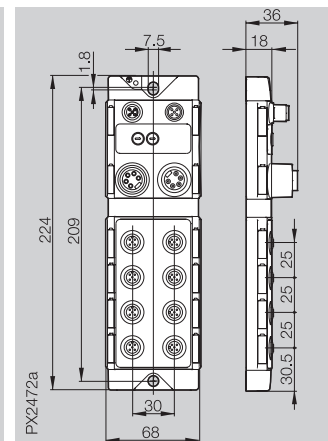
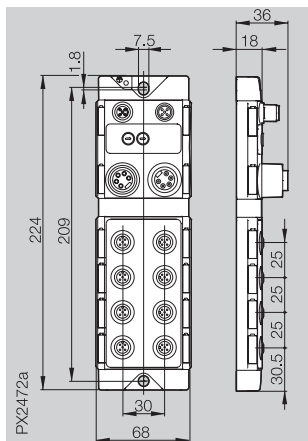


The Balluff PROFIBUS interface provides for optimum operation of IO-Link modules, thereby assuring acyclical operation of PROFIBUS-DP V1 as well.

The module includes four IO-Link Master ports which can be parameterized and used fully independently of each other. All IO-Link ports support COM1, COM2, COM3 (3-wire only) as well as SIO mode.

The IO-Link ports also include an additional input or in-/output on Pin 2. This means that SIO mode also enables connecting of complementary NO/NC and DESINA sensors.

You get four additional standard IO ports with eight inputs or eight freely configurable in-/outputs for standard sensors and actuators up to 1.6 A.



Ordering code	BNI-PBS-501-000-Z001	BNI-PBS-502-000-Z001
Supply voltage U_s	18...30 V DC	18...30 V DC
Function indicator	BUS RUN	BUS RUN
Power indicator	U_A , U_s , under-voltage	U_A , U_s , under-voltage
Connection: Fieldbus	M12, B-coded	M12, B-coded
Connection: Supply voltage	7/8"	7/8"
Connection: I/O ports	M12, A-coded	M12, A-coded
No. of I/O ports	8	8
No. of inputs	12	12
No. of outputs	12	12
Configurable	no	yes
max. load current sensors/channel	200 mA	200 mA
max. output load current		1.6 A
Port status indicator	LED yellow	LED yellow
Port diagnostic indicator	Short circuit/overload: LED red	Short circuit/overload: LED red
Total current $U_{Actuator}$	< 9 A	< 9 A
Total current U_{Sensor}	< 9 A	< 9 A
Enclosure rating per IEC 60529	IP 67 (when attached)	IP 67 (when attached)
Operating temperature T_a	-5...+55 °C	-5...+55 °C
Storage temperature	-25...+85 °C	-25...+85 °C
Weight	approx. 580 g	approx. 580 g
Attachment	2 mounting holes	2 mounting holes
Dimensions	225x68x37 mm	225x68x37 mm
Housing material	Nickel-plated GdZn	Nickel-plated GdZn
IO-Link		
No. of IO-Link Master Ports	4x Master	4x Master
Operating modes (3-wire)	SIO, COM 1, COM 2, COM 3	SIO, COM 1, COM 2, COM 3
Indicators Communication	LED green	LED green
Error	LED red	LED red
max. load current for IO-Link device	1.6 A	1.6 A



Fieldbus	PROFINET	PROFINET
IO-Link	Master	Master
Version	4x IO-Link, 12x I	4x IO-Link, 12x I/O

