

Product Specifications

Standard Temperature Range +32°F to +158°F (0°C to +70°C)
 Standard Temperature Accuracy ±0.36°F (±0.2°C)
 Extended Temperature Range..... -40°F to +248°F (-40°C to 120°C)
 Extended Temperature Accuracy ... ±1.5°F (±0.8°C)
 Resistance Range 2 Meg to 286 ohms
 Response Time (32 to 212°F)..... 22 sec (in liquid)
 Response Time (212 to 32°F)..... 30 sec (in liquid)
 Input Voltage..... 5vdc
 Sensor Resistance..... 100,000 ohms @ 77°F (25°C)
 Housing Specifications:
 Dimensions 0.187"OD x 1.5"L
 Material..... Stainless Steel
 Environmental rating..... Waterproof to IP68
 Testing 10,000 freeze/thaw thermal cycles

Cable:
 Length..... 20', 40', or 60'
 Wire 2 conductor 22 awg stranded
 Shield..... Foil shield with 25% overlap
 Drain Stranded tinned copper drain
 Part number description when ordering (MCS-T100-xx)
 xx 20', 40', 60', or 100' wire length



Part # MCS-T100

Product Description

The MCS-T100 is an extremely fast acting temperature sensor built for demanding environments. It is ideal for high moisture locations with continuous freeze and thaw cycles. The sensor is potted with a thermally conductive adhesive to guarantee durability and response. Its high accuracy allows for interchangeability in the field.

The large resistance range allows the use of over 1000' of cable with no noticeable effect. By placing a 100,000 ohm resistor between signal and ground the sensor may be used in a three wire input mode. The table below provides a cross reference between °F /°C, ohms, and vdc at a sensor input pin (S1) of a MCS micro controller.

Temp to Resist to VDC Chart

Temp (°F / °C)	Resist (ohms)	S1 (vdc)	Temp (°F / °C)	Resist (ohms)	S1 (vdc)	Temp (°F / °C)	Resist (ohms)	S1 (vdc)	Temp (°F / °C)	Resist (ohms)	S1 (vdc)
-40/-40	4,015,500	0.121	32/0	351,020	1.109	95/35	63,480	3.058	158/70	15,500	4.329
-35/37.2	3,324,096	0.146	35/1.6	320,976	1.188	100/37.7	56,200	3.201	160/71.1	14,881	4.352
-30/34.4	2,760,524	0.175	38/3.3	293,758	1.270	104/40	51,050	3.310	165/73.8	13,456	4.407
-25/-31.6	2,299,670	0.208	40/4.4	277,040	1.326	105/40.5	49,846	3.337	167/75	12,930	4.428
-20/-28.9	1,921,640	0.247	45/7.2	239,686	1.472	110/43.3	44,287	3.465	170/76.6	12,185	4.457
-15/-26.1	1,610,592	0.292	50/10	207,850	1.624	113/45	41,290	3.539	175/79.4	11,052	4.502
-10/-23.3	1,353,866	0.344	55/12.7	180,647	1.782	115/46.1	39,420	3.586	180/82.2	10,033	4.544
-5/-20.6	1,141,345	0.403	58/14.4	166,243	1.878	120/48.8	35,149	3.370	183/83.8	9,474	4.567
0 /-17.7	964,963	0.470	60/15.5	157,353	1.943	125/51.6	31,399	3.805	185/85	9,121	4.582
5/-15.0	818,070	0.545	65/18.3	137,363	2.106	130/54.4	28,093	3.903	190/87.7	8,303	4.617
10/-12.2	695,433	0.629	70/21.1	120,169	2.271	135/57.2	25,173	3.994	195/90.5	7,567	4.648
15 /-9.4	592,755	0.722	75/23.9	105,347	2.435	140/60	22,590	4.079	198/92.2	7,162	4.666
20/-6.6	506,560	0.824	80/26.7	92,541	2.597	145/62.8	20,309	4.156	200/93.3	6,906	4.677
25/-3.8	434,007	0.936	85/29.4	81,454	2.756	150/65.5	18,284	4.227	203/95	6,541	4.693
30/-1.1	372,778	1.058	90/32.2	71,838	2.910	155/68.3	16,484	4.292	205/96.1	6,310	4.703
									208/97.7	5,981	4.718
									210/98.8	5,773	4.727
									212/100	5,573	4.736
									215/101.6	5,289	4.749
									218/103.3	5,020	4.761
									220/104.4	4,849	4.769
									223/106.1	4,605	4.780
									225/107.2	4,449	4.787
									227/108.3	4,299	4.794
									230/110	4,085	4.804
									233/111.6	3,886	4.813
									235/112.7	3,760	4.819
									240/115.5	3,463	4.833
									245/118.3	3,191	4.845
									248/120	3,040	4.852