

 AIR COMFORT

AIR MOVEMENT

ROOF FANS

ROOFMASTER STEF ROOF FAN

» TECHNICAL CATALOGUE



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ROOFMASTER STEF



Features

7 sizes

- Volume flow up to 5 m³/s (18 000 m³/h)
- Max pressure rise up to 700 Pa
- AC-motor DOL or with integrated speed control
- Insulated casing
- Low sound level
- High efficiency
- ErP 2015 compliant

Electrical supply

- 1x 230 V 50/60 Hz (sizes 225 - 400)
- 3x400 V 50Hz (sizes 1 - 7)

Ambient temperature range

- -20°C...+40 °C

Sizes

STEF-225, 310, 355, 400
STEF-1, -2, -3, -4, -5, -6, -7.

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 (single-phase versions). Three-phase versions have a backward curved impeller made of galvanized sheet steel (in size 7 the impeller is made of welded steel and powder painted).

Motor

Single-phase fans have AC-external rotor motor with thermal contact. Three-phase fans are using IEC standard three-phase AC-motors, which are located outside the air stream.

Installation

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

Speed control

The speed of single-phase motors can be controlled by using transformers.

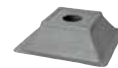
Three-phase motor speed with integrated frequency converter (or loose frequency converter) can be controlled by a 0-10 V control signal. One or two fixed speeds can be set by a speed controller. Both running and alarm indications are available with the same accessory. Frequency converters are available both as single-phase and three-phase option. See frequency converter alternatives in Accessories part.

Product Code - STEF-aaa-bbb-ccc-O, Single-phase
STEF-a-bbb-c-d-e, Three-phase

Accessories



BOGA
Roof curb



STEZ-01
Flat roof Socket



STEZ-02
Flexible connection



STEZ-04
Mounting plate



STEZ-05
Back draught shutter



STEZ-07
Roof Curb with
sound baffles



SAFE
Safety switch



STYZ-01-51
Potentiometer



STYR
Frequency converter



STYZ-01-10
Pressure controller



EA90000a
Transformer



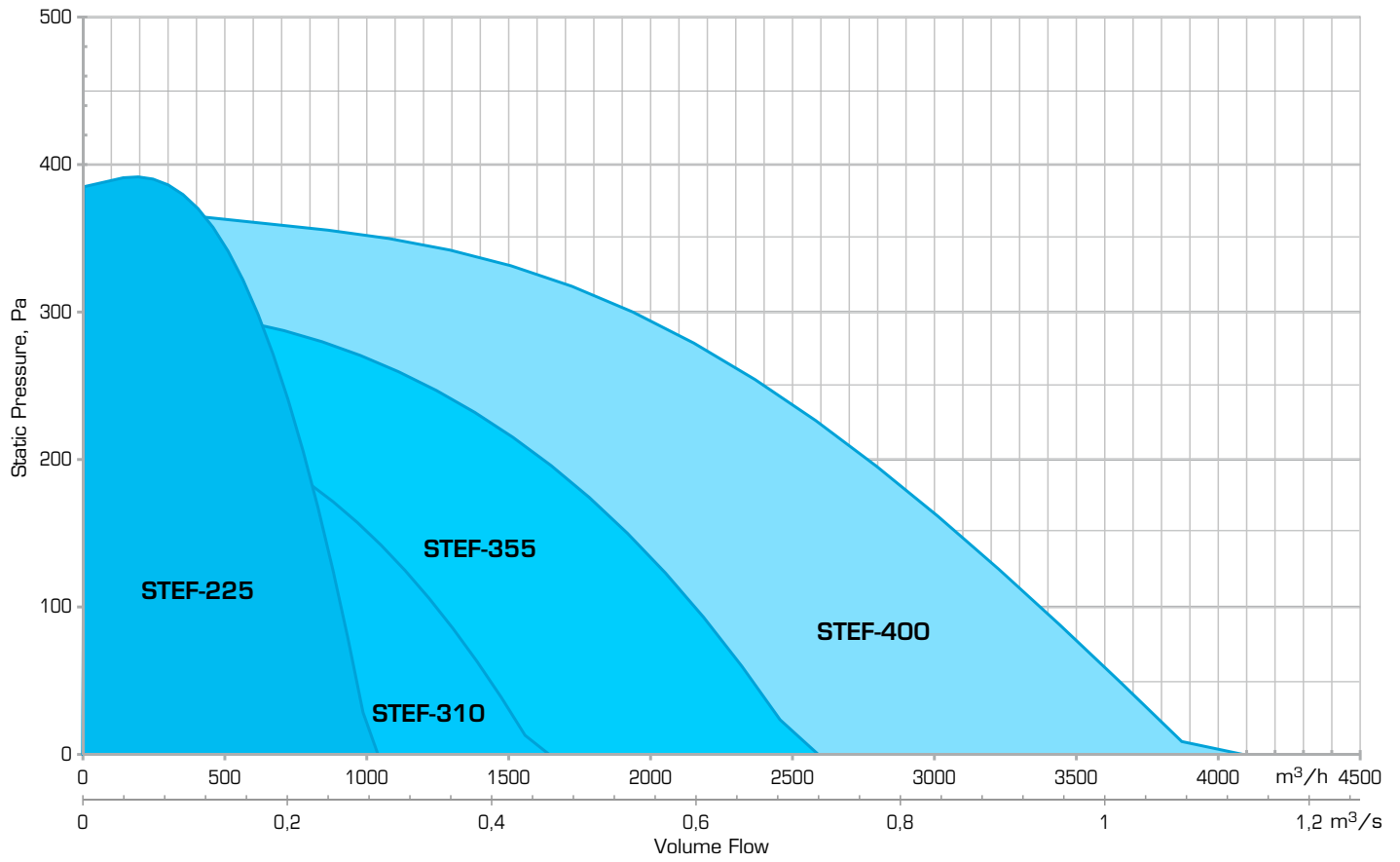
FLOW
Mounting frame
with air flow
measurement



Centrimeter
Manometer for
air flow
measurement

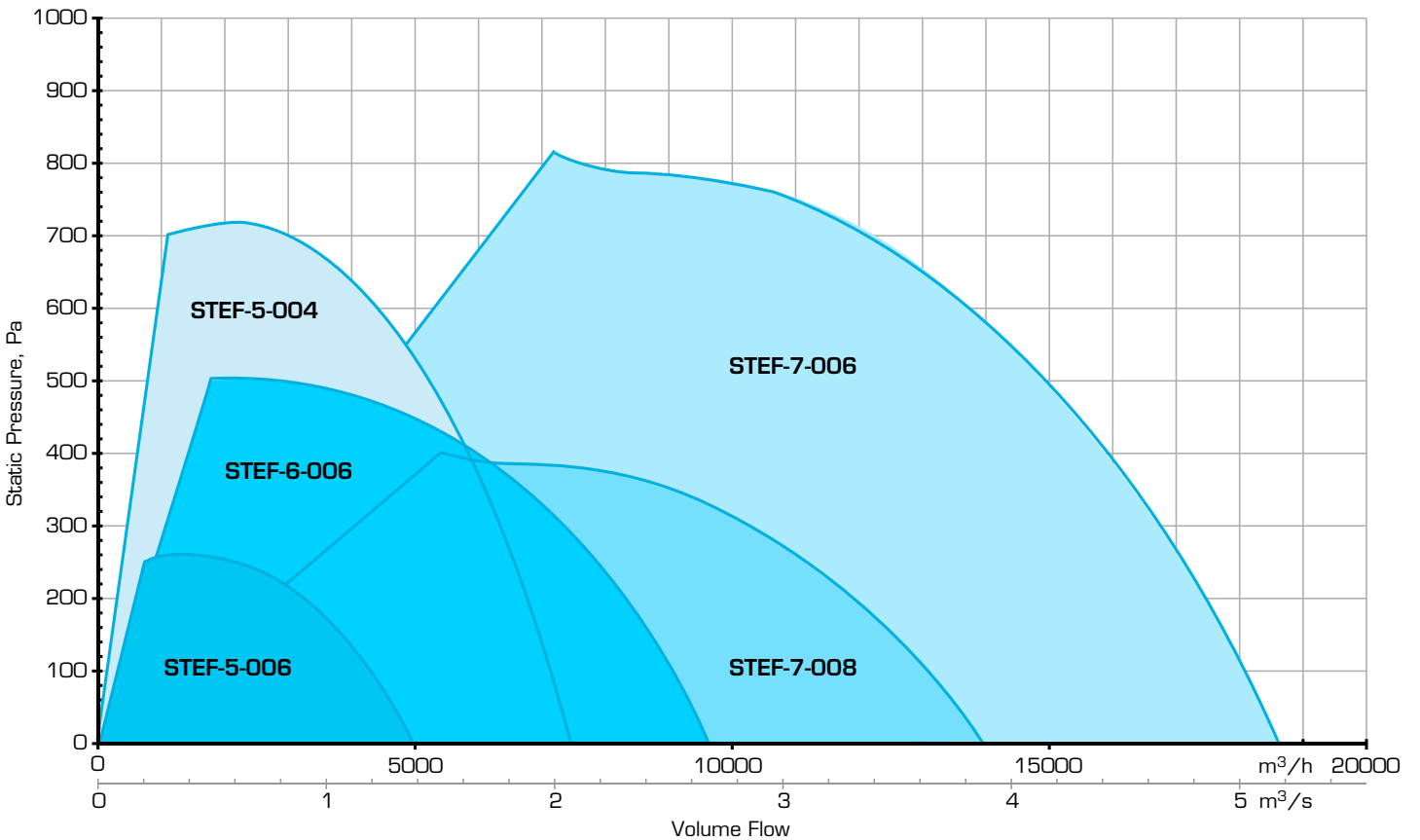
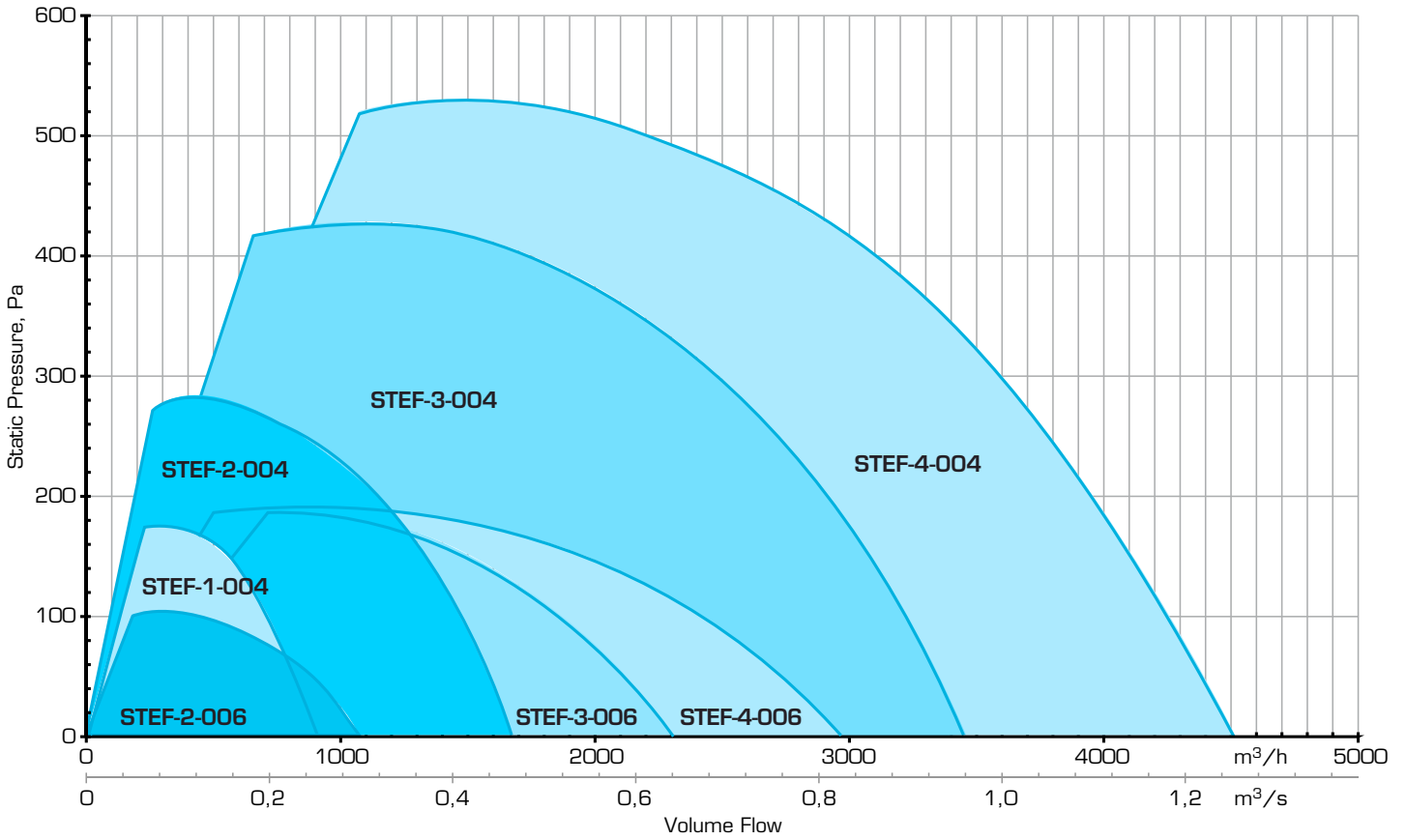
Performance Data

