



INSTRUCTIONS FOR THE USER AND THE INSTALLER



FOR VENTILATED CABINETS AND FILTRATION HOODS

Thank you for trusting us!

Justrite Safety Group is a growing family of industrial safety companies. With ten different portfolio brands, each with a specific focus, Justrite Safety Group provides the essential safety products you need to protect your workers and your workplace.

Download this manual
in other languages:



Contents

WARRANTY.	3
REGULATORY REFERENCES AND CERTIFICATIONS.	3
1. GENERAL INFORMATION.	4
1.1. Manual contents and purpose.	4
1.2. Ownership of information.	4
1.3. Conventions.	4
1.3.1. Typographical conventions.	4
1.4. Manufacturer's details.	4
1.5. Cabinet data.	4
1.6. Technical support.	4
1.7. Liability.	4
2. SAFETY.	5
3. DESCRIPTION.	5
3.1. Controller-JCBCFN0000.	5
3.2. Accessories.	5
4. USER INTERFACE.	6
4.1. Touch screen display.	6
4.2. Changing the parameters.	7
5. TECHNICAL SPECIFICATIONS.	10
5.1. Technical data.	10
5.2. Dimensions.	10
5.3. Electrical connections.	11
5.4. ModBus Interface.	13
5.4.1. ModBus COILS Table.	13
5.4.2. ModBus DISCRETE INPUTS (DI) Table.	13
5.4.3. ModBus HOLDING REGISTERS (HR) Table.	14
5.4.4. ModBus INPUT REGISTERS (IR) Table.	14

Dear Customer,

Thank you for choosing a Controller JCBCFN0000 product from our company. You have made a decisive investment into your company's safety.

Our products make it more convenient and safe to store hazardous substances at the workplace, ensuring occupational safety requirements are met.

This instruction manual contains important information and suggestions that must be followed in order to get the best out of the Controller JCBCFN0000 for Ventilated cabinets and Filtration hoods.

Many thanks again

Justrite Safety Group.

WARRANTY.

The Controller JCBCFN0000 is covered by a 12-month manufacturer's warranty starting on the date of delivery.

REGULATORY REFERENCES AND CERTIFICATIONS.

All Controller **JCBCFN0000** models quoted in this manual have been subjected to electrical tests at an independent accredited laboratory and are CE marked.



1. GENERAL INFORMATION.

1.1. Manual contents and purpose.



This manual describes the Controller **JCBCFN0000**, its intended use and its technical specifications.



The purpose of this manual is to provide the essential information for using and maintaining the Controller **JCBCFN0000**, to create a sense of responsibility and knowledge of its possibilities and limitations.



The people deemed suitable to carry out a determined task must have sufficient physical and mental capacity to learn the instructions given to them.



The instructions in this manual do not replace but supplement the obligations to comply with current legislation on accident prevention safety regulations.

1.2. Ownership of information.

This manual contains proprietary information; all rights are reserved.

This manual may not be reproduced or photocopied, in whole or in part, without the prior written consent of **Justrite Safety Group**.

This manual may only be used by the customer to which it has been provided as an accessory to the Controller **JCBCFN0000** and solely for the purposes of installation, use and maintenance of the product to which the manual refers.

Justrite Safety Group declares that the information given in this manual is consistent with the technical and safety specifications of the Controller **JCBCFN0000** to which the manual refers.

Justrite Safety Group accepts no liability for direct or indirect harm to persons, pets or property arising from using this manual or Controller **JCBCFN0000** under conditions other than those intended.

Justrite Safety Group reserves the right to make changes or improvements without prior notice to this manual and to the Controller **JCBCFN0000**, including where applicable to products of the same model to which this manual refers but with a different serial number.

The information given in this manual refers in particular to the Controller **JCBCFN0000** specified in "4.1 Touch screen display" on page 7.

1.3. Conventions.

1.3.1. Typographical conventions.



CAUTION/IMPORTANT = for important information requiring particular attention.



DANGER = for actions requiring particular caution and adequate preparation.



FORBIDDEN = for actions that **MUST NOT** be carried out.

NOTE = provides important information highlighted outside the text to which it refers.

