



USER MANUAL

SMC Smart Case

Internet of Things system for remote monitoring of compressed air networks



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1. Introduction

1.1 System description

SMC Smart Case is an Internet of Things system developed by **Optimo IoT** for the remote monitoring, both locally and via cloud, of the operating parameters of compressed air networks. The system is designed to support energy analysis and optimization campaigns on compressed air systems, by acquiring the data collected from the **SMC Wireless Base** and **SMC Air Management System** devices present on the customer's plant.

The system is organized as a portable, Plug&Play case that integrates all the hardware needed to acquire, transmit and display the data, both locally and remotely via the Optimo IoT cloud platform.

The SMC Smart Case system consists of two main components, covered in separate chapters of this manual:

- a hardware part, made up of the SMC Smart Case housing with the electrical panel, the Optimo IoT AssetLinker 300 gateway, the supplied LoRaWAN wireless devices and the local display tablet (chapter 3);
- a software part, made up of the Optimo IoT monitoring platform, accessible both locally via the network generated by the gateway and remotely via the cloud, which enables data display, analysis and alarm management for the acquired data (chapter 4).

The heart of the system is the **Optimo IoT AssetLinker 300** gateway (**AL300**), which acts as the link between the data acquired in the field and the Optimo IoT cloud platform: the gateway acquires data from the field devices (via the OPC UA protocol from the **SMC Wireless Base** and via the LoRaWAN protocol from the supplied wireless sensors) and makes it available both locally, through its built-in webserver, and on the cloud.

1.2 Purpose of the manual

This manual is intended to describe the composition, installation, configuration, use and maintenance of the SMC Smart Case system, providing the technical staff in charge with all the information needed for correct and safe use of the product.

1.3 Intended readers and required skill level

This manual is intended for the technical staff responsible for installing, commissioning and maintaining the system, who must have basic skills in the electrical/electronic field and in data networks (TCP/IP).

1.4 Scope of supply and limits of liability

The **SMC Smart Case** system, covered by this manual, is supplied by **Optimo IoT** s.r.l. in its entirety as regards the case, the electrical panel, the **AL300** gateway, the LoRaWAN wireless devices (current transducers and push buttons) and the display tablet.

The following components are excluded from the **Optimo IoT** scope of supply, and remain the responsibility of the customer:

- the SMC Wireless Base device;
- any other SMC Air Management System devices and the related IO-Link sensors;
- the installation and connection of these devices on the customer's compressed air system.

Optimo IoT accepts no liability regarding the operation, installation and maintenance of the above-listed **SMC** devices, for which reference should be made to the technical documentation provided by the SMC manufacturer.

2. Safety

This chapter sets out the general safety warnings to be observed during installation, use and maintenance of the SMC Smart Case system. It is recommended to read this chapter carefully before carrying out any operation on the device.

2.1 General warnings

The SMC Smart Case system is an electrical device powered at **low voltage** (110V AC / 230V AC) and must be installed, connected and commissioned exclusively by **qualified technical personnel**, in compliance with the electrical regulations in force in the country of installation.

- Before any work on the electrical panel inside the case, disconnect the mains power supply.
- Do not open or tamper with the electrical panel except by authorized, qualified personnel.
- Check that the available supply voltage is compatible with the rating plate (110V AC 60Hz or 230V AC 50Hz).
- Do not use the system in the presence of damaged cables, connectors or components: in that case, contact Optimo IoT technical support.
- Do not expose the case and the wireless sensors to environmental conditions (temperature, humidity, atmosphere) that are not compatible with the protection ratings declared for the individual components.
- **The system is not suitable for aggressive environments or for environments classified as having explosive atmospheres (ATEX).**

Warning

The electrical connection and installation of the SMC devices (Wireless Base, Air Management System) remain the responsibility of the customer/SMC installer. Optimo IoT does not supply or install these devices and is not responsible for their correct installation.

2.2 Installation conditions and intended use

The SMC Smart Case system is intended **exclusively for monitoring** the operating parameters of compressed air networks in industrial settings, by acquiring data from SMC devices and transmitting it to the Optimo IoT monitoring platform.

The case must be positioned in a dry area, sheltered from direct weather exposure, excessive heat sources and significant mechanical vibration, and must allow free dissipation of the heat generated by the internal electronic components.

The system **must not be installed in areas classified as being at risk of explosion** (ATEX atmospheres). **Installation in an ATEX area is not permitted.**

2.3 Prohibited uses

The SMC Smart Case system is a device intended exclusively for monitoring and data collection: **it is not suitable, and must never be used, for safety functions**, direct process control or emergency shutdown (safety-critical applications).

- Do not use the system as the sole means of detection for the safety of the plant or of personnel.
- Do not use the system's data to automatically trigger safety devices without an adequate, independent and certified control system.
- Do not modify the hardware configuration of the case (wiring, connectors, power supply) with respect to what was supplied by Optimo IoT.

2.4 Maintenance and support

Routine maintenance operations (cleaning, visual inspection of the wiring, replacement of the wireless sensor batteries) may be carried out by the customer's personnel, following the instructions given in chapter 7 of this manual.

Any work on the electrical panel, on the AssetLinker 300 gateway or on the network configuration must be agreed with Optimo IoT technical support, which can be contacted using the details given on the cover page and in chapter 8 of this manual.