ROOFMASTER STEF – 1 phase



Performance Data

ROOFMASTER STEF – 3 phase



Performance Table

ROOFMASTER STEF – 1 phase

Air flow m³/h as function of static pressure

	Pressure [Pa]									
	0	50	100	150	200	250	300	350	400	450
STEF-225-VAC-11c-O	1044	994	936	878	814	738	652	544	367	
STEF-310-VAC-11c-O	1620	1517	1224	1080	720					
STEF-355-VAC-11c-O	2621	2448	2254	2023	1746	1382	760			
STEF-400-VAC-11c-O	3978	3809	3607	3384	3121	2808	2448	1872	565	
Airflow m ³ /h										

Air flow m³/s as function of static pressure

	Pressure [Pa]									
	0	50	100	150	200	250	300	350	400	450
STEF-225-VAC-11c-O	0,29	0,276	0,26	0,244	0,226	0,205	0,181	0,151	0,102	
STEF-310-VAC-11c-O	0,45	0,421	0,34	0,3	0,2					
STEF-355-VAC-11c-O	0,728	0,68	0,626	0,562	0,485	0,384	0,211			
STEF-400-VAC-11c-O	1,105	1,058	1,002	0,94	0,867	0,78	0,68	0,52	0,157	
Airflow m ³ /s										

Performance Table

ROOFMASTER STEF – 3 phase

Air flow m³/h as function of static pressure

	Statiskt tryck (Pa)														
	0	50	100	150	200	250	300	350	400	450	500	550	600	650	700
STEF-1-004	900	778	634	396											
STEF-2-004	1674	1552	1393	1192	889	230									
STEF-2-006	1073	835	234												
STEF-3-004	3485	3341	3175	2981	2754	2480	2146	1710	925						
STEF-3-006	2315	2038	1681	1127											
STEF-4-004	4536	4352	4158	3953	3722	3470	3175	2822	2369	1706					
STEF-4-006	2963	2693	2344	1868	965										
STEF-5-004	7459	7268	7063	6840	6595	6329	6041	5720	5364	4968	4518	3992	3341	2347	
STEF-5-006	4957	4662	4298	3856	3298	2542									
STEF-6-006	9616	9288	8906	8460	7924	7283	6520	5612	4432						
STEF-6-008	7261	6818	6210	5378	4255	2117									
STEF-7-006	18623	18227	17798	17327	16808	16240	15628	14958	14238	13464	12629	11718	10696	9475	7754
STEF-7-008	14000	13478	12838	12092	11228	10238	9104	7744							
	Luftflöde m ³ /h														

Air flow m³/s as function of static pressure

	Statiskt tryck (Pa)														
	0	50	100	150	200	250	300	350	400	450	500	550	600	650	700
STEF-1-004	0,25	0,216	0,176	0,11											
STEF-2-004	0,465	0,431	0,387	0,331	0,247	0,064									
STEF-2-006	0,298	0,232	0,065												
STEF-3-004	0,968	0,928	0,882	0,828	0,765	0,689	0,596	0,475	0,257						
STEF-3-006	0,643	0,566	0,467	0,313											
STEF-4-004	1,26	1,209	1,155	1,098	1,034	0,964	0,882	0,784	0,658	0,474					
STEF-4-006	0,823	0,748	0,651	0,519	0,268										
STEF-5-004	2,072	2,019	1,962	1,9	1,832	1,758	1,678	1,589	1,49	1,38	1,255	1,109	0,928	0,652	
STEF-5-006	1,377	1,295	1,194	1,071	0,916	0,706									
STEF-6-006	2,671	2,58	2,474	2,35	2,201	2,023	1,811	1,559	1,231						
STEF-6-008	2,017	1,894	1,725	1,494	1,182	0,588									
STEF-7-006	5,173	5,063	4,944	4,813	4,669	4,511	4,341	4,155	3,955	3,74	3,508	3,255	2,971	2,632	2,154
STEF-7-008	3,889	3,744	3,566	3,359	3,119	2,844	2,529	2,151							
	Luftflöde m ³ /s														

General description

Applications

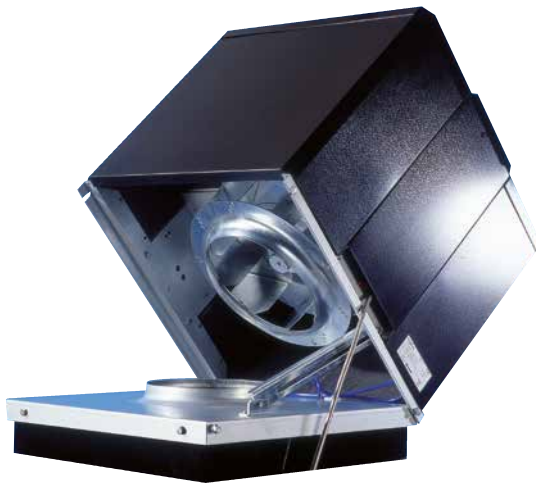
STEF roof fans are used as exhaust fans in comfort systems where low energy consumption, low noise levels and demand controlled ventilation are required. It can be used also in industrial applications where the air is slightly greasy or polluted.

STEF 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. By using demand controlled ventilation (DCV) the operation point can be adjusted to optimize sound levels.

Easy installation and service



STEF can be installed by 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 of the fan can be removed to perform the maintenance of the motor.

Air flow measurement

STEF can be equipped with air flow measurement device FLOW for easy and accurate measurement of air flow (NB! Always to be ordered together with the fan, not delivered separately).

By using Centrimeter display, the actual air flow can be seen directly from the fan and the 0-10V can be sent to any control device. Centrimeter can be integrated inside the fan or installed separately. Mounting frame FLOW needs to be installed to the fan when using Centrimeter.

Material and design

The fan casing is made of black pre-painted galvanized sheet or aluminium and zinc coated sheet steel. STEF can be used in industrial area 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 225-400 have single-phase AC-motor with thermal contact. The impeller is made of plastic and it has backward curved blades.

Sizes 1 - 7 have IEC standard three-phase motors that can be regulated by a frequency converter. The impeller is made of galvanized sheet steel (size 7 impeller is made of painted, welded steel).

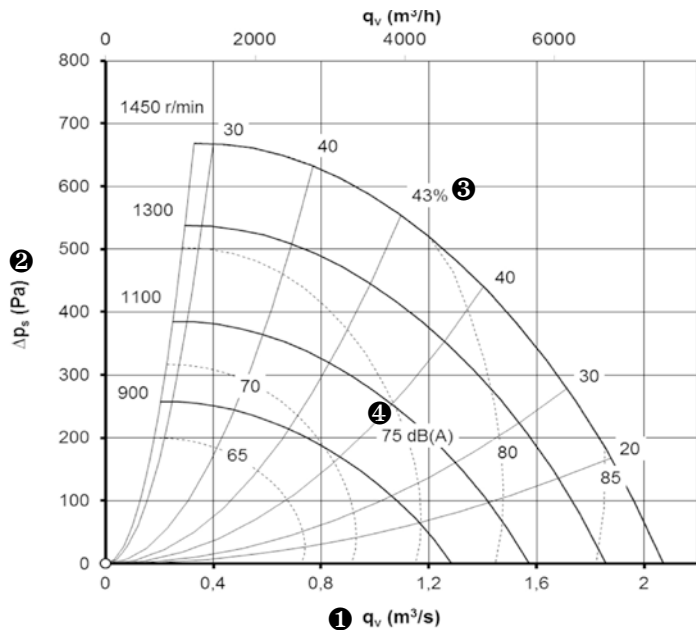
Demand controlled ventilation

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. STEF roof fans can be equipped with a speed controller. Single-phase motors can be controlled by using transformers and three-phase motors by using a frequency converter.

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

Fan chart-explanation and definitions

Symbols



- ① Q_v Airflow m^3/s
- ② Δp_s Static pressure rise Pa
- ③ η Overall efficiency (impeller, motor and rotation speed control) at max rotation speed %
- ④ 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 dividing into different octave bands dB
- ΔL Remote attenuation (given values calculated for an ideal case in a halfspace) dB

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:

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

Specification text

A high efficiency roof fan equipped with an impeller with custom shaped blades. single-phase motors are AC-outer rotor motors. Impeller is made of plastic and it has backward curved blades.

Three-phase motors are IEC standard fully closed motors outside the airstream.

The fan casing and 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 is C4. The fan discharges air upwards.

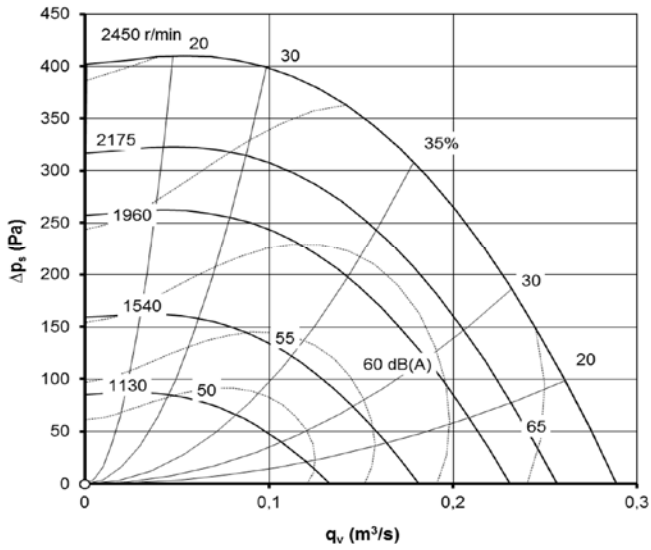
The capacity measurement has been performed according to ISO 5801:2007 and the sound power level to surrounding according to ISO 3741:1999.

Single-phase motors can be speed controlled by using transformers and three-phase motors by using frequency converters.

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
- Safety switch SAFE
- Potentiometer STYZ-01-51-1-1
- Frequency converter STYZ-aa-b-S-d-1
- Pressure controller STYZ-01-10-1-1
- Transformer EA90000a
- Air flow measurement FLOW
- Airflow transmitter CENTRIMETER

STEF-225



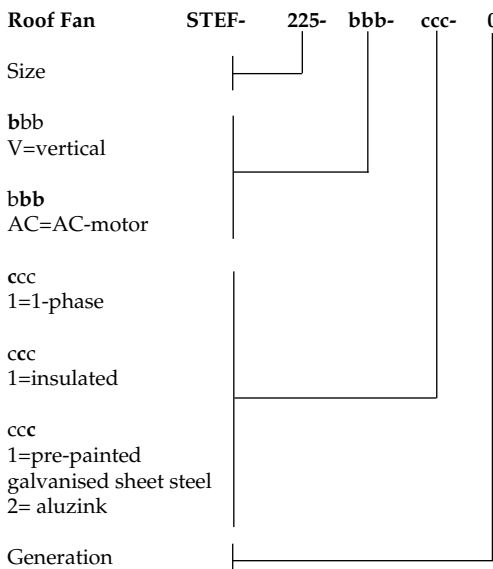
Sound data

		Correction Koct (dB)									
		Octave band mid-frequency (Hz)									
Fan code	Sound path	MinRPM	MaxRPM	63	125	250	500	1000	2000	4000	8000
STEF-225-VAC-11c-0	Surroundings	0	1533	-2	5	1	-2	-6	-8	-19	-23
STEF-225-VAC-11c-0	Surroundings	1534	2450	-5	1	3	-1	-8	-10	-14	-18
STEF-225-VAC-11c-0	To the inlet duct	0	1533	-1	5	4	-3	-2	-4	-11	-18
STEF-225-VAC-11c-0	To the inlet duct	1534	2450	-7	0	6	-3	-3	-5	-8	-14

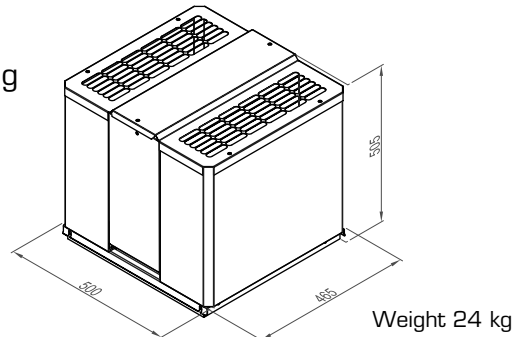
Motor data

Motor nominal data at 50 Hz							
	Supply voltage	Power kW	Max current A	Speed r/min	Speed fan r/min	Wiring nr.	Temperature range °C
STEF-225-VAC-11c-0	1x230V 50/60 Hz	0,155	0,68	2500	2450	STOF AA	-25...+40

	SAFE-	Condensator μF	Transformer	Current A	IP class	Voltage	Weight	AxBxC
STEF-225-VAC-11c-0	SAFE-1-b-0	3,5	EA900000	1	54	230VAC 50/60 Hz	1,3	84x160x88

