

# DVG-V 450EC/F400

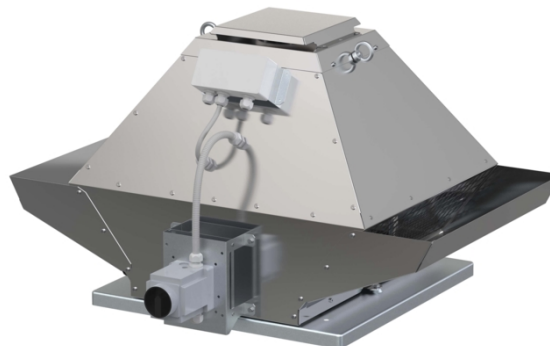
Item no. 95257

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## Description

- Roof unit for smoke and heat extraction + normal ventilation
- Vertical exhaust
- Up to 400°C / 120 min (F400/120, F400/90, F300, F200)
- Normal ventilation up to 120°C continuous operation, up to 80°C in standstill
- Service switch serial
- Suitable for coastal applications
- Snow load class SL 0 (suitable for heated buildings)
- Wide range of accessories
- Tested acc. to EN 12101-3 at LGAI, Barcelona
- CE-certified acc. to EN 12101-3 at BSI, UK
- 1~ (sizes 355 and 450) or 3~ connection, 50/60 Hz
- EC (electronically commutated) high efficiency motor inside
- 0-10V speed control input
- Modbus controllable
- Fire mode



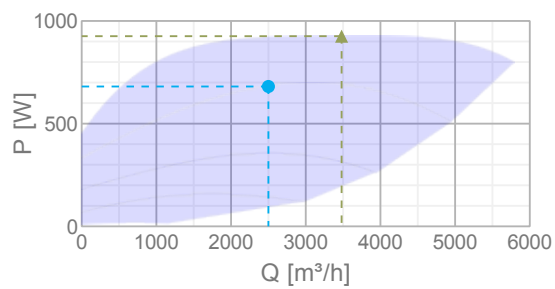
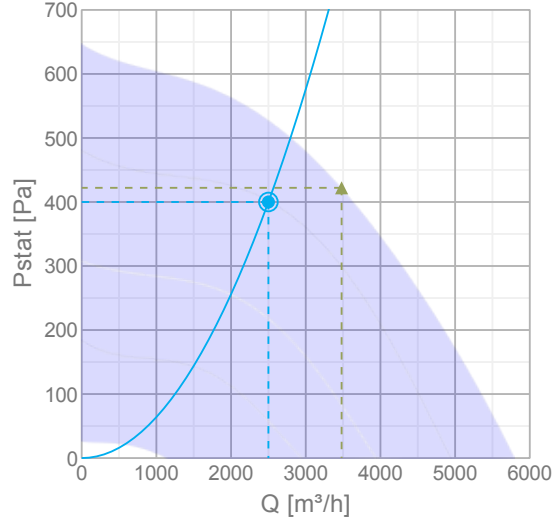
DVG smoke and heat extract fans are used in case of fire to extract smoke gases from rooms, and also during normal working conditions for standard ventilation. Smoke-free escape ways increase the chances to rescue people in case of fire. The casing is manufactured from seawater resistant aluminium. The base frame is made of pre-galvanized steel. Impeller with backward-curved blades is manufactured from pre-galvanized steel (sizes 355, 450), respectively from steel, welded and galvanized. Motor outside air stream is cooled with fresh air. Connection to power supply in the service switch, connection to controller in the connection box on the casing. In case of fire switch to fire mode and bridging of motor protective devices is necessary.

## Technical parameters

Nominal data		
Voltage	230	V
Frequency	50	Hz
Phase	1	~
Input power (P1)	930	W
Nominal power at shaft (P2)	800	W
Current	4	A
Max. airflow	5800	m³/h
Fan impeller speed	1450	r.p.m.
Weight	57	kg
Temperature data		
Max. temperature of transported air	120	°C
Max. temperature of transported air when voltage-controlled	120	°C
Max. temp. of transported air for 120 min	400	°C
Sound data		
Sound pressure level at 4 m (free field)	65	dB(A)
Sound pressure level at 10 m (free field)	58	dB(A)
Protection / Classification		
Insulation class	F	
Enclosure class, motor	IP54	IP

## Performance

### Diagrams



### Max efficiency

Hydraulic data										
▲ Working air flow										3480 m³/h
▲ Working static pressure										422 Pa
▲ Power										926 W
Speed										1419 r.p.m.
Current										4 A
SFP										0,958 kW/(m³/s)
Voltage										10 V
Sound power level		63	125	250	500	1k	2k	4k	8k	Tot
Inlet	dB(A)	56	70	73	78	85	73	66	63	86
Outlet	dB(A)	57	73	77	81	83	72	66	60	86

