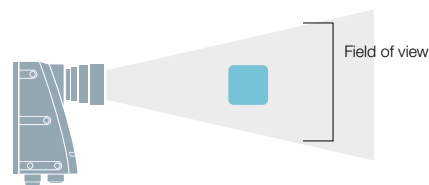
Depth of field

Area in front of and behind the working distance in which an object is still sharply represented. It is dependent on the focal length of the lens, the current working distance, and the set f-stop.



Field of view

Size of the image surface within which an image-processing device can undertake and process an image or event. The size is dependent upon the focal length of the lens and the working/reading distance.



Trigger


Initiator of an event such as an inspection in a camera/vision sensor.

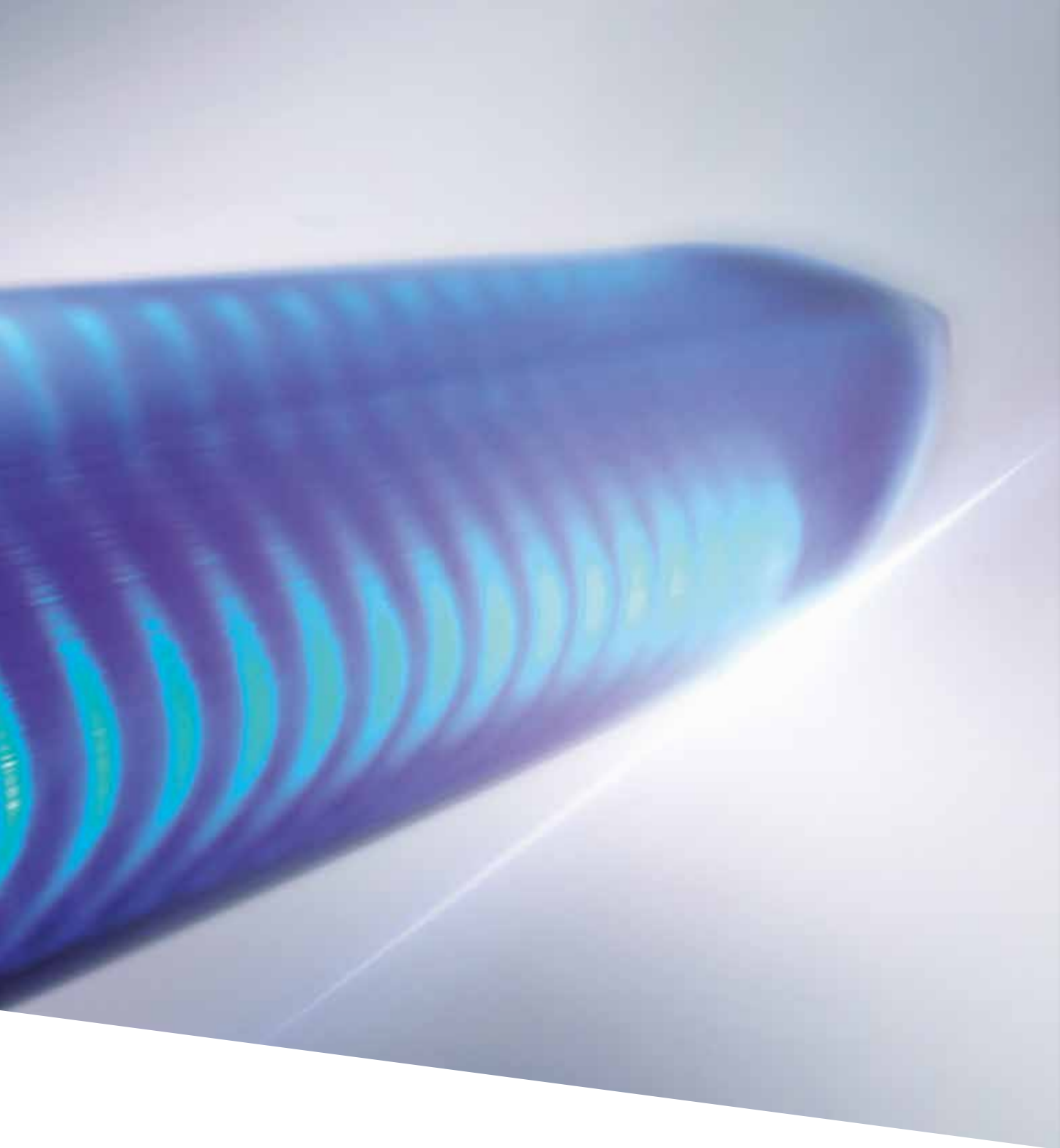
Distortion

Optical effects of lenses which can have different reactions on the processing.
Two common types of distortion are pincushion and barrel distortion.

All the information you need at a glance

HUMAN MACHINE INTERFACES

 *innovating automation*



With our signaling and display devices, you know at all times what/where things stand with production and exactly where a tool is located. You can reliably monitor the state of machines and systems and display the sensor output signals.

Your Balluff solutions

- Signaling and display devices
- Monitors
- Displays



Capture operating status with displays and SmartLight

SIGNALING AND DISPLAY DEVICES



Our displays and the SmartLight LED stack light display physical variables. They allow you to know the operating status of your machine at a glance. The displays give you the choice between analog, SSI and pulse inputs. The SmartLight visualizes progressions and trends, with the special advantage that you can correlate different colors and modes without any mechanical modifications. Through the IO-Link interface, it is easy to install and configure.

