VISIOTECH



SMART POWER

SOLAR-POWERED

SMART CABINETS

The **SF-BOX08SOL-BMS-IP55** junction boxes are specifically designed to harness the power provided by a photovoltaic solar energy system, ensuring an autonomous and sustainable supply 24 hours a day. During daylight hours, the photovoltaic panels generate energy and recharge the lithium battery, which will keep supplying power during the night or during prolonged periods without sunlight, thanks to its compatibility with the large **48-volt, 100-amp** lithium battery**.**

By installing one 60V panel or two 30V panels together, the system is capable of fast charging the lithium battery.

The system also includes a smart board that allows **remote monitoring and management** (if an Internet connection is available). Thanks to this technology, users can have real-time access to information and data about the installation, from any device with web access.

Additionally, users can **configure and control connected devices, perform diagnostics, receive alerts and notifications, and manage energy consumption remotely,** thus gaining complete control of the system regardless of their location.

Key Advantages:

• **Advanced Data Security:** Incorporates protection through data encryption, user authentication, and defence against unauthorised access, ensuring the privacy and integrity of stored and transmitted information.

• **OTA (Over-The-Air) Updates:** Allows remote firmware and software updates via wireless connections, keeping the system up to date with the latest improvements and features, without the need for manual intervention.

• **High Security**: Equipped with advanced protection against overloads, short circuits, and unauthorised access, ensuring the security and stability of devices.

• **Customisable Alerts and Notifications**: Configurable to send customised alerts and notifications via channels such as email or SMS, alerting you to important events, system failures, or critical situations that require immediate attention. It is also compatible with existing alarm systems.

• **Intuitive and User-Friendly Interface**: Its user interface is designed to be easy to use, making management simple even for those without technical experience.

• **Centralised Management:** Provides a centralised platform for the administration and monitoring of multiple devices, facilitating remote management, configuration, and monitoring of cameras, recorders, and routers from a single point of control.

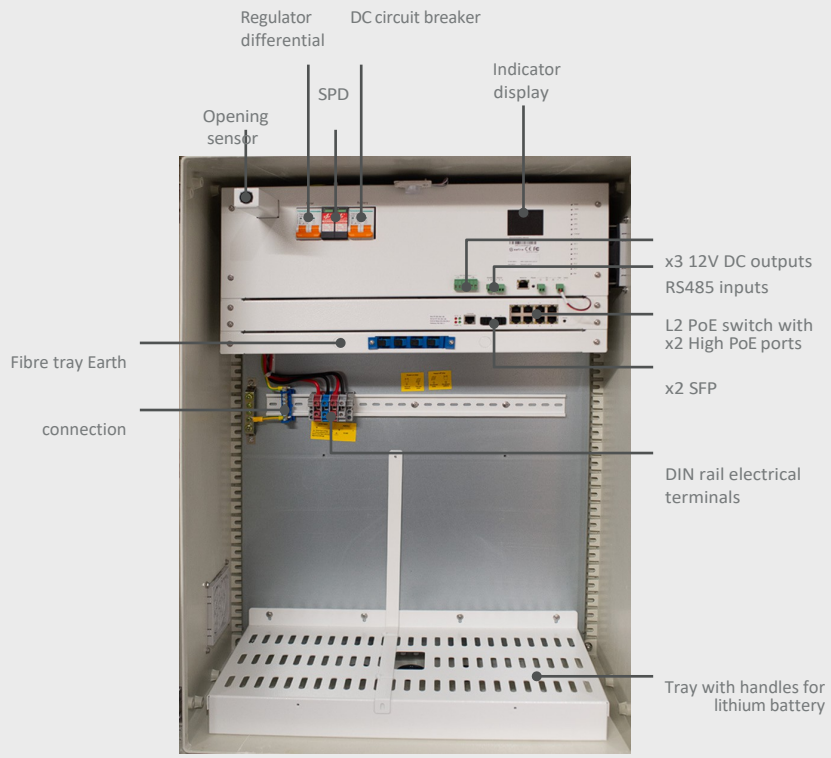
• **Versatility in Integration:** Thanks to their manageable outputs, these streetlight models adapt to different devices, such as IP cameras, recorders, and routers, simplifying the integration of video surveillance systems and networks into a single solution.

• **Multi-User Access and Role Management:** Allows the configuration of multiple users with different roles and access levels, ensuring secure and customised administration of the system in accordance with assigned responsibilities and permissions.

• **Resilience and Reliability:** Designed to withstand adverse conditions, such as voltage fluctuations, power surges, and extreme weather, ensuring continuous and reliable operation of connected devices.

