

Installation, Operation and Maintenance

Wireless Mesh Outdoor Sensor 043

The tekmar Wireless Mesh Outdoor Sensor 043 provides outdoor temperature measurement for mesh compatible boiler controls without exterior wiring. The Wireless Mesh Outdoor Sensor 043 provides maximum accuracy supporting outdoor reset giving ultimate hydronic heating comfort. It is compatible with the following products:

- Smart Boiler Control 294
- Smart Steam Control 289
- Mesh Network Extender 041



 **WARNING**



THINK

SAFETY

FIRST

Please read carefully before proceeding with installation. Your failure to follow any attached instructions or operating parameters may lead to the product's failure.

Keep this Manual for future reference.

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Radio Frequency Statement

FCC Statement

“This equipment has been tested and found to comply with the limits for a Class B digital device, pursuant to part 15 of the FCC Rules. These limits are designed to provide reasonable protection against harmful interference in a residential installation. This equipment generates, uses and can radiate radio frequency energy and, if not installed and used in accordance with the instructions, may cause harmful interference to radio communications. However, there is no guarantee that interference will not occur in a particular installation. If this equipment does cause harmful interference to radio or television reception, which can be determined by turning the equipment off and on, the user is encouraged to try to correct the interference by one or more of the following measures:

- Reorient or relocate the receiving antenna.
- Increase the separation between the equipment and receiver.
- Connect the equipment into an outlet on a circuit different from that to which the receiver is connected.
- Consult the dealer or an experienced radio/TV technician for help.”

Changes or modifications not expressly approved by the Granter could void the user's authority to operate the equipment.

This device complies with part 15 of the FCC Rules. Operation is subject to the following two conditions: (1) This device may not cause harmful interference, and (2) this device must accept any interference received, including interference that may cause undesired operation.

Radiofrequency radiation exposure statement

To ensure compliance with FCC and ISED RF exposure requirements, this device must be installed to provide a minimum of 20cm between the device and people.

Pour garantir la conformité aux exigences d'exposition RF de la FCC et d'ISED Canada, cet appareil doit être installé de manière à laisser un minimum de 20 cm entre l'appareil et les personnes.

IC Statement

“This device contains licence-exempt transmitter(s)/receiver(s) that comply with Innovation, Science and Economic Development Canada's licence-exempt RSS(s). Operation is subject to the following two conditions:

1. This device may not cause interference.
2. This device must accept any interference, including interference that may cause undesired operation of the device.

L'émetteur/récepteur exempt de licence contenu dans le présent appareil est conforme aux CNR d'Innovation, Sciences et Développement économique Canada applicables aux appareils radio exempts de licence. L'exploitation est autorisée aux deux conditions suivantes :

- 1. L'appareil ne doit pas produire de brouillage;
- 2. L'appareil doit accepter tout brouillage radioélectrique subi, même si le brouillage est susceptible d'en compromettre le fonctionnement."

Important Safety Information

It is your responsibility to ensure that this sensor is safely installed according to all applicable codes and standards.

tekmar® is not responsible for damages resulting from improper installation and/or maintenance.



This is a safety-alert symbol. The safety alert symbol is shown alone or used with a signal word (DANGER, WARNING, or CAUTION), a pictorial and/or a safety message to identify hazards. When you see this symbol alone or with a signal word on your equipment or in this manual, be alert to the potential for death or serious personal injury.

⚠ WARNING

- It is the installer's responsibility to ensure that this sensor is safely installed according to all applicable codes and standards.
- This sensor is not intended for use as a primary limit device. Other devices that are intended and certified as safety limits must be placed into the control circuit.

NOTICE

- Do not attempt to service the sensor. There are no user serviceable parts inside the sensor. Attempting to service the sensor voids the warranty.



This pictorial alerts you to electricity, electrocution, and shock hazards.

⚠ WARNING

This symbol identifies hazards which, if not avoided, could result in death or serious injury.

⚠ CAUTION

This symbol identifies hazards which, if not avoided, could result in minor or moderate injury.

NOTICE

This symbol identifies practices, actions, or failure to act which could result in property damage or damage to the equipment.

Installation

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 043 includes:

- 1x Screw/Anchor Mounting Kit
- 2x AA Lithium Batteries

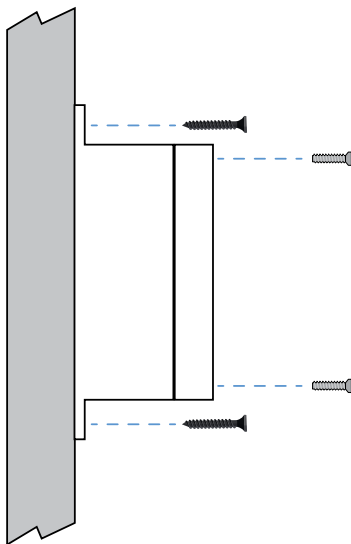
Preparation

Tools Required

- Phillips Screwdriver

Mounting

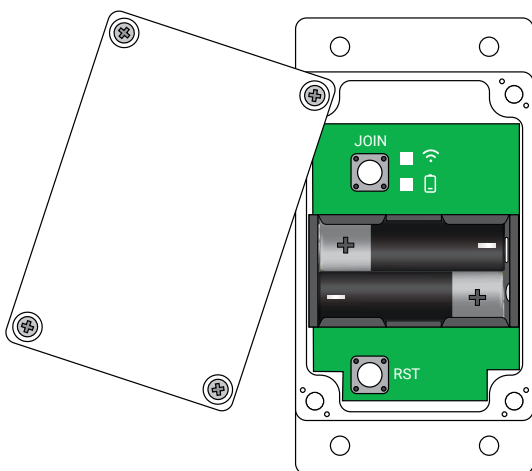
- Install it on a north-facing outside wall, away from direct sunlight.
- To prevent heat from the wall affecting readings, you may need to add insulation behind the sensor.
- Keep it away from heat sources like vents or open windows.
- Mount it above ground level to avoid damage or tampering.
- Don't place it on metal or other conductive surfaces.



Commissioning

An Internet connection is required to commission the sensors to your system control.

- Open the Nexa app.
- Click on equipment and find your System Control. If your device is not registered, follow the directions in the control's IOM to register. You may scan the QR Code to start the registration process
- Click on “Connected Devices”
- Click on “+ Add”
- Scan the QR code on your device. Add in a name for the device and select a location for the device.
- When prompted press the “join button” on the device.
- You will receive a message the device has joined the mesh network



To reset the network to try to join again you must press the RST button. Press and hold the button for 20 seconds.

LED Operation

LED Patterns

Call customer service if you need assistance with technical details.

LED Pattern	Illustration	Description
On		LED on constantly
Off		LED off constantly
Indicator		LED on for 3s
Flashing		LED flashing every 200 ms

Commissioning

	Description
	Attempting to connect to Mesh Network
	Successful connected to Mesh Network
	Failed to connect to the Mesh Network

Reset

	Description
	The Device has been removed and is not connected to a Mesh Network

Troubleshooting

Signal Strength

On The Nexa Platform you can view all the devices. Each device will show a signal strength.

BOILERS & PUMPS (6)		SENSORS (6)		EXTENDERS (5)			
Name	Location	Type	Last Reading Value	Status	Signal Strength	Battery Level	
Apartment 1B	Main Floor	 Temperature Se	69.2°F	 Operational	 Excellent	 100%	...
Apartment 2A	2nd Floor	 Temperature Se	70.1°F	 Operational	 Excellent	 100%	...
Apartment 3C	3rd Floor	 Temperature Se	68.7°F	 Operational	 Excellent	 100%	...
Apartment 4B	4th Floor	 Temperature Se	71.1°F	 Operational	 Excellent	 100%	...
Apartment 5D	5th Floor	 Temperature Se	69.5°F	 Operational	 Excellent	 100%	...
Outdoor Sensor	Outside	 Temperature Se	69.2°F	 Operational	 Excellent	 100%	...

You may also press the join button to get the signal strength.

	Description
	Excellent
	Fair
	Poor

If you cannot connect the senor you may need to add additional tekmar Mesh Network Extender 041s to increase the range of your mesh network. Scan the QR code to view more information on the Commissioning and Installation Guide for how to build the network.



Maintenance

Replacement Batteries

Battery status can be viewed on the Connected Devices>Sensor tab of your Boiler Control equipment page on Nexa.

For best performance use AA lithium batteries.

Technical Data

CHARACTERISTIC	VALUE
Literature	IOM-T-043, ES-T-043, Mesh-T-Guide
Standards	FCC, IC, THREAD Certified Product
Enclosure	NEMA 4X
Dimensions	5 ³ / ₁₆ " H x 2 ³ / ₄ " W x 2" D (132 mm x 70 mm x 50 mm)
Operating Range	-40°F to 140°F (-40°C to 60°C)
Battery	2x Lithium AA
Packaged Weight	0.5 lbs (230 g)

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 & acknowledges that it has read & 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 & materials if the Product is installed & used in compliance with tekmar's instructions, ordinary wear & 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 & labor provided by tekmar to repair defects in materials &/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, & such repair, exchange or credit shall be the sole remedy available from tekmar, &, 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 & expenses being subject to Purchaser's agreement & 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 & obligation. Purchaser shall indemnify & hold tekmar harmless from & against any & all claims, liabilities & 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 &/or the local codes & 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 & FITNESS FOR A PARTICULAR PURPOSE, DURABILITY OR DESCRIPTION OF THE PRODUCT, ITS NON-INFRINGEMENT OF ANY RELEVANT PATENTS OR TRADEMARKS, & 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 & other contact information regarding the appropriate Representative.