The most important benefits

- Flexible
- Easy to install
- Displays for analog, SSI or pulse input signal
- SmartLight with IO-Link and individually correlated colors and modes

SmartLight – LED stack lights	566
Displays	574
Touchpanel PC	580



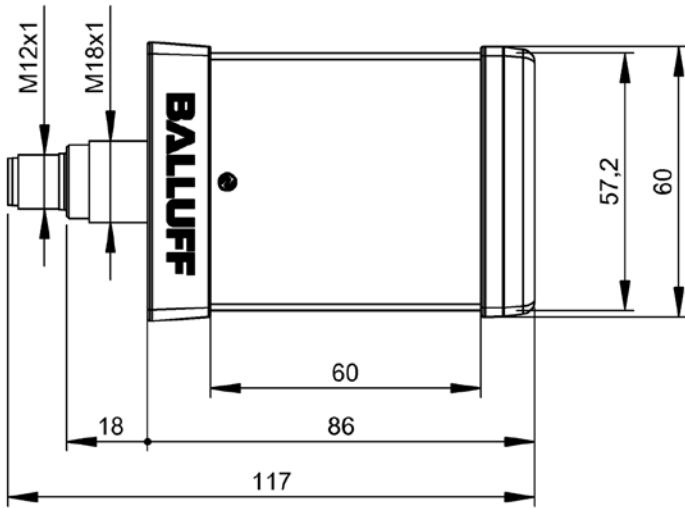
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Principle of operation	Indicator light	Indicator light with sound module	Indicator light	
Interface	IO-Link 1.1	IO-Link 1.1	IO-Link 1.1	
Operating voltage U_b	18...30.2 VDC	18...30.2 VDC	18...30.2 VDC	
Connection	M12x1 connector, 4-pin	M12x1 connector, 4-pin	M12x1 connector, 4-pin	
Segments, number max.	1	1	3	
Predefined colors	Yellow, white, Green, Blue, Red, Orange, configurable	Yellow, white, Green, Blue, Red, Orange, configurable	Yellow, white, Green, Blue, Red, Orange, configurable	
Function indicator	Runlight Mode, Segment Mode, Flexi-Mode	Runlight Mode, Segment Mode, Flexi-Mode	Runlight Mode, Level Mode, Segment Mode, Flexi-Mode	
Volume max.	—	95 dB/m	—	
Setting	Function indicator	Function indicator, Volume	Function indicator	
Additional function	—	—	—	
Dimension	60 x 60 x 117 mm	60 x 60 x 138.5 mm	60 x 60 x 213 mm	
Housing material	PC, Transparent Die-cast zinc	PC, Transparent Die-cast zinc	PC, Transparent Die-cast zinc	
Mounting	Screws M18	Screws M18	Screws M18	
Ambient temperature	-5...50 °C	-5...50 °C	-5...50 °C	
Protection degree	IP65	IP30	IP65	
Transfer rate	COM2 (38.4 kBaud)	COM2 (38.4 kBaud)	COM2 (38.4 kBaud)	
Process data cycle min.	5 ms	5 ms	5 ms	
Process data in	—	—	—	
Process data out	1 bytes	1 bytes	2 bytes	
Productview	Page 570	Page 570	Page 570	



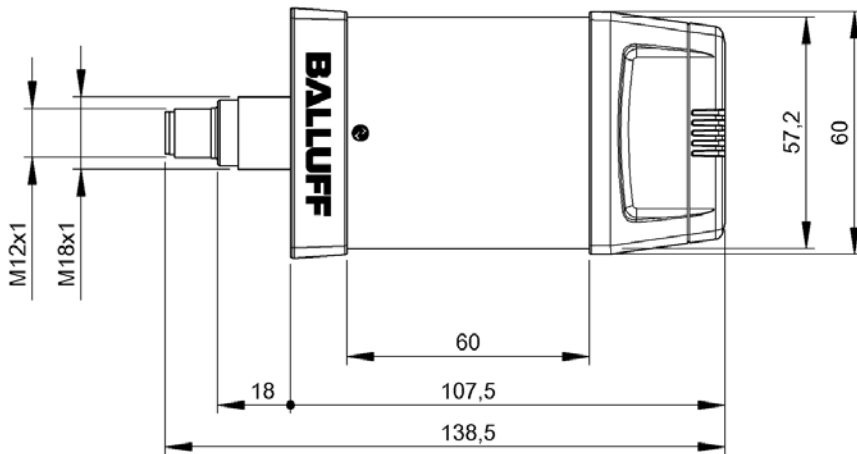
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	Indicator light	Indicator light with sound module	Indicator light with sound module	Indicator light	Indicator light
	IO-Link 1.1	IO-Link 1.1	IO-Link 1.1	IO-Link 1.1	IO-Link 1.1
	18...30.2 VDC	18...30.2 VDC	18...30.2 VDC	18...30.2 VDC	18...30.2 VDC
	M12x1 connector, 4-pin	M12x1 connector, 4-pin	M12x1 connector, 4-pin	M12x1 connector, 4-pin	M12x1 connector, 4-pin
	3	3	3	5	5
	Yellow, white, Green, Blue, Red, Orange, configurable	Yellow, white, Green, Blue, Red, Orange, configurable	Yellow, white, Green, Blue, Red, Orange, configurable	Yellow, white, Green, Blue, Red, Orange, configurable	Yellow, white, Green, Blue, Red, Orange, configurable
	Runlight Mode, Level Mode, Segment Mode, Flexi-Mode	Runlight Mode, Level Mode, Segment Mode, Flexi-Mode	Runlight Mode, Level Mode, Segment Mode, Flexi-Mode	Runlight Mode, Level Mode, Segment Mode, Flexi-Mode	Runlight Mode, Level Mode, Segment Mode, Flexi-Mode
	—	95 dB/m	95 dB/m	—	—
	Function indicator	Function indicator, Volume	Function indicator, Volume	Function indicator	Function indicator
	Expanded process data	—	Expanded process data	—	Expanded process data
	60 x 60 x 213 mm	60 x 60 x 234.5 mm	60 x 60 x 234.5 mm	60 x 60 x 309 mm	60 x 60 x 309 mm
	PC, Transparent Die-cast zinc	PC, Transparent Die-cast zinc	PC, Transparent Die-cast zinc	PC, Transparent Die-cast zinc	PC, Transparent Die-cast zinc
	Screws M18	Screws M18	Screws M18	Screws M18	Screws M18
	-5...50 °C	-5...50 °C	-5...50 °C	-5...50 °C	-5...50 °C
	IP65	IP30	IP30	IP65	IP65
	COM2 (38.4 kBaud)	COM2 (38.4 kBaud)	COM2 (38.4 kBaud)	COM2 (38.4 kBaud)	COM2 (38.4 kBaud)
	7.2 ms	5 ms	7.2 ms	5 ms	7.2 ms
	1 bytes	—	1 bytes	—	1 bytes
	8 bytes	3 bytes	8 bytes	3 bytes	8 bytes
	Page 571	Page 571	Page 571	Page 571	Page 571



