

# AC centrifugal fan

forward curved, dual inlet  
with housing (flange)

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## Nominal data

Type	D2E146-HT59-02		
Motor	M2E068-EC		
Phase		1~	1~
Nominal voltage	VAC	230	230
Frequency	Hz	50	60
Type of data definition		fa	fa
Valid for approval / standard		CE	CE
Speed	min <sup>-1</sup>	1600	1500
Power input	W	290	320
Current draw	A	1.28	1.4
Motor capacitor	µF	6	6
Capacitor voltage	VDB	400	400
Capacitor standard		P2 (CE)	P2 (CE)
Min. ambient temperature	°C	-25	-25
Max. ambient temperature	°C	50	40
Starting current	A	1.48	1.5

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 =  $1 + p_g / 100\,000\text{ Pa}$

		Actual	Request 2013	Request 2015
Overall efficiency $\eta_{es}$	%	33.3	26.3	33.3
Efficiency grade N		44	37	44
Power input $P_e$	kW	0.2		
Air flow $q_v$	m <sup>3</sup> /h	630		
Pressure increase $p_{fs}$	Pa	379		
Speed n	min <sup>-1</sup>	2410		

Data definition with optimum efficiency. LU-156752  
The ErP data is determined using a motor-impeller combination in a standardised measurement configuration.



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## Technical features

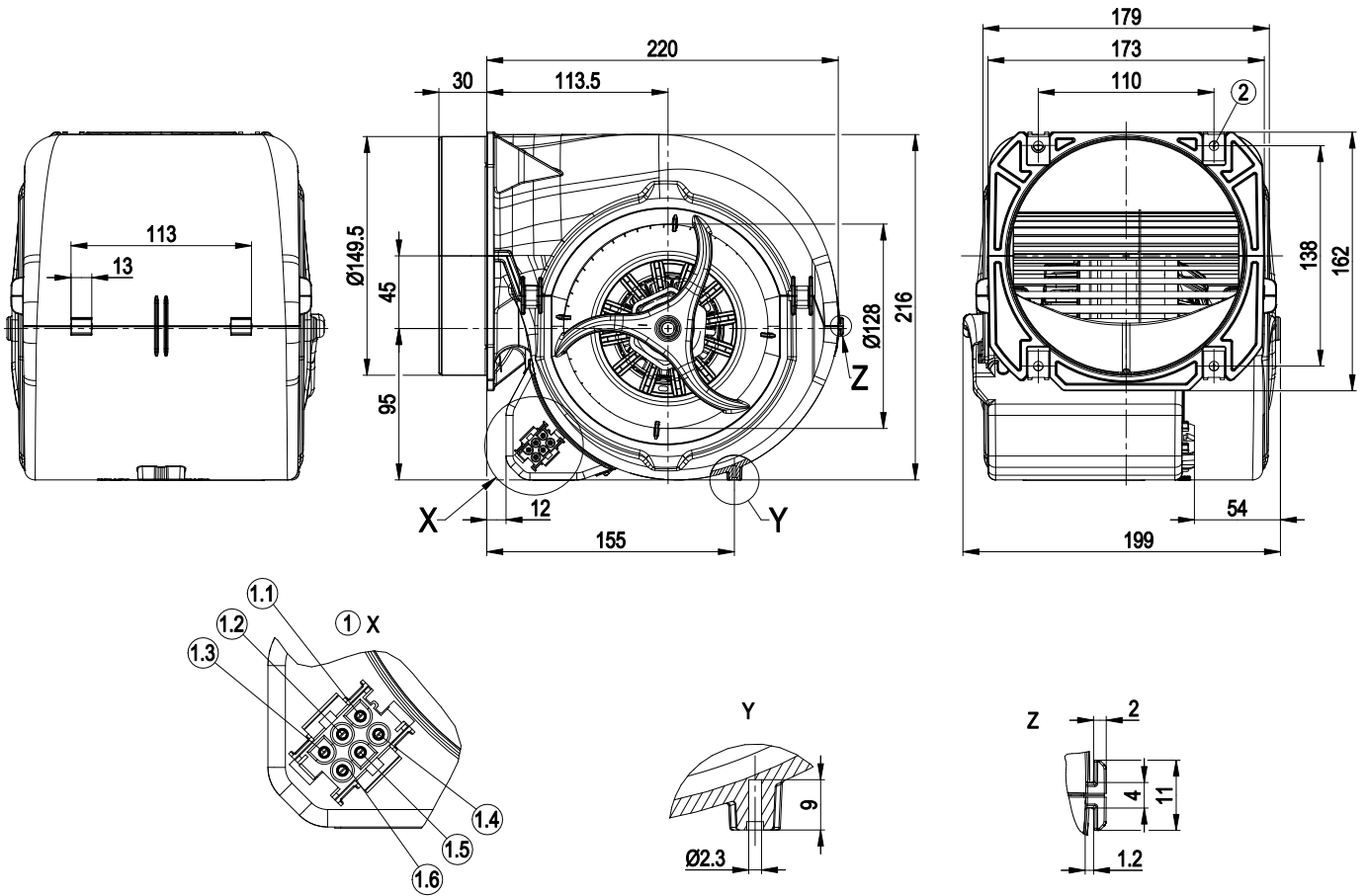
<b>Mass</b>	3.4 kg
<b>Size</b>	146 mm
<b>Surface of rotor</b>	Partially cast in aluminium
<b>Material of terminal box</b>	PP plastic, black
<b>Material of impeller</b>	Sheet steel, hot-dip galvanised
<b>Housing material</b>	PP plastic, black
<b>Motor suspension</b>	Motor mounted anti-vibration on both sides
<b>Direction of rotation</b>	Counter-clockwise, seen on rotor
<b>Type of protection</b>	IP 20
<b>Insulation class</b>	"F"
<b>Humidity class</b>	F0
<b>Max. permissible ambient motor temp. (transp./ storage)</b>	+ 80 °C
<b>Min. permissible ambient motor temp. (transp./storage)</b>	- 40 °C
<b>Mounting position</b>	Any
<b>Condensate discharge holes</b>	None, open rotor
<b>Operation mode</b>	S1
<b>Motor bearing</b>	Ball bearing
<b>Speed steps</b>	4
<b>Touch current acc. IEC 60990 (measuring network Fig. 4, TN system)</b>	< 0.75 mA
<b>Electrical leads</b>	With plug; Via terminal box, integrated capacitor connected via terminal box
<b>Motor protection</b>	Thermal overload protector (TOP) wired internally
<b>Cable exit</b>	Variable
<b>Protection class</b>	I (if protective earth is connected by customer)
<b>Product conforming to standard</b>	EN 60335-2-31; CE
<b>Approval</b>	VDE



