



Level



Pressure



Flow



Temperature



Liquid
Analysis



Registration



Systems
Components



Services



Solutions

Operating Instructions

Waterpilot FMX167

Level probe

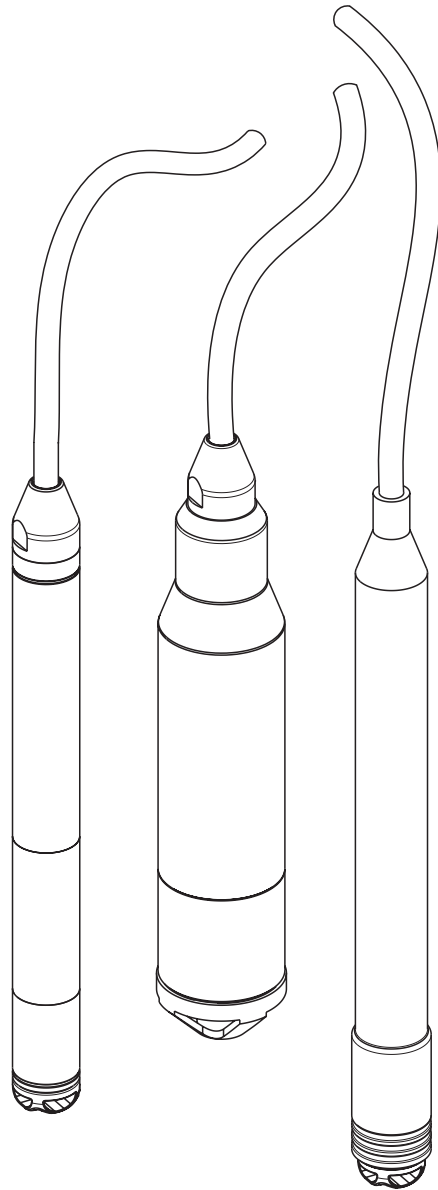


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1 Safety instructions

1.1 Designated use

The Waterpilot FMX167 is a hydrostatic pressure sensor for measuring the level of fresh water, wastewater and seawater. Versions with a Pt 100 resistance thermometer can detect temperature at the same time. The optional temperature transmitter converts the Pt 100 signal into a 4...20 mA signal.

The manufacturer shall not accept any liability for damage arising from improper use or if the device is used for purposes for which it was not intended.

1.2 Installation, commissioning and operation

The Waterpilot FMX167 and the temperature transmitter TMT181 (optional) are designed as fail-safe to the state of the art and comply with prevailing regulations and EC directives. If the devices are not used properly or for purposes for which they were not intended, they may become hazards arising from the particular application, e.g. product overflow through incorrect installation or adjustment. For these reasons, only trained personnel authorised by the plant operator may install, connect electrically, commission, operate and maintain the measuring system. Trained personnel must have read and understood these Operating Instructions and heed the instructions. Any changes and repairs to the devices may only be performed if the Operating Instructions expressly permit this.

1.3 Operational safety

1.3.1 Explosion hazardous area (optional)




Devices for use in hazardous areas are additionally identified on the nameplate (→ see Page 6). If the device is to be installed in an explosion hazardous area, then the specifications in the certificate as well as all national and local regulations must be observed. A separate Ex documentation is enclosed with the device and is an integral part of this documentation. The installation regulations, connection values and Safety Instructions listed in this document must be observed. The documentation number of the related Safety Instructions (XAs) is also indicated on the nameplate.




- Ensure that all personnel are suitably qualified.






Versions in the order code (e.g. FMX167 - D ...)	Certificate	Protection
B	ATEX	ATEX II 2 G EEx ia IIC T6
C	ATEX	ATEX II 3 G EEx nA II T6
D	FM	IS, Class I, Division 1, Groups A–D
E	CSA	IS, Class I, Division 1, Groups A–D

1.4 Notes on safety conventions and icons

In order to highlight safety-relevant or alternative operating procedures in the manual, the following conventions have been used, each indicated by a corresponding icon in the margin.

Symbol	Meaning
	Warning! A warning highlights actions or procedures which, if not performed correctly, will lead to personal injury, a safety hazard or destruction of the instrument.
	Caution! Caution highlights actions or procedures which, if not performed correctly, may lead to personal injury or incorrect functioning of the instrument.
	Note! A note highlights actions or procedures which, if not performed correctly, may indirectly affect operation or may lead to an instrument response which is not planned.

	Device certified for use in explosion hazardous area If the device has this symbol embossed on its nameplate, it can be installed in an explosion hazardous area or a non-explosion hazardous area, according to the approval.
	Explosion hazardous area Symbol used in drawings to indicate explosion hazardous areas. – Devices used in hazardous areas must possess an appropriate type of protection.
	Safe area (non-explosion hazardous area) Symbol used in drawings to indicate, if necessary, non-explosion hazardous areas. – Devices used in hazardous areas must possess an appropriate type of protection. Lines used in hazardous areas must meet the necessary safety-related characteristic quantities.

	Direct voltage A terminal to which or from which a direct current or voltage may be applied or supplied.
	Alternating voltage A terminal to which or from which an alternating (sine-wave) current or voltage may be applied or supplied.
	Grounded terminal A grounded terminal, which as far as the operator is concerned, is already grounded by means of an earth grounding system.
	Protective grounding (earth) terminal A terminal which must be connected to earth ground prior to making any other connection to the equipment.
	Equipotential connection (earth bonding) A connection made to the plant grounding system which may be of type e.g. neutral star or equipotential line according to national or company practice.

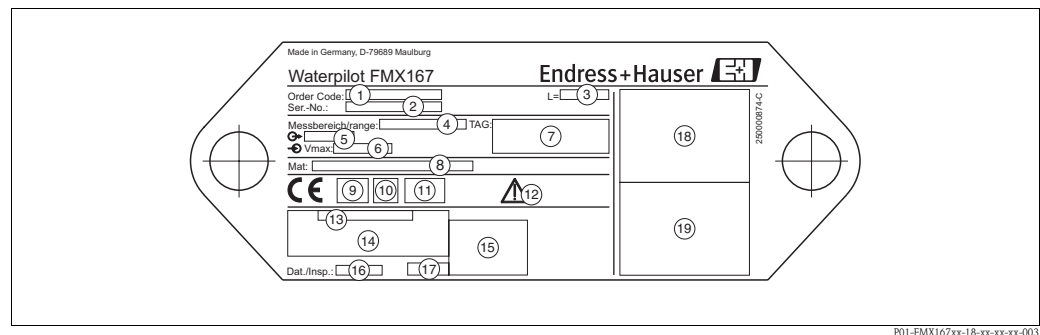
2 Identification

2.1 Device designation

- Waterpilot FMX167 for hydrostatic level measurement, refer to Section 2.1.1.
- Waterpilot FMX167 with optional Pt 100 resistance thermometer for simultaneous level and temperature measurement, refer to Section 2.1.1.
- Waterpilot FMX167 with optional Pt 100 resistance thermometer and optional temperature transmitter TMT181, refer to Sections 2.1.1 and 2.1.2.

