

TNS3000 - Separate Temperature Sensor with LED Digital Display

- ▶ Probe and display unit designed separately
- ▶ Smart product
- ▶ 4-digit LED display
- ▶ All-metal housing
- ▶ PNP/NPN programmable
- ▶ 4...20mA programmable
- ▶ Rotatable indicator

TNS3000, designed with separate probe and display unit, measures the temperature with a high-accuracy sensor and output signal is processed to standard electrical signal for outputting and displaying.

All-metal housing; rotatable highlight LED display; dual keys design and friendly menu; multiple process connections; 330° rotatable indicator.



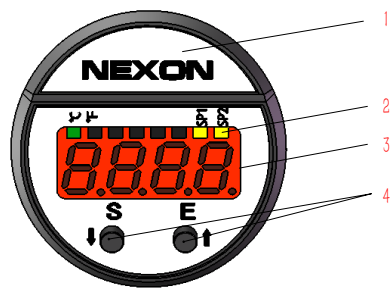
Specifications

Measuring Range	
TNS3000	-50...125°C
Power Supply	
	12...30Vdc
Current Consumption	
	≤30mA (power supply 24Vdc, no-load)
Switching Output	
Output	Push-pull (compatible with PNP/NPN);NC/NO configurable
S1, S2 Output Current	<500mA
Response Time	<10ms
Voltage Drop	<1V
Accuracy	≤±0.5% of F.S.
Current Analog Output	
Output	3-wire 4...20mA
Load RA	RA≤0.5KΩ
Linearity	≤±0.5% of F.S.
Voltage Analog Output	
Output	3-wire 0...5V
Load RA	RA>10KΩ
Linearity	≤±0.5% of F.S.
Wiring Protection	
	Reverse polarity, overvoltage and short-circuit
Display	
Design	8mm height, red 4-digit LED
Display Range	-1999...9999
Accuracy	
	≤±0.5% of F.S.
Stability (Drift/Year)	
	≤±0.3% of F.S.
Temperature	
Medium	-50...125°C
Ambient	-40...85°C
Probe Pressure Rating	
	200bar
Material	
Display Head	Zinc Alloy
Housing	304 stainless steel
Wetted Parts	316 stainless steel
Protection Class	
	IP67
Electrical Connection	
	M12×1 plug
Process Connection	
	G1/4 external thread ED seal

Applications

- ▶ Equipment manufacturing
- ▶ Hydraulics and pneumatics
- ▶ Pumps and compressors
- ▶ Machinery manufacturing

Set Panel



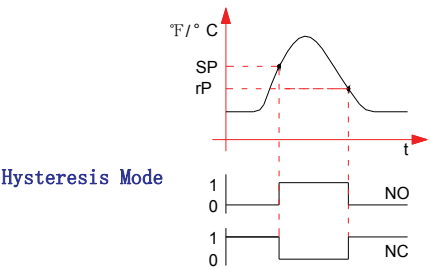
- 1 - LOGO
- 2 - 8 state lights
- 3 - 4-digit LED display window
- 4 - Keys

S + E	Press and hold for 2 seconds to enter setting mode/verification
S	Shift down the menu/change values
E	Shift up the menu/change the setting bit

Functional Specifications

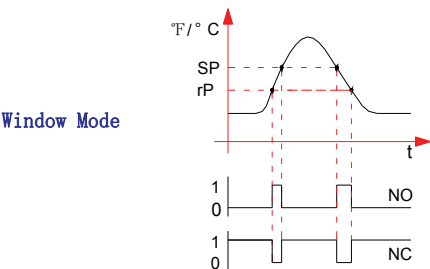
Hysteresis Mode

The hysteresis keeps the switching output stable if temperature fluctuates around the setpoint. Output switches when rising temperature reaches set point (SP1); As temperature falls, the output switches back only if the reset point (rP1) is reached.



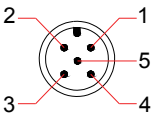
Window Mode

The window function allows the monitoring of a defined range. If the temperature is between set point (SP1) and reset point (rP1), the output is activated (NO), otherwise it is deactivated (NC).



