

ROOF FAN ROOFMASTER STEC

INSTALLATION AND MAINTENANCE





1 IMPORTANT INFORMATION

FläktGroup fans comply with the requirements for health and safety of the EC Machinery Directive.

All fans leave the factory after being subjected to testing.

These instructions are intended for use by professional service staff. The installation, commissioning and operation of the fans must be carried out by professional staff who are familiar with the safety regulations. Tools and protective equipment necessary for preventing accidents from occurring while installing and operating the fan must be used/worn in accordance with the local safety regulations.

All personnel involved with the product must carefully study this operating manual and diligently comply with all orders and instructions.

FläktGroup does not accept responsibility for any damage that can be attributed to non-observance of these instructions. The warranty issued by the manufacturer will be forfeited if any changes to the product are made without the manufacturer's consent.

2 SAFETY



This symbol is designed to point out all safety and danger related information regarding danger on the operating personnel's lives and health.





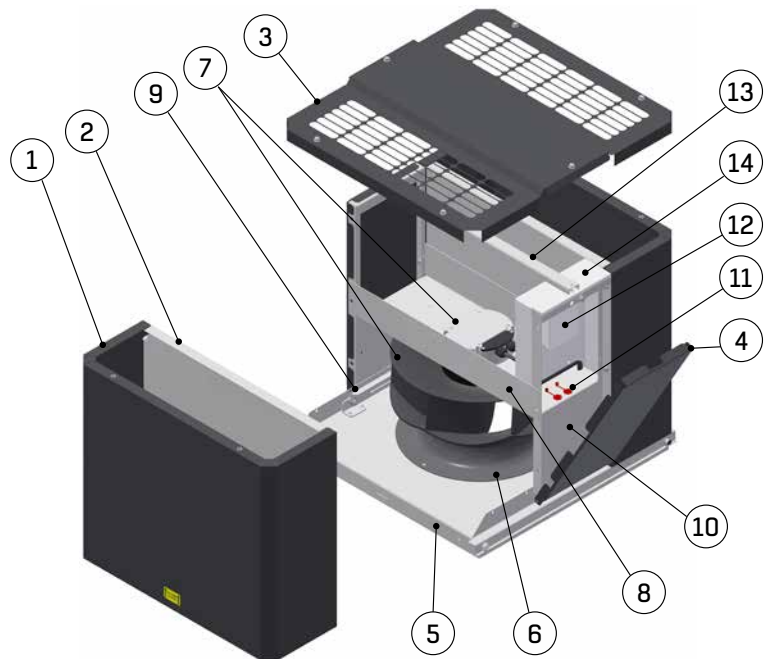
3 TECHNICAL DESCRIPTION

The fan is used to produce a required air volume flow at a specific pressure that corresponds to the pressure losses of the duct system connected to the fan. This is achieved with a rotating impeller. The fan unit is hinged onto the bottom plate so it can be tilted open for cleaning the duct system.

3.1 CONSTRUCTION

SIZES 1-3

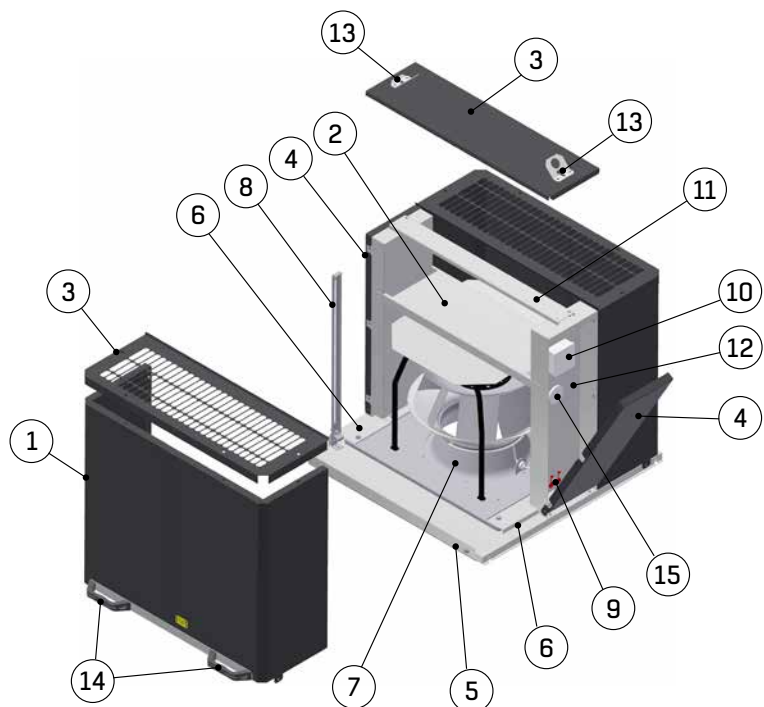
- 1. Outer casing } Riveted together
- 2. Rain cover } Riveted together
- 3. Roof panel
- 4. Hatch
- 5. Bottom plate
- 6. Inlet cone
- 7. Motor and impeller
- 8. Motor bracket
- 9. Locking bar for opening
- 10. Vertical panel
- 11. Airflow measurement nipples
- 12. Junction box (in the basic version)
- 13. Crossbar
- 14. Installation plate



Sizes 1-3.

SIZES 4-7

- 1. Outer casing
- 2. Rain cover
- 3. Roof panel (3 parts, sizes 5-7)
- 4. Hatch
- 5. Bottom plate
- 6. Mounting strip
- 7. Fan unit
- 8. Locking bar for opening (2 pcs, sizes 6 and 7)
- 9. Airflow measurement nipples
- 10. Junction box (in the basic version)
- 11. Crossbar
- 12. Vertical panel/housing
- 13. Lifting lugs
- 14. Opening handles
- 15. Cable glands



Sizes 4-7.

3.2 APPLICATIONS

Roof fans have been designed to be used for the extraction of exhaust air. Do not run the fan on a higher RPM than specified in the technical manual.

PLEASE NOTE:

If the fan is not used continuously we recommend using a shutter damper in the duct system so that indoor moisture does not freeze in the fan structure in cold conditions.

If the fan is used with greasy exhaust air, for example as a kitchen exhaust fan, care must be taken to separate the grease before the fan and to ensure that the maximum exhaust air temperature is not exceeded.

3.3 MOTORS

Below is a list of the motor types and minimum RPMs used in our fans.

Fan	Motor construction	Type	Minimum RPM
STEC-1	External rotor	1~230 VAC	400 rpm
STEC-2	External rotor	1~230 VAC	280 rpm
STEC-3	External rotor	1~230 VAC	270 rpm
STEC-4	External rotor	1~230 VAC	380 rpm
STEC-5	External rotor	3~400 VAC	380 rpm
STEC-6	External rotor	3~400 VAC	320 rpm
STEC-7	External rotor	3~400 VAC	300 rpm

The highest allowed extract air temperature is +40 °C.

4 TRANSPORTATION AND STORAGE



4.1 DELIVERY INSPECTION

Immediately upon receiving the fan, inspect it for damage that may have occurred during transport. If you detect any damage caused by transport, please contact the company responsible for transportation without delay.

Check the fan specifications on the rating plate.

Proper procedures must be followed when transporting the product. Inappropriate conditions may seriously damage the product.

4.2 TRANSPORT SAFETY

Transport equipment should be selected based on the package and product weight. Loading must be performed according to instructions.

4.3 INTERMEDIATE STORAGE

If the fan is stored before use or between use, please take note of the following:

- The original packaging should be used when storing the product; additional protection may be used.
- The storage environment should be dry and dust free, and the humidity must not exceed 70%.
- The storage temperature should be between -25 and +60°C.

The appropriate instructions should be reviewed thoroughly before commissioning.

4.4 LIFTING THE FAN

Ensure a safe lifting method is used.

The fans' masses are listed in section **5.1 Fan installation** and on the fan's rating plate.



