

USER'S MANUAL

# COMMUNICATION MODULE

**SCMI-03S**



“Translation of original instructions”

**IMPORTANT NOTE:**

Read this manual carefully before installing or operating your new air conditioning unit. Make sure to save this manual for future reference.



## SCMI-03S CONTROL MODULE

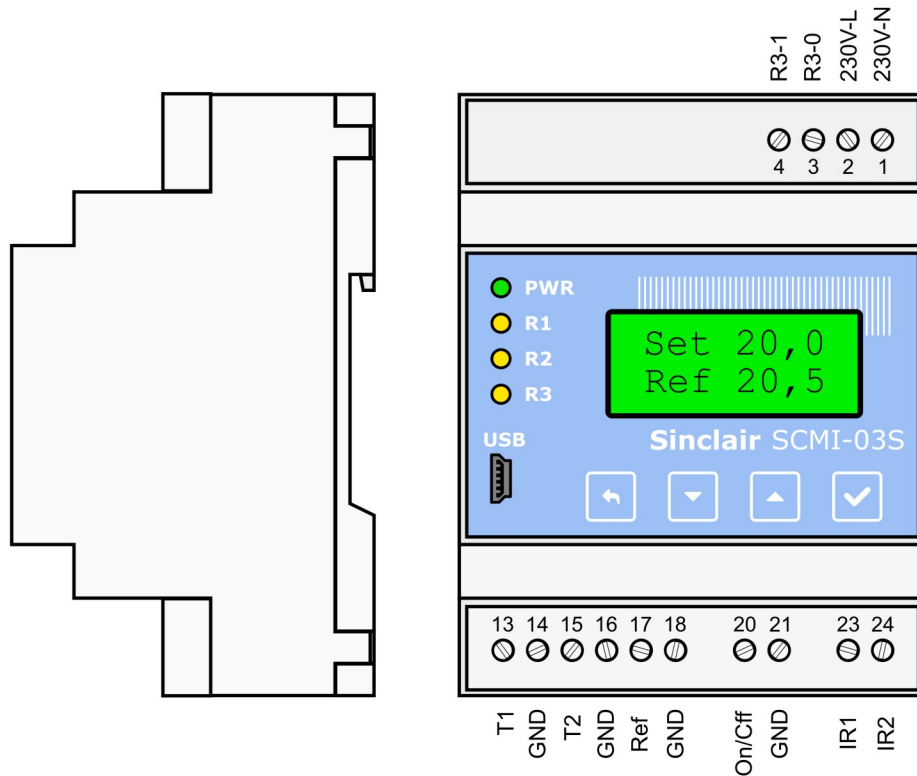


Fig. 1. SCMI-03S control module

The SCMI-03S module allows you to control one or two air-conditioning (AC) units to maintain the required temperature in rooms with servers or other devices that require a specified temperature for their operation. AC units enable cooling or heating and, depending on the selected mode, one selected unit can operate continuously, or both units can alternate regularly or they can work simultaneously. The AC units are controlled by SC05010 modules, which contain a transmitting diode operating in the infrared (IR) part of the spectrum and a 10k $\Omega$  resistance thermometer ( $\beta = 3435$ ). These modules must be fixed with double-sided adhesive tape under the covers of the AC units near the receiving diode of the remote control and their wires must be connected to the appropriate terminals of the SCMI-03S module. The green LED of the SCMI-03S module indicates its connection to the mains supply voltage. The yellow LEDs R1 and R2 indicate by their light the required status of the AC units and simultaneously they indicate, by short changes of their status, sending of commands to the corresponding AC unit. The red LED R3 flashes to indicate an error condition; the LED continues to flash even after the malfunction has been fixed until the error list is viewed and deleted. Error-indicating relay R3 is only activated for the duration of the malfunction. When the On/Off input is connected to the common GND terminal, the controlled AC units are switched off regardless of the selected operation mode of the module.

## Description of SCMI-03S module terminals

No.	Label	Signal type	Description
1	230V-N	Input 230V N	Input of the mains supply voltage – neutral wire
2	230V-L	Input 230V L	Input of the mains supply voltage – phase wire
3	R3-0	Relay output	R3 relay NO contact 230V/2A
4	R3-1	Relay output	R3 relay NO contact 230V/2A
13	T1	Resistance input	Input for temperature sensor T1 (10k $\Omega$ , $\beta$ =3435)
14	GND	GND	Common terminal for temperature sensor T1
15	T2	Resistance input	Input for temperature sensor T2 (10k $\Omega$ , $\beta$ =3435)
16	GND	GND	Common terminal for temperature sensor T2
17	Ref	Resistance input	Input for the set temperature sensor (10k $\Omega$ , $\beta$ =3435)
18	GND	GND	Common terminal for reference temperature sensor
20	On/Off	Digital input	Binary input for external switching on/off of the module
21	GND	GND	Common terminal for digital inputs
23	IR1	Out. for IR d.	Output for transmitting IR diode of channel 1
24	IR2	Out. for IR d.	Output for transmitting IR diode of channel 2

