FläktWoods

AIR COMFORT

AIR MOVEMENT

ROOF FANS

ROOFMASTER STEC ROOF FAN

» TECHNICAL CATALOGUE

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ROOFMASTER STEC

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ROOFMASTER STEC

Features

5 sizes

- Volume flow up to 1.7 m³/s (6100 m³/h)
- EC-motor with integrated speed control
- Insulated casing
- Low sound level
- High efficiency
- ErP 2015 compliant

Electrical supply

1x 230 V 50/60 Hz (sizes 1-2)
3x400 V 50Hz (sizes 3-5)

Ambient temperature range

- -20°C…+50 °C (see size by size)

Sizes

STEC-1, -2, -3, -4, -5.

Material and design

The fan casing is made of black pre-painted galvanized sheet or aluminium and zinc coated sheet steel. The surface treatment meets the requirements of environmental class C4 (EN ISO 1294-2). The fan is insulated inside against noise. The fan discharges air upwards.

Impeller

The impeller is made of plastic and has backward curved blades (sizes 1 and 2). Sizes 3-5 have a backward curved impeller made of steel and painted.

Motor

Sizes 1 and 2 have 1-phase EC-motor with integrated speed control. Sizes 3-5 have high efficiency 3-phase PM-motor with speed controller integrated inside the fan.

Installation

The fan can be installed with an installation frame, with different roof curbs or directly on a base.

Speed control

EC motor has an integrated speed controller. Speed can be controlled by using a 0-10 V control signal. 1 or 2 fixed speed can be set by using a speed controller. Both alarm and running indication are available with PM motor as opposed to EC motor where either alarm or running indication has to be selected. PM motors can be controlled by using an integrated speed controller. Separate manual for different control systems and demand controlled venti-lation is available.

Product Code - STEC-a-bbb-c-d-e

Accessories

BOGA
Roof curb

STEZ-01
Flat roof Socket

STEZ-07
Roof Curb with sound baffles

STEZ-04
Mounting plate

STEZ-02
Flexible connection

STEZ-05
Back draught shutter

STYZ-01-51
Potentiometer

SAFE
Safety switch

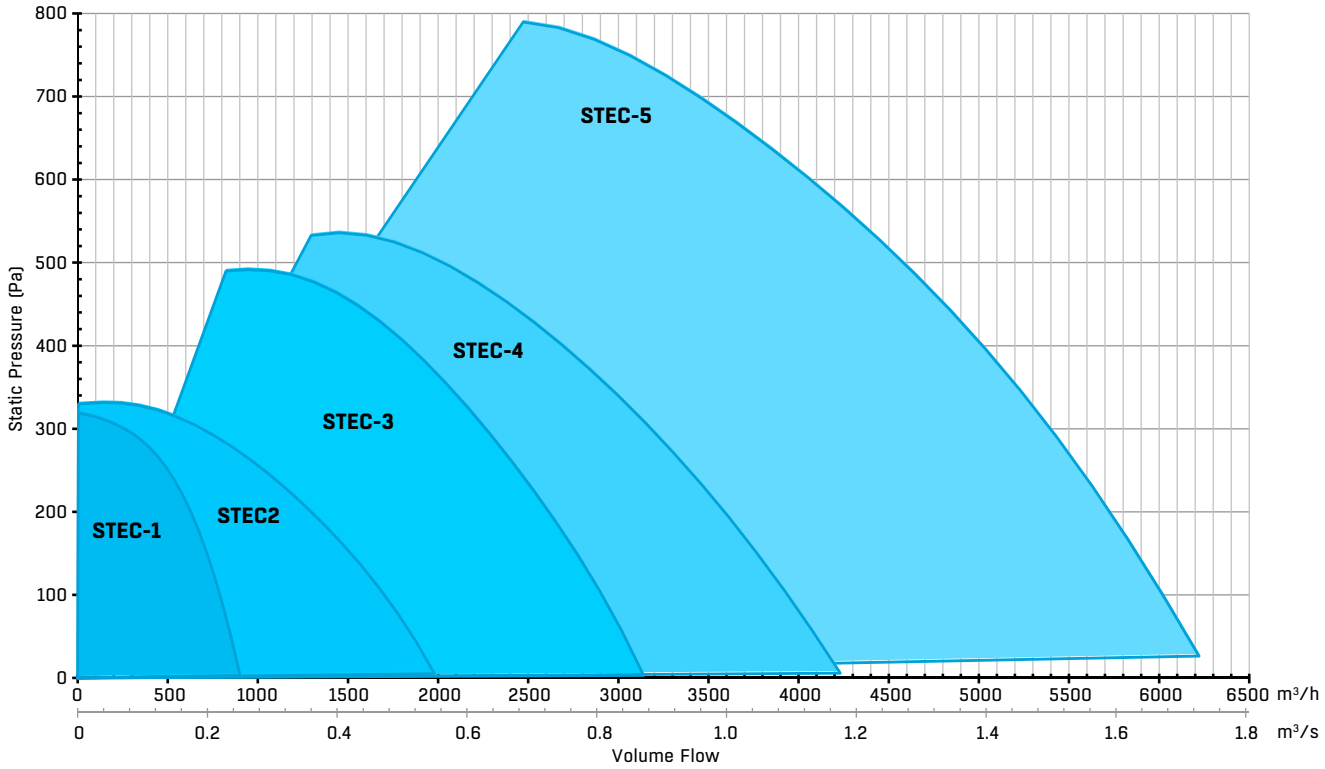
FLOW
Mounting frame with air flow measurement

STYZ-01-10
Pressure controller

Centrimeter
Manometer for air flow measurement

Performance Data

ROOFMASTER STEC



Performance table

Air flow m³/h as function of static pressure

	Pressure (Pa)												
STEC size	0	50	100	150	200	250	300	350	400	450	500	600	700
STEC-1	914	846	767	680	580	450	248						
STEC-2	2058	1869	1734	1599	1410	1113	654						
STEC-3	3150	3028	2894	2758	2614	2455	2279	2077	1836	1519			
STEC-4	4237	4090	3935	3766	3586	3402	3193	2966	2700	2390	1980		
STEC-5	6314	6170	6026	5875	5713	5551	5375	5191	5004	4802	4579	4086	3456
	Airflow m³/h												

Air flow m³/s as function of static pressure

	Pressure (Pa)												
STEC size	0	50	100	150	200	250	300	350	400	450	500	600	700
STEC-1	0,254	0,235	0,213	0,189	0,161	0,125	0,069						
STEC-2	0,572	0,519	0,482	0,444	0,392	0,309	0,182						
STEC-3	0,875	0,841	0,804	0,766	0,726	0,682	0,633	0,577	0,51	0,422			
STEC-4	1,177	1,136	1,093	1,046	0,996	0,945	0,887	0,824	0,75	0,664	0,55		
STEC-5	1,754	1,714	1,674	1,632	1,587	1,542	1,493	1,442	1,39	1,334	1,272	1,135	0,96
	Airflow m³/s												

General description

Applications

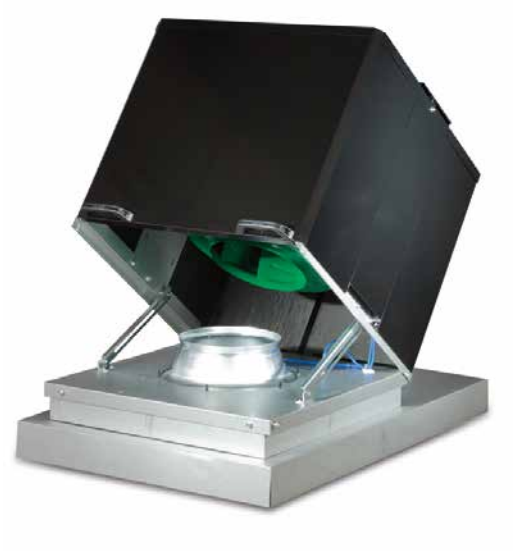
STEC roof fans are used as exhaust fans in comfort systems where low energy consumption, low noise level and demand controlled ventilation (DCV) are required. They can be used also in industrial applications where the air is slightly greasy or polluted.

STEC will comply with new Regulations for roof fans.

Quiet operation

The inside of the fan casing and the side plates of the motor compartment have sound insulation. The fan itself has very low sound values. Using the DCV the operation point can be adjusted to optimize also sound levels.

Easy installation and service



STEC can be installed using different roof curbs or directly on to the concrete. It is equipped with opening hinges as standard. The impeller and duct can be easily cleaned, if necessary. The roof can be removed to perform the maintenance of the motor.

Air flow measurement

STEC can be equipped with an air flow measurement device FLOW for easy and accurate measurement of air flow. With Centrimeter the actual air flow can be seen directly from the fan and the 0-10V can be sent to any control device.

