

Wide Range PT100 resistor for UHV use 343-PT100-C1 and 343-PT100-C3

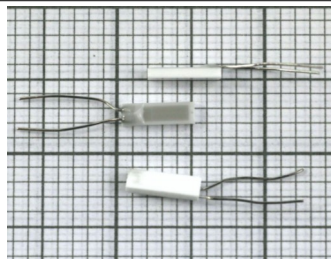
Allectra offers wide range PT 100 resistors for precise temperature measurement between -200 °C and +600/+750 °C. The class AA and A resistors offer very low tolerances and a higher stability than thermocouples.

The resistors are offered on its own, with 2 to 4 cables connected and as a set including thermal contact foil and screw-on clamp.

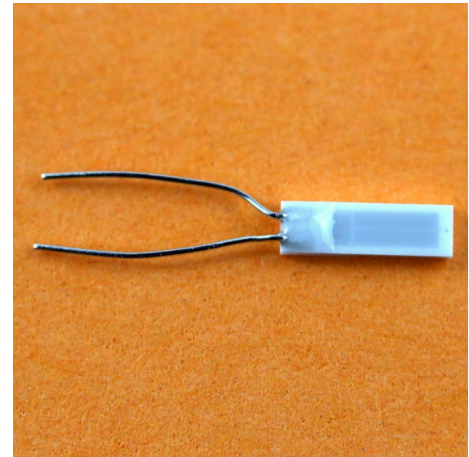
Type C3 is only half the size of C1 type and has tolerance class AA = F0.1 (+/-0.1K at 0 °C max.)

Specifications

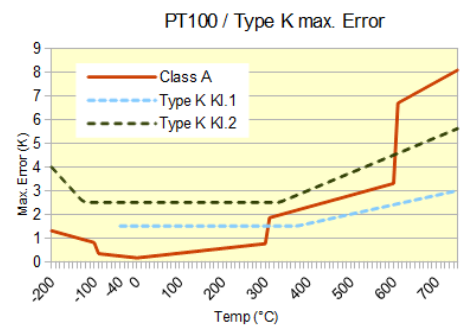
	343-PT100-C1	343-PT100-C3
Vacuum	UHV	
Materials	Ceramic, Glass, Platinum	
Size	1.6 x 5 mm 0.65/1.3 mm thick	1.6 x 2.5 mm 0.65/1.3 mm thick
Connection wires	Pt-Ni, 0.2 mm ø, 12 mm long	Pt-Ni, 0.2 mm ø, 7 mm long
Recommended current	1 mA max.	
Temperature range	-200 °C ... +750 °C	-200 °C ...+600 °C
Response time	T _{0.9} : 0.7 s (in water)	T _{0.9} : 0.42 s (in water)
Tolerance (DIN EN 60751)	Class A = F0.15 +/- (0.15+(0,002* T) - 90...+300 °C +/- (0.3+(0,005* T) -200...+600 °C	Class AA = F0.1 +/- 0.1K @ 0 °C +/- (0.1+(0,0017* T) - 50...+150 °C
Options	343-PT100-C1-1M-RAD / 343-PT100-C3-1M-RAD Versions with 4x 1m attached cables 301-KAPM-025 (radiation resistant)	
	Sets with screw clamp and thermal contact foil	



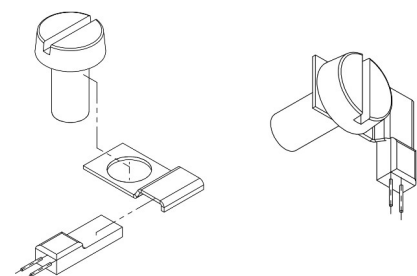
343-PT100-C1 on mm paper



343-PT100-C1, picture is about 4 times the size of the part (1.6mmx5mm)




Maximal allowed errors of PT100 class A, compared to Thermocouples Type K



Sketch of C1 sensor with 343-PT-C1 CLAMP mounting option, screw size M2.

The clamp has a width of 3mm, so it is longer than the C3 type sensor.

Art. Nr.	Description
	PT100 NO CABLES
343-PT100-C1	PT100 resistor, 1.6x5 mm, -200... +750 °C, Class A
343-PT100-C1-SET1	PT100 resistor + Clamp (BeCu) and screw M2x4
343-PT100-C1-SET2	PT100 resistor + Clamp + Thermal Contact foil 20x20 mm ²
343-PT100-C3	PT100 resistor, 1.6x2.5 mm, -200... +600 °C, Class AA
	PT100 WITH ATTACHED CABLES
	
343-PT100-C1-1M	PT100 resistor, C1, with 4x 1m 301-KAPM-025
343-PT100-C1-1M-SET1	PT100 resistor C1 + Clamp (BeCu) and screw M2x4
343-PT100-C1-1M-SET2	PT100 resistor C1 with cable + Clamp + Thermal Contact foil 20x20 mm ²
343-PT100-C3-1M	PT100 resistor, C3, with 4x 1m 301-KAPM-025

Remark for use of 343-PT-C1-CLAMP with 343-PT100-**C3**:

The screw clamp 343-PT-C1-CLAMP is optimized for **C1** type sensor. It holds the sensor on the 0.65mm thick area.

The clamp has a width of 3mm, so it is longer than the C3 type sensor. The 0.65mm thick area is very short, so the clamp can only be used to go over the complete sensor, which has a height of up to 1.3mm. So it can only be used in a limited sub-optimal way.

Wired versions are made as standard with 4-wire connection

Used wire is the radiation resistant type 301-KAPM-025

Standard cable length is 1m

2-wire and 3-wire connection available on request

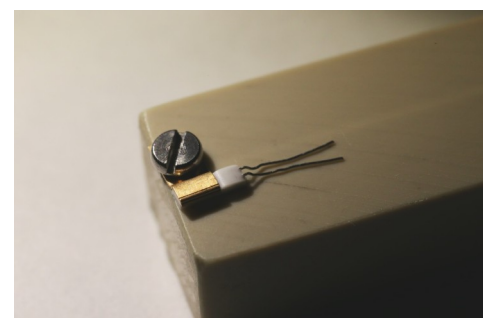
Other cable length available on request

Recommended alternative cables:

301-KAPM-035	(Radiation resistant wire 0.35 mm)
301-KAP-RIB4	(Radiation resistant 4-way ribbon cable 0.35 mm)



The thermal contact foil (317-TCP-20x20) melts at 58 °C and gives with 125 W/(m K) thermal conductivity an optimized contact to the base material. It contains no filler.



343-PT100-C1-SET1, resistor with mounting clamp



KAP301 is a superior Kapton insulated wire.

It withstands up to 300 °C and is radiation resistant up to 10⁹ Rad.