

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 to 1200°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

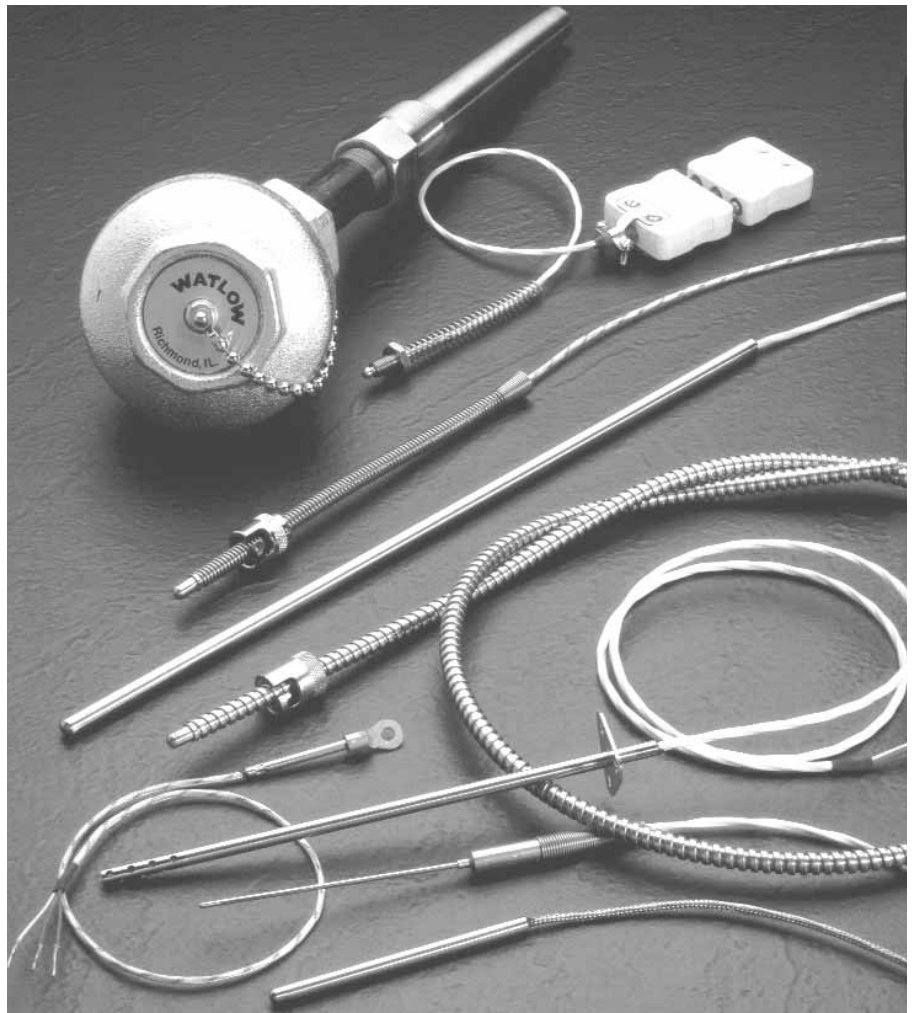
Temperature coefficient (alpha) carefully controlled while insulation resistance values exceed DIN-IEC-751 standards

- 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 factory



Applications

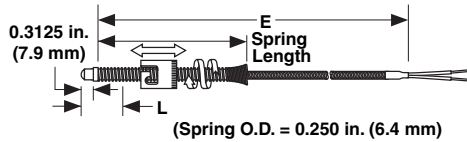
- Air conditioning and refrigeration servicing
- Furnace servicing
- Stoves and grills
- Textile production
- Plastics processing
- Petrochemical processing
- Micro electronics
- Air, gas and liquid temperature measurement
- Exhaust gas temperature measurement

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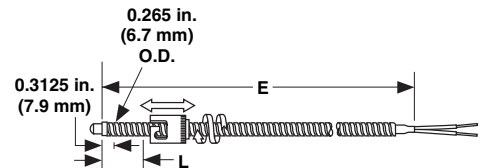
Speciality RTDs and Thermistors

