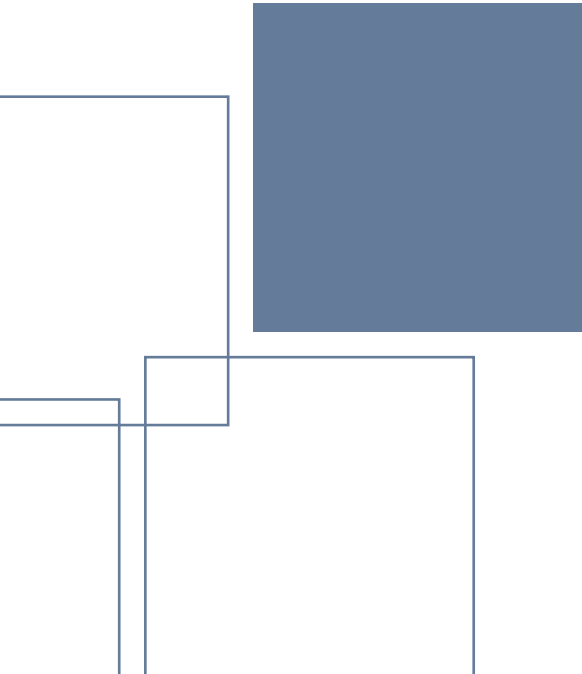




DATA COLLECTOR

SMX FAMILY

A decorative graphic in the bottom left corner consisting of a solid blue square and several thin, light blue lines that overlap and extend from the square and each other.

Data Sheet

Document version v1.3

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Description

SensMax SMX Data Collectors are advanced devices designed to gather data from SensMax sensors via radio channel. These data collectors serve as the central hub in a wireless sensor network, aggregating data from multiple sensors across various locations. Once the data is collected, the SensMax SMX devices transmit the information to a centralized server using either Wi-Fi or Ethernet, offering flexible connectivity options to suit different environments and infrastructures.

With support for the MQTT protocol, these data collectors provide reliable real-time data transfer, making them ideal for IoT applications, smart buildings, and remote monitoring solutions.

Key features include:

- Wireless data collection from SensMax sensors via a radio channel.
- Flexible connectivity through Wi-Fi or Ethernet options.
- Support for the MQTT protocol for lightweight, efficient data transfer.
- Real-time data transmission to a central server.

Model comparison

Model	Data format	Data delivery	Server protocol	Range
Sensmax SMX LR TS	24-hour, 5-minutes step / every visitor timestamp	Immediately / Scheduled	MQTT / SensMax	150-250 m
Sensmax SMX SLR868 TS				Up to 1000 m
Sensmax SMX SLR915 TS				Up to 1000 m
Sensmax SMX LR	24-hour, 1-hour step	Scheduled		150-250 m
Sensmax SMX SLR				Up to 1000 m
Sensmax SMX PRO				20-50 m

Technical specification

All devices support Ethernet and Wi-Fi 2.4GHz WPA2-PSK connectivity.

The Ethernet connection takes priority. When an RJ-45 Ethernet cable is plugged into the network, the SensMax SMX data collector will automatically use it. If the Ethernet network is unavailable, the device will switch to the selected Wi-Fi network to connect to the internet.

Model	Max. sensors connected	Data memory	Working Frequency, MHz	Power supply	Dimensions, mm	Supported sensors models	Supported LED DISPLAY models
SensMax SMX LR TS	20	Up to 80 days for 5-min step data (1)	868	5 VDC	66×66×28	SensMax D3 LR TS SensMax L3 LR TS	LED-391 LR TS
SensMax SMX SLR868 TS	20	Up to 80 days for 5-min step data (1)	868	5 VDC	66×66×28	SensMax D3 SLR868 TS SensMax L3 SLR868 TS	LED-391 SLR TS868
SensMax SMX SLR915 TS	20	Up to 80 days for 5-min step data (1)	915	5 VDC	66×66×28	SensMax D3 SLR915 TS SensMax L3 SLR915 TS	LED-391 SLR TS915
SensMax SMX LR	30	25 days for 1-hour step data (1)	868	5 VDC	66×66×28	SensMax S1 LR SensMax D3 LR SensMax L3 LR	no
SensMax SMX SLR	30	25 days for 1-hour step data (1)	868	5 VDC	66×66×28	SensMax S1 SLR SensMax D3 SLR SensMax L3 SLR	no
SensMax SMX PRO	10	25 days for 1-hour step data (1)	2400	5 VDC	66×66×28	SensMax S1 PRO SensMax D3 PRO SensMax L3 PRO	no

Note (1): Data memory described in more detail in the section [Data Memory Allocation](#)

