SOLEM

QUICK INSTALL GUIDE

LR-IP-ECO

+ Turbine

Bluetooth® LoRa

EN

The LR-IP-ECO is a battery-powered, waterproof irrigation controller. It is equipped with a turbine that recharges an internal NiMH battery in order to preserve the life of the 9V battery. Thanks to the turbine, the 9V battery life can last for several years, depending on the configuration of your installation. In addition to this feature, once configured, the LR-IP-ECO and its turbine can calculate the volume of water circulating in its network, allowing it to be both a smart programmer and a water meter. The LR-IP-ECO + Turbine uses Bluetooth technology to enable connection and management via the MySOLEM application from just a few meters away. It also features LoRa technology, enabling it to be remotely controlled by adding a Wi-Fi or 4G gateway (LR-MB or LR-BST).

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1 Operation with Bluetooth

Download the MySOLEM app on your smartphone or tablet from the **App Store** or **Google Play.**

CREATING AN ACCOUNT

To benefit from all the advantages of LR-IP-ECO + Turbine, it is necessary to create a MySOLEM account.

1. To log in or create an account, open the MySOLEM application on your smartphone and/or tablet.
2. Go to the «My account» tab by pressing the ⚙ icon.
3. Follow the steps described on the application.

PAIRING

1. Unscrew the LR-IP-ECO cap.
2. Insert a 9V 6LR61 or 6AM6 battery and screw the cap back on.
3. Launch the MySOLEM application from your smartphone and/or tablet.
4. Press the «Add a controller» button or the «+» button.
5. Choose the LR-IP-ECO from the list of available controllers.

6 (Optional) Define a name and security key for your controller and press the «Validate» button.

7. Connect the turbine to the LR-IP-ECO, select the generator in the application, then follow the final steps to complete the association of your LR-IP-ECO.

Note :

- To identify your LR-IP-ECO among the available programmers nearby, refer to the «Default name» on the label at the back of the product.

SECURITY KEY

The security key protects your controller. You can set it up during step 6 of «PAIRING», or by accessing the product information via the icon at the top right of your screen.

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❷ Gateway pairing

LR-MB

To optimize the LoRa™ connection between LR-MB and LR-IP-ECO, preferably install the latter in a plastic manhole. Test the LoRa™ connection by following steps 7 and 8. It is recommended to pair all your LR-IP-ECOs near the LR-MB before installing them separately in the manholes.

1. Select the previously installed LR-IP-ECO controller.
2. Click on the icon on the top right of your screen to access the product information.
3. Click on «Access remotely».
4. Select the LR-MB relay you wish to use.
5. Confirm the process by pressing the «Send» button or at the bottom of your screen.

6. Once the pairing process is finished, you can test the connection between your LR-MB and your LR-IP-ECO.
7. Return to the LR-IP-ECO «Remote access» screen, as seen previously.
8. Click on the button to start the test.

Note:

- The message «Connection established» indicates a reliable connection.
- The message «No connection established» indicates that it is necessary to bring your LR-IP-ECO closer to the LR-MB or vice versa.

LR-BST

1. Select your LR-BST on the app and switch to pairing mode (only for LR-BST-25).
2. Select the LR-IP-ECO that was previously installed.
3. Click on the icon on the top right of your screen to acess the product information.
4. Click on «Access remotely»..
5. Select the LR-BST previously selected from the list.
6. Once the pairing process is finished, you can test the connection between your LR-BST and your LR-IP-ECO.
7. Return to the LR-IP-ECO «Remote access» screen, as seen previously.
8. Click on the button to start the test.

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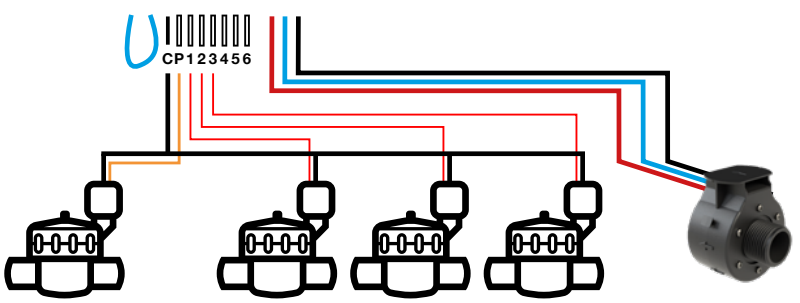
3 Valve wiring