1.4. Manufacturer's details.

Justrite Safety Group

Achterzeedijk 57, Unit 1
2992 SB Barendrecht, The Netherlands

Tel: +31 (0) 180 615 744

Fax: +31 (0) 180 611 551

e-mail: saleseu@justrite.com

1.5. Cabinet data.

A nameplate on the product states the essential data and technical specifications of the Controller **JCBCFN0000 for Ventilated cabinets and Filtration hoods**.



The data shown on the manufacturer's plate must always be provided when requesting technical support and/or spare parts.

1.6. Technical support.

Customers with any doubts or issues can contact the **Justrite Safety Group** authorised Technical Support Service for technical support, training and maintenance.

1.7. Liability.

Justrite Safety Group accepts no liability for harm to persons, pets or property arising from failure to comply with the safety regulations and recommendations in the documentation provided.

2. SAFETY.



Please read the following carefully and comply scrupulously with the instructions provided, to prevent any issues and accidents during product operation.



This manual does not replace but supplements the obligations to comply with current legislation on accident prevention safety regulations.



The appliance must be installed in compliance with current regulations and in accordance with the manufacturer's instructions given in this manual. Incorrect installation may cause harm to persons, animals and/or property, for which the manufacturer cannot be held liable.



After having removed the packaging, make sure that the appliance is not damaged. If it is damaged, do not install or start the appliance as it may be dangerous. Contact your retailer or your nearest Authorised Technical Support Centre.



The appliance must be installed by qualified personnel who are responsible for ensuring compliance with current local and national laws and regulations on:

- suitability of the installation site;
- proper electrical connections;
- compliance with technical specifications.

3. DESCRIPTION.



It is the user's responsibility to assess the suitability of the Controller **JCBCFN0000** for their specific needs.

3.1. Controller-JCBCFN0000.

This new Controller **JCBCFN0000** manages the maintenance of the filters installed in chemical storage ventilated cabinets. It is installed directly and easily on the cabinets and has a 2.4" touch screen for easy setup and monitoring.

The controller measures the ventilation flow velocity through the cabinet and runs a countdown based on the FILTER COUNTER parameter, which can be configured by the user in the parameters menu SETUP 2 screen. This countdown corresponds to the cabinet filters' lifetime. When the countdown reaches zero, the user is alerted to the need to change the filters through a visual alert and a buzzer. The controller is also able to detect if the cabinet door is open and alert the user if it stays open too long.

An option to schedule filter maintenance every 60 hours is also available. If active, the screen alerts the user every 60 hours to check the condition of the filters. The 60-hour countdown is reset manually.

Finally, the controller has a 1H ON/1H OFF mode in which ventilation alternates between on and off for 1 hour at a time.

3.2. Accessories.

TEMPERATURE SENSOR:

for measuring and displaying the temperature inside the cabinet, for example.

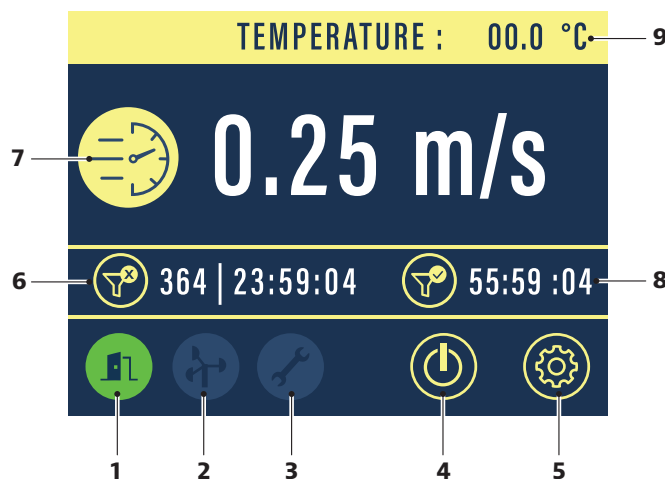
MODBUS INTERFACE:

for monitoring and setting up the controller remotely via a Modbus RTU interface.

4. USER INTERFACE.

The Controller **JCBCFN0000** has a 2.4" touch screen that clearly displays the system status. It can also be used to set all parameters.

