

**ROOF FAN
ROOFMASTER STEC
INSULATED VERSION**

TECHNICAL CATALOGUE



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PRODUCT AND ACCESSORY CODES32

GENERAL DESCRIPTION

APPLICATION/SPECIFICATION

STEC insulated roof fan is designed to be used for the extraction of exhaust air and other non-aggressive gases where low energy consumption, low noise level and demand controlled ventilation are required. It can be installed directly on the concrete or alternatively on a roof curb. The existing unit can be exchanged by using an installation frame, which is always included as standard in the delivery of STEC roof fan.

Note! 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.

STEC is equipped with high efficiency EC-motor with integrated speed controller. The impeller is optimized for low sound and high efficiency. The casing and motor-impeller-combination can be opened for easy service and maintenance. Casing is internally insulated to give extra low sound levels. The fan is discharging vertically.

SPECIFICATION

Product type:	STEC insulated roof fan
Impeller type:	Sizes 1-3 using plastic impeller with integrated EC-motor Sizes 4-7 using CentriFlow 3D impeller with integrated EC-motor
Insulation:	All fans have internal insulation
Discharge:	Vertical
Temperature:	Ambient temperature up to + 40 C Max exhaust air + 40 C
Environment class:	C4 (EN ISO 12944-2)
Water test class:	IPX4
Motor:	EC outer rotor motor
Electrical supply:	Sizes 1-4: 1~ 230 VAC 50 Hz Sizes 5-7: 3~ 400 VAC 50 Hz
Speed controller:	Sizes 1-2 using 0-10 V signal Sizes 3-7 using 0-10 V control signal or Modbus RTU RS485 Using separate control accessories
Directives and regulations applied:	EMC-Directive 2014/30/EU Machinery Directive 2006/42/EC, Annex II, sub A Low Voltage Directive 2014/35/EU Regulation 1253/2014 for roof fan as NRVU/UVU Regulation 327/2011 for motorized impeller inside

All components are designed and manufactured in accordance with quality assurance system ISO 9001 and the environmental management system ISO 14001.

The roof fan is CE marked.



FEATURES

- 7 sizes
- Volume flow rate up to 4.3 m³/s (15 500 m³/h)
- Max pressure rise up to 1050 Pa

MATERIAL AND DESIGN

The casing is made of black pre-painted galvanized sheet metal or magnesium and zinc coated sheet metal (ZM275). Surface treatment meets requirements for environmental class C4. RAL classic colours are available as an option. The fan casing is internally insulated. The fan discharges upwards.

MOTOR AND IMPELLER

The fans use EC-motors with integrated speed controller. The motor is cooled by the exhaust air. Sizes 1-3 have a plastic impeller which is integrated to the motor. Sizes 4-7 have a CentriFlow 3D aluminum impeller and integrated motor. The fan can be equipped with an EC controller. All fans are balanced to meet the vibration level of 4.5 mm/s RMS ISO 14694.



WATER AND SNOW PROTECTION

There is a perforated sheet on top of the fan to keep leaves from falling inside the casing. Above the impeller there is a plate that prevents water and snow from entering the impeller and the duct system. If, however, water reaches the inside of the casing it flows out between the bottom plate and outer casing.

Note! When the fan is stopped, water/snow may enter the ductwork via the impeller due to external conditions (wind, heavy rain). It is therefore recommended to run the fan continuously. For the same reason, during the construction phase, before commissioning, it is recommended to protect the fan outlets from rain.

GENERAL DESCRIPTION

WIRING CHARTS

Wiring charts are presented on pages 28 - 32.

SPEED CONTROL

Motor speed can be controlled using an analog 0-10 V signal, Modbus RTU RS485 (fan sizes 3...7), a pressure controller or using a special EC controller.

EC CONTROLLER

The EC controller is installed behind the hatch in the casing side plate. It can be ordered as a ready-to-be-used part, in which case it is included in the fan ordering code (see codes on page 33).

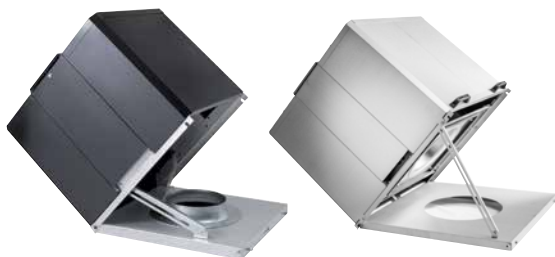
The EC controller is not automatically included in the basic version of STEC, so please check the ordering codes.

The EC controller includes the following operations:

- Single-speed use: speed is set using Low potentiometer
- Two-speed operation is set using Low and High potentiometer
- Relay output can be selected for either alarm or running indication
- 0 - 10 V control from BMS (Building Management System)
- EC controller has two potentiometers, high and low speed

EASY INSTALLATION AND SERVICE

STEC can be installed on the concrete or on roof curbs.



The existing unit can be exchanged by using an installation frame, which is always included as standard in the delivery of STEC roof fan. The fan is equipped as standard with opening mechanism which can be locked to open position. The impeller can be easily cleaned, if necessary.

AIR FLOW MEASUREMENT



STEC roof fan is equipped as standard with the air flow measurement for accurate and easy measurement. The accuracy of the air flow measurement is $\pm 10\%$.

$$q_v = \frac{1}{k} \cdot \sqrt{\Delta p_m}$$

q_v = volume flow (m^3/s)

Δp_m = differential pressure (Pa)

k = fan-specific constant

K VALUES

Fan size	k value
1	71,63
2	39,28
3	28,26
4	33,77
5	25,03
6	15,44
7	11,69

k values are valid when using the unit m^3/s .

DEMAND CONTROLLED VENTILATION

Demand controlled ventilation, DCV, is required by ErP Regulations. In practise this means that all roof fans shall be equipped with a speed controller. STEC roof fan range with EC-motor has an integrated speed controller and thus the whole fan range is fully ErP compliant also in this sense.

Using DCV it is easy to adjust the correct fan speed and optimize the energy consumption.

Different sensors and controllers can be connected to the speed control system.

GENERAL DESCRIPTION

REPLACING THE EXISTING ROOF FAN



All roof fans are equipped with a mounting frame as standard. The mounting frame can be installed on the existing base made of concrete, on different roof curbs or on the old BOGA.

As the fans have as standard the possibility to adjust the fan speed it is easy to replace the existing fan and adjust the air flow.

Installation is presented in the installation manual and various control possibilities in a separate section of this catalogue.



Most of the electrical components are factory mounted and the wiring between the components is ready. There is a simple interface for the end user for wiring to the mains and control devices.

ACCESSORIES INCLUDED IN FAN PACKAGES

(see the roof fan product code: "accessory package (bbb)" on page 33)

- 1 = STEC fan including safety switch, installed
- 2 = STEC fan including safety switch and EC controller, installed
- 3 = STEC fan including pressure controller, installed
- 4 = STEC fan including safety switch and pressure controller, installed

ACCESSORIES TO BE ORDERED SEPARATELY



BOGA
Roof curb



STEZ-04
Mounting plate



STEZ-07
Inlet sound attenuator



STYZ-01-30
Thermostat with sensor



STYZ-01-40
Timer



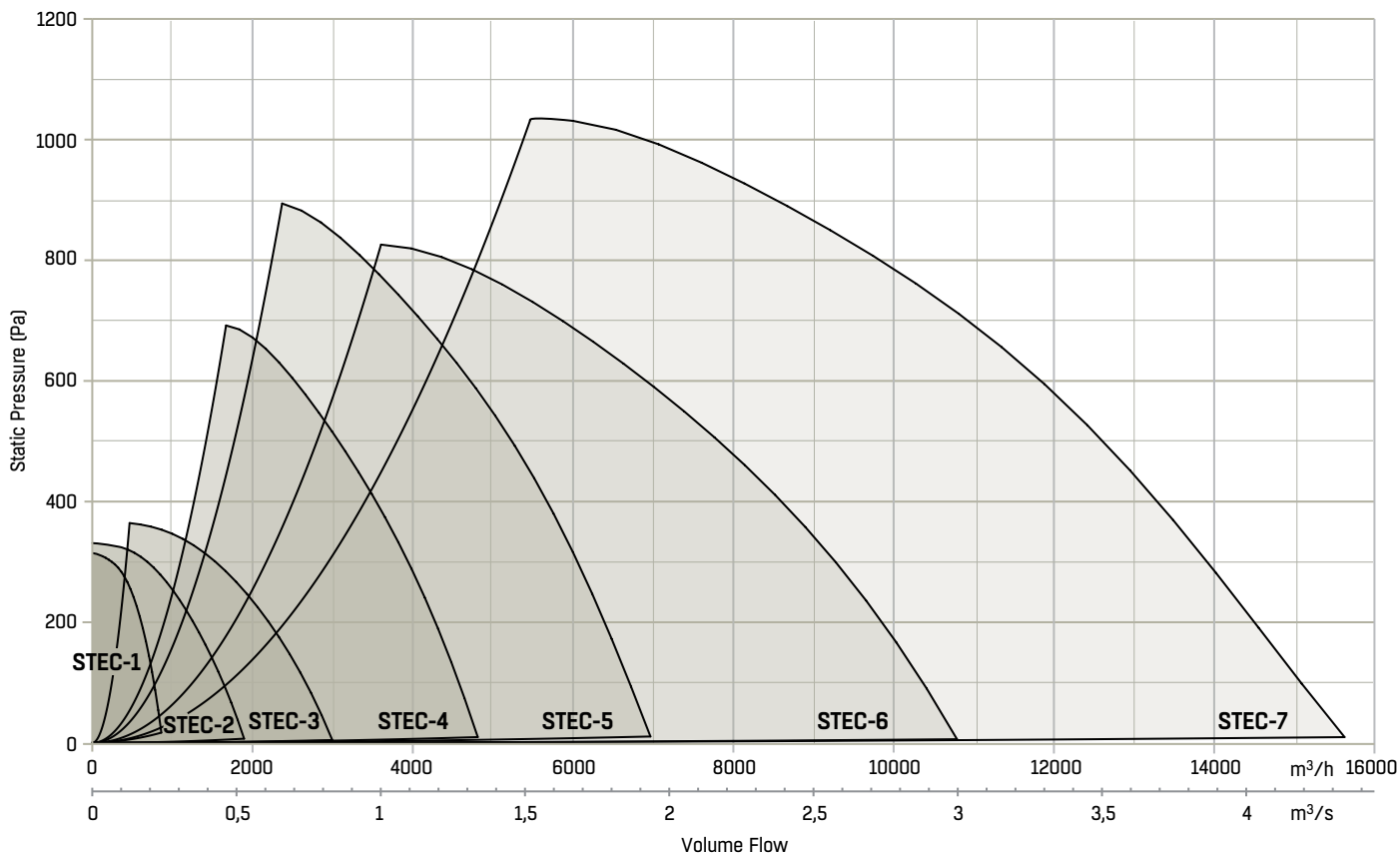
STYZ-01-51
Potentiometer



STEZ-60
Painted finish,
RAL classic colors

PERFORMANCE DATA AND TABLES

ROOFMASTER STEC



MAX VOLUME FLOW RATE m³/s AS FUNCTION OF STATIC PRESSURE

Size	Pressure (Pa)																			
	50	100	150	200	250	300	350	400	450	500	550	600	650	700	750	800	850	900	950	1000
STEC-1	0,231	0,214	0,195	0,17	0,137	0,067														
STEC-2	0,495	0,453	0,406	0,35	0,283	0,191														
STEC-3	0,791	0,74	0,68	0,612	0,53	0,427	0,26													
STEC-4	1,308	1,271	1,231	1,19	1,144	1,095	1,042	0,984	0,921	0,854	0,781	0,701	0,608							
STEC-5	1,903	1,862	1,819	1,776	1,73	1,682	1,631	1,576	1,518	1,455	1,385	1,31	1,229	1,141	1,047	0,945	0,827			
STEC-6	2,942	2,879	2,81	2,737	2,66	2,576	2,486	2,389	2,284	2,171	2,05	1,92	1,78	1,628	1,457	1,241				
STEC-7	4,26	4,19	4,109	4,028	3,945	3,864	3,78	3,69	3,6	3,503	3,4	3,288	3,167	3,035	2,89	2,73	2,556	2,37	2,164	1,919