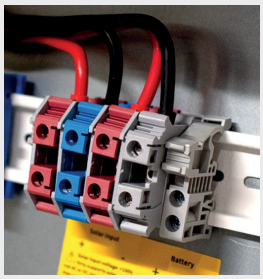
• **Predictive Maintenance:** Provides real-time data on device status and performance, enabling predictive maintenance that facilitates the identification of problems before they affect the system.

• **Scalability:** Designed to be scalable, this system allows devices and configurations to be added or modified in accordance with changing system requirements or future expansions.



Features

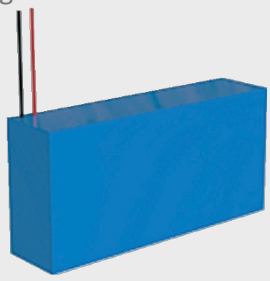
60V DC input, battery input and charge output. Connection to the solar panel, uses the voltage supplied by the solar panel to charge the lithium battery and provide power to the internally connected components.

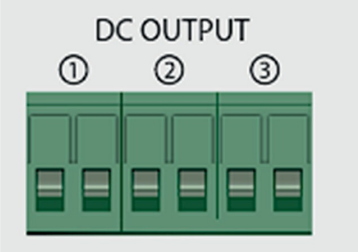




The regulator circuit breaker, SPD, and the miniature circuit breaker are electrical protection devices designed to interrupt the flow of current in the event of overloads or short circuits in the electrical system. In addition, they have a thermal relay that constantly monitors the temperature of the system, disconnecting the power supply if excessive heating is detected.

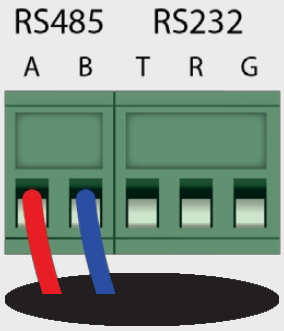
The system includes a direct connection to a battery, which acts as a backup power source. This connection allows the system to operate continuously throughout the day, using stored energy, and ensures a smooth transition in the event of power grid interruptions. The type of battery used for this cabinet is 48-volt, 100-amp lithium.

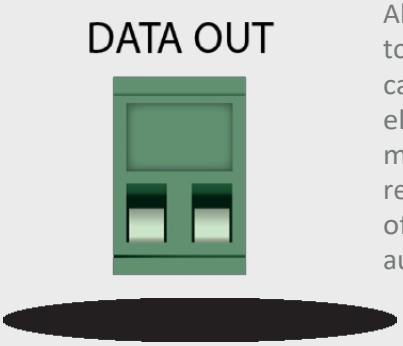




All boxes are equipped with three 12-volt, 3-amp direct current (DC) outputs, specifically designed to power devices and equipment that require this power supply. This configuration allows several devices to be powered independently, facilitating equipment management: in the event of a failure, it is possible to cut or reset the voltage of a specific circuit without affecting the others, allowing for selective and efficient management of each device.

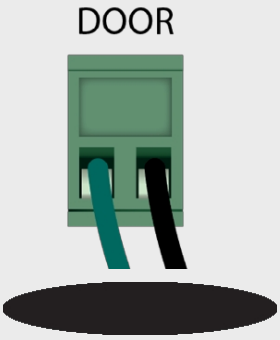
The boxes are equipped with RS485 and RS232 inputs, two widely used serial communication standards for data transmission between electronic devices. These connections allow instructions to be sent remotely to connected industrial equipment, facilitating efficient and reliable communication between devices in the system.

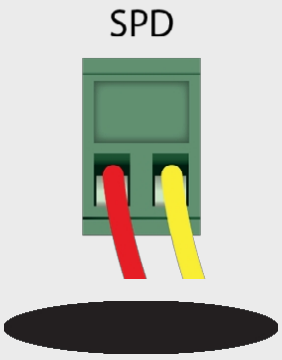




All models include a relay output that functions as an electromechanical switch to control external devices that require activation or deactivation. This output can be activated remotely and manually, allowing additional devices such as electric locks, lights, alarms, and access controls to be connected and managed. In addition, it can be configured to activate automatically in response to programmed events, such as the opening of a door, the activation of an alarm, or according to a set schedule, expanding the system's automation functionalities and options.

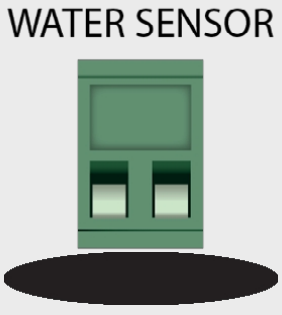
The **SF-BOX08220-BMS-IP55** model is equipped with a door sensor that notifies when the door is opened. This allows the control centre to verify that the technical intervention is legitimate and that no sabotage is taking place. In addition, the sensor automatically activates the auxiliary light, improving visibility and safety in the area.





