

RTD - PT100

Resistance Temperature Detector



ORDERING CODE

SEE BELOW FOR ORDERING OPTIONS

Application Examples

- All temperatures from cryogenic to $\pm 600^{\circ}\text{C}$ where fast response and accuracy are required
- Pharmaceutical
- Laboratory
- General industry

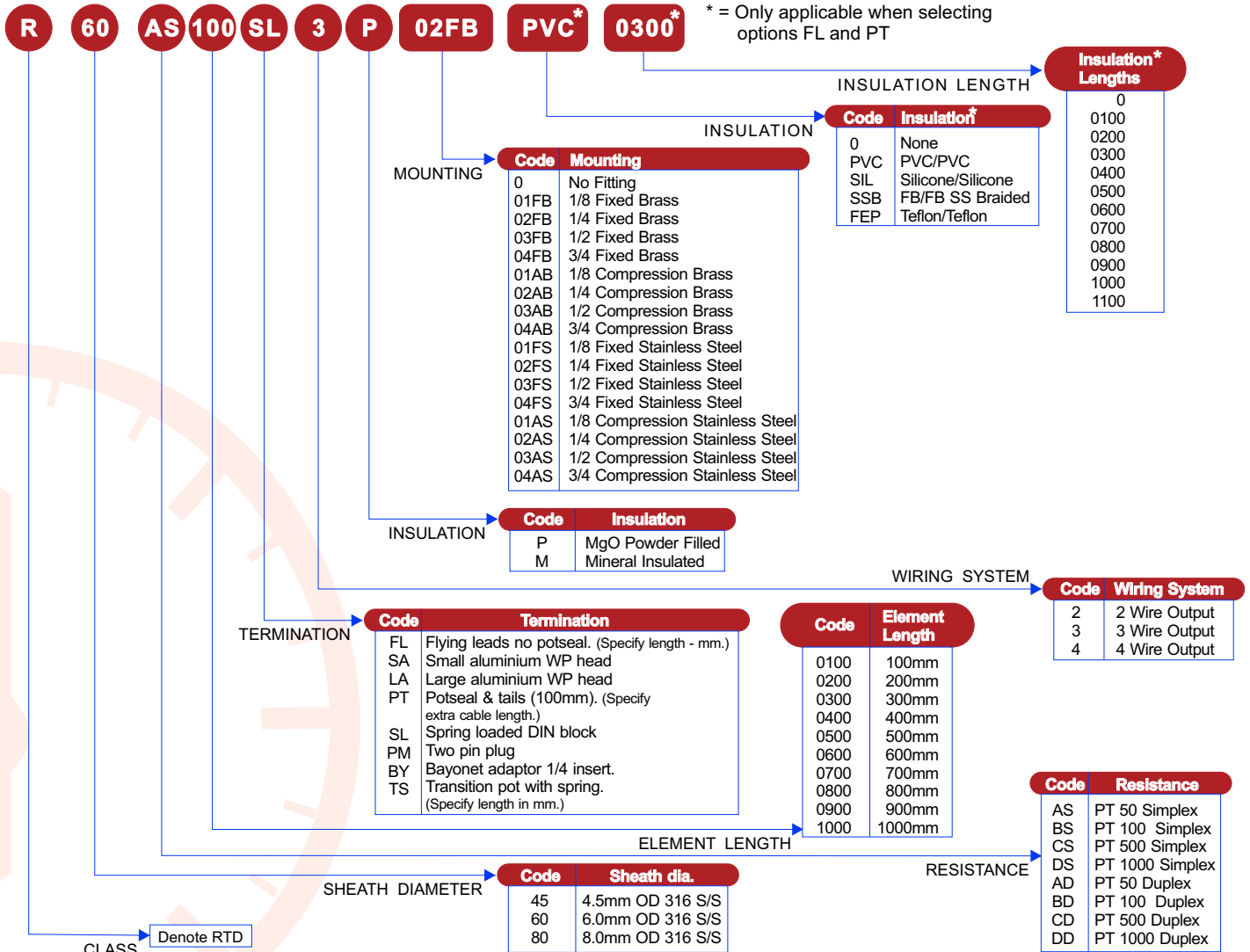
Description

The resistance that electrical conductors exhibit to the flow of an electrical current is related to their temperature.

