R4D450-AL01-05

AC centrifugal fan

backward curved, single inlet



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ErP2013 EXCEEDS THE NORM

Nominal data

Type	**R4D450-AL01-05**
Motor	**M4D110-GF**

Phase		3~	3~	3~	3~	3~	3~
Nominal voltage	VAC	230	230	277	400	400	480
Connection		Δ	Δ	Δ	Y	Y	Y
Frequency	Hz	50	60	60	50	60	60
Type of data definition		ml	ml	ml	ml	ml	ml
Valid for approval / standard		CE	CE	CE	CE	CE	CE
Speed	min^{-1}	1380	1550	1620	1380	1550	1620
Power input	W	590	890	960	590	890	960
Current draw	A	2.34	2.79	2.82	1.35	1.61	1.63
Min. back pressure	Pa				0	0	
Min. ambient temperature	°C	-40	-40	-40	-40	-40	-40
Max. ambient temperature	°C	90	65	65	90	65	65
Starting current	A				10	9.6	

ml = Max. load · me = Max. efficiency · fa = Running at free air · cs = Customer specs · cu = Customer unit
Subject to alterations

Data according to ErP directive

Installation category	A
Efficiency category	Static
Variable speed drive	No
Specific ratio*	1.00

* Specific ratio = 1 + p_{fs} / 100 000 Pa

		Actual	Request 2013	Request 2015
Overall efficiency η_{es}	%	46.7	45.1	49.1
Efficiency grade N		59.6	58	62
Power input P_e	kW	0.59		
Air flow q_v	m^3/h	2850		
Pressure increase p_{fs}	Pa	350		
Speed n	min^{-1}	1380		

Data definition with optimum efficiency. LU-72630
The ErP data is determined using a motor-impeller combination in a standardised measurement configuration.

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Technical features

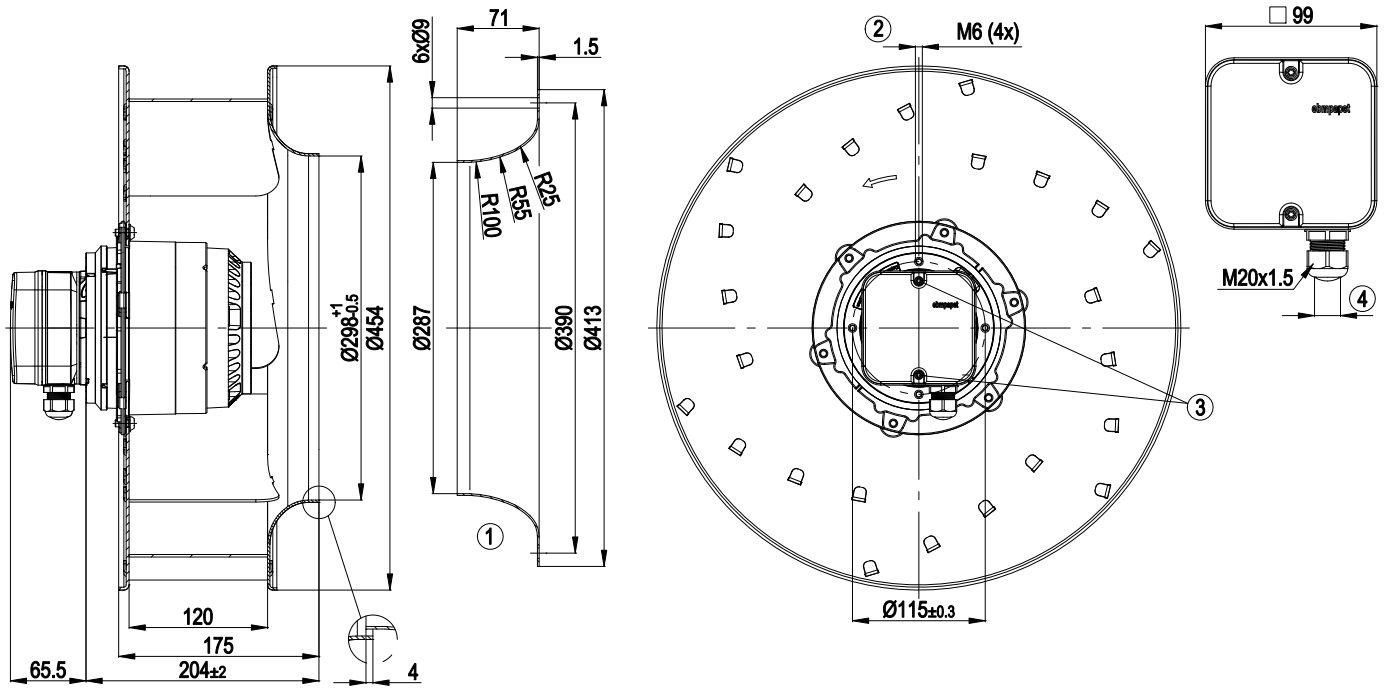
Mass	11.6 kg
Size	450 mm
Surface of rotor	Cast in aluminium
Material of terminal box	PC/ABS plastic, black
Material of impeller	Aluminium sheet, joined by tabs
Number of blades	6
Direction of rotation	Clockwise, seen on rotor
Type of protection	IP 54
Insulation class	"F"
Humidity class	F3-1
Max. permissible ambient motor temp. (transp./ storage)	+ 80 °C
Min. permissible ambient motor temp. (transp./storage)	- 40 °C
Mounting position	Shaft horizontal or rotor on bottom; rotor on top on request
Condensate discharge holes	Rotor-side
Operation mode	S1
Motor bearing	Ball bearing
Touch current acc. IEC 60990 (measuring network Fig. 4, TN system)	<= 3.5 mA
Electrical leads	Via terminal box
Motor protection	Thermal overload protector (TOP) brought out
Cable exit	Axial
Protection class	I (if protective earth is connected by customer)
Product conforming to standard	EN 61800-5-1; CE
Approval	CSA C22.2 Nr.100; EAC; UL 1004-1; VDE

