

Electronic Temperature Switch

TS2000

Features

- ▶ Temperature control digital display
- ▶ 2 solid state contacts or 1 solid state contact plus 1 analog output
- ▶ High accuracy with fully adjustable deadband
- ▶ Optional 4-20 mA analog output
- ▶ Built-In digital temperature readout
- ▶ Fully configurable via keypad
- ▶ UL/CSA approved

Applications

- ▶ Hydraulic and pneumatic systems
- ▶ Lubrication monitoring
- ▶ Construction machinery
- ▶ Automobile industry
- ▶ Machine tools
- ▶ Injection molding machines



General Specifications*

Accuracy:	0.5% f. s.
Linearity Error:	±0.5% f. s. at 77°F (25°C)
Repeatability:	±0.1% f. s.
Sensor Element:	PT100-element (Class B)
Sensor Diameter:	1/4 in. (6 mm)
Sensor Length:	0.67, 1.97, 11.82 in.
Wetted Parts: Seals:	Stainless steel 1.4435 (ST 316L) FKM (fluorelastomer)
Measuring Ranges:	32° to +212°F (0° to +100°C); -22° to +302°F (-30° to +150°C)
Proof Pressure:	8,700 psi (600 bar)
Process Connection:	1/4" NPT (standard), G1/4 male
Electrical Connection:	Plug M 12 x 1, 4-pin
Power Supply:	12 to 32 VDC
Power Consumption:	approx. 50 mA (without load)
A/D-Converter: Resolution: Scanning Rate:	10 bit (1024 steps per measure. span) 100/s (for peak value memory)
Time Constant:	approx. 40s
Analog Output: Current Output: Load: Load Influence: Scanning Rate: Voltage Output: Rating: Adjustment Range	4-20 mA max. RI = (Ub-12 V) / 20 mA RI = 600 Ohm at Ub =24 VDC 0,3% / 100 Ohm 5 ms 0 to 10 VDC (optional) max. 10 mA, short circuit-proof 25% to 100% f. s.

