

# RESISTANCE THERMOMETER

Measuring insert: Fixed

Type:  
**RT-REG1S**

Sheet No.  
1-14 V2.1

5850-E010818V2.1

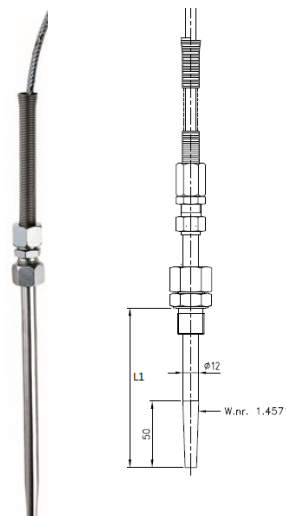


## Application:

- For measuring and regulating exhaust gas in stationary or maritime
  - diesel engines
  - turbines

## Properties:

- Media temperatures up to 600°C
- Ambient temperature up to 200°C
- Process attachment: weld-in nipple
- Measuring insert: interchangeable
- Pt100 and Pt1000 resistance thermometer in acc. with IEC 60751, type B1/1DIN
- Mechanical and thermal stress in acc. with DIN 43772
- Cable with clamp, type TGSB (Teflon-Glass Fibre-Braided)
- Constructed to have the greatest possible accuracy and durability during demanding operating conditions
- Outer protective sheath: acid-proof steel
- Marine approved by: DNV.GL, LR, NK, RINA, ABS, and BV



## MECHANICAL SPECIFICATIONS

**Protective sheath:** -----  
EN 1.4571 (AISI 316Ti) max. 850°C  
Other on request

**Immersion length L1 [mm]:** -----  
150 / 200 / 250 / 300  
Other on request

**Reduced Tip**-----  
50 mm  
Other on request

**Process attachment:** -----  
1/2" BSP welded coupling  
3/4" BSP welded coupling  
Other on request

## ELECTRICAL SPECIFICATIONS

**---Sensor element:**  
1xPt100  
2xPt100  
1xPt1000 (only cl. B 1/1 and cl. A)  
2xPt1000 (only cl. B 1/1 and cl. A)

**---Number of conductors:**  
2-wire (recommended only for Pt1000)  
3-wire  
4-wire

**---Tolerance in acc. with IEC 60751:**  
Type A DIN (i.e.  $\pm(0,15+0,002 \times \text{Tactual})$  °C)  
Type B 1/1 DIN (i.e.  $\pm(0,3+0,005 \times \text{Tactual})$  °C)  
Type B 1/3 DIN (i.e.  $\pm(0,1+0,0017 \times \text{Tactual})$  °C)  
Type B 1/6 DIN (i.e.  $\pm(0,05+0,00083 \times \text{Tactual})$  °C)  
Type B 1/10 DIN (i.e.  $\pm(0,03+0,0005 \times \text{Tactual})$  °C)

**---Cable**  
SBS (Silicone-Inner Braided-Silicone) max. 180°C  
TBT (Teflon-Inner Braided-Teflon) max. 250°C  
TGSB (Teflon-Glass Fibre-Braided) max. 250°C  
Other on request

**---Cable length [m]:**

Link for further information: [Pt100 Tolerance](#)

**THERMOCOUPLE THERMOMETER**  
**Measuring insert: Fixed**

**Type:**  
**TC-TEG1S**

Sheet No.  
3-36 V2

5850-E010818V2

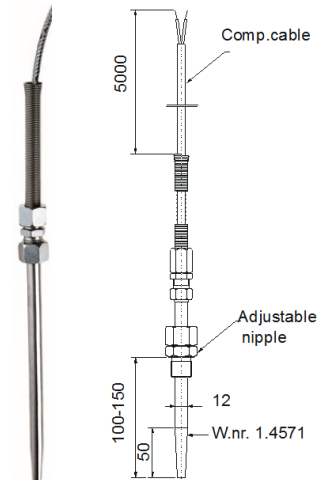


**Application:**

- For measuring and regulating exhaust gas in stationary or maritime
  - diesel engines
  - turbines

**Properties:**

- Media temperatures up to 850°C
- Ambient temperature up to 200°C
- Process attachment: Adjustable nipple
- Immersion length: Adjustable
- Measuring insert: Fixed
- Tolerance in acc. with:  
DIN IEC 584-1, DIN IEC 584-2, DIN 43710
- Constructed to have the greatest possible accuracy and durability during demanding operating conditions
- Outer protective tube: Stainless acid-proof steel
- Marine approved by: DNV, LR, GL, NK, RINA, ABS and BV