3. Hardware – SMC Smart Case

This chapter describes the hardware composition of the SMC Smart Case, made up of the following main elements:

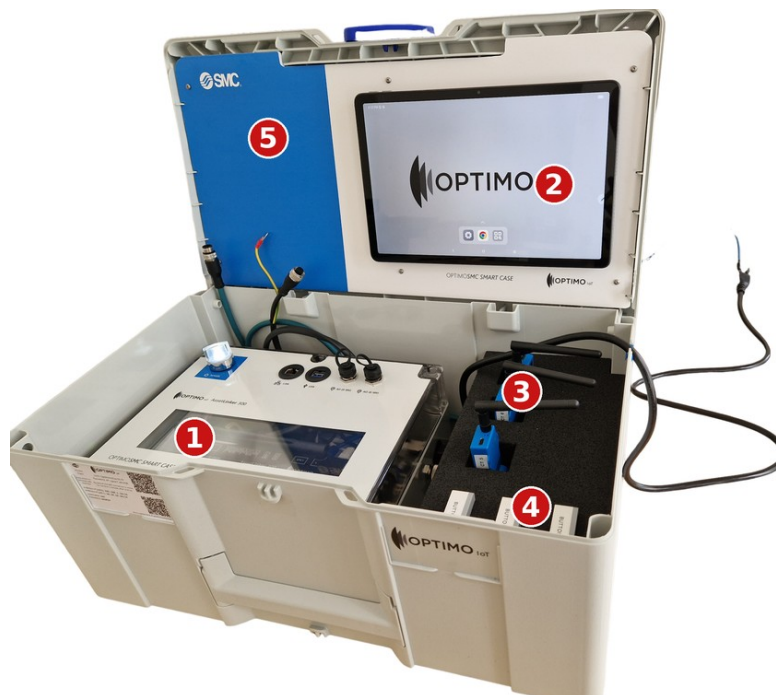
- the internal electrical panel;
- the connector panel;
- the supplied LoRaWAN wireless devices;
- the local display tablet.

For information purposes, the SMC devices that interface with the system but remain part of the customer's own supply are also mentioned.

3.1 Overview and case layout

The SMC Smart Case is a portable, Plug&Play solution designed to be positioned close to the compressed air system to be monitored, with no need for fixed installation works. When the case is opened, two main areas can be identified:

- the lower compartment of the case, which houses the electrical panel, integrating the Optimo IoT AssetLinker 300 gateway, the power supply unit, the protection devices, the LoRaWAN antenna, the 4G module and the connector panel, as well as the supplied LoRaWAN wireless devices (current transducers and push buttons), housed in dedicated shaped protective foam compartments;
- the upper compartment, on the lid of the case, which houses the 10" tablet for local data display.



Ref.	Component
1	Electrical panel with Optimo IoT AssetLinker 300 gateway
2	10" tablet for local dashboard display
3	LoRaWAN wireless current transducers (qty. 3)

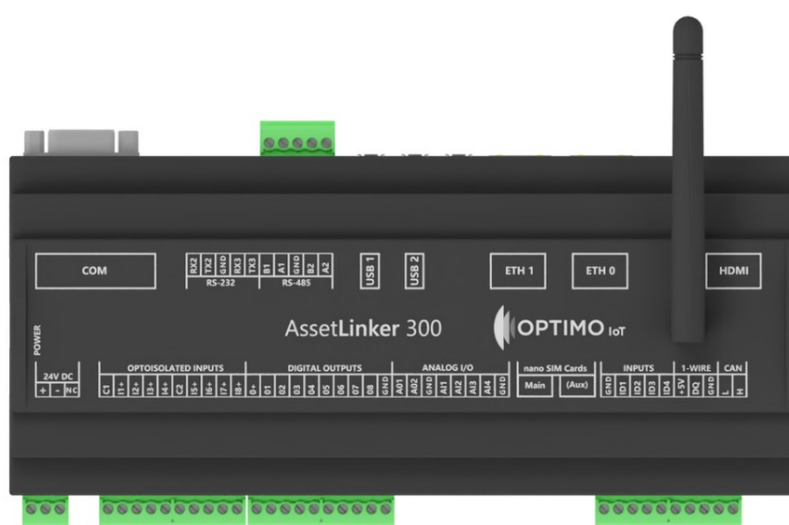
4	LoRaWAN wireless push buttons (qty. 3)
5	Free space, with hook-and-loop fastening, for housing the SMC Wireless Base (customer-supplied)

3.2 Electrical panel

The electrical panel inside the case integrates all the electrical and electronic components needed to acquire, process and transmit the data. The main components are detailed below.

3.2.1 Optimo IoT AssetLinker 300 gateway

The **AssetLinker 300 gateway** is the **heart of the system**: it acquires data from the field devices and makes it available both locally and on the cloud.



Feature	Detail
Connectivity	WiFi, LAN (Ethernet), 4G LTE
Supported protocols	Modbus RS-485, Modbus TCP/IP, BACnet, OPC UA, LoRaWAN
PLC integration	Direct integration with Siemens and Rockwell PLCs
I/O	On-board analog and digital inputs and outputs
Local interface	Local webserver for offline use
Operating continuity	Internal supercapacitors for safe shutdown in case of power loss
Power supply	24V DC
Mounting	DIN rail or wall mounting
Remote support	Dedicated VPN channel for remote interventions

The complete datasheet of the Optimo IoT AssetLinker 300 gateway is provided as an attachment (see chap. 9).

3.2.2 Multi-voltage power supply unit

The panel is equipped with a **multi-voltage power supply unit**, suitable for both **110V AC 60Hz** power supply (American standard) and **230V AC 50Hz** power supply (European standard), allowing the case to be used in both contexts with no need for hardware modifications.

3.2.3 Fuse protections

The panel is protected by fuses sized to protect the internal power circuits, safeguarding the gateway, the power supply unit and the connected devices.

3.2.4 LoRaWAN antenna

The LoRaWAN antenna, installed on the electrical panel, ensures reception of the signals transmitted by the supplied wireless devices (current transducers and push buttons) and by any other compatible LoRaWAN devices installed on the plant.

3.2.5 4G communication module

The integrated 4G module allows the case to connect to the Optimo IoT cloud platform even when no wired data network or local WiFi is available.