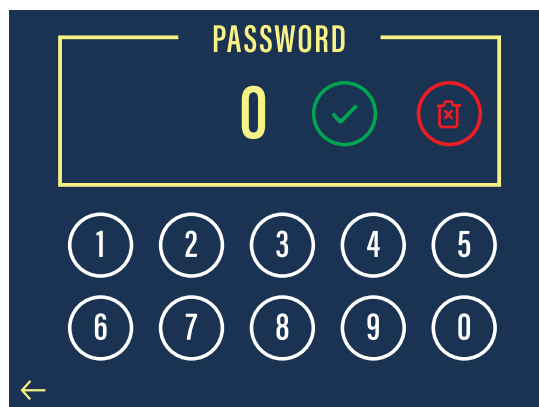
4.1. Touch screen display.



DESCRIPTION	MEANING
1 Door open/closed.	The icon is GREEN if the ventilated cabinet door is closed. The icon is RED if the ventilated cabinet door is open. If the alarm time is exceeded, the buzzer sounds and the user can temporarily deactivate it by pressing the icon.
2 Air velocity too low.	The icon is RED if the ventilation air flow velocity is outside the range set by the user. If the alarm time is exceeded, the buzzer sounds and the user can temporarily deactivate it by pressing the icon.
3 Change filter.	The icon turns RED at the end of the countdown. Signals the ventilation filters need changing. If the alarm time is exceeded, the buzzer sounds and the user can temporarily deactivate it by pressing the icon.
4 Standby mode.	For putting the controller into standby. Once in standby, the screen switches off, the ODM relay deactivates and the countdown pauses. To exit standby mode, simply tap the touch screen.
5 Access setup parameters.	For accessing the controller's setup pages.
6 Displays the filters' life-time countdown.	The countdown corresponds to the filters' life-time. The count can be set by the user in the controller's setup pages. The value is displayed in RED at the end of the countdown. Signals the filters need changing.
7 Displays the ventilation flow velocity /rate.	The default setting displays the ventilation flow velocity inside the cabinet in m/s and measured by the built-in sensor. Tap the value to display the equivalent flow rate in m3/h. The flow rate calculation depends on the cabinet ventilation surface (which can be set by the user). The value turns RED when it is outside the set range.
8 Displays the 60H countdown.	The optional 60H countdown corresponds to the filters' maintenance. The value is displayed in RED at the end of the countdown. Signals the filters' condition needs checking. The user must reset the 60H counter in the controller setup menu.
9 Displays the temperature (optional).	The temperature measured inside the cabinet, expressed in °C and measured by the optional sensor supplied by ASEM S.r.l.. The value turns RED when it is higher than the set alarm value.

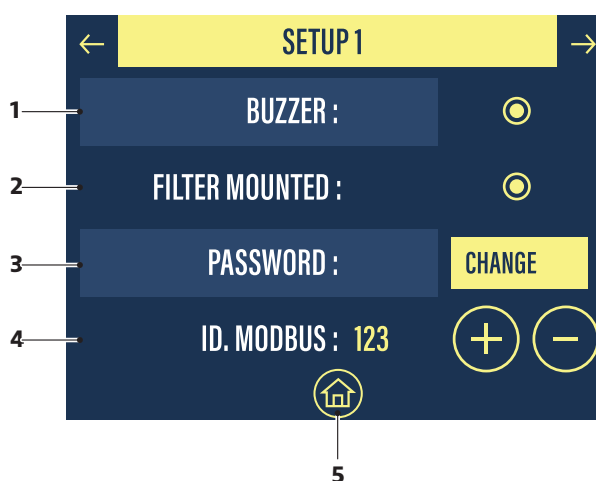
4.2. Changing the parameters.

Press key **5** (see chapter 1.5 on page 5) to access system settings.
A PASSWORD must be entered in order to change the settings.



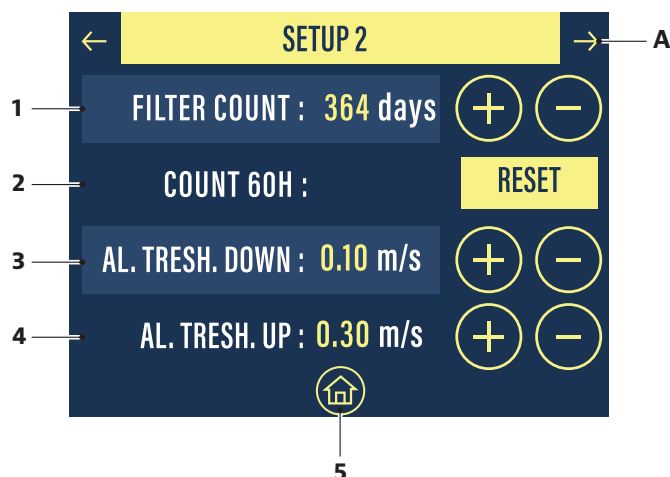
DESCRIPTION	MEANING
PASSWORD	The default password is 1234 and can be subsequently changed by the user.

