RTDs and Thermistors

Resistance Temperature Sensing

RTDs

Watlow's platinum resistance elements are specially designed to ensure precise and repeatable temperature versus resistance characteristics. The sensors are made with controlled purity platinum, have high purity ceramic components and constructed in a unique strain-free manner.

Performance Capabilities

- Ceramic elements are extremely precise and stable within the wide temperature range of -200 to 650°C (-328 to1200°F).

Features and Benefits

Patented, strain-free construction

- Provides dependable, accurate readings
- Allows elements from different lots to be substituted without recalibration

High signal-to-noise output

- Increases accuracy of data transmission
- Permits greater distances between sensor and measuring equipment

Temperature coefficient (alpha) carefully controlled while insulation resistance values exceed DIN-IEC-751 standards

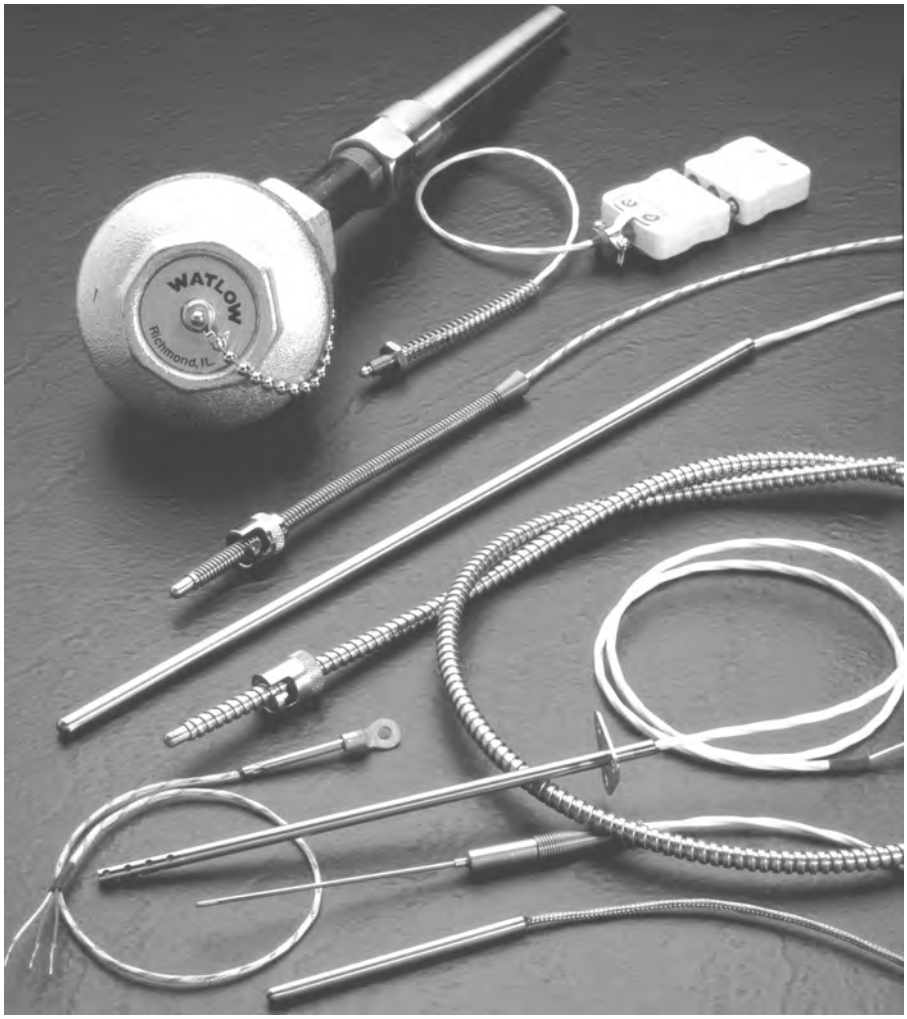
- Ensures sensor sensitivity
- Minimizes self heating
- Allows precise measurement
- Repeatable

Highly controlled manufacturing process

- Ensures wide temperature range
- Stabilizes physical and chemical attributes

Metric diameters and fittings are available, please consult us

Applications



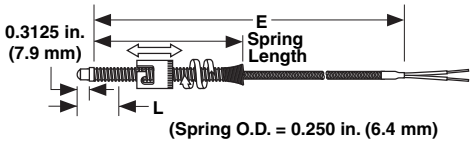
- Air conditioning and refrigeration servicing
- Furnace servicing
- Stoves and grills
- Textile production
- Plastics processing
- Petrochemical processing
- Micro electronics
- Air, gas and liquid temperature measurement
- Exhaust gas temperature measurement