The system includes an internal surge protection device (SPD), designed to protect both the system and operators from possible electric shocks. This device acts as a barrier against static discharges, ensuring the safety and integrity of electronic components.

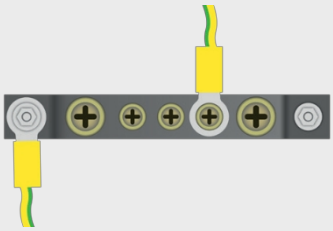
The system allows for the optional connection of a flood sensor, which detects the presence of water inside the cabinet where it should not be. Upon detecting water, the sensor sends an emergency alert to the control centre, allowing devices to be disconnected remotely to prevent further damage or accidents. It also notifies the need for immediate assistance and warns nearby personnel of risks, such as possible electric shocks, ensuring the safety of operators and the environment.

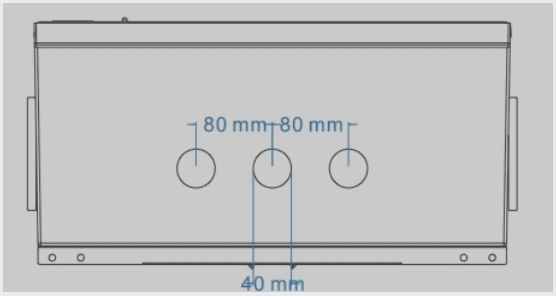




All devices have an internal fan that activates automatically when the internal temperature reaches high levels. This fan promotes the circulation of hot air towards the outlets, which contributes to the cooling of the system and prevents possible overheating, ensuring safe and efficient operation by removing hot air through the side grille.

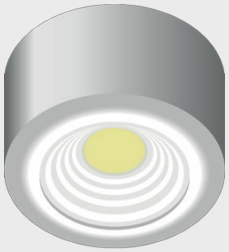
They are equipped with a ground connection, providing a key solution for ensuring electrical safety. This feature protects against electric shock and prevents failure or damage to connected equipment and systems. By establishing a secure connection to the ground, it allows for the dissipation of currents and the elimination of unwanted voltages. In addition, it complies with electrical safety regulations and standards, helping to prevent accidents and ensuring safe system operation.

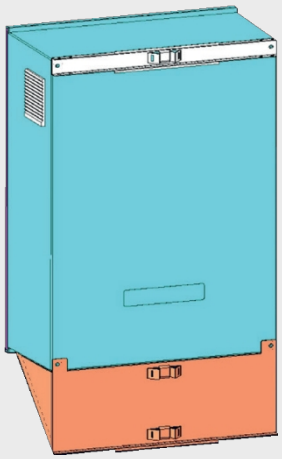




The system is equipped with three cable entries located at the bottom, providing a secure solution for sealing and protecting electrical, data and communication cables entering or exiting the cabinet. This ensures that the cabinet is protected against the ingress of water, dust, debris, moisture, among other things. Thanks to the three inputs/outputs, it is possible to isolate different types of signals, avoiding interference, electrical noise and other problems that may affect system performance.

All cabinet models include a small internal LED light that turns on automatically when the cabinet door is opened. This feature provides efficient lighting, improving visibility and facilitating access to internal equipment and components, especially when monitoring or repair is required. It also assists in carrying out periodic inspections and checks, ensuring safer and more convenient handling of equipment.



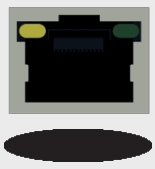


The system includes a specially designed bracket for mounting on a mast, providing a versatile and adaptable solution for the safe installation and securing of the cabinet or equipment in various locations and environments. In situations where space or the environment requires it, this option allows the equipment to be adapted to a mast, raising it to a suitable height to optimise access and functionality.

The door is designed to prevent the ingress of water or moisture, incorporating a double lock system with a key for added security. In addition, it has a step at its base that prevents water from accumulating at the joint of the comma, preventing it from sticking to the roof or the edges of the door due to frost or dirt. Optionally, a high-security lock can be installed to reinforce protection.



NETWORK



The system has a network socket that connects the internal smart module to one of the switch ports. This allows remote access to be enabled for efficient device management and monitoring when the switch is connected to the Internet.



