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CMC III leak sensor, 15 m

DK 7030.440

Assembly and operating instructions

RITTAL

FRIEDHELM **L O H** GROUP

Preface

Preface

Dear Customer!

Thank you for choosing a CMC III leak sensor, 15 m
(hereafter referred to as "leak sensor") from Rittal!

We wish you every success.

Yours,
Rittal GmbH & Co. KG

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We are always happy to answer any technical questions
regarding our entire range of products.

Contents

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1 Notes on documentation

1.1 CE labelling

Rittal GmbH & Co. KG hereby confirms that the CMC III leak sensor, 15 m is compliant with the EU EMC Directive 2014/30/EU. An appropriate declaration of conformity has been prepared. It can be provided on request.

$$ C \epsilon $$

1.2 Storing the documents

The assembly and operating instructions as well as all other applicable documents are an integral part of the product. They must be passed to those persons who are engaged with the unit and must always be available and on hand for the operating and maintenance personnel.

1.3 Symbols used in these operating instructions

The following symbols are used in this documentation:

Danger!
A hazardous situation in which failure to comply with the instructions causes death or severe injury.

Warning!
A hazardous situation which may lead to death or serious injury if the instructions are not followed.

Caution!
A hazardous situation which may lead to (minor) injuries if the instructions are not followed.

Note:
Identification of situations that can lead to material damage.

■ This symbol indicates an "action point" and shows that you should perform an operation or procedure.

1.4 Associated documents

– Installation Guide and Short User's Guide
– CMC III Processing Unit/CMC III Processing Unit Compact assembly and operating instructions

1.5 Area of validity

This guide applies to software version V3.20.00.

This documentation shows the English screenshots. The descriptions of individual parameters on the CMC III PU website likewise use English terminology. Depending on the set language, the displays on the CMC III PU website may be different (see assembly and operating instructions for the CMC III Processing Unit).

2 Safety instructions

2.1 General safety instructions

Please observe the following general safety instructions when installing and operating the system:

– Use only original Rittal products or products recommended by Rittal in conjunction with the leak sensor.

– Please do not make any changes to the leak sensor that are not described in this user manual or in the associated assembly and operating instructions.

– The operational safety of the leak sensor is only warranted in case of use as intended and according to the rules. The technical specifications and limit values stated must not be exceeded under any circumstances. In particular, this applies to the specified ambient temperature range and IP protection category.

– The leak sensor must not be opened. It does not contain any parts that need servicing.

– Operating the electronic unit of the leak sensor in direct contact with water, aggressive materials or inflammable gases and vapours is prohibited.

– Other than these general safety instructions, ensure you also observe the specific safety instructions when carrying out the tasks described in the following chapters.

2.2 Operating and technical staff

– The mounting, installation, commissioning, maintenance and repair of this unit must only be performed by qualified, trained personnel.

– Only properly instructed personnel may work on the unit while in operation.

3   Product description

3.1   Functional description and components

3.1.1   Function

The leak sensor monitors the floor of the room for liquids (leaks) over the entire length of the sensor cable, apart from the section in front of the yellow mark at the connection end, where no leaks are detected. If a liquid is detected, the leak sensor reports this to the connected CMC III PU. It contains an identifier that allows it to be detected automatically by the CMC III PU.

☞ Note:
In the following text, the designation "CMC III Processing Unit" refers to both the "CMC III Processing Unit" and also the "CMC III Processing Unit Compact". All text passages which only apply to one of these two variants are labelled accordingly.

3.1.2   Components

The device consists of a compact plastic housing in RAL 7035 with a ventilated front in RAL 9005, together with a sensor cable.

3.2   Proper use, foreseeable misuse

The CMC III leak sensor should only be used to monitor the floor of the room for conductive liquids. It must only be used together with the CMC III PU. Any other use is not permitted.

The unit is state of the art and built according to recognised safety regulations. Nevertheless, improper use can pose a threat to the life and limb of the user or third parties, or result in possible damage to the system and other property.

Consequently, the unit must only be used properly and in a technically sound condition! Any malfunctions which impair safety should be rectified immediately. Follow the operating instructions!

Proper use also includes the observance of the documentation provided, and compliance with the inspection and maintenance conditions.

Rittal GmbH & Co. KG is not liable for any damage which may result from failure to comply with the documentation provided. The same applies to failure to comply with the valid documentation for any accessories used.

Inappropriate use may be dangerous. Inappropriate use includes:
– Use of impermissible tools.
– Improper operation.
– Improper rectification of malfunctions.

