

pro^{sense}® TSD25 Series Temperature Switches



Features

- Compact temperature switch with simple setup using mechanical adjustment dials
- Extremely durable housing with 316 stainless steel wetted parts
- No internal moving parts ensure long-term stability without setpoint drift
- LEDs indicate switching and operating status

- Two normally open or complementary normally open/normally closed PNP DC switching outputs
- Optional plastic protective cover: PSD-CV

Agency Approvals

- cULus, File number E324411
- CE
- RoHS



ProSense Series Temperature Sensors					
Part Number	Description	Pcs/Pkg	Wt(lb)	Price	Use With
TSD25N-OP-0284-H	Temperature switch, two PNP complementary (1NO/1NC) switching DC outputs adjusted by setting dials. 1/4 inch NPT male port, 4-pin micro M12 DC plug, Set point scale: 3 to 284°F (-16 to 140°C). Probe length: 35 mm [1.38 inches]	1	0.25	\$89.75	PSD-CV
TSD25N-AP-0284-H	Temperature switch, two PNP (NO) switching DC outputs adjusted separately by setting dials with a fixed 9°F hysteresis. 1/4 inch NPT male port, 4-pin micro M12 DC plug, Set point scale: -4 to 284°F (-20 to 140°C). Probe length: 35 mm [1.38 inches]	1	0.25	\$89.75	PSD-CV

Note: Purchase cable separately

ProSense TSD25 Series Technical Specifications		
	TSD25N-AP-0284-H	TSD25N-OP-0284-H
Operating Voltage	9.6 to 32 VDC	
Process Connection	1/4" MNPT	
Electrical Connection	M12 connector; gold-plated contacts	
Outputs	Two PNP N.O. switching DC outputs	Two complementary PNP (1-N.O./1-N.C.) switching DC outputs
Current Rating	500 mA each output	
Current Consumption	< 30 mA	
Short-Circuit Protection	Yes (non-latching)	
Reverse Polarity Protection	Yes	
Overload Protection	Yes	
Voltage Drop	< 2 VDC	
Pressure Rating	4350 psi (300 bar)	
Set point scale	-4 to 284°F(-20 to 140°C)	3 to 284°F(-16 to 140°C)
Reset point scale	Fixed 5°C below setpoint	-4 to 277°F(-20 to 136°C)
Adjustment of the Switch Point	Setting dials	
Setting Accuracy	± 3°C	
Repeatability	± 0.1% of full range in °C	
Temperature Drift	± 0.1%, of full temperature range/10°C; 32 to 176°F (0 to 80°C).	
Power-on Delay Time	0.5 seconds	
Measuring Element	1 x Pt 1000, to DIN EN 60751, class B	
Dynamic Response (DIN EN 60751)	*to.5 = 1 sec/ to.9 = 3 sec	
Minimum Installation Depth	0.6 in (15 mm)	
Housing Material	PBT (Pocan); PC (Makrolon); FPM (Viton); stainless steel (316S12)	
Materials (wetted parts)	Stainless steel (316S12)	
Display	Switching Status: 2 LEDs: yellow	Power: LED - green - Switching Status: LED - yellow
Ambient Temperature	-13 to 158°F (-25 to 70°C)	
Medium Temperature	-13 to 257°F (-25 to 125°C) continuous, 258 to 293°F (126 to 145°C) 1 hour max	
Storage Temperature	-40 to 212°F (-40 to 100°C)	
Protection	IP 67, Class III	
Insulation Resistance	> 100 MΩ (500 VDC)	
Shock Resistance	50g (DIN / IEC 68-2-27, 11ms)	
Vibration Resistance	20g (DIN / EN 68-2-6, (10 to 2000 Hz)	
EMC		
EN 61000-4-2 ESD	4 kV CD/8 kV AD	
EN 61000-4-3 HF Radiated	10 V/m	
EN 61000-4-4 Burst	2 kV	
EN 61000-4-6 HF Conducted	10 V	

* to.5 = a 50% of full scale change in output when immersed in water at 0.4m/s, to.9 = a 90% FS change.

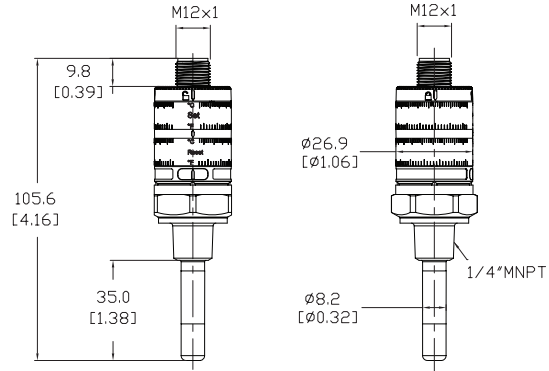


NOTE: CHECK THE CHEMICAL COMPATIBILITY OF THE SENSOR'S WETTED PARTS WITH THE MEDIUM TO BE MEASURED.
www.automationdirect.com/static/specs/prosensechemresistance.pdf

pro^{sense} TSD25 Series Temperature Switches

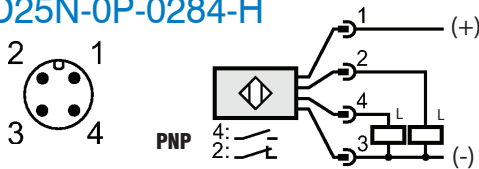
TSD25N Series Dimensions

mm [inches]



