# SOFREL S4W range

Telemetry and scada 4.0 remote terminal units for connected and cybersecured water networks





# Connected and cybersecure water networks management









AUTOMATIC REDUNDANCY OF COMMUNICATION MODES:

2G / 3G / 4G\* & ADSL / XDSL...

\* Available for Europe, Africa, Middle East, for other geographical area





# **SOFREL S4W modular architecture and "Water" industry**TO **ADAPT** TO ALL TYPES OF OPERATIONS

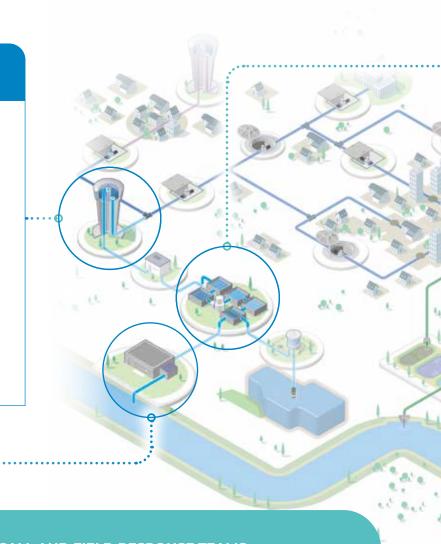


#### **PUMPING STATIONS**

- Inter-site communication between stations and water tanks
- Control of pump flow and pump performance
- Computation of volumes withdrawn from the natural environment
- Water physico-chemical characteristics monitoring
- Access control and management

#### **RESERVOIRS**

- Inter-site communication
   between water tanks and pumping stations
- Dynamic refilling according to need and electricity time-of-use rates
- Chlorination pump control
- Access control and management
- Data logging: levels, flow rates, etc.
- Management of overflow and underfill levels





#### **ON-CALL AND FIELD RESPONSE TEAMS**

- On-site and remote data visualisation
- Malfunction immediate alert

## features

#### **DRINKING WATER TREATMENT PLANTS**

- Management and monitoring of the water treatment process
- Pump and actuator operation **optimisation**
- Monitoring of treatment product levels
- Access control and management
- Logging of data from plant and process operations



#### **WASTE WATER TREATMENT PLANTS**

- Management and monitoring of the purification process
- Pump and actuator operation **optimisation**
- **Logging of data** required for operation and regulatory self-monitoring reports
- Control and management of access to structures

#### **WASTEWATER LIFT STATIONS**

- Overall management of pumping according to system load
- Pump operation **optimisation and automation**
- Management of the grease ring and tide mark build-up
- Computation of volumes and flows pumped (hours/days)
- Pump operating reports for preventive maintenance purposes
- Detection of clear water infiltration
- Energy monitoring and optimisation
- Data logging required for operation and self-monitoring reports



# **SOFREL S4W a Remote Terminal Units range and software**TO SUPPORT THE **SECURITY** AND **PERFORMANCE**OF WATER SYSTEMS

In addition to **compact, connected and robust** industrial equipment, we propose a full cybersecure **remote management solution** 

Its simplicity of implementation and use via graphics-based, user-friendly software make the daily life of users as easy as possible.







- Ready-to-use "water" features (alarm reporting, time-stamped archiving, reports, management functions, etc.)
- Built-in communication modules
- Configuration and user administration software (S4-Manager)

## ROBUSTESSE AND LONGEVITY

- Full control of development and manufacture (usine LACROIX France)
- Provides a **high degree of EMC** for surge protection
- Robust equipment for installation in harsh environments
- Regular updates to ensure telemetry network longevity
- 3-year warranty including surge cover

# RELIABILITY OF **COMMUNICATIONS**



## HIGH LEVEL OF SECURITY

suite

BEBBBBB



- Centralised access management
- "Watchdog" mode for switching to a degraded PLC in the event of process anomaly

• ADSL/4G dual support: in case of ADSL communication failure. the S4W automatically switches to 4G

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- Mobile operator selection optimisation
- Exchanged data volume and communication cost control monitoring
- Add-ons available (radio, LP modules)
- No loss of data: everything is transmitted to central systems
- Equipment backed-up by battery to continue logging and transmitting data in the event of power failure