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## Product drawing



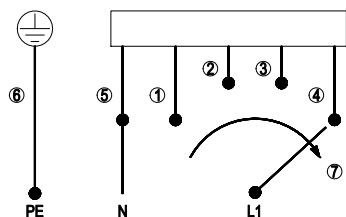
1	Coded plug system AMP Universal-Mate-N-Lok; connector housing: AMP 926 682-3; 6x plug pin AMP 926 886-1
1.1	L = Level 1
1.2	L = Level 2
1.3	L = Level 3
1.4	L = Level 4
1.5	N
1.6	Protective earth
2	4x sheet metal nut for thread EN ISO 1478-ST 4.8 (min. screw length 14.5 mm plus thickness of mounting material)



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## Connection screen



When changing speeds, switch must break the circuit

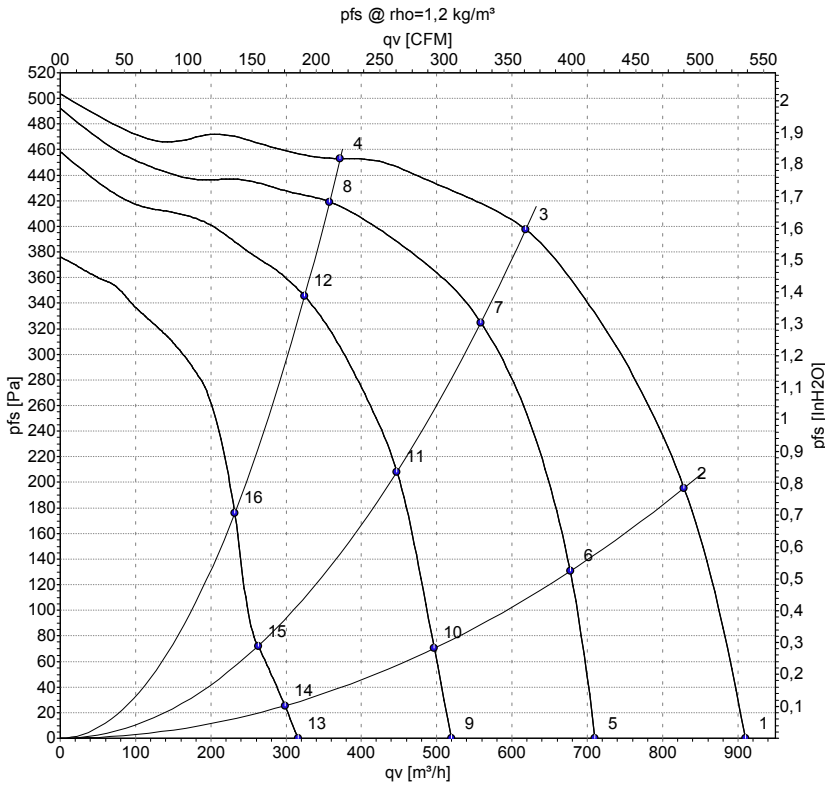
1	Step 1 (min.)	2	Step 2	3	Step 3
4	Step 4 (max.)	5	N	6	PE protective earth
7	Speed increase				

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## Charts: Air flow 50 Hz



Measurement: LU-156752  
 Measurement: LU-156754  
 Measurement: LU-156757  
 Measurement: LU-156762

