Moisture detector controllers
Type FF-

Installation and Operation Instructions

Original instructions
Read this instruction carefully prior to installation and/or use. Pay attention particularly to all advises and safety instructions to prevent injuries. Bühler Technologies can not be held responsible for misusing the product or unreliable function due to unauthorised modifications.

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1 Introduction

1.1 Intended use
A moisture detector is a device which signals moisture in the gas flow of a sample gas treatment system. Here the electrodes separated by a gap are located inside the gas flow.

The circuit devices Type FF analyse the moisture detector FF-3-N and FF-40. These devices allow the analysis of moisture ingress in the sample gas detected by the moisture detector, and to trigger an alarm.

1.2 Types
These operating instructions apply to the following devices. Please refer to the nameplate to identify your model.

**Moisture detector and mounting adapter**

- **FF-3-N** moisture detector with cable break detection
- **FF-40** moisture detector with cable break detection, max. pressure 40 bar
- Type G flowcell in PVDF
- Type S flowcell in stainless steel

<table>
<thead>
<tr>
<th>Controllers</th>
<th>Voltage</th>
<th>Connectible moisture detectors</th>
</tr>
</thead>
<tbody>
<tr>
<td>FF-HM-230</td>
<td>230/115 V AC</td>
<td>for one FF-3-N moisture detector or FF-40</td>
</tr>
<tr>
<td>FF-HM-24</td>
<td>24 V DC</td>
<td>for one FF-3-N moisture detector or FF-40</td>
</tr>
<tr>
<td>FF-19</td>
<td>24 V DC</td>
<td>for one FF-3-N moisture detector or FF-40</td>
</tr>
<tr>
<td>FF-1-U</td>
<td>230/115 V AC</td>
<td>for one or two moisture detectors FF-1</td>
</tr>
<tr>
<td>FF-3-U</td>
<td>230/115 V AC</td>
<td>for one FF-3-N moisture detector or FF-40</td>
</tr>
<tr>
<td>FF-3-U-2</td>
<td>230/115 V AC</td>
<td>for two separate FF-3-N or FF-40</td>
</tr>
</tbody>
</table>

The functionality and operability is identical for all controllers. Differences in the pin assignment are indicated accordingly.

Please note: proper functionality can only be guaranteed when using the specified moisture detectors with the controllers.

1.3 Contents
- Product documentation
- Optional (varies by order)
2 Safety instructions

2.1 Important advice

Operation of the device is only valid if:

- the product is used under the conditions described in the installation- and operation instruction, the intended application according to the type plate and the intended use. In case of unauthorized modifications done by the user Bühler Technologies GmbH can not be held responsible for any damage,
- when complying with the specifications and markings on the nameplates.
- the performance limits given in the datasheets and in the installation- and operation instruction are obeyed,
- monitoring devices and safety devices are installed properly,
- service and repair is carried out by Bühler Technologies GmbH,
- only original spare parts are used.

This manual is part of the equipment. The manufacturer keeps the right to modify specifications without advanced notice. Keep this manual for later use.

Signal words for warnings

<table>
<thead>
<tr>
<th>Signal word</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>DANGER</td>
<td>Signal word for an imminent danger with high risk, resulting in severe injuries or death if not avoided.</td>
</tr>
<tr>
<td>WARNING</td>
<td>Signal word for a hazardous situation with medium risk, possibly resulting in severe injuries or death if not avoided.</td>
</tr>
<tr>
<td>CAUTION</td>
<td>Signal word for a hazardous situation with low risk, resulting in damaged to the device or the property or minor or medium injuries if not avoided.</td>
</tr>
<tr>
<td>NOTICE</td>
<td>Signal word for important information to the product.</td>
</tr>
</tbody>
</table>

Warning signs

These instructions use the following warning signs:

- ! General information
- ! Unplug from mains
- ! Wear respiratory equipment
- ! Wear a safety mask
- ! Wear gloves
2.2 General hazard warnings

The equipment must be installed by a professional familiar with the safety requirements and risks. Be sure to observe the safety regulations and generally applicable rules of technology relevant for the installation site. Prevent malfunctions and avoid personal injuries and property damage.

The operator of the system must ensure:
– Safety notices and operating instructions are available and observed,
– The respective national accident prevention regulations are observed,
– The permissible data and operational conditions are maintained,
– Safety guards are used and mandatory maintenance is performed,
– Legal regulations are observed during disposal.