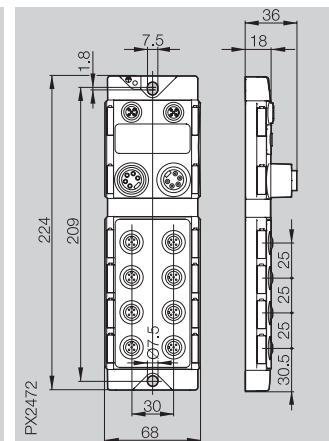
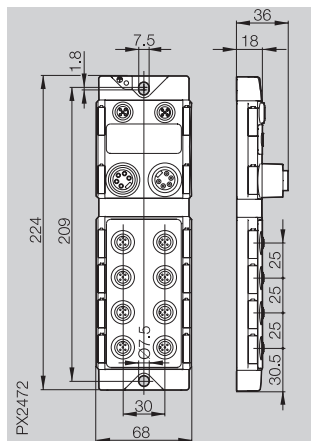
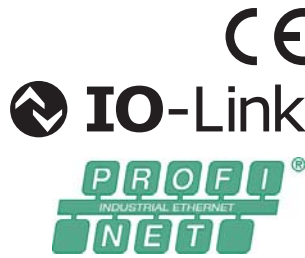
For high-performance applications consider the PROFINET IO-Link Master interface, which also supports isochronal real-time (IRT) using ERTEC 200.

The module includes four IO-Link Master ports which can be parameterized and used fully independently of each other.

All IO-Link ports support COM1, COM2, COM3 (3-wire only) as well as SIO mode.

The IO-Link ports also include an additional input or in-/output on Pin 2. This means that SIO mode also enables connecting of complementary NO/NC and DESINA sensors.

You get four additional standard IO ports with eight inputs or eight freely configurable in-/outputs for standard sensors and actuators up to 1.6 A.



Ordering code	BNI-PNT-501-000-Z002	BNI-PNT-502-000-Z002
Supply voltage U_s	18...30 V DC	18...30 V DC
Function indicator	BUS RUN	BUS RUN
Power indicator	U_A , U_s , under-voltage	U_A , U_s , under-voltage
Connection: Fieldbus	M12, B-coded	M12, B-coded
Connection: Supply voltage	7/8"	7/8"
Connection: I/O ports	M12, D-coded	M12, D-coded
No. of I/O ports	8	8
No. of inputs	12	12
No. of outputs	12	12
Configurable	no	yes
max. load current sensors/channel	200 mA	200 mA
max. output load current	1.6 A	1.6 A
Port status indicator	LED yellow	LED yellow
Port diagnostic indicator	Short circuit/overload: LED red	Short circuit/overload: LED red
Total current U_o	< 9 A	< 9 A
Total current U_s	< 9 A	< 9 A
Enclosure rating per IEC 60529	IP 67 (when attached)	IP 67 (when attached)
Operating temperature T_a	-5...+55 °C	-5...+55 °C
Storage temperature	-25...+85 °C	-25...+85 °C
Weight	approx. 580 g	approx. 580 g
Attachment	2 mounting holes	2 mounting holes
Dimensions	225x68x37 mm	225x68x37 mm
Housing material	Nickel-plated GdZn	Nickel-plated GdZn

IO-Link		
No. of IO-Link Master Ports	4x Master	4x Master
Operating modes (3-wire)	SIO, COM 1, COM 2, COM 3	SIO, COM 1, COM 2, COM 3
Indicators Communication	LED green	LED green
Error	LED red	LED red
max. load current for IO-Link device	1.6 A	1.6 A

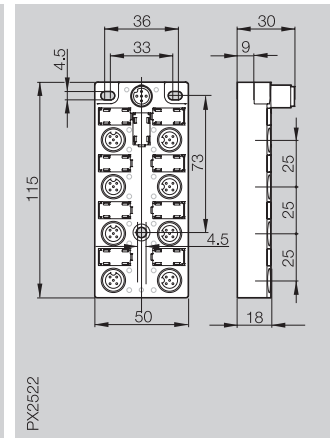
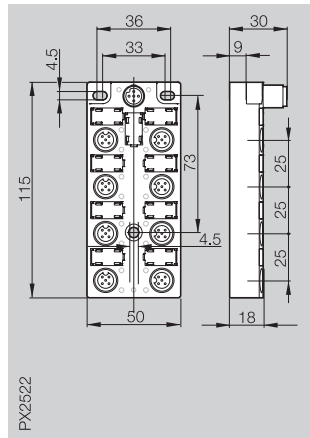


The Sensor Hub is an efficient way to complete your machine installation. You can conveniently connect standard sensors using 8 or 16 standard inputs.