RTDs and Thermistors

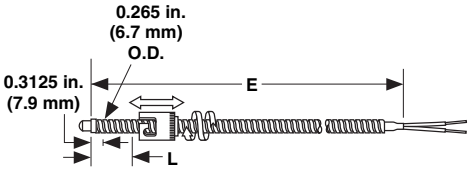
Speciality RTDs and Thermistors

Construction Styles

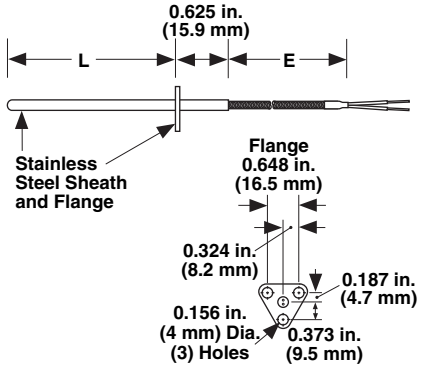
10 = 6 in. Adjustable Spring Style
11 = 12 in. Adjustable Spring Style



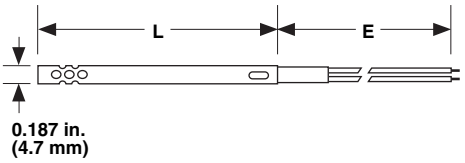
12 = Adjustable Armor Style



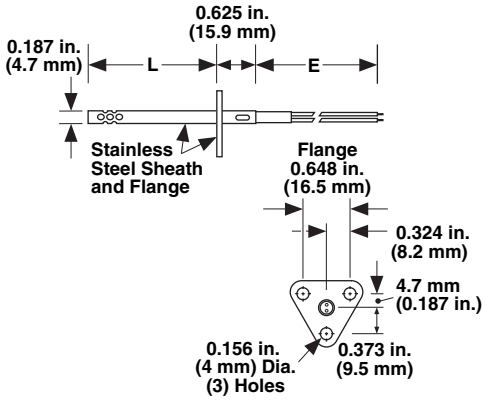
25 = Cartridge with Flange



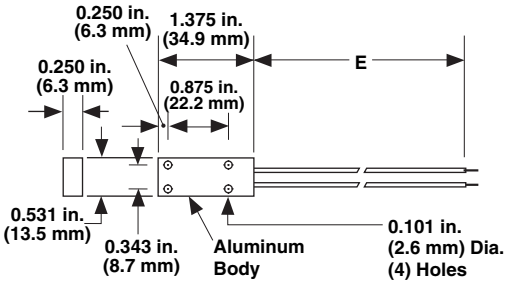
50 = Open Air



55 = Open Air with Flange

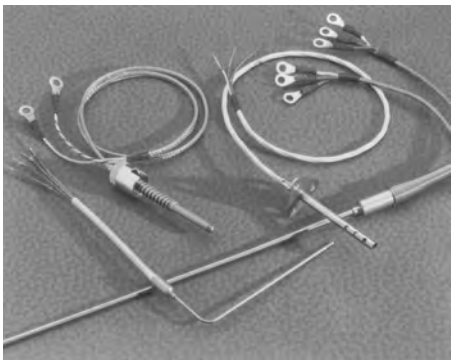


80 = Surface Mount



RTDs and Thermistors

Speciality RTDs and Thermistors



Rapid Ship Sensors

Rapid Ship sensors come with 100Ω DIN 0.00385 curve RTD sensor, 24 AWG stranded three-wire leads, temperature rating -50 to 260°C (-58 to 500°F), standard split end lead termination and no mounting fittings.

	Part Number	
	4 Foot (102 mm) Leads	6 Foot (152 mm) Leads
Construction 10 with Fiberglass and SS overbraid leads	S10DDN4C048A	S10DDN4C072A
Construction 80 with Teflon® leads	S80ADT2A048A	S80ADT2A072A

Custom Ordering Information—Items in **Bolded Green Type** are preferred with shorter lead times.

