Reliable information exchange across all levels

INDUSTRIAL NETWORKING.

innovating automation

The demands on industrial networking continually increase. The rising quantities of data and ever more complex communication require high-performance components that can reliably transport the information across all levels. This is especially true if high protection types, robustness, use at high temperatures or special interfaces and connections for maximum security are needed.

With the intelligent combination of high-performance industrial networking technology and the IO-Link communication standard, Balluff makes flexible and smooth communication in the most varied application scenarios possible.

Your Balluff solutions

- Network modules
- I/O modules
- Switches
- Memory modules
- Inductive couplers

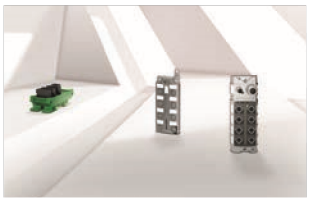
INDUSTRIAL NETWORKING

98
NETWORK BLOCKS

100 Profinet
112 Profibus
120 CC-Link IE/Field
124 CC-Link
130 Ethernet/IP
140 Devicenet
146 EtherCAT

150
SWITCHES

152 Unmanaged switches

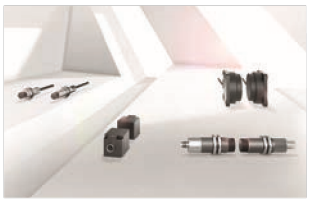


156
I/O MODULES

158 IO-Link sensor/actuator hubs
192 IO-Link valve interface
200 Universal IO-Link interfaces

204
MEMORY MODULES

206 IO-Link memory modules



208
INDUCTIVE COUPLERS

210 IO-Link signal transmission
216 Signal transmission
226 Power supply

230
BASICS AND GLOSSARY

Extraordinary parameter settings and diagnostics capabilities

NETWORK BLOCKS

Balluff has developed a new generation of network modules for perfect linking of sensors and actuators. The system features highly versatile parameter settings and diagnostics possibilities that can be carried out via display, LEDs and an integrated Web server.

The status LEDs on the modules are large, bright and easy to read and interpret. This saves you time in setup, maintenance or troubleshooting. With an output current of up to 2 A, the Balluff network modules are capable of driving almost any load. Each output also offers overload protection with LED indicator and a memory feature for easy troubleshooting. The rugged, full-jacket enclosure also withstands high mechanical loads.

Features

- High performance in all networks
- Faster, simpler connection
- Reliable even in harsh environments, shock and vibration resistant
- IP67 design and rugged full-jacket enclosure
- Integrated Web server
- Line topology construction

	BNI007M BNI PNT-509-105-Z033	BNI005H BNI PNT-508-105-Z015	BNI00AZ BNI PNT-538-105-Z063	
Principle of operation	Active splitter	Active splitter	Active splitter	
Interface	Profinet I/O	Profinet I/O	Profinet I/O	
Operating voltage Ub	18...30.2 VDC	18...30.2 VDC	18...30.2 VDC	
Connection (COM 1)	M12x1-Female, 4-pole, D-coded	M12x1-Female, 4-pole, D-coded	M12x1-Female, 4-pole, D-coded	
Connection (COM 2)	M12x1-Female, 4-pole, D-coded	M12x1-Female, 4-pole, D-coded	M12x1-Female, 4-pole, D-coded	
Connection (supply voltage IN)	7/8“-Male, 5-pole	7/8“-Male, 5-pole	M12x1-Male, 4-pole, T-coded	
Connection (supply voltage OUT)	7/8“-Female, 5-pole	7/8“-Female, 5-pole	M12x1-Female, 4-pole, T-coded	
Connection slots	16x M12x1-Female, 5-pole, A-coded	8x M12x1-Female, 5-pole, A-coded	8x M12x1-Female, 5-pole, A-coded	
Digital inputs	32x PNP, Type 3	16x PNP, Type3	12x PNP, Type 3	
Digital outputs	32x PNP	16x PNP	12x PNP	
Configurable inputs/outputs	yes	yes	yes	
Output current max.	2 A	2 A	2 A	
Current sum US, sensor	9.0 A	9.0 A	12.0 A	
Current sum UA, actuator	9.0 A	9.0 A	12.0 A	
Housing material	Zinc, die-cast	Zinc, die-cast	Zinc, die-cast	
Dimension	68 x 37.9 x 334 mm	68 x 37.9 x 224 mm	68 x 31.7 x 224 mm	
Ambient temperature	-5...70 °C	-5...70 °C	-5...70 °C	
Protection degree	IP67	IP67	IP67	
Auxiliary interfaces	16x IO-Link	8x IO-Link	8x IO-Link	
IO-Link version	1.1	1.1	1.1	
Port-class	Type A	Type A	Type A (4x) + Type B (4x)	
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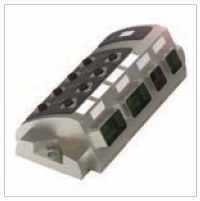



BNI007K BNI PNT-508-105-Z031	BNI004U BNI PNT-502-105-Z015	BNI006C BNI PNT-502-102-Z015	BNI0092 BNI PNT-507-005-Z040	BNI00A9 BNI PNT-527-005-Z040
Active splitter	Active splitter	Active splitter	Active splitter	Active splitter
Profinet I/O	Profinet I/O	Profinet I/O	Profinet I/O	Profinet I/O
18...30.2 VDC	18...30.2 VDC	18...30.2 VDC	18...30.2 VDC	18...30.2 VDC
Push-Pull RJ45, 8-pole	M12x1-Female, 4-pole, D-coded	M12x1-Female, 4-pole, D-coded	M12x1-Female, 4-pole, D-coded	M12x1-Female, 4-pole, D-coded
Push-Pull RJ45, 8-pole	M12x1-Female, 4-pole, D-coded	M12x1-Female, 4-pole, D-coded	M12x1-Female, 4-pole, D-coded	M12x1-Female, 4-pole, D-coded
Push/Pull, 5-pole	7/8“-Male, 5-pole	7/8“-Male, 5-pole	7/8“-Male, 5-pole	7/8“-Male, 5-pole
Push/Pull, 5-pole	7/8“-Female, 5-pole	7/8“-Female, 5-pole	—	—
8x M12x1-Female, 5-pole, A-coded	8x M12x1-Female, 5-pole, A-coded	8x M12x1-Female, 5-pole, A-coded	4x M12x1-Female, 5-pole, A-coded	4x M12x1-Female, 5-pole, A-coded
16x PNP, Type 2	16x PNP, Type3	16x PNP, Type3	8x PNP, Type3	4x PNP, Type 3
16x PNP	16x PNP	16x PNP	8x PNP	—
yes	yes	yes	yes	no
2 A	2 A	2 A	2 A	—
16.0 A	9.0 A	9.0 A	9.0 A	9.0 A
16.0 A	9.0 A	9.0 A	9.0 A	9.0 A
Zinc, die-cast	Zinc, die-cast	Zinc, die-cast	Zinc, die-cast	Zinc, die-cast
84.4 x 47 x 185.4 mm	68 x 37.9 x 224 mm	68 x 37.9 x 224 mm	37 x 32.6 x 224 mm	37 x 32.6 x 224 mm
-5...70 °C	-5...70 °C	-5...70 °C	-5...70 °C	-5...70 °C
IP67	IP67	IP67	IP67	IP67
8x IO-Link	4x IO-Link	4x IO-Link	4x IO-Link	4x IO-Link
1.1	1.1	1.1	1.1	1.1
Type A	Type A	Type A	Type A	Type B
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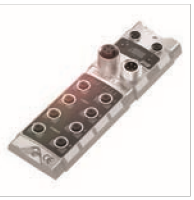

	BNI0052 BNI PNT-302-105-Z015	BNI0053 BNI PNT-104-105-Z015	BNI005K BNI PNT-305-105-Z015	
Principle of operation	Active splitter	Active splitter	Active splitter	
Interface	Profinet I/O	Profinet I/O	Profinet I/O	
Operating voltage Ub	18...30.2 VDC	18...30.2 VDC	18...30.2 VDC	
Connection (COM 1)	M12x1-Female, 4-pole, D-coded	M12x1-Female, 4-pole, D-coded	M12x1-Female, 4-pole, D-coded	
Connection (COM 2)	M12x1-Female, 4-pole, D-coded	M12x1-Female, 4-pole, D-coded	M12x1-Female, 4-pole, D-coded	
Connection (supply voltage IN)	7/8“-Male, 5-pole	7/8“-Male, 5-pole	7/8“-Male, 5-pole	
Connection (supply voltage OUT)	7/8“-Female, 5-pole	7/8“-Female, 5-pole	7/8“-Female, 5-pole	
Connection slots	8x M12x1-Female, 5-pole, A-coded	8x M12x1-Female, 5-pole, A-coded	8x M12x1-Female, 5-pole, A-coded	
Digital inputs	16x PNP, Type 2	16x PNP, Type 2	8x PNP, Type2	
Digital outputs	16x PNP	—	8x PNP	
Configurable inputs/outputs	yes	no	no	
Output current max.	2 A	—	2 A	
Current sum US, sensor	9.0 A	9.0 A	9.0 A	
Current sum UA, actuator	9.0 A	—	9.0 A	
Housing material	Zinc, die-cast	Zinc, die-cast	Zinc, die-cast	
Dimension	68 x 37.9 x 224 mm	68 x 37.9 x 224 mm	68 x 37.9 x 224 mm	
Ambient temperature	-5...70 °C	-5...70 °C	-5...70 °C	
Protection degree	IP67	IP67	IP67	
Auxiliary interfaces	—	—	—	
IO-Link version	—	—	—	
Port-class	—	—	—	
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BNI005F BNI PNT-202-105-Z015	BNI009M BNI PNT-508-005-E002	BNI009N BNI PNT-302-005-E002		
Active splitter	Active splitter	Active splitter		
Profinet I/O	Profinet I/O	Profinet I/O		
18...30.2 VDC	18...30.2 VDC	18...30.2 VDC		
M12x1-Female, 4-pole, D-coded	M12x1-Female, 4-pole, D-coded	M12x1-Female, 4-pole, D-coded		
M12x1-Female, 4-pole, D-coded	M12x1-Female, 4-pole, D-coded	M12x1-Female, 4-pole, D-coded		
7/8“-Male, 5-pole	7/8“-Male, 5-pole	7/8“-Male, 5-pole		
7/8“-Female, 5-pole	7/8“-Female, 5-pole	7/8“-Female, 5-pole		
8x M12x1-Female, 5-pole, A-coded	8x M12x1-Female, 5-pole, A-coded	8x M12x1-Female, 5-pole, A-coded		
—	16x PNP, Type3	16x PNP, Type3		
8x PNP	16x PNP	16x PNP		
no	yes	yes		
2 A	2 A	2 A		
9.0 A	9.0 A	9.0 A		
9.0 A	9.0 A	9.0 A		
Zinc, die-cast	Stainless steel (1.4571)	Stainless steel (1.4571)		
68 x 37.9 x 224 mm	70 x 44.1 x 228 mm	70 x 44.1 x 228 mm		
-5...70 °C	-5...70 °C	-5...70 °C		
IP67	IP69	IP69		
—	8x IO-Link	—		
—	1.1	—		
—	Type A	—		
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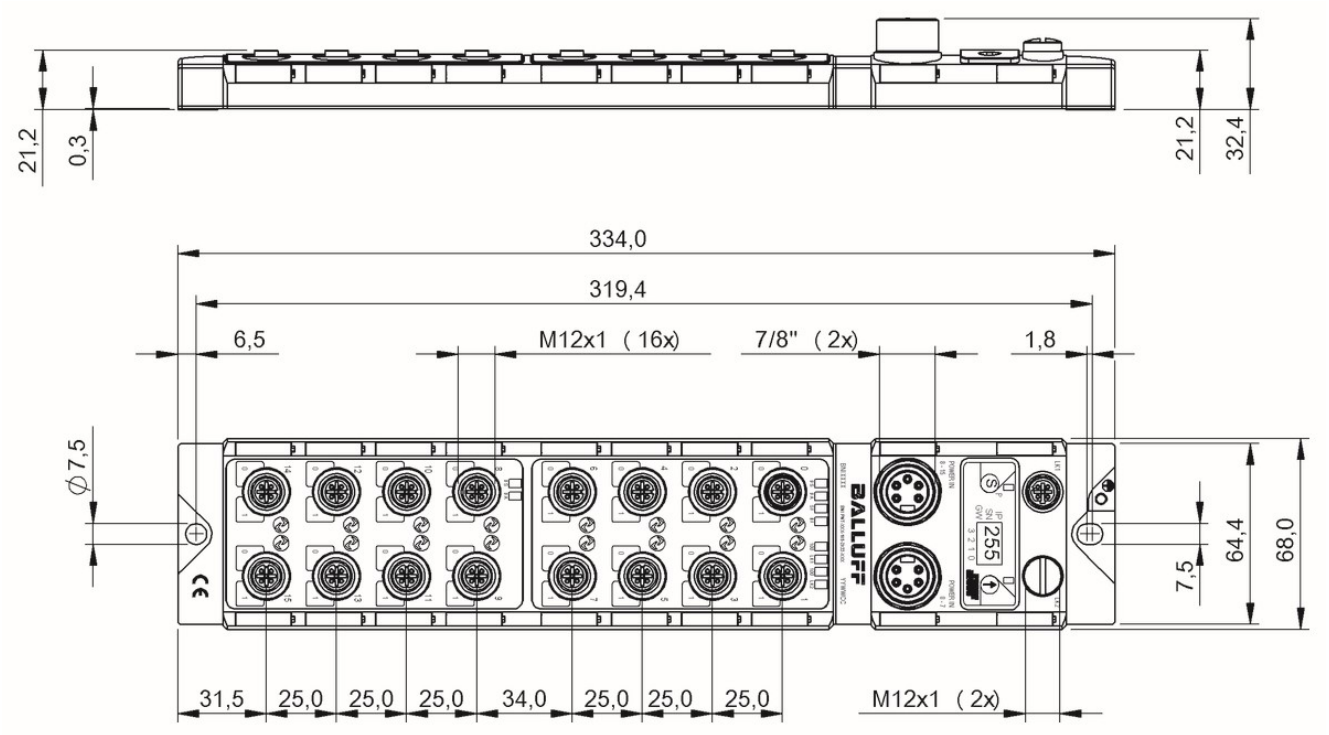

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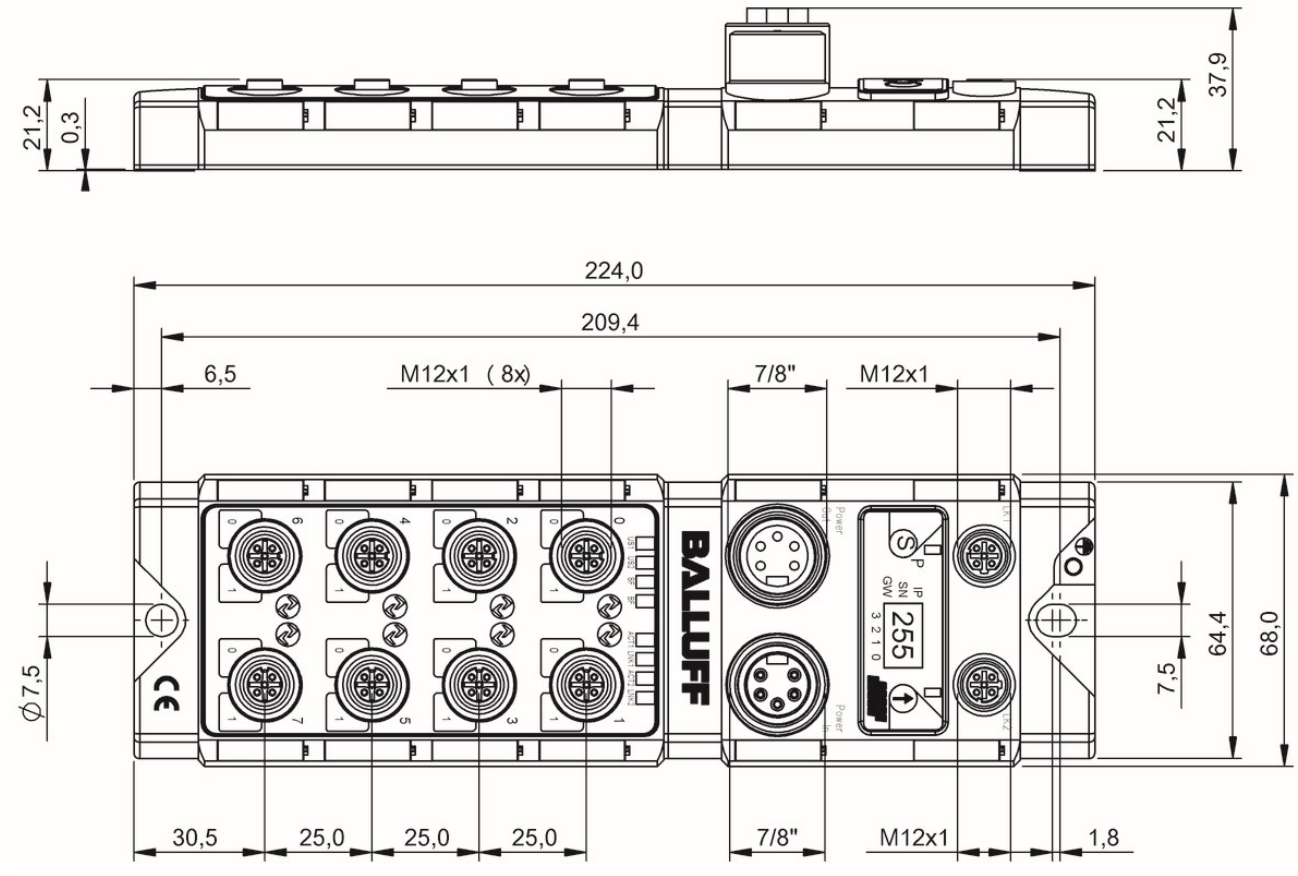

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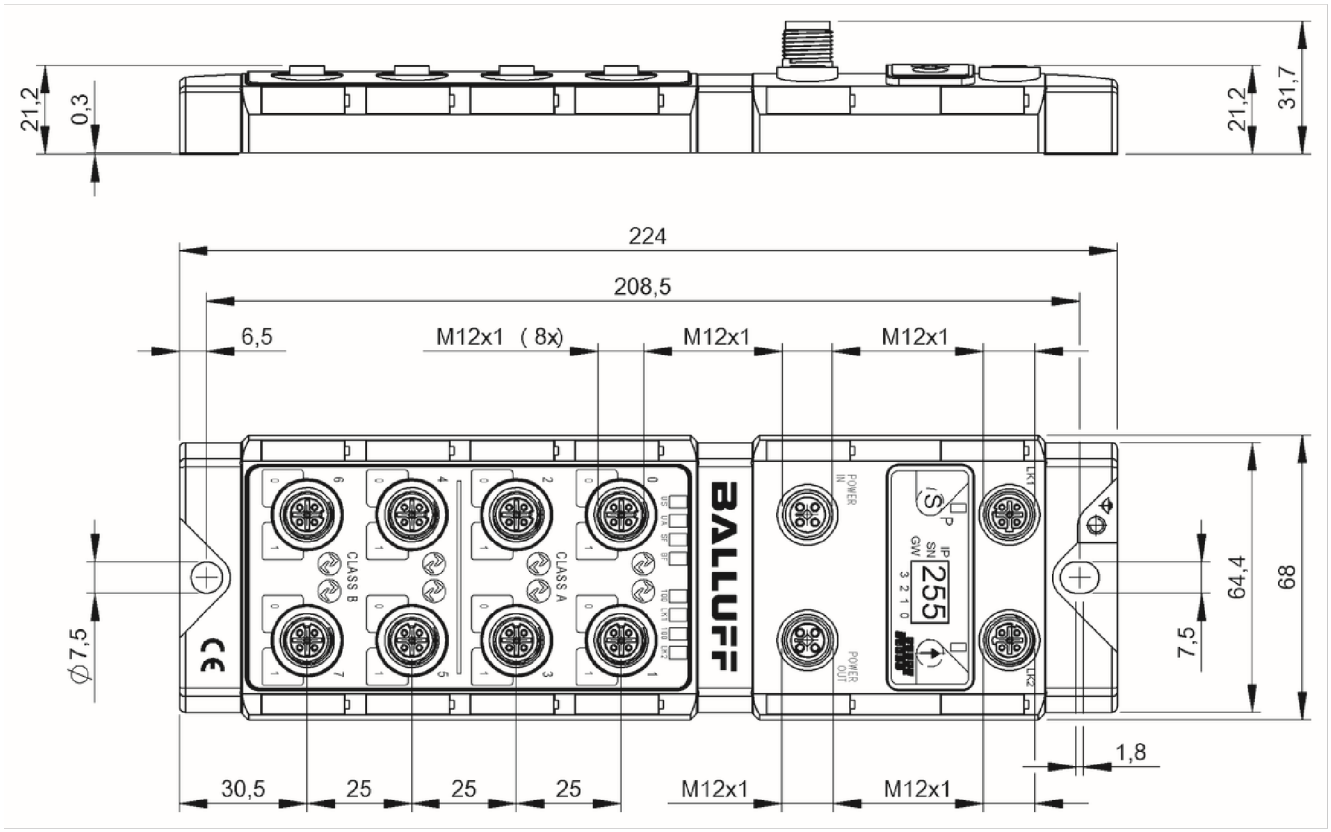
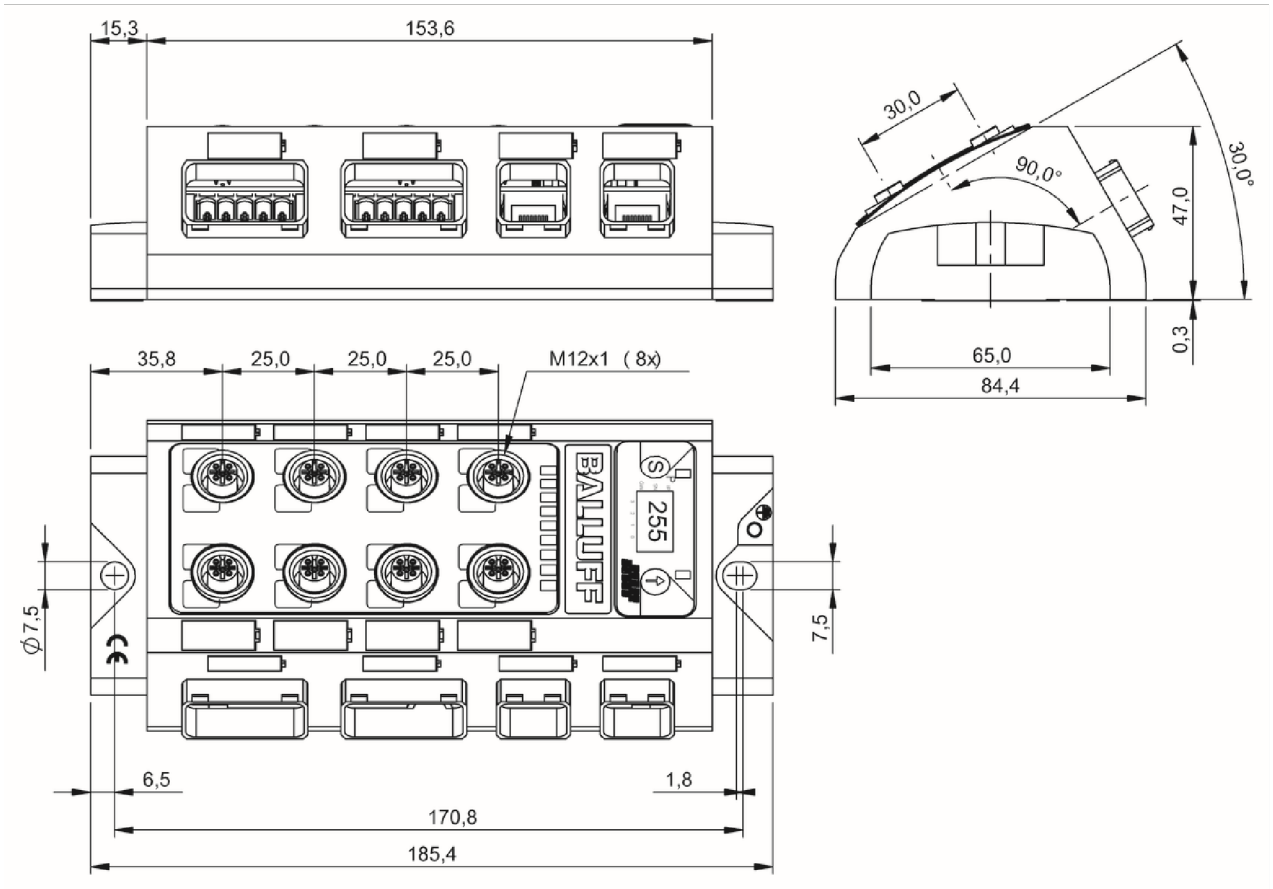
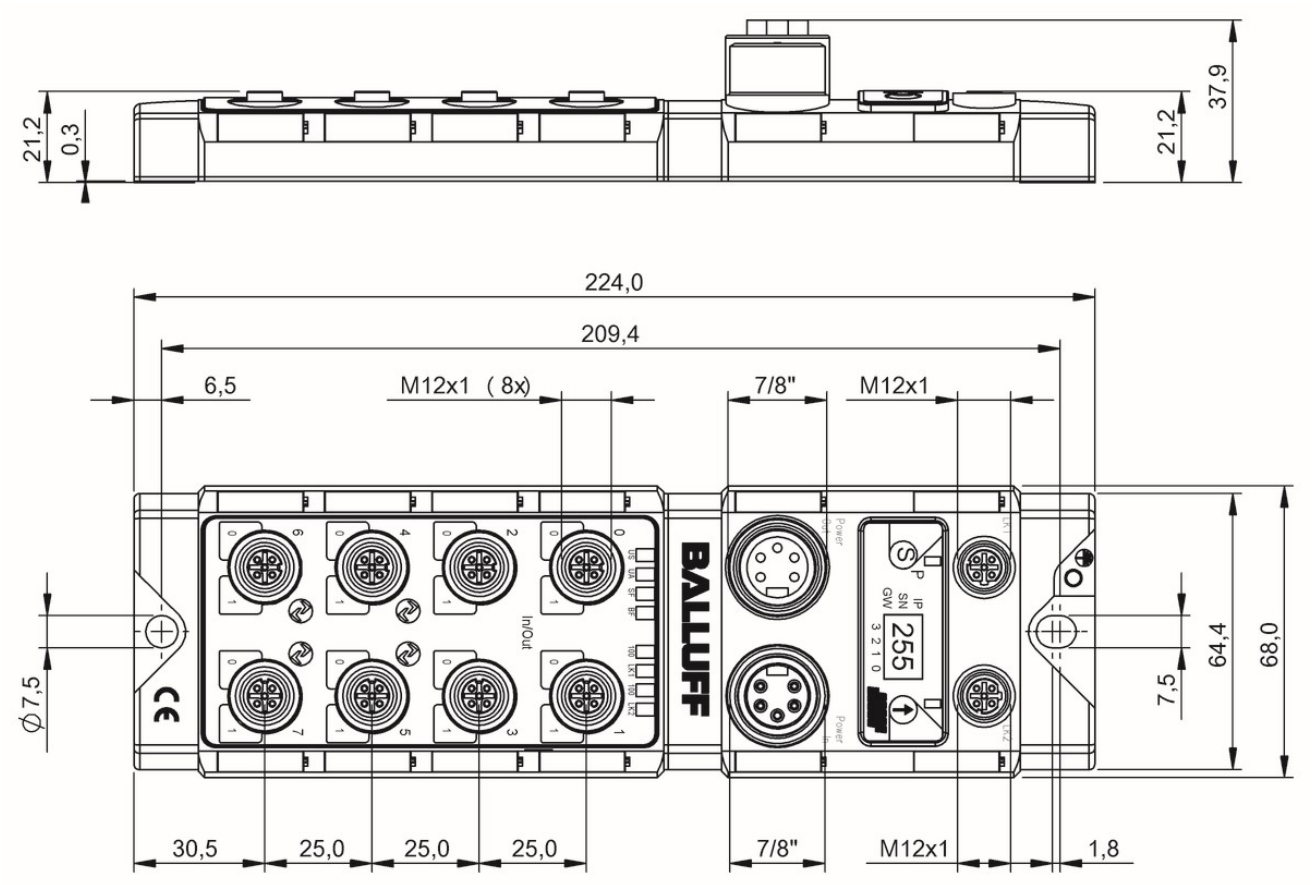


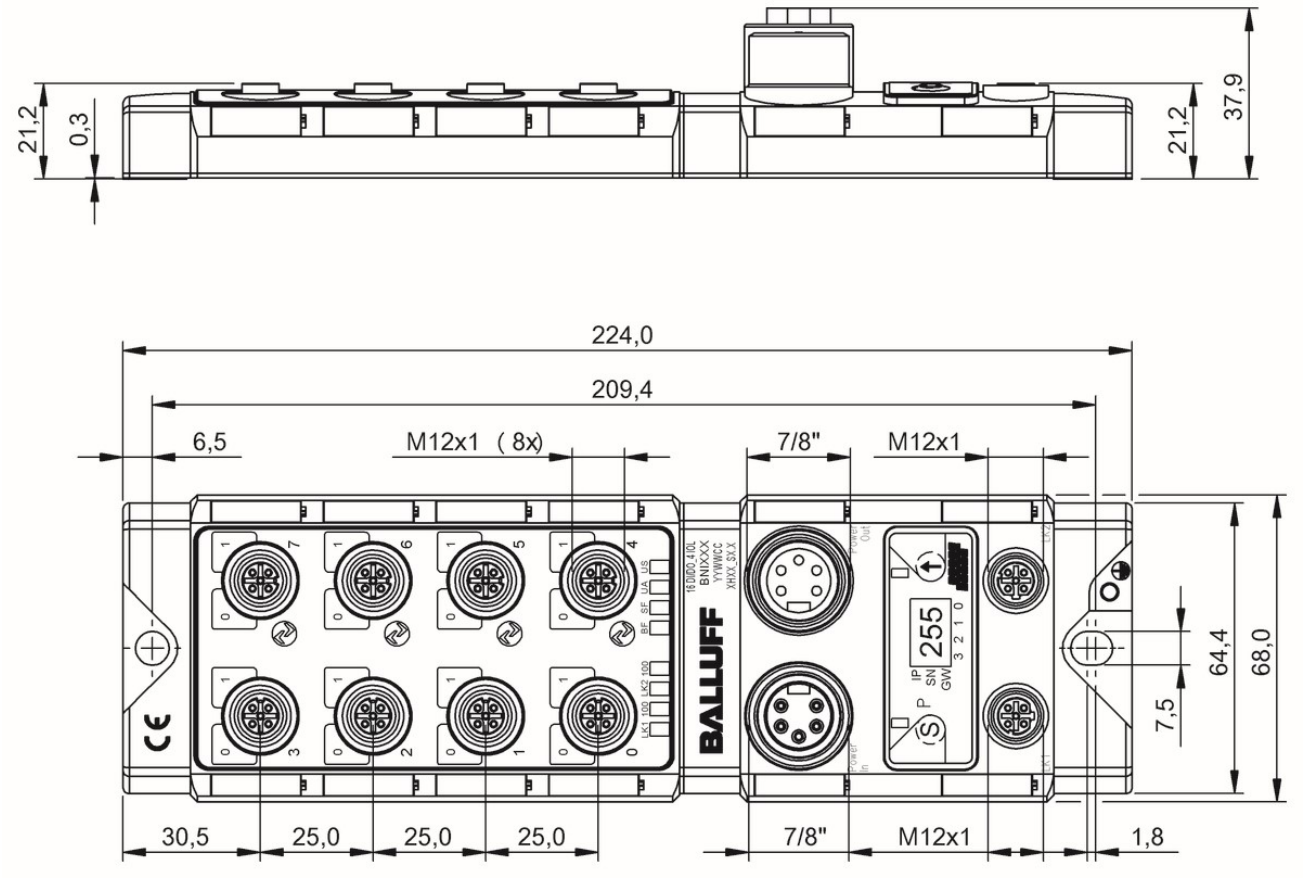
BNI00AZ



BNI007K



BNI004U



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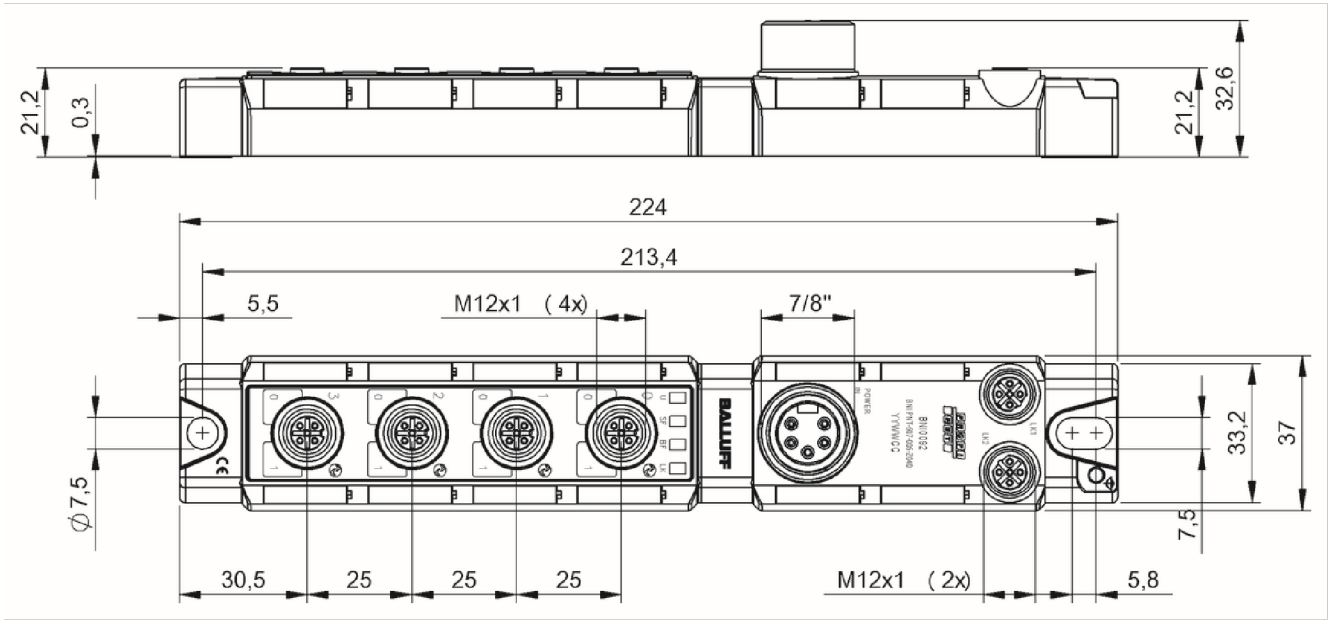

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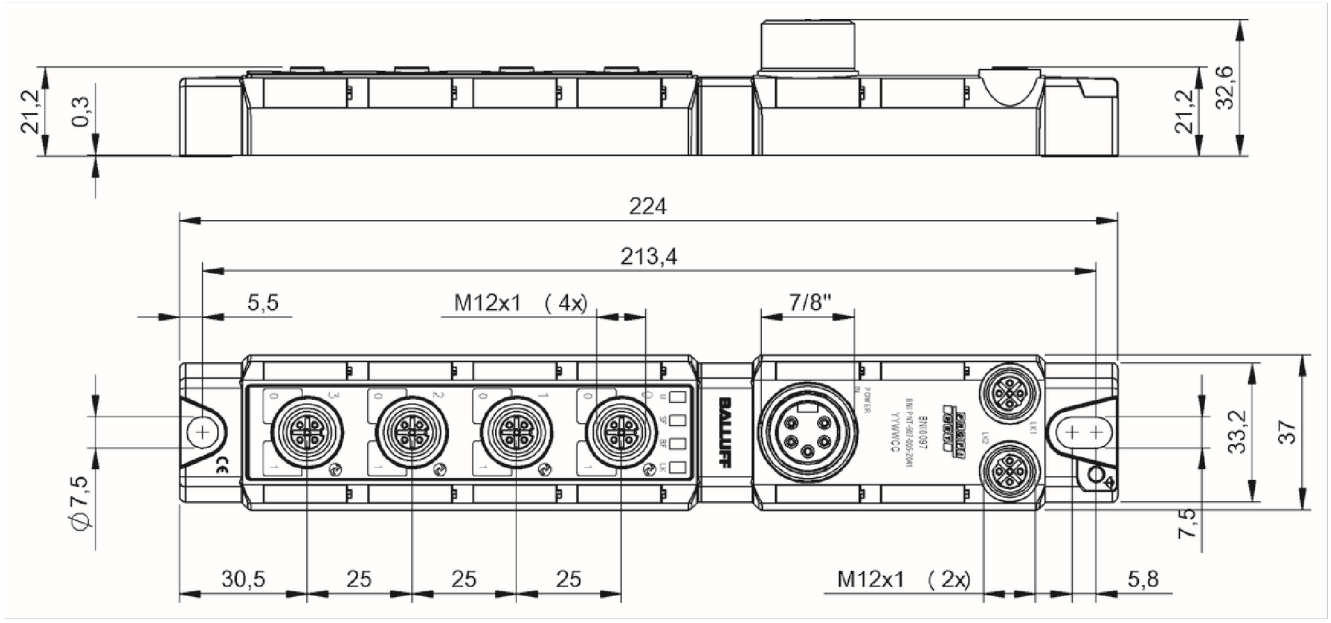

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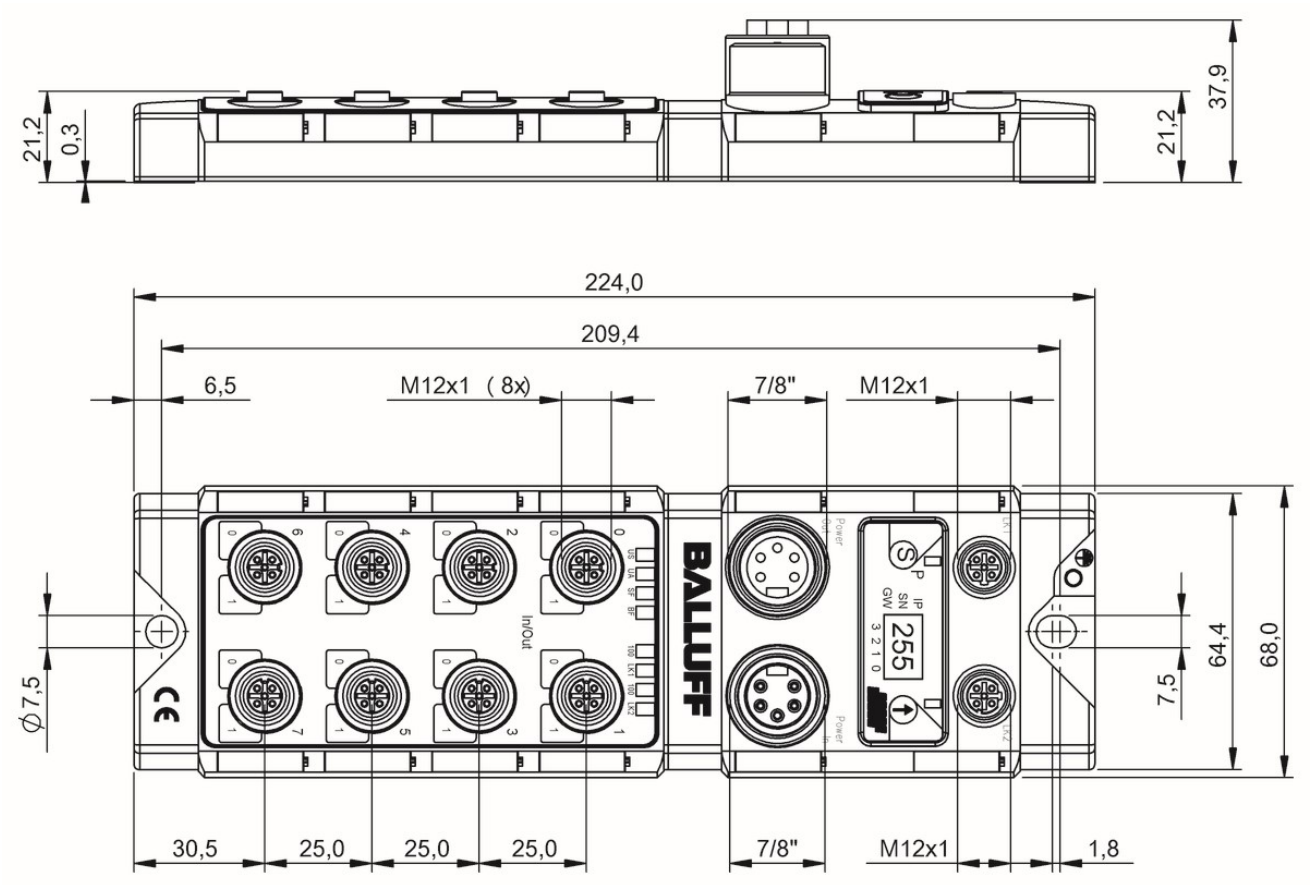
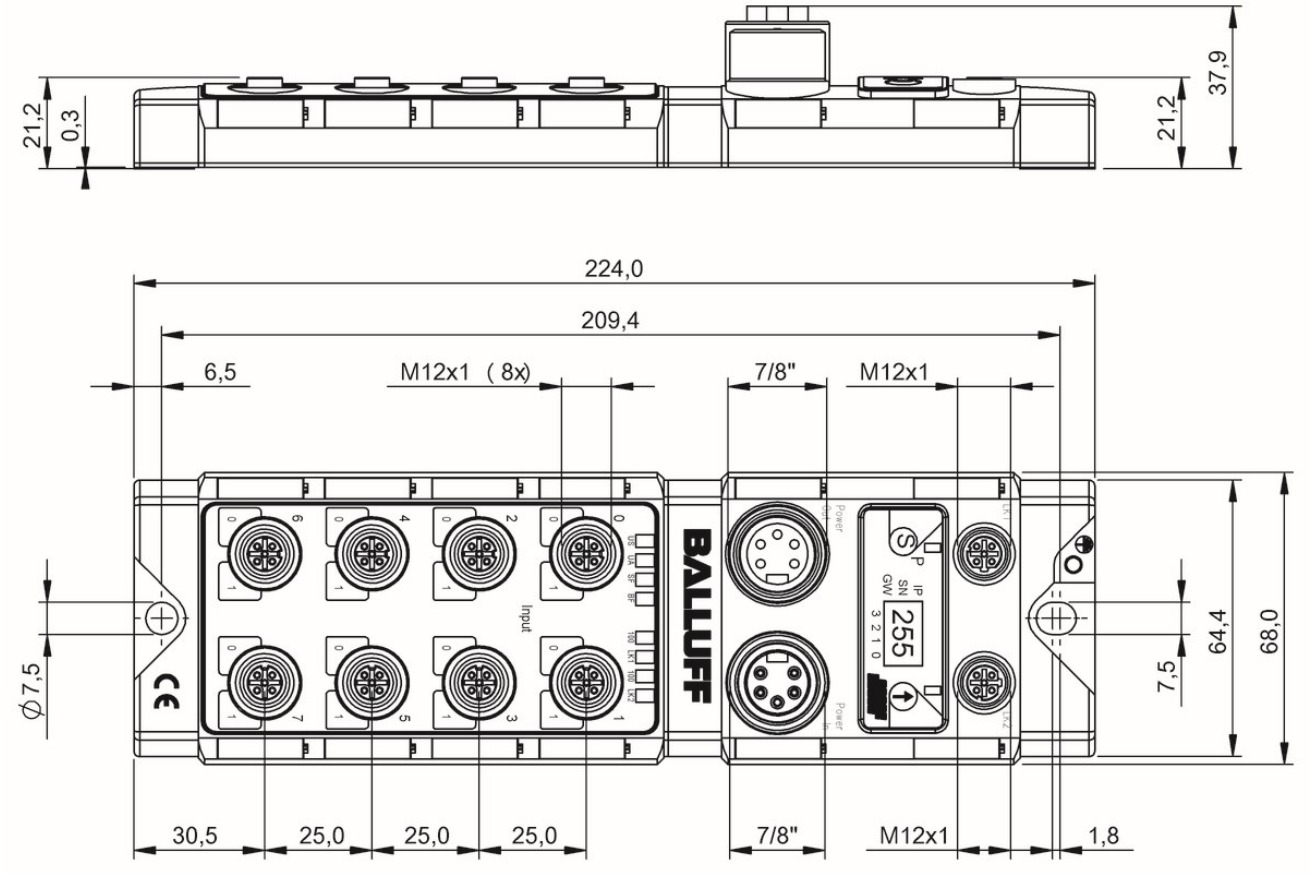


BNI0052



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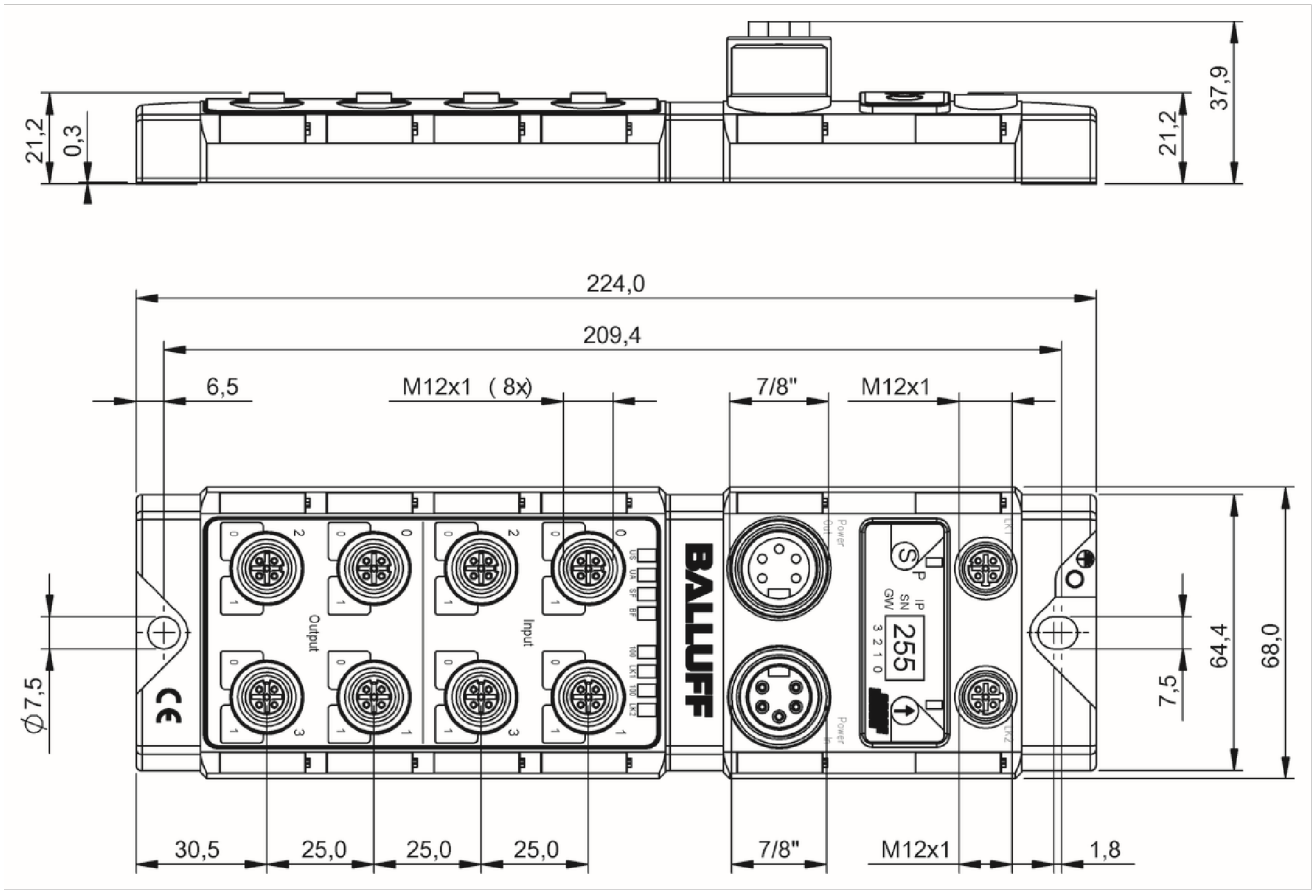

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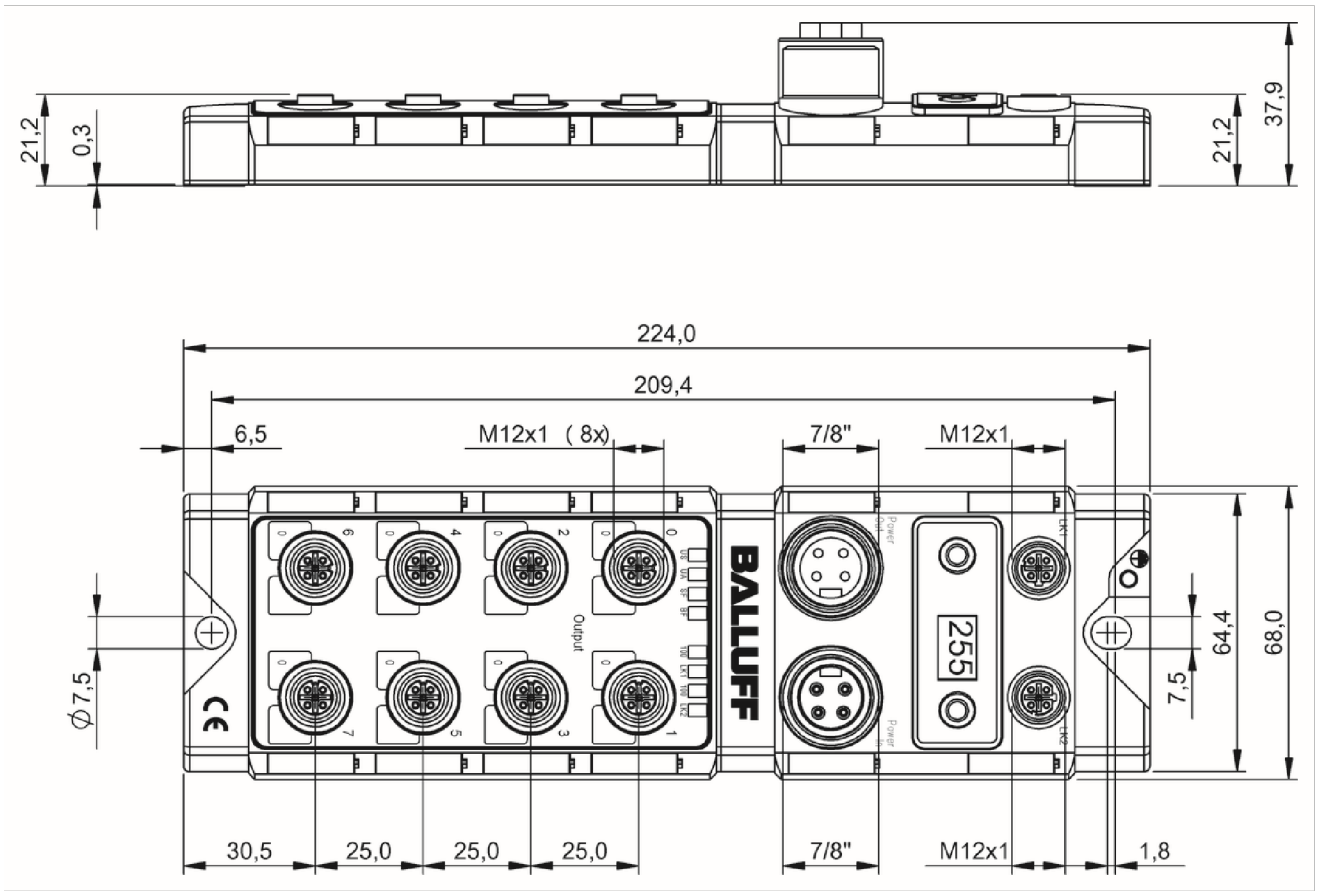

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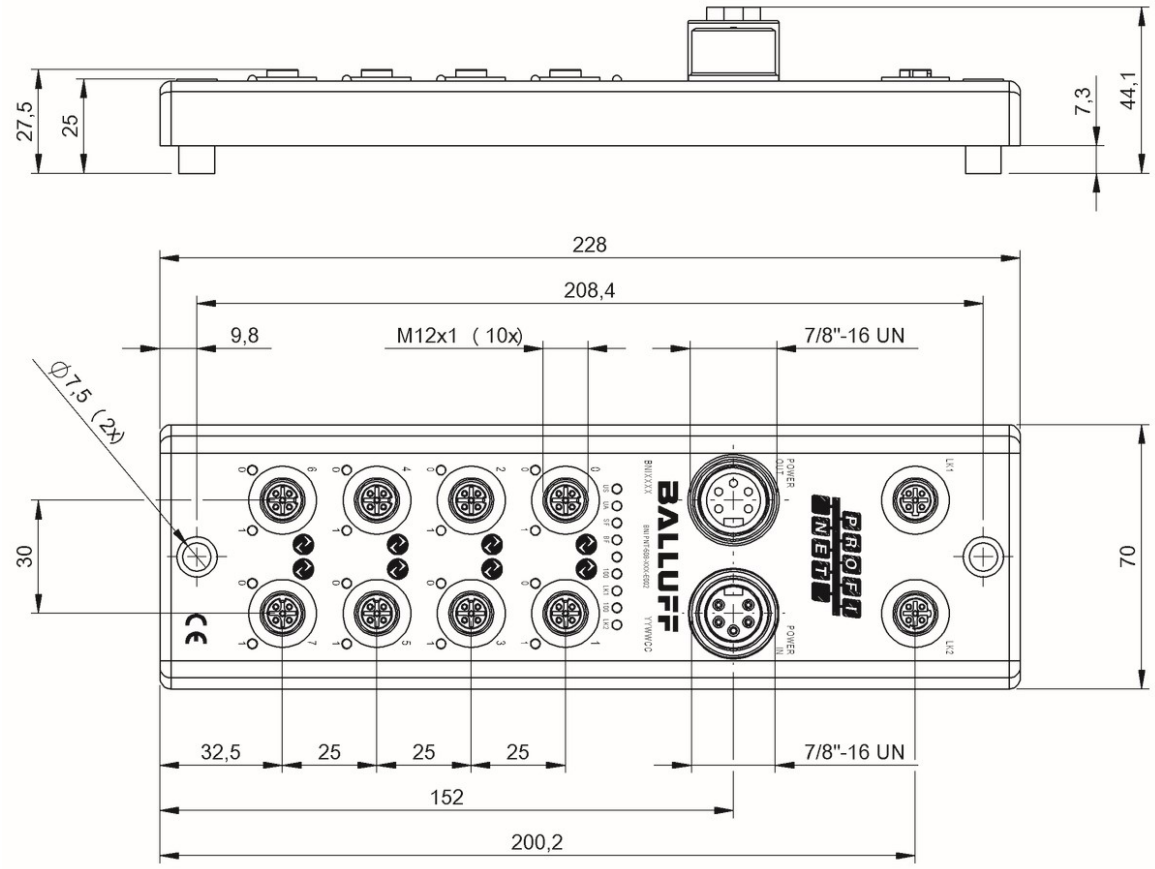

