

C7735A1000 Discharge Air Temperature Sensor

INSTALLATION INSTRUCTIONS

APPLICATION

The C7735A1000 Discharge Air Temperature Sensor (DATS) is a duct-mounted temperature probe that provides capacity control of heating and cooling equipment. The DATS is used only with zoning solutions, including TZ-3, MABS EZ-2 and MABS EZ-4, and EMM-3 and EMM-3U control panels. Mounted in the supply air duct, the DATS senses the delivered air temperature and cuts off the heating or cooling when the delivered air temperature goes above or below normal operating limits.

When either limit setting is reached, the appropriate heat or cool light emitting diode (LED) flashes on the TZ-3 or EMM series panels, indicating that heating or cooling is shut off. The call still exists and heated or cooled air is still being supplied to the calling zones. Once the delivered air temperature drops ten degrees for heating, or rises ten degrees for cooling, the heating or cooling equipment is brought back on. The ten-degree differential provides adequate minimum time-off to avoid damaging the equipment. EMM series has a 2.5 minute timer as equipment protection.

The location of the DATS is critical; it should not be placed in line-of-sight of the heat exchanger or cooling coil because the DATS could activate prematurely. It should also be located before the bypass damper, when applicable. DATS dimensions are shown in Fig. 1.

The DATS requires only two wires. Normal 18 to 22 gauge thermostat wire is used for shorter runs. For longer runs or when wiring near voltage, shielded cable is used.

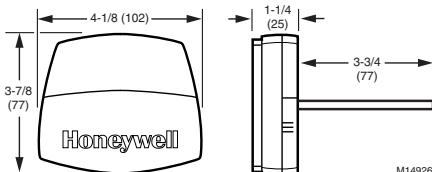


Fig. 1. C7735A dimensions in in. (mm).

INSTALLATION

When Installing this Product...

1. Read these instructions carefully. Failure to follow them could damage the product or cause a hazardous condition.
2. Check the ratings given in the instructions and on the product to make sure the product is suitable for your application.
3. Installer must be a trained, experienced service technician.
4. After completing installation, use these instructions to check out the product operation.

IMPORTANT

Do not locate the DATS probe in a duct near the heat exchanger or strip heat, which can cause false temperature readings.

1. Locate the DATS on the supply trunk between the bypass damper and the evaporator coil and/or heat exchanger. If a bypass damper is not used, locate the DATS between the zone dampers and the evaporator coil and/or heat exchanger. See Fig. 2.

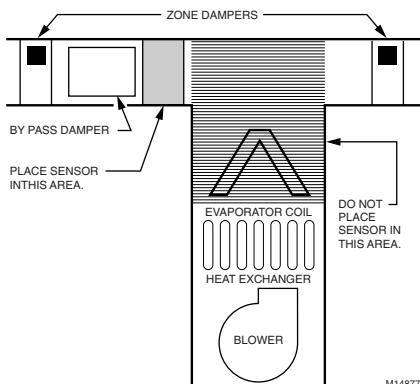


Fig. 2. DATS mounting location.



2. Drill a 1/4 in. hole in the duct at the location selected for the sensor.
3. Remove the cover from the DATS case and insert the probe into the hole drilled in step 2.
4. Secure the DATS to the side of the duct, through the two mounting holes in the back of the case, with the screws supplied.

IMPORTANT

Use normal 18-22 gauge thermostat wire for shorter runs. For longer runs or when wiring near voltage, use shielded cable.

5. Check the resistance across the sensor leads and cross reference with Table 1.
6. Connect the two DATS wires, using the wire nuts supplied, to wires that connect to the TL and TL terminals on the TZ-3, MABS EZ-2, MABS EZ-4 or to the ZMS and ZMS terminals on the EMM series panels, through the wiring hole in the DATS case. See Fig. 3.
7. Replace the cover on the DATS case.
8. Adjust the MAX Temp dial on the TZ-3 to the appropriate high limit setting. This can be set between 110° F and 160° F (43°C and 71°C). Note

that settings between the lines are approximate settings. The cooling low limit is fixed at 40 °F (4°C) on the TZ-3, Rev 2 and 3 panels. The TZ-3, Rev 4 panel, can be set at either 40 °F (4°C) or 48 °F (9°C). See TZ-3 panel instructions for further information.

