Modular iTHERM Thermometers

with hygienic design for the Food & Life Sciences industries

The optimal solution for every application

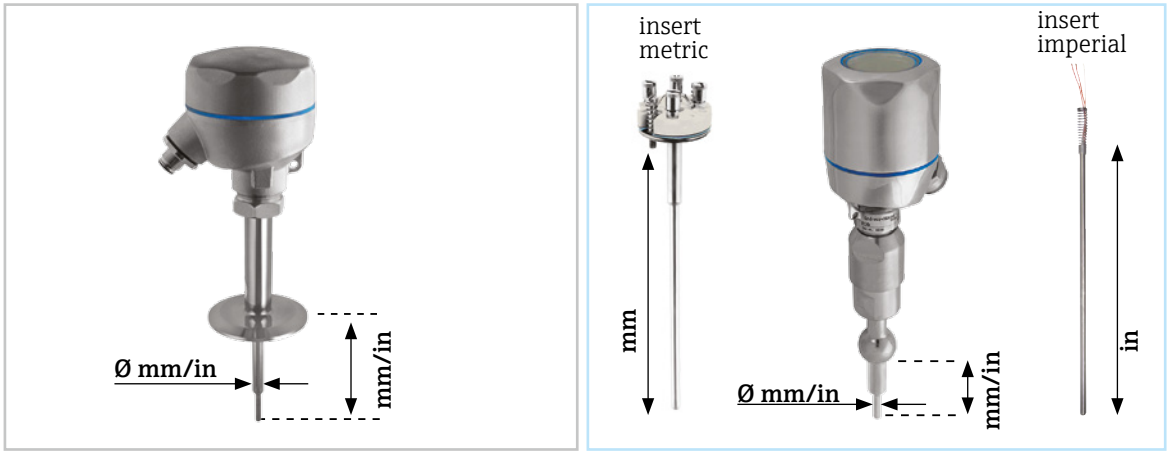
- iTHERM TM401/TM402: High-quality basic technology at the best possible price
- iTHERM TM411/TM412: Innovative advanced technology to meet highest requirements, optimized process control and best possible product quality
- Planning security due to suitable components for the entire measurement chain
- Metric and imperial design - suitable for your application

Endress+Hauser

People for Process Automation

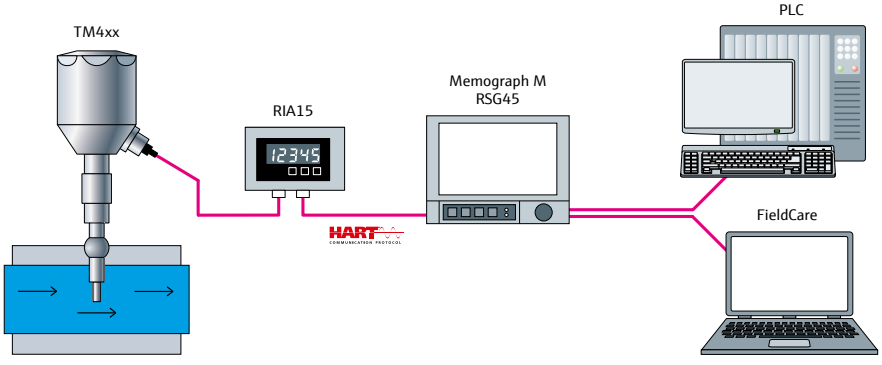
Endress+Hauser – Full basket supplier for each temperature measurement point

	BASIC TECHNOLOGY		ADVANCED TECHNOLOGY	
Device configuration	TM4**0**1 metric	TM4**0**2 imperial	TM4**1**1 metric	TM4**1**2 imperial
Insert	Not replaceable		Replaceable	
Transmitter	1-channel; no display		1- or 2-channel; plug-on display (optional)	
Ex-certificate	No		Yes	
Sensor	1x Pt100 standard thin film sensor		1x or 2x Pt100 standard thin film sensor 1x Pt100 **iTHERM QuickSens** 1x Pt100 **iTHERM StrongSens** 1x or 2x Pt100 wire wound	
Extension neck	Standard		Standard, optional **iTHERM QuickNeck**	



Thermometer models (examples) in basic and advanced technology, with and without replacable insert.