Device Overview



Icon	Status	Description
[1] SENSOR LINK	Lights	The connection with a sensor is established
	Flashes 3 times per sec	Search for new sensor
	Flashes 1 time per sec	Online sensors presented
[2] INTERNET	Lights	Connected to internet
	Flashes 1 time per sec	Trying to connect to the internet
[3] SERVER LINK	Lights	The connection with a server is established
[4] PAIRING button	Short Press	Start pairing with sensors
	Press and hold 10 sec	Remove all paired sensors
	Press and hold 30 sec	Apply Factory Reset
[5] ETHERNET port	n/a	RJ-45 Ethernet connector
[6] USB mini port	n/a	Power connector

Data Memory Allocation

SensMax SMX data collectors are equipped with non-volatile memory, allowing them to store sensor data when no internet connection is available. Once a connection is re-established, the device automatically transmits all accumulated data to the server.

The data memory allocation varies depending on the device model.

TS MODELS (SensMax SMX LR TS, SensMax SMX SLR868 TS, SensMax SMX SLR915 TS)

All TS models feature up to 80 memory blocks, with each block storing 24 hours of data in 5-minute intervals. However, the memory blocks are shared among the connected sensors: Bidirectional D3 TS sensors use 2 memory blocks each, while L3 TS loyalty buttons take up 3 blocks.

For example, if one D3 TS sensor is connected, the data collector can store up to 40 days of data in 5-minute intervals. With 10 D3 TS sensors connected, the collector will be able to store up to 4 days of data for each sensor.

non-TS MODELS (SensMax SMX LR, SensMax SMX SLR, SensMax SMX PRO)

All non-TS models, regardless of the number or type of connected sensors, can store data for up to 25 days in 1-hour intervals.

Configuration WEB page

All device settings are available on the device's settings web page. There are several ways to access the settings page:

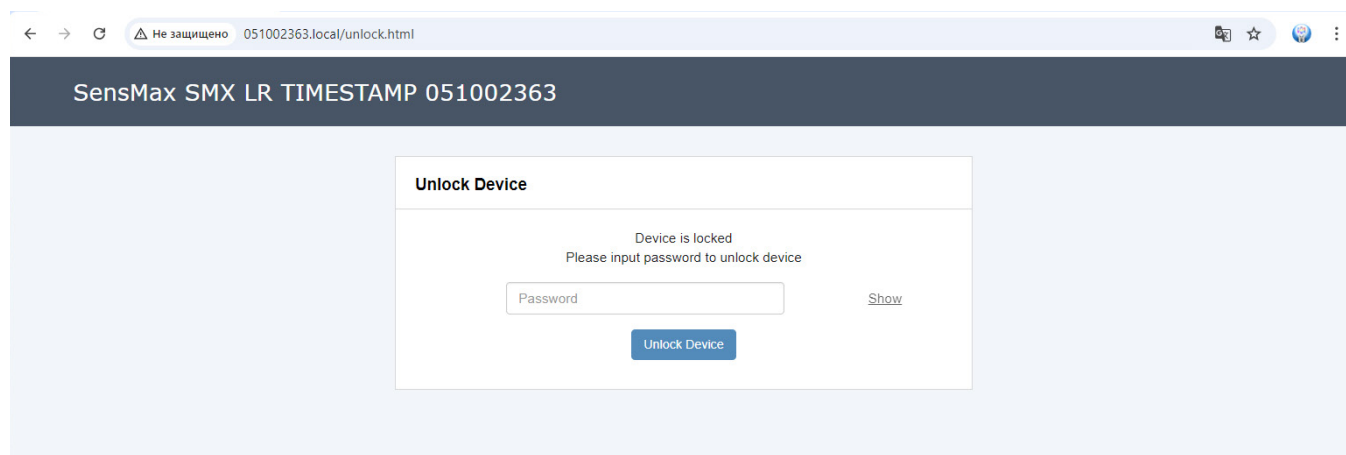
Access the settings page via Ethernet

1. Connect SensMax SMX data collector to power supply.
2. Connect SensMax SMX data collector to your Ethernet network using RJ-45 cable.
3. Connect your Laptop or Smart Phone to the same network.
4. Open a web browser and type in the address bar: `http://xxxxxxxx.local`
Where xxxxxxxx is a collector serial number. For example `http://051002363.local`

Access the settings web page using Wi-Fi AP

1. Connect SensMax SMX data collector to power supply.
2. Scan for available Wi-Fi networks on your Laptop or Mobil Phone.
3. Connect to Collector AP (AP name is "SensMax XXXXXXXXX"). The default password is same as collector Serial Number. For example, if collector's AP is SensMax 051002363, the default password will be 051002363
4. Open your web browser.
5. Input IP address 192.168.10.1 to address bar and press Enter.

