

ifm electronic

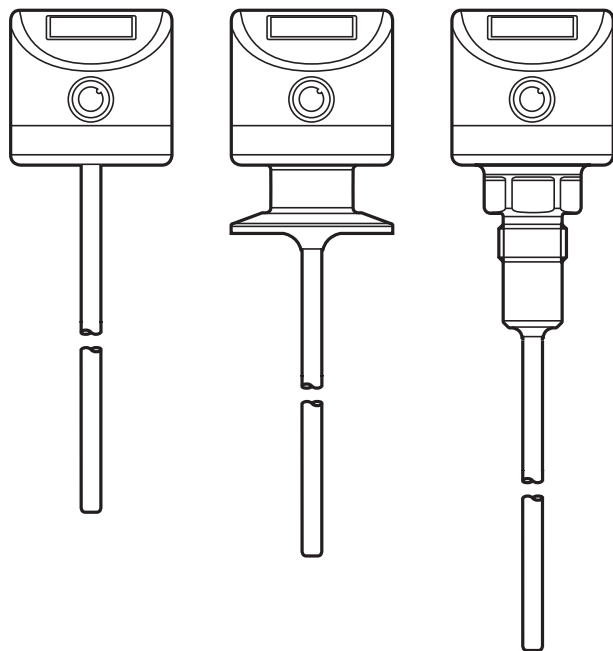


Operating instructions
Temperature transmitter with display

efector600®

TDxxxx

UK



80006622 / 00 12 / 2014

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1 Preliminary note

1.1 Explanation of symbols

► Instruction

> Reaction, result

[...] Designation of keys, buttons or indications

→ Cross-reference



Important note

Non-compliance can result in malfunction or interference.

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2 Safety instructions

- Please read this document prior to set-up of the unit. Ensure that the product is suitable for your application without any restrictions.
- If the operating instructions or the technical data are not adhered to, personal injury and/or damage to property can occur.
- Improper or non-intended use may lead to malfunctions of the unit or to unwanted effects in your application. That is why installation, electrical connection, set-up, operation and maintenance of the unit must only be carried out by qualified personnel authorised by the machine operator.
- In order to guarantee the correct condition of the device for the operating time the device must only be used in media to which the wetted parts are sufficiently resistant (→ Technical data).
- The responsibility whether the measurement devices are suitable for the respective application lies with the operator. The manufacturer assumes no liability for consequences of misuse by the operator. Improper installation and use of the devices result in a loss of the warranty claims.

3 Functions and features

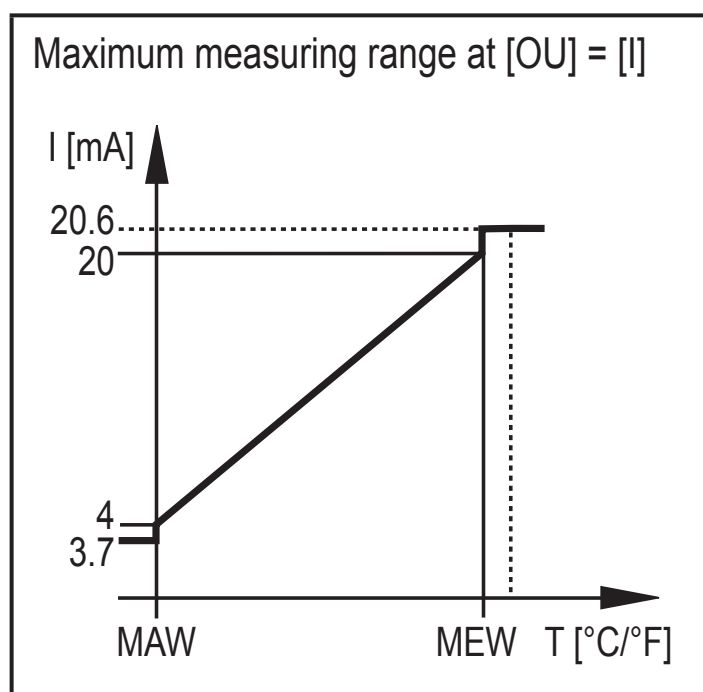
The unit detects the medium temperature and converts it into an analogue output signal (4 ... 20 mA).