2.1.1 Nameplate Waterpilot FMX167

The nameplate is fitted to the FMX167 extension cable.

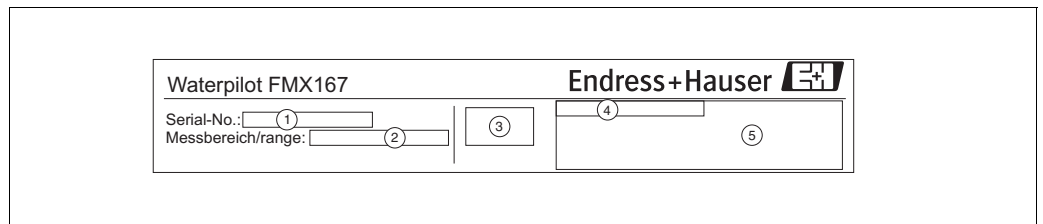


PO1-FMX167xx-18-xx-xx-xxx-003

Fig. 1: Nameplate for Waterpilot FMX167

- 1 Order code
See the specifications on the order confirmation for the meaning of the individual letters and digits.
- 2 Serial number
- 3 Length of extension cable
- 4 Nominal measuring range
- 5 Current output
- 6 Supply voltage
- 7 TAG
- 8 Wetted materials
- 9 Ex symbol (optional)
- 10 CSA symbol (optional)
- 11 FM symbol (optional)
- 12 Pay attention to the installation instructions in the Operating Instructions!
- 13 ID number of notified body with regard to ATEX (optional)
- 14 Text for approval (optional)
- 15 Approval symbol (optional)
- 16 Test date (optional)
- 17 Symbol: Observe Safety Instructions, indicating the documentation number, e.g. XA131P-C (optional)
- 18 Wiring diagram FMX167
- 19 Wiring diagram Pt 100 if Waterpilot was ordered with Pt 100.

The following information is also provided on the FMX167 with outer diameter = 22 mm (0.87 in) and 42 mm (1.66 in):

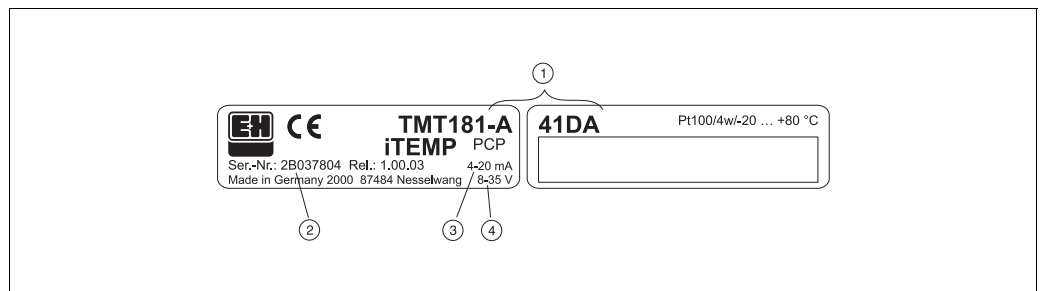


P01-FMX167-xx-18-xx-xx-xx-004

Fig. 2: FMX167 labeling

- 1 Serial number
- 2 Nominal measuring range
- 3 CE symbol or approval symbol
- 4 ID number of notified body with regard to ATEX (optional)
- 5 Text for approval (optional)

2.1.2 Nameplate of temperature transmitter TMT181



P01-FMX167-xx-18-xx-xx-xx-002

Fig. 3: Nameplate of temperature transmitter TMT181

- 1 Order code of temperature transmitter TMT181-A41DA
 - A: Version for non-hazardous area
 - 4: 4-wire
 - 1: Sensor Pt 100
 - D: Temperature transmitter with settings for $-20\dots+80^{\circ}\text{C}$ ($-4\dots+174^{\circ}\text{F}$) range
 - A: Label: Standard version
- 2 Serial No.
- 3 Current output: 4...20 mA
- 4 Supply voltage: 8...35 V DC

2.2 Scope of supply

The scope of delivery comprises:

- Waterpilot FMX167, optionally with integrated Pt 100 resistance thermometer
- Optional accessories (→ see also Chapter 7)

Documentation supplied:

- Operating Instructions BA231P (this document)
- Final inspection report
- Drinking water approval SD126P (optional)
- Devices which are suitable for use in hazardous areas:
 - additional documentation such as Safety Instructions (XAs), Control or Installation Drawings (ZDs)

2.3 CE mark, declaration of conformity

The device is designed to meet state-of-the-art safety requirements, has been tested and left the factory in a condition in which it is safe to operate. The device complies with the applicable standards and regulations as listed in the EC declaration of conformity and thus complies with the statutory requirements of the EC Directives. Endress+Hauser confirms the successful testing of the device by affixing to it the CE mark.

3 Installation

3.1 Incoming acceptance and storage

3.1.1 Incoming acceptance

- Check the packaging and the contents for damage.
- Check the shipment, make sure nothing is missing and that the scope of supply matches your order.