Material and design

The fan casing is made of black pre-painted galvanized sheet or aluminium and zinc coated sheet steel. STEC can be used in industrial areas or close to the sea, as the surface treatment meets the requirements of environmental class C4 (EN ISO 1294-2). The fan is insulated inside against noise. The fan discharges air vertically.

Motor and impeller

Sizes 1 and 2 have single-phase EC-motor with integrated speed control, IP 54. Sizes 3-5 have high efficiency three-phase PM-motor with speed controller integrated inside the fan, the motor is completely outside the air steam. Maximum exhaust temperature is + 50 °C.

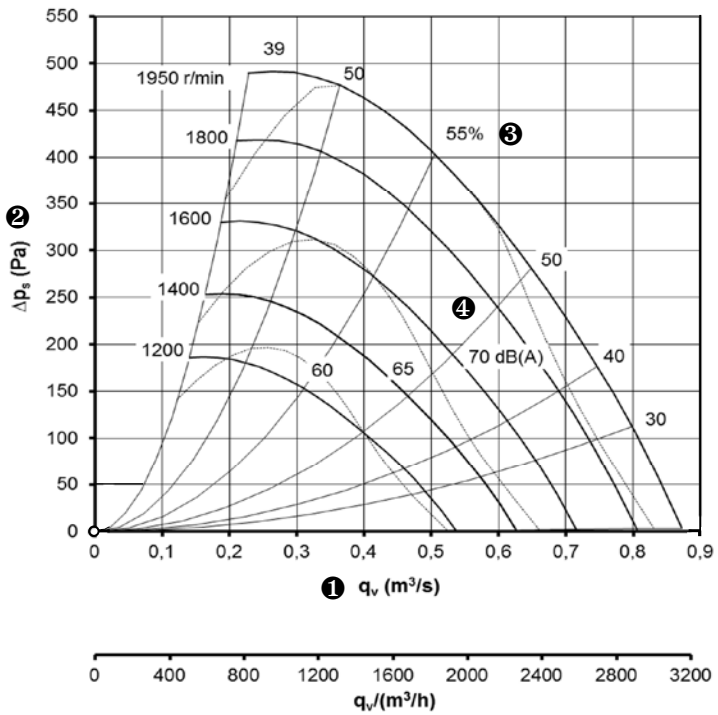
Demand controlled ventilation

The demand for different air flows at different times of the day and during different seasons is increasing all the time. Also the new Regulation draft for roof fans will require a speed controller to be used always with the roof fan. STEC roof fans are equipped as standard with a speed controller integrated into the fan. The motor speed can be controlled to optimize the energy consumption and sound levels.

A separate pressure controller and different sensors can be used together with the STEC. There is a separate document describing different options for DCV.

Fan chart-explanation and definitions

Symbols



❶	Q_v	Airflow	m³/s
❷	Δp_s	Static pressure rise	Pa
❸	η	Fan effeciency (impeller, motor and rotation speed control) at max rotation speed	%
❹	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

Specification text

A high efficiency roof fan equipped with an impeller with custom shaped blades and a rotating diffuser. The Permanent magnet motor is supplied with integrated/separate pre-mounted rotation speed controller. Sizes 1 and 2 have an EC motor with integrated control and plastic impeller. The fan can be controlled with a 0...10 V control signal or alteratively 1 or 2 stepless fixed speed values can be set.
The fan casing and the side plates of the motor compartment are sound-proof. The outer casing of the fan is made of either pre-painted galvanized sheet steel (black) or Al/Zn-coated sheet steel. Environmental class C4.
The fan discharges air upwards. The fan has been hinged to the base plate and can easily be opened for maintenance.
The capacity measurement have been performed according to ISO 5801:2007 and the sound power level to surroundings according to ISO 3741:1999.
Requirements have been stated according to the DIN 24 166 tolerance class 1.

Accessories:

- Flat roof socket STEZ-01
- Flexible connection STEZ-02
- Adapter plate STEZ-04
- Back draught shutter STEZ-05
- Roof curb with sound baffles STEZ-07
- Roof curb BOGA
- Air flow measurement FLOW
- Airflow transmitter CENTRIMETER
- Safety switch SAFE
- Potentiometer STYZ-01-51-d-1
- Pressure controller STYZ-01-10-1-1

STEC-1

Sound data

The total A-weighted sound power level to surroundings, L_{wA}, can be read in the fan chart. The correction coefficients by octave bands can be read in the chart below. 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.

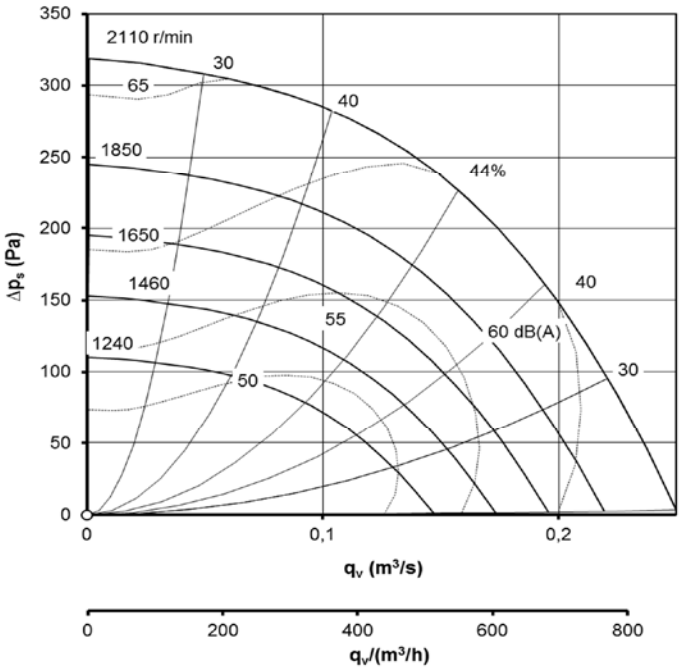
$$L_{woct} = L_{wA} + K_{oct}$$

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:

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



Sound data

			Correction Koct (dB)							
			Octave band mid-frequency (Hz)							
SoundPoint	Min r/min	Max r/min	63	125	250	500	1000	2000	4000	8000
Surroundings	0	1533	-2	5	1	-2	-6	-8	-19	-23
Surroundings	1534	2110	-5	1	3	-1	-8	-10	-14	-18
To the duct	0	1533	-1	5	4	-3	-2	-4	-11	-18
To the duct	1534	2110	-7	0	6	-3	-3	-5	-8	-14

Motor data

Motor nominal data at 50 Hz									
Type	Supply voltage	Power kW	Max current A	Speed r/min	Speed fan r/min	Temperature range °C	IP class	Insulation	Motor protection
STEC-1	1x200…240VAC 50/60 Hz	0,082	0,7	2200	2110	-25..+60	54	B	Internal TOP

Product code

Roof Fan **STEC- 1- 102 c- 1- 0**

Size

bbb
1= 1-phase

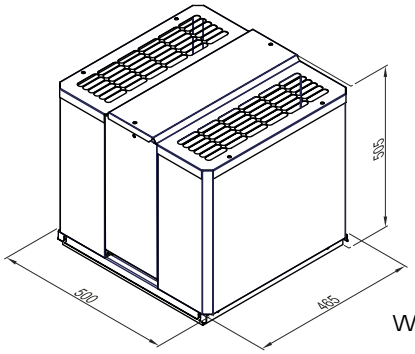
b**bb**
Consecutive number

c
1= painted galvanised sheet metal, black
2= Al/Zn coated sheet steel

d
1=insulated

Generation

Dimensional drawing



Weight 24 kg

Roof curb	BOGA-01-b-1-1	Potentiometer (EC)	STYZ-01-51-0-1
Flat roof socket	STEZ-01-1	Safety switch (EC)	SAFE-1-1-0
Flexible connecton	STEZ-02-1	Pressure controller	STYZ-01-10-1-1
Adapter plate	STEZ-04-1	Temperature sensor	STYZ-01-11-0-1
Back draught shutter	STEZ-05-1	Timer	STYZ-01-40-0-0
Inlet sound attenuator	STEZ-07-1	Centrimeter	GTLZ-86-bb-0-0
Air flow measurement	FLOW-1-b-0		

STEC-2

Sound data

The total A-weighted sound power level to surroundings, L_{wA}, can be read in the fan chart. The correction coefficients by octave bands can be read in the chart below. 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.