## Connection of the SCMI-03S Module

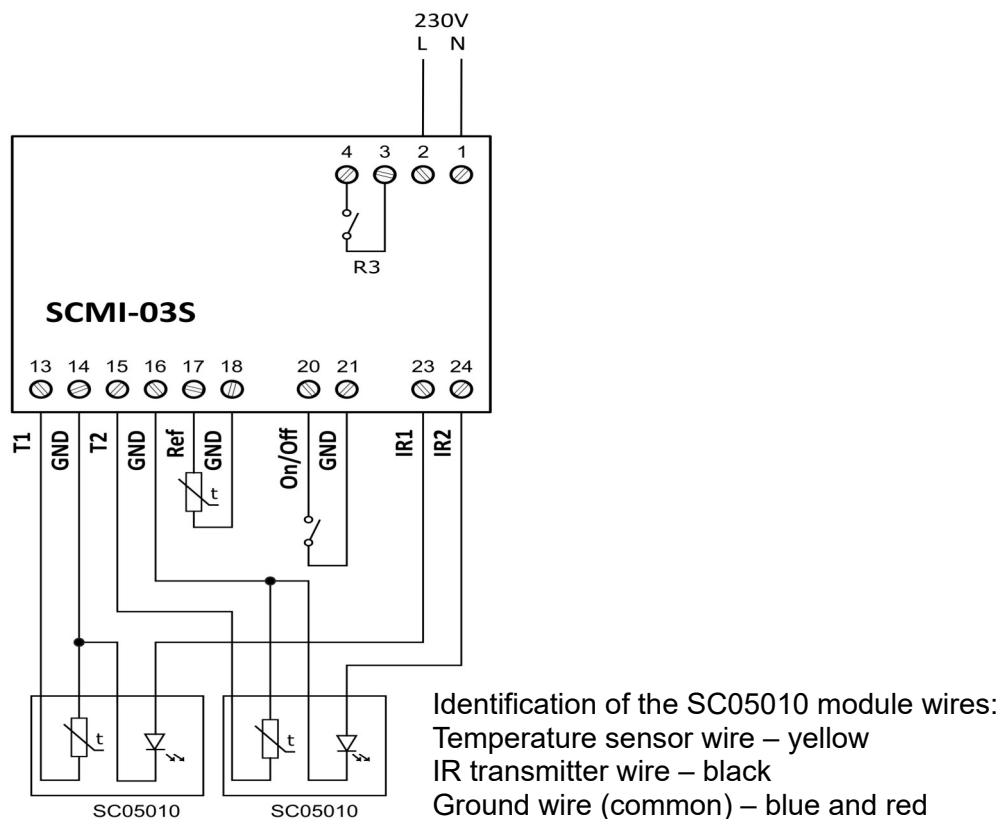


Fig. 2 Wiring diagram of the SCMI-03S module

## Manual Setting of the SCMI-03S Module

After turning on the power and initializing the module, the basic display appears containing the set operation mode, the set reference temperature and the actual reference temperature

<b>Coo</b> <b>xx.x</b> °C
<b>Ref</b> <b>xx.x</b> °C

After pressing the ▲ key, the data for the first AC unit appears

<b>Set</b>	<b>Off</b>
<b>T1</b>	<b>xx.x</b> °C

After pressing the ▲ key again, the data for the second AC unit appears

<b>Set</b>	<b>Off</b>
<b>T2</b>	<b>xx.x</b> °C

where the above example corresponds to a state where both ACs are inactive. With the AC running, the first line will show the operation mode (**Hea**-heating or **Coo**-cooling) and the desired temperature in degrees Celsius.

Press the **ENTER** key to enter the basic menu of the module; it has 3 menus

- Mode** - Allows you to set the operation mode of the module
- Settings** - Allows you to set the necessary parameters of the module operation
- Error list** - Allows you to view errors during module operation

## Operation Mode of the SCMI-03S Module

The menu of module operation mode has three items

- Off** - Both AC units are off (inactive)
- Cool** - Both AC units operate in the cooling mode according to another setting
- Heat** - Both AC units operate in the heating mode according to another setting

If the mode is changed to Off and confirmed by pressing the ENTER key, only the message below is displayed.