The gateway is supplied with a data SIM for the exclusive use of Optimo IoT, reserved for remote maintenance activities on the device only. Should the customer wish to use their own SIM for the data connection, it must be installed in place of the one currently fitted, following prior technical coordination with Optimo IoT's technicians.

3.3 Connector panel

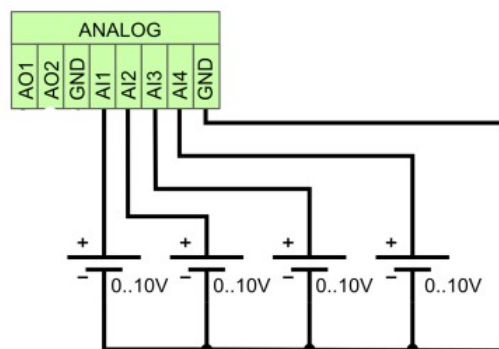
The front panel of the electrical panel provides the on/off selector, the LAN network port, the USB port and the connectors for the analog inputs, as well as the transparent window that allows the status of the AssetLinker 300 gateway to be read without having to open the panel.



Ref.	Component / Connector	Function
1	ON/OFF selector	Powers the electrical panel on and off (illuminated power selector)

2	LAN port (ETH1)	Connection to the company's wired network or to other TCP/IP equipment
3	USB port	Connection of USB peripherals
4	M12 connector – AI1 (0-10V)	0/10V analog input for connecting an external analog sensor/transducer
5	M12 connector – AI2 (0-10V)	0/10V analog input for connecting a second external analog sensor/transducer
6	Optimo IoT AssetLinker 300 gateway	Gateway module visible through the transparent window, with COM, RS-232, RS-485, USB1/USB2, ETH0/ETH1, HDMI ports, digital and analog I/O, nano SIM slot, 1-Wire and CAN

The diagram below shows the wiring of the M12 connectors for the AI1 and AI2 analog inputs on the front panel of the electrical panel, for connecting external analog sensors/transducers with a 0...10V voltage output:



On the side of the electrical panel, close to the M12 connectors for the analog inputs, there are also the connectors dedicated to connecting the SMC Wireless Base and the case's power cable:



Ref.	Component / Connector	Function
1	RJ45 port (ETH0)	OPC UA connection to the SMC Wireless Base

2	M12 connector	24V DC power supply for the SMC Wireless Base
3	Power cable with plug	Power supply for the case (110V AC 60Hz / 230V AC 50Hz)

Inside the case, close to the M12 connectors for the analog inputs, there are also the two pre-wired pigtail cables intended for connecting the SMC Wireless Base, already prepared to be plugged into the device at the time of installation:



Ref.	Component / Connector	Function
1	Network cable (male M12 connector)	Cable for the OPC UA connection with the SMC Wireless Base
2	Power cable (female M12 connector)	Cable for the 24V DC power supply of the SMC Wireless Base

3.4 Supplied LoRaWAN wireless devices

The case includes the following battery-powered wireless devices, based on the LoRaWAN communication protocol, which require no wiring for power supply or data transmission:

3.4.1 Current transducers (qty. 3, up to 100A)



The supplied current transducers are **Milesight CT101** model, suitable for a current rating of up to **100A**. These "clamp-on" devices accurately measure the electrical current drawn by the monitored loads via a clamp-on attachment system, with no batteries and no data cables, transmitting readings via **LoRaWAN** connectivity. They are easy to install (simply clamped around the conductor) and self-powered.

The datasheet of the Milesight CT101 device is provided as an attachment (see chap. 9).

3.4.2 Push buttons (qty. 3)



The wireless push buttons can be used to activate the different **operating states** of the SMC Air Management System on the monitored compressed air lines. These devices are also self-powered and transmit via **LoRaWAN** connectivity, with no need for wiring.

The datasheet of the Milesight push button is provided as an attachment (see chap. 9).

3.5 10" tablet for local display

The case is equipped with a 10" screen tablet, housed in the upper compartment, which allows local viewing of the monitoring dashboard, either by connecting to the WiFi network generated by the AssetLinker 300 gateway or, where available, via an internet connection for direct access to the cloud platform.

3.6 SMC devices supplied by the customer

The following devices, although they interface with the SMC Smart Case system, are not included in the Optimo IoT scope of supply and remain the responsibility of the customer, who is responsible for their purchase, installation and maintenance in accordance with the SMC technical documentation.

3.6.1 SMC Wireless Base

An SMC device for acquiring the monitoring data collected from the SMC sensors with IO-Link technology and from the SMC Air Management System devices installed on the plant. It connects to the AssetLinker 300 gateway via the OPC UA protocol on the ETH0 port and is powered at 24V DC via the dedicated M12 connector on the case panel.

