

Z227E

Cable Reel for 4-Wire Measurement

3-447-077-03

2/11.20

Safety Instructions

Observe this supplement, in particular all included safety information, in order to protect yourself and others from injury, and to prevent damage to the device.

- Carefully and completely read and adhere to this supplement.
- Carefully and completely read and adhere to the product documentation for the utilized measuring instrument.
- Carefully and completely read and adhere to the product documentation for all utilized accessories (e.g. Kelvin probes).
- Tests may only be performed by a qualified electrician, or under the supervision and direction of a qualified electrician. The user must be instructed by a qualified electrician concerning performance and evaluation of the tests.
- Wear suitable and appropriate personal protective equipment (PPE) whenever working with the instrument.
- The Z227E cable reel may only be used as long as it's in good working order. Inspect the cable reel before use. Pay particular attention to damage, interrupted insulation or kinked cables.
- Only use the Z227E cable reel in combination with the METRAHIT IM XTRA (M273A/D/W) or a technically comparable measuring instrument.
- Only use the Z227E cable reel in compliance with the specified technical data and under the specified conditions. In particular observe the maximum permissible measuring voltage of 30 V_{AC} / 60 V_{DC}

- Observe the technical data and conditions of use for the METRAHIT IM XTRA (M273A/D/W) or the utilized, technically comparable measuring instrument. All combined conditions must be fulfilled.
- Do not use the Z227E cable reel in potentially explosive atmospheres.
- Fully unreel the cable before starting a measurement. Never perform a measurement with the cable rolled up.
- Observe and comply with all safety regulations which are applicable for your work environment.

Meanings of Symbols on the Device



Warning concerning a point of danger (attention, observe documentation!)



European conformity marking



The device may not be disposed of with household trash.

Intended Use / Use for Intended Purpose

The Z227E cable reel includes a 2-pole extension cable with a length of 100 meters. It's used for 4-wire measurements at large objects performed with the METRAHIT IM XTRA (M273A/D/W) or any other technically comparable measuring instrument.

Applications include bonding tests for wind power turbine blades, lightning protection systems, lattice towers etc.

Use for Other than Intended Purpose

Use of the product for any purposes other than those described in this supplement, or in the operating instructions for the associated measuring instrument, is contrary to use for intended purpose.

Liability and Guarantee

Gossen Metrawatt GmbH assumes no liability for property damage, personal injury or consequential damage resulting from improper or incorrect use of the product, in particular due to failure to observe the product documentation. Furthermore, all guarantee claims are rendered null and void in such cases.

Nor does Gossen Metrawatt GmbH assume any liability for data loss.

Opening the Device / Repairs

The device may only be opened by authorized, trained personnel in order to ensure flawless, safe operation and to assure that the guarantee isn't rendered null and void. Even original replacement parts may only be installed by authorized, trained personnel.

Unauthorized modifications to the device are prohibited.

If it can be ascertained that the device has been opened by unauthorized personnel, no guarantee claims can be honored by the manufacturer with regard to personal safety, measuring accuracy, compliance with applicable safety measures or any consequential damages.

Technical Data

Cable length:	100 m +1.5 % tolerance
Number of wires:	2
Connection:	2 sockets (4 mm) 2 plugs (4 mm)
Overall resistance:	< 5 Ω
Max. permissible measuring voltage:	30 V _{AC} / 60 V _{DC}
Operating temperature:	+5 ... +50 °C
Storage temperature:	-20 ... +60 °C
Relative atmospheric humidity:	40 to 75% No condensation allowed
Elevation:	Max. 2000 m
Protection:	IP2X
Measuring category:	O

Scope of Delivery

- 1 Cable reel (Z227E)
- 2 Measurement cable adapters (4 mm socket to 4 mm socket)
- 1 Supplement (this document)

Required but not included:

- METRAHIT IM XTRA (M273A/D/W) or technically comparable measuring instrument
- Kelvin measuring device (Kelvin probes or clips, or comparable equipment)
- Measurement cables for connecting the measuring instrument to the cable reel

Applications

The Z227E cable reel can be used in different ways as an extension cable. The primary difference is whether or not a measuring instrument is located at the end of the extension in direct proximity to the inspector.