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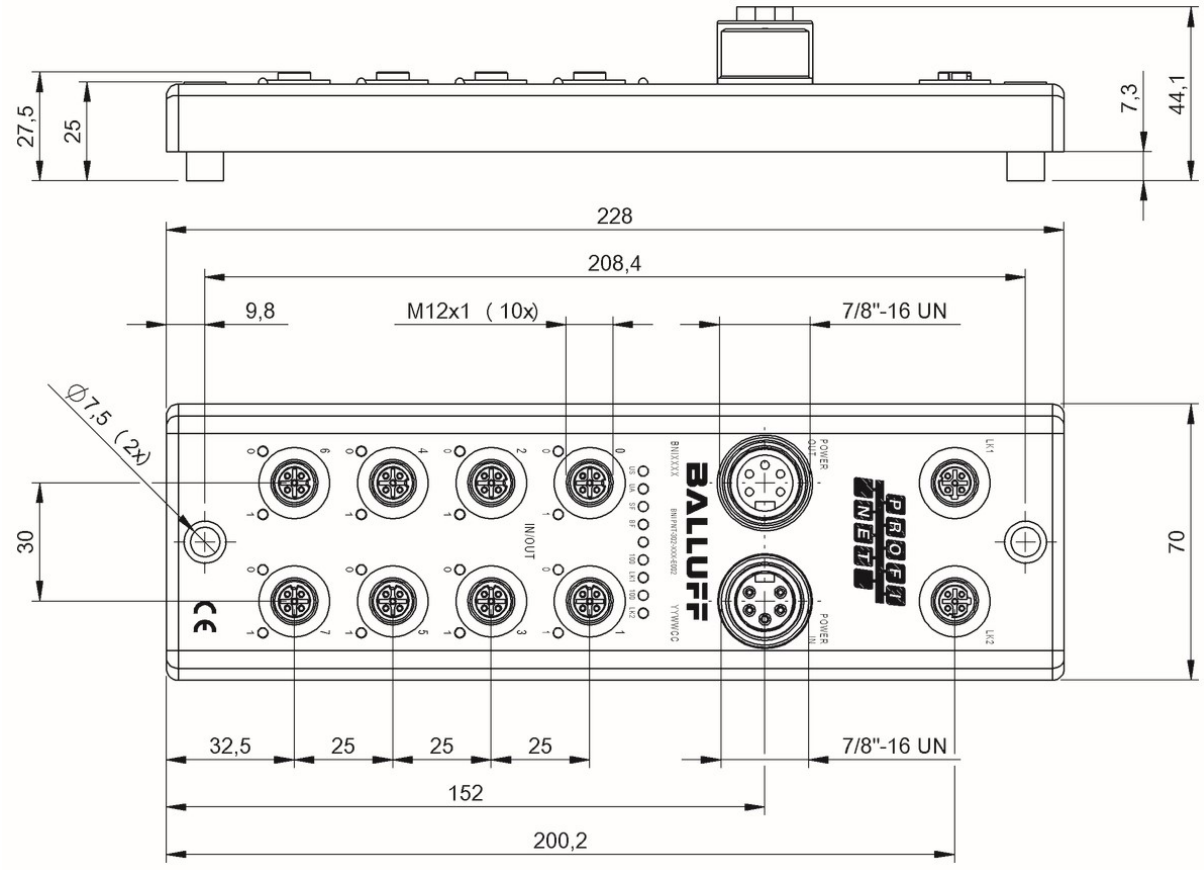

BNI009N

	BNI005R BNI PBS-502-101-Z001	BNI004N BNI PBS-507-002-Z011	
Principle of operation	Active splitter	Active splitter	
Interface	Profibus DP EN 50170	Profibus DP EN 50170	
Operating voltage Ub	18...30.2 VDC	18...30.2 VDC	
Connection (COM 1)	Bus in: M12x1-Male, 5-pole, B-coded	Bus in: M12x1-Male, 5-pole, B-coded	
Connection (COM 2)	Bus out: M12x1-Female, 5-pole, B-coded	Bus out: M12x1-Female, 5-pole, B-coded	
Connection (supply voltage IN)	7/8“-Male, 5-pole	7/8“-Male, 5-pole	
Connection (supply voltage OUT)	7/8“-Female, 5-pole	—	
Connection slots	8x M12x1-Female, 5-pole, A-coded	4x M12x1-Female, 5-pole, A-coded	
Digital inputs	16x PNP, Type 2	8x PNP, Type2	
Digital outputs	16x PNP	8x PNP	
Analog inputs	—	—	
Configurable inputs/outputs	yes	yes	
Output current max.	2 A	2 A	
Current sum US, sensor	9.0 A	9.0 A	
Current sum UA, actuator	9.0 A	9.0 A	
Housing material	Zinc, die-cast	Zinc, die-cast	
Dimension	68 x 37.9 x 224 mm	37 x 32.4 x 224 mm	
Ambient temperature	-5...70 °C	-5...70 °C	
Protection degree	IP67	IP67	
Auxiliary interfaces	4x IO-Link	4x IO-Link	
IO-Link version	1.1	1.1	
Port-class	Type A	Type A	
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BNI0064 BNI PBS-551-001-Z001	BNI0065 BNI PBS-552-001-Z001	BNI0054 BNI PBS-302-103-Z001	BNI003Z BNI PBS-302-102-Z001
Active splitter	Active splitter	Active splitter	Active splitter
Profibus DP EN 50170	Profibus DP EN 50170	Profibus DP EN 50170	Profibus DP EN 50170
18...30.2 VDC	18...30.2 VDC	18...30.2 VDC	18...30.2 VDC
Bus in: M12x1-Male, 5-pole, B-coded	Bus in: M12x1-Male, 5-pole, B-coded	Bus in: M12x1-Male, 5-pole, B-coded	Bus in: M12x1-Male, 5-pole, B-coded
Bus out: M12x1-Female, 5-pole, B-coded	Bus out: M12x1-Female, 5-pole, B-coded	Bus out: M12x1-Female, 5-pole, B-coded	Bus out: M12x1-Female, 5-pole, B-coded
7/8“-Male, 5-pole	7/8“-Male, 5-pole	7/8“-Male, 5-pole	7/8“-Male, 5-pole
7/8“-Female, 5-pole	7/8“-Female, 5-pole	7/8“-Female, 5-pole	7/8“-Female, 5-pole
4x M12x1-Female, 5-pole, A-coded 4x M12x1-Female, 8-pole, A-coded	4x M12x1-Female, 5-pole, A-coded 4x M12x1-Female, 8-pole, A-coded	8x M12x1-Female, 5-pole, A-coded	8x M12x1-Female, 5-pole, A-coded
8x PNP, Type2	—	16x PNP, Type 2	16x PNP, Type 2
—	—	16x PNP	16x PNP
—	4x Analog, voltage/Analog, current	—	—
no	no	yes	yes
—	—	2 A	2 A
9.0 A	9.0 A	9.0 A	9.0 A
—	—	9.0 A	9.0 A
Zinc, die-cast	Zinc, die-cast	Zinc, die-cast	Zinc, die-cast
68 x 37.9 x 224 mm	68 x 37.9 x 224 mm	68 x 37.9 x 224 mm	68 x 37.9 x 224 mm
-5...70 °C	-5...70 °C	-5...70 °C	-5...70 °C
IP67	IP67	IP67	IP67
4x BTL P-111	4x BTL P-111	—	—
—	—	—	—
—	—	—	—
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	BNI0047 BNI PBS-302-101-Z001	BNI005C BNI PBS-104-101-Z001	
Principle of operation	Active splitter	Active splitter	
Interface	Profibus DP EN 50170	Profibus DP EN 50170	
Operating voltage Ub	18...30.2 VDC	18...30.2 VDC	
Connection (COM 1)	Bus in: M12x1-Male, 5-pole, B-coded	Bus in: M12x1-Male, 5-pole, B-coded	
Connection (COM 2)	Bus out: M12x1-Female, 5-pole, B-coded	Bus out: M12x1-Female, 5-pole, B-coded	
Connection (supply voltage IN)	7/8“-Male, 5-pole	7/8“-Male, 5-pole	
Connection (supply voltage OUT)	7/8“-Female, 5-pole	7/8“-Female, 5-pole	
Connection slots	8x M12x1-Female, 5-pole, A-coded	8x M12x1-Female, 5-pole, A-coded	
Digital inputs	16x PNP, Type 2	16x PNP, Type 2	
Digital outputs	16x PNP	—	
Analog inputs	—	—	
Configurable inputs/outputs	yes	no	
Output current max.	2 A	—	
Current sum US, sensor	9.0 A	9.0 A	
Current sum UA, actuator	9.0 A	—	
Housing material	Zinc, die-cast	Zinc, die-cast	
Dimension	68 x 37.9 x 224 mm	68 x 37.9 x 224 mm	
Ambient temperature	-5...70 °C	-5...70 °C	
Protection degree	IP67	IP67	
Auxiliary interfaces	—	—	
IO-Link version	—	—	
Port-class	—	—	
Productview	Page 119	Page 119	

BNI004P BNI PBS-504-002-K008			
Active splitter			
Profibus DP EN 50170			
18...30.2 VDC			
D-Sub-Female, 9-pole			
–			
Spring terminal			
–			
4x M12x1-Female, 5-pole, A-coded			
4x PNP, Type2			
4x PNP			
–			
yes			
2 A			
9.0 A			
9.0 A			
ABS			
75.8 x 10 x 150.8 mm			
-5...55 °C			
IP54			
4x IO-Link			
1.1			
Type A			
Page 119			

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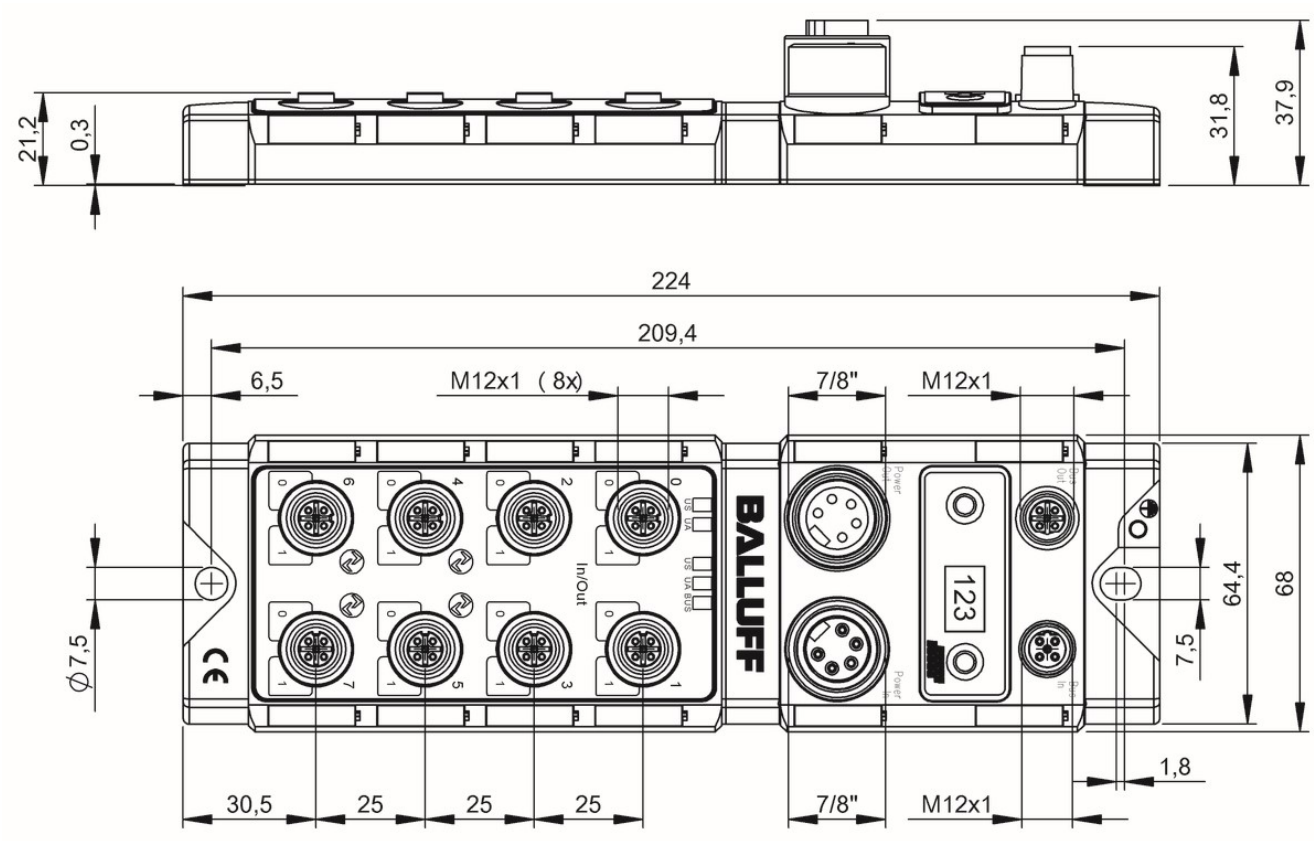
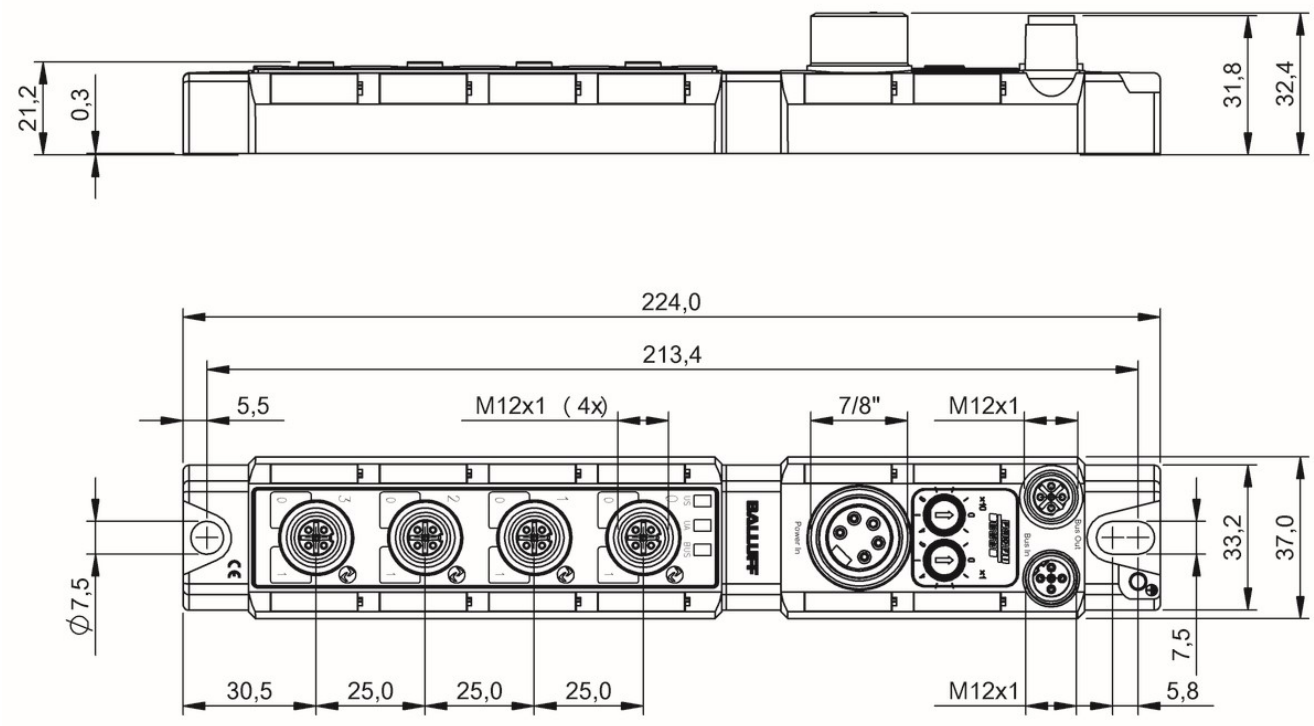
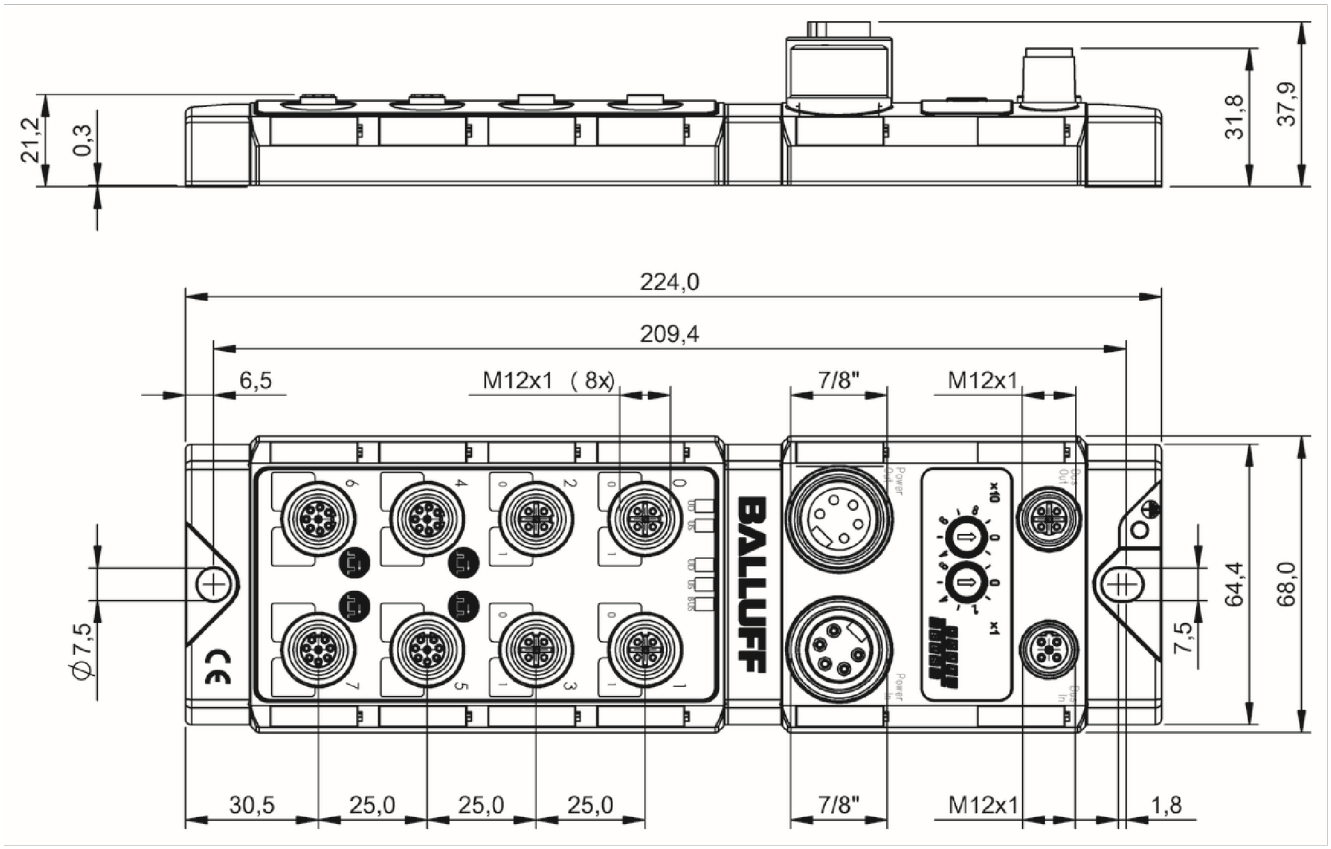


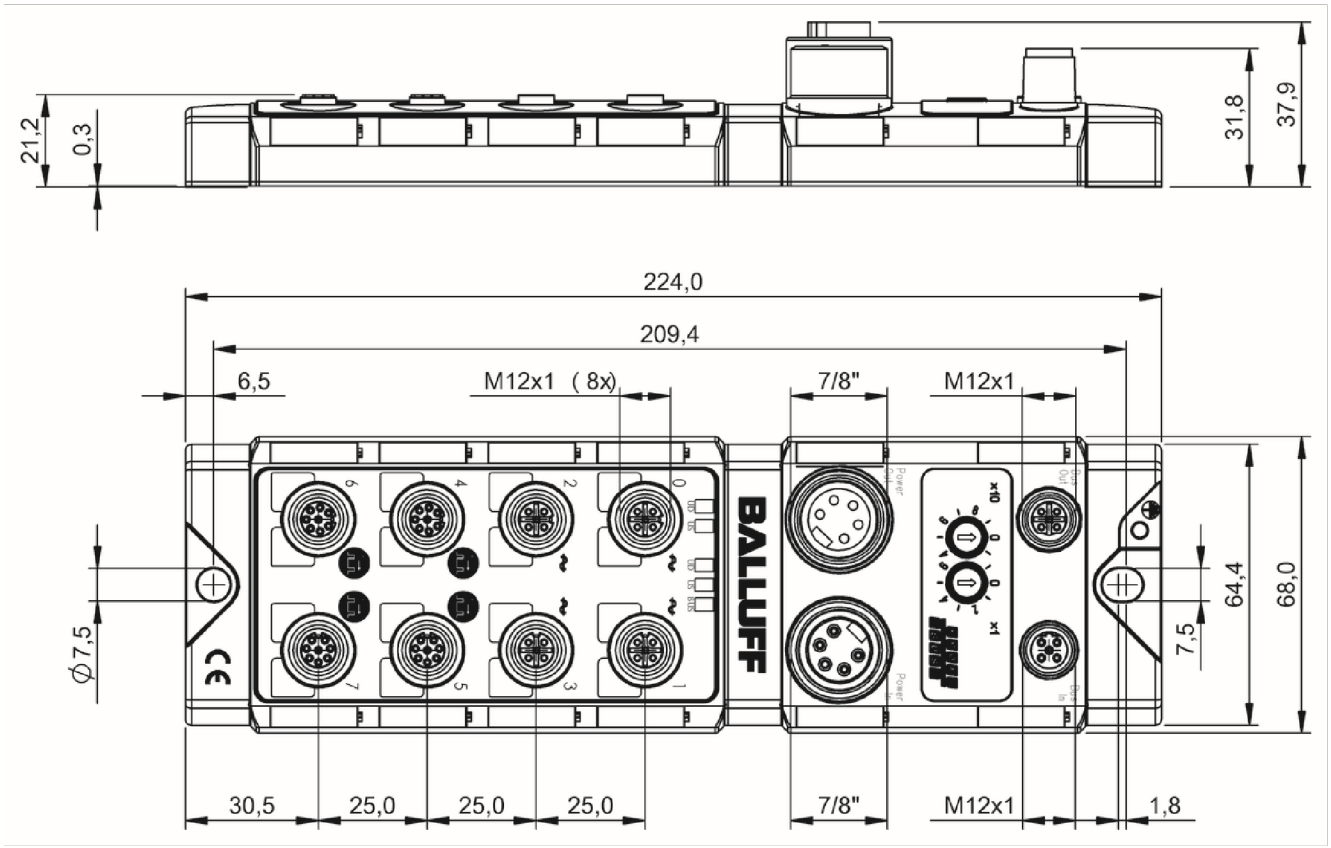
BNI005R



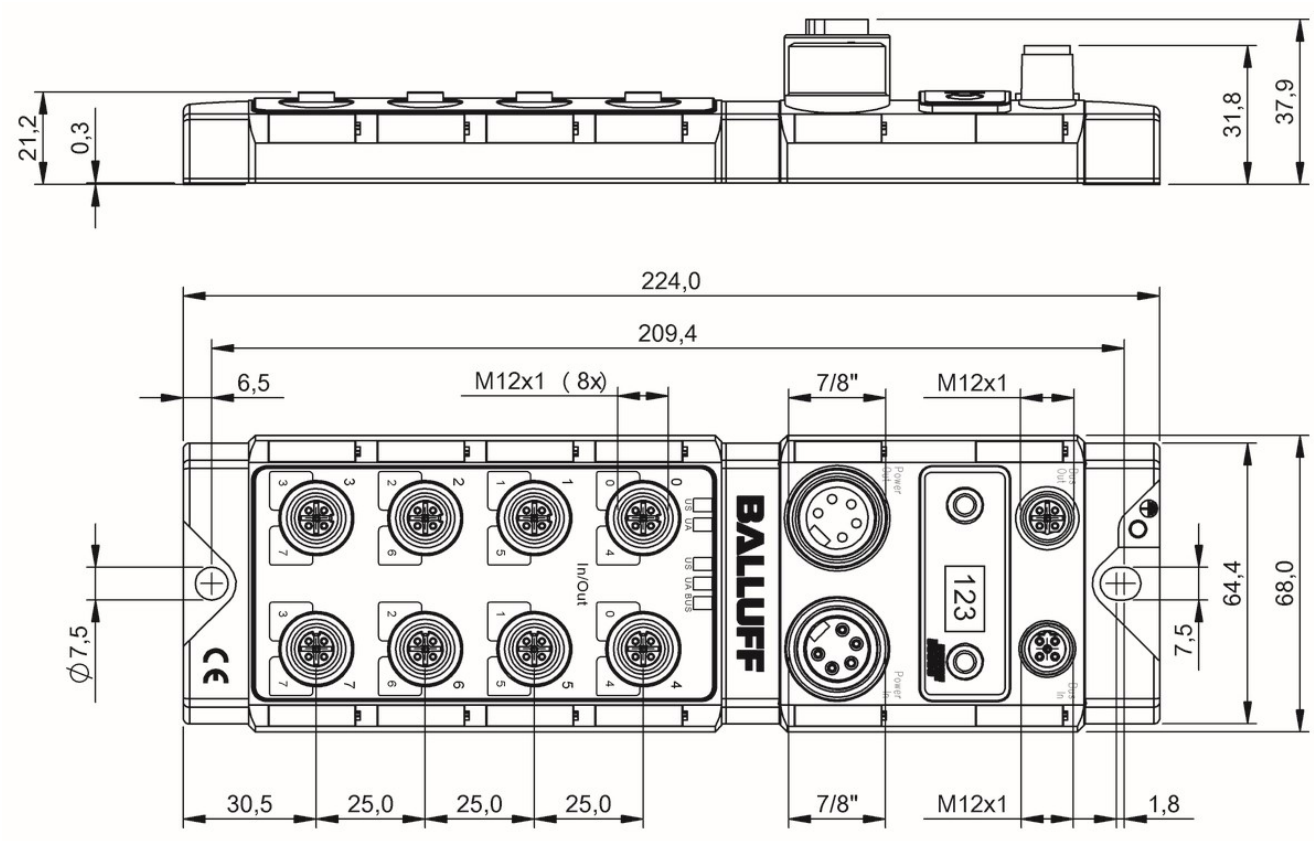
BNI004N



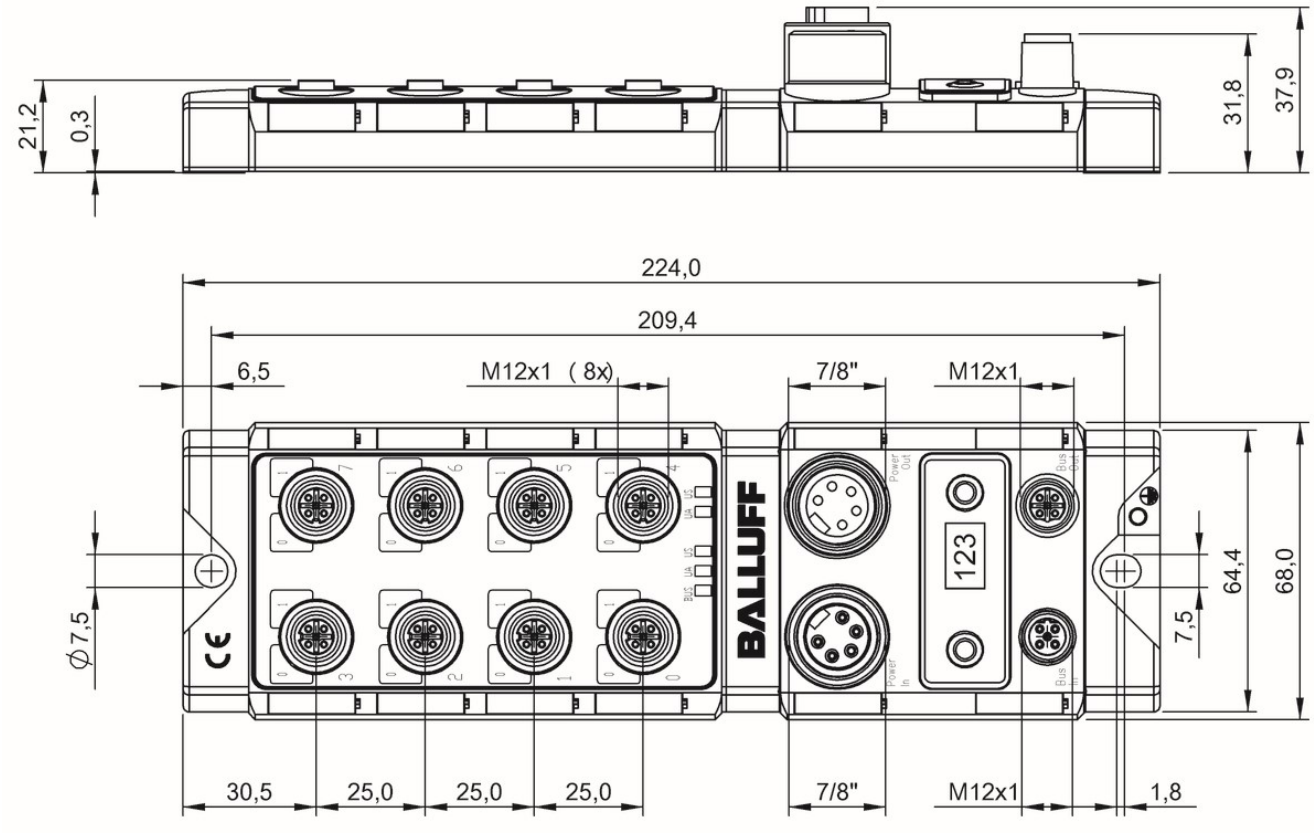
BNI0064



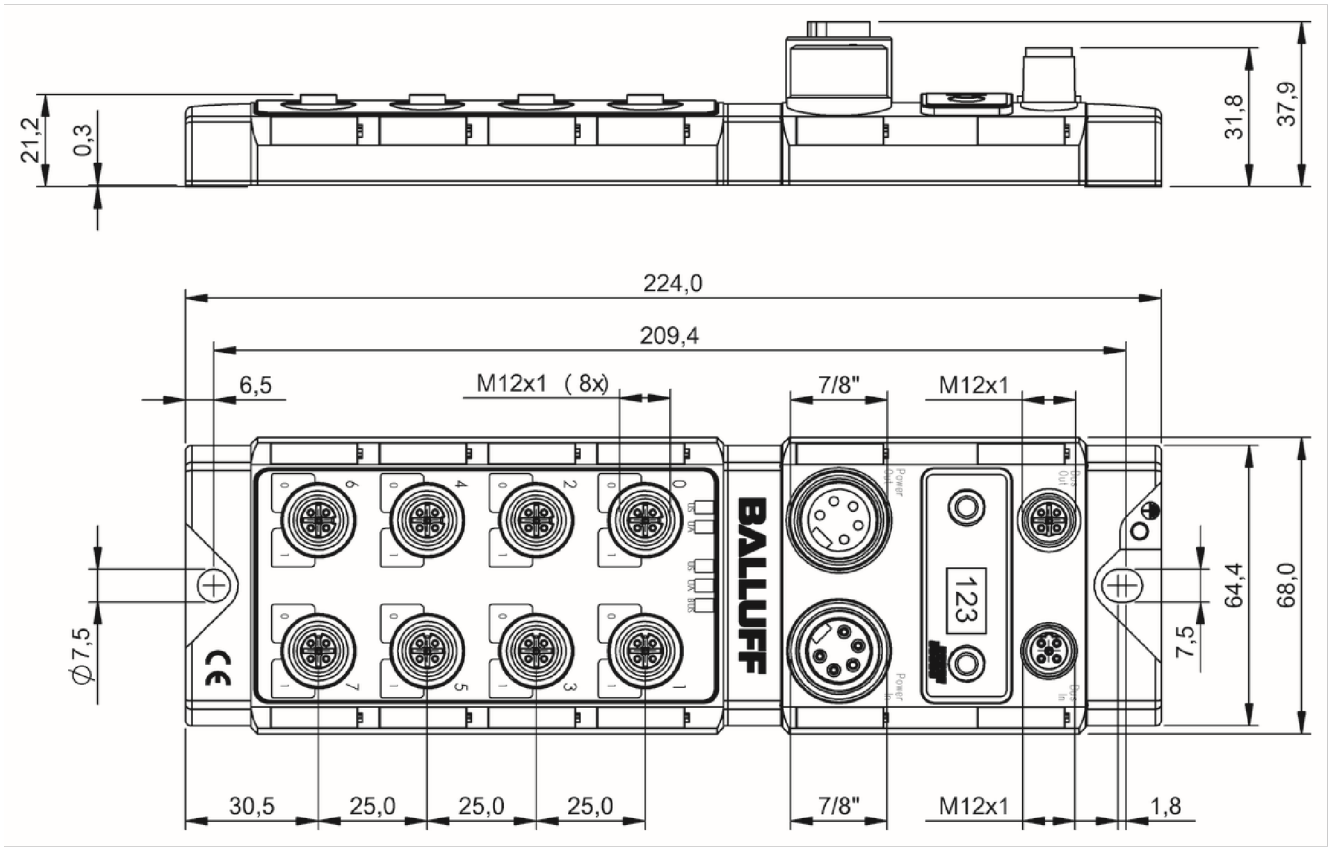
BNI0065



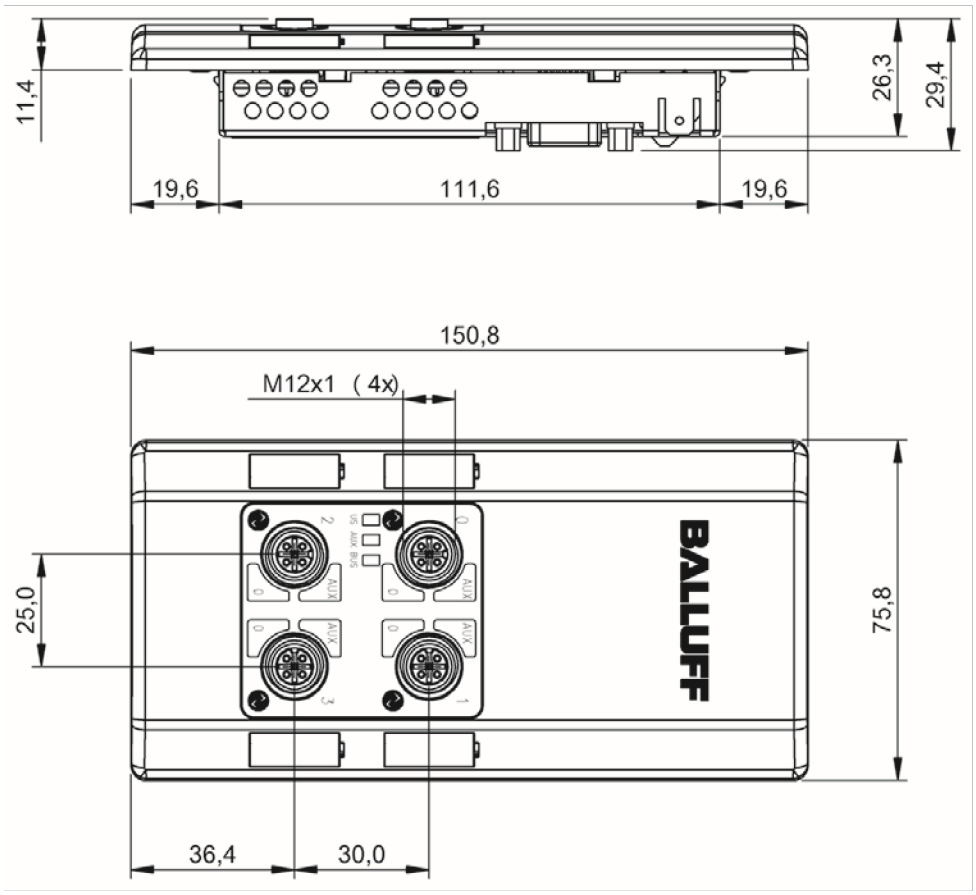
BNI0054



BNI003Z



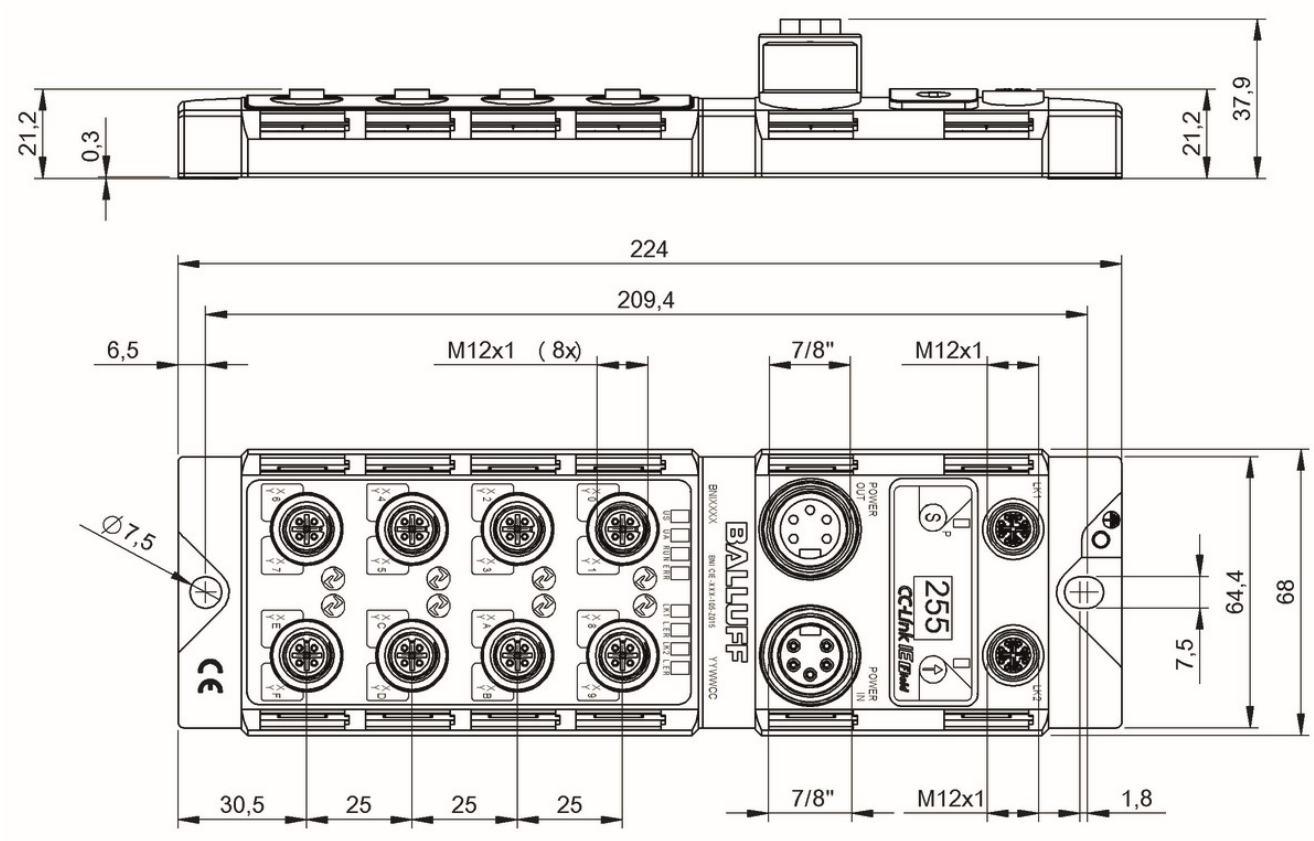
BNI0047, BNI005C



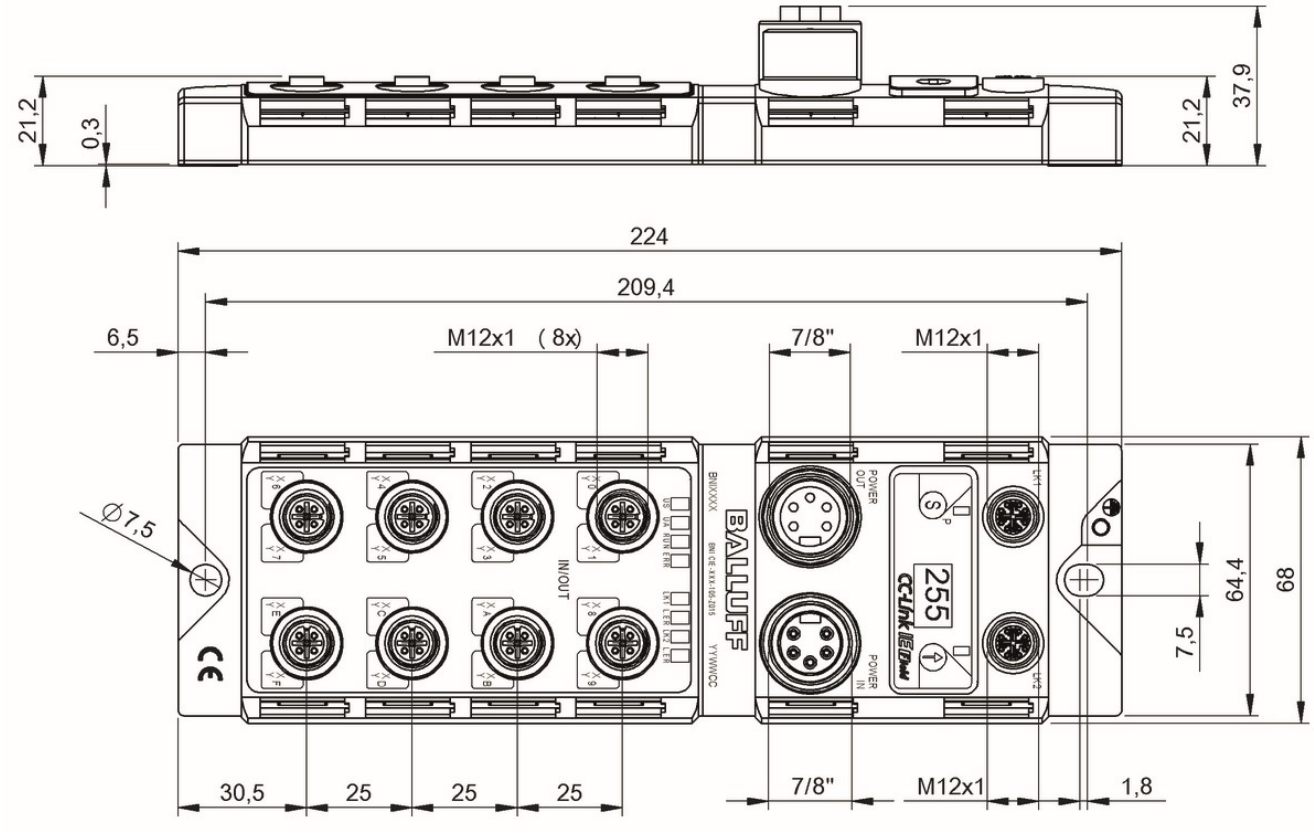
BNI004P

	BNI008C BNI CIE-508-105-Z015	
Principle of operation	Active splitter	
Interface	CC-Link IE Field V0	
Operating voltage Ub	18...30.2 VDC	
Connection (COM 1)	M12x1-Female, 8-pole, X-coded	
Connection (COM 2)	M12x1-Female, 8-pole, X-coded	
Connection (supply voltage IN)	7/8“-Male, 5-pole	
Connection (supply voltage OUT)	7/8“-Female, 5-pole	
Connection slots	8x M12x1-Female, 5-pole, A-coded	
Digital inputs	16x PNP, Type3	
Digital outputs	16x PNP	
Configurable inputs/outputs	yes	
Output current max.	2 A	
Current sum US, sensor	9.0 A	
Current sum UA, actuator	9.0 A	
Housing material	Zinc, die-cast	
Dimension	68 x 37.9 x 224 mm	
Ambient temperature	-5...70 °C	
Protection degree	IP67	
Auxiliary interfaces	8x IO-Link	
IO-Link version	1.1	
Port-class	Type A	
Productview	Page 122	

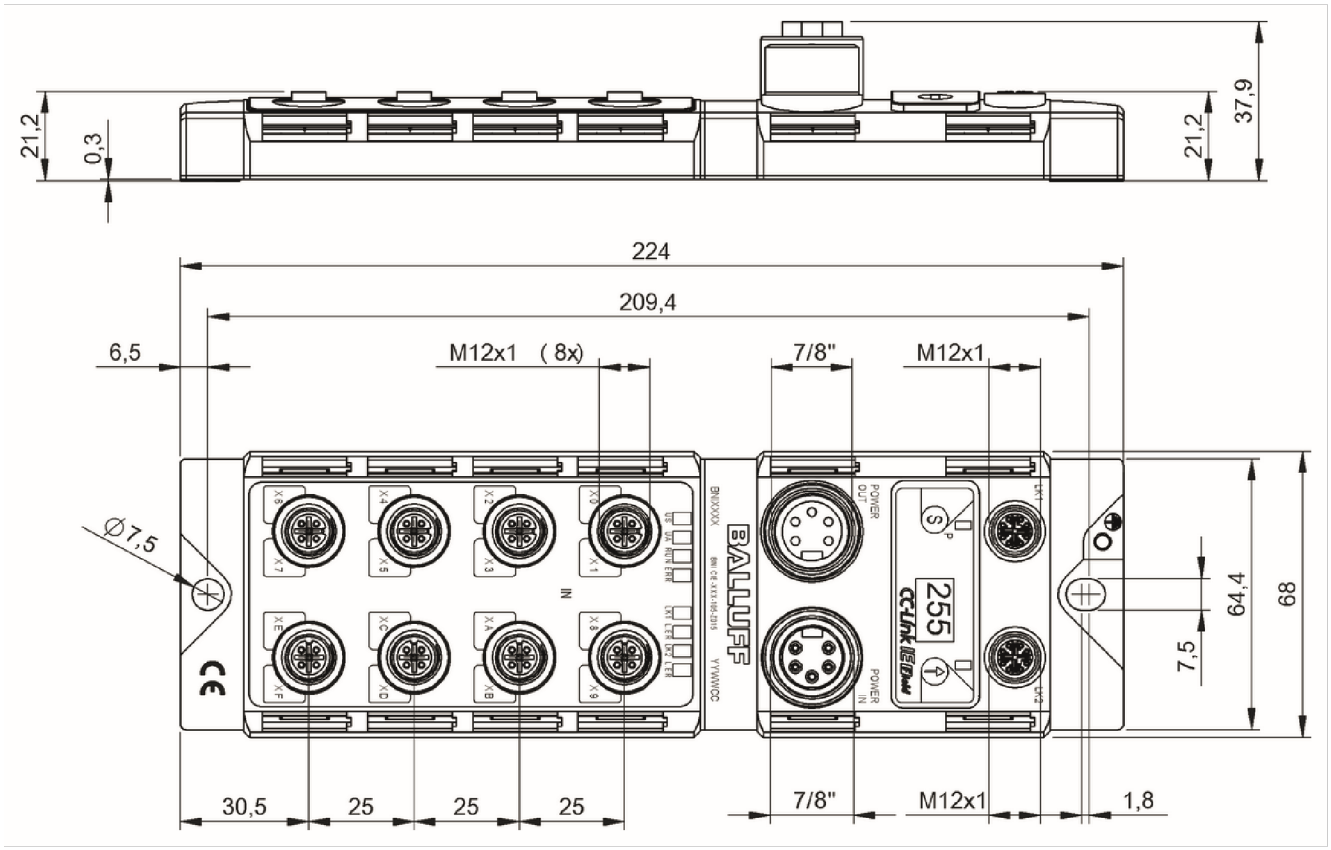
BNI0095 BNI CIE-302-105-Z015	BNI0094 BNI CIE-104-105-Z015	BNI008T BNI CIE-106-105-Z015
Active splitter	Active splitter	Active splitter
CC-Link IE Field V0	CC-Link IE Field V0	CC-Link IE Field V0
18...30.2 VDC	18...30.2 VDC	18...30.2 VDC
M12x1-Female, 8-pole, X-coded	M12x1-Female, 8-pole, X-coded	M12x1-Female, 8-pole, X-coded
M12x1-Female, 8-pole, X-coded	M12x1-Female, 8-pole, X-coded	M12x1-Female, 8-pole, X-coded
7/8“-Male, 5-pole	7/8“-Male, 5-pole	7/8“-Male, 5-pole
7/8“-Female, 5-pole	7/8“-Female, 5-pole	7/8“-Female, 5-pole
8x M12x1-Female, 5-pole, A-coded	8x M12x1-Female, 5-pole, A-coded	8x M12x1-Female, 5-pole, A-coded
16x PNP, Type3	16x PNP, Type3	16x NPN, Type3
16x PNP	—	—
yes	no	no
2 A	—	—
9.0 A	9.0 A	9.0 A
9.0 A	—	—
Zinc, die-cast	Zinc, die-cast	Zinc, die-cast
68 x 37.9 x 224 mm	68 x 37.9 x 224 mm	68 x 37.9 x 224 mm
-5...70 °C	-5...70 °C	-5...70 °C
IP67	IP67	IP67
—	—	—
—	—	—
—	—	—
Page 122	Page 123	Page 123



BNI008C



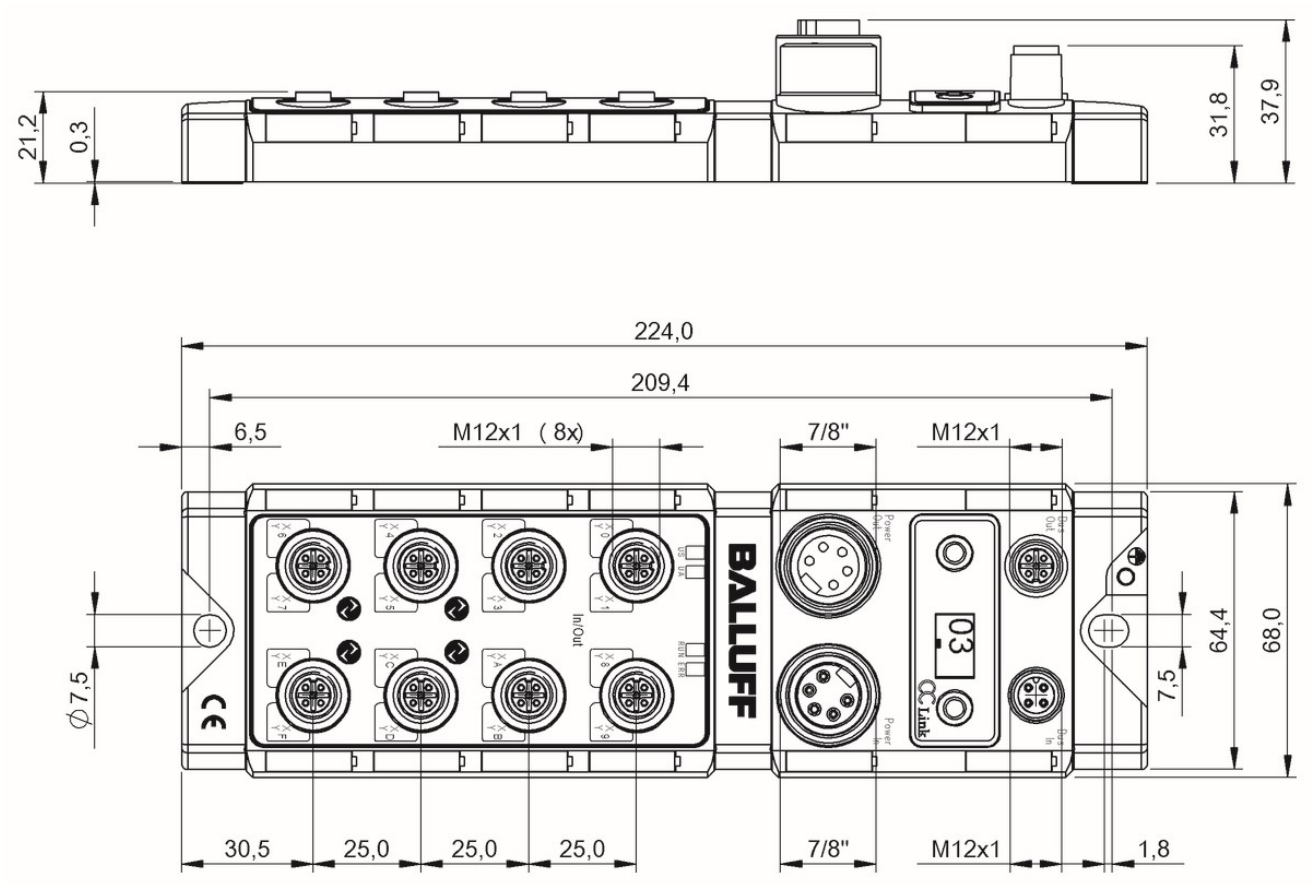
BNI0095



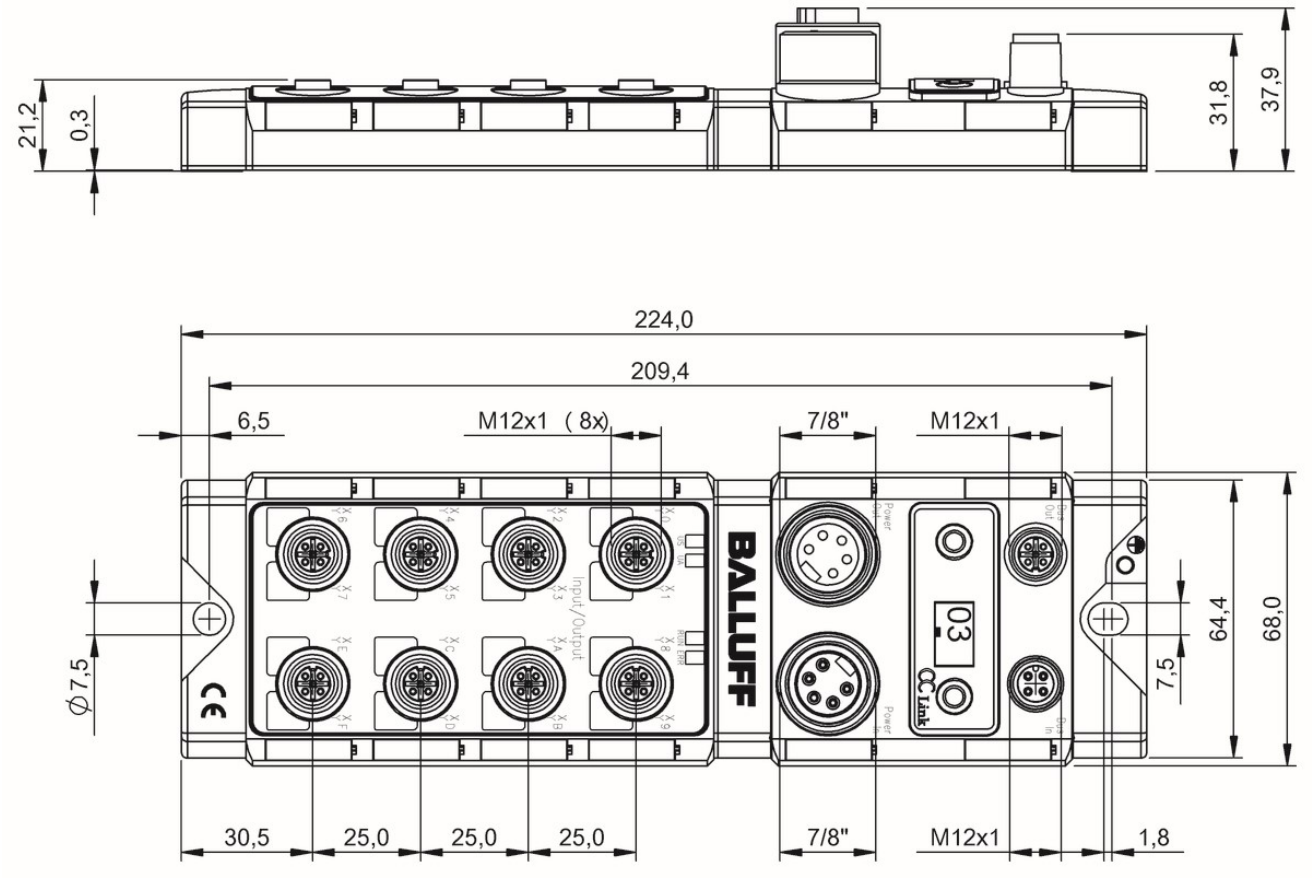
BNI0094, BNI008T

	BNI0040 BNI CCL-502-100-Z001	BNI002A BNI CCL-302-100-Z001	
Principle of operation	Active splitter	Active splitter	
Interface	CC-Link V1.1	CC-Link V1.1	
Operating voltage Ub	18...30.2 VDC	18...30.2 VDC	
Connection (COM 1)	M12x1-Male, 4-pole, A-coded	M12x1-Male, 4-pole, A-coded	
Connection (COM 2)	M12x1-Female, 4-pole, A-coded	M12x1-Female, 4-pole, A-coded	
Connection (supply voltage IN)	7/8“-Male, 5-pole	7/8“-Male, 5-pole	
Connection (supply voltage OUT)	7/8“-Female, 5-pole	7/8“-Female, 5-pole	
Connection slots	8x M12x1-Female, 5-pole, A-coded	8x M12x1-Female, 5-pole, A-coded	
Digital inputs	16x PNP, Type 2	16x PNP, Type 2	
Digital outputs	16x PNP	16x PNP	
Configurable inputs/outputs	yes	yes	
Output current max.	2 A	2 A	
Current sum US, sensor	9.0 A	9.0 A	
Current sum UA, actuator	9.0 A	9.0 A	
Housing material	Zinc, die-cast	Zinc, die-cast	
Dimension	68 x 37.9 x 224 mm	68 x 37.9 x 224 mm	
Ambient temperature	-5...55 °C	-5...55 °C	
Protection degree	IP67	IP67	
Auxiliary interfaces	4x IO-Link	—	
IO-Link version	1.1	—	
Port-class	Type A	—	
Productview	Page 126	Page 126	