Volume flow rate m³/s

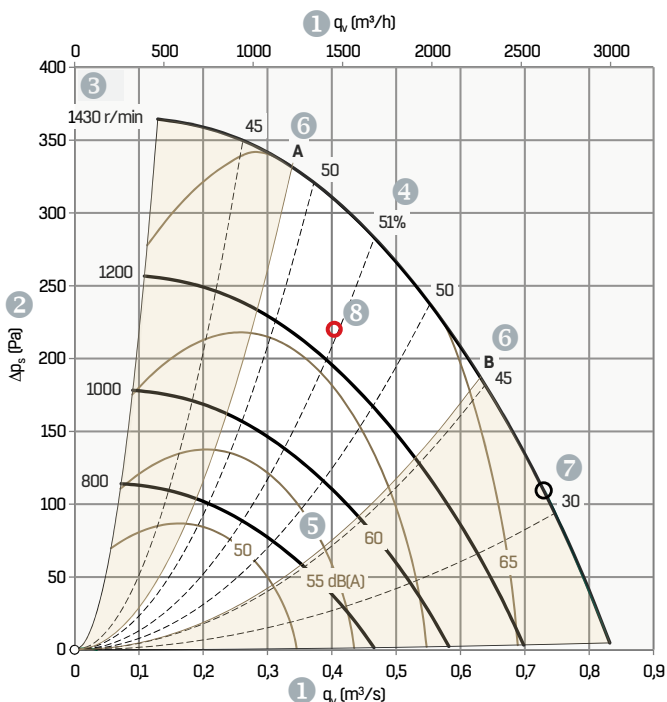
MAX VOLUME FLOW RATE m³/h AS FUNCTION OF STATIC PRESSURE

Size	Pressure (Pa)																			
	50	100	150	200	250	300	350	400	450	500	550	600	650	700	750	800	850	900	950	1000
STEC-1	832	770	702	612	493	241														
STEC-2	1782	1631	1462	1260	1019	688														
STEC-3	2848	2664	2448	2203	1908	1537	936													
STEC-4	4709	4576	4432	4284	4118	3942	3751	3542	3316	3074	2812	2524	2189							
STEC-5	6851	6703	6548	6394	6228	6055	5872	5674	5465	5238	4986	4716	4424	4108	3769	3402	2977			
STEC-6	10591	10364	10116	9853	9576	9274	8950	8600	8222	7816	7380	6912	6408	5861	5245	4468				
STEC-7	15336	15084	14792	14501	14202	13910	13608	13284	12960	12611	12240	11837	11401	10926	10404	9828	9202	8532	7790	6908

Volume flow rate m³/h

FAN CHART EXPLANATION AND DEFINITIONS

SYMBOLS



- ① q_v Volume flow rate m³/s, m³/h
- ② Δp_s Fan static pressure Pa
- ③ Fan max speed r/min
- ④ η Overall static efficiency at max r/min %
- ⑤ L_{WA} A-weighted total sound level to surroundings dB(A)
- L_{Woct} Sound power level by octave bands (without A-weighting) dB
- K_{oct} Correction when diving into different octave bands dB
- ΔL Remote attenuation (given values calculated for an ideal case in a halfspace) dB
- ⑥ Border line for octave band correction A, B
- ⑦ q_{nom} Nominal flow rate (m³/s)
- ⑧ See Example on this page

SOUND DATA

The total **A-weighted sound power level** to surroundings, L_{WA} , can be read in the fan chart. The correction coefficients K_{oct} by octave bands can be read in the table below the fan chart. The sound power level by octave band to the duct or to the surroundings (without A-weighting) can be obtained by using the following formula:

$$L_{Woct} = L_{WA} + K_{oct}$$

SOUND PRESSURE LEVEL AND REMOTE ATTENUATION

Distance L (m)	1	3	5	10	15	20	25	30	40
Attenuation ΔL (dB)	7	17	22	28	31	34	36	37	40

The total sound pressure level to surroundings at different distances can be estimated using the following formula:

$$L_{pA} = L_{WA} - \Delta L$$

EXAMPLE

Sound pressure level L_{pA} at 10 m distance:

Operation point 0,4 m³/s / 200 Pa

$L_{WA} = 61$ dB(A) according to fan chart

⇒ L_{pA} at 10 m: 61 dB(A) – 28 dB(A) = 33 dB(A)

The operation point and L_{WA} are presented in the above fan chart and table.

THE SYMBOLS USED:

Fan code = fan type and size.

Capacity zone

- left-A refers to the area from the left hand side to the system curve marked with A.
- A-B refers to the area between the system curves marked with A and B.
- B-right refers to the area from the system curve marked with B to the right hand side

Min r/min = minimum fan speed where the sound power level correction K_{oct} is still applicable.

Max r/min = maximum fan speed where the sound power level correction K_{oct} is still applicable.

Correction = Sound power level correction factors K_{oct} for the octave bands 63 to 8000 Hz.

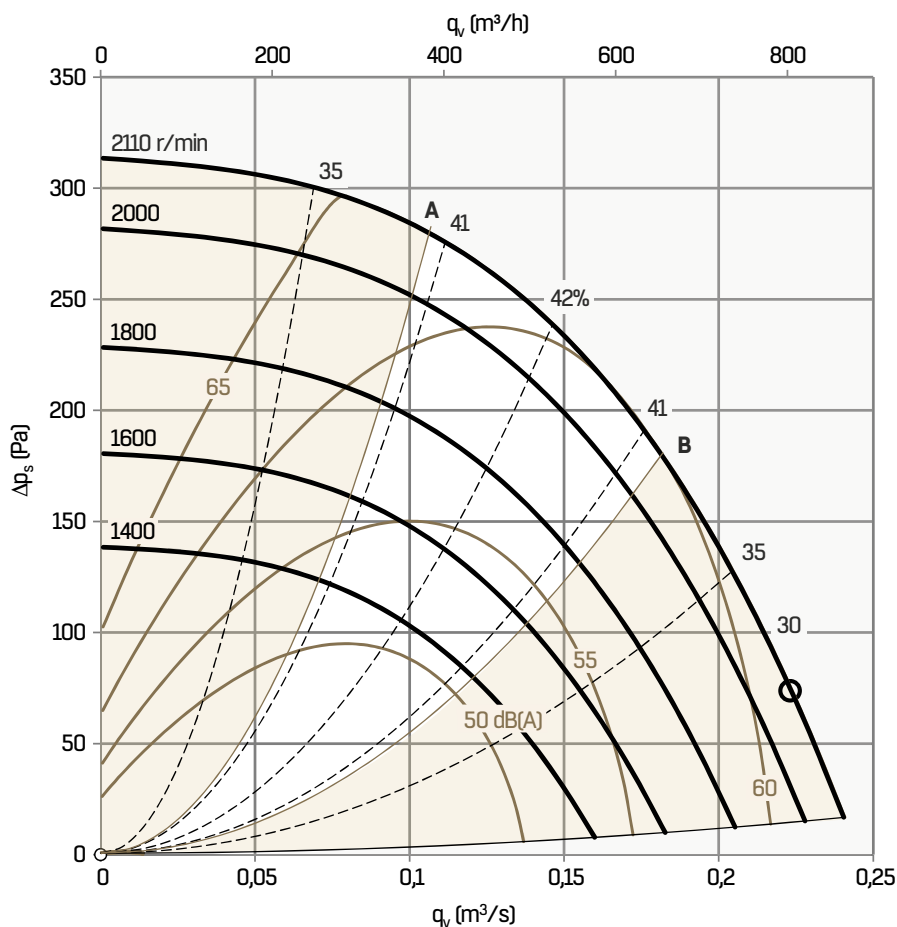
FAN DATA

The fan data is presented using fan-motor-speed controller combination. For nominal flow rate, see each size.

The fan data is presented at density 1.2 kg/m³ and tested according to ISO 5801 and ISO 13347-2.

TECHNICAL DATA - STEC-1

FAN DATA



Nominal flow rate according to Regulation 1253/2014 is 0.223 m³/s. The fan is classified as NRVU-UVU.

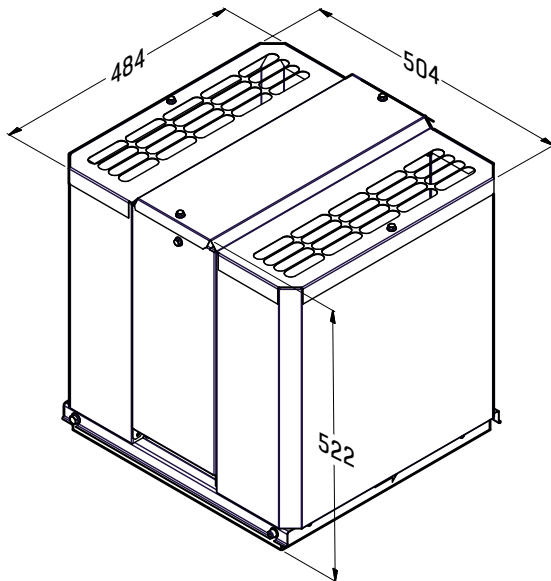
SOUND DATA

Fan code	Capacity zones		Sound path	Min r/min	Max r/min	Correction K_{oct} (dB) in octave band mid-frequency (Hz)							
	Left	Right				63	125	250	500	1000	2000	4000	8000
STEC-1	Left	A	Surroundings	0	1533	3	7	5	-2	-11	-14	-22	-21
	Left	A	Surroundings	1533	2110	-3	3	6	-3	-10	-12	-19	-21
	Left	A	Inlet duct	0	1533	7	11	8	1	-3	-9	-12	-18
	Left	A	Inlet duct	1533	2110	0	6	6	-1	-5	-9	-14	-19
STEC-1	A	B	Surroundings	0	1533	-3	4	3	-2	-8	-8	-18	-19
	A	B	Surroundings	1533	2110	-7	-1	4	-2	-8	-9	-15	-15
	A	B	Inlet duct	0	1533	-2	2	3	-1	-3	-2	-10	-16
	A	B	Inlet duct	1533	2110	-6	-3	1	-3	-3	-5	-7	-11
STEC-1	B	Right	Surroundings	0	1533	-3	4	2	-3	-9	-6	-18	-20
	B	Right	Surroundings	1533	2110	-7	-2	3	-2	-7	-9	-13	-15
	B	Right	Inlet duct	0	1533	-3	2	1	-2	-2	2	-9	-17
	B	Right	Inlet duct	1533	2110	-7	-3	2	-3	-3	-3	-3	-10

For information how to calculate sound data, sound pressure level and remote attenuation, see page 7.

TECHNICAL DATA - STEC-1

DIMENSIONS AND WEIGHT



Weight: 20 kg
 Roof free outlet area: 0,059 m²

PRODUCT CODE

Roof Fan STEC-1-10b-c-0-1

Size (a) _____

Motor type (bbb) _____
 1 = 1-phase motor

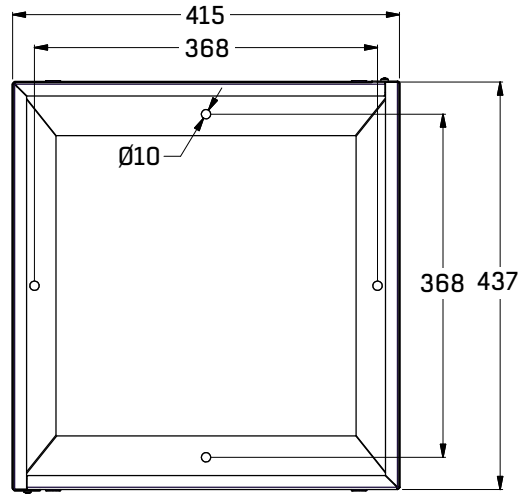
Insulation (bbb) _____
 0 = insulated version

Accessory package (bbb) _____
 0 = basic
 1 = including safety switch, installed
 2 = including safety switch and EC controller, installed
 3 = including pressure controller, installed
 4 = including safety switch and pressure controller, installed

Material (c) _____
 1 = painted galvanised sheet metal, black
 2 = ZM275 coated sheet metal

Construction (d) _____
 0 = standard

Generation (e) _____



Mounting frame (included in delivery)

FAN AND MOTOR DATA

Fan code	Nom. power kW	Supply voltage	Max Speed r/min	Min Speed r/min	Nom current A
STEC-1	0.082	1-230VAC 50 Hz	2110	400	0.7

ACCESSORIES

Roof curb	BOGA-01-b-c-d
Mounting plate	STEZ-04-1
Inlet sound attenuator	STEZ-07-1
Thermostat with sensor	STYZ-01-30-0-0
Clock	STYZ-01-40-0-0
Potentiometer (EC)	STYZ-01-51-0-1
Painted finish	STEZ-60-5-c-11

