

DIGITAL THERMOMETERS WITH DISPLAY

TDx THERMOMETERS WITH DIGITAL DISPLAY

These thermometers are made in 5 versions:

The **TDi** version is fitted with a programmable converter for a 4–20 mA current loop. Buttons enable the setting of certain parameters of the current loop on display (e.g. temperature unit).

The **TDu** version with a voltage output of 0–10 V or 0–5 V (three-wire connection). With the help of the buttons you can set the parameters for the voltage output or units on the display. On request, it is possible to add two switching semiconductor switches.

The **TDs** version with only a switching contactless 30 V/500 mA switch. By using the buttons you can set the parameters of switching and the units on the display.

The **TDb** battery-powered version. It does not have analogue or switching output. The thermometer is generally in sleep mode and data appears on the display for approx. 10 sec. Moreover, in this version you can select certain parameters of display, such as the temperature unit or minimum or maximum temperature value.

The **TDd** version with RS232 or RS485 (three-wire) serial digital output. This version enables the use of 1 switch. The communication protocol is ASCII or MODBUS RTU.

■ SPECIFICATIONS

Power supply	(Vs): 9 to 30 V DC for 2-wire connection (TDi), 15 to 30 V DC for 3-wire connection (TDu, TDs, TDd)
Maximum operating temperature range	-50 to +150 °C, -50 to 400 °C
Load resistance	< (Vs-9V)/0.02 for 2-wire connection > 10 k for 3-wire connection
Display range	4 ½ digits, bar graph, power supply effect (IEC 770): < 0.005 %/1V
Sensor accuracy	See Pt100 A or Pt100 B standard
Converter errors (in accordance with IEC 770)	basic 0.15 %, repeatability 0.05 %, hysteresis 0.03 %, linearity 0.25 %
Temperature dependence (IEC 770)	zero error 0.15 %/10 °K (range 0 to 70 °C) error margin 0.15 %/10 °K (range 0 to 70 °C)
Range of analogue outputs	adjustable using buttons and display – min. margin 20 % of the standard range
Response time	standard (flowing water, 0.4 ms–1.50=) < 7 s fast (flowing water, 0.4 ms–1.50=) < 4 s Fast (flowing water, 0.4 ms–1.90=) < 10 s
Damping constant	programmable 0 to 100 s
Ambient temperature of heads	-20 to 70 °C
Relative humidity	< 95 % (without condensation)
Ingress protection	IP 65 according to EN 60 529
Material of the sensor stem	stainless steel 17240
Head material	PA 6.6, polycarbonate
EMC (electromagnetic compatibility)	EN 50081-2 (emissions) EN 50082-2 (resistance)

