Manuals+

☰

Contents [hide]

WATTS®

WATTS TG-T Sensor Testing

Product Usage Instructions

Introduction

The Snow Sensor 095 is an aerial-mounted sensor that detects falling snow and allows a tekmar® Snow Melting Control to automatically start the snow melting equipment. System stop is provided by the control's timer or by manual disable. The 095 mounts to a nominal 1/2″ (16 mm) metal or PVC conduit or pole. The 095 is well suited for adding an automatic start to an existing snow melt system. For use with Tekmar Snow Melting Control type: 654, 670, 671, 680, or 681

WARNING

- Please read carefully before proceeding with the installation. Your failure to follow any attached instructions or operating parameters may lead to the product's failure.
- Keep this Manual for future reference.

Installation

Caution

Improper installation and operation of this control could result in damage to the equipment and possibly even personal injury or death. It is the installer's responsibility to ensure that this control is safely installed according to all applicable codes and standards. Please follow these step-by-step instructions to gain a full understanding of this device.

Step 1 – Check the Contents

Check the contents of this package. If any of the contents listed are missing or damaged, please refer to the Limited Warranty and Product Return Procedure on the back of this brochure and contact your wholesaler or tekmar sales representative for assistance.

Type 095 includes:

- One Snow Sensor 095
- One Installation and Operation Manual 095_D.

Step 2 – Choosing a Location for the Sensor

The sensor should be installed outside on a nominal 1/2″ (16 mm) PVC or rigid metal conduit pole, either on a roof or to the side of the snow melting surface. The sensor must be located away from trees, building overhangs or other locations that may interfere with falling snow. Avoid installing in locations where the sensor may be vandalised. It is best to point the front face of the sensor in the direction of any prevailing wind.
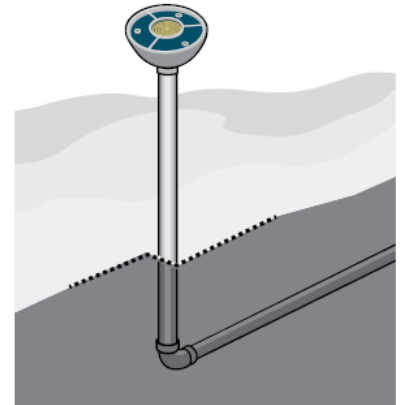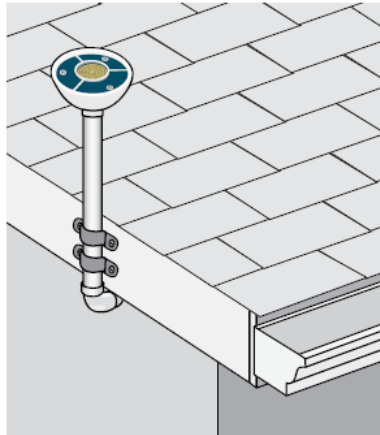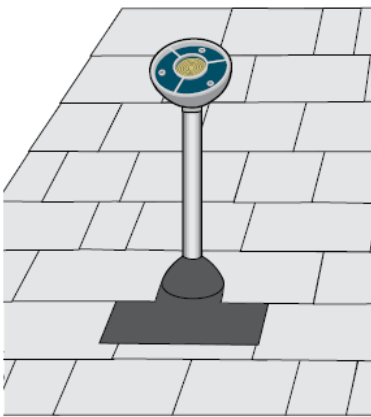
1. **Roof Mounted**

   Ensure waterproof installation with flashing boot or similar method

2. **Roof Mounted**

   Conduit fastened to the fascia board

3. **Ground Mounted**

   Conduit runs underground with a pole above the surface

Step 3 – Rough In Wiring

- Install a nominal 1/2″ (16 mm) PVC or metal conduit from the tekmar Snow Melting Control to the chosen sensor location. Pull 4 conductor 18 AWG wire from the sensor location to the control location through the conduit. The maximum wire length between the sensor and the control is 500' (150 m).
- If using PVC conduit, do not run the wires parallel to telephone or power lines.
- If the sensor wires are located in an area with strong sources of electromagnetic noise, shielded cable or twisted pair should be used. If using shielded cable, one end of the shield wire should be connected to the Com terminal on the Snow Melting Control and the other end should remain free.
- The shield must not be connected to the earth ground.