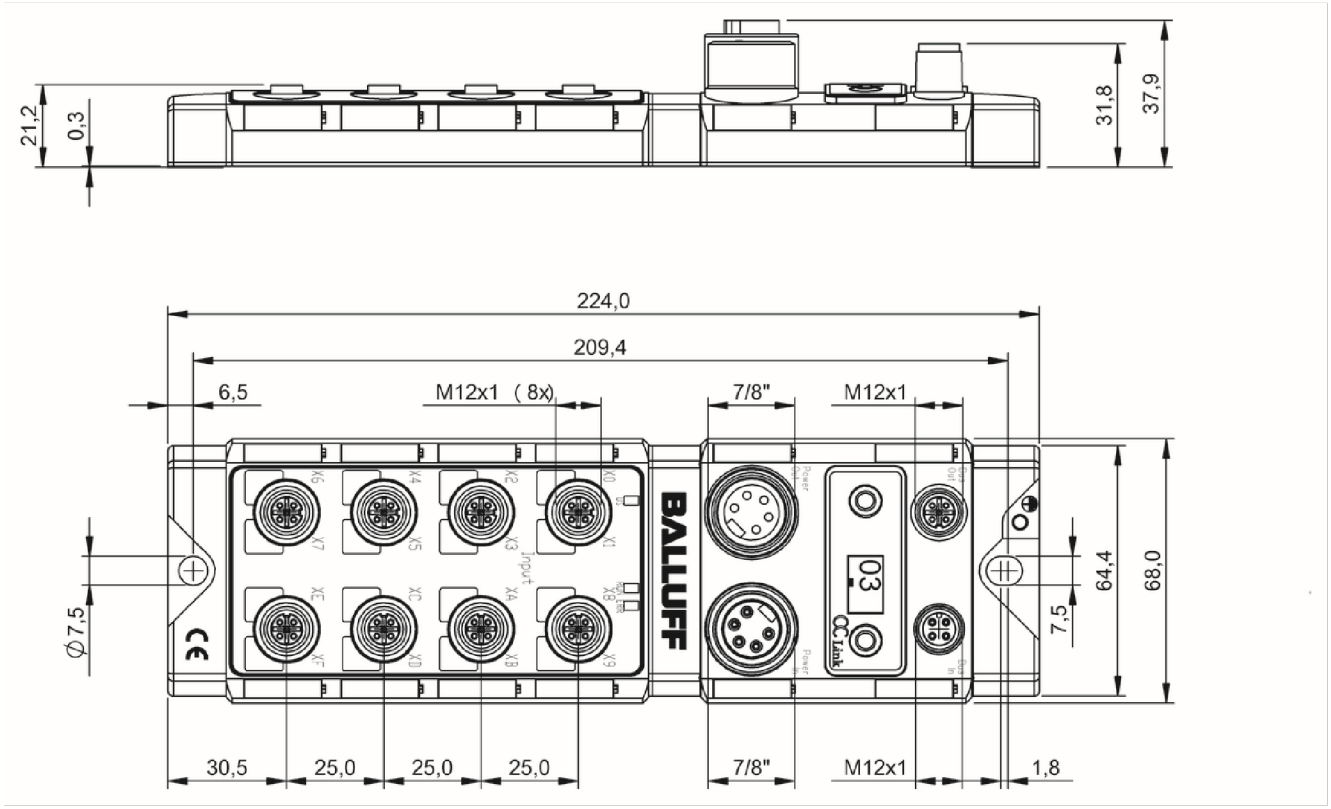
BNI002F BNI CCL-104-100-Z001	BNI0049 BNI CCL-106-100-Z001	BNI002C BNI CCL-305-100-Z001	BNI002E BNI CCL-202-100-Z001
Active splitter	Active splitter	Active splitter	Active splitter
CC-Link V1.1	CC-Link V1.1	CC-Link V1.1	CC-Link V1.1
18...30.2 VDC	18...30.2 VDC	18...30.2 VDC	18...30.2 VDC
M12x1-Male, 4-pole, A-coded	M12x1-Male, 4-pole, A-coded	M12x1-Male, 4-pole, A-coded	M12x1-Male, 4-pole, A-coded
M12x1-Female, 4-pole, A-coded	M12x1-Female, 4-pole, A-coded	M12x1-Female, 4-pole, A-coded	M12x1-Female, 4-pole, A-coded
7/8“-Male, 5-pole	7/8“-Male, 5-pole	7/8“-Male, 5-pole	7/8“-Male, 5-pole
7/8“-Female, 5-pole	7/8“-Female, 5-pole	7/8“-Female, 5-pole	7/8“-Female, 5-pole
8x M12x1-Female, 5-pole, A-coded	8x M12x1-Female, 5-pole, A-coded	8x M12x1-Female, 5-pole, A-coded	8x M12x1-Female, 5-pole, A-coded
16x PNP, Type 2	16x NPN, Type2	8x PNP, Type2	—
—	—	8x PNP	8x PNP
no	no	no	no
—	—	2 A	2 A
9.0 A	9.0 A	9.0 A	—
—	—	9.0 A	9.0 A
Zinc, die-cast	Zinc, die-cast	Zinc, die-cast	Zinc, die-cast
68 x 37.9 x 224 mm	68 x 37.9 x 224 mm	68 x 37.9 x 224 mm	68 x 37.9 x 224 mm
-5...55 °C	-5...55 °C	-5...55 °C	-5...55 °C
IP67	IP67	IP67	IP67
—	—	—	—
—	—	—	—
—	—	—	—
Page 127	Page 127	Page 127	Page 128



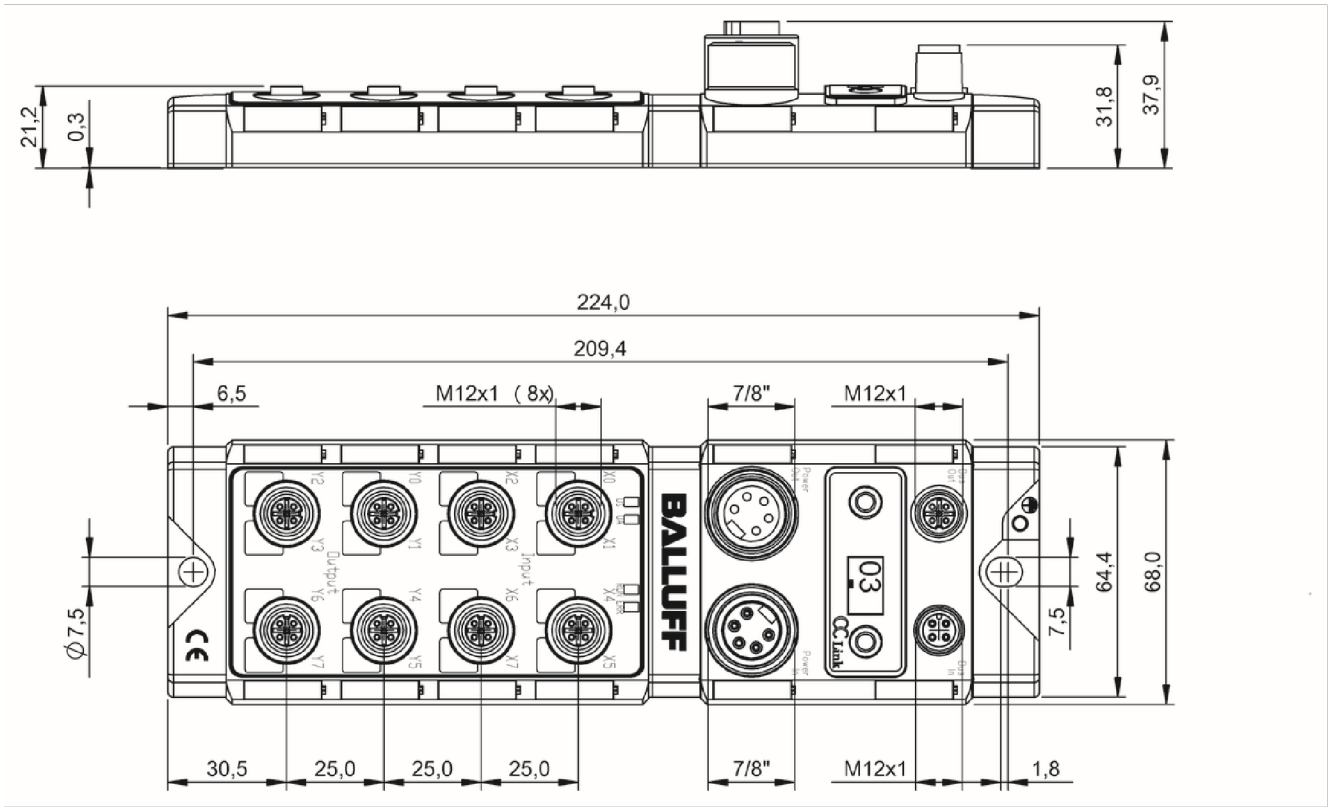
BNI0040



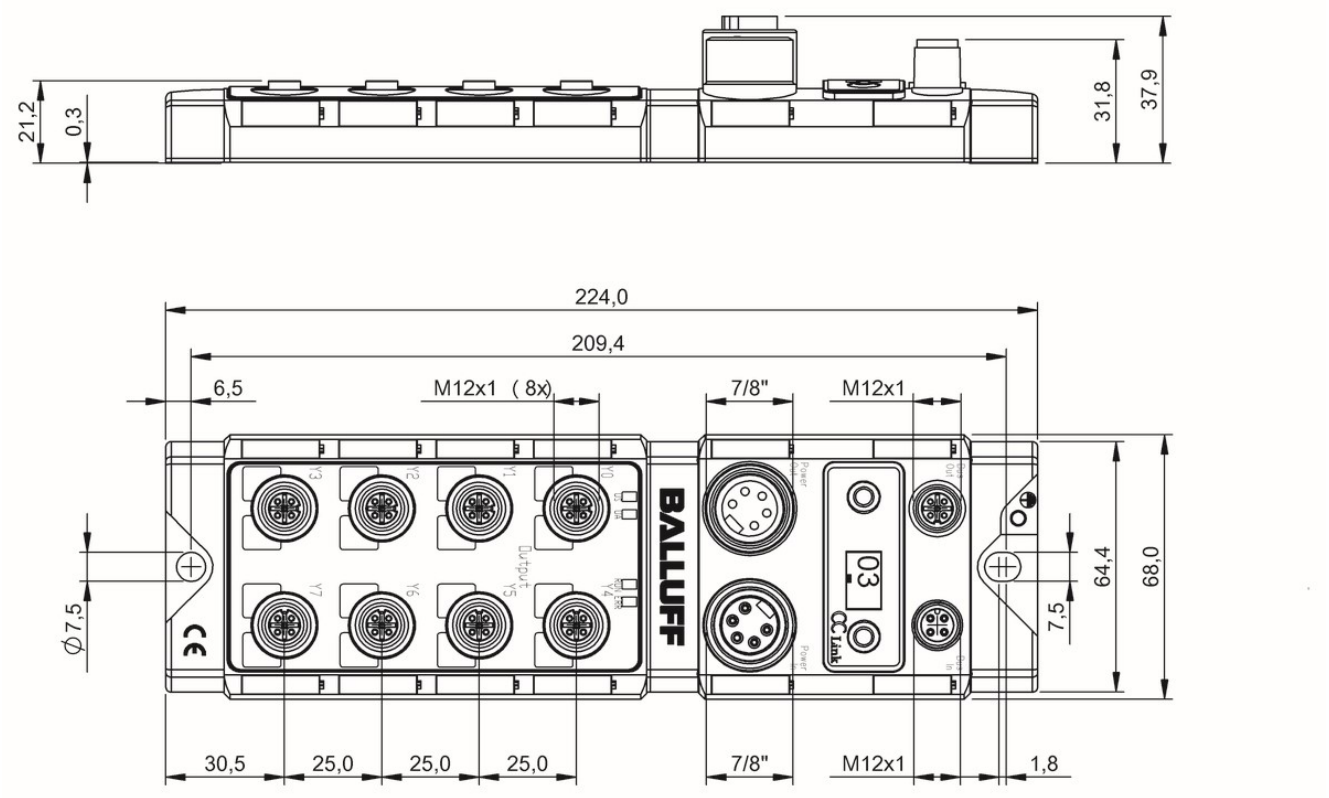
BNI002A



BNI002F, BNI0049



BNI002C


21,2
0,3
31,8
37,9
224,0
209,4
6,5
M12x1 (8x)
7/8"
M12x1
ϕ7,5
64,4
68,0
7,5
30,5
25,0
25,0
25,0
7/8"
M12x1
1,8
BALLUFF
03

BNI002E

	BNI006A BNI EIP-508-105-Z015	BNI007C BNI EIP-508-105-Z015-C06	BNI004A BNI EIP-502-105-Z015	
Principle of operation	Active splitter	Active splitter	Active splitter	
Interface	Ethernet/IP	Ethernet/IP	Ethernet/IP	
Operating voltage Ub	18...30.2 VDC	18...30.2 VDC	18...30.2 VDC	
Connection (COM 1)	M12x1-Female, 4-pole, D-coded	M12x1-Female, 4-pole, D-coded	M12x1-Female, 4-pole, D-coded	
Connection (COM 2)	M12x1-Female, 4-pole, D-coded	M12x1-Female, 4-pole, D-coded	M12x1-Female, 4-pole, D-coded	
Connection (supply voltage IN)	7/8“-Male, 4-pole	7/8“-Male, 4-pole	7/8“-Male, 4-pole	
Connection (supply voltage OUT)	7/8“-Female, 4-pole	7/8“-Female, 4-pole	7/8“-Female, 4-pole	
Connection slots	8x M12x1-Female, 5-pole, A-coded	8x M12x1-Female, 5-pole, A-coded	8x M12x1-Female, 5-pole, A-coded	
Digital inputs	16x PNP, Type3	16x PNP, Type 2	16x PNP, Type 2	
Digital outputs	16x PNP	16x PNP	16x PNP	
Configurable inputs/outputs	yes	yes	yes	
Output current max.	2 A	2 A	2 A	
Current sum US, sensor	9.0 A	9.0 A	9.0 A	
Current sum UA, actuator	9.0 A	9.0 A	9.0 A	
Housing material	Zinc, die-cast	Zinc, die-cast	Zinc, die-cast	
Dimension	68 x 37.9 x 224 mm	68 x 37.9 x 224 mm	68 x 37.9 x 224 mm	
Ambient temperature	-5...70 °C	-5...70 °C	-5...70 °C	
Protection degree	IP67	IP67	IP67	
Auxiliary interfaces	8x IO-Link	8x IO-Link	4x IO-Link	
IO-Link version	1.1	1.1	1.1	
Port-class	Type A	Type A	Type A	
Productview	Page 134	Page 134	Page 134	





BNI009T BNI EIP-507-005-Z040	BNI00AA BNI EIP-527-005-Z040	BNI004F BNI EIP-302-105-Z015	BNI004M BNI EIP-104-105-Z015	BNI0096 BNI EIP-508-005-E002
Active splitter	Active splitter	Active splitter	Active splitter	Active splitter
Ethernet/IP	Ethernet/IP	Ethernet/IP	Ethernet/IP	Ethernet/IP
18...30.2 VDC	18...30.2 VDC	18...30.2 VDC	18...30.2 VDC	18...30.2 VDC
M12x1-Female, 4-pole, D-coded	M12x1-Female, 4-pole, D-coded	M12x1-Female, 4-pole, D-coded	M12x1-Female, 4-pole, D-coded	M12x1-Female, 4-pole, D-coded
M12x1-Female, 4-pole, D-coded	M12x1-Female, 4-pole, D-coded	M12x1-Female, 4-pole, D-coded	M12x1-Female, 4-pole, D-coded	M12x1-Female, 4-pole, D-coded
7/8“-Male, 4-pole	7/8“-Male, 4-pole	7/8“-Male, 4-pole	7/8“-Male, 4-pole	7/8“-Male, 4-pole
–	–	7/8“-Female, 4-pole	7/8“-Female, 4-pole	7/8“-Female, 4-pole
4x M12x1-Female, 5-pole, A-coded	4x M12x1-Female, 5-pole, A-coded	8x M12x1-Female, 5-pole, A-coded	8x M12x1-Female, 5-pole, A-coded	8x M12x1-Female, 5-pole, A-coded
8x PNP, Type3	4x PNP, Type 3	16x PNP, Type 2	16x PNP, Type 2	16x PNP, Type3
8x PNP	–	16x PNP	–	16x PNP
yes	no	yes	no	yes
2 A	–	2 A	–	2 A
9.0 A	9.0 A	9.0 A	9.0 A	9.0 A
9.0 A	9.0 A	9.0 A	–	–
Zinc, die-cast	Zinc, die-cast	Zinc, die-cast	Zinc, die-cast	Stainless steel (1.4571)
37 x 32.6 x 224 mm	37 x 32.6 x 224 mm	68 x 37.9 x 224 mm	68 x 37.9 x 224 mm	70 x 44.1 x 228 mm
-5...70 °C	-5...70 °C	-5...70 °C	-5...70 °C	-5...70 °C
IP67	IP67	IP67	IP67	IP69
4x IO-Link	4x IO-Link	–	–	8x IO-Link
1.1	1.1	–	–	1.1
Type A	Type B	–	–	Type A
Page 135	Page 135	Page 135	Page 136	Page 136

	BNI009K BNI EIP-302-005-E002	BNI009L BNI EIP-104-005-E002	BNI008M BNI EIP-508-105-R015	
Principle of operation	Active splitter	Active splitter	Active splitter	
Interface	Ethernet/IP	Ethernet/IP	Ethernet/IP	
Operating voltage Ub	18...30.2 VDC	18...30.2 VDC	18...30.2 VDC	
Connection (COM 1)	M12x1-Female, 4-pole, D-coded	M12x1-Female, 4-pole, D-coded	M12x1-Female, 4-pole, D-coded	
Connection (COM 2)	M12x1-Female, 4-pole, D-coded	M12x1-Female, 4-pole, D-coded	M12x1-Female, 4-pole, D-coded	
Connection (supply voltage IN)	7/8“-Male, 4-pole	7/8“-Male, 4-pole	7/8“-Male, 4-pole	
Connection (supply voltage OUT)	7/8“-Female, 4-pole	7/8“-Female, 4-pole	7/8“-Female, 4-pole	
Connection slots	8x M12x1-Female, 5-pole, A-coded	8x M12x1-Female, 5-pole, A-coded	8x M12x1-Female, 5-pole, A-coded	
Digital inputs	16x PNP, Type3	16x PNP, Type3	16x PNP, Type3	
Digital outputs	16x PNP	—	16x PNP	
Configurable inputs/outputs	yes	no	yes	
Output current max.	2 A	—	2 A	
Current sum US, sensor	9.0 A	9.0 A	9.0 A	
Current sum UA, actuator	9.0 A	—	9.0 A	
Housing material	Stainless steel (1.4571)	Stainless steel (1.4571)	PPS	
Dimension	70 x 44.1 x 228 mm	70 x 44.1 x 228 mm	68 x 42.9 x 226 mm	
Ambient temperature	-5...70 °C	-5...70 °C	-5...70 °C	
Protection degree	IP69	IP69	IP67	
Auxiliary interfaces	—	—	8x IO-Link	
IO-Link version	—	—	1.1	
Port-class	—	—	Type A	
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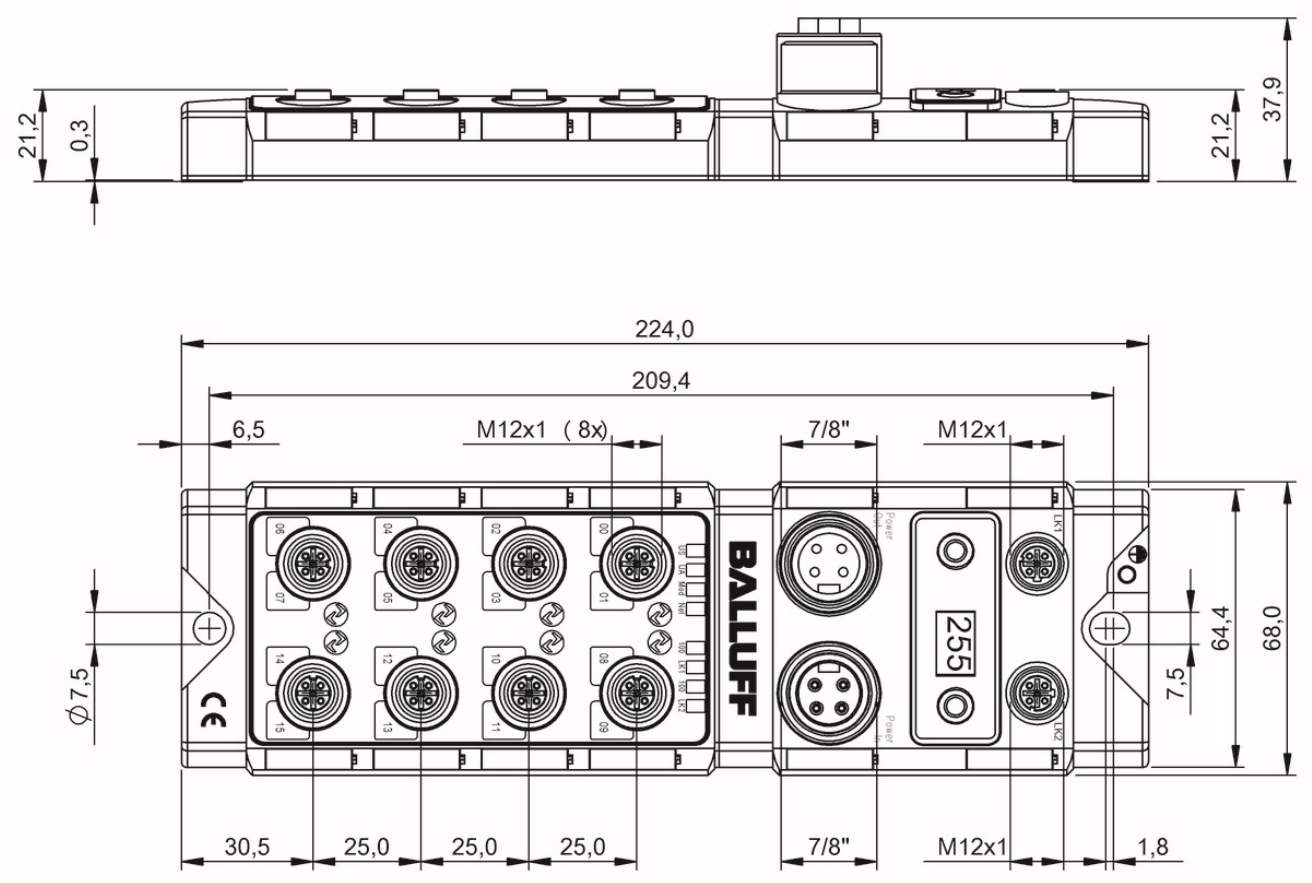
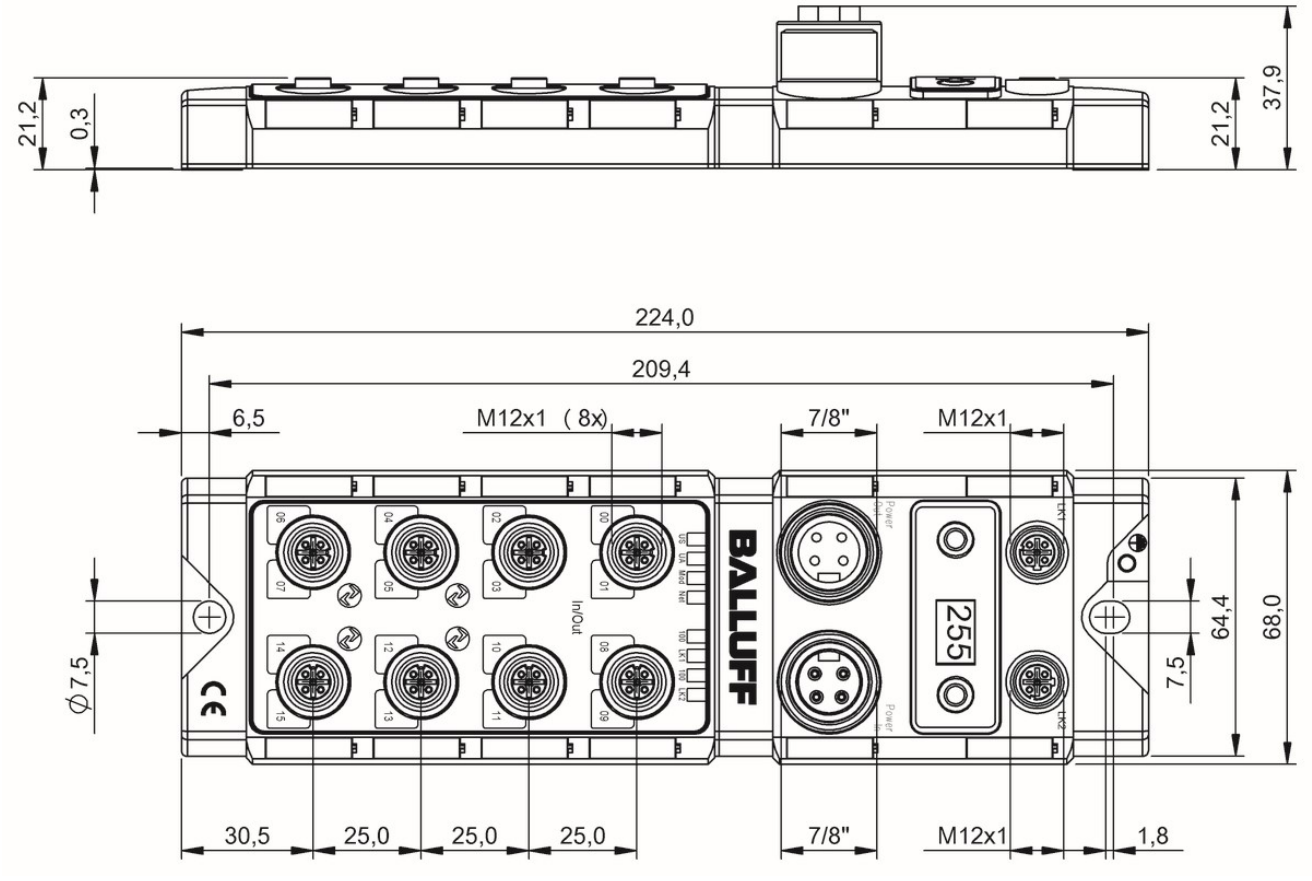
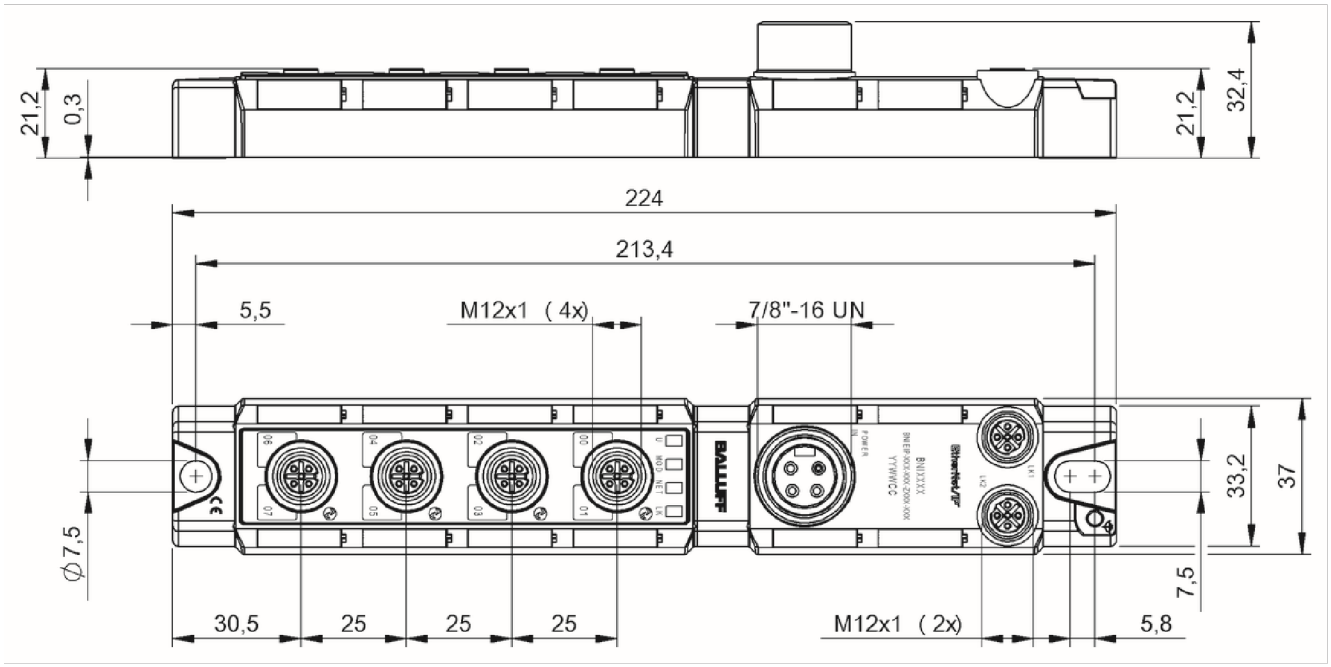
BNI008Z BNI EIP-502-105-R015	BNI008P BNI EIP-302-105-R015	BNI008Y BNI EIP-104-105-R015		
Active splitter	Active splitter	Active splitter		
Ethernet/IP	Ethernet/IP	Ethernet/IP		
18...30.2 VDC	18...30.2 VDC	18...30.2 VDC		
M12x1-Female, 4-pole, D-coded	M12x1-Female, 4-pole, D-coded	M12x1-Female, 4-pole, D-coded		
M12x1-Female, 4-pole, D-coded	M12x1-Female, 4-pole, D-coded	M12x1-Female, 4-pole, D-coded		
7/8“-Male, 4-pole	7/8“-Male, 4-pole	7/8“-Male, 4-pole		
7/8“-Female, 4-pole	7/8“-Female, 4-pole	7/8“-Female, 4-pole		
8x M12x1-Female, 5-pole, A-coded	8x M12x1-Female, 5-pole, A-coded	8x M12x1-Female, 5-pole, A-coded		
16x PNP, Type3	16x PNP, Type3	16x PNP, Type3		
16x PNP	16x PNP	—		
yes	yes	no		
2 A	2 A	—		
9.0 A	9.0 A	9.0 A		
9.0 A	9.0 A	—		
PPS	PPS	PPS		
68 x 42.9 x 226 mm	68 x 42.9 x 226 mm	68 x 42.9 x 226 mm		
-5...70 °C	-5...70 °C	-5...70 °C		
IP67	IP67	IP67		
4x IO-Link	—	—		
1.1	—	—		
Type A	—	—		
Page 138	Page 139	Page 139		