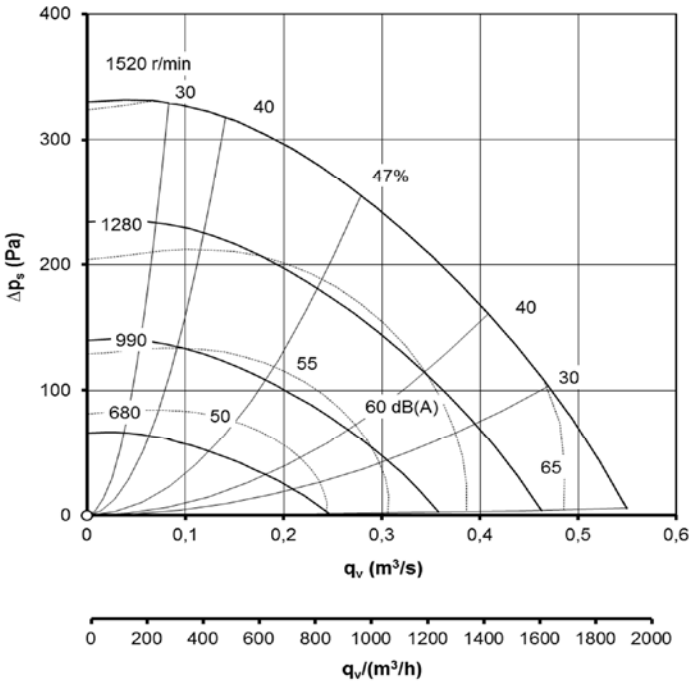
$$L_{woct} = L_{wA} + K_{oct}$$

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:

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



Sound data

			Correction Koct (dB)							
			Octave band mid-frequency (Hz)							
SoundPoint	Min r/min	Max r/min	63	125	250	500	1000	2000	4000	8000
Surroundings	0	893	5	4	3	0	-8	-19	-24	-26
Surroundings	894	1520	-2	6	2	-1	-7	-15	-20	-26
To the duct	0	893	6	3	2	-3	-10	-12	-16	-22
To the duct	894	1520	-2	6	2	-3	-10	-11	-15	-20

Motor data

Motor nominal data at 50 Hz									
Type	Supply voltage	Power kW	Max current A	Speed r/min	Speed fan r/min	Temperature range °C	IP class	Insulation	Motor protection
STEC-2	1x200...240VAC 50/60 Hz	0,15	1,2	1525	1520	-25..+60	54	B	Internal TOP

Product code

Roof Fan **STEC- 2- 102 c- 1- 0**

Size

bbb
1= 1-phase

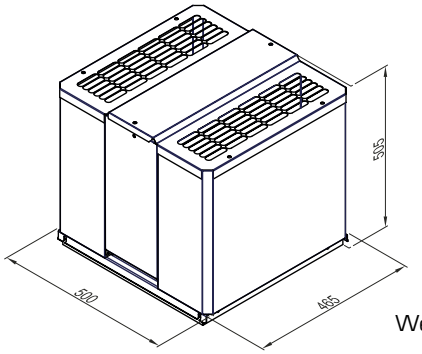
b**bb**
Consecutive number

c
1= painted galvanised sheet metal, black
2= Al/Zn coated sheet steel

d
1=insulated

Generation

Dimensional drawing



Weight 24 kg

Roof curb	BOGA-02-b-1-1	Safety switch (EC)	SAFE-1-1-0
Flat roof socket	STEZ-01-2	Pressure controller	STYZ-01-10-1-1
Flexible connecton	STEZ-02-2	Temperature sensor	STYZ-01-11-0-1
Adapter plate	STEZ-04-2	Timer	STYZ-01-40-0-0
Back draught shutter	STEZ-05-2	Centrimeter	GTLZ-86-bb-0-0
Inlet sound attenuator	STEZ-07-2		
Air flow measurement	FLOW-2-b-0		
Potentiometer (EC)	STYZ-01-51-0-1		

STEC-3

Sound data

The total A-weighted sound power level to surroundings, L_{wA}, can be read in the fan chart. The correction coefficients by octave bands can be read in the chart below. 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.

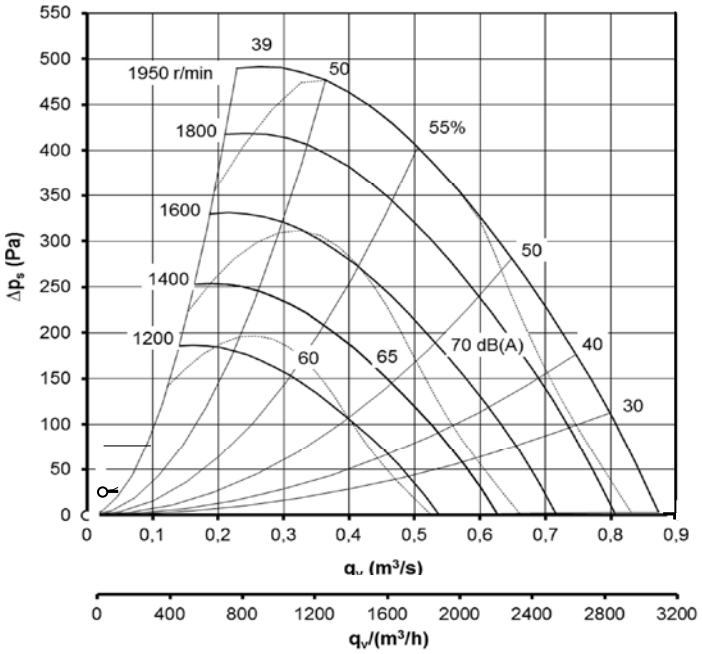
$$L_{woct} = L_{wA} + K_{oct}$$

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:

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



Sound data

			Correction Koct (dB)							
			Octave band mid-frequency (Hz)							
SoundPoint	Min r/min	Max r/min	63	125	250	500	1000	2000	4000	8000
Surroundings	0	1532	-7	4	0	-3	-3	-14	-21	-23
Surroundings	1533	1950	-7	-4	5	-3	-6	-14	-18	-20
To the duct	0	1533,3	-5	9	4	4	5	-6	-12	-14
To the duct	1533	1950	-6	-3	8	-5	-3	-5	-9	-10

Motor data

Motor nominal data at 50 Hz					
Type	Supply voltage	Power kW	Max current A	Speed r/min	Max frequency Hz
STEC-3	3 x 400 V, 50 Hz	0,63	1,2	1800	97,5

Product code

Roof Fan **STEC-** **3-** **001** **c-** **1-** **0**

Size

bbb
1= 1-phase

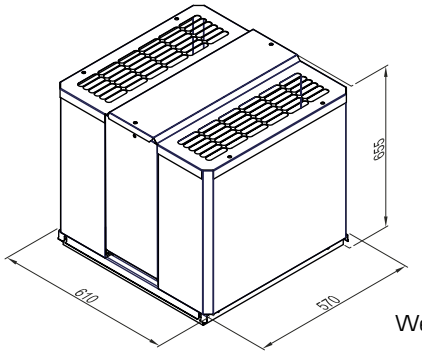
b**bb**
Consecutive number

c
1= painted galvanised sheet metal, black
2= Al/Zn coated sheet steel

d
1=insulated

Generation

Dimensional drawing



Weight 40 kg

Roof curb	BOGA-03-b-1-1	Potentiometer	STYZ-01-51-1-1
Roof curb[1)]	BOGA-03-b-3-1	Safety switch	SAFE-1-1-0
Flat roof socket	STEZ-01-3	Pressure controller	STYZ-01-10-1-1
Flexible connecton	STEZ-02-3	Temperature sensor	STYZ-01-11-0-1
Adapter plate	STEZ-04-3	Timer	STYZ-01-40-0-0
Back draught shutter	STEZ-05-3	Centrimeter	GTLZ-86-bb-c-0
Inlet sound attenuator	STEZ-07-3		
Inlet sound attenuator [1)]	STEZ-07-03		
Air flow measurement	FLOW-3-b-0		

[1)] BOGA version c=3 and STEZ-07-03 to be used only if the roof fan is supplied with FLOW.

STEC-4

Sound data

The total A-weighted sound power level to surroundings, L_{wA}, can be read in the fan chart. The correction coefficients by octave bands can be read in the chart below. 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.

