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
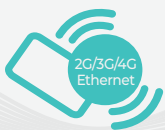- Battery backup

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	Battery backup & Redundancy	Guarantee	S4-Manager

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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 (S4-Display)
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 Up to ten IO modules: 16DI - 8DI - 8AIT° - 4AIT° - 8DO - 4DO - 8AI mA - 4AI mA - 8AO - 4AO - 8AIV - 4AIV Bus extension module: EXT
S4-Display unit (option)	5" and 7" touchscreen graphic display Dedicated lift station mimic diagrams, curve charts, alarm log, etc.

Technical characteristics

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

Functional specifications

Managed information	Up to 2000 data points
Calculations	Thresholds, formulas, average flow rates, conversion tables
Reports	Calculations: difference, max, min, current value (index), indexing Periods: hourly, daily, weekly, monthly
Archiving	Logical: on change of status Balance: during production Modular archiving of numerical data (depth of 1 year and 1.5 million archives)
Process control	Configurable cycle time - 20ms by default Languages: Ladder - ST - FBD - SFC (Grafcet). Workbench compliant with IEC 61131-3 Program memory: 2 MB 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 Pumping efficiency: pump group running time, average flow-rate monitoring, worn pump identification, clogged pump identification Hydraulic efficiency: Incoming flow, total pumped volume, overflow monitoring, parasite water calculation
Alarm reporting	Triggering: Appearance/Disappearance on a logical information configured as alarm Configurable alarm sequence (PC, SMS, email) - 20 sequences of 14 recipients Management of deferral calendars - 20 calendars (10 exceptions) - substitution calendar 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 Help selecting telecom operator according to predefined criteria
Web server	Built-in mimic-diagram editor (up to 60 mimic diagrams per device) HTML 5 - Runs on tablet, PC, smartphone (remote and on-site) Archive export in CSV format

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 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

Standards

Electrical safety	EN 62368-1: Electric shock, energy transfer hazard, fire, mechanical and thermal hazards
Telecommunications	ETSI EN 301 511: (2G) - ETSI EN 301 908: (3G) - ETSI EN 301 908-13 (4G) ETSI EN 300 220-1 / ETSI EN 300 220-2: RDRTU-2 (500 mW) Radio link module
Compatibility	EN 55032: Data processing instrument emissions: class A instruments: CISPR16,, EN 61000-3-2, EN 61000-3-3, EN 55024: Immunity to shock waves (surges, lightning) of level 4 (EN 61000-4-2, EN 61000-4-3, EN 61000-4-4, EN 61000-4-5, EN 61000-4-6, EN 61000-4-8, EN 61000-4-29)
Environmental protection	DEEE directives: 2012/19/UE

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