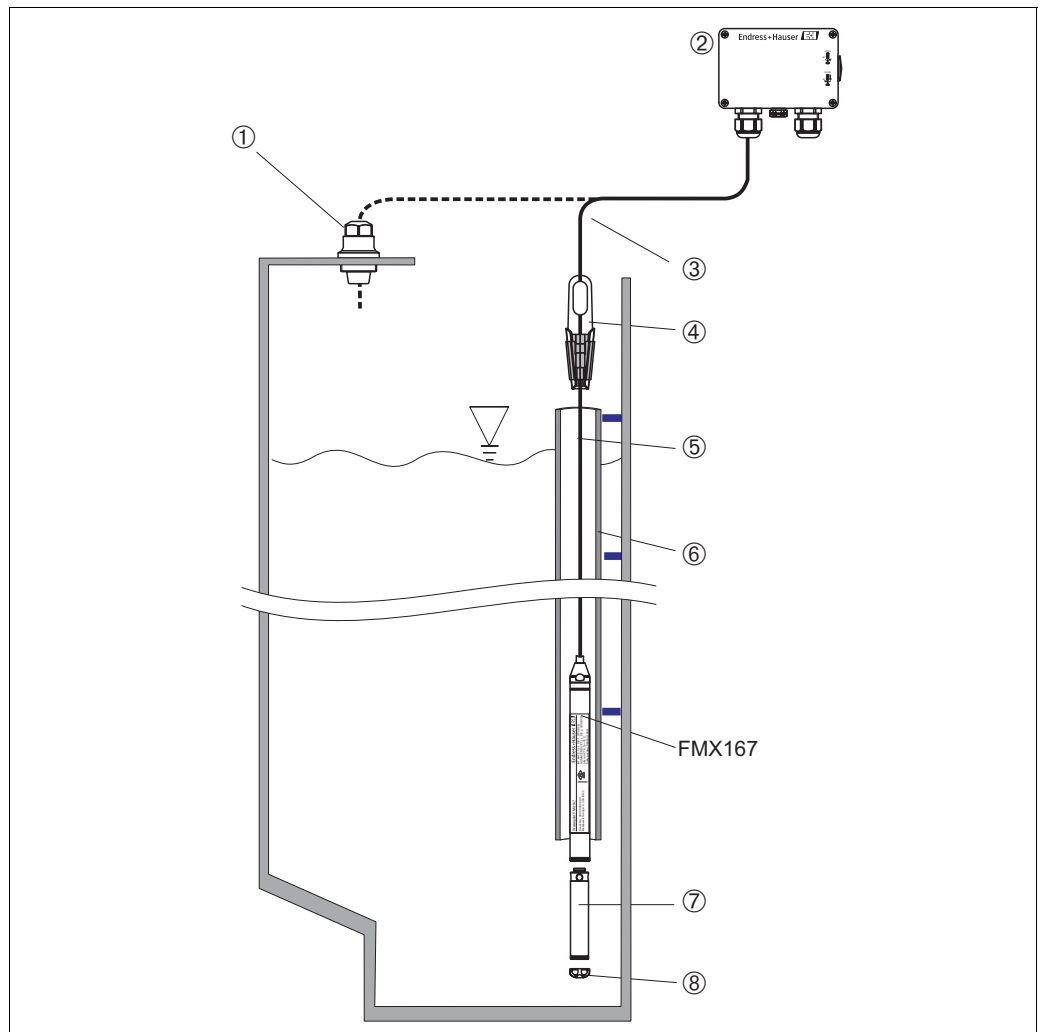
3.1.2 Storage

The device must be stored in a dry, clean area and protected against damage from impact (EN 837-2).

Storage temperature range:

- FMX167: -40...+80°C (-40...+176°F)
- TMT181: -40...+100°C (-40...+212°F)

3.2 Installation conditions



P01-FMX167xx-11-xxx-xxx-003

Fig. 4: Installation examples
For accessories see Page 18, Chapter 7.

- 1 Extension cable mounting screw can be ordered via order code or as an accessory
- 2 Terminal housing can be ordered via order code or as an accessory
- 3 Extension cable bending radius > 120 mm (4.72 in)
- 4 Mounting clamp can be ordered via order code or as an accessory
- 5 Extension cable up to 300 m (384 ft)
- 6 Guide tube
- 7 Additional weight can be ordered as an accessory
- 8 Protection cap



Note!

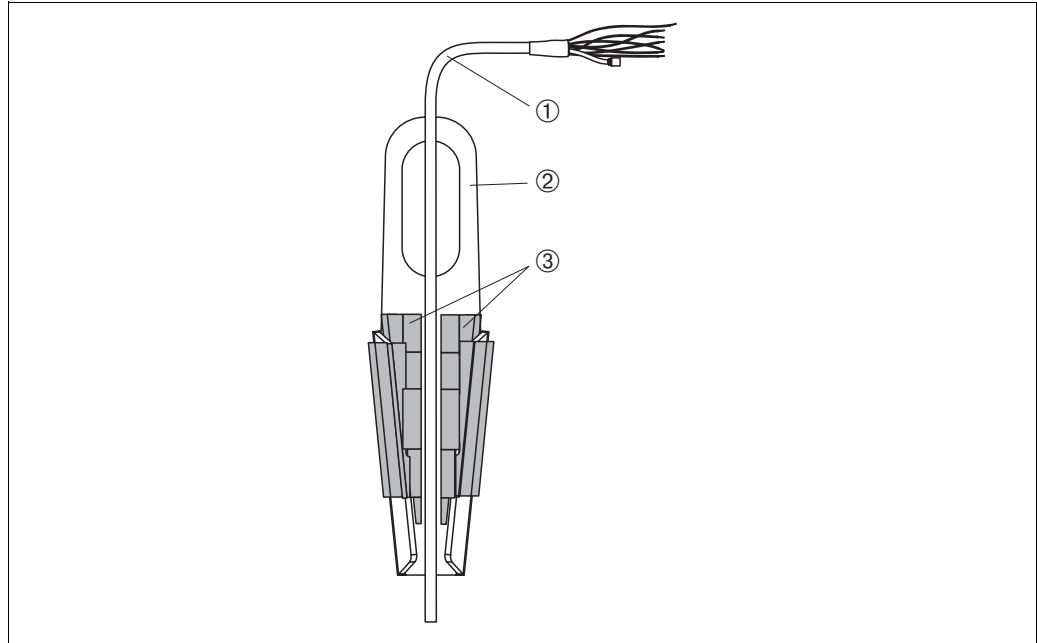
- A sideways movement of the level probe can lead to measuring errors. Therefore install the probe at a point free from flow and turbulence, or use a guide tube. The internal diameter of the guide tube should be at least 1 mm (0.04 in) bigger than the outer diameter of the selected FMX167.
- The cable must end in a dry room or in a proper terminal box. The terminal box from Endress+Hauser provides optimum humidity and climatic protection and is suitable for outdoor installation.
- Protective cap: to avoid mechanical damage to the measuring cell, the device is provided with a protective cap.
You can order protective caps (5 pieces per set) as spare part directly from your Endress+Hauser Service Organisation using Order No.: 52008999.

3.2.1 Dimensions

→ For dimensions, please refer to the Technical Information for Waterpilot TI351P, "Mechanical construction" section (→ see also: www.endress.com → Download).

3.3 Installation instructions

3.3.1 Installing Waterpilot with a mounting clamp



P01-FMX167xx-17-xx-xx-xx-004

Fig. 5: Installing Waterpilot FMX167 with a mounting clamp

- 1 Extension cable
- 2 Mounting clamp
- 3 Clamping jaws

How to mount the mounting clamp:

1. Mount the mounting clamp (Pos. 2). When selecting the type of fixing, note the weight of the extension cable (Pos. 1) and the device.
2. Raise clamping jaws (Pos. 3). Place extension cable (Pos. 1) acc. to Figure 5 between clamping jaws.
3. Hold extension cable (Pos. 1) tight and push clamping jaws (Pos. 3) back down. Fix clamping jaws by tapping lightly.

