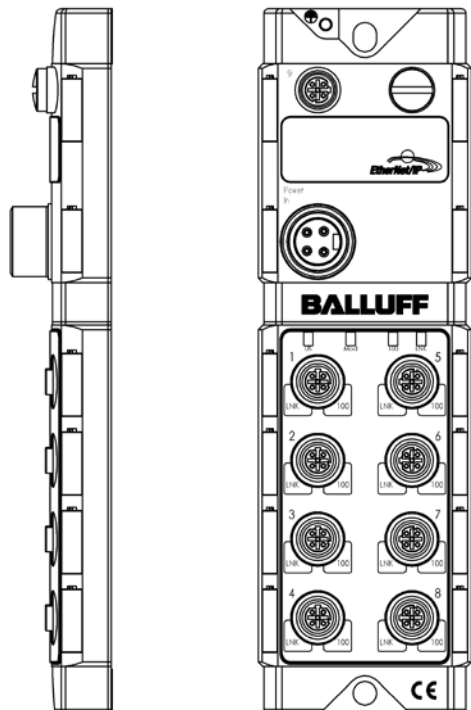




BNI EIP-950-000-Z009  
BNI EIP-950-000-Z009-C07  
EtherNet/IP™ IP67 modules. Unmanaged Switch  
User's Guide



## Table of Contents

<b>1</b>	<b>Notes</b>	<b>2</b>
1.1.	Structure of the guide	2
1.2.	Typographical Conventions	2
	Enumerations	2
	Actions	2
	Syntax	2
	Cross-references	2
1.3.	Symbols	2
1.4.	Abbreviations	2
1.5.	Deviating views	2
<b>2</b>	<b>Safety</b>	<b>3</b>
2.1.	Intended Use	3
2.3.	General Safety Notes	3
2.4.	Resistance to Aggressive Substances	3
	Dangerous Voltage	3
<b>3</b>	<b>First Steps</b>	<b>4</b>
3.1.	Modulübersicht	4
3.2.	Mechanical Connection	5
3.3.	Electrical Connection	5
	Power Supply	5
	Grounding	5
	Ethernet IP Interface	5
<b>4</b>	<b>Technical Data</b>	<b>6</b>
4.1.	Dimensions	6
4.2.	Mechanical Data	6
4.3.	Operating Conditions	6
4.4.	Electrical Data	6
4.5.	Ethernet	7
4.6.	Function Indicators	7
	Module Status	7
<b>5</b>	<b>Appendix</b>	<b>8</b>
5.1.	Scope of Delivery	8
5.2.	Order Number	8
5.3.	Ordering Information	8

## 1 Notes

- 1.1. Structure of the guide** This guide is arranged so that one chapter builds upon the other.  
Chapter 2: Basic safety instructions  
Chapter 3: Main steps for installing the device  
.....
- 1.2. Typographical Conventions** The following typographical conventions are used in this manual.
- Enumerations** Enumeration is shown in the form of bulleted lists.
- Entry 1,
  - Entry 2
- Actions** Action instructions are indicated by a preceding triangle. The result of an action is indicated by an arrow.
- Action instruction 1.
  - Result of action.
  - Action instruction 2.
- Actions can also be indicated as numbers in parentheses.
- (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<sub>hex</sub>) or the prefix "0x" (e.g., 0x00).
- Cross-references** Cross-references indicate where additional information on the topic is located.
- 
- 1.3. Symbols**
-  **Note**  
This symbol indicates general notes.
- 
-  **Attention!**  
This symbol indicates a security notice which must be observed.
- 
- 1.4. Abbreviations**
- |     |                               |
|-----|-------------------------------|
| BNI | Balluff Network Interface     |
| EIP | EtherNet/IP™                  |
| EMC | Electromagnetic compatibility |
| FE  | Function ground               |
- 1.5. Deviating views** Product views and illustrations in this manual may differ from the actual product. They are intended only as illustrative material.

### 2.1. Intended Use

The BNI EIP-950-000-Z009 serves as an unmanaged switch module for connecting to an EtherNet/IP™ network.

### 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.

Intended 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.

