User Guide
Mergen
USER MANUAL
CORRIGO
ENGLISH

AIR
TRADE
CENTRE

Durable HVAC Solutions

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INTRODUCTION

This user manual contains important information on the correct and safe use of the MERGEN appliance. Therefore, please read the user manual completely before using the device. Otherwise, there may be danger to persons and damage to the device.

The unit has a rating plate on the front. The rating plate contains the serial number and the required markings for identifying the unit.

CUSTOMER NAME	ATC
PROJECT NAME	PO3600 X SQUARE
ORDER NO	SSIP-*****
ITEM CODE	HRU-01 M4523H-HC-CW
ITEM MODEL	Premium Line 2 H x 4 W
AIR VOLUME	1.620 m³/h
COUNTERFLOW HEAT EXCHANGER	REK+ 53-600-24 + REK+ 53-500-24
COIL COOLING CAPACITY	2,41 kW
HEATING COIL CAPACITY	3,32 kW
FILTER	592x490x48 x 1 F7 - Bag
FILTER	592x490x48 x 1 M-5 Panel
SUPPLY FAN	K3G280PS10J2
MOTOR kW / POLES / V / Hz	1,05 kW/3P/400V/50-60V-Hz
EXTERNAL / TOTAL PRESSURE	250 / 539 Pa
EXTRACT FAN	K3G280PS10J2
MOTOR kW / POLES / V / Hz	1,05 kW/3P/400V/50-60V-Hz
EXTERNAL / TOTAL PRESSURE	250 / 479 Pa
Manufactured in Turkey	CE

The controller manual is valid for all ATC MERGEN (M45xx) models equipped with an integrated controller.

Control mode	Type	Description
Mode 1	Standard regulation	Automatic temperature control of supply air with external compensation, % low flow - % high flow - time based LS / HS speed switching
Mode 2	CO2 control	Automatic temperature control with external compensation, % low flow -% high flow - CO2 concentration based LS/HS speed switching
Mode 3	Constant pressure control	(Automatic temperature control of supply air with external compensation, % low flow -% high flow - Pulse channel pressure based LS/HS speed switching
Mode 4	Constant Flow Control	Automatic temperature control of supply air with external compensation, constant low flow rate in m³/h - constant high flow rate in m³/h - time-based LS / HS speed switching
Mode 5	Constant Flow CO2 control	(Automatic temperature control of supply air with external compensation, constant low flow rate in m³/h - constant high flow rate in m³/h - CO2 concentration based LS/HS speed switching.

The manual describes only the functions available to users with Operator access rights or below. The manual is based on the standard (English) menu of the controller.

MANUFACTURER

ATC Air Trade Centre A.Ş.

Headquarters:
İbrahim Karaoğlanoğlu Caddesi No: 101
34418 Seyrantepe / Istanbul, TURKEY

Factory:
OSB 14. Cad. No:15
35875, Pancar / Torbalı / Izmir, TURKEY

GUARANTEE

◇ The warranty period starts from the date of delivery of the product and is standard 2 (two) years for MERGEN devices.

◇ All parts of the product manufactured by ATC Air Trade Centre are covered by our company's warranty.

◇ In case of failure of the product within the warranty period, the time spent on the repair will be added to the original warranty period. The Product's repair period will not exceed 30 working days. This period starts from the date of notification of the product defect.

◇ During the warranty period of the product, defects in the product due to defects in material, workmanship and factory assembly will be corrected free of charge.

◇ Faults that result from using the product contrary to what is stated in the operating instructions and faults that are due to the user's fault are not covered by the guarantee.

◇ Accessories and devices used on our products that are not manufactured by our company are not covered by our company's warranty.

◇ The warranty is not valid in the case of repairs and modifications made without ATC Air Trade Centre's written consent and if the unit is not used as specified in the contract with ATC Air Trade Centre. Damage caused by negligence, lack of maintenance or failure to follow ATC Air Trade Centre's recommendations is not covered by the warranty.

GENERAL TECHNICAL DESCRIPTION

AHU SERIES

MERGEN is designed taking into account the requirements for silent air handling units with highly efficient heat recovery for heating and cooling. The units are sustainably designed with maximum consideration for the environment. Each component used in MERGEN heat recovery units is selected with regard to the energy saving principle. All air handling units are supplied pre-wired with operationally tested control equipment.

MERGEN is a range of compact air handling units with many options, consisting of various complete functional components and modules in standard lengths. The modules are equipped with selected air handling functions tailored to the specific requirements.

The MERGEN range consists of 5 different sizes in 5 different control options. The flow rate range is from 1200 to 5500 m³/h. Each unit has as standard two programmable flow rates that can be selected at the time of commissioning.

CASING

Thermally broken aluminium profiles with polyamide spacers between the profiles provide a TB2 class according to EN 1886. Glass fibre corners reinforced with polyamide. Insulation between the double-skin panels is 45 mm (70 kg/m³) of rock wool, resulting in a T2 class. The exterior panels are lacquered RAL 7047.

The MERGEN casing achieves class D1, L1, T2, TB2 according to EN1886.

There is a separate technical compartment containing the electrical components and controls. The electrical components are accessible via a lockable hinged door which houses the IP65 control panel with LCD display and the isolating switch.

Access to the other internal components, such as the stainless steel condensate drain pan, automatic bypass, filters or the heat exchanger, is via the removable safety interlock panels.

FILTERS

MERGEN units have as standard a high efficiency F7 filter for fresh supply air and an M5 panel filter for return air. The filters are always mounted upstream of components to protect them. Mounted on guides for easy maintenance, fitted with lip seals to ensure effective air tightness.

HEAT EXCHANGER

The units are equipped with Eurovent certified hexagonal aluminium plate exchangers. The exchanger has an efficiency higher than 80% according to EN308. The bypass with automatic defrosting function ensures the heating of the fresh air when needed. If the unit has an electric preheating system, the control will automatically choose the most optimal solution.

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FANS AND MOTORS

MERGEN units are equipped with directly driven plug fans with EC motor, direct current motors with electronic modulation (EC), high efficiency, thermal protection and integrated speed control. The EC technology guarantees low consumption by controlling its operating point between 10 and 100%. EC motors provide a low noise level which results in better acoustic comfort.

DUCT CONNECTIONS

Units with round duct connections have connections with rubber seals.

Units with rectangular duct connections are intended for connection with guide strips. Rectangular duct connections must be supplemented with a sealing strip.

DELIVERY CONFIGURATION AND BASIC FRAME

MERGEN units can be supplied as: block sections with a foot or block sections with a lifting eye(without foot).

The frame consists of profiles with feet and carrying slots for transport, with a standard height of 100 mm.

