Product specification

Model:ECF(K)6E250-PLHDAJ10-PRF

Fan type:EC Backward curved centrifugal fan

Manufactory:Zhejiang MingZhen Electric & Electronic Co., Ltd.

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Fan Introduction

This product consist of outer rotor(EC)motor, backward curved centrifugal impeller, with features of compact structure, large airflow, high static pressure, low vibration, low noise, convenient installation, energy saving, high efficiency etc..

Scope of application

General purpose fan, can be widely used in purification of air conditioning systems, ventilation duct dust, environmental protection, refrigeration equipment and other fields.

Environmental requirements

- ●Operating ambient temperature range:-25℃~+50℃
- ●Working environment humidity range:≤90%
- ●Transportation and storage temperature range:-40℃~+80℃
- ●Transportation and storage environment humidity range:≤80%
- ●The storage place is well ventilated, corrosive gases not contained.

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Design, manufacturing, testing standards and certification

- ●JB-T10563 Technical specification for general purposes centrifugal fans
- ●GB/T 14711 General safety requirements for Medium and small rotary motor
- ●GB/T 755/IEC60034-1 rotary motor quota and performance
- ●GB 4706.32-2012/IEC 60335-2-40:2005 Household and similar electrical appliances - Safety - Part 2-40: Particular requirements for electrical heat pumps, air-conditioners and dehumidifiers
- ●The level of balance is in accordance with ISO 1940, G6.3
- ●Vibration testing and velocity is performed according to JB/T8689.
- ●This product is certified by China CCC and EU CE
- ●ISO 9001 quality system certification

Technical features

Mass	7 kg
Size	φ250 mm
Impeller material	Sheet aluminium
Rotation	Counter-clockwise(Seen from cable exit)
Protection class	IP54
Insulation class	F
Mounting	Shaft horizontal or rotor on bottom; rotor on top on request
Mode of operation	S1(Continuous operation)
Bearings	Maintenance-free ball bearings
Controller	Controller integrated with motor, 0~10V or PWM control

Structures

Inlet type	Single Inlet
Impeller type	Backward curved impeller
Housing	Without housing; With inlet ring;

Technical parameters

Supply	1P,200~277V
Frequency	50/60 Hz

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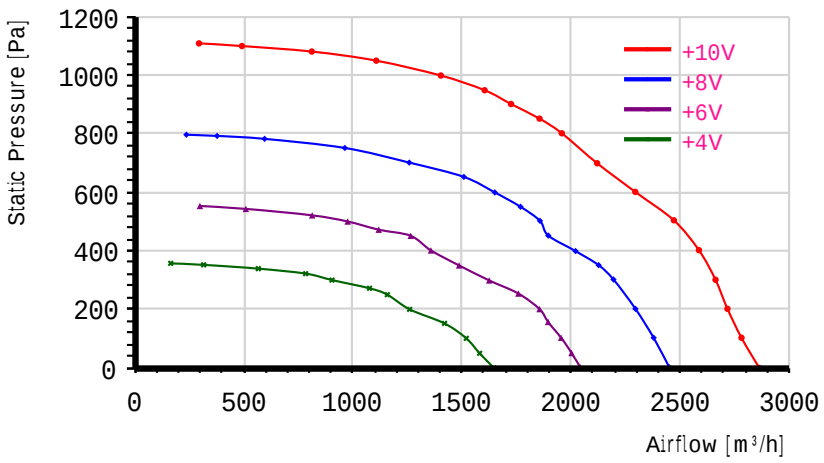
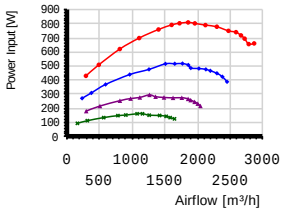
Rated voltage	230 VAC
Power input	803 W
Rated current	3.47 A
Rated speed	3530 r/min
Max airflow	2850 m³/h (Static pressure=0Pa)
Acoustic	75 dB(A) measured at 1.0m from inlet side
ErP level	2015