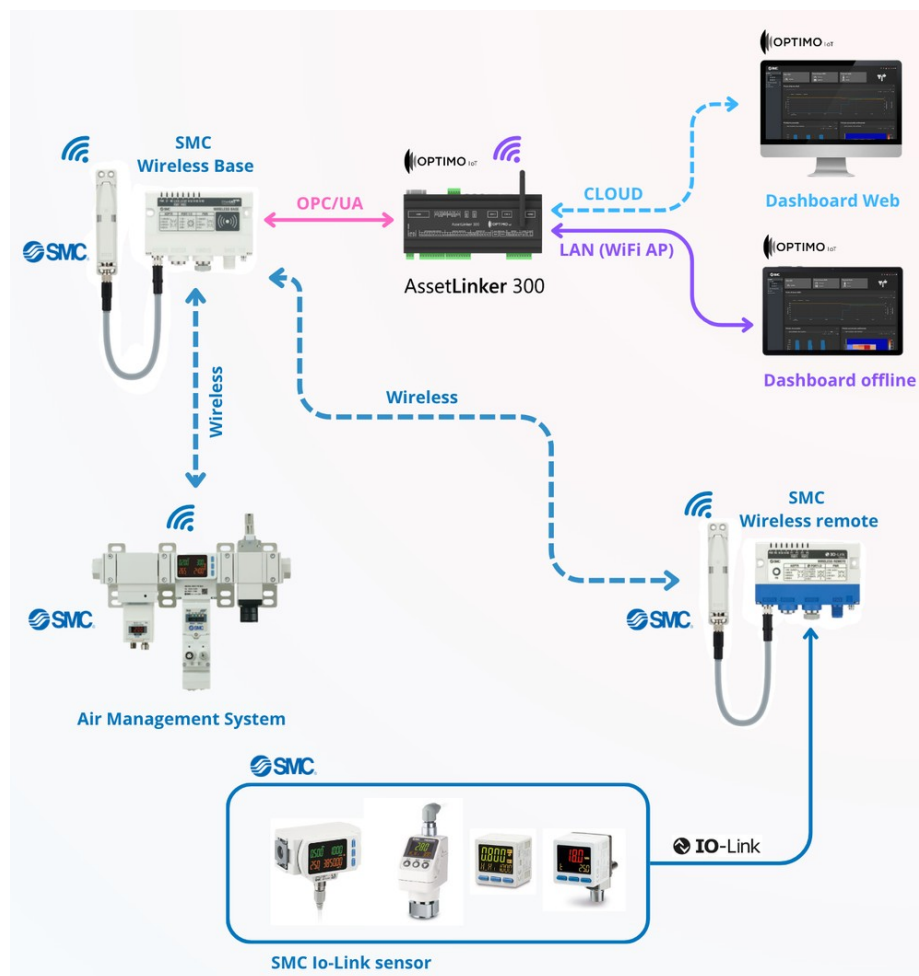
3.6.2 SMC Air Management System and IO-Link sensors

The SMC Air Management System enables intelligent monitoring of flow, pressure and temperature and optimized management of line pressure according to the operating conditions of the load (stand-by/operational). The data collected from these devices, and from any other SMC IO-Link sensors present on the plant (e.g. the SMC PSH humidity sensor), is acquired by the SMC Wireless Base and made available to the SMC Smart Case system.

3.7 System wiring diagram

The diagram below shows the overall architecture of the monitoring system, highlighting the connections between the SMC field devices (customer-supplied), the SMC Smart Case (Optimo IoT-supplied) and the cloud platform.

- The SMC IO-Link sensors (Air Management System and others) transmit data to the SMC Wireless Base;
- The SMC Wireless Base transmits data to the AssetLinker 300 gateway via the OPC UA protocol (ETH0 port);
- The supplied LoRaWAN wireless devices (current transducers, push buttons) transmit directly to the AssetLinker 300 gateway via the built-in LoRaWAN antenna;
- The AssetLinker 300 gateway makes the data available locally (offline webserver/dashboard, WiFi network or ETH1 port) and on the cloud (web dashboard), via a LAN, WiFi or 4G LTE connection.



4. Software – Optimo IoT monitoring platform

This chapter describes the Optimo IoT software platform for monitoring the data acquired by the SMC Smart Case system, describing its architecture, access modes (local and cloud) and the main features of the user interface.

Online documentation

Up-to-date technical documentation on the Optimo IoT AssetLinker 300 gateway and on the monitoring platform is available at docs.optimoiot.it.

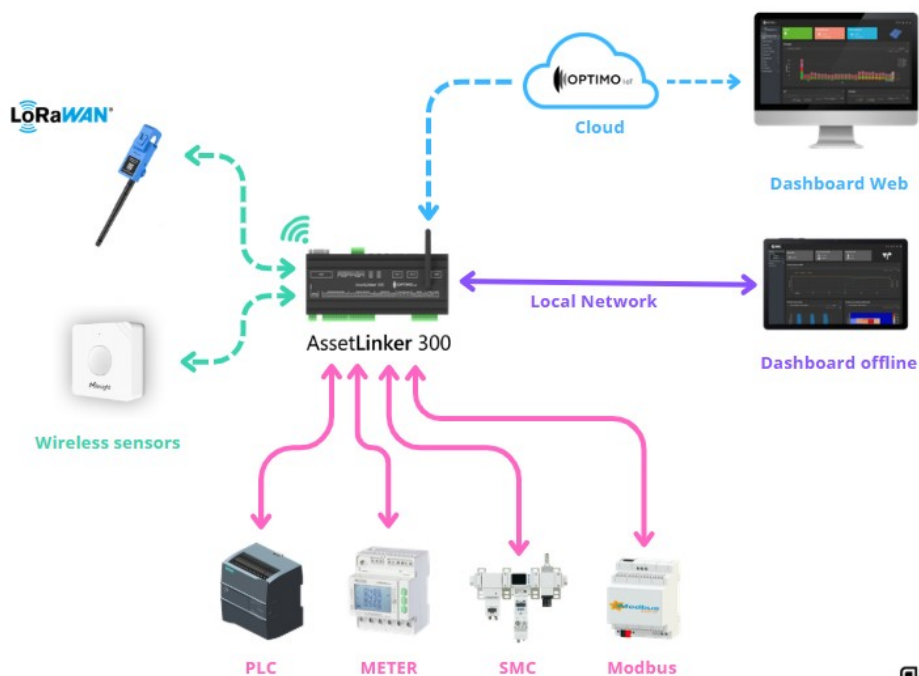
4.1 System architecture (Edge – Cloud)

The data acquired in the field by the AssetLinker 300 gateway (from the supplied LoRaWAN sensors and, via the SMC Wireless Base, from the SMC IO-Link and Air Management System devices) is made available through a user interface accessible from any web browser, with no need to install any software on the user's device.

The system architecture provides two complementary modes of data access:

- an edge/local level, in which the AssetLinker 300 gateway directly exposes, through its built-in webserver, an offline dashboard that can be consulted even without an internet connection;
- a cloud level, in which the data is synchronized to the Optimo IoT cloud platform and made available via a web dashboard, accessible from any authorized location connected to the internet.