Once the settings page is loaded, the login page will be displayed. To unlock settings, please input your password again (for this example, password is 051002363).



Home

This tab shows all connected sensors and their status.
Also on this page you can manage all sensors connections.

The screenshot shows a web browser window displaying the SensMax SMX LR interface. The header bar shows the device ID '051002363' and navigation links: Home, Reports, Settings, and Lock. The main content area is titled 'Home' and contains a section 'Connected devices' with an 'Edit device list' button. Below this is a table with the following data:

Name	Serial Nr	In	Out	Total counts today	Battery	Link status
My shop	041000511	1	1	2	Low	Excellent
Loyalty button	061000159	-	-	0	-	Offline

Edit connected devices

Press the Edit device list  button and setup manage connected sensors.

To add new sensor, please press the button and input the serial number of sensor and security code. Both are printed on the sensor enclosure.

In case if you cannot find the security code, you can add sensor manually. Please refer to [Pairing the sensor manually](#) section of this user manual.

The screenshot shows the 'Edit list of connected devices' modal window. It has a title bar with a close button (X). The form contains two input fields: 'Device Serial Nr' (with the value '123456789-ABCDE') and 'Device Name' (with the placeholder 'New device'). Below these is an 'Add device' button. At the bottom, there is a table with the following data:

Name	Serial Nr	
My shop	041000511	
Loyalty button	061000159	

At the bottom left of the modal is a 'Close' button.

By clicking the Edit button next to the connected sensor, you can edit its name or remove the sensor pairing.

SensMax SMX LR TIMESTAMP 051002363

HomeReportsSettingsLock

Edit list of connected devices

×

Device Serial Nr:

041000511

Device Name:

My shop

Edit device

Delete device

Settings

Click on the Settings tab in the top menu of the page to access the settings.

Wi-Fi settings

This tab allows to setup settings related to Wi-Fi connection.
Click to Wi-Fi tab to access Wi-Fi settings.

SensMax SMX LR TIMESTAMP 051002363

HomeReportsSettingsLock

Settings

Wi-Fi

Ethernet

Server

System

Status

Wi-Fi Settings:

☐ Connect by BSSID

☐ Input SSID manually

SSID

SensMax_2

Password

.....

Show

Refresh networks list

Soft AP Settings:

☐ Disable Soft AP ?

Soft AP Address

192.168.10.1

Network Settings:

☒ Use DHCP

☐ Use own DNS server

Wi-Fi Status:

Wi-Fi disabled as Ethernet connected

Save settings

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SensMax Data Sheet

Connect by BSSID	If the Connect by BSSID setting is enabled, the device will connect to a specific network by its MAC address. This can be useful scan finds multiple networks with the same name.
Input SSID manually	To connect to hidden Wi-Fi network, please set Input SSID manually flag and input desired SSID and password manually.
Scan networks	To find nearby Wi-Fi networks, tap the Scan Networks button. After few seconds, all founded networks will be displayed in SSID list. Please choose the correct Wi-Fi network and input password.
Soft AP Settings	If Soft AP is enabled, the user can connect directly to the device using its Wi-Fi AP. The user can change the IP address of the access point. Note: If the collector is simultaneously connected to the user's Wi-Fi network and its own AP is enabled, their subnet addresses must be different. The same subnet address must not be used, otherwise the connection will not be possible. For example, if the user Wi-Fi network has the address 192.168.1.X, you cannot set the Soft AP address to 192.168.1.X
Use DHCP	DHCP allows to automatically receive all network settings from the connected Wi-Fi network. Disable DHCP If you want to enter the network settings manually.
Use own DNS server	If enabled allows to setup user's DNS servers. If disabled, used Google DNS servers 8.8.4.4 and 8.8.8.8

Ethernet settings

This tab allows to setup settings related to Ethernet connection.
Click to Ethernet tab to access Ethernet settings.

SensMax SMX LR TIMESTAMP 051002363
Home
Reports
Settings
Lock

Settings

Wi-Fi
Ethernet
Server
System
Status

Network Settings:

☒ Use DHCP

☐ Use own DNS server

Save settings

Ethernet Status:

Ethernet connected

Use DHCP	DHCP allows to automatically receive all network settings from the connected Wi-Fi network. Disable DHCP If you want to enter the network settings manually.
Use own DNS server	If enabled allows to setup user's DNS servers. If disabled, used Google DNS servers 8.8.4.4 and 8.8.8.8

Server settings

This tab allows to setup settings related to Server connection.
Click to Server tab to access Server settings.

