

BALLUFF







BNI IOL-910-002-K060
IO-Link Memory Device
User's Guide



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1 General information

1.1. Structure of the manual	This manual is structured such that one chapter builds on the other. Chapter 2: Basic safety instructions Chapter 3: First steps				
1.2. Typographical Conventions	The following typographical conventions are used in this manual.				
Enumerations	Enumeration is shown in the form of bulleted lists. <ul style="list-style-type: none">• Entry 1• Entry 2				
Actions	Action instructions are indicated by a preceding triangle. The result of an action is indicated by an arrow. <ul style="list-style-type: none">➤ Action instruction 1➤ Result of action➤ Action instruction 2 Actions can also be indicated as numbers in parentheses. <ul style="list-style-type: none">(1) Step 1(2) Step 2				
Syntax	Numbers: Decimal numbers are shown without additional information (e.g. 123), Hexadecimal numbers are shown with the additional indicator hex (e.g., 00 _{hex}).				
Cross-references	Cross-references indicate where additional information on the topic is located.				
1.3. Symbols	<hr/> <table><tr><td></td><td>Note This symbol indicates general notes.</td></tr></table> <hr/> <table><tr><td></td><td>Attention! This symbol indicates a security notice which must be observed.</td></tr></table> <hr/>		Note This symbol indicates general notes.		Attention! This symbol indicates a security notice which must be observed.
	Note This symbol indicates general notes.				
	Attention! This symbol indicates a security notice which must be observed.				
1.4. Abbreviations	BNI Balluff Network Interface DPP Direct parameter page IOL IO-Link EMC Electromagnetic Compatibility SPDU Service Protocol Data Unit				
1.5. Divergent views	Product views and images can differ from the specified product in this manual. They serve only as an illustration.				

2.1. Intended use The BNI IOL-910-002-K060 serves as a decentralized memory module for storing various machine data. In 14 data fields a 64 byte data such as:
Service life, clamping cycles, maintenance data, etc. can be stored.

2.2. Installation and Startup



Attention!

Installation and startup are to be performed by trained technical personnel only. Skilled specialists are people who are familiar with the work such as installation and the operation of the product and have the necessary qualifications for these tasks. Any damage resulting from unauthorized tampering or improper use shall void warranty and liability claims against the manufacturer. The operator is responsible for ensuring that the valid safety and accident prevention regulations are observed in specific individual cases.

2.3. General Safety Notes

Commissioning and inspection

Before commissioning, carefully read the User's Guide. The system must not be used in applications in which the safety of persons depends on the function of the device.

Intended use

Warranty and liability claims against the manufacturer shall be rendered void by damage from:

- Unauthorized tampering
- Improper use
- Use, installation or handling contrary to the instructions provided in this User's Guide.

Obligations of the owner/operator!

The device is a piece of equipment in accordance with EMC Class A. This device can produce RF noise. The owner/operator must take appropriate precautionary measures against this for its use. The device may be used only with a power supply approved for this. Only approved cables may be connected.

Malfunctions

In the event of defects and device malfunctions that cannot be rectified, the device must be taken out of operation and protected against unauthorized use. Approved use is ensured only when the housing is fully installed.

2.4. Resistance to Aggressive Substances



Attention!

The BNI modules always have good chemical and oil resistance. When used in aggressive media (such as chemicals, oils, lubricants and coolants, each in a high concentration (i.e. too little water content)), the material must first be checked for resistance in the particular application. No defect claims may be asserted in the event of a failure or damage to the BNI modules caused by such aggressive media.

Dangerous Voltage



Attention!

Before working on the device, switch off its power supply.



Note

In the interest of continuous improvement of the product, Balluff GmbH reserves the right to change the technical data of the product and the content of these instructions at any time without notice.

3 First Steps

3.1. Connection overview

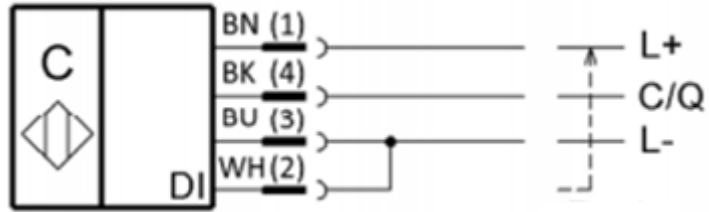


Figure BNI IOL-...-K060

- 1 Power supply 24V
- 2 Not used
- 3 Power supply 0V
- 4 IO-Link Interface

3.2. Mechanical Connection

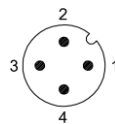
The IO-Link Device Memory Device can be mounted with M3 screws through the mounting holes. Both reverse mounting and standard mounting is possible.

3.3. Electrical Connection

The modules do not require a separate power supply connection. Power is supplied via the IO-Link interface.

