

Translation of the Original Operating Instructions

# BM1000

## Bus-Modul

Catalog No.

560-315 (Profibus), 560-316 (Profinet), 560-317 (DeviceNet), 560-318 (Ethernet/IP)

From software version

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# 1 About these instructions

## 1.1 Other associated documents

- Operating instructions of the connected leak detector
- Protocol Descriptions, Document No. jira54

## 1.2 Target groups

This instruction manual is aimed at the operator of the device and at technically qualified specialists, with experience in the field of leak testing technology.

## 2 Safety

### 2.1 Owner requirements

#### Safety conscious operation

Operate and install the device only in technically perfect working order and as specified, in a safety-conscious and hazard-conscious manner and in compliance with these instructions.

- ▶ Fulfill and ensure compliance with the following regulations:

- Intended use

Universally valid safety and accident prevention regulations

- International, national and local standards and guidelines

- Additional device-related provisions and regulations

- ▶ Use only original parts or parts approved by the manufacturer.

- ▶ Keep this manual available at the operating site.

#### Personnel qualifications

- ▶ All work must be performed only by technically qualified specialists who have been trained on the device.

- ▶ Allow personnel in training to work on the device only under the supervision of technically qualified specialists.

- ▶ Make sure that the authorized personnel have read and understood these instructions and all other applicable documents (refer to "Other associated documents"), especially the information on safety, maintenance and repairs, before starting work.

- ▶ Define responsibilities, authorizations and supervision of personnel.

### 2.2 Operator requirements

- ▶ Read, observe and follow the information in these instructions and the working instructions created by the owner, especially the safety instructions and warnings.

### 2.3 Warnings



 **DANGER**

**Imminent hazard resulting in death or serious injuries**



**⚠ WARNING**

Hazardous situation resulting in potential death or serious injuries



**⚠ CAUTION**

Hazardous situation resulting in minor injuries

**NOTICE**

Hazardous situation resulting in damage to property or the environment

## 3 Shipment, Transport, Storage

### Scope of delivery

Item	Quantity
Bus module	1
Operating instructions	1

- ▶ Please check the scope of delivery of the product for completeness after receipt.

### Transport

#### NOTICE

##### Damage due to unsuitable packaging material

Transport in unsuitable packaging material can damage the device.

Transport the device only in the original packaging.

Keep the original packaging.

### Storage

- ▶ Store the device taking into consideration the technical data, refer to Chapter 4.3, page 9.

## 4 Description

### 4.1 Construction of the bus module

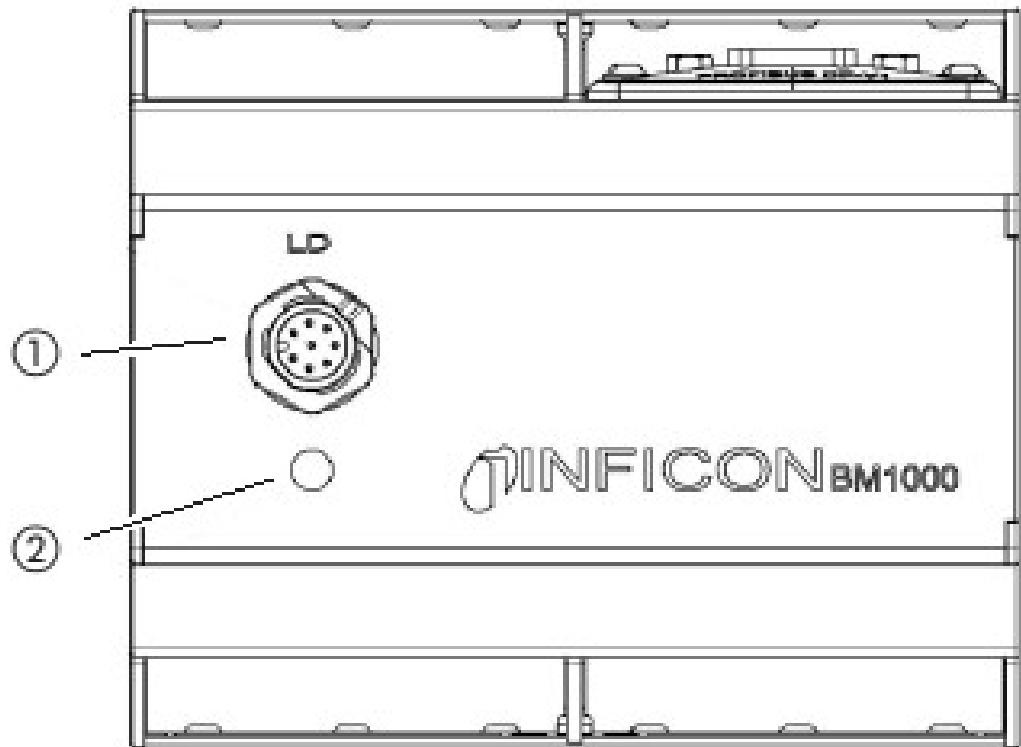


Fig. 1: Front view

1	Connection for the cable to the leak detector (LD)	2	Status LED Lights up green when the operating voltage is applied to the bus module.
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### 4.2 Function

