VIVACE™
Process Instruments
Exceeding Automation Limits

# VTT10-HH

## TEMPERATURE TRANSMITTER

head mounting model

HART® COMMUNICATION FOUNDATION


- ✓ Two Wire Loop Powered Transmitter with HART® 7 / 4 – 20 mA Communication Protocol
- ✓ Sensor Inputs RTD, TC, Ohm and mV
- ✓ 2, 3 or 4 Wires Measurement
- ✓ Ambient Temperature Compensation
- ✓ Callendar Van Dusen
- ✓ Galvanic Isolation of 1.5 kVAC
- ✓ Head Mounting (DIN 43729 B)
- ✓ Power Supply 12 to 45 Vdc (no polarity)
- ✓ Analog Output 4-20 mA NAMUR NE 43
- ✓ Operation Temperature - 40 to 85 °C
- ✓ Configuration, Calibration, Monitoring and Diagnostics via HART Configurator and Supported by Android, EDDL and FDT/DTM Tools

## DESCRIPTION

**VTT10-HH** is a member of Vivace Process Instruments Temperature Transmitters family, designed to DIN B head mounting assembly. It accommodates several sensor types, such as thermocouples and RTDs, plus resistance and voltage signals.

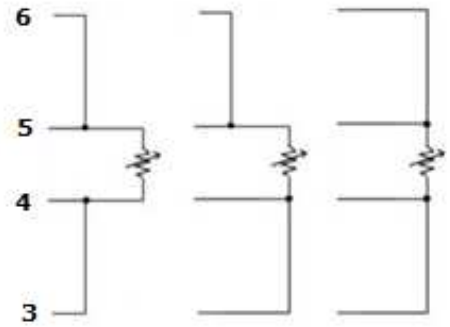
The transmitter is powered by a 12 to 45 Vdc voltage and modulates the communication on a 4 to 20 mA current, according to NAMUR NE43, using HART® 7 communication protocol, already established as the most used in the industrial automation world for configuration, calibration, monitoring and diagnostics.

Using a HART configurator or Android platform, EDDL and FDT/DTM tools it is possible to configure the sensor type, measuring scales, work units, perform a calibration in addition to monitoring the measurement variables and checking the status of the device.

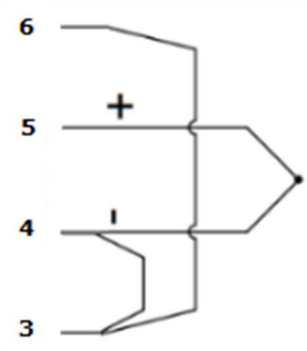
Prioritizing its high performance and robustness, VTT10-HH was designed with latest electronic and material technologies, ensuring long-term reliability for systems of any scale.

## SENSOR CONNECTION

**RTD or Ω**




**TC / mV**



## SENSOR TYPES

**RTD** – Temperature sensor based on resistance with 2, 3 or 4 wires connection

| SENSOR OPTION | REFERENCE | INPUT RANGE (°C) | MINIMUM SPAN (°C) | ACCURACY (°C) |
|---|---|---|---|---|
| Pt100 (α=0.00385) | IEC751 | -200 to 850 | 10 | 0.10 |
| Pt200 (α=0.00385) | IEC751 | -200 to 850 | 10 | 0.50 |
| Pt500 (α=0.00385) | IEC751 | -200 to 850 | 10 | 0.20 |
| Pt1000 (α=0.00385) | IEC751 | -200 to 300 | 10 | 0.20 |
| Pt100 (α=0.003916) | JIS1604 | -200 to 645 | 10 | 0.15 |
| Pt200 (α=0.003916) | JIS1604 | -200 to 645 | 10 | 0.70 |
| Ni120 | Edison Curve #7 | -70 to 300 | 10 | 0.08 |
| Cu10 | Edison Copper Winding #15 | -50 to 250 | 10 | 1.00 |
| Pt50 (α=0,00391) | GOST 6651-94 | -200 to 850 | 10 | 0.20 |
| Pt100 (α=0,00391) | GOST 6651-94 | -200 to 850 | 10 | 0.12 |
| Cu50 (α=0.00426) | GOST 6651-94 | -50 to 200 | 10 | 0.34 |
| Cu50 (α=0.00428) | GOST 6651-94 | -185 to 200 | 10 | 0.34 |
| Cu100 (α=0.00426) | GOST 6651-94 | -50 to 200 | 10 | 0.17 |
| Cu100 (α=0.00428) | GOST 6651-94 | -185 to 200 | 10 | 0.17 |

**TC** - Temperature sensor based on mV with 2 wires connection

| SENSOR OPTION | REFERENCE | INPUT RANGES (°C) | MINIMUM SPAN(°C) | ACCURACY (°C) |
|---|---|---|---|---|
| Thermocouple B | IEC584 | 100 to 1820 | 25 | 0.75 |
| Thermocouple E | IEC584 | -50 to 1000 | 25 | 0.20 |
| Thermocouple J | IEC584 | -180 to 760 | 25 | 0.25 |
| Thermocouple K | IEC584 | -180 to 1372 | 25 | 0.25 |
| Thermocouple N | IEC584 | -200 to 1300 | 25 | 0.40 |
| Thermocouple R | IEC584 | 0 to 1768 | 25 | 0.60 |
| Thermocouple S | IEC584 | 0 to 1768 | 25 | 0.50 |
| Thermocouple T | IEC584 | -200 to 450 | 25 | 1.00 |
| Thermocouple L | DIN43710 | -200 to 900 | 25 | 0.35 |
| Thermocouple U | DIN43710 | -200 to 600 | 25 | 0.35 |
| Thermocouple W3 | ASTM E988-96 | 0 to 2000 | 25 | 0.70 |
| Thermocouple W5 | ASTM E988-96 | 0 to 2000 | 25 | 0.70 |
| Thermocouple L | GOST R 8.585 | -200 to 800 | 25 | 0.45 |

**Ohm or mV** - Linear resistive sensor or mV with 2, 3 or 4 wires

| SENSOR OPTION | INPUT RANGES | ACCURACY |
|---|---|---|
| mV Input | -10 mV to 100 mV | 0.015 mV |
| Ohm Input | 0 Ohm to 2000 Ohm | 0.45 Ohm |

## TECHNICAL AND PHYSICAL SPECIFICATION

| | |
|---|---|
| Accuracy | As the above tables |
| Power Supply / Output Current | 12 to 45 Vdc (no polarity) / 4-20 mA according to NAMUR-NE43 |
| Communication Protocol | HART® 7 |
| Hazardous Area Certifications | Intrinsically Safe (pending) |
| Ambient Temperature Limits | - 40 to 85°C |
| Configuration | EDDL and FDT/DTM tools, as well as PALM and Android platform. |
| Assembly | Head Mounting according to DIN 43729 Form B |
| Protection Degree | IP00 / IP66 (Installed) |
| Electrical Isolation | Galvanic Isolation, 1.5 kVac |
| Housing Material | ABS Plastic |
| Dimension / Approximate Weight | Ø 45 x 23 mm / 90 g |

## ORDERING CODE

**VTT10-H** *Temperature Transmitter – Head Mounting*

| | | |
|---|---|---|
| Communication Protocol | H | HART |
| | P | PROFIBUS |
| Certification Type | 0 | NO CERTIFICATION |
| | 1 | INTRINSICALLY SAFE |
| Certification Body | 0 | NO CERTIFICATION |
| | 1 | CEPEL |
| | 2 | FM |
| | 3 | EXAM |

Ordering Code Example:

| | | | | |
|---|---|---|---|---|
| VTT10-H | H | - | 0 | 0 |