# **SOFREL S4W robust industrial equipment**

# **TO SUPPORT YOUR WATER SYSTEMS**

FOR MANY YEARS









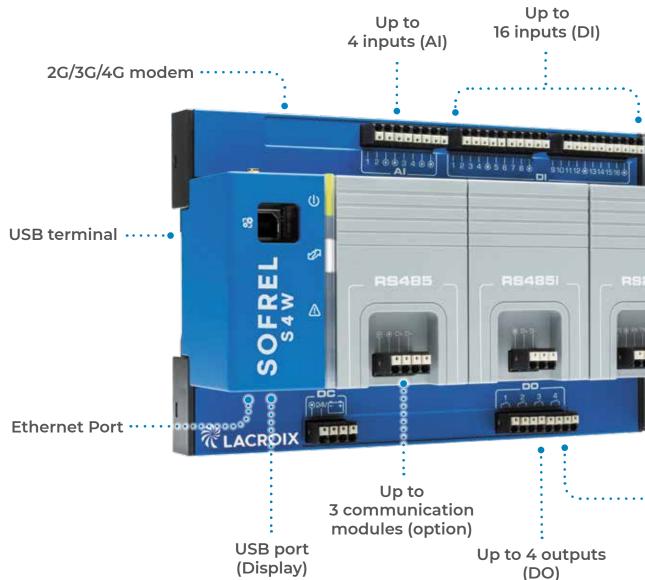






S4-Display touchscreen display unit





### EXTREMELY MODULAR

Up to 10 I/O extension modules Removable spring-loaded **EXT** bus connectors extension

modules

#### **SOFREL S4W Small**

8DI 2AI 2DO - 500 data points



#### **SOFREL S4W Medium**

12DI 2AI 4DO - 1000 data points



#### **SOFREL S4W Large**

16DI 4AI 4DO - 1000 data points



#### **SOFREL S4W Dual**

8DI - 1000 data points



The S4W offer is distinguished by its **simplicity of use** and speedy installation. S4W is accessible to all thanks to the graphics-based **configuration software** S4W-Tools, its configuration assistant and its pre-configured **"water industry" functions"**.

If necessary, expert users can customise the operation of their process even further using the **integrated automation workshop**.

Using equipment and installations is extremely simple thanks to the S4-View software, the **touch display** and **integrated web server**.



## Remote facilities monitoring & telemetry

- Data time-stamped at source
- Calculations & archiving, operating reports, thresholds, conversion tables
- Management of alarms, recipients and alerting sequences
- Permanent facility monitoring
- RTU and peripherals status diagnostics
- Automatic control of actuators and motors
- Inter-site control of remote terminal units and data loggers
- Monitoring and optimisation of electricity usage
- Communication redundancy
- GSM operator selection assistance

# SOFREL S4W easy-to-install, ACCORDING TO TO YOUR

## Built-in HTML5 web server for multi-terminal operation

- Responsive HTML-5 web server
- Data access via smartphone, PC or tablet
- Data viewing
  - · Logs and alarm acknowledgements
  - · Facility operational log
  - · Settings and time period adjustments
  - Graphing of data
- Animated graphic mimic diagrams
  - Editor integrated into S4W
- Archive export (file in CSV format)



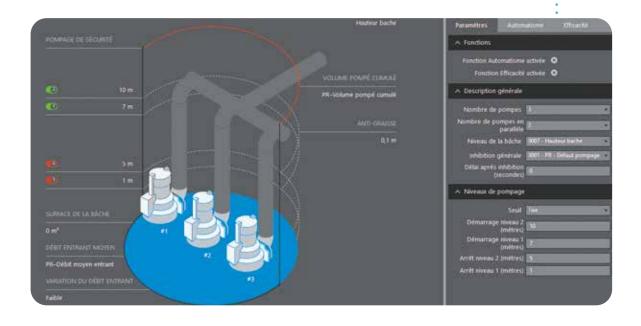






# easy-to-use equipment

## **PERFORMANCE** NEEDS



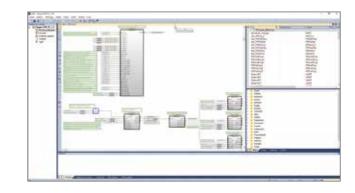
## Graphic configuration and management of lift station

- Graphics-based configuration of the lift station
- Pumping automation and efficiency:
  - · Level measurement
  - · Pump control, monitoring of starts and running times
  - · Sequencing and switching of pumps
  - · Anti-grease ring and anti-tide build-up offset
  - · Detection of clogged or worn pumps
- Hydraulic efficiency:
  - · Computation of current volume, cumulative pumped volume filling times and overflow times
  - · Computation of clear water infiltration



## Process-control suite for adaptation to specific use cases

- IEC61131-3-compliant suite built in to S4W
- Languages: ST, FBD, Ladder, Grafcet
- Industry library (specific archiving, badge management, lift station, communication drivers, etc.)
- Simulator, debugger, analyser



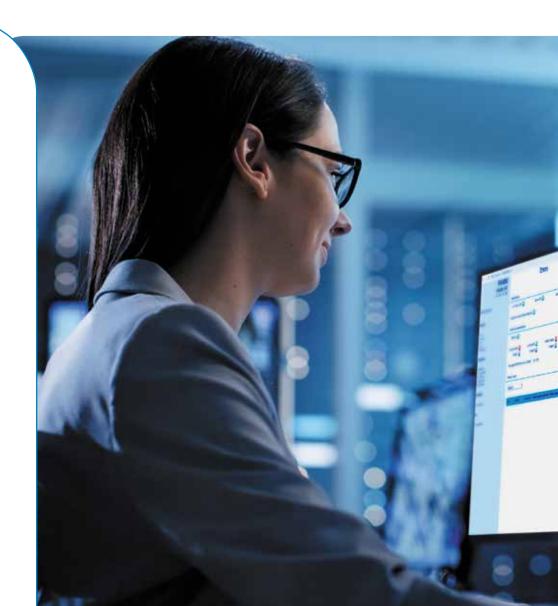
# SOFRELS4W meets the needs of communicating solutions for **permanently connected water networks**.