<b>Saved OK</b>
<b>Off</b>

If the cooling (heating) mode has been selected, it is also necessary to set the method of connection of both AC units

- |                  |   |
|------------------|---|
| <b>AC 1</b>      | - Only AC 1 is used for cooling (heating)   |
| <b>AC 2</b>      | - Only AC 2 is used for cooling (heating)   |
| <b>Together</b>  | - Both ACs work together  |
| <b>Alternate</b> | - Both ACs regularly alternate in operation according to the set period   |
| <b>Combi</b>     | - Both ACs alternate in operation according to the set period; if the performance of one AC is not sufficient and the set temperature difference is exceeded, both ACs start working together |

## Setting the Parameters of the SCMI-03S Module

The menu for setting the module parameters has the following items

- |                 |   |
|-----------------|---|
| <b>Reg.cons</b> | - Setting of the module control parameters  |
| <b>Output</b>   | - Setting of the switching logic of the output (error-indicating) relay of the module; can be <b>Direct</b> or <b>Inverse</b> |
| <b>Code</b>     | - Setting of the encoding of the output infrared signal to control both ACs; the code can be <b>Sinclair</b> or <b>Nordic</b> |
| <b>Louvres</b>  | - Setting of the control of the AC louvres ( <b>On</b> or <b>Off</b> )  |
| <b>Fan</b>      | - Setting of fan performance of both AC units   |
| <b>Display</b>  | - Setting of the module display   |

## Setting the Control Parameters of the SCMI-03S Module

The menu for setting the module control parameters has the following items

- |                |   |
|----------------|---|
| <b>Goal T</b>  | - Setting of the target (desired) temperature in the range of 15–30°C   |
| <b>Period</b>  | - Setting of the alternation period of the ACs operation; can be 1 to 48 hours  |
| <b>D alarm</b> | - Setting of the difference between desired and actual temperatures in the range of 1.0 to 5.0 °C; if exceeded, the error-indicating relay is activated             |
| <b>Dtemper</b> | - Setting of the difference between the desired and actual temperature in the range of 1.0 to 5.0 °C; if exceeded in combined mode, both ACs start working together |

## Setting the Parameters of Fans of Both AC units

The menu for setting the fans has items corresponding to the operation mode of the fans in the AC units

- |              |   |
|--------------|---|
| <b>Auto</b>  | - Automatic control of the AC fan performance         |
| <b>Fan 1</b> | - Setting of the AC fan performance to a low level    |
| <b>Fan 2</b> | - Setting of the AC fan performance to a medium level |
| <b>Fan 3</b> | - Setting of the AC fan performance to a high level   |

## Setting the Display Parameters of the SCMI-03S Module

The menu for setting the display parameters has the following items

- |                 |   |  |
|-----------------|---|--|
| <b>Backlit</b>  | - | Setting of the backlight of the module LCD in 16 levels  |
| <b>Contrast</b> | - | Setting of the contrast of the module LCD in 16 levels   |
| <b>IdleTime</b> | - | Setting of the idle time after which the LCD default state is restored. You can select Off or a delay from 30 to 120 seconds |

## List of Errors

The menu allows you to view up to the last eight operation errors of the SCMI-03S. When one or more errors have occurred and you open this menu, the recorded errors are displayed sequentially (from the latest to the oldest one). For example, if the required temperature is not kept, the display will show

**Err -1**

0100

For the duration of the error condition, the output relay is activated; at the same time the red LED flashes and remains to flash until all errors have been manually cleared. Press the ▼ key to display older errors. If there are no other errors, the display will show

**Err -2**

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After displaying and fixing all errors, you can use the ENTER key to **delete all stored errors at once**

**Delete**

**Errors? Y**

After confirmation, the successful deleting is confirmed by the message

**Saved OK**

Currently, only the following errors are displayed, others will be added during verification of the unit functions.

- |             |   |  |
|-------------|---|--|
| <b>0100</b> | - | The required temperature was not kept.                                 |
| <b>0001</b> | - | In the combined mode, the AC 1 cannot maintain the desired temperature |
| <b>0002</b> | - | In the combined mode, the AC 2 cannot maintain the desired temperature |



