AC centrifugal fan

forward-curved, dual-intake

with housing (flange)

Nominal data

Type	**D2E146-HR93-A2**
Motor	**M2E068-CF**

Phase		1~	1~
Nominal voltage	VAC	230	230
Frequency	Hz	50	60
Method of obtaining data		fa	ml
Valid for approval/standard		CE	CE
Speed (rpm)	min^{-1}	1030	1630
Power consumption	W	140	145
Current draw	A	0.62	0.65
Capacitor	µF	3.5	3.5
Capacitor voltage	VDB	400	400
Capacitor standard		S2 (CE)	S2 (CE)
Min. back pressure	Pa	0	150
Min. back pressure	in. wg	0	0.6
Min. ambient temperature	°C	-30	-30
Max. ambient temperature	°C	50	45
Starting current	A	0.65	0.67

ml = Max. load · me = Max. efficiency · fa = Free air · cs = Customer specification · ce = Customer equipment
Subject to change

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Technical description

Weight	2.95 kg
Size	146 mm
Motor size	68
Rotor surface	Partly cast in aluminum
Impeller material	PP plastic
Housing material	PP plastic
Motor suspension	Motor vibration-damped on both sides
Direction of rotation	Counterclockwise, viewed toward rotor
Degree of protection	IP20
Insulation class	"F"
Moisture (F) / Environmental (H) protection class	H0 - dry environment
Max. permitted ambient temp. for motor (transport/storage)	+ 80 °C
Min. permitted ambient temp. for motor (transport/storage)	- 40 °C
Installation position	Shaft horizontal
Condensation drainage holes	None, open rotor
Mode	S1
Motor bearing	Calotte bearing
Speed levels	4
Touch current according to IEC 60990 (measuring circuit Fig. 4, TN system)	< 0.75 mA
Electrical hookup	Plug; Via terminal box, capacitor integrated and connected
Motor protection	Thermal overload protector (TOP) internally connected
With cable	Variable
Protection class	I (with customer connection of protective earth)
Motor capacitor according to EN 60252-1 in safety protection class	S2
Conformity with standards	EN 60335-1; CE
Approval	VDE

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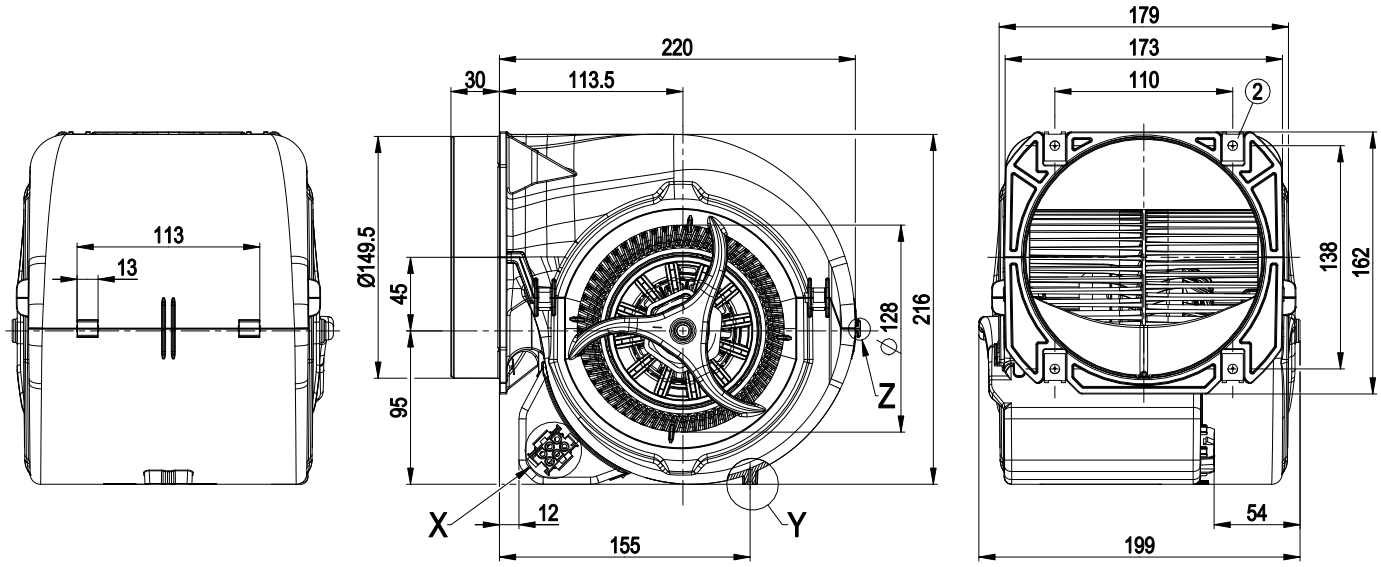
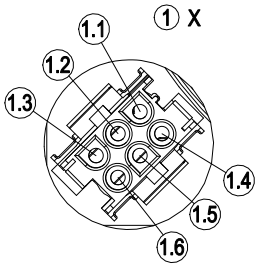
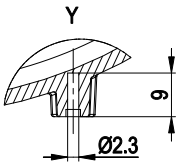
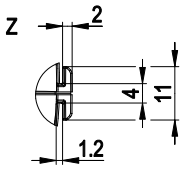
Product drawing