Performance curve

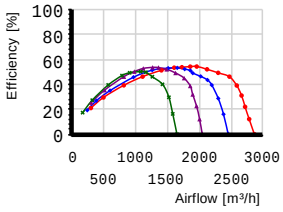
Airflow curve



Power input curve



Efficiency on static pressure



Performance test with reference to GB/T 1236-2017, equivalent to ISO 5801

TestID	20160906701	Control voltage	10 VDC

Test environment					
Outlet size	Outlet area	Temperature	Humidity	Baropressure	Density
301mm	0.0712㎡	29℃	74%	100.6kPa	1.2kg/m³

Test data										
Voltage	Frequency	Speed	Power input	Current	Airflow	Static pressure	Dynamic pressure	Total pressure	Pressure Differenc	Nozzle Size
V	Hz	r/min	W	A	m³/h	Pa	Pa	Pa	Pa	mm
229.1	50	3530	431	1.91	294	1108	1	1108	266	30+40+50
228.3	50	3530	509	2.26	491	1099	2	1101	189	30+40+50+70
228.2	50	3530	621	2.75	811	1080	6	1086	223	30+40+50+100
227.4	50	3530	699	3.09	1107	1049	11	1060	236	30+40+50+70+100
227.5	50	3530	760	3.36	1403	998	17	1015	377	30+40+50+70+100
232.9	50	3530	792	3.43	1604	948	22	971	379	150+189*0

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232.4	50	3530	804	3.48	1725	901	26	926	438	150+189*0
230.5	50	3530	810	3.53	1856	851	30	881	506	150+189*0
231.7	50	3530	803	3.47	1958	801	33	834	224	+189*1
231.8	50	3530	791	3.42	2120	699	39	738	262	+189*1
230.7	50	3540	779	3.4	2295	601	46	646	307	+189*1
231.2	50	3540	750	3.27	2472	504	53	557	356	+189*1
230.1	50	3540	741	3.24	2587	402	58	460	390	+189*1
231	50	3540	718	3.11	2663	301	62	363	413	+189*1
231.3	50	3540	695	3.02	2718	202	64	266	430	+189*1
231.2	50	3540	656	2.85	2782	103	67	170	450	+189*1
231.5	50	3540	661	2.88	2864	0	71	72	477	+189*1

TestID	20160906801	Control voltage	8 VDC

Test environment					
Outlet size	Outlet area	Temperature	Humidity	Baropressure	Density
301mm	0.0712㎡	31℃	66%	100.5kPa	1.2kg/m³

Test data										
Voltage	Frequency	Speed	Power input	Current	Airflow	Static pressure	Dynamic pressure	Total pressure	Pressure Differenc	Nozzle Size
V	Hz	r/min	W	A	m³/h	Pa	Pa	Pa	Pa	mm
232.2	50	3000	272	1.2	236	796	0	797	181	30+40+50
230.8	50	3000	310	1.38	377	792	1	793	200	30+40+70
231.3	50	3000	370	1.64	595	782	3	785	277	30+40+50+70
229.9	50	3000	440	1.94	963	751	8	759	314	30+40+50+100
229.9	50	3000	477	2.11	1258	701	14	714	304	30+40+50+70+100
230.8	50	3000	516	2.25	1509	652	20	672	436	30+40+50+70+100
230.5	50	3000	517	2.28	1651	599	24	623	521	30+40+50+70+100
230.8	50	3000	518	2.27	1769	550	27	577	597	30+40+50+70+100
230.8	50	3000	508	2.23	1858	502	30	532	659	30+40+50+70+100
230.7	50	3000	486	2.14	1896	452	31	483	525	150+189*0
230.6	50	3000	483	2.13	2021	399	35	435	237	+189*1
229.9	50	3000	477	2.11	2127	351	39	390	263	+189*1
230.2	50	3000	467	2.07	2195	302	42	343	280	+189*1
230.1	50	3000	449	1.98	2296	202	46	247	306	+189*1
230.2	50	3000	425	1.88	2379	103	49	152	328	+189*1
229.6	50	3000	389	1.73	2451	2	52	54	348	+189*1