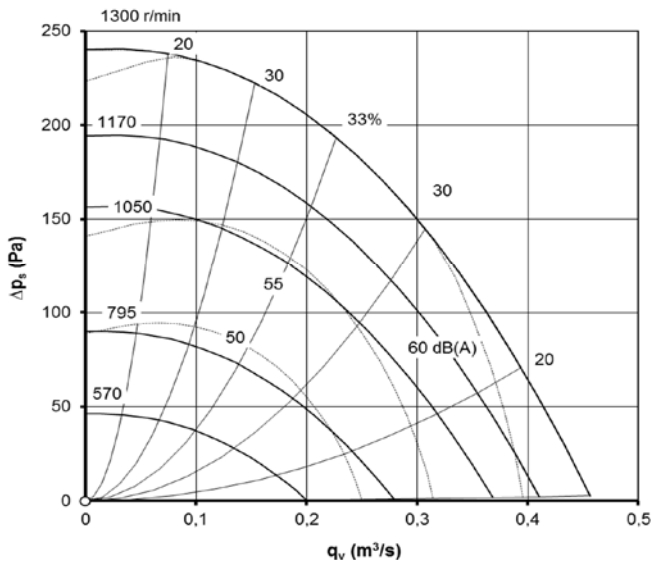


Dimensional drawing



Roof curb	BOGA-01-b-1-1	Centrimeter	GTLZ-86-bb-0-0
Flat roof socket	STEZ-01-1	Transformer	EA900000
Flexible connecton	STEZ-02-1		
Adapter plate	STEZ-04-1		
Back draught shutter	STEZ-05-1		
Inlet sound attenuator	STEZ-07-1		
Air flow measurement	FLOW-1-b-0		
Safety switch	SAFE-1-b-0		

STEF-310



Sound data

		Correction Koct (dB)									
		Octave band mid-frequency (Hz)									
Fan code	Sound path	MinRPM	MaxRPM	63	125	250	500	1000	2000	4000	8000
STEF-310-VAC-11c-0	Surroundings	0	893	5	4	3	0	-8	-19	-24	-26
STEF-310-VAC-11c-0	Surroundings	894	1648	-2	6	2	-1	-7	-15	-20	-26
STEF-310-VAC-11c-0	To the inlet duct	0	893	6	3	2	-3	-10	-12	-16	-22
STEF-310-VAC-11c-0	To the inlet duct	894	1648	-2	6	2	-3	-10	-11	-15	-20

Motor data

Motor nominal data at 50 Hz							
	Supply voltage	Power kW	Max current A	Speed r/min	Speed fan r/min	Wiring nr.	Temperature range °C
STEF-310-VAC-11c-0	1x230V 50/60 Hz	0,137	0,62	1325	1300	STOF AA	-25..+40

	SAFE-	Condensator μ F	Transformer	Current A	IP class	Voltage	Weight	AxBxC
STEF-310-VAC-11c-0	SAFE-1-b-0	4	EA900000	1	54	230VAC 50/60 Hz	1,3	84x160x88

Roof Fan

Size

bbb
V=vertical

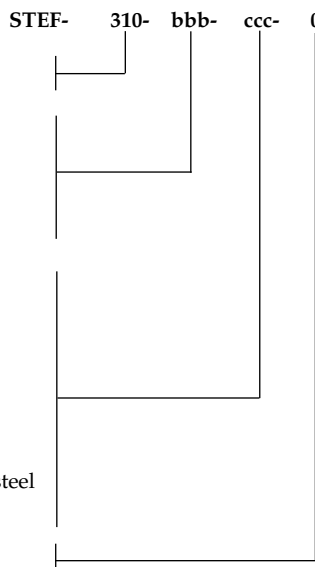
bbb
AC=AC-motor

ccc
1=1-phase

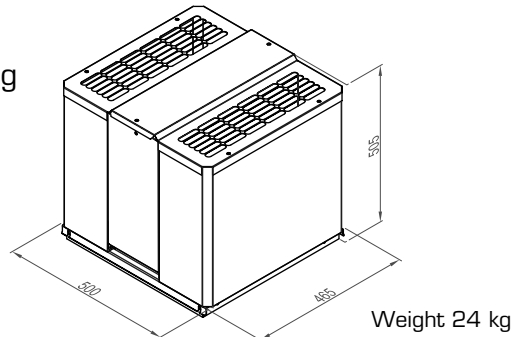
ccc
1=insulated

ccc
1=pre-painted galvanised sheet steel
2= aluzink

Generation



Dimensional drawing

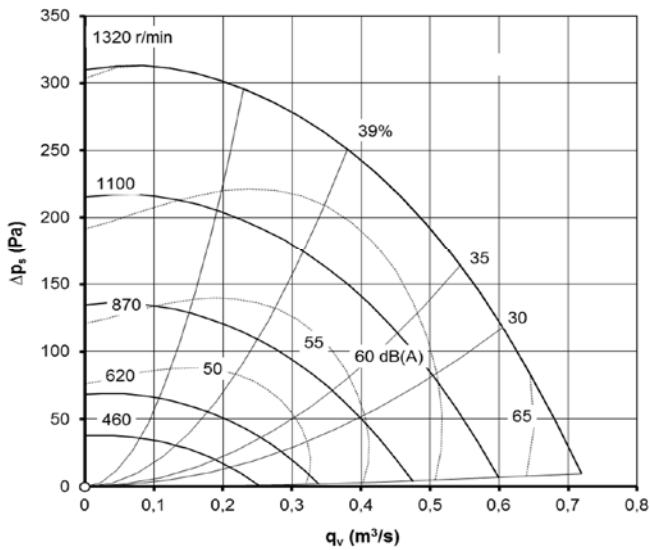


Roof curb	BOGA-02-b-1-1	Centrimeter	GTLZ-86-bb-0-0
Flat roof socket	STEZ-01-2	Transformer	EA900000
Flexible connecton	STEZ-02-2		
Adapter plate	STEZ-04-2		
Back draught shutter	STEZ-05-2		
Inlet sound attenuator	STEZ-07-2		
Air flow measurement	FLOW-2-b-0		

Safety switch

SAFE-1-b-0

STEF-355



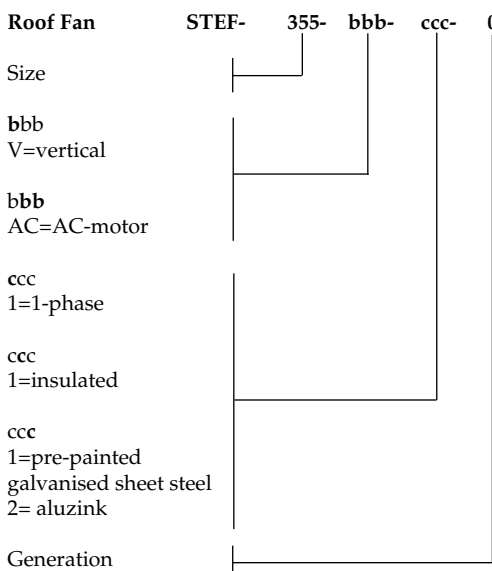
Sound data

		Correction Kocf (dB)										
		Octave band mid-frequency (Hz)										
Fan code	Sound path	MinRPM	MaxRPM	63	125	250	500	1000	2000	4000	8000	
STEF-355-VAC-11c-0	Surroundings	0	893	4	5	3	0	-8	-18	-22	-26	
STEF-355-VAC-11c-0	Surroundings	894	1433	0	4	4	-1	-7	-16	-19	-27	
STEF-355-VAC-11c-0	To the inlet duct	0	893	7	6	4	-5	-9	-10	-15	-23	
STEF-355-VAC-11c-0	To the inlet duct	894	1433	0	6	3	-5	-8	-12	-12	-22	

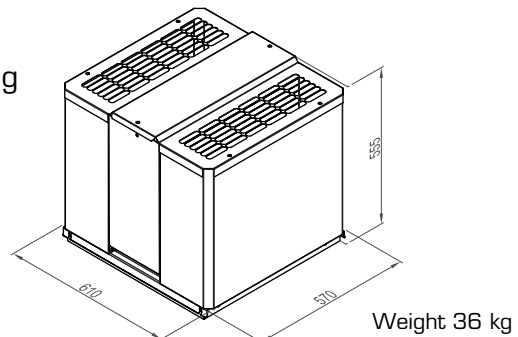
Motor data

Motor nominal data at 50 Hz							
	Supply voltage	Power kW	Max current A	Speed r/min	Speed fan r/min	Wiring nr.	Temperature range °C
STEF-355-VAC-11c-0	1x 230 V 50 Hz	0,27	1,18	1330	1300	STOF AA	-25...+40

	SAFE-	Condensator μF	Transformer	Current A	IP class	Voltage	Weight	AxBxC
STEF-355-VAC-11c-0	SAFE-1-b-0	6	EA900001	1,5	54	230VAC 50/60 Hz	2,1	115x205x100



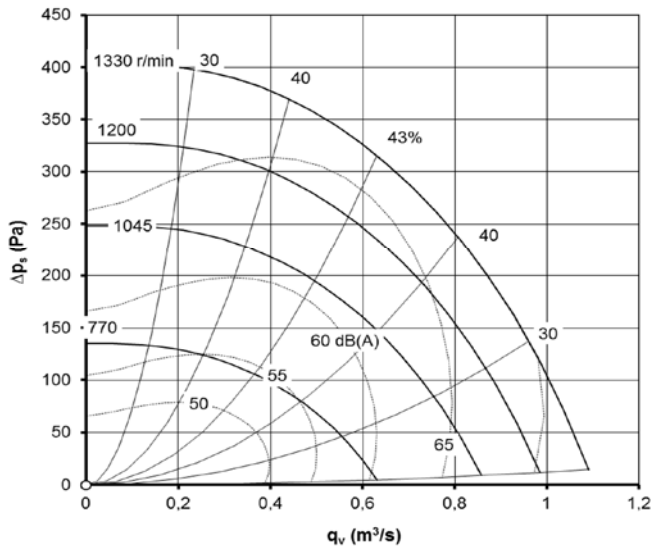
Dimensional drawing



Roof curb	BOGA-03-b-1-1	Air flow measurement	FLOW-3-b-0
Roof curb ¹⁾	BOGA-03-b-3-1	Safety switch	SAFE-1-b-0
Flat roof socket	STEZ-01-3	Centrimeter	GTLZ-86-bb-0-0
Flexible connecton	STEZ-02-3	Transformer	EA900001
Adapter plate	STEZ-04-3		
Back draught shutter	STEZ-05-3		
Inlet sound attenuator	STEZ-07-3		
Inlet sound attenuator ¹⁾	STEZ-07-03		

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

STEF-400



Sound data

		Correction Kocct (dB)									
		Octave band mid-frequency (Hz)									
Fan code	Sound path	MinRPM	MaxRPM	63	125	250	500	1000	2000	4000	8000
STEF-400-VAC-11c-0	Surroundings	0	893	7	15	-1	-8	-15	-19	-20	-25
STEF-400-VAC-11c-0	Surroundings	894	1404	6	9	3	-2	-8	-14	-18	-25
STEF-400-VAC-11c-0	To the inlet duct	0	893	2	8	-5	-14	-18	-18	-17	-30
STEF-400-VAC-11c-0	To the inlet duct	894	1404	1	7	2	-6	-10	-13	-15	-21

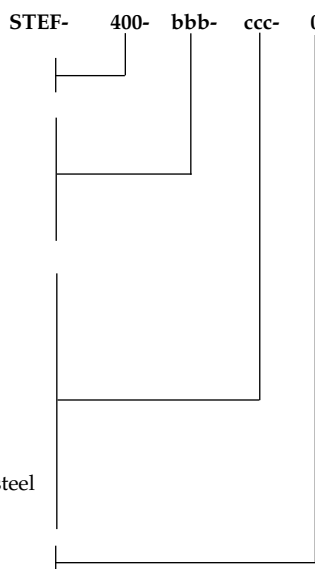
Motor data

Motor nominal data at 50 Hz							
	Supply voltage	Power kW	Max current A	Speed r/min	Speed fan r/min	Wiring nr.	Temperature range °C
STEF-400-VAC-11c-0	1x230V 50/60 Hz	0,47	2,05	1340	1350	STOF AB	-25...+40

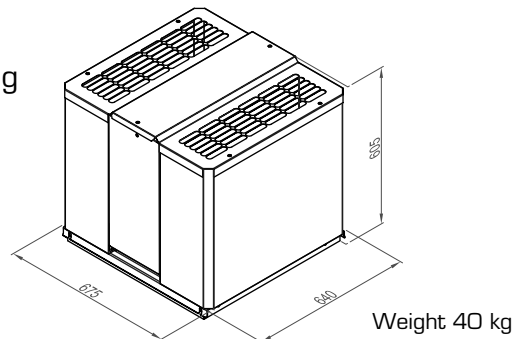
	SAFE-	Condensator μF	Transformer	Current A	IP class	Voltage	Weight	AxBxC
STEF-400-VAC-11c-0	SAFE-2-b-0	9	EA900008	2,5	54	230VAC 50/60 Hz	3,9	170x255x140

Roof Fan

Size
bbb
 V=vertical
bbb
 AC=AC-motor
ccc
 1=1-phase
ccc
 1=insulated
ccc
 1=pre-painted galvanised sheet steel
 2= aluzink
 Generation



