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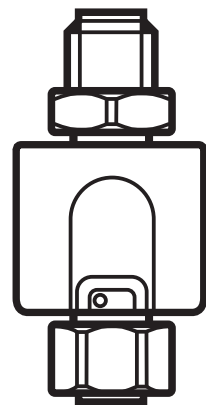
Operating instructions  
Measured signal converter  
for temperature sensors

**efector600<sup>®</sup>**

**TP9237**

**UK**

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## 1 Preliminary note

### 1.1 Symbols used

▶ Instruction

> Reaction, result

→ Cross-reference



Important note

Non-compliance can result in malfunction or interference.

## 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

In connection with a temperature probe the unit monitors the system temperature in machines and plants.

#### Connectable temperature probes:

- Temperature sensors TM, TS, TT.
- Resistance thermometer RTD (Pt 100 or Pt 1000).

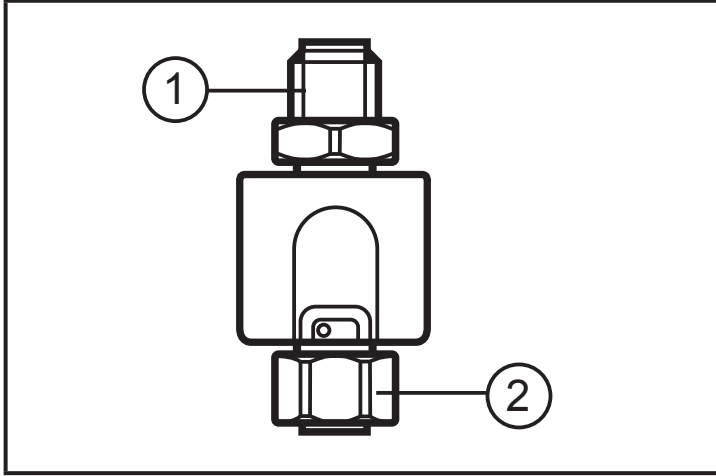
The unit detects the connected sensor type and configures itself accordingly.

### 4 Function

- The unit converts the measured signal into a temperature-proportional analogue signal:  $0...10\text{ V at [OU2] = [U]} / 10...0\text{ V at [OU2] = [Uneg]}$ .
- The analogue signal can be scaled. Factory setting → 10.  
Minimum distance between ASP (analogue start point) and AEP (analogue end point) =  $5\text{ °C}$  or  $9\text{ °F}$ .
- The unit supports IO-Link.

## 5 Installation

- ▶ Connect the unit to a temperature probe.



- 1: Connection for voltage supply and output signals
- 2: Connection for temperature probe