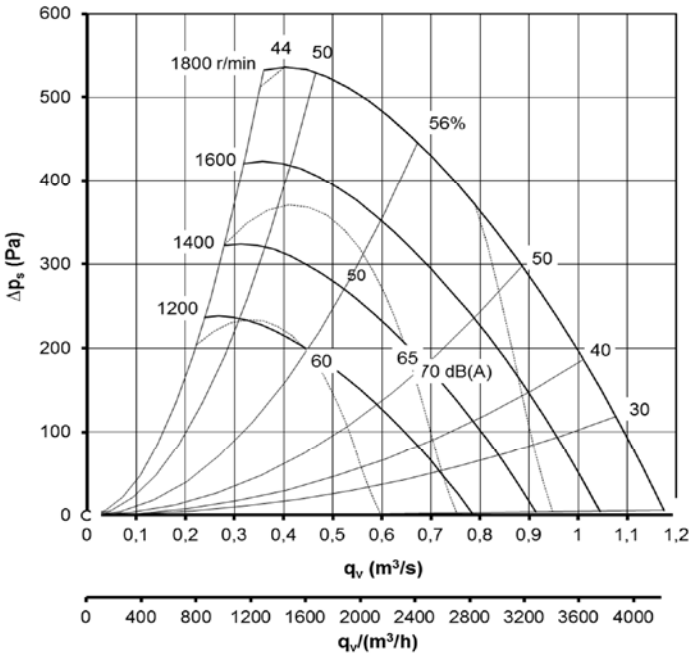
$$L_{woct} = L_{wA} + K_{oct}$$

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:

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



Sound data

			Correction Koct (dB)							
			Octave band mid-frequency (Hz)							
SoundPoint	Min r/min	Max r/min	63	125	250	500	1000	2000	4000	8000
Surroundings	0	1532	-2	7	3	-2	-6	-14	-19	-22
Surroundings	1533	1800	-10	-7	7	-4	-11	-17	-20	-21
To the duct	0	1532	-2	15	8	-2	-1	-2	-8	-11
To the duct	1533	1800	-9	-6	7	-6	-8	-8	-12	-17

Motor data

Motor nominal data at 50 Hz					
Type	Supply voltage	Power kW	Max current A	Speed r/min	Max frequency Hz
STEC-4	3 x 400 V, 50 Hz	0,63	1,2	1800	90

Product code

Roof Fan **STEC- 4- 001 c- 1- 0**

Size

bbb
1= 1-phase

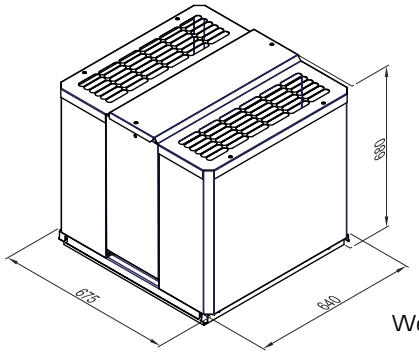
b**bb**
Consecutive number

c
1= painted galvanised sheet metal, black
2= Al/Zn coated sheet steel

d
1=insulated

Generation

Dimensional drawing



Weight 50 kg

Roof curb	BOGA-04-b-1-1	Potentiometer	STYZ-01-51-1-1
Flat roof socket	STEZ-01-4	Safety switch	SAFE-1-1-0
Flexible connecton	STEZ-02-4	Pressure controller	STYZ-01-10-1-1
Adapter plate	STEZ-04-4	Temperature sensor	STYZ-01-11-0-1
Back draught shutter	STEZ-05-4	Timer	STYZ-01-40-0-0
Inlet sound attenuator	STEZ-07-4	Centrimeter	GTLZ-86-bb-c-0
Air flow measurement	FLOW-4-b-0		

STEC-5

Sound data

The total A-weighted sound power level to surroundings, L_{wA}, can be read in the fan chart. The correction coefficients by octave bands can be read in the chart below. 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.

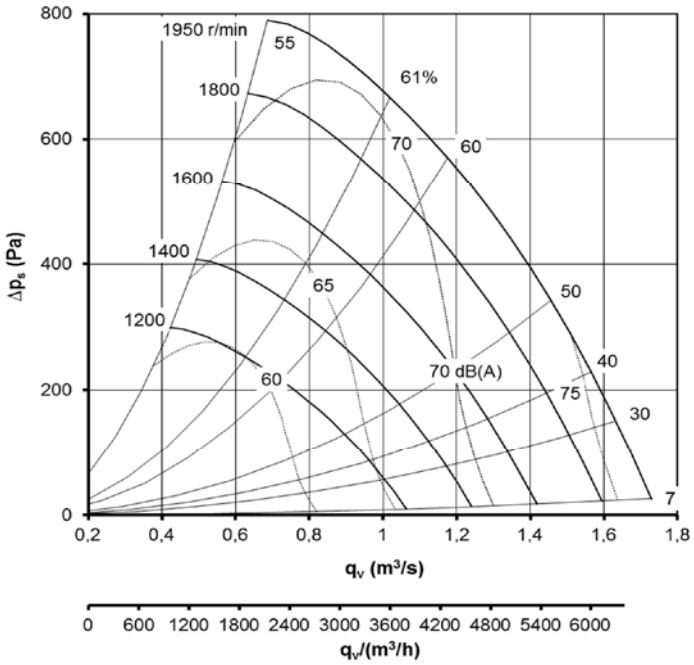
$$L_{woct} = L_{wA} + K_{oct}$$

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:

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



Sound data

			Correction Koct (dB)							
			Octave band mid-frequency (Hz)							
SoundPoint	Min r/min	Max r/min	63	125	250	500	1000	2000	4000	8000
Surroundings	0	1532	-1	7	3	-2	-7	-13	-16	-17
Surroundings	1533	1950	-7	-5	6	-2	-9	-15	-18	-22
To the duct	0	1532	2	18	11	3	2	1	-6	-10
To the duct	1533	1950	-6	-3	12	2	-1	-3	-7	-12

Motor data

Motor nominal data at 50 Hz					
Type	Supply voltage	Power kW	Max current A	Speed r/min	Max frequency Hz
STEC-5	3 x 400 V, 50 Hz	1,3	2,4	1800	97,5

Product code

Roof Fan **STEC- 5- 001 c- 1- 0**

Size

bbb
1= 1-phase

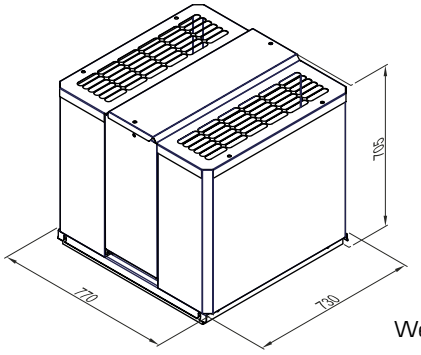
b**bb**
Consecutive number

c
1= painted galvanised sheet metal, black
2= Al/Zn coated sheet steel

d
1=insulated

Generation

Dimensional drawing



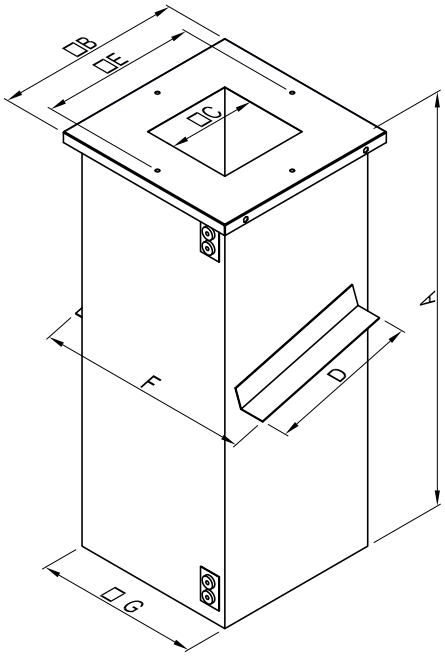
Weight 62 kg

Roof curb	BOGA-05-b-1-1	Potentiometer	STYZ-01-51-1-1
Flat roof socket	STEZ-01-5	Safety switch (EC)	SAFE-1-1-0
Flexible connecton	STEZ-02-5	Pressure controller	STYZ-01-10-1-1
Adapter plate	STEZ-04-5	Temperature sensor	STYZ-01-11-0-1
Back draught shutter	STEZ-05-5	Timer	STYZ-01-40-0-0
Inlet sound attenuator	STEZ-07-5	Centrimeter	GTLZ-86-bb-c-0
Air flow measurement	FLOW-5-b-0		

Accessories

BOGA roof curb with insulation

The BOGA consists of a sheet steel duct, insulated on the inside with 50 mm (in standard EI30 version) thick mineral wool mat.. The insulation is backed with perforated sheet metal. The duct is equipped with two cable glands and one built-in cable conduit which can accommodate two cables for electrical connection to the power roof ventilator. Adjustable mounting brackets, which can be set to suit the pitch of the roof, are fitted to the outside of the roof duct. The roof fan is secured by means of four screws through holes in the sides of the base plate.
The BOGA is made of aluminium and zinc coated sheet steel. The check damper blades are made of aluminium. BOGA versions c = 3 and c = 8 are to be used if the roof fan is supplied with FLOW or STEZ-03.
See next page for BOGA-005.