5 INSTALLATION

5.1 MECHANICAL INSTALLATION

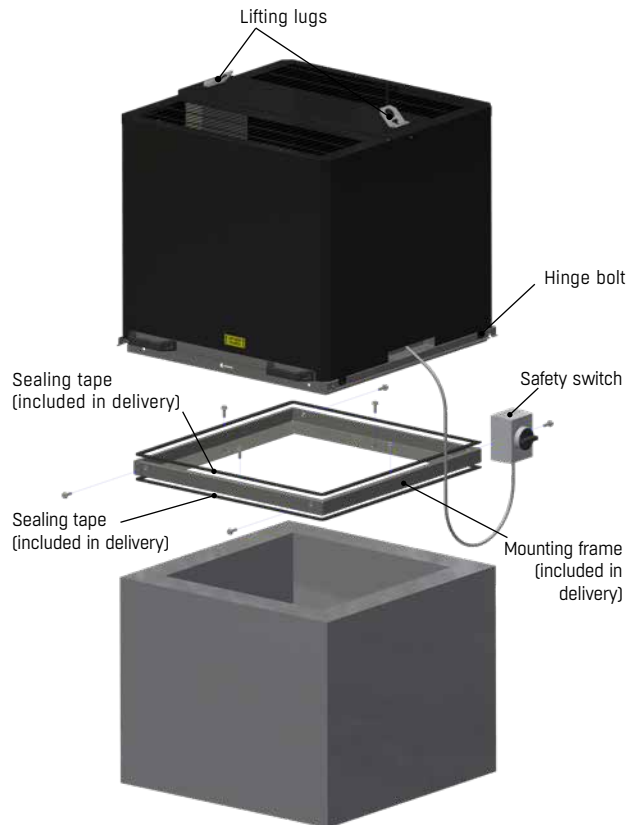
The fan can be installed on the BOGA roof curb or by using a mounting frame on a chimney built on site. The mounting frame is included in the delivery.

1. Remove the mounting frame from the roof fan (attached with four M8×35 bolts).
2. Fasten the sealing tape (included) on both sides of the mounting frame. Check that the sealing tapes are flush with outer edge of the mounting frame and cover the corners of the frame.
3. Install mounting frame carefully on the roof curb/chimney by using four (eight on fan size 7) screws or wedge anchors. There are Ø10 mm holes on the mounting frame for this purpose.

Please note the following:

- Wind load on the fan as well as opening the fan will burden the joint.
 - The safety switch and the roof curb’s electric cable lead-in should be placed on the same side. This also determines the orientation of the hinge.
4. Lift the roof fan on top of the mounting frame, being careful not to damage the seal, and install it in place with the M8×35 bolts (with fan sizes 6 and 7 tighten bolts carefully by hand to not damage the mounting frame or bottom plate). Lifting lugs are provided with heavier fans to facilitate lifting. The table below lists the masses by size category.

STEC	Mass (kg)
1	20
2	23
3	30
4	47
5	57
6	98
7	142



5.2 SAFETY REGULATIONS

The fan meets the CE marking requirements. The fan must be installed according to EN ISO 12100:2010.



The electrical installations should be performed by authorized personnel only.



The voltage should be cut off from the main switch 5 minutes before carrying out any electrical installations or product repairs. Sudden start-ups should be prevented.



The fan is not supplied with a protective screen on the inlet. Contact protection should be installed if there is danger of contact with the impeller as a result of the installation method.

6 COMMISSIONING



6.1 SAFETY INSPECTION

Make sure prior to start-up that there are no loose or foreign objects in the fan or duct system. Check also that the fan has been installed according to instructions. All the required protective equipment should be installed.

The fan may only be commissioned once the appropriate instructions have been followed and inspections have been performed.

6.2 TEST RUN

Run the fan briefly to check that the rotation direction is correct and the fan wheel rotates freely. If the rotation direction is correct and the fan wheel rotates freely the fan may be switched on. Check also that no abnormal mechanical noises are heard from the fan and the fan is firmly attached.

7 MAINTENANCE



The roof fan requires no other maintenance operations in normal use than those mentioned in section 7.2. When extracting contaminated exhaust air the inspections should be performed more often and the fan wheel and motor should be cleaned more frequently. Also pay attention to local regulations regarding the cleaning of ventilation units.

7.1 GUARANTEE

The guarantee is granted on condition that the installations have been carried out correctly and the required maintenance has been performed accordingly. Faults covered by the guarantee should be reported to the manufacturer or importer immediately. The guarantee does not cover maintenance operations or indirect costs.

7.2 MAINTENANCE

The following maintenance should be carried out once or twice a year:

GENERAL FAN INSPECTION

- vibration level
- cleaning and inspection of the impeller for intactness of the blades
- cleaning of the motor
- general cleaning, e.g. the roof panel
- free rotation of the impeller
- general visual inspection of the whole fan

ROOF CURB

- correct functioning of the back draught shutter

GENERAL INSPECTION OF THE ELECTRICAL COMPONENTS

- correct functioning of the electrical components and sensors
- intactness of all the connections, cable glands, etc.
- correct functioning of the safety switch



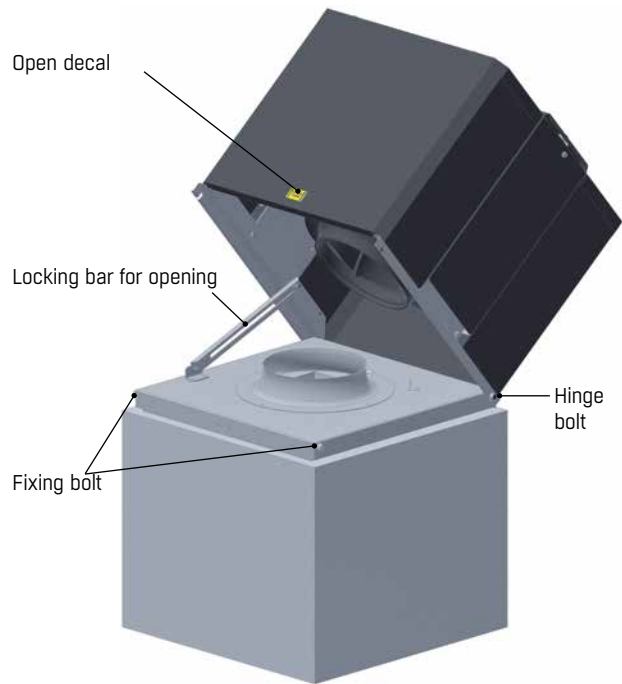
Voltage should be cut off from the main switch 5 minutes before carrying out maintenance operations. Sudden start-ups should be prevented.



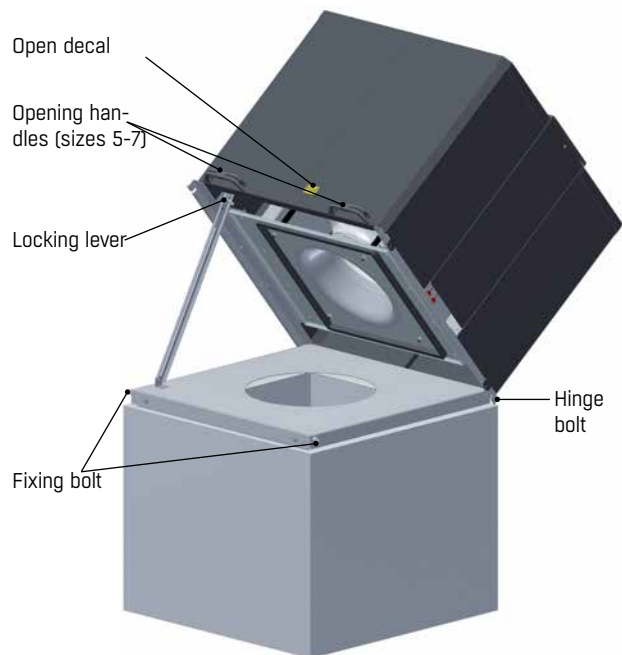
Make sure that fans that have been opened for maintenance cannot fall shut.

7.2.1 CLEANING THE FAN WHEEL AND CASING

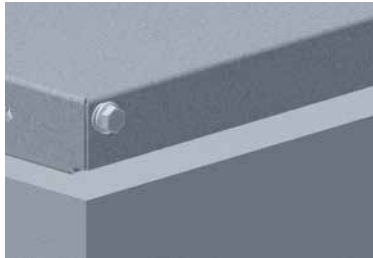
1. Disconnect the power supply to the fan from the safety switch and wait 5 minutes.
 2. Loosen the fixing bolts ~10 mm (in STEC fan sizes 4-7, remove both bolts) so the device can be tilted open (the side that opens has been marked with an arrow decal). The locking bar for opening (1 or 2, depending on the size of the fan) locks automatically in the maximum position. Fan sizes 5-7 have been equipped with handles to facilitate opening.
 3. Make sure that locking bars are properly locked and that the bottom plate and mounting frame fastenings are fastened.
 4. Perform the necessary cleaning operations.
 5. Release the locking mechanism of the locking bar by lifting the bar (fan sizes 1-3) or by pressing the spring-loaded locking lever (fan sizes 4-7), tilt the device back down and tighten the fixing screws.
 6. Start the fan. Make sure the fan wheel rotates freely.
- The casing may also be cleaned from above by removing the roof panel.