The AssetLinker 300 gateway also supports direct integration with other data sources that may be present on the plant, such as PLCs, energy meters, Modbus devices and, as described in the previous chapters, the SMC devices.



Learn more: docs.optimoiot.it/al300/settings/sources

4.2 Local dashboard access

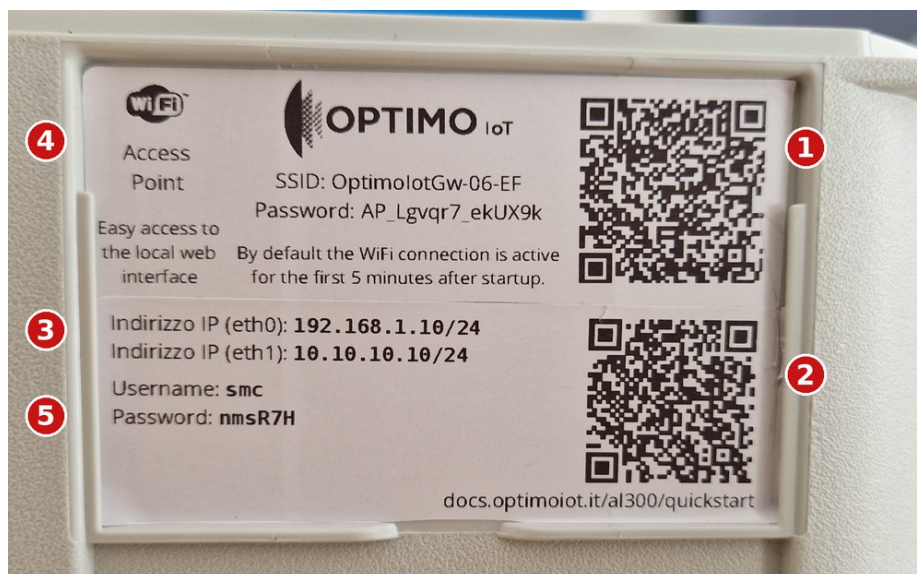
The dashboard can be accessed locally (offline) in two ways:

- via the 10" tablet supplied with the case, already configured to display the dashboard;

- by connecting a PC or mobile device to the WiFi network generated by the Optimo IoT AL300 gateway, or to the company network if the gateway is connected via the ETH1 port.

Local mode ensures that monitoring data can be consulted even without internet connectivity, via the webserver built into the AssetLinker 300 gateway.

A label is applied to the side of the AssetLinker 300 gateway showing all the information needed for the first local access to the device:



Ref.	Item	Description
1	WiFi network QR code	Quick access to the local WiFi network generated by the gateway (Access Point). The WiFi Access Point is active for the first 5 minutes after each time the device is switched on via the ON/OFF selector: at each power-on it is therefore possible, for the first 5 minutes, to connect to the gateway via this WiFi network
2	Documentation QR code	Access to the online quick start guide at docs.optimoiot.it/al300/quickstart
3	Network settings	Network settings of the gateway's two Ethernet ports (IP addresses of ETH0 and ETH1)
4	WiFi SSID and password	Network name (SSID) and password of the local WiFi network (Access Point) generated by the gateway
5	Local access credentials	Username and password for accessing the gateway's local webserver interface

Learn more: docs.optimoiot.it/al300/quickstart

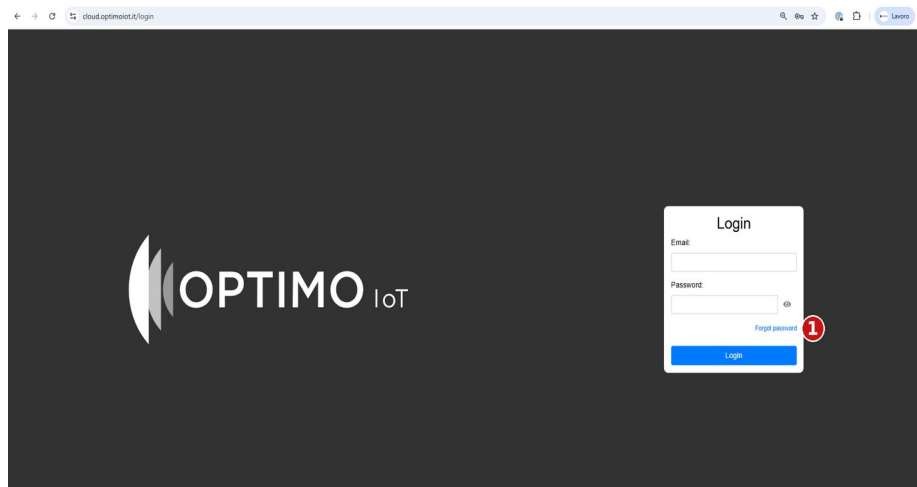
4.3 Cloud dashboard access

Accessing the **dashboard via the cloud** requires the AssetLinker 300 gateway to have an **active internet connection** (via the company LAN, WiFi, or the built-in 4G module). In this mode, the data can be consulted remotely, from any authorized location connected to the internet, using any web browser, with no need to install dedicated software.