POSSIBLE OPTIONS

- ◇ Electric preheater
- ◇ Water or Electric heating coil
- ◇ External Water or DX Coil
- ◇ 5 different automatic control options
- ◇ Roof for outdoor use
- ◇ Hoods for suction and discharge
- ◇ Motorised stop valve for suction and discharge
- ◇ Base frame for floor mounting or lifting eye for ceiling mounting

TECHNICAL TABLES

| Model	Nominal Airflow (m³/h)	Maximum Air Flow Rate (m³/h)***	Supply Voltage (V)	Max Power Consumption (kW)**	Max Current (A)**
M4512 H	1200	1950	400*	1,1	4,78
M4516 H	1600	2450	400*	1,6	6,96
M4523 H	2300	3450	400	2,2	3,34
M4540 H	4000	5150	400	3,7	5,62
M4555 H	5500	7100	400	5,46	8,3
* These units can also be operated with 230V monophase.					
** Without accessories.					
*** @0 pa external static pressure					

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Model	Nominal Airflow (m³/h)	Maximum Air Flow Rate (m³/h)***	Supply Voltage (V)	Max Power Consumption (kW)**	Max Current (A)**
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M4516 V	1600	2450	400*	1,6	6,96
M4523 V	2300	3450	400	2,2	3,34
M4540 V	4000	5150	400	3,7	5,62
M4555 V	5500	7100	400	5,46	8,3
* These units can also be operated with 230V monophase.					
** Without accessories.					
*** @0 pa external static pressure					

DIMENSIONS
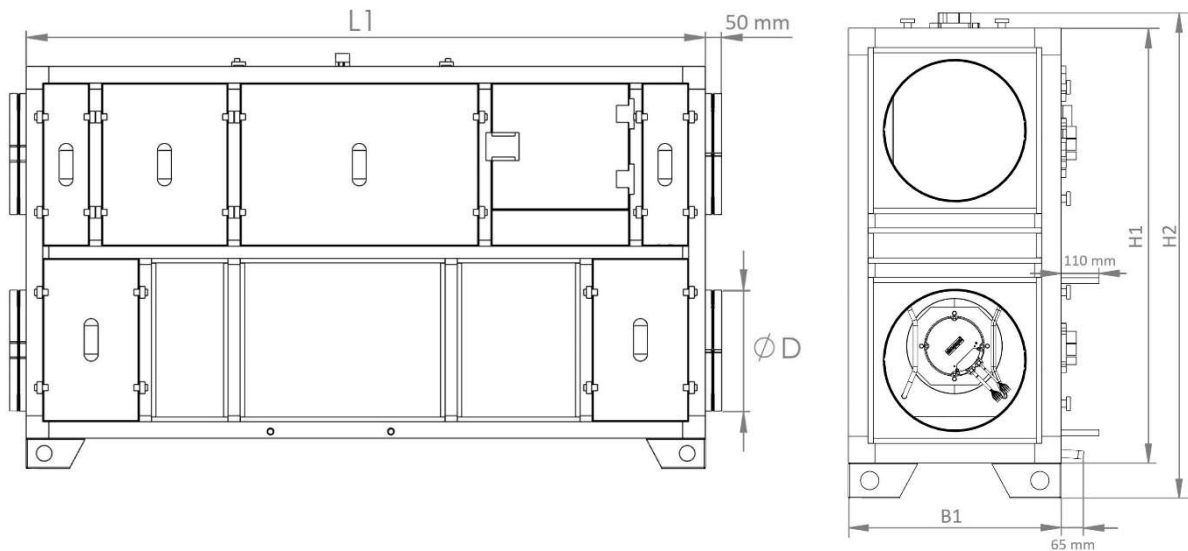
Model V	L1	B1	H1	H2	Connections	
					Flange	Round
M4512V	2190	600	1230	1375	490x470	315
M4516V	2250	600	1230	1375	490x470	400
M4523V	2395	730	1430	1575	605x640	450
M4540V	2980	1050	1630	1775	670x540	630
M4555V	3240	1134	1750	1895	1124x730	630
All dimensions are in mm.						

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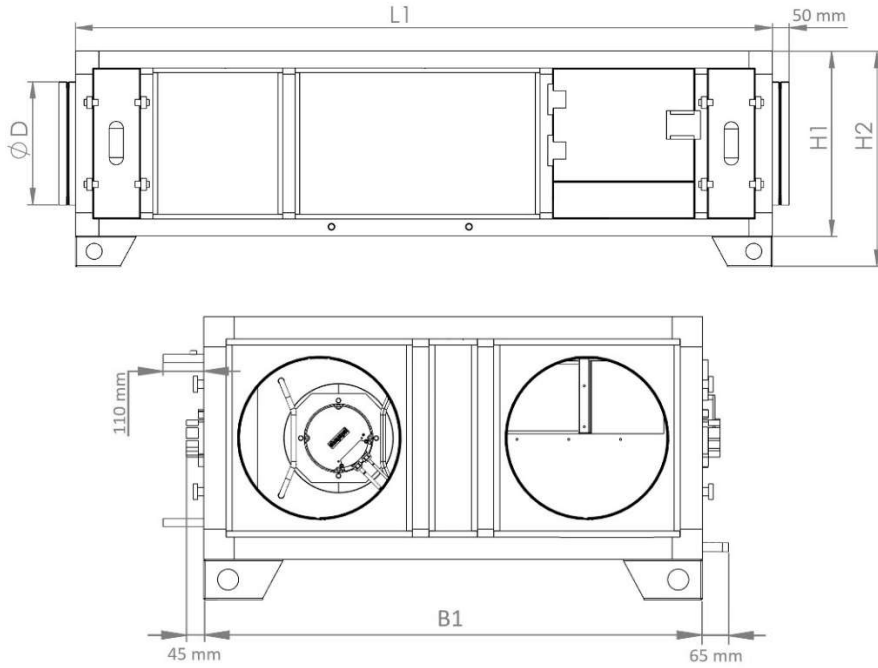
Model H	L1	B1	H1	H2	Connections	
					Flange	Round
M4512H	2190	1230	600	700	460x490	315
M4516H	2250	1230	600	700	460x490	400
M4523H	2395	1430	730	830	560x620	450
M4540H	2980	1630	1050	1150	680x940	630
M4555H	3240	1750	1334	1434	730x1225	630
All dimensions are in mm.						

