

# SOFREL S4W

Monitoring, process control and remote management of hydraulic structures

Pumping - Drinking water and Wastewater treatment - Reservoir - Lifting station



\*4G available for Europe, Africa, Middle East.  
For other geographical areas please contact us.

## TELEMETRY

- Data time-stamped at source
- Calculations, archiving, reports, thresholds
- Alarm management
- Permanent monitoring
- Automatic actuator control
- Inter-RTU

## COMMUNICATION CONTINUITY AND SECURITY

- Communication media redundancy
- Optimisation of operator options
- Built-in cybersecurity
- Battery backup

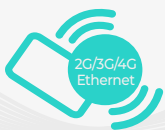
## SIMPLICITY

- Installation and configuration
- Data visualisation/processing on PC, tablet & smartphone
- Plug & Play touchscreen graphical display unit
- Sector-specific functions: drinking water and waste water

## KEY PRODUCT FEATURES

- Built-in 4G\*/3G/2G modem and Ethernet port
- Reliability and sturdiness
- Process control workbench included
- Easy operation thanks to web server and touchscreen display
- Simple configuration (graphical and intuitive, tutorials)
- Lifting station graphical interface

## MAIN FEATURES:



Integrated Modem



Simplicity



Cybersecurity



Automation workbench



Guarantee



S4-Manager

# Technical and functional characteristics

| Hardware specifications    |                                                                                                                                                                                                                        |
|----------------------------|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| I/O by case types          | Dual : 8DI / Small : 8DI - 2AImA - 2DO / Medium : 12DI - 2AImA - 4DO / Large : 16DI - 4AImA - 4DO                                                                                                                      |
| 2 USB ports                | Terminal - Display unit                                                                                                                                                                                                |
| External power supply      | 24 V DC external power supply (12V battery)                                                                                                                                                                            |
| Connector                  | Spring-loaded terminals                                                                                                                                                                                                |
| Dimensions W x H x D       | 195 x 125 x 63 mm                                                                                                                                                                                                      |
| Operating temperature      | -20 to +70 °C                                                                                                                                                                                                          |
| Extension modules (option) | Up to 3 COM modules: RS232 / RS485(i) / EDF / DL / RD-RTU2 / HID badge<br>Up to ten IO modules: 16DI / 8DI / 8AIT° / 4AIT° / 8DO / 4DO / 4DO+ / 8AI mA / 4AI mA / 8AO / 4AO / 8AIV / 4AIV<br>Bus extension module: EXT |

| Technical characteristics |                                                                                                                                                                                                                                                                                                                                                   |
|---------------------------|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| Inputs / Outputs          | Digital Inputs: Digital: No / Nc - Metering: 250 Hz<br>Analog input: 4-20 mA sensor (remote power feeding) - 0.1% precision (25°C)/ 0-10V<br>Digital Output: Breaking capacity: 3.6 VA (24V max - 150mA max) - 1 'watchdog' output<br>Digital Output+: 60 VA (24 V max - 1 A max continuous / 2.5 A max pulsed)<br>Analog output: 0-20 mA / 0-10V |
| Communications            | 2G/3G/4G modem - 100BT Ethernet - RJ45 socket<br>Series: RS232 TX/RX/RTS/CTS/RS485(i): multipoint series with or without isolation<br>DL: dedicated line - RD-RTU2: HF869 MHz module deported via RS485<br>Distribution client information remote link (Enedis type)<br>HID badge: Reader and badges (RFID or digitally via smartphone)           |

| Functional specifications                |                                                                                                                                                                                                                                                                                                                                                                                  |
|------------------------------------------|----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| Managed information                      | Up to 2000 data points - Type of information change                                                                                                                                                                                                                                                                                                                              |
| Calculations                             | Thresholds, formulas, average flow rates, conversion tables                                                                                                                                                                                                                                                                                                                      |
| Reports                                  | Calculations: difference, max, min, current value (index), indexing<br>Periods: hourly, daily, weekly, monthly                                                                                                                                                                                                                                                                   |
| Archiving                                | Logical: on change of status<br>Balance: during production<br>Modular archiving of numerical data (depth of 1 year and 1.5 million archives)                                                                                                                                                                                                                                     |
| Process control                          | Configurable cycle time - 20ms by default<br>Languages: Ladder - ST - FBD - SFC (Grafcet). Workbench compliant with IEC 61131-3<br>Program memory: 2 MB<br>Library of sector-specific functions: special archiving, badge management (isolated individual - intrusion), lifting station, etc.                                                                                    |
| Graphic configuration of lifting station | Automated pumping: Pumping control, pump permutation, grease-ring and deposit prevention<br>Pumping efficiency: pump group running time, average flow-rate monitoring, worn pump identification, clogged pump identification<br>Hydraulic efficiency: Incoming flow, total pumped volume, overflow monitoring, parasite water calculation                                        |
| Alarm reporting                          | Triggering: Appearance/Disappearance on a logical information configured as alarm<br>Configurable alarm sequence (PC, SMS, email) - 20 sequences of 14 recipients<br>Management of deferral calendars - 20 calendars (10 exceptions) - substitution calendar<br>Global acknowledgement: SCADA or operator (S4-View, web server, S4 Display / Global acknowledgement information) |
| Communication protocols                  | LACBUS RTU protocol, Syslog, IEC 60870-5-104                                                                                                                                                                                                                                                                                                                                     |
| Network function                         | Automatic transfer to cellular network in the event of Ethernet outage<br>Help selecting telecom operator according to predefined criteria                                                                                                                                                                                                                                       |
| Web server                               | Built-in mimic-diagram editor<br>HTML 5 - Runs on tablet, PC, smartphone (remote and on-site)<br>Archive export in CSV format<br>Equipment operating diagnostics                                                                                                                                                                                                                 |

| Integrated Cybersecurity and Ecosystem |                                                                                                                                                 |
|----------------------------------------|-------------------------------------------------------------------------------------------------------------------------------------------------|
| Users authentication                   | Individual accounts with login and password that can be administered remotely (SOFREL S4-Manager) - Active Directory link                       |
| Authentication of systems connected    | Mutual authentication by electronic certificate<br>Management of several environments (configuration and diagnostic tools - S4-Tools & S4-View) |
| Confidentiality and data integrity     | Communication encryption (TLS V1.2) - Configuration and software signature                                                                      |
| Traceability                           | Operation log - Hardware status - Syslog update                                                                                                 |

| LX CONNECT                  |                                                                                              |
|-----------------------------|----------------------------------------------------------------------------------------------|
| Simplified fleet management | Automated firmware and security patch updates - Programming of mass software version updates |
| Automated cybersecurity     | Automated updating of certificates generated by Microsoft PKI                                |

| Standards                           |                                                                                                                                       |
|-------------------------------------|---------------------------------------------------------------------------------------------------------------------------------------|
| Electrical safety                   | EN 61010-1: Electric shock, energy transfer hazard, fire, mechanical and thermal hazards                                              |
| Telecommunications                  | EN 301 511 (2G) - EN 301 908-1/-2/-13 (3G/4G) - EN 301 908-13 (4G)<br>EN 300 220-1 / EN 300 220-2: RDRTU-2 (500 mW) Radio link module |
| Electromagnetic compatibility (EMC) | EN 301489-1 / EN 301489-52 / 61326-1: class A instruments                                                                             |
| Environmental protection            | DEEE directives: 2012/19/UE                                                                                                           |



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