Each input can be programmed as normally open or normally closed using a parameter set. This adds significant flexibility to your installation. complementary DESINA sensors can be easily connected to the DI16 Sensor Hub.

Communication with the IO-Link Master takes place in COM2 mode (38.4 kbaud) on the standard 3-conductor cable. This gives you a complete process representation in as little as 2 ms.

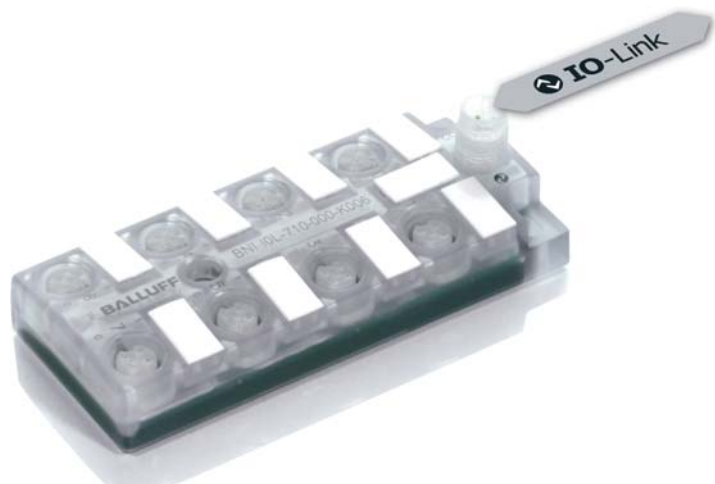
IO-Link	Device	Device
Version	8x I	16x I



Ordering code	BNI IOL-102-000-K006	BNI IOL-104-000-K006
---------------	----------------------	----------------------

Supply voltage U_s	18...30 V DC	18...30 V DC
Function indicator IO-Link RUN	LED green	LED green
Power indicator	LED green	LED green
Connection: IO-Link	M12, A-coded, male	M12, A-coded, male
Connection: I/O ports	M12, A-coded, female	M12, A-coded, female
No. of I/O ports	8	8
No. of inputs	8	16
Configurable	N.O./N.C.	N.O./N.C.
max. load current sensors/channel	200 mA	200 mA
Port status indicator	LED yellow	LED yellow
Total current U_s	< 1.2 A	< 1.2 A
Enclosure rating per IEC 60529	IP 67 (when attached)	IP 67 (when attached)
Operating temperature T_a	-5...+55 °C	-5...+55 °C
Storage temperature	-25...+85 °C	-25...+85 °C
Weight	approx. 86 g	approx. 86 g
Attachment	3 mounting holes	3 mounting holes
Dimensions (LxWxH)	115x50x31 mm	115x50x31 mm
Housing material	PC	PC

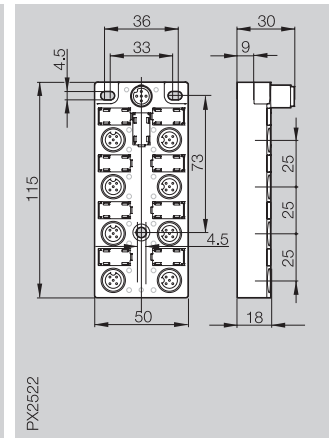
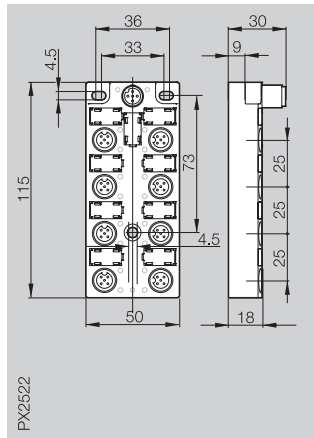
IO-Link		
No. of IO-Link Ports	1x Device	1x Device
Operating mode	COM 2	COM 2
Communication indicator	LED green	LED green
Error indicator	LED red	LED red
max. load current	< 1.2 A	< 1.2 A
Parameter	N.O./N.C. per input	N.O./N.C. per input



IO-Link	Device	Device
Version	4 AI-I, 8× I	4 AI-U, 8× I

With the analog Sensor Hub you can select from between two additional variants with current and voltage interface. This allows you to reliably connect non-IO-Link capable sensors.

