SOFREL S4W

MONITORING, PROCESS CONTROL AND REMOTE MANAGEMENT OF HYDRAULIC STRUCTURES

Pumping - Drinking water treatment - Reservoir - Lifting station - Waste water treatment

BENEFITS

- **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

Built-in modem — 2G/3G/4G Ethernet

Redundancy — ADSL / GSM

Cybersecurity

Simplicity

S4-Manager

Battery backup

Warranty — 3 Year

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**

A SIMPLE, CYBERSECURE ECOSYSTEM

- VPN server via public internet
- Electronic authentication certificate
- Centralised administration of remote terminal units
  - S4W configuration backup
  - User management
  - Access badge management
- Data centralisation and mining

KEY SERVICE FEATURES

- Downloadable configuration software
- Preliminary study
- Free hotline
- 3-year warranty

Sofrel
LACROIX

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

SOFREL S4W - Technical and functional characteristics

HARDWARE SPECIFICATIONS:

Compact cases

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

Extensions

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:

No. of data points managed	Up to 2000 data points
Calculations	Thresholds, formulas, average flow rates, conversion tables
Reports	Calculations: difference, max, min, current value (index) 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	Cycle time: 20 ms 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	Triggers: • Appearance: SCADA central station + sequence, otherwise acknowledgement of SCADA central station + web server • Disappearance: SCADA central station + web server 5 sequences of 10 recipients Directory of 20 SMS or Email recipients with confirmation info Global acknowledgement (SCADA central station - user) + web server
Communication protocols	LACBUS RTU protocol, Syslog
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 Archive export in CSV format

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