

ABB MEASUREMENT & ANALYTICS | DATA SHEET

SensyTemp TSHY (HY R-4E)

Resistance thermometer for the food and beverage industries



Measurement made easy

For mounting on the surfaces of vessels

Surface temperature measurement

- The surface of the wall must be flat

Indirect temperature measurement

- No fracture through the wall

Safe contact to the wall

- The sensor is pressed to the surface by a spring

Simple mounting

- With welding ring of stainless steel

Halftime approximately 20 s

(with heat transfer compound approx. 10 s)

- Suitable only for slow temperature changes

Selectable transmission of measured values

- Pt 100 signal or 4 to 20 mA with installed transmitter

High operational reliability

- Components have long-term stability and are maintenance-free, environment-resistant and vibration-resistant

Corrosion-resistant

- Housing of stainless steel, IP rating IP 66

General description

The HY R-4E temperature sensor has been designed, in terms of construction, choice of materials and mounting, especially for temperature measurements on vessels in the food and beverage industries. Measurement takes place indirectly by means of surface scanning. The wall is not fractured, which is optimal in terms of hygiene and cleaning.

At the mounting point of the sensor, the contact area must be **absolutely flat**. The sensor is mounted using the appropriate welding ring. Before welding the ring, the housing and the measuring sensor must be unscrewed.

In order to ensure reliable surface temperature measurement, the measuring sensor is pressed against the wall using a spring. If heat transfer compound is also applied, the halftime is reduced from 20 to 10 s.

Specification

Temperature sensor

Resistance element

Pt 100 in accordance with EN 60751, class A, two-wire circuit

Error limit

At 0 °C < 0.15 K; at 100 °C < 0.35 K

Measuring range

-40 to 140 °C (with transmitter max. 85 °C)

Response time

Approx. 20 s

Halftime acc. to VDE/VDI 3511

(with heat transfer compound approximately 10 s)

Insulation voltage

Max. 250 V DC

Welding ring

Stainless steel 1.4571 (AISI 316-TI)

Press-on spring

Stainless steel 1.4310 (AISI 301)

Connection head

- Stainless steel 1.4301 (AISI 304) with screwed lid, sealable
- IP rating IP 66;
- Cable gland PG 9 for cable entry
- Screw terminal for the connection cable

Dimensions

See **Figure 1** on page 4.

Weight

Approximately 0.4 kg

... Specification

Transmitter

Design TSHY (SensyTemp HY R)

Installation design, suitable for the connection head of the HY R-4E temperature sensor

Input

Pt 100 (EN 60751), three-wire circuit, fixed ranges

Output

4 to 20 mA, temperature linear

Power supply

$U_s = 10.5$ to 30 V DC, polarity safe

Climatic conditions

- Ambient temperature:
-40 to 85 °C
- Relative humidity:
≤ 100 % (condensation possible)

Characteristics at rated conditions

(Percentage referred to the measuring span)

Measurement deviation (upper-range value):

- Nominal value 0 °C:
≤ 0.15 % or 0.15 K
- Nominal value < or > 0 °C:
≤ 0.2 % or 0.2 K

Deviation of linearity:

< 0.10 %

Electromagnetic compatibility

According to NAMUR NE 21

CE conform

Measuring range of the transmitter

- -10 to 40 °C
 - 0 to 60 °C
 - 0 to 100 °C
- Other ranges on request

Dimensions

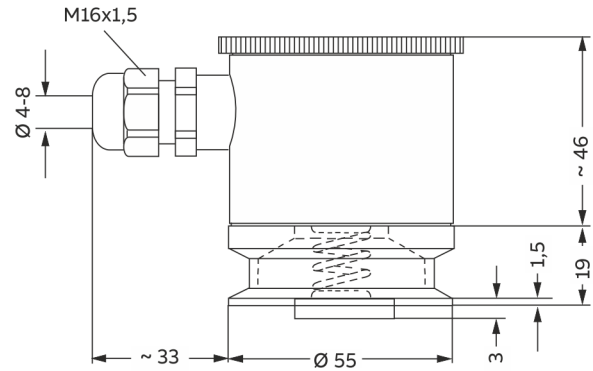


Figure 1: Dimensions in mm

Ordering Information

TSHY (HY R-4E)

Temperature sensor TSHY (HY R-4E) For surface temperature measurement	Catalog No.
With Pt 100 resist. element acc. to EN 60751 and single winding, class A	7958112
With Pt 100 resist. element acc. to EN 60751 and single winding, class A, with transmitter 4 to 20 mA, measuring range*	7958111
Heat transfer compound, 17.5 ml tube	319297

* Measuring range of the transmitter (clear text):

10 to 40 °C

0 to 60 °C

0 to 100 °C

Other versions on request



Notes

Sales



Service



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