On entering the correct password, the following screen is displayed (SETUP 1).



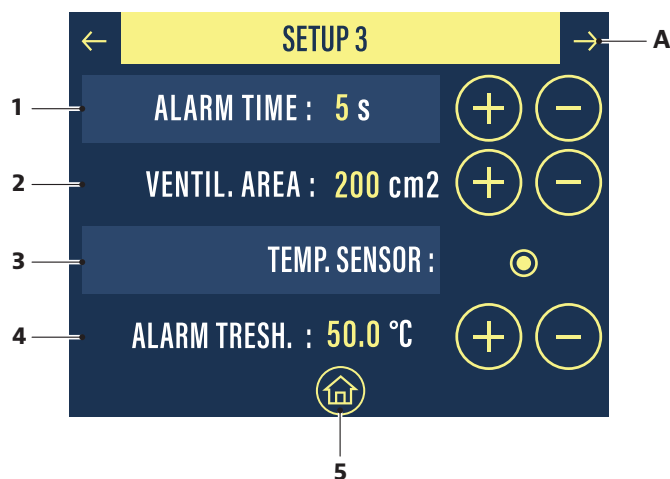
DESCRIPTION	MEANING
1 Buzzer activation.	For activating/deactivating the buzzer that activates when at least one of the alarm conditions occurs.
2 Ventilation filter presence.	To use the controller as a simple sensor for measuring air flow velocity, the ventilation filter management function can be deactivated. In this mode, the countdowns are not displayed and the velocity / flow rate measurements are displayed larger.
3 Password.	For changing the password for accessing settings.
4 ModBus identifier (optional).	For changing the ModBus identification code.
5 Home page.	Exits edit mode and returns to the home page.

Press arrow A to go to the next screen (SETUP 2).



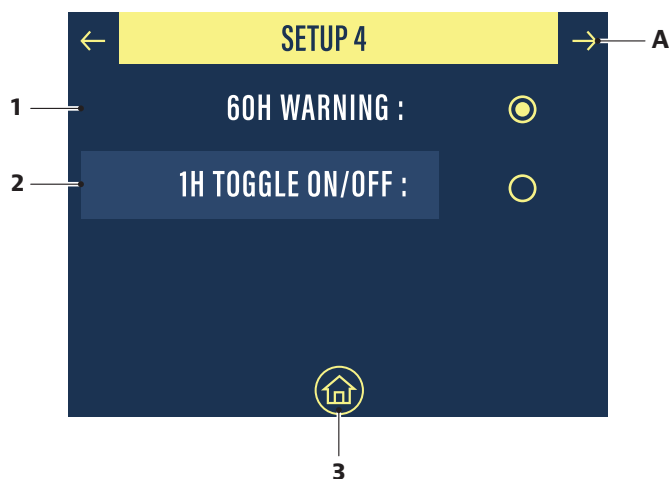
DESCRIPTION	MEANING
1 Filter maintenance.	For setting the filter life-time countdown in days (from 0 to 365).
2 Resetting the 60H countdown.	For resetting the filter check 60-hour countdown.
3 LOW velocity alarm threshold.	For setting the low alarm threshold for the measured air flow velocity. If the measured value is below this value, the system enters alarm state.
4 HIGH velocity alarm threshold.	For setting the high alarm threshold for the measured air flow velocity. If the measured value is above this value, the system enters alarm state.
5 Home page.	Exits edit mode and returns to the home page.

Press arrow A to go to the next screen (SETUP 3).



