

Thermo-Sensor

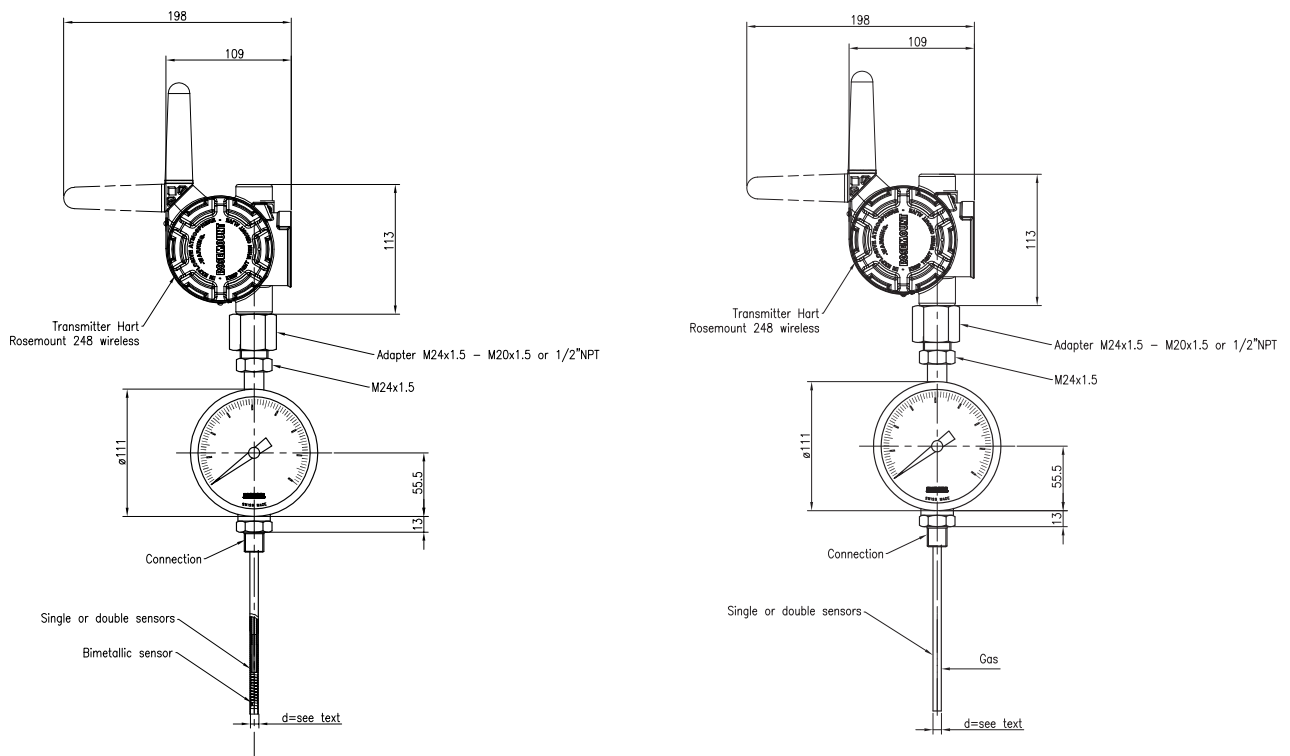
FT S 90/S91 + TT type 248-E-5.15

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S90: Pt100 thermoresistive probe + bimetallic thermometer

**S91: Pt100 thermoresistive probe + gas pressure thermometer
with temperature transmitter HART Rosemount 248 wireless**

Type **S 90/S91 + TT type 248**



Applications

- Chemical & petrochemical industries
- Pharmaceutical industry
- Intrinsically safe
- Offshore
- Special executions for explosive environments certified.



Description

The S90 combines a bimetallic thermometer and one or two Pt100 sensors with temperature transmitter HART Rosemount 248 wireless. The S90 has a temperature span from -70°C to +320°C.

The S91 combines a gas pressure thermometer and one or two Pt100 sensor with temperature transmitter HART Rosemount 248 wireless. The S91 has a temperature span from -200°C to + 600°C. On request also available as remote thermometer TFV100BI with one or two Pt100 sensors.