REQUIRED SPACES
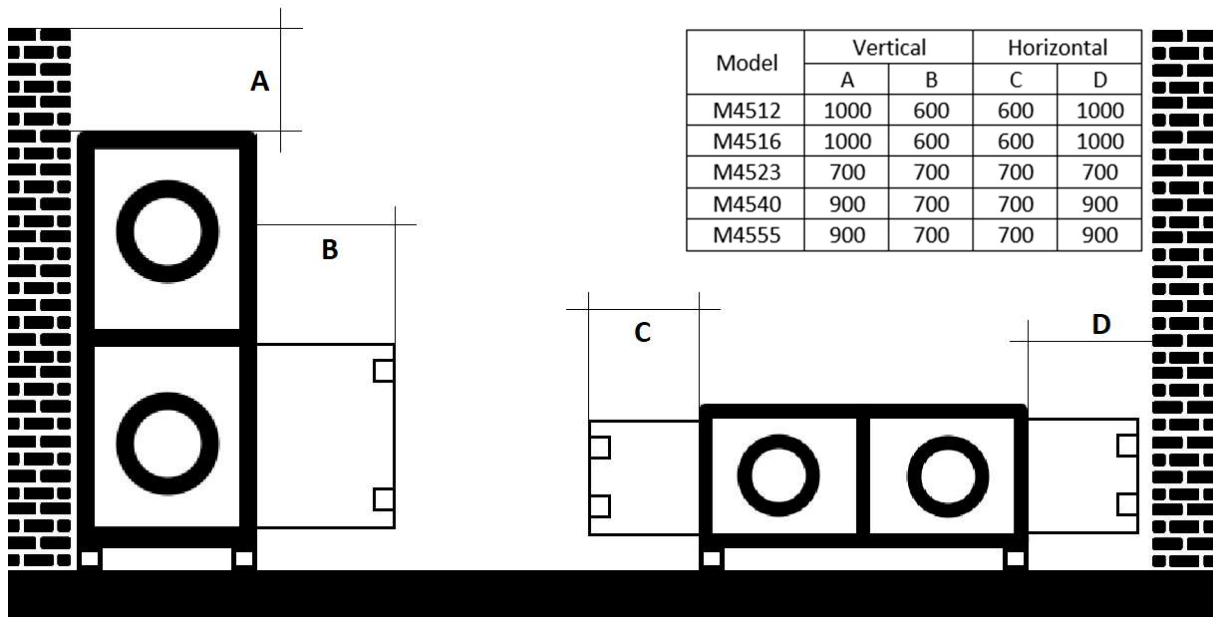
Model	Vertical		Horizontal	
	A	B	C	D
M4512	1000	600	600	1000
M4516	1000	600	600	1000
M4523	700	700	700	700
M4540	900	700	700	900
M4555	900	700	700	900

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ELECTRICAL SUPPLY

| Cable Cross Sections						
Model	Default Unit		Unit+PH & Unit+EH		Unit+PH+EH	
	Max Current (A)	Cable Details (mm²)	Max Current (A)	Cable Details (mm²)	Max Current (A)	Cable Details (mm²)
M4512 H/V	5,1	5x2,5	9,9	5x2,5	17,1	5x2,5
M4516 H/V	7,1	5x2,5	13,8	5x2,5	23,8	5x4
M4523 H/V	3,7	5x2,5	16,5	5x2,5	29,3	5x4
M4540 H/V	6,1	5x2,5	31,7	5x4	57,4	5x10
M4555 H/V	8,7	5x2,5	42,9	5x6	77,1	5x16
Cable section calculations are based on max 50m cable length and %10 drop of supply voltage. Please contact with ATC for different installations!						

MONOPHASE – TRIPHASE CHANGE (ONLY FOR M4512-M4516)

All units were produced with tri-phase supply connections in factory. In some projects, it must be operated with monophase supply. In this situation unit electrical connections can be like below.

For triphase-monophase translation, all connection changings must be made on electrical supply side of circuit breaker. **DO NOT CHANGE ANYTHING ON UNIT SIDE!**

The monophase option is not suitable for units which produced with electrical heaters and M4523/M4540/M455 models!

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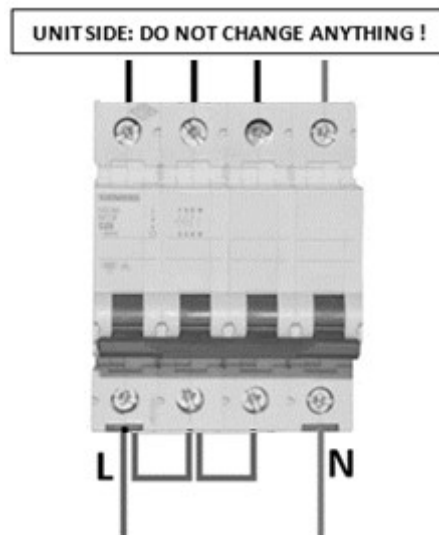
POSITIONING OF THE COMPONENTS

Configuration **H**: Horizontal installation
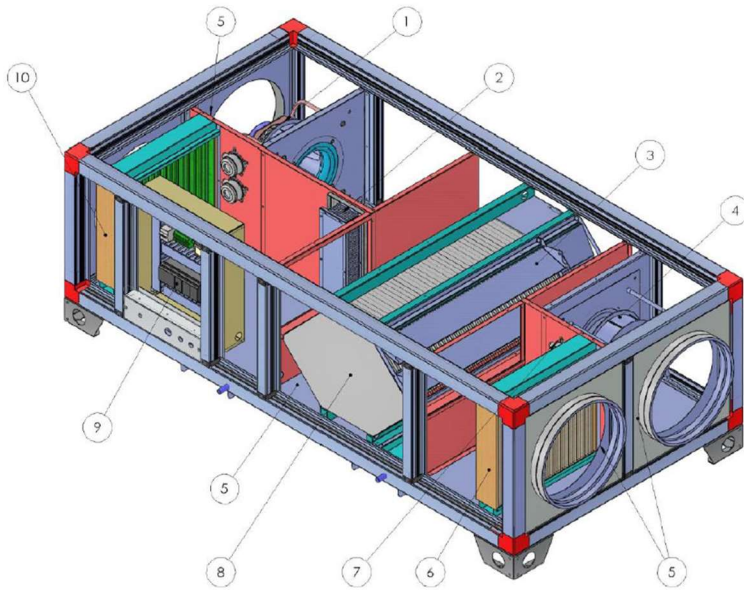
Configuration **V**: Vertical installation

No.	Component
1	Supply fan
2	Coil (electric or water)
3	Bypass valve
4	Exhaust fan
5	Temperature sensor
6	Filter
7	Pressure measurement
8	Plate Heat Exchanger
9	Control section
10	Filter outlet

Think different, be different!

