Zertifiziertes QM-System
DIN EN ISO 9001
Zertifikat-Nr. 01017

Digital Thermometer

battery powered

measuring • monitoring • analysing

DTE

- Universal Pt100 or thermocouple sensors
- Battery powered
- Direct mount, panel mount, or surface mount
- Clear 6 digit alphanumeric LCD display
- Configured °C or °F
- 5000 point logger with USB interface
- NFC Interface for reading log, sync clock/start new log
- Android app for transmission of data via e-mail
- 7 x 32 character messages from user set message library
- Dual alarm relays MAX/MIN information

T2

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Description

The DTE is a battery powered LCD digital thermometer designed for use in a wide range of industrial and process applications. Similar to our standard DTB instrument, this latest development provides extra operational features such as MAX/MIN with recorded time and date, messaging feature, two alarm relays, and data logging. The rugged IP 65 rated housings and all stainless steel design offers protection from moisture and dust. The DTE also offers a range of mounting options such as direct mount, surface mount, and panel mount. With our range of sensing probes and process connections this makes the DTE an ideal replacement for traditional mechanical instruments such as liquid bulb and bi-metal gauges where power is not available or practical.

The larger LCD display, now 15.8 mm high, can also be set to units of °C or °F, and with 0.1° resolution, the DTE not only eliminates the guesswork out of reading dials and mercury columns, it also provides a much higher degree of accuracy. Low battery indication is via the display however, one of the two alarm relays can also be utilised for latching to a scrolling message.

Note: *The use of mercury as a measuring medium is no longer permissible, so for mercury-in-glass thermometers or mercury-in-steel gauges, the DTE is an ideal instrument alternative offering high accuracy, and a large easy to read digital display.*

Dual relays

The instrument is equipped with 2 volt-free change over type relays, operating independently. The user may select one of seven actions including deviation, latched or non-latched operation, with fully adjustable set point and hysteresis. The relays may be turned off if not required to extend battery life. An option is provided to trigger an alert event when a relay contact is on.

Data logging function

DTE also provides a powerful data logging function. The log points can be set up to 5000 points, each point is time and date stamped together with temperature and relay state information.

The log rate is selectable in steps. The start of log can be delayed if required. Either fixed or rolling logs may be performed.

Two methods of reading the log are available. The USB configuration reads the log and allows the user to save to a text file for export to other programmes. While the NFC android interface allows data transfer to android phones or tablets and using the downloadable App the data can be graphed and forwarded by email, Bluetooth etc. The NFC interface is also capable of starting a new log with different log period and modes.

Battery powered

The instrument is powered by a single 3.6 V lithium battery. The battery life is dependent on the number of active features such as the relay contacts and alert LED. Battery life 1 year minimum (longer depending on options selected).

Real time clock

Date and time stamped maximum, minimum and average temperature values as well as relay on and relay off data is recorded and can be displayed along with the current time and date. The RTC is also used to record the data logged points.

Technical Details

Case diameter:	100 mm
Sensing element:	RTD (Pt100) and thermocouple (T/C)
Measuring units:	can be configured and displayed in °C or °F
Sensor Measuring range:	-200 … 850 °C (Pt100, depending on probe)
T/C Measuring range:	relative to thermocouple type
Accuracy @ 20 °C:	± 0.1% of reading ± 0.2 °C (for Pt100)
Temperature stability:	± 0.015% full range / °C (for Pt100)
Refresh rate:	5 s
Display:	clear 6-digit LCD alphanumeric display, 15.8 mm high
Communication:	USB, NFC interface Android app allows log data to be transmitted via e-mail etc.
MAX. / MIN.:	The MAX/MIN and average values are shown in the display.
Display messaging:	time and date of Max. / Min. readings + 7 x user set messages (32 character)
Data logging:	On board data log function with real time date stamp, offers 5000 log points with user set log intervals between 10 seconds and 2 hours. Bar graph indicates log volume.
Ambient and storage temperature range:	-30 … 70 °C
Maximum pressure:	34 bar (on probe)
Housing material:	304 stainless steel
Probe material:	316 stainless steel
Pocket material:	316 stainless steel
Compression fitting material:	316 stainless steel
Protection:	IP 65
Power:	lithium 3.6 V battery
Battery life:	>1 year (depends on function operations)