Advantages

- Combines a local reading indicator and remote signal to control room with wireless Rosemount transmitter.
- 2 independant sensors in 1 measuring point.
- Cost saving with only one thermowell.

Special executions for explosive environments, executions meeting the requirements EN / IEC 60079-0: «electrical apparatus for potentially explosive atmospheres (general requirements)»
EN / IEC 60079-11: «intrinsic safety (i)»
EN 60079-7: «increased safety (e)».

Technical data

1. Limiting temperatures (°C) for RTD insets:

Sensors	Ø 1.5 to 3.18 mm	Ø 4.5 to 12.7 mm	Exi, Exd, Exe all dia.
Pt 100 *	- 200...+ 550	- 200...+ 600	- 200...+ 500
Pt 1000	- 40...+ 400	- 40...+ 600	-

* Pt100 -200+850°C, Class B as option
Other sensors diameters on request

2. Precision classes:

RTD	according to IEC 60751
class A	+/- (0.15 + 0.002 ltl)
class B	+/- (0.3 + 0.005 ltl)
class AA	+/- (0.1 + 0.0017 ltl)

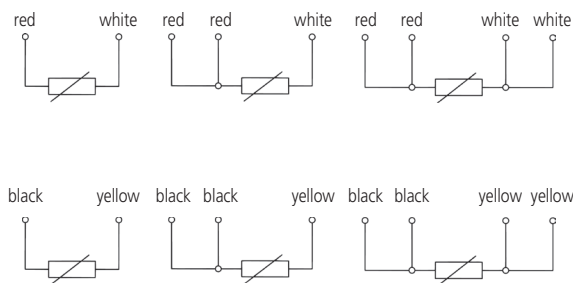
ltl = absolute value of measuring range

3. Ambient temperature: -40+85°C, -50 on request.

4. Identification of measurement circuits on terminal block and/or marking plate:

RTD:

(with color identification marking, according to IEC 60751)



Remark: "yellow" and "black" are used for double element.

5. Resistance of insulation at +15 to +35°C:

For RTD $\geq 100 \text{ M}\Omega$ with $U = 250 \text{ VDC}$

6. Sensitive length of inset:

For RTDs: 7 to 40 mm max. for all diameters of inset sheath.
For thermocouples: approximately equal to the external diameter of the inset sheath, but not more than 5 mm.

7. Response time:

The values given are for insets only. This is the time by which the reaction of the inset change in temperature;
t_{0,5} time to reach 50% of its total temperature value.
t_{0,9} time to reach 90% of its total temperature value.
The response times given below are indicative only.

Response time:

Inset	in water		in air	
	approx. 0.2 m/s		approx. 1 m/s	
	t _{0.5}	t _{0.9}	t _{0.5}	t _{0.9}
RTD 6 mm dia.	5 s	16 s	60 s	200 s

8. Minimum immersion length:

Recommended minimum immersion length:

Inset	in liquid	in gas/vapour
RTD 6 mm dia.	60 mm	75 mm

9. Bimetallic or gas pressure thermometers:

- All stainless steel
- Dial diameter 100 mm
- For heavy duty service
- Class 1, EN 13190
- For bimetallic stem diameter 6 mm
- For gas pressure stem diameter 8 mm

10. Rosemount 248 wireless temperature transmitter: (refer to product data sheet of Rosemount)

- Offers a wireless solution for process monitoring.
- Optimize plant efficiency and increase measurement reliability.
- Smart wireless delivers innovative wireless solutions for temperature measurement with universal sensor inputs.
- IEC-approved *WirelessHART* protocol.
- Large LCD display.
- Accuracy (Pt100 @ reference condition:20°C), $\pm 0.45^\circ\text{C}$ ($\pm 0.81^\circ\text{F}$)
- Wireless radio (WP5 and WK1 options)
Frequency: 2.400 - 2.485 GHz
Channels: 15
Modulation: IEEE 802.15.4 compliant DSSS
- Enclosure:
Housing Low-copper aluminium with NEMA 4x and IP66/67
Paint: Polyurethane (aluminium housing)
Cover-O-ring: Buna-N (aluminium housing)
- Antenna:
PBT/PC integrated omni-directional antenna (aluminium housing).

Modifications reserved,
 All technical data serves as a
 guideline and does not guarantee
 particular properties to any products.

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