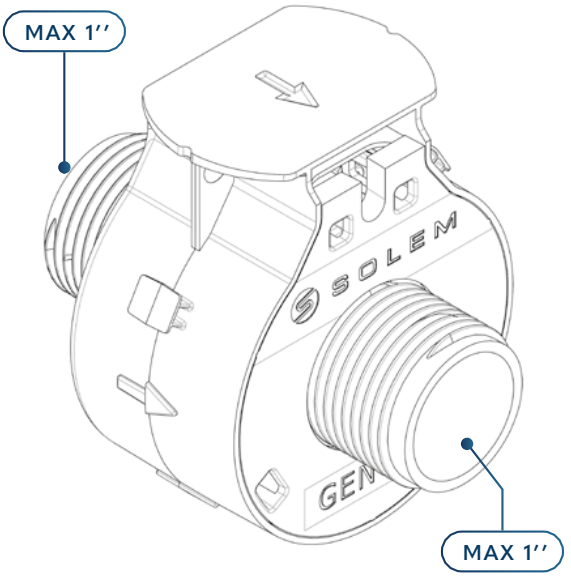
Connect your LR-IP-ECO to the solenoid valves as shown on the image to the right. Use solenoid valves with 9V impulse solenoids.



TURBINE INSTALLATION

The turbine can only be installed on diameters of 1”, to avoid flow/load losses. A distance before elbow of 8 times the nominal diameter upstream and five times the nominal diameter downstream of the turbine must be respected to enable a correct calculation of the water consumption.

Once installed on the pipe, the 1” diameter turbine measures water consumption and monitors flow and leaks. Like the sensor, it is configured via the MySOLEM application.



Note :
As the turbine also functions as a water meter, is it also possible to connect a rain sensor or pressure switch into the sensor input. We recommend the use of filtration upstream of the turbine, to prevent impurities from interfering with turbine operation.

LR-IP-ECO INSTALLATION

The LR-IP-ECO can be installed indoors or outdoors. It can either be mounted on a wall with 2 plugs and 2 screws (not supplied) or placed in a manhole.

SET FLOWMETER TURBINE

As the turbine measures the consumption of your irrigation network, you can use the MySOLEM application to configure all the thresholds required for proper management of your system.

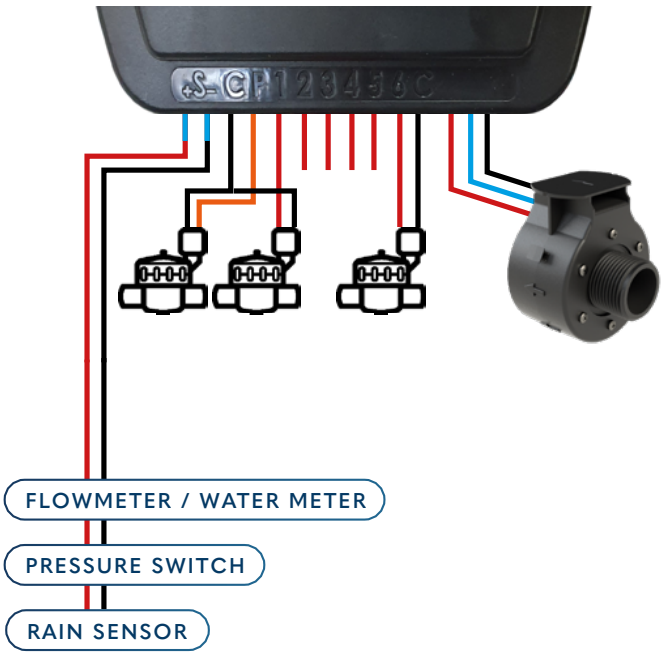
Daily consumption: set your upper and lower thresholds
High threshold (daily volume): maximum consumption (in m3) that you do not want to exceed in a period of 24h. If the goal is exceeded you will be alerted immediately (by e-mail and notification smartphone and / or tablet).
Low threshold (daily volume): minimum consumption (in m3) that you want to achieve over a period of 24h. If the goal is not reached you will be alerted the next day at 7am (by e-mail and notification smartphone and / or tablet)..
Leak alert volume: water volume threshold (in liter) from which you want to be alerted..
High Threshold (Station Flow Alerts) : Maximum consumption warning threshold in % of the calibrated flow of the channel (The maximum flow rate authorized by the turbine is 3.06m3/h or 791,9747 Gallons/h). The «High threshold» alert is immediate as soon as it is reached.
Low threshold (Station Flow Alerts) : Minimum consumption warning threshold in % of the calibrated flow of the channel(The minimum flow rate for the turbine to start counting is 0.24m3/H or 63,35 Gallons/h). The «High threshold» alert is immediate as soon as it is reached. For each station flow alert you have the possibility to define the desired type of action:
- No action : watering continues.
- Permanent OFF : resuming watering requires a manual ON command (in the application on the programmer concerned)..
- Inhibit the output : stops the station concerned, requires the acknowledgment of the alert (in the application on the programmer concerned) to reactivate the station.