1	Coded plug system: 6-pole connector housing TE 2178773-1, 6x plug pin TE 926886-1
1.1	L = step 1
1.2	L = step 2
1.3	L = step 3
1.4	L = step 4
1.5	N
1.6	Protective earth
2	4x sheet metal nut for thread EN ISO 1478-ST4.8 (min. screw length 14.5 mm plus material thickness of mounting)

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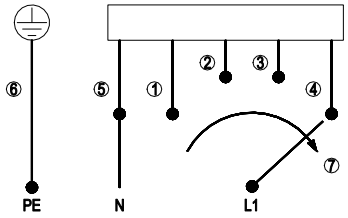
Connection diagram



The switch must interrupt the circuit when switching.

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

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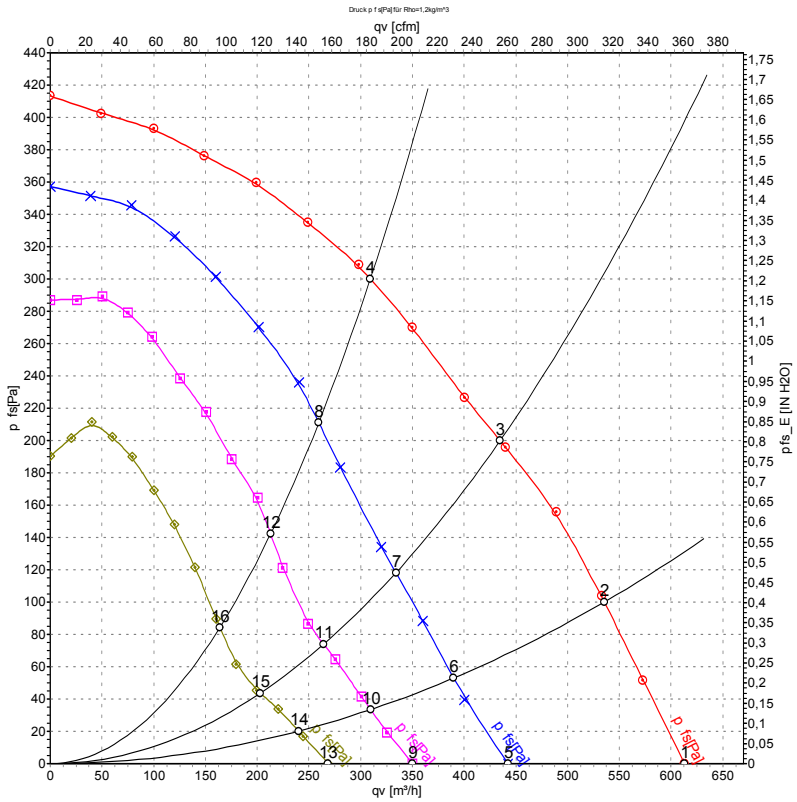
Curves: Air performance 50 Hz



Measurement: LU-134210-1
Measurement: LU-134212-1
Measurement: LU-134214-1
Measurement: LU-134219-1

Air performance measured according to ISO 5801 installation category A. For detailed information on the measurement setup, contact ebm-papst. Intake sound level: Sound power level according to ISO 13347 / sound pressure level measured at 1 m distance from fan axis. The values given are valid under the specified measuring conditions and may vary due to conditions of installation. For deviations from the standard configuration, the parameters have to be checked on the installed unit.

Measured values

	U	f	n	P_e	I	LpA_{in}	LwA_{in}	q_V	p_{fs}	q_V	p_{fs}
	V	Hz	min^{-1}	W	A	dB(A)	dB(A)	m^3/h	Pa	cfm	in. wg
1	230	50	1030	140	0.62	48	60	615	0	360	0.00
2	230	50	1425	133	0.58	47	60	535	100	315	0.40
3	230	50	1840	125	0.55	50	62	435	200	255	0.80
4	230	50	2220	112	0.50	54	67	310	300	180	1.20
5	230	50	850	100	0.47	40	52	440	0	260	0.00
6	230	50	1050	96	0.46	40	52	390	52	230	0.21
7	230	50	1415	93	0.45	44	56	335	118	195	0.47
8	230	50	1845	85	0.42	50	63	260	211	155	0.85
9	230	50	605	83	0.41	33	45	350	0	205	0.00
10	230	50	840	81	0.40	34	46	310	33	180	0.13
11	230	50	1130	79	0.39	39	51	265	74	155	0.30
12	230	50	1520	74	0.38	45	57	215	142	125	0.57
13	230	50	480	72	0.36	26	38	270	0	160	0.00
14	230	50	665	72	0.36	27	39	240	20	140	0.08
15	230	50	880	70	0.35	32	43	205	43	120	0.17
16	230	50	1175	68	0.35	39	51	165	84	95	0.34

