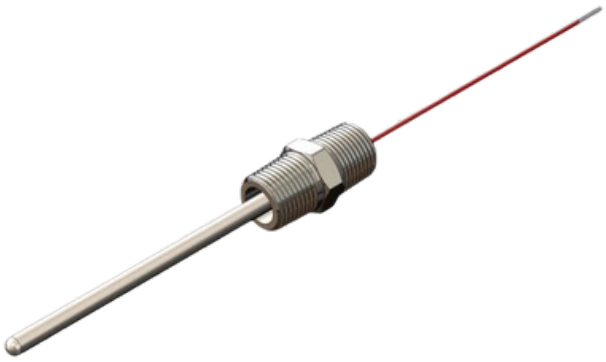


Model 305 Spring Loaded RTD

Key Features

- Precise temperature measurements
- Highly durable, with long-term accuracy
- Spring-loaded to ensure ongoing contact with temperature source
- Multiple applications across industries, including data centers and related HVAC systems

Technology overview

Curtiss-Wright's Model 305 Spring Loaded RTD is a highly precise and stable temperature sensor. It lends itself to numerous applications, including in data centers and related HVAC systems. A proven product, once specified by our customers, supply of replacement sensors can be sustained over the full lifecycle of the systems into which it is integrated.

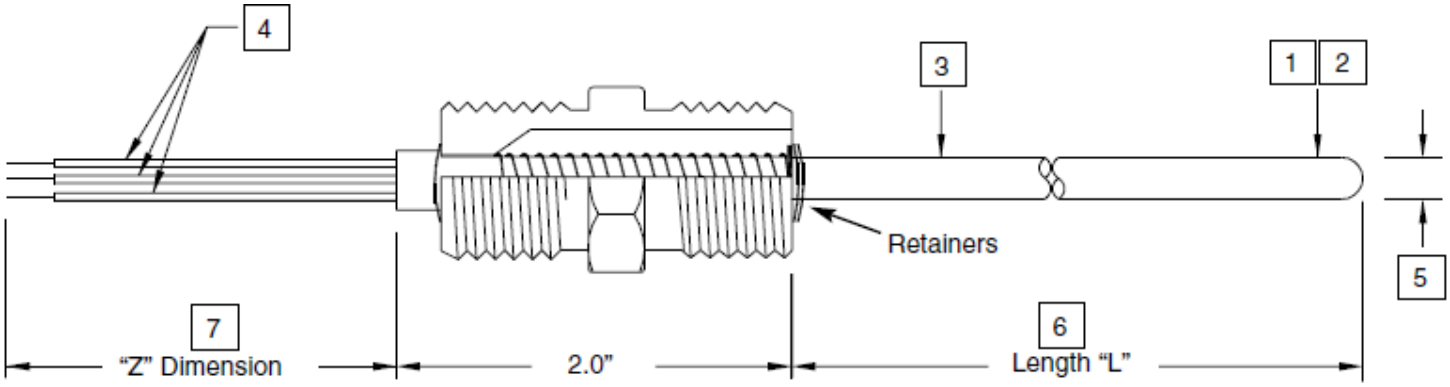
Designed for applications where a spring-loaded threaded male fitting is required for mounting. It is intended to be used with a thermowell and to be compatible with any head that will accept a 1/2" NPT instrument thread. The spring-loading action of this RTD ensures proper contact with the tip of the thermowell for maximum heat transfer.

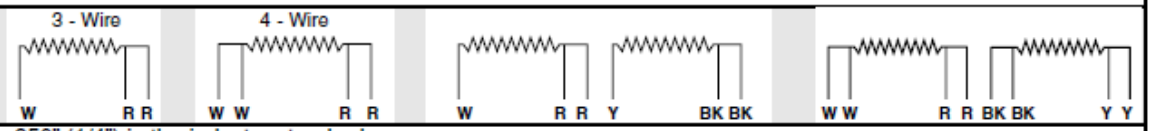
Refer to Model 301, 302, 303, & 304 if threaded fitting is not required. Refer to Model 201 if welded fitting is required.

Model 305 Spring Loaded RTD	
Element type	Standard platinum, 100 ohms @ 0C (32F), .00385 TCR, with optional Pt Ro and TCRs available
Accuracy	Standard DIN-B, with optional DIN-A and others available upon request
Construction	Standard 500°F service temperature, with optional high temperature and rugged constructions available
Lead wire configuration	Standard 3 Wire, with optional 2, 4, 6 or 8 wire
Sensor sheath diameter	Standard 1/4" diameter, with optional 1/8", 3/16" and others available
Sheath length	Typically 1-1/2" to 42", with custom lengths available

Technical Specifications

Model 305 Spring Loaded RTD	
Lead wire length	Standard 6", with custom length available
Connections	Options of standard and miniature sizes, as well as standard and high temperature ratings
Fittings	Optional compression and spring loaded fittings with various NPT connections
Insulation resistance	Greater than 100 Megohms @ 100VDC @ 21C (70F)