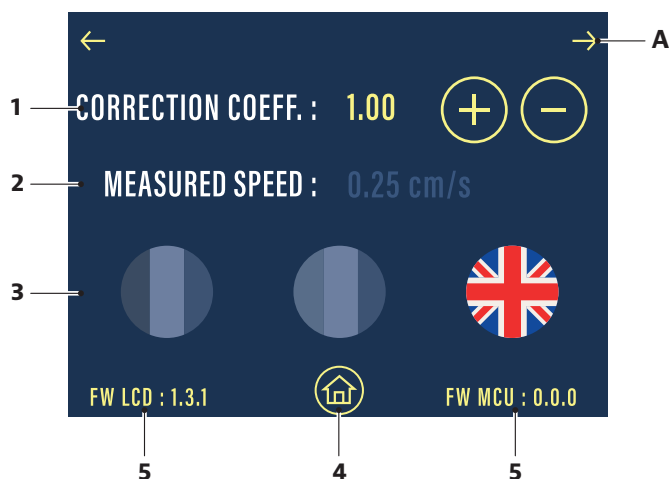
DESCRIPTION	MEANING
1 Alarm time.	For setting the system alarm time (in seconds). This is the minimum time for which an alarm condition must remain active before the system enters alarm state.
2 Ventilation surface.	The cabinet ventilation surface expressed in cm2 (typically the ventilation filter surface). This value is used to convert the measured air velocity (m/s) to flow rate (m³/h).
3 Temperature sensor presence (optional).	Signals to the system that an optional temperature sensor supplied by ASEM S.r.l. is connected.
4 Temperature alarm threshold (optional).	For setting the temperature alarm threshold. If the measured temperature is above this value, the system enters alarm state and the value is displayed in RED.
5 Home page.	Exits edit mode and returns to the home page.

Press arrow A to go to the next screen (SETUP 4).



DESCRIPTION	MEANING
1 Optional 60H countdown.	For activating/deactivating the filter check 60-hour countdown.
2 Optional 1 hour on / 1 hour off mode (1H ON/ 1H OFF).	For activating/deactivating 1H ON/ 1H OFF mode. This mode alternates ventilation on for one hour with ventilation in standby for one hour. When the system is in standby, it can be reactivated by tapping the screen. In this case the hour counter is reset and the operating phase is set to active.
3 Home page.	Exits edit mode and returns to the home page.

Press arrow A to go to the next screen (SETUP 5).



DESCRIPTION	MEANING
1 Correction coefficient (calibration of velocity measurement).	This coefficient calibrates the velocity sensor to the cabinet being used. Proceed as follows: – Mount the system in the filtering cabinet. – Run a nominal velocity air flow through the cabinet (verified by a calibrated anemometer). – Read the value measured by the system on the screen and adjust the coefficient to obtain the same value given by the anemometer.
2 Measured velocity value.	For reading the air flow velocity value measured by the system in real time.
3 TInterface language.	For selecting the interface language from those available (French, Italian and English).
4 Home page.	Exits edit mode and returns to the home page.
5 Software version.	System firmware versions (CPU & LCD).

