

Gas detection unit



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To download the full manual,
scan this QR code

- **Manages transmitters for combustible, toxic, refrigerant gases**
- **8 4 .. 20 mA inputs**
- **RS485 serial communication according to MODBUS® protocol (controls up to 32 transmitters of the same series)**
- **5 relay outputs with voltage-free changeover contacts:**
 - 2 alarm relays - 1 pre-alarm relay - 2 auxiliary relays.**
- **Stores the last alarm conditions**

TECHNICAL FEATURES

Supply voltage: 85 .. 264 V~, 50 .. 60 Hz or 12 .. 24 V=== (via backup system)

Power consumption: 30 W max

Contact rating of relay outputs: 5 x 8 A 250 V~ cosφ=1 (SPDT)

Voltage-free contacts

Inputs: 8 x 4 .. 20 mA

Communication port: RS485

Communication protocol: MODBUS® RTU

Start-up time: related to the warm-up time of the connected transmitters

Transmitters type: for combustible, toxic, refrigerant gases

Adjustment range: related to the gas sensor transmitted data

Accuracy: related to the gas sensor transmitted data

Resolution: related to the gas sensor transmitted data

Cross sensitivities: see remote sensor manual.

Display resolution: 180 x 128 pixel

Protection degree: IP54

ATEX Protection: **This control unit IS NOT approved for installation in ATEX classified areas.**

Operating temperature: -20 °C .. +55 °C

Storage temperature: -20 °C .. +55 °C

Humidity limits: 20% .. 90% RH (non-condensing)

Pressure: 800 .. 1100 hPa

Case: Material: Technopolymer

Color: Grey (RAL 7035)

Dimensions: 198.4 x 276.7 x 95.8 mm (W x H x D)

WARRANTY

The user is guaranteed against the product’s defects of conformity according to European Directive 2019/771 as well as the Seitron warranty terms, available online on the website www.seitron.com.

We invite the user to visit our website and check the latest version of technical documents, manuals and catalogs.

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START-UP

- Complete in the following order:**
- **Mechanical installation**
 - **Electrical connections**
 - **Starting the control unit**
 - **Scanning connected transmitters**
 - **Date and time setting**

CONTROL UNIT START-UP

As soon as the power supply is applied:

- If the control unit is powered by 85 .. 264 V~, 50 .. 60 Hz, the “POWER” indicator light light-up steadily;
- If the control unit is powered by 12 .. 24 V===, via a backup system, the “POWER” and “BATTERY” indicator lights light-up steadily.

During the start-up phase, the display shows the following screen:

Gas Master Control

Product name

Start-up bar

Installed firmware version

1.0.0

After the start-up is completed, the display shows the following screens:

Press the menu button and start a scan.

Press the  button to start scanning for connected devices.

Enter the password “1919”:

  to change the value of the selected digit.

  to select the digit to be changed.

 to confirm the entered password.

The display shows the main page of the unit setting menus.

SCAN FOR CONNECTED TRANSMITTERS

Before proceeding with the scan of connected devices, in case a RS485 network has been set up for communication using the MODBUS® RTU protocol between transmitters and the control unit, verify the communication speed of the connected transmitters and, if necessary, correctly set the parameter “System” => “Serial port” => “Speed”.

The connected transmitters should have the same communication speed.

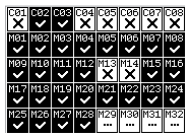
The control unit communication speed set by default to 9600 Baud; to modify this data, refer to the complete instruction manual.

Once the auto-learning procedure has started, it cannot be interrupted.

If a setting is changed on any connected transmitter, or the transmitter itself is replaced the scan must be repeated to detect changes.

Procedure:

1. Select the “System” menu and press the button .
2. Select the “Scan” menu and press the button .
3. The display shows the “Scan” line selected. Press the button .
4. As requested by the system, simultaneously press the buttons   to start the scan process.
5. The display shows the transmitter scanning screen:



“C” indicates the position of the transmitter connected to the 4 .. 20 mA input.

“M” indicates the position of the transmitter connected to the RS485 network.