3.3.2 Installing Waterpilot with cable mounting screw

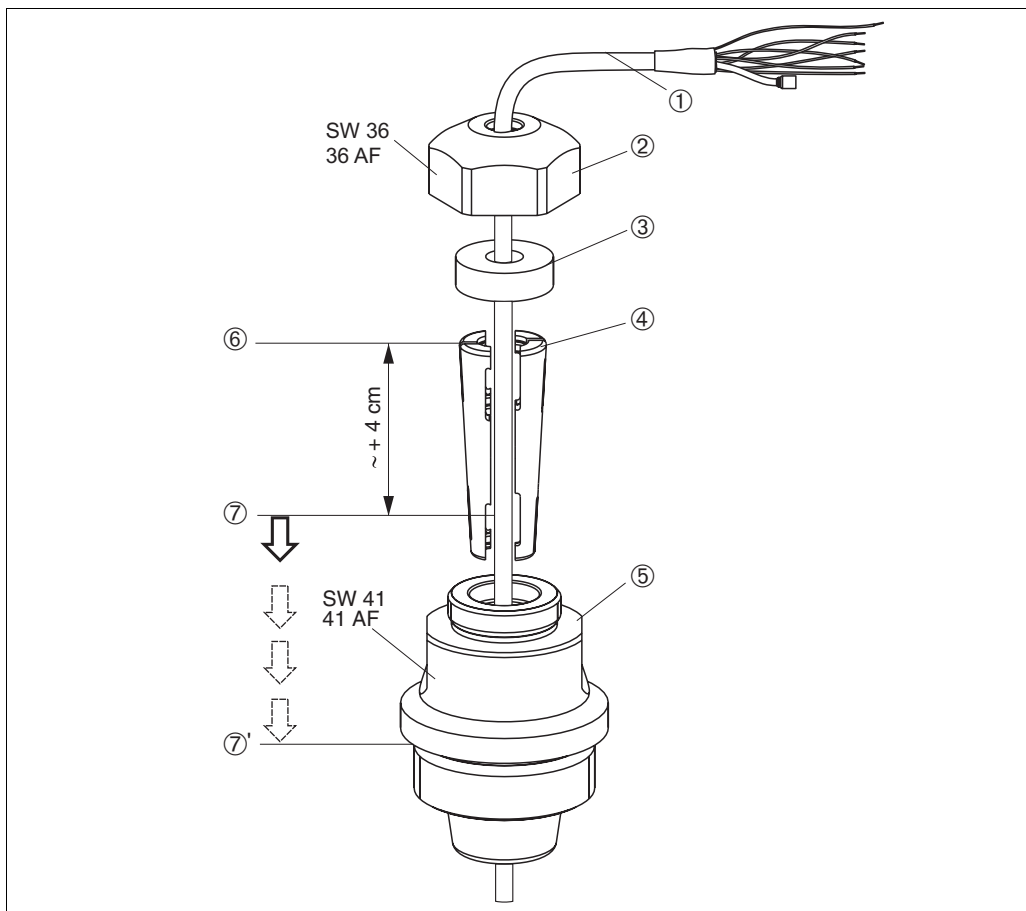


Fig. 6: Installing the Waterpilot FMX167 with cable mounting screw, here depicted with G 1 1/2 thread

- 1 Extension cable
- 2 Mounting screw cap nut
- 3 Sealing ring
- 4 Clamping sleeve
- 5 Mounting screw adapter
- 6 Top edge of clamping sleeve
- 7 required length of extension cable and FMX167 probe before assembly
- 7' after assembly Pos. 7 is located next to the mounting screw with
G 1 1/2 thread: sealing surface of mounting screw adapter
1 1/2 NPT thread run-out of mounting screw adapter



Note!

If you want to lower the level probe to a certain depth, place the top edge of the clamping sleeve 4 cm (1.57 in) higher than the required depth. Then push the extension cable and the clamping sleeve into the adapter as described in the following Section, Step 6.

How to mount the cable mounting screw with G 1 1/2 or NPT thread:

1. Mark required length of extension cable, refer to "Note" on this Page.
2. Insert probe through measuring opening and carefully lower on extension cable. Fix extension cable to prevent it from slipping.
3. Push adapter (Pos. 5) over extension cable and screw tightly in measuring opening.
4. Push sealing ring (Pos. 3) and cap (Pos. 2) from top onto cable. Press sealing ring into cap.
5. Place clamping sleeve (Pos. 4) around extension cable (Pos. 1) acc. to Figure 6.

6. Push extension cable and clamping sleeve (Pos. 4) into adapter (Pos. 5).
7. Push cap (Pos. 2) and sealing ring (Pos. 3) onto adapter (Pos. 5) and screw tightly to adapter.



Note!

Remove the cable mounting screw in the opposite sequence of operation to installation.

3.3.3 Mounting the terminal box

Mount the optional terminal box with four screws (M 4). → For dimensions of the terminal box, please refer to the Technical Information for Waterpilot TI351P, "Mechanical construction" section (→ see also: www.endress.com → Download).

3.3.4 Mounting the temperature transmitter TMT181

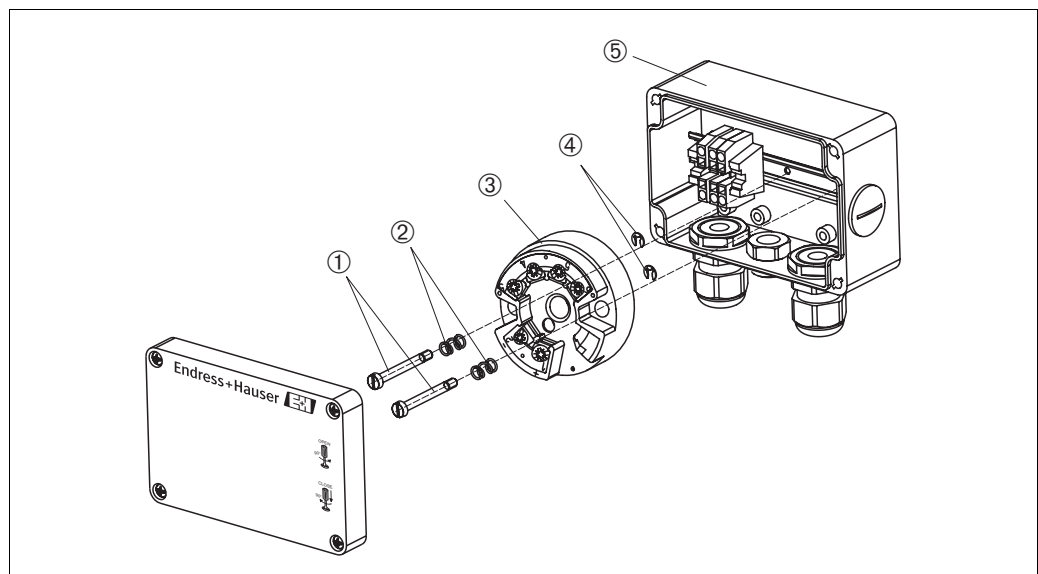


Fig. 7: Mounting the temperature transmitter, depicted here with terminal box
Only open terminal box with a screwdriver.