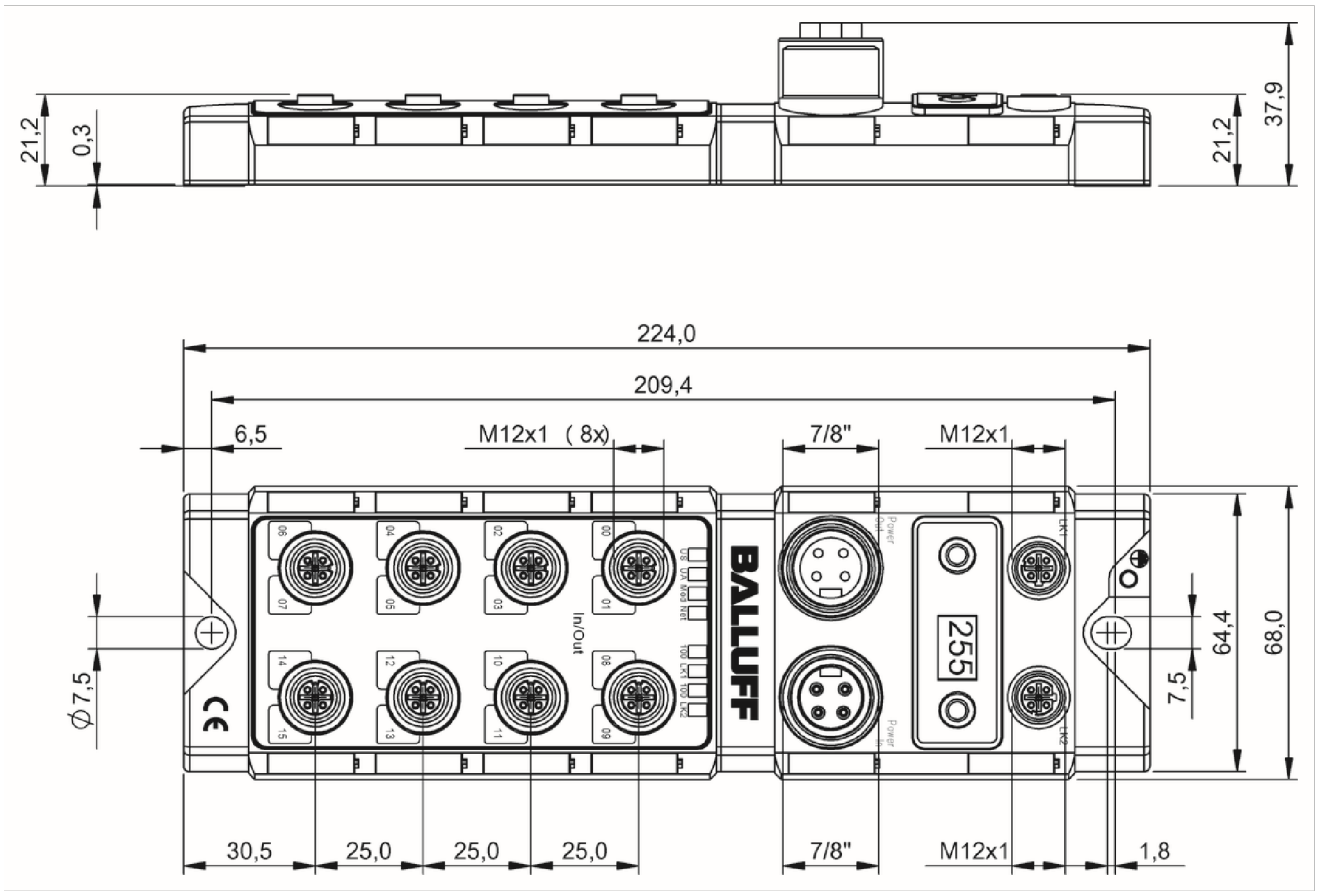
BNI006A, BNI007C



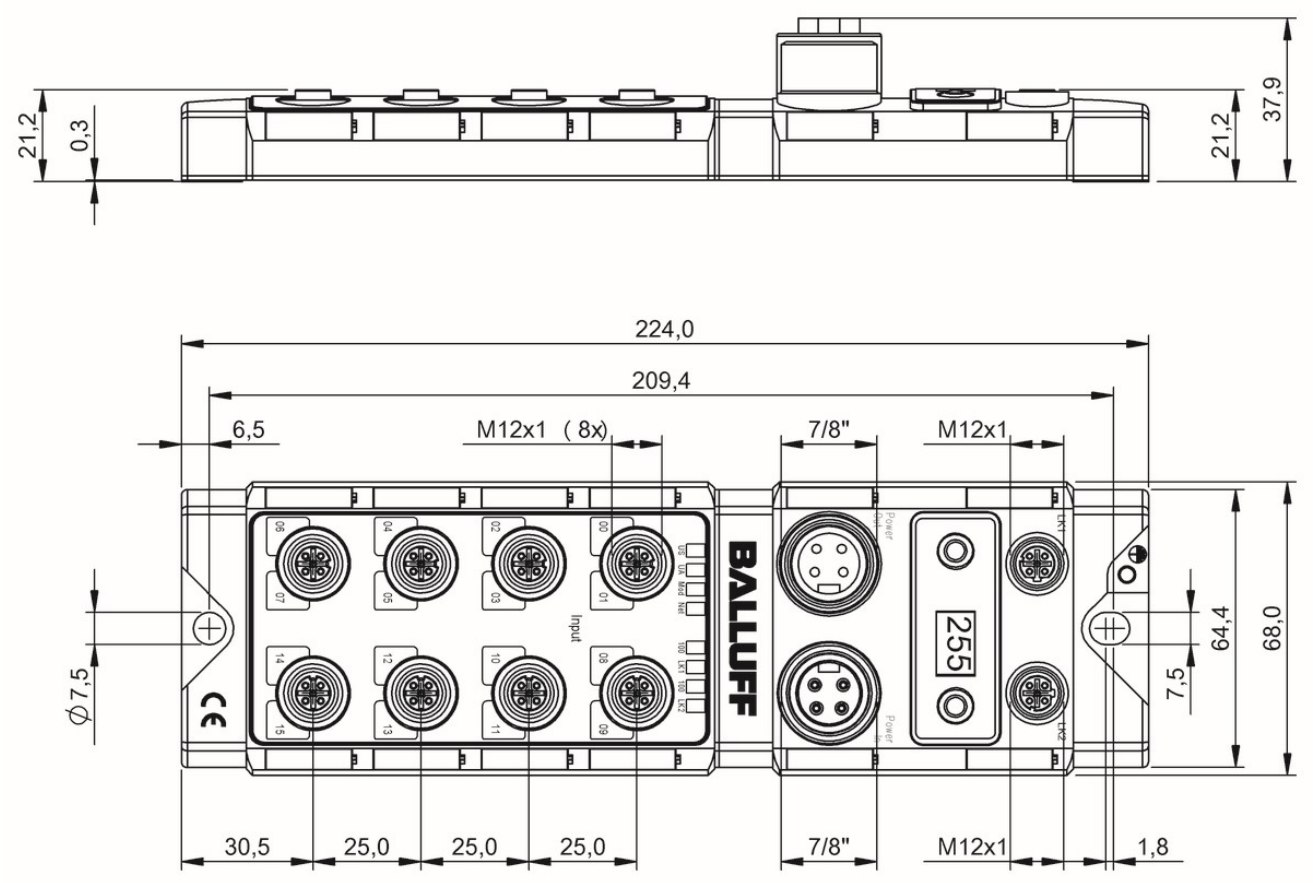
BNI004A



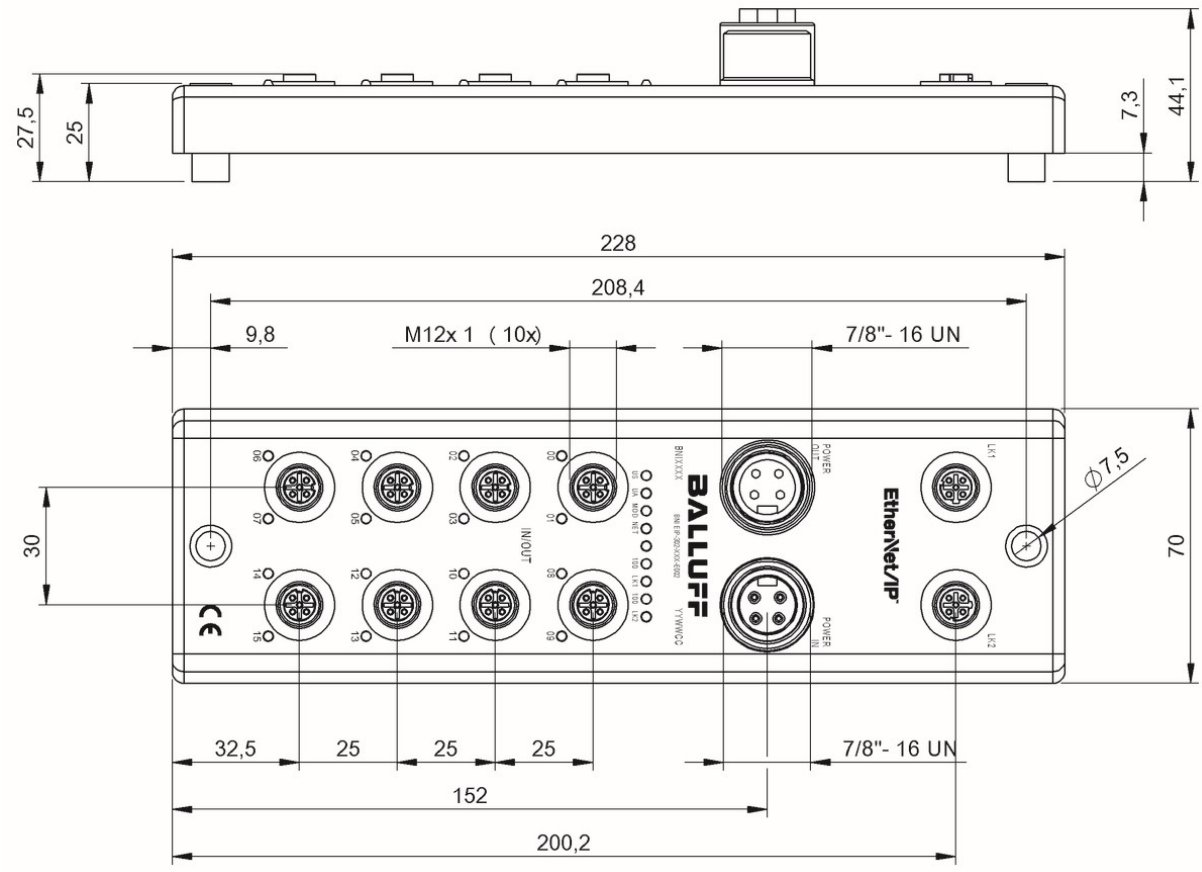
BNI009T, BNI00AA



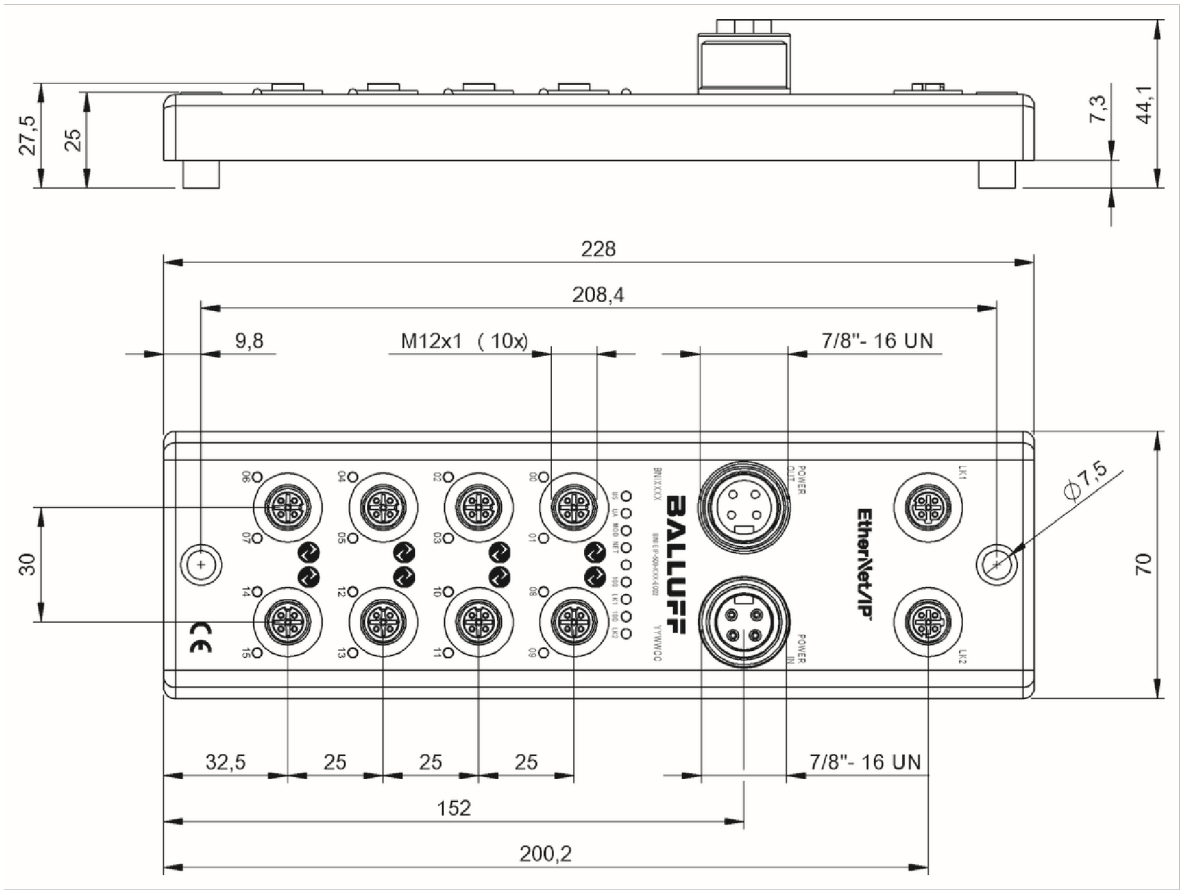
BNI004F



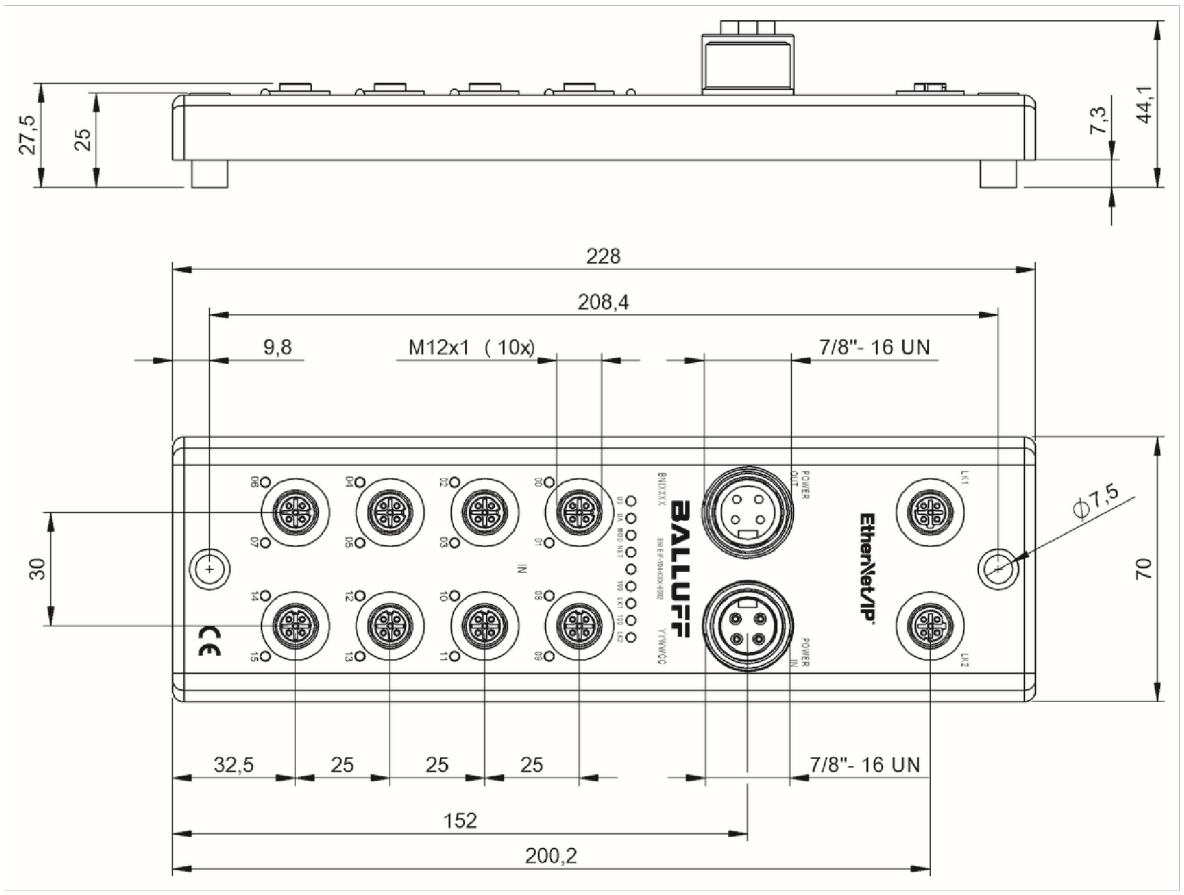
BNI004M



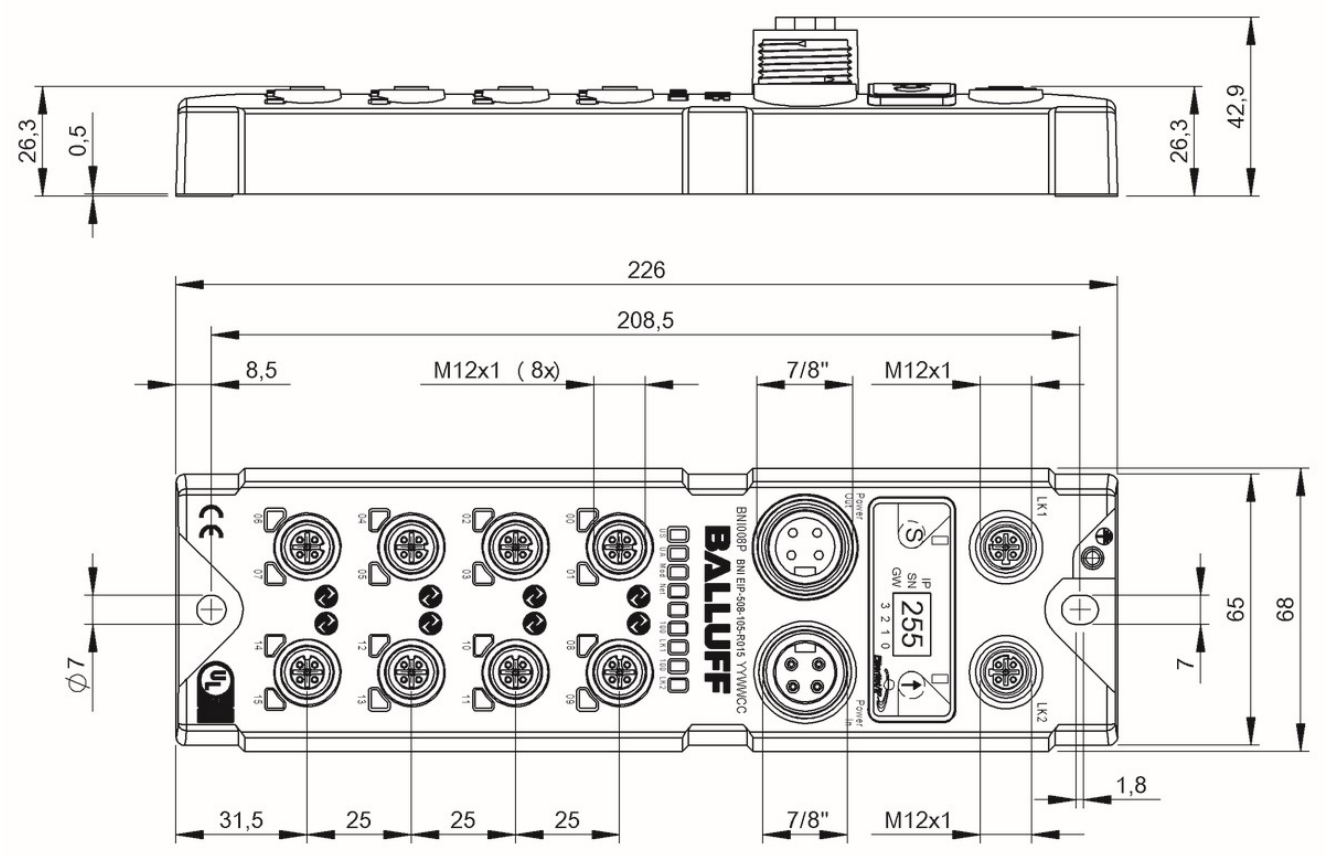
BNI009K



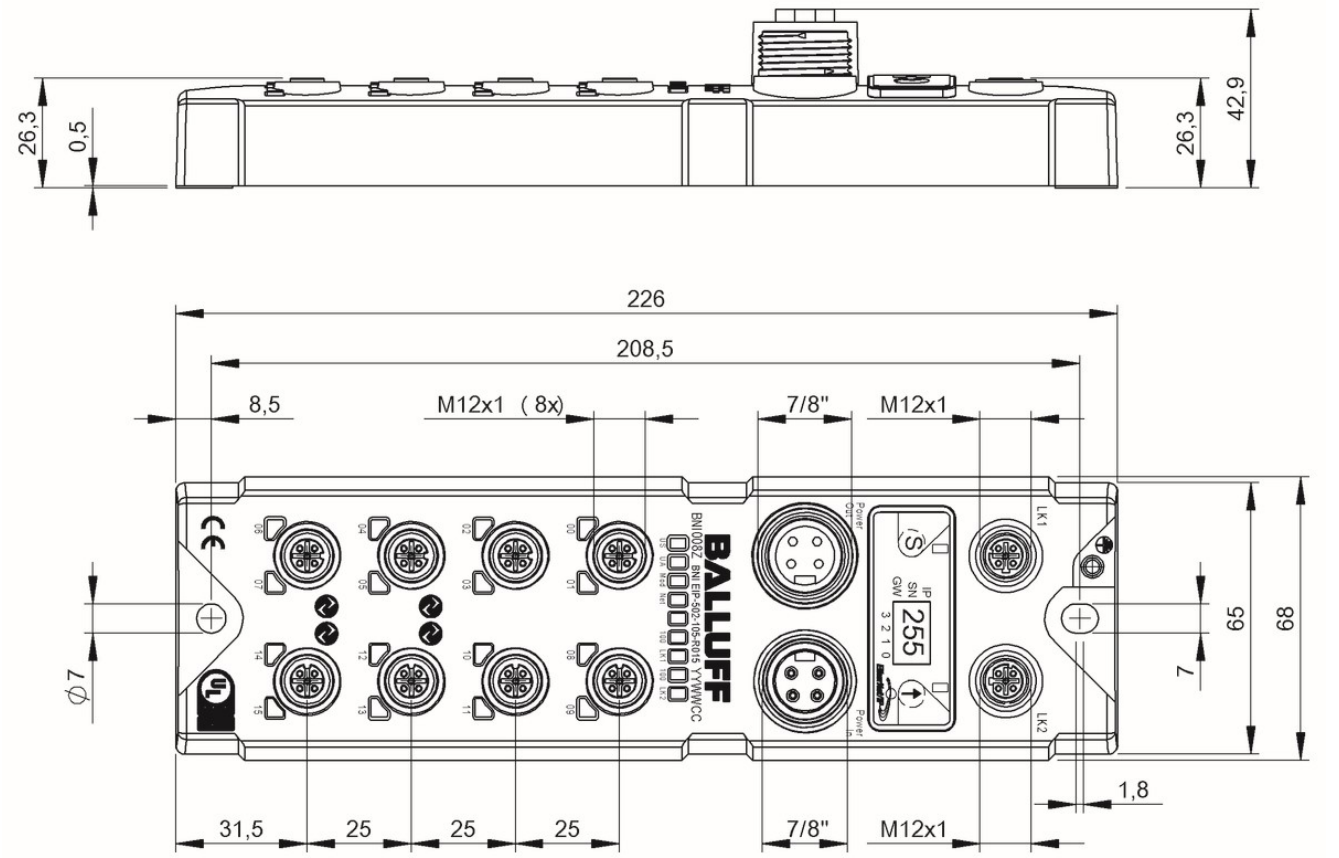
BNI0096



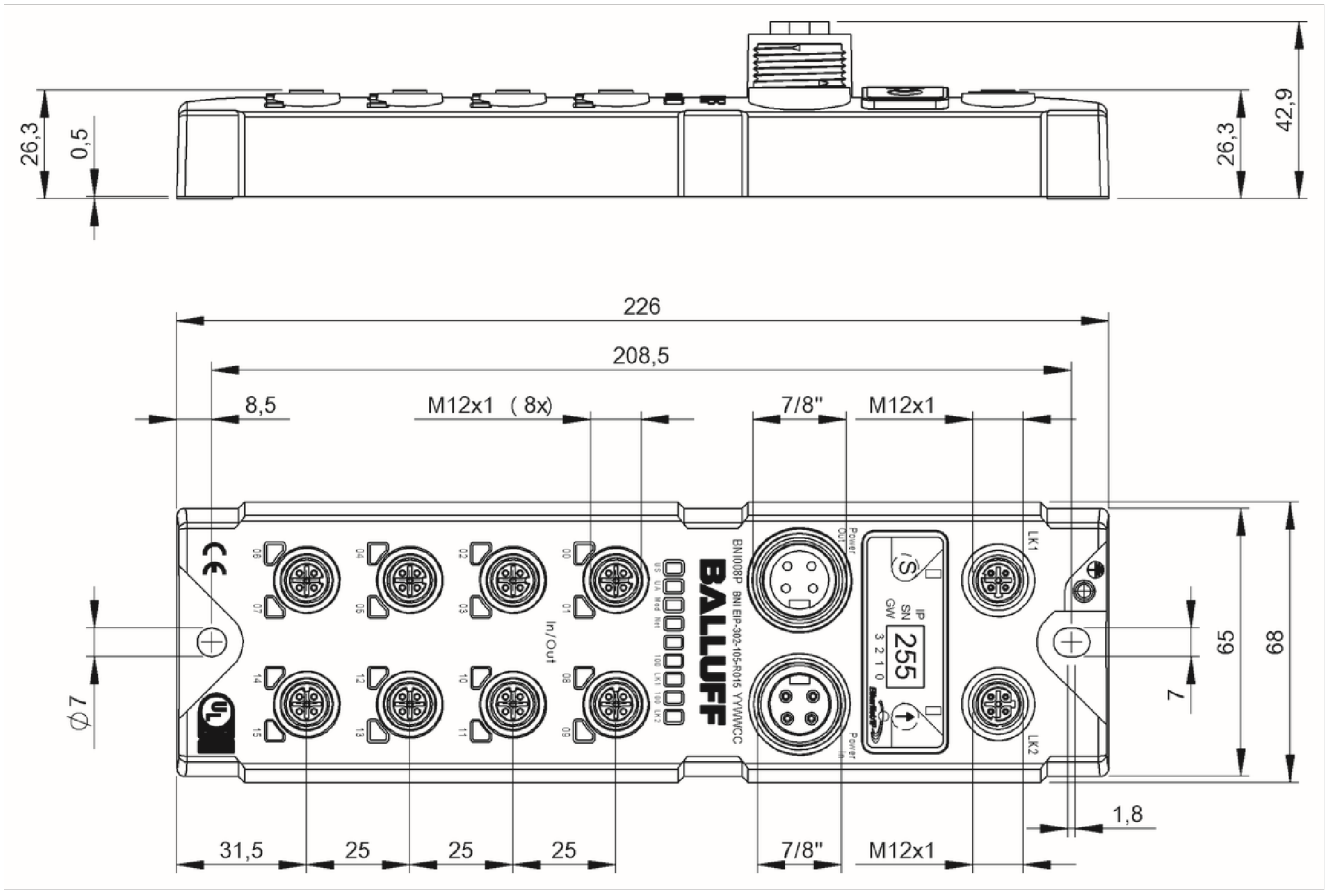
BNI009L



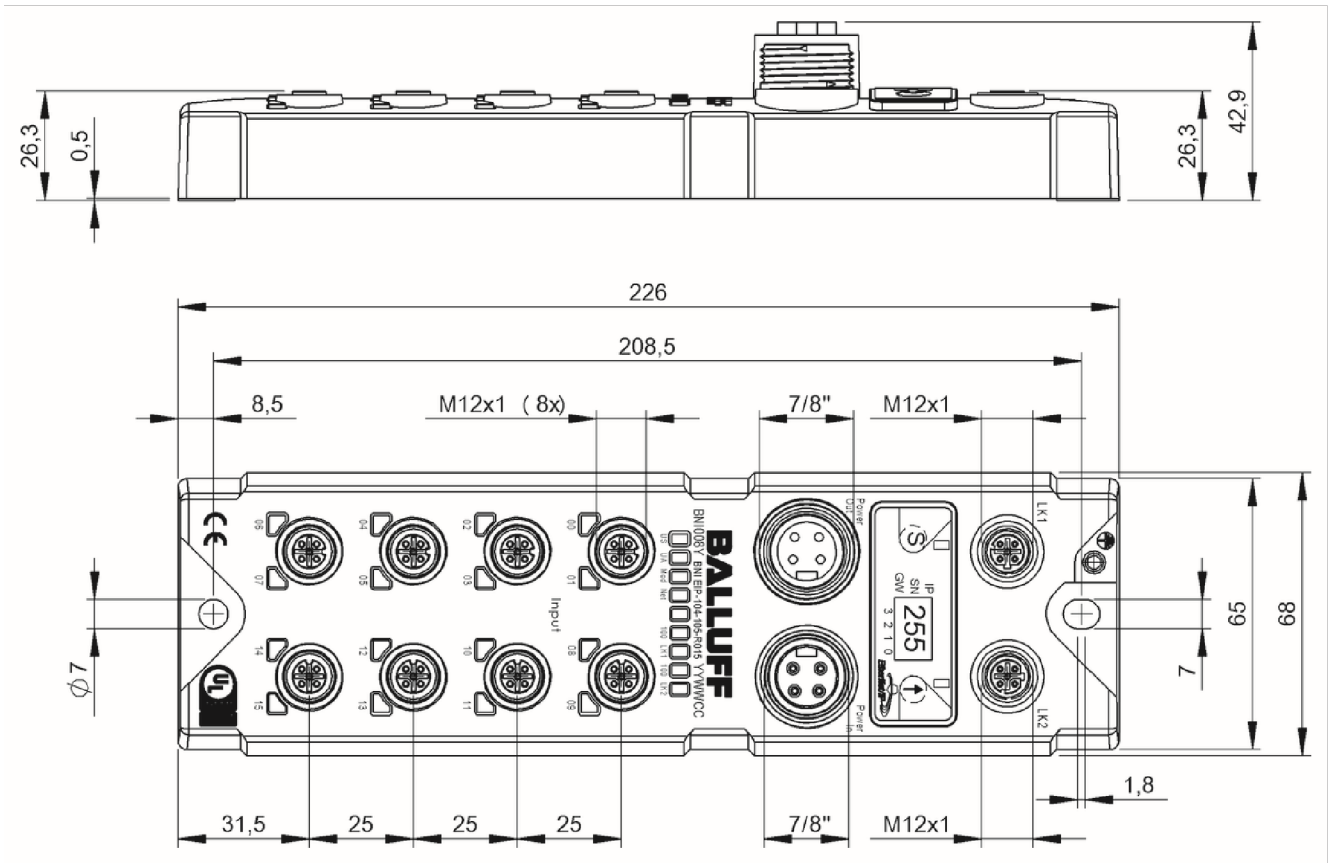
BNI008M



BNI008Z



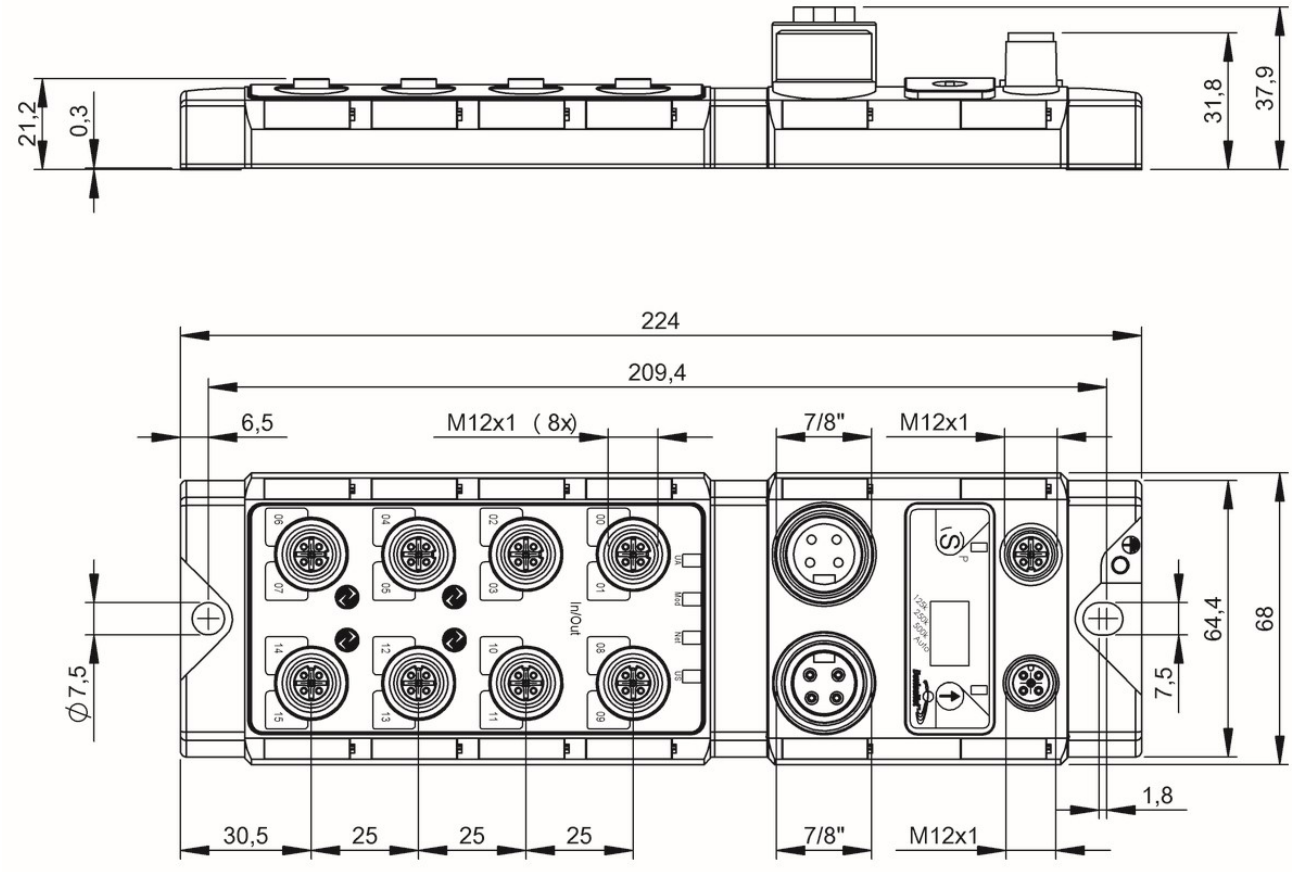
BNI008P



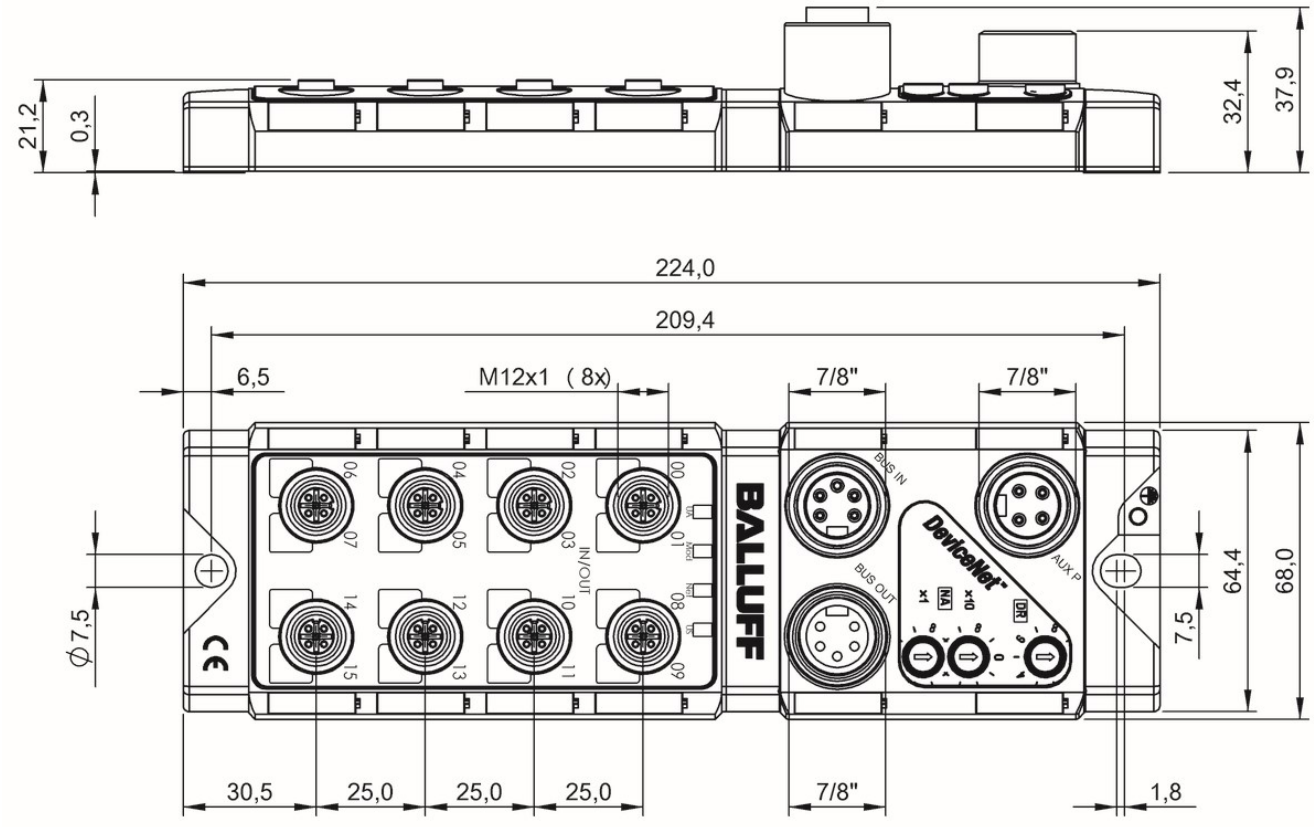
BNI008Y

	BNI005A BNI DNT-502-100-Z001	BNI0003 BNI DNT-302-000-Z005	
Principle of operation	Active splitter	Active splitter	
Interface	DeviceNet	DeviceNet	
Operating voltage Ub	18...30.2 VDC	18...30.2 VDC	
Connection (COM 1)	M12x1-Male, 5-pole, A-coded	7/8“-Male, 5-pole	
Connection (COM 2)	M12x1-Female, 5-pole, A-coded	7/8“-Female, 5-pole	
Connection (supply voltage IN)	7/8“-Male, 4-pole	7/8“-Male, 4-pole	
Connection (supply voltage OUT)	7/8“-Female, 4-pole	—	
Connection slots	8x M12x1-Female, 5-pole, A-coded	8x M12x1-Female, 5-pole, A-coded	
Digital inputs	16x PNP, Type 2	16x PNP, Type 2	
Digital outputs	16x PNP	16x PNP	
Configurable inputs/outputs	yes	yes	
Output current max.	2 A	2 A	
Current sum US, sensor	9.0 A	9.0 A	
Current sum UA, actuator	9.0 A	9.0 A	
Housing material	Zinc, die-cast	Zinc, die-cast	
Dimension	68 x 37.9 x 224 mm	68 x 37.9 x 224 mm	
Ambient temperature	-5...70 °C	-5...70 °C	
Protection degree	IP67	IP67	
Auxiliary interfaces	4x IO-Link	—	
IO-Link version	1.1	—	
Port-class	Type A	—	
Productview	Page 142	Page 142	

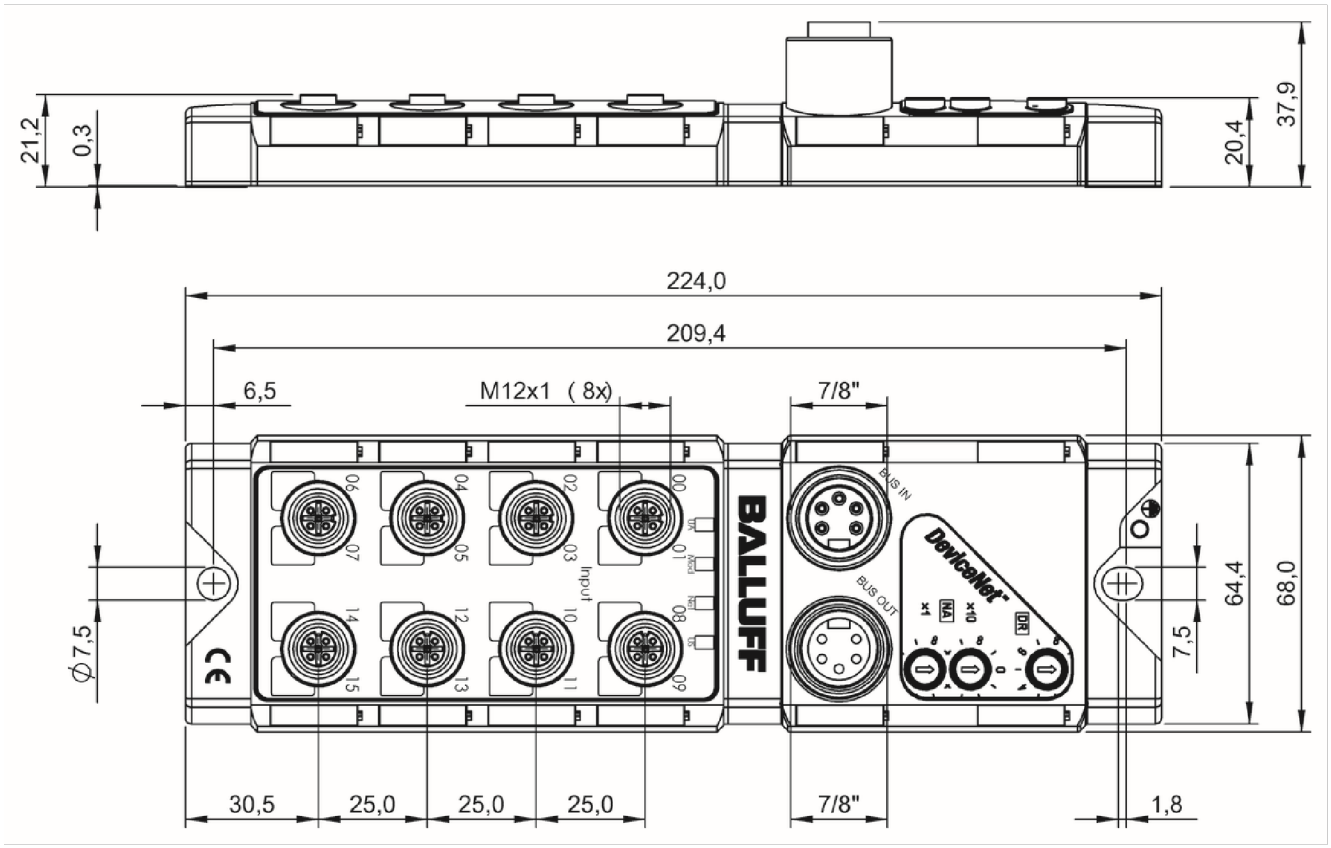
BNI0001 BNI DNT-104-000-Z004	BNI0004 BNI DNT-305-000-Z005	BNI0002 BNI DNT-202-000-Z005	
Active splitter	Active splitter	Active splitter	
DeviceNet	DeviceNet	DeviceNet	
18...30.2 VDC	18...30.2 VDC	18...30.2 VDC	
7/8“-Male, 5-pole	7/8“-Male, 5-pole	7/8“-Male, 5-pole	
7/8“-Female, 5-pole	7/8“-Female, 5-pole	7/8“-Female, 5-pole	
7/8“-Male, 4-pole	7/8“-Male, 4-pole	7/8“-Male, 4-pole	
—	—	—	
8x M12x1-Female, 5-pole, A-coded	8x M12x1-Female, 5-pole, A-coded	8x M12x1-Female, 5-pole, A-coded	
16x PNP, Type 2	8x PNP, Type2	—	
—	8x PNP	8x PNP	
no	no	no	
—	2 A	2 A	
9.0 A	9.0 A	—	
—	9.0 A	9.0 A	
Zinc, die-cast	Zinc, die-cast	Zinc, die-cast	
68 x 37.9 x 224 mm	68 x 37.9 x 224 mm	68 x 37.9 x 224 mm	
-5...70 °C	-5...70 °C	-5...70 °C	
IP67	IP67	IP67	
—	—	—	
—	—	—	
—	—	—	
Page 143	Page 143	Page 144	



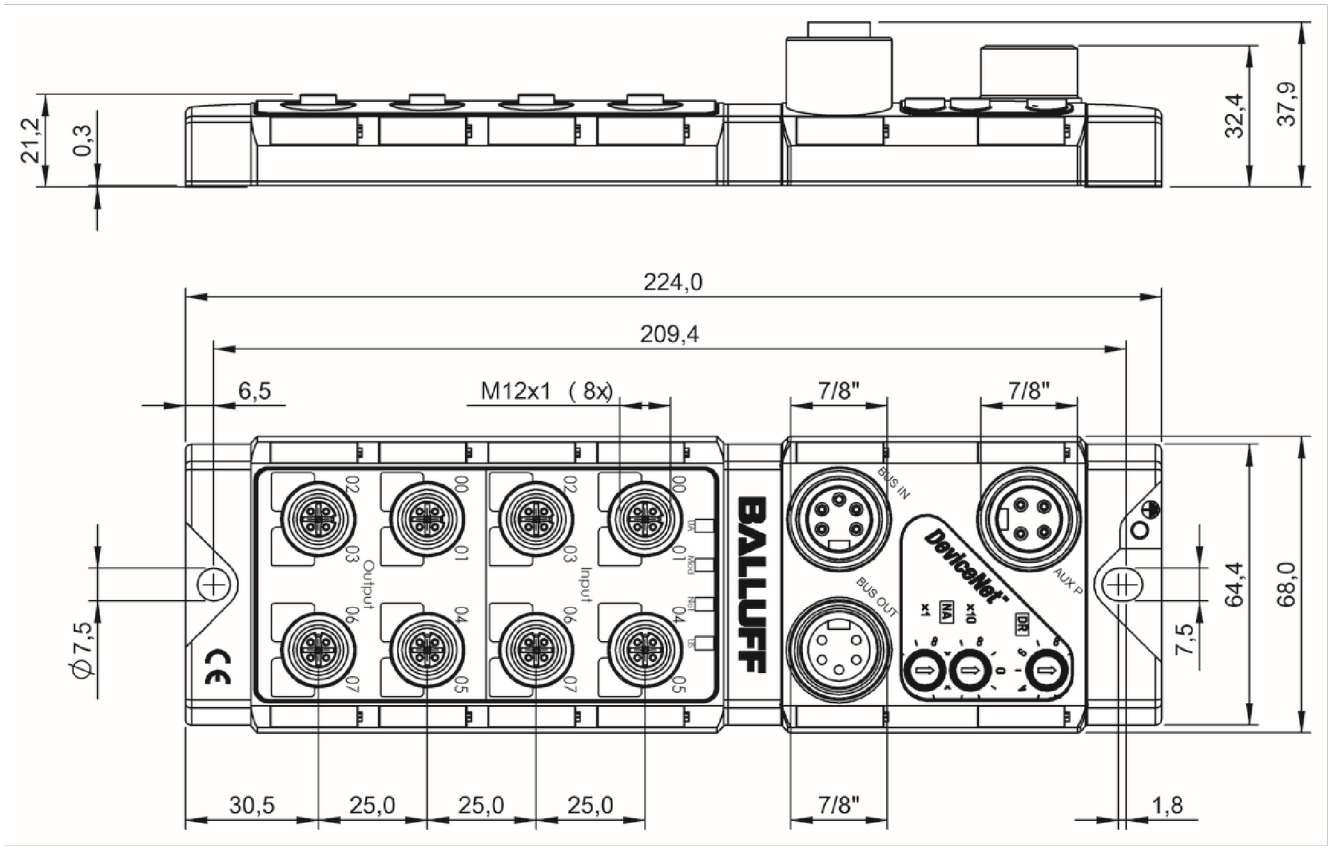
BNI005A



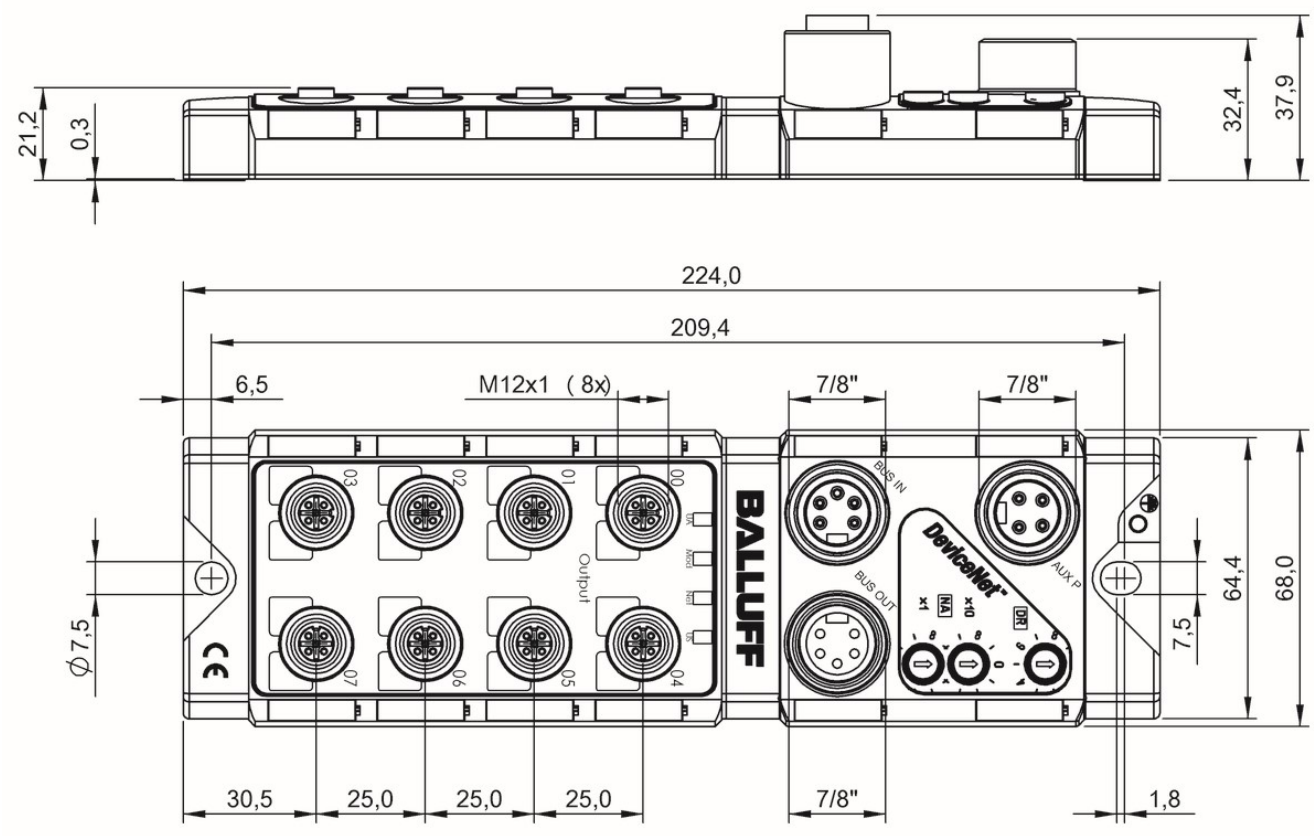
BNI0003



BNI0001

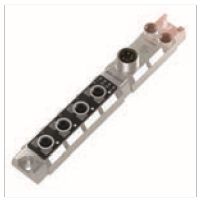


BNI0004

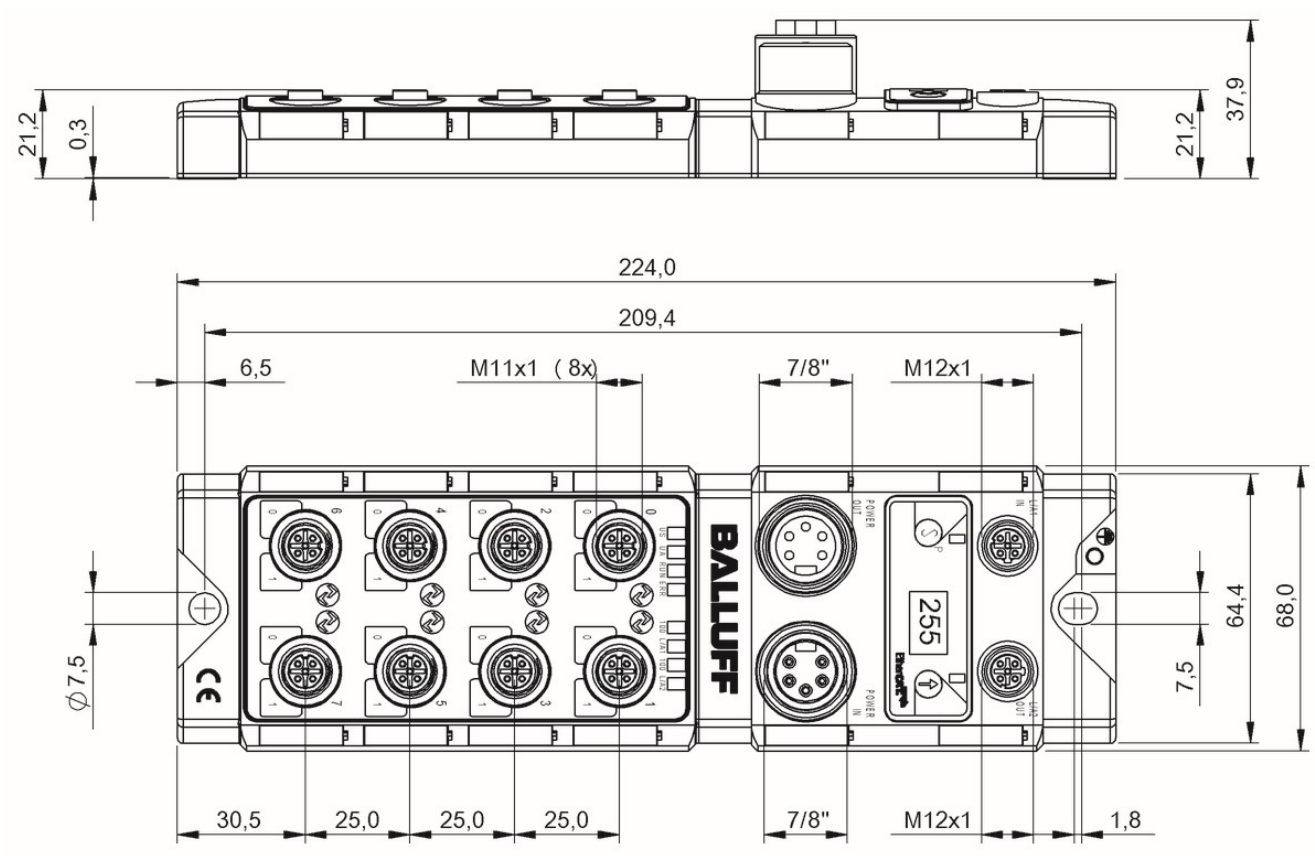

21,2
0,3
32,4
37,9
224,0
209,4
6,5
M12x1 (8x)
7/8"
7/8"
03
02
01
00
07
06
05
04
Output
BALLUFF
BUS IN
BUS OUT
DeviceNet
AUX P
ϕ7,5
64,4
68,0
7,5
30,5
25,0
25,0
25,0
7/8"
1,8

BNI0002

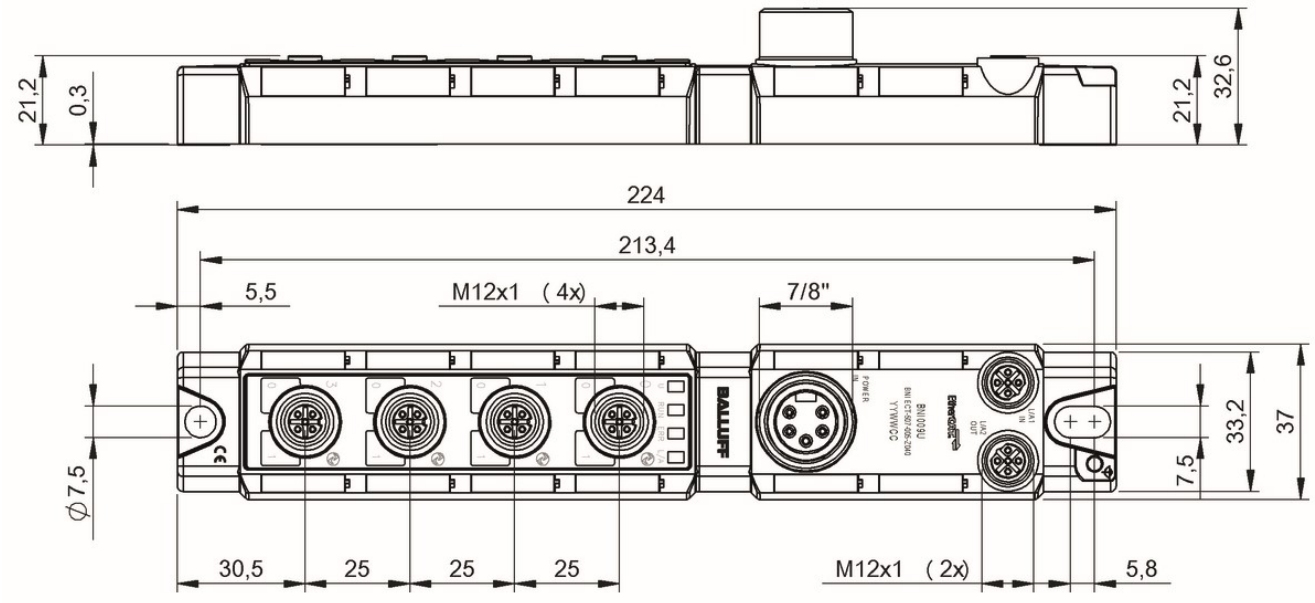
	BNI0077 BNI ECT-508-105-Z015	
Principle of operation	Active splitter	
Interface	EtherCAT	
Operating voltage Ub	18...30.2 VDC	
Connection (COM 1)	M12x1-Female, 5-pole, D-coded	
Connection (COM 2)	M12x1-Female, 5-pole, D-coded	
Connection (supply voltage IN)	7/8“-Male, 4-pole	
Connection (supply voltage OUT)	7/8“-Female, 4-pole	
Connection slots	8x M12x1-Female, 5-pole, A-coded	
Digital inputs	16x PNP, Type 2	
Digital outputs	16x PNP	
Configurable inputs/outputs	yes	
Output current max.	2 A	
Current sum US, sensor	9.0 A	
Current sum UA, actuator	9.0 A	
Housing material	Zinc, die-cast	
Dimension	68 x 37.9 x 224 mm	
Ambient temperature	-5...70 °C	
Protection degree	IP67	
Auxiliary interfaces	8x IO-Link	
IO-Link version	1.1	
Port-class	Type A	
Productview	Page 148	



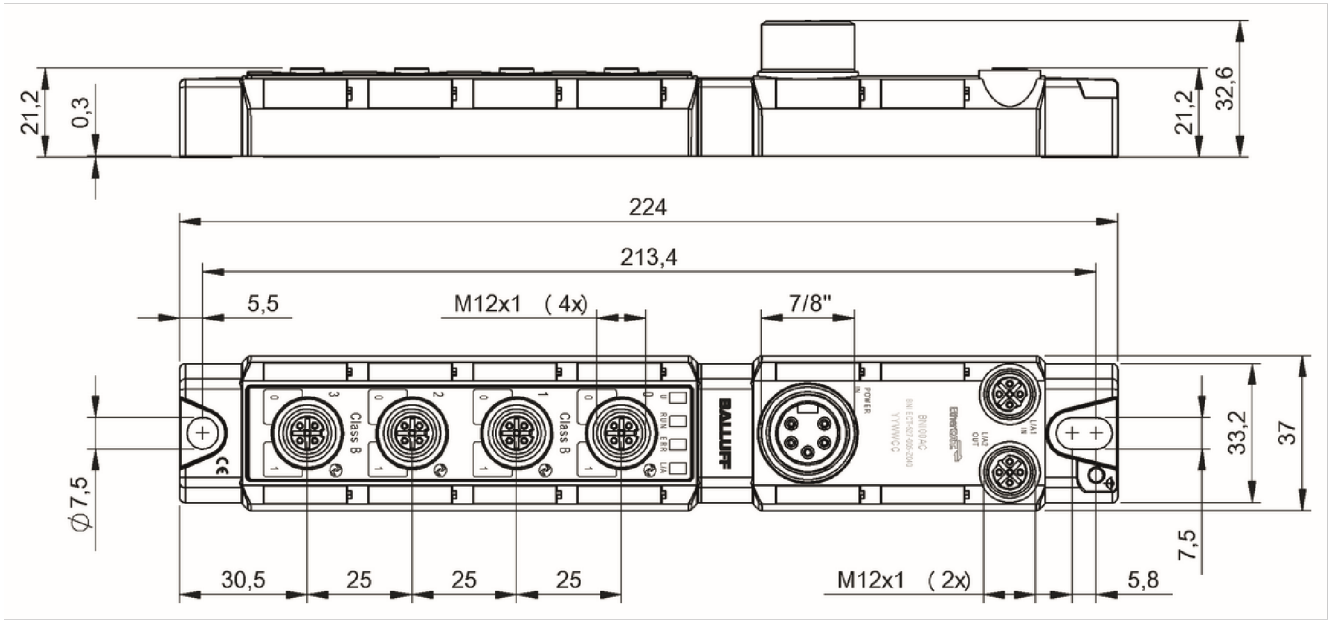
BNI009U BNI ECT-507-005-Z040	BNI00AC BNI ECT-527-005-Z040
Active splitter	Active splitter
EtherCAT	EtherCAT
18...30.2 VDC	18...30.2 VDC
M12x1-Female, 5-pole, D-coded	M12x1-Female, 5-pole, D-coded
M12x1-Female, 5-pole, D-coded	M12x1-Female, 5-pole, D-coded
7/8“-Male, 4-pole	7/8“-Male, 4-pole
—	—
4x M12x1-Female, 5-pole, A-coded	4x M12x1-Female, 5-pole, A-coded
8x PNP, Type3	4x PNP, Type 3
8x PNP	—
yes	no
2 A	—
9.0 A	9.0 A
9.0 A	—
Zinc, die-cast	Zinc, die-cast
37 x 32.6 x 224 mm	37 x 32.6 x 224 mm
-5...70 °C	-5...70 °C
IP67	IP67
4x IO-Link	4x IO-Link
1.1	1.1
Type A	Type B
Page 148	Page 149



BNI0077



BNI009U


21,2
0,3
21,2
32,6
224
213,4
5,5
M12x1 (4x)
7/8"
33,2
37
ϕ7,5
7,5
30,5
25
25
25
M12x1 (2x)
5,8
Class B
Class B
BALLUFF

BNI00AC

System solutions for efficient network design

SWITCHES

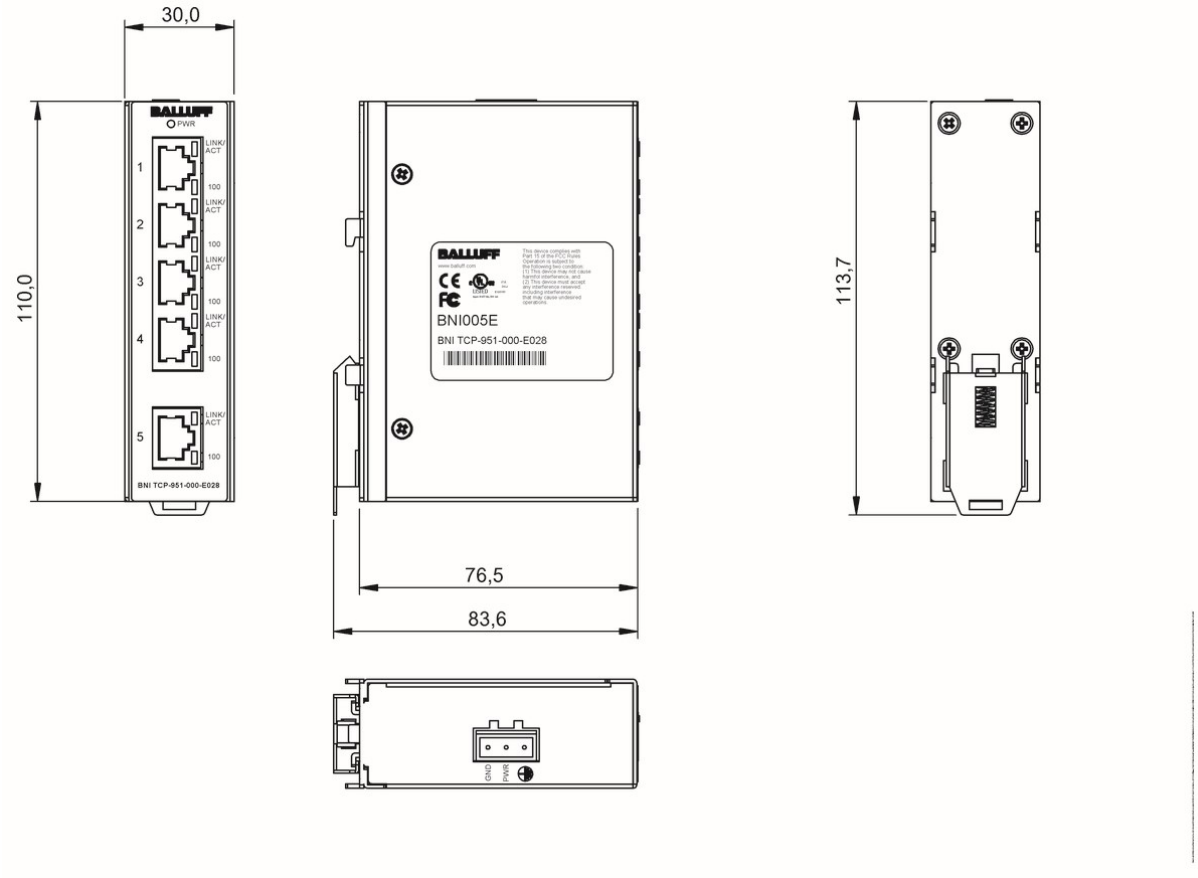
Ethernet-based network systems are increasingly gaining significance in industrial automation. To enable you to easily link all Ethernet system components with Ethernet, Balluff provides you with a complete system. We offer you a multiplicity of Ethernet-based systems and network components for machine and system outfitting, including Profinet and Ethernet/IP. This means optimum infrastructure for complex networks.

Features

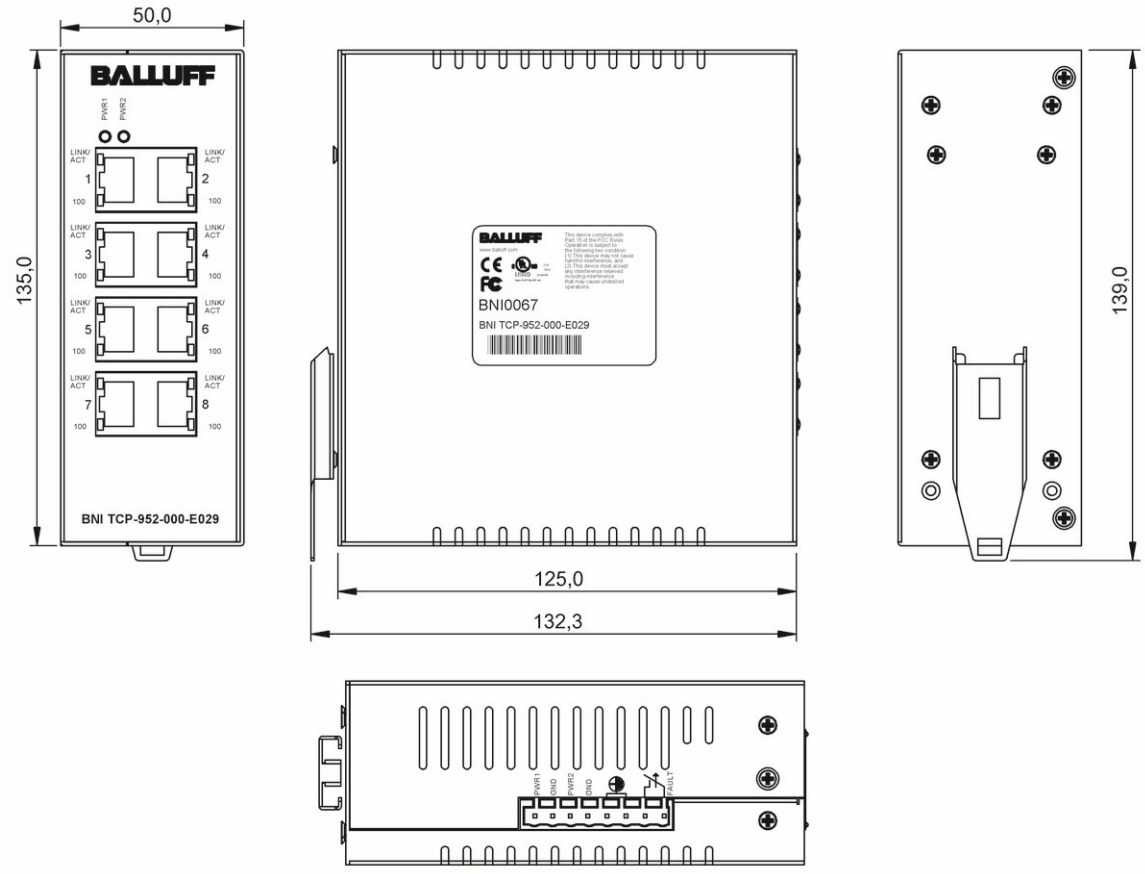
- Variety of Ethernet-based systems and network components
- Complete system for linking Ethernet system components with Ethernet

	BNI005E BNI TCP-951-000-E028	
Principle of operation	Active splitter	
Dimension	30 x 76.5 x 110 mm	
Mounting	DIN rail mount	
Housing material	Steel, coated	
Interface	Ethernet TCP/IP 10Base-T/100Base-TX	
Operating voltage Ub	12...48 VDC	
Connection slots	5x RJ45-Female, 8-pole	
Ambient temperature	-10...60 °C	
Protection degree	IP30	
Productview	Page 154	

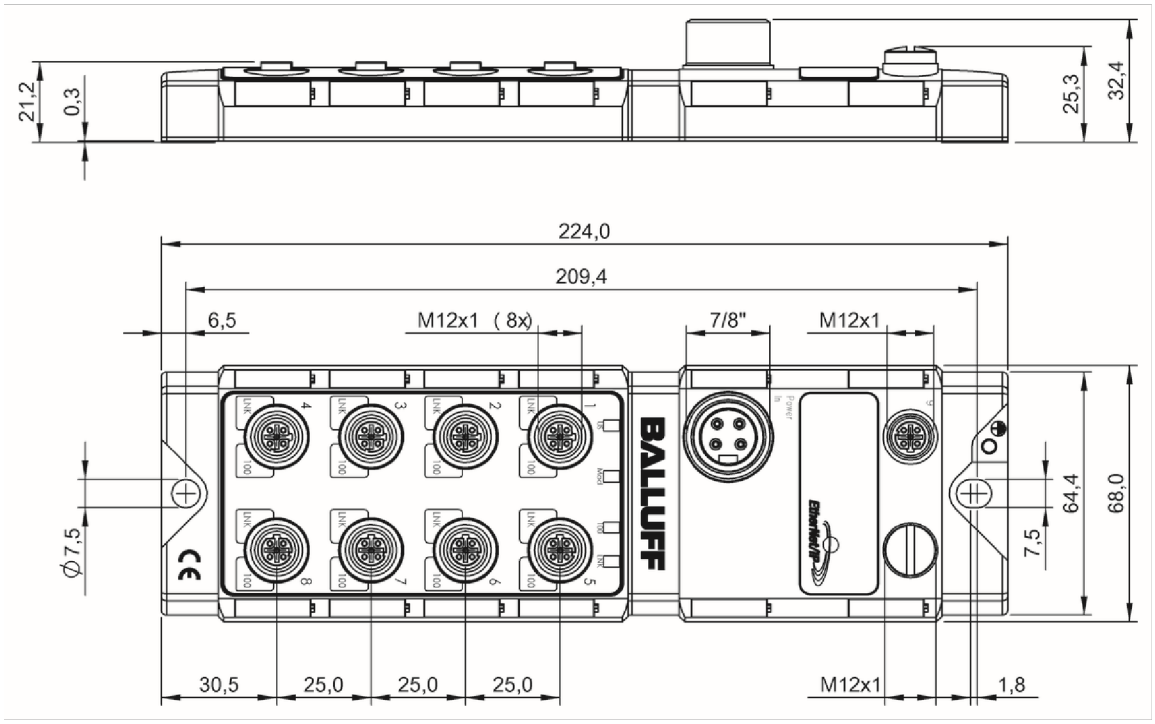
BNI0067 BNI TCP-952-000-E029	BNI000F BNI EIP-950-000-Z009
Active splitter	Active splitter
50 x 76.5 x 135 mm	68 x 32.4 x 224 mm
DIN rail mount	2-hole screw mount
Steel, coated	Zinc, die-cast
Ethernet TCP/IP 10Base-T/100Base-TX	Ethernet TCP/IP 10Base-T/100Base-TX
12...48 VDC	18...30.2 VDC
8x RJ45-Female, 8-pole	8x M12x1-Female, 4-pole, D-coded
-20...60 °C	-5...55 °C
IP30	IP67
Page 154	Page 155



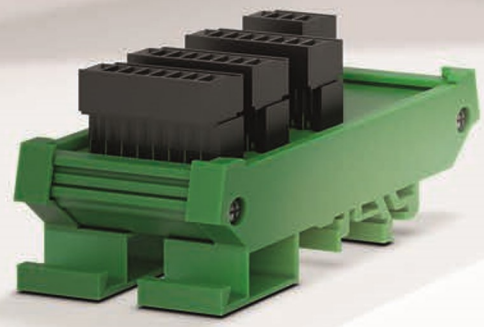
BNI005E



BNI0067


21,2
0,3
25,3
32,4
224,0
209,4
6,5
M12x1 (8x)
7/8"
M12x1
BALLUFF
Ø7,5
64,4
68,0
7,5
30,5
25,0
25,0
25,0
M12x1
1,8

BNI000F



**Reliable signal transmission,
even under extreme conditions**

I/O MODULES

I/O modules from Balluff connect binary and analog sensors and actuators to the control level via a bus. By using our modules you can significantly reduce the number of cables required. The Balluff I/O modules also offer additional functions for signal preprocessing and expanded diagnostic options. Various form factors and connection technologies provide solutions for a wide range of requirements – even under extreme ambient conditions.