Stabilisation time : Time required before the water flow is stable when starting and stopping the station. It eliminates the peak flow (start) or leak (stop). The time is the same for all stations.
During this duration, the turbine continues to take into account water consumption but does not trigger a flow rate alert or actions (example: during the water network filling phases).

SENSOR WIRING

The LR-IP-ECO has a + S - sensor input in order to connect a rain sensor, a pressure switch or a pulse sensor/water meter after cutting the blue wire. Once the sensor is connected, it must be set up through the application.

Note: If you have connected your turbine, a «flowmeter-turbine» sensor is automatically added. This does not prevent the configuration of an additional sensor.



For polarized flow probes, observe the polarization when wiring:

Red wire → + ***Black wire → -***

LR-IP-ECO PROGRAMMING

Simplified programming procedure for LR-IP-ECO:
Watch detailed videos tutorial on our **Support website**:
https://support.mysolem.com/en/tutoriels-mysolem-particulier/

You can also follow the following steps:

1. To create a program, select the LR-IP-ECO device.
2. Select the program you want to set. You can use only 1 program if you only have morning or evening watering with the same duration. However, if you want to set different runtimes for morning and evening watering for one station, use 2 programs.

Eg. Prog A: Station 1 = 5mn and prog B Station 1 = 10mn. All that's left to do is program the morning departure on Prog A and the evening departure on Prog B.

Important: your module works with sequential programming, which means that all stations that are set on a program (A, for example) will run one after the other. You must enter 1 start only.

3. You can set your watering frequency by selecting Calendar. Then, choose the schedule that suits your needs among 5 options:

- **Custom**, if you want to select specific days.
- **Even Days** (2, 4, 6…).
- **Odd Days** (1st, 3rd, 5…).
- **Odd Days -31**, if you don't want your program to run on the 31st (it won't water 2 days in a row). It will only water on the 1st of the next month.
- **Interval** (examples)
    - o Every day.
    - o Every 2 days.
    - o Every 3 days.

To continue setting up your watering schedule, select 'Starts'.

4. By selecting «Start 1», you can set the start time of your program. Then, press «Add» at the top right of your screen to confirm.

5. Set the start-time using the slot.

6. Set the watering duration for the stations. Select «Station 1» to set the activation duration for your station. Repeat this procedure for the other stations (if needed).

7. Once your program is complete, don't forget to send the command to the module using the arrow at the bottom right of the screen.

FAQ

What are the features required for the Bluetooth® product to work?

Android: Smartphone or tablet running Android 4.3 or greater with Bluetooth Smart 4.0 or greater.

Apple: iPhone or iPad running iOS 9.0 or greater with Bluetooth Smart 4.0 or greater.

Why is my station not starting?

A program is defined by start times, and a list of stations to which this program applies. If several stations are assigned to the same program, they will start one after the other. If the same station is associated with several programs starting at the same time, the programs will start one after the other.

Why is my Program B not starting?

If the start time of the Program A is the same than the Program B, the two programs will be executed one after the other, starting with Program A.

What is the P Output?

It is an output where you can connect a master valve or a pump. The output will automatically start 2s before each station and during the watering of each station.

What is the purpose of the S input (blue wire) on the controller?

You can connect a rain sensor, a pressure switch or a water meter to the S input by cutting the blue wire.

How does the rain sensor works?

When connected to the blue wire, the rain sensor affects all programs. If it is raining, programs A, B and C won't start; you have to wait for the sensor to dry before the programs start again. The «All stations» manual control is not affected by the state of the rain sensor.

What is the Water Budget?

The Water Budget adds a percentage of time to the duration of each station. It is normally used when changing seasons. Ex: If you entered Station 1 = 1h on Program A and Station 2 = 0h30 on Program A, then enter a Water Budget 120 % for Program A. When the Program A starts, the stations 1 and 2 will be increased by 20%, (ex 1h12 for Station 1 and 0h36 for Station 2).

How can I restart the initialization procedure?

To reset a device or restart an initialization procedure, short circuit the 2 pads of the battery pressure (remove the 9V battery before) for 30s minimum.

If my device does not have a battery, do I lose any programs?

No, programs are never lost. They are saved in a memory.

How can I restart a program from my devise?

Go to the application, enter the product and then open the parameters and select «Clear programs and durations».

Is there a specific direction for installing the turbine?