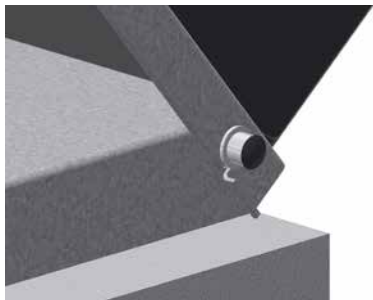
Sizes 1-3



Sizes 4-7



Fixing bolt



Hinge bolt

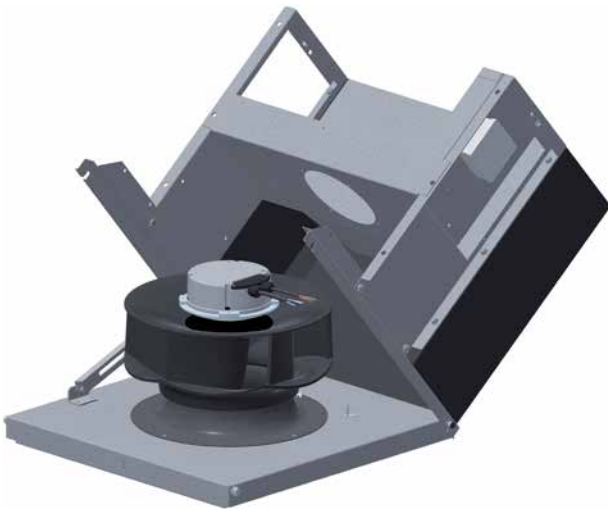


Open decal

7.2.2 REPLACING THE MOTOR AND FAN IMPELLER

SIZES 1-3: THE MOTOR AND IMPELLER ARE ALWAYS CHANGED AS A SET

1. Disconnect the power supply to the fan from the safety switch and wait 5 minutes.
2. Remove the roof panel and crossbar (M6 bolts), open/remove both hatches (an M6 bolt and sheet metal screws) and remove the fan's outer casing on the side that opens (M6 bolts).
3. Remove the motor cables and motor mounting bolts (M4/M6, depending on the size of the fan). Lower the motor and impeller carefully and let them rest on the inlet cone.
4. Open the tilting mechanism (please see **7.2.1 Cleaning the fan wheel and casing, sections 2 and 3**) and guide the motor cables through the motor bracket if necessary. Lift out the old motor and impeller.



The open chimney should be protected before the next step to avoid debris, parts and tools from falling inside.

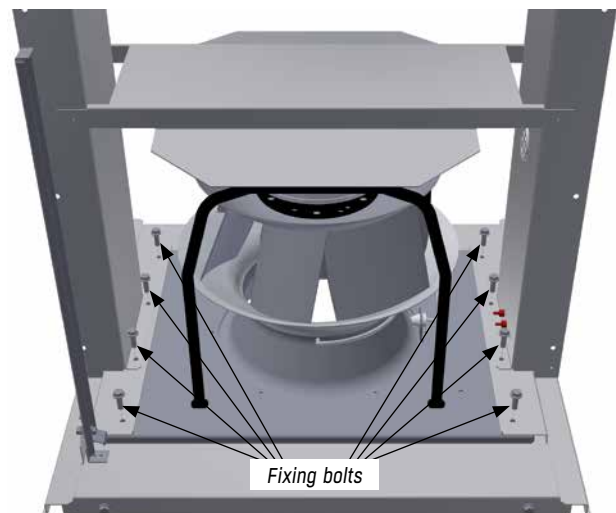
5. If you are also changing the inlet cone, remove it by first drilling out the blind rivets and then cutting off the cone's sealant from the bottom plate with a snap-off knife or similar. Also remove the airflow measurement tube. The sealant left on the bottom panel should be removed thoroughly before installing a new inlet cone.

Please note: New sealant should be applied when installing a new inlet cone.

6. Install the new motor, impeller and other parts that you removed in reverse order. Make sure to tighten all the bolts and screws.
7. Start the fan. Make sure the rotation direction is correct and the fan wheel rotates freely, and listen for unusual noises from the fan.

SIZES 4-7: THE WHOLE FAN UNIT IS ALWAYS CHANGED AS A SET

1. Disconnect the power supply to the fan from the safety switch and wait 5 minutes.
2. Remove the roof panel and crossbar (M6 and M8 bolts). If the roof panel is in three parts, it is sufficient to remove only the middle section (M8 bolts). Remove both hatches (an M6 bolt and sheet metal screws) and the outer casings (M6 bolts and sheet metal screws).
3. Remove the motor cables and airflow measurement tubes from the vertical panel. Remove the fan unit from the mounting strips (8 × M6 bolts, as in the figure below).



4. Open the tilting mechanism (see **7.2.1 Cleaning the fan wheel and casing, sections 2 and 3**). The fan unit should remain on the bottom plate.
5. Lift out the old fan unit using lifting slings and a crane, if necessary.



The open chimney should be protected to avoid debris, parts and tools from falling inside.

6. Lift the new fan unit into place, being careful not to damage the gasket on the new fan unit.
7. Lower the tilting mechanism into place and install the fan unit in reverse order. Reinstall the remaining parts in reverse order. Make sure to tighten all the bolts and screws.
8. Start the fan. Make sure the rotation direction is correct and the fan wheel rotates freely, and listen for unusual noises in the fan.

7.3 DISPOSAL OF THE PRODUCT

1. The product may contain a pressure controller and other electric components, in addition to the electric motor. All the electric components should be taken to an appropriate recycling facility for disposal.
2. Steel materials should be recycled.
3. The product contains only very few plastic parts. The parts are manufactured from recyclable materials.
4. The impeller of fan sizes 1-3 is made of composite. The motor and the fan impeller are recycled as a whole and should be taken to an appropriate recycling facility for disposal.

8 AIRFLOW MEASUREMENT



STEC insulated roof fans are equipped with airflow measuring. The airflow measurement is taken with a manometer as a differential pressure measurement. Open the hatch (see illustration below) and you can find the measuring sockets marked with the symbols + and -. The measurement accuracy under normal conditions is ±10%.



k-VALUES

STEC	k
1	71.63
2	39.28
3	28.26
4	33.77
5	25.03
6	15.44
7	11.69

To obtain the airflow corresponding to the differential pressure measurement with an air density of 1.2 kg/m³, the following formula is used:

$$q_v = \frac{\sqrt{\Delta p_m}}{k}$$

q_v = airflow [m³/s]
 k = fan-specific constant
 Δp_m = differential pressure measurement [Pa]

The k-values are located on the rating plate behind the fan's hatch as well as in the above table. The values apply when using m³/s for calculation.

9 SAFETY INSTRUCTIONS AND WARNINGS

Please read these installation and maintenance instructions thoroughly before you start working with this roof fan.

PERSONNEL

These fans may be installed, used and maintained only by authorised persons. An authorised person has technical competence as well as knowledge of the dangers and safety instructions involved when installing, using and maintaining the device.

WARNING



- These devices can put lives in danger because of the rotating parts and risk of electric shock.
- These devices contain large capacitors that take some time to discharge after the voltage is cut off.
- Make sure the voltage is cut off before working on the components. Wait for at least 5 minutes for the voltage of the capacitors to drop to a safe level.
- Do not make any alterations or additions to the product without permission from FläktGroup.

POSSIBLE RISKS

The components may not work as specified in defect situations, during blackouts or in other unintentional situations. Specifically:

- When the motor speed is not monitored.
- When the motor's rotation direction is not monitored.
- The motor may be live.
- The motor may start automatically.
- Dangerous voltages may exist in the motor connections even after the supply has been cut off.

SPECIAL CONSIDERATIONS FOR ELECTRICAL INSTALLATION

- The cabling and front fuses should be dimensioned and electrical installations performed in accordance with local regulations.
- The internal speed controller in the EC motor protects the motor against overload. Separate thermal protection is not required.
- The safety switch provided with the roof fan should be installed near the roof fan. The safety switch also acts as a supply connection point.
- Control cables are routed to the controller behind the hatch.
- The supply voltage should match the voltage specified on the roof fan's rating plate and wiring diagrams.
- The device should only be used in TN/TT systems.