TestID	20160906901	Control voltage	6 VDC

Test environment					
Outlet size	Outlet area	Temperature	Humidity	Baropressure	Density
301mm	0.0712㎡	29℃	75%	100.6kPa	1.2kg/m³

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Test data										
Voltage	Frequency	Speed	Power input	Current	Airflow	Static pressure	Dynamic pressure	Total pressure	Pressure Differenc	Nozzle Size
V	Hz	r/min	W	A	m³/h	Pa	Pa	Pa	Pa	mm
231.7	50	2505	181	0.84	298	553	1	553	274	30+40+50
231.9	50	2505	217	0.98	509	543	2	545	203	30+40+50+70
231.9	50	2505	255	1.14	813	521	6	527	224	30+40+50+100
231.9	50	2505	270	1.2	976	500	8	509	322	30+40+50+100
230.9	50	2505	278	1.24	1118	472	11	483	241	30+40+50+70+100
230.9	50	2505	296	1.32	1265	451	14	465	307	30+40+50+70+100
229.1	50	2502	283	1.28	1358	401	16	417	270	150+189*0
229.9	50	2502	278	1.25	1487	350	19	369	324	150+189*0
230	50	2504	275	1.23	1625	299	23	322	386	150+189*0
231.6	50	2505	276	1.23	1759	254	27	281	452	150+189*0
231.7	50	2507	268	1.2	1856	201	30	231	503	150+189*0
230.8	50	2500	259	1.16	1895	157	31	188	209	+189*1
232.1	50	2500	247	1.11	1955	103	33	136	222	+189*1
230.9	50	2500	234	1.06	2003	51	35	86	233	+189*1
231.5	50	2500	218	1	2043	2	36	38	242	+189*1

TestID	201609061001	Control voltage	4 VDC

Test environment					
Outlet size	Outlet area	Temperature	Humidity	Baropressure	Density
301mm	0.0712㎡	29℃	75%	100.6kPa	1.2kg/m³

Test data										
Voltage	Frequency	Speed	Power input	Current	Airflow	Static pressure	Dynamic pressure	Total pressure	Pressure Differenc	Nozzle Size
V	Hz	r/min	W	A	m³/h	Pa	Pa	Pa	Pa	mm
229.8	50	2002	94	0.51	164	357	0	357	331	30+40
230.5	50	2004	113	0.58	315	352	1	353	305	30+40+50
231.1	50	2004	135	0.66	566	339	3	342	250	30+40+50+70
231.4	50	2002	149	0.72	783	322	5	327	208	30+40+50+100
230.7	50	2003	153	0.73	904	300	7	307	276	30+40+50+100
229.9	50	2004	162	0.77	1076	272	10	283	223	30+40+50+70+100
230.9	50	2003	162	0.77	1158	250	12	262	258	30+40+50+70+100
231.9	50	2001	152	0.73	1260	200	14	214	233	150+189*0
231.4	50	2000	150	0.72	1420	152	18	169	296	150+189*0
231.4	50	2000	144	0.69	1520	101	20	121	338	150+189*0
232.4	50	2000	135	0.66	1581	50	22	72	366	150+189*0
231.8	50	2000	126	0.63	1647	0	24	24	397	150+189*0