## 6 Electrical connection

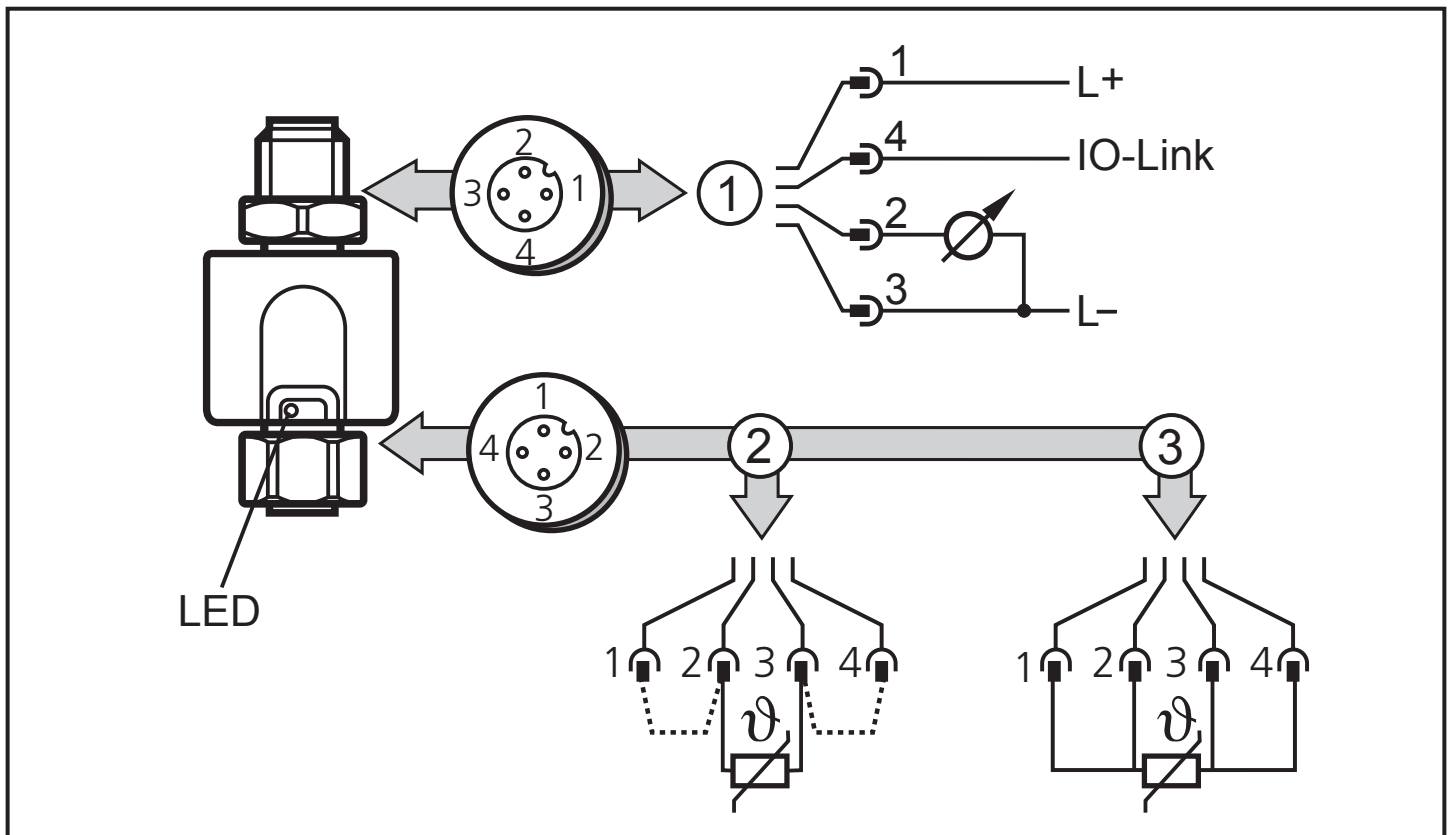


The unit must be connected by a qualified electrician.

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

Voltage supply to EN 50178, SELV, PELV.

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



1	Connection Ub and output signals	
	Pin 1	L+
	Pin 3	L-
	Pin 4 (OUT1)	IO-Link
	Pin 2 (OUT2)	Analogue signal for temperature
2	Connection of a 2-wire measuring probe; links between 1 / 2 and 3 / 4. A wire fault can be corrected in the menu COF	
3	Connection of a 4-wire measuring probe	

LED green lit = the unit is ready for operation

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## 7 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.

### 7.1 IO-Link

#### 7.1.1 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](http://www.ifm.com/gb/io-link).

#### 7.1.2 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](http://www.ifm.com/gb/io-link).

#### 7.1.3 Parameter setting tools

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

## 7.2 Adjustable parameters

OU2	Output function for OUT2: Analogue signal: 0...10 V [U] or 10...0 V [Uneg].
ASP	Analogue start value for temperature. Measured value at which the output signal is 0 V (10 V at [OU2] = [Uneg]).
AEP	Analogue end value for temperature. Measured value at which the output signal is 10 V (0 V at [OU2] = [Uneg]). Minimum distance between ASP (analogue start point) and AEP (analogue end point) = 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 output 2 in case of an internal fault. - [On] = the analogue signal goes to the upper end stop value (10.6 V). - [OFF] = the analogue signal goes to the lower end stop value (0 V).
Uni	Unit of measurement for system temperature: °C or °F.

## 8 Operation

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

Response of the analogue output in case of a fault:

Value below the set measuring range	- The output signal falls to 0 V (at [OU2] = [U]), - rises to max. 10.3 V (at [OU2] = [Uneg]).
Value above the set measuring range	- The output signal rises to max. 10.3 V (at [OU2] = [U]), - falls to 0 V (at [OU2] = [Uneg]).
Value below or above the detection zone of the sensor	Analogue signal acc. to setting [FOU2].

## 9 Technical data and scale drawing

Technical data and scale drawing at [www.ifm.com](http://www.ifm.com).

## 10 Factory setting

	Factory setting	User setting
OU2	U	
ASP	0	
AEP	100	
COF	0.0	
FOU2	OFF	
Uni	°C	

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More information at [www.ifm.com](http://www.ifm.com)