DESCRIPTION OF THE MODEL

M45   12   HL   PH   EH   CCW   Mode1   R   D   A   CR   B

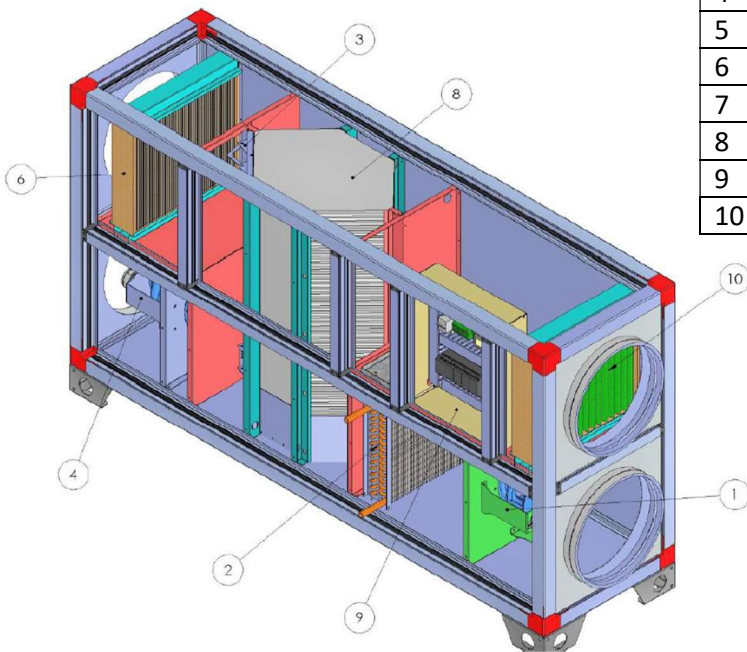MERGEN thermally broken profile 45mm

B = 100mm Base frame for floor mounting
L = Lifting eye for ceiling installation

12 = 1200 m³/h
16 = 1600 m³/h
23 = 2300 m³/h
40 = 4000 m³/h
55 = 5500 m³/h

CR = Round connection for all sides
CRF = Round connection fresh air
CRS = Round connection supply air
CRR = Round connection return air
CRE = Round connection exhaust air

HL = Horizontal Left
HR = Horizontal Right
VL = Vertical Left
VR = Vertical Right

CO = Rectangular connection for all sides
COF = Rectangular connection fresh air
COS = Rectangular connection supply air
COR = Rectangular connection return air
COE = Rectangular connection exhaust air

PH = Electric pre-heater

EH = Electrical heater
HC = Hot water coil

Damper actuator

CCW = Cold water coil
CCDX = DX coil

Damper for both side

Mode 1
Mode 2
Mode 3
Mode 4
Mode 5

R = Roof
RH = Roof and hoods

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MAINTENANCE

The installation and service operations of the unit must be only carried out by authorized technicians!

BEFORE YOU START THE MAINTENANCE

The device must be stopped and the mains voltage switched off.

A wait should be made for the fans to come to a complete stop. A hand or other object should not be used as a brake to stop the fans.

Make sure the unit is not operated during maintenance, so turn off safety switches such as the maintenance switch and fuses.

ATTENTION DURING MAINTENANCE

Fans, filters and exchangers must not be cleaned with water under pressure.

Maintenance is not recommended while the aircraft is airborne. If possible, the aircraft should be taken down and maintained in this manner.

Protective gloves and safety goggles should be used during maintenance.

Maintenance may only be carried out by a competent person.

During maintenance, avoid situations that would upset the balance of the fans and damage the fans.

During maintenance, situations that may damage the structure of filters and exchangers must be avoided.

REGULAR MAINTENANCE

Periodic maintenance should be performed step by step in the sections of the MERGEN unit.

Fan:

◇ **Check for mechanical friction noises**: If a mechanical friction noise is heard, the fan should be stopped. The fan should be replaced with a new one.
◇ **Balance check**: If it is observed that the fan is not balanced, the fan must be stopped. The fan should be replaced with a new one.
◇ **Fan blades check**: The fan must be stopped in case of warping and crushing in the fan blades. The fan must be replaced with a new one.
◇ **Check the fan mounting bolts**: The fan mounting bolts should be checked one by one, if there is a loose bolt, it should be tightened to the correct torque.
◇ **Dust, dirt and corrosion control in fans**: If the fans become dirty, they should be cleaned with compressed air or wiped with a damp cloth.
◇ **Checking the fan pressure sensor hoses**: If a pressure sensor is used for fan speed control, check that the hoses are still in place. If not, they must be reinserted and damaged hoses replaced.

◇ **Electrical data check of the motor integrated in the fan**: Measure current, voltage, etc. If the electrical values are lower or higher than they should be, stop the fan and check the electrical lines.

The above checks must be carried out every 3 months and the ATC after-sales service must be contacted in the event of a discrepancy.

Changer:

◇ **Damage control on aluminum fins**: The situations such as crushing and cracks in the aluminum fins that make up the heat exchanger will reduce the efficiency of the MERGEN device, so if this situation occurs, the exchanger must be replaced.

◇ **Cleaning of aluminium fins**: The aluminium fins of the heat exchanger must be cleaned of dust and other dirt. Cleaning of the heat exchanger should be done in the summer. The heat exchanger should be removed from the unit and wiped with a damp cloth, then replaced. No chemical substances should be used when cleaning the heat exchanger.

◇ **Checking the bypass valve blades**: The blades of the bypass valve in the heat exchanger section should be checked. If there are damages, such as bending of the blades, the valve must be replaced. In addition, the dirt on the surface of the valve must be cleaned.

◇ Checking **the tightness of the heat exchanger**: To ensure the tightness of the heat exchanger, the connected gaskets must be checked, the shifted gaskets must be replaced and the unusable ones must be replaced.

The above checks must be carried out every 3 months and the ATC after-sales service must be contacted in the event of a discrepancy.

Filter:

◇ **Filter checking**: The cleanliness of the filters must be checked and the filters must be cleaned if they are dirty.

◇ **Filter tightness check**: To ensure the tightness of the filter, the connected gaskets must be checked, shifted gaskets must be replaced and those that are unusable must be replaced.

◇ **Filter pressure switch hose check**: Pressure switches are used for the contamination information of the filters, it should be checked that the hoses of these pressure switches are in place. If not, they should be reinserted and damaged hoses replaced.

The above checks must be carried out once a month and ATC after-sales service must be contacted in the event of a discrepancy. Even if monthly periodic maintenance is performed, the filters must be replaced by new ones once a year.

Coil:

◇ **Checking the coil section**: The general cleanliness of the water coil, DX coil and electric heater being used should be checked and cleaned. Foreign objects that obstruct air flow on the surface of the coils should be cleaned.

The above checks must be carried out every 3 months and the ATC after-sales service must be contacted in the event of a discrepancy.

