

Installation Instructions

Original Instructions

1445 Wireless Condition Monitoring

Catalog Numbers 1445-SENOW, 1445-RSC-1, 1445-RSC-3, 1445-RSC-6, 1445-SSC-3, 1445-TEGH, 1445-IPVH, 1445-OPVH

Overview

Installation of 1445 Wireless Condition Monitoring devices requires the following components.

Table 1 - Components



Callout	Cat. No.	Description
A	1445-SENOW	1445 MVM2 Sensor Assembly
B	1445-TEGH	1445 Thermoelectric Generator (TEG) Harvester
C	1445-RSC-1	Dual TS USB-C Cable, 90° to 180° connections [0.3 m (1 ft)]
	1445-RSC-3	Dual TS USB-C Cable, 90° to 180° connections [0.6 m (3 ft)]
	1445-RSC-6	Dual TS USB-C Cable, 90° to 180° connections [1.83 m (6 ft)]
	1445-SSC-3	Dual TS USB-C Cable, straight connections [0.6 m (3 ft)]
D	1445-IPVH	1445 Indoor Photovoltaic (PV) Harvester ⁽¹⁾
E	1445-OPVH	1445 Outdoor Photovoltaic (PV) Harvester ⁽¹⁾

(1) Can be the primary harvester or daisy chained with cat. no. 1445-TEGH harvester.

IMPORTANT Use only cables listed in [Table 1](#) with 1445 wireless condition monitoring devices. Do not plug the cables into a USB-C-style charger or laptop; sensor assemblies cannot charge from a USB-C charger.

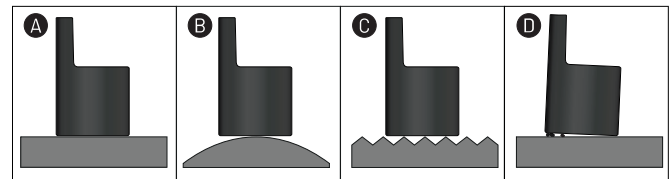
Installation

The frequency performance of the sensor assembly is highly dependent on the method of installation.

Position the sensor assembly closest to the measurement point, ideally on a hard, flat surface. Depending on the machine surface, you can either mount the sensor assembly with the magnetic base or epoxy.

IMPORTANT The sensor assembly must not rock when placed on the surface of the machine. The sensor assembly cannot produce useful data.

Figure 1 - Mounting Surface Options



Magnetic mounting (see [Sensor Assembly Attachment - Magnetic Mount](#)) is the fastest, easiest way to mount the sensor assembly to the surface of a machine if:

- The machine surface is a ferromagnetic material.
- There is a hard, flat area **A** of approximately 50.8 mm x 50.8 mm (2 in. x 2 in.) to place the sensor assembly.

IMPORTANT Do not install with the magnetic base on a curved **B** or uneven **C** surface, or over particulate **D**.

Epoxy mounting (see [Sensor Assembly Attachment - Epoxy Mount on page 2](#)) is best if:

- The machine surface is a non-ferromagnetic material.
- The machine surface is uneven **C** (for example, cast steel) and causes the sensor assembly to rock if mounted with the magnetic base.
- The machined casing is finned **C** for cooling.

IMPORTANT Do not install over particulate **D**.

Sensor Assembly Attachment - Magnetic Mount

Tightly secure the sensor assembly only on a hard, flat surface.

- Select a location on the machine to monitor at either the inboard or outboard end of the unit. Orientation can be vertical or horizontal.
- Place the sensor assembly on the machine with the antenna oriented perpendicular to the axis of rotation of the machine. If necessary, reposition the sensor assembly to secure tightly with no rocking motion.
- Gently wiggle the antenna of the sensor assembly until you achieve a positive connection between the sensor assembly and the machine.

Sensor Assembly Attachment - Epoxy Mount

Rockwell Automation recommends Loctite AA 330 No-Mix Adhesive to mount the sensor assembly (when magnetic mounting is not possible), TEG harvester, and PV harvester. See the Loctite specifications and MSDS sheets for more information.

1. Select a location on the machine to monitor at either the inboard or outboard end of the unit. Orientation can be vertical or horizontal.
2. Clean and dry surfaces of any heavy grease or oil.
3. Remove the rubber bottom from the sensor assembly.



4. Hold the activator can about 25...50 mm (1...2 in.) from the sensor assembly mount location and coat the surface with Loctite AA 330 activator.
5. Apply Loctite AA 330 adhesive to the base of the sensor assembly to form two parallel beads.
6. Place the sensor assembly on the machine with the antenna oriented perpendicular to the axis of rotation of the machine.
7. Press the sensor assembly to the machine firmly for 60 seconds.