Features

- Simple to install
- Efficient configuration
- Continuous diagnostics
- Individual solutions through a variety of designs and connection techniques
- Suitable for use under extreme conditions

	BNI0093 BNI IOL-309-002-Z019	BNI0099 BNI IOL-102-002-Z019	BNI00AU BNI IOL-302-002-Z046	
Interface	IO-Link 1.1	IO-Link 1.1	IO-Link 1.1	
Operating voltage Ub	18...30.2 VDC	18...30.2 VDC	18...30.2 VDC	
Connection (COM 1)	M12x1-Male, 4-pole, A-coded	M12x1-Male, 4-pole, A-coded	M12x1-Male, 4-pole, A-coded	
Connection (supply voltage IN)	—	—	—	
Connection slots	8x M8x1-Female, 3-pole	8x M8x1-Female, 3-pole	16x M8x1-Female, 3-pole	
Digital inputs	8x PNP, Type3	8x PNP, Type3	16x PNP, Type3	
Digital outputs	8x PNP	—	16x PNP	
Analog inputs	—	—	—	
Configurable inputs/outputs	yes	no	yes	
Additional function	Extension port	Extension port	Extension port	
Output current max.	300 mA	—	300 mA	
Housing material	Zinc, die-cast	Zinc, die-cast	Zinc, die-cast	
Dimension	30 x 32.5 x 132 mm	30 x 32.5 x 132 mm	30 x 32.8 x 220 mm	
Ambient temperature	-5...70 °C	-5...70 °C	-5...70 °C	
Protection degree	IP67 when threaded in	IP67 when threaded in	IP67 when threaded in	
Transfer rate	COM2 (38.4 kBaud)	COM2 (38.4 kBaud)	COM2 (38.4 kBaud)	
Process data cycle min.	3.5 ms	3.2 ms	4.0 ms	
Process data in	1 bytes	1 bytes	2 bytes	
Process data out	1 bytes	—	2 bytes	
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BNI00AY BNI IOL-104-002-Z046	BNI000R BNI IOL-102-000-K019	BNI001Y BNI IOL-102-S01-K019	BNI0021 BNI IOL-104-000-K021	BNI0022 BNI IOL-104-S01-K021
IO-Link 1.1	IO-Link 1.0	IO-Link 1.0	IO-Link 1.0	IO-Link 1.0
18...30.2 VDC	18...30.2 VDC	18...30.2 VDC	18...30.2 VDC	18...30.2 VDC
M12x1-Male, 4-pole, A-coded	M12x1-Male, 4-pole, A-coded	M12x1-Male, 4-pole, A-coded	M12x1-Male, 4-pole, A-coded	M12x1-Male, 4-pole, A-coded
–	–	–	–	–
16x M8x1-Female, 3-pole	8x M8x1-Female, 3-pole	8x M8x1-Female, 3-pole	8x M8x1-Female, 4-pole	8x M8x1-Female, 4-pole
16x PNP, Type3	8x PNP, Type2	8x PNP, Type2	16x PNP, Type 2	16x PNP, Type 2
–	–	–	–	–
–	–	–	–	–
no	no	no	no	no
Extension port	–	Single-channel monitoring	–	Single-channel monitoring
–	–	–	–	–
Zinc, die-cast	PBT, GF	PBT, GF	PBT, GF	PBT, GF
30 x 32.8 x 220 mm	30 x 24 x 129.5 mm	30 x 24 x 129.5 mm	30 x 24 x 129.5 mm	30 x 24 x 129.5 mm
-5...70 °C	-5...55 °C	-5...55 °C	-5...55 °C	-5...55 °C
IP67 when threaded in	IP67 when threaded in	IP67 when threaded in	IP67 when threaded in	IP67 when threaded in
COM2 (38.4 kBaud)	COM2 (38.4 kBaud)	COM2 (38.4 kBaud)	COM2 (38.4 kBaud)	COM2 (38.4 kBaud)
3.5 ms	2.5 ms	2.5 ms	2.5 ms	10 ms
2 bytes	1 bytes	2 bytes	2 bytes	3 bytes
–	–	–	–	–
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	BNI000P BNI IOL-101-000-K018	BNI001W BNI IOL-101-S01-K018	BNI00CN BNI IOL-302-S02-Z012	
Interface	IO-Link 1.0	IO-Link 1.0	IO-Link 1.1	
Operating voltage Ub	18...30.2 VDC	18...30.2 VDC	18...30.2 VDC	
Connection (COM 1)	M12x1-Male, 4-pole, A-coded	M12x1-Male, 4-pole, A-coded	M12x1-Male, 4-pole, A-coded	
Connection (supply voltage IN)	—	—	—	
Connection slots	4x M8x1-Female, 3-pole	4x M8x1-Female, 3-pole	8x M12x1-Female, 5-pole, A-coded	
Digital inputs	4x PNP, Type2	4x PNP, Type2	16x PNP, Type3	
Digital outputs	—	—	16x PNP	
Analog inputs	—	—	—	
Configurable inputs/outputs	no	no	yes	
Additional function	—	Single-channel monitoring	Extension port, Single-channel monitoring	
Output current max.	—	—	500 mA	
Housing material	PBT, GF	PBT, GF	Zinc, die-cast	
Dimension	30 x 24 x 85.5 mm	30 x 24 x 85.5 mm	68 x 31.8 x 181.5 mm	
Ambient temperature	-5...55 °C	-5...55 °C	-5...55 °C	
Protection degree	IP67 when threaded in	IP67 when threaded in	IP67 when threaded in	
Transfer rate	COM2 (38.4 kBaud)	COM2 (38.4 kBaud)	COM2 (38.4 kBaud)	
Process data cycle min.	2.5 ms	2.5 ms	6.2 ms	
Process data in	1 bytes	2 bytes	8 bytes	
Process data out	—	—	2 bytes	
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	BNI00CR BNI IOL-104-S02-Z012	BNI0063 BNI IOL-106-000-Z012	BNI0062 BNI IOL-106-S01-Z012	BNI0061 BNI IOL-106-S01-Z012-C01	BNI00AJ BNI IOL-719-002-Z012
	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-Male, 4-pole, A-coded	M12x1-Male, 4-pole, A-coded	M12x1-Male, 4-pole, A-coded	M12x1-Male, 4-pole, A-coded	M12x1-Male, 4-pole, A-coded
	—	—	—	—	—
	8x M12x1-Female, 5-pole, A-coded	8x M12x1-Female, 5-pole, A-coded	8x M12x1-Female, 5-pole, A-coded	8x M12x1-Female, 5-pole, A-coded	8x M12x1-Female, 5-pole, A-coded
	16x PNP, Type3	16x NPN, Type2	16x NPN, Type2	16x NPN, Type2	—
	—	—	—	—	—
	—	—	—	—	8x Analog, voltage/ ANalog, current/ana-log, temperature (0…10 V/-10…10 V/0…5 V/-5…5 V/5…10 V/4…20 mA/0…20 mA/Pt100/ Pt1000/Thermocouple Type J/Thermocouple Type K)
	no	no	no	no	no
	Extension port, Sing-le-channel monitoring	—	Single-channel monitoring	Single-channel monitoring, Identification 2 bytes	—
	—	—	—	—	—
	Zinc, die-cast	Zinc, die-cast	Zinc, die-cast	Zinc, die-cast	Zinc, die-cast
	68 x 31.8 x 181.5 mm	68 x 31.8 x 181.5 mm	68 x 31.8 x 181.5 mm	68 x 31.8 x 181.5 mm	68 x 31.8 x 181.5 mm
	-5...55 °C	-5...70 °C	-5...70 °C	-5...70 °C	-5...70 °C
	IP67 when threaded in	IP67 when threaded in	IP67 when threaded in	IP67 when threaded in	IP67 when threaded in
	COM2 (38.4 kBaud)	COM2 (38.4 kBaud)	COM2 (38.4 kBaud)	COM2 (38.4 kBaud)	COM2 (38.4 kBaud)
	4.4 ms	3.0 ms	3.5 ms	4.0 ms	55 ms
	4 bytes	2 bytes	4 bytes	6 bytes	22 bytes
	—	—	—	—	1 bytes
	Page 175	Page 176	Page 176	Page 176	Page 176

	BNI003U BNI IOL-302-000-Z012	BNI0032 BNI IOL-104-000-Z012	BNI003T BNI IOL-104-S01-Z012-C01	
Interface	IO-Link 1.0	IO-Link 1.0	IO-Link 1.0	
Operating voltage Ub	18...30.2 VDC	18...30.2 VDC	18...30.2 VDC	
Connection (COM 1)	M12x1-Male, 4-pole, A-coded	M12x1-Male, 4-pole, A-coded	M12x1-Male, 4-pole, A-coded	
Connection (supply voltage IN)	—	—	—	
Connection slots	8x M12x1-Female, 5-pole, A-coded	8x M12x1-Female, 5-pole, A-coded	8x M12x1-Female, 5-pole, A-coded	
Digital inputs	16x PNP, Type 2	16x PNP, Type 2	16x PNP, Type 2	
Digital outputs	16x PNP	—	—	
Analog inputs	—	—	—	
Configurable inputs/outputs	yes	no	no	
Additional function	—	—	Single-channel monitoring, Identification 2 bytes	
Output current max.	500 mA	—	—	
Housing material	Zinc, die-cast	Zinc, die-cast	Zinc, die-cast	
Dimension	68 x 31.8 x 181.5 mm	68 x 31.8 x 181.5 mm	68 x 31.8 x 181.5 mm	
Ambient temperature	-5...70 °C	-5...70 °C	-5...70 °C	
Protection degree	IP67 when threaded in	IP67 when threaded in	IP67 when threaded in	
Transfer rate	COM2 (38.4 kBaud)	COM2 (38.4 kBaud)	COM2 (38.4 kBaud)	
Process data cycle min.	12 ms	3.0 ms	18 ms	
Process data in	2 bytes	2 bytes	6 bytes	
Process data out	2 bytes	—	—	
Productview	Page 177	Page 177	Page 177	





	BNI005P BNI IOL-104-S01-Z012-C02	BNI0031 BNI IOL-102-000-Z012	BNI0043 BNI IOL-205-000-Z012	BNI00CM BNI IOL-302-002-Z042	BNI0046 BNI IOL-302-S02-Z013
	IO-Link 1.0	IO-Link 1.0	IO-Link 1.0	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-Male, 4-pole, A-coded	M12x1-Male, 4-pole, A-coded	M12x1-Male, 4-pole, A-coded	M12x1-Male, 4-pole, A-coded	M12x1-Male, 4-pole, A-coded
	—	—	—	—	7/8“-Male, 5-pole
	8x M12x1-Female, 5-pole, A-coded	8x M12x1-Female, 5-pole, A-coded	8x M12x1-Female, 5-pole, A-coded	8x M12x1-Female, 5-pole, A-coded	8x M12x1-Female, 5-pole, A-coded
	16x PNP, Type 2	8x PNP, Type2	—	16x PNP, Type3	16x PNP, Type3
	—	—	16x PNP	16x PNP	16x PNP
	—	—	—	—	—
	no	no	no	yes	yes
	Single-channel monitoring, Identification 4 bytes	—	—	Extension port	Extension port, Sing-le-channel monitoring
	—	—	500 mA	2 A	2 A
	Zinc, die-cast	Zinc, die-cast	Zinc, die-cast	Zinc, die-cast	Zinc, die-cast
	68 x 31.8 x 181.5 mm	68 x 31.8 x 181.5 mm	68 x 31.8 x 181.5 mm	68 x 31.8 x 181.5 mm	68 x 32.4 x 181.5 mm
	-5...70 °C	-5...70 °C	-5...70 °C	-5...55 °C	-5...55 °C
	IP67 when threaded in	IP67 when threaded in	IP67 when threaded in	IP67 when threaded in	IP67 when threaded in
	COM2 (38.4 kBaud)	COM2 (38.4 kBaud)	COM2 (38.4 kBaud)	COM2 (38.4 kBaud)	COM2 (38.4 kBaud)
	24 ms	3.0 ms	3.0 ms	4.4 ms	6.2 ms
	8 bytes	1 bytes	—	2 bytes	8 bytes
	—	—	2 bytes	2 bytes	2 bytes
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	BNI0035 BNI IOL-302-000-Z013	BNI0048 BNI IOL-302-S01-Z013-C01	BNI00CP BNI IOL-302-S02-Z026	
Interface	IO-Link 1.0	IO-Link 1.0	IO-Link 1.1	
Operating voltage Ub	18...30.2 VDC	18...30.2 VDC	18...30.2 VDC	
Connection (COM 1)	M12x1-Male, 4-pole, A-coded	M12x1-Male, 4-pole, A-coded	M12x1-Male, 4-pole, A-coded	
Connection (supply voltage IN)	7/8“-Male, 5-pole	7/8“-Male, 5-pole	7/8“-Male, 4-pole	
Connection slots	8x M12x1-Female, 5-pole, A-coded	8x M12x1-Female, 5-pole, A-coded	8x M12x1-Female, 5-pole, A-coded	
Digital inputs	16x PNP, Type 2	16x PNP, Type 2	16x PNP, Type3	
Digital outputs	16x PNP	16x PNP	16x PNP	
Analog inputs	—	—	—	
Configurable inputs/outputs	yes	yes	yes	
Additional function	—	Single-channel monitoring, Identification 2 bytes	Extension port, Sing-le-channel monitoring	
Output current max.	2 A	2 A	2 A	
Housing material	Zinc, die-cast	Zinc, die-cast	Zinc, die-cast	
Dimension	68 x 32.4 x 181.5 mm	68 x 32.4 x 181.5 mm	68 x 32.4 x 181.5 mm	
Ambient temperature	-5...70 °C	-5...70 °C	-5...55 °C	
Protection degree	IP67 when threaded in	IP67 when threaded in	IP67 when threaded in	
Transfer rate	COM2 (38.4 kBaud)	COM2 (38.4 kBaud)	COM2 (38.4 kBaud)	
Process data cycle min.	12 ms	30 ms	5.6 ms	
Process data in	2 bytes	10 bytes	6 bytes	
Process data out	2 bytes	2 bytes	2 bytes	
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BNI0050 BNI IOL-302-000-Z026	BNI00AR BNI IOL-302-002-E012	BNI00AP BNI IOL-104-002-E012	BNI00AT BNI IOL-302-002-E013	BNI0090 BNI IOL-104-S02-R012
IO-Link 1.0	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-Male, 4-pole, A-coded	M12x1-Male, 4-pole, A-coded	M12x1-Male, 4-pole, A-coded	M12x1-Male, 4-pole, A-coded	M12x1-Male, 4-pole, A-coded
7/8“-Male, 4-pole	—	—	7/8“-Male, 5-pole	—
8x M12x1-Female, 5-pole, A-coded	8x M12x1-Female, 5-pole, A-coded	8x M12x1-Female, 5-pole, A-coded	8x M12x1-Female, 5-pole, A-coded	8x M12x1-Female, 5-pole, A-coded
16x PNP, Type 2	16x PNP, Type3	16x PNP, Type3	16x PNP, Type3	16x PNP, Type3
16x PNP	16x PNP	—	16x PNP	—
—	—	—	—	—
yes	yes	no	yes	no
—	Extension port	Extension port	Extension port	Extension port, Single-channel monitoring
2 A	2 A	—	2 A	—
Zinc, die-cast	Stainless steel (1.4571)	Stainless steel (1.4571)	Stainless steel (1.4571)	PPS
68 x 32.4 x 181.5 mm	70 x 37.9 x 185.6 mm	70 x 37.9 x 185.6 mm	70 x 38.5 x 185.6 mm	68 x 36.8 x 183.5 mm
-5...70 °C	-5...70 °C	-5...70 °C	-5...70 °C	-5...70 °C
IP67 when threaded in	IP69 when threaded in	IP69 when threaded in	IP69 when threaded in	IP67 when threaded in
COM2 (38.4 kBaud)	COM2 (38.4 kBaud)	COM2 (38.4 kBaud)	COM2 (38.4 kBaud)	COM2 (38.4 kBaud)
12 ms	4.0 ms	3.5 ms	4.0 ms	4.5 ms
2 bytes	2 bytes	2 bytes	2 bytes	4 bytes
2 bytes	2 bytes	—	2 bytes	—
Page 180	Page 180	Page 180	Page 181	Page 181

	BNI0091 BNI IOL-302-S02-R026	BNI005L BNI IOL-302-000-K006	BNI005U BNI IOL-302-000-K006-C01	
Interface	IO-Link 1.1	IO-Link 1.1	IO-Link 1.1	
Operating voltage Ub	18...30.2 VDC	18...30.2 VDC	18...30.2 VDC	
Connection (COM 1)	M12x1-Male, 4-pole, A-coded	M12x1-Male, 4-pole, A-coded	M12x1-Male, 4-pole, A-coded	
Connection (supply voltage IN)	7/8“-Male, 4-pole	—	—	
Connection slots	8x M12x1-Female, 5-pole, A-coded	8x M12x1-Female, 5-pole, A-coded	8x M12x1-Female, 5-pole, A-coded	
Digital inputs	16x PNP, Type3	16x PNP, Type3	16x PNP, Type3	
Digital outputs	16x PNP	16x PNP	16x PNP	
Analog inputs	—	—	—	
Configurable inputs/outputs	yes	yes	yes	
Additional function	Extension port, Sing-le-channel monitoring	—	Identification 2 bytes	
Output current max.	2 A	350 mA	350 mA	
Housing material	PPS	PA, Transparent	PA, Transparent	
Dimension	68 x 37.6 x 183.5 mm	50 x 30.8 x 115 mm	50 x 30.8 x 115 mm	
Ambient temperature	-5...70 °C	-5...55 °C	-5...55 °C	
Protection degree	IP67 when threaded in	IP67 when threaded in	IP67 when threaded in	
Transfer rate	COM2 (38.4 kBaud)	COM2 (38.4 kBaud)	COM2 (38.4 kBaud)	
Process data cycle min.	6.0 ms	3.5 ms	4.0 ms	
Process data in	6 bytes	2 bytes	4 bytes	
Process data out	2 bytes	2 bytes	2 bytes	
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	BNI007Z BNI IOL-302-002-K006	BNI005T BNI IOL-302-S01-K006	BNI005W BNI IOL-302-S01-K006-C01	BNI00AF BNI IOL-311-002-K006	BNI00AW BNI IOL-311-S02-K006-C01
	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-Male, 4-pole, A-coded	M12x1-Male, 4-pole, A-coded	M12x1-Male, 4-pole, A-coded	M12x1-Male, 4-pole, A-coded	M12x1-Male, 4-pole, A-coded
	—	—	—	—	—
	8x M12x1-Female, 5-pole, A-coded	8x M12x1-Female, 5-pole, A-coded	8x M12x1-Female, 5-pole, A-coded	8x M12x1-Female, 5-pole, A-coded	8x M12x1-Female, 5-pole, A-coded
	16x PNP, Type3	16x PNP, Type3	16x PNP, Type3	16x NPN, Type3	16x NPN, Type3
	16x PNP	16x PNP	16x PNP	16x NPN	16x NPN
	—	—	—	—	—
	yes	yes	yes	yes	yes
	Extension port	Single-channel monitoring	Single-channel monitoring, Identification 2 bytes	Extension port	Extension port, Single-channel monitoring, Identification 2 bytes
	300 mA	350 mA	350 mA	350 mA	350 mA
	PA, Transparent	PA, Transparent	PA, Transparent	PA, Transparent	PA, Transparent
	50 x 30.8 x 115 mm	50 x 30.8 x 115 mm	50 x 30.8 x 115 mm	50 x 30.8 x 115 mm	50 x 30.8 x 115 mm
	-5...55 °C	-5...55 °C	-5...55 °C	-5...55 °C	-5...55 °C
	IP67 when threaded in	IP67 when threaded in	IP67 when threaded in	IP67 when threaded in	IP67 when threaded in
	COM2 (38.4 kBaud)	COM2 (38.4 kBaud)	COM2 (38.4 kBaud)	COM2 (38.4 kBaud)	COM2 (38.4 kBaud)
	3.5 ms	5.0 ms	5.5 ms	3.5 ms	6.0 ms
	2 bytes	8 bytes	10 bytes	2 bytes	10 bytes
	2 bytes	2 bytes	2 bytes	2 bytes	2 bytes
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	BNI0074 BNI IOL-106-000-K006	BNI0075 BNI IOL-106-S01-K006	BNI0076 BNI IOL-106-S01-K006-C01	
Interface	IO-Link 1.1	IO-Link 1.1	IO-Link 1.1	
Operating voltage Ub	18...30.2 VDC	18...30.2 VDC	18...30.2 VDC	
Connection (COM 1)	M12x1-Male, 4-pole, A-coded	M12x1-Male, 4-pole, A-coded	M12x1-Male, 4-pole, A-coded	
Connection (supply voltage IN)	—	—	—	
Connection slots	8x M12x1-Female, 5-pole, A-coded	8x M12x1-Female, 5-pole, A-coded	8x M12x1-Female, 5-pole, A-coded	
Digital inputs	16x NPN, Type2	16x NPN, Type2	16x NPN, Type2	
Digital outputs	—	—	—	
Analog inputs	—	—	—	
Configurable inputs/outputs	no	no	no	
Additional function	—	Single-channel monitoring	Single-channel monitoring, Identification 2 bytes	
Output current max.	—	—	—	
Housing material	PA, Transparent	PA, Transparent	PA, Transparent	
Dimension	50 x 30.8 x 115 mm	50 x 30.8 x 115 mm	50 x 30.8 x 115 mm	
Ambient temperature	-5...55 °C	-5...55 °C	-5...55 °C	
Protection degree	IP67 when threaded in	IP67 when threaded in	IP67 when threaded in	
Transfer rate	COM2 (38.4 kBaud)	COM2 (38.4 kBaud)	COM2 (38.4 kBaud)	
Process data cycle min.	3.0 ms	3.5 ms	4.0 ms	
Process data in	2 bytes	4 bytes	6 bytes	
Process data out	—	—	—	
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	BNI0006 BNI IOL-104-000-K006	BNI0005 BNI IOL-102-000-K006	BNI0007 BNI IOL-709-000-K006	BNI0008 BNI IOL-710-000-K006	BNI007P BNI IOL-309-000-K024-001
	IO-Link 1.0	IO-Link 1.0	IO-Link 1.0	IO-Link 1.0	IO-Link 1.0
	18...30.2 VDC	18...30.2 VDC	18...30.2 VDC	18...30.2 VDC	18...30.2 VDC
	M12x1-Male, 4-pole, A-coded	M12x1-Male, 4-pole, A-coded	M12x1-Male, 4-pole, A-coded	M12x1-Male, 4-pole, A-coded	Pluggable without terminals
	—	—	—	—	Pluggable without terminals
	8x M12x1-Female, 5-pole, A-coded	8x M12x1-Female, 5-pole, A-coded	8x M12x1-Female, 5-pole, A-coded	8x M12x1-Female, 5-pole, A-coded	Pluggable without terminals
	16x PNP, Type 2	8x PNP, Type2	8x PNP, Type2	8x PNP, Type2	8x PNP, Type2
	—	—	—	—	8x PNP
	—	—	4x Analog, current (4…20 mA)	4x Analog, voltage (0…10 V)	—
	no	no	no	no	yes
	—	—	—	—	—
	—	—	—	—	350 mA
	PA, Transparent	PA, Transparent	PA, Transparent	PA, Transparent	PA 6.6, UL94V-0
	50 x 30.8 x 115 mm	50 x 30.8 x 115 mm	50 x 30.8 x 115 mm	50 x 30.8 x 115 mm	48.6 x 33.6 x 84 mm
	-5...55 °C	-5...55 °C	-5...55 °C	-5...55 °C	-5...50 °C
	IP67 when threaded in	IP67 when threaded in	IP67 when threaded in	IP67 when threaded in	IP20
	COM2 (38.4 kBaud)	COM2 (38.4 kBaud)	COM2 (38.4 kBaud)	COM2 (38.4 kBaud)	COM2 (38.4 kBaud)
	3.0 ms	3.0 ms	30 ms	30 ms	3.0 ms
	2 bytes	1 bytes	10 bytes	10 bytes	1 bytes
	—	—	—	—	1 bytes
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	BNI004K BNI IOL-309-000-K024	BNI007R BNI IOL-310-000-K025-001	BNI004L BNI IOL-310-000-K025	
Interface	IO-Link 1.0	IO-Link 1.0	IO-Link 1.0	
Operating voltage Ub	18...30.2 VDC	18...30.2 VDC	18...30.2 VDC	
Connection (COM 1)	Screw/plug-in terminals	Pluggable without terminals	Screw/plug-in terminals	
Connection (supply voltage IN)	Screw/plug-in terminals	Pluggable without terminals	Screw/plug-in terminals	
Connection slots	Screw/plug-in terminals	Pluggable without terminals	Screw/plug-in terminals	
Digital inputs	8x PNP, Type2	16x PNP, Type 2	16x PNP, Type 2	
Digital outputs	8x PNP	16x PNP	16x PNP	
Analog inputs	—	—	—	
Configurable inputs/outputs	yes	yes	yes	
Additional function	—	—	—	
Output current max.	350 mA	350 mA	350 mA	
Housing material	PA 6.6, UL94V-0	PA 6.6, UL94V-0	PA 6.6, UL94V-0	
Dimension	48.6 x 42.6 x 84 mm	79 x 33.6 x 84 mm	79 x 42.6 x 84 mm	
Ambient temperature	-5...50 °C	-5...50 °C	-5...50 °C	
Protection degree	IP20	IP20	IP20	
Transfer rate	COM2 (38.4 kBaud)	COM2 (38.4 kBaud)	COM2 (38.4 kBaud)	
Process data cycle min.	3.0 ms	12.0 ms	12.0 ms	
Process data in	1 bytes	2 bytes	2 bytes	
Process data out	1 bytes	2 bytes	2 bytes	
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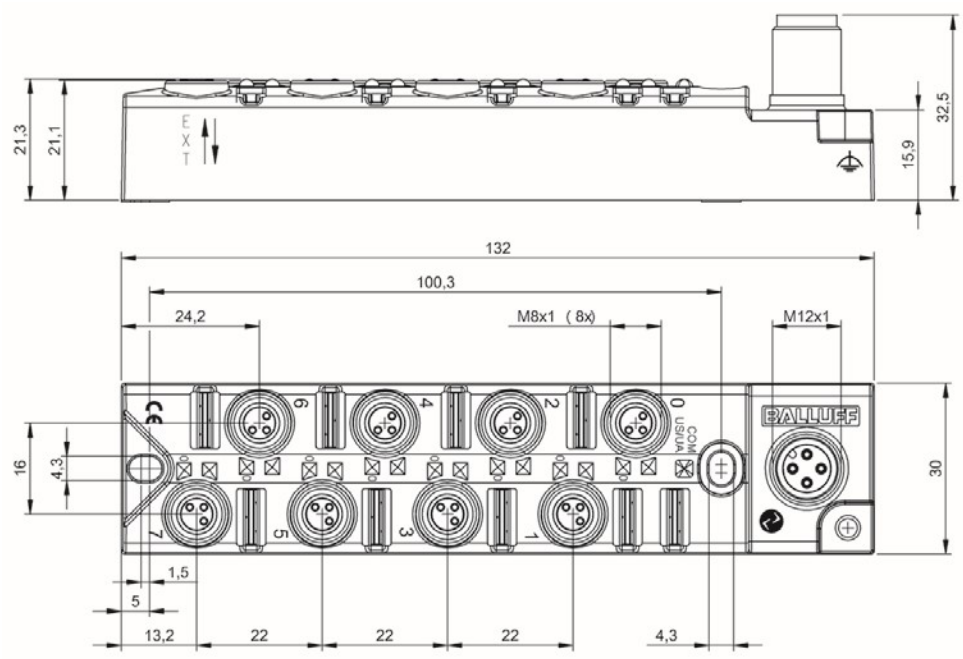

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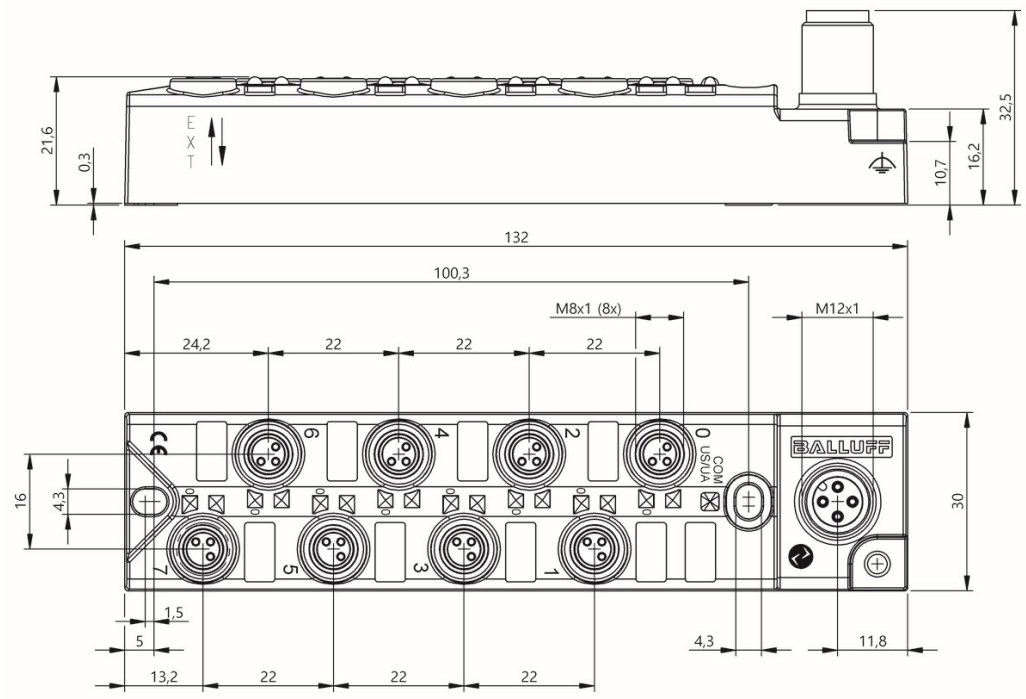

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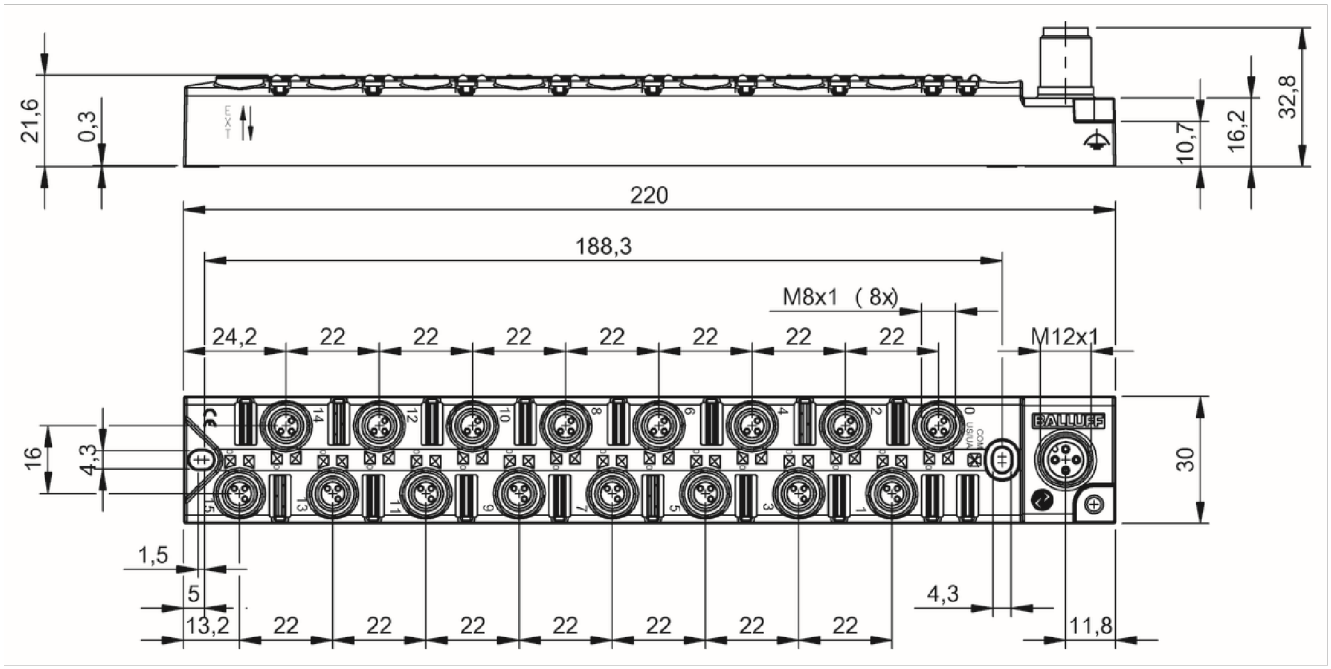

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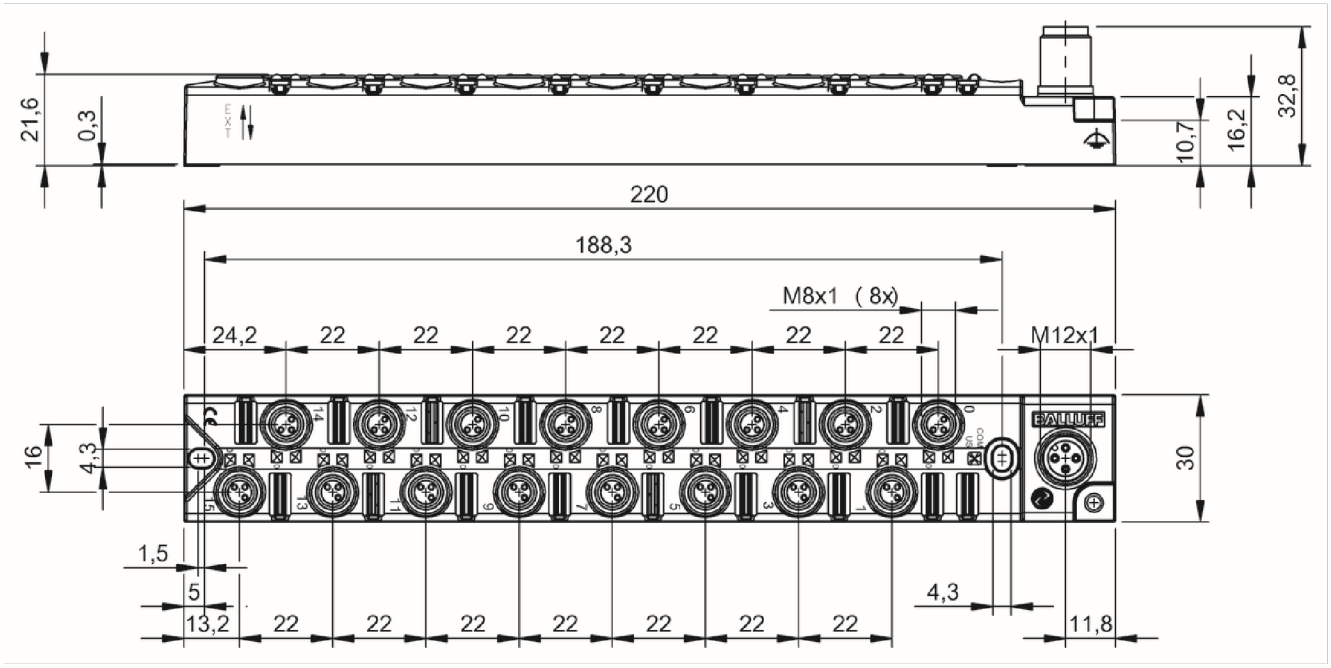

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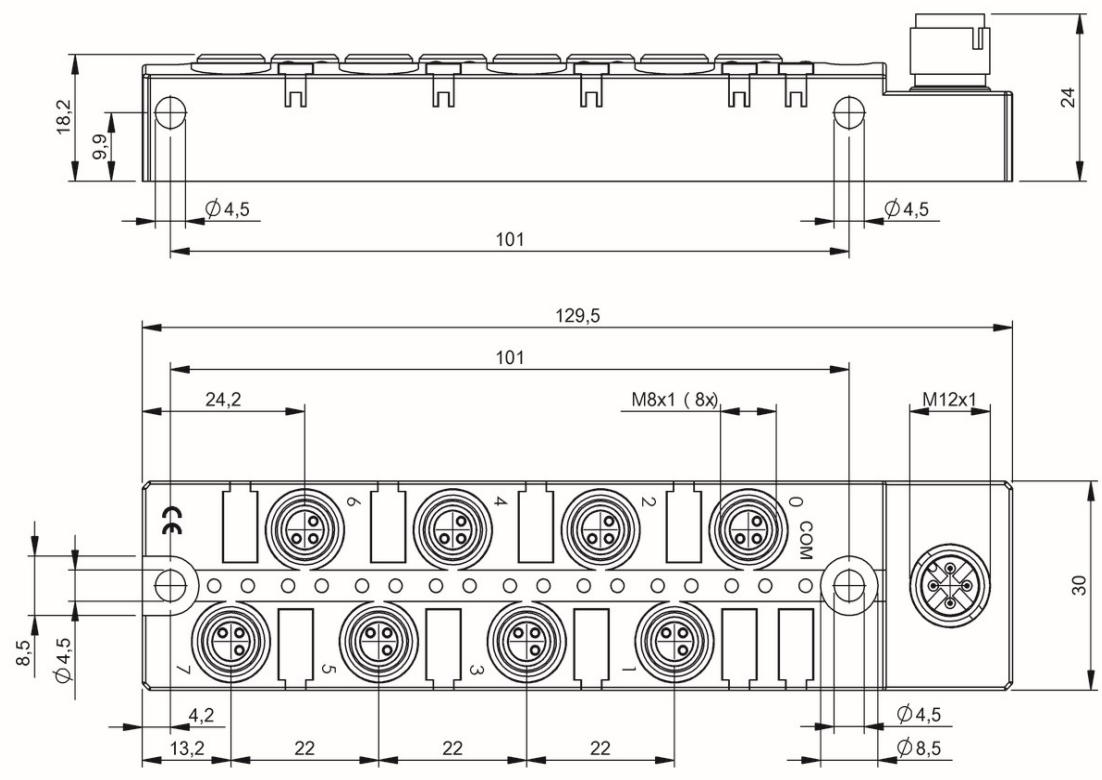
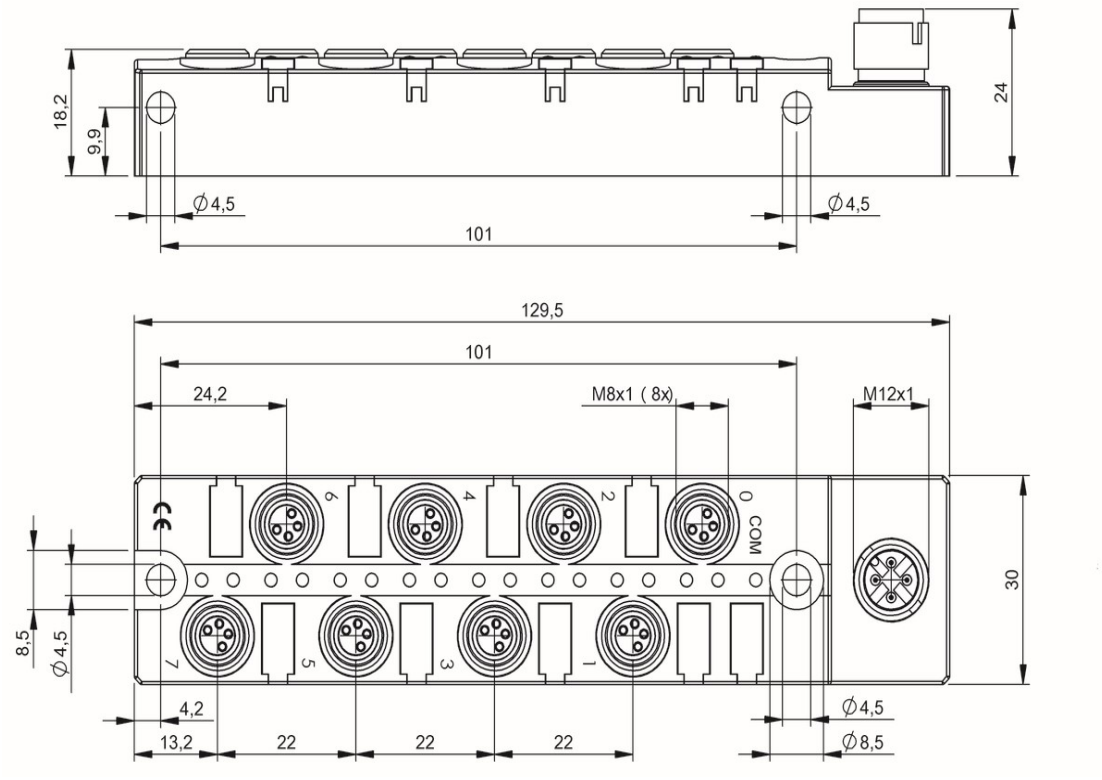


BNI000R, BNI001Y



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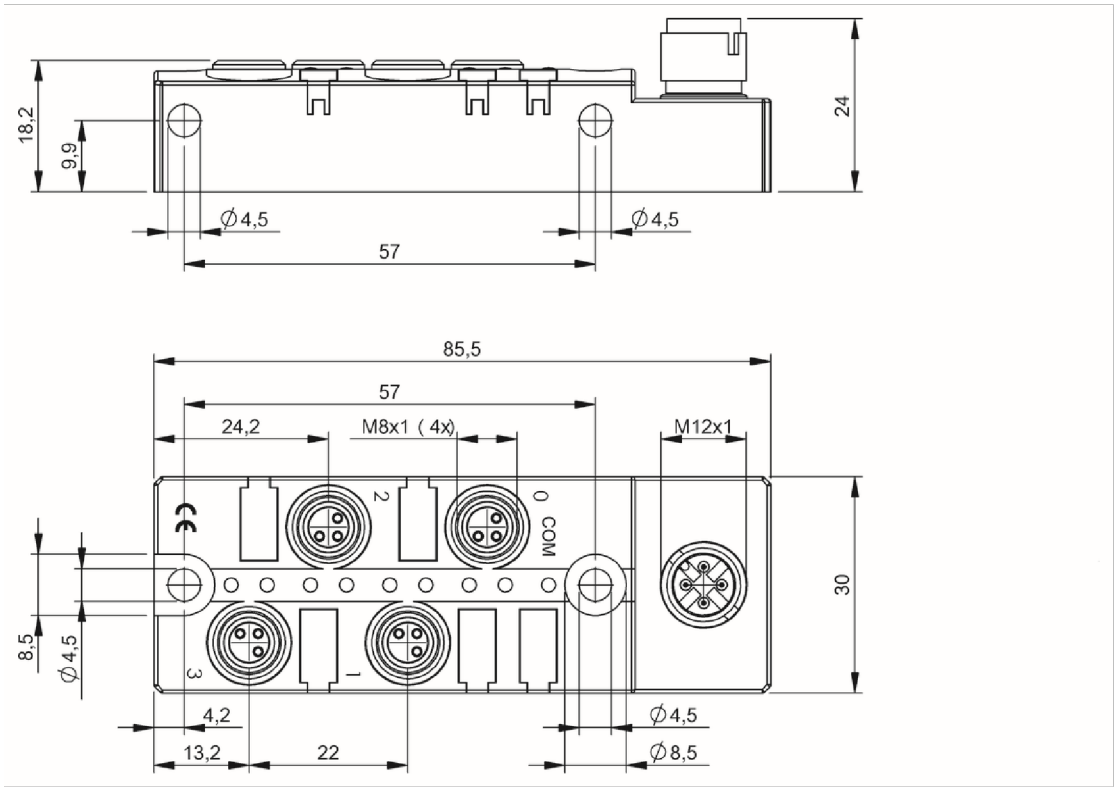
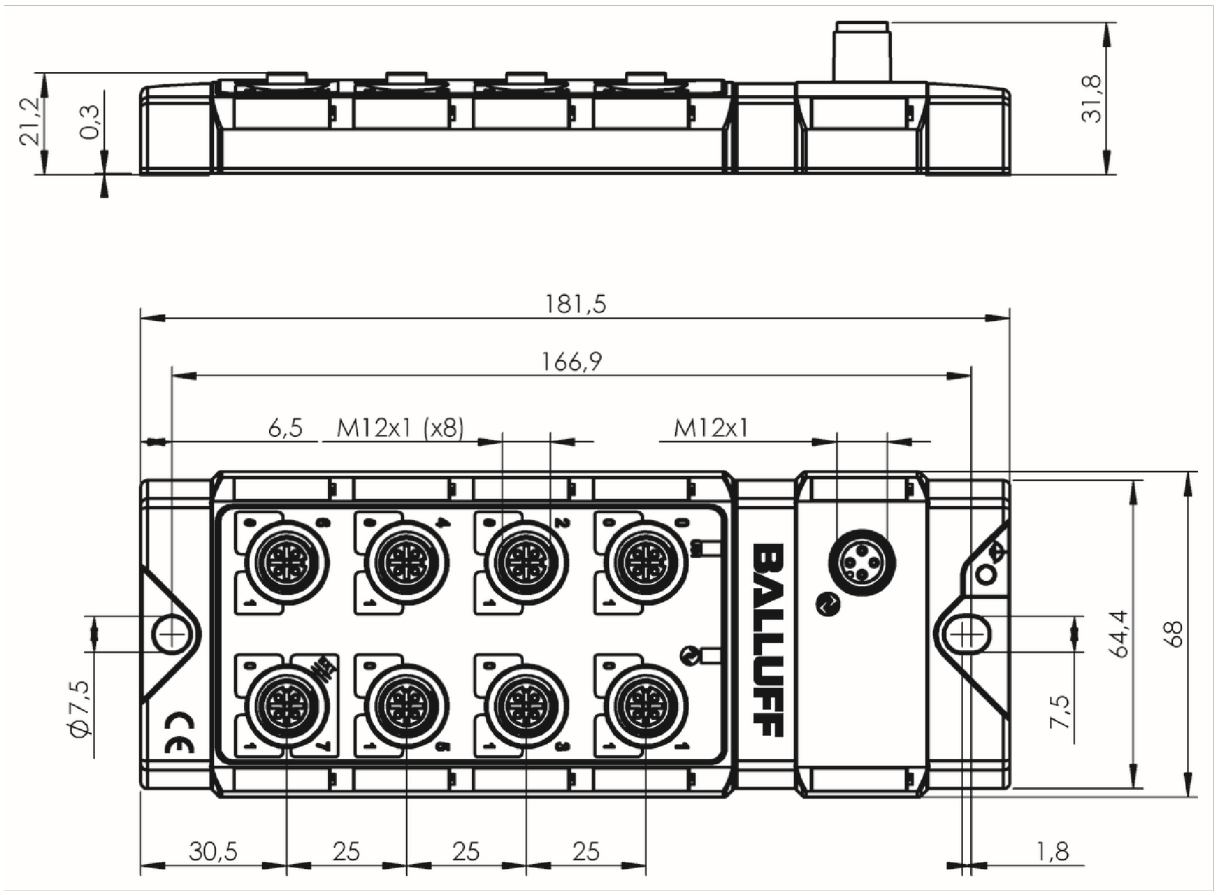


BNI000P, BNI001W



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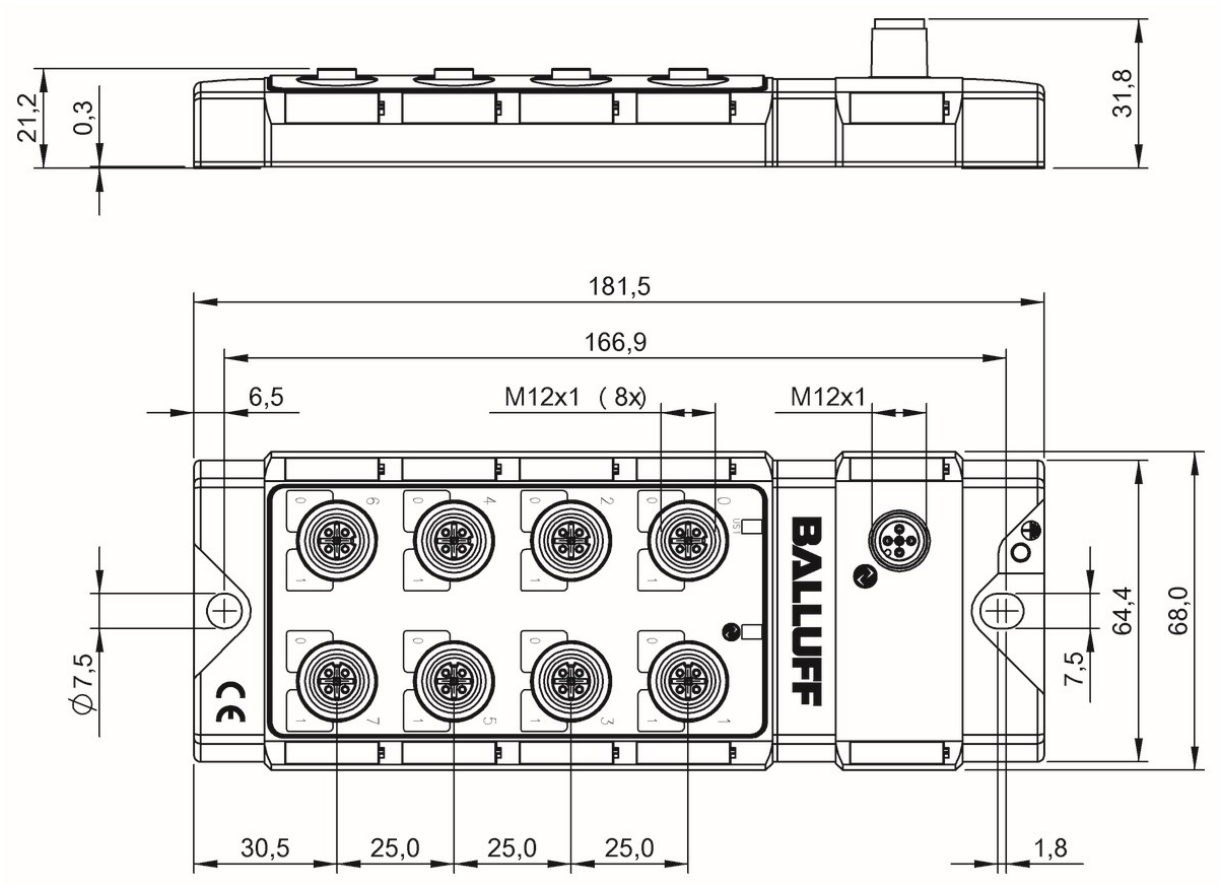
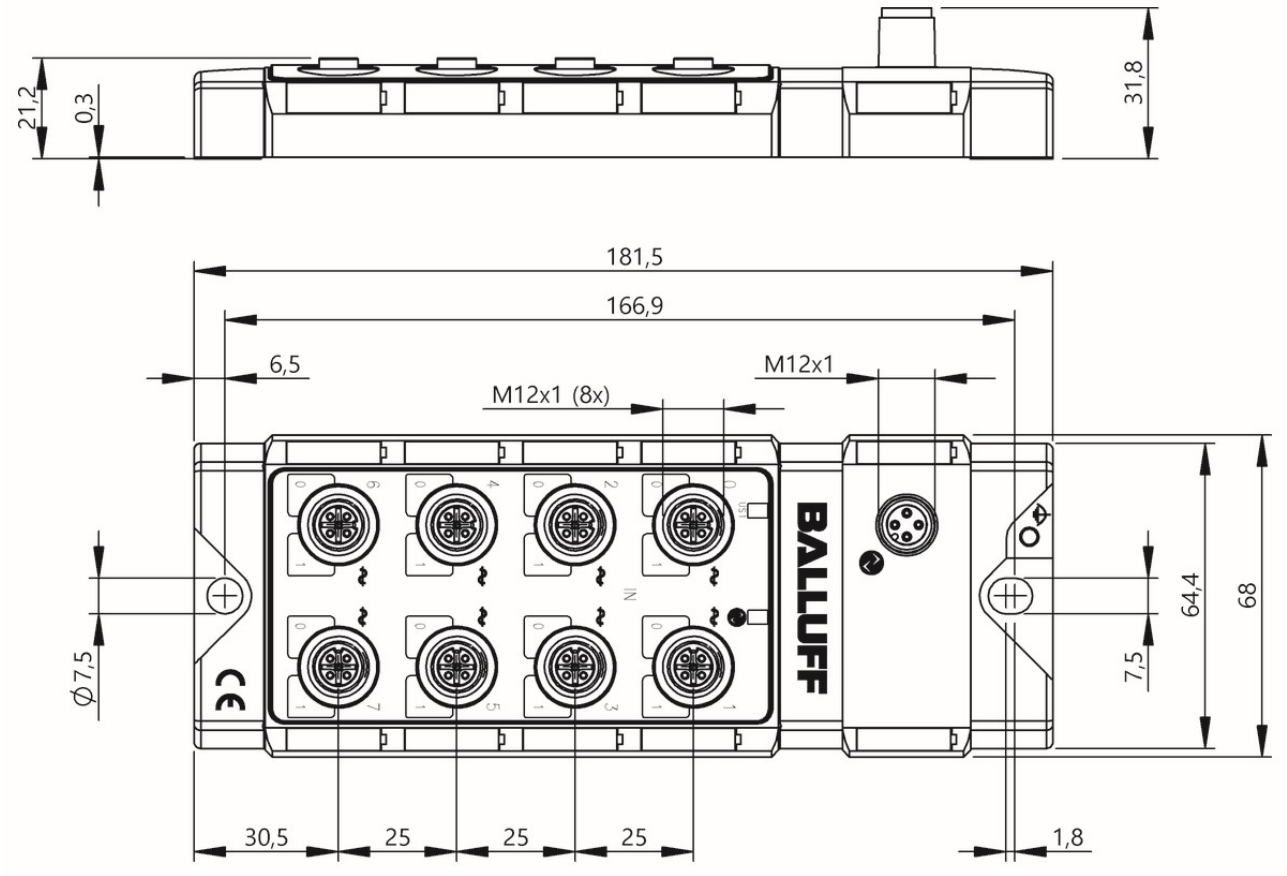


BNI0063, BNI0062, BNI0061



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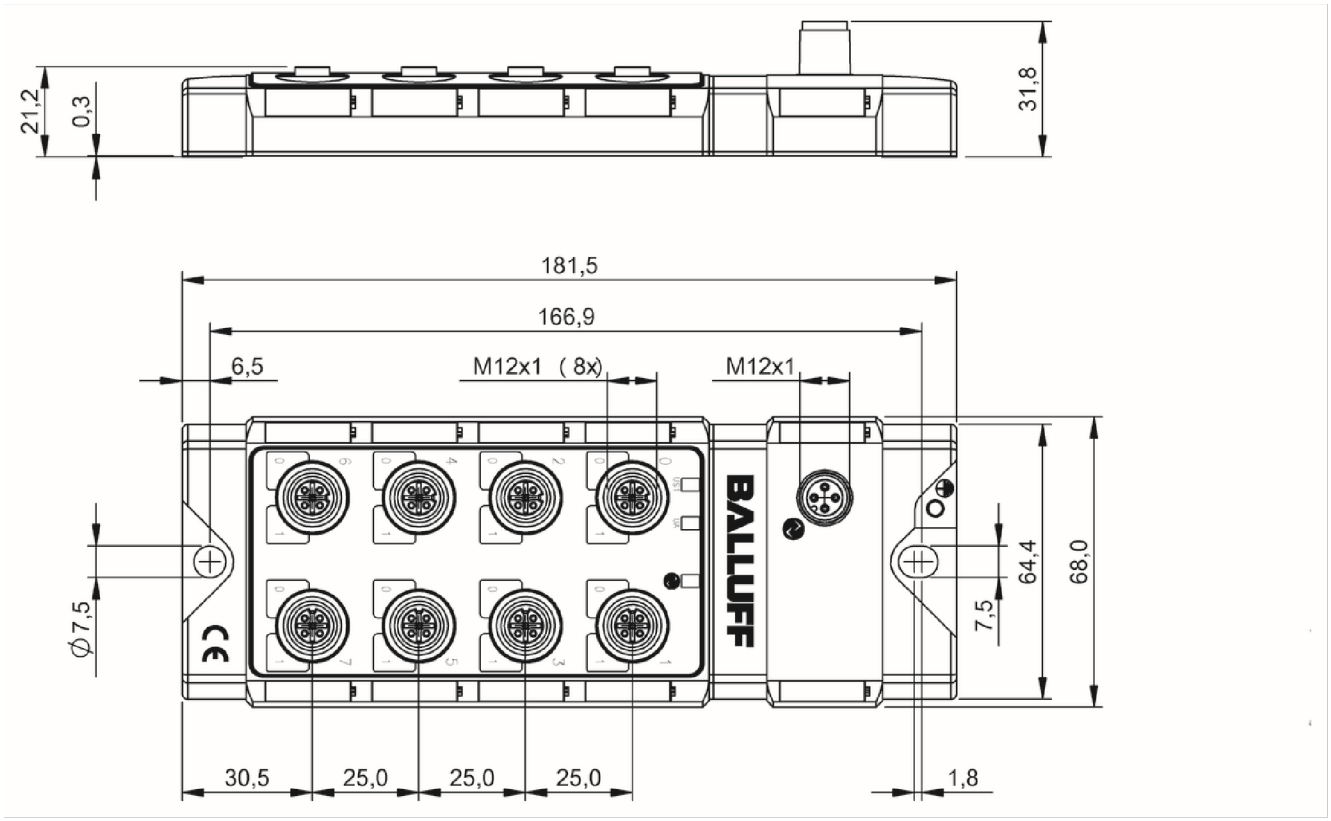

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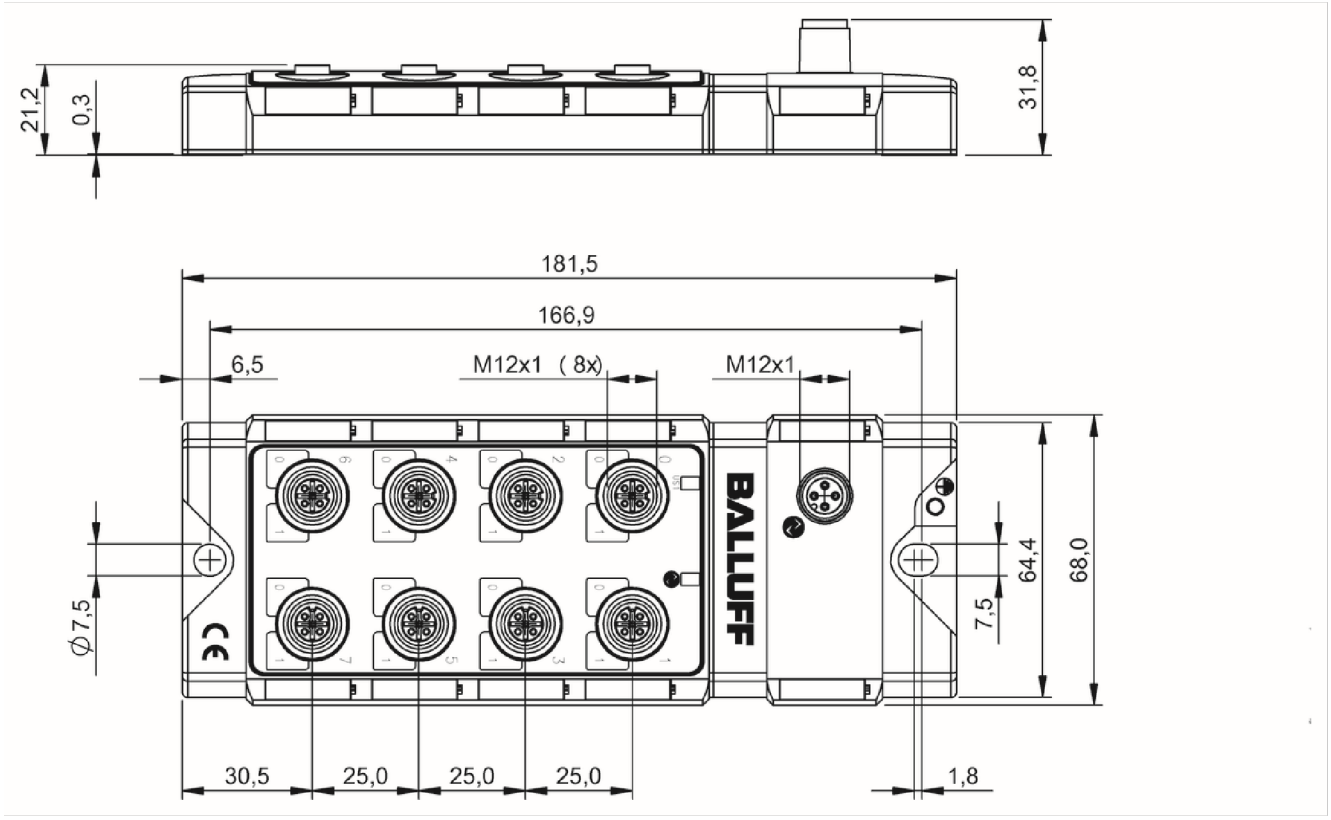