- 1 Mounting screws
- 2 Mounting springs
- 3 Temperature transmitter TMT181
- 4 Circlips
- 5 Terminal box

How to mount the temperature transmitter:

1. Insert the mounting screws (Pos. 1) with the mounting springs (Pos. 2) through the boring of the temperature transmitter (Pos. 3).
2. Fix the mounting screws with the circlips (Pos. 4).
The circlips, mounting screws and springs are contained in the scope of supply of the temperature transmitter.
3. Screw the temperature transmitter tightly in the field housing. (thread taper max. 6 mm (0.23 in))



Warning!

To prevent damage to the temperature transmitter, do not tighten the mounting screw too tightly.

3.4 Checking the installation

Check that all screws are seated firmly.

4 Wiring

4.1 Connecting the device

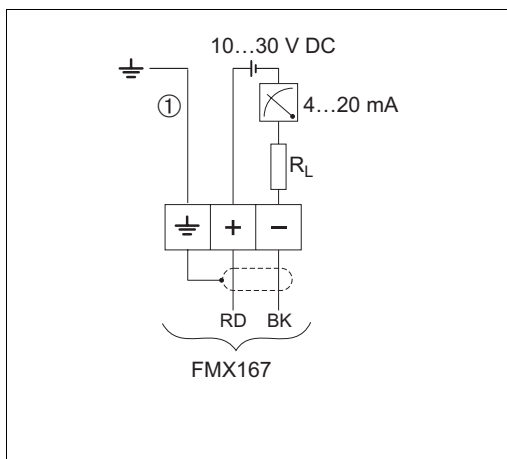


Note!

When using the measuring device in hazardous areas, installation must comply with the corresponding national standards and regulations and the Safety Instructions (XAs) or Installation or Control Drawings (ZDs).

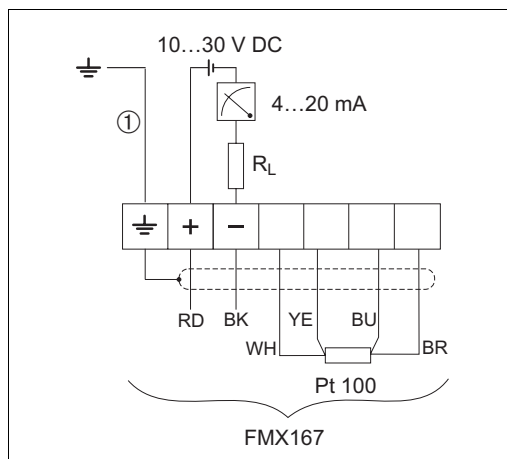
- The supply voltage must match the supply voltage on the nameplate. (→ See also Page 6 ff, Sections 2.1.1 and 2.1.2.)
- Switch off supply voltage before you connect the device.
- The cable must end in a dry room or in a proper terminal box. The terminal box with GORE-TEX® filter, IP 66/IP 67 from Endress+Hauser is suitable for outdoor installation.
- Connect device acc. to the following figures. A polarity protection is integrated in the Waterpilot FMX167 and the temperature transmitter TMT181. Changing the polarities will not destroy the devices.

Waterpilot FMX167, Standard



P01-FMX167xx-04-xx-xx-xx-008

Waterpilot FMX167 with Pt 100



P01-FMX167xx-04-xx-xx-xx-006

Fig. 8: FMX167 electrical connection, versions "7" or "3" for Feature 70 "Additional options" in the order code.

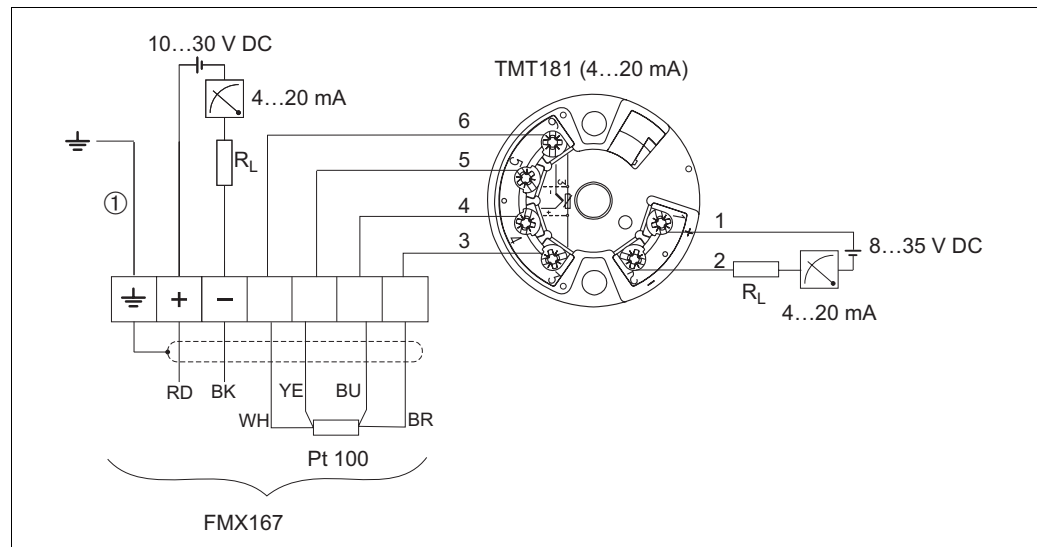
1 Not for FMX167 with outer diameter = 29 mm (1.15 in)

Fig. 9: FMX167 electrical connection with Pt 100, versions "1" or "4" for Feature 70 "Additional options" in the order code.

1 Not for FMX167 with outer diameter = 29 mm (1.15 in)

Wire colors: RD = red, BK = black, WH = white, YE = yellow, BU = blue, BR = brown

Waterpilot FMX167 with Pt 100 and temperature transmitter TMT181 (4...20 mA)



P01-FMX167xxx-04-xx-xx-xx-007

Fig. 10: FMX167 with Pt 100 and TMT181 temperature transmitter (4...20 mA), version "5" for Feature 70 in the order code

1 Not for FMX167 with outer diameter = 29 mm (1.15 in)

Wire colours: RD = red, BK = black, WH = white, YE = yellow, BU = blue, BR = brown

4.1.1 Supply voltage

Certificate	Supply voltage		
	FMX167	FMX167 + Pt 100	Temperature transmitter TMT181
Standard	10...30 V DC	10...30 V DC	8...35 V DC

4.1.2 Cable specification

- FMX167 with optional Pt 100
 - Commercially available installation cable
 - Terminals in terminal box FMX 167: 0.08...2.5 mm²
- Temperature transmitter TMT181 (optional)
 - Commercially available installation cable
 - Terminals in terminal box FMX 167: 0.08...2.5 mm²
 - Transmitter terminals: max. 1.75 mm²



Note!

