

Translation of the original operating instructions

CalMate

Calibration adapter for calibration leaks

Catalog No.

520-250



INFICON GmbH
Bonner Strasse 498
50968 Cologne, Germany

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1 About these instructions

Product names may occur in the document, which are added for identification purposes only and belong to the respective owner of the rights.

1.1 Target groups

This instruction manual is aimed at the operator of the device and at technically qualified specialists.

1.2 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

2 Safety

2.1 Intended use

When a sniffer tip is inserted into the intended opening of the calibration adapter of the instrument, a calibration check or calibration is started in the sniffer leak detector.

To do this, attach the calibration adapter to an INFICON calibration leak and connect it to the sniffer leak detector using a connection cable (accessory) of max. 3 m in length.

If the sniffer leak detector does not have a separate interface for connecting the connecting cable, alternatively connect via the IO1000 module.

- Use the device only according to this instruction manual.
- The instrument may only be connected to INFICON sniffer leak detectors that support automatic calibration.
- Comply with application limits, see "Technical Data".

Improper use

Avoid the following, non-intended uses:

- Use outside the technical specifications, see "Technical Data"
- Using the device with detectable defects or defective power switch

2.2 Owner requirements

The following notes are for companies or any person who is responsible for the safety and effective use of the product by the user, employee or third party.

Safety conscious operation

- Operate the device only if it is in perfect technical condition and has no damage.
- Only operate the device in accordance with this instruction manual, in a safety and risk conscious manner.
- Adhere to the following regulations and observe their compliance:
 - Intended use
 - General applicable safety and accident prevention regulations
 - International, national and local standards and guidelines
 - Additional device-related provisions and regulations
- Only use original parts or parts approved by the manufacturer.
- Keep this instruction manual available on site.

Personnel qualifications

- Only instructed personnel should be permitted to work with and on the device. The instructed personnel must have received training on the device.
- Make sure that authorized personnel have read and understood the operating instructions and all other applicable documents.

2.3 Duties of the operator

- Read, observe, and follow the information in this manual and in the work instructions provided by the owner. This concerns in particular the safety instructions and warnings.
- Always observe the complete operating instructions for all work.
- If you have any questions about operation or maintenance that are not answered in this manual, please contact Customer Service.

2.4 Dangers

The measuring instrument was built according to the state-of-the-art and the recognized safety regulations. Nevertheless, improper use may result in risk to life and limb on the part of the user or third parties, or damage to the measuring instrument or other property may occur.

Hazards due to liquids and chemicals

Liquids and chemical substances can damage the instrument.

- Comply with application limits, see Technical Data.
- Only use the device away from areas with a risk of explosions.
- Do not expose the device to a naked flame and avoid spark formation, for example, by smoking.

Danger to wearers of pacemakers or implants

The device contains magnets. Pacemakers and other implants can be influenced in their function.

- If you are wearing a pacemaker or implant, do not attach the instrument to the calibration leak yourself.
- Always maintain a distance of at least 10 cm between the device and the implant.

3 Shipment, Transport, Storage



⚠ WARNING

Danger to pacemaker wearers from magnets

The calibration adapter contains magnets with which it adheres to the calibration leak.

- ▶ Only ship the calibration adapter in its original packaging.
- ▶ If you wear a pacemaker, do not install the calibration adapter yourself.
- ▶ If you wear a pacemaker, always maintain a distance of at least 10 cm from the calibration adapter when operating the device.

Scope of delivery

Item	Quantity
CalMate	1
M8 Connecting cable CalMate to sniffer leak detector (1 m length)	1
Instruction manual	1

- ▶ Check the delivery contents after receiving the product to ensure it is complete.
- The CalMate connection cable to the 1 m long sniffer leak detector is also available as a spare part; the cables can be plugged together up to 3 m.
- A connecting cable CalMate to a 3 m long sniffer leak detector is available as an accessory, as is a connecting cable to the I/O module IO1000.

See also “Accessories and spare parts [▶ 18]”.

4 Description

4.1 Function

If a sniffer tip is inserted into the intended opening of the CalMate calibration adapter, a calibration check or calibration is started in the sniffer leak detector, e.g. the XL3000flex. Also refer to the operating instructions of the respective sniffer leak detector.

To do this, place the calibration adapter on an INFICON calibration leak for sniffer applications. The adapter adheres magnetically. A connecting cable is used to establish the connection between the adapter and the sniffer leak detector.

If the sniffer leak detector does not have a separate interface for connecting the connecting cable, alternatively connect via the IO1000 module.

A light barrier in the adapter detects when a sniffer tip is held in the calibration opening. The sniffer leak detector must support calibration verification or calibration via CalMate with appropriate software.

