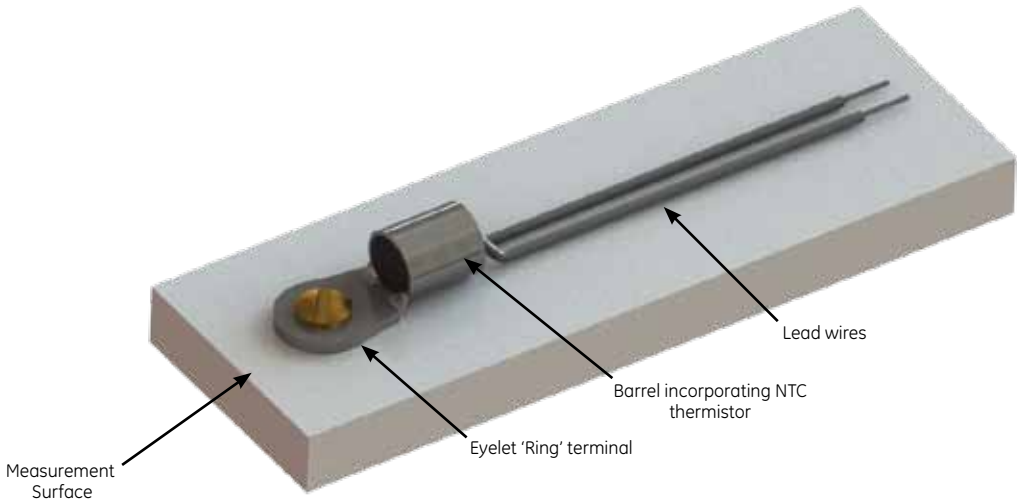
THERMOMETRICS
A COMMITMENT TO EXCELLENCE

Ring Terminal Temperature Sensors

This series of NTC temperature sensors is encapsulated within a 'ring terminal' for fixing to a surface and for measurement of its surface. The sensors are used in a wide range of automotive and industrial applications, providing robust and reliable temperature sensing capability when used correctly.



Amphenol

Advanced Sensors

Sensors

JR- Ring Terminal Sensors

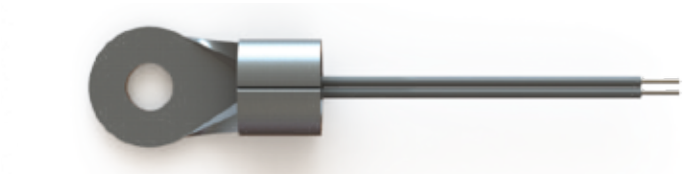
Part number	Resistance / Ω±x at T ref	B 25/ 85 k^{-1} ± x	Ring terminal			Lead			Operating Temp / ° C
			Outside Ø / mm (inches)	Inside Ø / mm (inches)	Length / mm (inches)	Length/ mm ± x (inches)	Material	Conductor	
JR103R5L500	10,000 ±5% 25°C	3960 ± 1%	6.4 (0.25)	3.2 (0.13)	12.3 (0.48)	50 ± 5 (1.97)	PVC	Cu, AWG28 tinned	-20 to 105
JR103R5L202	10,000 ±5% 25°C	3960 ± 1%	6.4 (0.25)	3.2 (0.13)	12.3 (0.48)	2000 ± 50 (78.74)	PVC	Cu, AWG28 tinned	-20 to 105

Length variations: L101, L201, L301, L401, L501, L102, L152, where 101 = 100 mm & 102 = 1000 mm

CTTS-125670

Part number	Resistance / Ω±x at T ref	B 25/ 85 k^{-1} ± x	Ring terminal			Lead			Operating Temp / ° C
			Outside Ø / mm (inches)	Inside Ø / mm (inches)	Length / mm (inches)	Length/ mm ± x (inches)	Material	Conductor	
CTTS-125670-1	10,000 ±5% 25°C	3435 ± 1%	8.0x8.0 (0.31x0.31)	3.2 (0.13)	15 (0.59)	1000 ± 20 (39.37)	PTFE	Cu, AWG24	-40 to 120
CTTS-125670-7	10,000 ±5% 25°C	3435 ± 1%	8.0x8.0 (0.31x0.31)	3.2 (0.13)	15 (0.59)	700 ± 20 (27.56)	PTFE	Cu, AWG24	-40 to 120