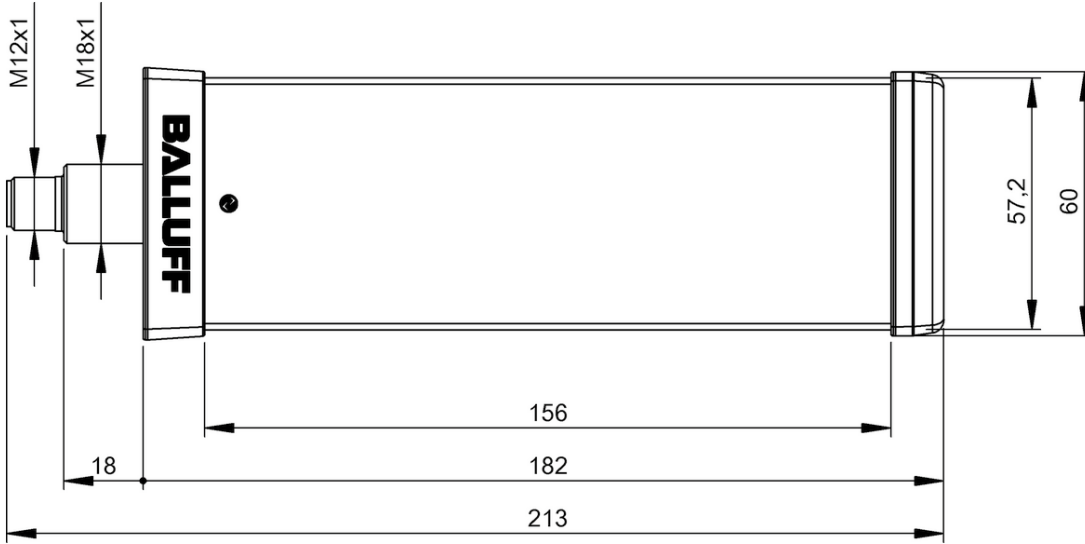
	BNI0083 BNI IOL-802-000-Z037	BNI0085 BNI IOL-802-102-Z037		
Principle of operation	Indicator light with sound module	Indicator light with sound module		
Interface	IO-Link 1.1	IO-Link 1.1		
Operating voltage U_b	18...30.2 VDC	18...30.2 VDC		
Connection	M12x1 connector, 4-pin	M12x1 connector, 4-pin		
Segments, number max.	5	5		
Predefined colors	Yellow, white, Green, Blue, Red, Orange, configurable	Yellow, white, Green, Blue, Red, Orange, configurable		
Function indicator	Runlight Mode, Level Mode, Segment Mode, Flexi-Mode	Runlight Mode, Level Mode, Segment Mode, Flexi-Mode		
Volume max.	95 dB/m	95 dB/m		
Setting	Function indicator, Volume	Function indicator, Volume		
Additional function	—	Expanded process data		
Dimension	60 x 60 x 330.5 mm	60 x 60 x 330.5 mm		
Housing material	PC, Transparent Die-cast zinc	PC, Transparent Die-cast zinc		
Mounting	Screws M18	Screws M18		
Ambient temperature	-5...50 °C	-5...50 °C		
Protection degree	IP30	IP30		
Transfer rate	COM2 (38.4 kBaud)	COM2 (38.4 kBaud)		
Process data cycle min.	5 ms	7.2 ms		
Process data in	—	1 bytes		
Process data out	3 bytes	8 bytes		
Productview	Page 572	Page 572		