10 CONTROL METHODS

This manual contains a list of possible configurations based on the control method. A functional description, illustrative drawing, parts list and wiring diagram for each option are shown on the respective page. Adjustment instructions are given in a separate section. STEC roof fans include an EC motor with an integrated speed controller.

A: Control from Building Management System (BMS)

B: Graduated manual control with a potentiometer

C: Fixed speeds

D: Pressure control

The components are mainly installed inside the roof fan. Some of the components used for control are supplied loose.

INSTALLED COMPONENTS

- EC controller
- Pressure controller
- Safety switch

COMPONENTS SUPPLIED LOOSE

- | | |
|--|---------------------------------------|
| • Timer | STYZ-01-40-0-0 |
| • Thermostat and outdoor temperature sensor | STYZ-01-30-0-0 |
| • Potentiometer | STYZ-01-51-0-1 |
| • Pressure controller's outdoor temperature sensor | Supplied with the pressure controller |

AHU EMERGENCY STOP

An AHU emergency stop is performed by cutting off the supply to the roof fan with the electrical switchboard contactor.

11 CONFIGURATION BASIC

Basic configuration is used when the roof fan is controlled directly by

- voltage control (0-10V)
- potentiometer or
- Modbus control (STEC 3-7)

In 0-10V, the fan starts at a voltage of about 1 V. A separate starting command is not needed.

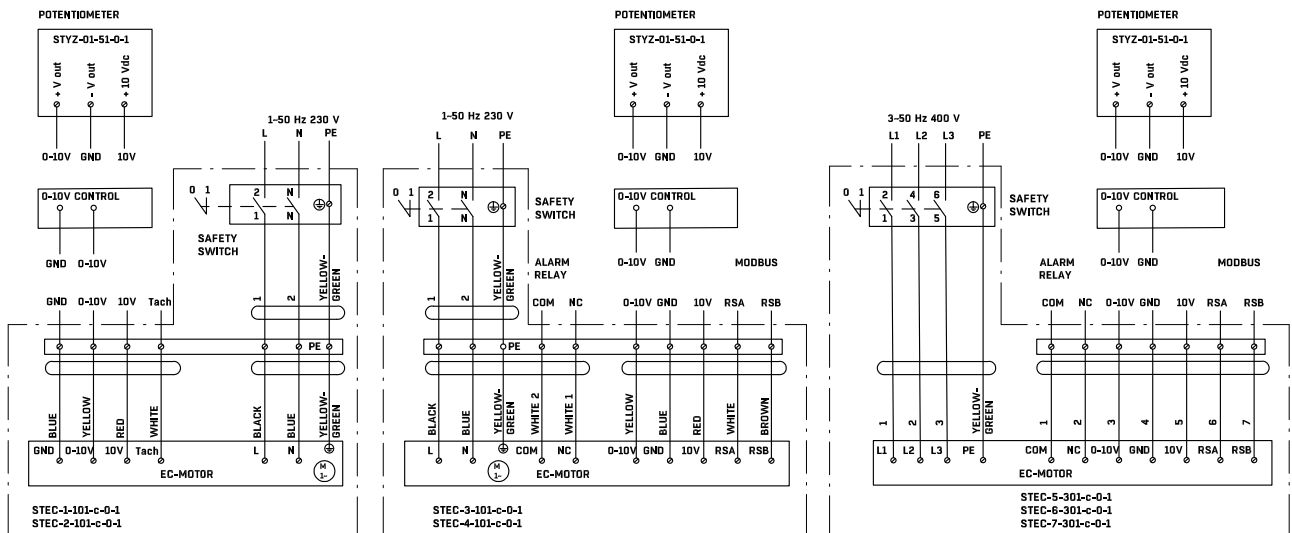
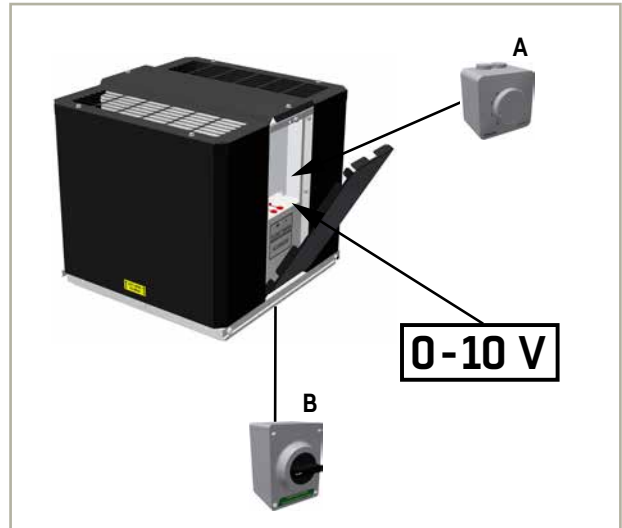
INSTALLED COMPONENTS:

B. Safety switch, if accessory package 1, STEC-a-bb1-0-1

Note! Accessory package 0, STEC-a-bb0-0-1 does not include any accessories.

ACCESSORIES, SUPPLIED LOOSE:

A. Potentiometer STYZ-01-51-0-1



12 CONFIGURATION A, BMS CONTROL (BUILDING MANAGEMENT SYSTEM)

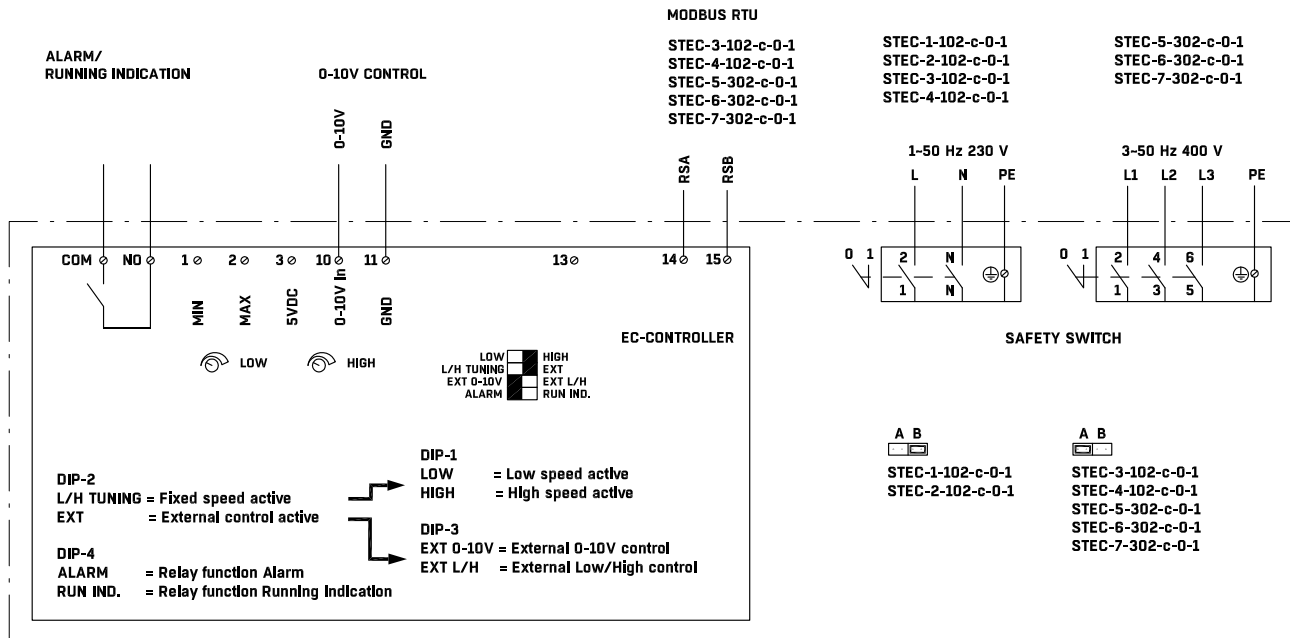
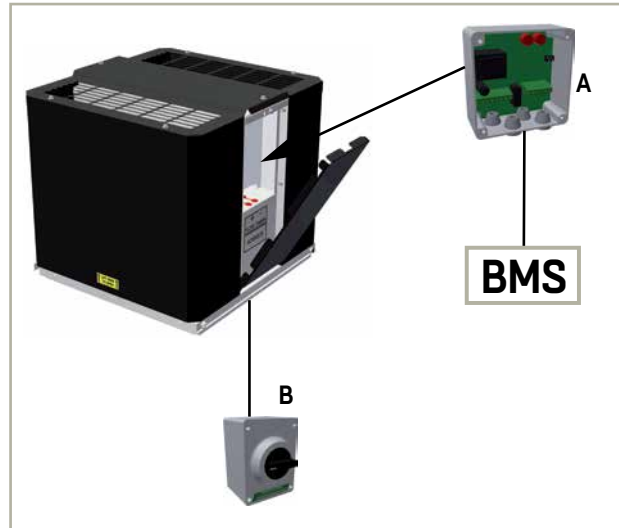
Configuration A is used when the roof fan is controlled from the Building Management System (BMS).

