VAISALA

Temperature Transmitters TMT120 and TMT130

Features

- Platinum RTD temperature sensor for outstanding measurement stability and accuracy
- Interchangeable probe, easy field calibration
- Resistant to dust and most chemicals
- Enclosure IP65
- Traceable calibration certificate: 1 point for temperature
- Suitable for cleanrooms and other demanding HVAC and light industrial applications

Vaisala Temperature Transmitters TMT120 and TMT130 are designed for temperature monitoring in cleanrooms and are also suitable for other demanding HVAC and light industrial applications.

Options

- 2-wire loop-powered or 3-wire voltage output configurations
- Extended temperature range with the TMP115 wide-range temperature probe
- Optional LCD display
- Wall-mounted transmitter with a fixed or remote probe
- Can be mounted outdoors using a Vaisala installation kit and Vaisala Radiation Shield DTR504A

Performance

The TMT120 and TMT130 transmitters incorporate platinum RTD temperature sensor technology for outstanding measurement stability and accuracy.

The TMT120 and TMT130 transmitter enclosure is optimized for use in cleanrooms. The smooth surface of the enclosure makes it easy to clean and the enclosure material is chosen to tolerate cleaning agents. Furthermore, cabling can be done through the back wall of the transmitter.

Interchangeable probe

The TMT120 and TMT130 transmitters use a fully interchangeable temperature probe. The probe can be easily removed and replaced with a new one without having to adjust the transmitter, which allows for easy and quick recalibration of the transmitter. The probe can be adjusted using one of Vaisala's handheld meters as a reference.

Available options

The TMT120 and TMT130 transmitters are available as wall mounted with a fixed or remote probe. For high temperature applications or where space is limited, the remote probe is ideal.

For an extended temperature range, the transmitter can be optionally ordered with TMP115, a wide-range temperature probe, which includes a 3-m (9.8 ft) sensor cable. The length includes the probe body and sensor tip.

The optional LCD display shows the measurement values in selected units.

Technical data

Models

Model	Measured parameters	Probe options	Output
TMT120	T	HMP110T, TMP115 [1]	1 analog output, 4–20 mA (loop-powered)
TMT130	T	HMP110T, TMP115 [1]	1 analog output, 0–1 V, 0–5 V, 0–10 V, or user-defined between 0–10 V

1) TMP115 with a 3 m (9.8 ft) cable. Length includes the TMP115 probe body and sensor tip.

Measurement performance

Temperature	
Measurement range	HMP110T: −40 ... +80 °C (−40 ... +176 °F) TMP115: −196 ... +150 °C (−320 ... +302 °F)
Temperature sensor	Pt1000 RTD Class F0.1 IEC 60751
Accuracy over temperature range:	
HMP110T:	
At +15 ... +25 °C (+59 ... +77 °F)	±0.1 °C (±0.18 °F)
At 0 ... +15 °C and +25 ... +40 °C (+32 ... +59 °F and +77 ... +104 °F)	±0.15 °C (±0.27 °F)
At −40 ... +0 °C and +40 ... +80 °C (−40 ... +32 °F and +104 ... +176 °F)	±0.4 °C (±0.72 °F)
TMP115:	
at −196 ... −90 °C (−320 ... −130 °F)	±2.5 °C (±4.5 °F)
at −90 ... −30 °C (−130 ... −22 °F)	±0.75 °C (±1.35 °F)
at −30 ... 0 °C (−22 ... +32 °F)	±0.5 °C (±0.9 °F)
at 0 ... +50 °C (+32 ... +122 °F)	±0.25 °C (±0.45 °F)
at +50 ... +90 °C (+122 ... +194 °F)	±0.75 °C (±1.35 °F)
at +90 ... +150 °C (+194 ... +302 °F)	±2.5 °C (±4.5 °F)