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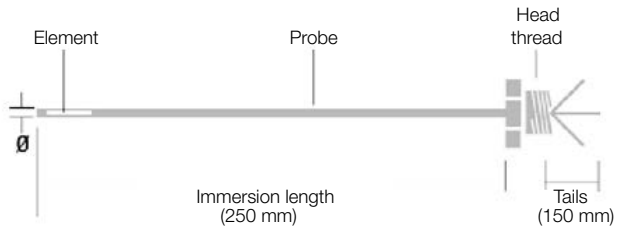
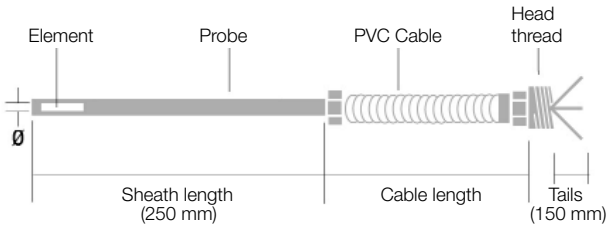
Type 2 probe:

Construction:	all welded 316 SS sensor for compression gland
Element:	Pt100 acc. to EN60751 IEC751 Class B
Probe.	Ø6x250 mm
Tails:	3 wire
Temperature range:	-50 ... +200 °C (at tip)
Head Thread:	M16x1.5



Type 8 probe:

Construction:	Flying lead sensor with a 316 SS sensor for compression gland
Element:	Pt100 acc. to EN60751 IEC751 Class B
Probe.	Ø6x250 mm
Cable:	Flexible PVC sheath over cable 3-wire, 2500 mm length (standard)
Temperature range:	-50 ... +250 °C (at tip)
Head Thread:	M16x1.5



Input
RTD (3 wire)

Model (Type "2" probe, standard scope of supply)	Range	Accuracy / stability at 20 °C
Pt100 (IEC)	-200 ... 850 °C	±0.2 °C ±0.05m % of reading (plus, sensor error)
Ni100	-60 ... 180 °C	
Ni120	-70 ... 180 °C	
Cu53	-40 ... 180 °C	
Cu100	-80 ... 260 °C	
Thermal drift	0 °C at 20 °C	typically, 0.01 Ω/°C example Pt100 0.03° C/°C

Input Thermocouple

Model (Type "8" probe, standard scope of supply)	Range	Accuracy / stability at 20 °C
K	-150 ... 1370 °C	±0.1 % of full scale ±0.5 °C ± CJ error (plus, sensor error)
J	-200 ... 1200 °C	
N	-270 ... 1300 °C	
E	-260 ... 1000 °C	
T	-270 ... 400 °C	±0.2 % of full scale ±0.5 °C ± CJ error (plus, sensor error)
R	0 ... 1760 °C	±0.1 % of full scale ±0.5 °C ± CJ error (plus, sensor error) over range 800 ... 1760 °C
S	0 ... 1760 °C	
L	-200 ... 900 °C	±0.1 % of full scale ±0.5 °C ± CJ error (plus, sensor error)
U	0 ... 600 °C	
B	0 ... 1820 °C	
C	0 ... 2300 °C	
D	0 ... 2300 °C	
G	0 ... 2300 °C	
Thermal drift	0 °C at 20 °C	typically, ±0.1 uV/°C

Case sensor / Cold Junction (CJ)

Model	Range	Accuracy / stability at 20 °C
Thermistor 10K Beta 3380	-30 ... 70 °C	±0.2 °C
Thermal drift	0 °C at 20 °C	±0.05 °C/°C

Display

Type / options / function	Description
Display height	15.8 mm non-backlit
Display information options. Some information is displayed scrolling.	6 digits 14 segment input value plus “Warning”,” Transmit”, “NFC”, “USB”, “Log”, “Battery” icons, 8 segment log volume indicators. Maximum, minimum, average *1. Date and time, case temperature. Custom messages for visual alarms / information. Relay condition.
High intensity LED	alarm and warning options
*1 Rolling average log is independent of data logging	

Relays
Relay 1 and Relay 2

Type / options / function	Description
2 x independent relays	single pole change over (common, N/o, N/c)
Rating	48 V_{DC} maximum @ 1 A (5 mA minimum) 28 V_{AC} RMS maximum @ 1 A

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Order Details (example: **DTE-A 2 06 0 0**)

Model	Case style	Probe type/Sensor type	Probe diameter	Lead[1] material/length	Options
DTE-	**Compact Version** **A** = side entry, direct mounting **(standard)** **C** = back entry, direct mounting (standard)	**2** = type 2/Pt100 **Y** = special	**06** = 6 mm **YY** = special	**0** = without	**0** = without **Y** = special option (specify in clear text)
	Remote Version **B** = side entry, remote wall mounting **D** = back entry, remote panel mounting	**8** = type 8/Pt100 **Y** = special		**A** = PVC, 2500 mm	

[1] Choose only for DTE-B/D. Leave out for DTE-A/C

Note: *Customer may exchange existing probes.*

Order Details Fabricated Stainless Steel (316) Thermo Pockets (example: **TWL-0000 G BG4A 00 150**)

Model	Sensor connection	Process connection	Immersion length[1]
TWL-0000	**G** = ½" BSP **N** = ½" NPT	**BG4A00** = ½" BSP **BN4A00** = ½" NPT	length under connection in mm

[1] Length to be specified while ordering but do not form part of the model code.

