TOTP 010
Outdoor temperature transmitter without LCD display

TOTP 010D
Outdoor temperature transmitter with LCD display

Features

• **Active transmitters**
   0-10 Vdc or 4-20 mA output

• **With or without display**

• **8 different temperature ranges in same unit, selectable via jumpers on pcb**

   -20°C to +150°C, -50°C to +50°C, -20°C to +80°C, -30°C to +60°C, 0 to +40°C, 0 to +50°C, 0 to +100°C and 0 to +150°C.

   other temperature ranges on request

• **IP65 enclosure with quick locking screws**

Ordering

Outdoor temperature transmitter

Type no.	Output	Display
TOTP 010	0-10 Vdc	No
TOTP 010D	0-10 Vdc	Yes
TOTP 420	4-20 mA	No
TOTP 420D	4-20 mA	Yes

Description

Outdoor temperature transmitter TOTP is used for sensing temperature outside and indoors where IP65 enclosure is required.

The outdoor temperature transmitter TOTP is used in heating, ventilation and air conditioning systems as reference sensor for wheather-compensated control, measuring sensor, e.g. for optimization, or for measured value display, or for connection to a building management system

Outdoor temperature transmitters TOTP have
8 different temperature ranges in same unit,
selectable via jumpers on pcb:
-20C to +150C, -50C to +50C, -20 to +80C, -30C to +60C,
0 to +40C, 0 to +50C, 0 to +100C and 0 to +150C.
Other temperature ranges on request.

The power supply for outdoor temperature transmitter TOTP with 4-20 mA output is 15-36 Vdc and the power supply for outdoor temperature transmitter TOTP with 0-10 Vdc output is 24 Vac/dc.

The active outdoor temperature transmitter TOTP with output 0-10 Vdc and 4-20 mA have a PT1000 sensor (DIN EN 60751, class B).

The sensing element for the outdoor temperature transmitter TOTP is located in a stainless steel probe outside the enclosure.

Wiring connection for outdoor temperature transmitter TOTP is inside the ABS plastic enclosure on a terminal block.

The enclosure of outdoor temperature transmitter TOTP is supplied with a plastic cable entry gland M 16 x 1.5, including strain relief.

TOTP outdoor temperature transmitter can be supplied with or without LCD display.

Always install the outdoor temperature transmitter TOTP on north facing wall and at least 2.5 metres above ground.

Avoid to expose the outdoor temperature transmitter TOTP for direct sunlight, if mounting the unit in sunlight it is recommended to use the sensor shield SGD SS1.

Do not mount the outdoor temperature transmitter TOTP close to heat sources such windows, doors etc.

The cable entry for outdoor temperature transmitter TOTP should be pointing downwards.
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Stainless steel sensor shield SGD SS1.
Size 184 x 180 x 80 mm.
SGD SS1 can be used with outdoor temperature transmitter TOTP

Technical data

Measuring ranges
multi-range switching with 8 switchable measuring ranges,
see table (other ranges optional)
with manual zero point correction (±10K).

Working resistance
Ra (ohm) = (Ub -14 V) ∕ 0.02 A for I variant

Load resistance
RL > 5 kOhm for U variant

Sensing element
PT1000, DIN EN 60751, class B
Sensor inside external stainless steel probe 1.4571, V4A

Outputs
0-10 Vdc, 3 –wire (TOTP 010 types)
4-20 mA, 2-wire (TOTP 420 types)

Power supply
24 Vac/dc +/- 10% for output 0-10 Vdc
(TOTP 010 types)
15-35 Vdc for output 4-20 mA
(TOTP 420 types)

Deviation temperature
+/-0.2K at +25°C

Power consumption
<1.0 VA / 24 Vdc; < 2.2VA / 24Vac

Ambient temperature
Measuring transducer -30°C to +70°C

Humidity
< 95% r.H. non-precipitating air

Protection class
III (according to EN 60730)

Protection type
IP65 (according to EN 60529)

Enclosure
plastic, UV-stabilised, material polyamide,
30 % glass-globe-reinforced, with quick-locking screws
(slotted ∕ Phillips head combination), colour traffic white
(similar to RAL 9016), enclosure cover for display is transparent!

