

Platinum Resistance Temperature Detector

Sealed with Cement in a Cylindrical Ceramic Body

FR Series

FR Series elements are designed for applications where high vibration resistance as well as high temperature stability are vital. Typical industrial applications include analytical equipment, chemical plants, and mechanical equipment. Small tolerances on diameters allow problem-free installation in protective tubes.

Specifications

Tolerance: IEC751, Class B

Nominal Resistance: 100 Ω , 500 Ω and 1000 Ω at 0°C (32°F)

Temperature Range

(Continuous Operation):

-70 to 500°C (-95 to 930°F)

Temperature Coefficient:

TCR = 3850 ppm/K

Leads: Platinum-clad nickel wire; 6.0 mm L (0.24")

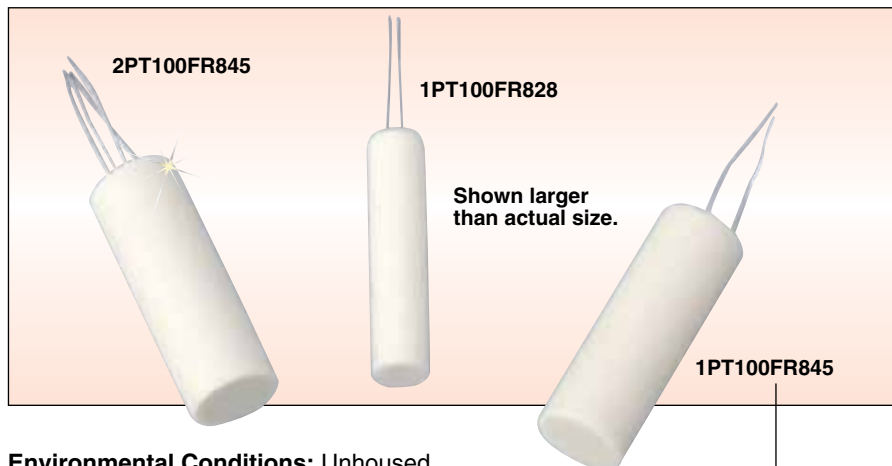
Long-Term Stability: Max

R₀-drift 0.1% after 1000 h

at 500°C (930°F)

Measuring Current: 100 Ω max, 3 mA; 500 Ω max, 1.4 mA; 1000 Ω max, 1 mA (self-heating has to be considered)

Vibration Resistance: At least 40 g acceleration at 10 to 2000 Hz; at least 100 g acceleration with 8 ms half sine wave



Environmental Conditions: Unhoused for dry environments only

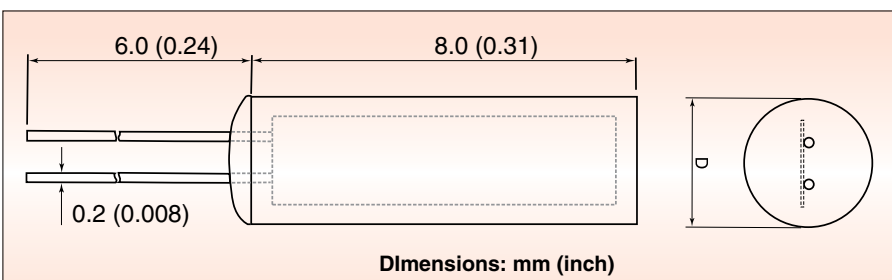
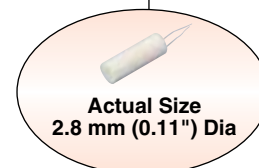
Insulation Resistance:

>10 M Ω at 20°C (70°F)

>1 M Ω at 500°C (930°F)

Discount Schedule

1 to 4 units	Net
5 to 10 units	.4%
11 to 24 units	.6%
25 to 49 units	.10%
50 to 99 units	.11%
100 and up	.13%



Dimensions: mm (inch)

Type Model No.	Nominal Resistance (Ω)	"D" Dimensions* mm (inch)	Self Heating 0°C (K/mW)	Response Time in Seconds			
				Water V = 0.4 m/s		Air V = 1 m/s	
				50%	90%	50%	90%
1PT100FR828	1 x 100	2.8 (0.11)	0.05	0.9	2.7	12.3	39.5
1PT1000FR828	1 x 1000	2.8 (0.11)	0.05	0.9	2.7	12.3	39.5
2PT100FR828	2 x 100	2.8 (0.11)	0.16	0.9	2.7	12.3	39.5
2PT1000FR828	2 x 1000	2.8 (0.11)	0.16	0.9	2.7	12.3	39.5
1PT100FR845	1 x 100	4.5 (0.18)	0.04	1.5	4.6	24.8	78.8
1PT500FR845	1 x 500	4.5 (0.18)	0.04	1.5	4.6	24.8	78.8
1PT1000FR845	1 x 1000	4.5 (0.18)	0.04	1.5	4.6	24.8	78.8
2PT100FR845	2 x 100	4.5 (0.18)	0.08	1.5	4.6	24.8	78.8
2PT1000FR845	2 x 1000	4.5 (0.18)	0.08	1.5	4.6	24.8	78.8

The measuring point for the basic value is situated 8 mm from the end of the sensor body.

* Note: Dimensions are ± 0.3 mm.

Ordering Examples: 12 1PT100FR828 less 6% quantity discount.

2PT1000FR845, 2 x 1000 Ω , 4.5 mm Dia RTD.