4 Function

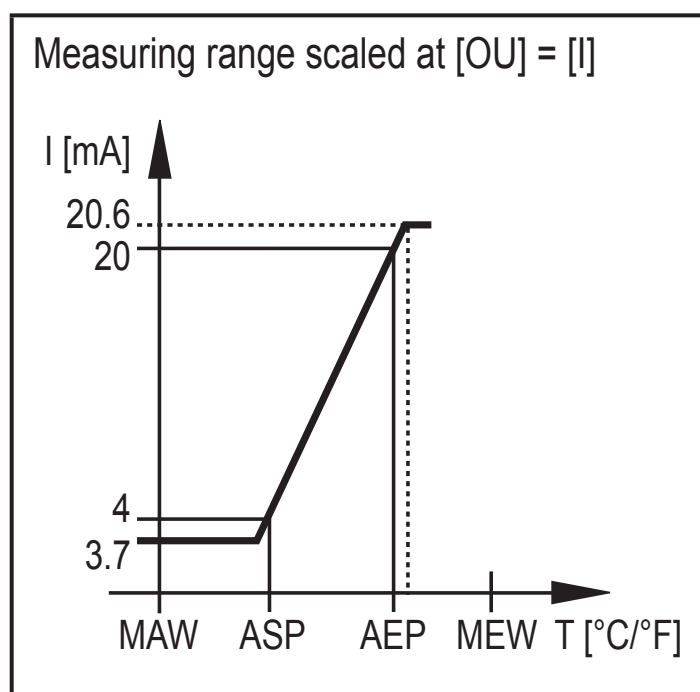
- The unit converts the measured signal into a temperature-proportional analogue signal. Depending on the parameter setting (\rightarrow 8) the output signal is at:
4...20 mA with setting [OU] = [I] or
20...4 mA with setting [OU] = [Ineg].
- The analogue signal can be scaled. Factory setting \rightarrow see Technical data at www.ifm.com.



Minimum distance between ASP and AEP = 5 °C or 9 °F.



MAW = initial value of the measuring range
MEW = final value of the measuring range



ASP = analogue start point
AEP = analogue end point

Within the measuring range the output signal is between 4 and 20 mA. If the temperature value is outside the limits of the measuring range, the following output signal is displayed:

	Output signal at [OU] = [I]	Output signal at [OU] = [Ineg]
Temperature > AEP	20...20.6 mA	4...3.7 mA
Temperature > MEW	20.6 mA	3.7 mA
Temperature < ASP	4...3.7 mA	20...20.6 mA
Temperature < MAW (initial value of the measuring range)	3.7 mA	20.6 mA

In case of internal fault, the output signal behaves according to the parameter set in [FOU] (3.5 mA or 21.1 mA) → 8 Parameter setting.

5 Installation

- ▶ Connect the unit to the process using a fixing element (Triclamp, adapter).
For G½" sealing cone (type TD25xx): tightening torque 30...50 Nm.

6 Electrical connection

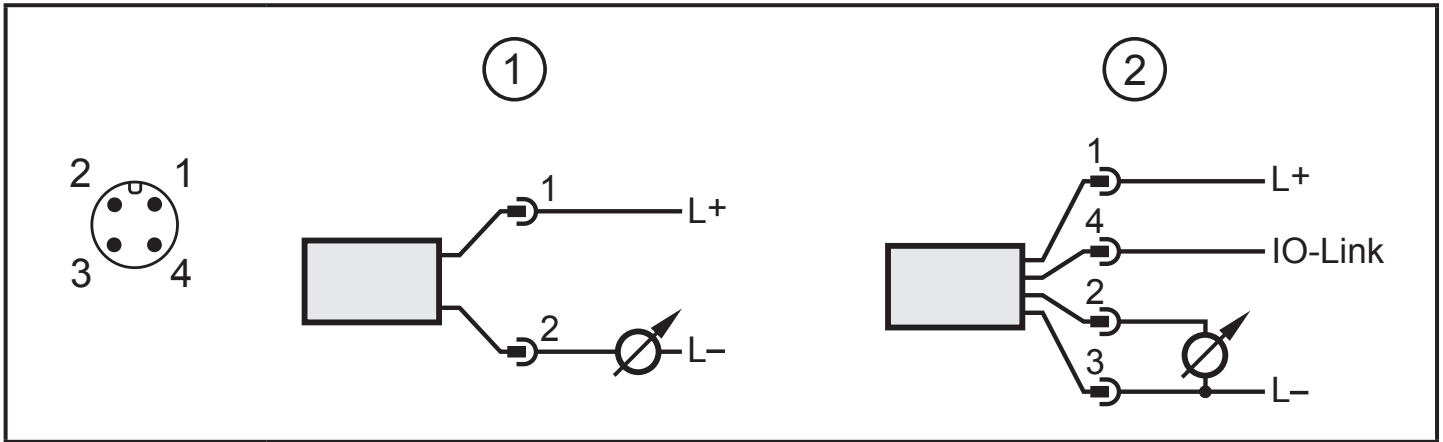
The unit must be connected by a qualified electrician.