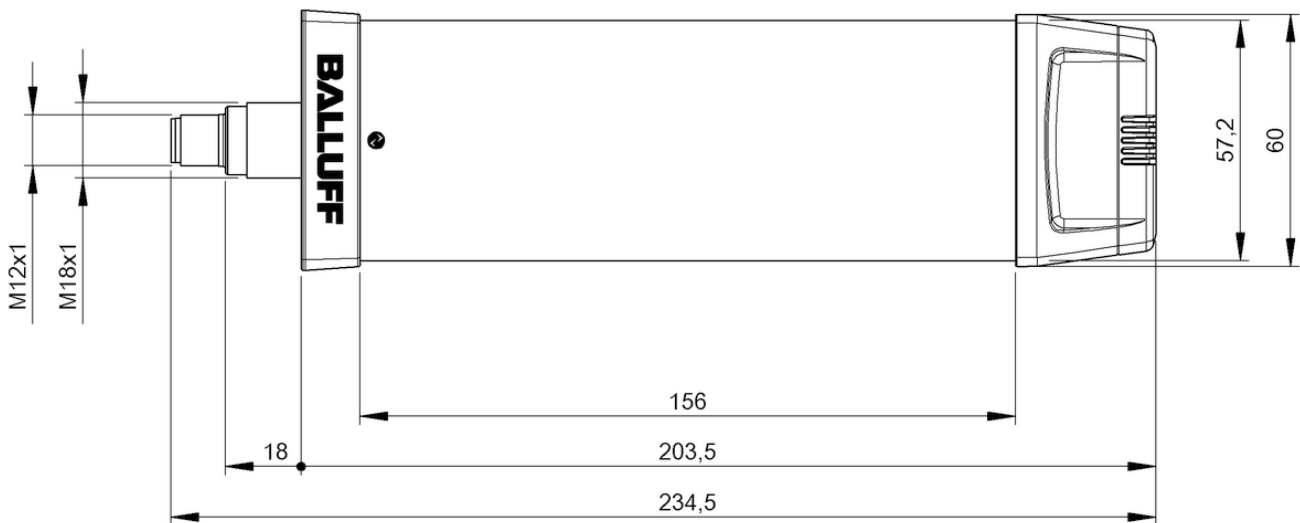
BN1007T



BN10087

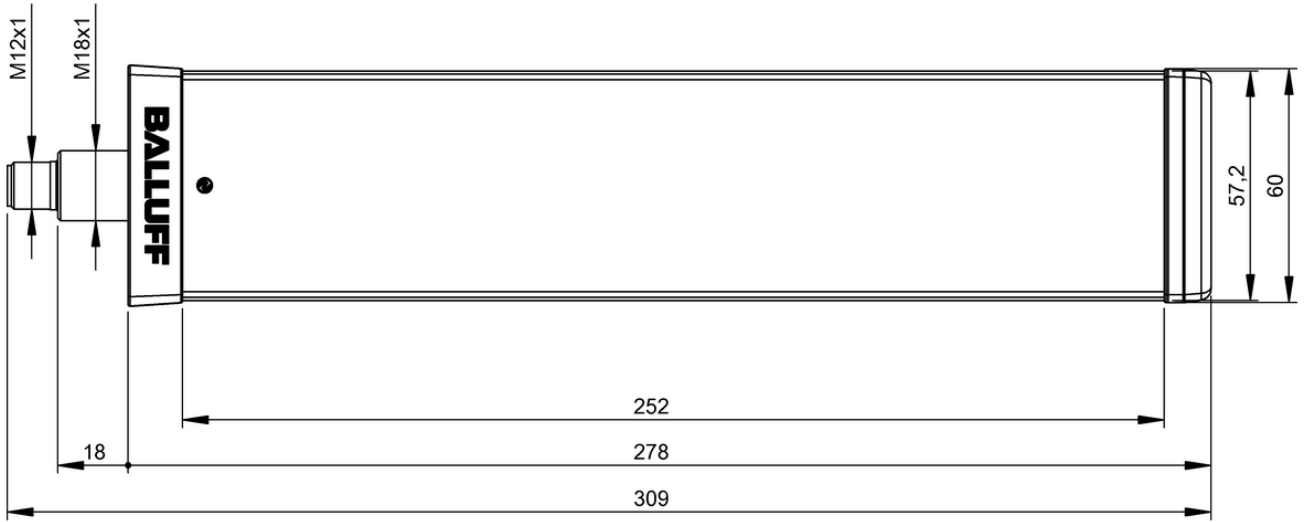


BNI007F, BNI0088

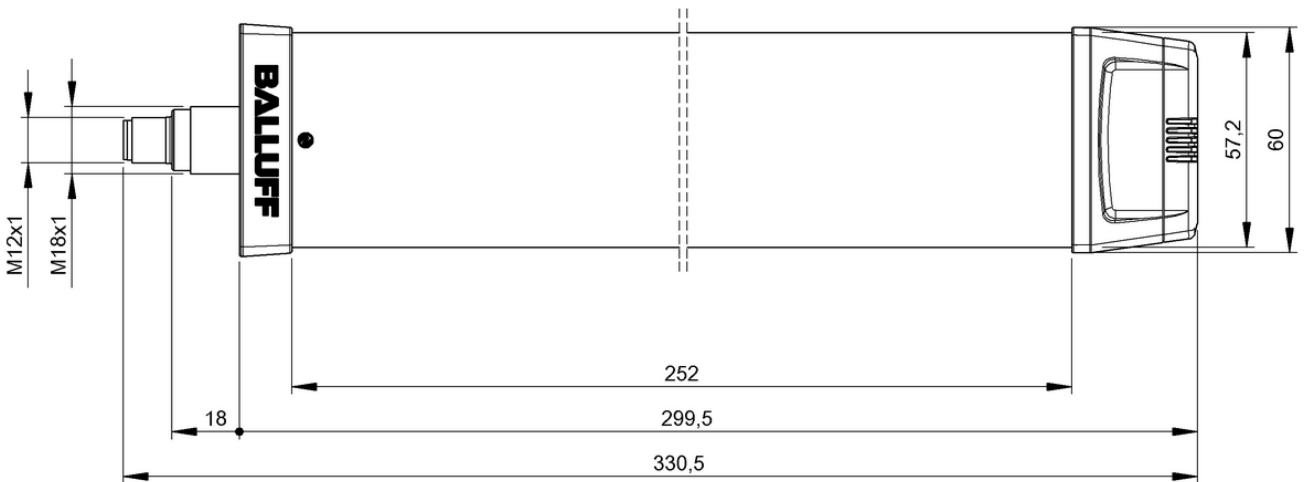


BNI0086, BNI008A

Do you need more details? Our Product Finder at www.balluff.com provides you with product-specific information, including technical drawings, data sheets, user guides and more for each individual product. All items are available for download.