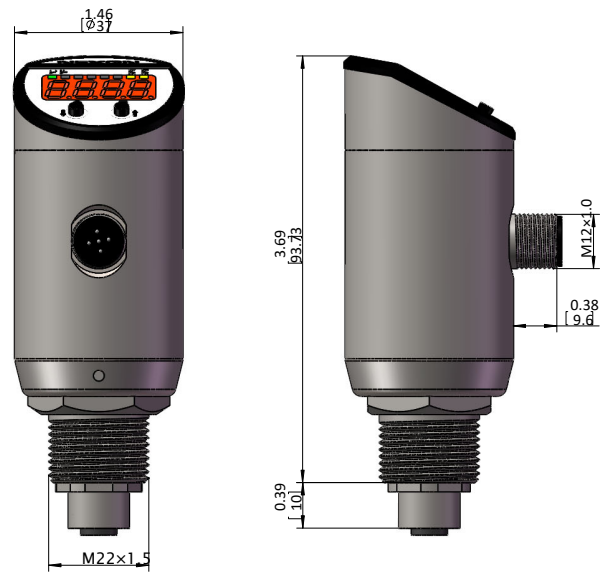
Display Unit Wiring

Signal	Plug	Cable
U+	1	Brown
U-	3	Blue
Switching output 1	4	Black
Switching output 2	2	White
Analog output (Current or Voltage)	5	Gray



PNP output	NPN output
<p>2x PNP</p>	<p>2x NPN</p>
<p>2x PNP + analog output</p>	<p>2x NPN + analog output</p>

Dimensions in Inches (mm)

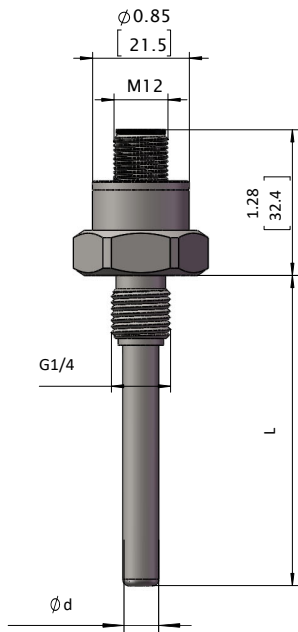


Model Number for Display Unit

OrderNO.	Type	Temperature °C	Probe series	Output type mA/V
TNS1000	TNS3000/DH21S	-50...125°C	TT1000	2 switch output Current Output 3-wire (4...20mA)
TNS1100	TNS3000/DH22S			2 switch output Voltage Output 3-wire (0...5V)

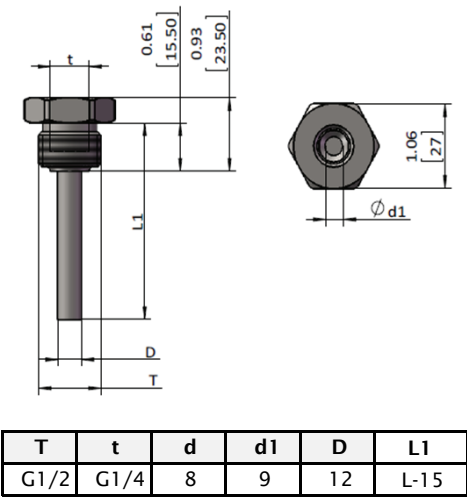
Probe assembly

TT1000 type



Dimensions in Inches (mm)

Probe matching tube size



Model Number for Temperature Probe

OrderNO.	Type	Rod Length mm
TT002,5	TNS3000/SNG14M010	25
TT005,0	TNS3000/SNG14M035	50
TT0010	TNS3000/SNG14M085	100
TT0015	TNS3000/SNG14M135	150
TT0025	TNS3000/SNG14M235	250
TT0035	TNS3000/SNG14M335	350

Note: Other range, process connection, electrical connection can be customized

Model Number for Connecting Cable

OrderNO.	Type	Cable length L m
CD05FGRPVO2S	2 m 5 pin 5 core hole double straight shielded cable	2
CD05FGRPVO5S	2 m 5 pin 5 core hole double straight shielded cable	50
CD05FGRPVI0S	2 m 5 pin 5 core hole double straight shielded cable	100