Operating environment

IP rating (transmitter body)	IP65 [1]
Operating temperature of transmitter body, no display	−40 ... +60 °C (−40 ... +140 °F)
Operating temperature of transmitter body with display	−20 ... +60 °C (−4 ... +140 °F)
Operating temperature, probe	HMP110T: −40 ... +80 °C (−40 ... +176 °F) TMP115, sensor tip: −196 ... +150 °C (−320 ... +302 °F) TMP115, probe body: −40 ... +60 °C (−40 ... +140 °F)
Storage temperature	−50 ... +70 °C (−58 ... +158 °F)

1) IP65 for the HMP110T probe only when using stainless steel sintered filter (HM46670SP) or PTFE sintered filter (item code DRW244938SP).

Inputs and outputs

TMT120 2-wire transmitter (loop-powered)	
Current output signals	4–20 mA
External loop voltage	10–30 V DC (R_L = 0 Ω) 20–30 V DC (R_L < 500 Ω)
TMT130 3-wire transmitter	
Voltage output signals	0–1 V, 0–5 V, 0–10 V or user-defined between 0–10 V
Min. output resistance	1 kΩ
Serial output	RS-485, non-isolated
Relay output	1 relay (max. 50 V DC, 200 mA)
Supply voltage	10–35 V DC 15–35 V DC (when output 0–10 V) 24 V AC (±20 %)
Current consumption at 24 V DC	8 mA, if relay closed 15 mA
Max. additional error caused by the analog outputs after calibration at +20 °C (+68 °F) ambient temperature	±0.1 % of FS output signal
Temperature dependence of the analog outputs	±0.005 % of FS output signal

Mechanical specifications

Weight	270 g (9.5 oz)
Probe connection cable lengths	3 m, 5 m, 10 m - up to 50 m (9.8 ft, 16 ft, 33 ft - up to 164 ft)
Display (optional)	128 × 64 resolution full graphics B&W display without backlight
Material	
Transmitter housing	PBT plastic
Display window	PC plastic
HMP110T probe body	Stainless steel (AISI 316)
HMP110T probe grid filter	Chrome coated ABS plastic
TMP115 probe body	PC/ABS blend
TMP115 probe cable	FEP
TMP115 sensor tip	Stainless steel (AISI 316)
Connections	
Inputs and outputs	Screw terminals 0.5–1.5 mm^2 (AWG 20–AWG 15)
Probe interface	4-pin M8 female panel connector

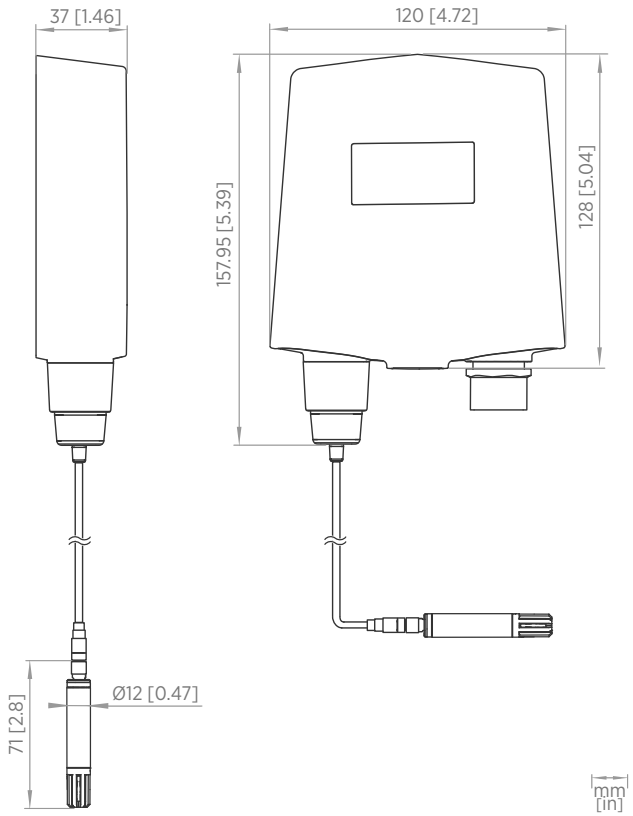
Compliance

EU directives and regulations	EMC, RoHS
Electromagnetic compatibility (EMC)	EN 61326-1, basic electromagnetic environment CISPR 32 / EN 55032, Class B
Compliance marks	CE, RCM