1. Base Model	Base Model/Series Number.	
2. A. Accuracy:	*Standard*	Class B (no code)
	High	Class A (code H)
	Special	Customer Specified (code S)
	* Industry Standard is DIN Curve (code 01B), Platinum, 100@ 0°C. Conforms to IEC 751.	
B. TCR:	Temperature Coefficient of Resistance is the temperature vs. resistance characteristics of a given metal (Pt, Cu & Ni) used in manufacturing the RTD. Determines the curve of the RTD.	
C. Ice Point Resistance:	R_0 - Resistance at 0°C (32°F)	
3. Construction:	Code A - 316SS tube and wire construction, thin film element, Teflon insulated lead wire. Code C - 316SS tube and wire construction, fiberglass insulated lead wire. Code B & D - MgO construction, Teflon insulated lead wire.	
4. Lead Wires:		
5. Sheath Diameter:	.250" (1/4") is the industry standard.	
6. Sheath Length:	Bottom of fitting to tip of sensor. See sizing chart in RTD General Specifications.	
7. Lead Wire Length:	Length of wires beyond sheath.	
8. Water resistant:	Increases moisture protection for humid environments.	

Model 305 Spring Loaded RTD

Technical Specifications

Model	Description
305	Spring loaded 1/2" x 1/2" NPT Hex Nipple RTD (all housings)

1

Code	RO and remperature coefficient
01B	**100 ohm platinum .00385055 TCR 100 ohms @ 0° C - industry standard**
01A	100 ohm platinum .003902 TCR 100 ohms @ 0° C
10A	1000 ohm platinum .003902 TCR 1000 ohms @ 0° C
10B	1000 ohm platinum .00385055 TCR 1000 ohms @ 0° C
12N	120 ohm nickel .00672 TCR 120 ohms @ 0° C
09C	10 ohm copper .004274 TCR 10 ohms @ 25° C
	Add code H for higher accuracy
	Add code S for special accuracy
	Add code ME for matched to element, MT for matched to transmitter, MP for two matched probes

2

Code	Construction temperature limit
A	500°F maximum
C	900°F maximum (platinum only)
D	1200°F maximum (platinum only)
B	1700°F maximum (platinum only)

3

Code	Number of lead wires
2	2-wire (no lead compensation)
3	3-wire (lead compensation)
4	4-wire (complete compensation)
6	Dual 3--wire (with dual element)
8	Dual 4-wire (with dual element)

4

Code	Sheath diameter
C	.250" (1/4") diameter
Other	Consult factory

5

Code	Sheath length
XXX.X	Specify length to the nearest 0.1"

6

Code	Lead wire length
Z006	6" - standard with head
Z024	24" - standard without head
ZXXX	Other - consult factory

7

Code	Option
W	Water resistant

8

305	01B	A	3	C	012.0	Z006	-	Sample model number
-	-	-	-	-	-	-	-	Your model number

Model 305 Spring Loaded RTD

Technical Specifications

305	Spring loaded sensor with 1/2" NPT hex fitting		
Code	**Sensing element**	**TCR (ohms/C/C)**	**Accuracy**
01B	**100 ohm platinum**	**.00385055**	**DIN-B** **Standard**
01BW	100 ohm platinum - wire wound	.00385055	DIN-B
01AW	100 ohm platinum - wire wound	.003902	DIN-B equivalent
10AW	1000 ohm platinum - wire wound	.003902	DIN-B equivalent
10B	1000 ohm platinum	.00385055	DIN-B
10BW	1000 ohm platinum - wire wound	.00385055	DIN-B
12N	120 ohm nickel	.00672	+/- .85° C (.60 ohms) at 0° C
09C	10 ohm copper	.004275	+/- .25° C (.05 ohms) at 0° C

Option: add H for high accuracy - DIN-A (platinum elements only)

Option: add S for ⅛ DIN accuracy (platinum elements only)

Option: add MT for matched calibration to transmitter

Code	Temperature range limit / construction	Sensing tip	Lead end maximum
A	**316SS sheath, Teflon insulated internal and external leads**	**-58 to 500F**	**500F** **Standard**
C	316SS sheath, Fiberglass insulated internal and external leads (platinum only)	-58 to 900F	900F
E	316SS sheath, Fiberglass insulated internal and Teflon insulated external leads (platinum only)	-58 to 900F	500F
D	316SS sheath MgO, Teflon insulated external leads (platinum only)	-58 to 1200F	500F
B	Inconel MgO sheath, Teflon insulated external leads (platinum only)	-58 to 1700F	500F
L	316SS sheath, Teflon insulated internal and external leads (platinum only)	-328 to 500F	500F

Code	Lead wire configuration
2	2-wire (no lead configuration)
3	**3-wire (lead compensation)** **Standard**
4	4-wire (complete lead compensation
6	Dual 3-wire (2 sensing elements - .187" diameter sheath or larger)
8	Dual 4-wire (2 sensing elements - .187" diameter sheath or larger)

Code	Sheath diameter
C	**.250" (1/4") diameter** **Standard**
Other	Consult factory

Code	Sheath length (QuickShip limit: 1.5" to 44")
xxx.x	Specifiy length to nearest 0.1"

Code	Lead wire coinfiguration (inches) (QuickShip limit: 24" max)
Zxxx	Specify flying lead length Standard Z024 (Z006 if used w/head)
Jxxx	Specify jacketed lead length
Sxxx	Specify jacketed w/shield lead length

Code	Options
SF	Silicon free

305	01B	A	3	C	010.0	Z006

Model 305 Spring Loaded RTD