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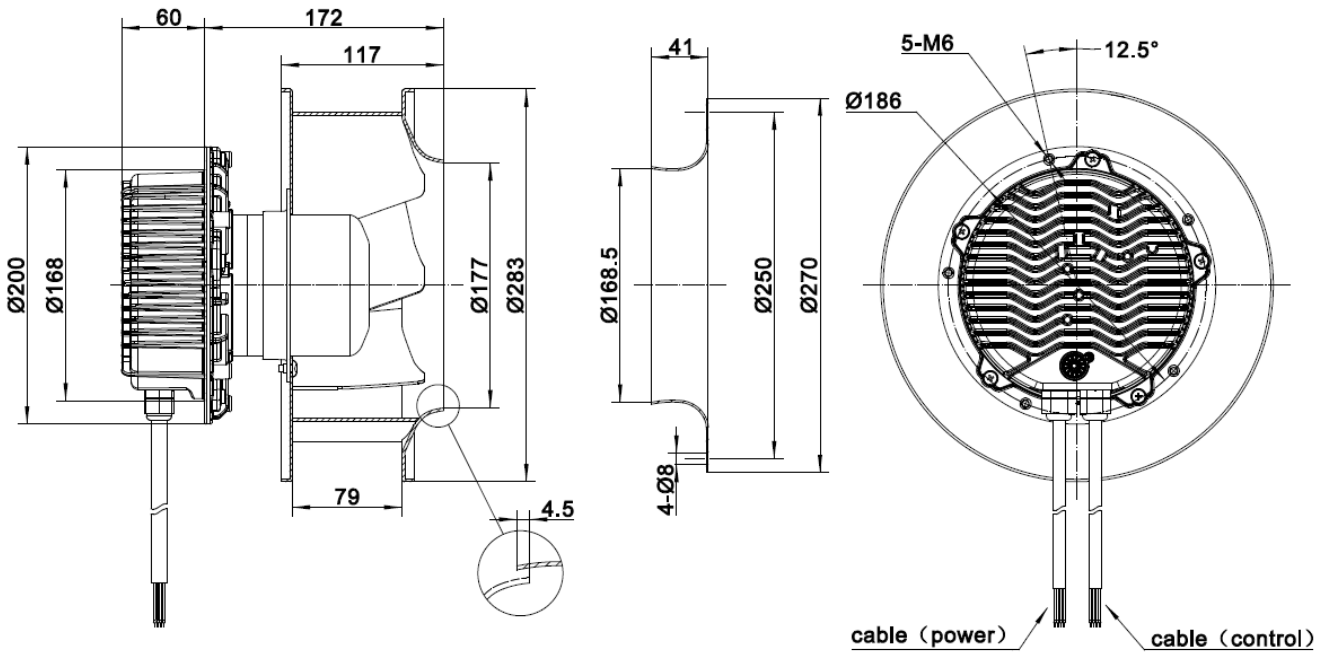
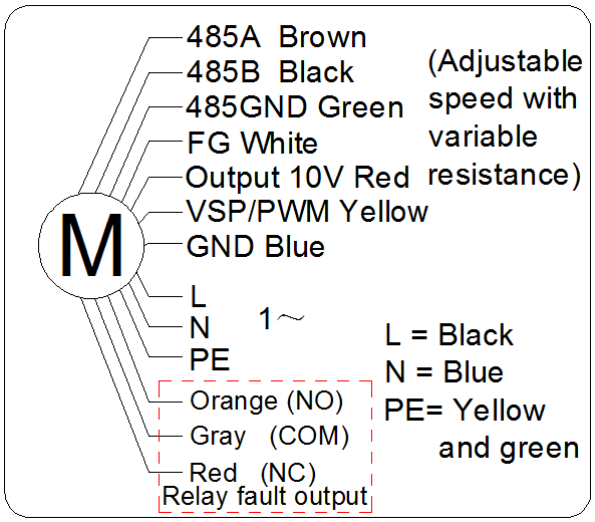
Dimensions(in mm)



Wiring diagram



Electrical connections

Connection	Assignment/function
L、N	Single-phase supply connection, voltage range 200-277VAC, frequency 50/60Hz
PE	Protective earth
485A	RS485 interface for MODBUS-RTU
485B	RS485 interface for MODBUS-RTU

