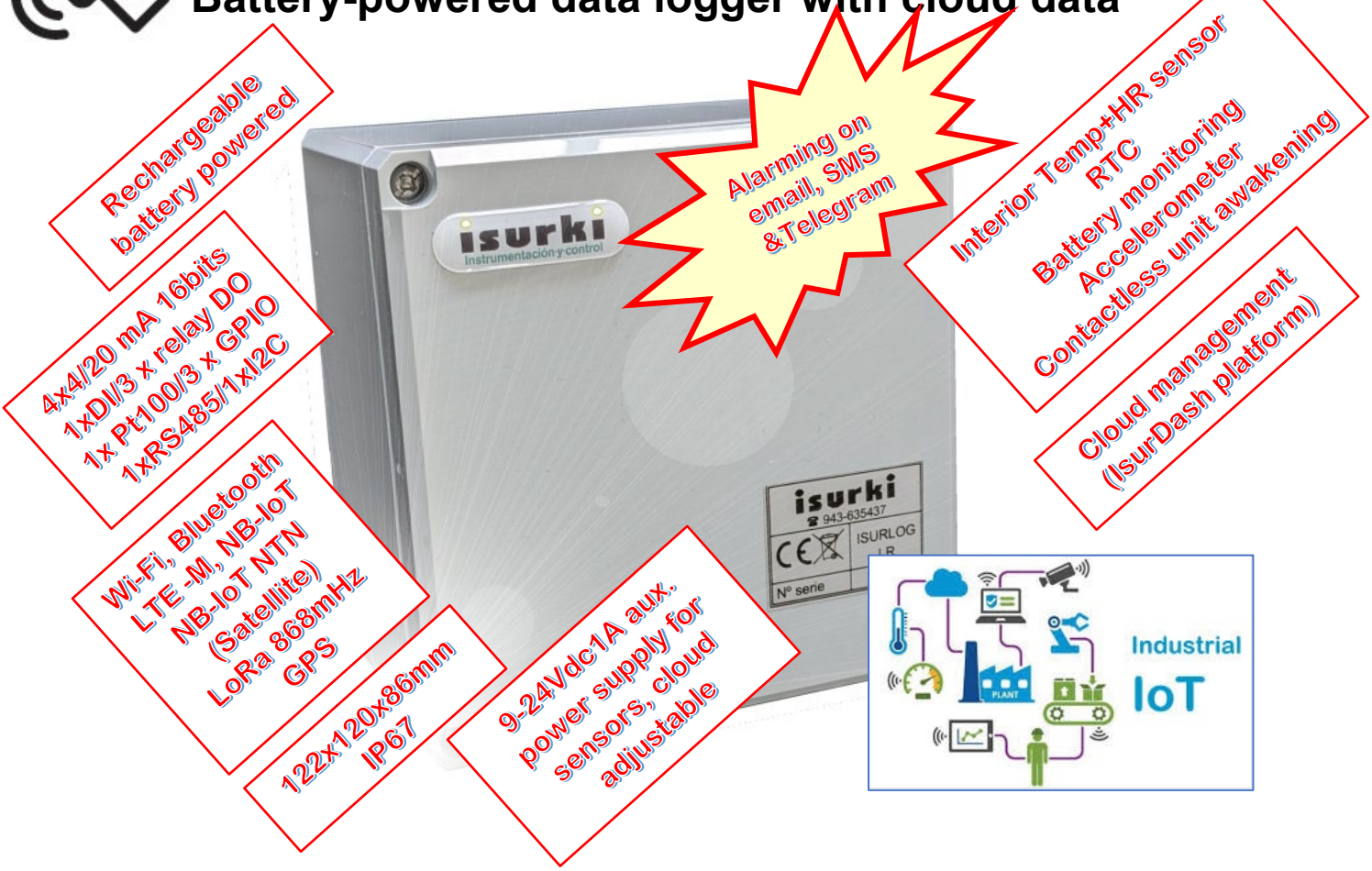
ISURLOG (v2026)

Battery-powered data logger with cloud data



ISURLOG is a state-of-the-art intelligent datalogger with a cloud connection that allows:

- **wireless remote communications** by terrestrial (NB-IoT), satellite (NB-IoT-NTN) and free (LoRa) networks.
- **local wireless connectivity** using BlueTooth and WiFi.
- device consumption management to ensure **maximum battery life**.
- **constant information** on sensor parameters and connected device statuses.
- **remote and local wireless configuration** of system operating parameters.
- real time messaging, via email, SMS and Telegram, about **alarms and operational diagnostics**, both of the process to be controlled and of the **ISURLOG** units that control it.
- **database of historical records hosted in the cloud**, which allows analysing and optimizing the operation of the infrastructure to be controlled.
- **Remotely management of the fleet of installed units**, using the **IsurDash** cloud platform.

isurki
Instrumentación·y·control

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ISURLOG [1] is based on **SP-IIoT-SAP** (*Self Powered Industrial Internet of Things Sensor Access Point*), thus offering:

- Rechargeable batteries power supplied.
- Data monitoring and device management from/to any smart terminal.
- General purpose input/outputs allowing the connection of practically any sensor.
- On the cloud data hosting.
- IIoT-NB connectivity.

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⇧**ISURLOG** *field unit for drinkable water distribution network pressure monitoring*

Embedded Inputs/Outputs (I/O) for external sensors/detectors:

- Aux. power supply for sensors 9-24V 1A (cloud adjustable) + 5V/0.5A.
- 4 x 4-20mA analogue inputs, active/passive loops, fused protected with aut. reset.
- 1 x voltage free DI.
- 1 x RS485, up to 32 sensors + 1 x QWIIC connector for I2C sensors.
- 1 x PT100, 2, 3 or 4 wires.
- 3 x relay DO: 1 x 2A + 2 x 0.4A
- 3 x GPIO, one by one selectable as I/O.

I/O expansion module:

Modbus

4 to 20 mA 4 AI

Volt. Free 4 DI

- Modbus RTU.
- 4 x 4/20 mA analogue inputs, active/passive loops.
- 2 x voltage free status DI + 2 voltage free counter.
- Open/closed and proportional control of automatic hydraulic valves (pressure and flow regulators) with latch solenoid valves.
- Internal temperature and relative humidity measurement inside the device.

[1] As a result of a constant evolution, here in stated characteristics can be upgraded and changed without previous notice to customer. Please ask for the last datasheet version contacting directly with our company.

IsurDash RATIONAL, INTUITIVE AND EFFICIENT ON-THE-CLOUD MANAGEMENT OF THE ISURLOG UNITS DEPLOYED IN THE FIELD

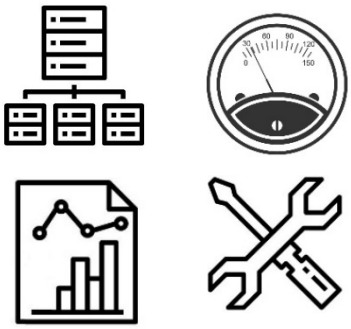
IsurDash is a cloud platform for the management of the fleet of devices in the **ISURLOG** ecosystem based on criteria of rationality, friendliness and efficiency.

Its purpose is to facilitate the management of remote units for the user, reducing operating times and enhancing the quality and degree of processing of the information received.

The main management areas integrated into **IsurDash** are as follows:

- **Dashboard** of the **ISURLOG** fleet of operational devices:
  - Geolocation.
  - Management.
  - Diagnosis.

- **Devices**:
  - Field devices data base.
  - Real-time monitoring.
  - Trending charts.
  - Configuration.



- **Customization**:

  - Tags: Tag creation and assignment for intelligent and intuitive management.
  - Profiles: Allows you to generate custom configurations that respond to a common pattern applicable to various devices.

  - Users, with different levels of access:
    - Manager: access to monitoring, alarm notification and configuration.
    - Operator: access to monitoring and alarm notifications.