Wiring

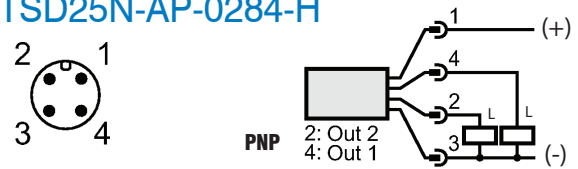
TSD25N-0P-0284-H



Note: wiring colors are based on AutomationDirect CD12L and CD12M 4-pole cable assemblies.

Cable Assembly Wiring Colors:
 Pin 1 - Brown
 Pin 2 - White
 Pin 3 - Blue
 Pin 4 - Black

TSD25N-AP-0284-H

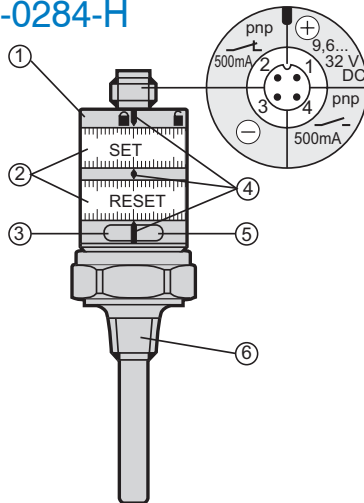


Cable Assembly Wiring Colors:
 Pin 1 - Brown
 Pin 2 - White
 Pin 3 - Blue
 Pin 4 - Black

Note: wiring colors are based on AutomationDirect CD12L and CD12M 4-pole cable assemblies.

Setting and Operation

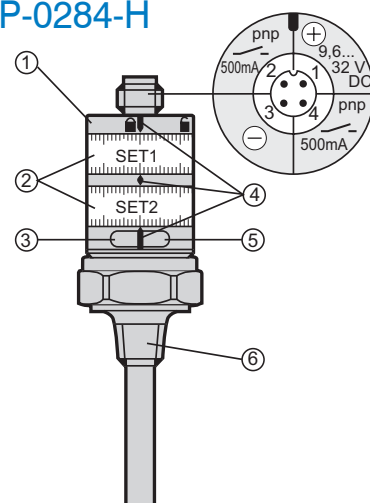
TSD25N-0P-0284-H



- 1: locking ring
- 2: setting rings (manually adjustable after unlocking)
- 3: LED green: supply voltage O.K.
- 4: setting marks
- 5: LED yellow: value [SET] reached, OUT1 = ON / OUT2 = OFF
- 6: process connection 1/4" NPT
pin 4 = OUT1 / pin 2 = OUT2

Minimum distance between [SET] and [RESET] = 3°C.
 To obtain the setting accuracy: Set both rings to the minimum value, then set the requested values.

TSD25N-AP-0284-H



- 1: locking ring
- 2: setting rings (manually adjustable after unlocking)
- 3: LED yellow: lights if OUT1 = ON, temperature ≥ [SET1]
- 4: setting marks
- 5: LED yellow: lights if OUT2 = ON, temperature ≥ [SET2]
- 6: process connection 1/4" NPT
Pin 4 = OUT1 / Pin 2 = OUT2

To obtain the setting accuracy: Set both rings to the minimum value, then set the requested values.