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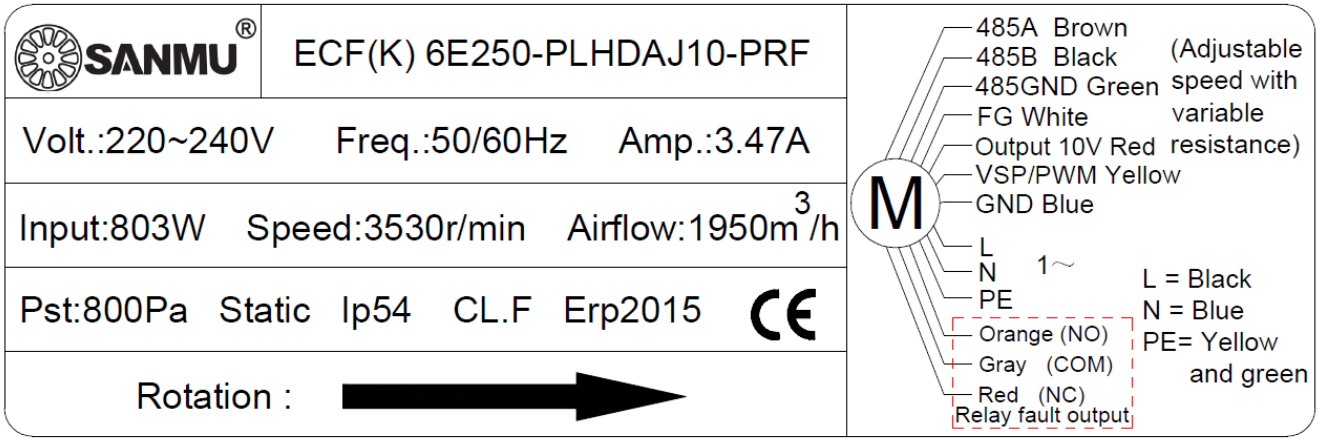
485GND	Reference ground for control interface
NC	Status relay, mode2--close on normal, open on fault
COM	Common connection of status relay, contact rating 250VAC/3A
NO	Status relay, mode2--open on normal, close on fault
FG	Speed feedback pulse output, 2 pulses per revolution, can be customized
+10V	10VDC output,maximum output current 10mA
VSP/PWM	Speed control signal input connection, 0-10V voltage or PWM signal (amplitude 10-12V, frequency 1-10kHz)
GND	Signal ground for control interface

NamePlate



Attentions

★Please check the appearance and the accessories if there is no damage before use, check the model is consistent with requirements;

★Keep reliable grounding according to the wiring diagram. to avoid motor burning and personal accident, please check wiring is loose or fall off;

★Before connect the power supply, check whether the motor is reliable, otherwise it will cause motor damage and personal injury;

★It is forbidden to pull the power cable, if the power cable is damaged, to be repaired before use, to avoid the accident of electric shock;

★Drop or impact motor is forbidden;

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★Washing motor with water is prohibited, it will reduce the motor insulation level, even lead to electric leakage even endanger personal safety;

★Special customized product is designed for specified requirements, please consult with our engineers before change useage;

★The temperature of the motor shell may be higher in a short time after the fan stopped, Please avoid direct contact with the motor surface. If necessary, please take protective measures to prevent scald;

★Do not contact the impeller when the fan running, you need to wait for all the parts stopped before operate it;

★When the fan is installed, check and ensure thers is no debris in the shell and other shell body, keep the fan clean;

★After the fan installation complete, before connected to supply, please confirm that there is no collision or interference or stuck.

Product life and maintenance, warranty

●The design life of this product is 40,000 hours. This data is derived from the expected life of L10 for general ball bearings at 40℃ is 40,000 hours. The actual service life of the product is affected by the use environment (temperature, humidity, installation, bearing load, etc.).

●According to the use of the environment, please make a clean maintenance every 3~6 months.

●From the date of purchase (order delivery date), The warranty period is one year. During this period, for failure due to the quality of the product itself, we provide free replacement or repairing. If the damage caused by improper disassembly, transportation, artificial damage or natural disasters, etc., is not in the scope of this warranty;