– Use of accessories not approved by Rittal GmbH & Co. KG.

3.3   Scope of supply
– CMC III leak sensor, 15 m
– Accessories supplied loose (fig. 1)
– Installation Guide and Short User's Guide

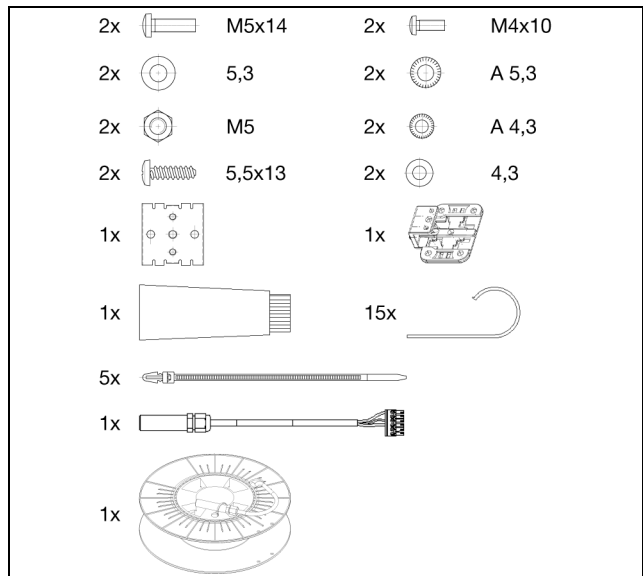| 2x | M5x14 | 2x | M4x10 |
2x	5,3	2x	A 5,3
2x	M5	2x	A 4,3
2x	5,5x13	2x	4,3
1x		1x	
1x		15x	
5x			
1x			
1x			

Fig. 1:   Accessories supplied loose

4 Transport and handling

4.1 Transport

The unit is delivered in a carton.

4.2 Unpacking

■ Remove the unit's packaging materials.

> Note:
> After unpacking, the packaging materials must be disposed of in an environmentally friendly way. They consist of the following materials:
> Polyethylene film (PE film), cardboard.

■ Check the unit for any damage that may have occurred during transport.

> Note:
> Damage and other faults, e.g. incomplete delivery, should be reported immediately, in writing, to the shipping company and to Rittal GmbH & Co. KG.

■ Remove the unit from the PE film.
■ Remove the protective film from the front cover of the device.

5 Installation

5.1 Safety instructions

■ Please observe the valid regulations for installation in the country in which the leak sensor is installed and operated, and the national regulations for accident prevention. Please also observe any internal company regulations, such as work, operating and safety regulations.
■ The technical specifications and limit values stated must not be exceeded under any circumstances. In particular, this applies to the specified ambient temperature range and IP protection category.
■ If a higher IP protection category is required for a special application, the leak sensor must be installed in an appropriate housing or in an appropriate enclosure with the required IP protection category.

5.2 Siting location requirements

To ensure correct functioning of the unit, the conditions for the installation site of the unit specified in section 8 "Technical specifications" must be observed.

Electromagnetic interference

– Interfering electrical installations (high frequency) should be avoided.

5.3 Installation procedure

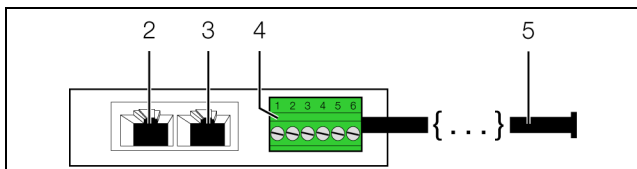#### 5.3.1 Connecting and installing the sensor cable

Fig. 2:   Rear of the leak sensor

Key
2   CAN bus connection, 24 V $=$
3   CAN bus connection, 24 V $=$
4   Universal interface
5   Sensor cable

Leave the sensor cable on the transport coil until you are ready to lay it.

■ To lay the sensor cable, carefully wind the transport coil so that the cable is unrolled without twisting, and positioned directly at the installation location.

☞ Note:
The sensor cable must not be twisted or kinked while unrolling, and must not be trodden on after laying. Otherwise, a short-circuit may occur, leading to a defect in the sensor cable.

■ Connect the sensor cable connector to the universal interface (fig. 2, item 4).

■ Lay the sensor cable on the floor inside the area to be monitored.
■ To do so, first stick the supplied retaining clips to the floor using the adhesive.
■ Then press the sensor cable into the clips.

☞ Note:
The sensor cable has a section of approximately 2.5 m at the connection end where no leaks are detected. The start of the sensor cable itself is indicated by a yellow marker.