The system incorporates a professional switch with 8 Ethernet ports (RJ45) and 2 SFP (Small Form-factor Pluggable) ports, offering versatile and robust connectivity for interconnecting devices. This facilitates integration into local area networks (LAN) or wide area networks (WAN), ensuring efficient and flexible communication between connected devices. The L2 switch has 6 PoE ports and 2 special High PoE ports for connecting high-consumption devices. It allows for extended PoE functionality.

What it is used for:

• **Resilience and Redundancy:** It offers resilience (with watchdog on all ports) and redundancy functions, improving network availability and reliability. The SFP ports can be used as trunk links, increasing network stability and capacity.

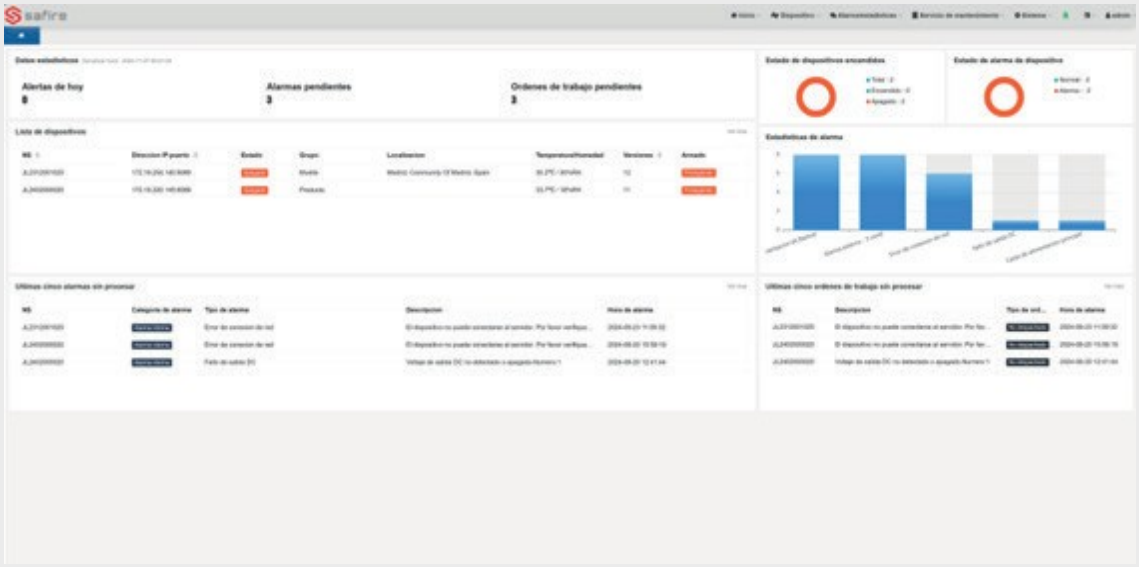
• **High Performance and Speed:** Provides high performance and fast data transfer speeds, facilitating the efficient transmission of information, videos, images, and other data between connected devices.

• **Extended Connectivity:** Provides extended and flexible connectivity, allowing the interconnection of various devices, equipment, and systems. Facilitates the creation of local area networks (LANs), network segmentation, and network infrastructure expansion according to installation needs.

• **Integration with Existing Networks:** Facilitates integration with existing networks, enabling connection and communication with other switches, routers, servers, storage devices, and network equipment, allowing for coordinated and unified operation.

Remote Management Software

The management software is free and installs in a Windows environment. It is designed to manage and monitor multiple smart cabinets, facilitating the registration, configuration and centralised monitoring of connected cabinets. The web interface is accessible and easy to use, allowing efficient management from anywhere.