BNI0072, BNI0082



BNI0083, BNI0085

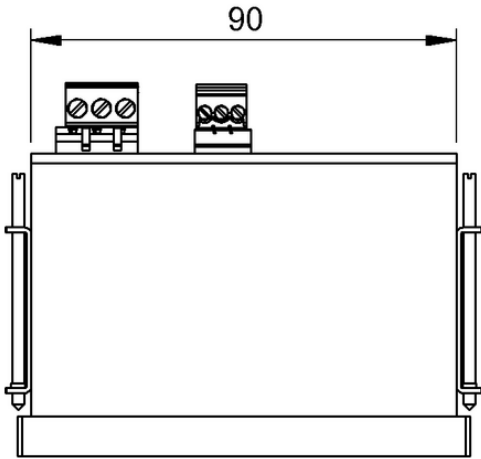
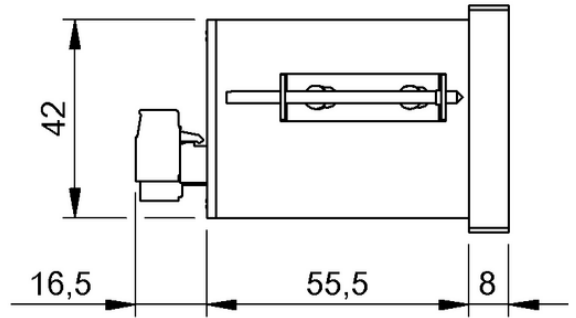
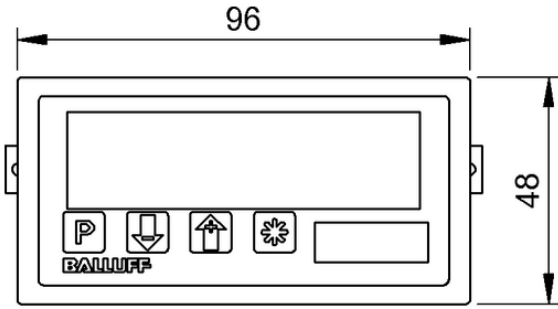
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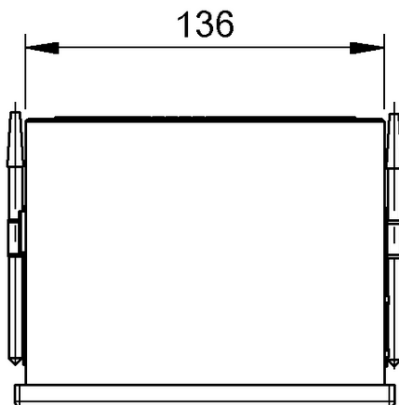
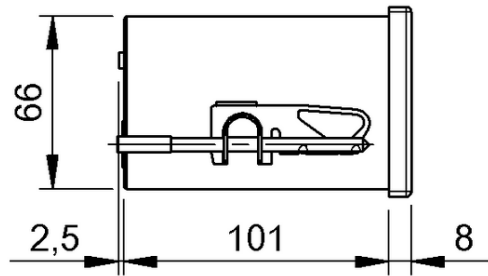
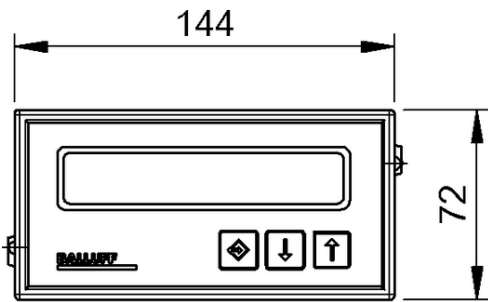
	BAE006K BDD-UM 3023	BAE0067 BDD-AM 10-1-P	BAE0069 BDD-AM 10-1-SSD	
Function	Analog value display	display module	display module	
Display	4 characters, red, LED 7-segment	7 1/2 characters, red, LED 7-segment	7 1/2 characters, red, LED 7-segment	
Dimension	72 x 48 x 96 mm	112 x 72 x 144 mm	112 x 72 x 144 mm	
Principle of operation	Display unit	Display unit	Display unit	
Rated input voltage	18...36 V DC	10...32 V DC	10...32 V DC	
Inputs, number	1	2	2	
Analog inputs	Analog, voltage/ Analog, current (0...10 V/ 0...20 mA/4...20 mA)	—	—	
Interface port 01	—	Digital pulse	SSI	
Interface, note Port 01	—	—	—	
Resolution	≤ 12 bits	—	—	
Cycle time min.	200 ms	—	—	
Digital outputs	—	2x Relay	2x Relay	
Analog output	Analog, voltage/Analog, current	—	—	
Rated output voltage DC	—	24 V	24 V	
Output current max.	—	2 A	2 A	
Encoder supply	—	5 V/24 V, max 300 mA	5 V/24 V, max 300 mA	
Housing material primary	Plastic	Plastic	Plastic	
Ambient temperature	0...60 °C	0...50 °C	0...50 °C	
IP rating of housing front	IP54	IP64	IP64	
Approval/Conformity	CE	CE	CE	
Productview	Page 676	Page 676	Page 677	