CTTS-186340



Part number	Resistance / Ω±x at T ref	B 25/ 85 k^{-1} ± x	Ring terminal			Lead			Operating Temp / ° C
			Outside Ø / mm (inches)	Inside Ø / mm (inches)	Length / mm (inches)	Length/ mm ± x (inches)	Material	Conductor	
CITS-186340	10,000 ±0.9% 25°C 2764 ±0.6% 100°C	3969 nom	9.65 (0.31)	3.76 (0.15)	13.7 (0.54)	25 ±3 (0.98)	FEP	Cu, AWG24 tinned	-40 to 150

A-1602

Part number	Resistance / Ω±x at T ref	B 25/ 85 k^{-1} ± x	Ring terminal				Lead		Operating Temp / ° C
			Outside Ø / mm (inches)	Inside Ø / mm (inches)	Length / mm (inches)	Length/ mm ± x (inches)	Material	Conductor	
A-1602	100,000±2% 25°C	3969 ± 1%	9.5 (0.375)	4.3 (0.171)	19.4 (0.765)	145 ± 10 (5.7 ± 0.4)	PTFE	Cu, AWG26	-20 to 180

A-1696

Part number	Resistance / Ω±x at T ref	B 25/ 85 k^{-1} ± x	Ring terminal				Lead		Operating Temp / ° C
			Outside Ø / mm (inches)	Inside Ø / mm (inches)	Length / mm (inches)	Length/ mm ± x (inches)	Material	Conductor	
A-1696	10,000 ±.0.2°C 0-70°C	3969 ± 1%	7.1 (0.281)	3.7 (0.145)	16 (0.63)	915 ±15 (36 ± 0.5)	TFE	Cu, AWG22 Silver plated	-20 to 100
Connector System					Tyco 103957-2				

A-1730

Part number	Resistance / Ω±x at T ref	B 25/ 85 k^{-1} ± x	Ring terminal				Lead		Operating Temp / ° C
			Outside Ø / mm (inches)	Inside Ø / mm (inches)	Length / mm (inches)	Length/ mm ± x (inches)	Material	Conductor	
A-1730	100,000±2% 25°C	3969 ± 1%	9.5 (0.375)	4.3 (0.171)	19.4 (0.765)	564 ± 10 (22.2 ± 0.4)	PTFE	Cu, AWG26	-20 to 180
Connector System					Tyco 770602-3, positions 1&2 occupied				

A-1742

Part number	Resistance / Ω±x at T ref	B 25/ 85 k^{-1} ± x	Ring terminal			Lead			Operating Temp / ° C
			Outside Ø / mm (inches)	Inside Ø / mm (inches)	Length / mm (inches)	Length/ mm ± x (inches)	Material	Conductor	
A-1742	40.000±1.2% 25°C 1585 ±0.74% 120°C	3936 ± 1%	22.2 (0.875)	13.1 (0.515)	49.8 (1.96)	9,430 ± 76.2 (371.25 ± 3)	Polyrad XD	AWG20, Tinned copper, (shield and earth)	-20 to 100

CTTS-156922

Part number	Resistance / Ω±x at T ref	B 25/ 85 k^{-1} ± x	Ring terminal			Lead			Operating Temp / ° C
			Outside Ø / mm (inches)	Inside Ø / mm (inches)	Length / mm (inches)	Length/ mm ± x (inches)	Material	Conductor	
CTTS-156922	10,000 ±.1.0% 25°C	3435 ± 1%	12.0 (0.47)	6.4 (0.25)	23.8 (0.94)	195 ± 20 (7.68)	PVC	Cu, AWG24	-40 to 105
Connector			1-1718346-3 positions 1 & 3 occupied						