9. Set the upper and lower limits on the EMM-3U using DIP switches 5 and 6.

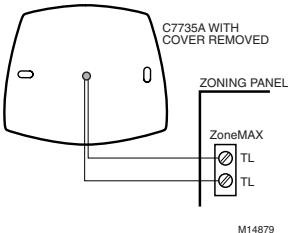


Fig. 3. DATS wiring to TZ-3 panel.

TROUBLESHOOTING

When Zoning Panel LED is...	It means...	It is corrected when...
Flashing IDLE light five times on initial power-up (TZ-3).	No DATS is wired to the panel or there is an open circuit.	Circuit is closed. Note that the DATS Sensor is optional and not required for the TZ-3 to operate.
Flashing IDLE continuously (TZ-3). Flashing system light (EMM-3). Flashing purge light (EMM-3U).	A DATS failure or no sensor.	Unhook the loads and verify the resistance using step 5 of the Installation instructions.
Flashing HEAT light continuously.	DATS has tripped on high temperature limit and all stages of heating are shut off.	Reset because delivered air temperature drops 10°F (-12°C) from MAX Temp setting on the TZ-3 panel. 2.5-minute minimum wait required on EMM series panels.
Flashing COOL light continuously	DATS has tripped on low temperature limit and all stages of cooling are shut off.	Reset because delivered air temperature rises 10°F above fixed low temperature setting of 40°F (4°C) on TZ-3, Rev 2 and 3 panels, or 40° and 48°F (4°C and 9°C) on TZ-3, Rev 4 panels. 2.5-minute minimum wait required on EMM series panels.

See Table 1 for readings in resistance for each temperature to determine if the DATS is reading the correct temperature. To obtain the correct resistance measurement, remove the two wires from the wire nuts and measure the resistance across the two wires.

Table 1. DATS Resistance Cross Reference.

Temperature (°F)	Resistance	Temperature (°F)	Resistance
32	33630	117	3915
33	32668	118	3830
34	31737	119	3747
35	30835	120	3666
36	29962	121	3587
37	29117	122	3510
38	28298	123	3435
39	27505	124	3362
40	26737	125	3290
41	25993	126	3221
42	25272	127	3153
43	24573	128	3086
44	23896	129	3021
45	23240	130	2958
46	22604	131	2896
47	21988	132	2836
48	21390	133	2777
49	20810	134	2720
50	20248	135	2664
51	19703	136	2609
52	19175	137	2555
53	18662	138	2503
54	18165	139	2452
55	17683	140	2402
56	17215	141	2353
57	16761	142	2306
58	16320	143	2259
59	15892	144	2214
60	15477	145	2170
61	15074	146	2126
62	14683	147	2084
63	14303	148	2043
64	13934	149	2002
65	13576	150	1963
66	13229	151	1924
67	12891	152	1886
68	12563	153	1849
69	12244	154	1813
70	11935	155	1778
71	11634	156	1744
72	11342	157	1710
73	11058	158	1677
74	10782	159	1645
75	10514	160	1613
76	10253	160	1582
77	10000	162	1552
78	9754	163	1523
79	9514	164	1494

Table 1. DATS Resistance Cross Reference. (Continued)

Temperature (°F)	Resistance	Temperature (°F)	Resistance
80	9281	165	1466
81	9055	166	1438
82	8835	167	1411
83	8621	168	1385
84	8412	169	1359
85	8210	170	1334
86	8013	171	1309
87	7821	172	1285
88	7634	173	1261
89	7453	174	1238
90	7276	175	1215
91	7104	176	1193
92	6937	177	1171
93	6774	178	1150
94	6615	179	1129
95	6461	180	1108
96	6311	181	1088
97	6164	182	1069
98	6022	183	1050
99	5883	184	1031
100	5748	185	1012
101	5617	186	994
102	5488	187	977
103	5363	188	959
104	5242	189	943
105	5123	190	926
106	5008	191	910
107	4895	192	894
108	4786	193	878
109	4679	194	863
110	4575	195	848
111	4473	196	833
112	4374	197	819
113	4278	198	805
114	4183	199	791
115	4092	200	777
116	4002	—	—

For Internet access: www.trolatemp.com or
www.honeywell.com/yourhome/zoning/zoning_home.htm

For technical support, call 1-800-TAT-Temp (1-800-828-8367).
 To download Zoning literature: <http://hbctechlit.honeywell.com>

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Honeywell
 1985 Douglas Drive North
 Golden Valley, MN 55422

Honeywell Limited-Honeywell Limitée
 35 Dynamic Drive
 Scarborough, Ontario
 M1V 4Z9



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