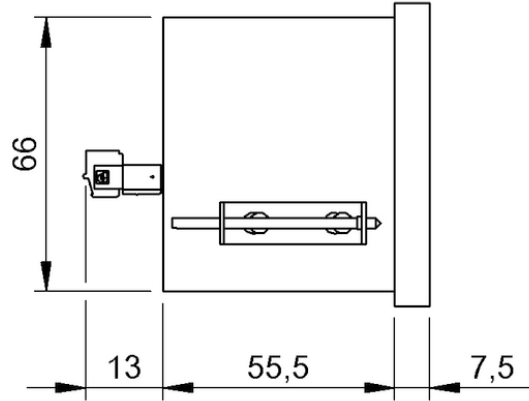
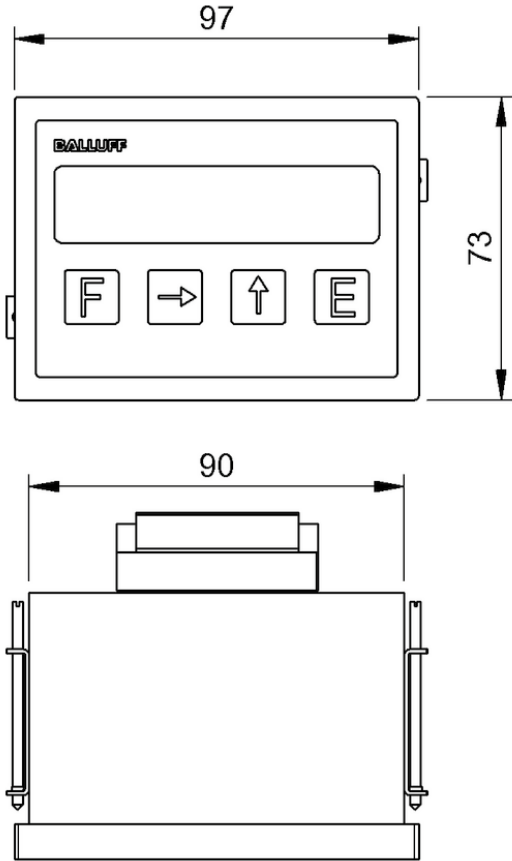
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Single-axis counter	Single-axis counter	Single-axis counter	Data transfer to/from PC, Manage user profiles, Manage sensor data, Find sensors in the network, Manage inspections, Ch- ange inspections, display inspections	
6 characters, red, LED 7-segment	6 characters, red, LED 7-segment	6 characters, red, LED 7-segment	Software menus- LCD sensor images - LCD inspections - LCD sensor data - LCD Output 1 active - LED orange Output 2 active - LED orange supply voltage - LED green connection with LAN - LED green sensor search - LED green system menu - LED green setup menu - LED green monitor mode - LED green	
76 x 73 x 97 mm	76 x 73 x 97 mm	76 x 73 x 97 mm	96 x 104 x 42.5 mm	
Display unit	Display unit	Display unit	Programming Device	
24 V DC ± 10 %	24 V DC ± 10 %	24 V DC ± 10 %	24 V DC ± 10 %	
2	2	4	—	
—	—	—	—	
—	—	—	Ethernet 10/100 Base T	
A, B	A, B	A, \bar{A} , B, \bar{B} , Z, \bar{Z} , A, B, Z	Ethernet Rx+/Ethernet Rx-	
—	—	—	—	
—	10 μ s	250 ns	—	
—	2x PNP	2x PNP	—	
—	—	—	—	
—	24 V	24 V	—	
—	600 mA	450 mA	—	
24 V, max 500 mA	24 V, max 500 mA	5 V/24 V, max 150 mA	—	
Plastic	Plastic	Plastic	ABS	
0...40 °C	0...40 °C	0...40 °C	-10...55 °C	
IP42	IP42	IP42	IP40	
CE	CE	CE	CE	
Page 677	Page 677	Page 677	Page 678	



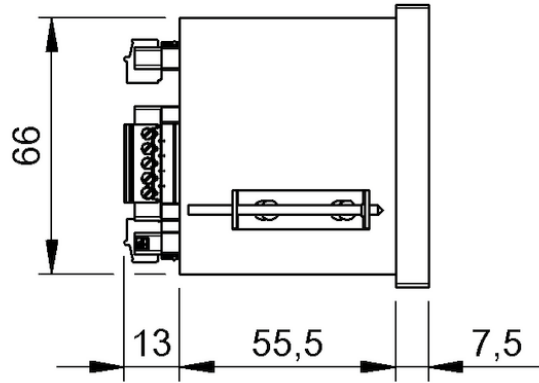
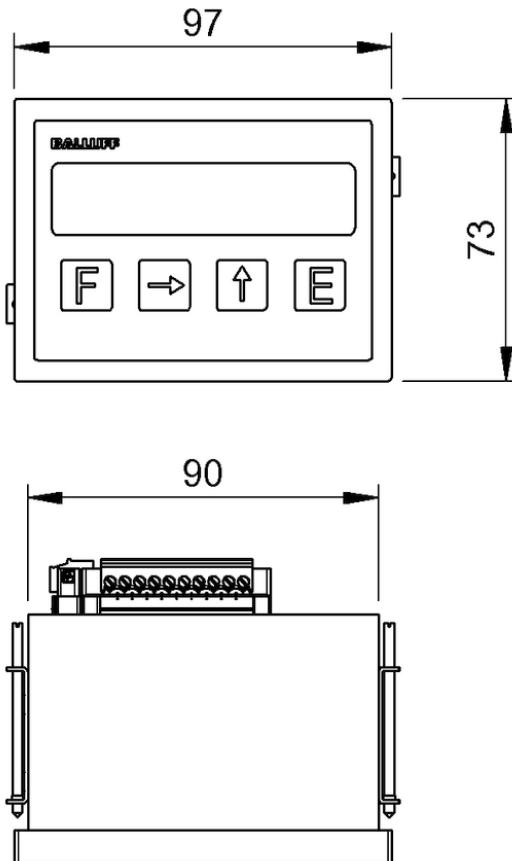
BAE006K