The national and international regulations for the installation of electrical equipment must be adhered to.

Voltage supply according to EN 50178, SELV, PELV.

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- ▶ Disconnect power.
- ▶ Connect the unit as follows:



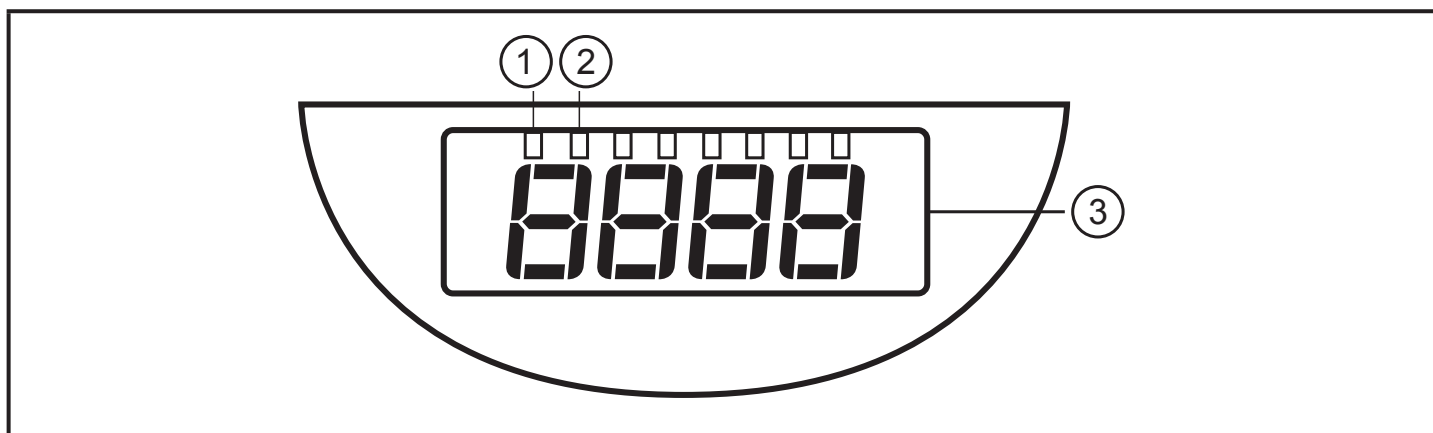
Operation as 2-wire unit (1):

Pin 1	L+
Pin 2	Analogue signal for temperature

Operation as 4-wire unit (2):

Pin 1	L+
Pin 2	Analogue signal for temperature
Pin 3	L-
pin 4	IO-Link

7 Operating and display elements



- 1: Current temperature in °C
- 2: Current temperature in °F
- 3: 7-segment LED display (4 digits)

8 Parameter setting

Using an IO-Link capable parameter setting tool, the following options are available:

- Reading current process values.
- Reading, changing and saving current parameter settings and transmitting them to other units of the same type.

8.1 IO-Link

8.1.1 General information

This unit has an IO-Link communication interface which requires an IO-Link-capable module (IO-Link master) for operation.

The IO-Link interface enables direct access to the process and diagnostic data and provides the possibility to set the parameters of the unit during operation.

In addition communication is possible via a point-to-point connection with a USB adapter cable.

You will find more detailed information about IO-Link at www.ifm.com/gb/io-link.

8.1.2 Device-specific information

You will find the IODDs necessary for the configuration of the IO-Link unit and detailed information about process data structure, diagnostic information and parameter addresses at www.ifm.com/gb/io-link.

8.1.3 Parameter setting tools

You will find all necessary information about the required IO-Link hardware and software at www.ifm.com/gb/io-link.

8.2 Adjustable parameters

OU2	Output function: Analogue signal: 4...20 mA [I] or 20...4 mA [Ineg].
ASP2	Analogue start value for temperature. Measured value at which the output signal is 4 mA (20 mA if [OU2] = [Ineg]).
AEP2	Analogue end value for temperature. Measured value at which the output signal is 20 mA (4 mA if [OU2] = [Ineg]). Minimum distance between ASP2 and AEP2 = 5 °C or 9 °F.
COF	Zero-point calibration. Setting range: ± 10 °C in steps of 0.1 °C. The internal measured value "0" is shifted by this value.
FOU2	Behaviour of the output in case of an internal fault. - [ON] = the analogue signal goes to the upper end stop value (21.1 mA). - [OFF] = the analogue signal goes to the lower end stop value (3.5 mA).
Uni	Unit of measurement for system temperature: °C or °F.
Update rate of display	[d1] = update of the measured values every 50 ms. [d2] = update of the measured values every 200 ms. [d3] = update of the measured values every 600 ms.
Orientation of display	[rd] = display rotated by 180°.