**MECHANICAL SPECIFICATIONS:**

**Protective tube:** -----  
Thermowell, EN 1.4571 (AISI 316Ti)

**Sensor diameter [mm]:** -----  
Ø12  
Special

**Immersion length L1 [mm]:** -----  
150 / 200 / 250 / 300  
Special

**Reduced protection tube end on sensor:** ----  
50 mm  
Special

**Process attachment:** -----  
1/2" BSP  
3/4" BSP  
Special

**ELECTRICAL SPECIFICATIONS**

**---Cable**  
TGSB (Teflon-glass Fibre-braided)  
SGSB (Silicone-Glass Fibre-Braided)  
Special

**---Cable length [m]:**

**---Sensor element:**  
Type K (NiCr-Ni) max. +1150°C  
Type J (Fe-CuNi) max. +700°C  
Type E (NiCr-CuNi) max. +800°C  
Type N (NiCrSi-Ni) max +1250°C  
Special

**---Number of thermocouples:**  
1xTC  
2xTC

**---Tolerance in acc. with DIN 43732:**  
Class 1 for K,J,N,E (i.e.  $\pm 1,5^{\circ}\text{C}$  or  $\pm(0,0040 \times T)$ )  
Class 2 for K,J,N,E (i.e.  $\pm 2,5^{\circ}\text{C}$  or  $\pm(0,0075 \times T)$ )  
Class 1 for T (i.e.  $\pm 0,5^{\circ}\text{C}$  or  $\pm(0,0040 \times T)$ )  
Class 2 for T (i.e.  $\pm 1,5^{\circ}\text{C}$  or  $\pm(0,0075 \times T)$ )

Link for further information: [Pt100 Tolerance](#)

## THERMOCOUPLE THERMOMETER

Measuring insert: Fixed

Type:  
**TEG1S**

Sheet No.  
3-36 V2  
5850-E010818V2



### Calibration:

Temperature calibration are used to verify and certify the sensor to have the correct accuracy. We can do either: "In house" or "Accredited" calibration. Accredited is certified by 3.e part. Normally we do a calibration in 3 points.

### Enhanced performance services:

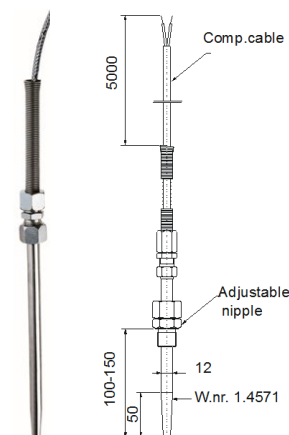
Cold applications (below -50°C) will influence the material and the measurement. CRYO treatment is needed to ensure a correct and working sensor down to -196°C.

A sensor will always drift over time, especially when there are high temperature fluctuations.

With "Ageing treatment" we stabilize the sensor to ensure a minimum drift over time. The benefits are long term stability, more correct measurement and easier planning of calibration periods.

### Documentation:

Please order the correct documentation when ordering the sensor.



## SIGNAL PROCESSING

### Enclosure

Marine Box (112x82x42mm) -----

ABS Box (82x80x56mm) -----

NONE -----

Programmable mounted transmitter:



[5333A Uninsulated for RTD](#)

[5333D EEX Uninsulated for RTD](#)

[5332A Uninsulated for RTD](#)

[5332D EEX Uninsulated for RTD](#)

[5334A Uninsulated for TC](#)

[5334B Galvanic Isolated TC](#)

[5331A Galvanic Isolated RTD / TC](#)

[5331D EEX Galvanic Isolated RTD / TC](#)

[5335A Hart 5 Protocol Standard](#)

[5335D Hart 5 Protocol CSA, FM, ATEX, IECEx](#)

[5337A Hart 5 & 7 Protocol](#)

[5337D Hart 5 & 7 Protocol CSA, FM, ATEX, IECEx](#)

Transmitter Type:			
4 mA =	C°	20 mA =	C°

[5350A Profibus standard](#)

[5350B Profibus ATEX, FM and CSA](#)

Link to further information:

[Transmitter Overview](#)

[Programmable rail mounted transmitter](#)

## CALIBRATION

### ---Calibration:

In house (Span -33°C - +700°C)

Accredited – in laboratory (-196°C - +1200°C)

1.	Point	°C
2.	Point	°C
3.	Point	°C

More point on request

### Enhanced performance services

### -----Cryo treatment.

For temperature sensor under -50°C

### -----Ageing:

For long term stability.  
Secure minimum drift of sensor accuracy

### -----Documentation

Certificate: 3.1 Material  
Certificate of origin  
Certificate of conformity

### -----Marine Certificate

Certificate of DNV.GL  
Certificate of BV  
Certificate of Rina  
Certificate of ClassNK  
Certificate of LR  
Certificate of ABS

Other on request