



Level



Pressure



Flow



Temperature



Liquid
Analysis



Registration



Systems
Components



Services



Solutions

Operating manual

Thermophant T TTR31, TTR35

Temperature switch

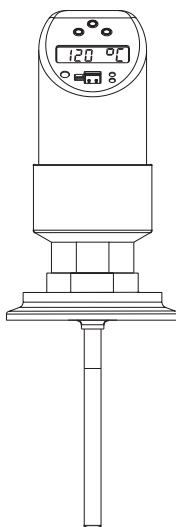
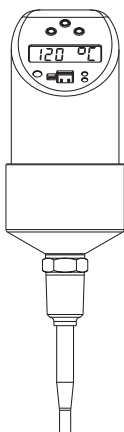


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1 Safety instructions

1.1 Designated use

The Thermophant T is a temperature switch for monitoring, displaying and regulating process temperatures. The device has been safely built with state-of-the-art technology and meets the applicable requirements and EC Directives. It can, however, be a source of danger if used incorrectly or for anything other than the designated use.

1.2 Installation, commissioning and operation

Installation, electrical connection, commissioning, operation and maintenance of the measuring system must be carried out by trained, qualified specialists authorised to perform such work by the facility's owner-operator. The specialist must have read and understood these Operating Instructions and must follow the instructions they contain. The device may only be modified and repair work carried out if this is explicitly permitted in the Operating Instructions. Damaged devices which could be a source of danger may not be commissioned and must be labelled and identified as defective.

1.3 Operational safety

■ Functional safety

The Thermophant T temperature switches were developed according to the standards IEC 61508 and IEC 61511-1 (FDIS). The device version with PNP switch output and additional analog output is equipped with fault detection and fault prevention facilities within the electronics and software. This device version can therefore be used to monitor temperature up to SIL 2 (Safety Integrity Level). The attainable SIL value is determined by the safety technical characteristics of probability of failure, hardware fault tolerance and the safe failure fraction. Details on this may be found in the Functional Safety Manual (in development).

■ Ex-area

The Thermophant T is not approved for use in Ex-areas.

1.4 Return

The following procedures must be carried out before a device is returned to Endress+Hauser:

- Always enclose a fully completed “Declaration of Contamination” form with the device. Only then can Endress+Hauser transport and examine a returned device. A copy of the “Declaration of Contamination” can be found on the second last page of these Operating Instructions.
- Remove all fluid residues. This is particularly important if the fluid is hazardous to health, e.g. flammable, toxic, caustic, carcinogenic, etc.



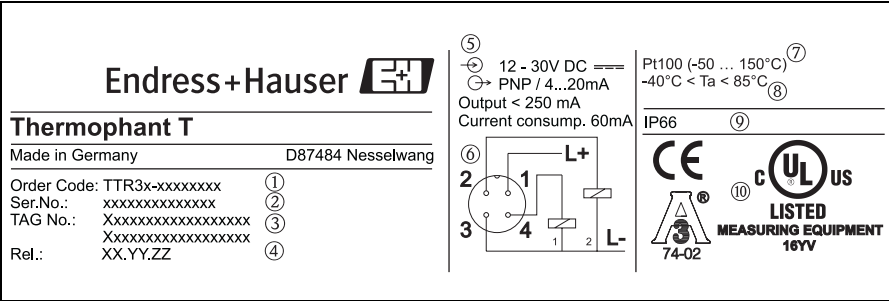
Warning!

Do not return a measuring device if you are not absolutely certain that all traces of hazardous substances have been removed, e.g. substances which have penetrated crevices or diffused through plastic.

2 Device identification

2.1 Nameplate

To identify your device, compare the complete order code and the version information on the delivery papers with the data on the nameplate.



T09-TTR31xxx-18-xx-xx-xx-000

Fig. 1: Nameplate for device identification (as example)

①	Order code	⑥	Connection diagram
②	Serial number	⑦	Measuring range
③	TAG number	⑧	Ambient temperature
④	Release number (change status)	⑨	Degree of protection
⑤	Connection values	⑩	Approvals

 **Note!**
The release number indicates the change status of the device. A change in the last two figures does not have any effect on the compatibility – see also → Chap. 7.

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