Roof duct **BOGA - (a)aa - b - c - 1**

Size
(005, 01, 02, 03, 04, 05, 06, 07)

Back draught damper
1 = with shutter
2 = w/o shutter

Model
1= 980 mm, EI30, 50 mm insulation
3 = 980 mm, EI30, 50 mm Insulation (with FLOW or STEZ-03)
2 = 1250 mm, EI30, 50 mm insulation
8 = 1250 mm, EI30, 50 mm insulation (with FLOW or STEZ-03)
4 = 1250 mm, EI60, 100 mm insulation
6 = 1250 mm, EI120, 150 mm insulation

Generation

Dimensions and weight

EI30, 50 mm insulation

Modell	A1	A2	B	C	D	E	F	G	W1 (kg)	W2 (kg)
BOGA-01-b-c-1	980	1250	442	211	310	368	485	325	18	22
BOGA-02-b-c-1	980	1250	442	211	310	368	485	325	18	22
BOGA-03-b-c-1	980	1250	552	435	530	468	705	545	43	53
BOGA-04-b-c-1	980	1250	622	435	530	498	705	545	43	53
BOGA-05-b-c-1	980	1250	712	435	530	573	705	545	43	53
BOGA-06-b-c-1	980	1250	892	768	870	800	1040	880	85	105
BOGA-07-b-c-1	980	1250	1112	768	870	853	1040	880	85	105

W1 = Weight in kg for A1
W2 = Weight in kg for A2

EI60, 100 mm insulation

Modell	A	B	C	D	E	F	G	W (kg)
BOGA-01-b-4-1	1228	429	211	385	369	586	429	41
BOGA-02-b-4-1	1228	429	211	385	369	586	429	41
BOGA-03-b-4-1	1228	653	435	605	479	810	653	69
BOGA-04-b-41	1228	653	435	605	549	810	653	69
BOGA-05-b-4-1	1228	653	435	605	590	810	653	69
BOGA-06-b-4-1	1228	986	768	940	819	1143	986	111
BOGA-07-b-4-1	1228	986	768	940	900	1143	986	111

EI120, 150 mm insulation

Modell	A	B	C	D	E	F	G	W (kg)
BOGA-01-b-6-1	1228	529	211	485	369	686	529	71
BOGA-02-b-6-1	1228	529	211	485	369	686	529	71
BOGA-03-b-6c-1	1228	753	435	705	479	910	753	113
BOGA-04-b-6-1	1228	753	435	705	549	910	753	113
BOGA-05-b-6-1	1228	753	435	705	590	910	753	113
BOGA-06-b-6-1	1228	1086	768	1040	819	1243	1086	178
BOGA-07-b-6-1	1228	1086	768	1040	900	1243	1086	178

Accessories

BOGA roof curb with insulation, cont.

Sound attenuation when using BOGA L=980

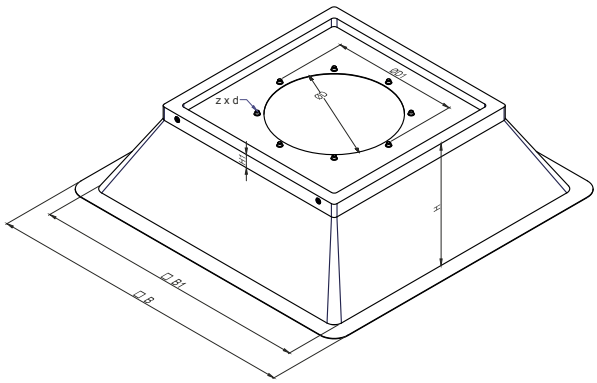
	Octave band mid frequency (Hz)							
Model	63	125	250	500	1000	2000	4000	8000
BOGA-01-b-c-1	-1	-2	-3	-11	-19	-15	-13	-9
BOGA-02-b-c-1	-1	-2	-3	-11	-19	-15	-13	-9
BOGA-03-b-c-1	0	-1	-2	-9	-16	-13	-11	-8
BOGA-04-b-c-1	0	-1	-2	-9	-16	-13	-11	-8
BOGA-05-b-c-1	0	-1	-2	-9	-16	-13	-11	-8
BOGA-06-b-c-1	0	-2	-3	-8	-13	-11	-9	-7
BOGA-07-b-c-1	0	-2	-3	-8	-13	-11	-9	-7

Sound attenuation when using BOGA L=1250

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

Flat roof socket STEZ-01

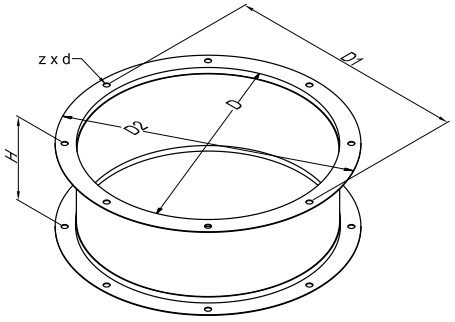
The roof socket STEZ-01 is made of corrosion resistant fibre glass. It is designed for mounting on flat roofs or roofs with a maximum pitch of 15 °. For saddle roofs a BOGA roof duct is available. The roof socket is equipped with a connection flange according to DIN 24 154, part 1. The roof is secured to the flat roof socket by means of 4 screws.



Model	D	D1	B	B1	H	H1	zxd	Weight (kg)
STEZ-01-1	182	212	782	682	260	40	6x7	4.5
STEZ-01-2	253	283	782	682	260	40	6x7	4.5
STEZ-01-3	358	392	892	792	260	40	8x9.5	5.0
STEZ-01-4	358	392	962	862	260	40	8x9.5	6.0
STEZ-01-5	454	488	1052	952	260	40	8x9.5	7.0
STEZ-01-6	454	488	1235	1132	260	40	8x9.5	8.0
STEZ-01-7	564	600	1452	1352	260	140	12x9.5	9.5

Flexible connection STEZ-02

The flexible connection STEZ-02 is used to disconnect the fan from the ductwork. The flanges are according to DIN 24 154, part 1.

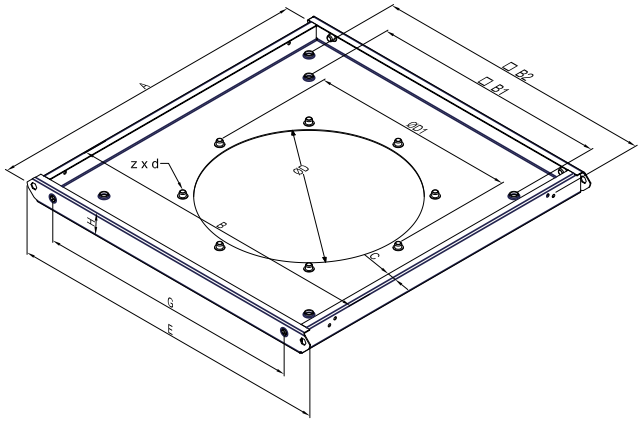


Model	D	D1	D2	H	zxd	Weight (kg)
STEZ-02-1	182	212	232	130	6x7	0.7
STEZ-02-2	253	283	303	130	6x7	2.0
STEZ-02-3	358	392	418	140	8x9.5	3.4
STEZ-02-4	358	392	418	140	8x9.5	3.4
STEZ-02-5	454	488	514	140	8x9.5	4.2
STEZ-02-6	454	488	514	140	8x9.5	4.2
STEZ-02-7	564	600	634	140	12x9.5	5.4

Accessories

Mounting frame STEZ-03

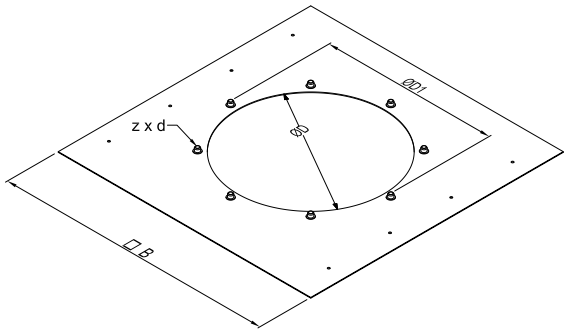
The mounting frame is designed for securing the roof fans STOF, STEC and STEF to an in-situ built chimney or other type of concrete. (FLOW can be used for same purpose with STEC and STEF, instead of STEZ-03). STEZ-03 shall also be used with STOF when opening of the fan is needed, e.g. for cleaning of the impeller. Also, if direct installation of flexible connection or shutter damper is required, STEZ-03 shall be used with roof fans. Mounting frame is made of aluminium and zink coated sheet steel and the connection flange is according to DIN 24 154, part 1.