BAE0067, BAE0069

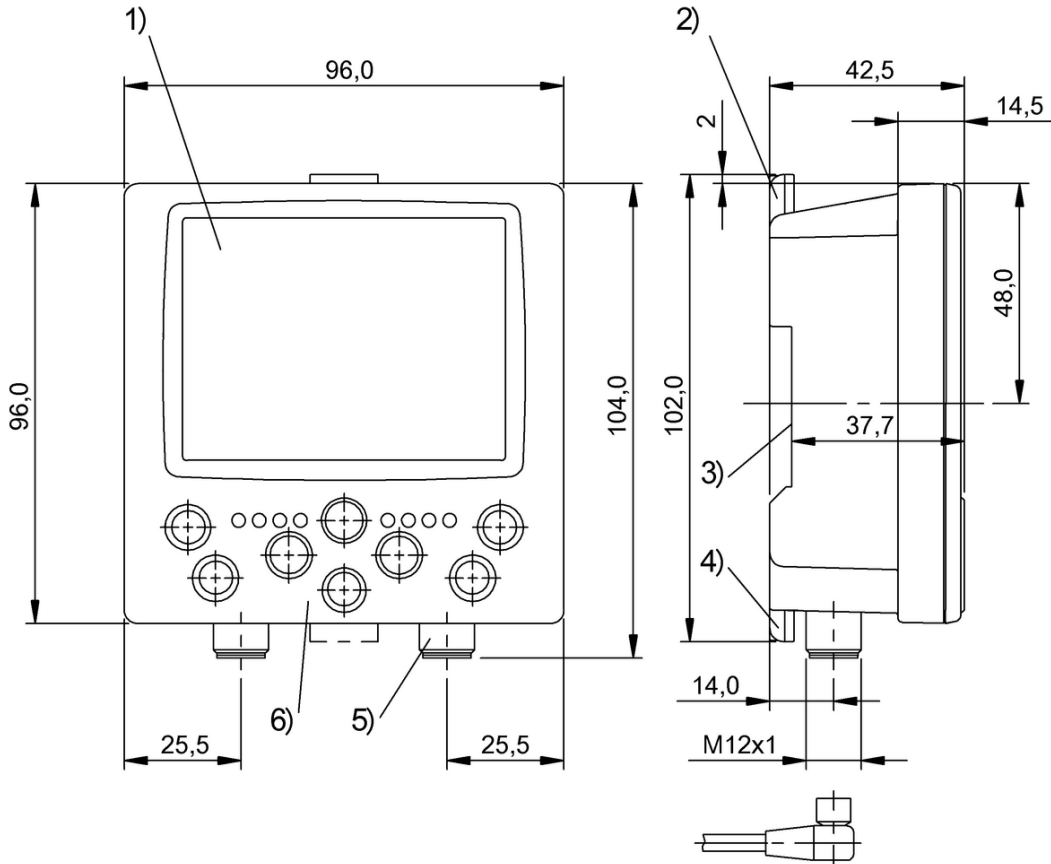


BAE004H, BAE004J



BAE004K

Do you need more details? Our Product Finder at www.balluff.com provides you with product-specific information, including technical drawings, data sheets, user guides and more for each individual product. All items are available for download.

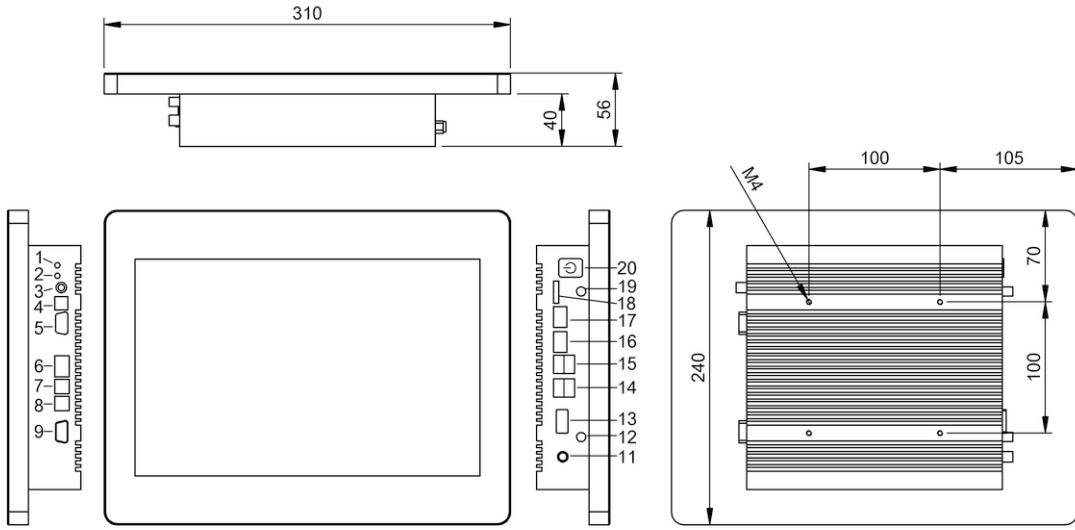


1) Color screen 3.5", 2) Latch, 3) For DIN rail 35mm, 4) Latch, 5) Connection BVS/LAN, 6) Display and control panel

BAE00EH



	BAE00WC BAE PD-VS-011-01
Short description	Touchpanel PC
Supported operating systems	Windows 10 (32/64 bit)
CPU	—
Working memory	—
Hard drive	—
Dimension	310 x 56 x 240 mm
Mounting	VESA 100 mm
Display	12.1"
Ambient temperature	10...40 °C
Approval/Conformity	CE



- | | | | |
|-------------------|-------------------------|----------------------------|----------------------------|
| 1 Mic-In | 6 GPIO | 11 Power Connector 8-36VDC | 16 10/100/1000Mbit network |
| 2 Ear-Out | 7 RS485/COM4 switchable | 12 WIFI Connector | 17 10/100/1000Mbit network |
| 3 S/PDIF | 8 RS485/COM3 switchable | 13 COM1, RS232/RS485 | 18 HDMI connector |
| 4 TOS Link S/PDIF | 9 COM2 | 14 2x USB 2.0 | 19 WIFI Connector |
| 5 VGA | | 15 2x USB 3.0 | 20 On/Off Button |

