

Leaving Air Sensor Model ZMS



The Zoning Mixed Air Sensor, Model ZMS, is a duct mounted sensor used with the ZONEFIRST MasterZone™ Control Panels. The ZMS senses the supply air plenum temperature and protects the furnace, compressor or heat pump from over temperatures as zone dampers close down and air flow may be restricted and especially when a by-pass is used and supply is mixed back into the return air which can cause extreme plenum temperatures. The ZMS protects the equipment by cutting off the heating or cooling call when its limit temperature is reached for either heating or cooling. The ZMS insures the heating and cooling equipment is protected when zoning.

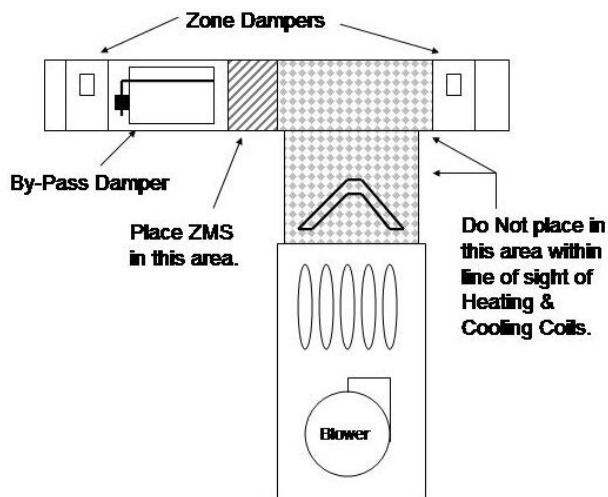
The ZMS senses the supply air temperature and the actual control is on the zoning panel. The zoning panel has an adjustable heating set point from 100°F to 170°F and a fixed cooling set point at 45°F, for the ZMS. When the supply air temperature rises above the heating set point or below the cooling set point, the zoning panel will lockout the heating or cooling equipment. The calls are maintained and conditioned air is still delivered to the zones. The ZMS must sense a 10°F drop in the supply air temperature before bringing the heating back on after tripping. In Cooling, the supply air must raise to 55°F before allowing the compressor to come back on. The 10°F reset temperature allows an adequate off time in order to prevent compressor/equipment short cycling.

The ZMS inserts into the supply air duct, see location information and drawing on right, and requires only two (2) wires to the zoning panel. Lengths longer than 15 feet or that come in close contact with line voltage, shielded cable is recommended.

INSTALLATION

Choose a location for the ZMS in the supply air duct downstream of the heat exchanger and cooling evaporator coil, and before the by-pass and any zone dampers. It is also recommended to not be directly in line of sight with the heat exchanger or cooling evaporator coil, if possible.

For Heat Pumps it is recommended to be located in the air handler downstream of the evaporator coil and before the strip heaters.



To Install:

1. Drill a 1/2" hole in the duct where the ZMS is to be mounted.
2. Insert the ZMS into the hole opening and insure the probe extends beyond any insulation.
3. Secure to the duct with self-tapping screws, provided.
4. Wire to the zoning panel.

This chart is used to determine the temperature sensed by the ZMS probe. Match the resistance reading to the temperature.

Temperature °F	Resistance	Temperature °F	Resistance
31	34718.4	106	5020.86
32	33720.8	107	4907.89
33	32755.3	108	4797.80
34	31820.7	109	4690.50
35	30916.0	110	4585.92
36	30040.1	111	4483.97
37	29191.9	112	4384.59
38	28370.6	113	4287.20
39	27575.1	114	4193.23
40	26804.6	115	4101.12
41	26058.3	116	4011.30
42	25335.2	117	3923.71
43	24634.6	118	3838.28
44	23955.7	119	3754.96
45	23297.8	120	3673.69
46	22660.1	121	3594.41
47	22042.0	122	3517.07
48	21442.8	123	3441.61
49	20861.9	124	3367.99
50	20298.6	125	3296.16
51	19752.4	126	3226.06
52	19222.7	127	3157.65
53	18708.9	128	3090.89
54	18210.6	129	3025.73
55	17727.1	130	2962.12
56	17258.1	131	2900.03
57	16802.9	132	2839.42
58	16361.3	133	2780.25
59	15932.7	134	2722.47
60	15516.7	135	2666.06
61	15112.9	136	2610.98
62	14720.9	137	2557.18
63	14340.4	138	2504.65
64	13909.0	139	2453.34
65	13612.1	140	2403.22
66	13263.7	141	2354.27
67	12925.3	142	2306.45
68	12596.6	143	2259.73
69	12277.3	144	2214.09
70	11967.1	145	2169.50
71	11665.7	146	2125.92
72	11372.9	147	2083.35
73	11088.3	148	2041.74
74	10811.8	149	2001.07
75	10543.0	150	1961.33
76	10281.7	151	1922.48
77	10027.8	152	1884.51
78	9780.87	153	1847.39
79	9540.82	154	1811.11
80	9307.40	155	1775.83
81	9080.42	156	1740.95
82	8859.67	157	1707.04
83	8644.97	158	1673.88

Temperature °F	Resistance	Temperature °F	Resistance
84	8436.14	159	1641.45
85	8233.00	160	1609.73
86	8035.37	161	1578.72
87	7843.08	162	1548.39
88	7655.99	163	1518.71
89	7473.94	164	1489.69
90	7296.76	165	1461.30
91	7124.33	166	1433.53
92	6956.49	167	1406.35
93	6793.12	168	1379.77
94	6634.08	169	1353.75
95	6479.24	170	1328.30
96	6328.48	171	1303.39
97	6181.68	172	1279.01
98	6038.73	173	1255.16
99	5899.51	174	1231.81
100	5763.92	175	1208.96
101	5631.84	176	1186.59
102	5503.19	177	1164.69
103	5377.86	178	1143.25
104	5255.76	179	1122.27
105	5136.79	180	1101.72

ZMS Wiring