Maintenance, Repair

Please note during maintenance and repairs:
– Repairs to the unit must be performed by Bühler authorised personnel.
– Only perform conversion-, maintenance or installation work described in these operating and installation instructions.
– Always use genuine spare parts.

Always observe the applicable safety and operating regulations in the respective country of use when performing any type of maintenance.

<table>
<thead>
<tr>
<th>DANGER</th>
<th>Electrical voltage</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Electrocution hazard.</td>
</tr>
<tr>
<td>![Warning symbol]</td>
<td>a) Disconnect the device from power supply.</td>
</tr>
<tr>
<td></td>
<td>b) Make sure that the equipment cannot be reconnected to mains unintentionally.</td>
</tr>
<tr>
<td></td>
<td>c) The device must be opened by trained staff only.</td>
</tr>
<tr>
<td></td>
<td>d) Regard correct mains voltage.</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>DANGER</th>
<th>Toxic, corrosive gases</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>The measuring gas led through the equipment can be hazardous when breathing or touching it.</td>
</tr>
<tr>
<td>![Warning symbol]</td>
<td>a) Check tightness of the measuring system before putting it into operation.</td>
</tr>
<tr>
<td></td>
<td>b) Take care that harmful gases are exhausted to a save place.</td>
</tr>
<tr>
<td></td>
<td>c) Before maintenance turn off the gas supply and make sure that it cannot be turned on unintentionally.</td>
</tr>
<tr>
<td></td>
<td>d) Protect yourself during maintenance against toxic / corrosive gases. Use suitable protective equipment.</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>DANGER</th>
<th>Potentially explosive atmosphere</th>
</tr>
</thead>
<tbody>
<tr>
<td>![Warning symbol]</td>
<td>Explosion hazard when used in explosive areas</td>
</tr>
<tr>
<td></td>
<td>The equipment is not suitable for use in explosive areas.</td>
</tr>
<tr>
<td></td>
<td>Never operate moisture detectors located in flammable or explosive gas mixtures on the device.</td>
</tr>
</tbody>
</table>
3 Transport and storage

The device should be only transported in the original case or in appropriate packing.
If the device is not used for some time, protect it against heat and humidity. Store the device in a roofed, dry, and dust free room. Temperature should be between −20 °C and 40 °C (-4 °F and 104 °F).
4 Installation and connection

4.1 Mounting

4.1.1 Mounting of moisture detector and adapter

The flow adapter is equipped with internal threading, G1/4 or NPT1/4 (flow adaptor marked with NPT), for the gas connections and G1/4 for the moisture sensor. The drawing you find on the backside of the attached data sheet. As well the fittings as the moisture detector must be used with Teflon sealing or an O-ring to assure proper sealing of the sample stream. Please assure that the wires are guided tension free.

If there’s particulate or aerosols in the sample gas, a filter has to be installed upstream the detector. Otherwise the particulate or aerosols can build a layer on the detectors surface inhibiting its function.

The wire should NOT be put into one cable channel with power switching cords. The function can be influenced otherwise.

It might be necessary to adjust the position of the humidity sensor in strongly fluctuating ambient or component temperatures in order to ensure the necessary tightness in the system.

4.1.2 Mounting of detector-controller

Controller type FF-19

This type is designed as an insert for 19"-housings. The bus connector is a DIN 41612 type B. Used pins of columns a and c are plated through.

Before inserting the FF-19 into the housing, set the jumpers.

Controller types FF-HM

The type FF-HM is designed for standard 35 mm rail mounting according to DIN EN 50022.

Controller types type FF-..-U

For mounting disassemble the cover by loosening the 4 black screws. The holes for the mounting screws are below the black screws. Mounting dimensions are 165 mm x 79 mm (6.5" x 3.1"). They are made for screws M4, the screws head should be at least 6 mm (0.24") in diameter.

4.2 Electrical connections

<table>
<thead>
<tr>
<th>WARNING</th>
<th>Hazardous electrical voltage</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>The device must be installed by trained staff only.</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>CAUTION</th>
<th>Wrong mains voltage</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Wrong mains voltage may damage the device.</td>
</tr>
<tr>
<td></td>
<td>Regard the correct mains voltage as given on the type plate.</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>WARNING</th>
<th>High voltage</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Damage to the device in case of insulation testing</td>
</tr>
<tr>
<td></td>
<td>Do not proceed insulation tests with high voltage to the device as a whole!</td>
</tr>
</tbody>
</table>
**Insulation test**

The device is equipped with extensive EMC protection. If insulation tests are carried out the electronic filter devices will be damaged. All necessary tests have been carried out for all concerned groups of components at the factory (test voltage 1 kV or 1.5 kV respectively, depending on the device).