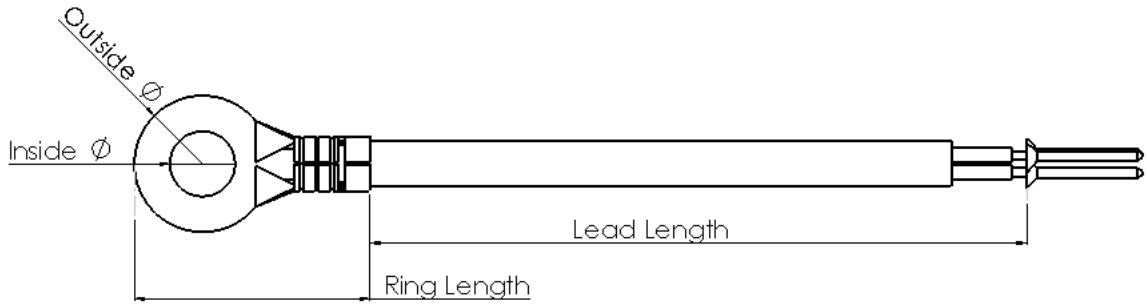
JRS6862

JRS7740

Part number	Resistance / Ω±x at T ref	B 25/ 85 k^{-1} ± x	Ring terminal			Lead			Operating Temp / ° C
			Outside Ø / mm (inches)	Inside Ø / mm (inches)	Length / mm (inches)	Length/ mm ± x (inches)	Material	Conductor	
JRS6852	10,000 ±5% 25°C	3435 ±1% 25°C	9.0 (0.35)	4.3 (0.17)	25 (0.98)	400 ± 5 (15.75)	PVC	Cu, AWG26	-20 to 105
Connector System			MKFL13262-6-1-202 housing with CVILUX CT07TO21PEO terminals						
JRS7740	10,000 ±5% 25°C	3435 ± 1%	9.0 (0.35)	4.3 (0.17)	25 (0.98)	220 ± 5 (8.7)	PVC	Cu, AWG26	-20 to 105 Notes 1. Key to dimensions

Notes

1. Key to dimensions



2. Resistance values are defined at full thermal equilibrium immersed in a reference fluid of known temperature.
3. For dielectric strength values, please contact Thermometrics design office.

Application Considerations

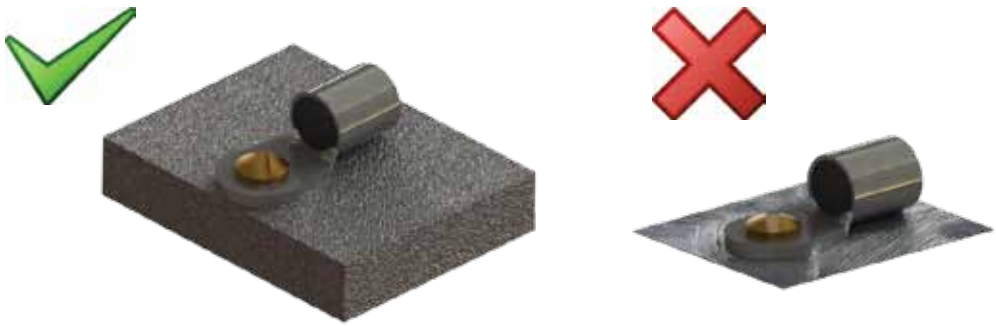
A. Size versus Performance

Large: ΔT between $T_{surface}$ and $T_{measure}$ is large.
Sensor responds slowly

Small: ΔT between $T_{surface}$ & $T_{measure}$ is small.
Sensor responds quickly

