Electronic Indicating Temperature Transmitter/Switch



850 SERIES

- Utilizes PT1000 technology for continuous temperature monitoring, electronic temperature switching, and transmission of analog output while providing local digital indication
- Allows for one or two switching outputs as well as optional current and voltage outputs
- Three buttons on top allow simple adjustment of the temperature set points, reset points, switching functions and the measuring range of the optional analog output
- 1/2" NPT Male standard connection
- A variety of stem lengths are available for maximum versatility; also available with adjustable insertion lengths via the sliding compression fitting
- Durable stainless steel housing and wetted parts
- Display and electrical connection can be rotated independently
- RoHS compliant

APPLICATIONS

- Mechanical engineering
- Heating and cooling circuits
- Air conditioning technology
- Plant construction
- Environmental technology

SPECIFICATIONS	
Temperature ranges	Standard -4 °F to 176 °F (-20 °C to 80 °C) Optional -4 °F to 248 °F (-20 °C to 120 °C) Selectable display for °F or °C
Temperature sensor	Platinum resistor (PT1000 2-wire, DIN EN 60751 Class A)
Wetted materials	316Ti stainless steel
Housing material	304 Stainless steel
Max. operating pressure	2,000 psi (1/2" NPT Male fixed process connection); 725 psi (1/2" NPT Male sliding compression fitting process connection)
Power requirement*	15 Vdc to 35 Vdc
Signal output adjustment	Zero point: 0-25% of span Full scale: 75-100% of span
Switch points **Number** **Function** **Adjustment accuracy**	Individually adjustable via external control keys 1 or 2 (PNP) N.O. / N.C.; windows-and hysteresis function freely adjustable ≤ 0.5% of span
Switch rating	Max. 250 mA
Electrical connection	M12 x 1 (4-pin), M12 x 1 (5-pin)
Accuracy **Analog signal** **Switching output** **Display** **Temperature sensor**	 ≤ ±0.5% of span + temperature sensor error ≤ ±0.8% of span + temperature sensor error ≤ ±(0.8% of span + temperature sensor error) ±1 digit For °F: ±[1.8*(0.15 + 0.002 (t - 32) / 1.8)] For °C: ±(0.15 K + 0.002 I t I) per EN 60751
Display	14 segment-LED, red 4-digit, height 0.35"
Environmental protection	IP65 and IP67 (IEC 60529)

* Unregulated

Thermowells are recommended for pressure, corrosive fluids and high velocity applications, see pages 48-50.

WARNING: This product can expose you to chemicals including Lead and Nickel, which are known to the State of California to cause cancer and birth defects or other reproductive harm. For more information go to www.P65Warnings.ca.gov

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ORDERING INFORMATION

SERIES	**850**			
SWITCH FUNCTIONS	**1**	2 N.O. or 2 N.C. switch (PNP *)	**4**	2 N.O. or 2 N.C. switch (PNP*) with 4 mA to 20 mA 3-wire analog output **
	2	1 N.O. or 1 N.C. switch (PNP *) with 4 mA to 20 mA 3-wire analog output	**5**	2 N.O. or 2 N.C. switch (PNP*) with 0 Vdc to 10 Vdc 3-wire output) **
	3	1 N.O. or 1 N.C. switch (PNP *) with 0 Vdc to 10 Vdc 3-wire output		
PROCESS CONNECTIONS	**2**	1/4" NPT Male	**47**	1/4" NPT Male sliding compression fitting
	8	1/2" NPT Male	**48**	1/2" NPT Male sliding compression fitting
TEMPERATURE RANGES	**-4/176**	-4 °F to 176 °F (-20 °C to 80 °C)	**-4/248**	-4 °F to 248 °F (-20 °C to 120 °C) † **This range is available with sliding compression fitting ONLY)**
ELECTRICAL CONNECTION	**2**	M12 x 1 (4-pin)	**3**	M12 x 1 (5-pin) ††
STEM LENGTHS	**010**	1" ***	**040**	4" **120** 12"
	020	2" ***	**060**	6" **140** 14"
	025	2.5" ***	**090**	9"
STEM DIAMETERS	**6**	6 mm		

Please consult your local NOSHOK Distributor or NOSHOK, Inc. for availability and delivery information.

* NPN available, consult factory
** Available only with M12 x 1 (5-pin) connector
*** Not available with sliding compression fitting
† Available only with sliding compression fitting process connection and stem lengths ≥4"
†† Switch function 4 and 5 only

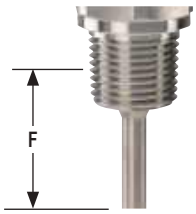
EXAMPLE

850 – 1 – 2 – -4/176 – 2 – 040 – 6

Series 850
Switch function ..... 2 N.O. or 2 N.C. (PNP)
Process connection ..... 1/4" NPT Male
Temperature range ..... -4 °F to 176 °F
Electrical connection ..... M12 x 1 (4-pin)
Stem length ..... 4"
Stem diameter ..... 6 mm

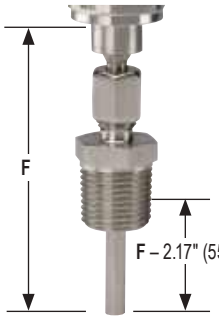
850 Series

Tapered Thread



F								
in	1	2	2.5	4	6	9	12	14

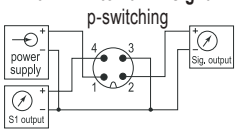
Sliding Compression Fitting with Tapered Thread



F					
in	4	6	9	12	14

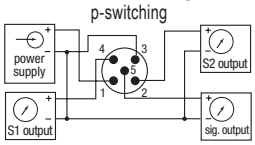
1 switching output (M12 x 1) with 4 mA to 20 mA signal ††

p-switching



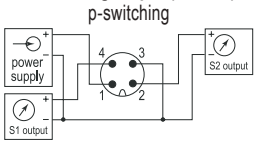
2 switching output (M12x1) with 4 mA to 20 mA signal ††

p-switching



2 switching output (M12 x 1)

p-switching



†† Also applies to 0 Vdc to 10 Vdc output

Dimensions inches (mm) with circular connector M12 x 1 (4-pin and 5-pin)