Drainage:

◇ **Checking the siphon and the condensation trap**: The dirt in the condensation trap must be cleaned. In addition, the water from the siphon must be drained and cleaned.

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The above checks must be carried out every 6 months and the ATC after-sales service must be contacted in the event of a discrepancy.

Housing:

◈ **Checking the casing**: The interior and exterior of the unit should be checked for dust, dirt and corrosion, and dirt should be cleaned with a damp cloth. The parts that begin to form corrosion should be replaced.

◈ **Service door latch and fasteners check**: The operation of the door handle, hinge and other fasteners on the unit should be checked and defective ones replaced.

The above checks must be carried out every 6 months and the ATC after-sales service must be contacted in the event of a discrepancy.
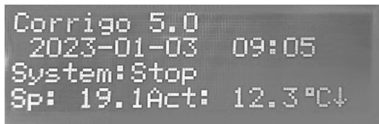
TROUBLESHOOTING

Problem	Possible reason	Solution
The device does not work	Not started from the control panel	The device must be started from the panel
	Alarm in the unit	The cause of the alarm must be resolved and the alarm must be reset from the control panel
	Fuse is off	Turn on the fuses and other switches
Device vibrates	Unbalanced fan	The fans must be balanced or replaced with a new one.
	Loose parts in the fan section	Tighten loose parts
The device is excessively noisy	Damaged fan blades	Fan must be replaced
	Mechanical friction in the fan	Fan must be replaced
	There is a foreign object in the device	The housing of the unit must be checked and cleaned
	Unbalanced fan	The fans must be balanced or replaced with a new one.
	Seals (gasket etc.) have shifted	The tightness of the connected elements must be checked, the displaced items must be repaired and the unusable ones must be replaced.
Structural damage in the fan	There is a foreign object in the fan of the unit	Fan must be replaced
	Unbalanced fan	The fans must be balanced or replaced with a new one.
	Unbalanced fan	The fans must be balanced or replaced with a new one.
Structural damage in the exchanger	A foreign object hit the heat exchanger	Heat exchanger must be replaced
	There is ice on the heat exchanger	The sensor that protects the heat exchanger from freezing must be replaced

Problem	Possible reason	Solution
The bypass valve is not working.	Mechanical defect of the valve	The bypass valve must be replaced.
	Failure of the bypass valve motor	Valve motor must be replaced
Water leaks from the appliance	The siphon's clogged.	The siphon must be disassembled and cleaned
	Congestion drain blockage	The condensate drip tray must be cleaned and the drainpipe must be opened.
Insufficient airflow	Incorrect assembly	Adjust the assembly according to the user manual
	Filters are clogged or dirty	Filters must be cleaned or replaced
	Dirty suction and discharge	Suction and discharge must be cleared
	The heat exchanger is clogged or dirty	Heat exchanger must be cleaned or replaced
	Fan pressure sensor hoses relocated	The sensor hoses should be put back in place
	Fault in the fan pressure sensor	Fan pressure sensor must be replaced
Too much airflow	The device is open	Close industrial doors and possible open spaces
	Leaks in the channels	Leaks in the ducts must be plugged
	Fan pressure sensor hoses relocated	The sensor hoses should be put back in place
	Fault in the fan pressure sensor	Fan pressure sensor must be replaced
Continuous measurement of electrical values at maximum power	Device operating outside the theoretical curve	The assembly and other systems shall be checked and the device adjusted to normal operating conditions
	Incorrect project planning for the electrical wiring	The electrical conduit needs to be revised.
	The wrong choice of capacity	Capacity selects should be checked

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DISPLAY, KEYS AND LEDS

DISPLAY

```
Corrigo 5.0
 2023-01-03   09:05
System:Stop
Sp: 19.1Act: 12.3°C↓
```

The display has 4 lines with 20 character positions each. The display is backlit. The backlight is off, but is activated when the user presses a key. After a certain period of time with no key presses, the backlight switches off automatically.
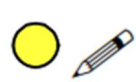
KEYS AND LEDS

△	**UP ARROW**: Go to previous line in menu. (Increase parameter value)	🔴	**ALARM:** Press to view alarm summary.
▽	**DOWN ARROW:** Go to the next line in the menu. (Decrease parameter value)	Ⓒ	**DELETE:** Resets/cancels change of a parameter unless OK is already pressed.
▷	**ARROW TO THE RIGHT:** Go to lower level in menu. (Move cursor to the right within the parameter)	🔴🔔	**ALARM LED:** Red LED flashes if the alarm has not yet been acknowledged. After acknowledgement, the LED remains lit until the alarm is reset.
◁	**LEFT ARROW:** Go to a higher level in the menu. (Move cursor to the left within the parameter)	🟡✏️	**SCREAMING LED:** Some menus have adjustable values. This is indicated by a flashing yellow LED. The value can be changed by pressing OK.
OK	**OK:** Open/enable menu/setting after selection. (Confirm a parameter value)		

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ACCESS RIGHTS

There are four levels of access rights. **Normal** has the least access rights which do not require logging in. This is followed by **Operator**, **Service** and **Admin** levels, where Admin has the most rights. The choice of an access level determines which menus are displayed and also which settings you can change in those menus.

The basic level only allows you to change the operating mode and gives you read access to a limited number of menus.

The Operator level gives access to all menus except Configuration.

The Service level provides access to all menus except the Inputs, Outputs and System submenus of the Configuration menu.
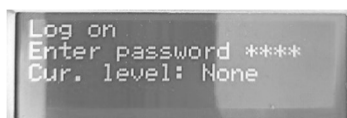
The Admin level gives full read/write rights for all settings in all menus.

In the user manual we only discuss the Normal and Operator menus. To make changes to the other menus, contact your installer.

In the startup display, press ARROW repeatedly.
DOWN to the marker arrow at the line
Access rights state. Press the RIGHT ARROW.

SIGN UP

This menu allows you to log in at any access level by entering the appropriate 4-digit code. The login menu also appears if you are trying to access a menu or function that requires higher access rights than you currently have.

Press OK. A cursor mark will then appear at the first digit position. Press UP ARROW repeatedly until the correct digit appears. Press RIGHT ARROW to move to the next position. Repeat until all four digits of the code are displayed. Then press OK to confirm. Shortly afterwards, the new logon level will be displayed in the Current level line. Press LEFT ARROW to exit the menu.

Factory preset passwords:
Operator: **3333**

SIGN OFF
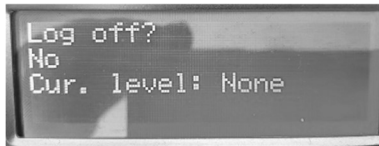
Use this menu to log out of the current level and go to the basic 'without logging in' level.