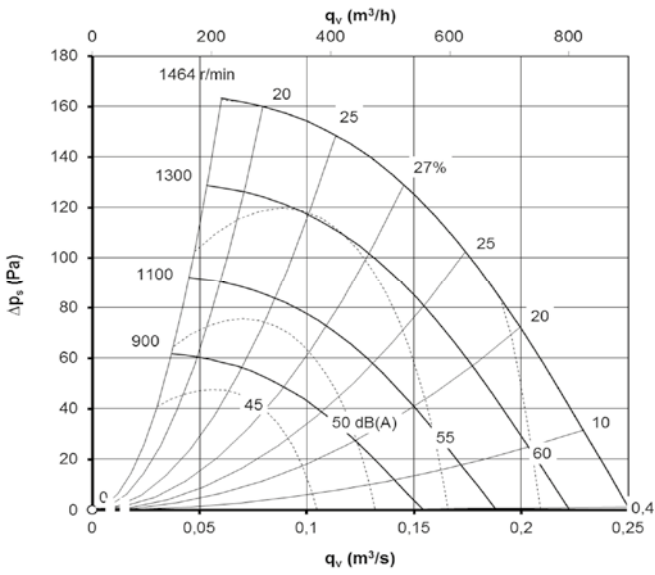
Dimensional drawing



Roof curb	BOGA-04-b-1-1	Safety switch	SAFE-2-b-0
Flat roof socket	STEZ-01-4	Centrimeter	GTLZ-86-bb-0-0
Flexible connecton	STEZ-02-4	Transformer	EA900008
Adapter plate	STEZ-04-4		
Back draught shutter	STEZ-05-4		
Inlet sound attenuator	STEZ-07-4		
Air flow measurement	FLOW-4-b-0		

STEF-1

STEF-1-004



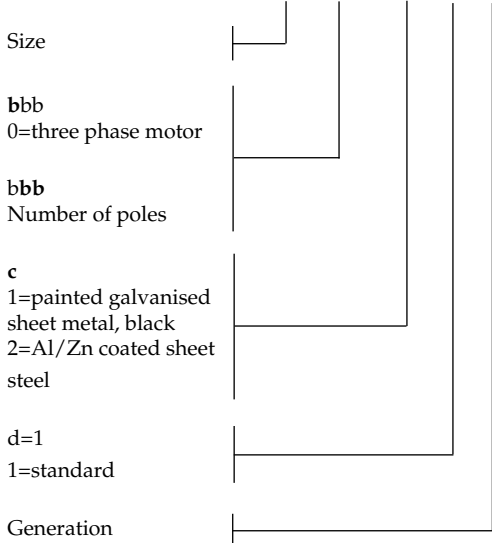
Sound data

				Correction Kocf (dB)							
				Octave band mid-frequency (Hz)							
Fan code	Sound path	MinRPM	MaxRPM	63	125	250	500	1000	2000	4000	8000
STEF-1	Surroundings	0	1500	-2	9	3	-3	-10	-15	-19	-15
STEF-1	To the inlet duct	0	1500	-2	2	-3	-6	-3	-3	-13	-19

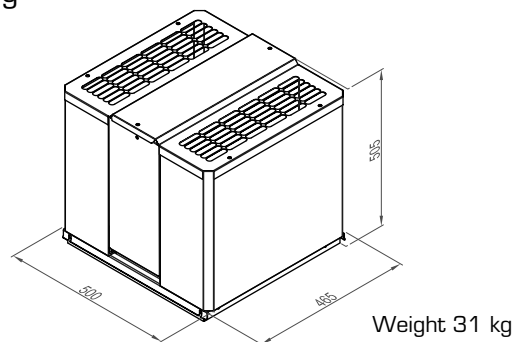
Motor data

Motor nominal data at 50 Hz						
STEF-	Speed r/min	Output kW	Voltage V	Current (A)	STYR- 1~ 230 V	STYR- 3~ 400V
1-004-c	1350	0.12	3x400/3x230	0,45/0,8	STYR-13-1-S-d-1	STYR-14-3-S-d-1

Roof Fan



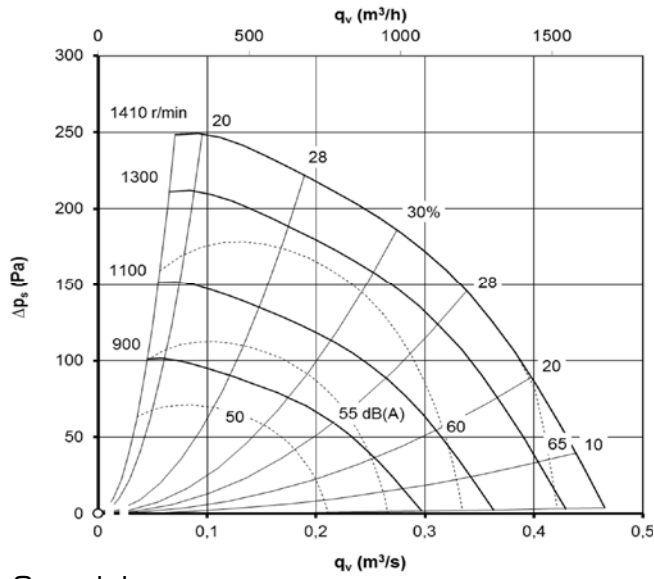
Dimensional drawing



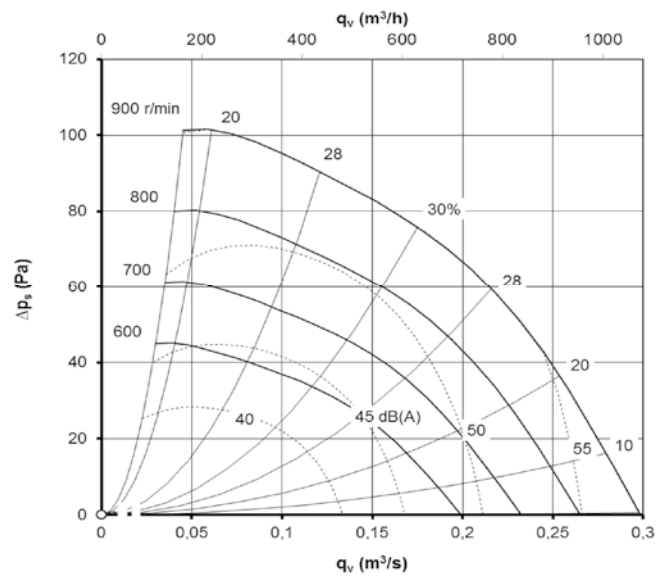
Roof curb	BOGA-01-b-1-1	Pressure controller	STYZ-01-10-c-1
Flat roof socket	STEZ-01-1	Temperature sensor	STYZ-01-11-0-1
Flexible connection	STEZ-02-1	Timer	STYZ-01-40-0-0
Adapter plate	STEZ-04-1	Potentiometer	STYZ-01-51-1-1
Back draught shutter	STEZ-05-1	Centrimeter	GTLZ-86-bb-c-0
Inlet sound attenuator	STEZ-07-1	Frequency converter	STYR-aa-b-S-d-1
Air flow measurement	FLOW-1-b-0	(see motor table)	
Safety switch	SAFE-1-b-0		
Safety switch in EMC version	SAFE-3-b-0		

STEF-2

STEF-2-004



STEF-2-006

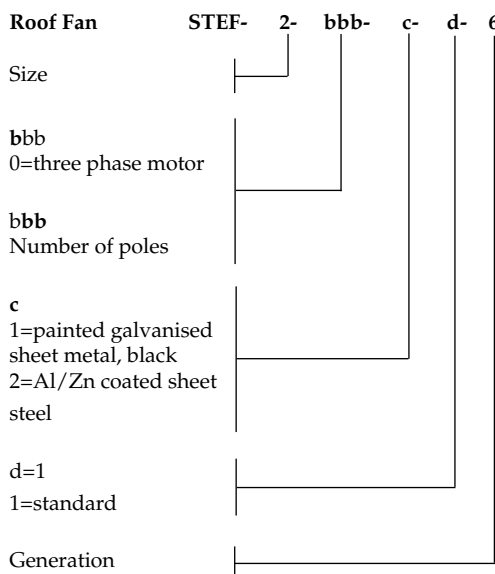


Sound data

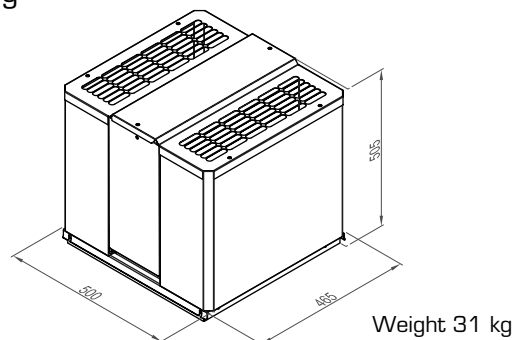
				Correction Kocot (dB)							
				Octave band mid-frequency (Hz)							
Fan code	Sound path	MinRPM	MaxRPM	63	125	250	500	1000	2000	4000	8000
STEF-2	Surroundings	0	1500	-3	8	3	-2	-8	-13	-17	-16
STEF-2	To the inlet duct	0	1500	1	1	-3	-6	-1	-5	-11	-19

Motor data

Motor nominal data at 50 Hz						
STEF-	Speed r/min	Output kW	Voltage V	Current (A)	STYR- 1~ 230 V	STYR- 3~ 400V
2-004-c	1350	0.12	3x400/3x230	0,45/0,8	STYR-13-1-S-d-1	STYR-14-3-S-d-1
2-006-c	905	0.18	3x400/3x230	0,8/1,3	STYR-14-1-S-d-1	STYR-14-3-S-d-1



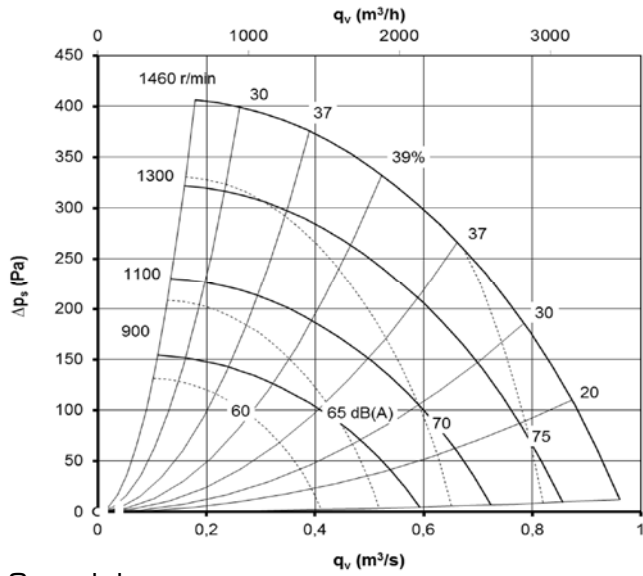
Dimensional drawing



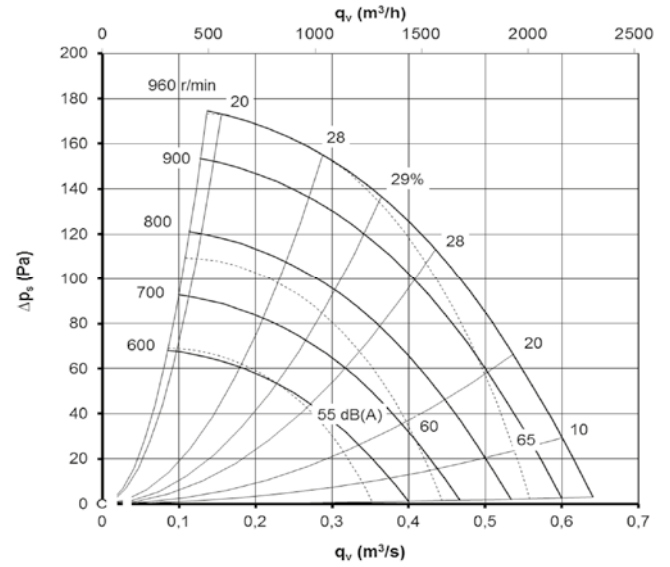
Roof curb	BOGA-02-b-1-1	Pressure controller	STYZ-01-10-c-1
Flat roof socket	STEZ-01-2	Temperature sensor	STYZ-01-11-0-1
Flexible connecton	STEZ-02-2	Timer	STYZ-01-40-0-0
Adapter plate	STEZ-04-2	Potentiometer	STYZ-01-51-1-1
Back draught shutter	STEZ-05-2	Centrimeter	GTLZ-86-bb-c-0
Inlet sound attenuator	STEZ-07-2	Frequency converter	STYR-aa-b-S-d-1
Air flow measurement	FLOW-2-b-0	(see motor table)	
Safety switch	SAFE-1-b-0		
Safety switch in EMC version	SAFE-3-b-0		

STEF-3

STEF-3-004



STEF-3-006



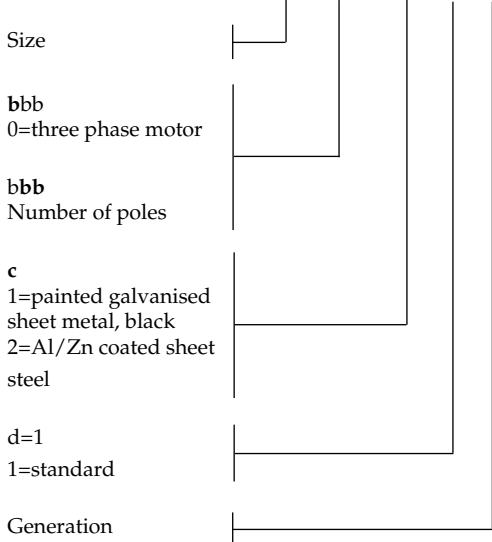
Sound data

				Correction Kocf (dB)							
				Octave band mid-frequency (Hz)							
Fan code	Sound path	MinRPM	MaxRPM	63	125	250	500	1000	2000	4000	8000
STEF-3	Surroundings	0	1500	-8	3	6	-4	-8	-13	-17	-16
STEF-3	To the inlet duct	0	1500	-9	-6	-6	-6	-6	-10	-15	-19