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

	U	f	n	P <sub>e</sub>	I	LpA <sub>in</sub>	LwA <sub>in</sub>	qv	p <sub>fs</sub>
	V	Hz	min <sup>-1</sup>	W	A	dB(A)	dB(A)	m <sup>3</sup> /h	Pa
1	230	50	1600	290	1.28	62	73	910	0
2	230	50	2020	256	1.12	61	73	830	200
3	230	50	2420	203	0.89	60	72	620	400
4	230	50	2645	161	0.70	63	74	370	450
5	230	50	1280	247	1.08	56	67	710	0
6	230	50	1665	226	0.99	56	68	675	133
7	230	50	2210	183	0.83	59	70	560	325
8	230	50	2550	140	0.66	63	74	360	421
9	230	50	960	203	0.89	48	59	520	0
10	230	50	1235	196	0.87	49	60	495	70
11	230	50	1805	174	0.78	53	65	445	214
12	230	50	2330	133	0.63	60	71	325	345
13	230	50	595	163	0.72	36	47	315	0
14	230	50	765	160	0.71	36	47	300	26
15	230	50	1065	154	0.68	40	52	265	72
16	230	50	1675	138	0.63	51	62	230	181

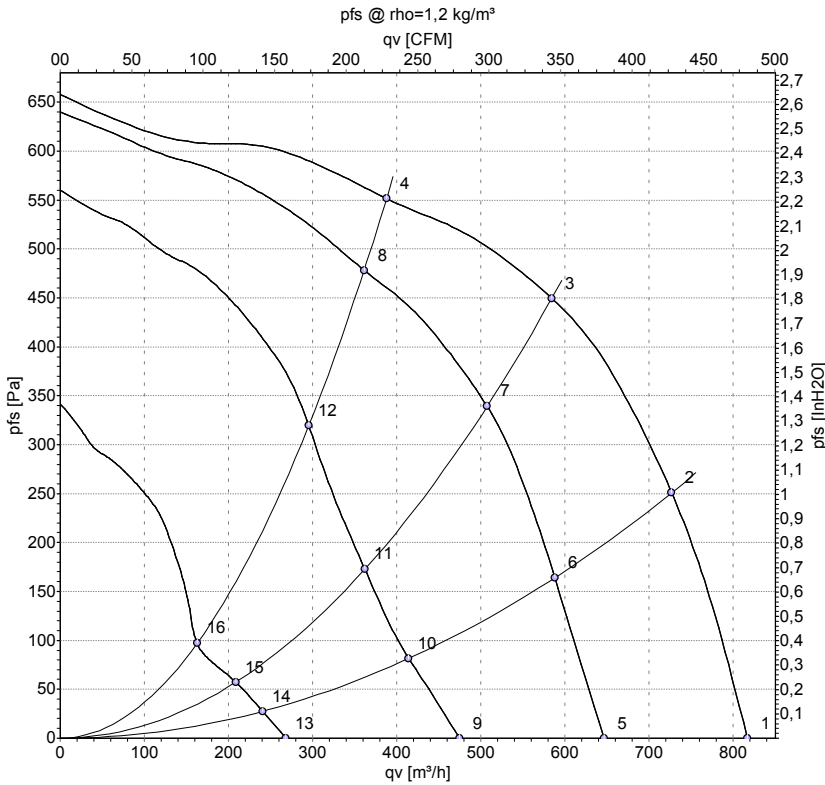
U = Supply voltage · f = Frequency · n = Speed · P<sub>e</sub> = Power input · I = Current draw · LpA<sub>in</sub> = Sound pressure level inlet side · LwA<sub>in</sub> = Sound power level inlet side · qv = Air flow  
 p<sub>e</sub> = Pressure increase



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## Charts: Air flow 60 Hz



Measurement: LU-156771  
Measurement: LU-156772  
Measurement: LU-156773  
Measurement: LU-156774

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

	U	f	n	P <sub>e</sub>	I	LpA <sub>in</sub>	LwA <sub>in</sub>	qv	p <sub>fs</sub>
	V	Hz	min <sup>-1</sup>	W	A	dB(A)	dB(A)	m³/h	Pa
1	230	60	1500	320	1.40	60	71	815	0
2	230	60	2085	296	1.28	60	71	725	250
3	230	60	2570	267	1.17	62	73	585	450
4	230	60	2930	236	1.06	65	77	390	550
5	230	60	1170	254	1.11	54	65	645	0
6	230	60	1685	244	1.08	54	66	590	164
7	230	60	2260	221	1.01	59	70	505	339
8	230	60	2720	188	0.92	64	75	360	477
9	230	60	875	204	0.92	46	57	475	0
10	230	60	1225	197	0.89	46	56	415	81
11	230	60	1640	192	0.88	51	62	360	173
12	230	60	2255	169	0.82	59	70	295	320
13	230	60	515	157	0.72	29	40	270	0
14	230	60	730	153	0.70	30	41	240	28
15	230	60	955	151	0.69	36	47	210	57
16	230	60	1245	147	0.68	42	53	165	93

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