Features

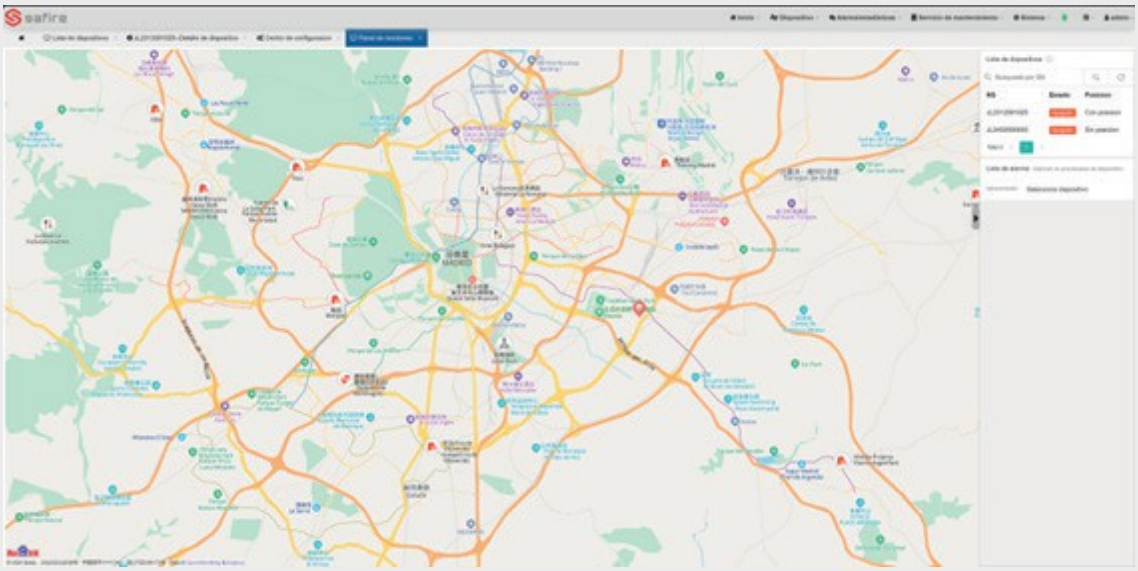
Automatic Connection and Cabinet Registration

Smart lockers are designed to automatically connect and register with the web server when the server address is entered. This facilitates rapid integration and simplified implementation of the lockers in the centralised management system.



GPS Location on Online Map (Manually)

This feature allows you to geolocate the box and enter its coordinates into the control centre, which has a map tool (emap). This makes it easy to view all installed devices on the map, which is especially useful when managing units distributed over a large area.



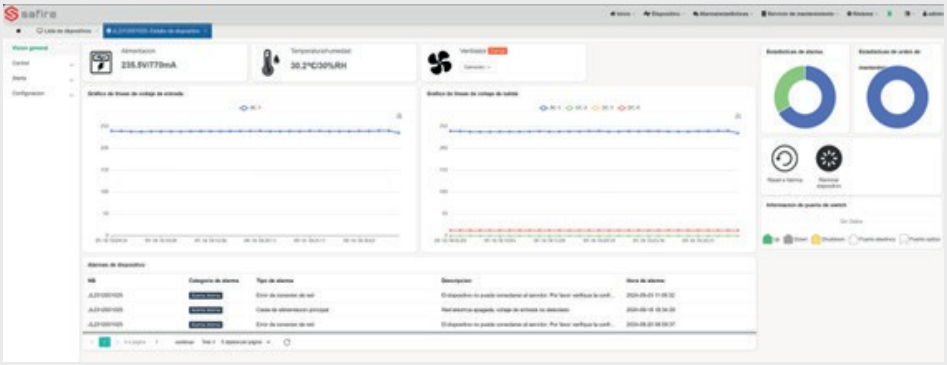
Manual and Automatic Control of 12V Outputs and Relay Output

The system allows both manual and automatic control of the 12V outputs and the relay output of the smart cabinet. This offers flexible and customised management of connected devices and systems. Users can remotely switch devices on or off in the event of a blockage, or receive notifications via an alarm panel, thanks to the integrated relay output.



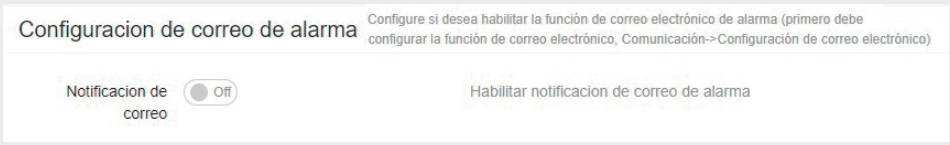
Real-Time Display of Cabinet Properties

The management software allows you to view all the properties and characteristics of the smart cabinet in real time, facilitating continuous monitoring and supervision of its status. Information on the operating parameters of the equipment and systems in the cabinet can be accessed, such as consumption, voltage outputs, switch ports, door status, internal lighting, ventilation, humidity, among others, allowing for detailed and efficient analysis.