5.3.2 Installing the electronic unit with the mounting bracket provided

The electronic unit can be mounted on the frame of the IT enclosure using the bracket provided.

■ Place the leak sensor on the bracket from above.
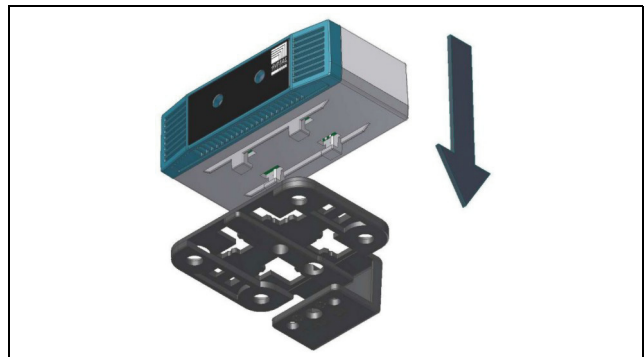

Fig. 3:   Attaching the sensor to the bracket

■ Move the sensor sideways slightly on the bracket so that it latches into place.
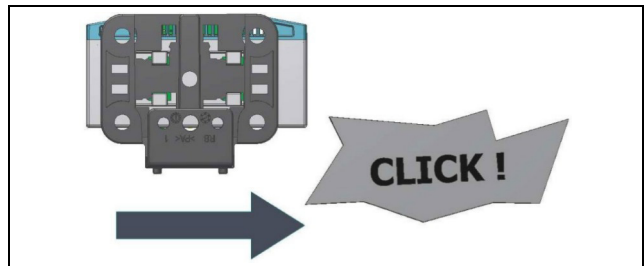

Fig. 4:   Latching the sensor into place on the bracket

■ Mount the bracket including leak sensor in the desired position in the enclosure or the IT enclosure using the screw included in the scope of delivery.
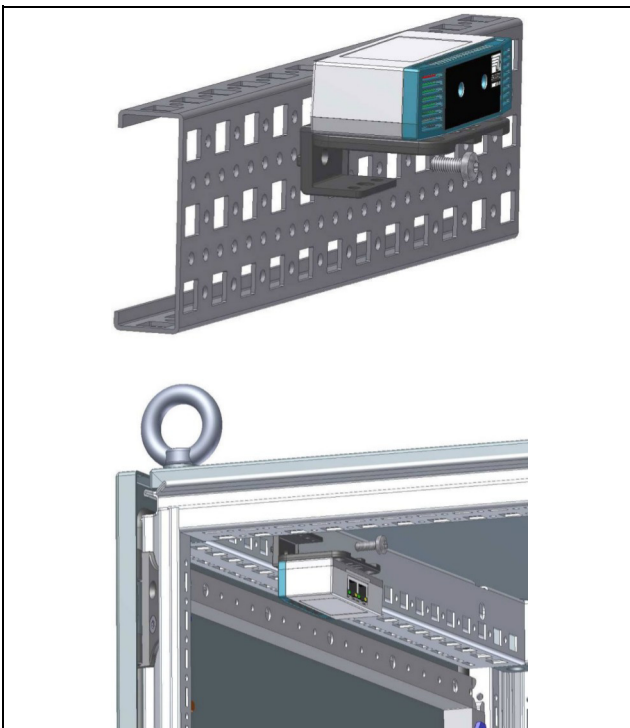
Fig. 5: Mounting the sensor in the enclosure or IT enclosure

5.3.3 Installing the electronic unit on a top-hat rail

The sensor can also be mounted on a top-hat rail using the bracket along with the spring clip included in the scope of delivery.

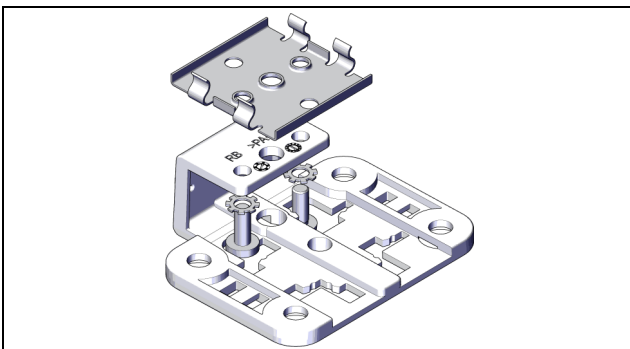■ First screw the bracket onto the spring clip provided for installation on a top-hat rail.