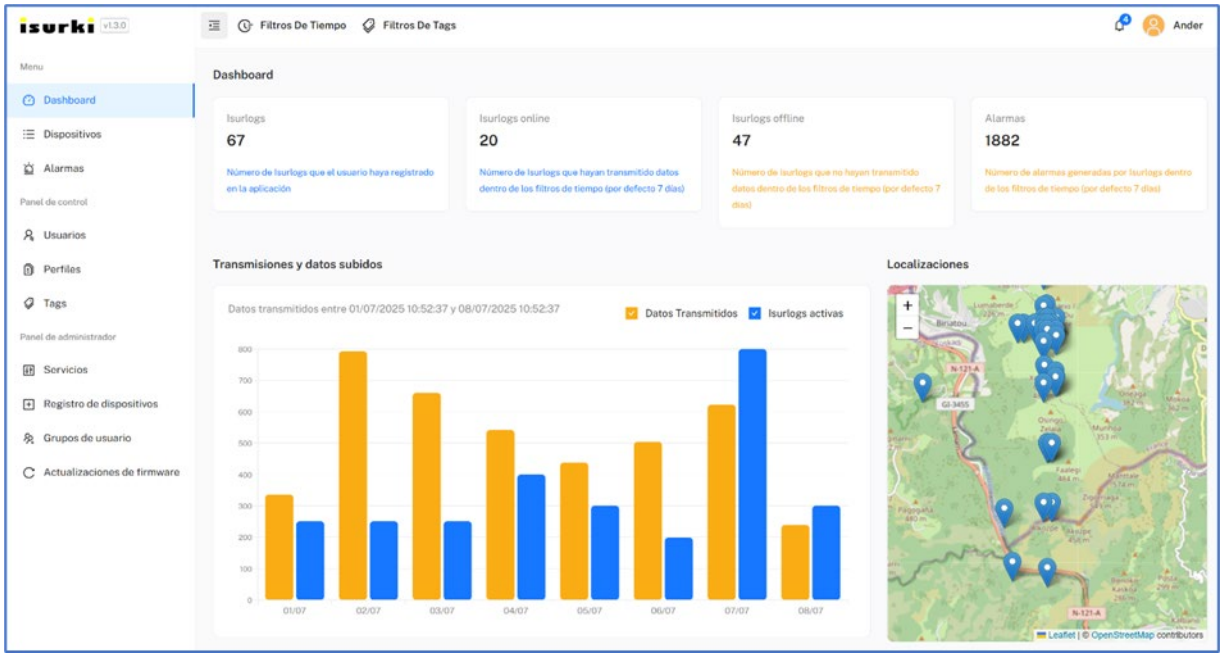
- **Communications**:

  - Bluetooth: Wireless local link between the **IsurDash** platform and the **ISURLOG** device, contactless activation via magnetic pen, avoiding opening the unit.

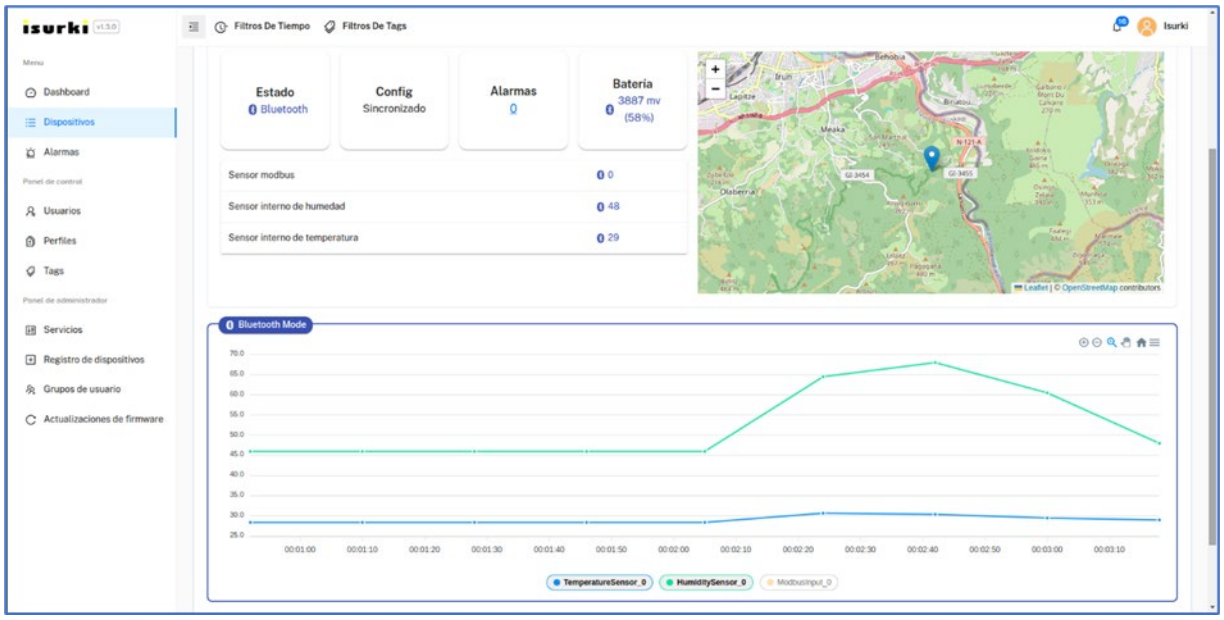
- NB-IoT / LoRa / Satellite (NB-IoT NTN): Remote wireless connection.
  - Force access to the **ISURLOG** remote device out of latency time (wake it up from sleep mode).
  - FOTA: Remote firmware update.