BNI0032, BNI003T, BNI005P

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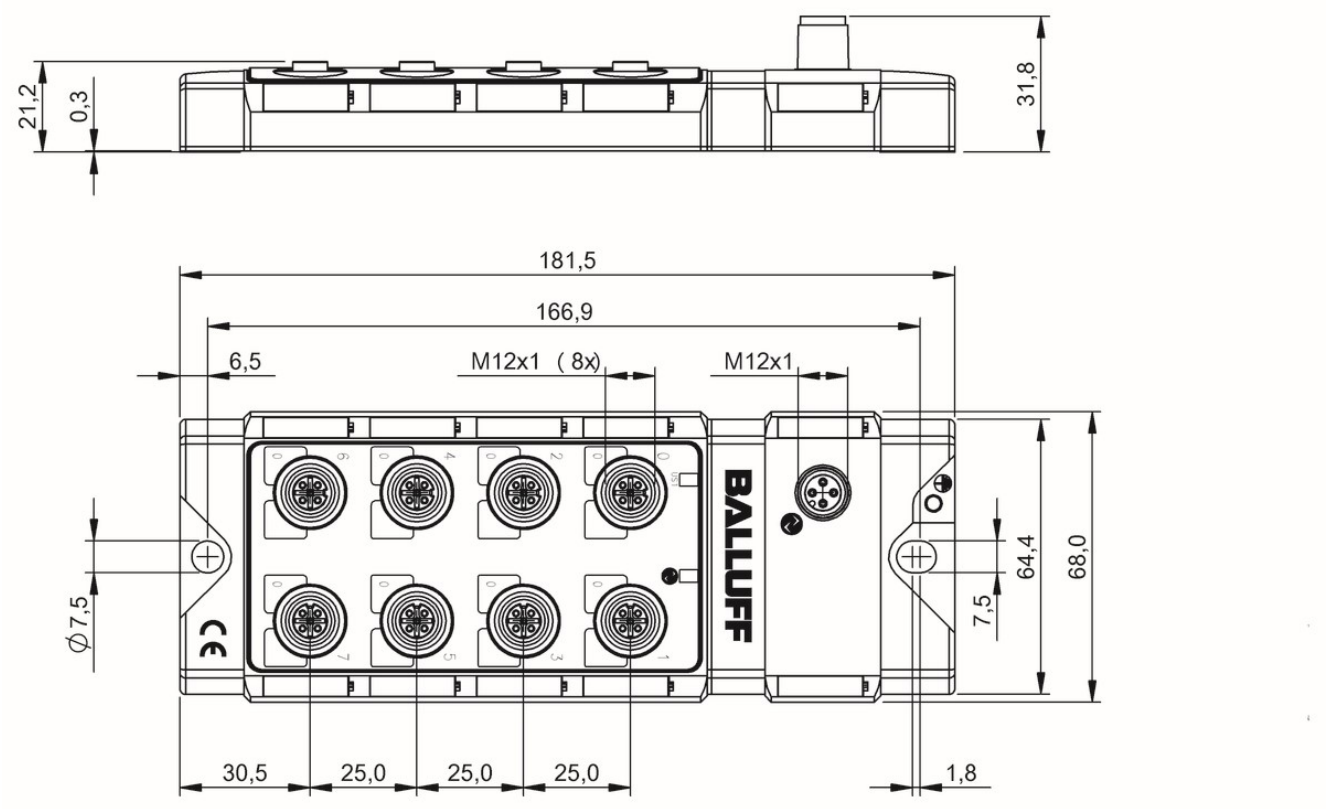

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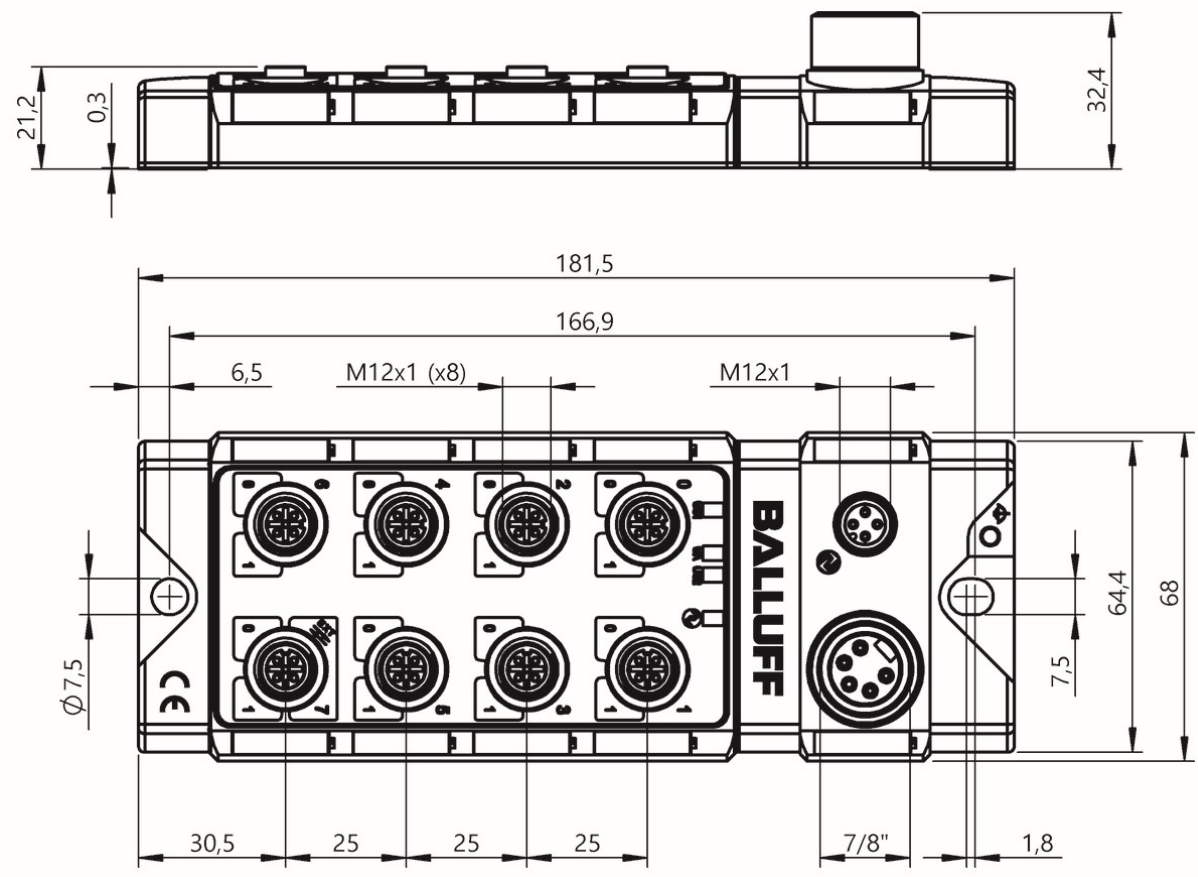

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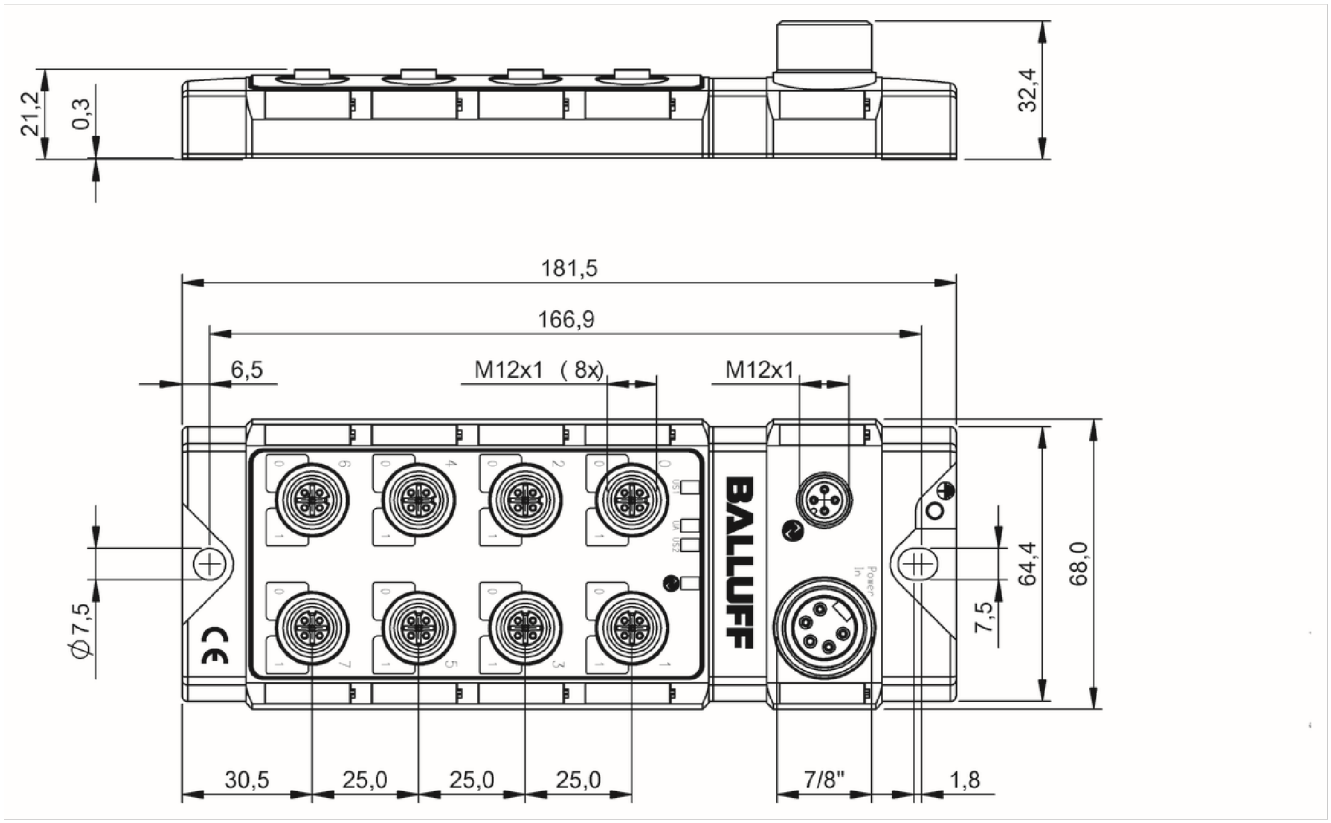

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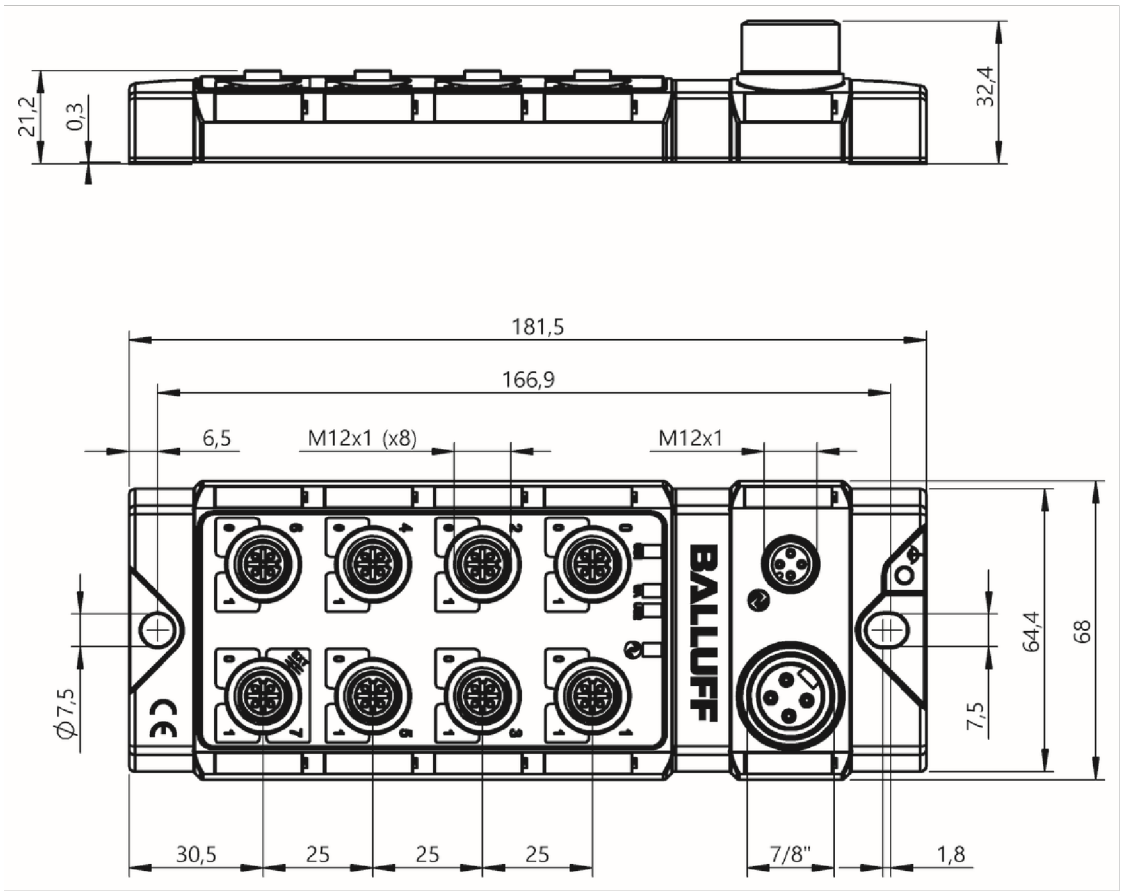

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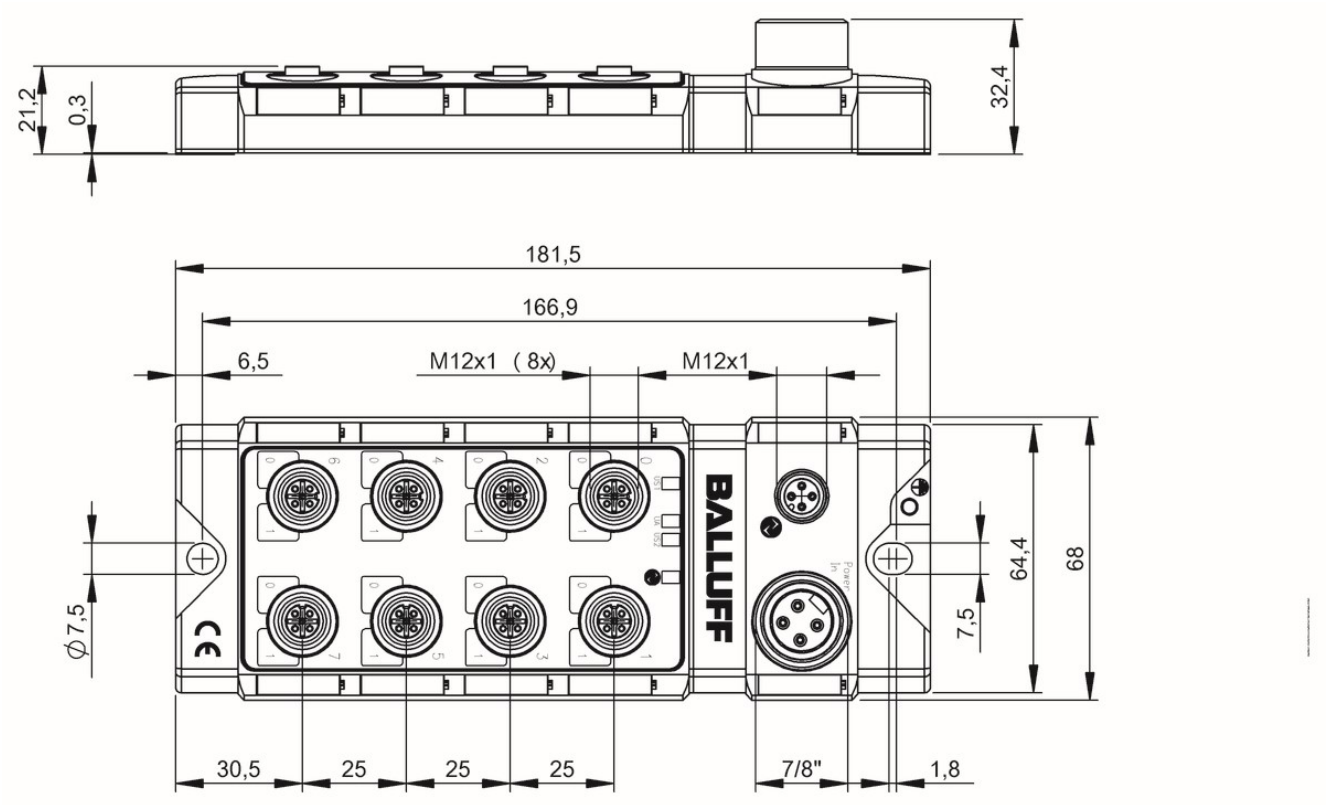

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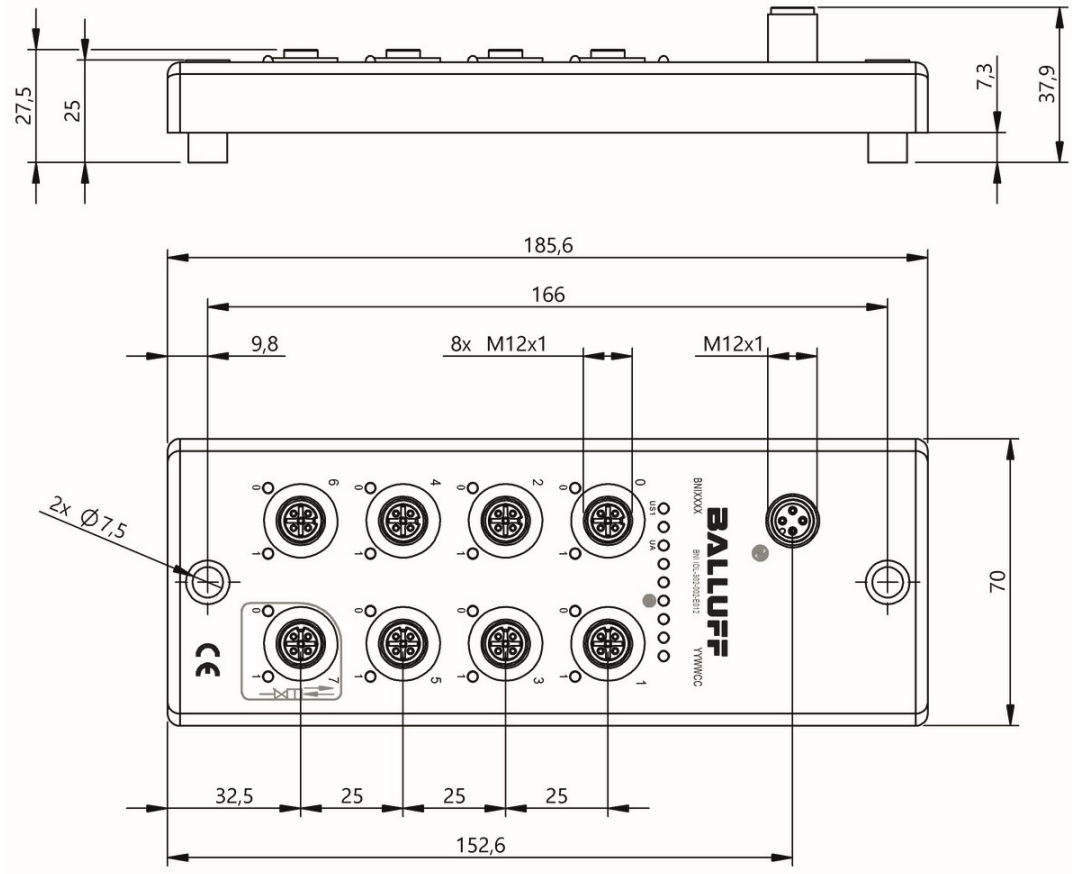

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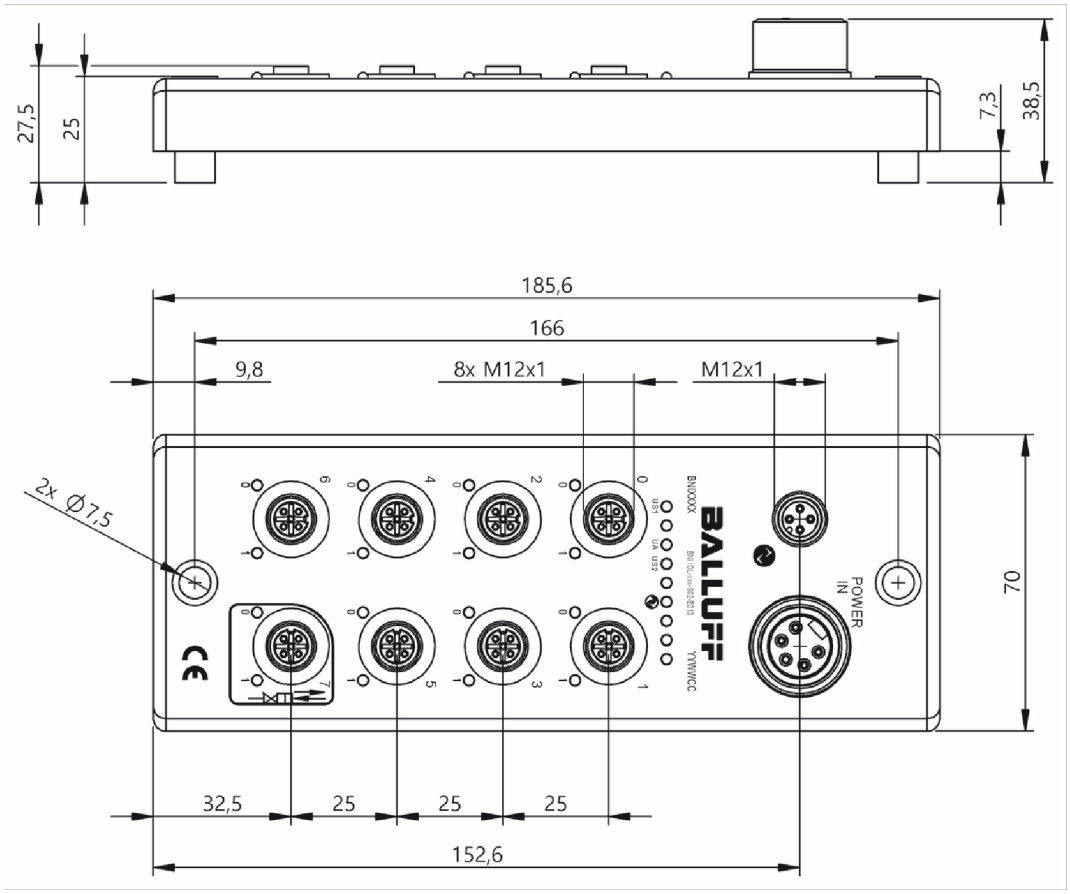

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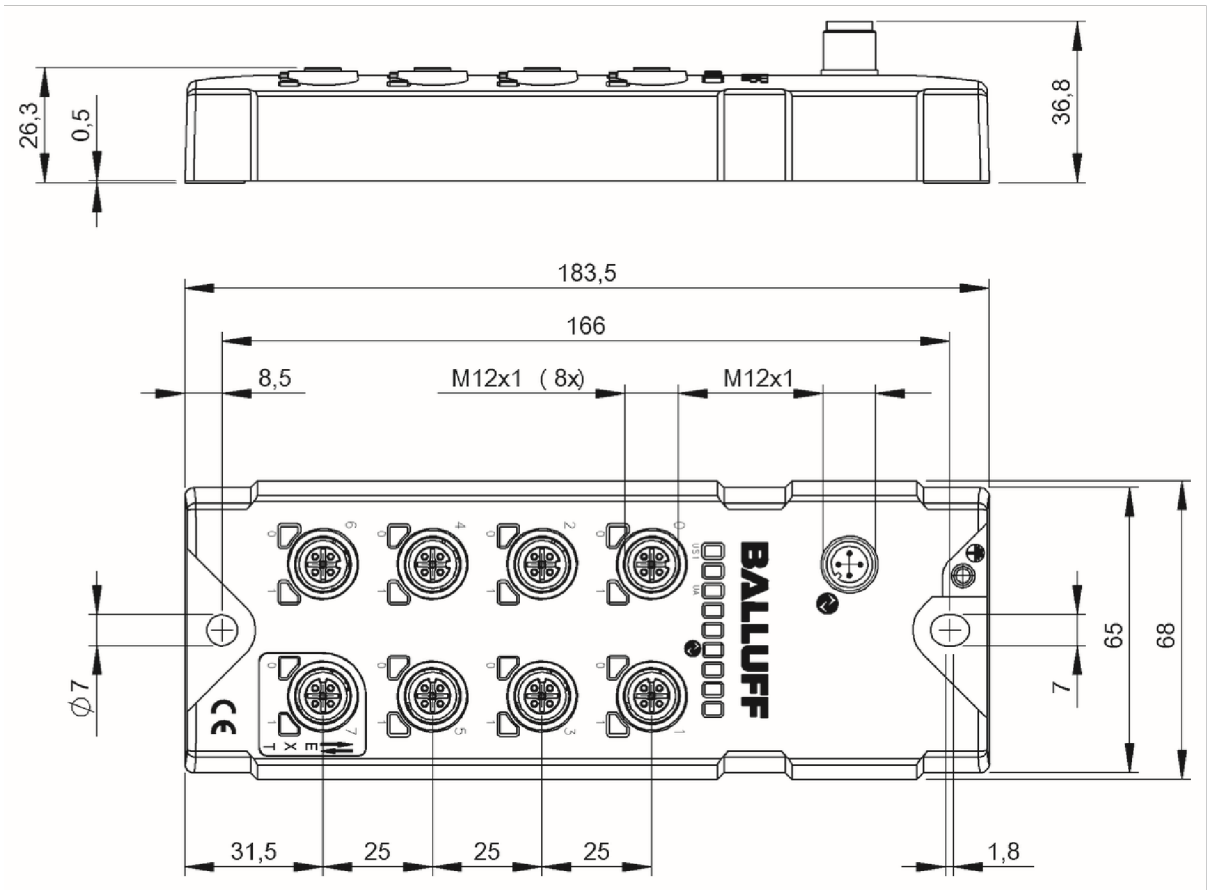

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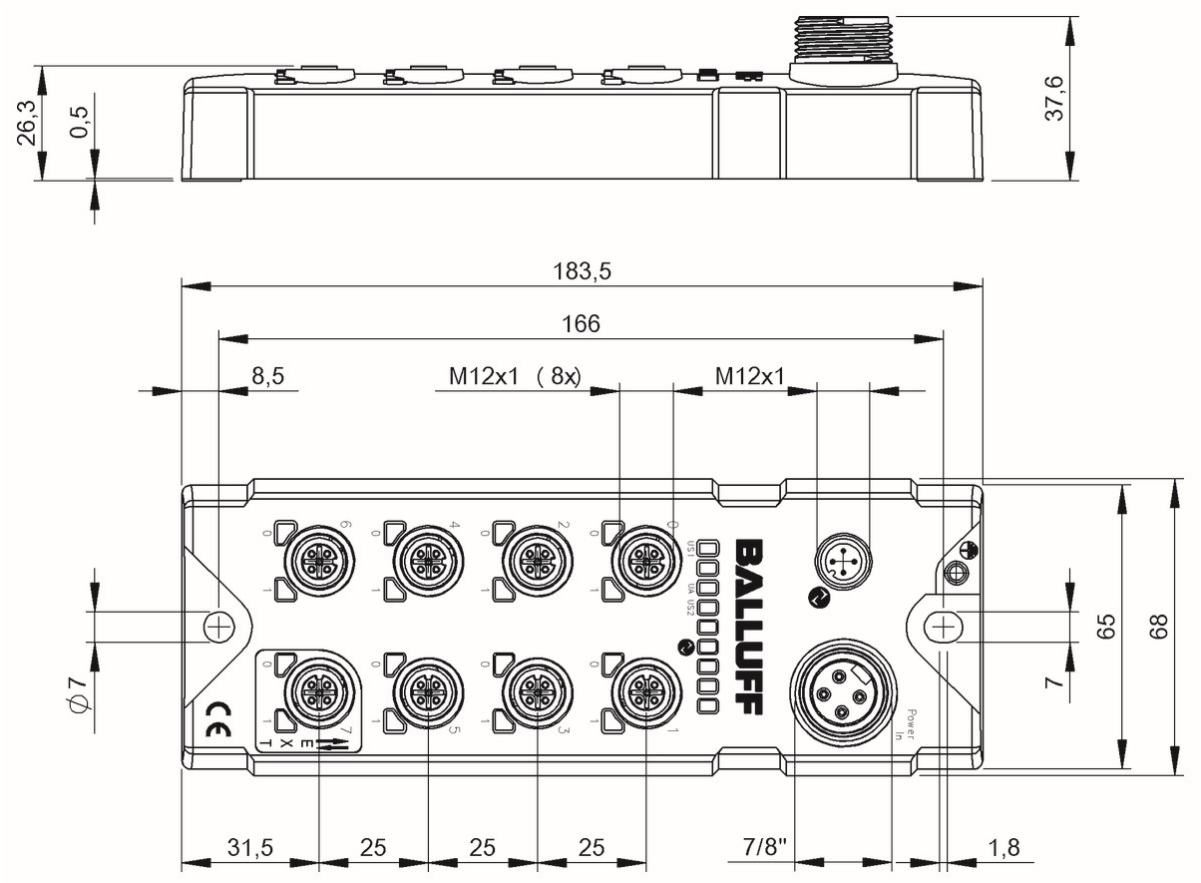

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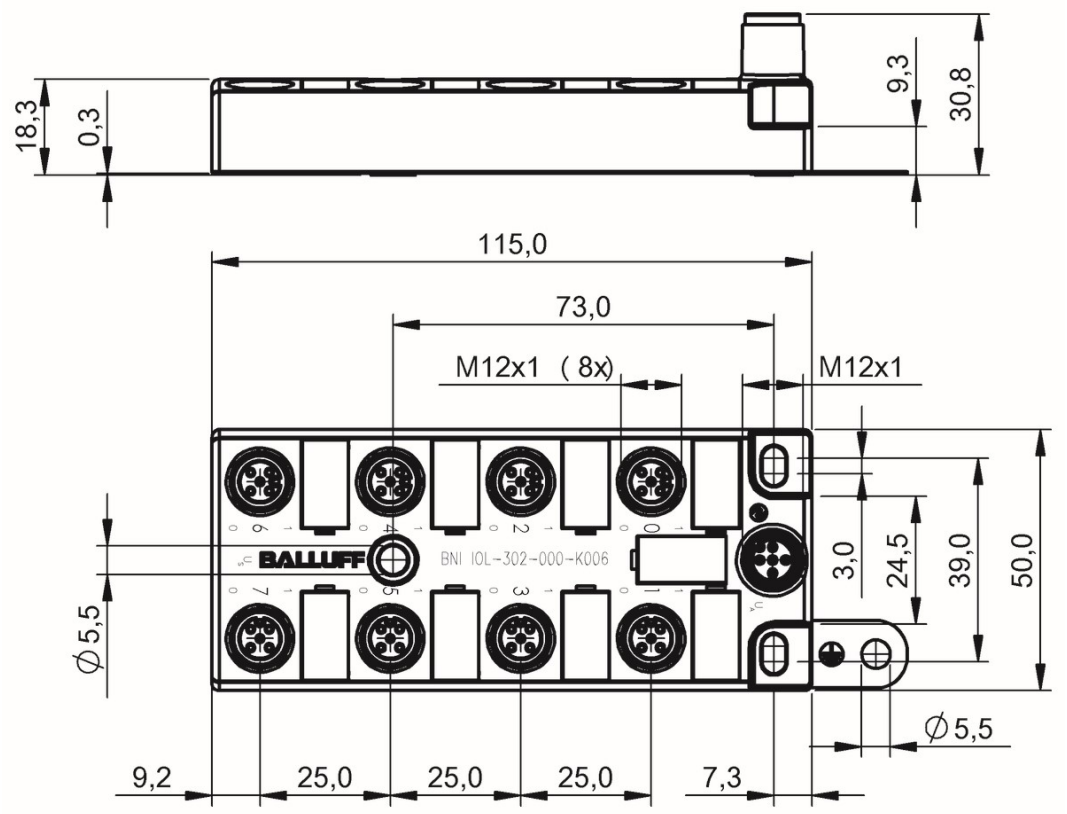

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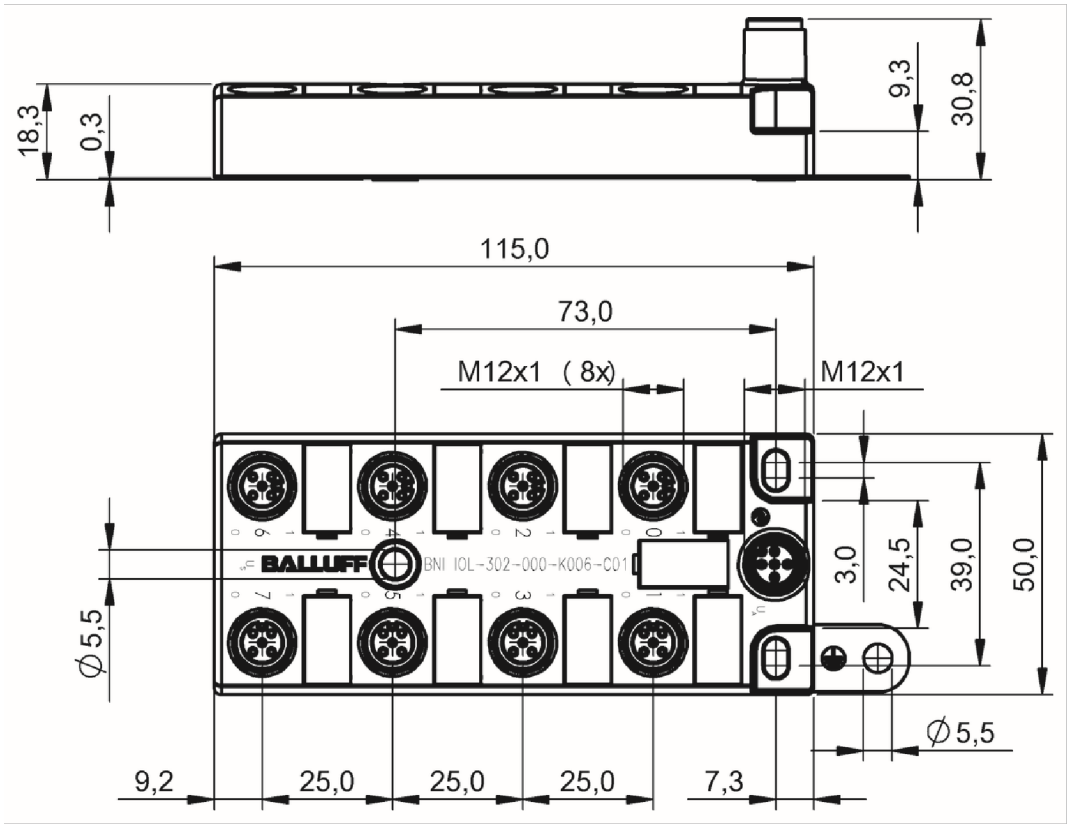

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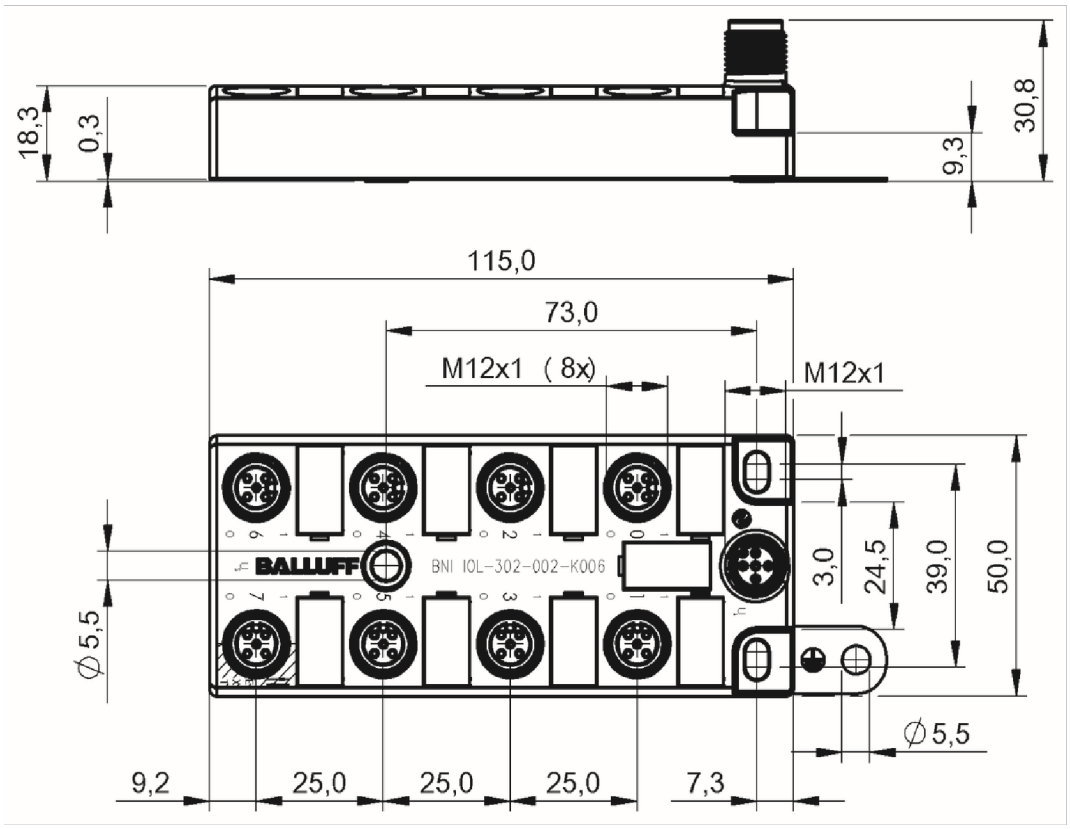

BNI007Z

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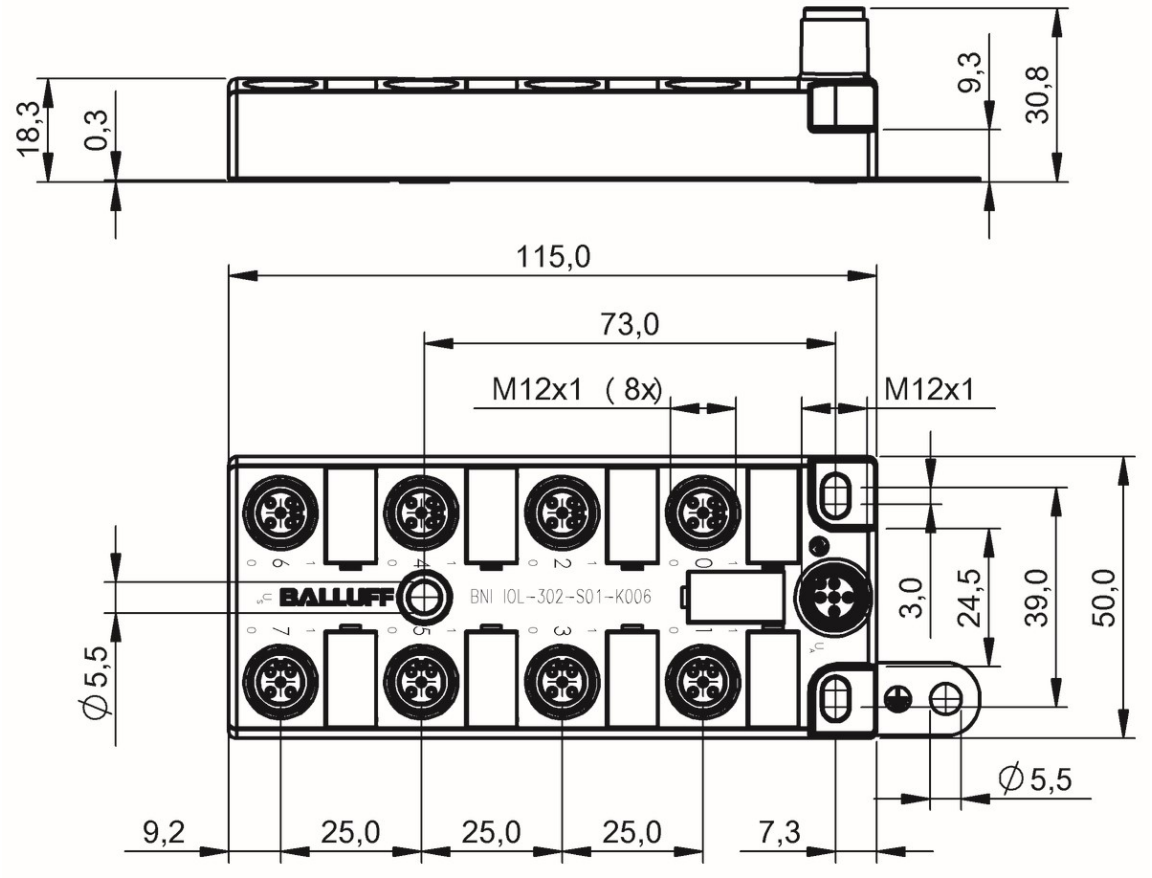

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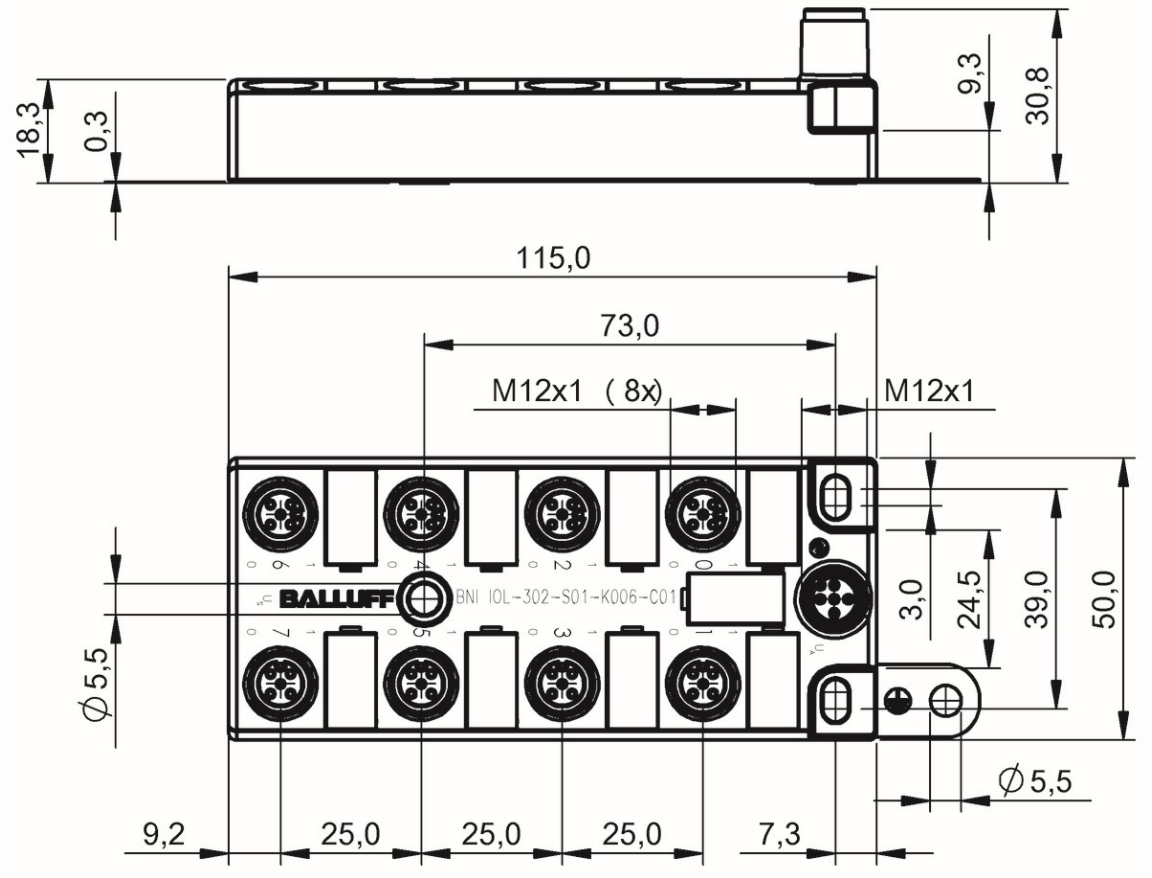

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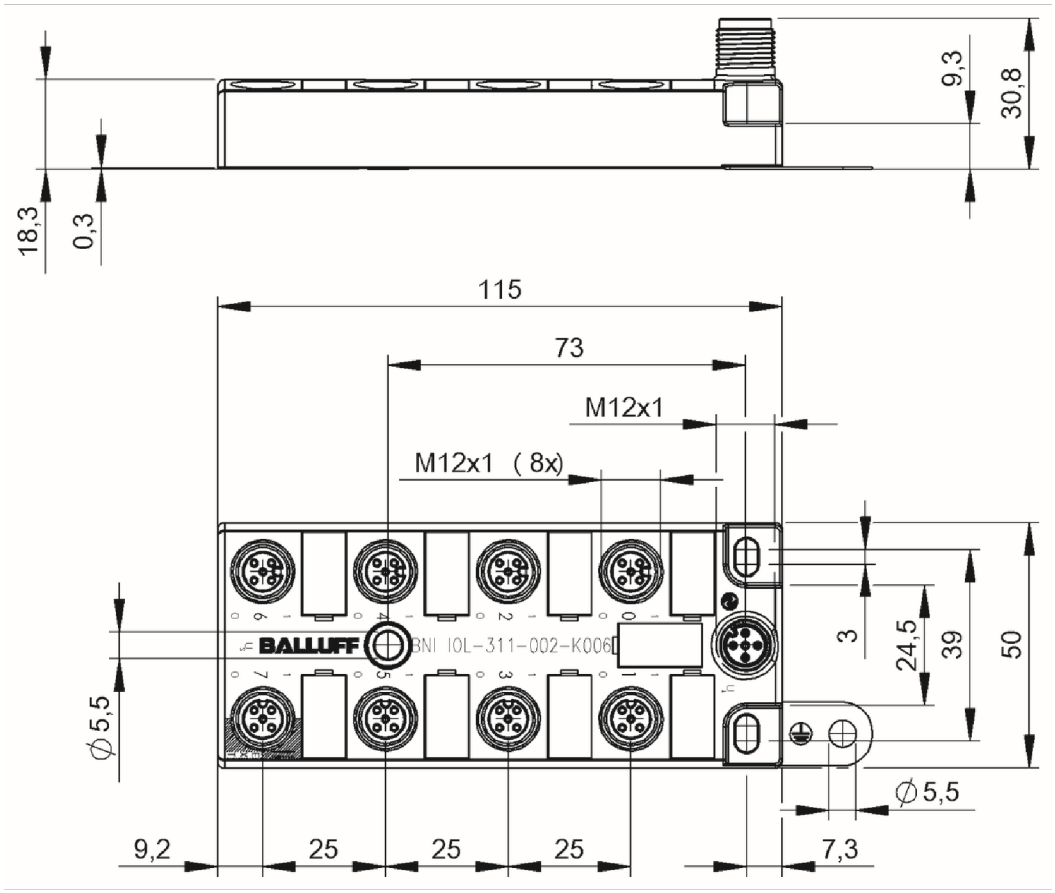

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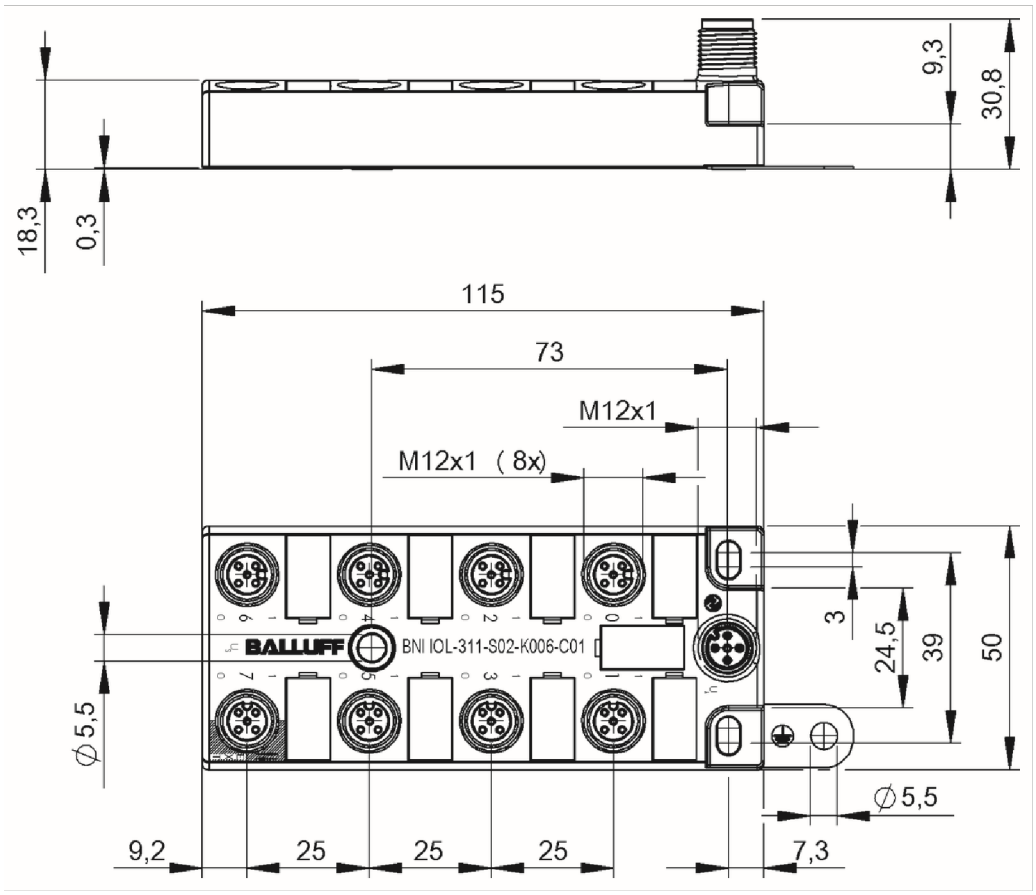
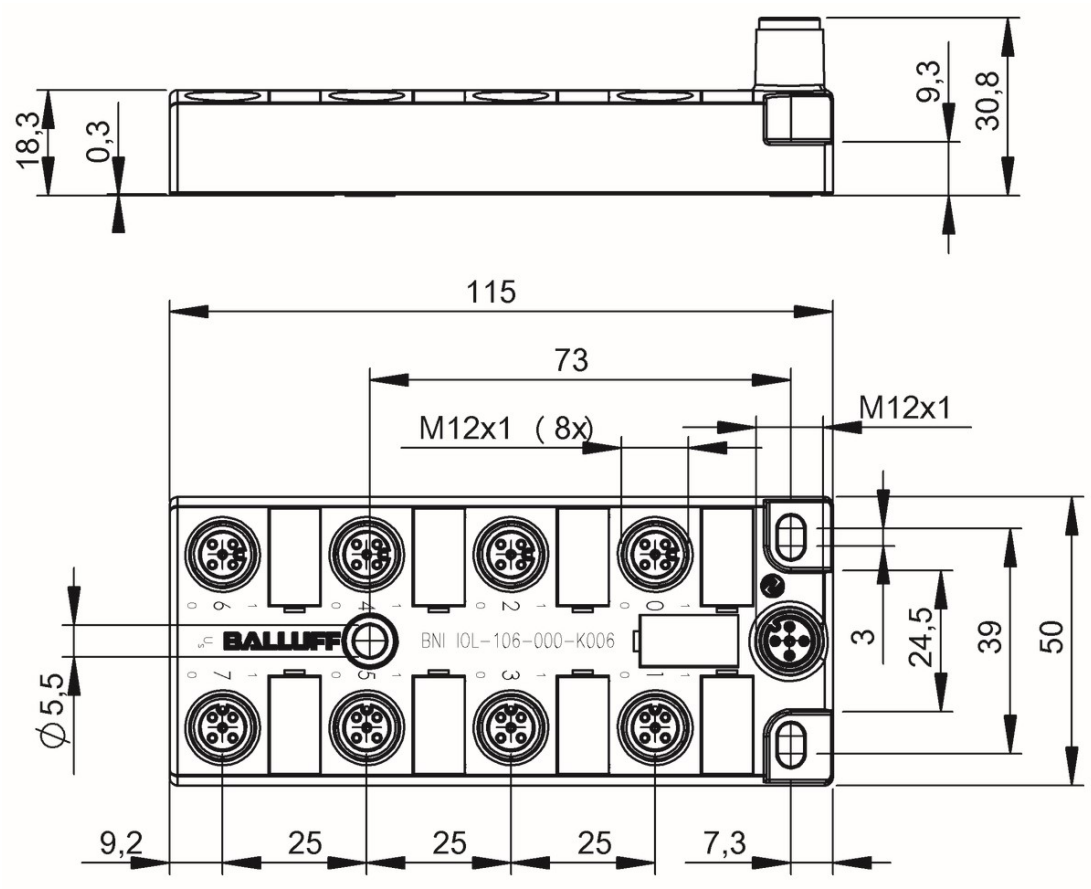


BNI00AW

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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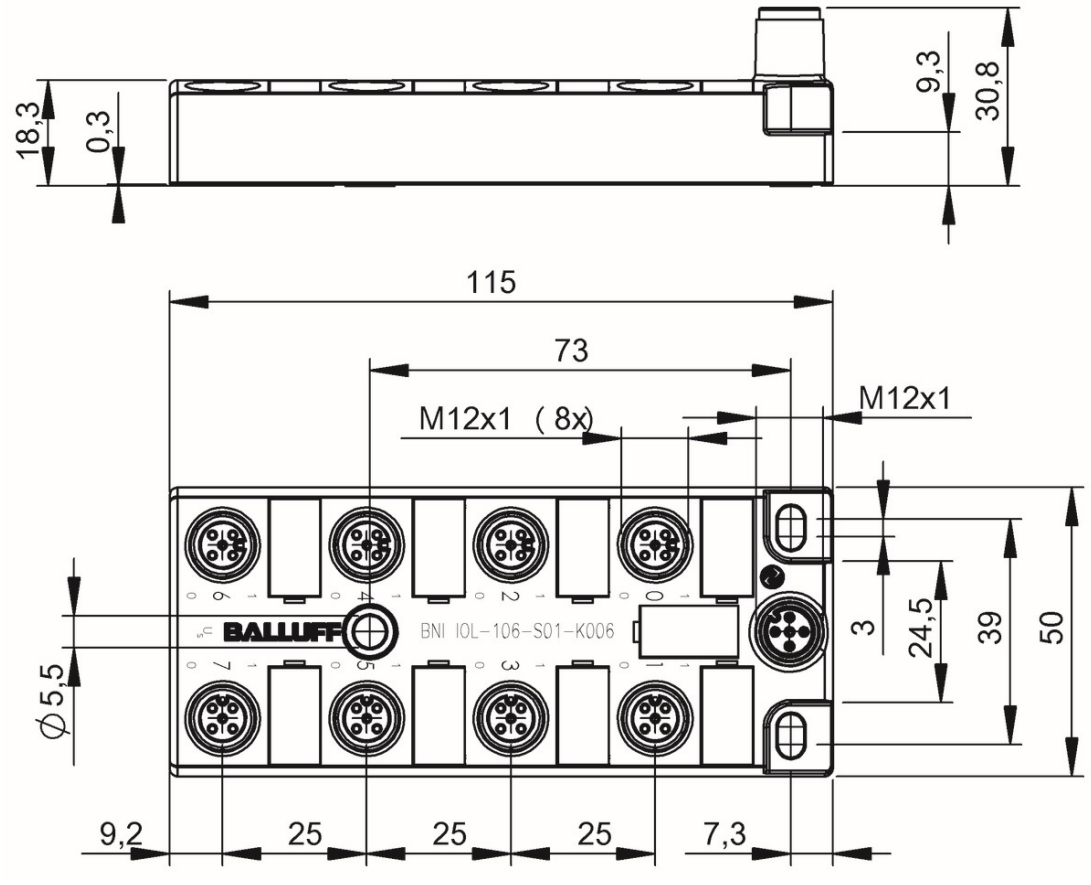

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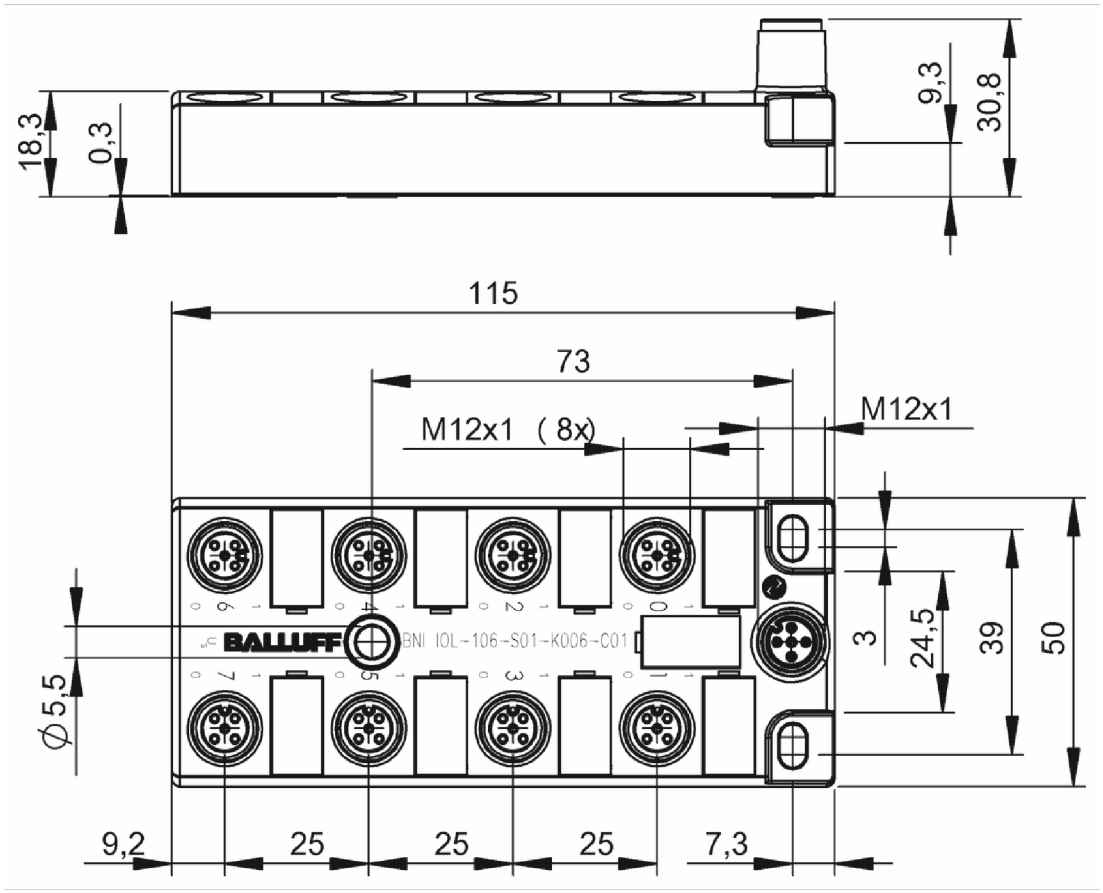