Fig. 6: Fastening the bracket to the spring clip

■ Then place the leak sensor on the bracket (fig. 3) and latch it into place (fig. 4).
■ Latch the spring clip into place at the desired position on the top-hat rail.
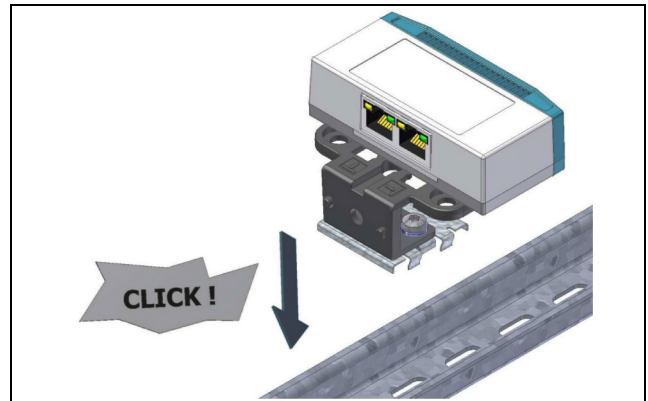

Fig. 7: Fastening the spring clip to the top-hat rail

5.4 Connecting the electronic unit

The CAN bus connection supplies the leak sensor with the necessary operating voltage. There is no need to connect a separate power supply unit.

■ Use a CAN bus connection cable to connect the leak sensor to a CAN bus interface on the CMC III Processing Unit or the neighbouring component on the CAN bus (fig. 2, item 2).

The following CAN bus connection cables from the CMC III accessories range may be used:
– DK 7030.090 (length 0.5 m)
– DK 7030.091 (length 1 m)
– DK 7030.092 (length 1.5 m)
– DK 7030.093 (length 2 m)
– DK 7030.480 (length 3 m)
– DK 7030.490 (length 4 m)
– DK 7030.094 (length 5 m)
– DK 7030.095 (length 10 m)

Fig. 8: Front of the leak sensor

Key
1 Multi-LED for status display

The sensor software is updated, if necessary, following connection. The status LED of the leak sensor glows blue throughout and also flashes purple during the entire update process.

In addition, the status LED of the CMC III Processing Unit flashes white and a corresponding message appears on the website.

Note:
No settings can be made as long as the update process is running.

5 Installation

The sensor update is complete when the following conditions have been fulfilled:

1. The LEDs on the CAN bus connection of the sensor are green.
2. The multi-LED of the sensor behind the front panel flashes blue and also green or red, depending on the status of the sensor.

Further components are connected as a daisy chain.

■ If necessary, connect another component (e.g. another sensor type) to the second, free CAN bus interface of the leak sensor (fig. 2, item 3).

Status change display:
– The two green and the two red CAN bus LEDs on the CAN bus connection flash.
– The multi-LED of the Processing Unit flashes continually in the sequence green – orange – red.
– The multi-LED of the leak sensor flashes blue continuously.

■ Press the "C" button on the CMC III Processing Unit (an initial audio signal will sound) and keep it pressed for approx. 3 seconds until a second audio signal is heard.

> Note:
> See section 6.3.1 "Multi-LED displays" for a list of all of the multi-LED displays.

Status change display on the CAN bus LEDs
– Continuous green LEDs: CAN bus status "OK".
– Continuous red LEDs: CAN bus status defective.

Status change display on the multi-LED of the Processing Unit
– Continuous green light: All devices connected to the CAN bus have the status "OK".
– Continuous orange light: At least one device connected to the CAN bus has the status "Warning".
– Continuous red light: At least one device connected to the CAN bus has the status "Alarm".

Status change display on the multi-LED of the leak sensor
– Continuous blue flashing: Communication via the CAN bus.
– Green flashing: When the measured value changes, or at least every 5 seconds.
– Continuous red flashing: The leak sensor has the status "Alarm".
– Continuous red light: Invalid measured value.

6 Operation

6.1 Activating the leak sensor

After connecting the leak sensor to the CMC III Processing Unit using a CAN bus connection cable, the leak sensor will activate automatically (see section 5.4 "Connecting the electronic unit"). Separate activation is not required.
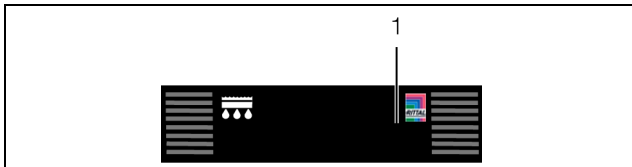
6.2 Operating and display elements