Construction Styles

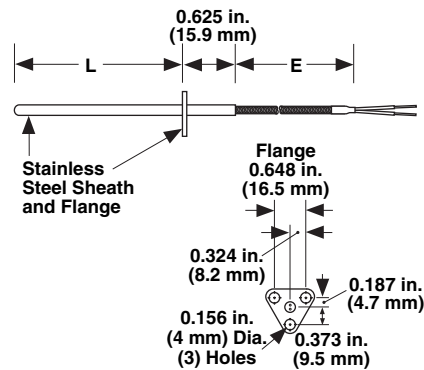
10 = 6 in. Adjustable Spring Style
11 = 12 in. Adjustable Spring Style



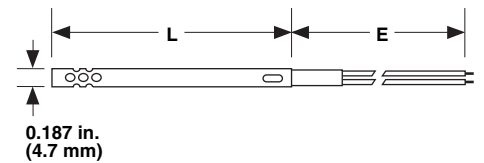
12 = Adjustable Armor Style



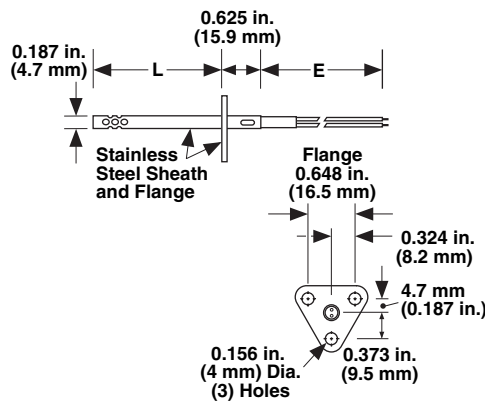
25 = Cartridge with Flange



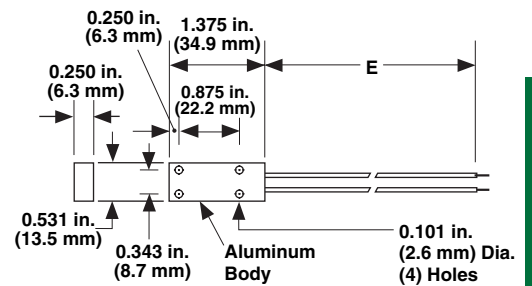
50 = Open Air



55 = Open Air with Flange



80 = Surface Mount



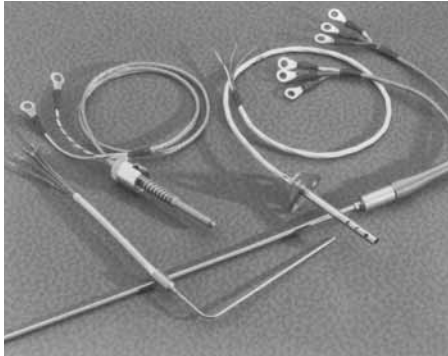
RTDs and Thermistors



See next page for Rapid Ship sensors and ordering instructions.

RTDs and Thermistors

Speciality RTDs and Thermistors



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.

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

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 N = Thermistor No. 12
D = RTD 3-wire No. 3850 P = Thermistor No. 16
 M = Thermistor No. 11

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 L = 5.5 T = 9.0
 E = 2.5 **M = 6.0** U = 9.5
 F = 3.0 N = 6.5 W = 10.0
 G = 3.5 P = 7.0 Y = 11.0
H = 4.0 Q = 7.5 Z = 12.0
 J = 4.5 R = 8.0
 K = 5.0 S = 8.5

9-11. Lead Wire Length "E" (foot) —————

012 = 1 084 = 7
024 = 2 096 = 8
 036 = 3 108 = 9
048 = 4 120 = 10
 060 = 5 180 = 15
 072 = 6

12. Terminations —————

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