

Datasheet

Temperature meter ST100 - Display

Introduction

ST100 equips a pt100 and a transmitter, pt100 is used to sensing the changes of medium temperature, the transmitter will convert the changes to industrial signal and output.



Characteristics

330° rotatable display

Measuring range -50...200°C / -58...392°C

High repeatability

4...20mA + 2 switching output

Temperature and switching state display

High reliability

Applications

Hydraulic and lubrication system

Cooling system

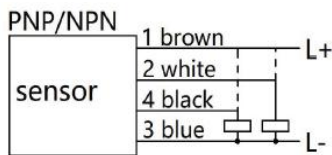
Heating system

Water supply system

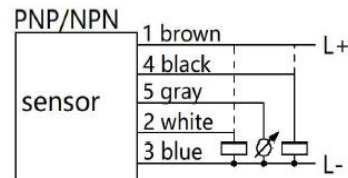
Specifications

Measuring range	-50...200°C / -58...392°F
Measuring range setting	Switching point(SP): 2...100% of full span
	Reset point(rP): 0...98% of full span
	Number of switches: 1 or 2 selectable
	Increase/decrease every 0.1°C
Accuracy	0.5K + 0.4% of full span
Resolution	Switching output: 0.5°C
	Analog output: 0.5°C
	Display: 0.1°C
Process pressure	Ø6 probe: 40 bar / 580 psi
	Ø8 probe: 100 bar / 1450 psi
Temperature effect	0.1K / 10K
Voltage drop	<2V
Non-load current	<30mA
Switching load current	300mA
Analog load current	500Ω @24VDC
Wiring protection	Reverse polarity, Over-voltage
Display	4-bit digital LED
Sensor	PT100
Ambient temperature	-25...80°C / -13...176°F
Protection class	IP65
Power	24 VDC
Housing material	Zinc alloy
Wetted parts material	304 or 316L stainless steel selectable
Electrical connection	4-pin M12 x 1
	5-pin M12 x 1 (for analog + 2 switching output)
Version	Integrated / remote transmitter

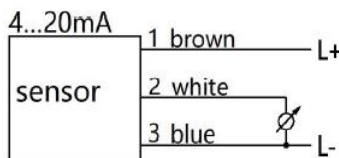
Wiring



2 switching output



2 switching output +
1 analog output



1 analog output

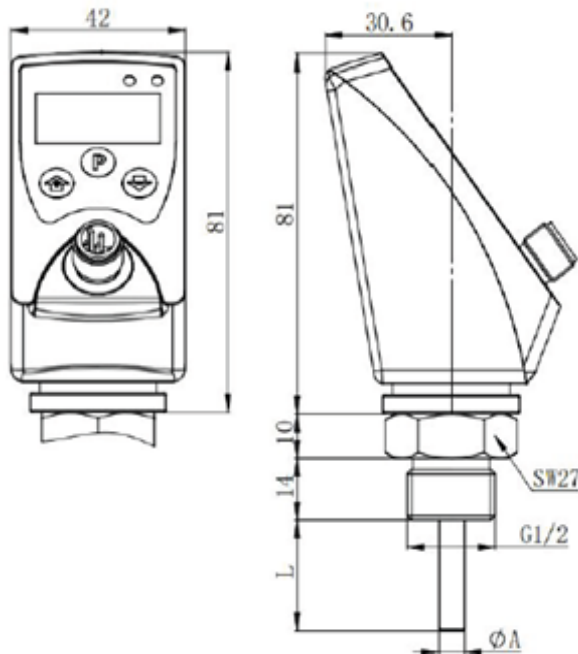


1 switching output +
1 analog output

Pin	Cable	2 switching output	1 switching + analog output	2 switching + analog output
1	Brown	Power: 24VDC(±20%)	Power: 24VDC(±20%)	Power: 24VDC(±20%)
2	White	Switch 2 output	4...20mA output	Switching 2 output
3	Blue	VDC Grond (0V)	VDC Ground (0V)	VDC Ground (0V)
4	Black	Switch 1 output	Switch 1 output	Switch 1 output
5	Gray	/	/	4...20mA

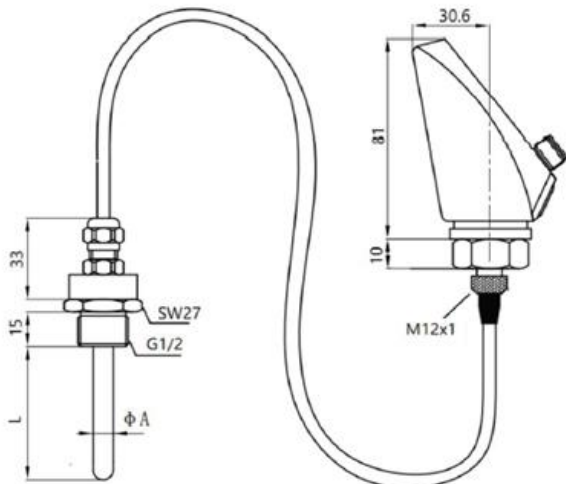
Dimensions in mm

Integrated transmitter



Customization available for:
 Probe length L
 Probe diameter A

Remote transmitter



Customization available for:
 Probe length L
 Probe diameter A

Panel



- 1- I = output 1 state
II = output 2 state
- 2- LED display
- 3- P confirm
- 4- up
- 5- down

