PHOENIX SENSORS

PTC-WT Washer Type Thermocouple

PTC-WT Series

FEATURES

- Temperature Range -50 to 600 °C
- Accuracy ± 1.5°C or ± 0.4%
- Washer Size #6, #8 or #10
- Media – Liquid, Air, & Gas
- Common Thermocouple Types: Type J, Type K, and Type T

DESCRIPTION

The PTC-WT Washer/ring thermocouple is a specialized type of thermocouple used for surface temperature measurement.

It features a flat, metal lug or plate that makes direct contact with the surface being measured. This design ensures accurate and reliable temperature readings by optimizing thermal conductivity between the thermocouple and the surface.

APPLICATIONS

- Automotive
- Industrial
- HVAC

Maximum Environmental Ratings

Operating Temperature …….... -50°C to 600°C Storage Temperature Range ……. -50°C to 600°C

Parameter	Details
Thermocouple Type	K-Type (NiCr-NiAl), J- Type (fe - cuNI)
Operating Temperature Range	-50 to 600 °C
Cable Type	14/36 fiber Glass / Fiber Glass / SS Braided
Outer Covering	Stainless Steel Braided
Output	~1754 µV (or 1.75 mV)
Resistance (per meter)	1.5 – 2.5 ohms
Mounting Type	Bolt-on via washer
Cable Temperature Rating	Up to 400°C (short term), 350°C (continues)
Configuration	Simplex
Element Insulation	Ungrounded
Application Surface	Flat metal surfaces (e.g., plates, pipes)

Example Applications

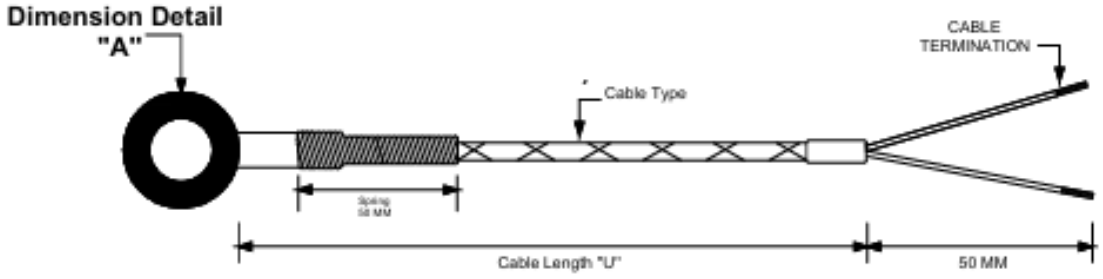
A washer type thermocouple is a type of temperature sensor that is designed to be installed between two flat surfaces, such as between a bolt and a metal plate. It consists of a thin metal washer with a thermocouple junction embedded in the center. When the washer is compressed between two surfaces, the junction is in contact with both surfaces, allowing it to measure the temperature difference between them.

There are several different types of washer type thermocouples, each with its own temperature range and sensitivity. Common types include Type J, Type K, and Type T thermocouples, which are made from different combinations of metals such as iron, copper, and nickel. The selection of a thermocouple type will depend on the specific application and temperature range of interest.

Washer type thermocouples are commonly used in industrial settings to monitor the temperature of machinery, equipment, and other surfaces where it is not possible or practical to install other types of temperature sensors. They are often used in applications such as bearing temperature monitoring, engine temperature monitoring, and process control.

Washer type thermocouples can be installed using a variety of methods, such as by threading them onto a bolt or using a compression fitting. They are generally easy to install and remove, making them a convenient option for temporary or portable temperature

Mechanical Dimensions (inches)



Nomenclature

PTC-WT-K-24-TS-MM-3FT

Model	Washer Size	Thermocouple Type	Wire Gauge	Insulation Type	Termination Type	Lead Wire Length (ft)
PTC-WT	06 = No. 6 (0.156")	K = Chromel/Alumel (Type K)	20 = 20 AWG	T = Teflon® Solid (500°F / 260°C)	S = 2" Split Leads	1FT
	08 = No. 8 (0.169")	J = Iron/Constantan (Type J)	24 = 24 AWG	TS = Teflon® Stranded (500°F / 260°C)	L = Split Leads w/ Spade Lugs	...
	10 = No. 10 (0.196")	T = Copper/Constantan (Type T)		F = Fiberglass Solid (900°F / 482°C)	M = Standard Male Plug	100FT
	14 = 1/4" (0.266")	E = Chromel/Constantan (Type E)		FS = Fiberglass Stranded (900°F / 482°C)	F = Standard Female Jack	
				FB = Fiberglass Solid w/ SS Braid (900°F / 482°C)	MM = Miniature Male Plug	
				FSB = Fiberglass Stranded w/ SS Braid (900°F / 482°C)	FM = Miniature Female Jack	

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