Yes, you should refer to the arrows on the product to determine the direction of the flow.

If my turbine stops working, will my watering programs still run?

Yes, the programming is independent of the turbine.

EUROPE: DECLARATION CONFORMITY

Solem Electronique said that watering programmer type LR-IP-ECO complies with the essential requirements of the european Directives :

Directive 2014/53/UE (RED)

Following standards :

BLE standard : ETSI EN 300 328 v2.2.2

LoRa standard : ETSI EN 300 220-2 v3.2.1 & ETSI EN 300 220-1 v3.1.1

EMF standard : EN 62311 (2008)

EMC standard : EN 61326-1 (2013), ETSI EN 301 489-1 v2.2.3, EN 301 489-3 V2.3.0 & ETSI EN 301 489-17 v3.2.4

Safety standard : EN 61010-1:2010/A1:2019, EN 61010-2-030:2011 et EN 61010-2-201:2013

RoHS Directive 2011/65/EU & Directive amendment (EU)2015/863

Clapiers, le 27/03/2023

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FCC NOTICE

Caution : the user that changes or modifications not expressly approved by the party reponsible for compliance could void the user's authority to operate the equipment.

Note: This equipment has been tested and found to comply with the limits for a Class B digital device, persuant 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 instruction, may cause harmful interference is not guarantee that interference will not occur in a particular installation. If this equipement 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 interference by one or more of the following measures:

1. Reorient or relocate the receiving antenna.
2. Increase the separation between the equipment and receiver.
3. Connect the equipment into an outlet on circuit different from that to which the receiver is deconnected.
4. Consult the dealer or an experienced radio/TV technicien for help.

This device complies with FCC RF radiation exposure limits set forth for general population. This device must be installed to provided a separation distance of a least 20cm from all persons and must not be colocated or operating in conjunction with any other antenna or transmitter.

IC STATEMENT

This equipment has been tested and found to comply with the limits for a Class B digital device, pursuant to Subpart J of 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 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:

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

The user may find the following booklet prepared by the Federal Communications Commission helpful: «How To Identify and Resolve Radio-TV Interference Problems.» is booklet is available from the U.S.Government Printing Office, Washington, DC 20402, stock # 004-000-00345-4m

LR-IP-ECO

SPECIFICATIONS:
Indoor/outdoor use
Operating altitude: 2000m
Relative humidity: 10-95%
Damp/humid location possible
Pollution degree: 2
Rain sensor / Flow meter / Pressure switch connection
Master valve connection
9V impulse solenoid connection
Maximum distance between LR-IP-ECO and solenoid: 30 m
Operating temperature: 0°C to 50°C
IP68-rated: prolonged immersion 1m 1h

OPPERATION:
Bluetooth® Smart 4.0 Low Energy [2400-2483.5]Mhz
LoRa™ radio communication [868-868.6]Mhz,25mW
Permanent programming backupInternal clock backup
in case of power failure < 30 s

DIMENSIONS:
Largeur : 14 cm
Hauteur : 5,5 cm
Profondeur : 9 cm

POWER SUPPLY:
9V alkaline battery 6AM6 or 6LR61
NiMH battery

TURBINE

DIMENSIONS :
120mm x 49mm x 65mm

WEIGHT:
400gr

THREAD:
Entry and exit 1” (thread BSPP)

BODY MATERIAL:
PA6 30% glass fiber

WATERPROOFING: IP68

OPERATING PRESSURE:
Min 1 bar, Max 6 bars

MAX. FLOW: 3.06m3/h or 792 Gallons/h
Min. flow: 0.24m3/h or 63,35 Gallons/h

OPERATING TEMPERATURE:
From 0 to 50°C

POWER GENERATED AT 15L/MIN:
1h of watering per day at 15L/min
keeps the secondary battery charged.

IMPORTANT INFORMATIONS

1. Before installing and commissioning the product, please read the instructions in this manual. Failure to comply with these instructions may compromise the protection provided by the device.
2. Replacing the battery with a type other than alkaline 9V 6AM6 or 6LR61 may damage the product.
3. In the event of failure, the manufacturer cannot be held responsible beyond the repair or replacement of the product under its legal legal warranty. Maintenance operations remain the full responsibility of the user. Any deterioration of the product due to incorrect handlingcannot be attributed to equipment failure.

GENERAL INFORMATION

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

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

The «CE» symbol indicates that this device complies with European standards on safety, health, the environment and user protection. Appliances with the «CE» symbol are intended for sale in Europe.

This symbol indicates that these types of electrical and electronic equipment 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.

Danger resulting from replacing the battery with an unsuitable type.