Optimo IoT cloud access

The cloud dashboard is accessible from any web browser at cloud.optimoiot.it/login, after

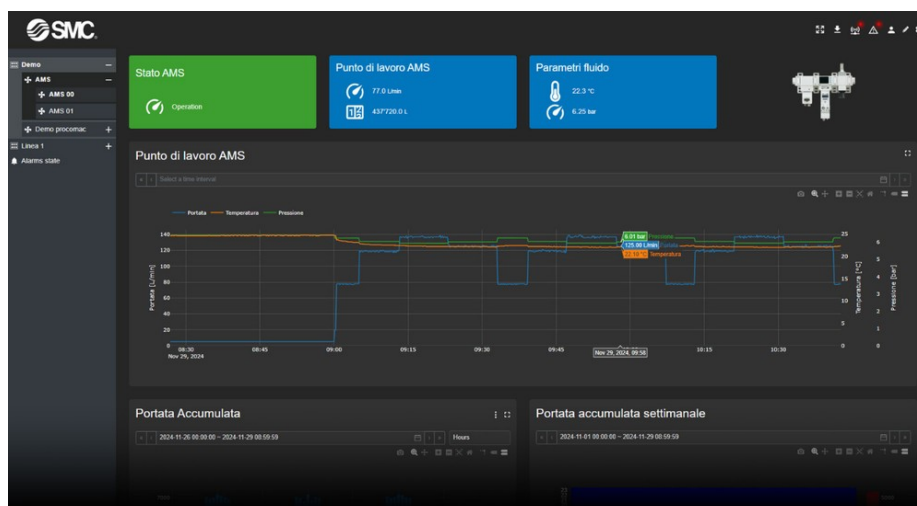
authenticating with the credentials provided by Optimo IoT.



For first-time access to the cloud platform, it is enough to run the **password recovery** procedure ("Forgot password", point 1 in the figure), entering your e-mail address as the username and following the guided procedure, which allows you to create a new password for accessing the cloud dashboard interface.

4.4 User interface and navigation

The user interface of the Optimo IoT monitoring platform is organized into a side navigation menu, which allows the plants and monitored devices to be selected, and a central area dedicated to displaying the data via summary indicators (status, instant values) and historical charts.



The main screen displays, via summary indicators (the plant/device selection on the left, status boxes and instant parameter values at the top) and historical charts, the data acquired from the SMC devices connected to the system, with the option to select the time interval of interest.

Users with an **administrator profile** also have the option to independently edit the dashboards, adding or modifying charts, creating new pages and/or periodic reports, with full control over the platform. To enter **edit mode**, simply click the pencil icon (point 1 in the figure) in the toolbar at the top right of the screen.



Learn more: docs.optimoiot.it/dashboard

4.5 Monitoring parameter display

The platform allows the main operating parameters of the monitored compressed air network to be displayed: the flow, pressure and temperature parameters detected by the SMC Air Management System devices (via the SMC Wireless Base), the operating status of the AMS system (Standby or Operational), and the electrical current readings detected by the supplied wireless current transducers, which can be correlated with the compressed air network's operating parameters for energy optimization analysis.

All the charts and indicators shown in the dashboard can be customized and expanded directly by the user, who can therefore adapt the parameter display to their specific monitoring and analysis needs.

Learn more: docs.optimoiot.it/analysis/analysis

4.6 Alarm and threshold management

The platform allows **alarm thresholds** to be configured on the monitored parameters, with the alarm status shown directly in the dashboard via colored summary indicators.

Learn more: docs.optimoiot.it/alarms/notifications

4.7 Data history and export

The acquired data is stored on the platform and can be consulted via time-series charts, with the option to select the time interval of interest for your own analysis.

It is also possible to **export the historical data** in **.csv** and **.xls** formats, allowing it to be processed and analyzed outside the Optimo IoT monitoring platform as well.

Learn more: docs.optimoiot.it/reports/reports

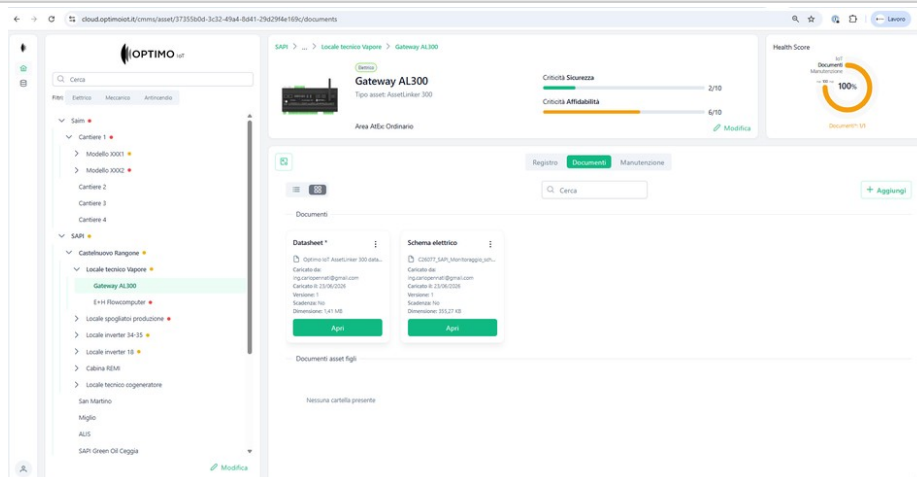
4.8 User management and access levels

A user with an administrator profile can create new users within the platform, defining their access credentials and authorization levels, and grant them access to the SMC Smart Case system and the relevant monitored plants.

Learn more: docs.optimoiot.it/authentication/authentication

4.9 Optimo IoT AIMS

Optimo IoT AIMS is a dedicated digital environment, accessible at optimoiot.it/aims/, which makes it possible to keep track of the operations carried out on the plant via a **digital log**, with the option to recall notes directly from within the dashboard. AIMS also allows all of the plant's **technical documentation** to be stored in a single digital environment, making it easier to consult and manage over time.



4.10 Local automations with Node-RED

The AssetLinker 300 gateway integrates the Node-RED tool, which makes it possible to build local automations and custom features directly on the gateway, with no need to work on the cloud platform.

Learn more: docs.optimoiot.it/al300/settings/sources/nodered

4.11 Integration with third-party platforms

The system provides **HTTPS APIs** and **local APIs** for exchanging data with third-party platforms, enabling the data acquired by the SMC Smart Case system to be integrated into other software tools used by the customer.

