

IN HEAD TEMPERATURE TRANSMITTER WITH HART UPLINK 200



The UP200 has the HART communications protocol which allows the user to quickly and easily download information or interrogate the device enabling the following:

- Simple re-ranging of the sensor type and range.
- Easy on site re-calibration.
- Operation with proprietary software packages such as AMS Plant Web™ and Conerstone™
- Remote configuration on the 4 to 20) mA loop with hand held communicator or with a PC & HART modem
- Online Digital communication concurrent with a (4-20) mA Analogue signal.

In head transmitters can be applied in all areas of process automation. They make sure that the transmitted process temperature is both accurate and secure. It also means that the sensitive sensor cables no longer need to be connected to the control system.



ENHANCED FEATURES

USER CALIBRATION

In addition to sensor referencing, user offset and current output trimming is possible via the HART commands.

CUSTOM LINEARISATION

The [X]^{*1} facility allows the UP200 to be programmed with a custom linearisation to suit non standard sensors or sensors with unusual or unique characteristics.

SENSOR BURN OUT DETECTION

If any sensor wire is broken or becomes disconnected the UP200 output will automatically go to its user defined level (upscale or downscale). This happens irrespectively of which wire is broken.

OUTPUT CURRENT PRESET

For ease of system calibration and commissioning the output can be set to a pre-defined level anywhere within the (4 to 20) mA range.

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SPECIFICATIONS @ 20° C

Input Types Pt100, Thermocouple, mV or Slidewire. (Ni100, via Custom[X]^{*1} facility)

Time Constant (Filter off) 0.5 s (to 90 % of final value)
Filter Factor Off/ selectable between 1 s and 32 s or Adaptive

Warm-up Time 120 s to full accuracy

Input/Output

Breakdown Isolation 500 VAC

ENVIRONMENTAL

Operating Range (-40 to 85) °C

Storage Temperature (-50 to 85) °C

Humidity Range (0 to 95) % (non condensing)

APPROVALS

EMC BS EN61326

Hazardous Area ATEX II1GEExia IICT4-T6

FM FM3610-IS/I/1/ABCD/T4

OUTPUT

Maximum Output Load [(Vsupply-10)/21.5] KI, 250 I minimum loop load. Supply voltages over 30 V a minimum loop load of 500 I is necessary.

Burnout Levels Low 3.75 mA, High 21.5 mA

Input Out of Range Low 3.8 mA, High 20.5 mA

Output Range (4 to 20) mA, Min. 3.75 mA,

Maximum 21.5 mA

Accuracy ± 5 LA

Thermal Drift 1 LA/ °C

Supply Voltage (10 to 40) VDC

Supply Voltage Effect 0.2 LA/ V

Hart TrimDac function available.

ENCLOSURE

Material ABS

Flammability SEI UL94-V0

MECHANICAL

Weight 43 g

INPUT SENSORS & RANGES

Pt100 (RTD) 2, 3 or 4 Wire

Sensor Range (-200 to -850) °C

(18 to 390) I

Minimum Span 25 °C

Linearisation BS EN 60751, BS 1904, DIN

43760, JIS1604, CUSTOM [X]^{*1}

Max Lead Resistance 50 I per leg (balanced for 3 wire)

Basic Measurement Accuracy^{*2}

0.01 % FRI^{*3} ± 0.07 % rdg

RTD Excitation Current (300 to 500) LA

Thermal Drift Zero 0.008 °C/°C

Span 0.01 %/°C

THERMOCOUPLE

Type Range °C Minimum Span °C
 TC Type K -200 to 1370 50
 TC Type J -200 to 1200 50
 TC Type T -210 to 400 25
 TC Type R -10 to 1760 100
 TC Type S -10 to 1760 100
 TC Type E -200 to 1000 50
 TC Type L -100 to 600 25
 TC Type N -180 to 1300 50
 TC Type [X]3 User defined

Linearisation BS EN 60584-01, BS 4937, IEC 584-1

Basic Measurement Accuracy*2

0.04 % FRI*3 ± 0.04 % rdg or 0.5 °C (whichever is greater)

Cold Junction ± 0.5 °C tracking 0.05 °C/°C range (-40 to 85) °C

Thermal Drift Span 0.01 %/°C

MILLIVOLTS

Input Voltage source

Range (-10 to 75) mV

Characterisation Linear, Custom [X]*1

Minimum Span 5 mV

Basic Measurement Accuracy*2

± 10 LV ± 0.07 % rdg

Input Impedance 10 MΩ

Thermal Drift Zero 0.1 LV/°C

Span 0.01 %/°C

SLIDEWIRE

Input 3 wire potentiometer

Resistance Range (10 to 390) Ω end to end (Larger values can be accommodated with an external resistor)

Range (0 to 100) %

Characterisation Linear, Custom [X]*1

Minimum Span 5 % of FRI*3

Thermal Drift Zero 0.005 % of Span /°C

Span 0.01 %/°C

Basic Measurement Accuracy*2

0.1 % of FRI*3

***Notes:**

- 1) Customer linearisation is available pre-programmed at the factory, contact sales office for details.
- 2) Basic Measurement Accuracy includes the effects of calibration, linearisation and repeatability.
- 3) FRI = Full Range Input

COMMUNICATING WITH A HAND HELD COMMUNICATOR

The UP200 will communicate with any proprietary HART communicator and access to all universal commands is available from the communicator. In order to access all the parameters available, the communicator must have the correct HART Device Description (DD) installed. COMMUNICATING WITH PLC'S OR DCS'S. Any system that supports HART field devices using such software packages as AMS-Plant Web™ or Cornerstone™ will communicate with the UP200 enabling access to advanced system features such as self documentation and diagnostics. The correct DD must be installed for full access to all parameters.

OPTIONS AND ACCESSORIES

- Fitted inside a RDT terminal head
- IS version

HOW TO ORDER

Please specify: model, range, options if any

Example : UP200, -50 to 250 Deg C