AUTOMATIC UNSUBSCRIBE

At the Operator access level, after a certain period of inactivity, the user is automatically logged off and the Normal level is activated. That period can be set.

CHANGE PASSWORD

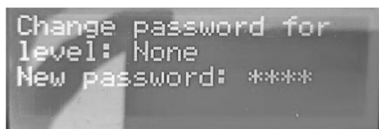You can only change the password of access levels lower than the currently active access level.

LANGUAGE

Pressing the RIGHT ARROW three times from the Home menu displays a menu where you can select a different display language.

The language files are stored in the application memory and are copied to the working memory. If you have loaded a newer program version than the manufacturer's revision via Application tool©, you cannot download language files from the application memory. This prevents the language files from being incompatible with that latest version. Therefore, you can only choose between the two languages that you downloaded with Application tool©.
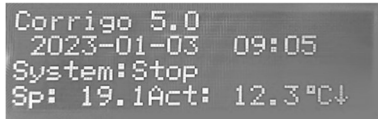
VERSION NUMBER

If you press the RIGHT ARROW twice on the Home menu, a menu will be displayed showing the revision number, release date and ID number of the program.

THE MENU SYSTEM

NAVIGATE THROUGH THE MENUS

The access rights or user rights determine which menus are displayed.

The display on the left is usually shown at startup and is at the basic level of the menu structure. The appearance of the start-up display can vary as there are 5 types to choose from during configuration. The text on the first line can be changed with Application tool©.

Sp and **Act** are respectively the set point value and the measured value for the supply air controller. This also applies to cascade control of the room temperature or return air temperature.

Measured value (Act) = the temperature currently being measured.
Set point value (Sp) = the set point temperature.

The DOWN ARROW button moves down through the options in this lowest menu level.
Use the UP ARROW button to scroll up through the options.
The access level you use determines which menus are visible (see the chapter on access rights for logging on at a higher level).

The basic access level, the level that is usually active when you are not logged in, shows only a limited number of menus and submenus:

Operating mode

Here you can view and set the current operating mode. You can also view the selected operation functions and alarm events.

Temperature, Air and Humidity Control

The relevant values and the desired values are displayed here. You can only change desired values if you have Operator rights or higher.

Time settings

The time, date and set active periods are displayed here. You can only change the values if you have Operator rights or higher.

Access rights

Here you can log on and off at a higher access level and change the password.

```
Ventilation
Additional function
Time settings
Alarm events
Inputs/Outputs
Configuration
Access rights
```
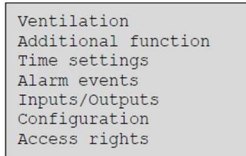
A user with normal access at the basic level has a limited number of menus to choose from. The user can change the operating mode and acknowledge alarms.

If you have Operator rights, you can access more information and change other operating parameters, such as set point values and timer functions.

To move to another menu level, use UP ARROW and DOWN ARROW to highlight your desired menu, then press RIGHT ARROW. If you are logged in with sufficient access rights, the selected menu will appear.

Each level can have several new menus. Use the UP ARROW and DOWN ARROW keys to move through the options.

Sometimes you can access additional submenus from a menu or option. This is indicated by an arrow on the right of the display. Press the RIGHT ARROW to enter the submenu.

LEFT ARROW takes you to the previous level.

CHANGE PARAMETERS

In some menus you can adjust the value of a parameter. This is indicated by the yellow LED with blinking.

Fast blinking (2 times per second) means that the setting can be changed with the current access rights.

Slower flashing (1 time per second) means that changing the setting requires higher access rights.

To change a setting, press OK first. If higher access rights are required, a login menu appears. See below. If you have sufficient access rights, a cursor will appear next to the first value you can change.

To change the value, press UP ARROW or DOWN ARROW.

For multi-digit numbers, you can move through the number using LEFT/RIGHT ARROW.

Press OK when the desired value is displayed.

If other values can be set, the cursor automatically moves to the next of those values.

If you want to skip a value without changing, press the RIGHT ARROW.

To abort a change and restore the existing value, press and hold the C key until the cursor disappears.

This is followed by a number of menus showing the operating mode, selected functions, alarm events and the status of inputs and outputs.

COMPANY MODE

OPERATING MODE UNIT

You can change the operating mode of the unit without logging in first. When you are at start display, press **[►]**. Select **AUTO** or **OFF** and press **[OK]** to confirm the change.

The operating mode can be set to **Auto, Off**. Normally the Automatic mode should be used.
Off can be used to stop the unit for maintenance or similar purposes.

If the operating mode is set to **Off** a C alarm is triggered: Operating state Manual. This alarm is reset as soon as you return the operating mode to **Automatic**.

ALARM EVENTS

A logbook with the last 40 alarm events. The overview starts with the last alarm. The log can only display the alarm history. An alarm is handled in a special area. See Alarm handling.

IN/OUT ACCESSES
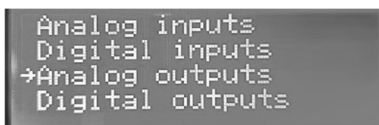
These menus show the current values for all set inputs and outputs.
These menus are only readable. You cannot change anything in them.

Universal inputs (UI) can be set as analog (AI) or digital input (DI).
The analog inputs (AO) and digital inputs (DO) are shown here as examples.

Analogue inputs:

Digital Inputs:
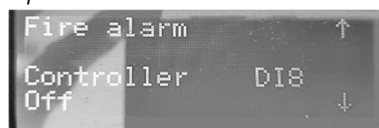
TEMPERATURE

Here you can see all measured and setpoint values for the temperature control. The menu is visible to all users, regardless of their login level. However, to make changes, you need at least Operator rights.
Only menus for activated functions are displayed.

SET POINT VALUE FOR TEMPERATURE CONTROL OF SUPPLY AIR

The measured and target values are displayed here.

SET POINT VALUE WEATHER-DEPENDENT SUPPLY AIR CONTROL

The measured and target values are displayed here.
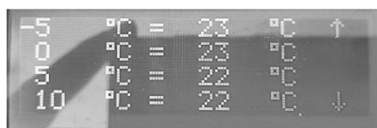
Use the eight nodal points for the ratio between the desired temperature and the outside temperature. Intermediate values are calculated using straight lines between nodal points.

Desired values that are lower than the lowest kink point or higher than the highest kink point are calculated by extending the line between the last two kink points on either side.

Example: At the lowest end, the set point value is increased by 1 °C for every 5 °C drop in the outside temperature. At -23°C, the set point value therefore becomes 25°C + 0.6 x 1.0°C = 25.6°C.