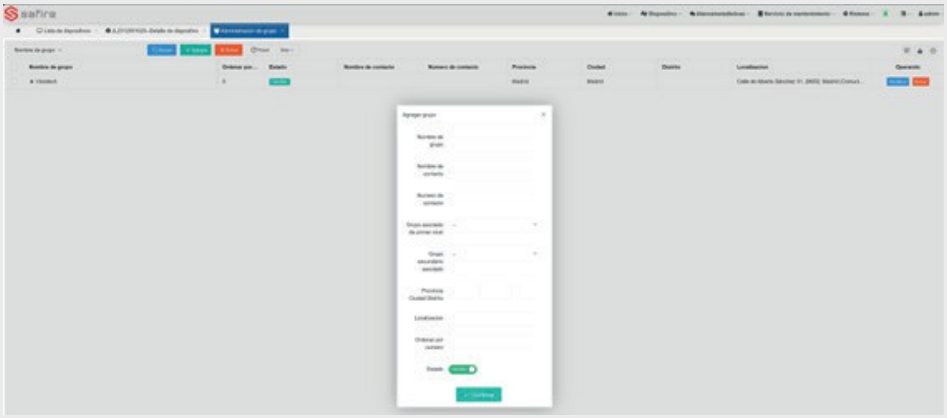
Alarm notifications via relay and email

The system automatically detects events and incidents, such as equipment failures, overloads, short circuits, power failures, and other critical events that require immediate attention. Through the relay and email, it sends automatic notifications to designated recipients (technicians, administrators), providing detailed alerts, incident reports, and status updates. These notifications report on events that have occurred, conditions detected, and actions needed to manage and mitigate the risks and effects associated with incidents.



User Group Management by Levels and Permissions

The system allows you to manage user groups with different levels and permissions, providing an organised, secure and customised structure to control access, functions and operations in the smart cabinet. In addition, it facilitates detailed auditing and access logging, documenting all activities, operations and events performed by users. This ensures traceability, transparency and accountability, enabling effective monitoring, evaluation and analysis of user behaviour in the operating environment.



Statistics and Consumption History Tables and Real-Time Event Viewer

The system provides a table of statistics and consumption histories, along with a real-time event viewer, allowing for detailed and up-to-date visualisation of data and activities related to the performance and operation of the cabinet. The statistics table presents graphs, diagrams and metrics on energy consumption, battery levels, device operations and other relevant data. In addition, it provides access to stored consumption histories, which record and document measurements and activities related to energy consumption. This data can be exported for processing in other programmes.



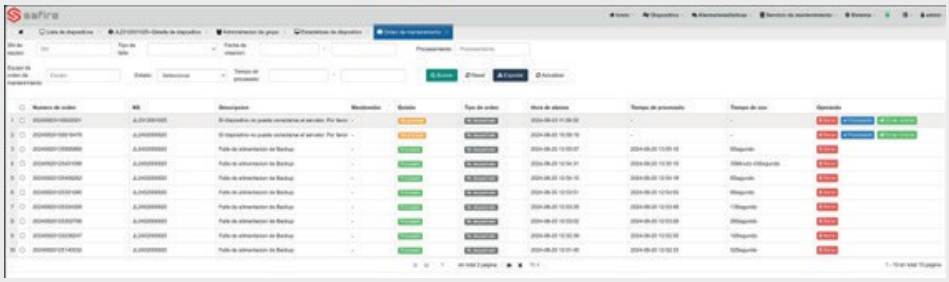
Platform in Spanish with customisable logo and home screen, menus and adaptive design.

The software is provided free of charge in Spanish and allows you to customise key aspects such as the home screen, logo and user interface. This customisation capability is specially designed for users who manage multiple units, providing a more satisfying experience tailored to their needs. The design is also adaptive, ensuring an optimised and easy-to-use interface.



Automatic Generation of Maintenance Orders through Fault Detection

The system allows for the automatic generation of maintenance orders when faults are detected in the smart cabinet. This functionality facilitates a quick and efficient response to incidents, ensuring operational continuity and system reliability. Once the maintenance order has been created, a fault report is automatically sent to the responsible technicians so that they can intervene in a timely manner.