3.4. IO-Link Interface

IO-Link (M12, A-coded, male)



Pin	Function
1	Sensor power supply, +24V
2	-
3	GND, reference potential
4	C/Q, IO-Link Data transmission channel



Note

The connection to the higher-level IO-Link master module is made with a standard 3-pin cable.

Module variants

Modul variants	Function
BNI IOL-910-002-K060	Storage area 14*64 Byte

4.1. Communication parameters **BNI IOL-910-002-K060**

Transmission rate	COM2 (38,4 kBaud)
Frametyp	1
Minimum cycle time	2 ms
IO-Link version	1.1

4.2. Parameterdaten / Bedarfsdaten

	DPP	SPDU		Object name	Length	Range	Default value
	Index	Index	Sub-Index				
Identification Data	0x07			Vendor ID	2 Byte	read only	0x0378
	0x08			Device ID	3 Byte		0x050C00
	0x09						
	0x0A						
	0x0B						
	0x10	0	Vendor name	7 Byte	BALLUFF		
	0x11	0	Vendor text	15 Byte	www.balluff.com		
	0x12	0	Product name	20 Byte	BNI IOL-910-002-K060		
	0x13	0	Product ID	7 Byte	BNI00AM		
	0x14	0	Product text	22 Byte	Memory Device		
	0x16	0	Hardware Revision	-	-		
	0x17	0	Firmware Revision	-	-		
	0x18	0	Application Specific Tag	32 Byte	0x00		
Parameter Data		0x100	0	Data Field 1	64 Byte		0x00
		0x101	0	Data Field 2	64 Byte		0x00
		:	:	:	:	:	:
		0x10D	0	Data Field 14	64 Byte		0x00



Note

This device does not support data management!

5 Technical data

5.1. Dimension

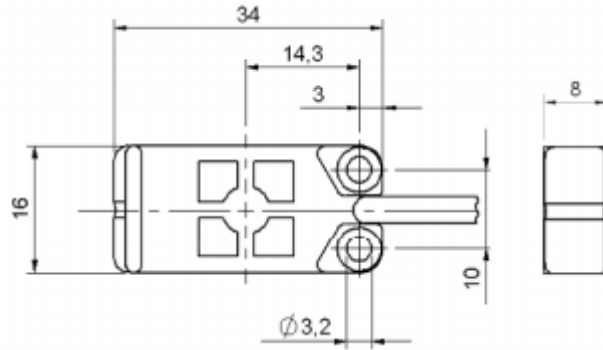


Figure 5-1: Dimension BNI IOL-....K060

5.2. Mechanical data

Housing material	PP
IO-Link Port	M12, A-coded, male
Enclosure rating per IEC 60529	IP 67
Dimensions (B x H x T in mm)	34 x 16 x 8
Cable length	0,30 m
Cable diameter D max	3,5 mm

5.3. Electrical Data

Connection type	Cable with connector
Operating voltage	18...30 V DC, per EN 61131-2
Rated operational current	50 mA
Ripple	<1%

5.4. Operating conditions

Operating temperature	-25 °C ... 70 °C
Storage temperature	-25 C ... 80 °C

5 Technical data

5.5. LED Indicators

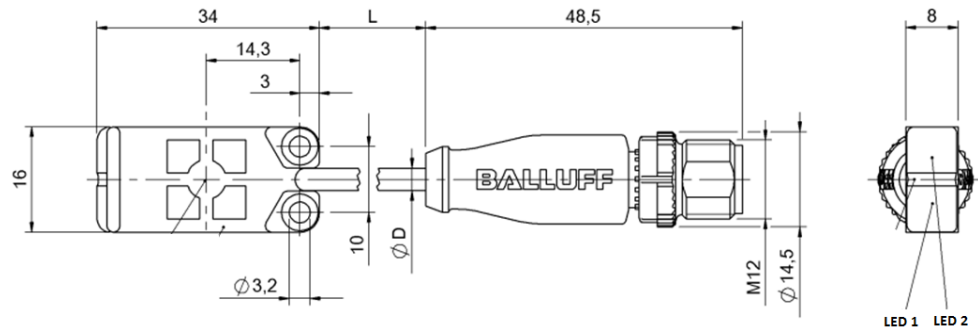


Abb. 5-2: LED Indicators

Status LEDs

BNI IOL-910-000-K060

LED	Display	Function
LED 1	Green	Communication ok
LED 2	Without function	

6.1. Type designation code

BNI IOL-910-002-K060

Balluff Network Interface

IO-Link interface

Functions

910 = Memory Modul

Version

002 = Standard execution

Mechanical design

K060 = Plastic housing, PUR cable with M12 connector

6.2. Order information

Type	Order code
BNI IOL-910-002-K060	BNI00AM

6.3. Scope of delivery

- IO-Link module
- holder
- User's guide

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