- 0-10 V control
- Modbus control (STEC 3-7)

In 0-10 V, the fan starts at a voltage of about 1 V. A separate starting command is not needed. The EC controller relay gives either an alarm or a run data.

INSTALLED COMPONENTS:

- A. EC controller; see Chapter 16
- B. Safety switch



13 CONFIGURATION B, MANUAL CONTROL

Configuration B is used when the roof fan is controlled with a potentiometer. Speeds 1 and 2 may be set progressively using the adjustment screws under the potentiometer cover at commissioning. The potentiometer obtains its operating voltage from the roof fan's EC controller.

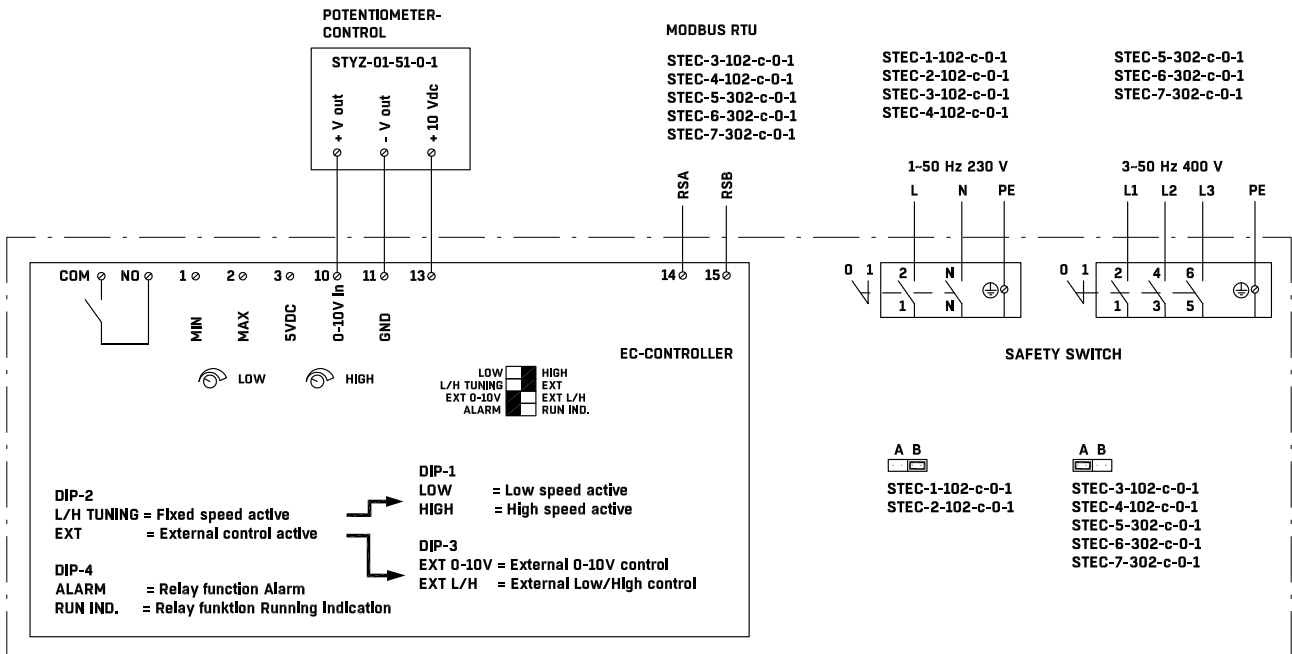
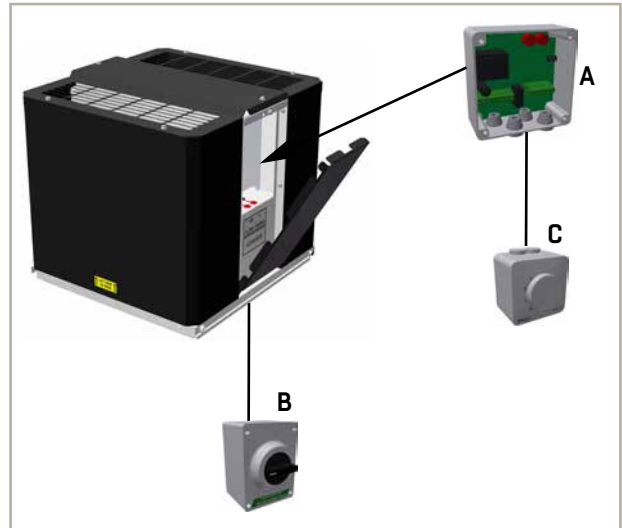
- The potentiometer has four positions:
 - 0 = stop
 - 1 = adjustable speed (3-7 V)
 - 2 = adjustable speed (5-9 V)
 - 3 = maximum speed
- The potentiometer should be installed near the user in an easily accessible location.

INSTALLED COMPONENTS:

- A. EC controller
- B. Safety switch

ACCESSORIES, SUPPLIED LOOSE:

- C. Potentiometer STYZ-01-51-0-1



14 CONFIGURATION C, FIXED SPEEDS

Configuration C is used when the roof fan:

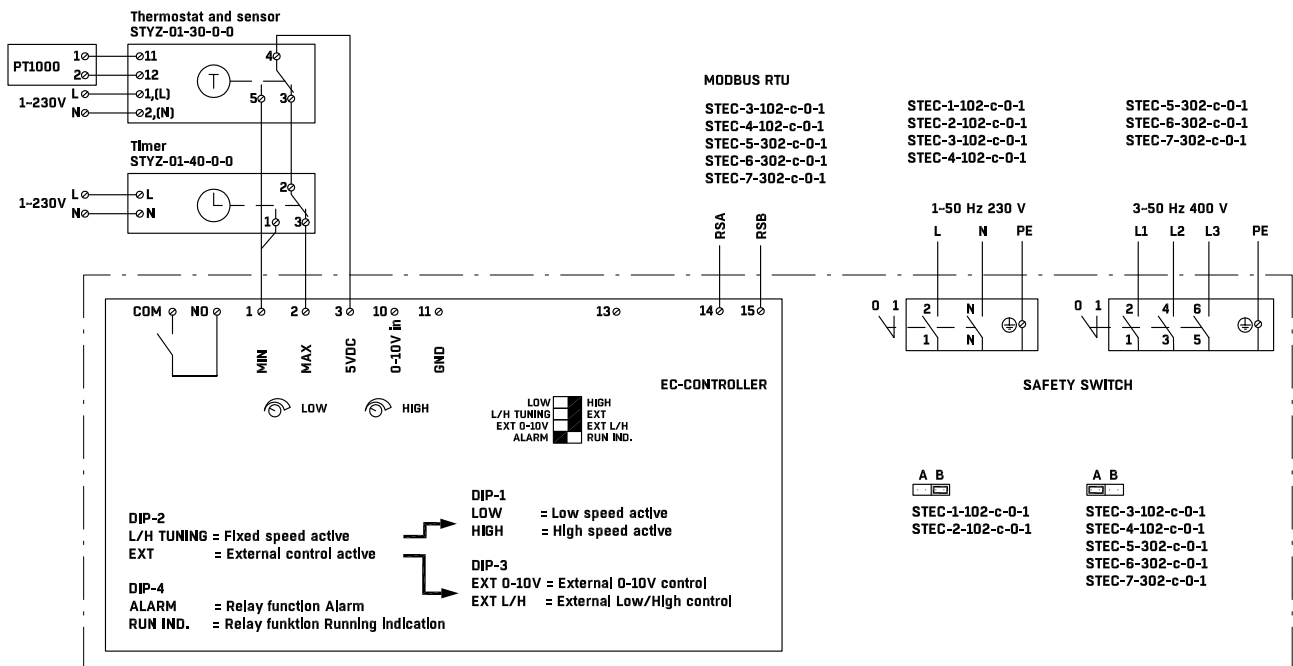
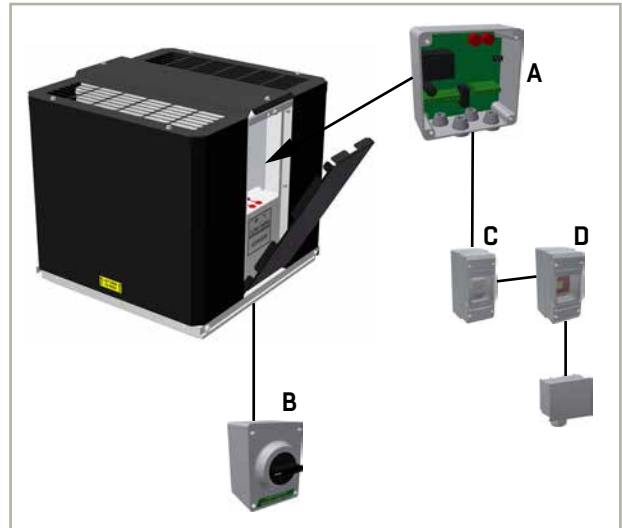
- Rotates at one pre-set speed
- Rotates at two pre-set speeds. The control devices are a timer and an outdoor temperature thermostat.