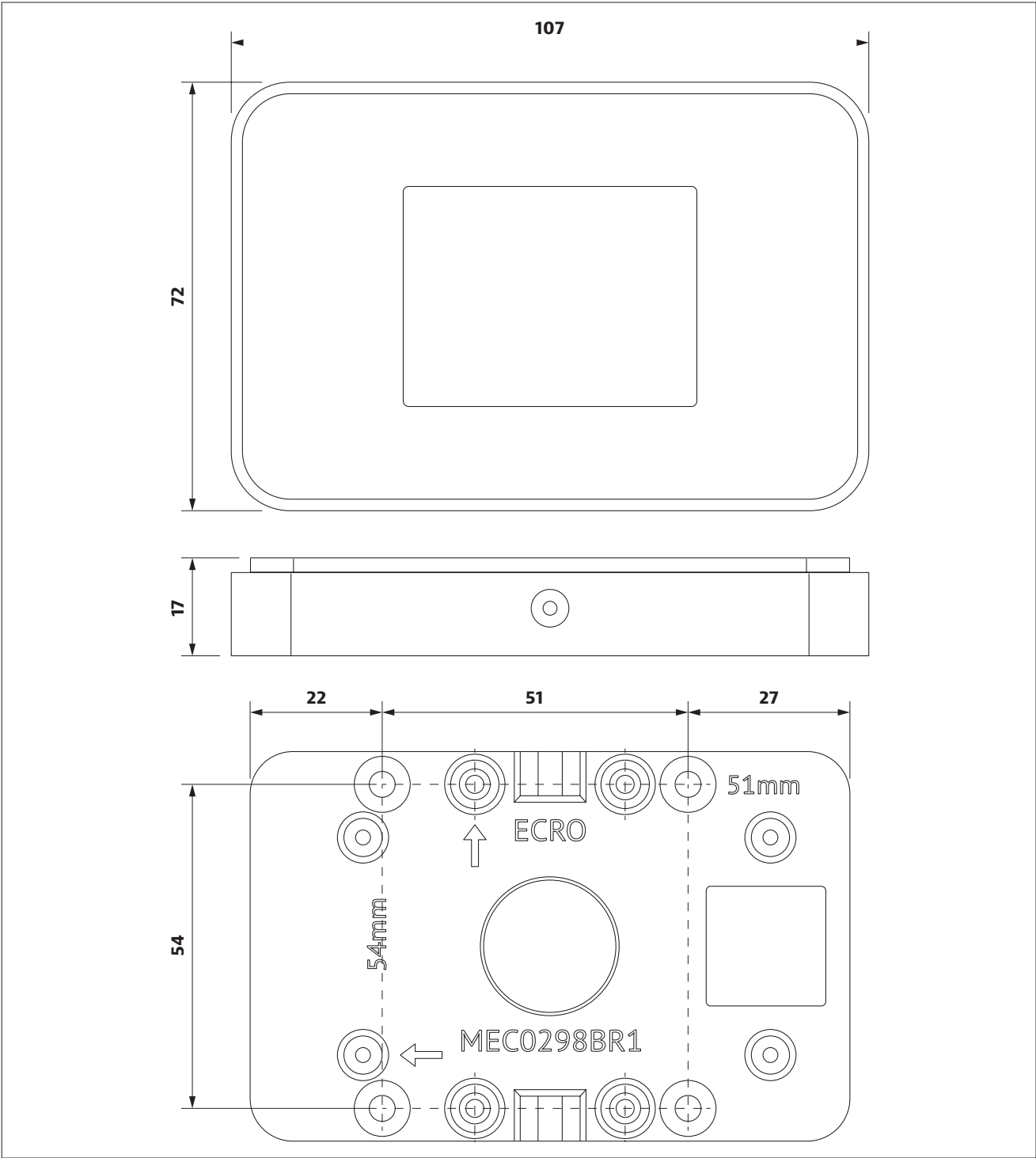
5. TECHNICAL SPECIFICATIONS.

5.1. Technical data.

DESCRIPTION	Controller JCBCFN0000	U.M.
Electrical power supply	90/265	VAC
Resettable fuse protection.	1 / 250	A / VAC
Average power consumption	5	VA
Safety class	III	-

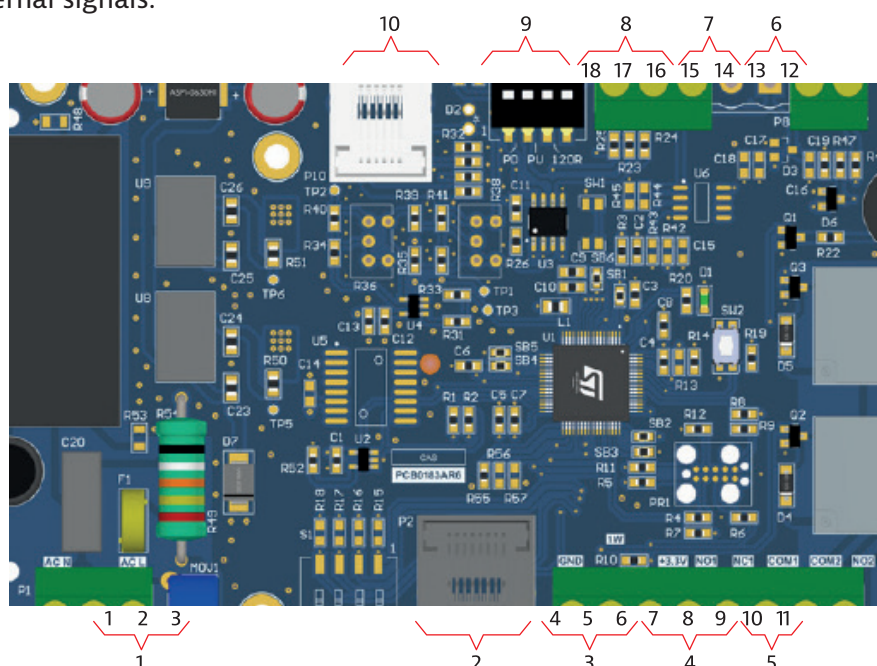
5.2. Dimensions.