Alarming, on:

- email.
- SMS.
- Telegram messaging.



*Screenshot of the "dashboard" menu of the **IsurDash** platform with geolocation of the deployment of devices in the field and daily graphs of data traffic.*



Screenshot of the "devices" menu at the **IsurDash** *platform, with graph of the evolution of temperature and relative humidity.*

The **ISURLOG** units acquire and register field parameter readings internally with a configurable periodicity between 5 minutes and 24 hours. The upload of data to the **IsurDash** platform occurs once the number of acquisitions/registrations configured by the user has been verified, without this implying a limitation in the time frame between two consecutive uploads. This procedure, exclusive to the **ISURLOG** solution, allows the consumption of the device to be optimised by maximising the battery life. The data is accessible in table and graph format from the **IsurDash** platform, being downloadable in a .csv format, which allows direct import from any spreadsheet.

IsurDash allows you to configure in a few minutes a MODBUS RTU connection with other smart devices (sensors, PLC, PC, controllers, etc.), allowing you to centralize in one unit the information of up to 32 instrumentation and control devices from other manufacturers. In this way, an **ISURLOG** unit can act as a Sensor Access Point open to any device that integrates this protocol, considered one of the most widespread and reputable in industrial communications.

SECTORS OF APPLICATION

- ✓ Environment.
- ✓ Clean energy.
- ✓ Instrumentation and sensors.
- ✓ Smart cities.
- ✓ Smart buildings.
- ✓ Industrial Control.
- ✓ Sustainable agrifood.
- ✓ Healthcare.
- ✓ Meteorology.
- ✓ Roads networks.

TECHNICAL SPECIFICATIONS

- Power supply:
  - 5 x INR18650 rechargeable batteries with a total 17000 mAh capacity and a unit embedded battery charger.
  - External power supply available through USB-C or terminal blocks @ 5V maximum voltage.
  - Energy harvesting through weak sources such as embedded micro solar panels, TEGs... ≥ 225mV
  - 5V external solar panels compatible, available as an option.
  - CR2032 connector for the RTC.
  - Minimum consumption: 20µA @ sleep mode.
- Battery autonomy (examples):
  - > 1 year (1 analogue input + 1 counter, logging and cloud uploading every 15 minutes).
  - > 2 in the same case but with 12 hours uploading rate.
  - Unlimited, with embedded solar panel.
- Local wireless connectivity:
  - Wi-Fi 802.11 b/g/n
  - Bluetooth v4.2 BR/EDR and Bluetooth LE
- Remote wireless connectivity:
  - Terrestrial mobile: LTE Cat-M1, LTE CAT-NB1 (NB-IoT) with global coverage, On-board eSIM and external Nano SIM (Optional)
  - Satellite: NB-IoT NTN (Non-Terrestrial Network), Global satellite coverage for areas without terrestrial infrastructure (LEO satellites). Available soon.
  - GPS (L1 C/A). Antenna not included. Optional.
  - LoRa 868mHz (Optional).
  - Protocols: HTTP, MQTT, UDP (compatible; not included in standard firmware).
- Unid embedded sensors:
  - Temperature & relative humidity sensor.
  - Low consumption RTC.
  - Hall effect switch for contactless unit activation from sleep mode.