Model	A	B	B1	B2	C	D	D1	E	H	z x d	Weight (kg)
STEZ-03-1	442	402	245	330	15	182	212	446	42,5	6xM6	2,9
STEZ-03-2	442	402	330	-	15	253	283	446	42,5	6xM6	2,6
STEZ-03-3	552	512	450	-	15	358	392	556	42,5	8xM8	3,5
STEZ-03-4	617	582	450	535	15	358	392	621	42,5	8xM8	4,6
STEZ-03-5	712	672	535	590	15	454	488	716	42,5	8xM8	5,5
STEZ-03-6	887	848	535	590	15	454	488	891	42,5	8xM8	9,3
STEZ-03-7	1112	1073	750	840	15	564	600	1116	42,5	12xM8	13,9

Mounting plate STEZ-04

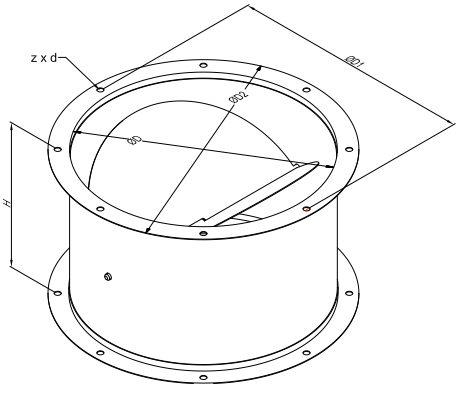
Model	D	D1	B	zxd	Weight (kg)
STEZ-04-1	182	212	435	6x7	2.2
STEZ-04-2	253	283	435	6x7	2.2
STEZ-04-3	358	392	548	8x9.5	3.6
STEZ-04-4	358	392	618	8x9.5	4.6
STEZ-04-5	454	488	708	8x9.5	6.1
STEZ-04-6	454	488	888	8x9.5	9.5
STEZ-04-7	564	600	1108	12x9.5	14.7



Back drought shutter STEZ-05

Back drought shutter prevents outdoor air to stream into the duct system while the roof fan is off. The back drought shutter is made of aluminium and zink coated sheet steel and the flanges are according to DIN 24 154, part 1.

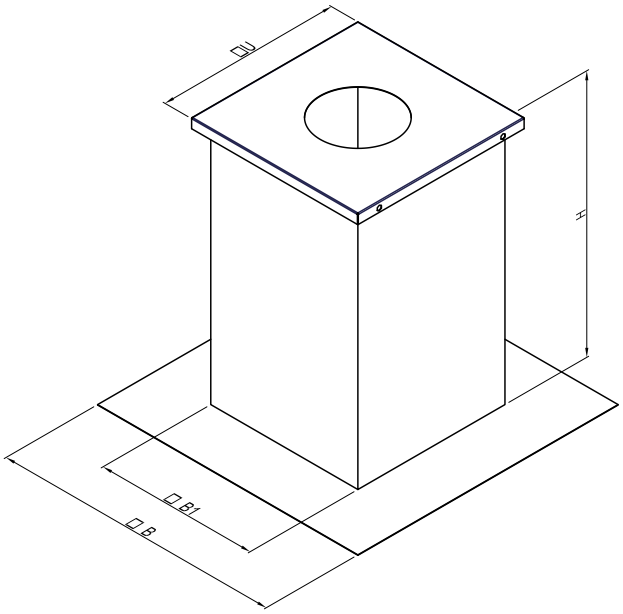
Model	D	D1	D2	H	zxd	Weight (kg)
STEZ-05-1	182	212	232	130	6x7	1.9
STEZ-05-2	253	283	303	225	6x7	3.4
STEZ-05-3	358	392	418	238	8x9.5	6.0
STEZ-05-4	358	392	418	238	8x9.5	6.8
STEZ-05-5	454	488	514	270	8x9.5	8.0
STEZ-05-6	454	488	514	270	8x9.5	8.0
STEZ-05-7	564	600	634	330	12x9.5	12.4



Accessories

Flat roof socket STEZ-07

The STEZ-07 sound attenuator is used to attenuate the sound level to the duct. It is made of aluminium and zink coated sheet steel. The baffles are made of mineral wool and covered by fibre glass film. The inlet of the sound attenuator is square. If the sound attenuator is supposed to be connected to a round duct, a separate mounting plate STEZ-04, is available. STEZ-04 is mounted under the STEZ-07.

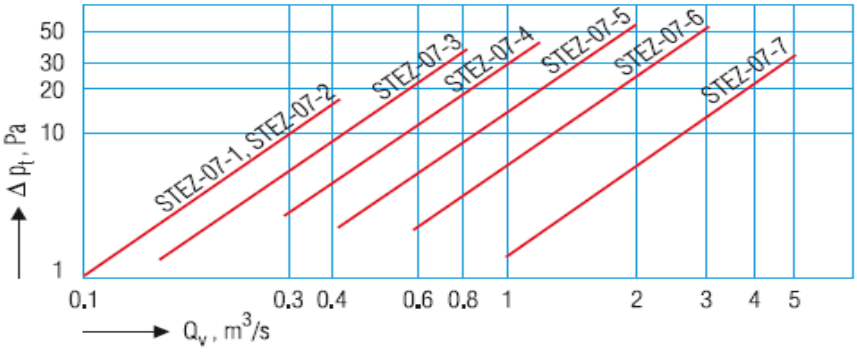


Model	B	B1	U	H	Weight (kg)
STEZ-07-1	690	390	442	660	15
STEZ-07-2	690	390	442	660	15
STEZ-07-3	803	503	552	760	35
STEZ-07-03	803	503	552	760	35
STEZ-07-4	873	573	622	760	40
STEZ-07-5	963	663	712	960	45
STEZ-07-6	1133	833	892	960	60
STEZ-07-06	1133	833	892	960	60
STEZ-07-7	1363	1063	1112	960	80

Sound attenuation when using STEZ-07

	Octave band mid frequency (Hz)							
Model	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-07-3/03	-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-07-6/06	-1	-3	-8	-14	-18	-24	-25	-23
STEZ-07-7	-1	-2	-7	-13	-16	-22	-23	-20

Pressure loss



Accessories

Safety switch SAFE

The safety isolation switch has been tested to IEC 947-3.
It is available in standard version and can be supplied loose.

Safety isolation switch **SAFE-a-b-0**

1 = 3-pole with auxiliary contact

0 = delivered loose
1 = installed

Version 0

Potentiometer STYZ-01-51-d-1

The potentiometer is used to control the speed of EC-motors.

It needs a supply of 10 VDC and gives a 3- or 4-step output signal of 0 - 10 VDC.

Potentiometer **STYZ-01-51-d-1**

0 = 4-step (STEC -1 and -2)
1 = 3-step (STEC-3, -4 and -5)

Technical features:

Voltage supply: 10 VDC
Output signal: 0–10 VDC
IP rating: IP44

Steps:
0 = stop (only in STEC-1 and -2)
1 = min (adjustable)
2 = med (adjustable)
3 = max (10V)

Pressure controller STYZ-01-10-1-1

Pressure controller STYZ-01-10-1-1 (PC) is used to keep constant pressure in duct system. It measures duct pressure and controls fan speed to achieve pressure set point. It is set during commissioning. It is also possible to set two pressure set points, night and day operation. Change between these set points can be made with external clock STYZ-01-40-0-0 (KS). Alarm relay is also available. Alarm is generated if there is a big difference between set point and actual value.

Constant pressure control with outdoor temperature compensation:

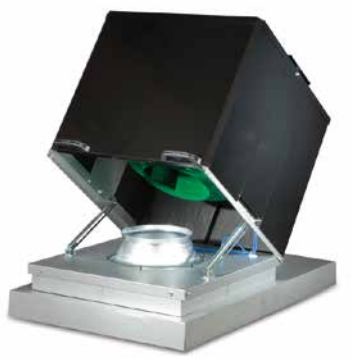
Duct pressure can be compensated with outdoor temperature by connecting temperature sensor STYZ-01-11-0-1 (TE) to the pressure controller. Chimney effect during cold weather can be avoided with this function.

Technical features:

Voltage supply:	230V ±10%, 50/60Hz
Output signal:	0-10VDC
Alarm relay output	
Digital input for set point change	
Analogue input for outdoor temperature sensor	
3-digit display	
Dip switches for controller tuning	
Push buttons for adjusting pressure and temperature limits	
Dimensions:	92x115x56 mm
Power consumption:	10VA
IP rating:	IP54
Operating temperature:	0 °C…+40 °C
Day and night set point:	10...490 Pa
Temperature compensation:	Upper limit: 0 °C...+30 °C
Temperature compensation:	Lower limit: -20 °C...0 °C
Max pressure drop during temp. compensation:	10...200 Pa
Output signal min:	0...8 V
Output signal max:	2...10 V

Accessories

Airflow measurement



Roof fans can be supplied with an airflow measurement device (NB! Always to be ordered together with the fan, not delivered separately).Airflow is measured as differential pressure measurement with a manometer.
The measuring nipples are located behind the fan´s opening hatch and are marked with +/-. A manometer or a separate measurement device can be connected to the nipples. The accuracy in normal conditions is +/- 10%.
The airflow is calculated as a function of measured pressure difference at air density 1,2 kg/m³ as follows:

$$Q_v = \frac{\sqrt{\Delta p_m}}{K}$$

where
Q_v = air flow
Δp_m = measuring pressure difference (Pa)
K = factor for given fan size

K-factors corresponding to each fan size are given in the adjacent table.