Hardware specifications

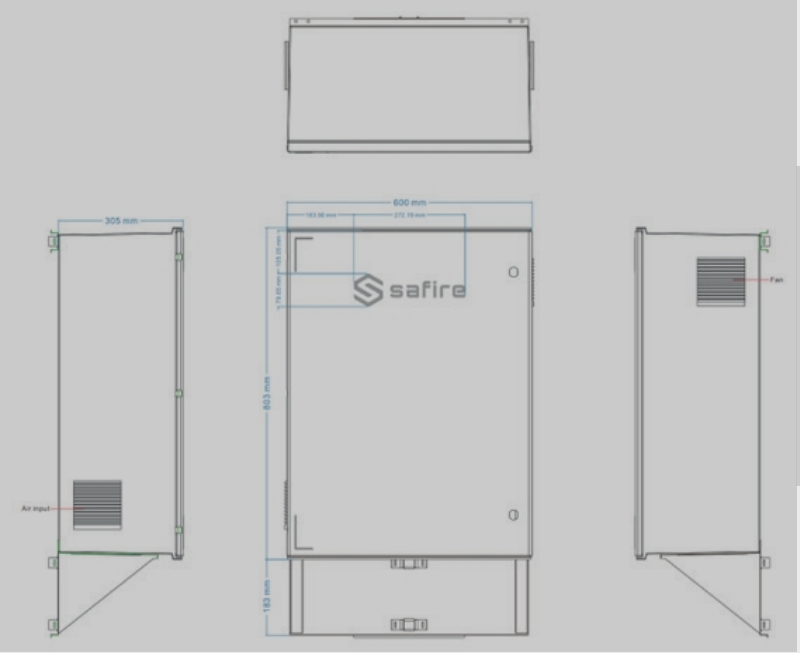


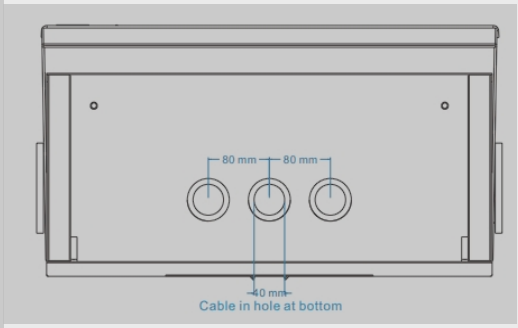
Product specifications

Brand Safire
Type Polyester cabinet with switch and power supply included
Security Double key lock
Power input Input <100VDC (voltage supplied by solar panel not included, 60V panel recommended or 2 x 30V DC panels in series)
Plug x2, European type F
Transient SPD xSPD 2P, AC380V, 20KA
Circuit breaker MCB circuit breaker, 1P, DC220V, 16A, type C + 1P, DC220V, 16A, type C
DC output 3x 12V DC, max. 240W (between the 3 outputs)
Fan 1x 12V DC
DC **light** 12V||Internal LED for night-time maintenance. Lights up when the door is opened
Door sensor Yes
Ethernet switch xSwitch 8*10/100/1000M PoE (2*90W ports, 6*30W ports) + 2*1000 SFP, L2 managed
Alarm input 3 inputs, dry contact||*Input 1 used by default for door contact
Intelligent module network port 1 x 10/100Base-TX
Reset button > Long press for 5 seconds: restore factory settings
Converter DC 48 V to DC 12 V converter
Charge controller Maximum input voltage 100 V, supports DC12 V/24 V/48 V battery, charging current 20 A
LCD display Size: 2.5-inch LCD display **Fibre fusion tray** 4 x SC (connector) **Operating temperature** -20°C to 70°C
Storage temperature -40°C to 85°C
Humidity 0~90% non-condensing
External dimensions 800 (H) x 600 (W) x 300 (D) mm
Material SMC (glass fibre reinforced polyester resin) **Colour** White
Net weight 22 kg
Management software Yes
Switch
Power consumption Self-consumption <20W, PoE output 180W max.
Ports Ports 1-2: 10/100/1000Base-T, 90 W, PoE RJ45 (IEEE 802.3bt, also compatible with IEEE8025.3af/at); ||Ports 3-8: 10/100/1000Base-T, 30 W, PoE RJ45 (IEEE802.3af/at)
SFP Ports 9~10, SFP slots 1000Base-X
Switching capacity 20Gbps **Bandwidth** 14.88Mpps
Buffer 1M
Address table MAC 8K
Protection Surge: 6 kV, standard: IEC61000-4-5||ESD: 6 kV: contact/8 kV: air, standard: IEC61000-4-2
System configuration Date and time||User management||Security management (http, SNMP,