- 3-axis accelerometer: Motion, impact, and orientation detection.
- Battery Monitor: Reports percent charge (SOC), voltage, and rate of change in %/hour. Estimates the Remaining Time allowing to predict the autonomy in days and automatically compensates for battery degradation due to aging.

- Connection to field devices (central unit):

  - Aux. power supply for sensors 9-24V 1A (cloud adjustable) + 5V/0.5A.
  - 4 x 4-20mA analogue inputs, 16 bits, active/passive loops, fused protected with aut. reset.
  - 1 x voltage free DI.
  - 1 x RS485, up to 32 sensors + 1 x QWIIC connector for I2C sensors.
  - 1 x PT100, 2, 3 or 4 wires.
  - 3 x relay DO: 1 x 2A + 2 x 0.4A
  - 3 x GPIO, one by one selectable as I/Os.

- Connection to field devices (**IsurNode** I/O expansion module):

  - Power supply: from an **Isurlog** unit or from an external source 9-18 Vdc.
  - 4 analogue inputs, 4/20mA, for active or passive current loops (powered from the unit), with auto-reset protection fuse. **16-bit resolution**.
  - 2 digital status inputs + 2 pulse inputs for counting (voltage-free contacts, pulse width ≥ 50 mS).
  - 4 digital outputs for latch solenoid valve control.
  - 1 RS485 input, up to 32 sensors, Modbus RTU protocol.
  - Execution in a waterproof polycarbonate box, 120x80x56 mm, IP66, IK08, -50 to 100ºC, suitable for outdoor UVA rays, self-extinguishing, flammability UL94 V-2.

- Electrical protections:

  - PCB-integrated battery protection against:
    - Transients and overvoltage.
    - Overloads.
    - Overcurrent.
    - Short circuit.
  - ESD protection (Electrostatic discharges):
    - Implemented using TVS diodes (Transient Voltage Suppressors) at key points of the circuit.

- Standard Enclosure Ext dimensions, in mm.: 120 (H) x122 (W) x 86 (D):
  - Non-waterproof version for indoor use: PETG material.
  - Waterproof version for outdoor use: ABS material, Halogen-free, protection degree: IP67/IK07. Resistant to solar UV radiation. -50 a 100ºC. Self-extinguishing, flammability UL94 V-2.
  - Optional: version protected against water ingress, IP68 degree of protection.
  - Internal anti-condensation kit: atmospheric pressure compensation membrane + 2 g desiccant bag + interior humidity % indicator card.

⇧ Prevención de Legionela en red ACS mediante medición y registro de temperatura.
⇦ Ejecución especial en armario IP66, 300x265x165mm, con bornero, y panel solar opcional.