Fig. 9:   Front of the leak sensor
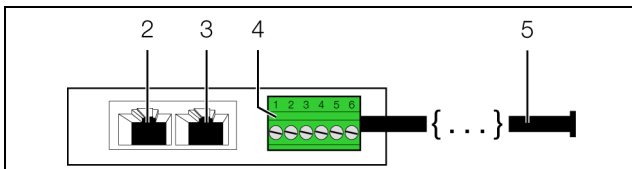
Key
1   Multi-LED for status display

Fig. 10:   Rear of the leak sensor

Key
2   CAN bus connection, 24 V ⎓
3   CAN bus connection, 24 V ⎓
4   Universal interface
5   Sensor cable

6.3 LED displays

A multi-LED for the status display is integrated into the front of the leak sensor (fig. 9, item 1). Further LEDs are located at the rear on the CAN bus connection (fig. 10, items 2 and 3).

6.3.1 Multi-LED displays

The status of the leak sensor can be read on the multi-LED.

Continuous light

Colour	Status
Red	Invalid measured value

Tab. 1:   Multi-LED continuously lit

Flashing codes

Colour	Status
Green	When the measured value changes or, at the latest, every 5 seconds.

Tab. 2:   Multi-LED flashing codes

Colour	Status
Purple	A leak sensor software update is being carried out.
Blue	Communication via the CAN bus.
Red	The leak sensor has the status "Alarm".

Tab. 2:   Multi-LED flashing codes

6.3.2 LED displays on the CAN bus connection

A red and a green LED are located on the CAN bus connection. They display the status of the CAN bus.

Colour	Status
Green (steady light)	Communication via the CAN bus possible.
Red (flashing)	Transmission error.

Tab. 3:   LEDs on the CAN bus connection

6.4 Operating via the CMC III Processing Unit website

After logging on to the CMC III Processing Unit, the web interface for operating the device is displayed.
■ First select the "CMCIII-LEAK" entry in the navigation area.

Similar to the CMC III Processing Unit, the **Configuration** tab can be used to individually configure the access rights for the leak sensor (**Device Rights** button) and the alarm messages (**Alarm Configuration** button).

The **Observation** tab is used to configure all of the settings for the leak sensor, such as the time delay for changes to the status message.
In the following sections 6.4.1 "Device" and 6.4.2 "Leakage", only those parameters which you can modify are described. There are also display values that provide information.

6.4.1 Device

General settings for the leak sensor are configured at the "Device" level.

Parameter	Explanation
Description	Specific description of the leak sensor.
Location	Installation location of the leak sensor.

Tab. 4:   Settings at "Device" level

In addition, parameters that provide detailed information about the leak sensor, such as the software and hardware version, are also displayed. You should have such information available, in particular to permit fast troubleshooting of queries with Rittal.

6 Operation

6.4.2 Leakage

Leakage settings are configured at the "Leakage" level.

Parameter	Explanation
DescName	Specific description of the leakage measured.
Delay	Time delay after which the status message changes.

Tab. 5: Settings at "Leakage" level

The following parameters are also displayed for the leak sensor:

Parameter	Explanation
Position	Sensor cable zone (zone 1 to zone 5) where the leak was detected.
Status	Current status of the leak sensor, taking account of the time delay.

Tab. 6: Displays at "Leakage" level

The sensor cable is divided into five zones: In the event of a leak, the sensor indicates the zone where the leak is located in the "Position" parameter. Depending on the liquid's conductivity (e.g. with water/glycol mixtures or heavily contaminated water), the lengths of the zones may vary.

7 Storage and disposal

7.1 Storage

If the device is not used for a long period, Rittal recommends that it be disconnected from the mains power supply and protected from damp and dust.

7.2 Disposal

Since the leak sensor consists mainly of the "housing" and "circuit board" parts, the device must be passed on to the electronic waste recycling system for disposal.

EN

8   Technical specifications

Technical specifications		CMC III leak sensor, 15 m
Model No.		DK 7030.440
W x H x D (mm)		110 x 30 x 40
Operating temperature range		0°C…+55°C
Storage temperature		-45°C…+85°C
Operating humidity range		5%...95% relative humidity, non-condensing
Protection category of electronic unit		IP 30 to IEC 60 529
Inputs and outputs	CAN bus (RJ 45)	2 x
	Sensor cable interface	1 x
Operation/signals	LED display	OK/Alarm/CAN bus status

Tab. 7:   Technical specifications

9 Customer service addresses

For technical queries, please contact:
Tel.: +49(0)2772 505-9052
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For complaints or service requests, please contact:
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