## Overview of SCMI-03S Module Settings

Main menu	Menu levels (press ENTER to select, press ESC to return)		Range	Note
<b>Mode</b>	<b>Off</b>	Both ACs are off (inactive)	-	
	<b>Cool</b>	<b>AC 1</b>	Only the AC 1 is used for cooling	-
		<b>AC 2</b>	Only the AC 2 is used for cooling	-
		<b>Together</b>	Both ACs are used for cooling	-
		<b>Alternate</b>	Both ACs alternate in cooling according to the set period	-
		<b>Combi</b>	Both ACs alternate in cooling according to the set period; start working together if the performance of one AC is not sufficient.	-
	<b>Heat</b>	<b>AC 1</b>	Only the AC 1 is used for heating	-
		<b>AC 2</b>	Only the AC 2 is used for heating	-
		<b>Together</b>	Both ACs are used for heating	-
		<b>Alternate</b>	Both ACs alternate in heating according to the set period	-
		<b>Combi</b>	Both ACs alternate in heating according to the set period; start working together if the performance of one AC is not sufficient.	-
<b>Settings</b>	<b>Reg.cons</b>	<b>Goal T</b>	The target (desired) temperature	15–30°C
		<b>Period</b>	Setting of the alternation period of the ACs operation	1–48 hours
		<b>D alarm</b>	The difference between desired and actual temperatures; if exceeded, the error-indicating relay is activated	1.0–5.0°C
		<b>Dtemper</b>	The difference between the desired and actual temperature; if exceeded, both ACs work together	1.0–5.0°C
	<b>Output</b>	<b>Direct</b>	Direct logic for activation of the output relay	-
		<b>Inverse</b>	Inverse logic for activation of the output relay	-
	<b>Code</b>	<b>Sinclair</b>	<b>Sinclair</b> code for IR signal for AC control	-
		<b>Nordic</b>	<b>Nordic</b> code for IR signal for AC control	-
	<b>Louvres</b>	<b>On</b>	AC louvres control is switched on	-
		<b>Off</b>	AC louvres control is switched off	-
	<b>Fan</b>	<b>Auto</b>	Automatic control of the AC fan performance	-
		<b>Fan 1</b>	Low level of the AC fan performance	-
		<b>Fan 2</b>	Medium level of the AC fan performance	-
		<b>Fan 3</b>	High level of the AC fan performance	-
	<b>Display</b>	<b>Backlit</b>	LCD backlight brightness	16 levels
		<b>Contrast</b>	LCD contrast	16 levels
		<b>IdleTime</b>	Idle time to restore the default state of the display	Off or 30–120 sec
<b>Error list</b>	Display of the last 8 recorded errors (Error –1 to Error –8)		-	

## Installation

### Installation of the SC05010 Module

The SC05010 module with an IR diode should be placed into each indoor unit and connected to the SCMI-03S module. SC05010 is supplied with a 5m cable as standard and is equipped with an adhesive label for attachment. The location of the module itself must be chosen with regard to the conditions of the specific installation. It must be placed in the immediate vicinity of the IR receiver of the AC unit (the IR receiver is a part of the display).

The orientation of the module is also important, the IR diode must point towards the IR receiver. The recommended location is the inner side of the front cover – see Fig. 3.



1 – SC05010 module  
2 – Display

Fig. 3 Location of SC05010 at the indoor unit display – view of the inner side of the front cover

### Installation of the SCMI-03S Module

The SCMI-03S module itself can be placed on a DIN rail. In addition to the two SC05010 modules, it is necessary to place a reference temperature sensor in the room according to the installation requirements. For wiring diagram, please see Fig. 2.



# NOTE CONCERNING PROTECTION OF ENVIRONMENT

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This product must not be disposed of via normal household waste after its service life, but must be taken to a collection station for the recycling of electrical and electronic devices. The symbol on the product, the operating instructions or the packaging indicate such disposal procedures. The materials are recyclable in accordance with their respective symbols. By means of re-use, material recycling or any other form of recycling old appliances you are making an important contribution to the protection of our environment. Please ask your local council where your nearest disposal station is located.

In case of quality problem or other please contact your local supplier or authorized service center.

**Emergency number: 112**

## PRODUCER

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SINCLAIR CORPORATION Ltd.  
1-4 Argyll St.  
London W1F 7LD  
Great Britain

[www.sinclair-world.com](http://www.sinclair-world.com)

This product was manufactured in China (Made in China).

## REPRESENTATIVE

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SINCLAIR EUROPE spol. s r.o.  
Purkynova 45  
612 00 Brno  
Czech Republic

## TECHNICAL SUPPORT

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SINCLAIR Global Group s.r.o.  
Purkynova 45  
612 00 Brno  
Czech Republic

Tel.: +420 800 100 285  
Fax: +420 541 590 124

[www.sinclair-solutions.com](http://www.sinclair-solutions.com)  
[info@sinclair-solutions.com](mailto:info@sinclair-solutions.com)