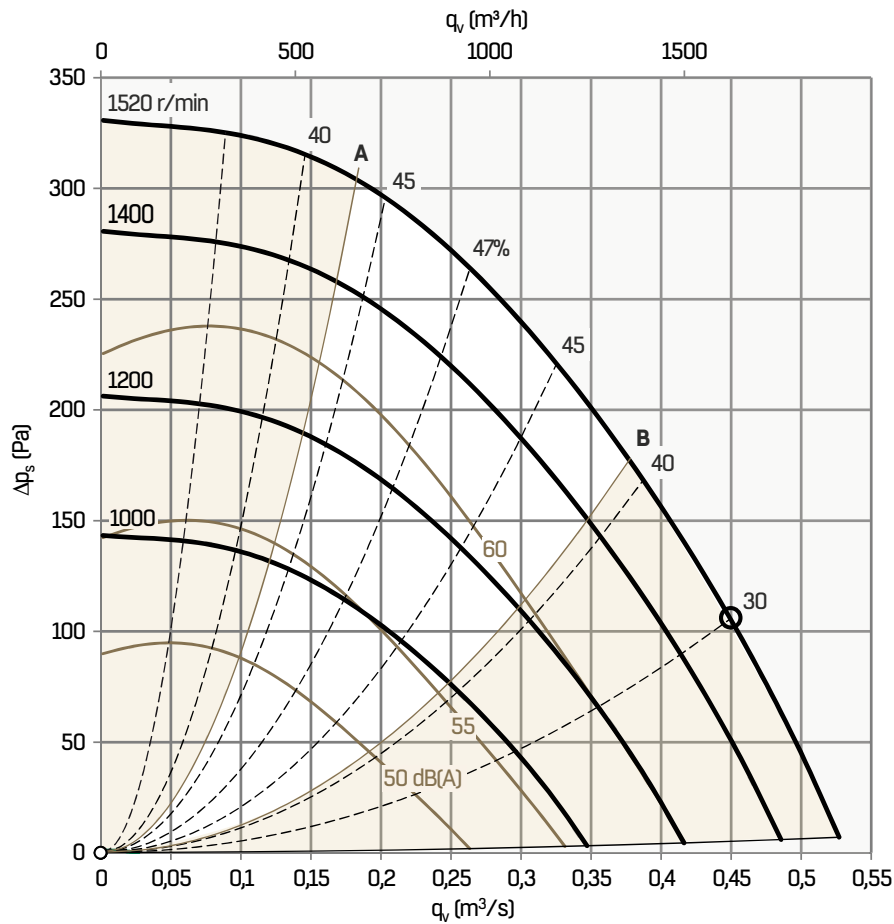
WIRING

A	STEC-1-101-c-0-1	(fan packages 0 & 1)
B	STEC-1-102-c-0-1	(fan package 2)
C	STEC-1-104-c-0-1	(fan packages 3 & 4)

See corresponding wiring diagram on pages 28 - 32.

TECHNICAL DATA - STEC-2

FAN DATA



Nominal flow rate according to Regulation 1253/2014 is 0.446 m³/s. The fan is classified as NRVU-UVU.

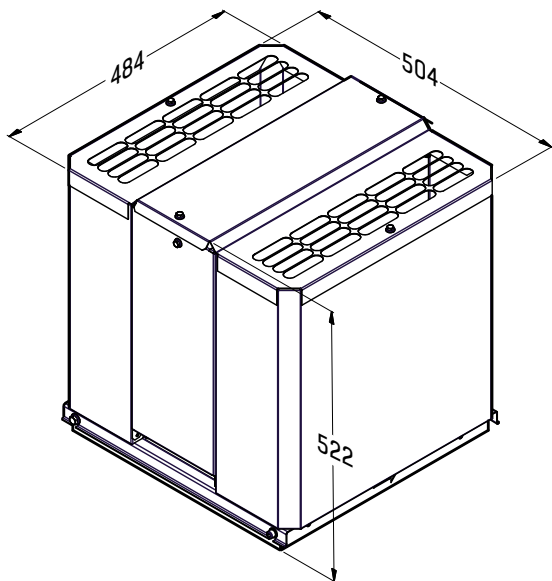
SOUND DATA

Fan code	Capacity zones		Sound path	Min r/min	Max r/min	Correction K_{oct} (dB) in octave band mid-frequency (Hz)							
	Left	Right				63	125	250	500	1000	2000	4000	8000
STEC-2	Left	A	Surroundings	0	894	6	3	3	-1	-8	-12	-18	-19
	Left	A	Surroundings	894	1520	2	6	3	-2	-6	-13	-19	-26
	Left	A	Inlet duct	0	894	10	3	1	-3	-9	-10	-12	-18
	Left	A	Inlet duct	894	1520	7	7	3	-2	-8	-9	-13	-20
STEC-2	A	B	Surroundings	0	894	4	4	4	-1	-8	-14	-18	-20
	A	B	Surroundings	894	1520	-2	5	3	-2	-6	-13	-20	-27
	A	B	Inlet duct	0	894	5	1	0	-3	-9	-11	-12	-18
	A	B	Inlet duct	894	1520	-1	4	0	-4	-9	-10	-14	-21
STEC-2	B	Right	Surroundings	0	894	1	4	4	-1	-8	-13	-18	-20
	B	Right	Surroundings	894	1520	-4	4	3	-1	-6	-14	-20	-28
	B	Right	Inlet duct	0	894	5	4	4	-1	-7	-9	-10	-16
	B	Right	Inlet duct	894	1520	-4	2	-1	-5	-10	-13	-15	-21

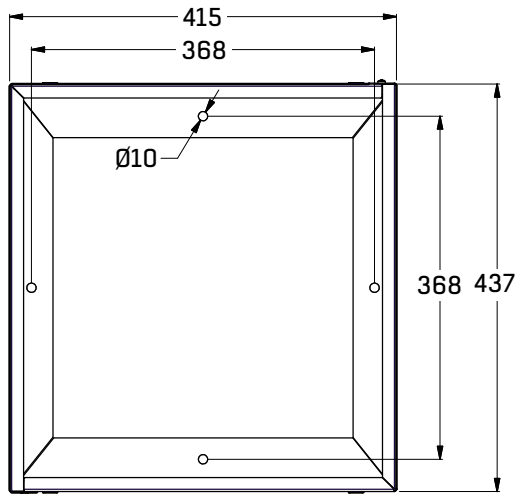
For information how to calculate sound data, sound pressure level and remote attenuation, see page 7.

TECHNICAL DATA - STEC-2

DIMENSIONS AND WEIGHT



Weight: 23 kg
 Roof free outlet area: 0,059 m²



Mounting frame (included in delivery)

PRODUCT CODE

Roof Fan **STEC-2-10b-c-0-1**

Size (a) _____

Motor type (bbb) _____
 1 = 1-phase motor

Insulation (bbb) _____
 0 = insulated version

Accessory package (bbb) _____
 0 = basic
 1 = including safety switch, installed
 2 = including safety switch and EC controller, installed
 3 = including pressure controller, installed
 4 = including safety switch and pressure controller, installed

Material (c) _____
 1 = painted galvanised sheet metal, black
 2 = ZM275 coated sheet metal

Construction (d) _____
 0 = standard

Generation (e) _____

FAN AND MOTOR DATA

Fan code	Nom. power kW	Supply voltage	Max Speed r/min	Min Speed r/min	Nom current A
STEC-2	0.15	1-230VAC 50 Hz	1520	280	1.2

ACCESSORIES

Roof curb	BOGA-02-b-c-d
Mounting plate	STEZ-04-2
Inlet sound attenuator	STEZ-07-2
Thermostat with sensor	STYZ-01-30-0-0
Clock	STYZ-01-40-0-0
Potentiometer (EC)	STYZ-01-51-0-1
Painted finish	STEZ-60-5-c-12

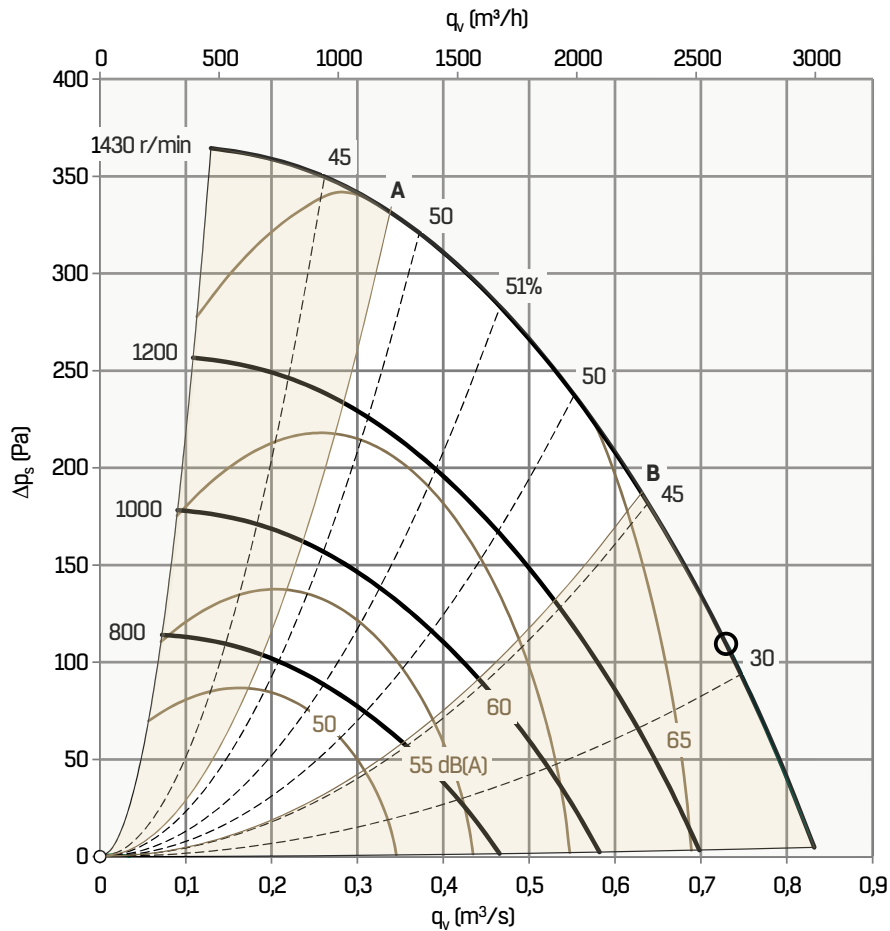
WIRING

A	STEC-2-101-c-0-1	(fan packages 0 & 1)
B	STEC-2-102-c-0-1	(fan package 2)
C	STEC-2-104-c-0-1	(fan packages 3 & 4)

See corresponding wiring diagram on pages 28 - 32.

TECHNICAL DATA - STEC-3

FAN DATA



Nominal flow rate according to Regulation 1253/2014 is 0.73 m³/s. The fan is classified as NRVU-UVU.

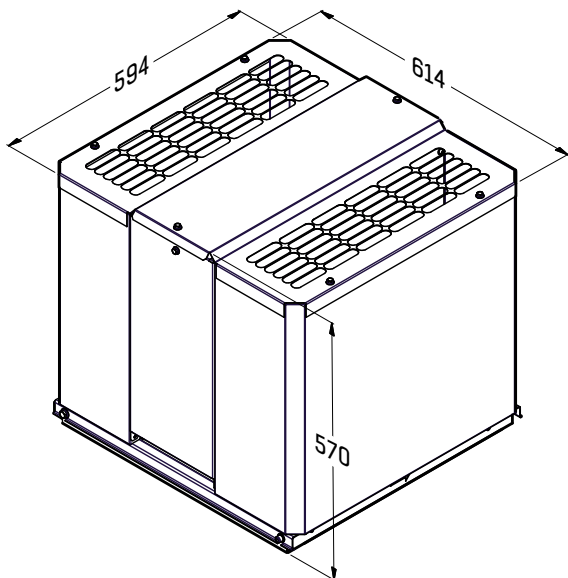
SOUND DATA

Fan code	Capacity zones		Sound path	Min r/min	Max r/min	Correction K_{oct} (dB) in octave band mid-frequency (Hz)							
	Left	Right				63	125	250	500	1000	2000	4000	8000
STEC-3	Left	A	Surroundings	0	894	8	5	4	-1	-8	-14	-23	-21
	Left	A	Surroundings	894	1430	4	7	3	-2	-6	-14	-20	-23
	Left	A	Inlet duct	0	894	11	7	3	-2	-8	-11	-15	-19
	Left	A	Inlet duct	894	1430	7	11	3	-4	-8	-10	-14	-22
STEC-3	A	B	Surroundings	0	894	4	5	5	-2	-8	-15	-24	-23
	A	B	Surroundings	894	1430	-1	5	2	-1	-6	-13	-20	-26
	A	B	Inlet duct	0	894	3	2	1	-4	-10	-11	-13	-21
	A	B	Inlet duct	894	1430	-2	3	0	-4	-8	-11	-14	-22
STEC-3	B	Right	Surroundings	0	894	3	6	5	-2	-9	-16	-25	-23
	B	Right	Surroundings	894	1430	-2	6	2	-1	-6	-14	-21	-28
	B	Right	Inlet duct	0	894	3	3	6	-2	-9	-9	-16	-21
	B	Right	Inlet duct	894	1430	-2	5	1	-2	-6	-9	-13	-20

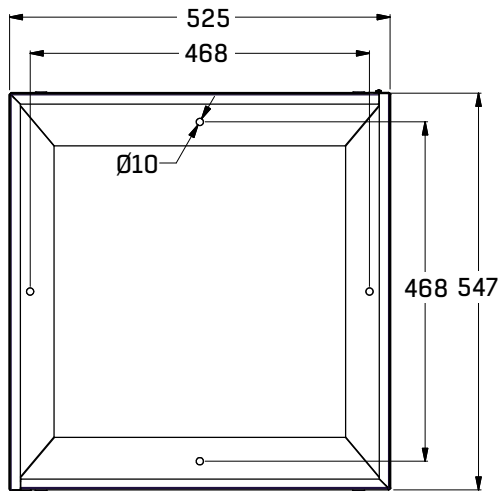
For information how to calculate sound data, sound pressure level and remote attenuation, see page 7.

