

# Installation, Operation and Maintenance

## Mesh Network Extender 041

The tekmar Mesh Network Extender 041 adds signal strength and redundancy to wireless mesh networks. It is used with wireless mesh sensors to build a wireless mesh network to support Indoor Temperature Feedback on select tekmar boiler controllers.

It is compatible with the following products:

- Smart Boiler Control 294
- Smart Steam Control 289
- Wireless Mesh Indoor Sensor 042
- Wireless Mesh Outdoor Sensor 043



works with **nexa**

### ⚠ WARNING



**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 Grantor 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 device 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 device is safely installed according to all applicable codes and standards.

### **NOTICE**

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

As a wireless networking device, a more central and unobstructed location will provide the best possible range and performance to your mesh network.

### 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 041 includes:

- 1 of Mesh Network Extender 041
- 1 of Screw/Anchor Mounting Kit
- 1 of Backplate
- 1 of USB-C Power adapter

### Preparation

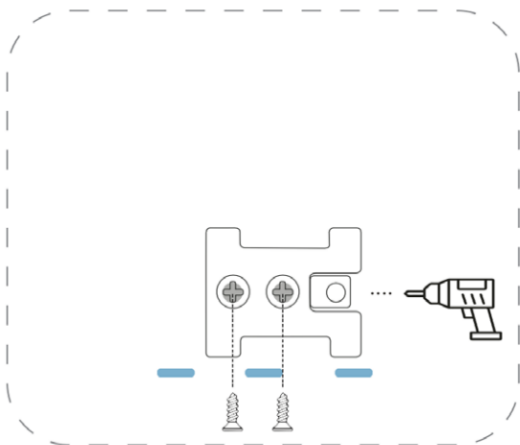
#### Tools Required

- Phillips Screwdriver or bit
- Power Drill (Optional)

### Mounting

- Do not install in a cabinet or metal container.
- Avoid installing behind walls or other obstructions which would interfere with line of sight to other wireless mesh devices on your network.
- Avoid installing low to the ground. This limits wireless signal range.
- Install in a central location which offers best coverage for devices in the premise.
- Do not install on rough or uneven surfaces.

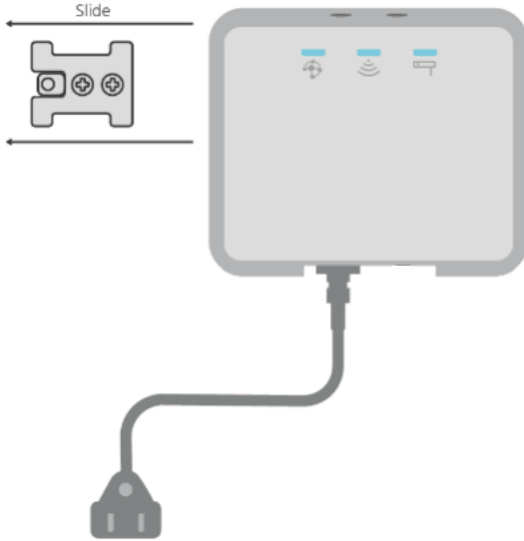
When choosing a location for the mounting bracket, ensure final placement of the device is not obstructed. Please ensure the mounting bracket is installed with enough clearance for the 041 to slide onto the mounting bracket. Final placement of 041 in respect to the mounting bracket can be seen below.



## NOTICE

Do not overtighten screws. Screws must be flush with the mounting bracket. Use # 4 Flat Head screws only. The mounting bracket should be level and installed flush to the wall or ceiling surface material.

Once the mounting bracket is correctly installed, and the power cable connected to the 041, slide the 041 onto the bracket from left to right to mount.

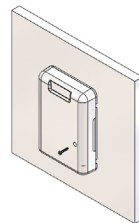
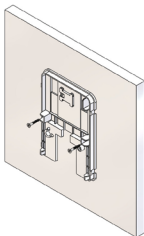


## Optional Security Cover (Sold Separately)

There is an optional (sold separately) security cover for the Mesh Network Extender. Security Cover 041C protects the extender from tampering and comes with a low profile 5V power adapter.


The Security Cover will fit around the extender. It is designed to be installed over top of an electrical outlet. The power adapter uses the top outlet, while the bottom outlet remains available for use.

To mount, fasten to the wall. The cover will be secured by the screw on the outer cover.



## Commissioning

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





- Open the Nexa app.
- Click on the equipment tab 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  button on the device.
- You will receive a message the device has joined the mesh network.











To reset the 041, press and hold the  button. Press and hold the button for 20 seconds.

## LED Operation

### LED Patterns

LED Pattern	Illustration	Description
Green On		LED on constantly
Off		LED off constantly
Green Flashing		LED on for 2 seconds
Green Fast Flashing		LED flashing every 1 second











## Commissioning

 Status	Middle LED	 Mesh
Power On - Starting Up Green Fast Flashing 	Not used on 041	Not Joined to Wireless Network Yellow Flashing 
Power On Green On 		Attempting to Join Wireless Network Green Flashing 
		Joined to Wireless Mesh Network Green On 
		Joined to wireless network, but disconnected from boiler control Blue On 

## Troubleshooting

### Signal Quality

On the Nexa app you can view all the devices. Each device will show a signal quality to the next available wireless mesh extender or the system control.

BOILERS & PUMPS (6)		SENSORS (6)		EXTENDERS (5)	
Name	Location	Type	Status	Signal Strength	
1st Floor	Main Floor	 Hub	<span style="color: green;">●</span> Operational	 Excellent	...
4th Floor	4th Floor	 Hub	<span style="color: green;">●</span> Operational	 Excellent	...
Boiler Room	Mechanical Room	 Hub	<span style="color: green;">●</span> Operational	 Excellent	...
Floor 2	2nd Floor	 Hub	<span style="color: green;">●</span> Operational	 Excellent	...
Floor 3	3rd Floor	 Hub	<span style="color: green;">●</span> Operational	 Excellent	...

If you cannot connect the sensor 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.



### Locating an Extender

On the Nexa app, view the extender details to find the Device ID. The corresponding Device ID is printed on the label next to the USB-C plug. This can be used to confirm the Nexa name with the physical device.

## Maintenance

### General Maintenance

The mesh extender does not require specific maintenance and cleaning procedures. Check that the electrical supply is in good condition.

### Technical Data

Call customer service if you need assistance with technical details.

CHARACTERISTIC	VALUE
Literature	IOM-T-041, ES-T-041, Mesh-T-Guide
Standards	FCC, IC, THREAD Certified Product
Enclosure	NEMA 1
Dimensions	3" H x 3-5/8 inches W x 1" D (77 mm x 92 mm x 25 mm)
Operating Range	32°F to 104°F (0°C to 40°C)
Power adapter	120 Vac +/-10%, 5W
Packaged Weight	1.0 lbs (450 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 and acknowledges that it has read and understands same. The online warranty for this product is located on Watts website (<https://www.watts.com/resources/warranty-information>) and in the event that the terms or conditions of this manual conflict with the online warranty, the terms and conditions of the online warranty shall control.*

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 either (a) the cost of parts and labor provided by tekmar to repair defects in materials and workmanship of the defective product; or (b) to the exchange of the defective product for a warranty replacement product; or (c) 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, 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, punitive, 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.



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All specifications are subject to change without notice

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[tekmarControls.com](https://www.watts.com)

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