SensMax cloud application:

To use the SensMax cloud application, enable Use my.sensmax.eu

To connect to your server, disable the Use my.sensmax.eu setting and select the appropriate protocol.

SensMax Protocol:

The SensMax Protocol used for communication with 'SensMax GPRS server' software.

SensMax SMX LR TIMESTAMP 051002363

HomeReportsSettingsLock

Settings

Wi-FiEthernetServerSystemStatus

Server Settings:

☐ Use my.sensmax.eu

Protocol ?

SensMax Protocol

Server

192.168.1.173

Port

2029

Server status:

Server connected [MQTT Protocol]

Save settings

MQTT:

The MQTT protocol provides modern, lightweight and efficient data transfer.

SensMax SMX LR

TIMESTAMP 051002363

Home

Reports

Settings

Lock

Settings

Wi-Fi

Ethernet

Server

System

Status

Server Settings:

☐ Use my.sensmax.eu

Protocol ?

MQTT

Connection type

SSL/TLS without certificate

Server

mybroker.hivemq.cloud

Port

8883

User postfix for server address

Server address: mybroker.hivemq.cloud:8883[postfix]

User Name

admin

Password

.....

Show

User prefix for topics

Topic example: [prefix]smx/device/051002363/settings

☐ Retain data packets on broker

Server status:

Server connected [MQTT Protocol]

Save settings

To setup own MQTT broker, please use one from possible settings:

- Credentials

■ SSL/TLS

■ SSL/TLS without certificate

■ Two-way auth
- Mutual auth

■ WebSocket

■ WebSocket Secure

User prefix for topics	Optionally, user can add any prefix to topic name. Max length is 128 symbols.
Retain data packets on broker	If enabled, the data packets will be stored on MQTT broker. Please refer to MQTT documentation for more info.
User postfix for server address	Optionally, user can add any postfix to server address. Max length is 128 symbols.

[Click here](#)

to download
SensMax MQTT
documentation.
Or scan the QR
code below.



System settings

Click to System tab to access System settings.

SensMax SMX LR TIMESTAMP 051002363

HomeReportsSettingsLock

Settings

Wi-FiEthernetServerSystemStatus

Time and Date Settings:

Automatic time

Set time and date manually

NTP server

pool.ntp.org

Time Zone

UTC+02:00

Use daylight saving time

More settings:

New unlock password

Show

Reboot schedule

OFF

Reboot Device

Enable automatic firmware update

Firmware update check & install

Save settings

Time and Date Settings	Depending on the selected server protocol, the time settings are different. For my.sensmax.eu an external NTP server is used (poolntp.org by default). For SensMax Server protocol, the device receives time settings from 'SensMax GPRS Server' software. For MQTT, the user can choose to use an external NTP server, or set the time manually.
New unlock password	Here you can change password which used for collector AP and settings page both. We recommend to change password if you still use default password.
Reboot schedule	This setting allows you to set the time for the device to reboot daily. OFF disables scheduled reboot.
Reboot Device	This button activates an immediate reboot of the device.
Enable automatic firmware update	If this option set, device will automatically check updates from time to time. If this option disabled, you could check the firmware update manually.

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Status

This tab allows to check current device status.

SensMax SMX LR TIMESTAMP 051002363

HomeReportsSettingsLock

Settings

Wi-FiEthernetServerSystemStatus

Device info:

Internet connection type ETHERNET

Server connected [MQTT Protocol]

DHCP obtained IP 192.168.1.245

Device MAC A8:42:E3:32:B6:B4

Firmware Version v2.8

Power profile: IMMEDIATE DELIVERY

Save settings

Reports

Click on the Reports tab in the top menu of the page to access the Reports.

Only TS-type devices support built-in reports.

Currently, only the LiveReport report type is supported. This report type is typically used to display how many visitors are inside the premises.

The reports are displayed on the web page of the device and can also be sent via radio link to compatible SensMax LED DISPLAYS.