TECHNICAL DATA - STEC-3

DIMENSIONS AND WEIGHT



Weight: 30 kg
 Roof free outlet area: 0.106 m²



Mounting frame (included in delivery)

PRODUCT CODE

Roof Fan **STEC-3-10b-c-0-1**

Size (a) _____

Motor type (bbb) _____
 1 = 1-phase motor

Insulation (bbb) _____
 0 = insulated version

Accessory package (bbb) _____
 0 = basic
 1 = including safety switch, installed
 2 = including safety switch and EC controller, installed
 3 = including pressure controller, installed
 4 = including safety switch and pressure controller, installed

Material (c) _____
 1 = painted galvanised sheet metal, black
 2 = ZM275 coated sheet metal

Construction (d) _____
 0 = standard

Generation (e) _____

FAN AND MOTOR DATA

Fan code	Nom. power kW	Supply voltage	Max Speed r/min	Min Speed r/min	Nom current A
STEC-3	0.25	1-230VAC 50 Hz	1430	270	1.1

ACCESSORIES

- Roof curb BOGA-03-b-c-d
- Mounting plate STEZ-04-3
- Inlet sound attenuator STEZ-07-3
- Thermostat with sensor STYZ-01-30-0-0
- Clock STYZ-01-40-0-0
- Potentiometer (EC) STYZ-01-51-0-1
- Painted finish STEZ-60-5-c-13

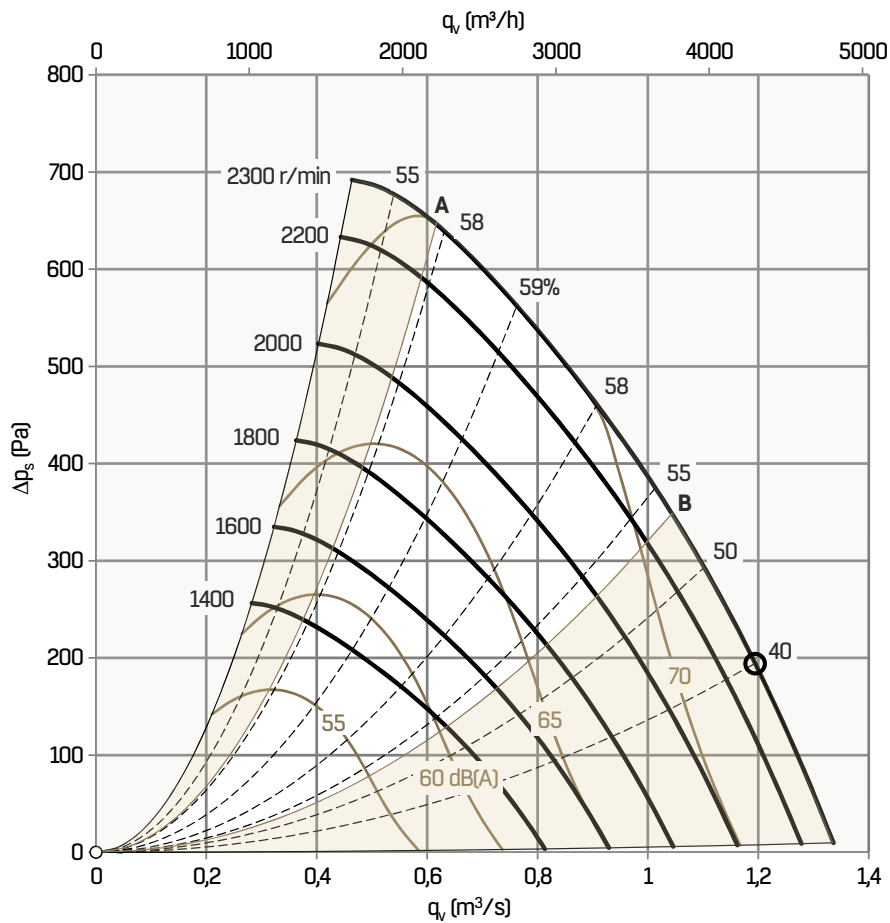
WIRING

- A STEC-3-101-c-0-1 (fan packages 0 & 1)
- B STEC-3-102-c-0-1 (fan package 2)
- C STEC-3-104-c-0-1 (fan packages 3 & 4)

See corresponding wiring diagram on pages 28 - 32.

TECHNICAL DATA - STEC-4

FAN DATA



Nominal flow rate according to Regulation 1253/2014 is 1.203 m³/s. The fan is classified as NRVU-UVU.

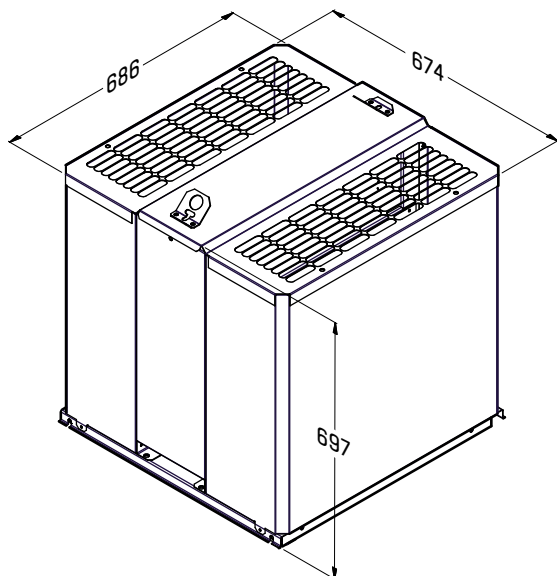
SOUND DATA

Fan code	Capacity zones		Sound path	Min r/min	Max r/min	Correction K_{oct} (dB) in octave band mid-frequency (Hz)							
	Left	Right				63	125	250	500	1000	2000	4000	8000
STEC-4	Left	A	Surroundings	0	1789	5	5	-1	-2	-6	-8	-13	-21
			Surroundings	1789	2300	-2	0	2	-3	-8	-8	-10	-16
	Left	A	Inlet duct	0	1789	7	11	6	1	-1	-1	-6	-14
			Inlet duct	1789	2300	1	6	6	0	-5	-1	-3	-10
STEC-4	A	B	Surroundings	0	1789	-1	5	0	-2	-7	-8	-13	-22
			Surroundings	1789	2300	-4	-1	0	-1	-7	-10	-10	-15
	A	B	Inlet duct	0	1789	-4	6	5	0	-3	0	-5	-16
			Inlet duct	1789	2300	-8	-1	8	2	-5	-3	0	-7
STEC-4	B	Right	Surroundings	0	1789	0	3	0	-2	-7	-8	-11	-22
			Surroundings	1789	2300	-4	-1	0	-1	-7	-10	-12	-14
	B	Right	Inlet duct	0	1789	-4	6	7	1	-2	4	3	-10
			Inlet duct	1789	2300	-5	0	7	2	-4	-4	-2	-1

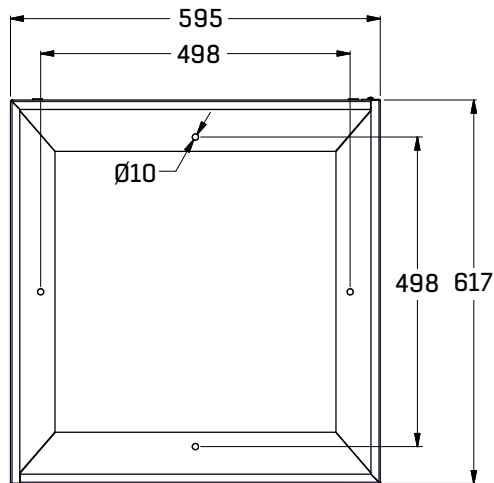
For information how to calculate sound data, sound pressure level and remote attenuation, see page 7.

TECHNICAL DATA - STEC-4

DIMENSIONS AND WEIGHT



Weight: 47 kg
 Roof free outlet area: 0.165 m²



Mounting frame (included in delivery)

PRODUCT CODE

Roof Fan STEC-4-10b-c-0-1

Size (a) _____

Motor type (bbb) _____
 1 = 1-phase motor

Insulation (bbb) _____
 0 = insulated version

Accessory package (bbb) _____
 0 = basic
 1 = including safety switch, installed
 2 = including safety switch and EC controller, installed
 3 = including pressure controller, installed
 4 = including safety switch and pressure controller, installed

Material (c) _____
 1 = painted galvanised sheet metal, black
 2 = ZM275 coated sheet metal

Construction (d) _____
 0 = standard

Generation (e) _____

FAN AND MOTOR DATA

Fan code	Nom. power kW	Supply voltage	Max Speed r/min	Min Speed r/min	Nom current A
STEC-4	0.75	1-230VAC 50 Hz	2300	380	3.1

ACCESSORIES

Roof curb	BOGA-04-b-c-d
Mounting plate	STEZ-04-4
Inlet sound attenuator	STEZ-07-4
Thermostat with sensor	STYZ-01-30-0-0
Clock	STYZ-01-40-0-0
Potentiometer (EC)	STYZ-01-51-0-1
Painted finish	STEZ-60-5-c-14

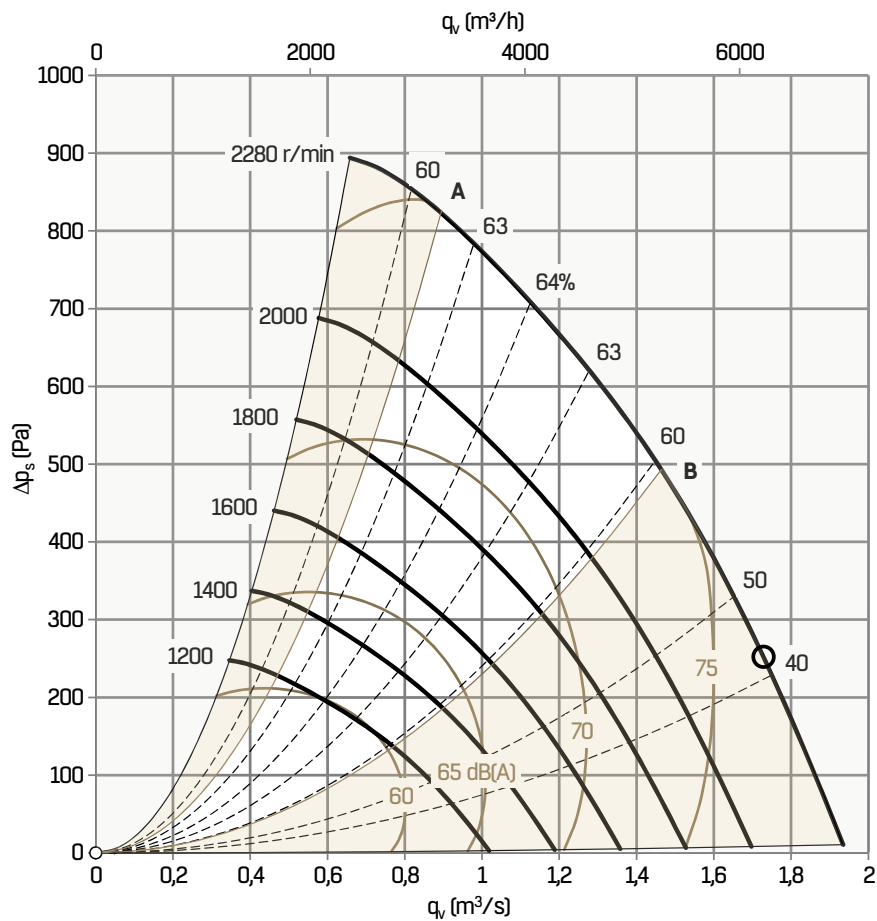
WIRING

A	STEC-4-101-c-0-1	(fan packages 0 & 1)
B	STEC-4-102-c-0-1	(fan package 2)
C	STEC-4-104-c-0-1	(fan packages 3 & 4)

See corresponding wiring diagram on pages 28 - 32.