Learn more: docs.optimoiot.it/integrations/api_http/api_http

4.12 Integration with artificial intelligence systems

The Optimo IoT platform makes it possible to interface the acquired data with artificial intelligence systems as well, such as **ChatGPT** and **Claude**, via a dedicated integration based on the MCP (Model Context Protocol) protocol.

Learn more: docs.optimoiot.it/integrations/mcp/mcp

5. Installation and commissioning

This chapter describes the operations needed to install and commission the SMC Smart Case system, from checking the package contents through to verifying communication with the Optimo IoT cloud platform.

Warning

Installation and electrical connection operations must be carried out by qualified technical personnel, in compliance with the safety warnings given in chapter 2 of this manual.

5.1 Package contents – delivery check

On delivery of the SMC Smart Case system, check that the case contains all the components included in the Optimo IoT scope of supply:

- case with electrical panel and Optimo IoT AssetLinker 300 gateway installed and wired;
- 10" tablet for local display, housed in its dedicated compartment;
- 3 LoRaWAN wireless current transducers (up to 100A);
- 3 LoRaWAN wireless push buttons;
- power cable with plug;
- pre-wired pigtail cables for connecting the SMC Wireless Base (OPC UA network cable and 24V DC power cable);
- this user manual.

If any **components are missing or damaged**, contact Optimo IoT technical support promptly before proceeding with the installation.

5.2 Positioning the case

Position the case close to the compressed air system to be monitored, in an area that meets the installation conditions described in section 2.2 (dry environment, sheltered from heat sources and vibration, with adequate heat dissipation).

Also check that a compatible electrical power outlet is available at the chosen location and, if a wired or company WiFi connection is planned, that the network signal is adequate.

5.3 Power connection

Connect the case's power cable (see par. 3.3) to the available power outlet, checking that the mains voltage is compatible with the panel's multi-voltage power supply (110V AC 60Hz or 230V AC 50Hz). **Switch on the electrical panel using the ON/OFF selector** on the front panel.

5.4 Connecting the SMC Wireless Base sensors

Connecting the SMC Wireless Base is the responsibility of the customer/SMC installer, in accordance with the manufacturer's technical documentation. The SMC Smart Case system provides the following pre-wired connections (see par. 3.3):

- the network cable with male M12 connector, for the OPC UA connection (gateway's ETH0 port);
- the power cable with female M12 connector, for the 24V DC power supply of the device.

A free space with hook-and-loop fastening is also available inside the case for housing the SMC Wireless Base (see par. 3.1).

5.5 Connecting the supplied LoRaWAN sensors

The supplied LoRaWAN current transducers and push buttons are battery-powered wireless devices, already configured to communicate with the AssetLinker 300 gateway via the built-in LoRaWAN antenna, and do not require any wired connection.

- position the current transducers by clamping them (clamp-on system) around the conductors of the loads to be monitored;
- position the push buttons at the points on the plant from which you want to control the operating states of the SMC Air Management System.

Check, via the local or cloud interface, that the data transmitted by the wireless devices is being received correctly.

5.6 First start-up and connectivity configuration

On first start-up, the AssetLinker 300 gateway automatically activates its own WiFi network (Access Point) for **5 minutes**, as indicated on the label on the side of the device (see par. 4.2). Connect to this network to access the local configuration interface and set the desired connectivity mode:

- wired LAN network, via the ETH1 port;
- company WiFi network, if available;
- 4G connection, by inserting a data nano SIM into the dedicated slot on the gateway.

As an alternative to the WiFi connection, it is possible to connect via a network cable to the AssetLinker 300 gateway using the LAN network port on the front panel of the case (see par. 3.3), and access the local webserver with the credentials given on the front label of the gateway (see par. 4.2).

5.7 Checking communication with the cloud platform

Once connectivity has been configured, check that the AssetLinker 300 gateway is communicating correctly with the Optimo IoT cloud platform, by accessing the cloud dashboard at cloud.optimoiot.it/login (see par. 4.3) and checking that the data acquired from the connected devices is displayed correctly and kept up to date.

Once the gateway's internet connection parameters have been correctly configured, it will be possible to view the data acquired by the system via the cloud interface as well as locally.

6. Configuration

This chapter describes the main configuration operations for the Optimo IoT AssetLinker 300 gateway, needed to adapt the SMC Smart Case system to the specific connectivity and field-device integration requirements.

Online documentation

The complete configuration guide for the AssetLinker 300 gateway is available at docs.optimoiot.it/al300/quickstart.

6.1 Local configuration interface of the AL300 gateway

The AssetLinker 300 gateway exposes a local web configuration interface, accessible by connecting to the WiFi network generated by the device (Access Point) or via a network cable to the LAN port on the front panel (see par. 5.6), using the credentials given on the label on the side of the gateway (see par. 4.2).

From this interface it is possible to access all the device's configuration sections, including network connectivity, the OPC UA connection to the SMC Wireless Base, and the communication parameters with the Optimo IoT cloud platform.

6.2 Configuring the OPC UA connection with SMC Wireless Base

Communication between the AssetLinker 300 gateway and the SMC Wireless Base takes place via the **OPC UA** protocol on the gateway's **ETH0 port** (see par. 3.3). From the local configuration interface it is possible to set the OPC UA connection parameters (server address, communication port, any access credentials) needed to establish the connection with the SMC device.

Learn more: docs.optimoiot.it/al300/settings/sources

6.3 Configuring the Ethernet and WiFi network

Configuring the Ethernet network allows the IP addresses of the ETH1 (user network) and ETH0 (OPC UA connection) ports to be set, according to the customer's data network requirements. It is also possible to configure the WiFi network generated by the gateway (Access Point), changing the SSID and password from the default values shown on the device's label, or to connect the gateway to an existing company WiFi network.