“...” indicates querying the presence of the transmitter.

“X” indicates that the transmitter has not been detected by the control unit.

“V” indicates that the transmitter has been detected by the control unit.

6. The display shows the message “Scan completed”. Press the button .

7. The display shows the selected “Scan” line.

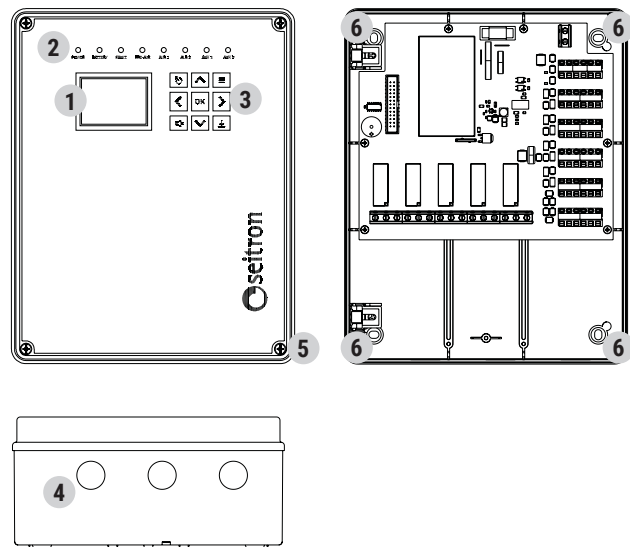
8a. Only transmitters connected to the RS485 network:

Press the button . The display shows the schematic of the connected transmitters.

8b. With 4 .. 20 mA transmitters connected:

- a. Press the button . The display shows the menu of parameters to be set for the first connected 4 .. 20 mA transmitter.
- b. Set all the data proposed by the menu using the buttons     .
- c. Once the data for the first transmitter is set, press the button  again to move on to setting the data for the next transmitter.
- d. Continue in this manner until all the connected 4 .. 20 mA transmitters data is set.
- e. Once the data for the last transmitter is set, pressing the button  will display the schematic of the connected transmitters

MECHANICAL DESCRIPTION



DATE AND TIME SETTING

The correct setting of date and time is crucial for meaningful logging of the latest alarm event.

This setting must occur during the first activation of the control unit.

Procedure:

1. From the main screen, press the button .
2. Enter the password “1919” to access the menu page.
3. Select the “System” line; press the button .
4. Select the “Clock” line; press the button .
5. Set all the data proposed by the menu using the buttons     .
6. Once all the data is set, select the “SAVE” line and press the button .
7. Press the button ; the display shows the schematic of the connected transmitters.

COMPONENTS DESCRIPTION	
1	Display
2	Status LED bar
3	Keyboard:
	Returns to the previous selection.
	1. Accesses the configurable parameter menus of the control unit. 2. Under parameter configuration, return to the main screen.
	Alarm silencing.
	Reset alarms.
	Select / Set configurable values.
	Access to submenus / Confirm settings.
4	Holes for mounting the supplied cable glands and/or plugs.
5	Screws for access to the internal parts of the product.
6	Screw seat for fixing the product to the wall.

CONDITIONS OF ACTIVATION OF OUTPUT RELAYS, LEDS AND BUZZER

STATUS	OUTPUTS													
	LED POWER	LED BATTERY	LED FAULT	LED PRE-ALR	LED ALR1	LED ALR2	LED AUX1	LED AUX2	BUZZER	RELAY PRE	RELAY AL1	RELAY AL2	RELAY AUX1	RELAY AUX2
Power supply: 85 .. 264 V~														
Power supply: 12 .. 24 V==, from backup system														
Test LEDs		AC												
Test Relays		AC												
Test Buzzer		AC												
Transmitter fault		AC											AC	AC
Pre-alarm		AC											AC	AC
Alarm 1		AC											AC	AC
Alarm 2		AC											AC	AC
Open loop (solo 4 .. 20 mA)		AC											AC	AC
Over Range		AC											AC	AC
End-of-life sensor		AC											AC	AC

LEGEND

 LED off / Buzzer off / Relay off.

