Series

VENTS TT-MD EC

Inline mixed-flow fans
with the air capacity
up to **11100 m³/h**

Application

New series of the duct fans VENTS TT-MD EC enclosed in a special sound-insulated casing that ensures low-noise operation of the fans at high aerodynamic characteristics. The fans are compatible with Ø 355, 400, 450, 500 air ducts. VENTS TT-MD EC combine wide capabilities and high performance features of both axial and centrifugal fans, thus providing powerful air stream and high pressure. The fans are used as a component part of air handling systems for various commercial and industrial premises with high requirements to noise level, i.e. in libraries, conference halls, educational institutions, kindergartens, etc.

Design

The fan casing is made of polymer-coated steel. The conic impeller with special blade profiling increase air flow speed and provide higher pressure and air capacity as compared to standard axial fans. The diffuser, the specially profiled impeller and the directing vanes at outlet from the fan casing distribute air flow in such a way as to attain the best combination of high performance and high pressure at low noise level. The fan casing is equipped with an airtight terminal box for connection to power mains.

Motor

High-efficient electronically commutated direct current motor. Such motors are the most state-of-the-art energy saving solution. EC motors are featured with high performance and total speed controllable range. High efficiency reaching 90% is the premium advantage of the electronically-commutated motors. The motors are equipped with ball bearings designed for at least 40 000 operating hours. For precise features, safe operation and low noise, each impeller is dynamically balanced during assembly. Motor ingress protection rating IP 44.

Speed control

The fan is controlled with an external 0-10 V control signal. The fan capacity is regulated depending on temperature and pressure level, smoke content, etc. The rotation speed of the EC motor changes proportionally to fluctuations of the control parameter and the fan delivers a required air volume to the ventilation system.

Maximum fan speed does not depend on the current frequency. The fan is compatible both with 50 or 60 Hz power mains. The fans may be integrated into a unified data processing control system. The specially designed software provides precise control of all the fans integrated into the system. The computer displays all the system parameters. Each fan in the system may be individually adjusted.

Mounting

The fan may be mounted at any place and at any angle within the ductwork system. Several fans may be installed in one system in parallel to attain higher air capacity or in series to increase operating pressure in the system. The fan casing is equipped with fixing brackets for fastening to the floor, wall.

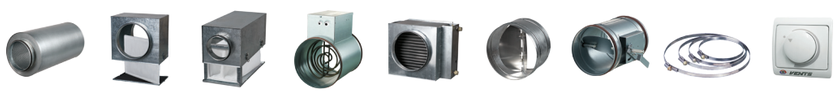
Designation key:

TT-M D XXX-X EC

- EC: synchronous electronically commutated motor
- Motor phase: 1 - single-phase; 3 - three-phase
- Connected air duct diameter, mm
- High-efficient motor
- Casing material: metal
- Fan model

ErP data	
Overall efficiency	η, [%]
Measurement category	MC
Efficiency category	EC
Efficiency grade	N
Variable speed drive	VSD
Power	[kW]
Current	[A]
Air flow	[m³/h]
Static pressure	[Pa]
Speed	[n/min⁻¹]
Specific ratio	SR

Accessories



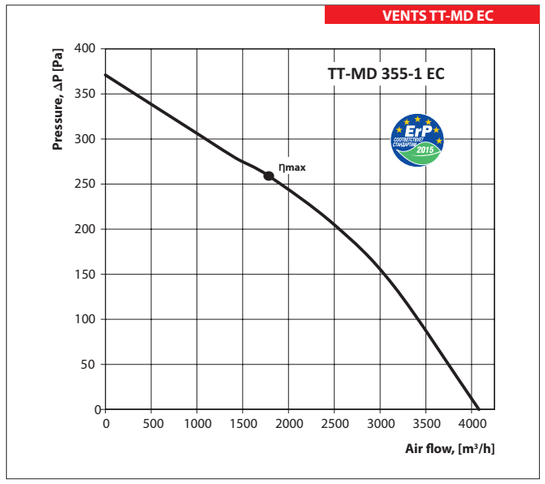
page 378 page 386 page 388 page 392 page 406 page 442 page 446 page 455 page 462

Technical data:

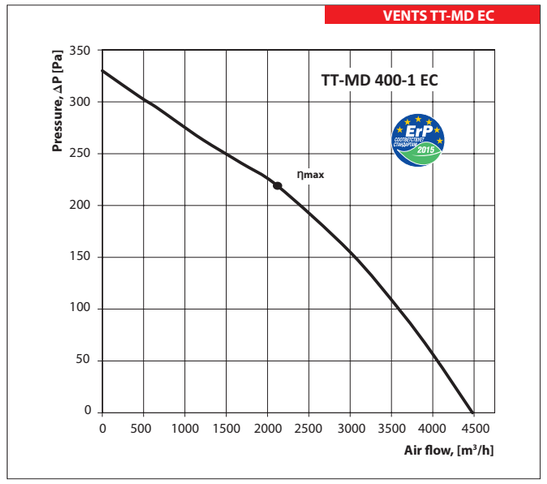
	TT-MD 355-1 EC	TT-MD 400-1 EC	TT-MD 450-1 EC
Voltage [V / 50/60 Hz]	1~ 200-277	1~ 200-277	1~ 200-277
Power [W]	460	380	1250
Current [A]	2.5	2.1	6.3
Max. air capacity [m³/h]	4080	4480	7830
RPM [min⁻¹]	1700	1290	1530
Sound pressure level at 3 m distance [dB(A)]	61	63	63
Max. transported air temperature [°C]	-25 +40	-25 +40	-25 +40
Protection rating	IP X4	IP X4	IP X4