6.4 Configuring the SIM and 4G connectivity

To enable **4G connectivity**, insert a **data nano SIM** into the dedicated slot on the AssetLinker 300 gateway (see par. 3.2.1) and configure, from the local interface, the connection parameters provided by the mobile operator (APN and any credentials). Once configured, the 4G connection is used by the gateway as a communication channel with the Optimo IoT cloud platform whenever no LAN or WiFi network is available.

7. Maintenance

This chapter describes the routine maintenance operations for the SMC Smart Case system, the replacement of the batteries in the supplied wireless devices, and how to update the firmware and software of the AssetLinker 300 gateway.

7.1 Routine maintenance

To ensure the system continues to work correctly over time, it is recommended to periodically carry out the following checks:

- external cleaning of the case and tablet, using a soft, dry cloth, avoiding the use of solvents or aggressive detergents;
- visual inspection of the condition of the cables, connectors and gaskets of the case, to rule out signs of wear, damage or water ingress;
- check that the current transducers are correctly fitted on the monitored conductors and that the push buttons are in their installation position;
- periodic check, via the local or cloud dashboard, that data is being correctly received from all the devices connected to the system.

The routine maintenance operations described above may be carried out by the customer's personnel. **Any work on the electrical panel or on the AssetLinker 300 gateway must be agreed with Optimo IoT technical support** (see par. 2.4).

7.2 Replacing the wireless sensor batteries

The supplied Milesight WS101 LoRaWAN push buttons are battery-powered; the supplied Milesight VT101 LoRaWAN current transducers, on the other hand, have no battery at all, as they are self-powered directly by the monitored conductor.

- Milesight WS101 push button: battery 1 × 1650 mAh, type ER14335, Li-SOCl₂.
- Milesight VT101 current transducer: no battery present.
- Use only batteries of the same type and model as those indicated above.
- After replacement, check via the dashboard that the device resumes transmitting data correctly.

7.3 Firmware/software update

The AssetLinker 300 gateway and the Optimo IoT monitoring platform may be subject to periodic firmware and software updates, aimed at introducing new features, improving performance or fixing any faults.

Updates to the cloud platform are applied automatically by Optimo IoT, with no action required from the customer. Any firmware updates to the AssetLinker 300 gateway are applied by Optimo IoT technical support, including remotely via the dedicated VPN channel (see par. 3.2.1).

8. Troubleshooting

This chapter lists the main faults that may be encountered while using the SMC Smart Case system, together with their possible causes and corrective actions, as well as the contact details for Optimo IoT technical support for cases that cannot be resolved independently.

8.1 Power supply faults

Fault	Possible cause	Corrective action
The ON/OFF selector does not light up when switched on	Power cable not connected correctly, or the electrical outlet is not powered	Check the power cable connection (see par. 3.3) and that voltage is present at the electrical outlet
The panel switches off suddenly during operation	The fuse protections have tripped following an overload, or the mains power supply has been interrupted	Check the condition of the fuses (see par. 3.2.3) and the continuity of the power supply; if the problem persists, contact Optimo IoT technical support
The tablet does not switch on	Tablet disconnected from the internal power supply, or the internal battery is flat	Check the internal connections inside the case; if the problem persists, contact Optimo IoT technical support
 Warning Replacing the fuses requires opening the electrical panel and is therefore carried out with the power live: this operation must be performed exclusively by qualified technical personnel, following the specifications and references given in the panel's wiring diagram, attached to this manual (see chap. 9).		

8.2 Connectivity faults (network, 4G, WiFi)

Fault	Possible cause	Corrective action
Unable to access the gateway's WiFi network (Access Point)	More than 5 minutes have passed since power-on: by default, WiFi is automatically deactivated after this interval (see par. 4.2)	Restart the gateway using the ON/OFF selector and connect to the WiFi network within the first 5 minutes after power-on
No access to the cloud dashboard	No internet connection (LAN, WiFi or 4G network not active)	Check the gateway's network connectivity (see par. 5.6 and 6.3); if 4G connectivity is being used, check that the nano SIM is present and correctly configured (see par. 6.4)
Local dashboard not reachable via the LAN network	The IP address of the ETH1 port is not compatible with the network of the connected PC	Check that the PC used for the connection is set to a network compatible with the gateway's IP address (see par. 4.2 and 6.3)

8.3 Wireless sensor communication faults

Fault	Possible cause	Corrective action
No data received from a current transducer or a LoRaWAN push button	The device's battery is flat, or the device is out of range of the gateway's LoRaWAN antenna	Check the battery charge level (see par. 7.2) and the distance/presence of obstacles between the device and the case
No data received from the SMC Wireless Base	OPC UA connection (ETH0 port) not active, or the 24V DC power cable is disconnected	Check the connections of the pre-wired pigtail cables (see par. 3.3) and the OPC UA connection configuration (see par. 6.2)
Unstable or inconsistent sensor readings	Radio interference in the installation area, or the sensor is not correctly positioned	Check that the sensor is correctly positioned (see par. 5.5) and, if the problem persists, contact Optimo IoT technical support

8.4 Optimo IoT technical support

For faults that cannot be resolved using the guidance given in this chapter, or for any work on the electrical panel or the AssetLinker 300 gateway, contact **Optimo IoT technical support** using the details given on the cover page of this manual:

- Phone: +39 039 5969780;
- Email: info@optimoiot.it;
- Online documentation: docs.optimoiot.it.

The AssetLinker 300 gateway has a dedicated VPN channel (see par. 3.2.1) that allows Optimo IoT technical support to carry out remote diagnostic and configuration interventions, with the customer's consent.

9. Attachments

The following documents are attached to this manual:

- wiring diagram of the panel inside the SMC Smart Case;
- datasheet of the Optimo IoT AssetLinker 300 gateway;
- datasheet of the Milesight VT101 LoRaWAN current transducer;
- datasheet of the Milesight WS101 LoRaWAN push button;
- declaration of conformity CE.