TECHNICAL DATA - STEC-5

FAN DATA



Nominal flow rate according to Regulation 1253/2014 is 1.733 m³/s. The fan is classified as NRVU-UVU.

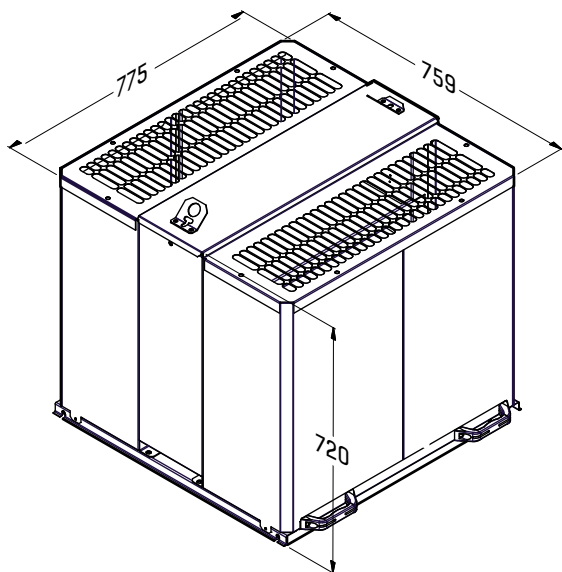
SOUND DATA

Fan code	Capacity zones		Sound path	Min r/min	Max r/min	Correction K_{oct} (dB) in octave band mid-frequency (Hz)							
	Left	Right				63	125	250	500	1000	2000	4000	8000
STEC-5	Left	A	Surroundings	0	894	6	0	-2	-4	-3	-9	-19	-23
	Left	A	Surroundings	894	1789	0	5	0	-5	-6	-7	-12	-20
	Left	A	Surroundings	1789	2280	-5	0	4	-5	-9	-8	-9	-15
	Left	A	Inlet duct	0	894	6	3	0	-1	-1	-3	-12	-20
	Left	A	Inlet duct	894	1789	-1	6	1	-3	-5	-3	-8	-17
	Left	A	Inlet duct	1789	2280	-6	1	4	-2	-8	-4	-5	-11
STEC-5	A	B	Surroundings	0	894	6	1	1	-3	-4	-10	-19	-22
	A	B	Surroundings	894	1789	0	2	-1	-3	-5	-8	-12	-21
	A	B	Surroundings	1789	2280	-4	-3	4	-3	-8	-9	-11	-15
	A	B	Inlet duct	0	894	4	3	1	0	-2	-2	-11	-19
	A	B	Inlet duct	894	1789	-3	5	1	-1	-3	0	-6	-15
	A	B	Inlet duct	1789	2280	-8	-5	3	-3	-7	-4	-4	-8
STEC-5	B	Right	Surroundings	0	894	6	2	1	-3	-5	-9	-15	-25
	B	Right	Surroundings	894	1789	0	3	-1	-4	-7	-7	-9	-18
	B	Right	Surroundings	1789	2280	-4	-2	3	-2	-8	-10	-13	-11
	B	Right	Inlet duct	0	894	6	5	2	0	4	2	-5	-20
	B	Right	Inlet duct	894	1789	-3	5	4	-1	-3	2	1	-9
	B	Right	Inlet duct	1789	2280	-8	-4	4	-2	-7	-5	-6	-1

For information how to calculate sound data, sound pressure level and remote attenuation, see page 7.

TECHNICAL DATA - STEC-5

DIMENSIONS AND WEIGHT



Weight: 57 kg
 Roof free outlet area: 0.208 m²

PRODUCT CODE

Roof Fan **STEC-5-30b-c-0-1**

Size (a) _____

Motor type (bbb) _____
 3 = 3-phase motor

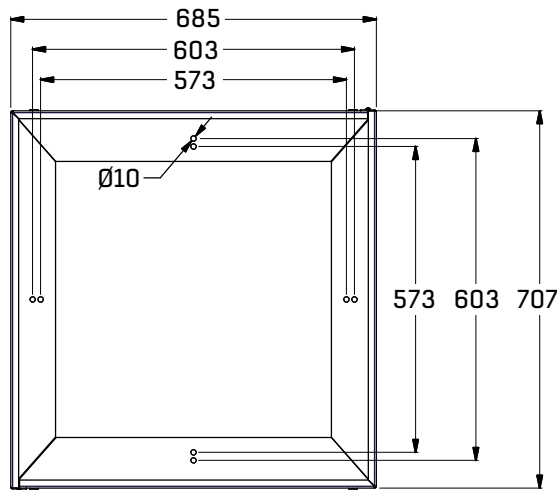
Insulation (bbb) _____
 0 = insulated version

Accessory package (bbb) _____
 0 = basic
 1 = including safety switch, installed
 2 = including safety switch and EC controller, installed
 3 = including pressure controller, installed
 4 = including safety switch and pressure controller, installed

Material (c) _____
 1 = painted galvanised sheet metal, black
 2 = ZM275 coated sheet metal

Construction (d) _____
 0 = standard

Generation (e) _____



Mounting frame (included in delivery)

FAN AND MOTOR DATA

Fan code	Nom. power kW	Supply voltage	Max Speed r/min	Min Speed r/min	Nom current A
STEC-5	1.3	3-400VAC 50 Hz	2280	380	2.0

ACCESSORIES

- Roof curb BOGA-05-b-c-d
- Mounting plate STEZ-04-5
- Inlet sound attenuator STEZ-07-5
- Thermostat with sensor STYZ-01-30-0-0
- Clock STYZ-01-40-0-0
- Potentiometer (EC) STYZ-01-51-0-1
- Painted finish STEZ-60-5-c-15

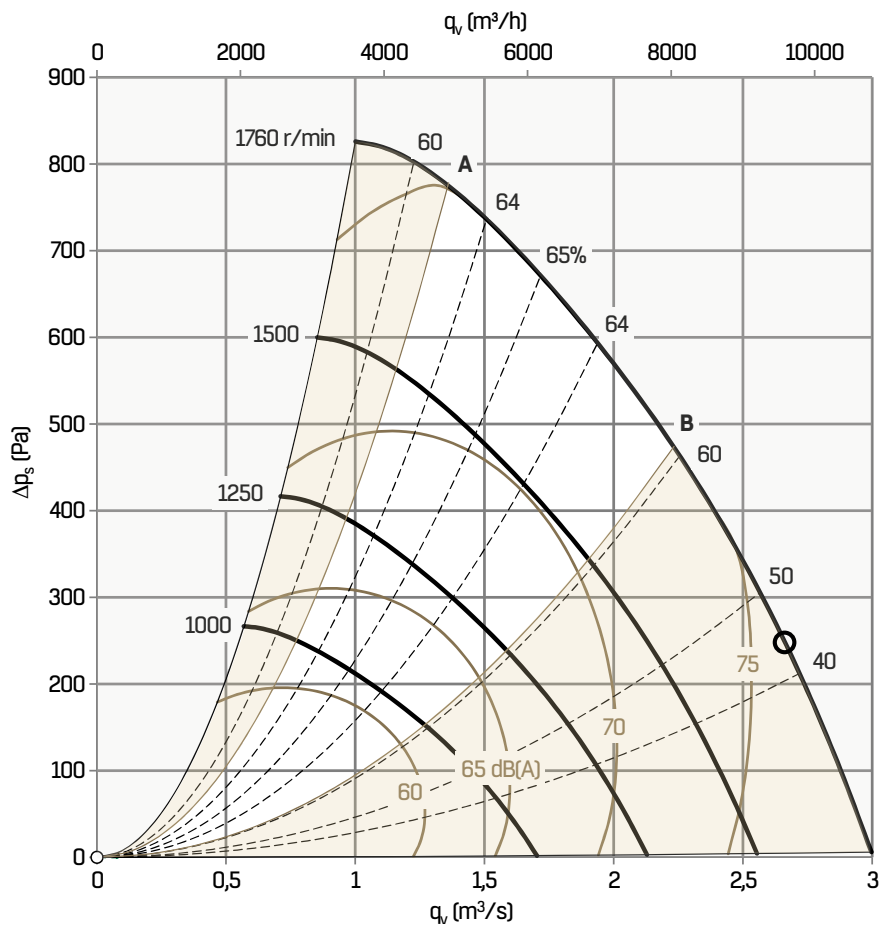
WIRING

- A STEC-5-301-c-0-1 (fan packages 0 & 1)
- B STEC-5-302-c-0-1 (fan package 2)
- C STEC-5-304-c-0-1 (fan packages 3 & 4)

See corresponding wiring diagram on pages 28 - 32.

TECHNICAL DATA - STEC-6

FAN DATA



Nominal flow rate according to Regulation 1253/2014 is 2.66 m³/s. The fan is classified as NRVU-UVU.

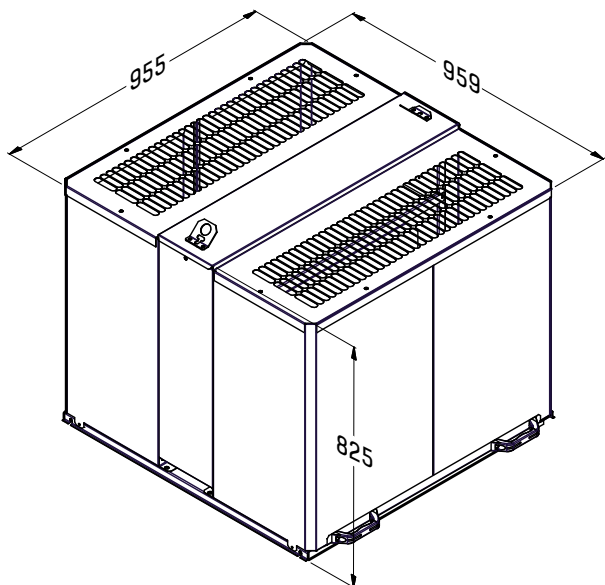
SOUND DATA

Fan code	Capacity zones		Sound path	Min r/min	Max r/min	Correction K_{oct} (dB) in octave band mid-frequency (Hz)							
	Left	Right				63	125	250	500	1000	2000	4000	8000
STEC-6	Left	A	Surroundings	0	894	5	0	5	-2	-7	-15	-24	-28
	Left	A	Surroundings	894	1760	0	5	0	-5	-6	-6	-12	-20
	Left	A	Inlet duct	0	894	5	2	6	2	-5	-9	-14	-18
	Left	A	Inlet duct	894	1760	-1	8	2	-4	-3	-2	-8	-15
STEC-6	A	B	Surroundings	0	894	4	-1	5	-2	-7	-15	-25	-28
	A	B	Surroundings	894	1760	-1	2	2	-3	-7	-8	-12	-20
	A	B	Inlet duct	0	894	5	1	5	0	-4	-11	-18	-21
	A	B	Inlet duct	894	1760	-3	5	4	-1	-3	-2	-6	-13
STEC-6	B	Right	Surroundings	0	894	6	1	5	-4	-6	-10	-21	-27
	B	Right	Surroundings	894	1760	0	3	2	-3	-6	-9	-12	-18
	B	Right	Inlet duct	0	894	8	3	5	-3	3	1	-14	-21
	B	Right	Inlet duct	894	1760	-1	6	5	0	-2	-3	-4	-8

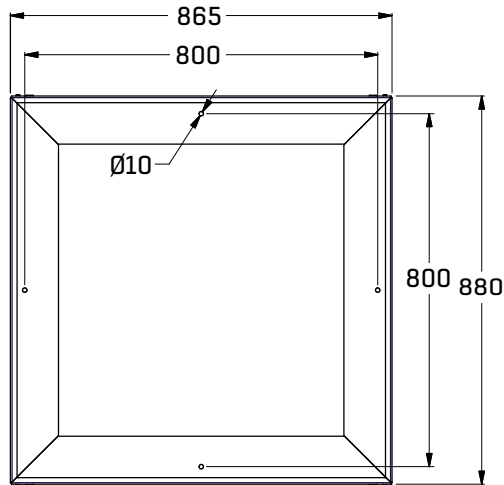
For information how to calculate sound data, sound pressure level and remote attenuation, see page 7.