Enclosure dimensions
72x64x37.8 mm (without display)
72x64x43.3 mm (with display)

Cable gland
M 16 x 1.5, including strain relief, exchangeable,
max. inner diameter 10.4 mm

Electrical connection
0.14 - 1.5 mm² via terminal screws on circuit board

Humidity
< 95 % r. H., non-precipitating air

Protection class
III (according to EN 60 730)

Contin. Technical data

Standards
CE conformity,
electromagnetic compatibility
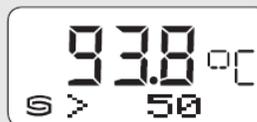accoring to EN 61326
according to EMC directive 2004/30/EU

Display
Two-line display with illumination cutout 36x15 mm (W x H),
for displaying actual temperature and intergral dignostics
(measuring range exceeded, measuring range not reached,
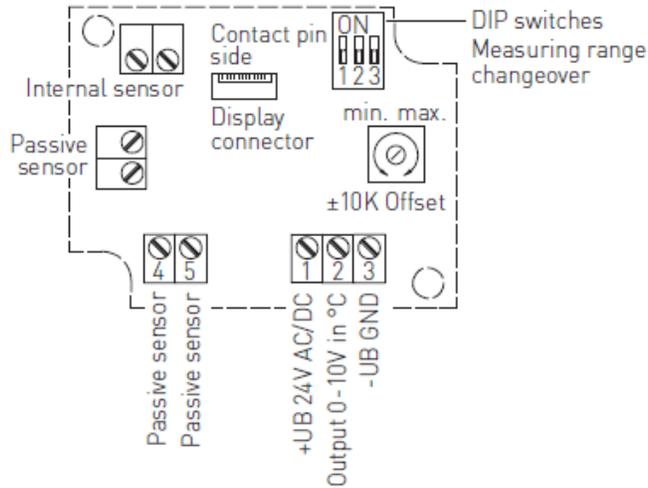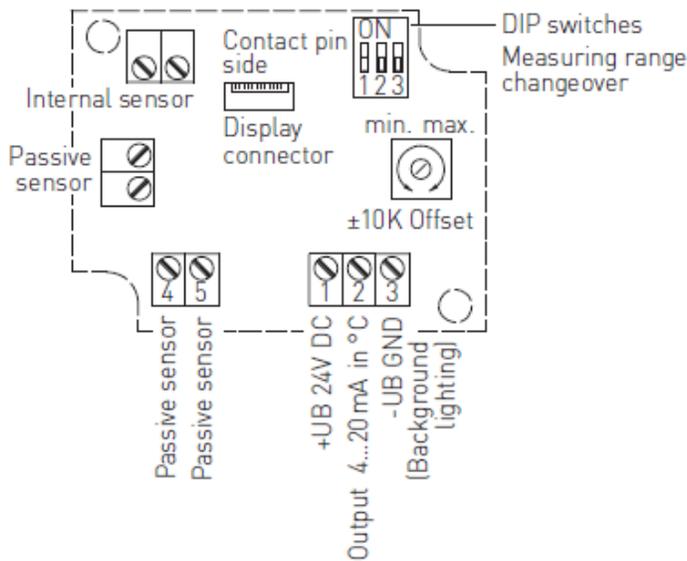sensor breakage, sensor short circuit)

Temperature ranges

When selecting measuring transducer ranges,
it is necessary to ensure that the maximum temperatures
permissible for sensor ∕ enclosure are not exceeded !

Ambient temperature for measuring transducers:
– 30 to + 70 °C

Wiring TOTP with 0-10 Vdc output

Internal sensor
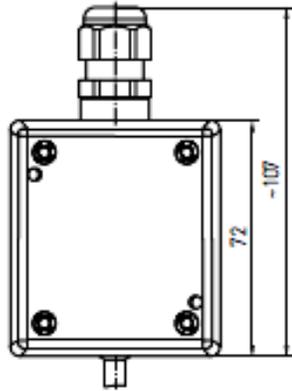
Contact pin side

Display connector

DIP switches
Measuring range changeover

Passive sensor

min. max.

±10K Offset

4 5

1 2 3

Passive sensor
Passive sensor

+UB 24V AC/DC
Output 0-10V in °C
– UB GND

Wiring TOTP with 4-20 mA output.

Internal sensor

Contact pin side

Display connector

DIP switches
Measuring range changeover

Passive sensor

min. max.

±10K Offset

4 5

1 2 3

Passive sensor
Passive sensor
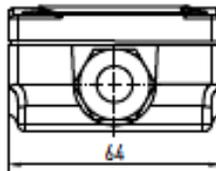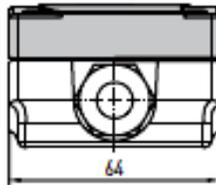
+UB 24V DC
Output 4...20 mA in °C
– UB GND
(Background lighting)

8 different temperature ranges in same unit, selectable via jumpers on pcb

Measuring ranges (adjustable)	DIP 1	DIP 2	DIP 3
-20 °C ...+150 °C	ON	ON	ON
-50 °C ... +50 °C	OFF	ON	ON
-20 °C ... +80 °C	ON	OFF	ON
-30 °C ... +60 °C	OFF	OFF	ON
0 °C ... +40 °C	ON	ON	OFF
0 °C ... +50 °C	OFF	ON	OFF
0 °C ...+100 °C	ON	OFF	OFF
0 °C ...+150 °C	OFF	OFF	OFF

Dimensions of TOTP

TOTP with display

M16x1.5

TOTP without display

M16x1.5