THERMASGARD® RPTM 2

**Pendulum room temperature measuring transducers,
calibratable, with multi-range switching and active output**

S+S REGELTECHNIK

Calibratable resistance thermometer **THERM**ASGARD® **RPTM 2** with eight switchable measuring ranges, continuous output, terminal box enclosure made of impact-resistant plastic and enclosure cover with quick-locking screws, with or without optional display (for displaying actual temperature). This room pendulum sensor is specifically designed for temperature detection in larger rooms and halls, as a dark radiation sensor for example. Due to the measuring method employed by this pendulum room temperature sensor in combination with its positioning in the room, excellent and room-representative measuring results are achieved. The globe thermometer RPTM 2 determines the effective portion of active radiation or the effective radiant heat at the measured location. The globe temperature is determined to take heat radiation into consideration and to estimate thermal comfortableness (operative room temperature). The operative room temperature describes the coaction of heat radiation and heat convection (the ratio of globe temperature / air temperature is approx. 70 % / 30 %). These sensors are factory-calibrated. Adjustment / fine adjustment by the user is possible (range and zero point are adjustable).
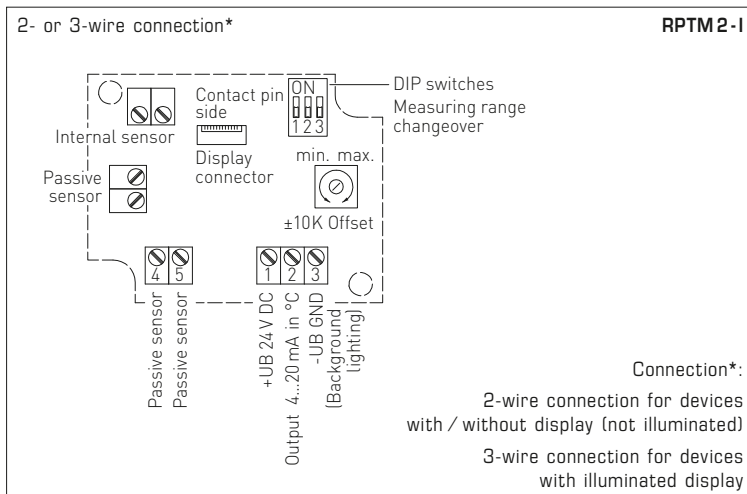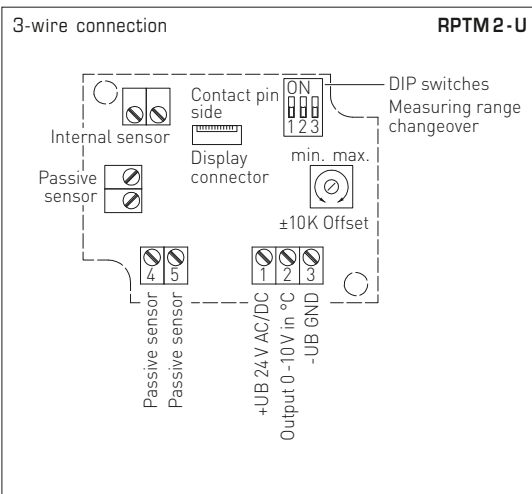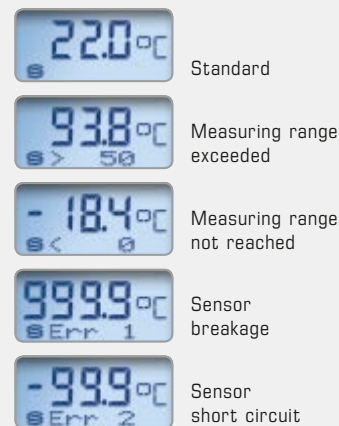
RPTM 2

TECHNICAL DATA

Power supply:	24 V AC / DC (± 10 %) for U variant 15...36 V DC for I variant, depending on working resistance, residual ripple stabilised ± 0.3 V
Working resistance:	R_a (ohm) = (U_b -14 V) / 0.02 A for I variant
Load resistance:	R_L > 5 kOhm for U variant
Power consumption:	< 1.0 VA / 24 V DC; < 2.2 VA / 24 V AC
Sensor:	Pt1000, DIN EN 60751, class B
Measuring ranges:	**multi-range switching with 8 switchable measuring ranges, 5 measuring ranges usable,** see table (other ranges optional) T_{min} –50 °C, T_{max} +80 °C **with manual zero point correction (± 10 K)**
Deviation, temperature:	± 0.2 K at +25 °C
Output:	0 - 10 V or 4...20 mA
Ambient temperature:	measuring transducer –5...+60 °C
Connection type:	2- or 3-wire connection
Globe:	plastic, colour black, Ø = 50 mm
Sensor cable:	PVC; LiYY, 1.5 m (other lengths optional: e. g. 3 m, 6 m)
Enclosure:	plastic, 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:	72 x 64 x 37.8 mm (Tyr 1 without display) 72 x 64 x 43.3 mm (Tyr 1 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
Humidity:	< 95 % r. H., non-precipitating air
Protection class:	III (according to EN 60 730)
Protection type:	**IP 65** (according to EN 60 529)
Standards:	CE conformity, electromagnetic compatibility according to EN 61326, according to EMC directive 2014 / 30 / EU
Optional:	Two-line **display with illumination**, cutout approx. 36 x 15 mm (W x H), for displaying the **ACTUAL temperature** and the **internal diagnostics** (measuring range exceeded, measuring range not reached, sensor breakage, sensor short circuit)