 LED on steady / Buzzer on / Relay activated.

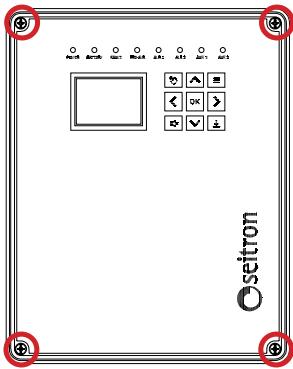
 LED flashing.

AC LED lit conditionally (lit steadily if the control unit is powered at 12 .. 24 V===, via backup system)

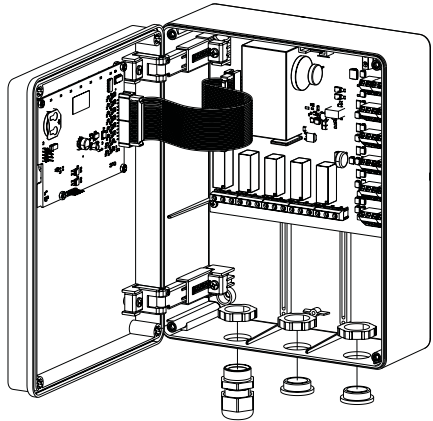
AC Relay conditionally activated; the relay can be activated only if the auxiliary output has been set correctly (see menu “Relays” - “Aux1” and “Aux2”).

INSTALLATION

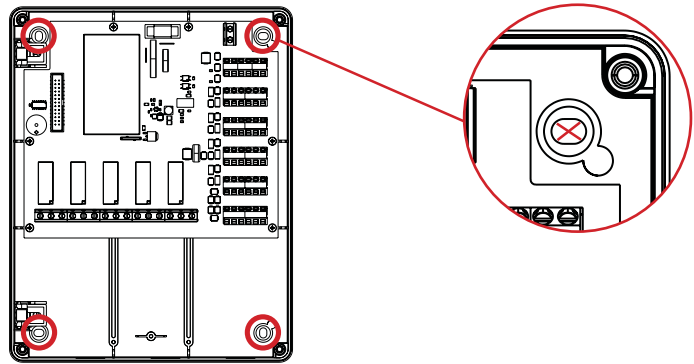
- 1 Access the internal parts of the product by unscrewing the 4 screws on the cover.



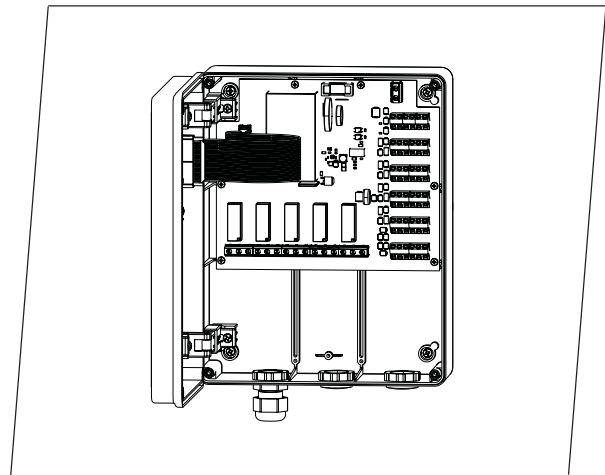
- 2 On the bottom side of the product there are 3 holes each having a diameter of 20.5 mm. The supplied cable glands and/or plugs should be mounted on each hole. The cable glands are used for cable routing for the product's electrical connections. In case you do not plan to use all the cable glands, it is recommended to mount the plugs in their place.



- 3 Locate the four screw slots for fixing the product to the wall. On each drill a hole for inserting the screw.



- 4 Secure the product to the wall using the appropriate wall plugs and screws.



- 5 Make electrical connections; see chapter "Electrical Connections".

- 6 Close the product by tightening the 4 screws on the lid.