TECHNICAL DATA - STEC-6

DIMENSIONS AND WEIGHT



Weight: 98 kg
 Roof free outlet area: 0.310 m²



Mounting frame (included in delivery)

PRODUCT CODE

Roof Fan **STEC-6-30b-c-0-1**

Size (a) _____

Motor type (bbb) _____
 3 = 3-phase motor

Insulation (bbb) _____
 0 = insulated version

Accessory package (bbb) _____
 0 = basic
 1 = including safety switch, installed
 2 = including safety switch and EC controller, installed
 3 = including pressure controller, installed
 4 = including safety switch and pressure controller, installed

Material (c) _____
 1 = painted galvanised sheet metal, black
 2 = ZM275 coated sheet metal

Construction (d) _____
 0 = standard

Generation (e) _____

FAN AND MOTOR DATA

Fan code	Nom. power kW	Supply voltage	Max Speed r/min	Min Speed r/min	Nom current A
STEC-6	1.8	3-400VAC 50 Hz	1760	320	2.7

ACCESSORIES

Roof curb	BOGA-06-b-c-d
Mounting plate	STEZ-04-6
Inlet sound attenuator	STEZ-07-6
Thermostat with sensor	STYZ-01-30-0-0
Clock	STYZ-01-40-0-0
Potentiometer (EC)	STYZ-01-51-0-1
Painted finish	STEZ-60-5-c-16

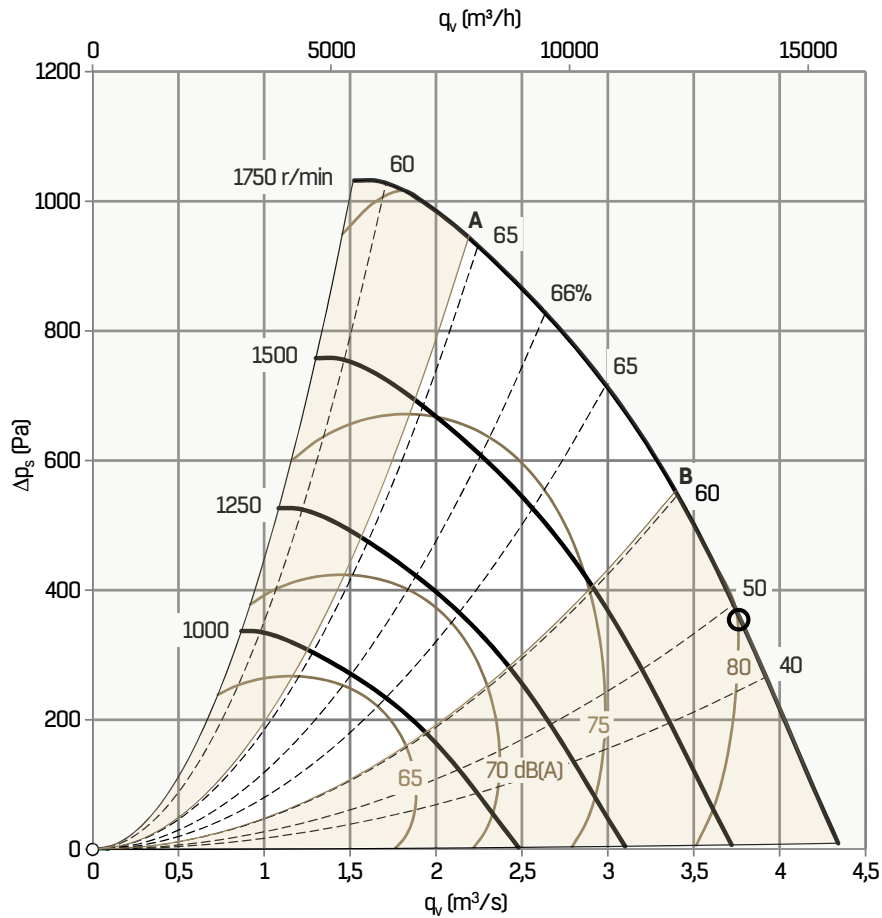
WIRING

A	STEC-6-301-c-0-1	(fan packages 0 & 1)
B	STEC-6-302-c-0-1	(fan package 2)
C	STEC-6-304-c-0-1	(fan packages 3 & 4)

See corresponding wiring diagram on pages 28 - 32.

TECHNICAL DATA - STEC-7

FAN DATA



Nominal flow rate according to Regulation 1253/2014 is 3.768 m³/s. The fan is classified as NRVU-UVU.

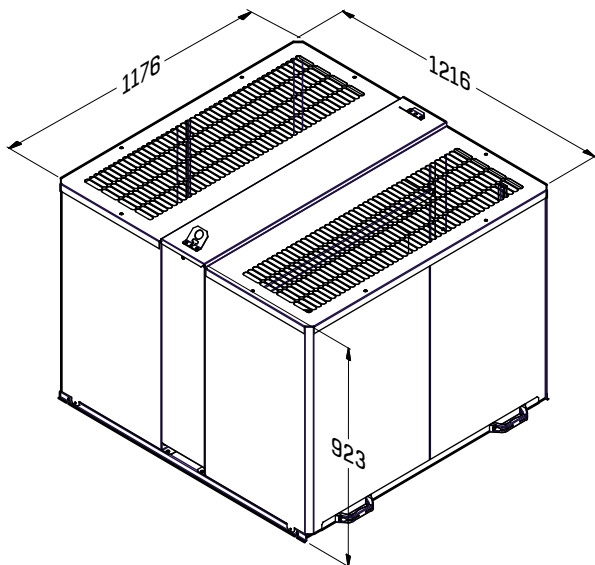
SOUND DATA

Fan code	Capacity zones		Sound path	Min r/min	Max r/min	Correction K_{oct} (dB) in octave band mid-frequency (Hz)							
	Left	Right				63	125	250	500	1000	2000	4000	8000
STEC-7	Left	A	Surroundings	0	894	8	4	0	-3	-4	-11	-18	-23
	Left	A	Surroundings	894	1750	1	8	-3	-7	-6	-6	-11	-18
	Left	A	Inlet duct	0	894	8	5	4	-1	-1	-3	-6	-6
	Left	A	Inlet duct	894	1750	-1	6	1	-6	-5	-4	-7	-12
STEC-7	A	B	Surroundings	0	894	9	6	2	-3	-6	-10	-15	-22
	A	B	Surroundings	894	1750	1	3	0	-4	-5	-9	-11	-14
	A	B	Inlet duct	0	894	11	7	6	-2	-2	-2	-3	-7
	A	B	Inlet duct	894	1750	1	9	6	-1	-4	-5	-6	-6
STEC-7	B	Right	Surroundings	0	894	9	5	1	-4	-7	-7	-13	-20
	B	Right	Surroundings	894	1750	1	4	-1	-3	-5	-9	-12	-14
	B	Right	Inlet duct	0	894	10	9	5	-2	-2	1	-1	-7
	B	Right	Inlet duct	894	1750	1	8	5	0	-4	-5	-6	-5

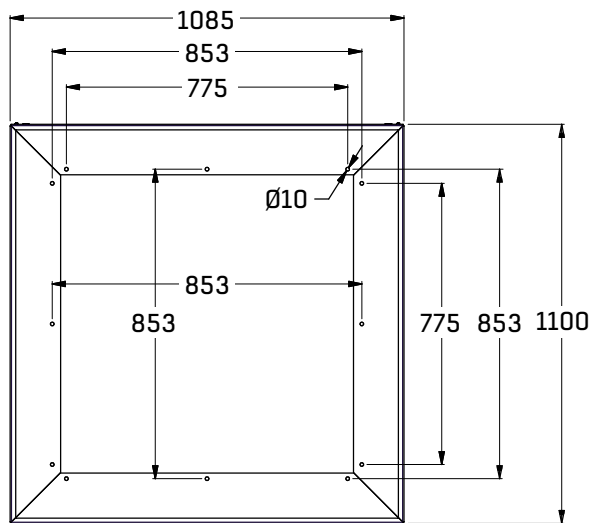
For information how to calculate sound data, sound pressure level and remote attenuation, see page 7.

TECHNICAL DATA - STEC-7

DIMENSIONS AND WEIGHT



Weight: 142 kg
 Roof free outlet area: 0.531 m²



Mounting frame (included in delivery)

PRODUCT CODE

Roof Fan STEC-7-30b-c-0-1

Size (a) _____

Motor type (bbb) _____
 3 = 3-phase motor

Insulation (bbb) _____
 0 = insulated version

Accessory package (bbb) _____
 0 = basic
 1 = including safety switch, installed
 2 = including safety switch and EC controller, installed
 3 = including pressure controller, installed
 4 = including safety switch and pressure controller, installed

Material (c) _____
 1 = painted galvanised sheet metal, black
 2 = ZM275 coated sheet metal

Construction (d) _____
 0 = standard

Generation (e) _____

FAN AND MOTOR DATA

Fan code	Nom. power kW	Supply voltage	Max Speed r/min	Min Speed r/min	Nom current A
STEC-7	3.15	3-400VAC 50 Hz	1750	300	4.8

ACCESSORIES

- Roof curb BOGA-07-b-c-d
- Mounting plate STEZ-04-7
- Inlet sound attenuator STEZ-07-7
- Thermostat with sensor STYZ-01-30-0-0
- Clock STYZ-01-40-0-0
- Potentiometer (EC) STYZ-01-51-0-1
- Painted finish STEZ-60-5-c-17

WIRING

- A STEC-7-301-c-0-1 (fan packages 0 & 1)
- B STEC-7-302-c-0-1 (fan package 2)
- C STEC-7-304-c-0-1 (fan packages 3 & 4)

See corresponding wiring diagram on pages 28 - 32.

ACCESSORIES INCLUDED IN FAN PACKAGES

SAFE - SAFETY SWITCH

The safety isolation switch (IP 55) has been tested according to IEC 947-3.

It can be ordered and supplied as a part of the roof fan, connected to cable. Please see the fan ordering codes.

Cable length is about 1 m.



EC CONTROLLER

With two built-in potentiometers included in the EC controller it is possible to get a single-speed or a two-speed operation. The relay output provides with alarm or running indication that can be selected by the DIP switch. Speed can also be controlled by 0 - 10 V via BMS (Building Management System).

The EC controller can be ordered and supplied as a part of the roof fan, connected to cable. Please see the fan ordering codes.

Internal cabling is carried out at the factory. Information for the user is available in the installation manual.

Modbus RTU communication with EC motor is still possible in fan sizes 3 - 7.



PRESSURE CONTROLLER

Pressure controller is used to keep a constant pressure in the duct system. It measures duct pressure and controls fan speed to achieve the pressure set point, which is set during commissioning. It is also possible to set two pressure set points, for night and day operation. Change between these set points can be made with an internal timer. An alarm relay is also available. Alarm is generated if there is a big difference between the set point and the actual value. Pressure controller can be read and programmed via Modbus RTU (RS485). All settings are saved in the event of power failure. The pressure controller is mounted

inside of the hatch in the roof fan's casing.

Duct pressure can be compensated with outdoor temperature by connecting a temperature sensor to the pressure controller.

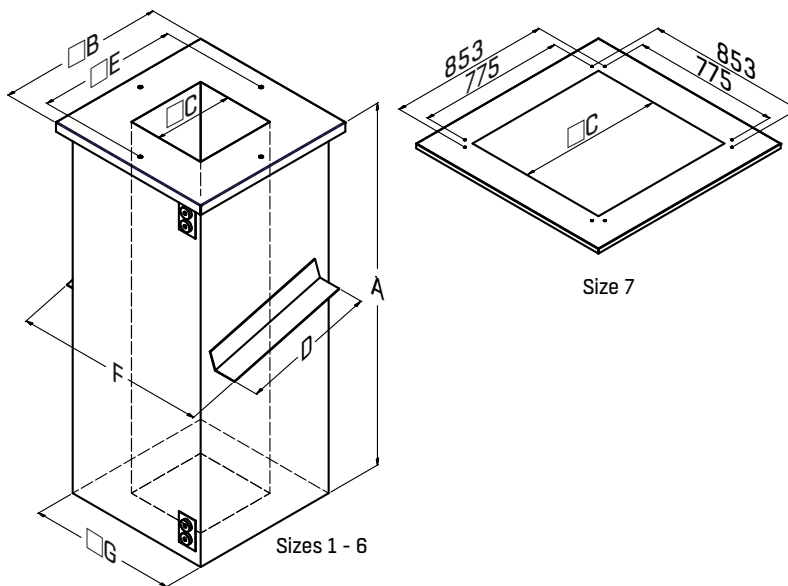
A separate sensor is delivered with the pressure controller.

Chimney effect during cold weather can be avoided with this function.

The pressure controller can be ordered and supplied as a part of the roof fan, connected to cable. Please see the fan ordering codes.



ACCESSORIES TO BE ORDERED SEPARATELY



BOGA - ROOF CURB WITH INSULATION EI60

The BOGA consists of a sheet metal duct, insulated inside with 60 mm thick mineral wool. The inner duct is made of perforated sheet metal. The roof curb is equipped with two cable glands and one built-in conduit which can accommodate two cables for electrical connection to the roof fan. Adjustable mounting brackets, which can be set to suit the pitch of the roof, are fitted to the outside of the roof curb. There are shutter plates located inside the roof curb. Roof fan can be installed on the roof curb using the mounting frame that is included in the roof fan delivery as standard. The roof curb is made of ZM275 -coated sheet metal.