All dimensions are in mm.



5.3. Electrical connections.

The image below shows the circuit board inside the controller, which contains the terminal boards for connecting the external signals.



1- POWER SUPPLY CONNECTOR.

TERMINAL NUMBER	NAME/FUNCTION	DESCRIPTION
1	AC N	230 VAC power supply - NEUTRAL.
2	NC	Not connected.
3	AC L5	230 VAC power supply - PHASE.

2 - INTERFACE FOR LCD SCREEN.

The 3.5" display on the cabinet wall is connected to the electronic board via an RJ45 cable.

3 - TEMPERATURE SENSOR INPUT (OPTIONAL).

An optional temperature sensor can be connected to this input.

TERMINAL NUMBER	NAME/FUNCTION	DESCRIPTION
4	+3.3V	+3.3V power supply - RED WIRE.
5	SENSOR	Sensor signal - YELLOW WIRE.
6	GND	System earthing - BLACK WIRE.

4 - RELAY OUTPUT: ALARM.

The alarm relay activates when at least one of the alarm conditions is met.

The relay opening characteristics are:

– 10A / 30 VDC / 250 VAC.

TERMINAL NUMBER	NAME/FUNCTION	DESCRIPTION
7	NO1	Relay NO output (Normally Open).
8	NC1	Relay NC output (Normally Closed).
9	COM1	Relay COM output (Common).

5 - RELAY OUTPUT: RUN ORDER (ODM).

The control relay activates when the system is not in standby.

The relay opening characteristics are:

– 10A / 30 VDC / 250 VAC.

TERMINAL NUMBER	NAME/FUNCTION	DESCRIPTION
10	COM2	Relay COM output (Common).
11	NO2	Relay NO output (Normally Open).

6 - DOOR CONTACT INPUT.

This input is used to detect the opening of the ventilated cabinet door.

- CONTACT OPEN: Door closed (the corresponding alarm is disabled).
- CONTACT CLOSED: Door open (the corresponding alarm is activated).

TERMINAL NUMBER	NAME/FUNCTION	DESCRIPTION
12	DI1	Contact 1 input.
13	GND	System earthing.

7 - CONNECTOR NOT USED.

TERMINAL NUMBER	NAME/FUNCTION	DESCRIPTION
14	NC	Not used.
15	NC	Not used.

8 - MODBUS INTERFACE (OPTIONAL).

All system settings can be monitored and set up via the RS-485 ModBus interface.

TERMINAL NUMBER	NAME/FUNCTION	DESCRIPTION
16	GND	System earthing.
17	MB A	ModBus A Signal
18	COM1	ModBus B Signal

9 - RS-485 MODBUS TERMINATION RESISTOR (SOLELY FOR MODBUS OPTION).

In this case the ModBus communication protocol uses a RS485 RTU interface.

IMPORTANT: 120 Ohm resistors must be installed at both ends of the line. DIP switches (S1) allow this resistor to be connected between signals A and B.

The pull-up and pull-down resistors (signals A and B respectively) must be mounted on a single point of the RS485 line. These resistors can be mounted using DIP switches (S2).

S2 from left to right:

- SWITCH 1 ON = The pull-down resistor is mounted.
- SWITCH 1 OFF = The pull-down resistor is NOT mounted.
- SWITCH 2 ON = The pull-up resistor is mounted.
- SWITCH 2 OFF = The pull-up resistor is NOT mounted.
- SWITCH 3 ON = The 120 Ohm termination resistor is mounted.
- SWITCH 3 OFF = The 120 Ohm termination resistor is NOT mounted.

10 - VELOCITY SENSOR CONNECTOR.

The velocity sensor is connected to the circuit board via an RJ-12 cross over cable.



5.4. ModBus Interface.

The controller can be set up/monitored via a Modbus RTU interface.

The default connection settings are:

- BAUDRATE = 9600 bauds;
- DATA BITS = 8 bits;
- STOP BITS = 1;
- PARITY = none.

