

# SMART THERMOCOUPLE TRANSMITTER

## TTC200 TTC200X

- K, J, N, E, T, R, S, L, U, B, C(W5), D(W3), G(W) plus mV INPUTS
- ATEX AND IECEx APPROVED VERSION
- 22 SEGMENT USER LINEARISATION mV INPUT
- SENSOR OFFSET AND OUTPUT ALIGNMENT
- ISOLATED INPUT
- PROGRAMMABLE BURNOUT

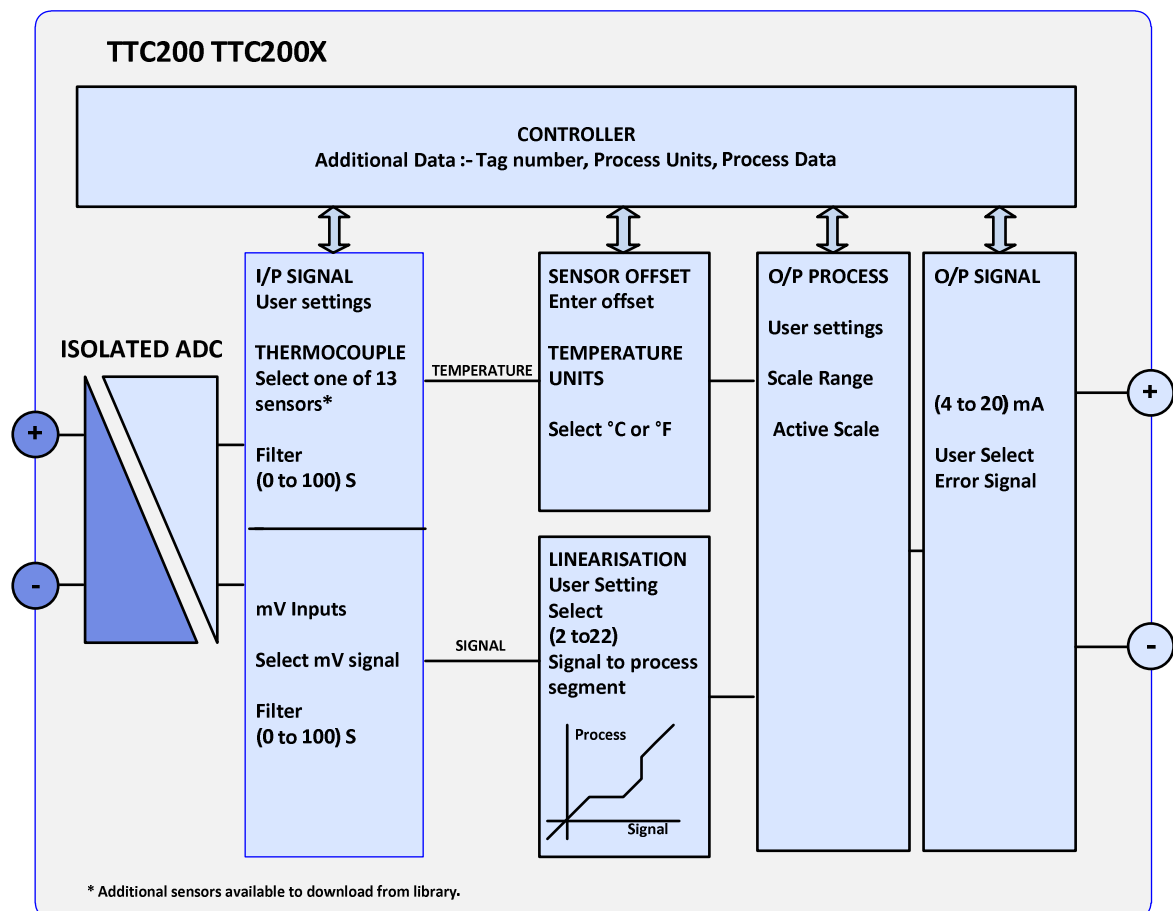
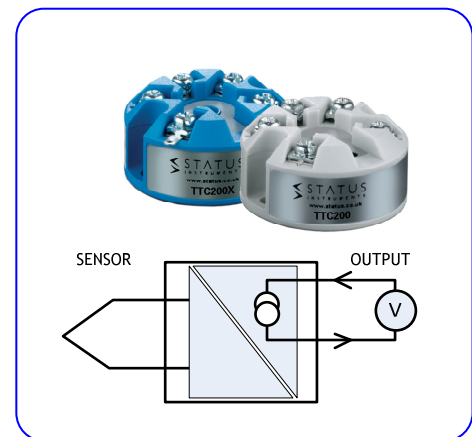
### INTRODUCTION

The TTC200 “smart” in head temperature transmitter accepts thermocouple temperature sensors and converts the sensor output over a configured range to a standard industrial (4 to 20) mA transmission signal. Two versions are available; standard and ATEX / IECEx approved for hazardous areas.

PC configuration allows the user to select TC type, Range, Filter, units, linearization and Burnout direction, without requiring calibration equipment. Additionally, the user may read live process data when connected to the PC, this allows for sensor offset, and output alignment calibration, where the user can enter values to match the actual process and therefore reducing system errors.

If required the desired range can be specified at the time of order, removing the need for user configuration.

If the range is not specified then the transmitter will be shipped with the default range of (0 to 1000) °C type K.



