

# SensyTemp TSHY (HY R) Resistance thermometer for the food and beverage industries



## 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 ... 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, degree of protection IP 66

## General description

The HY R-4E temperature sensor has been designed, in terms of construction, choice of materials and mounting, specially 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 s to 10 s.

Sensors with installed transmitter comply with the EMC Directive 89/336/EEC of May 1989 and the EU Directive for CE conformity identification.

## Technical data

### Temperature sensor

#### Resistance element

Pt 100 in accordance with EN 60751, class A, 2-wire connection

#### Error limit

At 0 °C < 0.15 K; at 100 °C < 0.35 K

#### Measuring range

-40...+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 degree of protection IP 66; cable gland PG 9 for cable entry screw terminal for the connection cable

#### Dimensions

see dimensional drawing

#### Weight

approximately 0.4 kg

## 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),  
3-wire circuit, fixed ranges

#### Output

4...20 mA, temperature linear

#### Power supply

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

## Climatic conditions

### Ambient temperature

-40...+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

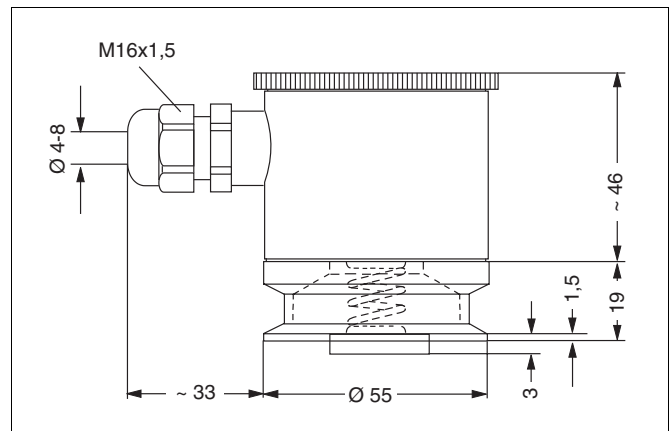
according to NAMUR NE 21

### CE conform

### Measuring range of the transmitter

-10... +40 °C  
0... 60 °C  
0... 100 °C  
other ranges on request

## Dimensional drawing



**Ordering Information**

	Catalog No.		
<b>Temperature sensor TSHY (HY R-4E)</b> for surface temperature measurement			
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...20 mA, measuring range	7958111		
<b>Heat transfer compound</b> 17.5 ml tube	319297		

1) Measuring range of the transmitter (clear text)

-10...+40 °C

0... 60 °C

0...100 °C

Other versions on request

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3KXT171001R1001

10/10-3.65-EN Rev. B 01.2011