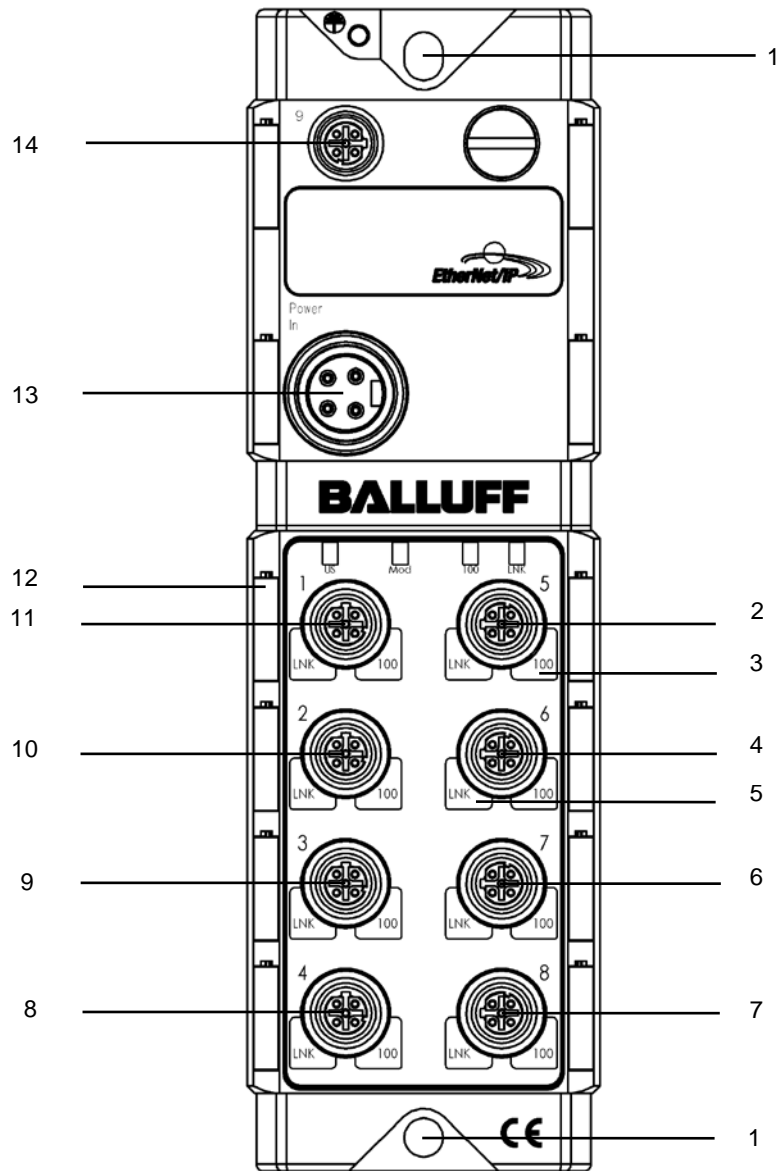


#### Note

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. Modulübersicht



- |   |                               |    |                      |
|---|-------------------------------|----|----------------------|
| 1 | Mounting hole                 | 10 | Ethernet Port 2      |
| 2 | Ethernet Port 5               | 11 | Ethernet Port 1      |
| 3 | Status LED, transmission rate | 12 | Label                |
| 4 | Ethernet Port 6               | 13 | Power supply         |
| 5 | Status LED: Link active       | 14 | Ethernet Uplink Port |
| 6 | Ethernet Port 7               |    |                      |
| 7 | Ethernet Port 8               |    |                      |
| 8 | Ethernet Port 4               |    |                      |
| 9 | Ethernet Port 3               |    |                      |

### 3 First Steps

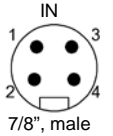
#### 3.2. Mechanical Connection

The module is secured by means of two M6 screws and two washers. Insulation support is available separately.