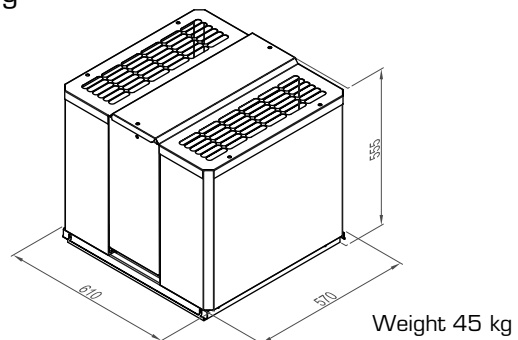
Motor data

Motor nominal data at 50 Hz						
STEF-	Speed r/min	Output kW	Voltage V	Current (A)	STYR- 1~ 230 V	STYR- 3~ 400V
3-004-c	1370	0,55	3x400/3x230	1,7/2,9	STYR-16-1-S-d-1	STYR-16-3-S-d-1
3-006-c	905	0,18	3x400/3x230	0,8/1,3	STYR-14-1-S-d-1	STYR-14-3-S-d-1

Roof Fan



Dimensional drawing



Size

bbb
0=three phase motor

bbb
Number of poles

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

d=1
1=standard

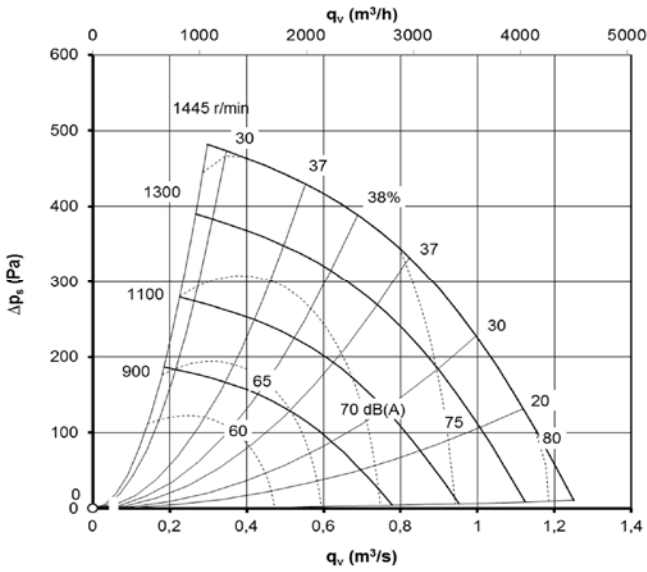
Generation

Roof curb	BOGA-03-b-1-1	Pressure controller	STYZ-01-10-c-1
Roof curb ¹⁾	BOGA-03-b-3-1	Temperature sensor	STYZ-01-11-0-1
Flat roof socket	STEZ-01-3	Timer	STYZ-01-40-0-0
Flexible connection	STEZ-02-3	Potentiometer	STYZ-01-51-1-1
Adapter plate	STEZ-04-3	Centrimeter	GTLZ-86-bb-c-0
Back draught shutter	STEZ-05-3	Frequency converter	STYR-aa-b-S-d-1
Inlet sound attenuator	STEZ-07-3	(see motor table)	
Inlet sound attenuator ¹⁾	STEZ-07-03		
Air flow measurement	FLOW-3-b-0		
Safety switch	SAFE-1-b-0		
Safety switch in EMC version	SAFE-3-b-0		

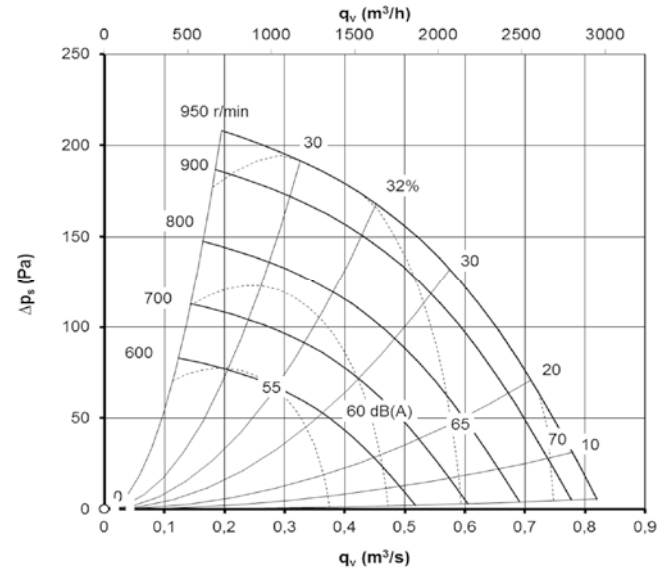
¹⁾ BOGA version c = 3 and STEZ-07-03 to be used only if the roof fan is supplied with FLOW.

STEF-4

STEF-4-004



STEF-4-006



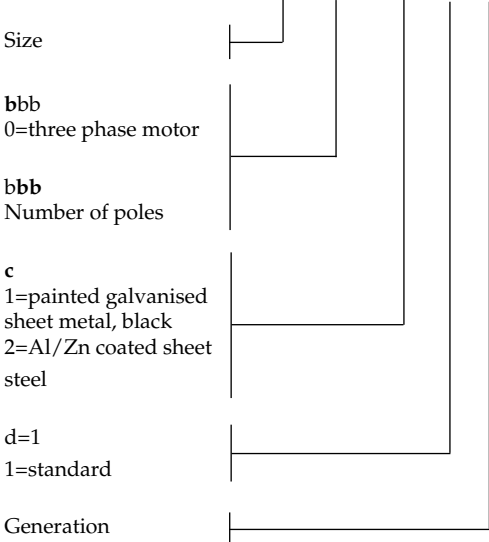
Sound data

		Correction Kocf (dB)									
		Octave band mid-frequency (Hz)									
Fan code	Sound path	MinRPM	MaxRPM	63	125	250	500	1000	2000	4000	8000
STEF-4	Surroundings	0	1500	-8	3	6	-5	-10	-15	-20	-25
STEF-4	To the inlet duct	0	1500	-8	-6	-8	-7	-5	-10	-17	-22

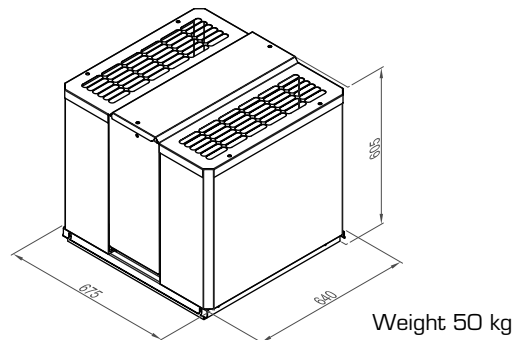
Motor data

Motor nominal data at 50 Hz							
STEF-	Speed r/min	Output kW	Voltage V	Current (A)	STYR- 1~ 230 V	STYR- 3~ 400V	
4-004-c	1380	0.75	3x400/3x230	2,3/4,0	STYR-16-1-S-d-1	STYR-16-3-S-d-1	
4-006-c	900	0.25	3x400/3x230	1,0/1,8	STYR-14-1-S-d-1	STYR-14-3-S-d-1	

Roof Fan



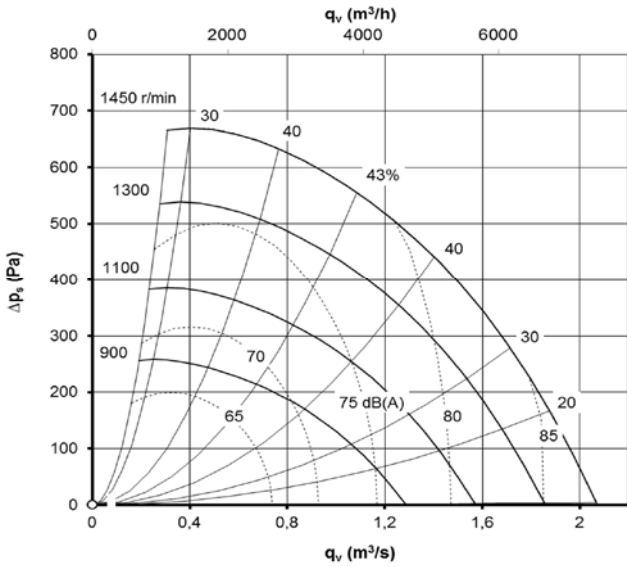
Dimensional drawing



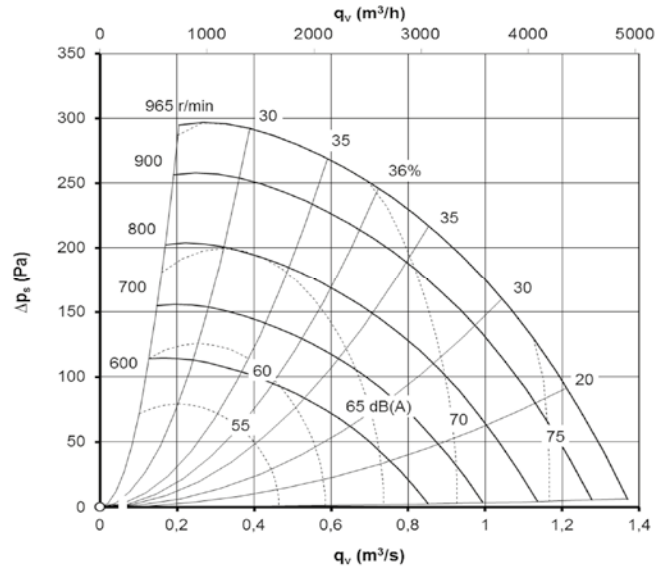
Roof curb	BOGA-04-b-1-1	Pressure controller	STYZ-01-10-c-1
Flat roof socket	STEZ-01-4	Temperature sensor	STYZ-01-11-0-1
Flexible connecton	STEZ-02-4	Timer	STYZ-01-40-0-0
Adapter plate	STEZ-04-4	Potentiometer	STYZ-01-51-1-1
Back draught shutter	STEZ-05-4	Centrimeter	GTLZ-86-bb-c-0
Inlet sound attenuator	STEZ-07-4	Frequency converter	STYR-aa-b-S-d-1
Air flow measurement	FLOW-4-b-0	(see motor table)	
Safety switch	SAFE-1-b-0		
Safety switch in EMC version	SAFE-3-b-0		

STEF-5

STEF-5-004



STEF-5-006



Sound data

				Correction Kocot (dB)							
				Octave band mid-frequency (Hz)							
Fan code	Sound path	MinRPM	MaxRPM	63	125	250	500	1000	2000	4000	8000
STEF-5	Surroundings	0	1500	-8	3	6	-5	-12	-16	-19	-22
STEF-5	To the inlet duct	0	1500	-11	-7	-8	-9	-11	-11	-18	-25

Motor data

Motor nominal data at 50 Hz						
STEF-	Speed r/min	Output kW	Voltage V	Current (A)	STYR- 1~ 230 V	STYR- 3~ 400V
5-004-c	1420	1.5	3x400/3x230	3,6/6,3	STYR-18-1-S-d-1	STYR-18-3-S-d-1
5-006-c	900	0.55	3x400/3x230	1,9/3,3	STYR-16-1-S-d-1	STYR-16-3-S-d-1

Roof Fan

STEF- 5- bbb- c- d- 5

Size

bbb
0=three phase motor

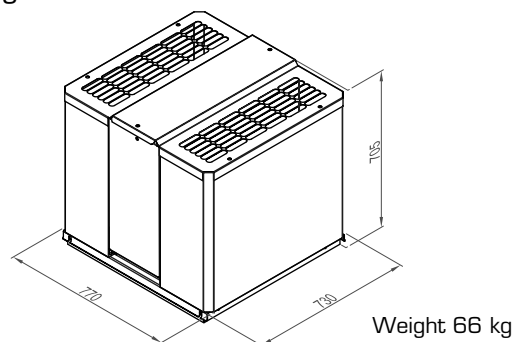
bbb
Number of poles

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

d=1
1=standard

Generation

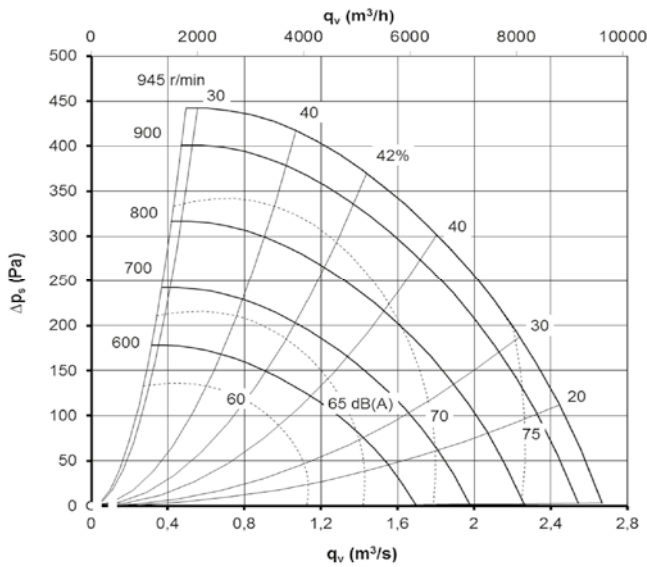
Dimensional drawing



Roof curb	BOGA-05-b-1-1	Pressure controller	STYZ-01-10-c-1
Flat roof socket	STEZ-01-5	Temperature sensor	STYZ-01-11-0-1
Flexible connecton	STEZ-02-5	Timer	STYZ-01-40-0-0
Adapter plate	STEZ-04-5	Potentiometer	STYZ-01-51-1-1
Back draught shutter	STEZ-05-5	Centrimeter	GTLZ-86-bb-c-0
Inlet sound attenuator	STEZ-07-5	Frequency converter	STYR-aa-b-S-d-1
Air flow measurement	FLOW-5-b-0	(see motor table)	
Safety switch	SAFE-1-b-0		
Safety switch in EMC version	SAFE-3-b-0		