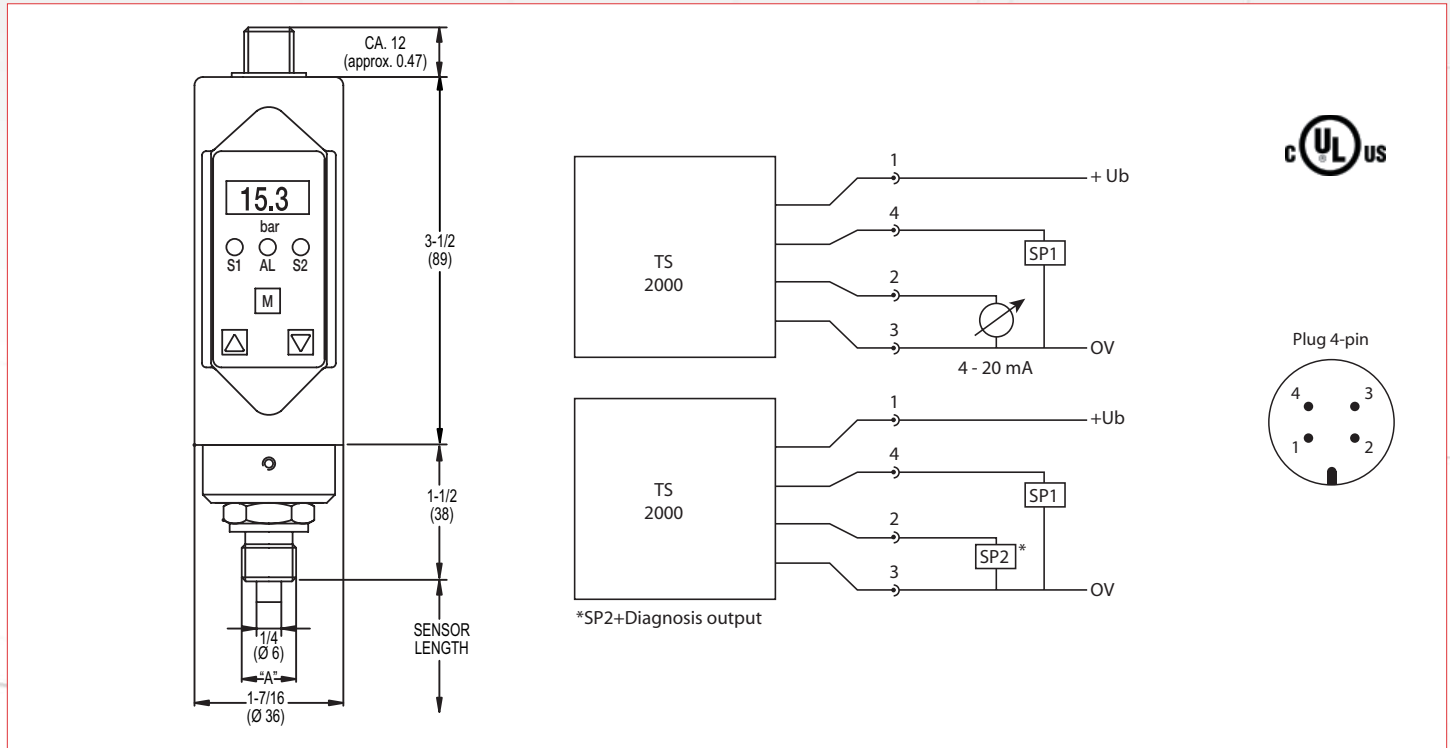
Switching Output(s): Switching Function (adjustable): Adjustment Range: Hysteresis: Diagnosis Function Switching Frequency: Contact Rating: Delay: Status Display(s):	1 or 2 pnp open collector, standard-/windows-mode 0% to 125% f. s. 0% to 125% f. s. SP2 max. 100 Hz max. 500 mA, short circuit-proof 0.0 to 9.9 s adjustable LED(s) green for activated switching point
Digital Display: Display Range: Display Rate: Display Unit:	3-digit LED display, 7-segment, height 10 mm (0.39 inch), red -99 to 999 20/s °F (°C) - adjustable
Error Display:	LED orange and alphanumeric display
Operating Elements:	3 easy response push buttons
Temperature Range: Media: Electronics: Storage:	-22° to +302°F (-30° to +150°C) +14° to +158°F (-10° to +70°C) -22° to +176°F (-30° to +80°C)
Protection Class:	IP65
Dimensions (Housing):	1-7/16 x 5-1/8 inch (36 X 130 mm) (without electrical plug), housing rotates for switch adjustment after mounting
Additional Features:	7-segment LED display, microprocessor controlled, self monitoring with error display, display rotateable around 330°, all parameters are configured by keypad. Tamper proof, keypad lock, rugged construction, vibration- and shockproof, long term stability.
Weight:	approx. 200 g with 17 mm sensor length approx. 0.44 lb. with 0.67 inch sensor length

* See product configurator for additional options.

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Technical Drawings



Plug M 12 X 1 4 pin	Model with 1 switching output	Model with 2 switching outputs	Model with 1 switching output and 1 analog output
Pin 1 brown	+Ub (15 - 32 V DC) (15 - 28 V DC)*	+Ub (15 - 32 V DC) (15 - 28 V DC)*	+Ub (15 - 32 V DC) (15 - 28 V DC)*
Pin 2 white	-	SP2 (0.5 A max.) (0.4 A)*	Analog
Pin 3 blue	0 V	0 V	0 V
Pin 4 black	SP1 (0.5 A max.) (0.4 A)*	SP1 (0.5 A max.) (0.4 A)*	SP1 (0.5 A max.) (0.4 A)*

*cULus version

Product Configurator

Example **TS2000 -212 -A -N -2**

Base Model

TS2000 Solid State temperature switch

Temperature Ranges

-212	32° to 212° F
-302	-22° to 302° F

Sensor Length

-A	0.67" length
-B	1.97" length
-C	11.82" length

Options

-1	Single switch plus 4-20 mA output
-2	Dual switch capability (No analog output)

Connection

-N	1/4" NPT
G	G1/4

Accessory

Order #	Description
239236	- 4 Pin, M12 Electrical mating connector