Moisture and broken-wire alarms are signaled via two independent dry contacts. They are made fail-safe in the FF-HM and FF-19 types. The relays switch when power is turned on and no moisture is detected, they fall off when power fails, moisture or a broken wire is detected. Relays are used in the opposite logic with the types FF-..-U (switched in the alarm case).

The devices have three LEDs (FF-3-U-2: five LEDs) for POWER, BROKEN WIRE and MOISTURE. Alarms are monostable; they switch back after the cause for the alarm is removed.

Using the FF-HM or FF-19 type a **hold function** can be chosen by setting/wiring a jumper. The alarm will stay until the internal or externally connected reset button is pressed.

### 4.2.1 Controller type FF-19

Note the drawing 47/075-06-4.

This type can only be used with a 24 V DC power supply. **NOTICE! The grounding to PE has always to be attached!**

The detector FF-40 is connected to PIN 30 and 31, the shield to PIN 2.

Connect the cable to the FF-3-N. Root strands white and brown to PIN 30 and 31, and shielding to PIN 2.

For FF-3-N and FF-40 the jumper J2 is set to 2-3.

When using older models (FF-1) jumper J2 has to be set to 1-2. Otherwise the controller would signal a broken wire.

**Alarm hold function:**

To select this function, jumper J1 has to be set to 2-3. An external reset switch or contact can be connected to PIN 26 and 27 of the bus connector.

**NOTICE! When using a detector without broken wire-detection, the broken wire alarm is not used. The relay contact may then be used to look for power supply failure.**

When installing the FF-3-N or FF-40 detector, both relays are used. A power supply failure may be seen by combining both alarm outputs with an AND function since in working condition EITHER moisture alarm OR broken wire alarm is given.

### 4.2.2 Controller type FF-HM

Note the drawing 41/073-01-4 and 41/074-01-4.

On the upper terminal are the connections for power supply and alarm relay outputs, on the lower terminal the moisture detector and the external reset switch are connected.

The type FF-HM-230 is suitable for 230 V AC and 115 V AC. **The jumpers are factory set to 230 V AC.** To change it to 115 V AC disconnect the jumper between terminals 9-10 and set jumpers to terminals 8-9 and 10-11. The power supply is connected to terminals 12-13 (PE is 7).

The type FF-HM-24 is only suitable for 24 V DC. The power supply is connected to terminals 12-13. **NOTICE! Even with this controller, PE has always to be connected to terminal 7!**

**Connecting the moisture detector:**

The detector FF-40 is connected to terminals 25-26, the shield to 24.

Connect the cable to the FF-3-N. Root strands white and brown to terminals 25-26, and shielding to terminal 24.

When using models FF-3-N and FF-40, terminals 22 and 23 stay open to ensure broken wire detection.

When using older models (FF-1), a jumper must be set between terminals 22 and 23.

**Hold function:**

To enable this function, a jumper has to be set between terminals 20 and 21. An external reset switch or contact may be connected to terminals 14 and 15. The shield of this wire is connected to terminal 16.
4.2.3 Controller type FF-..-U

Note the drawing 41/065-07-4.

After opening the housing you will see the switch for the voltage adjustment next to the fuses, which must first be set to your voltage.

The power supply is connected directly next to the switch (refer to board labelling).

The moisture detector for protective elements FF-3-U-2 and FF-1-U attach to the 5-pin terminal X3 with the white and brown conductors according to the connection diagram. On protective element type FF-3-U the moisture detector attaches to the 3-pin terminal X3. Connect the shielding with care.

The signal relay for Type FF-3-U and FF-1-U connect to the 6-pin terminal above the switch, on Type FF-3-U-2 they connect to a 12-pin terminal. Please also refer to the connection plans FF-U in the appendix.

Please be sure to sufficiently tighten the screw connections.

**NOTICE!** With these types both output relays will trigger in the event of a cable break, so also that of the moisture alarm.
5 Operation and control

NOTICE

The device must not be operated beyond its specifications.

It might be necessary to adjust the position of the humidity sensor in strongly fluctuating ambient or component temperatures in order to ensure the necessary tightness in the system.