STEF-6

STEF-6-006



Sound data

				Correction Koct (dB)							
				Octave band mid-frequency (Hz)							
Fan code	Sound path	MinRPM	MaxRPM	63	125	250	500	1000	2000	4000	8000
STEF-6	Surroundings	0	1500	3	8	3	-2	-8	-12	-15	-21
STEF-6	To the inlet duct	0	1500	3	6	1	-2	-7	-7	-12	-15

Motor data

Motor nominal data at 50 Hz							
STEF-	Speed r/min	Output kW	Voltage V	Current (A)	STYR- 1~ 230 V	STYR- 3~ 400V	
6-006-c	925	1.1	3x400/3x230	3,3/5,7	STYR-18-1-S-d-1	STYR-18-3-S-d-1	

Roof Fan

Size

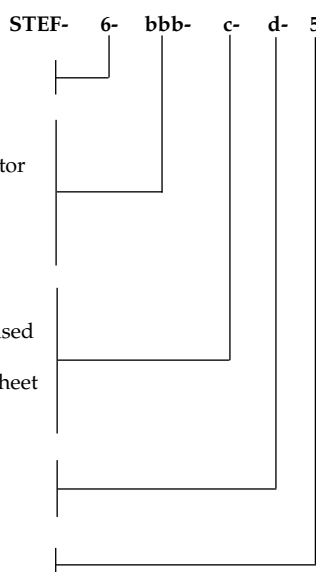
bbb
0=three phase motor

bbb
Number of poles

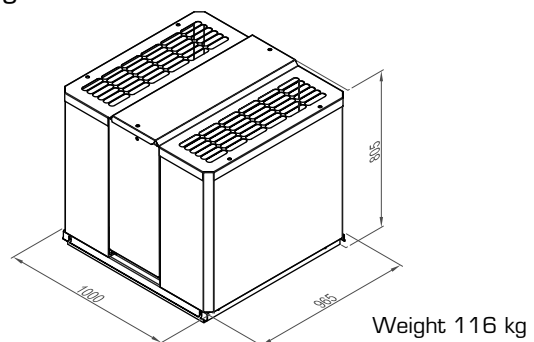
c
1=painted galvanised sheet metal, black
2=Al/Zn coated sheet steel

d=1
1=standard

Generation



Dimensional drawing

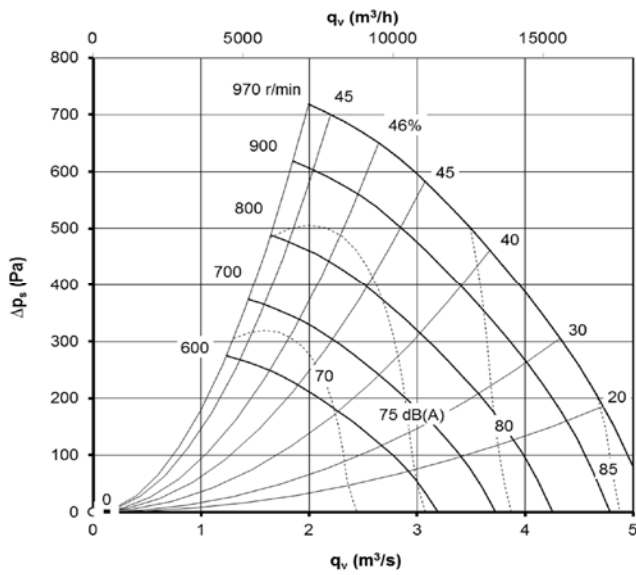


Roof curb	BOGA-06-b-1-1	Pressure controller	STYZ-01-10-c-1
Roof curb ¹⁾	BOGA-06-b-3-1	Temperature sensor	STYZ-01-11-0-1
Flat roof socket	STEZ-01-6	Timer	STYZ-01-40-0-0
Flexible connecton	STEZ-02-6	Potentiometer	STYZ-01-51-1-1
Adapter plate	STEZ-04-6	Centrimeter	GTLZ-86-bb-c-0
Back draught shutter	STEZ-05-6	Frequency converter	STYR-aa-b-S-d-1
Inlet sound attenuator	STEZ-07-6	(see motor table)	
Inlet sound attenuator ¹⁾	STEZ-07-06		
Air flow measurement	FLOW-6-b-0		
Safety switch	SAFE-1-b-0		
Safety switch in EMC version	SAFE-3-b-0		

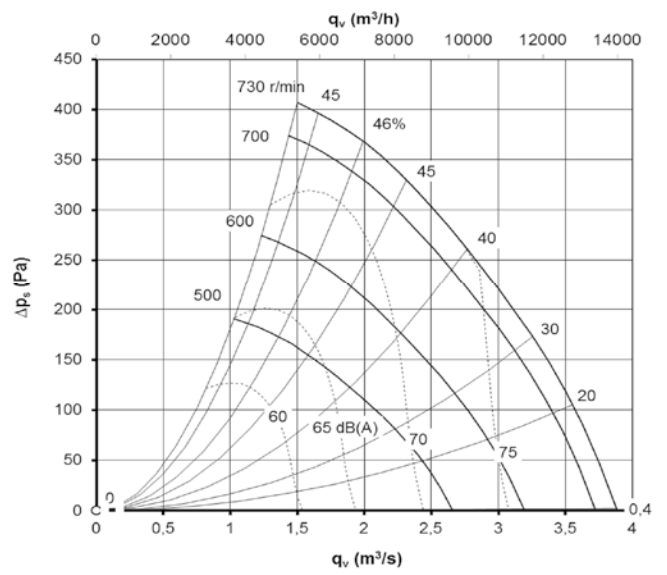
¹⁾ BOGA version c = 3 and STEZ-07-06 to be used only if the roof fan is supplied with FLOW.

STEF-7

STEF-7-006



STEF-7-008



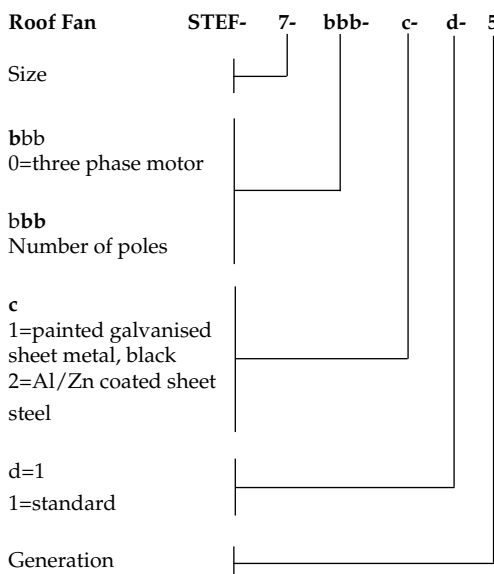
Sound data

		Correction Kocf (dB)									
		Octave band mid-frequency (Hz)									
Fan code	Sound path	MinRPM	MaxRPM	63	125	250	500	1000	2000	4000	8000
STEF-7	Surroundings	0	1500	3	7	3	-3	-7	-12	-15	-21
STEF-7	To the inlet duct	0	1500	1	3	5	1	-2	-4	-10	-15

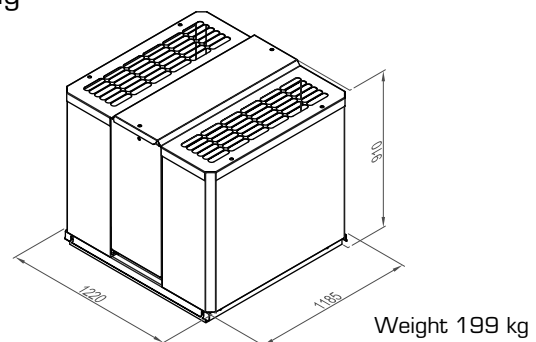
Motor data

Motor nominal data at 50 Hz						
STEF-	Speed r/min	Output kW	Voltage V	Current (A)	STYR- 1~ 230 V	STYR- 3~ 400V
7-006-c	960	4	3x400/3x230	9,4/15,6	-	STYR-21-3-S-d-1
7-008-c	710	2.2	3x400/3x230	5,9/10,2	-	STYR-19-3-S-d-1

Roof Fan



Dimensional drawing



Roof curb ¹⁾	BOGA-07-b-1-1	Pressure controller	STYZ-01-10-c-1
Flat roof socket	STEZ-01-7	Temperature sensor	STYZ-01-11-0-1
Flexible connecton	STEZ-02-7	Timer	STYZ-01-40-0-0
Adapter plate	STEZ-04-7	Potentiometer	STYZ-01-51-1-1
Back draught shutter	STEZ-05-7	Centrimeter	GTLZ-86-bb-c-0
Inlet sound attenuator	STEZ-07-7	Frequency converter	STYR-aa-b-S-d-1
Air flow measurement	FLOW-7-b-0	(see motor table)	
Safety switch	SAFE-1-b-0		
Safety switch in EMC version	SAFE-3-b-0		

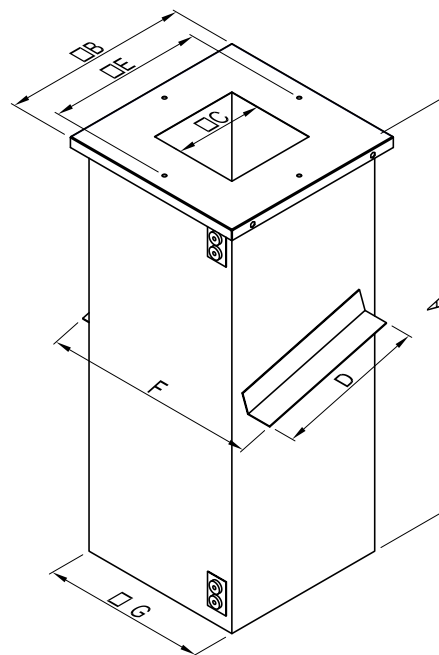
Accessories

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-4-1	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

Model	Octave band mid frequency (Hz)							
	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

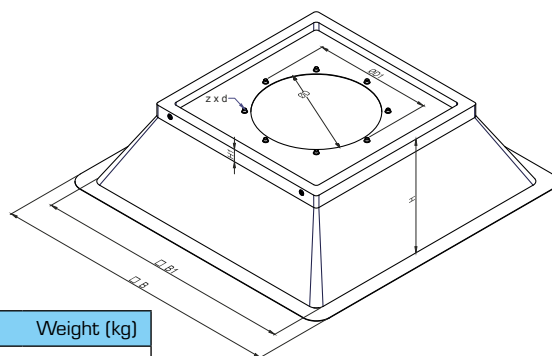
Sound attenuation when using BOGA L=1250

Model	Octave band mid frequency (Hz)							
	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

Accessories

Flat roof socket STEZ-01

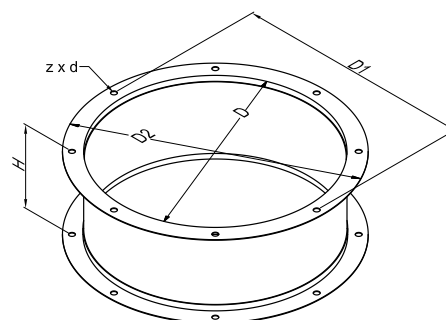
The roof socket STEZ-01 is made of corrosion resistant fibre glass. It is designed for mounting on flat roofs or roofs with a maximum pitch of 15°. For saddle roofs a BOGA roof duct is available. The roof socket is equipped with a connection flange according to DIN 24 154, part 1. The roof fan is secured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

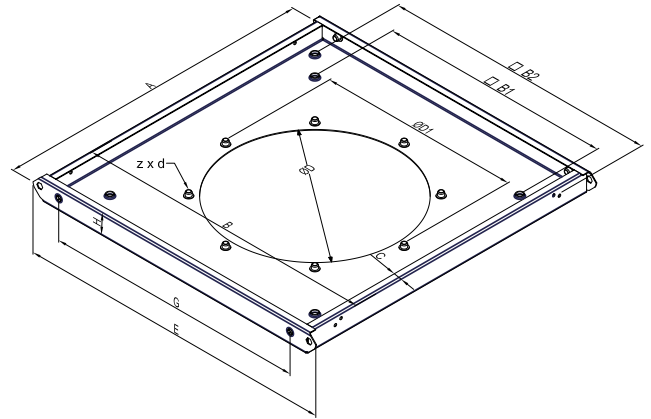


Model	D	D1	D2	H	zxd	Weight (kg)
STEZ-02-1	182	212	232	130	6x7	0.7
STEZ-02-2	253	283	303	130	6x7	2.0
STEZ-02-3	358	392	418	140	8x9.5	3.4
STEZ-02-4	358	392	418	140	8x9.5	3.4
STEZ-02-5	454	488	514	140	8x9.5	4.2
STEZ-02-6	454	488	514	140	8x9.5	4.2
STEZ-02-7	564	600	634	140	12x9.5	5.4

