



INSTALLATION GUIDE



LR-MS-SDI12



The LR-MS-SDI12 module acquires measurements from capacitive multi-level probes. This battery-powered sensor communicates using the SDI-12 serial protocol. Data transmission is achieved remotely via LoRa™ through an LR-MB or an LR-BST communication gateway. The module can also be connected and used via Bluetooth®.

GUIDELINES AND IMPORTANT REMINDERS

- Before installing and using this product, please read the entire user manual carefully. Failure to follow these instructions may compromise the protection provided by the device.
- The battery can be replaced but not recharged. Replacing the battery with any type other than a 9V 6AM6 or 6LR61 alkaline battery may damage the product.
- Regarding the cleaning of the module: use a soft, dry cloth, or one slightly dampened with water if necessary. Avoid solvents or harsh chemicals that could damage the components.
- In case of failure, the manufacturer's liability is limited to repair or replacement of the product within its legal warranty period. Maintenance operations are the full responsibility of the user. Any damage to the product caused by mishandling cannot be attributed to equipment malfunction.

1 Downloading the application

1. On your smartphone and/or tablet, download and launch the **MySOLEM** application.



2. Once installed, activate the Bluetooth® on your smartphone and/or tablet.

2 Bluetooth® pairing

An LR-MS-SDI12 can be installed in different locations depending on your needs and the probes to be connected:

- in a technical room, you can fix it on a flat surface using two screws. The screw head size must be between 6.5 and 8 mm, and the external thread diameter must match the anchors used.
- in a manhole, for example, if you want to connect a tensiometer, it should be placed close to the ground.
- on a pole outdoors.



Warning: Your module communicates via LoRa™ radio, so make sure to keep it away from any electromagnetic field sources and avoid any obstacles between your module and the relay.

1. Unscrew the cap of the **LR-MS-SDI12**. Connect a 9V battery, type 6LR61 or 6AM6 and screw the cap back on.
2. Launch the **MySOLEM** application from your smartphone and/or tablet.
3. Ensure that the Bluetooth® on your smartphone and/or tablet is enabled.
4. To add a **LR-MS-SDI12**, in the **Controllers** tab:
 - if you do not have a module installed, click on **Add a controller**.
 - if you have one or more modules installed, tap on the "+" button.
5. Click on **LR-MS-SDI12**.
6. Select your LR-MS-SDI12 from the list of available products by identifying it by its **Default Name** (found on the label on the back of the product).

③ Pairing with an LR-BST or an LR-MB

To pair an LR-MB, start directly at step 5. For an LR-BST follow the next steps:

1. Place your LR-MS-SDI12 near the LR-BST (<10m).
2. On the **Controllers** tab, select your LR-BST.
3. Click on the icon ⚙️ at the top right of the page.
4. Click on **Pairing mode** at the bottom of the page.
5. Go to the **Controllers** page, and in your list of installed modules, select your **LR-MS-SDI12**.
6. Click on the icon ⚙️ at the top right corner of the page to access the product information page.
7. Click on **Remotes Access** at the bottom of the page.
8. Select the **LR-BST** or the **LR-MB** that you want to use.
9. To confirm the operation, click the icon ➤.

④ LoRa™ connection test

Once your network is set up: the LR-MB or LR-BST installed and connected to the Wi-Fi network, and your modules paired with the communication gateway, you can test the connection between your gateway and your module.

1. Go back to the **Controllers** tab and click on the installed LR-MS-SDI12.
2. Click on **Remote access** at the bottom of the page.
3. To test the connection, click on the icon 📶 in the middle of the page.

Note:

- The message “**Connection established**” indicates that the connection is reliable.
- The message “**No connection established**” means that you need to move your **LR-MS-SDI12** closer to the **LR-MB or LR-BST**, or vice versa.

LoRa™ CONNECTION STATUS



The last connection occurred **less than 5 minutes ago**.



The last connection occurred **within the last 5 to 10 minutes**.



