

# Sanitary RTD - iTHERM TrustSens TM371

Self-calibrating hygienic temperature transmitter lowers risk and drives automation in regulated processes



More information and current pricing:  
[www.lasc.endress.com/TM371](http://www.lasc.endress.com/TM371)

## Benefits:

- Reduce risks and costs by implementing fully automated, traceable inline RTD sensor self-calibration; Eliminate non-conformities or undetected failures
- True sanitary **RTD sensor self-calibration** making use of the Curie effect  
Built-in, long-term stable fix point reference with complete traceability of calibration chain to ITS-90
- Full instrument diagnostics, monitoring and verification with Heartbeat Technology
- Automated process documentation, built-in memory for 350 calibration events  
24/7 access to printable, audit proof calibration certificates, on-site or through cloud-based system integration
- Built-in 4 to 20 mA loop check function saves time and increases process safety
- Highest temperature measurement precision  
Individual transmitter-sensor matching from factory for improved RTD accuracy

## Specs at a glance

- **Response time**  $t_{50} = 2.5 \text{ s}$   $t_{90} = 5.4 \text{ s}$
- **Max. process pressure (static)** at 20 °C: 40 bar (580 psi)
- **Operating temperature range** Pt 100: -40 °C to 160 °C (-40 °F to 320 °F)
- **Max. immersion length on request** up to 900.00 mm (35.4")

**Field of application:** Our award-winning iTHERM TrustSens TM371 sanitary RTD features the world's first self-calibrating Pt100 sensor unit! The hygienic temperature transmitter with **Heartbeat Technology** effectively eliminates the risk of undetected non-conformities, reduces production downtime while increasing product safety and process efficiency in food, beverage and life sciences applications. The instrument complies with FDA and GMP regulations and integrates with the **Netilion** cloud-based Industry 4.0 ecosystem.

## Features and specifications

### Thermometer

#### Measuring principle

Resistance Temperature Detector

#### Characteristic / Application

self-calibrating  
metric style  
compact temperature probe  
hygienic design  
life sciences, food & beverage

#### Thermowell / protection tube

without  
incl. thermowell  
incl. elbow thermowell

#### Insert / probe

without exchangeable insert

#### Outer diameter protection tube / Insert

6.0 mm (0.24")  
9.0 mm (0.35")  
12.7 mm (0.5")

#### Max. immersion length on request

up to 900.00 mm (35.4")

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## Thermometer

**Material protection tube/ thermowell**

1.4435 Delta Ferrite < 1%  
316L

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**Process connection**

compression fitting  
weld in adapter  
clamp connections acc. to ISO 2852  
screwed pipe joint acc. to DIN 11851  
aseptic screwed pipe joint acc. to DIN 11864-1  
metallic sealing system  
thread acc. to ISO 228 for Liquiphant adaptor  
APV Inline  
Varivent  
Ingold  
SMS 1147  
Neumo Biocontrol  
TT411 elbow pieces DIN 11865

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**Tip shape**

straight  
reduced

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**Surface roughness Ra**

0.76 µm (29.92 µin)  
0.38 µm (14.96 µin)  
0.38 µm (14.96 µin) electropolished

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**Operating temperature range**

Pt 100:  
-40 °C to 160 °C  
(-40 °F to 320 °F)

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**Max. process pressure (static)**

at 20 °C: 40 bar (580 psi)

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## Thermometer

### Response time

t50 = 2.5 s

t90 = 5.4 s

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### Integration head transmitter

no (4 to 20 mA signal, HART)

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