5.1 Adjusting the sensitivity

NOTICE

If the moisture detector controller works in combination with a sample gas cooler, please wait for at least 5 minutes until the cooler has reached its working temperature.

At the moisture detector controllers FF-HM 230 (24), FF-19 and ER-145/A/Ex sensitivity is reduced by turning the potentiometer counter clockwise. Turn until the alarm turns off. (We recommend disabling the hold function during adjustment. Otherwise the reset switch has to be pressed during the whole procedure).

At the FF-...U the setting of sensitivity is quite the same. But first the enclosure must be opened. The potentiometer is on the upper right, next to the terminal block for the moisture detector.

The FF-3-U-2 has for the second moisture detector a Potentiometer on the upper left.

When switching on the power supply the alarm may happen to come on. This has to be taken into account for the design of the whole system’s control. No other settings need to be done.
6 Maintenance

During maintenance, remember:
– The equipment must be maintained by a professional familiar with the safety requirements and risks.
– Only perform maintenance work described in these operating and installation instructions.
– When performing maintenance of any type, observe the respective safety and operation regulations.

**DANGER**

**Electrical voltage**

Electrocution hazard.

a) Disconnect the device from power supply.
b) Make sure that the equipment cannot be reconnected to mains unintentionally.
c) The device must be opened by trained staff only.
d) Regard correct mains voltage.

**DANGER**

**Toxic, corrosive gases**

The measuring gas led through the equipment can be hazardous when breathing or touching it.

a) Check tightness of the measuring system before putting it into operation.
b) Take care that harmful gases are exhausted to a safe place.
c) Before maintenance turn off the gas supply and make sure that it cannot be turned on unintentionally.
d) Protect yourself during maintenance against toxic / corrosive gases. Use suitable protective equipment.

The devices work free of maintenance. In case of failure see the table in chapter Troubleshooting [page 11].

The controllers are internally fused by Ø5x20 fuses. To replace the fuses, turn off the power supply (see chapter Troubleshooting [page 11]). The fuses have to be replaced by the same type.

The following fuses are used:

<table>
<thead>
<tr>
<th>Controller type</th>
<th>Quantity</th>
<th>Value</th>
<th>Dimensions</th>
<th>Part number</th>
</tr>
</thead>
<tbody>
<tr>
<td>FF-19 and FF-HM-24</td>
<td>1</td>
<td>100 mA slow</td>
<td>Ø 5 x 20 mm</td>
<td>9110000044</td>
</tr>
<tr>
<td>FF-..-U and F-HM-230</td>
<td>2</td>
<td>32 mA slow</td>
<td>Ø 5 x 20 mm</td>
<td>9110000037</td>
</tr>
</tbody>
</table>

6.1 Replacement of fuses

**Replacement of fuses at types FF-19 and FF-..-U**

– Disconnect power supply and disassemble insert / open housing.
– Disassemble fuse cover; take fuse out.
– Insert new fuse and reassemble fuse cover.
– Insert FF-19 again / close housing

**Replacement of fuses at types FF-HM**

– Disconnect power supply.
– With a matching tool press the lashes on the sides away from the sides carefully. Take the front away from the housing.
– Below the upper PCB there are the fuses (one for the FF-HM-24, two for the FF-HM-230).
– Press the front against the housing for reassembling until it fits in.
7 Service and repair

This chapter contains information on troubleshooting and correction should an error occur during operation.

Repairs to the unit must be performed by Bühler authorised personnel.

Please contact our Service Department with any questions:

Tel.: +49-(0)2102-498955 or your agent

If the equipment is not functioning properly after correcting any malfunctions and switching on the power, it must be inspected by the manufacturer. Please send the equipment inside suitable packaging to:

Bühler Technologies GmbH
- Reparatur/Service -
Harkortstraße 29
40880 Ratingen
Germany

Please also attached the completed and signed RMA decontamination statement to the packaging. We will otherwise be unable to process your repair order.

You will find the form in the appendix of these instructions, or simply request it by e-mail:

service@buehler-technologies.com.