To create new report, press the  button and write report name:

SensMax SMX LR TIMESTAMP 051002363

HomeReportsSettingsLock

Settings

Wi-FiEthernetServerSystemStatus

Network Settings:

☒ Use DHCP

☐ Use own DNS server

Ethernet Status:

Ethernet connected

Save settings

Click the Settings button on the created report to open more settings:

[Hide settings](#)

Report type

Live Report

Report name

test2

MAX value

10

☐ Reset to zero if the report value negative

Select sensors

+

Send to LED screen

+

Reset value

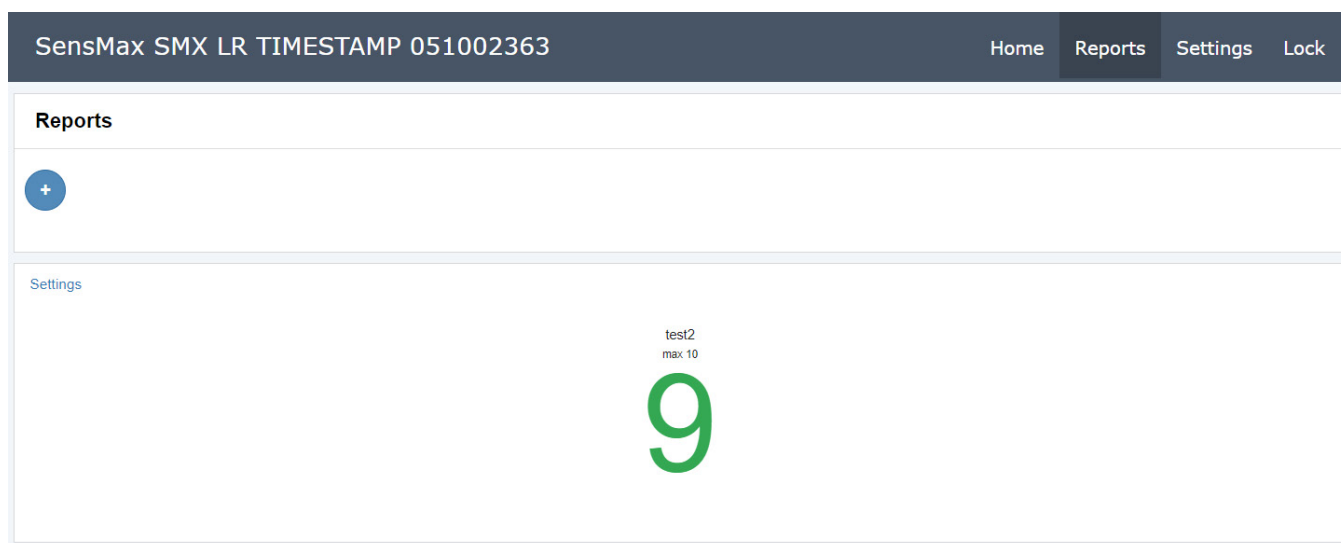
+

Delete report

+

Report name	Name of current report.
MAX value	If the current report reading is below the MAX value, the value in the report is displayed in green. If the value in the report is greater than and equal to the MAX value, it is displayed in red.
Reset to zero if the report value negative	If enabled, the report will not show negative values. Instead, zero will be displayed.
Select sensors	Allows to select sensors for the report. The value in the report is calculated using the formula: $VALUE = IN - OUT$. The report displays the difference of all selected IN and OUT. Select sensors - ☒ 141000511 My shop IN ☒ 241000511 My shop OUT Add sensor
Send to LED screen	Allows to select the wireless LED screens to which the report will be sent. Send to LED screen - ☒ 200000098 LED Display A Add screen
Reset value	Allows to reset the report reading to the specified value. Reset value - New value 0 Reset
Delete report	Allows to delete current report.

This is an example of a report that has been created:



Pairing the sensor manually

Each sensor must be paired to its collector. Following steps must be performed to pair sensors to the collector:

1. Insert the batteries in the sensor
2. Connect the collector to the power supply/ USB
3. Press the pairing button in the collector
4. Press the pairing button is located inside the sensor's enclosure

Note: the alternative way how to pair new sensor with data collector it is using of settings web page (this method described in [Home page](#) section).

Ordering Information

Data Collectors (Gateways)

Model / Part Number	Description	Compatible Collector
SensMax SMX PRO	Wireless data collector 2.4 GHz (Ethernet/Wi-Fi AP)	SensMax D3 Pro, SensMax S1 Pro, SensMax L3 Pro
SensMax SMX LR	Wireless Long Range data collector 868 MHz (Ethernet/ Wi-Fi AP)	SensMax D3 LR, SensMax S1 LR, SensMax L3 LR
SensMax SMX SLR	Wireless Super Long Range data collector 868 MHz (Ethernet/Wi-Fi AP)	SensMax D3 SLR, SensMax S1 SLR, SensMax L3 SLR
SensMax SMX LR TS	Wireless real-time data collector 868 MHz (Ethernet/ Wi-Fi AP)	SensMax D3 LR TS, SensMax L3 LR TS
SensMax SMX SLR TS	Wireless Super Long Range real-time data collector (Ethernet/Wi-Fi AP)	SensMax D3 SLR TS, SensMax L3 SLR TS



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