Accessories

Mounting frame STEZ-03

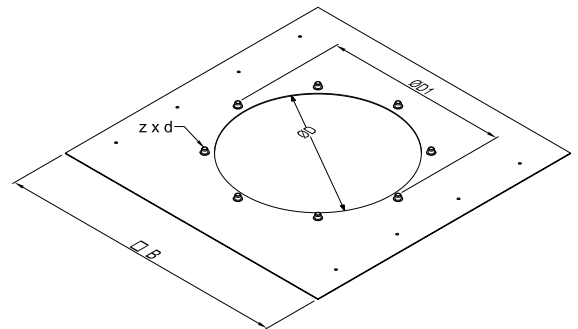
The mounting frame is designed for securing the roof fans STOF, STEC and STEF to an in-situ built chimney or other type of concrete. (FLOW can be used for same purpose with STEC and STEF, instead of STEZ-03). STEZ-03 shall also be used with STOF when opening of the fan is needed, e.g. for cleaning of 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

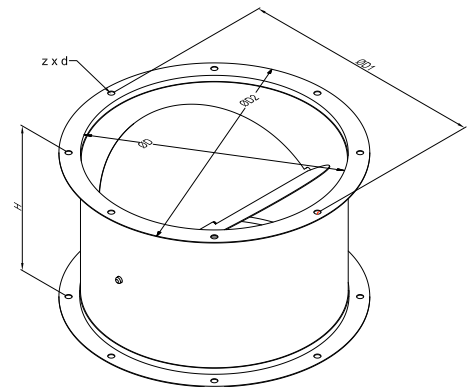
Model	D	D1	B	zxd	Weight (kg)
STEZ-04-1	182	212	435	6xM6	2.2
STEZ-04-2	253	283	435	6xM6	2.2
STEZ-04-3	358	392	548	8xM8	3.6
STEZ-04-4	358	392	618	8xM8	4.6
STEZ-04-5	454	488	708	8xM8	6.1
STEZ-04-6	454	488	888	8xM8	9.5
STEZ-04-7	564	600	1108	12xM8	14.7



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

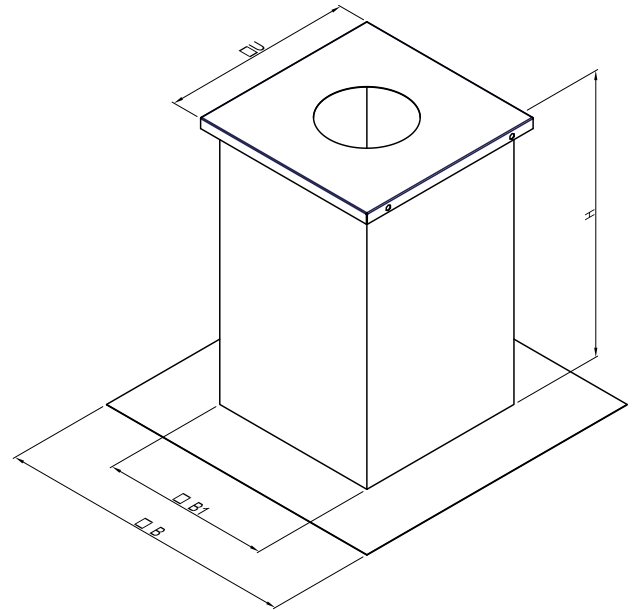


Accessories

Inlet sound attenuator 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.

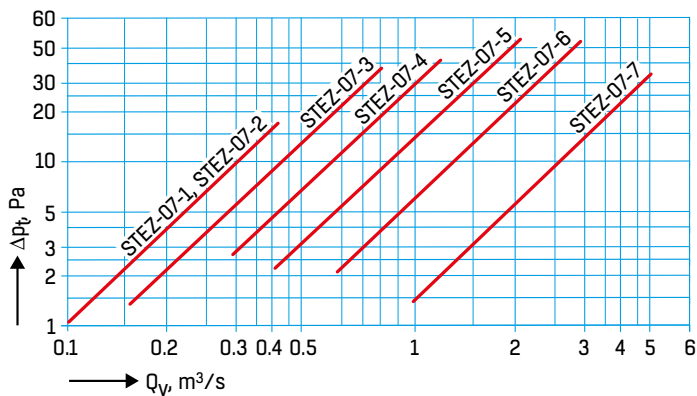


Model	B	B1	U	H	Weight [kg]
STEZ-07-1	690	390	442	660	15
STEZ-07-2	690	390	442	660	15
STEZ-07-3	803	503	552	760	35
STEZ-07-03	803	503	552	760	35
STEZ-07-4	873	573	622	760	40
STEZ-07-5	963	663	712	960	45
STEZ-07-6	1133	833	892	960	60
STEZ-07-06	1133	833	892	960	60
STEZ-07-7	1363	1063	1112	960	80

Sound attenuation when using STEZ-07

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-07-3/03	-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

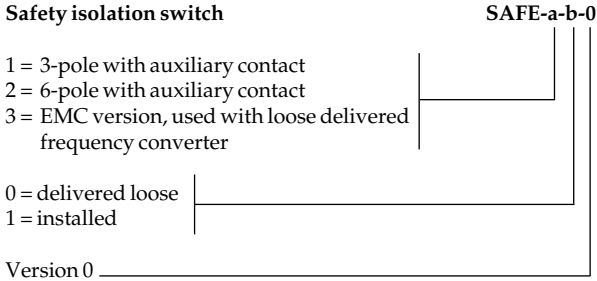
Pressure loss [Pa]



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.



Potentiometer STYZ-01-51-1-1

The potentiometer is used to control the frequency converter STYR.

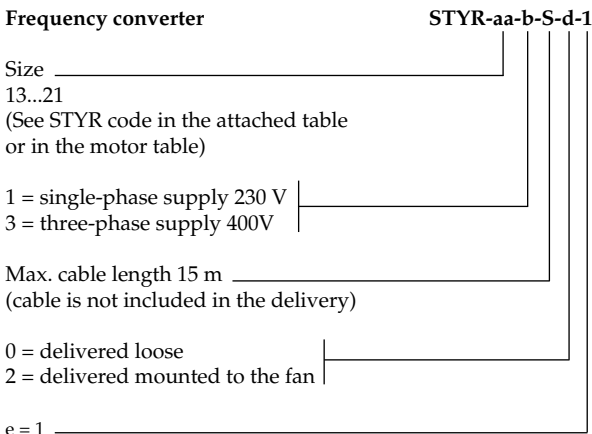
The potentiometer needs a supply of 10 V DC and gives a 3-step output signal of 0 - 10 VDC.



Technical features:

- Voltage supply: 10 VDC
- Output signal: 0-10 VDC
- IP rating: IP 44
- Steps: 1 = min (adjustable)
- 2 = med (adjustable)
- 3 = max (10V)

Frequency converter STYR



	Frequency converter 3phase STYR-code	Frequency converter 1-phase STYR-code	Max. frequency Hz
STEF-1-004-c-1-5	STYR-14-3-S-d-1	STYR-13-1-S-d-1	60
STEF-2-004-c-1-5	STYR-14-3-S-d-1	STYR-13-1-S-d-1	52
STEF-2-006-c-1-5	STYR-14-3-S-d-1	STYR-14-1-S-d-1	60
STEF-3-004-c-1-5	STYR-16-3-S-d-1	STYR-16-1-S-d-1	55
STEF-3-006-c-1-5	STYR-14-3-S-d-1	STYR-14-1-S-d-1	56
STEF-4-004-c-1-5	STYR-16-3-S-d-1	STYR-16-1-S-d-1	54
STEF-4-006-c-1-5	STYR-14-3-S-d-1	STYR-14-1-S-d-1	56
STEF-5-004-c-1-5	STYR-18-3-S-d-1	STYR-18-1-S-d-1	54
STEF-5-006-c-1-5	STYR-16-3-S-d-1	STYR-16-1-S-d-1	58
STEF-6-006-c-1-5	STYR-18-3-S-d-1	STYR-18-1-S-d-1	50
STEF-7-006-c-1-5	STYR-21-3-S-d-1	-	50
STEF-7-008-c-1-5	STYR-19-3-S-d-1	-	55

Accessories

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.

Potentiometer STYZ-01-10-c-1

0 = delivered loose
1 = mounted

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



Single-phase transformer

The EA 90000 transformer speed controllers are based on the principle of voltage control with autotransformers. They are applicable to control in five steps the rotational speed of fans.

A safety switch shall be installed on the mains side of all motor drives.

The EA900008 transformer is fitted with TK contacts for thermal motor protection (with fan size 400 and single-phase motor)

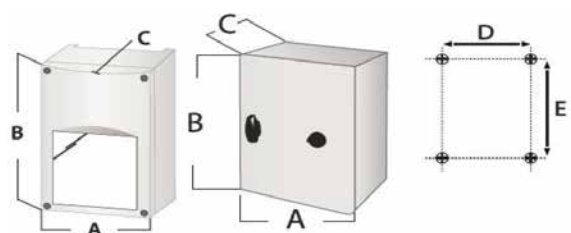
Technical data:

Degree of protection: IP54
 Supply voltage: 230 VAC, 50/60Hz
 Output voltage: 230-190-170-140-110 V
 Ambient temperature: max 50°C



Model	EA900000	EA90001	EA900008
Lmax (A)	1	1,5	2,5

Model	EA900000	EA90001	EA900008
A	84	115	170
B	160	205	255
C	88	100	140
D	71	98	155
E	108	140	194
Mass (kg)	1.2	1.9	3.9



Accessories

Airflow measurement

Roof fans can be supplied with an airflow measurement device. A mounting frame is always included in the delivery. (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