#### 3.3. Electrical Connection

##### Power Supply

BNI EIP-950-000-Z009

 7/8", male	Pin	Signal	Description
	1	+24 V	Power 1
	2	+24 V	Power 2
	3	FE	Function Earth
	4	0V	Power 1 Common GND

BNI EIP-950-000-Z009-C07

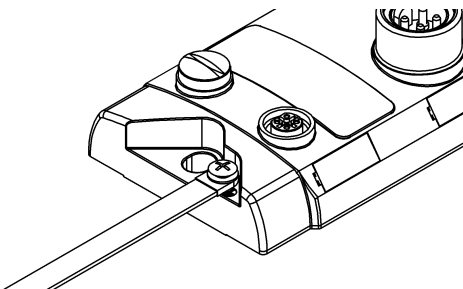
 7/8", male	Pin	Signal	Description
	1	+24 V	Power 1
	2	+24 V	Power 2
	3	0V	Power 2 Common GND
	4	0V	Power 1 Common GND



##### Note

Total current < 9 A The total current of all modules must not exceed 9 A even in the case of series connection of the actuator supply.

##### Grounding

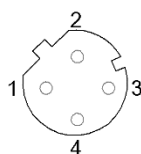


##### Note

The functional ground connection between housing and machine must have a low impedance and be as short as possible.

##### Ethernet IP Interface

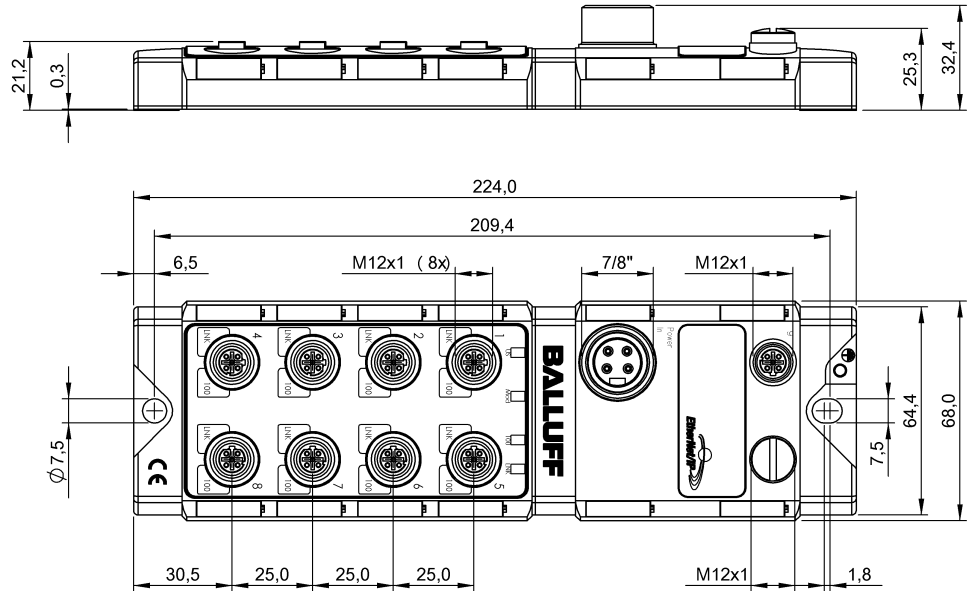
M12, D-coded, female



Pin	Function	
1	Tx+	Transmit Data +
2	Rx+	Receive Data +
3	Tx-	Transmit Data -
4	Rx-	Receive Data -

4 Technical Data

4.1. Dimensions



4.2. Mechanical Data

Housing material	Die-cast zinc, matte nickel plated
Enclosure rating per IEC 60529	IP 67 (only when plugged-in and threaded-in)
Supply voltage	7/8" 4-pin male
Dimensions (W x H x D in mm)	68 x 224 x 32.4
Mounting type	2-hole screw mount
Ground strap attachment	M4
Weight	Approx. 580 g

4.3. Operating Conditions

Operating temperature T <sub>a</sub>	-5 °C ... 55 °C
Storage temperature	-25 °C ... 75 °C