4.2 Meaning of the status LED

The RGB LED visible from the outside can assume the following states during normal operation (no errors):

Light barrier	Digital input CAL-Request	Significance using the example of the XL3000flex sniffer leak detector	RGB-LED	Digital output PHO-INT
free	Inactive (High)	Normal measuring operation	permanently green	Low
free	Active (Low)	Normal measurement operation, but calibration required	pulsing green	Low
Interrupted (sniffer tip is at calibration leak)	Inactive (High)	Calibration in progress, sniffer must be in contact with calibration leak	permanently yellow	High
Interrupted (sniffer tip is at calibration leak)	Active (Low)	Calibration is running, sniffer can or should be removed from the calibration leak.	blue	High

For the meaning of the status LED if there is a fault, see “Troubleshooting [▶ 15]”.

4.3 Technical data

	CalMate
Dimensions (W x H x D)	139 mm x 42 mm x 29 mm
Weight	0.14 kg
Operating voltage	24 V DC \pm 10%
Maximum power	2 W
Typical power	1 W
Operating temperature	+ 10°C to + 40°C
Max. altitude above sea level	2000 m
Max. relative humidity \leq 31°C	80%
Max. relative humidity > 31°C	50%
Storage temperature	-20°C ... 60°C
Ingress protection	IP30
Pollution degree	2

5 Installation

5.1 Connect adapter to calibration leak



⚠ WARNING

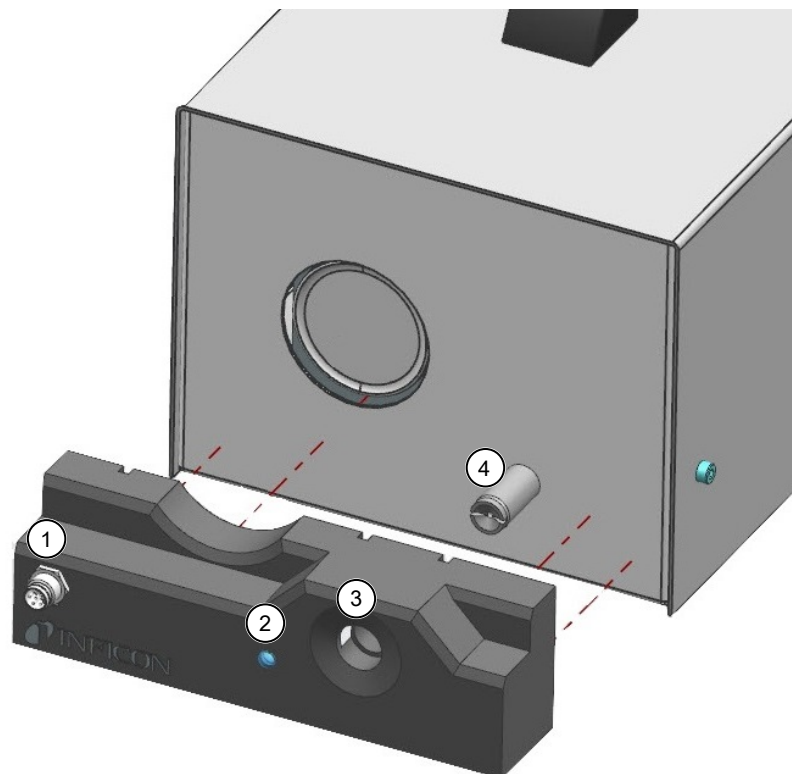
Danger to pacemaker wearers from magnets

The calibration adapter contains magnets with which it adheres to the calibration leak.

- ▶ If you wear a pacemaker, do not install it yourself.

- ▶ Position the adapter on the external calibration leak so that the calibration opening is above the outlet of the calibration leak. The manometer of the calibration leak should not be covered.

- ⇒ The calibration adapter sticks to the calibration leak through the magnets.



1	M8 connector	3	Calibration aperture
2	RGB-LED	4	Output of the calibration leak

5.2 Connect the adapter to the sniffer leak detector

5.2.1 Connection adapter / sniffer leak detector

If your INFICON sniffer leak detector is already prepared for connection to the calibration adapter, use the connection cable supplied with the CalMate. It is used both for the power supply of the calibration adapter by the sniffer leak detector and for the signal exchange between both devices.



Make sure that the devices involved are disconnected from the power supply before installation.

- ✓ A connection for the connecting cable to the calibration adapter is attached to your sniffer leak detector. Also refer to the operating instructions of the sniffer leak detector.
 - ✓ The software used for the sniffer leak detector supports the automatic calibration function.
- 1 Connect the calibration adapter and sniffer leak detector with the connection cable included with the delivery.