For versions with outer diameter = 22 mm (0.87 in) and 42 mm (1.66 in) the extension cables are shielded. In the following cases Endress+Hauser recommends use of a shielded cable for the cable extension:

- for large distances between extension cable end and display and/or evaluation unit,
- for large distances between extension cable end and temperature transmitter
- for directly connecting Pt 100 signals to the display and/or evaluation unit.

4.1.3 Power consumption/current drain

	FMX167	FMX167 + Pt 100	Temperature transmitter TMT181
Power consumption	≤ 0.675 W at 30 V DC	≤ 0.675 W at 30 V DC	≤ 0.875 W at 35 V DC
Current drain	max. ≤ 22.5 mA min. ≥ 3.5 mA	max. ≤ 22.5 mA min. ≥ 3.5 mA Pt 100: ≤ 0.6 mA	max. ≤ 25 mA min. ≥ 3.5 mA

4.1.4 Load

The maximum load resistance is dependent on the supply voltage (U_b) and must be determined for every current loop separately. Refer to the equations and diagrams for "FMX 167" and "Temperature transmitter".

The total resistance resulting from the resistances of the connected devices, the connecting cable and if necessary, the resistor of the extension cable may not exceed the load resistance.

FMX167

$$R_{tot} \leq \frac{U_b - 10 \text{ V}}{0.0225 \text{ A}} - 2 \cdot 0.09 \frac{\Omega}{\text{m}} \cdot l - R_{add}$$

P01-FMX167xx-16-xx-xx-xx-000

Temperature transmitter

$$R_{tot} \leq \frac{U_b - 8 \text{ V}}{0.025 \text{ A}} - R_{add}$$

P01-FMX167xx-16-xx-xx-xx-001

- R_{tot} = Max. load resistance [Ω]
- R_{add} = additional resistances, e.g. resistance of evaluating device and/or the display instrument, line resistance [Ω]
- U_b = Supply voltage [V]
- l = Simple length of extension cable [m] (cable resistance per wire ≤ 0,09 Ω /m)

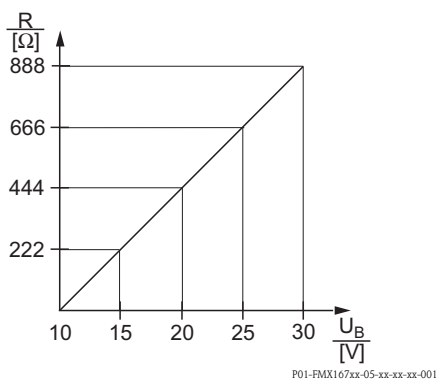


Fig. 11: Load chart FMX167 for estimating load resistance. Subtract the additional resistances, e.g. resistance of extension cable, from the calculated value as shown in the equation.

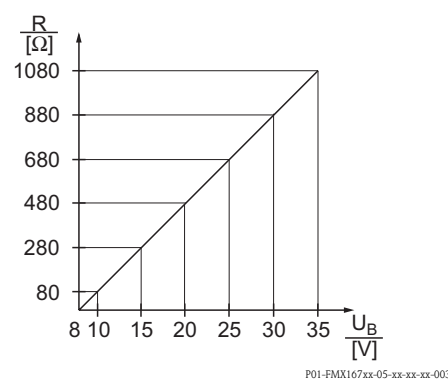


Fig. 12: Load chart temperature transmitter for estimating load resistance. Subtract the additional resistances from the calculated value as shown in the equation.

4.2 Wiring up the measuring unit

4.2.1 Overvoltage protection



Note!

- In order to protect the Waterpilot FMX167 and the temperature transmitter TMT181 from large transients, Endress+Hauser recommends the installation of an overvoltage protector upstream and downstream of the display and/or evaluation device as shown in the figure.
- The Waterpilot FMX 167 has an integrated overvoltage protection to EN 61000 of ≤ 1.2 kV as standard.