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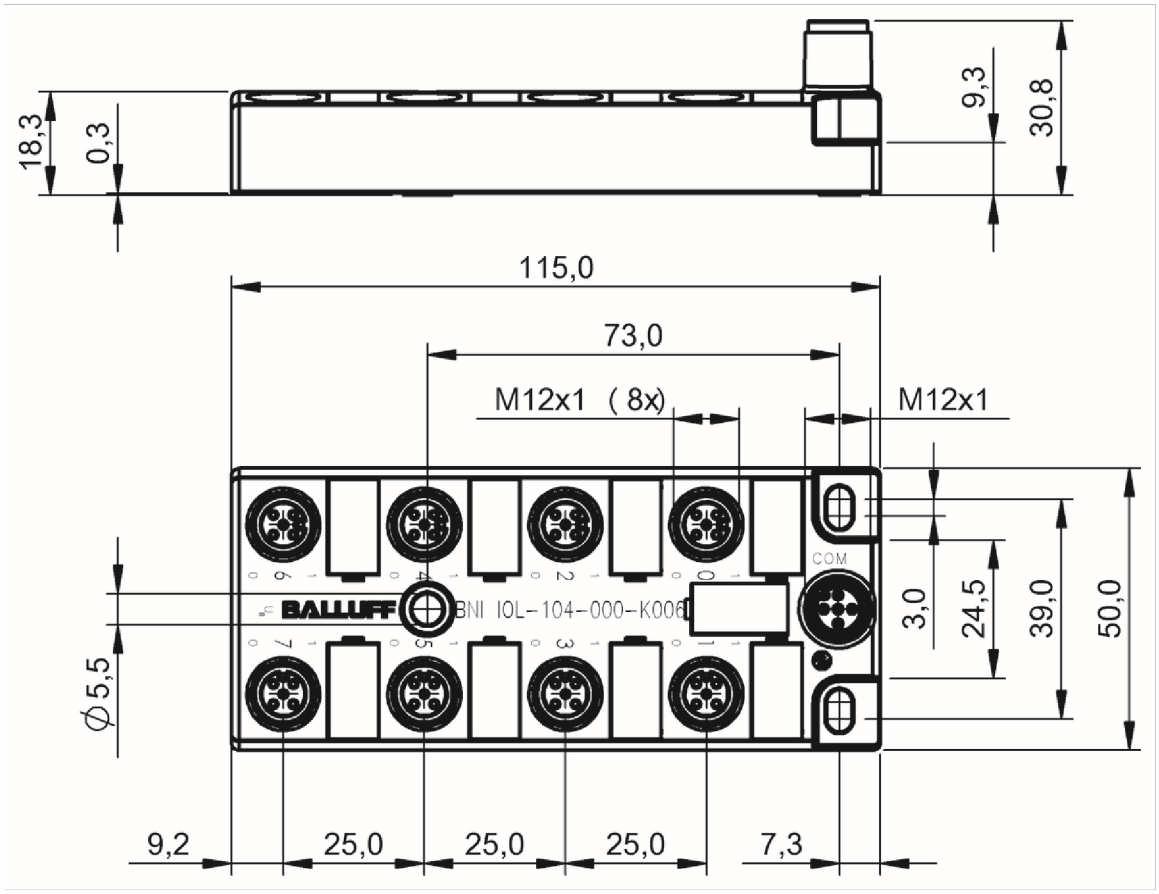

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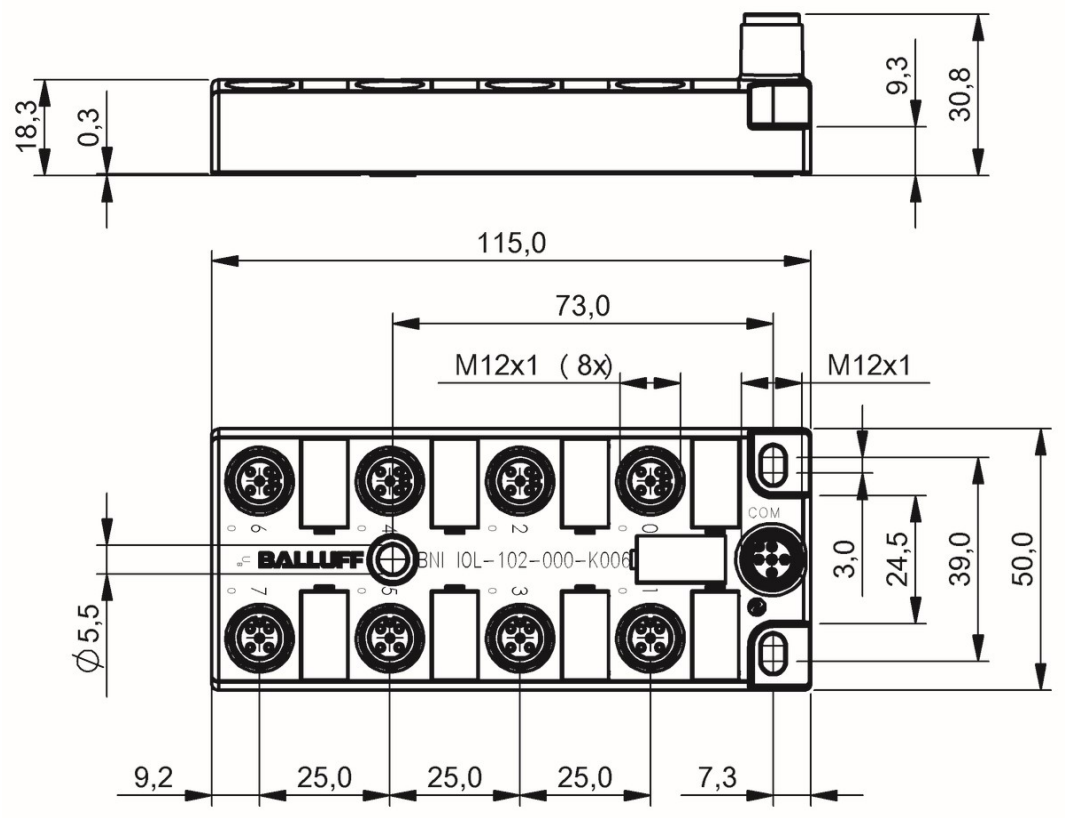

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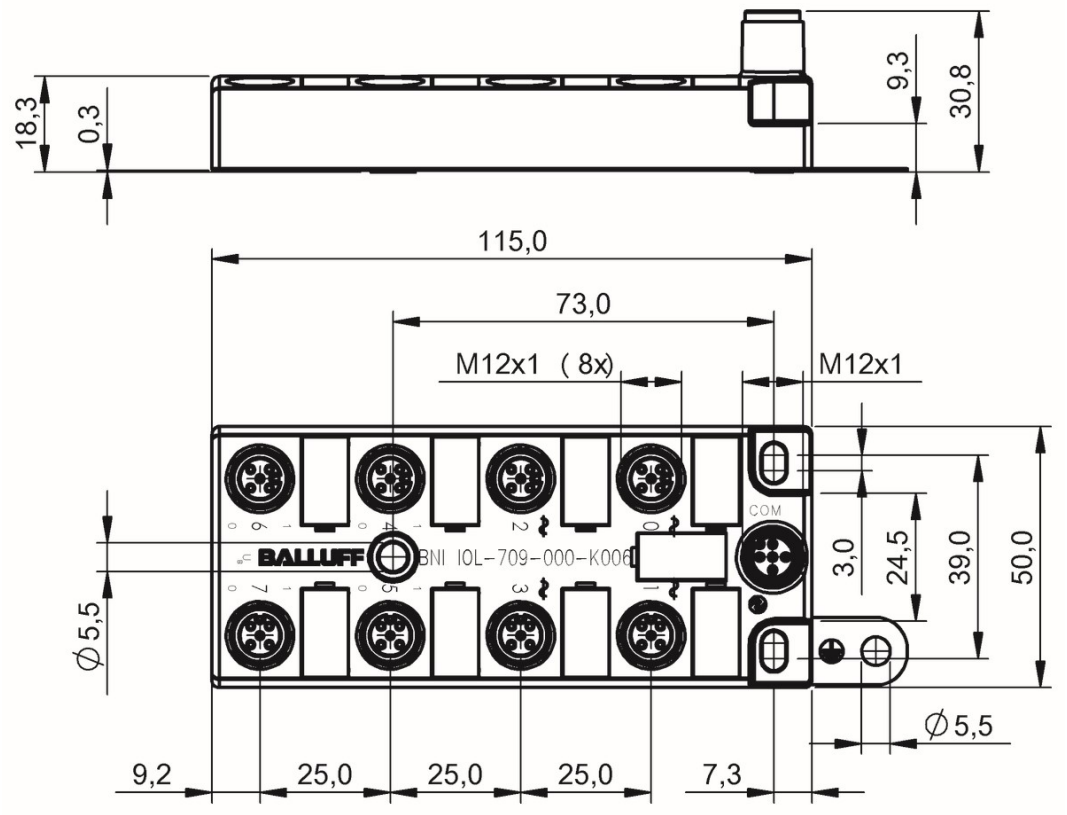

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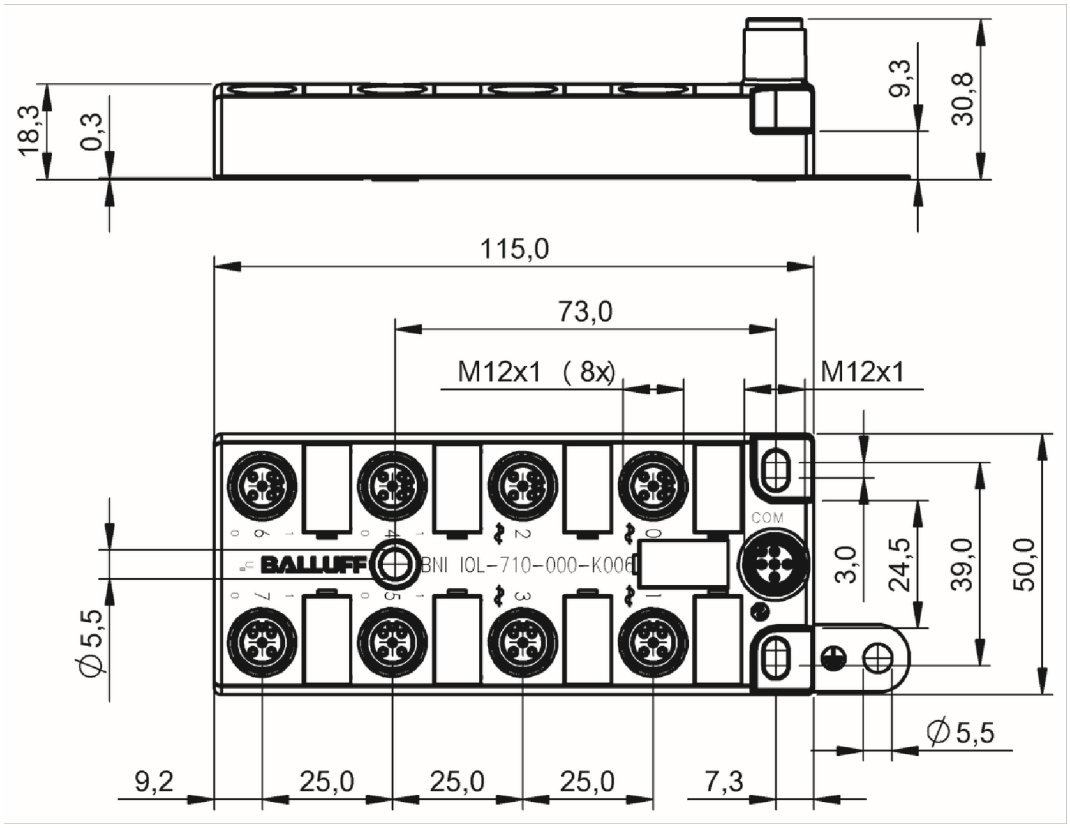

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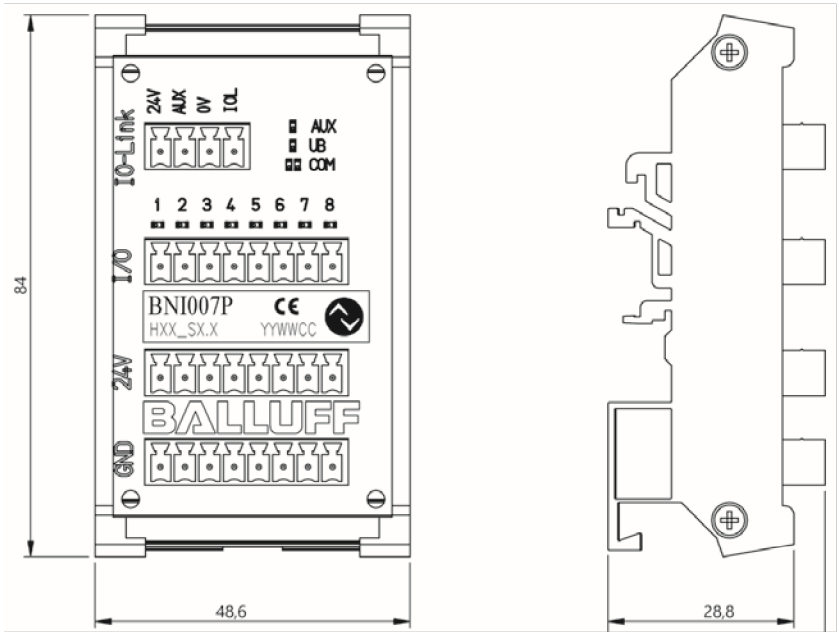

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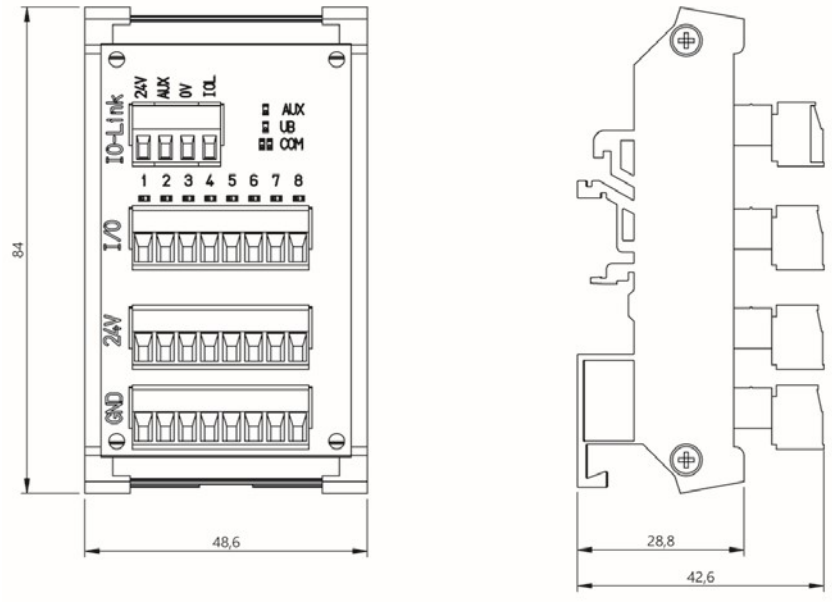

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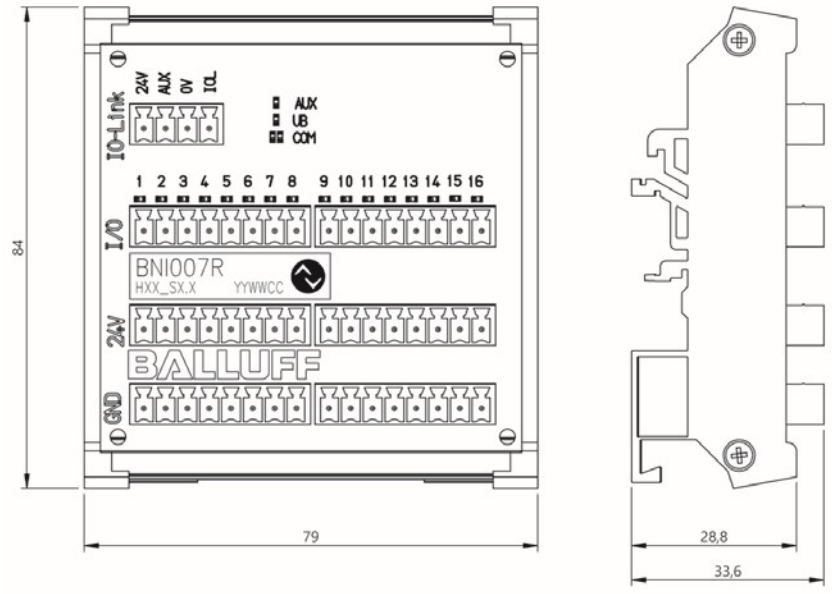
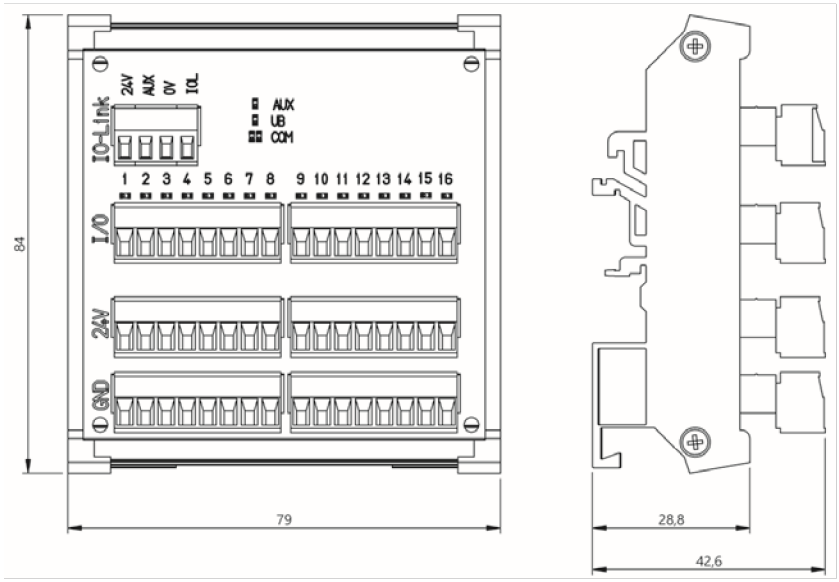


BNI007R


24V
AUX
0V
IOL
IO-Link
AUX
UB
COM
1 2 3 4 5 6 7 8 9 10 11 12 13 14 15 16
I/O
24V
GND
84
79
28,8
42,6

BNI004L

	BNI006J BNI IOL-750-V08-K007	BNI006E BNI IOL-750-V09-K007	
Version	Valve interface	Valve interface	
Application	Festo with D-Sub female, 25-pin, GND in Pin 25, Bosch Rexroth LS04, Bürkert Typ 8640	Festo with D-Sub female, 25-pin, GND in Pin 25, Bosch Rexroth LS04	
Interface	IO-Link 1.1	IO-Link 1.1	
Operating voltage Ub	18...30.2 VDC	18...30.2 VDC	
Connection (COM 1)	M12x1-Male, 5-pole, A-coded	M12x1-Male, 5-pole, A-coded	
Valve terminal connection	D-Sub-Female, 25-pole	D-Sub-Female, 25-pole	
Cable length L	0.6 m	0.6 m	
Outputs, number	24	16	
Output current max. UA, actuator	400 mA	400 mA	
Current sum UA, actuator	1.2 A	1.2 A	
Function	3-pin connection, Actuator supply on Pin 1	3-pin connection, Actuator supply on Pin 1	
Housing material	PA	PA	
Dimension	53 x 61 x 12.5 mm	53 x 61 x 12.5 mm	
Ambient temperature	-5...55 °C	-5...55 °C	
Protection degree	IP40 plugged in	IP40 plugged in	
Transfer rate	COM2 (38.4 kBaud)	COM2 (38.4 kBaud)	
Process data cycle min.	3.5 ms	3.0 ms	
Process data in	—	—	
Process data out	4 bytes	2 bytes	
Productview	Page 198	Page 198	

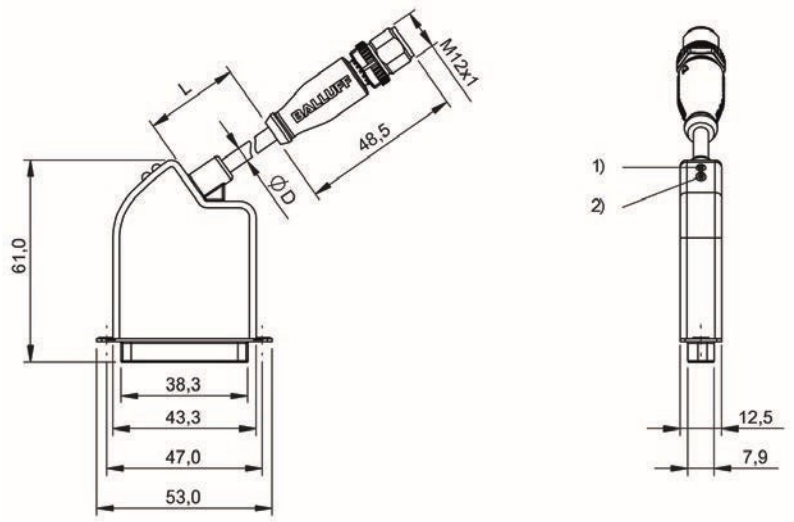
	BNI006K BNI IOL-750-V10-K007	BNI006H BNI IOL-750-V11-K007	BNI006L BNI IOL-750-V13-K007	BNI006N BNI IOL-751-V08-K007
	Valve interface	Valve interface	Valve interface	Power Aux valve terminal connector
	SMC VQC 1000/2000/4000	SMC VQC 1000/2000/4000	Numatics	Festo with D-Sub female, 25-pin, GND in Pin 25, Bosch Rexroth LS04, Bürkert Typ 8640
	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
	M12x1-Male, 5-pole, A-coded	M12x1-Male, 5-pole, A-coded	M12x1-Male, 5-pole, A-coded	M12x1-Male, 5-pole, A-coded
	D-Sub-Female, 25-pole	D-Sub-Female, 25-pole	D-Sub-Female, 25-pole	D-Sub-Female, 25-pole
	0.6 m	0.6 m	0.6 m	0.6 m
	24	16	22	24
	400 mA	400 mA	400 mA	400 mA
	1.2 A	1.2 A	1.2 A	1.2 A
	3-pin connection, Actuator supply on Pin 1	3-pin connection, Actuator supply on Pin 1	3-pin connection, Actuator supply on Pin 1	4-pin connection, Power Aux on Pin 2
	PA	PA	PA	PA
	53 x 61 x 12.5 mm	53 x 61 x 12.5 mm	53 x 61 x 12.5 mm	53 x 61 x 12.5 mm
	-5...55 °C	-5...55 °C	-5...55 °C	-5...55 °C
	IP40 plugged in	IP40 plugged in	IP40 plugged in	IP40 plugged in
	COM2 (38.4 kBaud)	COM2 (38.4 kBaud)	COM2 (38.4 kBaud)	COM2 (38.4 kBaud)
	3.5 ms	3.0 ms	3.5 ms	3.5 ms
	–	–	–	–
	4 bytes	2 bytes	4 bytes	4 bytes
	Page 198	Page 198	Page 198	Page 198

	BNI006M BNI IOL-751-V09-K007	BNI006P BNI IOL-751-V10-K007	
Version	Power Aux valve terminal connector	Power Aux valve terminal connector	
Application	Festo with D-Sub female, 25-pin, GND in Pin 25, Bosch Rexroth LS04	SMC VQC 1000/2000/4000	
Interface	IO-Link 1.1	IO-Link 1.1	
Operating voltage Ub	18...30.2 VDC	18...30.2 VDC	
Connection (COM 1)	M12x1-Male, 5-pole, A-coded	M12x1-Male, 5-pole, A-coded	
Valve terminal connection	D-Sub-Female, 25-pole	D-Sub-Female, 25-pole	
Cable length L	0.6 m	0.6 m	
Outputs, number	16	24	
Output current max. UA, actuator	400 mA	400 mA	
Current sum UA, actuator	1.2 A	1.2 A	
Function	4-pin connection, Power Aux on Pin 2	4-pin connection, Power Aux on Pin 2	
Housing material	PA	PA	
Dimension	53 x 61 x 12.5 mm	53 x 61 x 12.5 mm	
Ambient temperature	-5...55 °C	-5...55 °C	
Protection degree	IP40 plugged in	IP40 plugged in	
Transfer rate	COM2 (38.4 kBaud)	COM2 (38.4 kBaud)	
Process data cycle min.	3.0 ms	3.5 ms	
Process data in	—	—	
Process data out	2 bytes	4 bytes	
Productview	Page 198	Page 198	

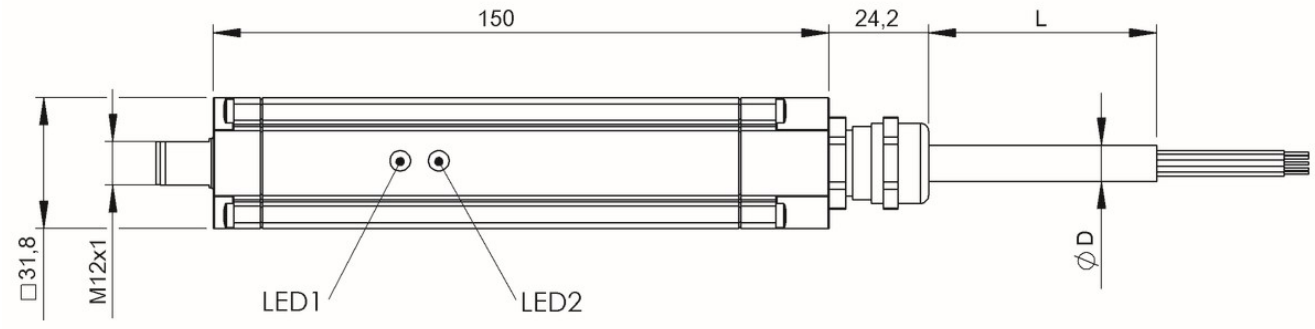
	BNI006T BNI IOL-751-V11-K007	BNI006R BNI IOL-751-V13-K007	BNI006Y BNI IOL-752-V08-K007	BNI006U BNI IOL-752-V09-K007
	Power Aux valve terminal connector	Power Aux valve terminal connector	Power Aux valve terminal connector	Power Aux valve terminal connector
	SMC VQC 1000/2000/4000	Numatics	Festo with D-Sub female, 25-pin, GND in Pin 25, Bosch Rexroth LS04, Bürkert Typ 8640	Festo with D-Sub female, 25-pin, GND in Pin 25, Bosch Rexroth LS04
	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
	M12x1-Male, 5-pole, A-coded	M12x1-Male, 5-pole, A-coded	M12x1-Male, 5-pole, A-coded	M12x1-Male, 5-pole, A-coded
	D-Sub-Female, 25-pole	D-Sub-Female, 25-pole	D-Sub-Female, 25-pole	D-Sub-Female, 25-pole
	0.6 m	0.6 m	0.6 m	0.6 m
	16	22	24	16
	400 mA	400 mA	400 mA	400 mA
	1.2 A	1.2 A	1.2 A	1.2 A
	4-pin connection, Power Aux on Pin 2	4-pin connection, Power Aux on Pin 2	5-pin connection, Power Aux on Pin 2, also 0V on Pin 5	5-pin connection, Power Aux on Pin 2, also 0V on Pin 5
	PA	PA	PA	PA
	53 x 61 x 12.5 mm	53 x 61 x 12.5 mm	53 x 61 x 12.5 mm	53 x 61 x 12.5 mm
	-5...55 °C	-5...55 °C	-5...55 °C	-5...55 °C
	IP40 plugged in	IP40 plugged in	IP40 plugged in	IP40 plugged in
	COM2 (38.4 kBaud)	COM2 (38.4 kBaud)	COM2 (38.4 kBaud)	COM2 (38.4 kBaud)
	3.0 ms	3.5 ms	3.5 ms	3.0 ms
	—	—	—	—
	2 bytes	4 bytes	4 bytes	2 bytes
	Page 198	Page 198	Page 198	Page 198

	BNI006Z BNI IOL-752-V10-K007	BNI006W BNI IOL-752-V11-K007	
Version	Power Aux valve terminal connector	Power Aux valve terminal connector	
Application	SMC VQC 1000/2000/4000	SMC VQC 1000/2000/4000	
Interface	IO-Link 1.1	IO-Link 1.1	
Operating voltage Ub	18...30.2 VDC	18...30.2 VDC	
Connection (COM 1)	M12x1-Male, 5-pole, A-coded	M12x1-Male, 5-pole, A-coded	
Valve terminal connection	D-Sub-Female, 25-pole	D-Sub-Female, 25-pole	
Cable length L	0.6 m	0.6 m	
Outputs, number	24	16	
Output current max. UA, actuator	400 mA	400 mA	
Current sum UA, actuator	1.2 A	1.2 A	
Function	5-pin connection, Power Aux on Pin 2, also 0V on Pin 5	5-pin connection, Power Aux on Pin 2, also 0V on Pin 5	
Housing material	PA	PA	
Dimension	53 x 61 x 12.5 mm	53 x 61 x 12.5 mm	
Ambient temperature	-5...55 °C	-5...55 °C	
Protection degree	IP40 plugged in	IP40 plugged in	
Transfer rate	COM2 (38.4 kBaud)	COM2 (38.4 kBaud)	
Process data cycle min.	3.5 ms	3.0 ms	
Process data in	—	—	
Process data out	4 bytes	2 bytes	
Productview	Page 198	Page 198	

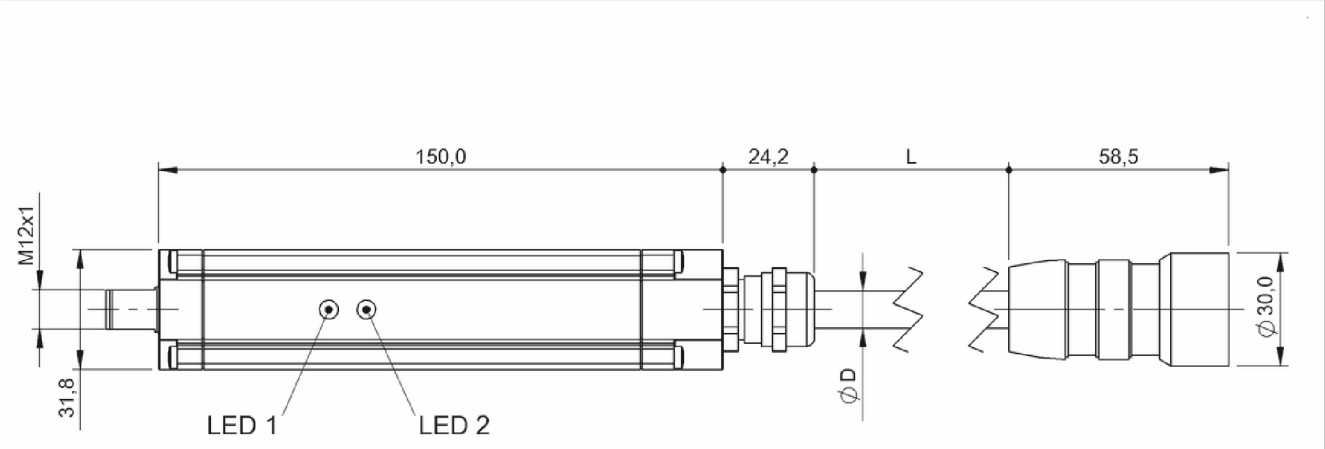
	BNI006F BNI IOL-752-V13-K007	BNI007E BNI IOL-770-000-A027	BNI004W BNI IOL-770-V06-A027	
	Power Aux valve terminal connector	Power Aux valve terminal connector	Power Aux valve terminal connector	
	Numatics	open cable end	SMC VQC 1000/2000/4000	
	IO-Link 1.1	IO-Link 1.1	IO-Link 1.1	
	18...30.2 VDC	18...30.2 VDC	18...30.2 VDC	
	M12x1-Male, 5-pole, A-coded	M12x1-Male, 5-pole, A-coded	M12x1-Male, 5-pole, A-coded	
	D-Sub-Female, 25-pole	—	M27-Female, 26-pole, A-coded	
	0.6 m	0.5 m	0.5 m	
	22	24	24	
	400 mA	400 mA	400 mA	
	1.2 A	1.2 A	1.2 A	
	5-pin connection, Power Aux on Pin 2, also 0V on Pin 5	4-pin connection, Power Aux on Pin 2, Diagnostics	4-pin connection, Power Aux on Pin 2, Diagnostics	
	PA	Aluminum	Aluminum	
	53 x 61 x 12.5 mm	31.8 x 31.8 x 185 mm	31.8 x 31.8 x 185 mm	
	-5...55 °C	-5...70 °C	-5...70 °C	
	IP40 plugged in	IP67 plugged in	IP67 plugged in	
	COM2 (38.4 kBaud)	COM2 (38.4 kBaud)	COM2 (38.4 kBaud)	
	3.5 ms	5.5 ms	5.5 ms	
	—	9 bytes	9 bytes	
	4 bytes	4 bytes	4 bytes	
	Page 198	Page 198	Page 199	



BNI006J, BNI006E, BNI006K, BNI006H, BNI006L, BNI006N, BNI006M, BNI006P, BNI006T, BNI006R, BNI006Y, BNI006U, BNI006Z, BNI006W, BNI006F



BNI007E

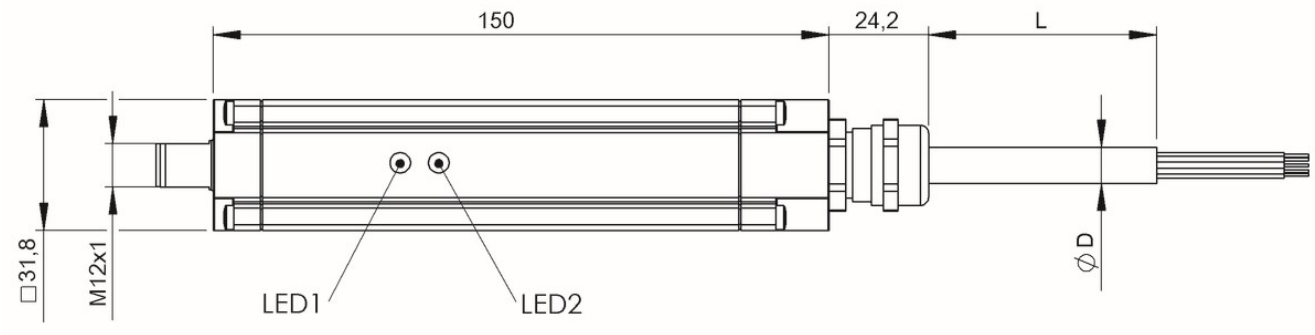


BNI004W

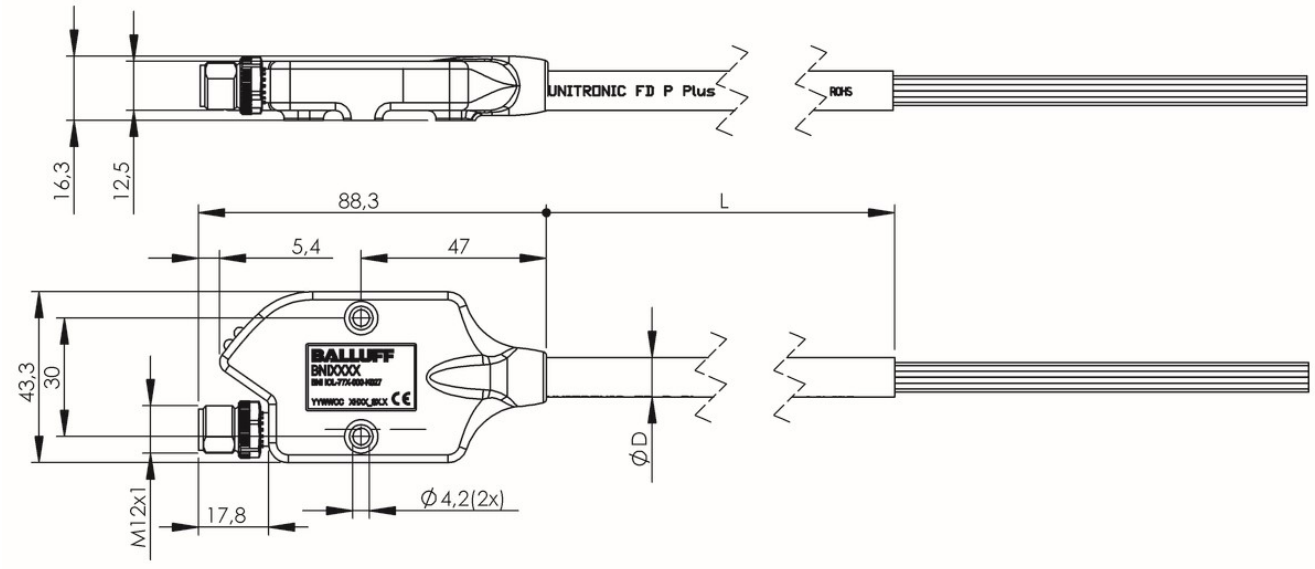
	BNI005Z BNI IOL-771-000-A027	BNI005M BNI IOL-771-000-K027	BNI00CA BNI IOL-771-002-K027-003	
Version	Universal cable I/O interface	Universal cable I/O interface	Universal cable I/O interface	
Interface	IO-Link 1.1	IO-Link 1.1	IO-Link 1.1	
Operating voltage Ub	18...30.2 VDC	18...30.2 VDC	18...30.2 VDC	
Connection (COM 1)	M12x1-Male, 4-pole, A-coded	M12x1-Male, 4-pole, A-coded	M12x1-Male, 4-pole, A-coded	
Connection for sensor	Leads	Leads	Leads	
Cable length L	0.5 m	0.5 m	3 m	
Digital inputs	16x PNP, Type3	16x PNP, Type3	16x PNP, Type3	
Digital outputs	16x PNP	16x PNP	16x PNP	
Configurable inputs/outputs	yes	yes	yes	
Output current max.	400 mA	400 mA	400 mA	
Additional function	Diagnostics (under-current, coil wire break), Output voltage on Pin 2	—	—	
Housing material	Aluminum	PA	PA	
Dimension	31.8 x 31.8 x 193.2 mm	43.3 x 16.3 x 88.3 mm	43.3 x 16.3 x 88.3 mm	
Ambient temperature	-5...55 °C	-5...55 °C	-5...55 °C	
Protection degree	IP67 when threaded in	IP54 up to open cable end	IP54 up to open cable end	
Transfer rate	COM2 (38.4 kBaud)	COM2 (38.4 kBaud)	COM2 (38.4 kBaud)	
Process data cycle min.	4 ms	4 ms	4 ms	
Process data in	2 bytes	2 bytes	2 bytes	
Process data out	2 bytes	2 bytes	2 bytes	
Productview	Page 202	Page 202	Page 202	




BNI005Y BNI IOL-772-000-A027	BNI005N BNI IOL-772-000-K027	BNI00CC BNI IOL-772-002-K027-003	BNI00AE BNI IOL-772-002-E032	
Universal cable I/O interface	Universal cable I/O interface	Universal cable I/O interface	Universal cable I/O interface	
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	
M12x1-Male, 4-pole, A-coded	M12x1-Male, 4-pole, A-coded	M12x1-Male, 4-pole, A-coded	M12x1-Male, 4-pole, A-coded	
Leads	Leads	Leads	Leads	
0.5 m	0.5 m	3 m	1.3 m	
8x PNP, Type3	8x PNP, Type3	8x PNP, Type3	8x PNP, Type3	
8x PNP	8x PNP	8x PNP	8x PNP	
yes	yes	yes	yes	
400 mA	400 mA	400 mA	400 mA	
Diagnostics (under-current, coil wire break), Output voltage on Pin 2	—	—	—	
Aluminum	PA	PA	Stainless steel (1.4305)	
31.8 x 31.8 x 193.2 mm	43.3 x 16.3 x 88.3 mm	43.3 x 16.3 x 88.3 mm	Ø 18 x 117 mm	
-5...55 °C	-5...55 °C	-5...55 °C	-5...60 °C	
IP67 when threaded in	IP54 up to open cable end	IP54 up to open cable end	IP69K, IP68	
COM2 (38.4 kBaud)	COM2 (38.4 kBaud)	COM2 (38.4 kBaud)	COM2 (38.4 kBaud)	
3 ms	3.2 ms	3.2 ms	8.5 ms	
1 bytes	1 bytes	1 bytes	1 bytes	
1 bytes	1 bytes	1 bytes	1 bytes	
Page 202	Page 202	Page 202	Page 203	



BNI005Z, BNI005Y



BNI005M, BNI00CA, BNI005N, BNI00CC

BNI00AE

Important parameters for optimized processes

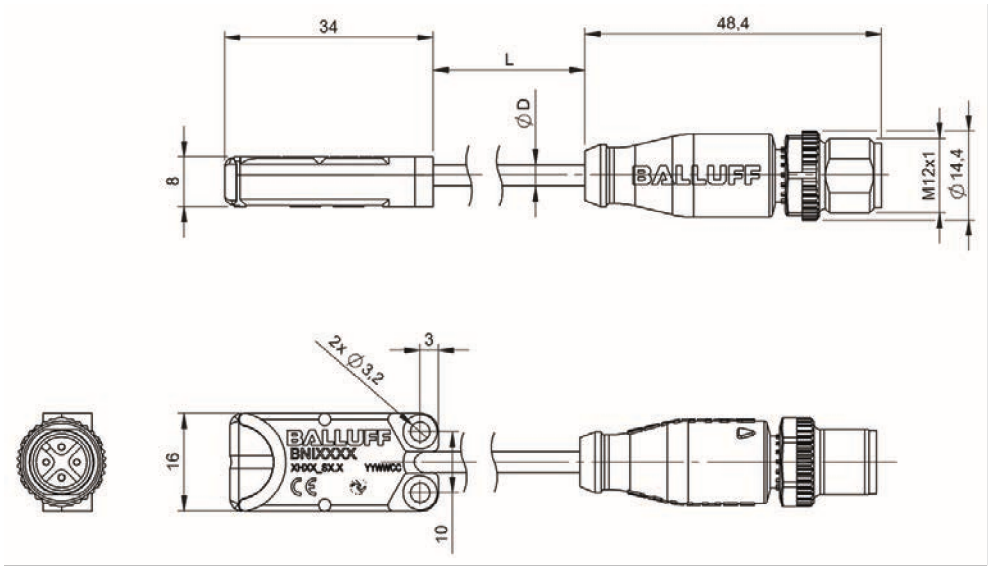
MEMORY MODULES

Our memory modules have a built-in data storage memory and thereby fulfill the function of a removable data carrier. Many parameters can be logged and saved on the IO-Link memory module: from the operating data of a tool through the histogram of the temperature level during operation and the required power level to the number of tool cycles and error messages in the tool.

Features

- Built-in data carrier
- Logs and saves many different parameters
- More efficient maintenance/repair, since supplementary information is available

	BNI00AM BNI IOL-910-002-K060
Principle of operation	Memory module
Interface	IO-Link 1.1
Operating voltage Ub	18...30.2 VDC
Connection	M12x1-Male, 4-pole, A-coded
Cable length L	0.3 m
Data storage	14*64 Bytes
IO-Link function	Remote memory module for operating data
Housing material	PP
Dimension	16 x 8 x 34 mm
Ambient temperature	-25...70 °C
Protection degree	IP67 when threaded in
Transfer rate	COM2 (38.4 kBaud)
Cycle time min.	2.0 ms
Productview	Page 207


34
L
48,4
ØD
8
BALLUFF
M12x1
Ø14,4
2x Ø3,2
3
16
10
BALLUFF
BNI0000
XXXX_6XX
YYWWCC

BNI00AM

Efficient communication without wear

INDUCTIVE COUPLERS

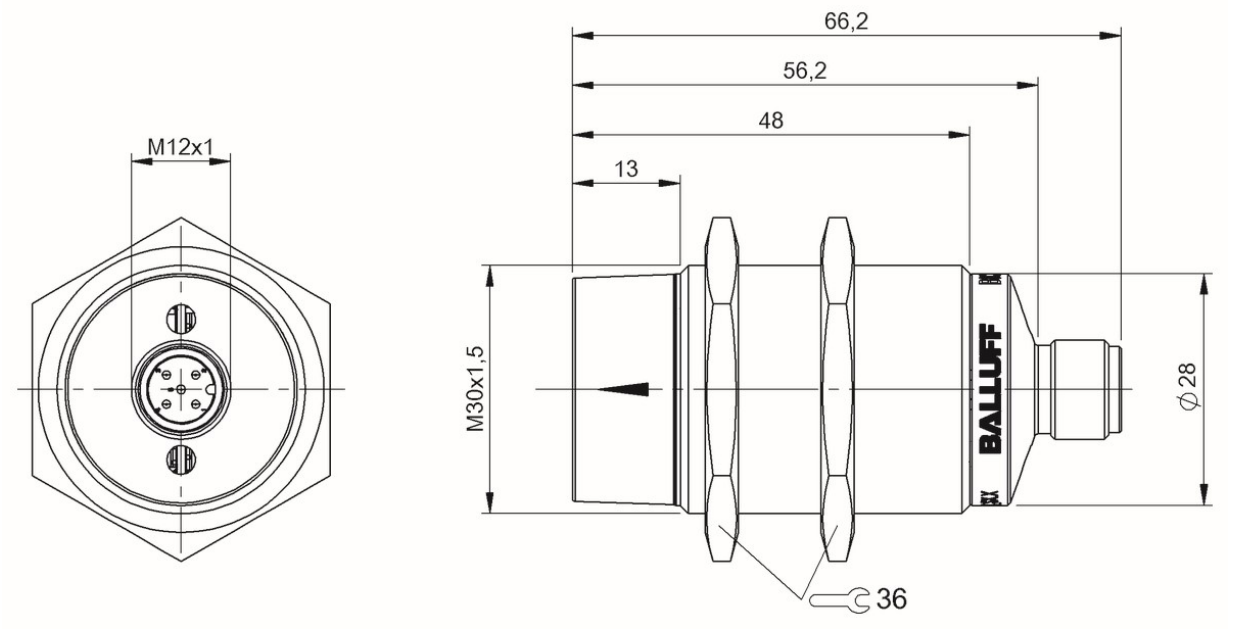
Fixed wiring of sensors and actuators comes with drawbacks: cable and contacts are often severely loaded in automation, and cables can fatigue and break. In the worst case scenario this can result in a machine failure. Our BIC inductive couplers transmit data and power contactlessly across an air gap. Thus, no mechanical wear is produced. The system availability is higher, the cycle times are shorter and the sequences are more flexible. The units can quickly be disconnected, are easy to handle and are maintenance-free. This enables you to meet new demands quickly.

Features

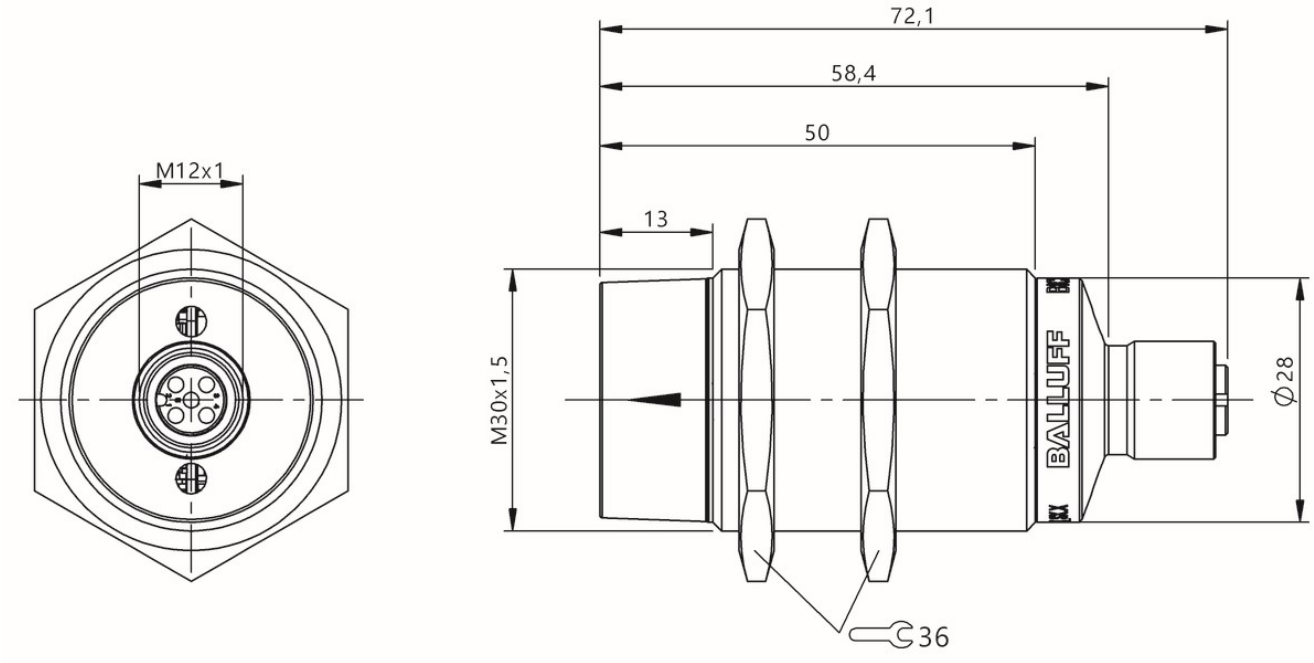
- No mechanical wear
- Higher system availability, shorter cycle times, more flexible sequences
- Quickly disconnectable, easy to handle, maintenance free

	BIC007L BIC 1B0-ITA50-M30MF1-SM4A5A	BIC007E BIC 2B0-ITA50-M30MF1-SM4A5A	
Function	IO-Link signal transmission	IO-Link signal transmission	
Signal type	bi-directional	bi-directional	
Transmission distance	0...10 mm	0...10 mm	
Component	Base	Remote	
Interface	IO-Link 1.1	IO-Link 1.1	
Connection	Connector, M12x1 connector, 5-pin	Connector, M12x1 connector, 5-pin	
Rated operating voltage Ue	24 VDC	—	
Output voltage	—	24 VDC	
Rated output current	—	650 mA	
Output current max.	—	5 A / 0.12 ms	
Housing material	Brass	Brass	
Dimension	Ø 30 x 66.2 mm	Ø 30 x 72.1 mm	
Ambient temperature	-5...55 °C	-5...55 °C	
Protection degree	IP67	IP67	
Transfer rate	COM2 (38.4 kBaud)	COM2 (38.4 kBaud)	
Additive cycle time	Device + 2.0 ms	Device + 2.0 ms	
Process data in	0…32 bytes	0…32 bytes	
Process data out	0…32 bytes	0…32 bytes	
SIO mode	yes	yes	
Productview	Page 212	Page 212	

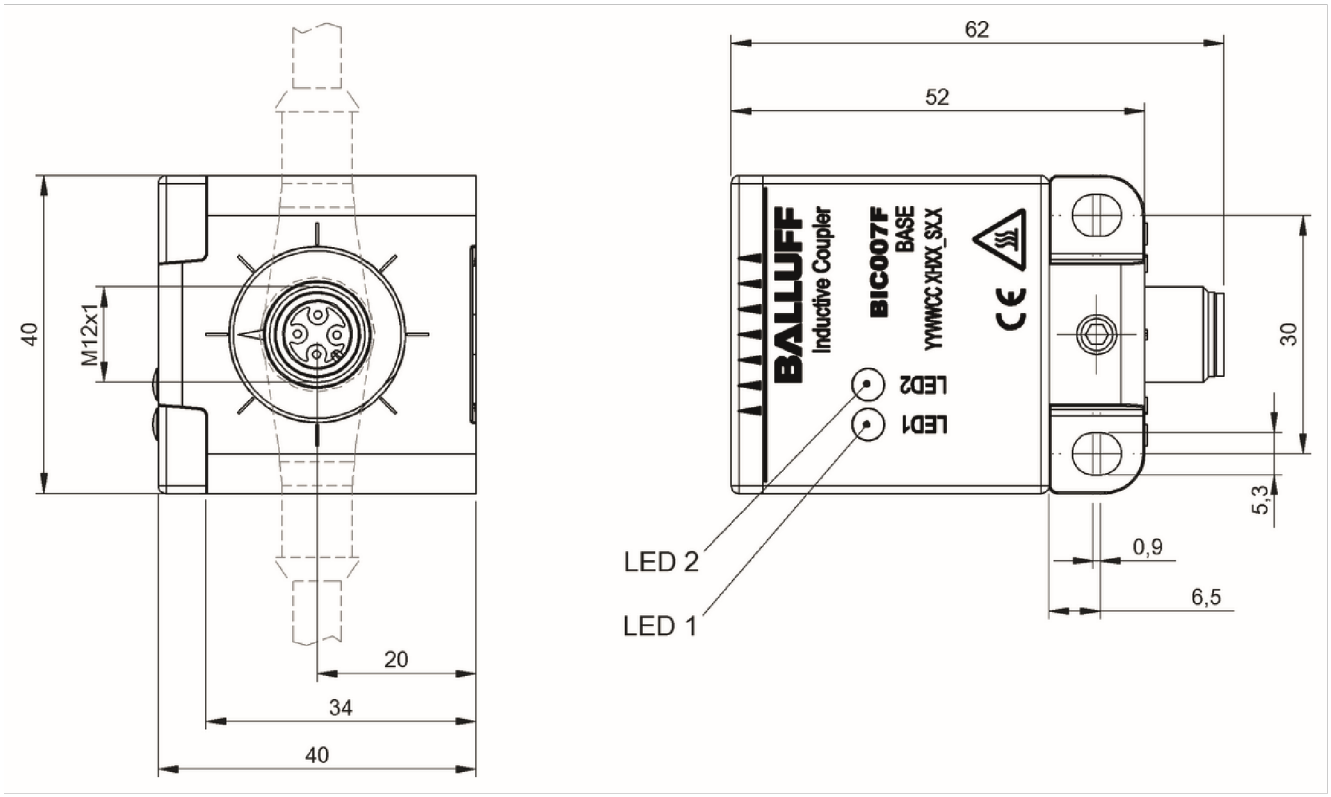
	BIC007F BIC 1B0-IT1A7-Q40KFU-SM4A4A	BIC007H BIC 2B0-IT1A7-Q40KFU-SM4A5A	BIC0070 BIC 1B0-ITA50-Q40KFU-SM4A4A	BIC0071 BIC 2B0-ITA50-Q40KFU-SM4A5A
	IO-Link signal transmission	IO-Link signal transmission	IO-Link signal transmission	IO-Link signal transmission
	bi-directional	bi-directional	bi-directional	bi-directional
	0...5 mm	0...5 mm	0...5 mm	0...5 mm
	Base	Remote	Base	Remote
	IO-Link 1.1	IO-Link 1.1	IO-Link 1.1	IO-Link 1.1
	Connector, M12x1 connector, 4-pin	Connector, M12x1 connector, 5-pin	Connector, M12x1 connector, 4-pin	Connector, M12x1 connector, 5-pin
	24 VDC	—	24 VDC	—
	—	24 VDC	—	24 VDC
	—	1.7 A	—	500 mA
	—	5 A / 1 ms	—	5 A / 0.05 ms
	PBTP	PBTP	PBTP	PBTP
	40 x 40 x 62 mm	40 x 40 x 60.8 mm	40 x 40 x 62 mm	40 x 40 x 63 mm
	-5...55 °C	-5...55 °C	-5...65 °C	-5...65 °C
	IP67	IP67	IP67	IP67
	COM2 (38.4 kBaud), COM3 (230.4 kBaud)	COM2 (38.4 kBaud), COM3 (230.4 kBaud)	COM2 (38.4 kBaud)	COM2 (38.4 kBaud)
	Device + 2.8 ms	Device + 2.8 ms	Device + 2.0 ms	Device + 2.0 ms
	0…32 bytes	0…32 bytes	0…32 bytes	0…32 bytes
	0…32 bytes	0…32 bytes	0…32 bytes	0…32 bytes
	no	no	yes	yes
	Page 213	Page 213	Page 214	Page 214