The bus module is a device interface between e.g. the MSB box of the mass spectrometer module LDS3000 and an external controller. The bus module BM1000 is available from INFICON in the following versions:

- 560-315 BM1000 PROFIBUS
- 560-316 BM1000 PROFINET
- 560-317 BM1000 DeviceNet
- 560-318 BM1000 EtherNet/IP



## 4.3 Technical data

Dimensions (L × W × H)	107.6 mm x 89.7 mm x 76.6 mm
Weight	0.5 kg (1.74 lb.)

*Table 1: Mechanical data*

Protection class	IP20
Nominal voltage	24 V
Nominal frequency	DC voltage
Nominal power	< 3 VA

*Table 2: Electrical data*

Max. height above sea level	2000 m
Max. relative humidity above 40 °C	50%
Max. relative humidity from 31 °C to 40 °C	80% to 50% (decreasing linearly)
Max. humidity up to 31 °C	80%
Max. storage temperature	-20 °C ... 60 °C
Permissible ambient temperature (during operation)	5 °C ... 50 °C
Pollution degree	II

*Table 3: Ambient conditions*

## 5 Installation and removal

### NOTICE

Install the bus module so that you can always easily disconnect the cable to the leak detector.

### 5.1 Mount the bus module and the DIN-TS35 top hat rail

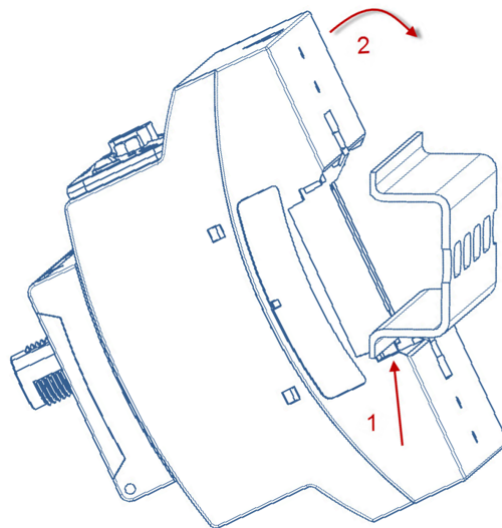


Fig. 2: Mounting of bus module

1. Hook device on top hat rail at bottom.
2. Press device onto top hat rail at top.

### 5.2 Establish connections

#### Connect the bus module with the leak detector

The bus module communicates via data cable with the leak detector and is supplied with voltage by the data cable.

- ✓ The device must be supplied with a circuit that meets the requirements of "Energy-limited circuits" of DIN EN 61010-1 (VDE 0411-1).
- ✓ INFICON data cable
  - 1 Connect the bus module (connection LD) via the data cable with the leak detector.

- 2 Connect the bus module with the external controller by means of the built-in field bus module.

The bus module is activated in the leak detector, e.g. the MSB box of the LDS3000, see the leak detector manual.

### Communication with field bus master

For information on establishing communication with the Field bus master, see Interface protocols, jira54 and kirb43.

## 5.3 Remove the bus module from the DIN-TS35 top hat rail

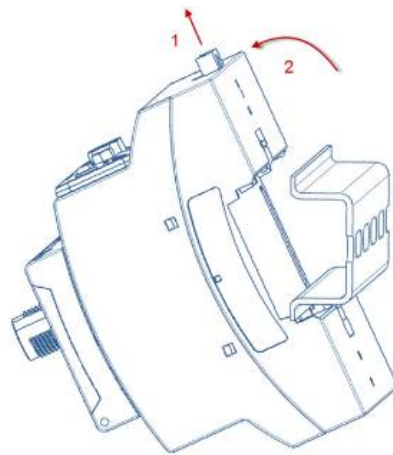


Fig. 3: Removing the bus module

1. Use the flat-tip screwdriver to pull out the locking device.
2. Pull the device off of the top hat rail.

# 6 Decommissioning the measuring instrument

## 6.1 Disposing of the device

The device can either be disposed of by the operator or be sent to the manufacturer. The device consists of materials that can be recycled. This option should be exercised to prevent waste and also to protect the environment.

During disposal, observe the environmental and safety regulations of your country.

## 6.2 Sending in the device



### **WARNING**

#### **Danger due to harmful substances**

Contaminated devices could endanger the health. The contamination declaration serves to protect all persons who come into contact with the device.

► Fill in the declaration of contamination completely.

- 1** Please do not hesitate to contact us and send a completed declaration of contamination before sending anything to us.  
⇒ You will then receive a return number from us.
- 2** Use the original packaging when returning.
- 3** Before sending the device, attach a copy of the completed contamination declaration. See below.