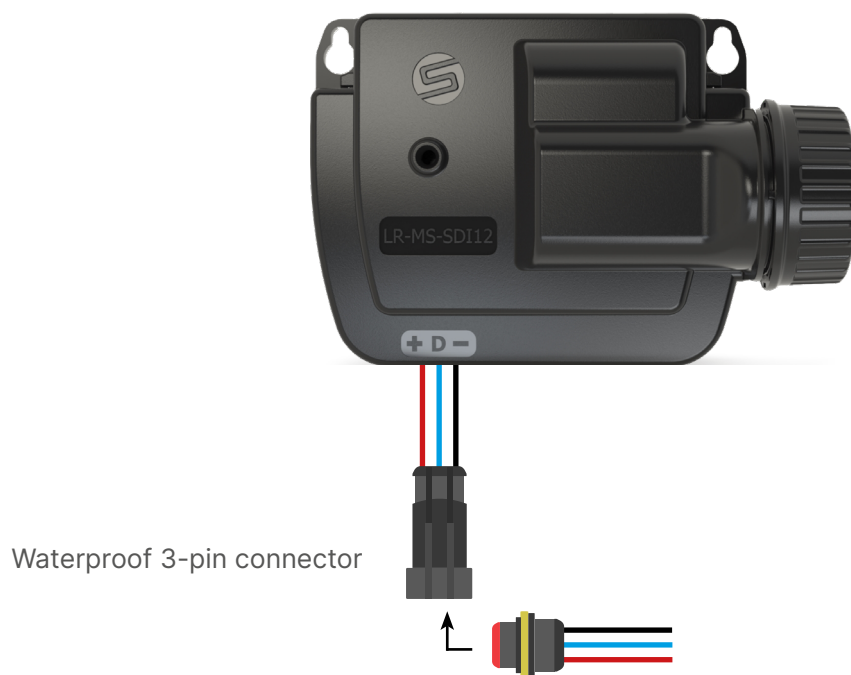
The last connection occurred **more than 10 minutes ago**. Changes not transmitted.



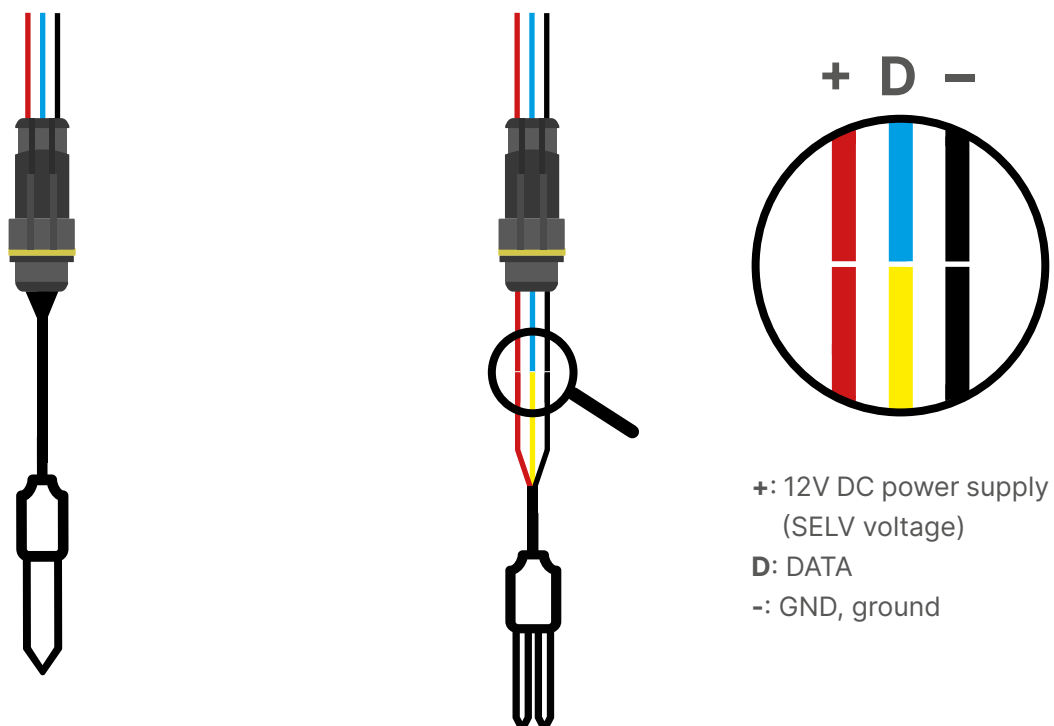
The connection has never been established.

