SOFREL S4TH

Monitoring, Process Control and Remote Management of Dispersed Boiler rooms

USES & BENEFITS

- **Smart management of heat production and distribution**
  - Regulation of boilers and heating circuits
  - Communication with heating plant ecosystem (meters, boilers, etc.)
  - Optimisation of regulation (cut-off and restart) based on ambient and outside temperatures
  - Remote adjustment of occupancy setpoints and schedules
  - Automatic calculation and checking of consumption ratios
- **Installation security**
  - Protection against cyberattacks
  - Continuous monitoring
  - Alerts on deviations in consumption and malfunctions
- **Operational savings**
  - Optimisation of energy consumption
  - Monitoring and calculation of the energy produced
  - Heating controlled based on occupancy of buildings
  - Limitation of service interruptions

AN ECOSYSTEM THAT FACILITATES AND SECURES THE OPERATION OF SOFREL S4TH

- **VPN server on public internet** (SOFREL SG-4000)
- Automated cybersecurity, centralized management of authentication certificates, and fleet management via LX CONNECT
- **Centralised administration** of RTUs (SOFREL S4-MANAGER)
  - Backup of SOFREL S4TH configurations
  - Management of individual user accounts
  - Management of access badges
- **Data centralisation and exploitation** (SOFREL PCWin2, LX SCADA, OPC server, etc.)

PRODUCT BENEFITS

- **Built-in 4G/3G/2G modem** and **Ethernet port**
- **Reliability** and **robustness**
- **Process control workshop included**
- **HTML5 web server** with built-in configuration tool
- **Simplicity:** graphical and intuitive configuration; many tutorials available in the technical area

MAIN FEATURES:

Cybersecurity · Integrated modem · Backup battery · Guarantee · Simplicity · S4-Manager · HTML

LACROIX

Technical and Functional Features

HARDWARE DESCRIPTION	
Integrated Input–Outputs	8AIT° - 8DI - 4AO V - 4DO or 4AIT°- 4DI - 2AO V - 2DO version
2 USB ports	Terminal – Display
Power Supply	External: 24 V DC - Backup: 12-V battery
Connections	Spring-loaded terminal strips
L × H × D Dimensions	195 x 125 x 63 mm
Expansion Modules (Optional)	Up to 3 COM modules: RS232 - RS485(i) - EDF - DL - RD-RTU2 - HID Badge Up to 10 I/O modules (depending on the case): 16DI / 8DI / 8AIT° / 4AIT° / 8DO / 4DO / 4DO+ / 8AI mA / 4AI mA / 8AO / 4AO / 8AIV / 4AIV Bus expansion module (10 m): EXT
TECHNICAL FEATURES	
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 AI-T°input: NI1000 Probe, Range -50°C to +150°C – Accuracy: ±0,8°C · PT100 Probe, Range -50°C to +150°C Accuracy ±2°C · PT1000 Probe, Range -50°C to +400°C – Accuracy: ±1,35°C AI-V input: 0/10-V signal DO output: Breaking capacity: 3.6 VA (24 V maximum – 150 mA maximum) – 1 "Watchdog" Digital Output+: 60 VA (24 V max - 1 A max continuous / 2.5 A max pulsed) V output: 0–10-V signal · AO-AV output: 0–20-mA or 0–10 signal
Communication	2G/3G/4G modem - 100BT Ethernet - RJ45 socket Series: RS232 TX/RX/RTS/CTS/RS485(i): multipoint series with or without isolation 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) Lora Gateway / Modbus TCP
FUNCTIONAL SPECIFICATIONS	
Data Points Handled	Up to 2000 data points - Type of information changen
Calculations	Thresholds, formulas, average flows
Balances	Calculations: difference, maximum, minimum, current value (index) Periods: hour, day, week, month – Adjustable
Archiving	Logical data point: on change of status · Numerical data point: over period Balance period: at the end of the calculation period 1.5 million archives across all data – maximum depth 1 year
Process Control	User-configurable cycle time – 20 ms by default Languages: Ladder - ST - FBD - SFC (Grafcet)- Workshop to IEC 61131-3 standard · Programme memory: 2 MB · Specific archiving Heating business functions library · Ventilation library: air treatment unit application Communication library: WM-BUS Regulation programmes, badges (isolated person – intrusion)
Alarm Reporting	Triggering: Appearance/Disappearance of a logical data point configured as an alarm User-configurable alarm sequence (central station, SMS, email) · 20 sequences of 14 recipients Reporting schedule management · 20 schedules (10 exceptions) · substitution schedule Global acknowledgement: SCADA Central Station or contract operator (S4-View, web server - A globally-acknowledged data point)
RTU and TCP Modbus	60 devices Periodic exchanges of 50 event-triggered outputs and 100 blocks · Event-triggered data write of setpoint changes
Inter-RTU Communications	20 interfacers (S4TH, S500TH ou S500) Periodic exchanges: 20 blocks of 30 data points per interfacer Event-triggered exchanges: 20 write data blocks of 25 data points per interfacer with10 triggering data points per interfacer
Siemens Device Communications	Synco devices – compatible with OZW 700 link - LPB or RVL devices – compatible with OZW 600 link
Meters	3 (1 per TIC or RS232 link) - 60 M-BUS METERS
Serveur Web	Mimic diagrams editor, curve tracing, schedule programs HTML5 – can be operated on tablets, PCs, smartphones (remote and local) Archive export in CSV format - Equipment operating diagnostics
INTEGRATED CYBERSECURITY AND ECOSYSTEM	
User Authentication	Individual accounts with login and password that can be administered remotely (SOFREL S4-Manager) · Active Directory Link
Authentication of Connected Systems	Mutual authentication by electronic certificate Management of several environments (configuration and diagnostics tools · S4Tools & S4-View)
Data Confidentiality and Integrity	Communication encryption (TLS V. 1.2) · Configuration and software signing
Traceability	Operational 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) 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

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