Keys

keys	Function
+	Press and hold for 3 seconds, enter setting mode
	Shift up menu item / change setting value
	Shift down menu item / shift setting bit
	Enter menu / Confirm and enter next menu

Menus

Menus	Description	Options
unit	Display unit	psi / bar
SP1	Switch 1 set point	2%...100% of measuring range
rP1	Switch 1 reset point	0...98% of measuring range
out1	Switch 1 output mode	Hno / Hnc / Fno / Fnc*
SP2	Switch 2 set point	2%...100% of measuring range
rP2	Switch 2 reset point	0...98% of measuring range
out2	Switch 2 output mode	Hno / Hnc / Fno / Fnc*
Sfun	Switch output function	PnP / nPn
Afr	Analog output lower limit	0...75% of measuring range
Ato	Analog output upper limit	25%...100% of measuring range
Aout	Analog output range	0...20 / 4...20
dAp	Wave filter coefficient	0...8
Sto	Save	YES / NO

Hno - Hysteresis normally open

Hnc - Hysteresis normally close

Fno - Window normally open

Fnc - Window normally close

Note:

1) The difference between set point and reset point must be at least 2% of measuring range, or one of them will be adjusted automatically.

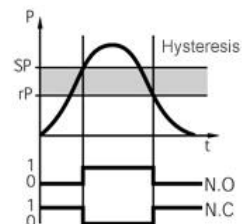
2) The difference between analog output upper limit and lower limit must be at least 25% of measuring range, or it will be adjusted automatically.

Others	Description
OL	Higher than upper limit alerting
UL	Lower than low limit alerting

Output function - Window / Hysteresis

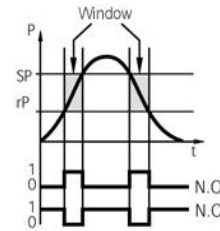
Hysteresis

Hysteresis of ST100 could be set through menu. The hysteresis is shown as gray band in right diagram, that is, SP-rP. The hysteresis keeps the switching output stable if the pressure fluctuates around the preset value. For rising pressure, the output switches when it reaches the set point (SP); For falling pressure, the output switches back only if the reset point(rP) is reached.



Window

The window function of ST100 could be used to monitor a certain pressure range, alerting will be activated if the pressure is out of the range. The window is shown as gray band in right diagram, it allows the monitoring of a defined range. If the pressure between the set point (SP) and reset point (rP), the output is activated (NO) respective deactivated (NC).



Order Code

Example: **ST100-IT51AA6L25M-**

1. ST100-

- I Integrated transmitter
- R Remote transmitter

5. Probe diameter

- 6 Ø6
- 8 Ø8

2. Measuring range

- T1 -50...0°C / -58...32°F
- T2 -50...50°C / -58...122°F
- T3 0...50°C / 32...122°F
- T4 0...80°C / 32...176°F
- T5 0...100°C / 32...212°F
- T6 0...120°C / 32...248°F
- T7 0...150°C / 32...302°F
- T8 0...200°C / 32...392°F

6. Probe length

- L25 25 mm
- L50 50 mm
- L75 75 mm
- L100 100 mm
- L150 150 mm
- L200 200 mm

3. Output signal

- 2S 2 switching output
- 1A 4...20mA output
- 2A 4...20mA + 1 switching output
- 3A 4...20mA + 2 switching output

7. Electrical connection

- M M12 x 1

4. Probe material

- A 304 stainless steel
- B 316L stainless steel

8. Cable length

- None
- 2 Cable length 2m / 6.5ft (remote transmitter only)
- 5 Cable length 5m / 16.5 ft (remote transmitter only)
- 10 Cable length 10m / 33 ft (remote transmitter only)

Accessory - Cable

ST04-	PU	02	F	G	Description
ET04(05)-					M12 4(5)-pin plug
ST04(05)-					Self locking M12 cable
	PU				Material: PUR
		02			Length: 2m / 6.5ft
		05			Length: 5m / 16.5ft
		10			Length: 10m / 33ft
			F		Female plug
				G	Straight
				W	Bend

Note: 5-pin plug is for 2 switching outputs + analog output



Accessory - Protection tube

PJ001-	H	I	/10	Description
PJ001-				Protection tube
	H			G12 male thread (Connect to pipeline)
		I		Male thread
				Female thread (Connect to sensor)
			/10	Diameter Ø10 (for Ø6 sensor)
			/12	Diameter Ø12 (for Ø8 sensor)