Step 4 – Disassembly

1. Remove the outer ring by pulling up on the three catches.
2. Remove the three screws.
3. Remove the blue sensor disk from the sensor enclosure.

Avoid scratching any part of the surface of the blue sensor disk. Scratches will result in corrosion, not covered by warranty.

Outer Ring

Blue Sensor Disk

Sensor Enclosure

Conduit Adapter (not included)
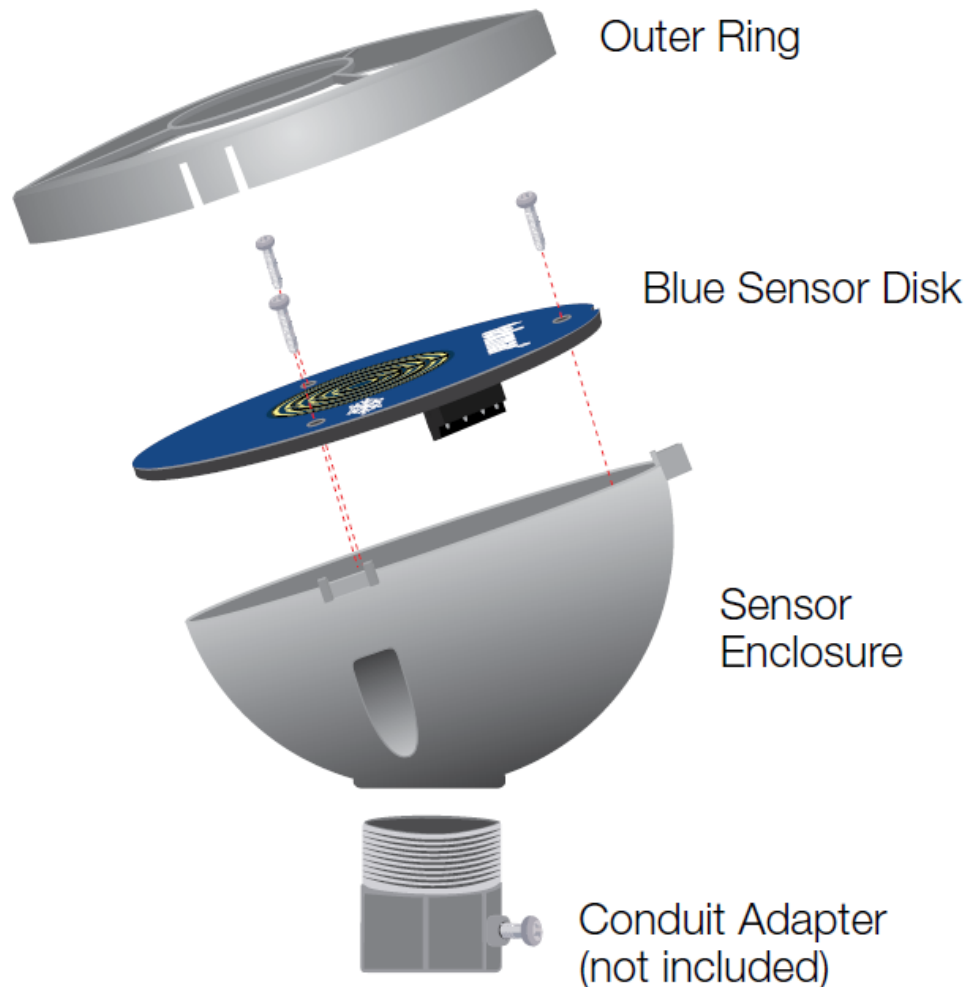
Step 5 – Painting the Sensor

The sensor enclosure is made of an off-white plastic material that is UV stable. The plastic enclosure may be spray painted to match the color of the building. Do not paint the blue sensor disk as this will damage the sensor.

Step 6 – Mounting

The conduit pole can be either PVC plastic or rigid metal. The conduit pole should be mounted plumb using a level.

- When using PVC plastic conduit, a nominal 1/2″ (16mm) PVC male terminal adapter with locknut is recommended.
- When using rigid metal, a nominal 1/2″ (16mm) rigid metal conduit adapter with set screw is recommended.
    1. Pull th4-conductoror wire through the conduit.
    2. Install the sensor body with conduit adapter to the conduit. For PVC conduit use PVC cement adhesive. For rigid metal conduit, tighten the set screw until the conduit adapter is firmly attached to the conduit.
    3. Fish the 4 conductor wire though the sensor body and place on top of the conduit adapter. Point the sensor body towards the prevailing wind direction, if any. Thread the locknut onto the conduit adapter and screw until tight.