# Declaration of Contamination

The service, repair, and/or disposal of vacuum equipment and components will only be carried out if a correctly completed declaration has been submitted. Non-completion will result in delay.  
 This declaration may only be completed (in block letters) and signed by authorized and qualified staff.

**1 Description of product**  
 Type \_\_\_\_\_  
 Article Number \_\_\_\_\_  
 Serial Number \_\_\_\_\_

**2 Reason for return**  
 \_\_\_\_\_  
 \_\_\_\_\_

**3 Operating fluid(s) used** (Must be drained before shipping.)  
 \_\_\_\_\_

**4 Process related contamination of product:**

toxic	no <input type="checkbox"/> 1)	yes <input type="checkbox"/>	 2) Products thus contaminated will not be accepted without written evidence of decontamination!
caustic	no <input type="checkbox"/> 1)	yes <input type="checkbox"/>	
biological hazard	no <input type="checkbox"/>	yes <input type="checkbox"/> 2)	
explosive	no <input type="checkbox"/>	yes <input type="checkbox"/> 2)	
radioactive	no <input type="checkbox"/>	yes <input type="checkbox"/> 2)	
other harmful substances	no <input type="checkbox"/> 1)	yes <input type="checkbox"/>	

The product is free of any substances which are damaging to health  
 yes

1) or not containing any amount of hazardous residues that exceed the permissible exposure limits

**5 Harmful substances, gases and/or by-products**  
 Please list all substances, gases, and by-products which the product may have come into contact with:

Trade/product name	Chemical name (or symbol)	Precautions associated with substance	Action if human contact

**6 Legally binding declaration:**  
 I/we hereby declare that the information on this form is complete and accurate and that I/we will assume any further costs that may arise. The contaminated product will be dispatched in accordance with the applicable regulations.

Organization/company \_\_\_\_\_

Address \_\_\_\_\_ Post code, place \_\_\_\_\_

Phone \_\_\_\_\_ Fax \_\_\_\_\_

Email \_\_\_\_\_

Name \_\_\_\_\_

Date and legally binding signature \_\_\_\_\_
Company stamp \_\_\_\_\_

Copies:  
 Original for addressee - 1 copy for accompanying documents - 1 copy for file of sender

# 7 Appendix

## 7.1 CE Declaration of Conformity



### EU Declaration of Conformity

We – INFICON GmbH - herewith declare that the products defined below meet the basic requirements regarding safety and health and relevant provisions of the relevant EU Directives by design, type and the versions which are brought into circulation by us. This declaration of conformity is issued under the sole responsibility of INFICON GmbH.

In case of any products changes made without our approval, this declaration will be void.

Designation of the product:

**Bus module**

Models: **BM1000 Profibus**  
**BM1000 ProfiNet**  
**BM1000 DeviceNet**  
**BM1000 Ethernet/IP**

Catalogue numbers:

**560-315**  
**560-316**  
**560-317**  
**560-318**

The products meet the requirements of the following Directives:

- **Directive 2014/30/EU (Electromagnetic Compatibility)**
- **Directive 2011/65/EU (RoHS)**

Applied harmonized standards:

- **DIN EN 61326-1:2013**  
**Class A according to EN 55011**
- **DIN EN 50581:2013**

Cologne, July 20<sup>th</sup>, 2017

  
 Dr. Döbler, President LDT

Cologne, July 20<sup>th</sup>, 2017

  
 Bausch, Research and Development

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## 7.2 RoHS

### Restriction of Hazardous Substances (China RoHS)

#### 有害物质限制条例（中国 RoHS）

		BM1000: Hazardous Substance BM1000: 有害物质				
Part Name 部件名称	Lead (Pb) 铅	Mercury (Hg) 汞	Cadmium (Cd) 镉	Hexavalent Chromium (Cr(VI)) 六价铬	Polybrominated biphenyls (PBB) 多溴联苯	Polybrominated diphenyl ethers (PBDE) 多溴联苯醚
PCB Mainboard PCB主板	X	O	O	O	O	O
PCB Interface board PCB接口板	X	O	O	O	O	O
USB stick U 盘	X	O	O	O	O	O

This table is prepared in accordance with the provisions of SJ/T 11364.  
本表是根据 SJ/T 11364 的规定编制的。

O: Indicates that said hazardous substance contained in all of the homogeneous materials for this part is below the limit requirement of GB/T 26572.  
O: 表示该部件所有均质材料中所含的上述有害物质都在 GB/T 26572 的限制要求范围内。

X: Indicates that said hazardous substance contained in at least one of the homogeneous materials used for this part is above the limit requirement of GB/T 26572.  
X: 表示该部件所使用的均质材料中，至少有一种材料所含的上述有害物质超出了 GB/T 26572 的限制要求。

(Enterprises may further provide in this box technical explanation for marking "X" based on their actual circumstances.)  
(企业可以根据实际情况，针对含 "X" 标识的部件，在此栏中提供更多技术说明。)