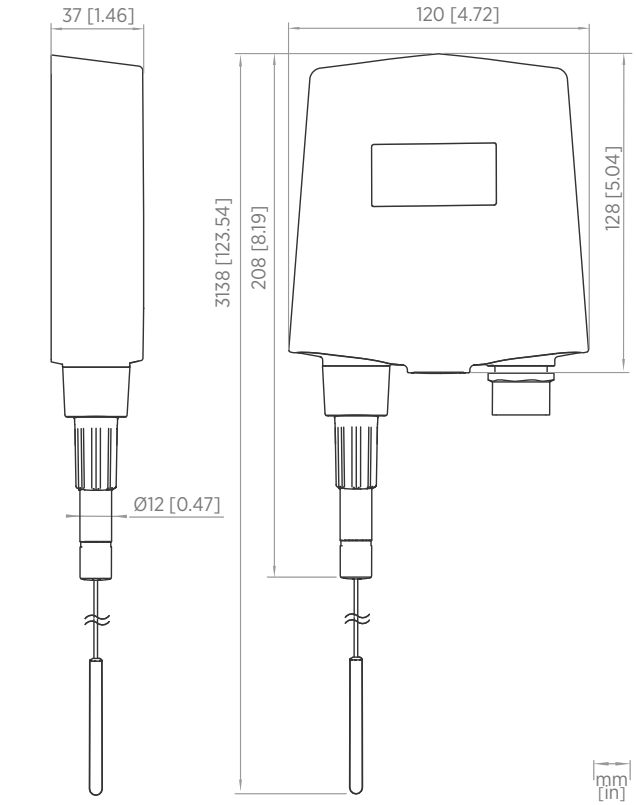
Spare parts and accessories

Probes [1]	
Temperature-only probe	HMP110T
Wide-range temperature probe	TMP115 with a 3 m (9.8 ft) cable [2]
Sensor protection	
HMP110T probe:	
Plastic grid filter	DRW010522SP
Plastic grid with membrane filter	DRW010525SP
Stainless steel sintered filter	HM46670SP
PTFE membrane filter with stainless steel grid	ASM212652SP
PTFE sintered filter	DRW244938SP
Probe installation	
Remote probe models with HMP110T:	
Probe mounting clamp, 1 pc	225501
Probe mounting clamps, 10 pcs	226067
Probe mounting flange	226061
Probe holder, 5 pcs	ASM213382SP
Fixed probe models with TMP115:	
Probe nut, 5 pcs	DRW257207SP
Thermal dampener block	236310SP
Probe connection cables [3]	
Probe connection cable 3 m (9.8 ft)	HMT120Z300
Probe connection cable 5 m (16 ft)	HMT120Z500
Probe connection cable 10 m (33 ft)	HMT120Z1000
Probe connection cable 20 m (66 ft)	HMT120Z2000
Other cables	
HM70 connection cable	211339
USB serial interface cable	219685
Transmitter protection and installation	
Radiation shield [3]	DTR504A
Rain shield with installation kit	215109
Duct installation kit [3]	215619

1) See the separate HMP110 and TMP115 order forms.
2) Length includes the TMP115 probe body and sensor tip.
3) For use with remote probe models.



Dimensions of TMT120 and TMT130 transmitter, remote probe model with HMP110T probe



Dimensions of TMT120 and TMT130 transmitter, fixed probe model with a TMP115 probe

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Distributed by:
Kenelec Scientific Pty Ltd
1300 73 22 33
sales@kenelec.com.au
www.kenelec.com.au

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www.vaisala.com

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