INSTALLED COMPONENTS:

- A. EC controller
- B. Safety switch

ACCESSORIES FOR TWO-SPEED MODE, SUPPLIED LOOSE:

- C. Timer STYZ-01-40-0-0, including enclosure IP55
- D. Outdoor thermostat and sensor STYZ-01-30-0-0, including enclosure IP55



15 CONFIGURATION D, PRESSURE CONTROLLED

Configuration D is used in the following cases:

- Pressure adjustment on one pressure level
- Pressure adjustment on two pressure levels
- Pressure adjustment with outdoor temperature compensation

INSTALLED COMPONENTS:

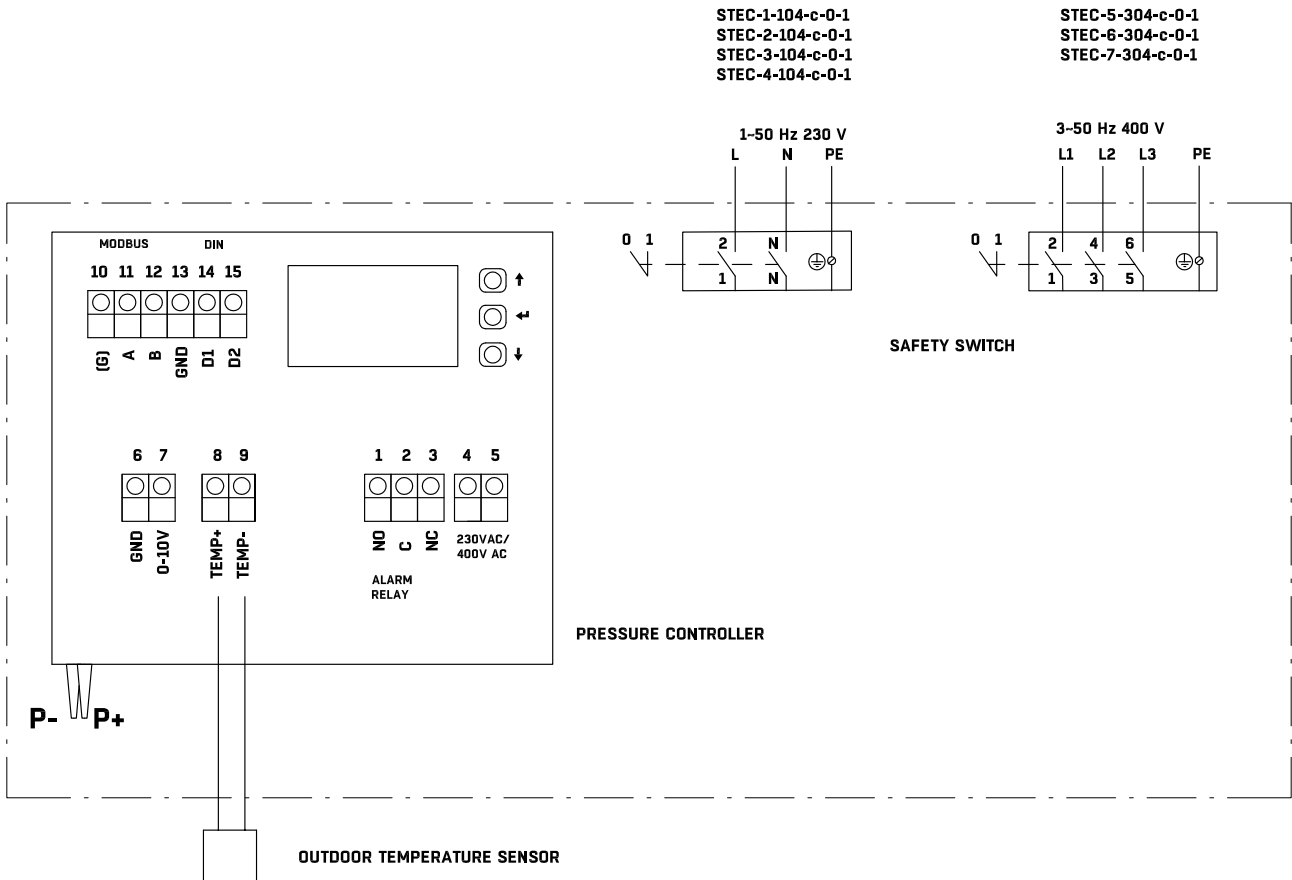
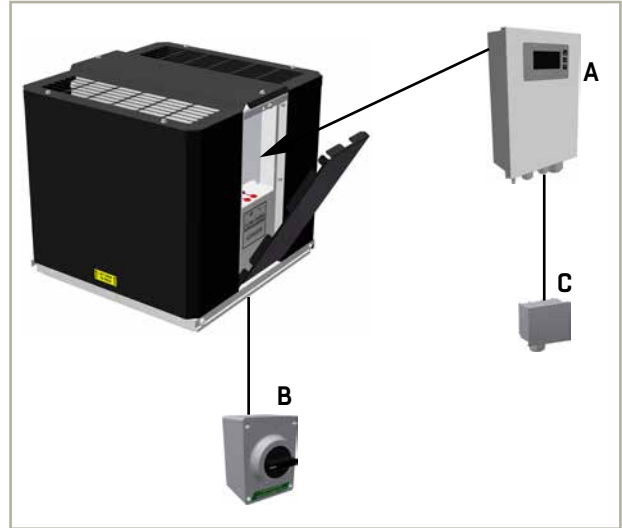
A. Pressure controller; see Chapter 20

B. Safety switch

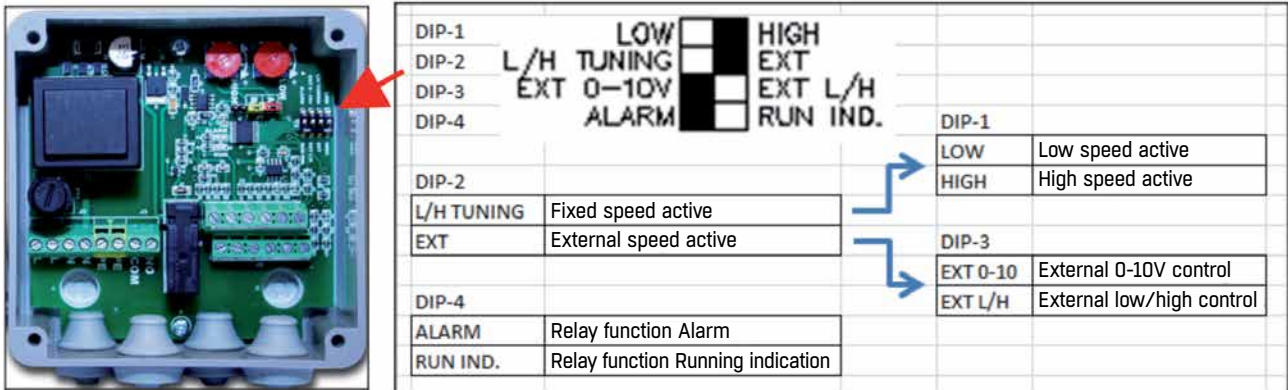
COMPONENTS THAT ARE SUPPLIED LOOSE:

C. Outdoor temperature sensor

The pressure controller also includes an integrated timer, Modbus-RTU connection and alarm relay.



