THERMOMETRICS
A COMMITMENT TO EXCELLENCE

Coolant Temperature Sensor (CTS)



Thermometrics Coolant Temperature Sensor (CTS) monitors the temperature of the coolant that is being pumped around the battery to cool the battery module in Electric Vehicles (EV) and Plug-in Hybrid Electric Vehicles (PHEV). The purpose of this sensor is to relay signal to the battery management system (BMS) in the event of overheating. Should this happen, the vehicle can be stopped and the charging switched off before the heat causes any permanent damage to the battery.

Applications

- Battery Coolant
- HVAC Refrigerant
- Gear Box Oil
- Inverter Coolant
- Fuel Cell

Features

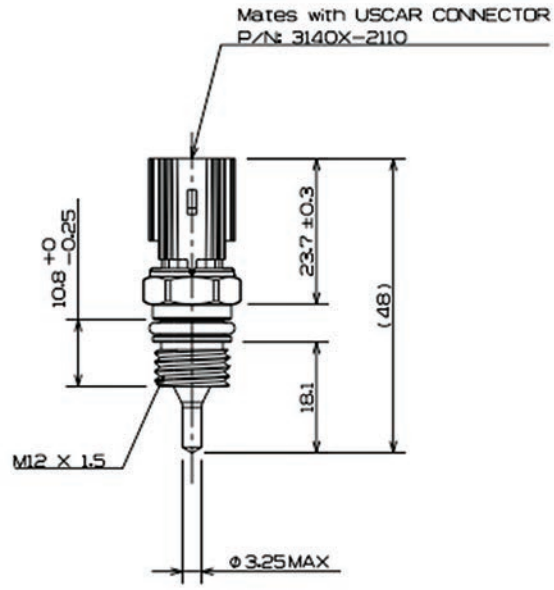
- Compact and Light Weight design
- USCAR Compliant Integrated Connector
- IP67 Ingress Compliant
- Fast Response Time
- Robust design in a variety of applications
- Alternative RvT curves and Terminal Plating available upon request

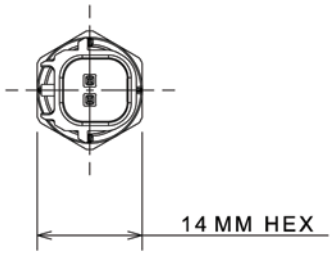
Available Configurations

Part Numbers	Housing Material
WTF083B001	Zinc Plated Steel
WTF083B004	316L Stainless Steel

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CTS Specifications





Part Number
WTF083B001 / WTF083B004

Operating Temperature Range
-40°C to 100°C

Storage Temperature Range
-40°C to 125°C

R @ 25°C
2828Ω ± 1.3%

Beta (25/85)°C
3975K ± 0.75%

Response Time
5 seconds from 25°C to 85°C in water

Temperature Accuracy
R@25°C ± 0.3°C

O-Ring Material
HNBR

Connector Material
PBT-GF15

Connector:
USCAR 064 Sealed (IP67)
Per USCAR 064-S-002-1-A02

Mating Connector:
Molex: 3140X-2100
Aptiv: 54390239

R vs. T

Temp. (°C)	Resistance (Ω)	Resistance Accuracy		Temperature Accuracy	
		-%	+%	+°C	-°C
-40	94331	-3.9	4.0	0.58	-0.61
-35	68175	-3.6	3.7	0.57	-0.59
-30	49796	-3.4	3.5	0.55	-0.57
-25	36743	-3.2	3.3	0.53	-0.55
-20	27377	-3.0	3.0	0.51	-0.52
-15	20590	-2.8	2.8	0.49	-0.50
-10	15626	-2.6	2.6	0.47	-0.48
-5	11960	-2.4	2.4	0.45	-0.46
0	9231	-2.2	2.2	0.43	-0.43
5	7180	-2.0	2.0	0.40	-0.41
10	5628	-1.8	1.8	0.38	-0.38
15	4444	-1.6	1.6	0.35	-0.35
20	3533	-1.5	1.5	0.32	-0.33
25	2828	-1.3	1.3	0.30	-0.30
30	2278	-1.5	1.5	0.34	-0.34
35	1847	-1.6	1.6	0.39	-0.39
40	1506	-1.8	1.8	0.44	-0.44
45	1235	-1.9	1.9	0.49	-0.49
50	1018	-2.1	2.1	0.54	-0.55
55	844	-2.2	2.2	0.59	-0.60
60	703	-2.3	2.4	0.65	-0.66
65	589	-2.5	2.5	0.70	-0.71
70	495	-2.6	2.6	0.76	-0.77
75	418	-2.7	2.8	0.81	-0.83
80	355	-2.8	2.9	0.87	-0.89
85	303	-2.9	3.0	0.93	-0.95
90	259	-3.1	3.1	0.99	-1.02
95	222	-3.2	3.3	1.05	-1.08
100	192	-3.3	3.4	1.12	-1.15

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