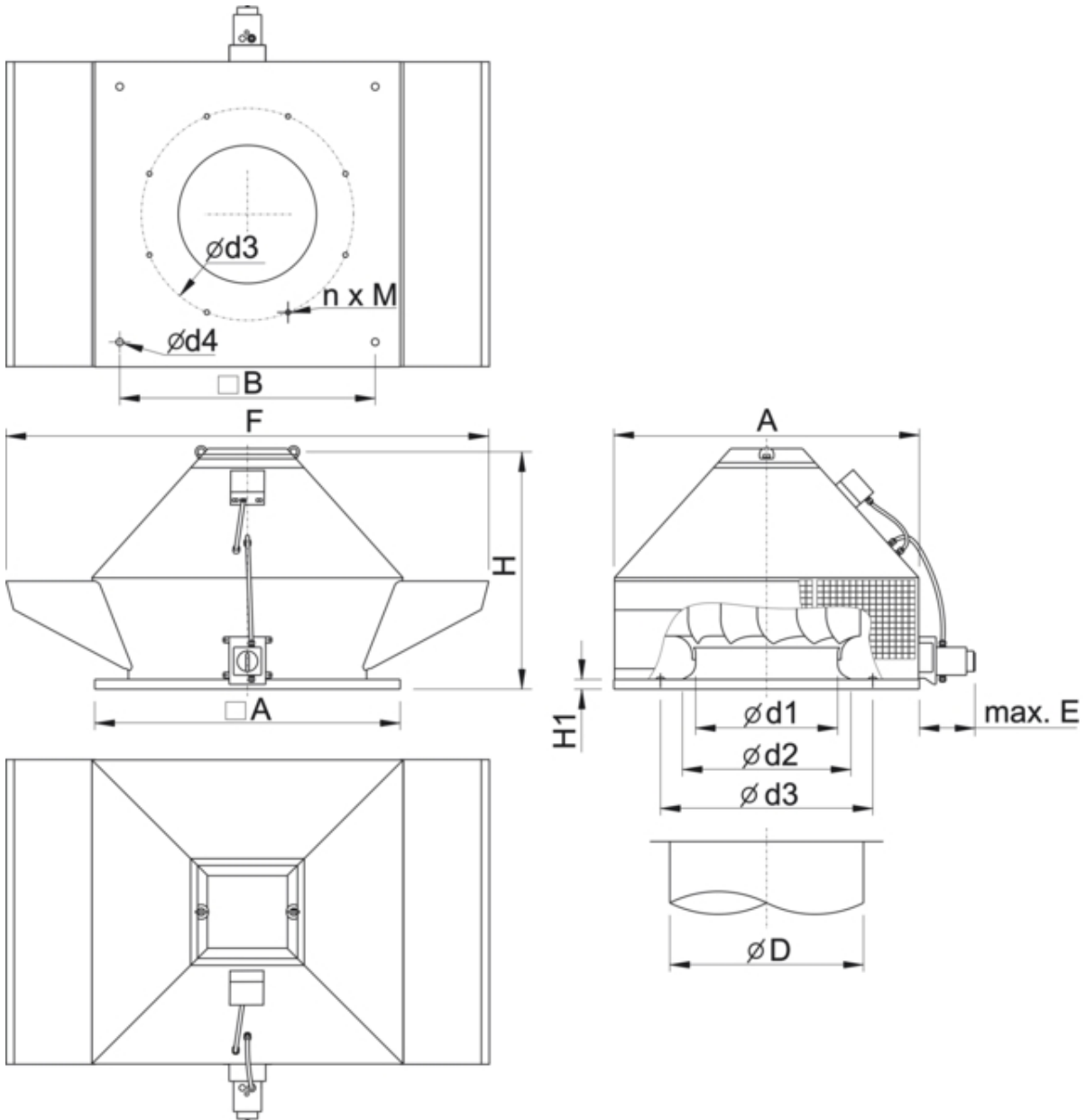
### User

## Hydraulic data

<input type="radio"/> Required air flow	2500 m <sup>3</sup> /h
<input type="radio"/> Required static pressure	400 Pa
<input checked="" type="radio"/> Working air flow	2500 m <sup>3</sup> /h
<input checked="" type="radio"/> Working static pressure	400 Pa
<input checked="" type="radio"/> Power	681 W
Speed	1298 r.p.m.
Current	2,95 A
SFP	0,98 kW/(m <sup>3</sup> /s)
Voltage	8,68 V