ELECTRICAL CONNECTIONS



WARNING

- This control unit IS NOT approved for installation in ATEX classified areas.
- Connections with remote transmitters must be made with cables of appropriate cross-sectional area for the correct sizing of the system and in any case not less than 1.5 mm². Do not use the same conduit for signal and power cables.
- If the installation is in environments with strong EMC noise, the use of shielded cables is strongly recommended. The shield should be connected to the 'Gnd' terminal of the relevant zone only on the control unit side.
- The control unit and/or power supply unit, if powered at 230 V~, must be connected to the power supply via a switch capable of disconnecting both poles, in accordance with current safety regulations, and with a separation of at least 3 mm at each pole. In case the control unit is powered at 12 VDC, the note should be extended to the power supply and not to the control unit.
- Installation and electrical connections of this device must be performed by qualified technicians and in accordance with current technical and safety standards.
- Before making electrical connections on the control unit, be sure to remove power from the system.
- It is the responsibility of the installer (whose responsibility it is to set up a detection system that complies with existing standards, both National and European) to choose the appropriate types of load to connect to the control unit as well as to properly configure the system parameters. In case of doubt, contact the distributor.

The central unit is normally powered by a 12 VDC power supply with a backup system or by mains voltage at 230 V~.

The control unit is equipped with five relays with voltage-free changeover contacts (SPDT): 2 auxiliary relays (AUX 1 and AUX 2), 2 alarm relays (ALR 1 and ALR 2) and one pre-alarm relay (PRE-ALR).

The AUX 1 or AUX 2 outputs can be used either to drive general loads such as a siren or flashing light or, with proper configuration of related parameters, a gas shut-off solenoid valve.

It should be noted that all outputs of the control unit are voltage free, that is, they do not supply power to the loads giving the user greater freedom to use loads with different operating voltages.

The RS485 serial interface is used to connect devices to the control unit; it is enabled only in MODBUS1 terminals, while it is not enabled in MODBUS2 terminals. The maximum number of transmitters that can be connected to the control unit with MODBUS® protocol is 32. It is a prerequisite that all devices belong to the same series. For example, up to 32 transmitters from the Cool Guardian/Safe Guardian series or up to 32 from the SX/SY series can be connected.

Please refer to the wiring diagrams proposed below for the electrical connections.

IMPLEMENTATION OF RS485 NETWORK

Scan the QR code on the side or visit the website www.seitron.com to view and download the documentation on setting up an RS485 network.