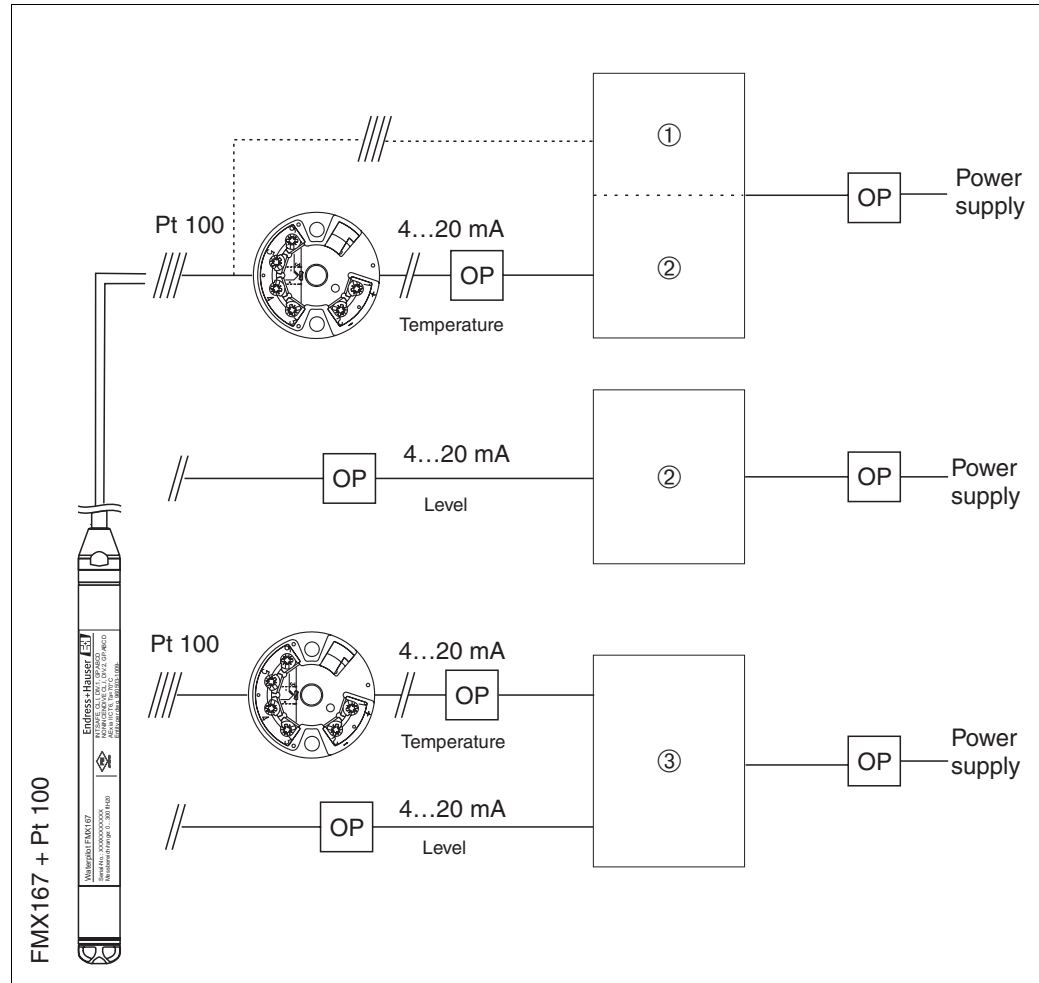


Fig. 13: Wiring up the measuring unit

- 1 Power supply, display and evaluation unit with one input for Pt 100
 - 2 Power supply, display and evaluation unit with one input for 4...20 mA
 - 3 Power supply, display and evaluation unit with two inputs for 4...20 mA
- OP Overvoltage protection e.g. HAW from Endress+Hauser

4.3 Checking the wiring

Perform the following checks after completing electrical installation of the device:

- Does the supply voltage match the specifications on the nameplate?
- Is the device connected as per Section 4.1?
- Are all screws firmly tightened?
- Optional terminal box: are the cable glands tight?

5 Operation



Note!

Endress+Hauser offers extensive measuring point solutions with display and/or evaluation units for the Waterpilot FMX167 and the temperature transmitter TMT181. For more information, please contact your nearest Endress+Hauser Service Organisation. For contact addresses, please go to www.endress.com/worldwide.

6 Maintenance

No special maintenance work is required for the Waterpilot FMX167 or for the optional temperature transmitter TMT181.

6.1 Exterior cleaning

Please note the following points when cleaning the exterior of the device:

- Do not use a cleaning agent that is aggressive to the housing surface or the seal.
- Waterpilot FMX167: avoid any mechanical damage to the membrane or the extension cable.

7 Accessories

There are a number of accessories available for the Waterpilot FMX167. You can order them separately from Endress+Hauser.

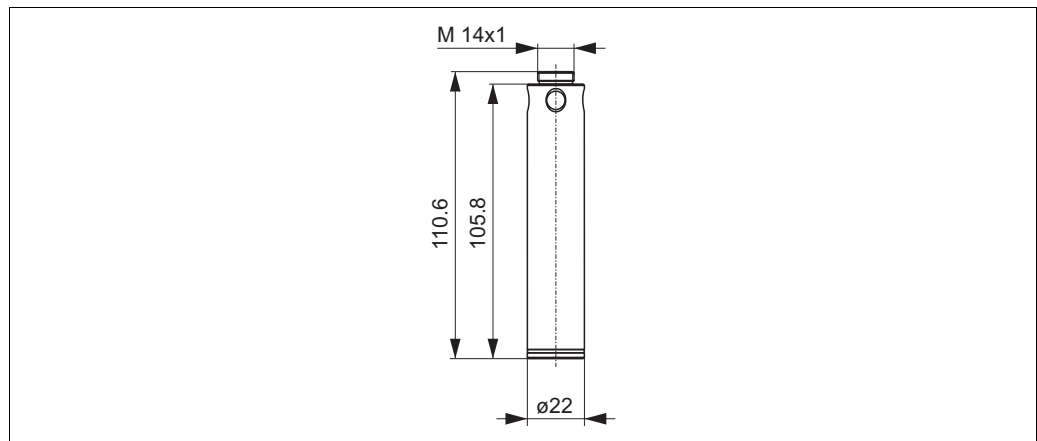
Mounting clamp

- Endress+Hauser offers a mounting clamp for simple FMX167 mounting. → See also Page 10, Section 3.3.1.
- Material: 1.4435 (AISI 316L) and glass fiber reinforced PA (polyamide)
- Order number: 52006151

Terminal box

- Terminal box IP 66/IP 67 with GORE-TEX® filter incl. 3 mounted terminals.
The terminal box is also suitable for installing a temperature transmitter (Order No. 52008794) or for four additional terminals (Order No. 52008938). → See also Page 12, Section 3.3.4.
- Order number: 52006152

Additional weight for FMX167 with $d_o=22$ mm (0.87 in) and $d_o=29$ mm (1.15 in)



P01-FMX167xxx-06-xx-xx-xx-014

- To prevent sideways movement leading to measuring errors or to ensure that the device lowers into a guide tube, Endress+Hauser provides additional weights.
You can screw several weights together. The weights are then attached directly to the FMX167. For FMX167 with outer diameter = 29 mm (1.15 in), a maximum of 5 weights may be screwed on to FMX167.
- Material: 1.4435 (AISI 316L)
- Weight: 300 g
- Order number: 52006153

Temperature transmitter TMT181 (4...20 mA)

- Temperature transmitter, 2-wire, preset for measuring range from $-20\dots+80^{\circ}\text{C}$ ($-4\dots+176^{\circ}\text{F}$).
This setting offers an easily displayable temperature range of 100 K. Note that the Pt 100 resistance thermometer is designed for a temperature range of $-10\dots+70^{\circ}\text{C}$ ($+14\dots+158^{\circ}\text{F}$).
→ See also Page 12, Section 3.3.4.
- Order number: 52008794

Cabel mounting screw

- Endress+Hauser offers extension cable mounting screws to simplify the installation of the FMX167 and to close the measuring open. → See also Page 11, Section 3.3.2.
- Material: 1.4301 (AISI 304)
- Order number for extension cable mounting screw with G 1 1/2 A thread: 52008264
- Order number for extension cable mounting screw with 1 1/2 NPT thread: 52009311

Terminals

- Four terminals in strip for FMX167 terminal box, suitable for wire cross-section of 0.08...2.5 mm²
- Order number: 52008939

Test adapter for FMX167 with $d_o=22$ mm (0.87 in) and $d_o=29$ mm (1.15 in)