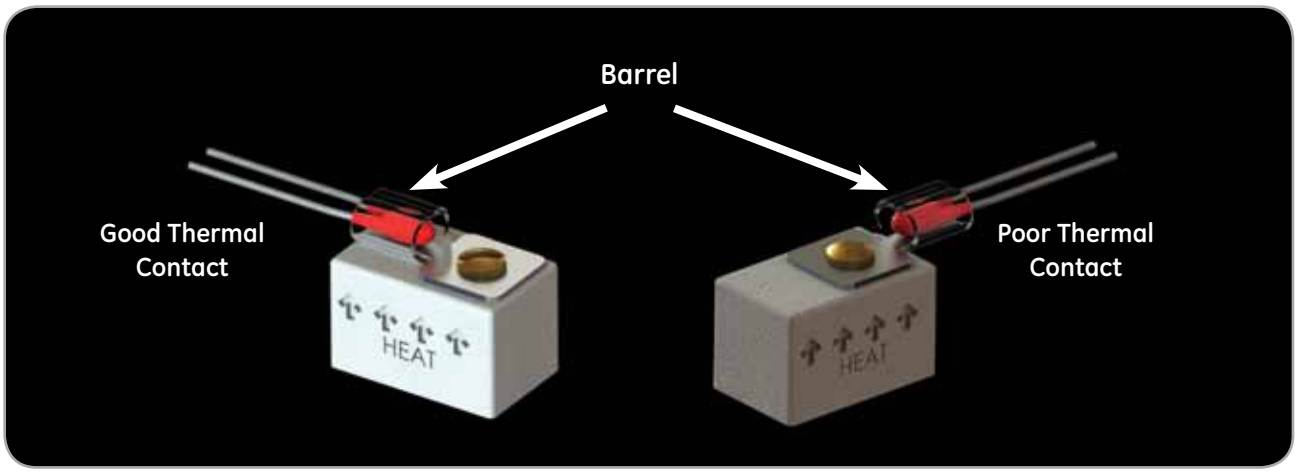
B. Thermal inertia of the measurement object

For accurate measurement it is necessary to ensure that the measurement object cannot experience a temperature change more quickly then the sensor can record it.



C.. Optimal Positioning

The functional component of the ring-terminal sensor is the thermistor positioned inside the barrel. For greatest measurement accuracy and fastest response, the barrel should make thermal contact with the measurement surface.