DEFROSTING EXCHANGER
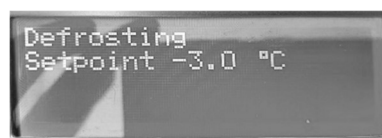
This menu is available if defrosting of the exchanger has been configured. If the temperature at the defrost sensor falls below the set value, the defrost function is started. It stops as soon as the temperature rises above that value again plus the set margin.

AIR CONTROL

The available menus depend on the selected fan control.

MODE 1: STANDARD CONTROL

The measured values and the set point values are displayed here.
The set point value is a percentage of the full output power. 100% = 10 V output signal.

MODE 2: CO2 CONTROL

In applications with varying occupancy rates, fan speed can be controlled based on air quality as measured by a CO2 sensor.

MODE 3: CONSTANT PRESSURE CONTROL
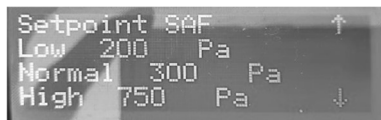
The set point values are displayed here.

MODE 4: CONSTANT FLOW CONTROL

Set point value for flow control SAF.

MODE 5: CONSTANT FLOW - CO2 CONTROL
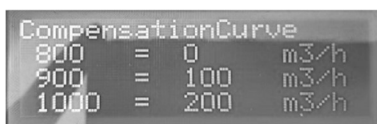
In applications with varying flow speed, fan speed can be controlled based on air quality as measured by a CO2 sensor.

TIME SETTINGS

GENERAL

```
Time/Date
Timer normal speed
Timer reduced speed
Extended running
Timer output1      →
Timer output2      →
Timer output3      →
Timer output4      →
Timer output5      →
Holidays           →
```
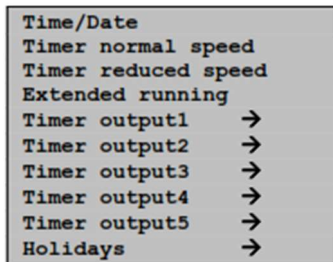
A Corrigo has a clock that can be set for an entire year. Therefore, a weekly schedule including holiday periods can be set for an entire year in advance.
The clock automatically switches between summer and winter time.

Separate schedules per weekday and special holiday schedules. Up to 24 separate holiday periods can be set. A holiday period can last from 1 to 365 days.
Holiday schedules are given priority over other schedules.

Two separate operating periods can be set for each day. For dual speed fans and pressure controlled fans there are separate daily schedules for full speed and half speed, each with up to two running times.

Up to 5 digital outputs can be used as timer controlled outputs, each with its own weekly schedule and two running times per day. These outputs can be used to control lighting, proximity switches etc. Only configured outputs are displayed. Timer output 5 can be used to control a recirculation function.

TIME/DATE

```
Time:      14:34
Date:      23:05:08
Weekday:Monday
```
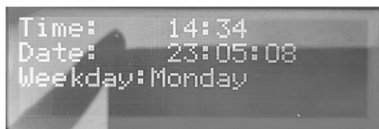
In this menu you can display and set the time and date.
The time is displayed in 24-hour format.
The date is displayed in the YY-MM-DD format.

TIMER FULL SPEED

```
Fan normal speed      →
Monday      Per3-4    >
Per1: 00:00- 24:00
Per2: 00:00- 00:00   ↓
```

There are 8 separate setting menus: one for each weekday and one extra for holidays.
Holiday schedules are given priority over other schedules.

For a 24 hour running time, set a period from 00:00 - 24:00.
To clear a period, set the time to 00:00 - 00:00. If both periods of a day are set to 0:00 - 0:00, the unit will not run at full speed that day.

ALARM HANDLING

When an alarm occurs, the red alarm LED on the front panel of units with a display illuminates or the alarm LED on a connected display starts flashing. The LED will only stop flashing when there are no more unconfirmed alarms.

Each alarm is recorded in an alarm summary. This summary shows the type of alarm, the date and time of the alarm and the alarm class (A, B or C).

You can open the alarm overview by pressing the alarm button on the front panel. This is the key with the red top.
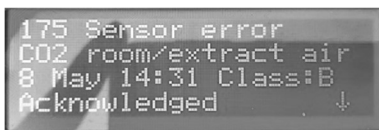
If multiple alarms are active, this will be indicated by vertical arrows on the right hand side of the display. Use the UP/DOWN ARROW buttons to view other alarms.

The status of the displayed alarm is shown at the bottom left of the display. This line is empty if it is an active and not yet acknowledged alarm. Alarms that have been reset are indicated by Confirmed. Alarms that are still active or that are still blocked are indicated by Confirmed or Blocked.

You acknowledge an alarm by pressing OK. You can then acknowledge or block the alarm.

An acknowledged alarm remains in the overview until the alarm input signal is reset. After acknowledging all alarms (after solving the cause) and switching the unit on and off with the isolating switch the unit is fully reset.

Blocked alarms remain in the overview until the alarm is reset and the blockage is removed. As long as the lockout is active, no new alarms of the same type will be activated.

Class A or B alarms activate alarm outputs when configured.

Class C alarms do not activate alarm outputs.

Class C alarms are removed from the alarm summary when the alarm input is reset, even if the alarm is not acknowledged.