7.1 Spare parts and accessories

<table>
<thead>
<tr>
<th>Item no.</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>41 11 100</td>
<td>FF-3-N moisture detector (without cable)</td>
</tr>
<tr>
<td>41 11 1000</td>
<td>FF-3-N moisture detector (with cable)</td>
</tr>
<tr>
<td>41 89 699</td>
<td>FF-40 moisture detector</td>
</tr>
<tr>
<td>40 11 000</td>
<td>Type G flowcell (PVDF)</td>
</tr>
<tr>
<td>40 11 001</td>
<td>Type NPT1/4 flowcell (PVDF)</td>
</tr>
<tr>
<td>40 11 005</td>
<td>Type S flowcell (stainless steel)</td>
</tr>
<tr>
<td>41 11 020</td>
<td>Controller FF-HM-230</td>
</tr>
<tr>
<td>41 11 030</td>
<td>Controller FF-HM-24</td>
</tr>
<tr>
<td>41 11 017</td>
<td>Controller FF-1-U</td>
</tr>
<tr>
<td>41 11 015</td>
<td>Controller FF-3-U</td>
</tr>
<tr>
<td>41 11 016</td>
<td>Controller FF-3-U-2</td>
</tr>
<tr>
<td>41 11 012</td>
<td>Controller ER-145/A, 230 V</td>
</tr>
<tr>
<td>41 11 014</td>
<td>Controller ER-145/A, 115 V</td>
</tr>
<tr>
<td>41 11 040</td>
<td>Controller FF-19</td>
</tr>
</tbody>
</table>

7.2 Troubleshooting

<table>
<thead>
<tr>
<th>Problem / Failure</th>
<th>Possible cause</th>
<th>Solution</th>
</tr>
</thead>
<tbody>
<tr>
<td>No display</td>
<td>– no power</td>
<td>– check power supply; check connections</td>
</tr>
<tr>
<td></td>
<td>– fuse blown</td>
<td>– check fuse and change it if necessary</td>
</tr>
<tr>
<td>No moisture detection</td>
<td>– sensitivity too low</td>
<td>– set sensitivity</td>
</tr>
<tr>
<td></td>
<td>– moisture detector dirty</td>
<td>– disassemble and clean detector</td>
</tr>
<tr>
<td>Alarm cannot be reset</td>
<td>– sensitivity too high</td>
<td>– set sensitivity</td>
</tr>
<tr>
<td></td>
<td>– moisture detector completely drowned</td>
<td>– disassemble and dry detector or flush with clean dry air</td>
</tr>
</tbody>
</table>

Tab. 1: Troubleshooting
8 Disposal

Dispose of parts so as not to endanger the health or environment. Follow the laws in the country of use for disposing of electronic components and devices during disposal.
9 Appendices

9.1 Technical Data

<table>
<thead>
<tr>
<th>Material</th>
<th>FF-3-N</th>
<th>FF-40</th>
</tr>
</thead>
<tbody>
<tr>
<td>Cord length</td>
<td>Standard 4 m, 4 x 0.34²</td>
<td>Standard 4 m, 2 x 0.25²</td>
</tr>
<tr>
<td>Max. operating pressure</td>
<td>2 bar</td>
<td>40 bar</td>
</tr>
<tr>
<td>Operating temperature</td>
<td>3 °C to 50 °C</td>
<td>3 °C to 50 °C</td>
</tr>
<tr>
<td>Cable break detection</td>
<td>yes</td>
<td>yes</td>
</tr>
</tbody>
</table>

Type FF-3-N is suitable for ATEX areas (II 2G Ex ib IIC T5 T_{amb} 3...50 °C)
(Only when using ER-145/A/Ex, refer to operating instructions)

<table>
<thead>
<tr>
<th>Controllers</th>
<th>FF-HM-230</th>
<th>FF-HM 24</th>
<th>FF-19</th>
<th>FF-x-U</th>
<th>ER-145/A/Ex</th>
</tr>
</thead>
<tbody>
<tr>
<td>Supply voltage</td>
<td>230/115 V AC 50/60 Hz ±10 %</td>
<td>24 V DC ±10 %</td>
<td>24 V DC ±10 %</td>
<td>230/115 V AC 50/60 Hz ±10 %</td>
<td>230/115 V AC 48/62 Hz ±10 %</td>
</tr>
<tr>
<td>Max. switching output current</td>
<td>230 V/2 A</td>
<td>24 V AC/DC 2 A</td>
<td>24 V AC/DC 2 A</td>
<td>230 V/2 A</td>
<td>AC: 250 V/5 A</td>
</tr>
<tr>
<td>Protection class</td>
<td>IP 40 Terminals IP 20</td>
<td>IP 40 Terminals IP 20</td>
<td>IP 20 when built-in</td>
<td>IP 65</td>
<td>IP 40 Terminals IP 20</td>
</tr>
<tr>
<td>Ex protection class</td>
<td>-</td>
<td>-</td>
<td>-</td>
<td>-</td>
<td>II(1)G [EEx ia Ga] IIC</td>
</tr>
<tr>
<td>Max. lead length</td>
<td>4 m</td>
<td>4 m</td>
<td>4 m</td>
<td>4 m</td>
<td>70 m</td>
</tr>
<tr>
<td>Dimensions (WxHxD/mm)</td>
<td>70 x 75 x 109</td>
<td>70 x 75 x 109</td>
<td>8TE x 3HE x 170</td>
<td>94 x 180 x 81</td>
<td>22.5 x 99 x 120</td>
</tr>
<tr>
<td>Connection</td>
<td>Terminals</td>
<td>Terminals</td>
<td>Multi-pole connector</td>
<td>Terminals</td>
<td>Terminals</td>
</tr>
</tbody>
</table>