Four analog channels are usable which can be supplemented with four additional dual-use standard input ports per IEC 61131. The analog channels have a resolution of 10 bits.



Ordering code	BNI IOL-709-000-K006	BNI IOL-710-000-K006
Supply voltage U_s	18...30 V DC	18...30 V DC
Function indicator IO-Link RUN	LED green	LED green
Power indicator	LED green	LED green
Connection: IO-Link	M12, A-coded, male	M12, A-coded, male
Connection: I/O ports	M12, A-coded, female	M12, A-coded, female
No. of I/O ports	8	8
No. of inputs	8	8
Configurable	N.O./N.C.	N.O./N.C.
max. load current sensors/channel	200 mA	200 mA
Port status indicator	LED yellow	LED yellow
Total current U_s	< 1.2 A	< 1.2 A
Enclosure rating per IEC 60529	IP 67 (when attached)	IP 67 (when attached)
Operating temperature T_a	-5...+55 °C	-5...+55 °C
Storage temperature	-25...+85 °C	-25...+85 °C
Weight	approx. 86 g	approx. 86 g
Attachment	3 mounting holes	3 mounting holes
Dimensions (L×W×H)	115×50×31 mm	115×50×31 mm
Housing material	PC	PC
Analog ports		
Number of analog ports	4	4
Interface	4...20 mm	0...10 V DC
Resolution	10 bits	10 bits
Analog signal indicator	LED green	LED green
IO-Link		
No. of IO-Link ports	1× Device	1× Device
Operating mode	COM 3 (3-wire)	COM 3 (3-wire)
Communication indicator	LED green	LED green
Error indicator	LED red	LED red
max. load current	< 1.2 A	< 1.2 A
Parameter	N.O./N.C. per input, 1 switch point per analog channel	N.O./N.C. per input, 1 switch point per analog channel

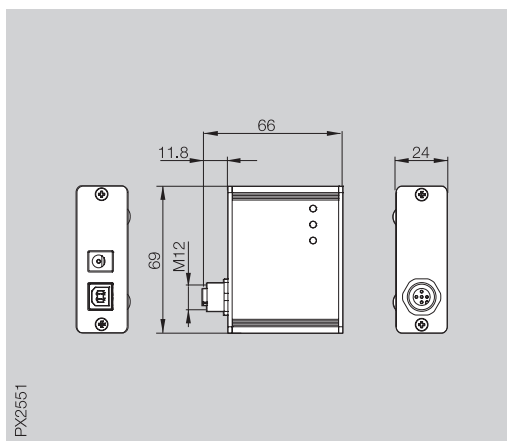


Test and configure IO-Link devices using the **IO-Link Master Tool**.

Released from the controller, you can now place an IO-Link device in service, call up the process parameters and load all the service parameters. The USB port makes it simple to connect to a laptop, and software makes operation easy.

Supply voltage for the IO-Link devices is provided directly through the USB port. If additional power is required, an external power supply provides this energy.