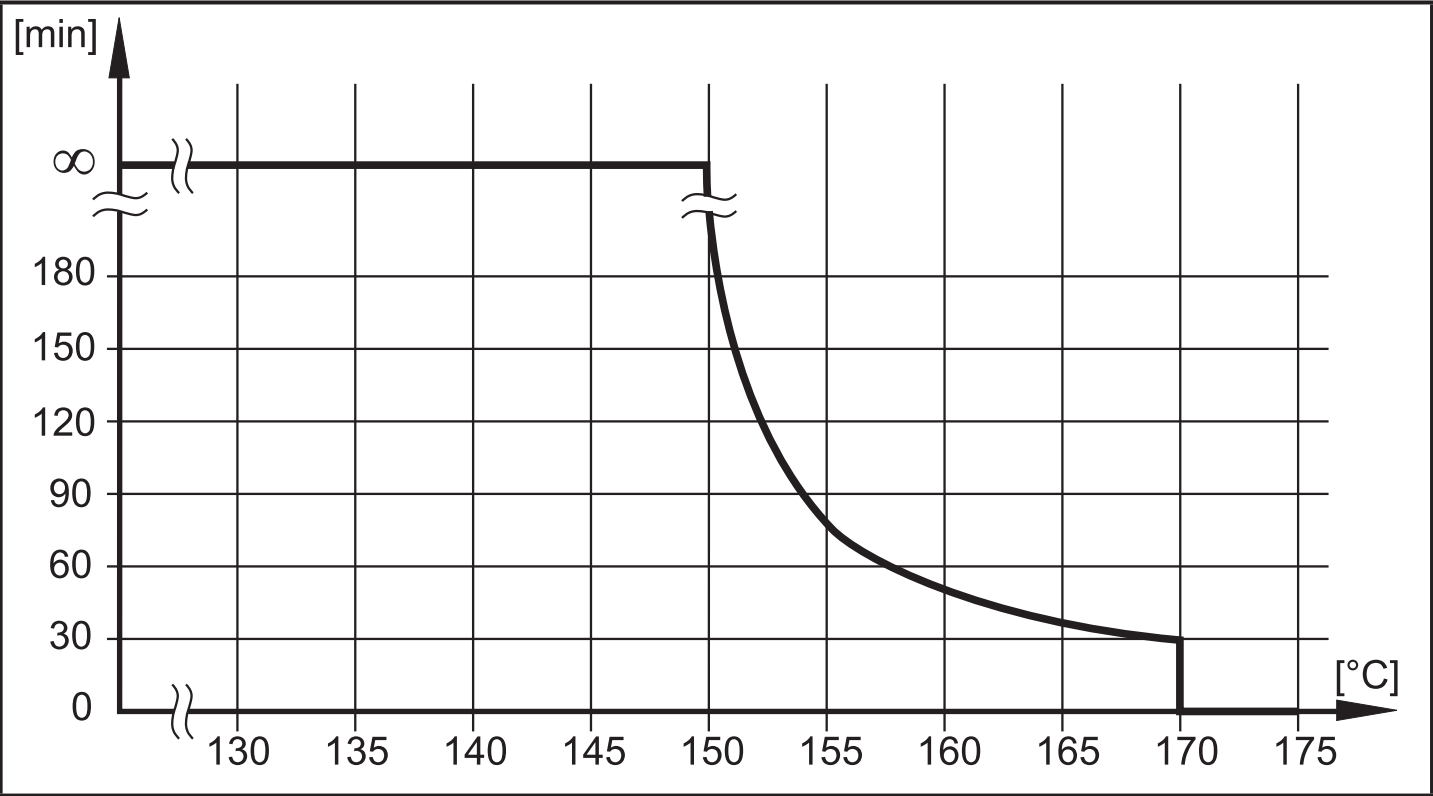
9 Operation

After power on, the unit is in the Run mode (= normal operating mode).

The current temperature value is shown in the display. The analogue output provides a temperature-proportional signal → 4 Function.

10 Technical data

10.1 Temperature resistance



Maximum operation time depending on the medium temperature

Further technical data and scale drawing at www.ifm.com.

11 Factory setting

	Factory setting	User setting
OU	I	
COF	0.0	
FOU	OFF	

Factory settings for the parameters ASP2, AEP2 and Uni → technical data sheet at www.ifm.com.

More information at www.ifm.com