Note: *For non-standard specifications please contact our sales office.*

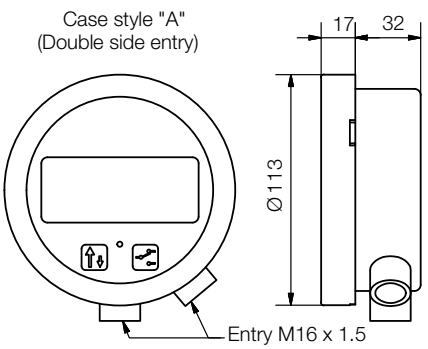
Order Details Stainless Steel (316) Sliding Compression Fittings

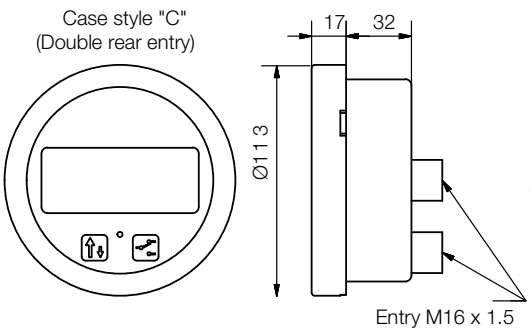
DTB-K2R08	1.4404 (316L SS) bore through compression fitting x G ¼ male (C = 38.5 mm)
DTB-K2R15	1.4404 (316L SS) bore through compression fitting x G ½ male (C = 46 mm)
DTB-K2N08	1.4404 (316L SS) bore through compression fitting x ¼" NPT male (C = 38 mm)
DTB-K2N15	1.4404 (316L SS) bore through compression fitting x ½" NPT male (C = 44.5 mm)

Note: *For non-standard specifications please contact our sales office.*

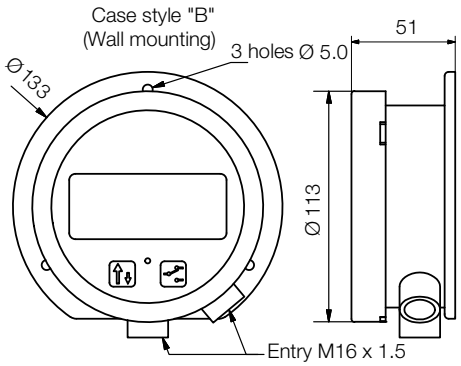
Dimensions [mm]

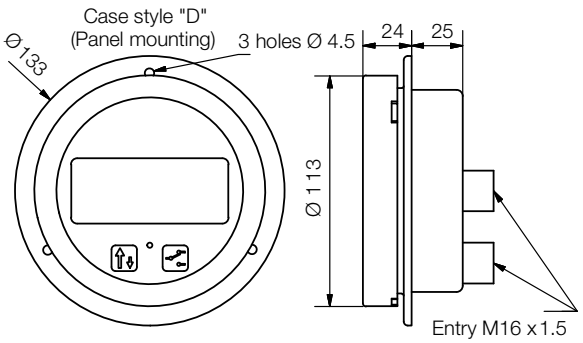
Compact Version



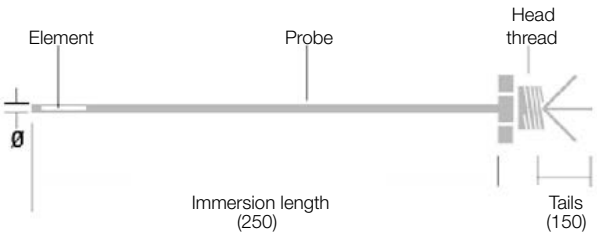


Remote Version

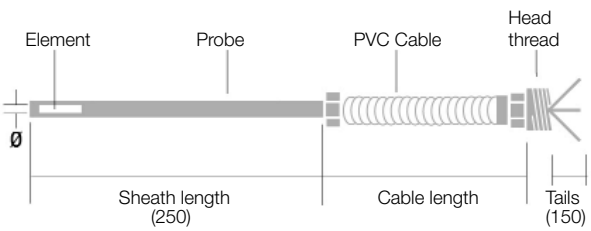




Type 2 probe



Type 8 probe



Note: *Probes are delivered mounted on the housings but may be removed/ interchanged by the customer.*