Display and internal diagnostics
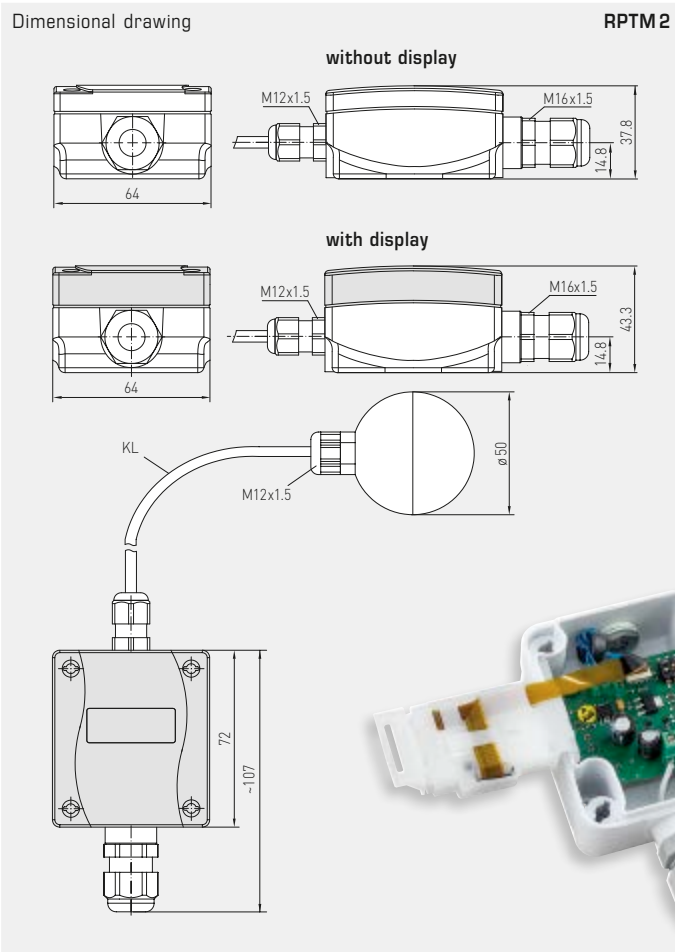**THERM**ASGARD®
Measuring transducer with display

22.0 °C	Standard
93.8 °C > 50	Measuring range exceeded
- 18.4 °C < 0	Measuring range not reached
999.9 °C Err 1	Sensor breakage
-99.9 °C Err 2	Sensor short circuit

3-wire connection — RPTM 2 - U

Internal sensor
Passive sensor
Contact pin side
Display connector
DIP switches
Measuring range changeover
ON 1 2 3
min. max.
±10K Offset
Passive sensor 4 5
+UB 24 V AC/DC 1
Output 0-10V in °C 2
-UB GND 3

2- or 3-wire connection* — RPTM 2 - I

Internal sensor
Passive sensor
Contact pin side
Display connector
DIP switches
Measuring range changeover
ON 1 2 3
min. max.
±10K Offset
Passive sensor 4 5
+UB 24 V DC 1
Output 4...20 mA in °C 2
-UB GND 3
(Background lighting)

Connection*:
2-wire connection for devices
with / without display (not illuminated)

3-wire connection for devices
with illuminated display

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Dimensional drawing   RPTM 2

RPTM 2
with display

without display

M12x1.5   M16x1.5

64   37,8   14,8

with display

M12x1.5   M16x1.5

64   43,3   14,8

KL

M12x1.5   ø50

72   ~107

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

(observe max. permissible temperature ranges!)

Dependency of output voltage
on output current

Ua [V]

12
10
8
6
4
2
0

Ia [mA]

0   0.5   1.0   1.5   2.0   2.5   3.0   3.5   4.0   4.5
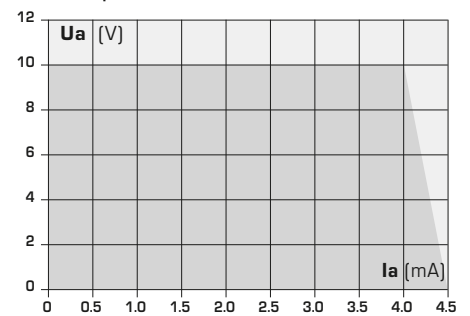
THERMASGARD® RPTM 2 – Pendulum room temperature measuring transducers (with globe)					
Type / WG01	Sensor	Output	Type	Item No.	Price
RPTM 2 - I				IP 65, I-variant	
RPTM2-I	Pt1000	4…20 mA	Remote sensor	1101-1172-0219-910	**128,85 €**
RPTM 2 - U				IP 65, U-variant	
RPTM2-U	Pt1000	0 - 10 V	Remote sensor	1101-1171-0219-910	**128,85 €**
Extra charge:	Other ranges optional				**21,42 €**
	Two-line **display** with illumination				**42,02 €**
	2-wire connecting leads, per running meter (**PVC**)			on request	