9.2 Dimensions

![FF-3-N Dimensions](image1)

- Flange seal 1.5 mm
- ø19

![FF-40 Dimensions](image2)

- G/4
- ø4.2

![Flowcell Dimensions](image3)

- NPT 1/4 (only PVDF)
10 Attached documents

- Connections diagrams:
  47/075-06-4 (type FF-19)
  41/073-01-4 (type FF-HM 230)
  41/074-01-4 (type FF-HM-24)
  41/065-07-4 (types FF-..-U)

- Declaration of Conformity KX410001

- RMA - Decontamination Statement
Jumperstellungen/Jumper settings

J1 Selbsthaltung mit Reset/Hold with RESET
1-2 = Selbsthaltung aus/Hold off
2-3 = Selbsthaltung an/Hold on
J2 Feuchtefühlerotyp/Detector type
1-2 = FF3/FF-3-N angeschlossen/connected
2-3 = FF1 angeschlossen/connected

Power LED
Reset-Taster
Reset switch
Alarm LED Feuchte
Alarm LED Moisture
Alarm LED Kabelbruch
Alarm LED broken wire
Empfindlichkeitsregler
Sensitivity
Hiermit erklärt Bühler Technologies GmbH, dass die nachfolgenden Produkte den wesentlichen Anforderungen der genannten Richtlinien in ihrer aktuellen Fassung entsprechen.

Für / for
Produkt / products: Beschaltungsgerät für Feuchtefühler / Controller for moisture detectors
Typ / type: FF-HM-230, FF-1-U, FF-3-U, FF-3-U-2
Richtlinie / Directive 2014/35/EU (Niederspannungsrichtlinie / low voltage directive)
Richtlinie / Directive 2014/30/EU (EMV/EMC)

Für / for
Produkt / products: Beschaltungsgerät für Feuchtefühler / Controller for moisture detectors
Typ / type: FF-HM-24, FF-19

Directive(s) 2014/30/EU (EMV/EMC)

Das oben beschriebene Produkt der Erklärung erfüllt die einschlägigen Harmonisierungsrechtsvorschriften der Union:

The object of the declaration described above is in conformity with the relevant Union harmonisation legislation:

EN 61010-1:2010
EN 61326-1:2013

Die alleinige Verantwortung für die Ausstellung dieser Konformitätserklärung trägt der Hersteller.

This declaration of conformity is issued under the sole responsibility of the manufacturer.

Dokumentationsverantwortlicher für diese Konformitätserklärung ist Herr Stefan Eschweiler mit Anschrift am Firmensitz.

The person authorized to compile the technical file is Mr. Stefan Eschweiler located at the company's address

Ratingen, den 03.03.2017

Stefan Eschweiler
Geschäftsführer – Managing Director

Frank Pospiech
Geschäftsführer – Managing Director
Um eine schnelle und reibungslose Bearbeitung Ihres Anliegens zu erreichen, füllen Sie bitte diesen Rücksendeschein aus. Eine genaue Fehlerbeschreibung ist für die Ursachenanalyse nötig und hilft bei der schnellen Bearbeitung des Vorgangs. Die Aussage „Defekt“ hilft bei der Fehlersuche leider nicht.

Die RMA-Nummer bekommen Sie von Ihrem Ansprechpartner im Vertrieb oder Service.


Bringen Sie den Rücksendeschein mit der Dekontaminierungs-erklärung bitte zusammen mit den Versandpapieren in einer Klarsichthülle außen an der Verpackung an. Ansonsten ist eine Bearbeitung Ihres Reparaturauftrages nicht möglich!