Measuring Instrument in Direct Proximity to the Inspector (without measurement cable adapters)

The measuring instrument, including the part of the Kelvin measuring device connected to it, is in direct proximity to the inspector. The cable reel, and the second part of the Kelvin measuring device which is connected to it, are located at a distance from the measuring site.

Example: In the case of measurements performed on aircraft, the measuring instrument and the part of the Kelvin measuring device connected to it are in direct proximity to the inspector. The inspector operates the measuring instrument while working directly next to the wing. The cable reel, and the second part of the Kelvin probes which is connected to it, are located at a the fuselage.

- ✓ Kelvin measuring device (Kelvin probes or clips, or comparable equipment)
- 1. Fully unreel the measurement cables from the cable reel.
Grasp the cable reel's black wheel to this end and turn it until the measurement cables have been unreeled.
- 2. Connect one part of the Kelvin measuring device to the sockets on the cable reel.
- 3. Connect the unreeled measurement cables to the measuring instrument.
- 4. Connect the other part of the Kelvin measuring device to the sockets on the measuring instrument.
- 5. Execute the measurement in accordance with the product documentation for the measuring instrument and the utilized accessories.

After measurement has been completed:

6. Switch off the measuring instrument and the Kelvin measuring device.
7. Remove the Kelvin measuring device from the measuring instrument.

8. Remove the Kelvin measuring device from the cable reel.
9. Disconnect the cable reel's measurement cables from the measuring instrument.
10. Fully roll up the measurement cables onto the cable reel.
Grasp the cable reel's black wheel to this end and turn it until the measurement cable has been rolled up.

Measuring Instrument at Remote Location (with measurement cable adapters)

The cable reel and the measuring instrument connected to it (including the part of the Kelvin measuring device connected to the measuring instrument) are located at a distance from the measuring site. Only the second part of the Kelvin measuring device connected to the extension cable is in direct proximity to the inspector.

Example: In the case of measurements performed on wind power turbines, the measuring instrument and the cable reel are located in the nacelle. One part of the Kelvin probes is connected to the measurement cables and the rappelling inspector works with it on the wind power turbine blade. A colleague operates the measuring instrument in the nacelle.

- ✓ Kelvin measuring device (Kelvin probes or clips, or comparable equipment)
- ✓ Measurement cables for connecting the measuring instrument to the cable reel
- ✓ Measurement cable adapters
- 1. Fully unreel the measurement cables from the cable reel.
Grasp the cable reel's black wheel to this end and turn it until the measurement cables have been unreeled.
- 2. Connect the measurement cable adapters to the unreeled measurement cables.
- 3. Connect one part of the Kelvin measuring device to the measurement cable adapters.
- 4. With the help of the measurement cables, connect the measuring instrument to the sockets in the cable reel.

5. Connect the other part of the Kelvin measuring device to the sockets on the measuring instrument.
6. Execute the measurement in accordance with the product documentation for the measuring instrument and the utilized accessories.

After measurement has been completed:

7. Switch off the measuring instrument and the Kelvin measuring device.
8. Remove the Kelvin measuring device from the measurement cable adapters.
9. Remove the measurement cable adapters from the cable reel's measurement cables.
10. Disconnect the measuring instrument from the cable reel.
11. Remove the Kelvin measuring device from the measuring instrument.
12. Fully roll up the measurement cables onto the cable reel.
Grasp the cable reel's black wheel to this end and turn it until the measurement cable has been rolled up.

© Gossen Metrawatt GmbH
Prepared in Germany • Subject to change, errors excepted • PDF version available on the Internet

All trademarks, registered trademarks, logos, product names and company names are the property of their respective owners.