Step 7 – Wiring

Remove the wiring terminal block by pulling up from the blue sensor disk. Connect the 4-conductor wire to the yellow (YEL), blue (BLU), red (RED) and black (BLK) wiring terminations. If the installed 4-conductor cable uses a different colour code, then make a note of the wire colour versus the wiring terminal colour names. Push the wiring terminal plug onto the pins of the blue sensor disk. At the Snow Melting Control location, connect the corresponding wires to the yellow, blue, red and black wire terminations.
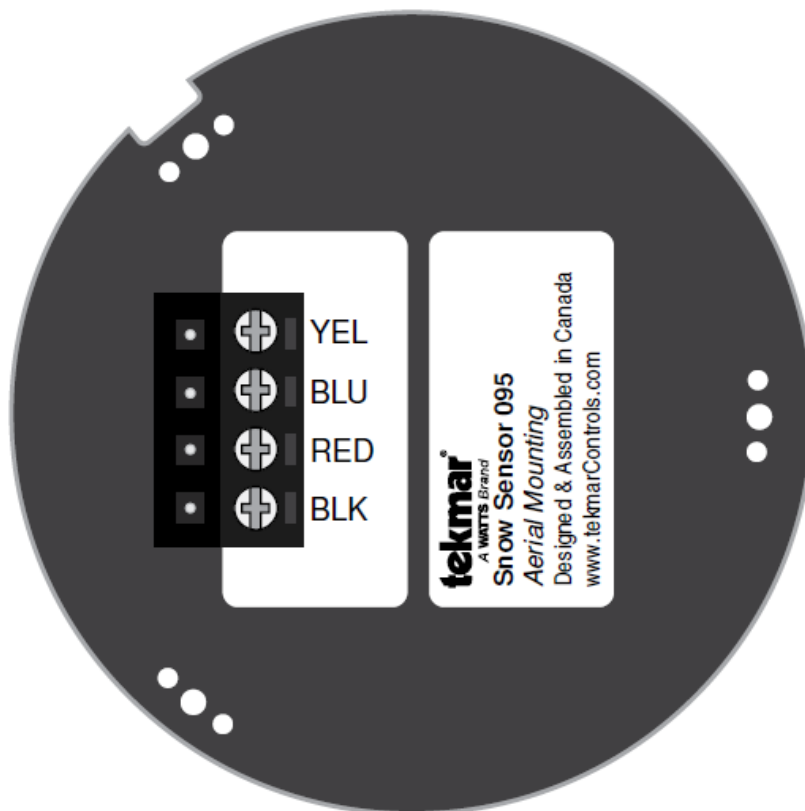
Step 8 – Assembly

1. Align the blue sensor disk Tekmar logo with the highest point of the sensor enclosure body. The blue sensor disk has a notch that ensures the sensor is installed in the correct position.
2. Insert the three screws into the holes and screw them until tight. Do not over-tighten.
3. Align the three notches of the outer ring with the sensor body and push down until each of the three corners has snapped on tight.

Maintenance

The sensor is installed in a harsh environment. Accumulation of dirt on the surface of the sensor may affect snow detection. The sensor should be checked on a periodic basis and, when necessary, cleaned.

1. Remove the outer ring by pulling up on the three catches.
2. A cloth with warm, soapy water can be used to clean any dirt.
3. Rinse with water.
4. Align the three notches of the outer ring with the sensor body and push down until each of the three corners has snapped on tight.

Testing and Troubleshooting

If the Snow Melt Control shows an error message describing a sensor failure, perform the following test procedure:

- The 4 conductor wires at the sensor should be disconnected (unplug the wiring terminal plug).
- Use a good quality electrical testing meter with an ohm scale range of 0 to 2,000,000 Ohms.

Using the ohmmeter and standard testing practices, measure the resistance between:

1. The yellow (YEL) and black (BLK) wiring terminals are used to measure a 10 kΩ sensor and use the Temperature vs. Resistance Table to calculate the approximate temperature reading. Measure the surface temperature of the 095 blue sensor disk

and compare it to the yellow to black temperature readings.