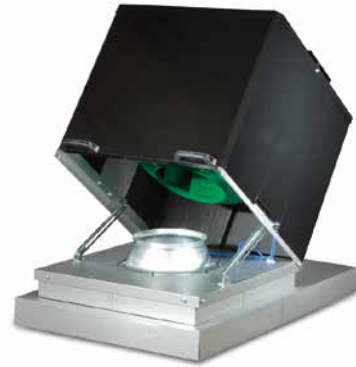
a = sizes 1, 2, 3, 4, 5, 6, 7

b = Design 1 = standard 2 = painted black

Version

K-factors

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



K-factors

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 = STEF

0 = loose

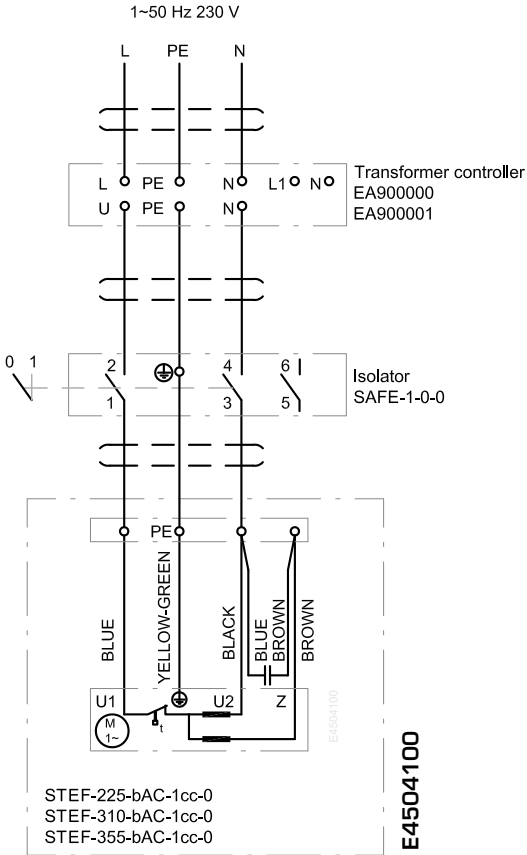
1 = factory-mounted

0 = Version

Wiring

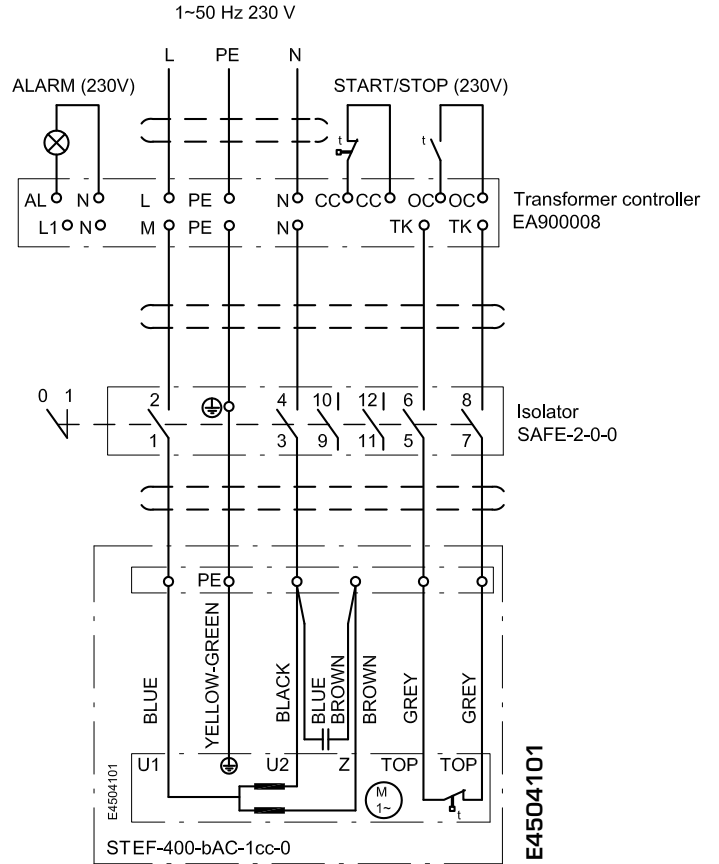
STOF-AA

Single phase motor, thermal overload protector (TOP) wired internally



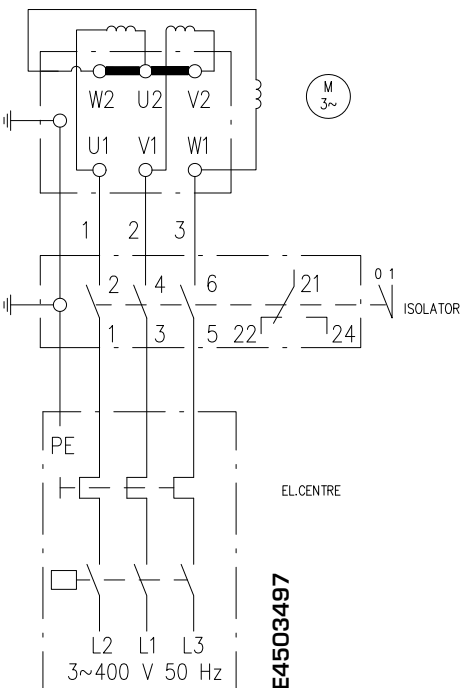
STOF-AB

Single phase motor, thermal overload protector (TOP) brought out



Star connection

Three phase motor, single speed

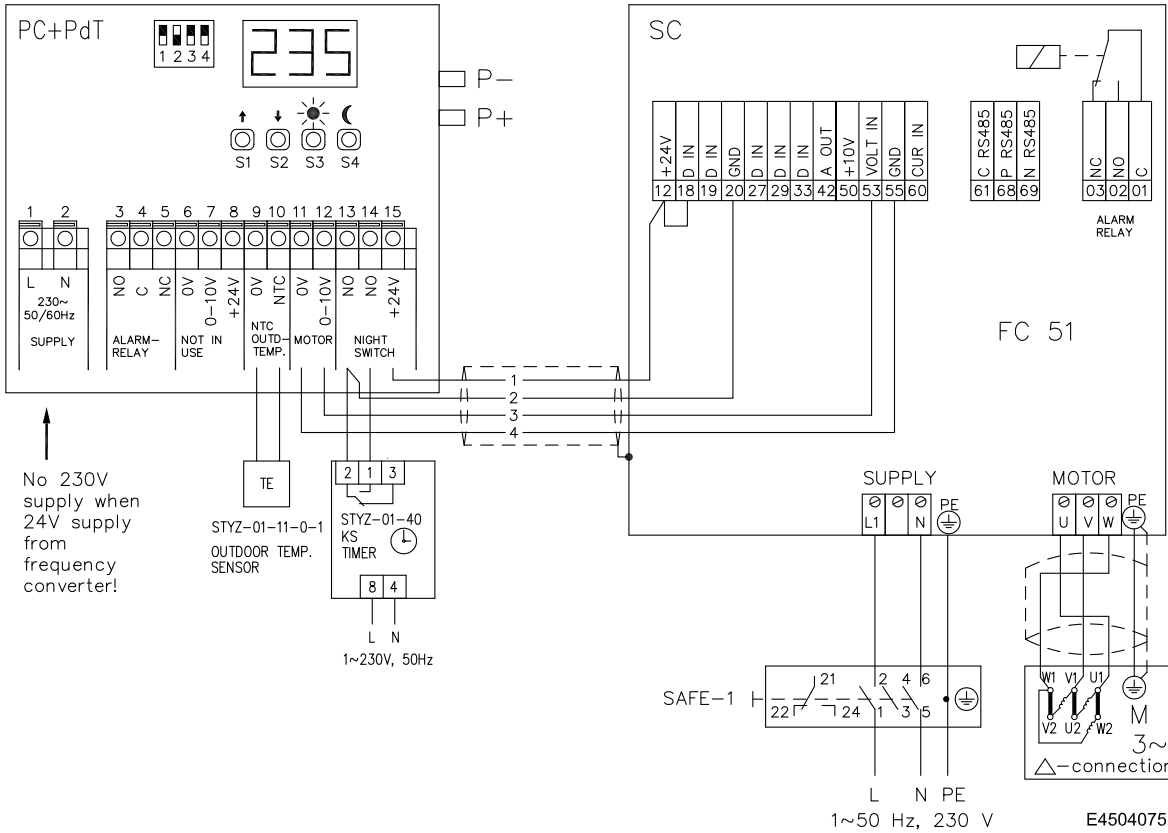


Wiring

Frequency converter with single phase supply and pressure controller

STYZ-01-10-c-1

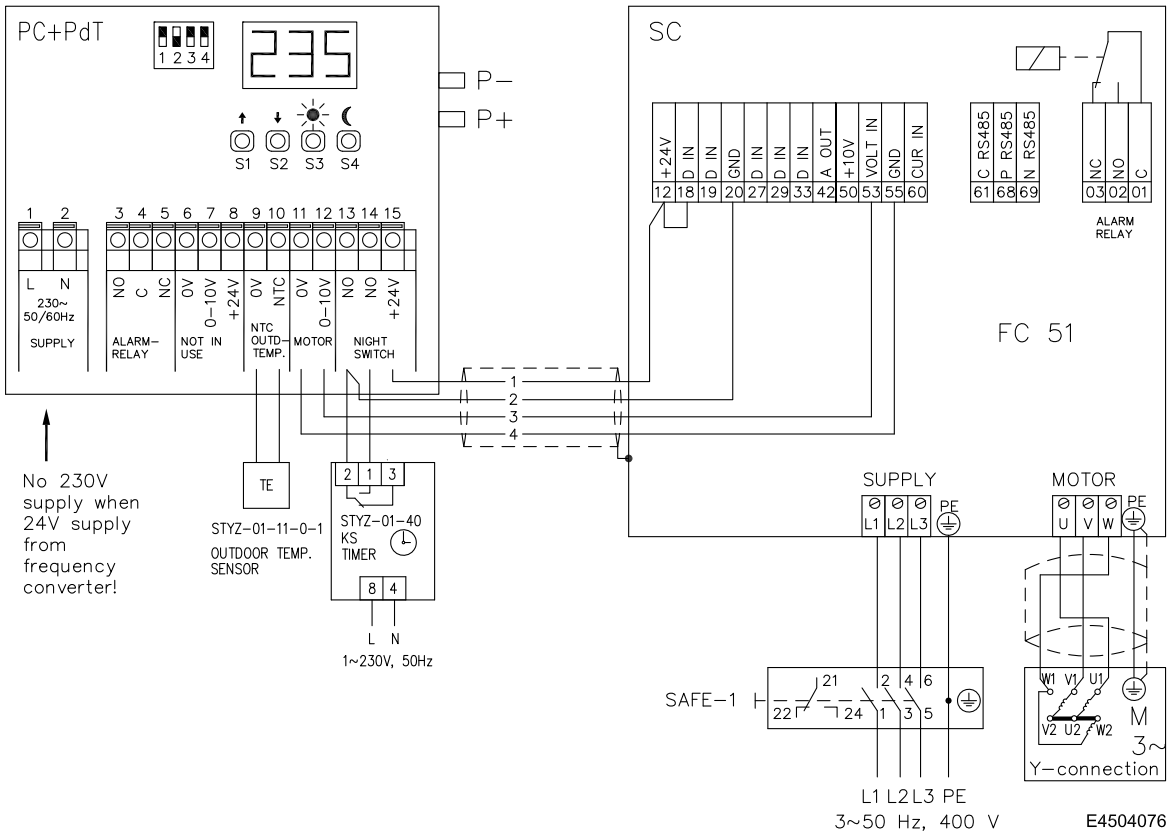
STYR-aa-1-S-2-1



Frequency converter with three phase supply and pressure controller

STYZ-01-10-c-1

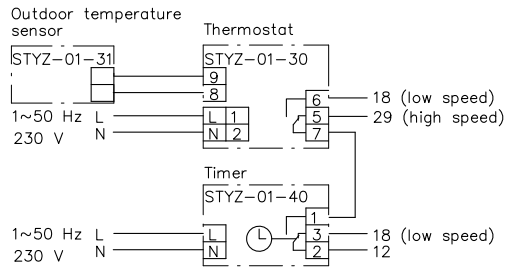
STYR-aa-3-S-2-1



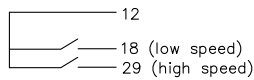
Wiring

Frequency converter with single-phase supply

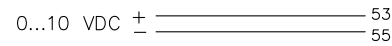
Two speed operation with STYZ-components



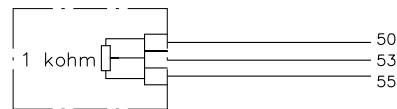
Two speed operation



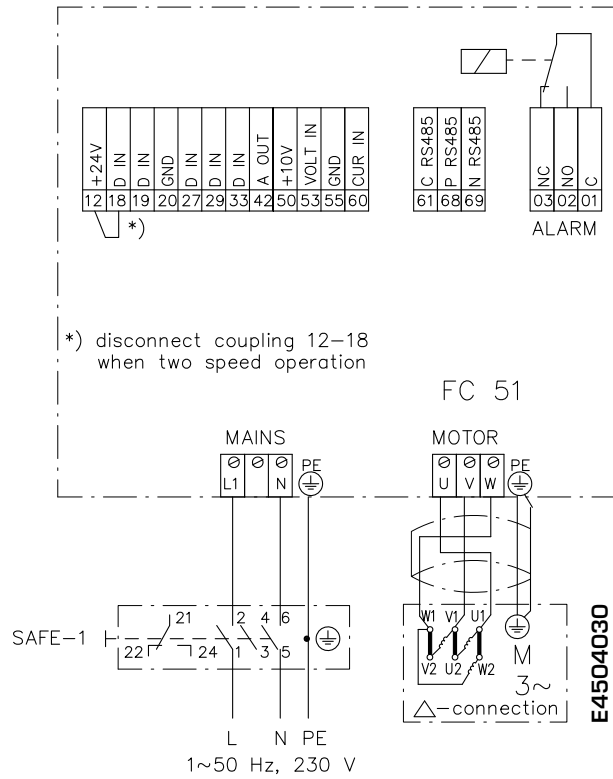
Stepless control



Potentiometer control

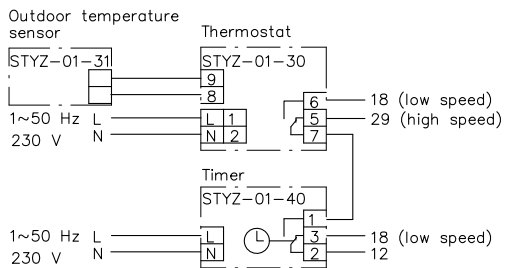


STYR-aa-1-S-2-1, 1x230 V supply

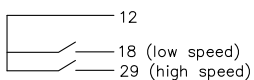


Frequency converter with three-phase supply

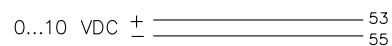
Two speed operation with STYZ-components



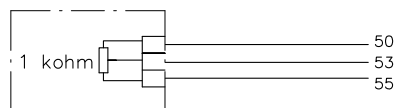
Two speed operation



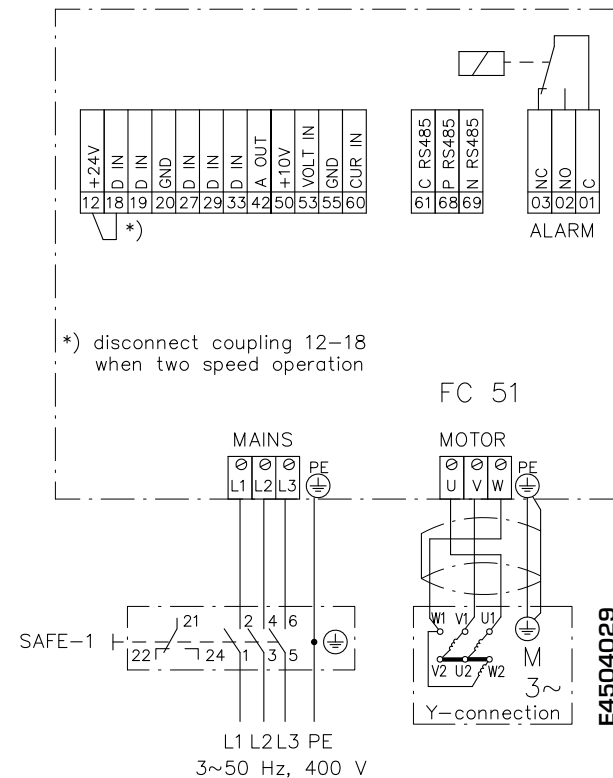
Stepless control



Potentiometer control



STYR-aa-3-S-2-1, 3x400 V supply



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