ORDER CODE
RDW17

LoRa | Certificate | IP40 | Class VIII 5%

Application

LoRa® Smart Valve, with long range radio transmission and low energy consumption, without battery, for individual room control. The new electronic winter heating system control valve uses heat dissipation between the radiator and the space to obtain electrical energy using a thermoelectric generator, and does not use disposable batteries.

TECHNICAL DATA

RADIO TECHNOLOGY	LoRa®
FREQUENCY	868 MHz ISM band
ANTENNA	Internal
TRANSMISSION	Bidirectional
POWER SUPPLY	Thermal Energy Harvesting
MEASUREMENT RANGE	0 to +40 °C
MEASUREMENT INTERVAL	2 to 20 min. configurable OTA
DISPLAY	Status-LED, red
CONTAINER	PC, White and aluminium
PROTECTION RATING	IP40 (EN 60529)
OPERATING TEMPERATURE	0 to +50 °C, max. 85% rH

ENERGY COLLECTION

The actuator for the **LoRa® Smart Valve** (SV-IE-LoRa-IAW02) is powered by a Peltier cell, which exploits the thermal delta between the valve's connecting flange and the surrounding environment. A temperature difference >5°K is sufficient to activate the Peltier element, which generates a low level electric current that's stored in a rechargeable cell. For permanent operation, it is necessary to ensure that the energy balance (collection consumption) is positive. During the installation of the valve, make sure that:

• The temperature difference is as great as possible (e.g. no heat accumulation due to the casing);
• The radio network is configured for maximum energy savings.
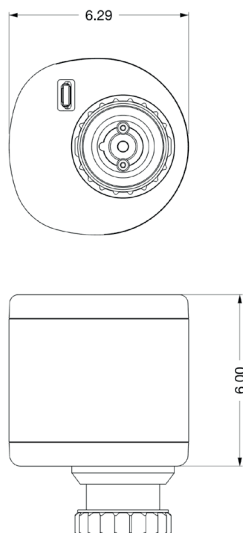
OPERATING PRINCIPLE

The **LoRa® Smart Valve**'s **Energy Harvesting** mechanism eliminates the need for disposable batteries, thus benefiting the environment and rendering the system more economical. After the installation phase, during which it automatically calibrates the piston's stroke and registers itself at the receiver, the valve initiates the regulation procedures. Although it is equipped with an internal temperature sensor, this is only used in emergency situations. For operational purposes, the valve utilises a distance probe capable of measuring the real value of the ambient temperature, away from any heat sources that might otherwise compromise its accuracy. The valve is coordinated by the controller, from which it receives the actuation commands and the temperature values detected by the room probes. The valve's built-in control system requires a limited number of transmissions with respect to the control loop. The valve can manage hourly reduction programs and closing periods during which the transmissions are rendered even less frequent. The interface between the operator and the valve consists of a magnet (which drives a REED sensor) and a red LED indicator. Using these simple tools, the operator is able to commission the valve, check the radio installation and assess the quality of the connection, perform tests, and even replace the device with no need for any type of intervention.

DIMENSIONS (mm)

6.29

6.00

LoRa® SEEDER

LoRa® Seeder is the software tool for configuring the LoRa® Wireless Monitoring system by Intellienergy Tech®. It is compatible with Microsoft's Windows 8® and Windows 10® platforms and will soon be available on the LINUX platform. LoRa® Seeder allows you to modify the operating configurations of all probe models (temperature, humidity, brightness, level, VOC, CO2, 20WGI-Master Modbus, etc.) using an accessory connected to the USB port of the PC (Dongle LoRa®).

On the other hand, it connects directly, via a USB port, to the IGW0xx receivers, making the association operations between probes and receivers simple and fast, also allowing to automatically produce the mapping documentation of the Modbus® registers for the System Integrators.

For receivers equipped with the Data Logger function, Seeder allows you to download data from the receiver and store them on its database, to view them graphically and export them in CSV format.

I-Lo®-View

I-Lo®-View, thanks to the use of a LoRa® USB DONGLE (available as an accessory), it transforms any Windows 10® PC into a powerful datalogger server capable of managing all models of Intellienergy wireless probes. On the same PC, or on any other fixed or mobile device (Smatphone, Tablet) connected to the same network, it is possible to consult or manage the entire wireless system, simply by using a Web browser (such as Chrome).

Several users can be connected to I-Lo®-View at the same time and access the probe data, both real-time and historical data, being able to compare multiple sensors simultaneously. In addition to the specific sensor data (temperature, humidity, brightness, VOC air quality, CO2 concentration, etc.). I-Lo®-View also displays and stores "service" data, such as communication quality and battery levels. If the user has administrator permissions, he can also change the operating parameters of the probes (for example the sampling intervals of the sensors and those for sending measurements).
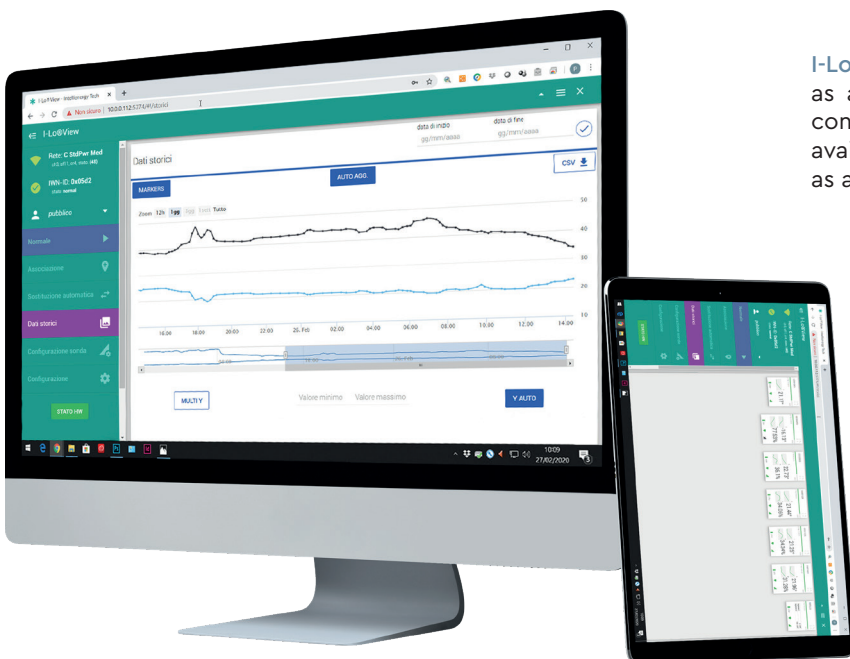
I-Lo®-View it is installed in the Windows environment as a service and is therefore active even if no user is connected to the PC where it is installed. A version is also available for Linux (x86 / x64 / arm) that can be installed as a normal application.