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Product drawing



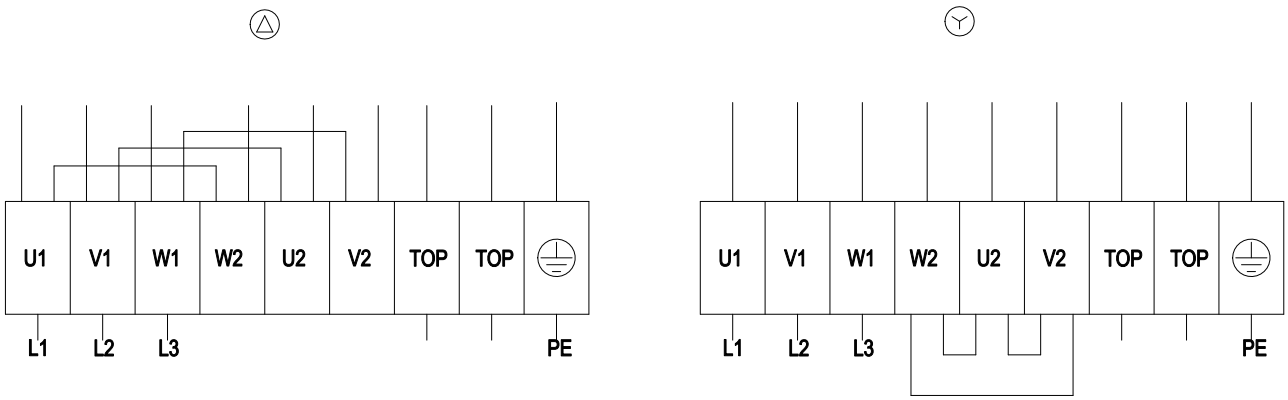
1	Accessory part: inlet nozzle 54478-2-4013 not included in the standard scope of delivery; other inlet nozzles on request
2	Depth of screw max. 12 mm
3	Tightening torque 1.5 ± 0.2 Nm
4	Cable diameter: min. 6 mm, max. 12 mm; tightening torque: 2±0.3 Nm

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Connection screen



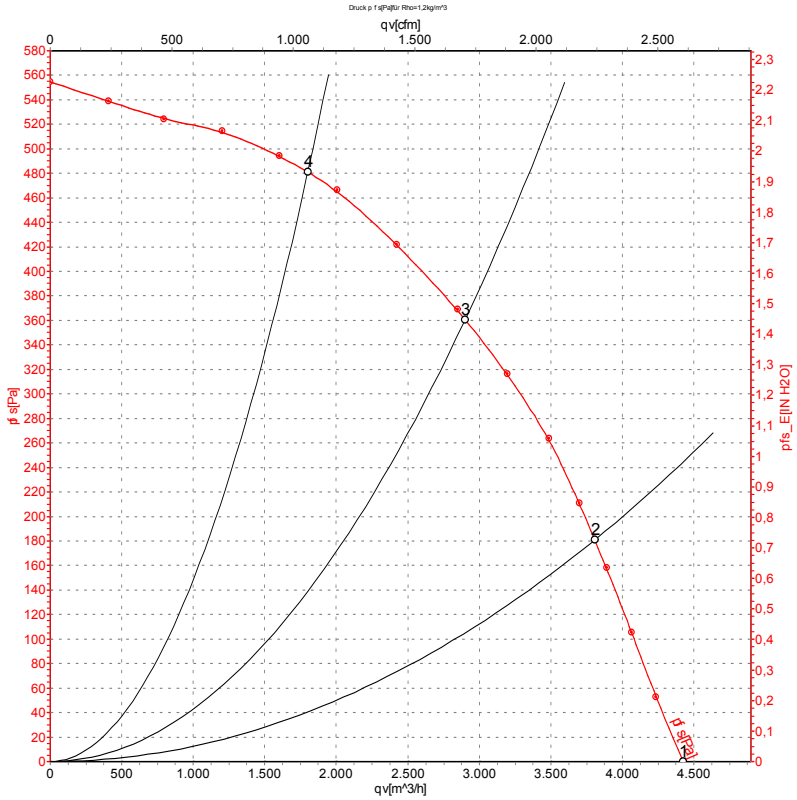
Δ	Delta-connection	Y	Star connection	L1	= U1 = black
L2	= V1 = blue	L3	= W1 = brown	W2	yellow
U2	green	V2	white	TOP	2 x grey
PE	green / yellow				