pro^{sense} Thermocouple and RTD Temperature Range

Thermocouple Temperature Range		
THMK-C06-04	32 to 2100°F (0 to 1149°C)	
THMK-C12-04		
THMK-C18-04		
THMK-H06L01-03		
THMK-H12L01-03	32 to 2100°F (0 to 1149°C) lead wire transition rated to 204°C (400°F)	
THMK-H18L01-03		
THMK-T06L06-03		
THMK-T12L06-03		
THMK-T18L06-03	0 to 300°F (-17.8 to 148.9°C)	
TTD25C-20-0300F-H		
TTD25N-20-0300F-H	32 to 900°F (0 to 482°C)	
THMJ-A01L04-01		
THMJ-A01L06-01		
THMJ-A01L10-01		
THMJ-A01L10-02		
THMJ-B01L06-01		
THMJ-B01L06-02		
THMJ-B02L06-01		
THMJ-B02L06-02		
THMJ-D08L04-01		
THMJ-D08L06-01		
THMJ-D08L10-01		
THMJ-D08L10-02		
THMK-A01L04-01		
THMK-A01L06-01		
THMK-A01L10-01		
THMK-A01L10-02		
THMK-B01L06-01		
THMK-B01L06-02		
THMK-D08L04-01		
THMK-D08L06-01		
THMK-D08L10-01		
THMK-D08L10-02		
THMJ-T06L06-01		32 to 970°F (0 to 521°C), lead wire transition rated to 400 °F (204 °C)
THMJ-T12L06-01		
THMJ-T18L06-01		
THMJ-P06-01		32 to 970°F (0 to 521°C), plug rated to 400 °F (204 °C)
THMJ-P12-01		
THMJ-P18-01		
THMJ-C04-03	32 to 1330°F (0 to 720°C)	
THMJ-C04R-03		
THMJ-C06-01		
THMJ-C06-02		
THMJ-C06-03		
THMJ-C06R-03		
THMJ-C12-01		
THMJ-C12-02		
THMJ-C12-03		
THMJ-C12R-03		
THMJ-C18-01		
THMJ-C18-02		
THMJ-H04L01-02		
THMJ-H06L01-01		
THMJ-H06L01-02		
THMJ-H12L01-01		
THMJ-H12L01-02		
THMJ-H18L01-01		

Thermocouple Temperature Range		
THMJ-T06L06-02	32 to 1330°F (0 to 720°C) lead wire transition rated to 400 °F (204 °C)	
THMJ-T12L06-02		
THMJ-T18L06-02		
THMJ-P06-02	32 to 1330°F (0 to 720°C) plug rated to 400 °F (204 °C)	
THMJ-P12-02		
THMJ-P18-02		
THMK-C04-03	32 to 1700°F (0 to 927°C)	
THMK-C04R-03		
THMK-C06-01		
THMK-C06-02		
THMK-C06-03		
THMK-C06R-03		
THMK-C12-01		
THMK-C12-02		
THMK-C12-03		
THMK-C12R-03		
THMK-C18-01		
THMK-C18-02		
THMK-H04L01-02		
THMK-H06L01-01		
THMK-H06L01-02		
THMK-H12L01-01		
THMK-H12L01-02		
THMK-H18L01-01		
THMK-T06L06-01		32 to 1700°F (0 to 927°C) lead wire transition rated to 400 °F (204 °C)
THMK-T06L06-02		
THMK-T12L06-01		
THMK-T12L06-02	32 to 1700°F (0 to 927°C) plug rated to 400 °F (204 °C)	
THMK-T18L06-01		
THMK-T18L06-02		
THMK-P06-01	32 to 1700°F (0 to 927°C) plug rated to 400 °F (204 °C)	
THMK-P06-02		
THMK-P12-01		
THMK-P12-02	32 to 900°F (0 to 482°C)	
THMK-P18-01		
THMK-P18-02		
THMK-B02L06-01	-328 to 700°F (-200 to 371°C) plug rated to 400 °F (204 °C)	
THMK-B02L06-02		
THMT-P06-01		
THMT-P12-01	-328 to 700°F (-200 to 371°C), lead wire transition rated to 400 °F (204 °C)	
THMT-P18-01		
THMT-T06L06-01		
THMT-T12L06-01	32 to 212°F (0 to 100°C)	
THMT-T18L06-01		
TTD25C-20-0100C-H	-4 to 284°F (-20 to 140°C)	
TTD25N-20-0100C-H		
TSD25N-0P-0284-H		
TSD25N-AP-0284-H		

RTD Temperature Range	
RTD1-R01-01	40 to 185°F (-40 to 85°C)
RTD1-S04-01	
RTD1-S04-02	
RTD1-S04-03	
RTD1-S04-04	
RTD1-B01L06-01	
RTD1-B02L06-01	
RTD1-C04-03	
RTD1-C04R-03	
RTD1-C06-01	
RTD1-C06-03	
RTD1-C06R-03	
RTD1-C12-01	-58 to 572°F (-50 to 300°C)
RTD1-C12-02	
RTD1-C12-03	
RTD1-C12R-03	
RTD1-C18-01	
RTD1-C18-02	
RTD1-H04L01-02	-58 to 572°F (-50 to 300°C) Plug rated to 400°F (204°C)
RTD1-H06L01-01	
RTD1-H06L01-02	
RTD1-H12L01-01	
RTD1-H12L01-02	
RTD1-H18L01-01	
RTD1-P06-01	-58 to 572°F (-50 to 300°C) Plug rated to 400°F (204°C)
RTD1-P12-01	
RTD1-P18-01	
RTD1-D08L10-01	-58 to 572°F (-50 to 300°C), lead wire transition rated to 400°F (204°C)
RTD1-T06L06-01	
RTD1-T12L06-01	
RTD1-T18L06-01	

J, K, & T Thermocouple Color Code		
J	White	+
	Red	-
K	Yellow	+
	Red	-
T	Blue	+
	Red	-