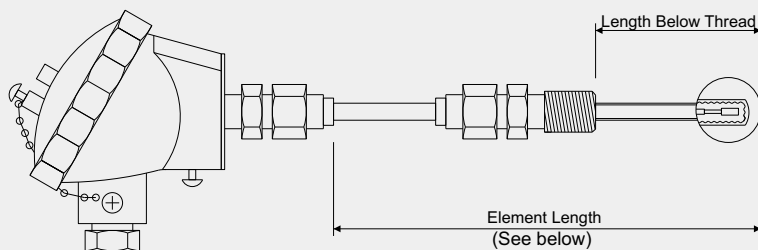
A **PT-100** is a precision platinum resistor that exhibits 100Ω at 0°C .

It has a positive temperature co-efficient so as the temperature rises, so does the resistance.

Resistance Temperature Detector (RTD) Ordering Code



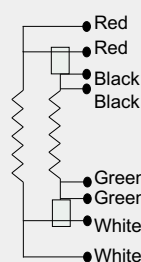
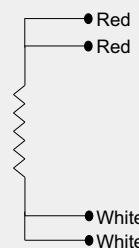
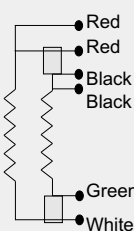
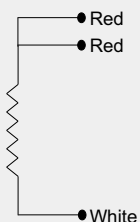
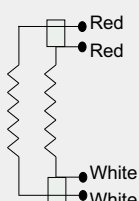
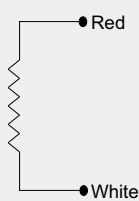
Dimensional Diagram



Wiring and Connection

ELEMENT CONNECTIONS

RTD sensor assemblies are available with two, three and four wire leads. Two wire connected elements do not provide lead resistance compensation for the measuring device. Three and four wire connected elements provided a means for compensating for lead resistance between the sensor and the measuring device.



Two-Wire:

Provides one connection to each end of the element. This construction is suitable where the resistance of the lead wire may be considered as an additive constant in the circuit and particularly where the changes in lead resistance due to ambient temperature changes may be ignored.

Three-Wire:

Provides one connection to one end of the element and two to the other end of the element. Connected to an instrument designed to accept three wire input, sufficient compensation is usually achieved for leadwire resistance and temperature change in leadwire resistance. This is the most commonly used configuration.

Four-Wire:

Provides two connections to each end of the element to completely compensate for leadwire resistance and temperature change in leadwire resistance. This configuration is used where highly accurate temperature measurement is vital.

PT100 Conversion Table

Industrial PT Resistance Thermometer to BS 1904 Table 1. 1970 Revision to IPTS 68 and DIN 43760

6B (°C)	-0	-10	-20	-30	-40	-50	-60	-70	-80	-90	-100
	Resistance - Ohms										
-200	18.56	14.40	10.45								
-100	60.28	56.21	52.12	48.01	43.88	39.72	35.54	31.34	27.11	22.83	18.56
-0	100.00	96.09	82.16	88.23	84.29	80.32	76.34	72.35	68.34	64.32	60.28
	+0	+10	+20	+30	+40	-50	-60	+70	+80	+90	+100
	Resistance - Ohms										
+0	100.00	103.90	170.79	111.67	115.54	119.40	123.24	127.07	130.89	134.70	138.50
100	138.50	142.29	146.06	149.82	153.57	157.31	161.04	164.76	168.46	172.16	175.83
200	175.83	179.50	183.16	186.82	190.45	194.07	197.69	201.29	204.88	208.46	212.02
300	212.02	215.58	219.12	222.66	226.18	229.69	233.19	236.68	240.88	243.61	247.08
400	247.08	250.52	253.95	257.37	260.77	264.17	267.56	270.94	274.29	277.64	280.98
500	375.6	284.31	287.63	290.93	294.22	297.50	300.76	304.02	307.27	310.51	313.72
600	313.72	316.93	320.12	232.31	326.5	329.6	332.8	335.9	339.1	342.2	345.4
700	345.4	348.4	351.5	354.5	357.7	360.6	363.6	366.6	369.7	372.7	375.6
800	375.6	378.7	381.6	384.6	387.5	390.4	393.3	396.2	399.0	401.9	404.8
900	404.8	407.6	410.5	413.2	416.1	418.8	421.7	424.4	427.2	430.0	432.7
1000	432.7	435.4	438.1	440.8	443.6	446.3					