Air flow measurement **FLOW - a - b - 0**

a = sizes 1, 2, 3, 4, 5, 6, 7

b = Design 1 = standard 2 = painted black

Version

K-factor

STEC-	FLOW	K
1	1	75,6
2	2	41,8
3	3	34,89
4	4	27,14
5	5	22,06

STEF-	FLOW	K
1	1	67,04
2	2	37,08
3	3	23,72
4	4	22,64
5	5	15,33
6	6	10,41
7	7	5,89

STEF-	FLOW	K
225	1	75,1
310	2	36,9
355	3	29
400	4	21,1

Airflow transmitter Centrimeter

The airflow transmitter Centrimeter provides a means for displaying the fan´s airflow. The device´s place is behind the fan´s hatch, next to the measuring nipples or it is supplied separately.
Centrimeter accurately measures the fan differential pressure, gives a 0 - 10 V voltage signal proportionate to the airflow and the pressure and shows the current airflow or the pressure difference on its display.
The pressure difference sensor automatically calibrates a reference zero point and adjust itself for changes in ambient temperature.

The device allows the user to select the displayed units of measured airflow, either in m3/s or m3/h, or differential pressure in Pa. The type and size of fan attached to Centrimeter can be selected through the buttons located behind the display. The airflow varies according to the fan´s K-factors, which have been programmed into the device.
The K-factors can also be adjusted. Centrimeter sends two linear voltage signals that are directly proportional to the measured differential pressure and the displayed airflow.

NB! Centrimeter requires 24 V supply. For the roof fans using frequency converter (VSD) the 24 V supply can be acquired from the VSD.
Roof fans using EC motor or trafo, or roof fans that are DOL-connected to the mains need a separate 24 V supply for Centrimeter.