Roof curb, EI60

BOGA-aa-1-4-2

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

Generation _____
 2

BOGA - ROOF CURB WITH INSULATION, EI120

The BOGA consists of a sheet metal duct, insulated inside with total 120 mm thick mineral wool. The inner duct is made of sheet metal, material thickness is 1,25 mm. The roof curb is equipped with two cable glands and one built-in conduit which can accommodate two cables for electrical connection to the roof fan. Adjustable mounting brackets, which can be set to suit the pitch of the roof, are fitted to the outside of the roof curb. There are shutter plates located inside the roof curb. Roof fan can be installed on the roof curb using the mounting frame that is included in the roof fan delivery as standard. The roof curb is made of ZM275 -coated sheet metal.

Roof curb, EI120

BOGA-aa-1-6-3

Size (aa) _____
 01, 02, 03, 04, 05, 06, 07

Back draught shutter (b) _____
 1 = with shutter

Height and insulation class (c) _____
 6 = 1200 mm, EI120, 120 mm insulation

Generation _____
 3

ACCESSORIES TO BE ORDERED SEPARATELY

BOGA DIMENSIONS AND WEIGHT

EI60, 60 MM INSULATION

Model	A	B	C	D	E	F	G	Weight (kg)
BOGA-01-1-4-2	1203	442	212	335	368	505	350	45
BOGA-02-1-4-2	1203	442	212	335	368	505	350	45
BOGA-03-1-4-2	1203	622	435	555	468	725	570	82
BOGA-04-1-4-2	1203	622	435	555	498	725	570	82
BOGA-05-1-4-2	1203	712	435	555	603	725	570	84
BOGA-06-1-4-2	1203	955	768	890	800	1060	905	134
BOGA-07-1-4-2	1203	1112	768	890	¹⁾	1060	905	138

¹⁾ See separate illustration for size 7.

EI120, 120 MM INSULATION

Model	A	B	C	D	E	F	G	Weight (kg)
BOGA-01-1-6-3	1203	522	212	455	368	628	472	70
BOGA-02-1-6-3	1203	522	212	455	368	628	472	70
BOGA-03-1-6-3	1203	742	435	675	468	848	692	110
BOGA-04-1-6-3	1203	742	435	675	498	848	692	110
BOGA-05-1-6-3	1203	742	435	675	603	848	692	110
BOGA-06-1-6-3	1203	1076	768	1010	800	1183	1028	175
BOGA-07-1-6-3	1203	1112	768	1010	¹⁾	1183	1028	180

¹⁾ See separate illustration for size 7.

SOUND ATTENUATION WHEN USING BOGA EI60, L = 1200

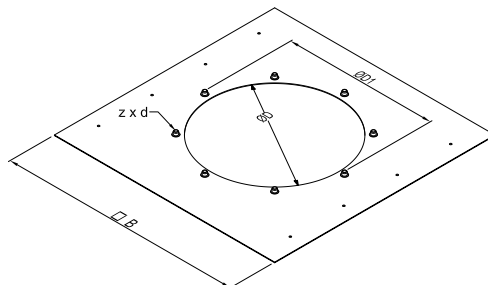
Model	Octave band mid frequency (Hz)							
	63	125	250	500	1000	2000	4000	8000
BOGA-01-1-4-2	-3	-4	-5	-14	-22	-19	-15	-11
BOGA-02-1-4-2	-3	-4	-5	-14	-22	-19	-15	-11
BOGA-03-1-4-2	-2	-3	-4	-12	-19	-16	-13	-9
BOGA-04-1-4-2	-2	-3	-4	-12	-19	-16	-13	-9
BOGA-05-1-4-2	-2	-3	-4	-12	-19	-16	-13	-9
BOGA-06-1-4-2	-1	-3	-6	-12	-15	-12	-10	-8
BOGA-07-1-4-2	-1	-3	-6	-12	-15	-12	-10	-8

ACCESSORIES TO BE ORDERED SEPARATELY

STEZ-04 - MOUNTING PLATE

To be used under the STEZ-07 sound attenuator to enable a circular duct connection.

Model	ØD	ØD1	B	z x d	Weight, kg
STEZ-04-1	182	212	435	6 x M8	2.2
STEZ-04-2	253	283	435	6 x M8	2.2
STEZ-04-3	358	392	548	8 x M8	3.6
STEZ-04-4	358	392	618	8 x M8	4.6
STEZ-04-5	454	488	708	8 x M8	6.1
STEZ-04-6	454	488	888	8 x M8	9.5
STEZ-04-7	564	600	1108	12 x M8	14.7



STEZ-07 - INLET SOUND ATTENUATOR

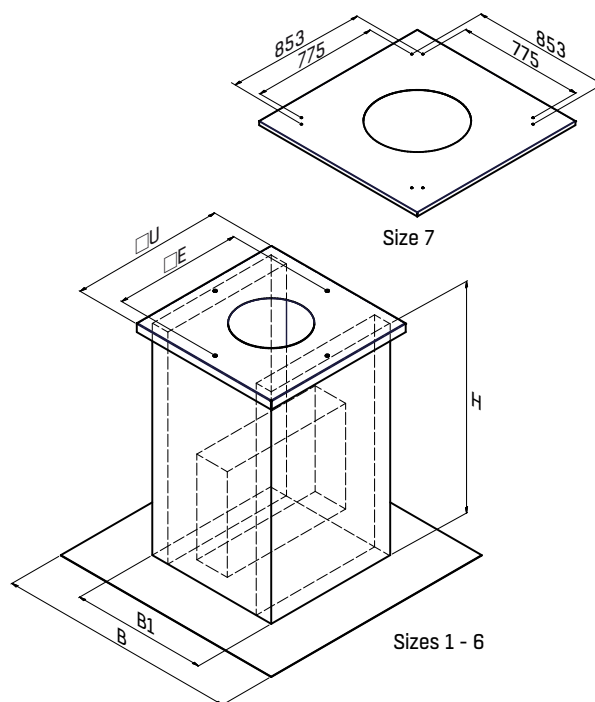
The STEZ-07 sound attenuator is used to attenuate the sound level to the duct on the inlet side. It is made of magnesium and zinc coated sheet metal. The baffles inside are made of mineral wool and they are covered by fibre class film. The inlet of the sound attenuator is square. If the sound attenuator is supposed to be connected to a circular duct, a separate mounting plate STEZ-04 shall be used under the STEZ-07.

Model	B	B1	E	U	H	Weight (kg)
STEZ-07-1	690	390	368	660	442	15
STEZ-07-2	690	390	368	660	442	15
STEZ-07-3	803	503	468	760	622	35
STEZ-07-4	873	573	498	760	622	40
STEZ-07-5	963	663	603	960	712	45
STEZ-07-6	1133	833	800	960	955	60
STEZ-07-7	1363	1063	1)	960	1112	80

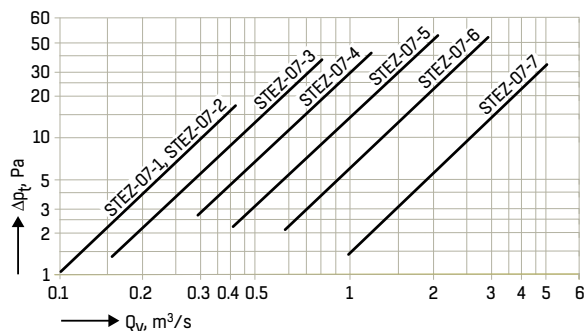
1) See separate illustration for size 7.

SOUND ATTENUATION WHEN USING STEZ-07

Model	Octave band mid frequency (Hz)							
	63	125	250	500	1000	2000	4000	8000
STEZ-07-1	-1	-2	-4	-9	-13	-20	-21	-12
STEZ-07-2	-1	-2	-4	-9	-13	-20	-21	-12
STEZ-07-3	-1	-2	-6	-9	-15	-18	-18	-11
STEZ-07-4	-1	-2	-6	-9	-16	-19	-19	-12
STEZ-07-5	-1	-3	-8	-14	-18	-24	-25	-23
STEZ-07-6	-1	-3	-8	-14	-18	-24	-25	-23
STEZ-07-7	-1	-2	-7	-13	-16	-22	-23	-20



PRESSURE LOSS IN PA



ACCESSORIES TO BE ORDERED SEPARATELY

STYZ-01-30-0-0 - THERMOSTAT WITH SENSOR

The thermostat switches the speed at desired temperature. The delivery includes thermostat with temperature sensor and enclosure IP55. The thermostat with sensor is to be used only when fan inclusive EC controller is ordered.

The wiring diagrams can be found on pages 28 - 32.

More information is available in the installation manual.



STYZ-01-40-0-0 - TIMER

Week timer. The delivery includes the timer and enclosure IP55.



STYZ-01-51-0-1 - POTENTIOMETER

The potentiometer is used to control the speed of the EC motor. It needs a supply 10 VDC and is a 4-step (zero + three steps) potentiometer where steps 1 and 2 are adjustable.

TECHNICAL FEATURES:

Supply voltage: 10 VDC
 Output signal: 0 - 10 VDC
 Resistance: 10 kΩ (ohm)
 IP rating: IP54 (FläktGroup's delivery)