16 EC CONTROLLER



SINGLE-SPEED USE

- Set DIP2 to L/H TUNING and DIP1 to LOW. Set the required speed from the LOW potentiometer. If you want the fan to rotate at this speed continuously, no other settings are necessary.

TWO-SPEED USE

- A lower speed is set in the same way as for single-speed use.
- Higher speed: Set DIP2 to L/H TUNING.
- Set DIP1 to HIGH and set a higher speed from the HIGH potentiometer.
- Set switch DIP2 to EXT.
- When you set DIP3 to EXT L/H, the motor can be controlled with external MIN and MAX contactor data (see the table below).

Contact in between the terminals	Terminals 1-3	Terminals 1-2
STOP	0	0
MIN speed	1	0
MAX speed	0 or 1	1

0-10 V CONTROL

When you want to control the fan using voltage signals:

- Set DIP2 to EXT.
- Set DIP3 to EXT 0-10 V.

Voltage 10 V = maximum speed

Voltage 1 V = minimum speed

Voltage 0-1 V = stop

RUN DATA AND ALARM

The EC controller gives either an alarm or run data from the relay's closing contactors.

ALARM

- Set DIP4 to ALARM

RUN DATA

- Set DIP4 to RUN IND.

17 POTENTIOMETER / 18 TIMER / 19 OUTDOOR TEMPERATURE THERMOSTAT AND SENSOR

17 POTENTIOMETER STYZ-01-51-0-1

- Position 0 stop
- Position 1 adjustable
- Position 2 adjustable
- Position 3 maximum speed

Positions 1 and 2 are located under the cover and are steplessly adjustable.

Dimensions: W×H×D: 62×62×65 mm

The potentiometer may be embedded in the IP44 mounting box or installed on the wall, IP54.

The potentiometer obtains its operating voltage from the 10 V EC motor.



18 TIMER STYZ-01-40-0-0

The digital timer STYZ-01-40-0-0 includes:

- A weekly/daily program
- 1 channel
- Programming in English
- Installed on a DIN rail or in the IP55 enclosure supplied
- Lit LCD display
- Automatic summer/winter time setting
- Holiday program
- Manual operation
- PIN code protection
- With enclosure IP55, without enclosure IP20

See the manual for the time switch programming instructions.



19 OUTDOOR TEMPERATURE THERMOSTAT AND SENSOR STYZ-01-30-0-0

INSTALLATION

- Install thermostat STYZ-01-30-0-0 (Calectro CMT-24/230V) in the electrical switchboard or the enclosure supplied.
- Install the outdoor temperature sensor STYZ-01-31-0-0 (PTC sensor ETZ-1795) on the building's north wall.
- With enclosure IP55, without enclosure IP20

CONNECTION

- Connect a 230 V supply to the thermostat's terminals 1 (L) and 2 (N).
- Connect the sensor to the thermostat's terminals 11 and 12.
- Connect the EC controller's speed control to the thermostat's terminals 3, 4 and 5 (wiring diagram).

PARAMETERING

- Select the sensor type by pressing the Menu button twice. Use the arrow keys to select sensor type PT1000.
- Confirm the selection by pressing the Menu button.
- Wait a moment until you see a temperature reading on the display. The reading will be correct if the connection and sensor type have been done correctly.
- The switching temperature is displayed in the top left-hand corner. Set it using the arrow keys. Accept the selection by pressing Enter.



20 PRESSURE CONTROLLER

STANDARD PRESSURE ADJUSTMENT (0 - 2000 Pa)

The pressure controller measures the duct system pressure and controls the roof fan's RPM to make sure that the pressure setting value is reached. The pressure setting value is set on the regulator at commissioning. If e.g. a lower duct pressure is required for the night, another setting value may be set. The pressure setting value may be changed using the internal timer, which can be set with weekly boosts in one-hour increments. The external timer STYZ-01-40-0-0 may also be used if required. The pressure controller includes an alarm relay that gives notifications of e.g. large deviations between the measurement pressure and setting value.

STANDARD PRESSURE ADJUSTMENT USING OUTDOOR TEMPERATURE COMPENSATION

Outdoor temperature compensation can be applied to the pressure adjustment by connecting the outdoor temperature sensor supplied. This function may be used to compensate for the chimney effect in winter. The outdoor temperature may also be sent to the pressure controller from the Building Management System (BMS) via the Modbus.

INSTALLATION INSTRUCTIONS

The pressure controller has been installed in the roof fan and connected with a tube to the suction chamber (from the pressure controller's minus nipple to the roof fan's plus nipple). The pressure controller's plus nipple should not be used.

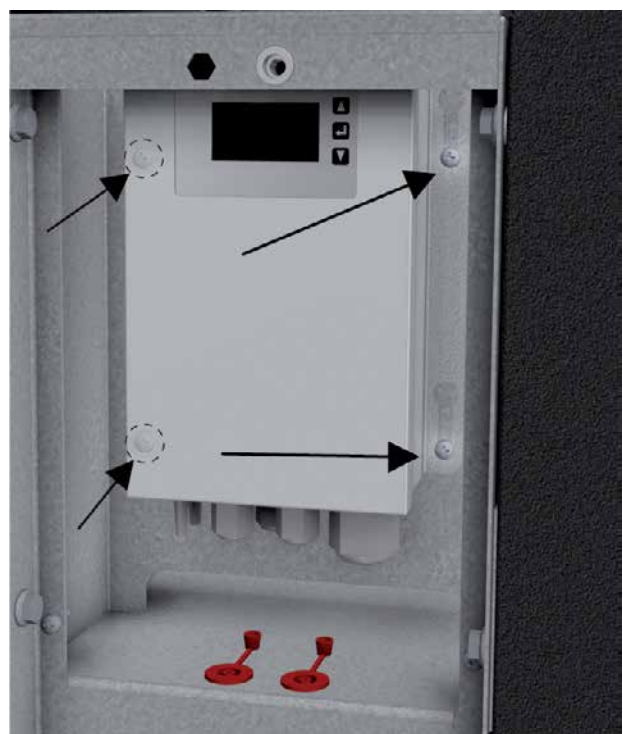


The outdoor temperature sensor should be installed on the building's north outside wall or another location where the sun cannot shine on it. If the outdoor temperature compensation is not used, the sensor should not be connected.

A supply of 1×230 V or 2×400 V has been connected to the pressure controller.

WARNING! The pressure controller's supply voltage is highly dangerous. Cut the voltage off from the roof fan's safety switch before opening the cover.

To install the cables, open the cover using the quick fasteners on the upper part of the device. Insert a screwdriver into a quick fastener hole and turn upwards. Make the necessary connections and re-attach the cover (see the illustration). Loosen the mounting plate screws (4 pcs) on the STEC-2, and pull the pressure controller and its plate first downwards, then outwards. You can then open the cover.



ELECTRICAL WIRING

See the wiring diagram on the corresponding configuration page.

- The outdoor temperature sensor should be connected to the pressure controller’s terminals 8 and 9.
- The alarm relay terminals are 1, 2 and 3.
- The Modbus RTU should be connected to terminals 10, 11 and 12.
- The external timer terminals are DIN2 and GND.
- The fire alarm terminals are DIN1 and GND.

SETTING THE LANGUAGE

The pressure controller’s factory default language is English. It can be changed to Finnish or Swedish. Open the language selection by pressing the arrow keys ↑↓ simultaneously. Select the language and confirm by pressing Enter.

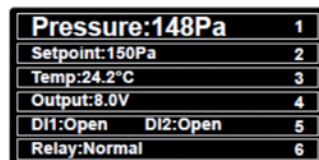
COMMISSIONING

We recommend that zero-point calibration is performed on the device at commissioning. Remove the tube during calibration. Open REGULATOR MENU / CALIBRATE SENSOR to perform calibration.

DISPLAY

The pressure controller display shuts down in 200 seconds. Press any button to bring the display back up.