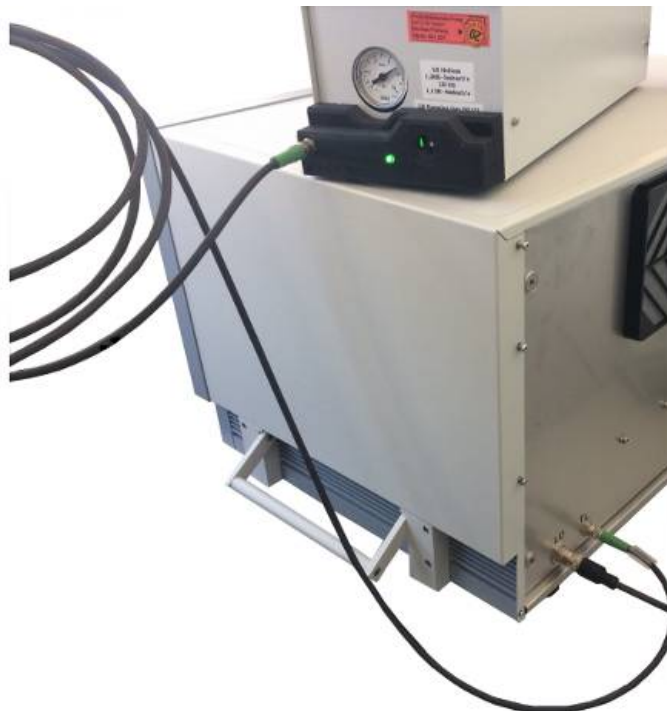


Fig. 1: CalMate connected to the "TL" connector of the XL3000flex sniffer leak detector

- 2 Set the gas type (mass) and the leak rate of the external calibration leak in the sniffer leak detector. Details can be found in the operating manual of the respective sniffer leak detector.

5.2.2 Connection adapter / IO1000/ sniffer leak detector

If your INFICON sniffer leak detector does not have a special connector for the connection to the calibration adapter, you can establish the connection between the sniffer leak detector and the calibration adapter via the IO1000 module.



Make sure that the devices involved are disconnected from the power supply before installation.

- ✓ There is no separate connection on your sniffer leak detector for the connection cable to the calibration adapter.
- ✓ The software of your sniffer leak detector supports the automatic calibration function or can be updated accordingly.
- ✓ You have the IO1000 module and the necessary connection cables to the sniffer leak detector and to the calibration adapter.
 - 1 If necessary, mount a DIN rail and the IO1000 module to your sniffer leak detector.
 - 2 Establish the cable connections between the I/O module and the sniffer leak detector and between the I/O module and the calibration adapter.

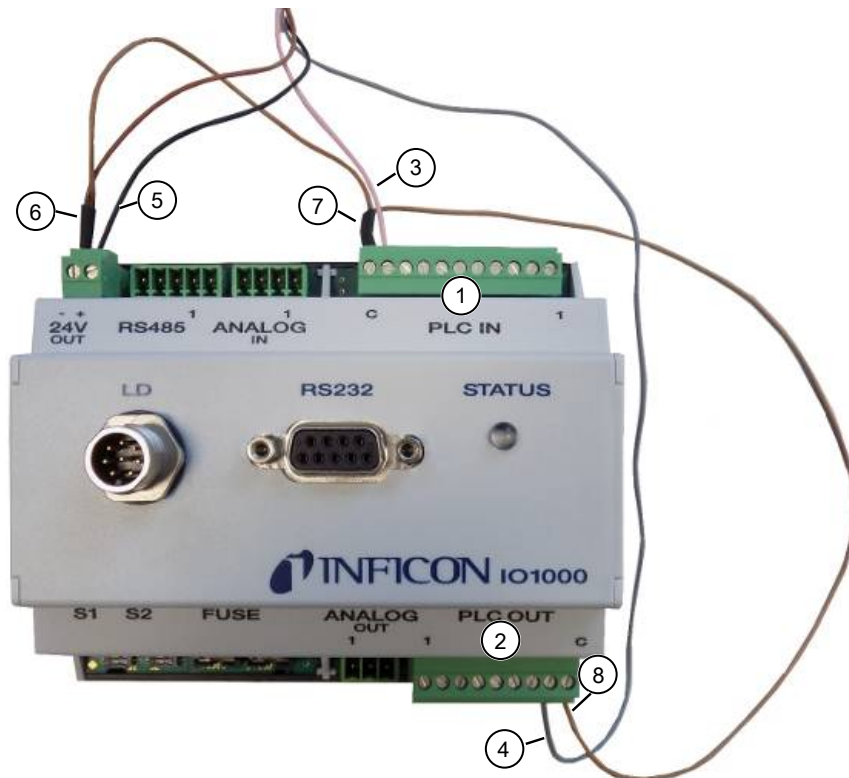


Fig. 2: Cabling of the IO1000 module

PLC IN (1) and PLC OUT Pins (2) are freely selectable
for example PLC IN Pin 10, pink cable with inscription "PHO-INT" (3)
for example PLC OUT Pin 8, grey cable with inscription "CAL" (4)