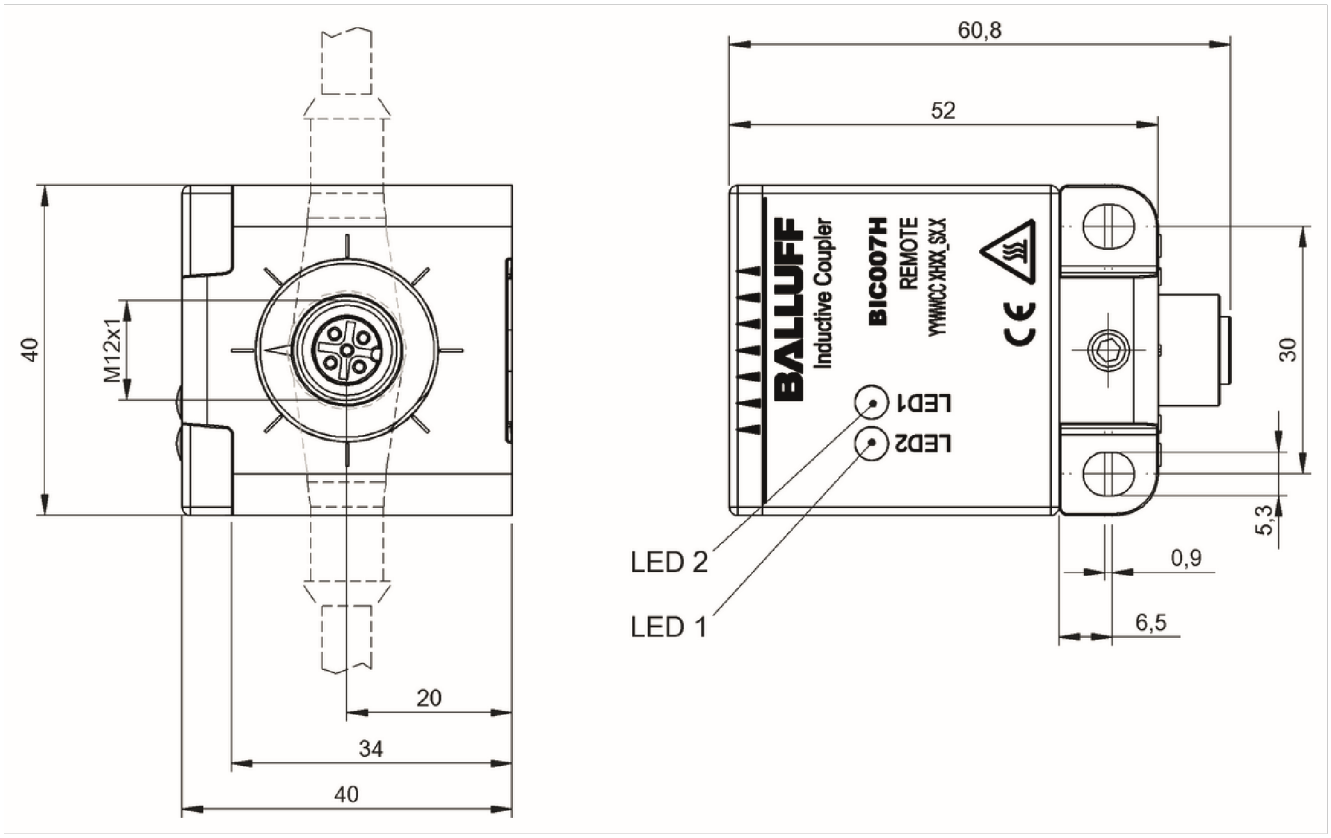
BIC007L



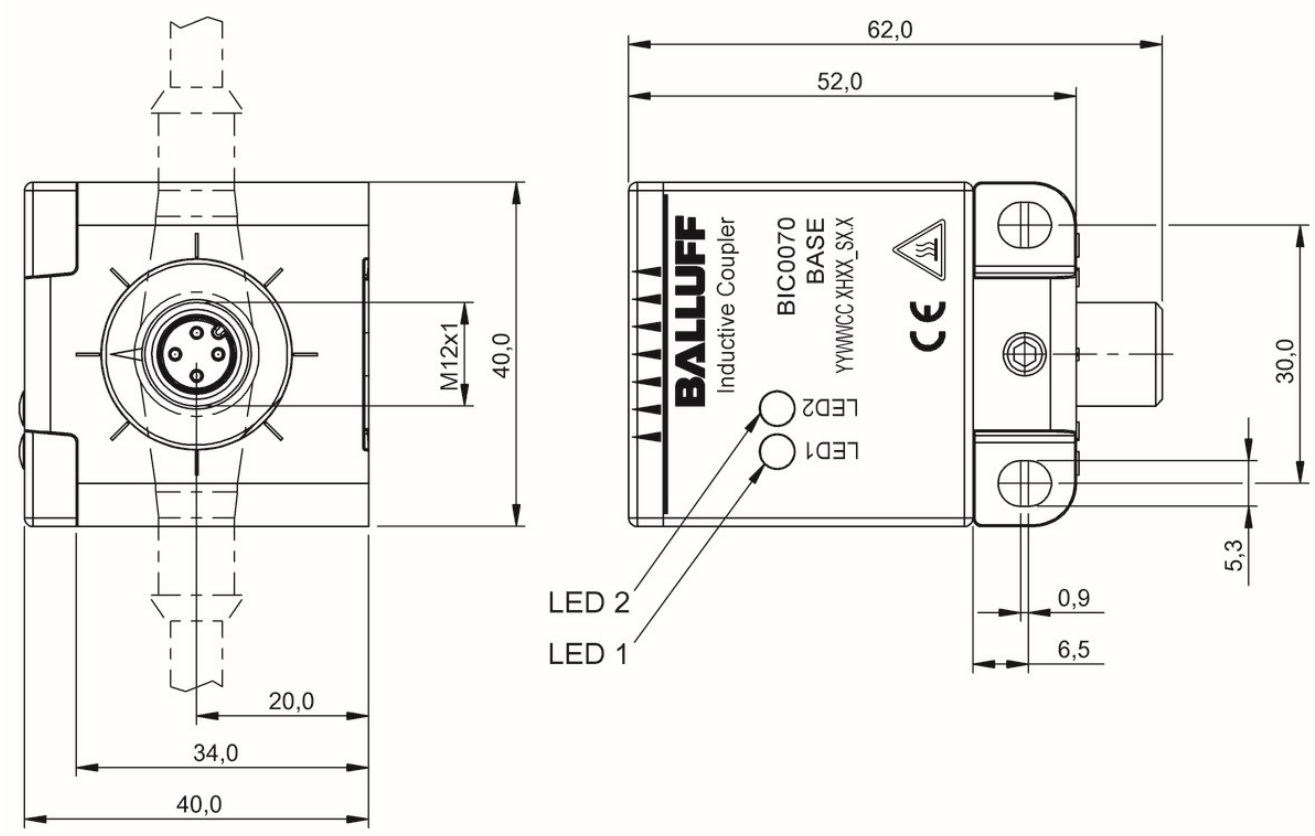
BIC007E



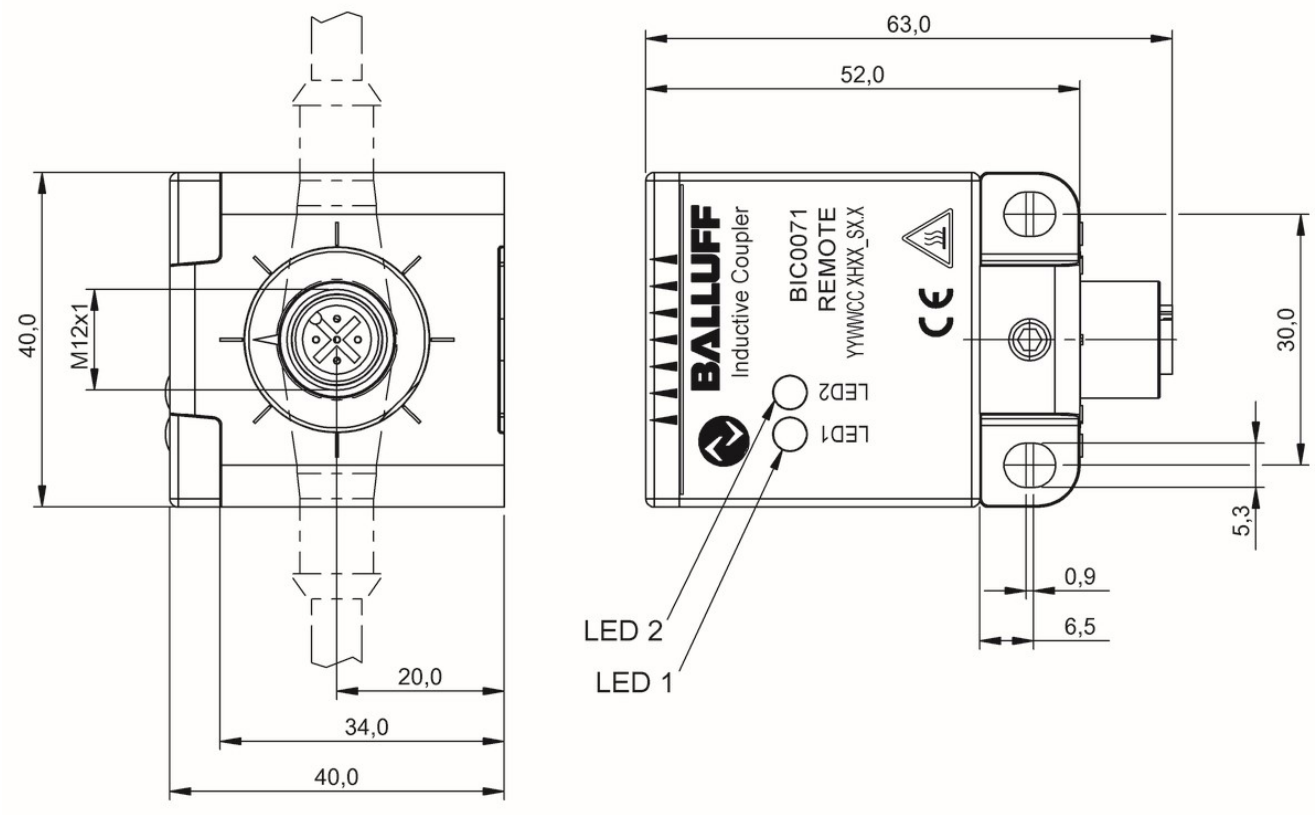
BIC007F



BIC007H



BIC0070



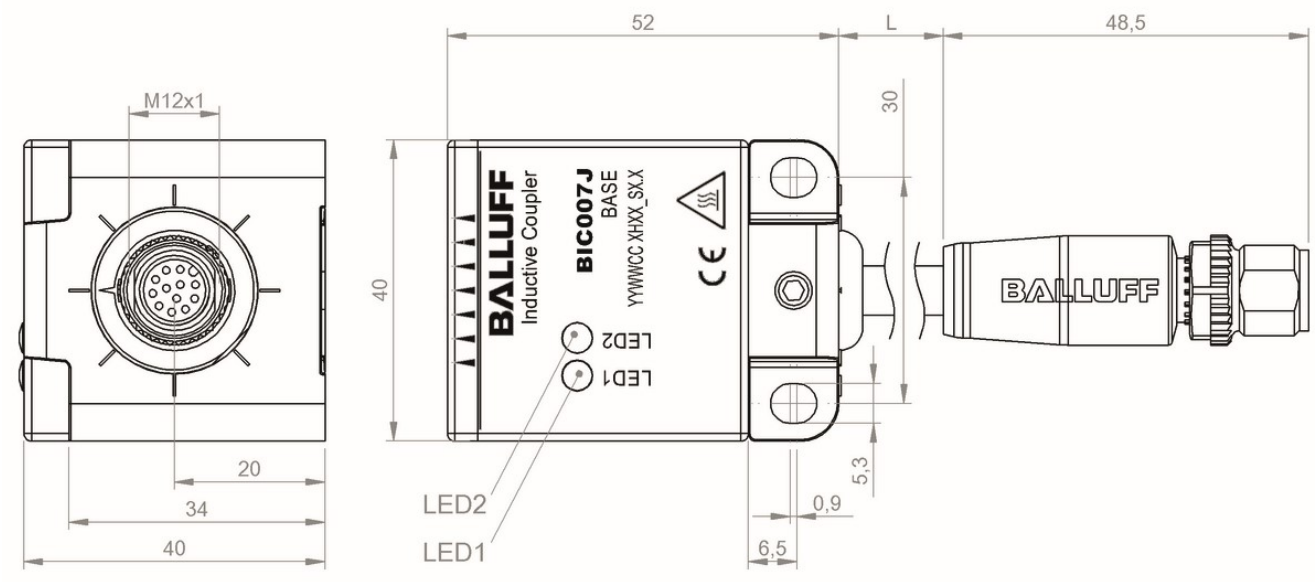
BIC0071

	BIC007J BIC 1I3-P2A50-Q40KFU-EPX0-002-M4CA	BIC007K BIC 2I3-P2A50-Q40KFU-EPX0-002-M4CA	
Function	Signal transmission	Signal transmission	
Signal type	unidirectional	unidirectional	
Digital inputs	—	8x PNP	
Digital outputs	8x PNP	—	
Transmission distance	0...5 mm	0...5 mm	
Component	Base	Remote	
Connection	Connector, M12x1, 12-pin, 0.20 m, PUR	Connector, M12x1, 12-pin, 0.20 m, PUR	
Rated operating voltage Ue	24 VDC	—	
Output voltage	—	24 VDC	
Rated output current	—	500 mA	
Housing material	PBTP	PBTP	
Dimension	40 x 40 x 52 mm	40 x 40 x 52 mm	
Ambient temperature	-5...65 °C	-5...65 °C	
Protection degree	IP67	IP67	
Productview	Page 220	Page 220	

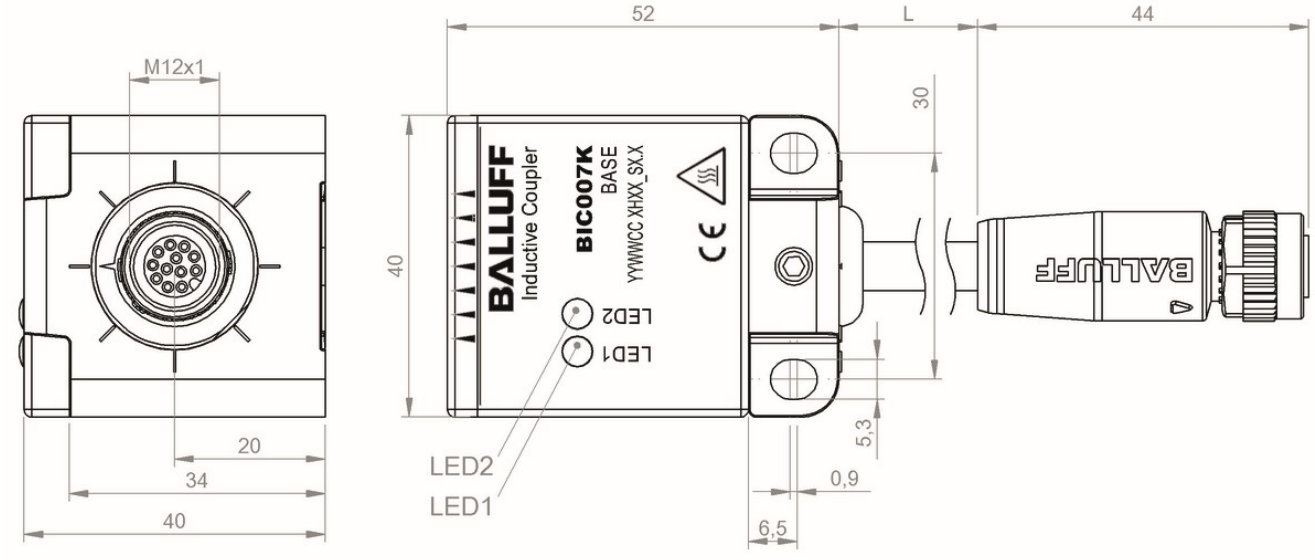
	BIC0077 BIC 1I1-P2A05-M12MM-BPX0-003-M45A	**BIC0078** BIC 2I1-P2A05-M12MF-BPX0-003-M44A	**BIC007T** BIC 1I22-P2A02-M18MN2-EPX07-050	**BIC007U** BIC 2I22-P2A02-M18MF2-EPX07-050
	Signal transmission	Signal transmission	Signal transmission	Signal transmission
	unidirectional	unidirectional	unidirectional	unidirectional
	—	2x PNP	—	4x PNP
	2x PNP	—	4x PNP	—
	0...2.5 mm	0...2.5 mm	1...3 mm	1...3 mm
	Base	Remote	Base	Remote
	Connector, M12x1, 5-pin, 0.30 m, PUR	Connector, M12x1, 5-pin, 0.30 m, PUR	Cable, 5.00 m, PUR	Cable, 5.00 m, PUR
	24 VDC	—	24 VDC	12 VDC
	—	24 VDC	—	24 VDC
	—	50 mA	—	100 mA
	Brass	Brass	Brass	Brass
	Ø 12 x 65 mm	Ø 12 x 41 mm	Ø 18 x 94 mm	Ø 18 x 61 mm
	-10...50 °C	-10...50 °C	0...50 °C	0...50 °C
	IP67	IP67	IP67	IP67
	Page 221	Page 221	Page 222	Page 222

	BIC0009 BIC 1I3-P2A50-M30MI3-SM4ACA	BIC005J BIC 2I3-P2A50-M30MI3-BPX0C-002-M4CA	
Function	Signal transmission	Signal transmission	
Signal type	unidirectional	unidirectional	
Digital inputs	—	8x PNP	
Digital outputs	8x PNP	—	
Transmission distance	0...5 mm	0...5 mm	
Component	Base	Remote	
Connection	Connector, M12x1, 12-pole	Connector, M12x1, 12-pin, 0.20 m, PUR	
Rated operating voltage Ue	24 VDC	—	
Output voltage	—	24 VDC	
Rated output current	—	500 mA	
Housing material	Brass	Brass	
Dimension	Ø 30 x 107 mm	Ø 30 x 85.5 mm	
Ambient temperature	0...55 °C	0...55 °C	
Protection degree	IP67	IP67	
Productview	Page 223	Page 223	

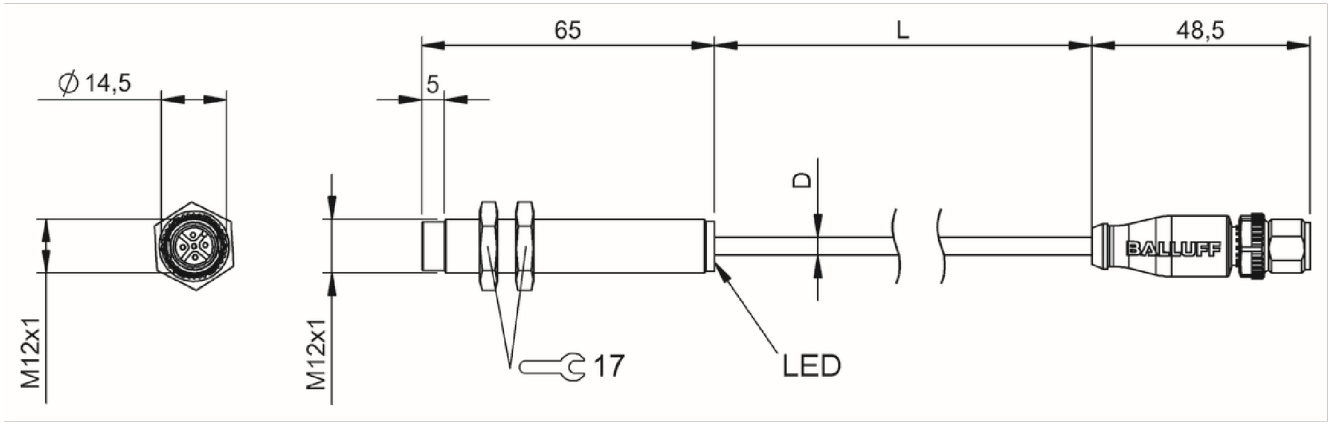
	BIC000A BIC 2I3-P2A50-M30MI3-SM4ACA			
	Signal transmission			
	unidirectional			
	8x PNP			
	–			
	0...5 mm			
	Remote			
	Connector, M12x1, 12-pole			
	–			
	24 VDC			
	500 mA			
	Brass			
	Ø 30 x 106 mm			
	0...55 °C			
	IP67			
	Page 224			



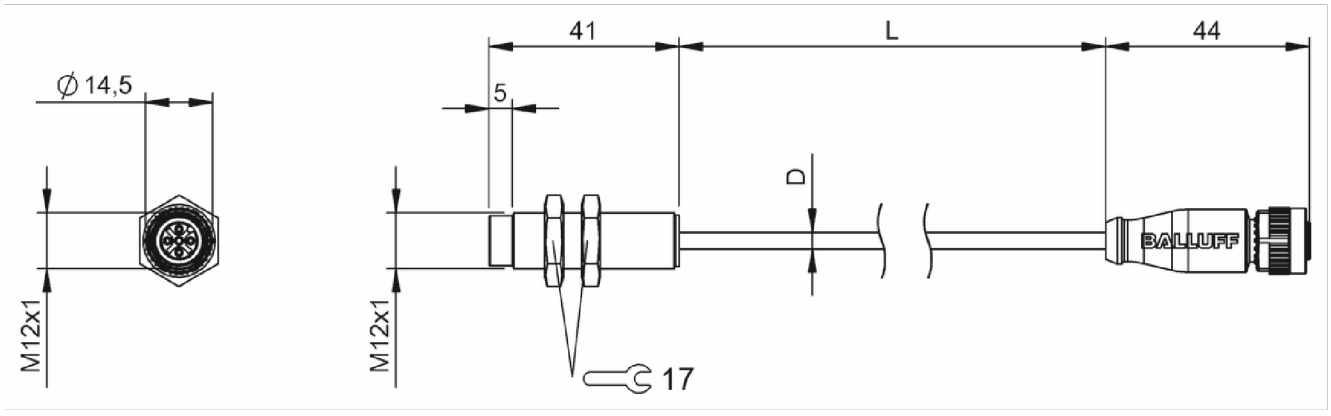
BIC007J



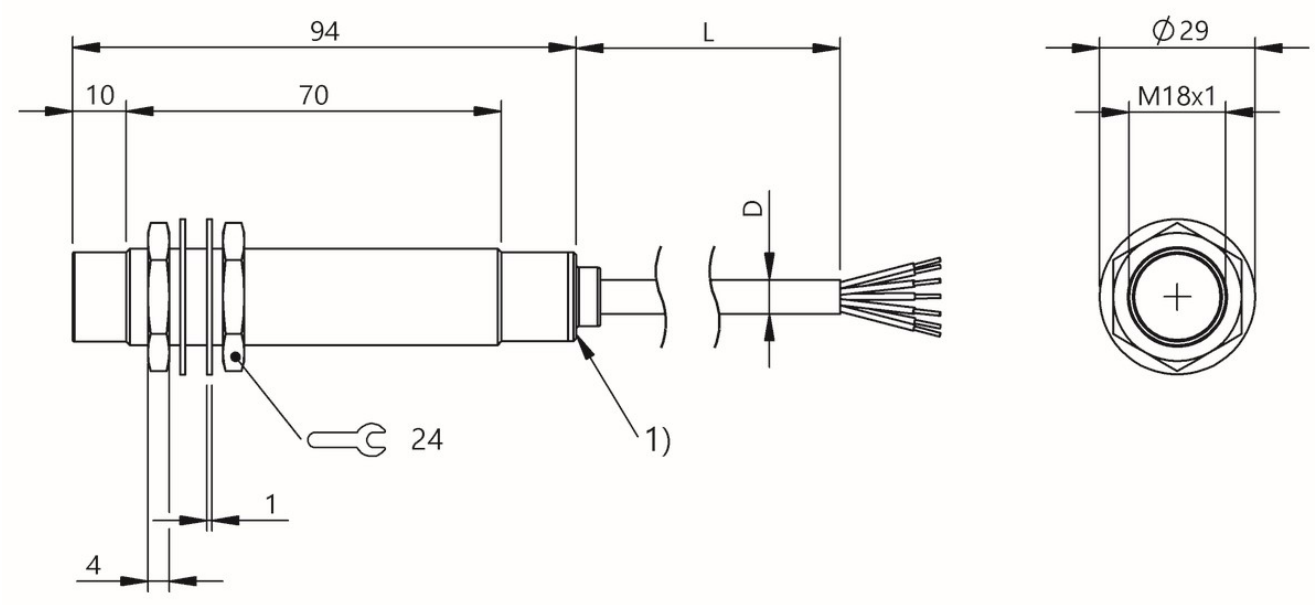
BIC007K



BIC0077

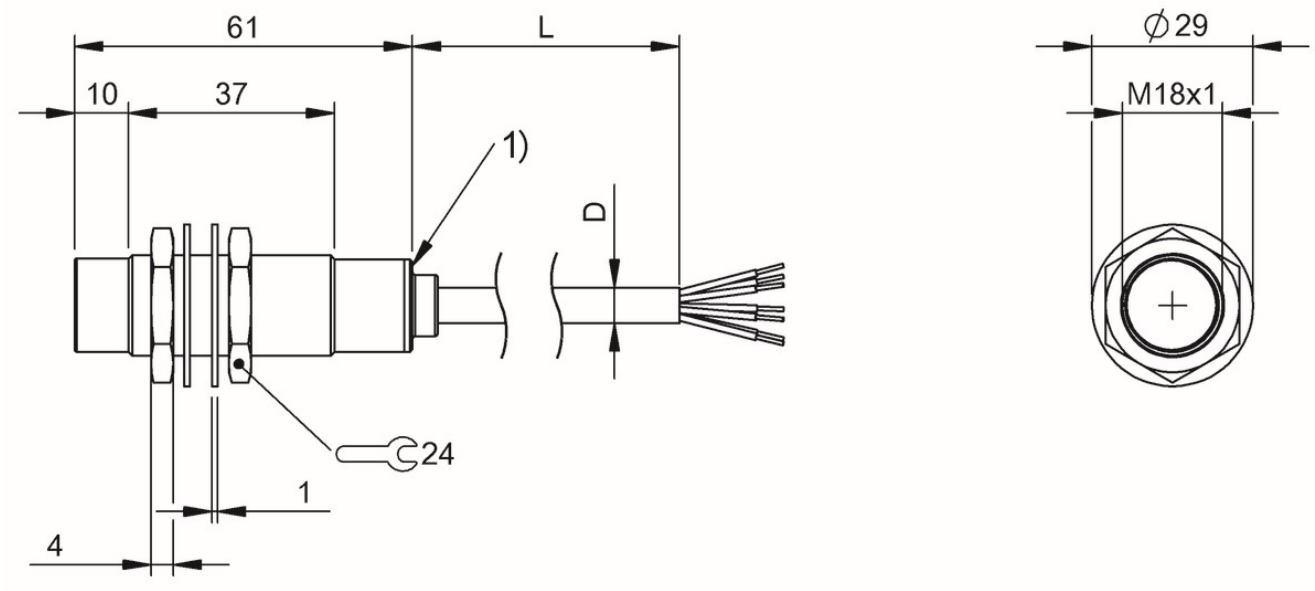


BIC0078



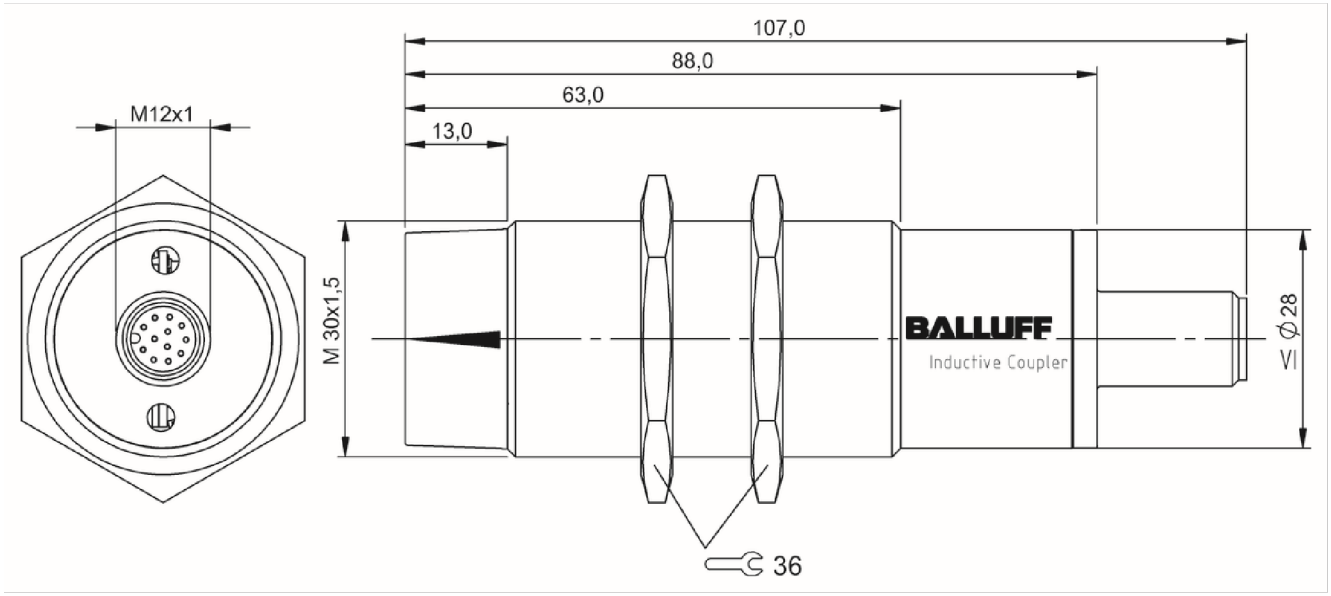
1) LED function indicator

BIC007T

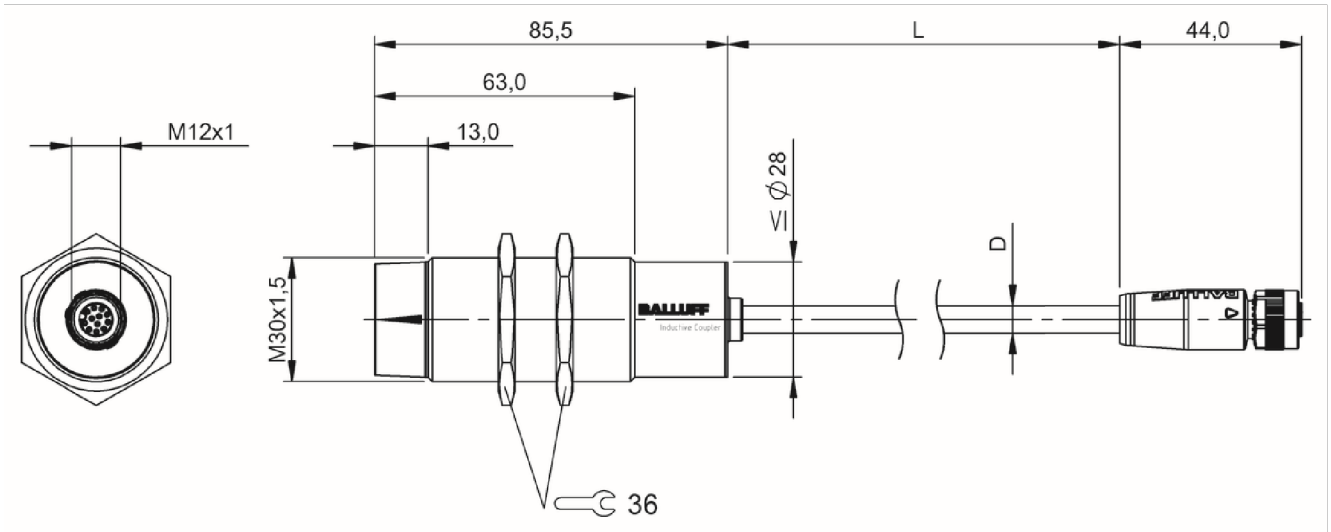


1) LED function indicator

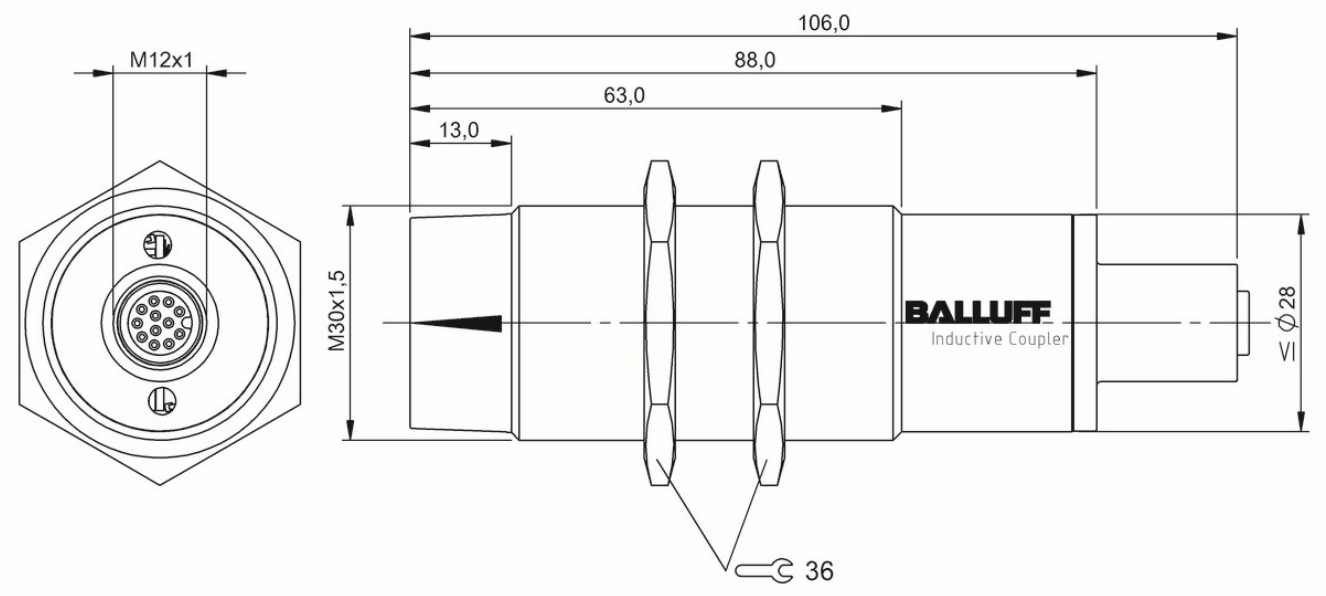
BIC007U



BIC0009



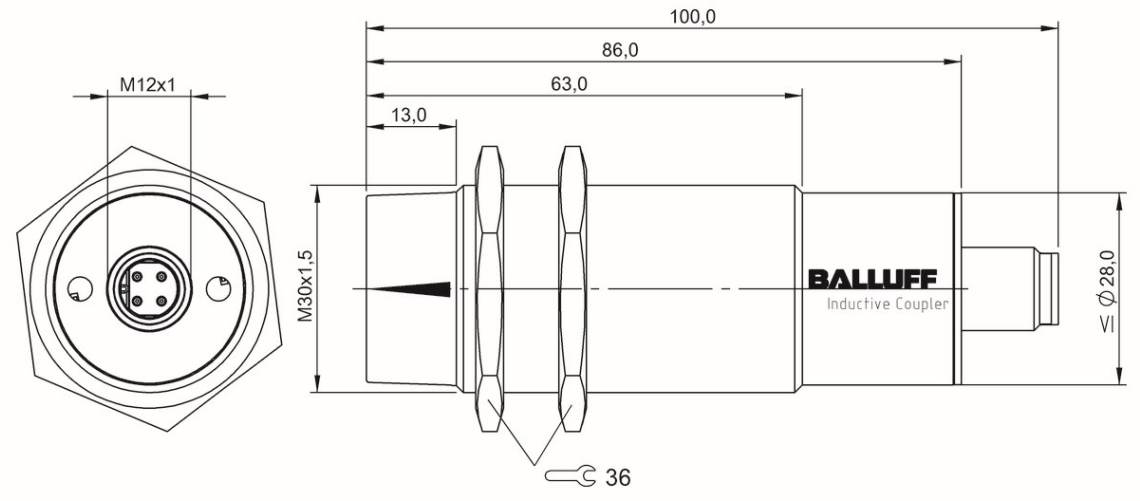
BIC005J


106,0
88,0
63,0
13,0
M12x1
M30x1,5
BALLUFF
Inductive Coupler
Ø28
36

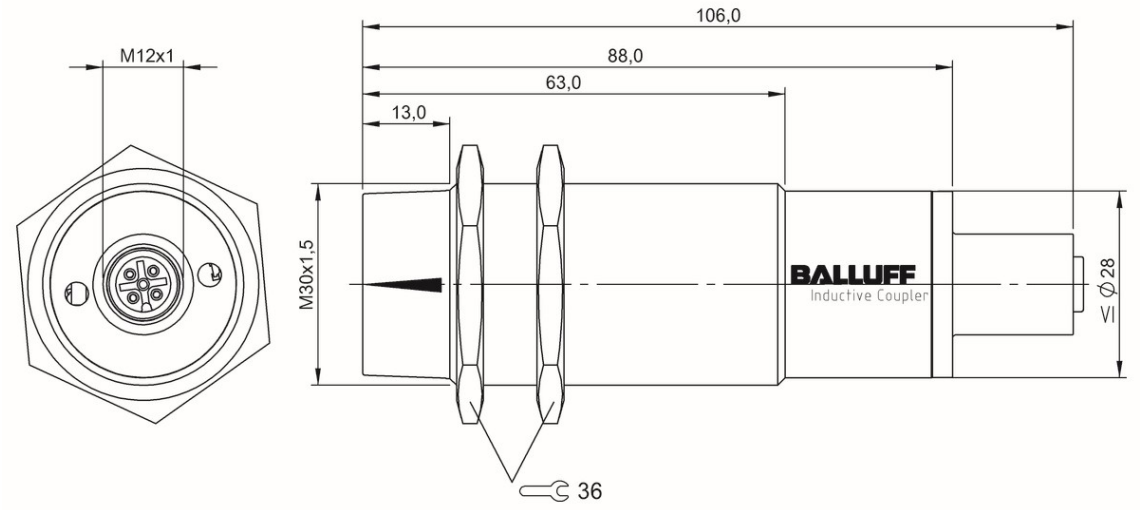
BIC000A

	BIC0007 BIC 1P0-P2A50-M30MI3-SM4A4A	BIC0008 BIC 2P0-P2A50-M30MI3-SM4A5A	
Function	Power only	Power only	
Transmission distance	0...5 mm	0...5 mm	
Component	Base	Remote	
Connection	Connector, M12x1, 4-pin	Connector, M12x1, 5-pin	
Rated operating voltage Ue	24 VDC	—	
Output voltage	—	24 VDC	
Rated output current	—	500 mA	
Housing material	Brass	Brass	
Dimension	Ø 30 x 100 mm	Ø 30 x 107.5 mm	
Ambient temperature	-5...55 °C	-5...55 °C	
Protection degree	IP67	IP67	
Productview	Page 228	Page 228	

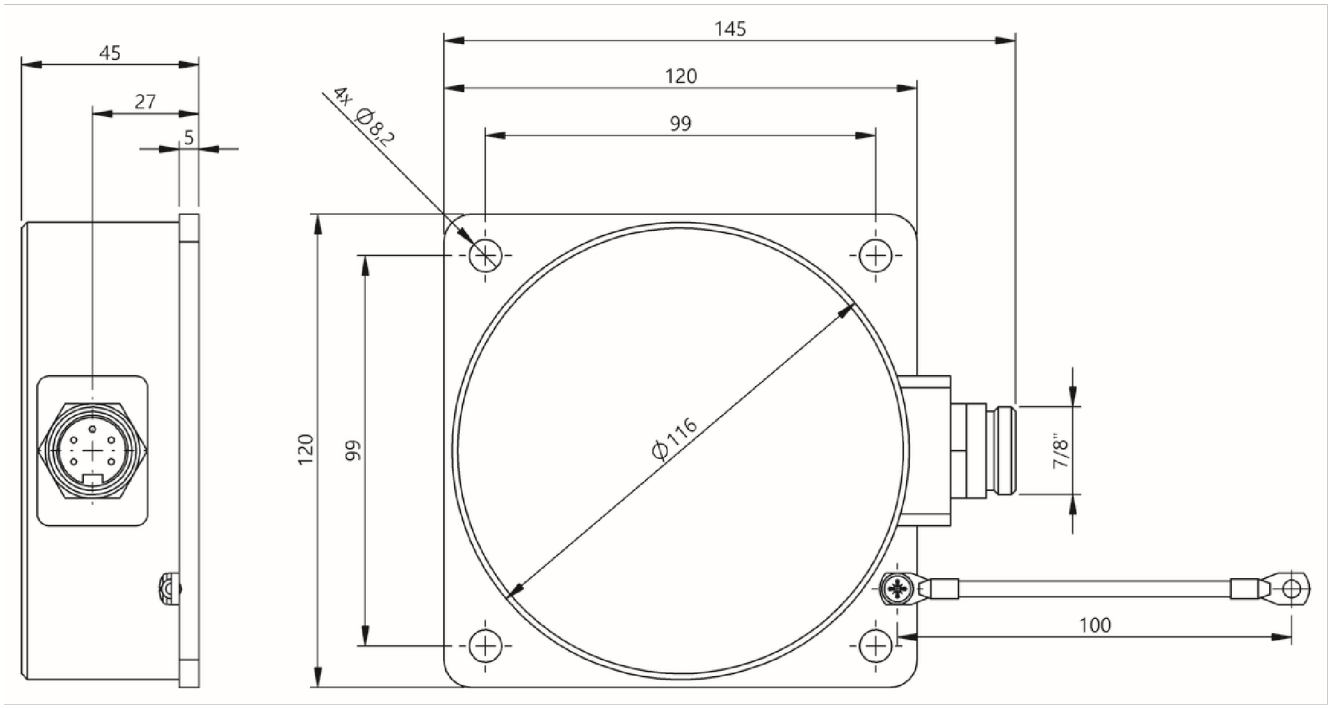
	BIC0075 BIC 1P0-P25A0-Q120AE-SA3A40	BIC0076 BIC 2P0-P25A0-Q120AE-SA3A40	BIC0073 BIC 1P0-P25A0-Q120AE-SA3A50	BIC0074 BIC 2P0-P25A0-Q120AE-SA3A50
	Power only	Power only	Power only	Power only
	0...4 mm	0...4 mm	0...4 mm	0...4 mm
	Base	Remote	Base	Remote
	Connector, 7/8“, 4-pole	Connector, 7/8“, 4-pole	Connector, 7/8“, 5-pole	Connector, 7/8“, 5-pole
	24 VDC	–	24 VDC	–
	–	24 VDC	–	24 VDC
	–	5 A	–	5 A
	Aluminum, black anodized	Aluminum, black anodized	Aluminum, black anodized	Aluminum, black anodized
	120 x 45 x 120 mm	120 x 45 x 120 mm	120 x 45 x 120 mm	120 x 45 x 120 mm
	-10...50 °C	-10...50 °C	-10...50 °C	-10...50 °C
	IP67	IP67	IP67	IP67
	Page 229	Page 229	Page 229	Page 229



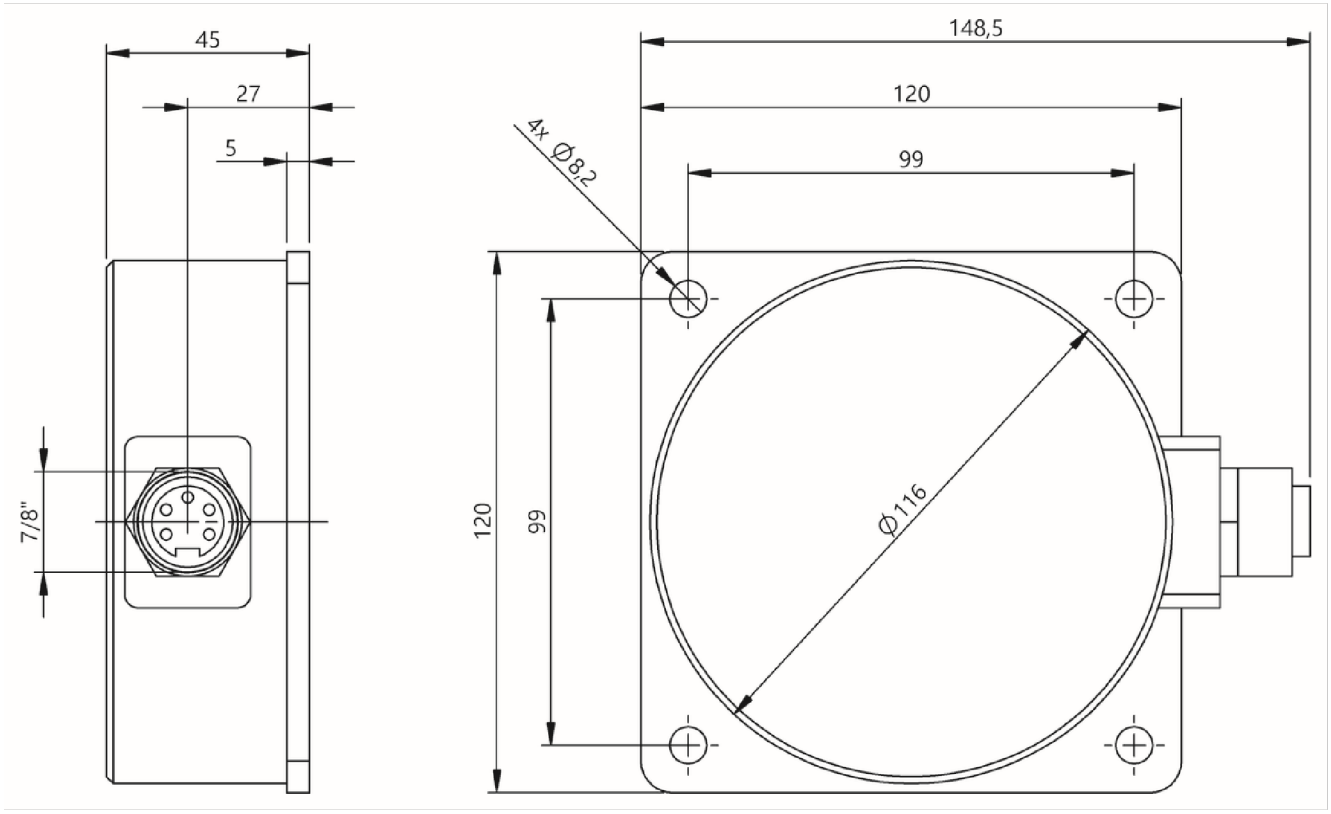
BIC0007



BIC0008



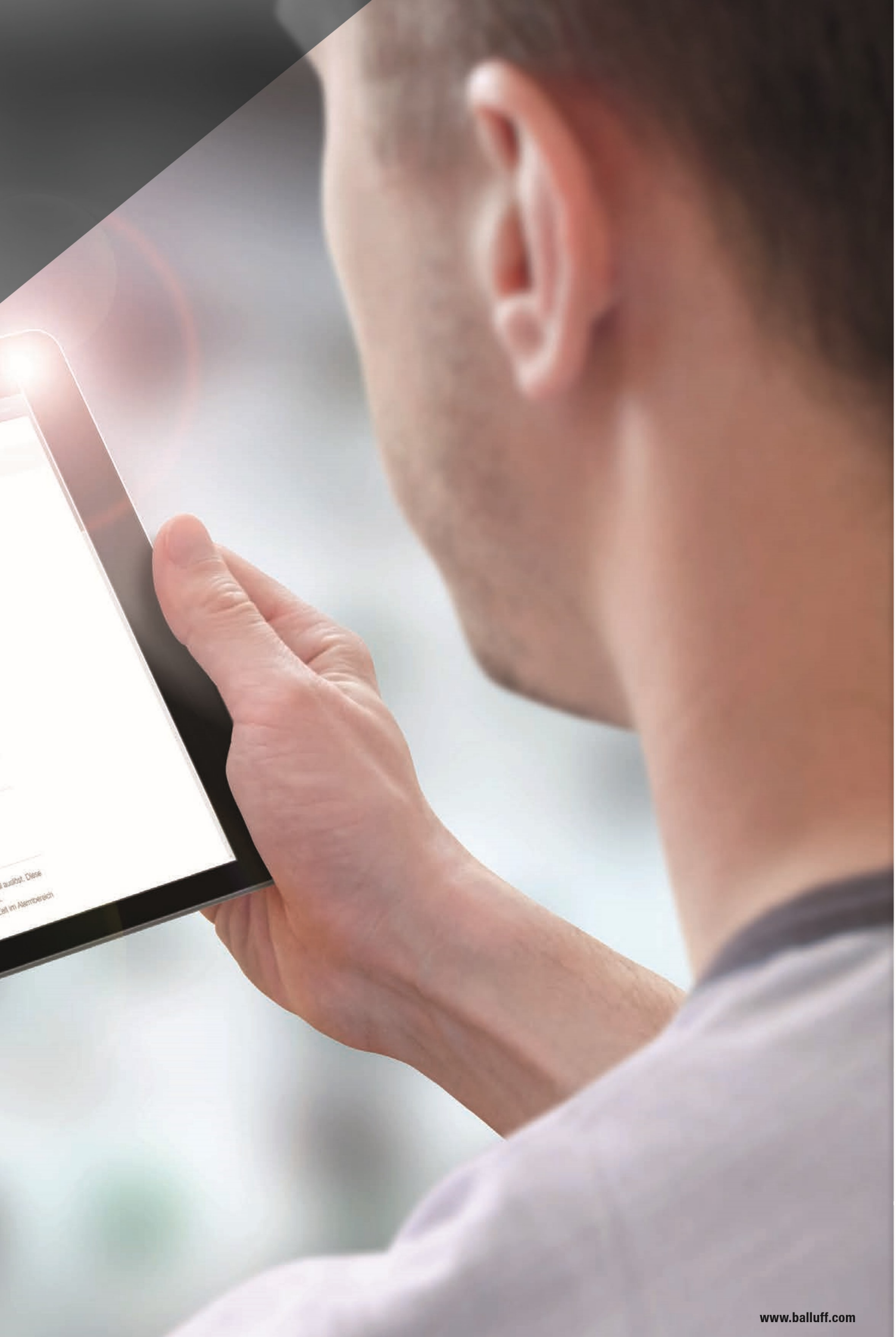
BIC0075, BIC0073



BIC0076, BIC0074

Industrial Networking

BASICS AND GLOSSARY



CC-Link

A standardized fieldbus designed to integrate the most diverse automation components of a wide range of providers. The fieldbus offers high transmission speed and deterministic communication. The open network is used mainly in Asia. CC-Link is supported by the worldwide represented CC-Link Partner Association CLPA. More than 1000 companies belong to this association .

CC-Link IE/Field

Gigabit per second transmission and real time protocol which enables controlling of decentralized I/O field devices with virtually no transmission delay. Its transmission rate is at least 10 x faster than the current available industrial Ethernet-based networks. CC-Link IE/Field is the first industrial Gigabit Ethernet network which can be brought down to the field level. A key difference between CC-Link IE/Field and other industrial Ethernet solutions is that the former implements deterministic communication without additional Ethernet switches. This reduces the hardware costs and implementation effort for such components.

Devicenet

An open fieldbus standard developed by Rockwell Automation and the ODVA (Open Devicenet Vendor Association), which is based on the CAN protocol. Devicenet is standardized in EN 50325. Specification and maintaining of the standard is the responsibility of the ODVA.

I/O module

Modules with IO-Link interface which connect the binary and analog sensors and actuators to the control level through a bus. Use of these modules substantially reduces the number of lines needed. They also offer additional functions for signal pre-processing and expanded diagnostics capabilities. Different designs and connection techniques enable solutions for a wide variety of applications, even under the most extreme environmental conditions.

EtherCAT

Open fieldbus system based on Ethernet and which due to its speed enables data transmission in real time. The technology for industrial networks in automation technology was standardized in the international standards IEC 61158 and IEC 61784 as well as in ISO 15745-4.

Ethernet/IP

Industrial Ethernet standard for industrial networks in automation technology, which is used especially in the North American market and in combination with Rockwell controllers. Standardization is through the international series IEC 61158. Based on CIP protocol (Common Industrial Protocol) and is used for transmitting cyclical I/O data as well as acyclic parameter data.

Inductive couplers

Non-contact transmission of data and energy over an air gap which eliminates mechanical wear.
The units are easy to use and require no maintenance.
They can be easily disconnected, so that new situations can be quickly responded to. The disadvantages of fixed wiring such as cable wear and break are eliminated while positive outcomes are gained: Elimination of unplanned machine stoppages, high system availability, shorter cycle times and more flexible sequences.

IO-Link

Worldwide standardized IO technology (IEC 61131-9) for communicating from the controller to the lowest level of automation. The interface can be used universally and is a fieldbus-neutral, point-to-point connection that operates using an unshielded industrial cable. Advantages of this digital communication standard include simple installation, need-based maintenance, efficient operation and the highest machine availability.

IO-Link device manager

Software for configuring IO-Link devices. Direct access to all IO-Link devices in the network via UDP (User Datagram Protocol) enables parallel configuration of different devices in the same network. The multi-window function of the software allows different devices to be configured and diagnosed at the same time. The ability to perform an IO test using software and make parameter settings without the PLC means significantly faster system startup. Along with PLC communication, process-, parameter- and diagnostics data can be transported without affecting the process cycle. This communication takes place continuously with all IO-Link devices in the network. The IO-Link device manager can be used with all Profinet and Ethernet/IP master modules from Balluff.

Memory module

A network technology with built-in data storage. In machines and equipment it can, for example, assume the function of an interchangeable data carrier. It logs and stores many parameters: including the operating data of the tool, the histogram of the temperature level in operation, the required power level up to the number of tool cycles, and the error messages in the tool.
This means operating data as well as supplemental information is always available during maintenance or repair in the factory.

Network module

Interface between fieldbus/industrial Ethernet and the IO-Link communication standard. Ever faster, more efficient and variable production demands seamless communication from the sensor to the Internet. The result is a growing amount of data within the production processes. This demands components which can make this information available. At the same time an infrastructure is required which transports the data across all levels. Network modules are required for these purposes. They usually serve as an interface between fieldbus/industrial Ethernet and the IO-Link communication standard.

Profibus

Universal standard for fieldbus communication in automation technology. This fieldbus is standardized in IEC 61158.
The basis of the protocol architecture is the OSI layer model. Profibus (Process Field Bus) is especially suited for complex applications and is today one of the most used fieldbuses in automation technology.

Profinet

Official industrial Ethernet standard of the Profibus User Organization. Based on TCP/IP, the protocol connects drives and safety technology directly to the network world.
Profinet (Process Field Network) is real time Ethernet capable and ensures significantly faster communication than Profibus. Both standards can be easily combined with each other. Profinet can be integrated consistently from the control level to the drive. Profinet is a communication solution which has been used in many applications for many years worldwide.

Signal converter

A module which stores an incoming signal in a particular format and outputs it in a different format.
Frequently, such modules are used in the conversion of analog signals into digital signals or vice versa. Likewise, you can convert different communication protocols using signal converters.

Switch, managed

Device which receives, processes and passes data packets to other devices in the network. It thereby connects individual network segments to each other. Can be configured so that it is matched to the network requirements (in contrast to an unmanaged switch) and has for example functions which ensure high system availability and high safety requirements.

Switch, unmanaged

Device which receives, processes and passes data packets to other devices in the network. It thereby connects individual network segments to each other. Cannot be configured and is integrated into a network using plug-and-play with no pre-settings.

UL

Independent, globally recognized organization with headquarters in the USA. Tests and certifies products, product groups and materials for safety. UL (Underwriters Laboratories) is not a product approval body, rather it tests whether products meet the specific safety requirements for certain applications. The UL logo, which can be attached on a product which has been certified, is recognized as a quality indicator especially in North America.