- 1: Current pressure
- 2: Pressure set point
- 3: Current outdoor temperature
- 4: Current voltage signal to the motor
- 5: Status of the digital inputs
- 6: Status of the alarm relay



MAINTENANCE

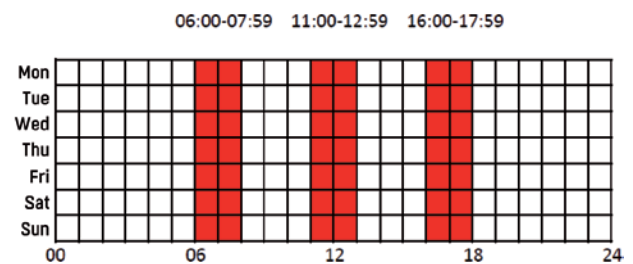
The pressure may be zeroed if necessary. See section Commissioning above.

SETTINGS

Settings are adjusted using the buttons on the right side of the display. It is not necessary to open the cover. The middle Enter button takes you from the Home screen to parametering mode. The arrow up and down buttons are used to change the parameter values. Confirm your selection with the middle Enter button within 20 seconds. If no buttons are pressed for 90 seconds, the display automatically reverts to normal.

MANUAL RUN, PRESSURE SETTING VALUE SEARCH

You can adjust the motor’s rotation speed manually and measure the airflow from the roof fan’s measuring sockets at the same time. This is how you can search for the pressure used to achieve the desired airflow. See MISC. MENU / OUTPUT OVERRIDE.



SETTING THE PRESSURE

Set the pressure setting value at REGULATOR MENU / SET POINT. The factory default is 150 Pa.

OVERRIDE SET POINT

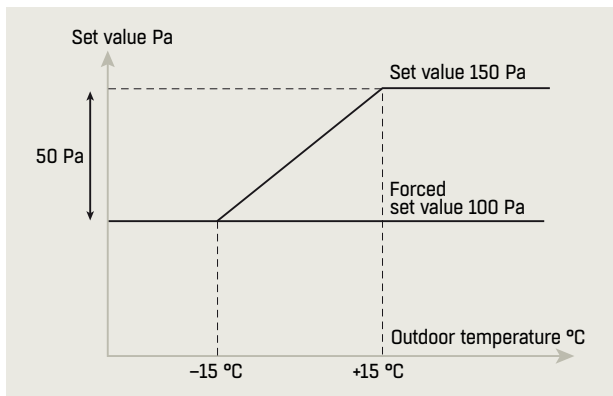
You can enable the override setting value using the internal weekly timer whenever you want. First set the date and time at MISC. MENU / SET TIME and DATE. Set the timer program at SCHEDULE according to the example image above. Finally, set the pressure setting value for these times at SCH. SET POINT and specify whether you want the temperature compensation to be active. The timer has battery backup in case of a blackout.

The setting value can also be overridden using the external timer STYZ-01-40-0-0. If it is connected to terminals DIN1 and GND, the outdoor temperature compensation is disabled. When using terminals DIN2 and GND, the outdoor temperature compensation is active. Set the other pressure setting value at MISC. MENU / DIGITAL IN / DI1 or DI2 FUNCTION = force set point. The factory default for the forced setting value is 100 Pa. See the diagram on the following page.

OUTDOOR TEMPERATURE COMPENSATION

Outdoor temperature compensation is activated in factory defaults at TEMPERATURE MENU / TEMP. SENSOR / PT1000. If the outdoor temperature sensor is not used, you can disable it by choosing NO for the sensor type. The starting temperature can be selected from the display at TEMP. COMP. RANGE / LOW, ending temperature at HIGH and pressure drop at TEMP. COMP. Outdoor temperature compensation is not available with forced set point as a factory default (see the diagram below).

The outdoor temperature can also be imported via the Modbus. You can set this at TEMPERATURE MENU / TEMP. SENSOR / TEMP. FROM MODBUS.



ALARM RELAY, LOG AND CODES

The alarm relay is activated when the supply voltage is lost or if the following alarms are enabled. Alarm codes:

- 01 High pressure alarm
- 02 Low pressure alarm
- 05 Temperature sensor error alarm
- 06 DI1 fire alarm

The alarm history can be reviewed at ALARM MENU / ALARM LOG.

High- and low pressure alarms are enabled at ALARM MENU. A fire alarm may be specified for digital input 1 at MISC. MENU / DIGITAL INPUT / DI1 OPERATION and by connecting the contactor data between DIN1 and GND.

PRESSURE CONTROLLER MENU STRUCTURE

Please see the menu structure in the separate pressure controller manual provided with the device.

MODBUS RTU

The pressure controller contains a Modbus interface. The physical interface is RS485. Modbus settings can be set in the MODBUS MENU. The pressure controller also has an integrated terminating resistor of 120 ohm that is set at commissioning. See the Modbus registers in the separate pressure controller manual.

21 EC MOTOR MODBUS CONNECTION

See the separate manual for the STEC modbus register.

22 PRODUCT CODES AND ACCESSORIES

PRODUCT CODE

Roof fan

STEC-a-bbb-c-d-1

Size (a)

1, 2, 3, 4, 5, 6, 7

Motor type (bbb)

1 = 1-phase motor

3 = 3-phase motor

Insulation (bbb)

0 = insulated version

Accessory set (bbb)

0 = basic

1 = includes an installed safety switch

2 = includes an installed safety switch and EC controller

3 = includes an installed pressure controller

4 = incl. an installed safety switch and pressure controller

Material (c)

1 = painted, galvanised steel sheet, black

2 = ZM275-coated steel sheet

Structure (d)

0 = basic

Generation (e)

ACCESSORIES

Roof curb EI60 or EI120

BOGA-aa-b-c-d

Size (aa)

01, 02, 03, 04, 05, 06, 07

Back draught shutter (b)

1 = with shutter

Height and insulation class (c)

4 = 1200 mm, EI60, 60 mm insulation

6 = 1200 mm, EI120, 120 mm insulation

Generation (d)

2, with EI60 version

3, with EI120 version

Thermostat with a temperature sensor

STYZ-01-30-0-0

Timer

STYZ-01-40-0-0

Potentiometer

STYZ-01-51-0-1

Painted finish

STEZ-60-b-c-dd

Colour (b)

5 = RAL classic colors

Extent of painting (c)

0 = painted outside

1 = painted inside and outside

Paint thickness (dd)

1 = 60 µm

Fan size (dd)

1, 2, 3, 4, 5, 6, 7

23 DECLARATION OF CONFORMITY

EC Declaration of Conformity

Machinery Directive 2006/42/EC, Annex II, sub A

Manufacturer: FläktGroup Finland Oy

Address: Kalevantie 39
FI-20520 Turku, Finland

Name and address of the person authorised to compile the relevant technical documentation:

Name: Heikki Stenberg Address: as above

Confirms that:

STEC roof fan with accessories and including
Electronically commutated external rotor motor with integrated controller

is in accordance with the Machinery Directive (2006/42/EC)

And that the machinery is in conformity with the provisions of the following other EC-Directives:


2014/35/EU Low Voltage Directive
2014/30/EU EMC-Directive
2009/125/EC ErP Directive
(EU) 2017/2102 RoHS Directive

And furthermore, declares that

the following (parts/clauses of) European harmonised standards and Regulations have been applied: EN ISO 12100:2010, EN ISO 13857:2008, EN 6100-6-2:2011, EN 61000-6-3:2011, EN ISO 5801 and Regulations 327/2011 and 1253/2014.

This Declaration of Conformity is valid only if the installation is carried out in accordance with the Machinery Directive 2006/42/EC, where appropriate, and if the original accessories are used.

Turku, 1.9.2018


Heikki Stenberg
R&D Manager

FläktGroup

EXCELLENCE IN SOLUTIONS

FläktGroup is the European market leader for smart and energy efficient Indoor Air and Critical Air solutions to support every application area. We offer our customers innovative technologies, high quality and outstanding performance supported by more than a century of accumulated industry experience. The widest product range in the market, and strong market presence in 65 countries worldwide, guarantee that we are always by your side, ready to deliver Excellence in Solutions.

PRODUCT FUNCTIONS BY FLÄKTGROUP

Air Treatment | Air Movement | Air Diffusion | Air Distribution | Air Filtration
Air Management & ATD's | Air Conditioning & Heating | Controls | Service



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