BAE00WC

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BIS000C	BIS C-108-05/L	321	BIS00EJ	BIS M-400-007-001-00-S115	226
BAE00JJ	BIS Z-GW-001-IND	306	BIS00EK	BIS M-400-007-002-00-S115	224
BAE003U	BIS Z-EL-001-ETHERNET	433	BIS00EM	BIS M-401-007-001-00-S115	228
BAE004C	BIS C-720-01-03	391	BIS00EN	BIS M-402-007-002-00-S115	234
BAE004H	BDD 610-R3Q3-0-51-N-00	575	BIS00EP	BIS M-407-039-003-06-S115	205
BAE004J	BDD 610-R3Q3-0-53-N-00	575	BIS00ER	BIS M-451-007-001-00-S115	230
BAE004K	BDD 611-R3Q4-0-52-N-00	575	BIS00EW	BIS M-6002-019-050-03-ST11	203
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BAE0095	BIS C-851	391	BIS000H8	BIS C-60R-001-08P-PU-20	388
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BAE0097	BIS C-853	391	BIS000J1	BIS C-140-11/L-M8	321
BAE0103	BAE PD-VS-014-05	523	BIS000J1	BIS C-140-05/L-M8	319
BAI000Z	BAI BVS-CA-EPC-001	523	BIS000J2	BIS C-140-05/L-M6	319
BAM012C	BIS C-300-ZA1	360	BIS000J4	BIS C-380-01/10-00,7	362
BCC00R2	BIS L-503-PU1-05	462	BIS000JJ	BIS C-380-06/06-01	362
BCC00R3	BIS L-503-PU1-10	463	BIS000JK	BIS C-380-06/06-01,5	362
BCC00R4	BIS L-503-PU1-15	464	BIS000JP	BIS C-380-10/10-01	362
BIS00A4	BIS C-602-019-650-03-KL2	375	BIS000JR	BIS C-380-10/10-05	362
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BIS00AM	BIS C-6022-019-050-03-ST14	377	BIS000K3	BIS C-6008-048-650-06-ST23	371
BIS00AU	BIS C-6026-034-050-06-ST19	377	BIS000K4	BIS C-6028-048-050-06-ST22	371
BIS00AY	BIS C-6027-039-050-06-ST19	377	BIS000KM	BIS M-115-03/A	105
BIS00C5	BIS L-400-035-001-00-S115	440	BIS000KR	BIS L-140-05/L-M8	405
BIS00C6	BIS L-400-035-001-02-S115	448	BIS000L7	BIS M-6008-048-050-06-ST23	203
BIS00C7	BIS L-400-035-002-00-S115	442	BIS000L8	BIS M-106-03/L	103
BIS00C9	BIS L-400-035-003-00-S115	444	BIS000L9	BIS C-140-11/L-M10	321
BIS00CC	BIS L-400-035-004-00-S115	446	BIS000LY	BIS M-699-052-050-03-ST11	205
BIS00CH	BIS L-400-043-001-02-S115	476	BIS000M2	BIS M-152-03/A	103
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BIS00CK	BIS L-400-043-003-02-S115	480	BIS000LH	BIS M-400-045-001-07-S4	240
BIS00CL	BIS L-400-043-004-02-S115	482	BIS000LJ	BIS M-400-045-002-07-S4	246
BIS00CM	BIS L-405-033-001-05-MU	458	BIS000LK	BIS M-401-045-001-07-S4	256
BIS00CN	BIS L-405-033-002-05-MU	466	BIS000LM	BIS M-451-045-001-07-S4	260
BIS00CP	BIS L-405-033-003-05-MU	468	BIS000LW	BIS M-402-045-002-07-S4	270
BIS00CR	BIS L-405-033-004-05-MU	470	BIS000M	BIS C-117-05/A	319
BIS00CT	BIS L-405-037-001-05-MU	460	BIS000M1	BIS M-402-045-004-07-S4	264
BIS00CU	BIS L-405-037-002-05-MU	472	BIS000M6	BIS M-341-001-S115	172
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BIS00EO	BIS L-409-045-002-07-S4	452	BIS000M9	BIS M-140-02/A-M6	81

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BIS000N5	BIS M-115-07/A-SA1	105	BIS00W6	BIS M-411-068-001-00-S115	304
BIS000N9	BIS C-380-06/06-05	362	BIS00W7	BIS M-411-068-001-02-S115	302
BIS000NK	BIS M-305-001-S115	176	BIS00W8	BIS M-411-068-001-09-S72	298
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BIS000P9	BIS C-302-PU1-10	336	BIS00W9	BIS U-102-05/CA-HT	17
BIS000PA	BIS C-302-PU1-05	336	BIS00WF	BIS U-101-04/CA-HT	17
BIS000PC	BIS C-306-PU1-01	338	BIS00WH	BIS U-101-04/CA	15
BIS000PE	BIS C-306-PU1-10	338	BIS00WK	BIS M-373-000-A01	186
BIS000PF	BIS C-310-PU1-01	346	BIS00WL	BIS M-372-000-A01	184
BIS000PH	BIS C-310-PU1-05	346	BIS00WM	BIS M-371-000-A01	182
BIS000PJ	BIS C-310-PU1-10	346	BIS00WN	BIS M-370-000-A02	188
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BIS000NW	BIS M-143-02/A-M8	79	BIS00Y4	BIS M-135-03/L-HT	99
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BIS01CK	BIS U-180-A0/C1M-HT	17	BIS009J	BIS C-6002-019-655-03-ST11	375
BIS01CM	BIS U-104-A0/C1M-HT	19	BIS009L	BIS C-6002-028-650-03-KL2	373
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BIS01E6	BIS M-4A7-082-401-07-S4	278	BIS011F	BIS M-108-11/A	83
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BIS003Z	BIS M-102-01/L	77	BIS013J	BIS U-6026-034-114-06-ST35	43
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