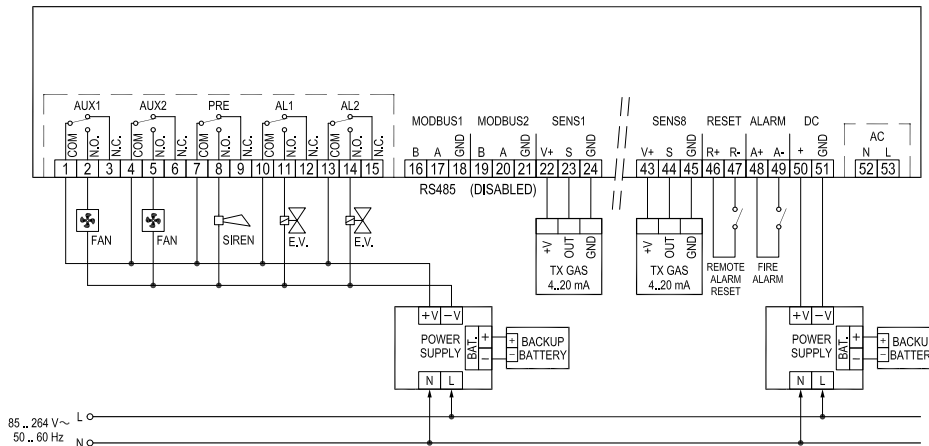


CONTROL UNIT AND LOADS POWERED AT 12 .. 24 V==

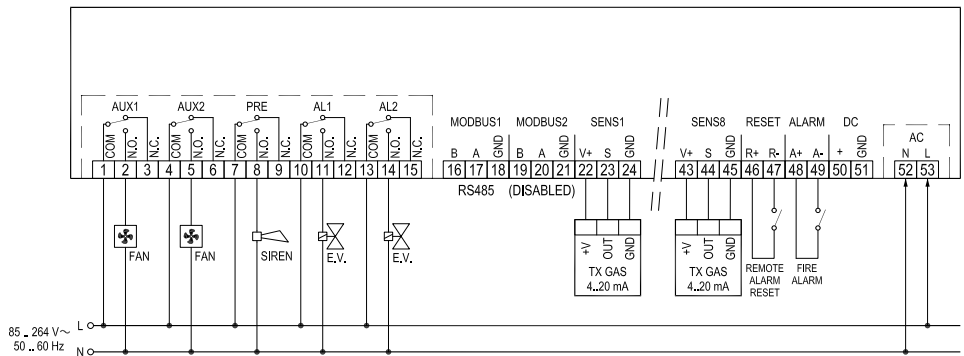


WARNING

- THE POWER SUPPLY* MUST BE RATED TO DELIVER AT LEAST 40 W: IT CAN POWER THE CONTROL UNIT AND UP TO 8 TRANSMITTERS CONNECTED TO THE 4 .. 20 mA ANALOG INPUTS.
- THE CONTROL UNIT IS POWERED BY AN EXTERNAL 12 .. 24 VDC POWER SOURCE. IF A SYSTEM CAPABLE OF TOLERATING POWER OUTAGES IS REQUIRED, A BACKUP POWER SUPPLY OF 12 .. 24 VDC MUST BE PROVIDED.
- THE +V POWER SUPPLY VOLTAGE FOR THE GAS TRANSMITTERS IS DERIVED FROM VDC, EXCEPT FOR A FUSE AND A DIODE WITH A TYPICAL VOLTAGE DROP OF 0,3 V.



CONTROL UNIT AND LOADS POWERED AT 85 .. 264 V~ 50 .. 60 Hz

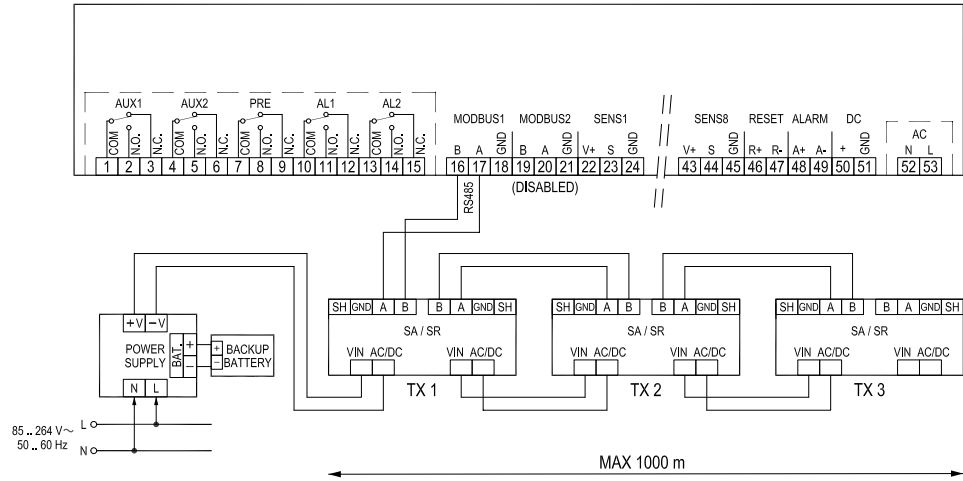


EXAMPLE OF AN RS485 NETWORK SETUP WITH BACKUP POWER SUPPLY AND 3 SA / SR SERIES TRANSMITTERS*



WARNING

- WITHIN AN RS485 NETWORK, IT IS POSSIBLE TO CONNECT UP TO 3 SA / SR SERIES TRANSMITTERS POWERED BY THE SAME POWER SUPPLY, REGARDLESS OF ITS POWER RATING.