Suitable components for the entire measurement chain:



Endress+Hauser offers a complete portfolio of optimally aligned components for the temperature measurement point – everything that is needed for a perfect integration of the measuring point into the complete plant. (application example)

Technical data

Type	**iTHERM TM40x** metric/imperial (basic technology)	**iTHERM TM41x** metric/imperial (advanced technology)
Measurement accuracy	Class A	Class A or AA
Response time	t_{90}: 7 s	t_{90}: 1.5 s
Protection class	IP69K	
Process temperature	-50 to +200 °C (-58 to +392 °F)	-200 to +600 °C (-328 to +1112 °F)
Mechanical construction		
Material, wetted parts	316L	▪ 316L ▪ 1.4435+316L, delta-ferrite < 1%
Surface, wetted parts	▪ 0.76 µm (30 µin) ▪ 0.38 µm (15 µin)	▪ 0.76 µm (30 µin) ▪ 0.38 µm (15 µin) - optionally electro-polished
Replaceable insert (thermowell)	No	Yes
Sensor	Standard thin film 1xPt100	▪ Standard thin film (1x /2x Pt100) ▪ Wire wound - extended measuring range (1x/2x Pt100) ▪ iTHERM QuickSens - fastest response time (1x Pt100) ▪ iTHERM StrongSens - highest vibration resistance (1x Pt100)
Sensor connection	3-wire, 4-wire	
Extension neck	Yes	Yes, optional with iTHERM QuickNeck
Terminal head	▪ Aluminum, low hinged cover ▪ Polypropylene, screwed cap ▪ Stainless steel, surface blasted ▪ iTHERM TA30R	▪ Aluminum, hinged cover: low/ high/with display ▪ Polypropylene, screwed cover ▪ Polyamide, high hinged cover ▪ Stainless steel, surface blasted/polished ▪ iTHERM TA30R
Display	No	▪ Head transmitter with plug-on display iTEMP TID10 (optional) ▪ TMT162 in field housing
Type of connection	Flying leads, ceramic block or 1-channel transmitter iTEMP (4 to 20 mA; HART®)	
		2-channel transmitter iTEMP (HART®, PROFIBUS® PA, FF)
Certificate/Conformity	EHEDG, 3-A, ASME BPE, FDA, TSE (Animal Fat Free Production), CRN	
Ex-approvals	No	Yes (ATEX, IEC, FM, CSA, NEPSI)
Calibrations	Factory calibration	▪ Factory calibration ▪ Accredited according to IEC 17025 ▪ Sensor-Transmitter-Matching

Information partly depending on the configuration

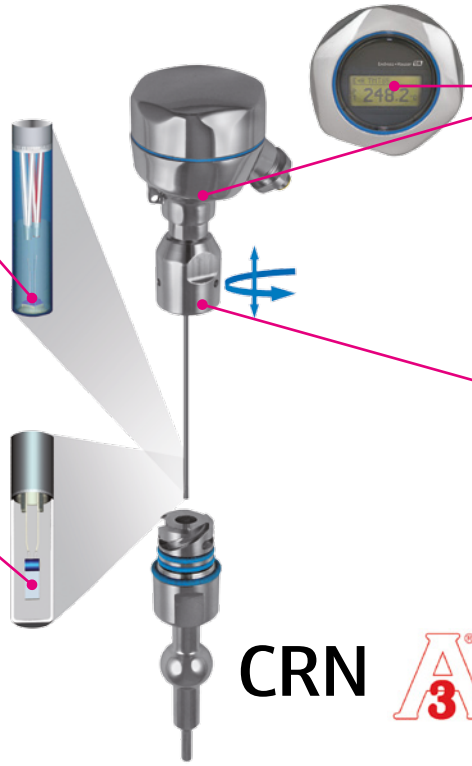
Innovative Temperature Measurement - E+H = °C

iTHERM QuickSens

Fastest response time (t_{90}: 1.5 s) for optimal process regulation

iTHERM TA30R

New stainless steel terminal head: Safety and optimal protection by local process display and safety class IP69K



iTHERM StrongSens

Unsurpassed vibration stability (> 60g) for highest construction safety

iTHERM QuickNeck

Cost and time savings due to tool-free and simple recalibration

Further documentation

- Competence brochure - Calibration of thermometers: CP004R
- Temperature Measurement - Thermometers and transmitters for the process industry: FA00006T
- System components - Solutions for the loop: FA00016K

Technical Information iTHERM hygienic, resistance thermometers:

- TM411, metric design: TI01038T
- TM412, imperial design: TI01348T
- TM401, metric design: TI01058T
- TM402, imperial design: TI01349T

Technical Information iTEMP temperature head transmitters:

- TMT180: TI088R
- TMT181: TI070R
- TMT182: TI078R
- TMT82: TI01010T
- TMT85: TI134R
- TMT84: TI138R

www.adresses.endress.com

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