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Charts: Air flow 50 Hz Y



Air performance measured as per ISO 5801 Installation category A. For detailed information on the measuring set-up, please contact ebm-papst. Suction-side noise levels: LwA measured as per ISO 13347 / LpA measured with 1m distance to fan axis. The values given are valid under the measuring conditions mentioned above and may vary according to the actual installation situation. With any deviation from the standard set-up, the specific values have to be checked and reviewed with the unit installed.

Measured values

	Conn.	U	f	n	P_e	I	qv	p_{fs}
		V	Hz	min^{-1}	W	A	m^3/h	Pa
1	Y	400	50	1425	405	1.20	4425	0
2	Y	400	50	1395	541	1.33	3810	180
3	Y	400	50	1380	590	1.35	2900	360
4	Y	400	50	1395	537	1.32	1800	480

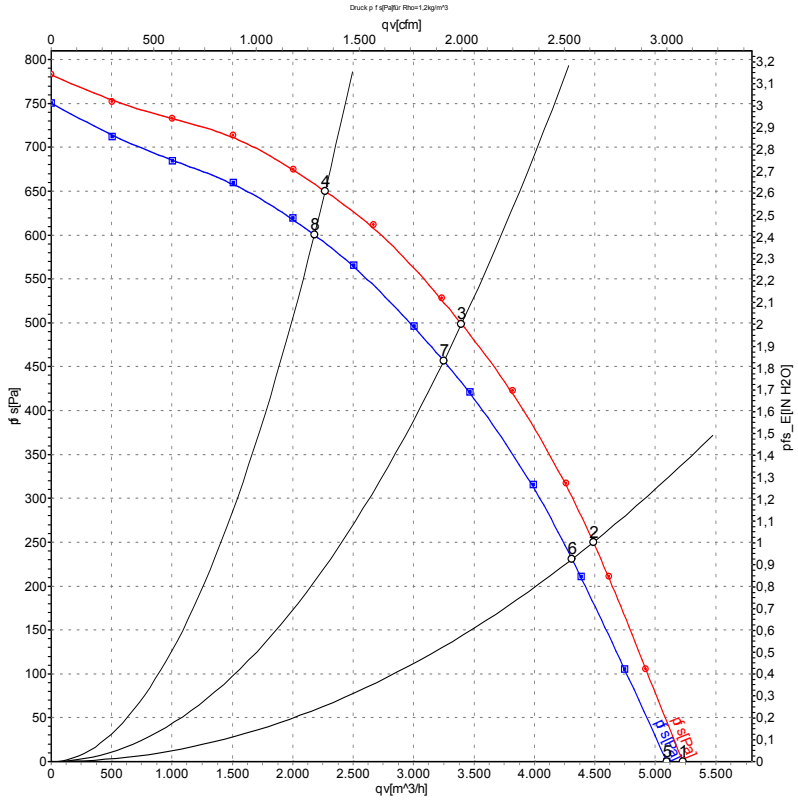
Conn. = Connection · U = Supply voltage · f = Frequency · n = Speed · P_e = Power input · I = Current draw · qv = Air flow · p_{fs} = Pressure increase

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Charts: Air flow 60 Hz Y



Air performance measured as per ISO 5801 Installation category A. For detailed information on the measuring set-up, please contact ebm-papst. Suction-side noise levels: LwA measured as per ISO 13347 / LpA measured with 1m distance to fan axis. The values given are valid under the measuring conditions mentioned above and may vary according to the actual installation situation. With any deviation from the standard set-up, the specific values have to be checked and reviewed with the unit installed.

Measured values

	Conn.	U	f	n	P_e	I	qv	p_{fs}
		V	Hz	min^{-1}	W	A	m^3/h	Pa
1	Y	480	60	1685	657	1.31	5230	0
2	Y	480	60	1640	877	1.52	4485	250
3	Y	480	60	1620	960	1.63	3395	500
4	Y	480	60	1640	890	1.53	2265	650
5	Y	400	60	1640	609	1.23	5095	0
6	Y	400	60	1575	811	1.51	4310	231
7	Y	400	60	1550	890	1.61	3250	456
8	Y	400	60	1570	818	1.52	2180	600

Conn. = Connection · U = Supply voltage · f = Frequency · n = Speed · P_e = Power input · I = Current draw · qv = Air flow · p_{fs} = Pressure increase

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