Click on the icon to get a message about the LoRa™ connection status.

MODULE OPERATION



Connect the probe to the waterproof 3-pin connector if it has the same type of connector. Otherwise, connect it to the three wires (+, Data, -) using the three provided waterproof quick connectors.



5 Adding a sensor

Once the product is paired with your application, you can add a sensor:

1. In the tab **Controllers**, click on your product.
2. Click on **Add a sensor**.
3. Select the brand of your probe based on your needs. Below, you will find the probes compatible with the module along with the data they provide.
4. Follow the procedure for installing the selected probe.

SENSOR COMPATIBILITY

Several probes are compatible with the LR-MS-SDI12 and its communication system, providing various measurements:

- **Hydrascout 5L**: soil moisture and temperature.
- **Sentek Drill & Drop** in versions **3L**, **6L**, **9L**, and **12L**: conductivity, moisture, and temperature.
- **Decagon 5TM**: volumetric water content and soil temperature.
- **Decagon 5TE**: volumetric water content, soil temperature, and conductivity.
- **Campbell CS650**: electrical conductivity, relative dielectric permittivity, volumetric water content, and soil temperature.

Each probe must be connected to the LR-MS-SDI12 using three cables corresponding to the module's cables: power, data, and ground.

This list of probes is non-exhaustive and can be expanded. New types of probes can be integrated upon specific request.

For more information, please contact our support team at: support@solem-irrigation.com.

TECHNICAL SPECIFICATIONS

USAGE

Outdoor use

Maximum Altitude: 2 000 meters / 1.2 miles

Humidity tolerance: 100%, IP68 rated

Operating temperature: -20°C to 50°C / -4°F to 122°F

Warranty: 2 years

Pollution degree: 2

DIMENSIONS

Width: 14 cm / 5.5 inches

Height: 5,5 cm / 2.2 inches

Depth: 9 cm / 3.5 inches

POWER SUPPLY

Alkaline battery 9V type 6AM6 or 6LR61

OPERATION

Bluetooth® Smart 4.0 Low Energy [2400-2483.5]Mhz

LoRa™ Radio Communication [868-868.6]Mhz, 25mW

GLOSSARY



This symbol indicates that the product uses Bluetooth® radio technology.



This symbol indicates that the product uses LoRa™ radio technology.



The “CE” symbol indicates that this device complies with European standards for safety, health, environmental protection, and user protection. Devices with the “CE” symbol are intended for sale in Europe.



This symbol indicates that these types of electrical and electronic devices must be disposed of separately in European countries. Do not dispose of this device with your household waste. Please use the collection and recycling points available in your country when you no longer need this device.



This symbol indicates that the device operates on direct current (DC), providing stable and unidirectional electrical power suitable for equipment sensitive to voltage fluctuations.



This symbol indicates that it is necessary to carefully read the documentation related to this product before use.

IP68

This symbol indicates that the product is fully protected against dust and can withstand continuous immersion in water at a depth of one meter for up to one hour.

Brand: Solem Electronique. Model or Identification Number: LR-MS-SDI12.

Warning: Products compliant with NOM-208 must include the following statement:

1. This equipment or device must not cause harmful interference, and
2. This equipment must accept any interference, including interference that may cause undesirable operation.

Contact

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