Technical data:

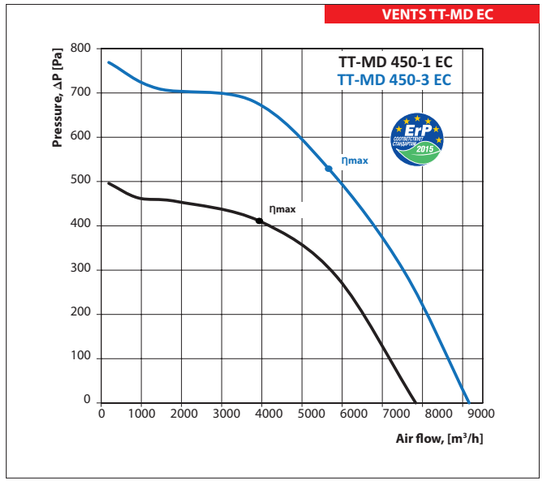
	TT-MD 450-3 EC	TT-MD 500-1 EC	TT-MD 500-3 EC
Voltage [V / 50/60 Hz]	3~ 380-480	1~ 200-277	3~ 380-480
Power [W]	2100	1050	2050
Current [A]	3.5	5.4	3.3
Max. air capacity [m³/h]	9160	8600	11100
RPM [min⁻¹]	1900	1290	1600
Sound pressure level at 3 m distance [dB(A)]	69	65	71
Max. transported air temperature [°C]	-25 +40	-25 +40	-25 +40
Protection rating	IP X4	IP X4	IP X4

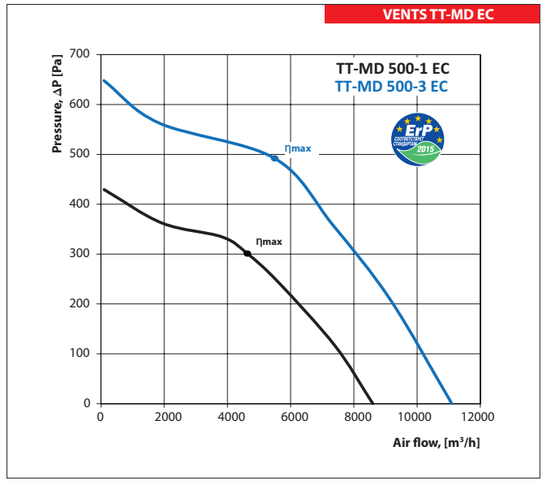


η, [%]	MC	EC	N	VSD	[kW]	[A]	[m³/h]	[Pa]	[RPM]	SR
43,3	A	Static	58,7	Yes	0,339	1,46	1785	259	1700	1



η, [%]	MC	EC	N	VSD	[kW]	[A]	[m³/h]	[Pa]	[RPM]	SR
41,8	A	Static	57,1	Yes	0,352	1,52	2120	219	1430	1





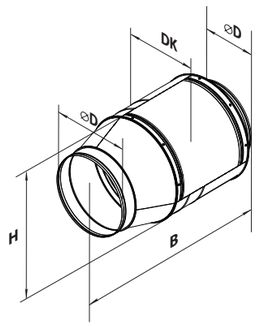
η, [%]	MC	EC	N	VSD	[kW]	[A]	[m³/h]	[Pa]	[RPM]	SR
41,5	A	Static	51,2	Yes	1,195	5,85	3936	411	1530	1

η, [%]	MC	EC	N	VSD	[kW]	[A]	[m³/h]	[Pa]	[RPM]	SR
44,9	A	Static	52,2	Yes	2,016	3,47	5663	529	1900	1

η, [%]	MC	EC	N	VSD	[kW]	[A]	[m³/h]	[Pa]	[RPM]	SR
42,8	A	Static	53,2	Yes	1,005	5,2	4630	301	1290	1

η, [%]	MC	EC	N	VSD	[kW]	[A]	[m³/h]	[Pa]	[RPM]	SR
41,0	A	Static	48,4	Yes	1,994	3,29	5495	492	1610	1

Overall dimensions:



Model	Dimensions			
	B	Ø D	DK	H
TT-MD 355-1 EC	685	353	605	515
TT-MD 400-1 EC	740	397	665	570
TT-MD 450-1 EC	900	447	800	705
TT-MD 450-3 EC	900	447	800	705
TT-MD 500-1 EC	900	497	815	720
TT-MD 500-3 EC	900	497	815	720