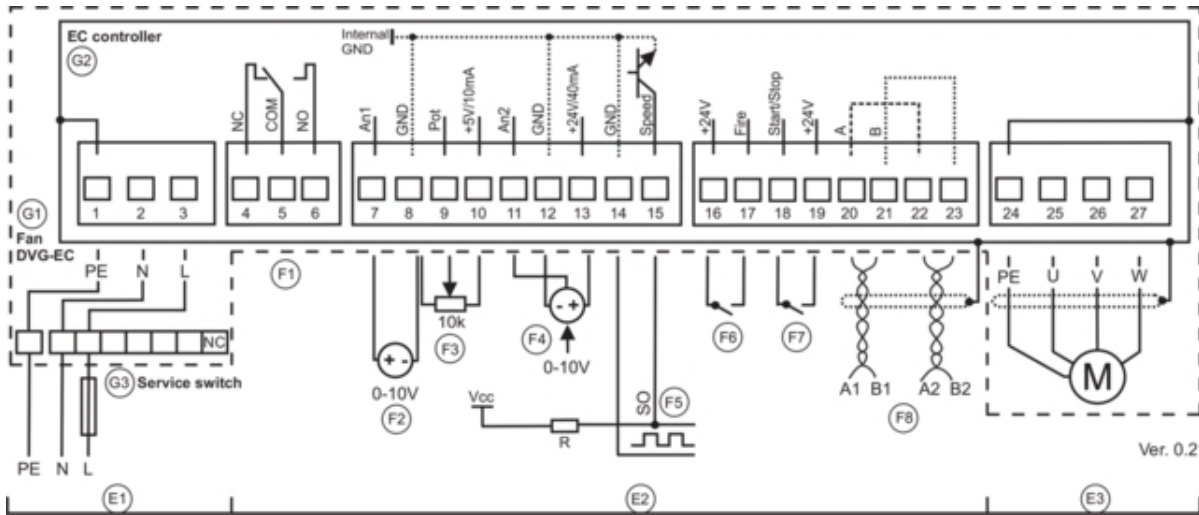
Sound power level		63	125	250	500	1k	2k	4k	8k	Tot
Inlet	dB(A)	52	67	69	74	82	70	63	59	83
Outlet	dB(A)	53	70	73	77	80	69	63	56	83

## Dimensions



	A	B	F	$\varnothing d1$	$\varnothing d2$	$\varnothing d3$	$n \times M$	$\varnothing d4$	$\varnothing D$	E	H1	H
<b>DVG-V 400, 450</b>	668	535	1261	286	379	438	6xM8	12	400	240	30	650

# Wiring



Symbol	Description		
G1	Fan DVG-EC		
G2	EC controller - terminals prewired with connection box on the casing		
G3	Service switch ON-OFF, 6 pole + 1xNC		
F1	Fault relay		
F2	Analog input for set value / speed setting		
F3	Potentiometer for speed setting		
F4	External sensor		
F5	Speed output		
F6	FIRE mode (open = FIRE)		
F7	Start /Stop switch (open = stop)		
F8	Modbus		
E1	Power supply - connection in G3 Max. cable crosssection: 2,5 mmq (4 mmq without core end sleeves) Max. cable diameter: 13 mm Cable gland on supply side included: 1xM20x1,5 Possible to install additional cable glands 1xM20x1,5, 1xM16x1,5		
E2	Control cables - connection in G2/connection box on the casing Max. cable crosssection: 1,5 mmq, recommended 0,75 mmq, max. cable diameter: 13 mm Cable glands on the connection box: 2xM20x1,5 for control cables 2 cable inserts with 3x5 mm hole enclosed for thinner control cables alternatively Eventual protecting tube for control cables not enclosed		
E3	EC-Motor pre-wired		
	Marking	Terminal No.	Description
Mains supply	PE	1	PE connection
	N	2	Neutral
	L	3	Supply voltage 1~ 230V/50-60Hz
Fault relay	NC	4	Normally close
	COM	5	Common connection; contact rating 250V/5A
	NO	6	Normally open
User interface	An1	7	Analog input 1; set value 0-10V; R >= 1kΩ
	GND	8, 12, 14	I/O ground
	Pot	9	Potentiometer output (3 wires)
	+5V	10	+5V +/-5% / 10mA for potentiometer
	An2	11	Analog input 2 for external sensor
	+24V	13, 16, 19	+24V +/- 5% DC (unregulated) voltage / I <sub>max</sub> 40 mA
	Speed	15	Digital output; speed output PWM signal f ~ 1,1 kHz; NPN open collector output
	Fire	17	Digital input; FIRE mode enabling function - open pin disabling function - bridge to +24V
	Start/Stop	18	Digital input; start/stop start - bridge to +24V stop - open pin
	A	20, 22	Bus connection RS485 - A; MODBUS RTU
	B	21, 23	Bus connection RS485 - B; MODBUS RTU
Motor connection	PE, U, V, W	24, 25, 26, 27	Motor pre-wired