Angaben zum Absender:

<table>
<thead>
<tr>
<th>Firma / Company</th>
<th>Ansprechpartner / Contact person</th>
</tr>
</thead>
<tbody>
<tr>
<td>Anschrift / Address</td>
<td>Abteilung / Department</td>
</tr>
<tr>
<td></td>
<td>E-Mail / E-Mail:</td>
</tr>
<tr>
<td></td>
<td>Tel. / Phone</td>
</tr>
<tr>
<td></td>
<td>Fax / Fax:</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Artikelnummer / Item number</th>
<th>RMA-Nr. / RMA no.</th>
</tr>
</thead>
<tbody>
<tr>
<td>Auftragsnummer / Order number</td>
<td></td>
</tr>
<tr>
<td>Anzahl / Quantity</td>
<td></td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Rücksendegrund / Return reason</th>
<th>Vorgangsnummer des Kunden / Customer transaction number:</th>
</tr>
</thead>
<tbody>
<tr>
<td>Reparatur / Repair</td>
<td></td>
</tr>
<tr>
<td>Garantie / Warranty</td>
<td></td>
</tr>
<tr>
<td>Zur Prüfung / For inspection</td>
<td></td>
</tr>
<tr>
<td>Rückgabe / Return</td>
<td></td>
</tr>
</tbody>
</table>

Fehlerbeschreibung / Description of the problem:

<table>
<thead>
<tr>
<th>Ort, Datum / Place, Date</th>
<th>Unterschrift / Stempel / Signature / Stamp:</th>
</tr>
</thead>
</table>

Please complete this return form to ensure your claim is processed quickly and efficiently. An accurate description of the problem is necessary for cause analysis and will help processing the claim quickly. Unfortunately, stating “defective” will not help us troubleshoot the issue.

You may obtain the RMA number from your sales or service representative.

This return form includes a decontamination statement. The law requires you to submit this completed and signed decontamination statement to us. Please complete the entire form, also in the interest of our employees’ health.

Attach the return form including decontamination statement along with the shipping documentation to the outside of the package, inside a clear pouch. Otherwise we are unable to process your repair order!
Bitte füllen Sie diese Dekontaminierungserklärung für jedes einzelne Gerät aus.

Please complete this decontamination statement for each individual item.

<table>
<thead>
<tr>
<th>Gerät / Device</th>
<th>RMA-Nr / RMA no:</th>
</tr>
</thead>
<tbody>
<tr>
<td>Serien-Nr. / Serial no.</td>
<td></td>
</tr>
</tbody>
</table>

Ich bestätige hiermit, dass das oben spezifizierte Gerät ordnungsgemäß gereinigt und dekontaminiert wurde und keinerlei Gefahren im Umgang mit dem Produkt bestehen.

I herewith declare that the device as specified above has been properly cleaned and decontaminated and that there are no risks present when dealing with the device.

Ansonsten ist die mögliche Gefährdung genauer zu beschreiben:

In other cases, please describe the hazards in detail:

Aggregatzustand (bitte ankreuzen):

Aggregate state (please check):

- Flüssig / Liquid
- Fest / Solid
- Pulvrig / Powdery
- Gasförmig / Gaseous

 Folgende Warnhinweise sind zu beachten (bitte ankreuzen):

Please note the following warnings (please check):

<table>
<thead>
<tr>
<th>Explosiv</th>
<th>Giftig / Tödlich</th>
<th>Entzündliche Stoffe</th>
<th>Brandfördernd</th>
</tr>
</thead>
<tbody>
<tr>
<td>Explosive</td>
<td>Toxic / lethal</td>
<td>Flammable substances</td>
<td>Oxidizing</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Komprimierte Gase</th>
<th>Gesundheitsgefährdend</th>
<th>Gesundheitsschädlich</th>
<th>Umweltgefährdend</th>
</tr>
</thead>
<tbody>
<tr>
<td>Compressed gasses</td>
<td>Hazardous to health</td>
<td>Harmful to health</td>
<td>Harmful to the environment</td>
</tr>
</tbody>
</table>

Bitte legen Sie ein aktuelles Datenblatt des Gefahrenstoffes bei!

Please include an updated data sheet of the hazardous substance!

Ort, Datum / Place, Date: __________________________
Unterschrift / Stempel / Signature / Stamp: __________________________