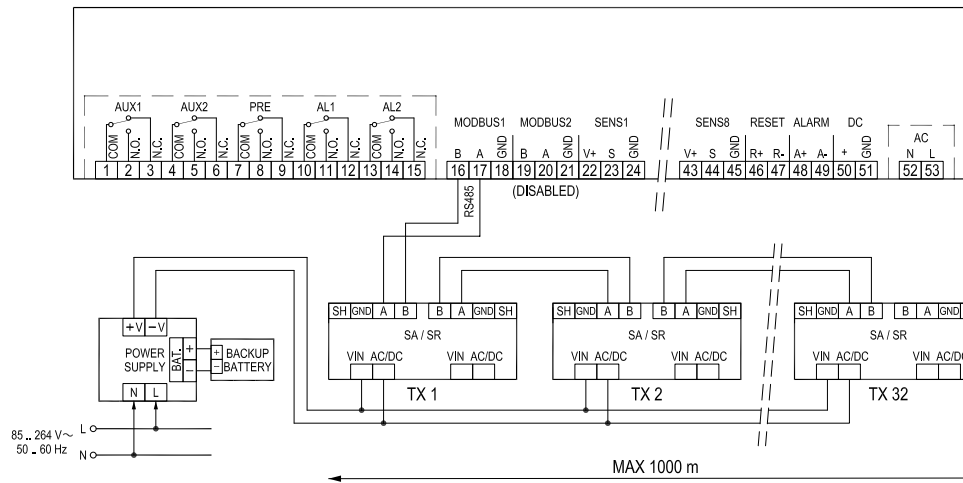


EXAMPLE OF AN RS485 NETWORK SETUP WITH BACKUP POWER SUPPLY AND UP TO 32 SA / SR SERIES TRANSMITTERS*



WARNING

- WITHIN AN RS485 NETWORK, IT IS POSSIBLE TO CONNECT UP TO 32 SA/SR SERIES TRANSMITTERS POWERED BY THE SAME POWER SUPPLY. THE POWER SUPPLY MUST BE PROPERLY SIZED TO DELIVER ADEQUATE POWER FOR ALL 32 TRANSMITTERS.

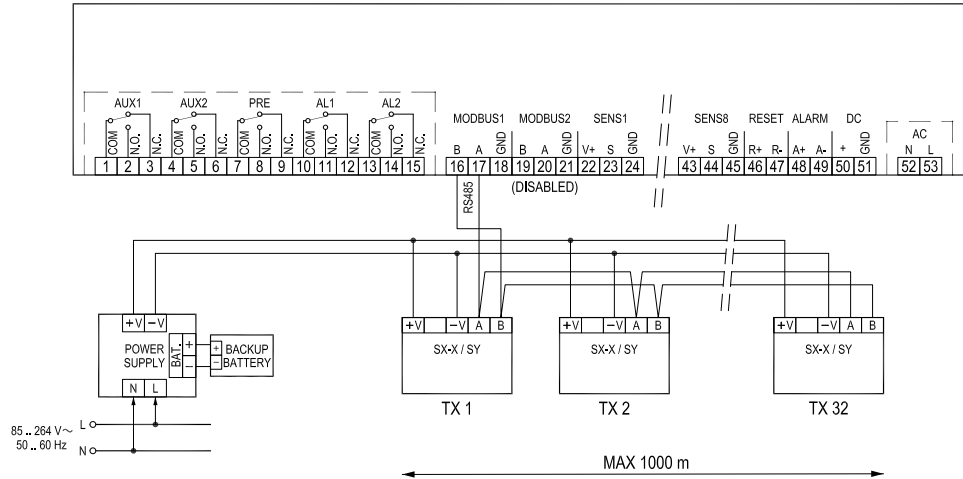


EXAMPLE OF AN RS485 NETWORK SETUP WITH BACKUP POWER SUPPLY AND UP TO 32 SX-X / SY SERIES TRANSMITTERS*



WARNING

- WITHIN AN RS485 NETWORK, IT IS POSSIBLE TO CONNECT UP TO 32 SX-X / SY SERIES TRANSMITTERS POWERED BY THE SAME POWER SUPPLY. THE POWER SUPPLY MUST BE PROPERLY SIZED TO DELIVER ADEQUATE POWER FOR ALL 32 TRANSMITTERS.



* Check the consistency of the actual system parameters.

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