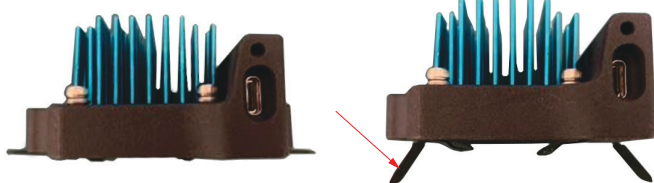


Handling strength occurs after 1...2 minutes. Full cure occurs after 4...24 hours, depending on environmental conditions. Larger gaps between mount surfaces increase cure times.

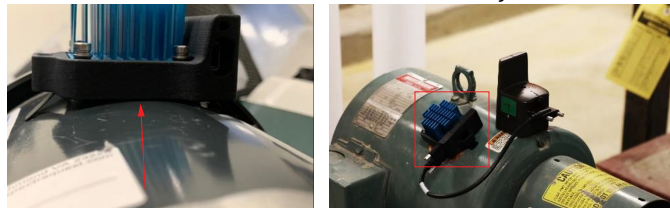
TEG Harvester Attachment

Once the sensor assembly is attached, connect and dress the harvesters and cables for the 1445 power train.

1. Identify the attachment location. Choose the hottest location on the machine or the motor that drives the machine.
2. To provide stability along the curved surface of the machine, bend the metal tabs down on the underside of the TEG harvester.



3. Secure the magnetic TEG harvester to the machine so the contact point is centered to maximize heat transfer to the harvesting source.



PV Harvester Attachment

If the thermal harvesting source is insufficient, a PV harvester is available as an alternative or supplemental harvesting source. Both the indoor and outdoor PV harvesters connect with the same custom USB-C cables.

1. Connect the sensor assembly to PV harvester.
If you are using a TEG harvester, for example in a marginal ambient energy environment where neither harvester can power the sensor alone, connect the sensor assembly to the TEG harvester, then connect the TEG harvester to the PV harvester (see [Table 2](#)).
2. Use Loctite AA 330 adhesive to secure the PV Harvester to the surface of the machine.
3. Angle the PV harvester to maximize direct light to the PV cells once secured.

Cable Attachments

The USB-C cables are custom-keyed to achieve proper connection.

Table 2 - USB-C Cables and Components Orientation



Callout	Description
A	Use cable Cat. No. 1445-RSC-x only.
B	90° connection. Symbols must face up.
C	Straight connections. Symbols on cable plugs must match the TEG harvester ports.
B	Only use cable Cat. No. 1445-SSC-3 between harvesters.
E	Straight connection to PV harvester. Sun symbol must face up.



For best results, use right-angle connectors to connect cat. no. 1445-SENOW sensor assemblies and straight connectors to connect harvesters. Only use cat. no. 1445-SSC-3 between harvesters.

Additional Resources

These documents contain additional information concerning related products from Rockwell Automation.

Resource	Description
1445 Gateway Installation Instructions, publication 1445-IN002	Describes how to install the 1445 gateway.
1445 Wireless Condition Monitoring System User Manual, publication 1445-UM001	Describes how to configure and use the 1445 wireless condition monitoring system.
Safety Guidelines for the Application, Installation, and Maintenance of Solid-state Control, publication SGI-1.1	Designed to harmonize with NEMA Standards Publication No. ICS 1.1-1987 and provides general guidelines for the application, installation, and maintenance of solid-state control in the form of individual devices or packaged assemblies that incorporate solid-state components.
Industrial Automation Wiring and Grounding Guidelines, publication 1770-4.1	Provides general guidelines for installing a Rockwell Automation industrial system.
Product Certifications website, rok.auto/certifications .	Provides declarations of conformity, certificates, and other certification details.

You can view or download publications at [rok.auto/literature](#).

Rockwell Automation Support

Use these resources to access support information.

Technical Support Center	Find help with how-to videos, FAQs, chat, user forums, Knowledgebase, and product notification updates.	rok.auto/support
Local Technical Support Phone Numbers	Locate the telephone number for your country.	rok.auto/phonesupport
Technical Documentation Center	Quickly access and download technical specifications, installation instructions, and user manuals.	rok.auto/techdocs
Literature Library	Find installation instructions, manuals, brochures, and technical data publications.	rok.auto/literature
Product Compatibility and Download Center (PCDC)	Download firmware, associated files (such as AOP, EDS, and DTM), and access product release notes.	rok.auto/pcdc

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Waste Electrical and Electronic Equipment (WEEE)



At the end of life, this equipment should be collected separately from any unsorted municipal waste.

Rockwell Automation maintains current product environmental compliance information on its website at rok.auto/pec.

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