telnet, SSH)||Configuration files (export/import)||Firmware||System (reboot, default)
Port configuration Status||Port speed||Traffic control||Storm control (broadcast, interval, unicast, multicast)||Port protection||MAC learning||Trunk ports||Mirror ports||DHCP||IGMP snooping||VLAN||LACP||LLDP||Loopback detection||MAC VLAN||VLAN mapping||Voice VLAN||Mvr interface||OAM||QinQ||Udld||Jumbo frame||DDM information
MAC MAC link||Auto link||MAC filter||Bridge
VLAN Working mode (access, trunk, hybrid)||Default VLAN||Tagged member
SNMP Configuration SNMP Community (community name, read, write)||TRAP (SNMP version V1, V2C, V3)
ACL Configuration Standard IP (Groups, Source IP, Wildcard, Mathematical Data Packets)||Extended IP Extended (Groups, source IP, source wildcard, destination IP, destination wildcard, protocol, source port)||IP MAC||MAC ARP||ACL reference||Time range
QoS configuration QoS application||QoS schedule||IP address||ARP||Static route host
AAA Configuration Tacacs+||Radius||802.1X Authentication
STP Configuration MSTP||STP port
IGMP Snooping Configuration Available
GMRP Configuration Global GMRP||GMRP Ports||GMRP Registration
EAPS Configuration EAPS
RMON Configuration Statistics||History||Alarm||Events **Cluster Management** NDP||NTDP||Cluster
Log Information Log||Syslog
POE Power Control Type||Status admin||Total Power||POE Policy||PD Query
DHCP DHCP Snooping
ERPS Configuration ERPS||ERPS Ring 1~21
LACP active links LACP
Line Vty
LLDP Global||Hold multiplier||Timer
Loop detection Detection time||Protocol||Response packets||Response time
MVR Groups||VLAN
OAM Frame error||Period||Seconds
Redundant port Forced||Primary port
UDLD Enable||Schedule
VLAN ARP Protocol, Atalkaarp, Atalkddp, Atmmulti, Atmtransport, Dec, Deccustom, Decdiagnostics, Decnadumpload, Decdnaremoteconsole, Decnarouting, Declat, Desyscomn, G8bpqx25, IEEEaddrtrans, IEEEpup, IP, IPX, PPPdiscovery, PPPsession, Rarp, X25, Xeroxaddrtrans, Xeroxpup
CFM CC||Enable||Linktrace||MA||MD||Rule-mip||Service-instance

Dimensions





Applications

Public Infrastructure and Equipment

Monitoring and maintenance of infrastructure, public facilities and control systems in municipal facilities, including parks, squares and public spaces. Supervision and control of components such as fountains, traffic lights, signs and traffic management devices, all connected to the smart cabinet.





Construction and Public Works

Facilitates the management of construction and building projects in locations where a constant 24-hour electricity supply is not available, enabling control, monitoring of project progress and safety.

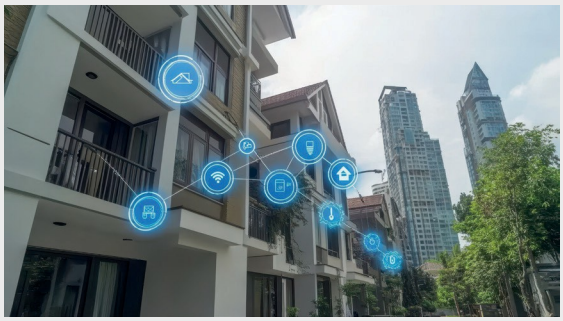


Water and Sanitation Infrastructure Management

Supervision and control of water management systems, pumping stations, distribution networks, and wastewater treatment and sanitation systems. Real-time monitoring of key parameters, storage levels, water quality, and maintenance operations.

Residential Environments and Smart Communities

Implementation of smart and connected solutions in homes, housing developments and residential communities, aimed at improving quality of life, safety and environmental sustainability through the integration of IoT sensors.





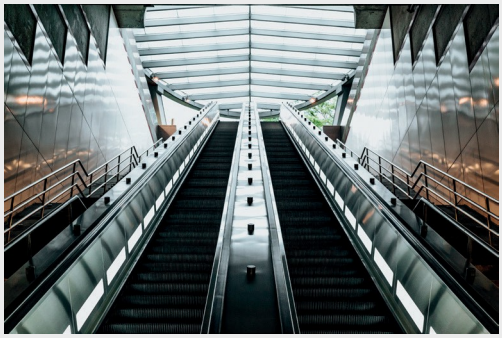
Video Surveillance and Security Systems

Integration and connection of IP cameras, recorders, and security systems to the smart cabinet. Supervision and control of security zones, access points, and protected areas through real-time monitoring and generation of alarms and alerts.

Industrial and Commercial Solutions

Implementation and administration of industrial, commercial and business solutions that require remote supervision and control of critical facilities and processes. Integration and management of automation systems, access control, environmental monitoring and administration of assets connected to the smart cabinet.





Transport and Logistics Facilities

Integration and control of signalling, traffic control, lighting and security systems in transport infrastructure such as stations, airports, ports and public transport networks. Remote monitoring and management of logistics facilities, warehouses, terminals and distribution points to optimise the operability, efficiency and safety of transport and logistics operations.

Agriculture and Smart Farming and Livestock Solutions

Integration and support of irrigation systems, agricultural sensors, weather stations and precision farming solutions connected to the smart cabinet. Remote monitoring and management of crops, environmental conditions, natural resources and agricultural operations. operations to optimise production production, productivity and sustainability in agriculture and agribusiness. Livestock monitoring and location of lost animals.