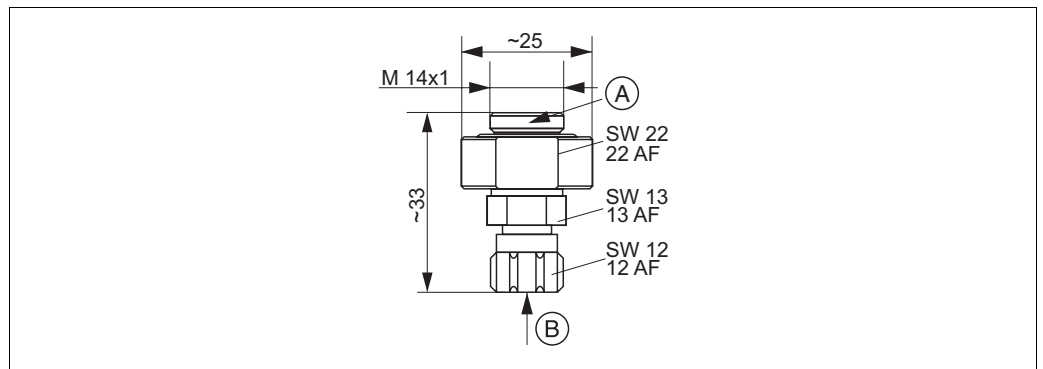


Abb. 14: Test adapter

A Connection suitable for level probe FMX167

B Connection compressed air hose, internal diameter, quick hose gland 4 mm (0.157 in)

- Endress+Hauser offers a test adapter to simplify the function test of level probes.
- Note the maximum pressure for the compressed air hose and the maximum level probe overload. (→ For the maximum level probe overload refer to Technical Information for Waterpilot TI351P or Internet: www.endress.com → Download)
- The maximum pressure for the supplied quick hose gland is 10 bar (145 psi).
- Adapter material: 1.4301 (AISI 304)
- Quick hose gland material: Anodized aluminum
- Adapter weight: 39 g
- Order number: 52011868

8 Trouble-shooting

8.1 Faults on Waterpilot FMX167 and Waterpilot FMX167 with optional Pt 100

Error description	Cause	Action
No measuring signal	Connection of 4...20 mA line incorrect	Connect device acc. to Section 4.1, Page 13.
	No supply voltage over 4...20 mA line	Check current loop.
	Supply voltage too low (min. 10 V DC)	<ul style="list-style-type: none"> – Check supply voltage. – Total resistance greater than max. load resistance, refer to Section 4.1, Page 15.
	Waterpilot defective	Replace Waterpilot.
Temperature measuring value inaccurate/incorrect (only with Waterpilot FMX167 with Pt 100)	Pt 100 connected to 2-wire circuit, line resistance not compensated	<ul style="list-style-type: none"> – Compensate line resistance. – Connect Pt 100 as 3-wire or 4-wire circuit.

8.2 Faults of temperature transmitter TMT181

Error description	Cause	Action
No measuring signal	Connection of 4...20 mA line incorrect	Connect device acc. to Section 4.1, Page 13.
	No supply voltage over 4...20 mA line	Check current loop.
	Supply voltage too low (min. 8 V DC)	<ul style="list-style-type: none"> – Check supply voltage. – Total resistance greater than max. load resistance, refer to Section 4.1, Page 13.
Error current $\leq 3,6$ mA or ≥ 21 mA	Connection of Pt 100 incorrect	Connect device acc. to Section 4.1, Page 13.
	Connection of 4...20 mA line incorrect	Connect device acc. to Section 4.1, Page 13.
	Pt 100 resistance thermometer defective	Replace Waterpilot FMX167.
	Temperature transmitter defective	Replace temperature transmitter.
Measuring value inaccurate/incorrect	Pt 100 connected in 2-wire circuit, line resistance not compensated	<ul style="list-style-type: none"> – Compensate line resistance. – Connect Pt 100 as 3-wire or 4-wire circuit.

8.3 Spare Parts



Note!

You can order spare parts directly from your nearest Endress+Hauser Service Organisation.

Membrane protective cap

- 5 pieces in set
- Order No.: 52008999

Pressure compensation set

- 10 pieces in set, comprising Teflon filter and sleeve for extension cable
- Order No.: 52005578

9 Technical Data

For technical data, please refer to the Technical Information for Waterpilot TI351P (→ see also: www.endress.com → Download).

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Declaration of Contamination

Erklärung zur Kontamination

Because of legal regulations and for the safety of our employees and operating equipment, we need the "declaration of contamination", with your signature, before your order can be handled. Please make absolutely sure to include it with the shipping documents, or - even better - attach it to the outside of the packaging.

Aufgrund der gesetzlichen Vorschriften und zum Schutz unserer Mitarbeiter und Betriebseinrichtungen, benötigen wir die unterschriebene "Erklärung zur Kontamination", bevor Ihr Auftrag bearbeitet werden kann. Legen Sie diese unbedingt den Versandpapieren bei oder bringen Sie sie idealerweise außen an der Verpackung an.

Type of instrument / sensor

Geräte-/Sensortyp _____

Serial number

Seriennummer _____

Process data/ Prozessdaten

Temperature / Temperatur _____ [°C] Pressure / Druck _____ [Pa]

Conductivity / Leitfähigkeit _____ [S] Viscosity / Viskosität _____ [mm²/s]

Medium and warnings

Warnhinweise zum Medium



	Medium /concentration Medium /Konzentration	Identification CAS No.	flammable entzündlich	toxic giftig	corrosive ätzend	harmful/ irritant gesundheitsschädlich/ reizend	other * sonstiges*	harmless unbedenklich
Process medium Medium im Prozess								
Medium for process cleaning Medium zur Prozessreinigung								
Returned part cleaned with Medium zur Endreinigung								

* explosive; oxidising; dangerous for the environment; biological risk; radioactive

* explosiv; brandfördernd; umweltgefährlich; biogefährlich; radioaktiv

Please tick should one of the above be applicable, include security sheet and, if necessary, special handling instructions.

Zutreffendes ankreuzen; trifft einer der Warnhinweise zu, Sicherheitsdatenblatt und ggf. spezielle Handhabungsvorschriften beilegen.

Reason for return / Grund zur Rücksendung _____

Company data / Angaben zum Absender

Company / Firma _____	Contact person / Ansprechpartner _____
_____	Department / Abteilung _____
Address / Adresse _____	Phone number/ Telefon _____
_____	Fax / E-Mail _____
_____	Your order No. / Ihre Auftragsnr. _____

We hereby certify that the returned parts have been carefully cleaned. To the best of our knowledge they are free from any residues in dangerous quantities.

Hiermit bestätigen wir, dass die zurückgesandten Teile sorgfältig gereinigt wurden, und nach unserem Wissen frei von Rückständen in gefährbringender Menge sind.

(place, date / Ort, Datum)

(Company stamp and legally binding signature)

(Firmenstempel und rechtsverbindliche Unterschrift)

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