STEZ-60-b-c-dd - PAINTED FINISH

Painted finish

Colour (b) _____
 5 = RAL classic colors

Extent of painting (c) _____
 0 = outside
 1 = outside and inside

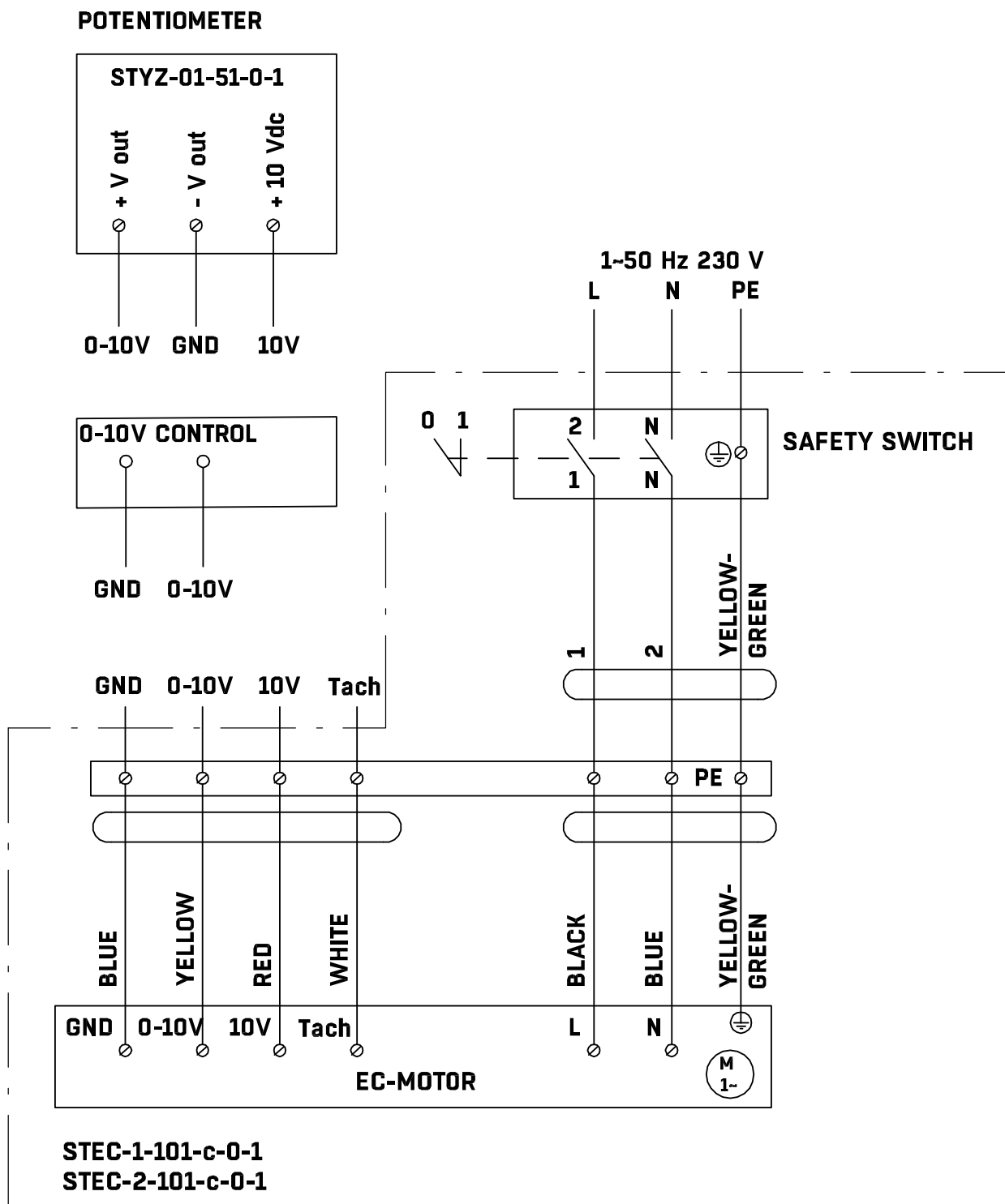
Paint thickness (dd) _____
 1 = 60 μm

Fan size (dd) _____
 1, 2, 3, 4, 5, 6, 7

STEZ-60-b-c-dd

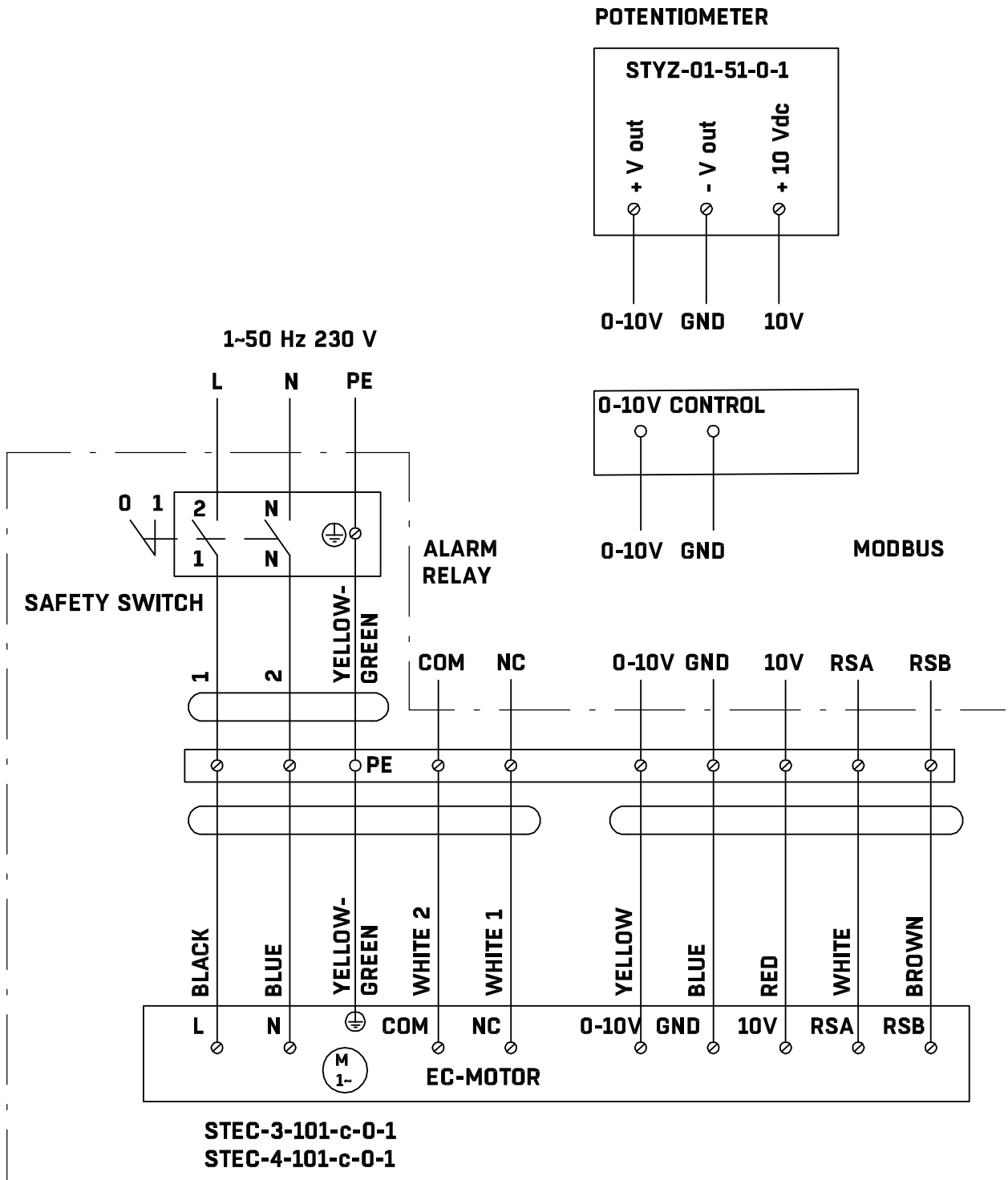
WIRING DIAGRAM A (FOR FAN PACKAGES 0 & 1)

STEC-1 and STEC-2



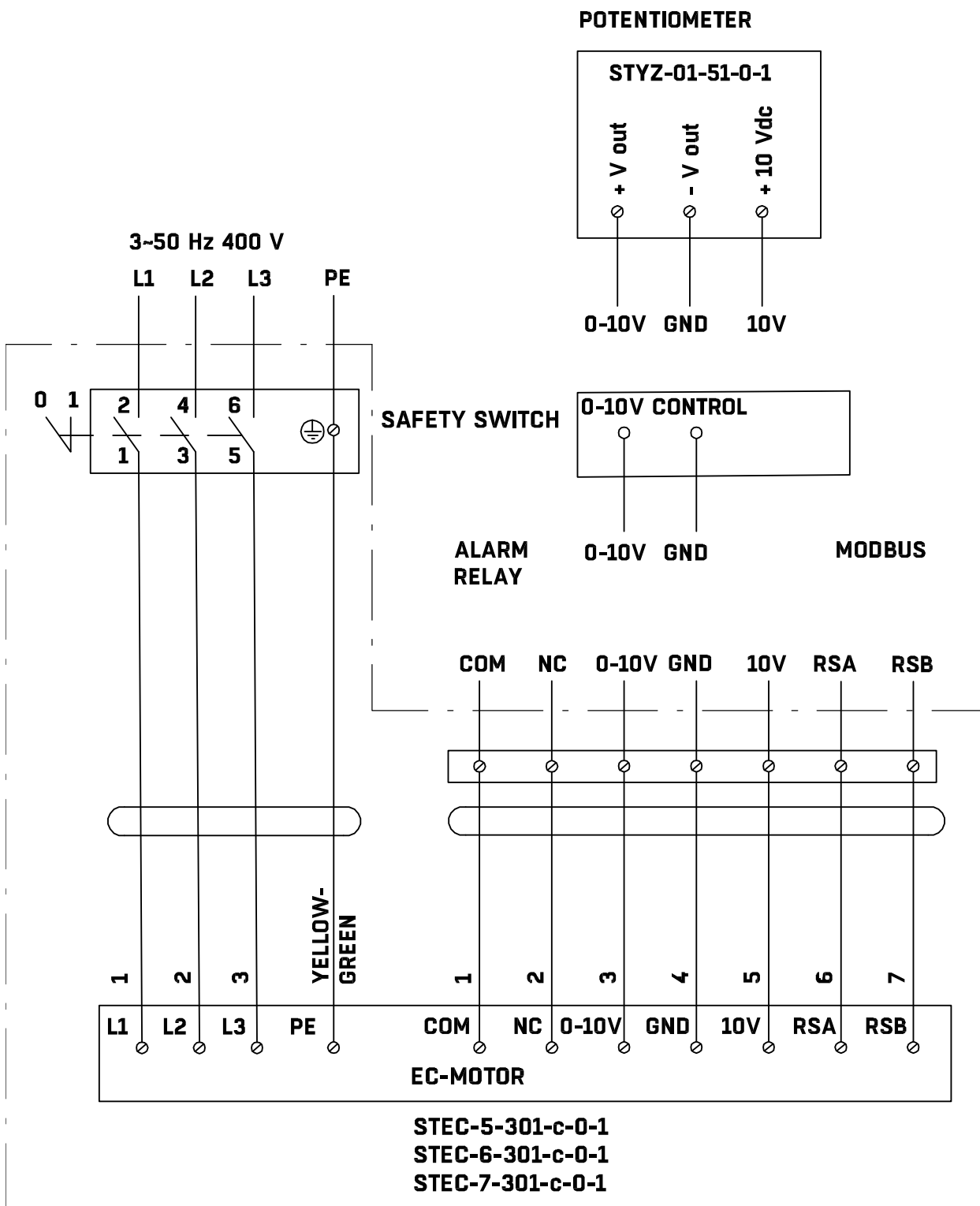
WIRING DIAGRAM A (FOR FAN PACKAGES 0 & 1)

STEC-3 and STEC-4



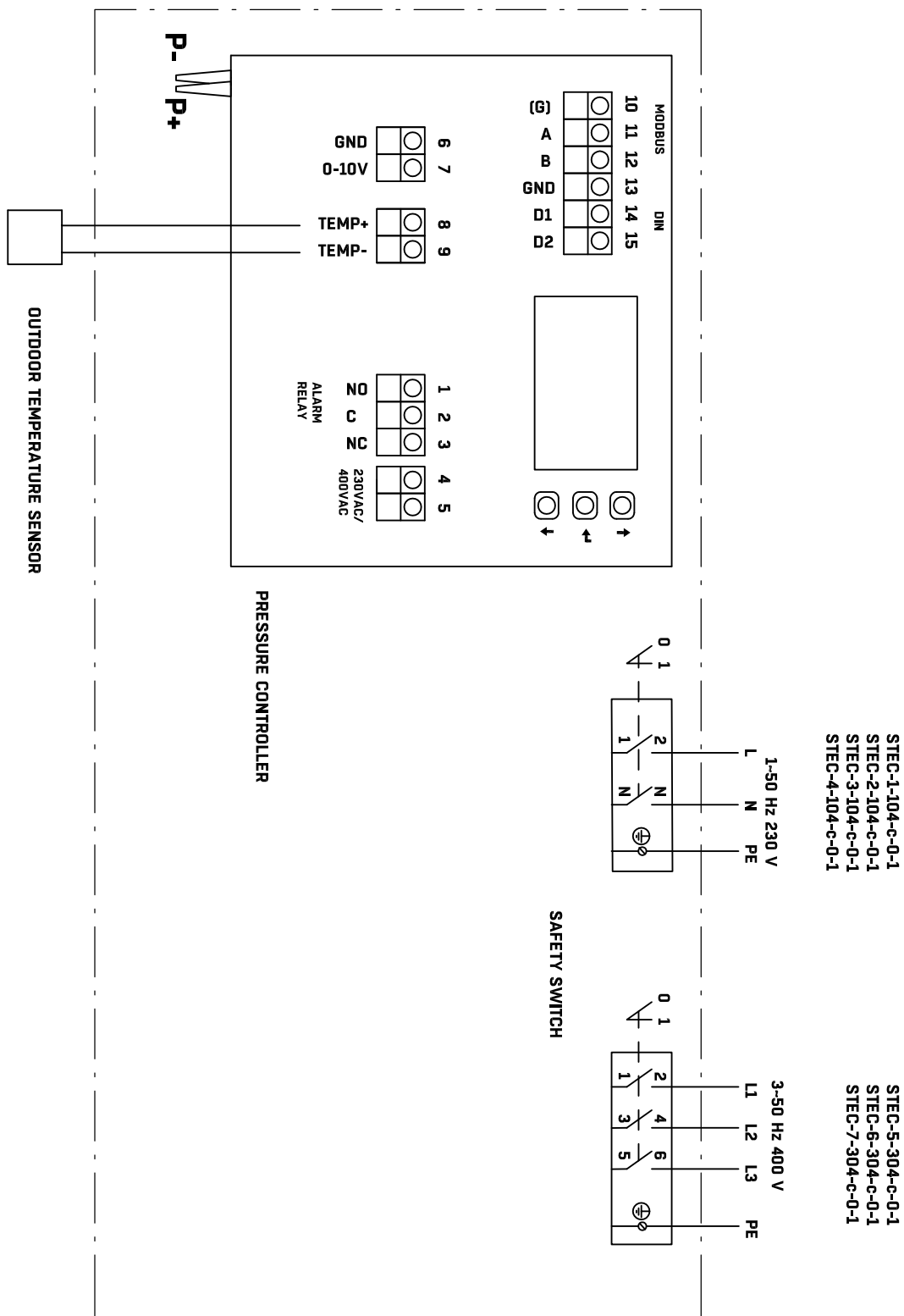
WIRING DIAGRAM A (FOR FAN PACKAGES 0 & 1)

STEC-5, STEC-6 and STEC-7



WIRING DIAGRAM C (FOR FAN PACKAGES 3 & 4)

STEC-1...STEC-7



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Air Management | Air Conditioning & Heating | Controls | Service



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