ALARM LIST

No	Alarm text	Delay	Description	THINGS TO DO
1	Malfunction supply air fan 1	120 s	Malfunction supply air fan 1	The ventilator fan needs to be checked.
6	Malfunction extract air fan 1	120 s	Malfunction extract air fan 1	The extractor fan needs to be checked.
11	Alarm supply air fan 1	0 s	Alarm from frequency converter SAF via Modbus communication	The ventilator fan needs to be checked.
16	Alarm extract air fan 1	0 s	Alarm from frequency converter EAF 1 via Modbus communication	The extractor fan needs to be checked.
21	Warning supply air fan 1	0 s	Warning from frequency converter SAF 1 via Modbus communication	The ventilator fan needs to be checked.
26	Warning extract air fan 1	0 s	Warning from frequency converter EAF 1 via Modbus communication	The extractor fan needs to be checked.
56	Freeze protection guard	0 s	External frost protection thermo- stat activated	The value from the freezing temperature sensor is below the specified limit.
57	Defrosting guard exchanger	0 s	Exchanger deicing pressure switch activated	The value from the defrosting temperature sensor is below the specified limit.
58	Fire alarm	0 s	Fire alarm activated	Check the fire status information connections from the relevant terminal
59	Smoke alarm	0 s	Smoke detector activated	Check the smoke status information connections from the relevant terminal
63	Electric heating is overheated	0 s	Heater high temperature limit switch activated	Electric heater high-temperature failure. Check if there is air flow. Check heater wiring connections. Cut off the power and check the heater.
68	Filter-1 Dirty	0 s	Filter-1 Dirty on digital input	Check if the filter on the fresh air side is dirty.
69	Filter-2 Dirty	0 s	Filter-2 Dirtyon digital input	Check if the filter on the return air side is dirty.
71	SAF Motor Protection Switch	0 s	SAF Motor Protection Switch on digital input	Check SAF Motor Protection Switch
72	EAF Motor Protection Switch	0 s	EAF Motor Protection Switch on digital input	Check EAF Motor Protection Switch
73	DX Fault	0 s	DX Fault on digital input	Check the DX fault information connections from the relevant terminal
78	Internal battery error	0 s	Internal battery needs replacing	Internal battery needs replacing
81	Deviation alarm supply air temp.	30 min	Supply air temp deviates too much from the setpoint	Check the supply air temp. sensor and coils
86	High supply air temperature	5 s	Supply air temp too high	The supply air is above the specified limit. Check the heating actuator or electric heater.
87	Low supply air temperature	5 s	Supply air temp too low	The supply air is below the specified limit. Check cooling valve or DX Unit.
90	High room temperature	30 min	Room temp too high during room temp control	Room temperature is above the specified limit. Check the temperature control equipment. Heater valve, DX Unit, etc.
91	Low room temperature	30 min	Room temp too low during room temp control	Room temperature is below the specified limit. Check refrigeration control equipment. Refrigerant valve, DX Unit, etc.
113	Manual operation air handling unit	0 s	The unit is in manual mode	The unit must be OFF mode. If not, check manual mode parameters
114	Manual operation supply air	0 s	Supply air temp controller in manual control	Check manual mode parameters
115	Manual operation supply air fan	0 s	Supply air fan in manual control	Check manual mode parameters
116	Manual operation extract air fan	0 s	Extract air fan in manual control	Check manual mode parameters

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No	Alarm text	Delay	Description	THINGS TO DO
117	Manual operation heater	0 s	The heater is in manual mode	Check manual mode parameters
118	Manual operation exchanger	0 s	Heat exchanger output in manual control	Check manual mode parameters
119	Manual operation cooler	0 s	Cooling output in manual control	Check manual mode parameters
120	Manual operation damper	0 s	Damper output in manual control	Check manual mode parameters
128	Manual control sequence A	0 s	Manual control of sequence A	Check manual mode parameters
129	Manual control sequence B	0 s	Manual control of sequence B	Check manual mode parameters
130	Manual control sequence C	0 s	Manual control of sequence C	Check manual mode parameters
131	Manual control sequence D	0 s	Manual control of sequence D	Check manual mode parameters
132	Manual control sequence E	0 s	Manual control of sequence E	Check manual mode parameters
138	Output in manual operation	0 s	Analogue or digital output in manual mode	Check manual mode parameters
139	Input in manual operation	0 s	Analogue or digital input in manual mode	Check manual mode parameters
143	Manual operation pretreatment	0 s	Pretreatment in manual mode	Check manual mode parameters
144	Sensor error outdoor air temperature	5 s	Malfunction in connected sensor	Check the relevant sensor connections.
145	Sensor error intake air temperature	5 s	Malfunction in connected sensor	Check the relevant sensor connections.
146	Sensor error supply air temperature	5 s	Malfunction in connected sensor	Check the relevant sensor connections.
147	Sensor error exhaust air temperature	5 s	Malfunction in connected sensor	Check the relevant sensor connections.
148	Sensor error extract air temperature	5 s	Malfunction in connected sensor	Check the relevant sensor connections.
149	Sensor error room temperature	5 s	Malfunction in connected sensor	Check the relevant sensor connections.
165	Sensor error pressure supply air	5 s	Malfunction in connected sensor	Check the relevant sensor connections.
166	Sensor error pressure extract air	5 s	Malfunction in connected sensor	Check the relevant sensor connections.
167	Sensor error flow supply air	5 s	Malfunction in connected sensor	Check the relevant sensor connections.
168	Sensor error flow extract air	5 s	Malfunction in connected sensor	Check the relevant sensor connections.
171	Sensor error defrosting temperature	5 s	Malfunction in connected sensor	Check the relevant sensor connections.
175	Sensor error CO2 room/extract air	5 s	Malfunction in connected sensor	Check the relevant sensor connections.
176	Sensor error humidity room/ extr. air	5 s	Malfunction in connected sensor	Check the relevant sensor connections.
192	Communication fault device	0 s	Communication error to supply/exhaust fan driver	Check the communication cables.
194	Internal error	60 s	Configuration of a physical output to more than 1 function will cause in an undefined behaviour of the controller.	Check the all digital and analog outputs positions

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INDICATORS

The status indicator is located in the upper left hand corner of the drive. On drives equipped with a display the LEDs for alarm indication and mode adjustment are located near the keys.

STATUS INDICATION

Symbol	Color	Description
Tx	Green	Port 1/2, send
Rx	Green	Port 1/2, send
Serv (… Lon models)	Yellow	Serviceled LON, commissioning
LAN (… W models)	Yellow/Green	Green: connected to other network devices Flashing green: network traffic Flashing yellow: for identification
P/B (power supply/battery)	Green/Red	Power supply enabled/battery fault
Controllers with integrated display:		
🔔	Red	Alarm indication. Flashing: there are unconfirmed alarms. Permanently lit: there are alarms that have been acknowledged, but the fault remains active.
✏️	Yellow	Change mode. Rapidly flashing: the display shows values that can be changed. Slowly flashing: a password is required to make changes to the display.

ANNEX

OVERVIEW OF MENU CONTROLLER

```
Main screen ──▶ Switch Mode ──▶ Product data
     │
     ▼
    Menu
     │
     │
     ▼
 Ventilation ─────────────────▶ Actual/Setpoint ──▶ Supply air contr.
     │                                │              Supply air fan
     │                                ▼
     │                           Fan control ──▶ Fan comp. curve 1
     │                                            to 4
     │
     ▼
Inputs/Outputs ──────────────────────────────────────────▶ Analogue inputs ──▶ Analog input 1 to 4
     │                                                             │
     │                                                             ▼
     │                                                       Digital Inputs ──▶ Digital input 1 to 8
     │                                                             │
     │                                                             ▼
     ▼                                                       Analogue outputs ──▶ Analogue output 1 to 5
Access Rights ───────────────▶ Log on / off                       │
     │                             │                               ▼
     │                             ▼                         Digital outputs ──▶ Digital output 1 to 7
     │                        Change Password
     │
     ▼
Time Settings ──▶ Time schedule ──▶ Holiday cshedule ──▶ Time / Date
```

Annex

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NOTES

EN_User Guide Mergen V0.2 samet, Mergen

User Guide
Mergen
USER MANUAL
ENGLISH

More information

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