## Accessories


### Electric accessories


[DSG 200 Sensor \(5169\)](#)  
[DSG 500 Sensor \(5170\)](#)  
[CO2RT-R-D Transmitter \(6993\)](#)  
[MTV-1/010 Controller 0..10V+ \(30650\)](#)  
[MTP 10, 10K, Speed control \(32731\)](#)  
[EC-Vent Room Unit \(3018\)](#)  
[EC-Vent control board \(3115\)](#)  
[MTP 20, on/off, 3-step \(310220\)](#)  
[Systemair-E-D CO2 sensor \(14905\)](#)  
[EC-Basic-H humidity \(24807\)](#)  
[EC-Basic-T temperature \(24805\)](#)  
[EC-Basic-U universal 0-10V \(24806\)](#)  
[EC-Basic-CO2 and temperature \(24808\)](#)  
[S-5EC/FRQ \(76738\)](#)

### Accessories

[ASFV G315-450 flange \(3700\)](#)  
[ASG/F 400-450 inflow box \(309949\)](#)  
[ASSG/F 315-450 Flex. conn. \(309955\)](#)  
[FDG/F 400-450 flat roof socket \(309941\)](#)  
[SSG/F 400-450 socket silencer \(309945\)](#)  
[VKG/F 315-450 shutter \(309952\)](#)  
[SSGE/F 400-450 socket silencer \(95113\)](#)  
[FDGE/F 400-450 roof socket \(95117\)](#)  
[ESDG 315-450 inlet cone VKG/F \(95539\)](#)


## Documentation


 [Instruction\\_EC\\_1Phase\\_Controller\\_20\\_12\\_2016\\_V2\\_2.pdf \(1,58MB\)](#)

 [IMO\\_DVG\\_en\\_13\\_12\\_2016.pdf \(7,19MB\)](#)


 [Certif\\_DVV\\_XS\\_XL\\_DVAX\\_DVG\\_BKF\\_0086\\_CPR\\_597958.pdf \(732,14kB\)](#)

 [Certif\\_DVV\\_DVAX\\_DVG\\_BKF\\_Kitemark\\_KM\\_646474.pdf \(798,16kB\)](#)

 [I058A3\\_05\\_DVG\\_F400\\_DoP\\_26\\_07\\_2016.pdf \(60,73kB\)](#)

 [DVG\\_EC\\_E8301\\_19\\_01\\_2017.pdf \(4,35MB\)](#)

## CAD drawing

 [DVG\\_V\\_450\\_EC\\_M1\\_10\\_03.dxf \(1,62MB\)](#)

## Eco design

Trade name	Systemair	
Product name	DVG-V 450EC/F400	
ErP compliance	2016/2018	
Unit category	NRVU	
Drive	Intergated VSD	
Unit type	UVU	
Heat recovery type	None	
Temperature ratio (UVU)	Not applicable	
qv nom	3301	m³/h
P nom	925	W
Ps nom	445	Pa
Fan efficiency	44,1	%
External Leakage	0	%
Sound power level LWA	86	dB(A)

## Specification text

DVG-EC radial fans are intended for the extraction of hot flue gases in the case of fire up to 400 degrees/120 min (F400/120, F400/90, F300, F200), as well as for the normal daily ventilation of medium with temperature up to 120°C in continuous operation and up to 80°C in standstill.

The base plate with inlet cone is made of pre-galvanized steel sheet. The outer casing consists of seawater-resistant aluminium parts. Bird protection grill is a part of casing. The fan has a backward curved radial impeller made of pre-galvanized steel (sizes 355, 450), respectively from steel, welded and galvanized. With taper bush that makes service easier and secured bolted joint directly assembled on the motor shaft. Dynamically balanced according to ISO 1940 T1 quality class G6,3.

Driven by an EC (electronically commutated) high efficiency motor. Connection to 1~ (sizes 355, 450) respectively 3~ power supply. Cooling of the motor with ambient air from the top of casing in underpressure system. Thermal protection of motor by EC controller, factory pre-set. Service switch serial outside on the casing. Flange connection according to dimension sketch.

In case of fire switch to fire mode and bridging of motor protective devices is necessary. Tested according to EN 12101-3 at LGAI, Barcelona. CE-Certification according to EN 12101-3 by BSI, UK.