

tekmar[®] - Data Brochure

D 076

Indoor Sensor 076

Available at:

PEXHEAT.COM

05/07

The tekmar Indoor Sensor 076 includes a 10k Ω thermistor which provides accurate measurement of the indoor temperature. The 076 can be mounted directly on the wall using two #6-1" screws. The small size of the 076 makes this sensor visually appealing and less noticeable on the wall. The 076 can be connected to a 10k Room Temperature Unit (RTU) for remote temperature sensing.

Installation - Indoor Sensor 076

STEP ONE — GETTING READY

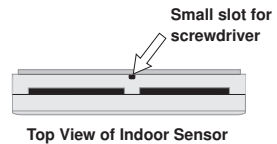
Check the contents of this package. If any of the contents listed are missing or damaged, please contact your wholesaler or tekmar sales representative for assistance.

Type 076 includes: • One Indoor Sensor 076 • One Data Brochure D 076

STEP TWO — REMOVING THE FRONT COVER

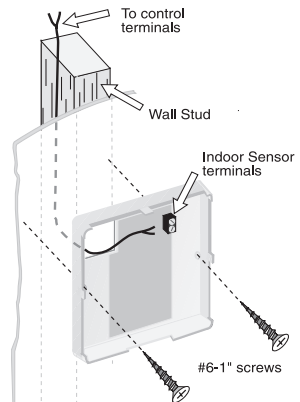
NOTE: The temperature sensor (thermistor) is built into the 076 enclosure.

To remove the 076 front cover, place a small screwdriver into the small hole located in the top of the 076 enclosure. Push the screwdriver against the plastic flap and pull the top of the front cover so that it pivots around the bottom edge of the mounting base.



STEP THREE — MOUNTING THE INDOOR SENSOR

- The Indoor Sensor should be installed on an interior wall of the desired zone to be controlled. Do not mount the 076 in a location that may be affected by localized heat sources or cold drafts. It may be necessary to install a draft barrier and / or insulation behind the enclosure in order to prevent air from blowing through the wiring hole and affecting the Sensor reading.
- For surface mounting, mount the Indoor Sensor directly to the wall using two #6-1" screws. The screws are inserted through the mounting holes and must be securely fastened to the wall. If possible, at least one of the screws should enter a wall stud.



STEP FOUR ————— WIRING THE INDOOR SENSOR

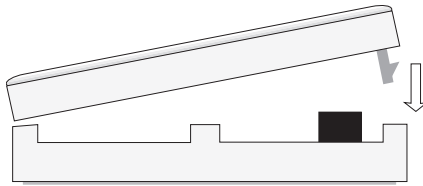
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Run two conductor 18 AWG or similar wire between the Indoor Sensor on the tekmar control. Insert the wires through the hole provided in the back of the indoor sensor enclosure and connect them to the indoor sensor terminal block. Do not run the wires parallel to telephone or power lines. If the indoor sensor wires are located in an area with strong sources of electromagnetic noise, shielded cable or twisted pair should be used or the wires can be run in a grounded metal conduit. If using shielded cable, one end of the shield wire should be connected to the Com-Sen terminals on the control and the other end should remain free. The shield must not be connected to earth ground. Follow the sensor testing instructions below and connect the wires to the control.

STEP FIVE ————— INSTALLING THE FRONT COVER

The Indoor Sensor 076 front cover is installed by aligning the hinges on the bottom of the front cover with the bottom of the sensor mounting base. The front cover is then pivoted around the bottom hinge and pushed against the mounting base until it snaps firmly into place.



Sensor Testing Instructions

A good quality test meter capable of measuring up to 5,000 k Ω (1 k Ω = 1000 Ω) is required to measure the sensor resistance. In addition to this, the actual temperature must be measured with either a good quality digital thermometer, or if a thermometer is not available, a second sensor can be placed alongside the one to be tested and the readings compared.

First measure the temperature using the thermometer and then measure the resistance of the sensor at the control. The wires from the sensor must not be connected to the control while the test is performed. Using the chart on the following page, estimate the temperature measured by the sensor. The sensor and thermometer readings should be close. If the test meter reads a very high resistance, there may be a broken wire, a poor wiring connection or a defective sensor. If the resistance is very low, the wiring may be shorted, there may be moisture in the sensor or the sensor may be defective. To test for a defective sensor, measure the resistance directly at the sensor location.

Do not apply voltage to a sensor at any time as damage to the sensor may result.

Resistance Table

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Temperature		Resistance	Temperature		Resistance	Temperature		Resistance	Temperature		Resistance
°F	°C	Ω	°F	°C	Ω	°F	°C	Ω	°F	°C	Ω
-50	-46	490,813	20	-7	46,218	90	32	7,334	160	71	1,689
-45	-43	405,710	25	-4	39,913	95	35	6,532	165	74	1,538
-40	-40	336,606	30	-1	34,558	100	38	5,828	170	77	1,403
-35	-37	280,279	35	2	29,996	105	41	5,210	175	79	1,281
-30	-34	234,196	40	4	26,099	110	43	4,665	180	82	1,172
-25	-32	196,358	45	7	22,763	115	46	4,184	185	85	1,073
-20	-29	165,180	50	10	19,900	120	49	3,760	190	88	983
-15	-26	139,402	55	13	17,436	125	52	3,383	195	91	903
-10	-23	118,018	60	16	15,311	130	54	3,050	200	93	829
-5	-21	100,221	65	18	13,474	135	57	2,754	205	96	763
0	-18	85,362	70	21	11,883	140	60	2,490	210	99	703
5	-15	72,918	75	24	10,501	145	63	2,255	215	102	648
10	-12	62,465	80	27	9,299	150	66	2,045	220	104	598
15	-9	53,658	85	29	8,250	155	68	1,857	225	107	553