U = Voltage · f = Frequency · n = Speed (rpm) · P_e = Power consumption · I = Current draw · LpA_{in} = Sound pressure level intake side · LwA_{in} = Sound power level intake side
q_V = Air flow · p_{fs} = Pressure increase

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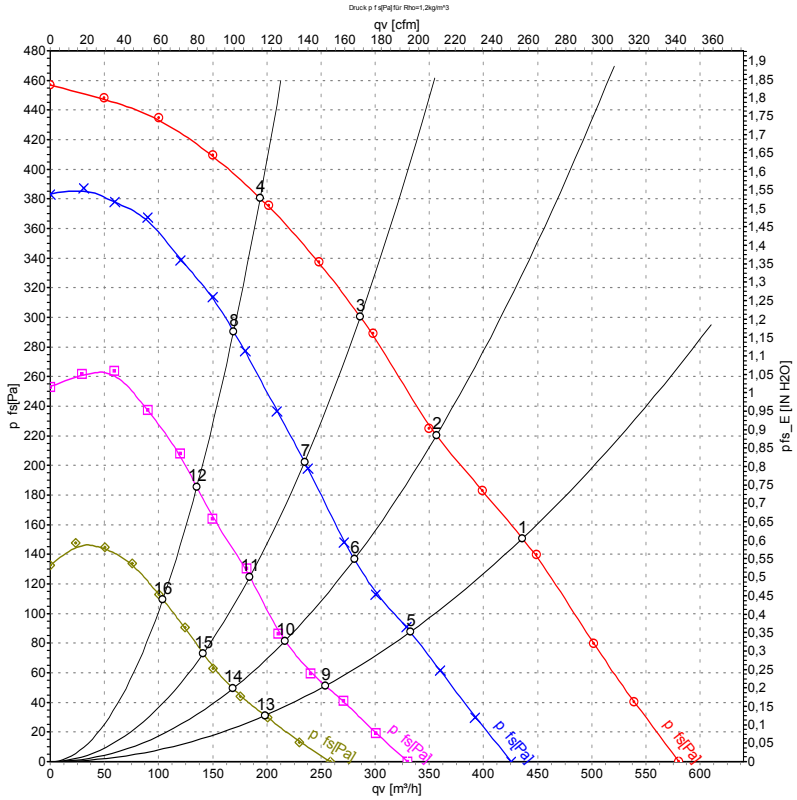
Curves: Air performance 60 Hz



Measurement: LU-134220-1
Measurement: LU-134223-1
Measurement: LU-134224-1
Measurement: LU-134225-1

Air performance measured according to ISO 5801 installation category A. For detailed information on the measurement setup, contact ebm-papst. Intake sound level: Sound power level according to ISO 13347 / sound pressure level measured at 1 m distance from fan axis. The values given are valid under the specified measuring conditions and may vary due to conditions of installation. For deviations from the standard configuration, the parameters have to be checked on the installed unit.

Measured values

	U	f	n	P_e	I	LpA_{in}	LwA_{in}	q_V	p_{fs}	q_V	p_{fs}
	V	Hz	min^{-1}	W	A	dB(A)	dB(A)	m^3/h	Pa	cfm	in. wg
1	230	60	1630	145	0.65	48	60	435	150	255	0.60
2	230	60	1905	144	0.63	51	64	355	220	210	0.88
3	230	60	2210	141	0.62	54	67	285	300	170	1.20
4	230	60	2465	139	0.61	58	71	195	380	115	1.53
5	230	60	1225	102	0.51			330	88	195	0.35
6	230	60	1505	101	0.51			280	137	165	0.55
7	230	60	1815	98	0.50			235	203	140	0.81
8	230	60	2160	92	0.49			170	290	100	1.16
9	230	60	960	83	0.44			255	51	150	0.20
10	230	60	1180	82	0.44			215	81	130	0.33
11	230	60	1440	80	0.43			185	126	110	0.51
12	230	60	1745	77	0.43			135	186	80	0.75
13	230	60	755	71	0.39			200	31	115	0.12
14	230	60	925	71	0.39			170	49	100	0.20
15	230	60	1105	68	0.38			140	73	85	0.29
16	230	60	1350	69	0.39			105	110	60	0.44

U = Voltage · f = Frequency · n = Speed (rpm) · P_e = Power consumption · I = Current draw · LpA_{in} = Sound pressure level intake side · LwA_{in} = Sound power level intake side
q_V = Air flow · p_{fs} = Pressure increase