4.4. Electrical Data

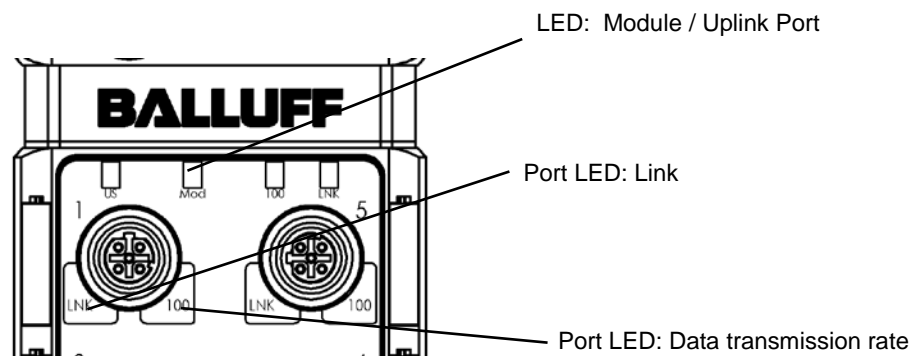
Supply voltage	18...30.2 V DC, in accordance with EN 61131-2
Ripple	< 1%
Input current at 24 V	130 mA

## 4 Technical Data

### 4.5. Ethernet

Ethernet IP Uplink port	1 x 10Base-/100Base-Tx
Connection for Ethernet IP Uplink port	M12, D coded
Standard Ethernet IP ports	8 x 10Base-/100Base-Tx
Connection for standard Ethernet ports	M12, D coded
Cable types per IEEE 802.3	Shielded twisted pair, min. STP CAT 5/ STP CAT 5e
Data transmission rate	10 / 100 Mps
Max. cable length	100 m
Flow control	Half Duplex/Full Duplex (IEEE 802.3x-Pause)

### 4.6. Function Indicators



### Module Status

LED	Indicator	Function
US	Green / Red	Power Status
Mod	Red / Off	Module Status
100	Yellow / Off	Data transfer Uplink port active / inactive
LNK	Yellow / Off	Data trans. rate Uplink port: 100Mbit/s / 50 Mbit/s

### LED indicator ports

Each M12 port is assigned LEDs which indicate the configuration or operating states.

LED LNK	Function
Off	Ethernet link is inactiv
Green flashing	Data transfer is active
LED 100	Function
Yellow / Off	Data trans. Rate: 100 Mbit/s / 50 Mbit/s

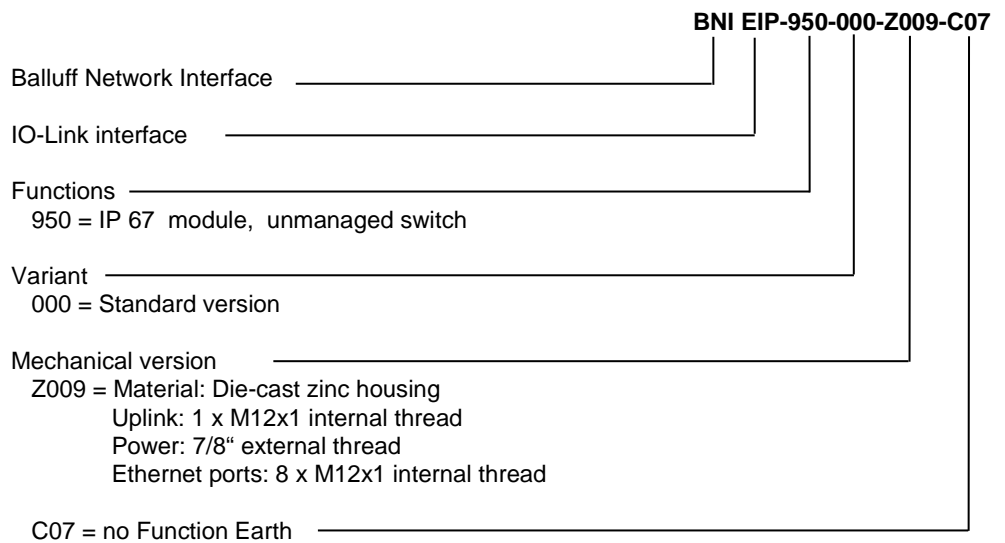


**5 Appendix**

**5.1. Scope of Delivery**

- The BNI EIP comprises the following elements:
- IO-Link block
  - 4x M12 dummy plugs
  - Ground strap
  - M4x6 screw
  - 20 labels
  - User's Guide

**5.2. Order Number**



**5.3. Ordering Information**

Product order code	Order code
BNI EIP-950-000-Z009	BNI000F
BNI EIP-950-000-Z009-C07	BNI0089

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