INDOOR SENSOR 076

Literature	D 076
Packaged weight	0.16 lb. (72 g), Enclosure G, white PVC plastic
Dimensions	2-7/8" H x 2-7/8" W x 13/16" D (73 x 73 x 21 mm)
Approvals	CSA C US
Operating range	-60 to 140°F (-50 to 60°C)
Sensor	NTC thermistor, 10 kΩ @ 77°F (25°C ±0.2°C), β=3892

Limited Warranty and Product Return Procedure

Limited Warranty *The liability of tekmar under this warranty is limited. The Purchaser, by taking receipt of any tekmar product ("Product"), acknowledges the terms of the Limited Warranty in effect at the time of such Product sale and acknowledges that it has read and understands same.*

The tekmar Limited Warranty to the Purchaser on the Products sold hereunder is a manufacturer's pass-through warranty which the Purchaser is authorized to pass through to its customers. Under the Limited Warranty, each tekmar Product is warranted against defects in workmanship and materials if the Product is installed and used in compliance with tekmar's instructions, ordinary wear and tear excepted. The pass-through warranty period is for a period of twenty-four (24) months from the production date if the Product is not installed during that period, or twelve (12) months from the documented date of installation if installed within twenty-four (24) months from the production date.

The liability of tekmar under the Limited Warranty shall be limited to, at tekmar's sole discretion: the cost of parts and labor provided by tekmar to repair defects in materials and / or workmanship of the defective product; or to the exchange of the defective product for a warranty replacement product; or to the granting of credit limited to the original cost of the defective product, and such repair, exchange or credit shall be the sole remedy available from tekmar, and, without limiting the foregoing in any way, tekmar is not responsible, in contract, tort or strict product liability, for any other losses, costs, expenses, inconveniences, or damages, whether direct, indirect, special, secondary, incidental or consequential, arising from ownership or use of the product, or from defects in workmanship or materials, including any liability for fundamental breach of contract.

The pass-through Limited Warranty applies only to those defective Products returned to tekmar during the warranty period. This Limited Warranty does not cover the cost of the parts or labor to remove or transport the defective Product, or to reinstall the repaired or replacement Product, all such costs and expenses being subject to Purchaser's agreement and warranty with its customers.

Any representations or warranties about the Products made by Purchaser to its customers which are different from or in excess of the tekmar Limited Warranty are the Purchaser's sole responsibility and obligation. Purchaser shall indemnify and hold tekmar harmless from and against any and all claims, liabilities and damages of any kind or nature which arise out of or are related to any such representations or warranties by Purchaser to its customers.

The pass-through Limited Warranty does not apply if the returned Product has been damaged by negligence by persons other than tekmar, accident, fire, Act of God, abuse or misuse; or has been damaged by modifications, alterations or attachments made subsequent to purchase which have not been authorized by tekmar; or if the Product was not installed in compliance with tekmar's instructions and / or the local codes and ordinances; or if due to defective installation of the Product; or if the Product was not used in compliance with tekmar's instructions.

THIS WARRANTY IS IN LIEU OF ALL OTHER WARRANTIES, EXPRESS OR IMPLIED, WHICH THE GOVERNING LAW ALLOWS PARTIES TO CONTRACTUALLY EXCLUDE, INCLUDING, WITHOUT LIMITATION, IMPLIED WARRANTIES OF MERCHANTABILITY AND FITNESS FOR A PARTICULAR PURPOSE, DURABILITY OR DESCRIPTION OF THE PRODUCT, ITS NON-INFRINGEMENT OF ANY RELEVANT PATENTS OR TRADEMARKS, AND ITS COMPLIANCE WITH OR NON-VIOLATION OF ANY APPLICABLE ENVIRONMENTAL, HEALTH OR SAFETY LEGISLATION; THE TERM OF ANY OTHER WARRANTY NOT HEREBY CONTRACTUALLY EXCLUDED IS LIMITED SUCH THAT IT SHALL NOT EXTEND BEYOND TWENTY-FOUR (24) MONTHS FROM THE PRODUCTION DATE, TO THE EXTENT THAT SUCH LIMITATION IS ALLOWED BY THE GOVERNING LAW.

Product Warranty Return Procedure All Products that are believed to have defects in workmanship or materials must be returned, together with a written description of the defect, to the tekmar Representative assigned to the territory in which such Product is located. If tekmar receives an inquiry from someone other than a tekmar Representative, including an inquiry from Purchaser (if not a tekmar Representative) or Purchaser's customers, regarding a potential warranty claim, tekmar's sole obligation shall be to provide the address and other contact information regarding the appropriate Representative.

 <p>tekmar Control Systems Ltd., Canada tekmar Control Systems, Inc., U.S.A. Head Office: 5100 Silver Star Road Vernon, B.C. Canada V1B 3K4 (250) 545-7749 Fax. (250) 545-0650 Web Site: www.tekmarcontrols.com</p>	<p>Product design, software and literature are Copyright © 2007 by: tekmar Control Systems Ltd. and tekmar Control Systems, Inc.</p>
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