Conductivity sensor – LF (T) product range

Description

Conductivity sensors of the LF (T) product range measure electrolytic conductivity in aqueous media. The sensors are split into the types listed below with different screw-in threads, measuring cable connections, with/without temperature compensation.

The material used in the sensor is not suitable for measurements in cleaning solutions containing surfactants and media containing solvents. The sensors with integrated temperature measurements are not suitable for applications with rapid temperature changes (> 0.3 °K/min). Use an external temperature measurement for this purpose.

Installation

An adapter PG 13.5/1" (Part no. 1002190) is needed when installing sensors with PG 13.5 screw-in threads into ProMinent bypass fittings with 1" threads. Install the sensors in such a way that the measuring electrodes are always fully covered with liquid. For correct measurement, ensure that there is sufficient sensor flow so that no air bubbles adhere in the gap between the measuring electrodes. After installation, allow the sensors with integrated temperature measurement to run in for a minimum of 15 minutes prior to calibration so that temperature compensation is performed correctly.

Calibration/Maintenance/ Cleaning

Regularly check the correct operation of the sensor with a conductivity calibration solution. Recalibrate the sensor in the event of deviating measured values lying outside of the accuracy specification. Follow the instructions in the operating instructions for the measuring device for calibration. Regularly check the gap between the measuring electrodes for dirt. Remove stubborn dirt with a gentle jet of water, immerse for 2 – 3 minutes in diluted (1%) acids or wipe with a cloth or a soft brush, such as a toothbrush or bottle brush.

Storage:

max. 90 % rel. air humidity and non-condensing, -5 ... 50 °C.

Design of the sensor types and compatibility with measuring devices

Description	Order number	Hydraulic connector	Cable	Temperature sensor	Compatibility with:
LFTK 1 FE-3m-shd	1046010	PG 13.5	Fixed cable, 3 m	Pt1000	Compact; DMTa
LFTK 1 FE-5m-shd	1046132	PG 13.5	Fixed cable, 5 m	Pt1000	Compact; DMTa
LFT 1 FE	1001374	PG 13.5	Fixed cable, 5 m	Pt100	DMTa; D1Ca
LF 1 FE	741152	PG 13.5	Fixed cable, 5 m	none	DMTa; D1Ca
LF 1 DE	1001375	PG 13.5	DIN 4-pin plug	none	Compact; DMTa; D1Ca
LFT 1 DE	1001376	PG 13.5	DIN 4-pin plug	Pt100	Compact; DMTa; D1Ca
LFT 1 1/2"	1001378	1/2"	DIN 4-pin plug	Pt100	Compact; DMTa; D1Ca
LFTK 1 DE	1002822	PG 13.5	DIN 4-pin plug	Pt1000	Compact; DMTa
LF 1 1/2"	1001377	1/2"	DIN 4-pin plug	none	Compact; DMTa; D1Ca
LFTK 1 1/2"	1002823	1/2"	DIN 4-pin plug	Pt1000	Compact; DMTa

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Data Sheet

Conductivity sensor Type LFTK 1 FE, LF 1 FE, LFT 1 FE, LF 1 DE, LFT 1 DE, LFT K1 DE, LF 1 1/2", LFT 1 1/2", LFT K1 1/2"

Technical data

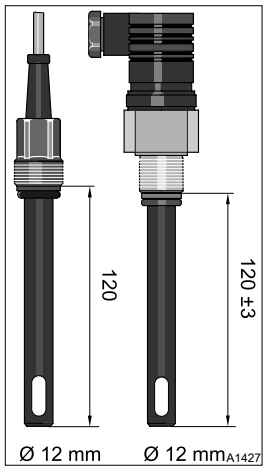

Fig. 1: Dimensions

Cell constant:	k = 1.0 cm^{-1} (± 5 %)
Measuring range:	approx. 0.01 ... 20 mS/cm
Medium temperature:	0 ... 80 °C (at atmospheric pressure)
Max. pressure:	16 bar (at 25°C)
Screw-in thread:	PG 13.5 or 1/2"
Dimensions:	Shaft length (up to plug-in head) 120 mm; ø 12 mm
Storage temperature:	-5 ... 50 °C
Sensors:	special graphite
Temperature sensor:	Pt 100 or Pt 1000 (integrated in the sensor shaft) only with type LFT/ LFT K
Sensor shaft:	epoxy resin
Electrical connector on the sensor:	Fixed cable, types ...FE; DIN 4-pin angle plug, types ...DE
Electrical connection on the measuring device:	2 - or 4-wire measuring line
Degree of protection:	IP 65

Electrical connection as per wiring diagram, measuring line on the measuring device

black/blue:	Measuring electrodes for conductivity
green-yellow/brown:	Temperature sensor (Pt100/Pt1000)
red on Compact controller:	Shielding (1) is connected on the ProMinent Compact controller, I A in Fig. 2
red on D1Ca, DMTa	Shielding (1) is cut off at (2) and is not connected on the D1Ca or DMTa, II A in Fig. 2

Electrical connection, shielded measuring lines on sensors with DIN 4-pin plug in Fig. 2 I B, II B

black/blue:	Measuring electrodes ⏚ and 2
green-yellow/brown:	Temperature sensor (Pt100/Pt1000)

Use the following shielded measuring lines to connect the sensors with DIN 4-pin plugs to the ProMinent Compact controller:

- Measuring line LF 1 m, order number 1046024; Measuring line LF 3 m, order number 1046025
- Measuring line LF 5 m, order number 1046026; Measuring line LF 10 m, order number 1046027

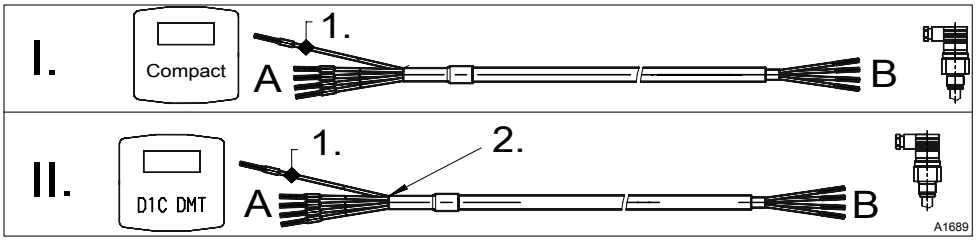

Fig. 2: Connection of the measuring line

You can also connect ProMinent measuring devices DMTa / D1Ca to the unshielded LKT measuring lines (order number 723712).

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