# SMART THERMOCOUPLE TRANSMITTER

## SPECIFICATION @20 °C

### THERMOCOUPLE mV INPUT

Standard TC  
mV  
Thermal Drift  
Cold Junction

Types K, J, E, N, T, R, S, L, U, B, C (w5), D (W3), G (W), library  
(-100 to 200) mV  $\pm 0.02\%$  of full scale.  
Thermocouple offset 0.1 °C/°C, span 0.05 °C/°C  
Range (-40 to 85) °C, Accuracy  $\pm 0.2$  °C,  $\pm 0.05$  °C/°C

### OUTPUT

Type  
Range  
Accuracy  
Loop Effect  
Max output load  
Loop Supply

Two wire (4 to 20) mA current Loop  
(4 to 20) mA ; Upscale burnout 21.5 mA ; Downscale Burnout 3.8 mA  
(mA Out/ 2000) or 5 uA which ever is the greater, Drift 1 uA/°C  
 $\pm 0.2$  uA/ V  
TTC200 [(Vsupply-10)/20] K Ohms (Example 700 Ohms @ 24 V)  
(10 to 30) VDC

### SUPPLY

(10 to 30) VDC, < 1W Full Power

### GENERAL

Response time  
Isolation  
Connections

Start up 5 seconds, Update 160 mS, Response 500 mS, Warm up 2 minutes.  
Input to output 500 V dc.  
Screw terminals 2.5 mm Maximum

### USER INTERFACE

Type  
Baud rate  
Equipment

USB 2.0  
1200 baud  
PC running windows XP or later, USB configurator.

### USER INTERFACE FUNCTIONS

Scaling  
Filter  
User Linearisation (Profile)  
Process Units  
Temperature units  
Tag Number  
Process Output  
User offset  
Active scaling

User signal to process value scaling, for simplified setup.  
Adjustable time constant (0 to 100) Seconds.  
(2 to 22) segments mV to process.  
4 Characters (signal input only)  
°C or °F (TC inputs only)  
20 Characters  
Range in process units  
Enter sensor offset (Temperature mode only).  
Set output process range against active sensor input

### ENVIRONMENT

Operating Ambient

TTC200(-40 to 85) °C ; (10 to 90) % RH (non condensing)  
TTC200X Refer to user manual  
(-50 to 85) °C ; (10 to 90) % RH (non condensing)  
(10 to 30) °C  
>= IP65.

Storage Ambient  
Configuration Ambient  
Installation Enclosure

### APPROVALS

CE

BS EN 61326

### MECHANICAL

Style  
Diameter

Head mounted terminal block  
43 mm diameter; 21 mm height Weight 31 g (encapsulated)

### THERMOCOUPLE TYPES

Accuracy  $\pm 0.1\%$  of full scale  $\pm 0.5$  °C (plus sensor error)  
K (-200 to 1370) J (-100 to 1200) E (-200 to 1000) N (-180 to 1300)  
L (-100 to 600) U (0 to 600) B (0 to 1800) C - D - W (0 to 2300)

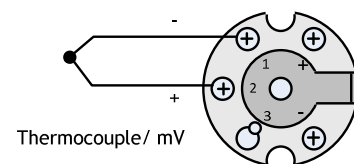
Accuracy  $\pm 0.2\%$  of full scale  $\pm 0.5$  °C (plus sensor error)  
T (-200 to 400)

Accuracy  $\pm 0.1\%$  of full scale plus  $\pm 0.5$  °C (range 800 to 1600)  
R (0 to 1760, S (0 to 1760)

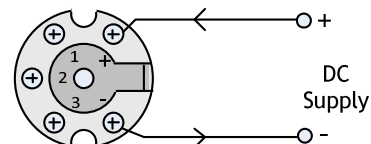
mV

Accuracy  $\pm 0.02\%$  of full scale (-100 to 200) mV

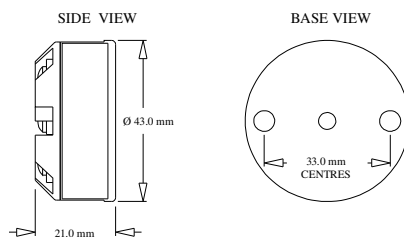
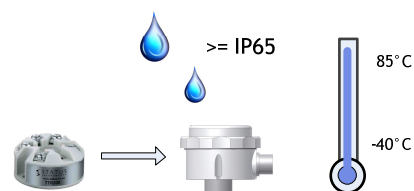
### TTC200 connection



Thermocouple/ mV



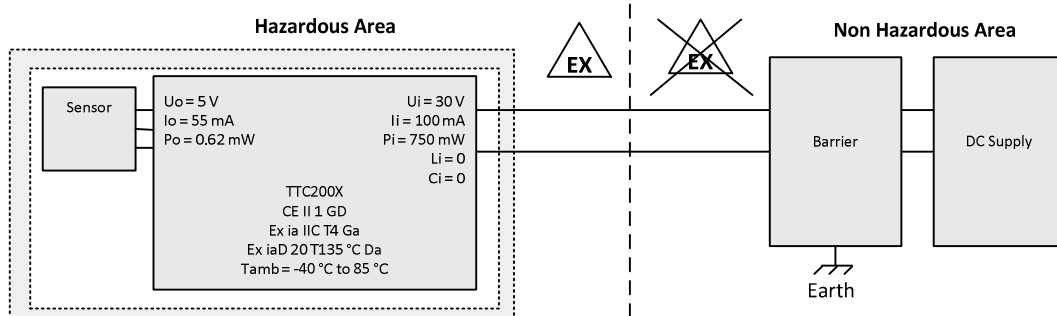
DC Supply



### TTC200X ATEX /IECEx VERSION



Please refer to user manual document D2505\_01 available at [www.status.co.uk](http://www.status.co.uk) for details of the TTC200X ATEX / IECEx specification and the special conditions for safe use.



Order code:

TTC200  
TTC200X

Std Tx.  
IS Ver.

Distribution via  
[www.fluidic-ltd.co.uk](http://www.fluidic-ltd.co.uk)  
Glasgow 0141 641 5920  
Warrington 01925 572401