Understanding the advantages offered by All-IP devices, as well as the risks related to the internet, the teams at LACROIX Sofrel have developed a software ecosystem designed to **keep your telemetry network cybersecure**.

Cybersecurity is a crucial challenge for smart devices. It is essential for maintaining the integrity of the network. Implementing the S4W ecosystem is simple and efficient.



# Cybersecurity integrated into TO RESPOND TO THE **NEW** BY OPERATORS

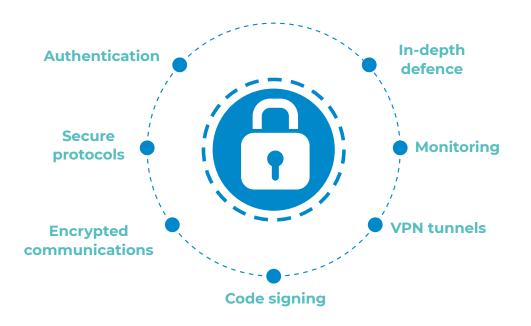


# the core of the solution CHALLENGES FACED



# An ideal operating mode for ensuring cybersecurity in water networks

- User authentication
  - · Individual accounts (login, password)
- Authentication of connected systems
  - · S4W-Tools, S4-View, S4-Manager, Monitoring, SCADA Central Station, S4W Intersites
  - · Mutual authentication by electronic certificate
- Data privacy and integrity
  - · Encrypted communications
  - · Signature of configurations and software
- Traceability
  - · Security monitoring (connections, updates, etc.)
  - · Safety monitoring (equipment status, system status, etc.)



# From RTU to ecosystem to smoothly YOUR TELEMETRY NETWORK

Apart from Remote Terminal Units, the S4W remote management solution comes with an **ecosystem** designed to **secure and facilitate administration of remote management networks**.

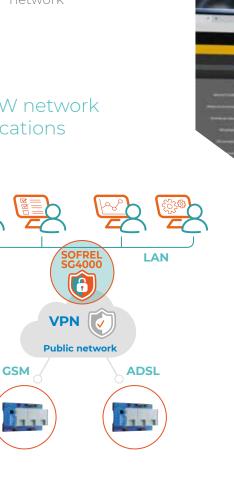
Centralised management of equipment, configurations and access rights provide **time savings and gains in efficiency** for network managers.

#### SOFREL SG4000

Creation of a permanent and secure S4W network is interfaced with the central site's applications

VPN server over public internet to facilitate management of the remote management network

- S4W VPN network
  - · Authenticated log-ins
  - Encrypted exchanges
  - · Automatic re-establishment of connections
- Interface with central site LAN
  - · RTU VPN/central LAN firewall
  - · Sector-specific applications: SCADA central station, monitoring, management
  - · Utilities: messaging service, remote access, etc.

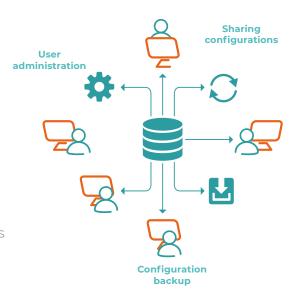


# safeguard and manage



# SOFREL S4-Manager Centralised administration of remote terminal units

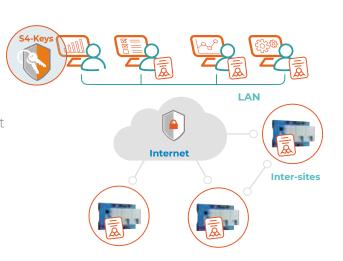
- User management
  - · Definition of individual accounts: passwords, rights, revocations, etc.
  - · Automatic updating of all S4Ws
  - · Access badge management
- Saving and sharing of S4W configurations between users



### **SOFREL** S4-KEYS

Creation of certificates for all products in the ecosystem

- Certification authority for all software and RTUs in the telemetry network
- Certificate issuing and management



CONNECTED
TECHNOLOGIES
FOR SMARTER
WATER &
ENERGY



LACROIX - Environment
2, Rue du Plessis
35770 Vern-sur-Seiche · France
Tel: +33 (0)2 99 04 89 00
info.environment@lacroix.group

www.lacroix-environment.com