ORDER CODE

Image	Description	Code
	IIoT Data logger, basic execution • PCB execution (without waterproof box). • 4 analogue inputs 4/20 mA, active/passive loops. • 1 voltage-free digital input for pulses/states. • 3 digital outputs with solid-state relay, 1x2A + 2x0.4A. • 1 input for Pt100 temperature probe, 2, 3 and 4 wires. • 1 RS485 communications input with Modbus RTU. • 3 GPIOs as inputs/outputs. • Internal temperature and relative humidity sensor. • with Wi-Fi and Bluetooth. • RTC. • Optional NB-IoT/satellite or LoRaWAN chip. • Includes pack of 5 rechargeable lithium-ion batteries • External power supply 6-24 Vdc • Includes interior anti-condensation kit.	**ISURLOG**
x = 2 	**NB IoT** connectivity. • x (0,1,2,3) ○ x = 0: no long-range comms (local wireless datalogger). ○ x = 1: NB-IoT connectivity + flexible interior antenna, 1,8 dBi. ○ x = 2: NB-IoT + 6 dBi elbowed antenna mounted in the box, total length: 158 mm extended and 135 mm 90º bent. ⇦ ○ x = 3: NB-IoT connectivity + Vertical antenna for outdoor mounting w/ mounting accesory, 8 dBi, total length: 750 mm.	- NB1 - NB2 - NB3
x = 2 x = 3 	**LoRa/LoRaWAN** connectivity based on RFM95W chip. • x (0,1,2,3) ○ x = 0: no long-range comms (local wireless datalogger). ○ x = 1: with flexible interior antenna 2,5 dBi. ○ x = 2: with exterior elbowed antenna, 196 mm long, enclosure mounted, 2,5 dBi. ○ x = 3: fiber glass vertical antenna, 35 cm long. Includes wall-mounting accessory and 3m cable with SMA connector, 3 dBi	- LR1 - LR2 - LR3
	1 x Pt100 temperature probe. • x (0,1,2) ○ x = 0: without. ○ x = 1: with SPI bus + 1 x Pt100 probe, 8x8x35mm, -50…200ºC, 2.0 m cable.	- SPI1/2

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	○ x = 2: with SPI bus + 1 x Pt100 probe, 8x8x35mm, -50…200ºC, 5.0 m cable.	
x = 2 	Basic box/enclosure: • x (0,1,2) ○ x = 0: without box. ○ x = 1: Complete Indoor Box-Mounted unit, 122 (W) x 120 (H) x 86 (D), in mm, with all selected accessories. Material PETG. Not suitable for outdoor use. ○ x = 2: Complete unit mounted in IP67 waterproof box for outdoor use, 122 (height) x 120 (width) x 86 (depth), in mm, with all selected accessories. ABS Material.	- 1PC1 - 1PC2
x = 3 	Additional external power supply for basic box/enclosure: • x (0,1,2,3) ○ x = 0: No additional power to the batteries. ○ x = 1: Embedded solar panel with transparent lid in box. ○ x = 2: 230V charger for mains power supply. ○ x = 3: IP65 outdoor solar panel, 5W, 194x166x14 mm, with articulated arm support.	- EPS1 - EPS2 - EPS3
x = 2 	Double waterproof box for outdoor mounting: • x (0,1,2,3) ○ x = 0: without double box. ○ x = 1: Complete unit mounted in outdoor waterproof box, IP66, 300 (height) x 265 (width) x 165 (depth), in mm, with all selected accessories, terminal block and cable glands. ○ x = 2: adds to the 2PC1 option a 5W outdoor photovoltaic solar panel, 194x166x14 mm, adjustable bracket, 4m cable, IP65. ○ x = 3: adds to the 2PC1 option the power supply at 230Vac.	- 2PC1 - 2PC2 - 2PC3
	x (0,1) 1 = **IsurNode**, I/O Expansion Module: ○ 4x4/20 mA 16-bit active/passive current loops, 2xDIs states, 2xDIs counters, 4xDOs solenoid valves. ○ Modbus RTU. ○ IP66 enclosure, 120x80x56 mm. ○ Cable glands.	- INx
	**IsurCloud-LR** LoRaWAN data connectivity **for 12 months**. • x (1) ○ x = 1: **IsurCloud-LR** version: **cloud upload every ≥ 15 minutes**. Configuration, status/value queries and alarms by email/Telegram messaging.	- ICL1
	**IsurCloud-NB** terrestrial NB data connectivity **for 12 months**. x (1,2) ○ x = 1: **IsurCloud-NB Basic** version: **cloud upload every ≥ 15 minutes**. Configuration, status/value queries and alarms by email/Telegram messaging. ○ x = 2: **IsurCloud-NB Pro** version**: cloud upload every ≥ 5 minutes** Rest of features as in **Basic** version**.**	- ICN1 - ICN2

ENVIRONMENTALLY FRIENDLY

Since our beginnings in 1992, ISURKI has been involved in the application of cutting-edge technologies to provide products and solutions that help preserve the environment and natural surroundings.