24V black cable with inscription "+24V" at +24V OUT (5)

GND brown cable with inscription "GND" at -24V OUT (6), PLC IN Common (7), PLC OUT Common (8)

On the sniffer leak detector the function "Photo interrupter" has to be selected for the PLC IN pin and the function "CAL request" for the PLC OUT pin. See, for example, the XL3000flex operating instructions, chapter "Assigning digital inputs of the I/O module" or "Assigning digital outputs of the I/O module".

- 3** Set the gas type (mass) and the leak rate of the external calibration leak in the sniffer leak detector. Details can be found in the operating manual of the respective sniffer leak detector.

6 Operation

Information on using the calibration adapter during operation can be found in the operating manual of the sniffer leak detector.

7 Troubleshooting

If automatic calibration is not possible despite correct connections, note the following overview:

No calibration despite inserted sniffer tip		
Connection adapter / sniffer leak detector	Sniffer leak detector software does not support function.	Please contact INFICON Service.
	Gas type (mass)" and "Leak rate calibration leak for external sniffing" are not set in the sniffer leak detector.	See operating manual of the sniffer leak detector
Connection adapter / IO1000/ sniffer leak detector	The sniffer leak detector software does not support function.	Please contact INFICON Service.
	Gas type (mass)" and "Leak rate calibration leak for external sniffing" are not set in the sniffer leak detector.	Refer to the operating manual of the sniffer leak detector
	The digital input/output of the I/O module is not set correctly, see "Connection adapter / IO1000/ sniffer leak detector [▶ 12]".	For further details, please refer to the operating manual of the sniffer leak detector

Meaning of the status LED

The RGB LED visible from the outside can assume the following states in the event of errors:

Error	Resettable through...	Digital output
Light barrier long, permanently interrupted since "Power on"	Release or clean light barrier	repeating: 1 red flash, 1s pause
Light barrier irradiated (photodiode permanently conductive)	Eliminate irradiation of extraneous light	repeating: 2 red flash, 1s pause
Light barrier defective: Photodiode has wrong voltage in illuminated state	Power off/on	repeating: 3 red flash, 1s pause
Light barrier defective: The voltage at the photodiode is lower in the illuminated state than in the unilluminated state	Power off/on	repeating: 4 red flash, 1s pause

Error	Resettable through...	Digital output
IR emitter of the light barrier defective: Incorrect current through the IR emitter when switched off	Power off/on	repeating: 5 red flash, 1s pause
IR emitter of the light barrier defective: Incorrect current through the IR emitter when switched on	Power off/on	repeating: 6 red flash, 1s pause
5 V internal supply voltage out of valid range	Power off/on	repeating: 6 red flash, 1s pause

The digital output PHO-INT is always "low" in the error states.

The state of the digital input CAL-Request is irrelevant in the error states.

8 Cleaning and maintenance

The calibration adapter is maintenance-free.

Cleaning the housing



Don't open the device!

The device contains a printed circuit board and a photocell that should not come into contact with moisture or be mechanically damaged.

- Wipe the housing with a soft, dry or slightly damp cloth.
- Avoid cleaners that contain alcohol, fat or oil.

In addition, the instructions from the accompanying documentation apply to the connected calibration leak.

9 Accessories and spare parts

	Order number
CalMate connection cable 1 m	520-210
CalMate connection cable 3 m	520-215
Connecting cable CalMate to IO1000	520-220
IO1000 module	560-310

10 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:

Calibration adapter for calibration leaks

Models: **CalMate**

Catalogue numbers:

520-250

The products meet the requirements of the following Directives:

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

Applied harmonized standards:

- **EN 61326-1:2013**
Class B according to EN 55011
- **EN 50581:2012**

Cologne, May 29th, 2019


Böhmer, Vice President LDT

Cologne, May 29th, 2019


Sauerwald, Research and Development

INFICON GmbH
Bonner Strasse 498
D-50968 Cologne
Tel.: +49 (0)221 56788-0
Fax: +49 (0)221 56788-90
www.inficon.com
E-mail: leakdetection@inficon.com

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reachus@inficon.com

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