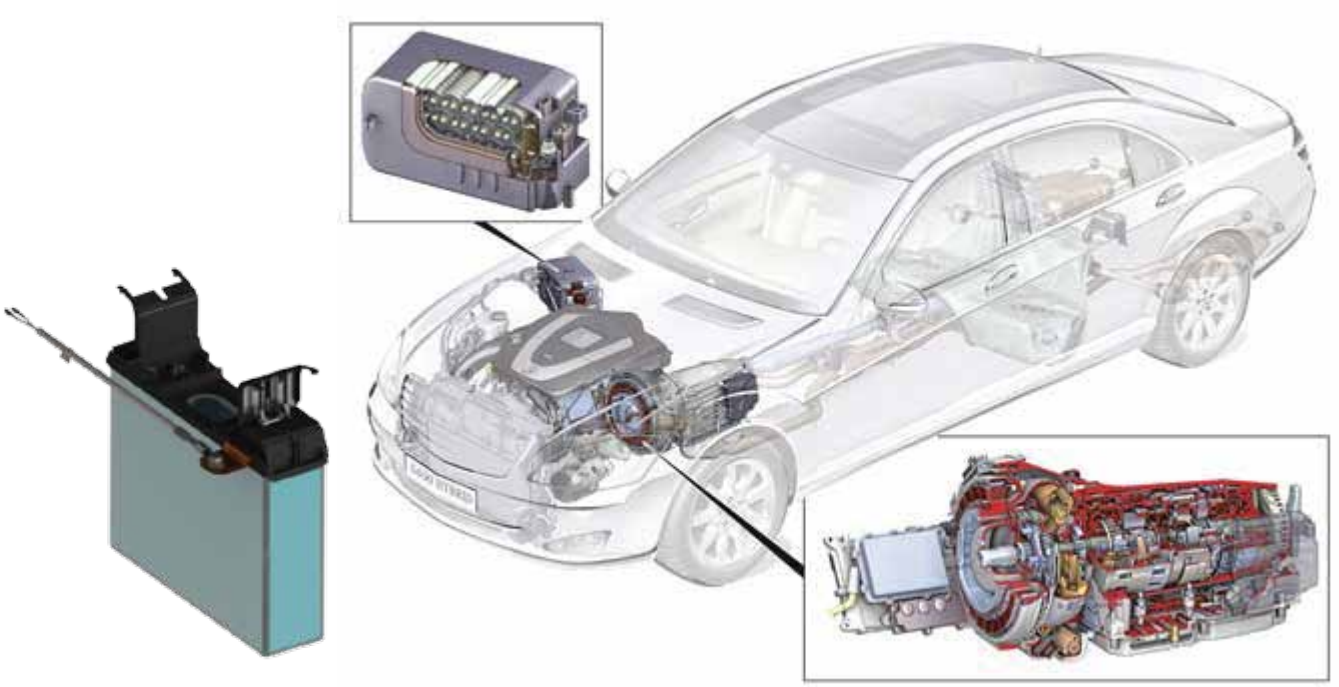


D. General Note 1

For applications where exceptionally quick responsiveness and accuracy of measurement is needed, a ring terminal sensor is not suitable, for these cases reference should be made to JC-F series of sensors (pipe clips). Please contact Amphenol Advanced Sensors engineering for more information on these Type JC sensors.

E. General Note 2
Ring terminal sensors are not designed to be used where they will be immersed in a fluid, either water or oil based.

Potential Applications



Electric Vehicle and Hybrid Electric Vehicle battery pack applications for safe and optimal functionality

General Engine Block, Cylinder Head applications, etc.

Power management: Transformers, Fuse boxes, Inverters, Switching devices, etc.

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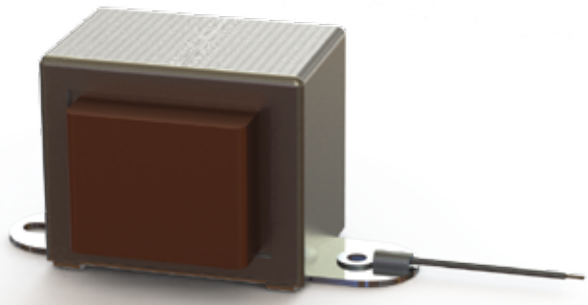

Thermal Equilibrium Resistance Versus Temperature Table

Part Number	JR103 CTTS-125670-1 CTTS-125670-7 CITS-186340 A-1696	A-1602 A-1730	A-1742	CTTS-156922 JRS6852 JRS7740
Temp / °C	Resistance / Ω	Resistance / Ω	Resistance / Ω	Resistance / Ω
-20	95788	957880	364200	67698
-15	72101	721010	276580	53403
-10	54771	547710	211750	42409
-5	41971	419710	163390	33896
0	32431	324310	127056	27261
5	25260	252600	99475	22058
10	19825	198250	78443	17951
15	15673	156730	62272	14692
20	12478	124780	49755	12089
25	10000	100000	40000	10000
30	8065.7	80657	32350	8313.5
35	6545.4	65454	26313	6945.2
40	5343.0	53430	21522	5829.4
45	4386.1	43861	17696	4915.0
50	3620.1	36201	14626	4162.2
55	3003.4	30034	12147	3539.6
60	2504.2	25042	10138	3022.5
65	2098.0	20980	8498.5	2591.0
70	1765.9	17659	7156.3	2229.6
75	1492.9	14929	6051.7	1925.7
80	1267.5	12675	5138.7	1669.0
85	1080.6	10806	4380.8	1451.6
90	924.88	9248.8	3749.0	1266.7
-95	794.64	7946.4	3220.2	1108.8
100	685.26	6852.6	2775.9	973.66

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