2. Measure the resistance between the blue (BLU) and black (BLK) wiring terminals. When the sensor surface is clean and dry, the reading should be 2,000,000 Ohms. When the sensor surface is wet, it should be between 10,000 and 300,000 Ohms.

3. Measure the resistance between the red (RED) and black (BLK) wiring terminals. This reading should be between 45 to 47 Ohms.

Temperature vs. Resistance Table

Temperature		Resistance	Temperature		Resistance
°F	°C		°F	°C	
-50	-46	490,813	90	32	7,334
-45	-43	405,710	95	35	6,532
-40	-40	336,606	100	38	5,828
-35	-37	280,279	105	41	5,210
-30	-34	234,196	110	43	4,665
-25	-32	196,358	115	46	4,184
-20	-29	165,180	120	49	3,760
-15	-26	139,402	125	52	3,383
-10	-23	118,018	130	54	3,050
-5	-21	100,221	135	57	2,754
0	-18	85,362	140	60	2,490
5	-15	72,918	145	63	2,255
10	-12	62,465	150	66	2,045

15	-9	53,658	155	68	1,857
20	-7	46,218	160	71	1,689
25	-4	39,913	165	74	1,538
30	-1	34,558	170	77	1,403
35	2	29,996	175	79	1,281
40	4	26,099	180	82	1,172
45	7	22,763	185	85	1,073
50	10	19,900	190	88	983
55	13	17,436	195	91	903
60	16	15,311	200	93	829
65	18	13,474	205	96	763
70	21	11,883	210	99	703
75	24	10,501	215	102	648
80	27	9,299	220	104	598
85	29	8,250	225	107	553

Technical Data

Snow Sensor 095 *Aerial Mounting*	
Literature	095_C, 095_D
Packaged weight	0.4 lbs (180 g)
Dimensions	115⁄16″ H x 35⁄32″ O.D. (50 H x 80 O.D. mm)

Enclosure	White PVC plastic, UV stable, NEMA type 1
Operating range	-40 to 122°F (-40 to 50°C)
Compatible equipment	tekmar Snow Melting Control 654, 670, 671, 680, or 681

SPECIAL REQUIREMENTS

This sensor must be used with aTekmarr Snow Melting Control 654, 670, 671, 680, or 681.

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 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 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 labour to remove or transport the defective product.e

- Product, or to reinstall the repaired or replacement Product, all such costs and expenses being subject to the 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 over the Tekmar Limited Warranty are the Purchaser's sole responsibility and obligation. Purchaser shall indemnify and hold Tekmar harmless from and against any 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 after 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 INSTEAD OF ALL OTHER WARRANTIES, EXPRESS OR IMPLIED, WHICH THE GOVERNING LAW ALLOWS PARTIES TO CONTRACTUALLY EXCLUDE, INCLUDING, WITHOUT LIMITATION, IMPLIED WAR-RANTIES OF MERCHANTABILITY AND FITNESS FOR A PARTICULAR PURPOSE, DURABILITY OR DESCRIP-TION 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 LEG-ISLATION; 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 a 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.

CONTACT INFORMATION

- Tel: 800-438-3903
- Fax: 250-984-0815
- tekmarControls.com
- All specifications are subject to change without notice

FAQS

Q: What should I do if I suspect a wiring issue with the sensor?
A: In case of a suspected wiring problem, perform wire tracing to check for splices and any damage to the wires.

Q: How can I ensure the sensor reading accuracy?
A: Properly test the sensor following the provided instructions and verify connections for accurate readings.

Q: Is it safe to test the sensor myself?
A: While testing the sensor, ensure to follow safety precautionsto avoid electric shock or injury. If unsure, seek professional assistance.

Documents / Resources

[WATTS TG-T Sensor Testing](#) [[pdf](#)] User Guide
680, TG-T-SensorTesting, TG-T Sensor Testing, TG-T, Sensor Testing, Testing

References

- [User Manual](#)

🏷 680, Sensor Testing, Testing, TG-T , TG-T Sensor Testing, TG-T-SensorTesting,

📁 WATTS   WATTS

Leave a comment

Your email address will not be published. Required fields are marked *

Comment *

Name

Email

Website

☐ Save my name, email, and website in this browser for the next time I comment.

Post Comment

Search:

e.g. whirlpool wrf535swhz

Search