Network	USB
IO-Link	1× Master



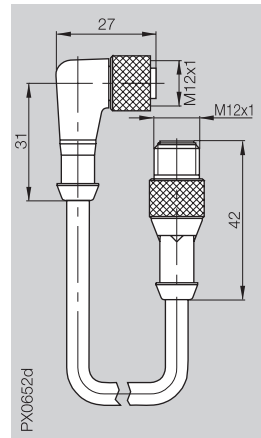
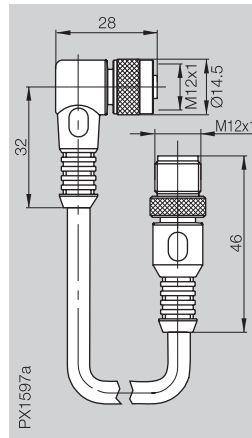
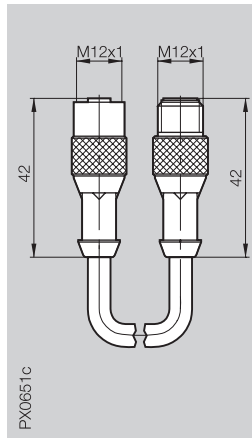
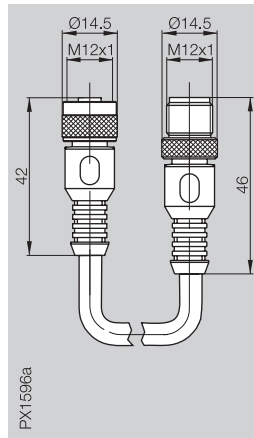
Ordering code	BNI USB-901-000-A301
---------------	----------------------

Power indicator	LED green
Connection: Network	USB B-female
Connection: Supply voltage	DC-9, 2.1 mm
Connection: IO-Link Port	M12, A-coded
No. of IO-Link Ports	1
max. load current for IO-Link port	50 mA using USB/1.6 A using external power supply
USB status indicator	LED green
Error indicator	LED red
Enclosure rating per IEC 60529	IP 40 (when attached)
Operating temperature T _a	-5...+55 °C
Storage temperature	-25...+70 °C
Weight	approx. 96 g
Attachment	None
Dimensions (L×W×H)	70×55×25 mm
Housing material	AL

IO-Link	
IO-Link	Master
Operating mode	SIO, COM 1, COM 2, COM 3
Communication indicator	LED green

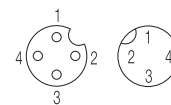
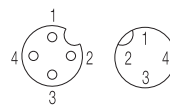
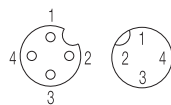
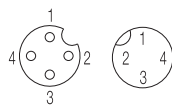


Connector/cable	BKS-B 19-_/GS4	BKS-S 19-_/GS4	BKS-B 20-_/GS4	BKS-S 20-_/GS4
Version	Straight female/ straight male	Straight female/ straight male	Right angle female/ straight male	Right angle female/ straight male
Use	Connector type sensors S 4	Connector type sensors S 4	Connector type sensors S 4	Connector type sensors S 4



No LED, N.O.	BKS-B 19-1/GS4-PU-__	BKS-S 19-1/GS4-PU-__		
No LED, complementary	BKS-B 19-3/GS4-PU-__	BKS-S 19-3/GS4-PU-__	BKS-B 20-3/GS4-PU-__	BKS-S 20-3/GS4-PU-__
With LED, N.O.	PNP		BKS-B 20-4/GS4-PU-__	BKS-S 20-4/GS4-PU-__
Manufacturer	Balluff	Lumberg	Balluff	Lumberg
Supply voltage U _s	10...30 V DC	10...30 V DC	10...30 V DC	10...30 V DC
Cable	molded-on PUR	molded-on PUR	molded-on PUR	molded-on PUR
No. of wires x conductor cross section	3x0.34 mm ² /4x0.25 mm ²	3x0.34 mm ² /4x0.25 mm ²	3x0.34 mm ² /4x0.25 mm ²	3x0.34 mm ² /4x0.25 mm ²
Enclosure rating per IEC 60529	IP 67	IP 68 per BWN Pr. 20	IP 67	IP 68 per BWN Pr. 20
Ambient temperature range T _a	-25...+85 °C	-25...+90 °C	-25...+85 °C	-25...+90 °C

View of female/male side



Please append cable length to ordering code!
PUR, standard lengths 0.6 m, 1 m, 2 m = 00.6, 01, 02
Other cable properties or lengths on request.

Ordering example
PUR, length 1 m =
BKS-S 20-1/GS4-PU-01



See additional connectors in the accessories catalog, on CD-ROM, DVD-ROM or online!

www.balluff.com