5.4.1. ModBus COILS Table.

COIL	DESCRIPTION	UNIT	EXAMPLE	MIN.	MAX.	DEFAULT
00	Controller run order. Activates or puts in standby the ventilated cabinet controller.	-	0 = standby 1 = run	0	1	1
01	Buzzer activation. Enables or disables the buzzer that sounds when the system is in alarm state.	-	0 = inactive 1 = active	0	1	1
02	Filter presence. Defines the presence of a filter in the cabinet ventilation system.	-	0 = not present 1 = present	0	1	1
03	Temperature sensor presence. Defines the presence of the optional temperature sensor.	-	0 = not present 1 = present	0	1	0
04	Return to factory settings.	-	To RESET the system to factory settings, write the value "1" on both ModBus registers in a single command.	-	-	-
05	Return to factory settings.	-		-	-	-

5.4.2. ModBus DISCRETE INPUTS (DI) Table.

DI	DESCRIPTION	UNIT	EXAMPLE	MIN.	MAX.	DEFAULT
00	General alarm state.	-	0 = no alarm 1 = alarm state	0	1	1
01	Alarm for filter life-time countdown.	-	0 = no alarm 1 = alarm state	0	1	1
02	Alarm for filter monitoring countdown.	-	0 = no alarm 1 = alarm state	0	1	1
03	Door open alarm.	-	0 = no alarm 1 = alarm state	0	1	1
04	Temperature alarm.	-	0 = no alarm 1 = alarm state	0	1	1
05	Alarm for velocity outside authorised range.	-	0 = no alarm 1 = alarm state	0	1	1

5.4.3. ModBus HOLDING REGISTERS (HR) Table.

HR	DESCRIPTION	UNIT	EXAMPLE	MIN.	MAX.	DEFAULT
00	Countdown of days remaining until maintenance. Maintenance of ventilated cabinet filters.	days	0x0064 = 100 → 100 days	0	365	10
01	Low velocity alarm threshold. Minimum air flow velocity to prevent alarm trigger.	cm/s	0x0032 = 30 → 30 cm/s = 0.3 m/s	0	120	30
02	High velocity alarm threshold. Maximum air flow velocity to prevent alarm trigger.	cm/s	0x0032 = 50 → 50 cm/s = 0.5 m/s	0	120	50
03	Alarm time. Minimum time for which an alarm condition must remain active before the system enters alarm state.	s	0x0005 = 5 → Tal = 5 s	0	300	5
04	Ventilation duct surface.	cm ²	0x0064 = 100 → S = 100 cm ² = 0.01m ²	0	10000	200
05	Temperature alarm threshold. Temperature above which the system goes to alarm state.	10x°C	0x01F9 = 505 → 50.5°C	0	1000	500
06	ModBus identifier.	-	0x0002 = 2	0	254	123
07	RS485 velocity. UART velocity used for ModBus RTU.	bauds	0 = 9600 1 = 19200 2 = 38400 3 = 57600 4 = 115200	0	4	0
08	Correction coefficient K. Used for velocity sensor calibration.	-	0x0032 = 50 → K = 0.5	0	300	100

5.4.4. ModBus INPUT REGISTERS (IR) Table.

IR	DESCRIPTION	UNIT	EXAMPLE	MIN.	MAX.	DEFAULT
00	Velocity value. Air flow velocity through cabinet.	cm/s	0x0032 = 50 → V = 50 cm/s = 0.5 m/s	-	-	-
01	Flow rate value. Air flow rate through cabinet.	m ³ /h	0x01DC = 476 → 476 m ³ /h	-	-	-
02	Temperature value. Temperature measured in cabinet.	10x°C	0x01F9 = 505 → 50.5°C	-	-	-
03	Maintenance days. Number of days remaining until maintenance.	days	0x0064 = 100 → 100 days	-	-	-
04	Hours remaining. Countdown of hours remaining (for 60-hour count).	hours	0x000A = 10 → 10 hours	-	-	-
05	Minutes remaining. Number of minutes remaining (for 60-hour count).	min.	0x000A = 10 → 10 minutes	-	-	-
06	Serial number. Read only.	-	0x00AB = 171	-	-	-
07	Firmware version. Read only	-	0x0123 → V1.2.3	-	-	-

Notes:



Justrite Safety Group

Achterzeedijk 57, UNIT 1,
2992 SB Barendrecht, The Netherlands

Tel. : +31 (0) 180 615 744

Fax : +31 (0) 180 611 551

E-mail: saleseu@justrite.com

 **Justrite**[®]
Safety Group