As a result of this business approach, we are committed to reducing as much as possible the impact that the production and marketing of our products can have on the environment.

All our devices and spare parts provides traceability that allows us to know the fleet of operational units deployed in the field.

Likewise, both the devices and the batteries used in them have been declared and registered within the European Recycling Platform, which guarantees the correct recycling of these at the end of their useful life.

Finally, we apply environmental criteria in the design of our products, especially in terms of compliance with applicable regulations (RoHS), materials, type of energy sources (Energy harvesting, rechargeable batteries only, ...) as well as in the implementation of operational management routines that reduce the consumption of each unit as much as possible and maximise the autonomy time of the batteries.


Member of European Recycling Platform

MEMBERSHIP
CERTIFICATE

This is to certify that

ISURKI, S.L.
with ID number B20430427

is a member of the **WEEE** Producer Compliance Scheme of ERP SPAIN with the following Producer Registration Number (RII_AEE number)

13798

4 of April, 2024

Matías Rodrigues
General Manager

European Recycling Platform

EUROPEAN RECYCLING PLATFORM RAEE, S.L.
C/Raimundo Fernández Villaverde, nº 61 8º centro izqda. 28003 - Madrid
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Tel: +(34) 91 806 30 42


Member of European Recycling Platform

MEMBERSHIP
CERTIFICATE

This is to certify that

ISURKI, S.L.
with ID number B20430427

is a member of the **BATTERIES AND ACCUMULATORS** Producer Compliance Scheme of ERP SPAIN with the following Producer Registration Number (RII_PYA number)

4598

4 of April, 2024

Matías Rodrigues
General Manager

European Recycling Platform

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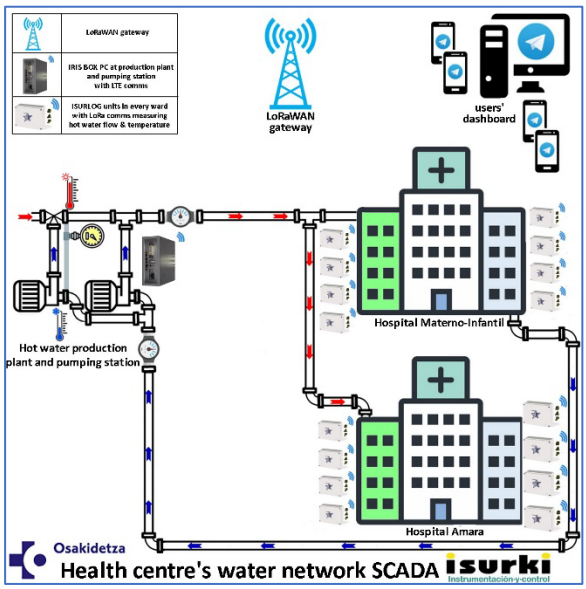
HISTORY AND EVOLUTION

ISURKI was founded in 1992 with the aim of offering the most advanced technologies in the fields of electronics, programming and industrial communications to optimise the control of industrial processes and the technical management of natural resources, facilities and civil infrastructures.



*Control of the ACS network of the Donostia University Hospital based on **IRIS IIoT***

ISURLOG is the result of applying the knowledge and experience accumulated over more than three decades to the design of instrumentation and control devices whose field of application is framed within the Industrial Internet of Things or IIoT and the **IRIS IIoT ecosystem**.

This background and mastery of the aforementioned technologies allows us to design tailor-made solutions adjusted to the requirements of each application, offering an extremely competitive final product in terms of prices and performance.

Finally, our technical support based on business excellence criteria in the pre- and post-sales phases, together with the quality of support from our technology partners, guarantee the best results in projects and applications based on the **IRIS IIoT ecosystem**.

Company headquarters in Irun (Gipuzkoa)

TECHNICAL SUPPORT

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YouTube tutoriales

As a result of our determined desire to meet the most demanding requirements of our customers and incorporate the latest technological advances, ISURLOG is a product in constant evolution, so the content of this document is merely informative and may be subject to change without prior notice.

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