Centrimeter **GTLZ - 86 - bb - c - 0**

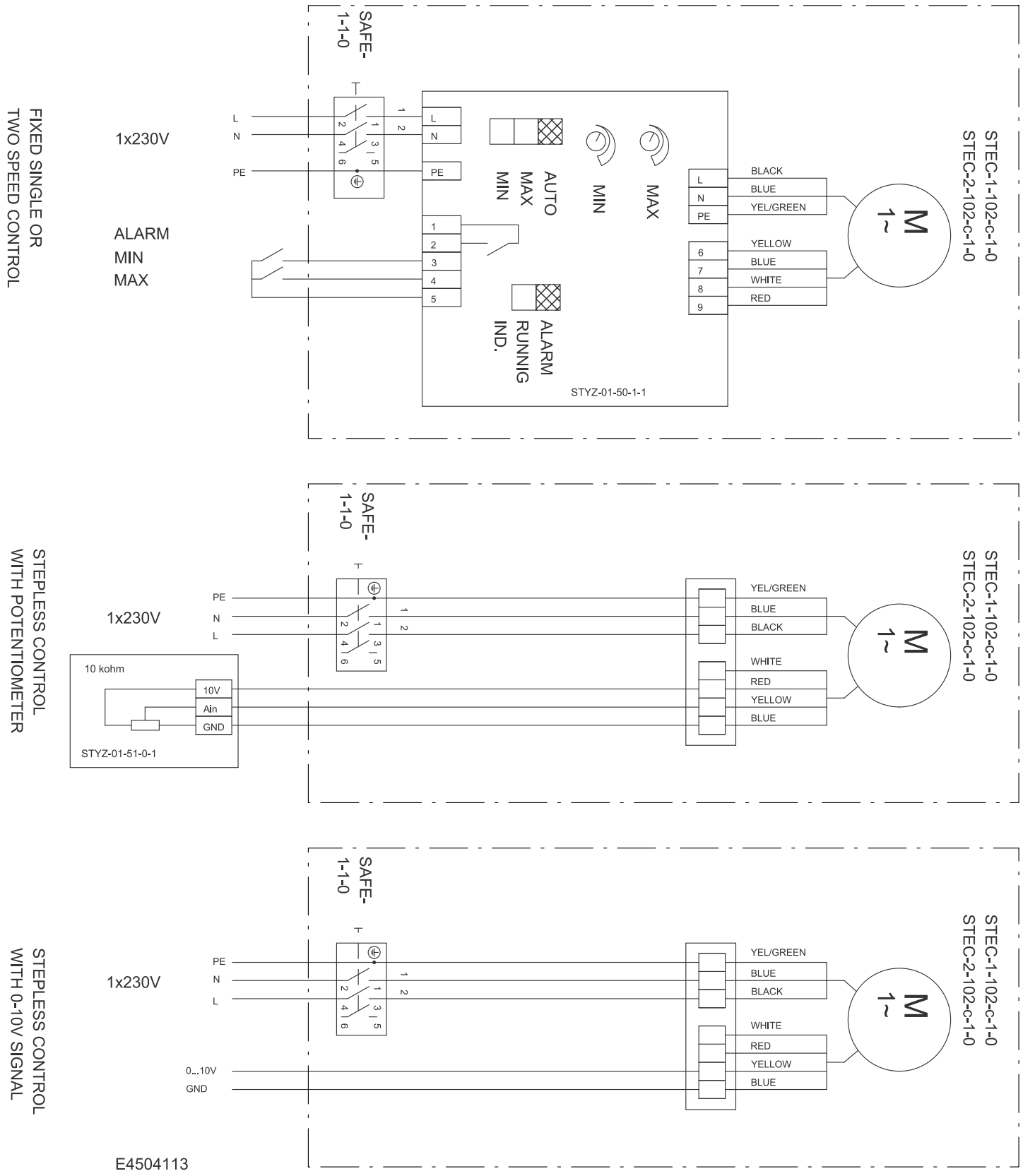
10 = STEC

0 = loose
1 = factory-mounted

0 = Version

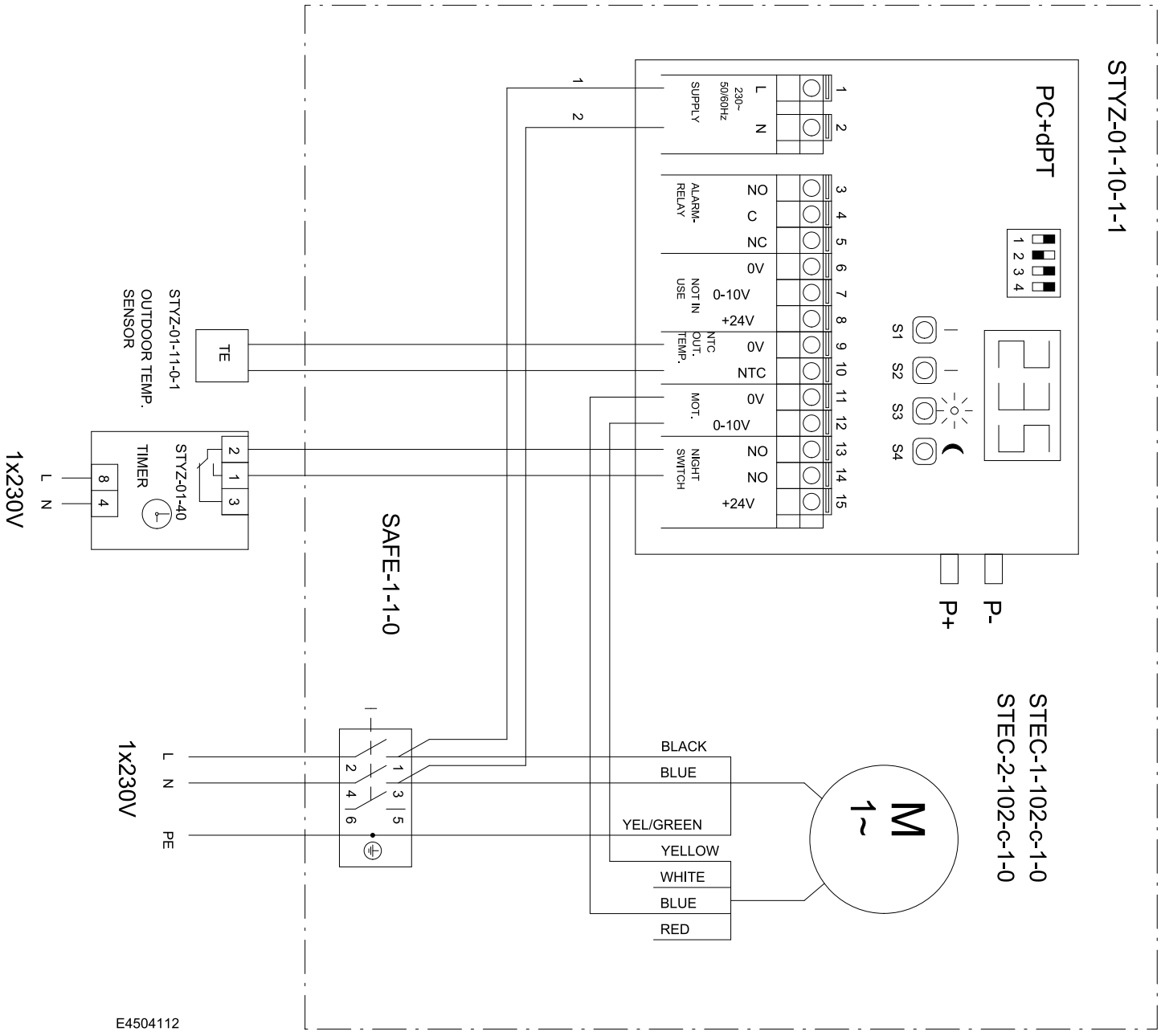
Wiring

STEC-1, STEC-2



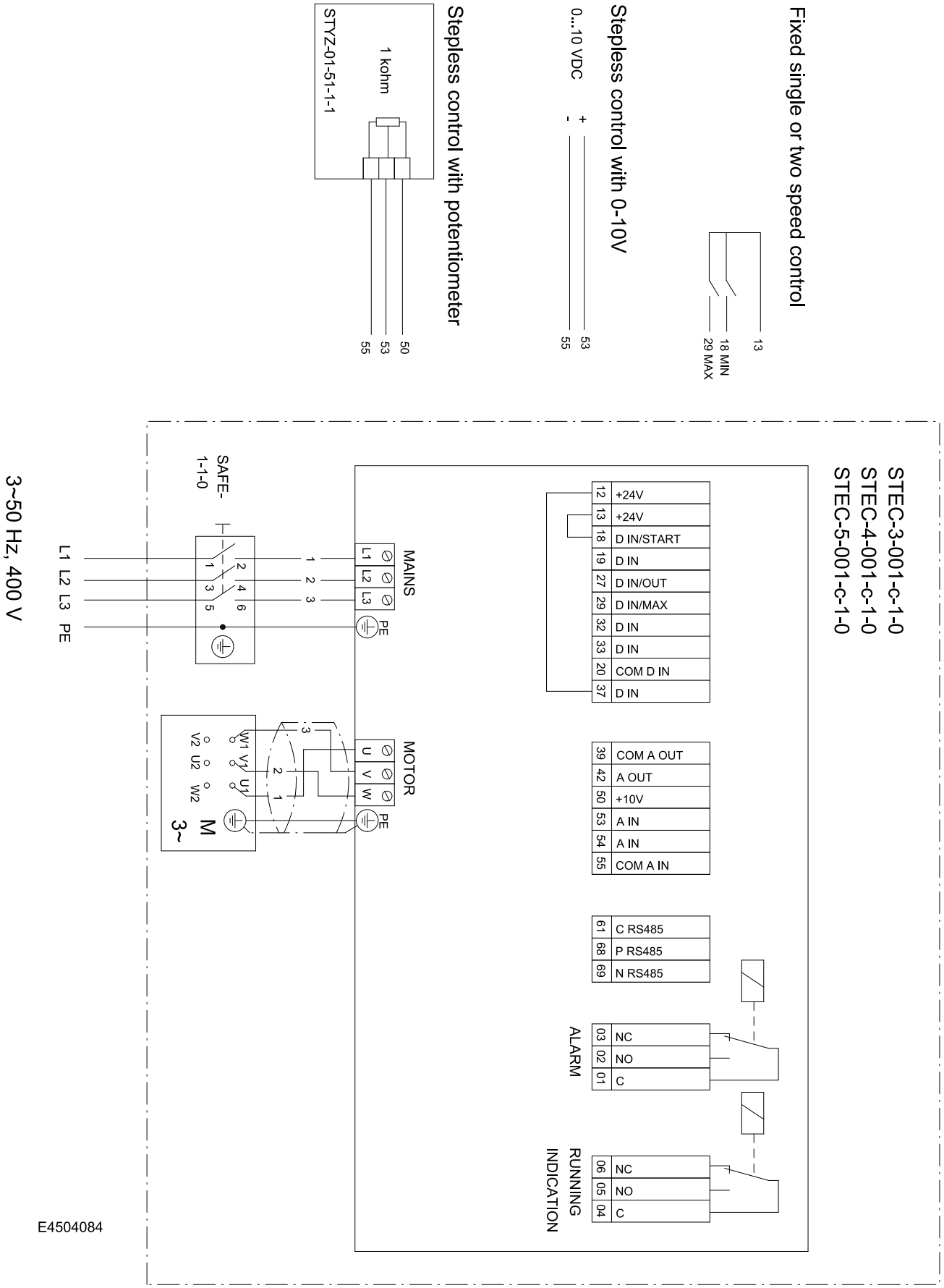
Wiring

STEC-1, STEC-2



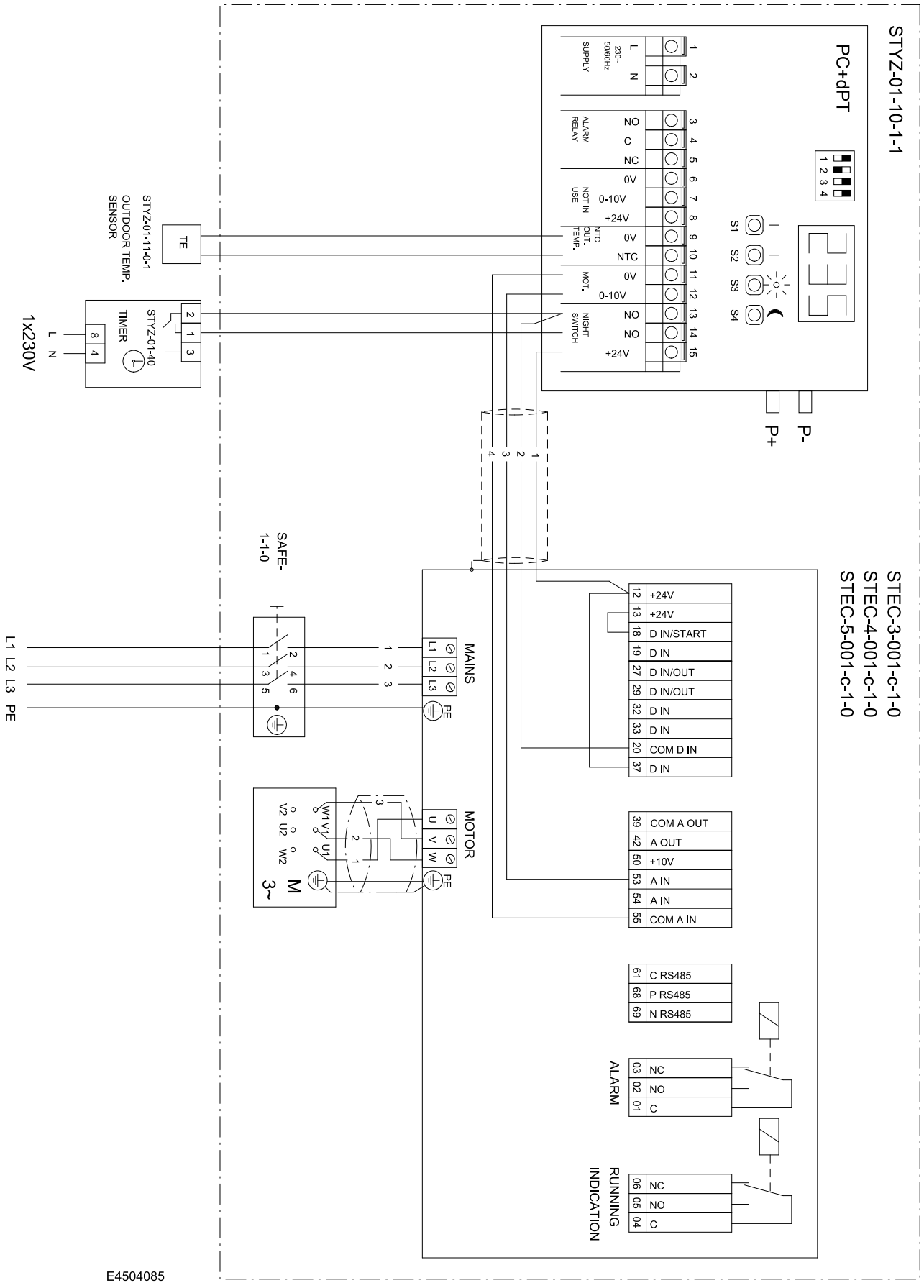
Wiring

STEC-3, STEC-4, STEC-5



Wiring

STEC-3, STEC-4, STEC-5



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Manufacturer:

Fläkt Woods Oy
Kalevantie 39, FI-20520 Turku, Finland
Tel. +358 20 4423000
email info@flaktwoods.com www.flaktwoods.com

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