1 2 3 4 5 6 7 8 9 10 11 12
S

2-3. Construction
10 = 6 inch adjustable spring style
11 = 12 inch adjustable spring style
12 = Adjustable armor style
25 = Cartridge with flange
50 = Open air
55 = Open air with flange
80 = Surface mount

4. Diameter (inch)
D = 0.188
A = Not applicable: surface mount

*5. Element Type**
C = RTD 2-wire No. 3850
D = RTD 3-wire No. 3850
M = Thermistor No. 11
N = Thermistor No. 12
P = Thermistor No. 16

6-7. Lead Type
L4 = Fiberglass and SS armor
M4 = Fiberglass
N4 = Fiberglass and SS overbraid
T2 = PFA or TFE

8. Sheath Length "L" (inches)
A = Not applicable
C = 1.5 (required for VAT construction: No. 10, 11, 12)
D = 2.0
E = 2.5
F = 3.0
G = 3.5
H = 4.0
J = 4.5
K = 5.0
L = 5.5
M = 6.0
N = 6.5
P = 7.0
Q = 7.5
R = 8.0
S = 8.5
T =9.0
U =9.5
W =10.0
Y =11.0
Z =12.0

9-11. Lead Wire Length "E" (foot)
012 = 1
024 = 2
036 = 3
048 = 4
060 = 5
072 = 6
084 = 7
096 = 8
108 = 9
120 = 10
180 = 15

12. Terminations
A = 1.5 inch stripped split leads, no terminals
B = No. 8 spade terminals
H = 0.25 inch female quick connect terminals

Specifications: RTD

- Two- or three-wire
- Resistance: 100Ω at 0°C
- Alpha curve: 0.00385Ω/Ω/°C
- Tolerance at 0°C: ±0.12% (±0.25°C)
- Range: -50 to 260°C (-58 to 500°F)

Specifications: Thermistor

- Metal oxide, sintered and encapsulated
- Negative temperature coefficient
- Non-linear temperature/resistance curve
- Resistance at 25°C (77°F) and ranges:

Epoxy Bead Tolerance ±1%Ω +0.3°C (37°F)		
#11	1000Ω	-60 to 150°C (-76 to 302°F)
#12	3000Ω	-60 to 150°C (-76 to 302°F)

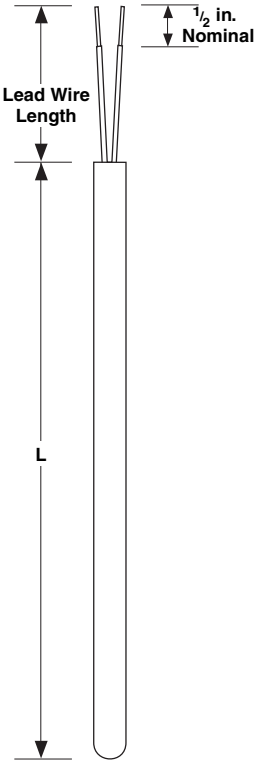
Glass Bead Tolerance ±15%Ω +0.3°C (37°F)		
#16	100,000Ω	-60 to 260°C (-76 to 500°F)

*Other thermistors available on request. Consult factory. See Style TB thermistor on page 109.

RTDs and Thermistors

Speciality RTDs and Thermistors

Style TB Standard Industrial Thermistor with Insulated Leads



Features and Benefits

Rigid 316 stainless steel sheath

- Ideal for industrial applications

Cold end epoxy seal

- Rated to 260°C (500°F)

Internal heat transfer paste

- Quick time response

Custom Ordering Information—Items in **Bolded Green Type** are preferred with shorter lead times.

1	2	3	4	5	6	7	8	9	10	11	12	13	14	15
T	B		B								O			

3. Sheath O.D. (inch)
H = 0.188
J = 0.250

4. Lead Wire Construction

	Standard
PFA or TFE Stranded	**B**

5. Fittings
If required, enter order code from pages 39 to 40.
If none, enter "0".

6. Lead Wire Termination
T = Standard leads
U = Leads with spade lugs

7. Temperature Rating and Accuracy
A① = -60 to 150°C (-75 to 302°F) ±1% (±.3°C) Accuracy @ 25°C
B② = -60 to 260°C (-75 to 500°F) ±15% (±.3°C) Accuracy @ 25°C

8-9. Sheath Length "L" (inches)
02, 04 and 06
Whole inches: 02 to 24

10. Sheath Length "L" (fractional inch)
0 = No fraction, whole inches

1 = 1/8	5 = 5/8
2 = 1/4	6 = 3/4
3 = 3/8	7 = 7/8
4 = 1/2	

11. Element/Resistance at 25°C (77°F)
E = 1,000Ω
G = 3,000Ω
T = 100,000Ω

12. Sheath
O = Standard sheath

13-14. Lead Wire Length "E" (foot)
02 and 04
Whole feet: 01 to 15

15. Special Requirements
0 = None
X = Special requirements, consult factory

① Only available with 1,000Ω or 3,000Ω.
⑤ Only available with 100,000Ω.