Product specification

Model:ECF(K)6E280-PLHDAL1-PRF | Fan type:EC Radial plug 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..The support bracket and panel assembly makes the fan have the characteristics of plug and play, the installation and maintenance become more convenient.

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/T 10563 Technical specification for general purposes centrifugal fans
●GB/T 14711 Safety requirements of small and medium size rotating electrical machines
●GB/T 755/IEC60034-1 Rotating electrical machines - Part 1: Rating 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
●Balance quality grade for rotor is G6.3, in accordance with ISO 1940-1,
●Vibration testing and velocity is performed according to JB/T 8689.
●This product is certified by China CCC and EU CE
●ISO 9001 quality system certification

Technical features

Mass	12 kg
Size	φ280 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; With bracket; With panel;

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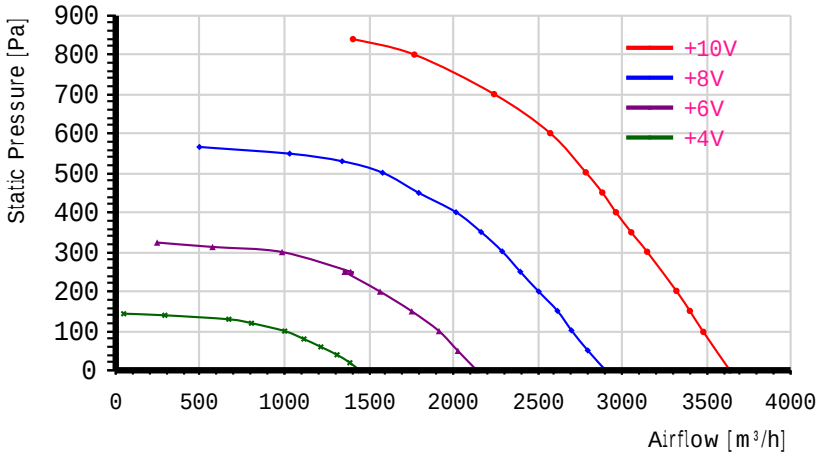
Technical parameters

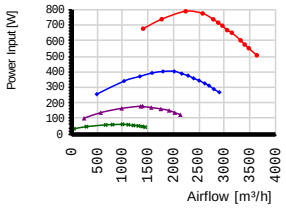
Supply	1P,200~277V
Frequency	50/60 Hz
Rated voltage	230 VAC
Power input	730 W
Rated current	3.2 A
Rated speed	2850 r/min
Max airflow	3600 m³/h (Static pressure=0Pa)
Acoustic	74 dB(A) measured at 1.0m from inlet side
ErP level	2015

Performance curve

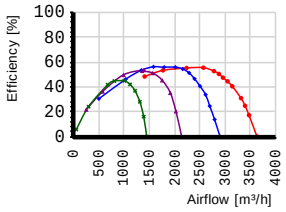
Airflow curve



Power input curve



Efficiency on static pressure



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

TestID	2019040901	Control voltage	10 VDC

Test environment					
Outlet size	Outlet area	Temperature	Humidity	Baropressure	Density
339mm	0.0903㎡	22℃	87%	101.1kPa	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
231.7	50	2841	677	2.94	1405	839	11	850	301	150+189*0
231.3	50	2841	738	3.2	1769	800	18	818	476	150+189*0

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230.5	50	2841	789	3.43	2241	700	28	728	303	+189*1
230.7	50	2841	775	3.36	2574	601	37	638	399	+189*1
229.8	50	2841	737	3.22	2784	502	43	545	466	+189*1
230.4	50	2840	716	3.12	2882	451	46	497	499	+189*1
230.5	50	2840	696	3.04	2963	401	49	450	527	+189*1
230.1	50	2840	668	2.92	3054	350	52	402	560	+189*1
230.6	50	2844	651	2.84	3148	301	55	356	595	+189*1
230.5	50	2845	602	2.64	3321	202	62	264	251	150+189*1
231.4	50	2842	575	2.51	3401	151	65	216	263	150+189*1
230.2	50	2842	551	2.42	3481	98	68	166	275	150+189*1
231.7	50	2842	506	2.2	3639	0	74	74	301	150+189*1

TestID	2018011305	Control voltage	8 VDC

Test environment					
Outlet size	Outlet area	Temperature	Humidity	Baropressure	Density
339mm	0.0903㎡	10℃	39%	103kPa	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
230.9	50	2280	256	1.15	496	566	2	568	209	30+40+50+70
230.7	50	2280	340	1.51	1030	549	6	556	388	30+40+50+100
230.1	50	2280	370	1.64	1341	530	11	540	374	30+40+50+70+100
231	50	2280	392	1.73	1581	501	15	516	518	30+40+50+70+100
229.4	50	2280	402	1.78	1795	450	19	470	518	150+189*0
230	50	2280	402	1.77	2016	401	24	425	260	+189*1
229.8	50	2280	388	1.72	2164	351	28	379	299	+189*1
229.7	50	2280	375	1.66	2289	302	31	334	334	+189*1
229.7	50	2280	358	1.6	2397	250	34	285	366	+189*1
229.2	50	2280	343	1.53	2506	200	38	238	400	+189*1
230	50	2280	325	1.45	2617	151	41	192	436	+189*1
230.2	50	2280	311	1.38	2700	102	44	146	464	+189*1
230.9	50	2280	288	1.28	2796	51	47	97	497	+189*1
229	50	2280	268	1.21	2904	0	50	51	203	150+189*1

TestID	2018011306	Control voltage	6 VDC

Test environment					
Outlet size	Outlet area	Temperature	Humidity	Baropressure	Density
339mm	0.0903㎡	10℃	39%	103kPa	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
230.1	50	1708	101	0.52	245	324	0	324	201	30+40+50
230.7	50	1708	137	0.67	573	313	2	314	278	30+40+50+70
229.5	50	1708	165	0.78	985	300	6	306	203	30+40+50+70+100
230.5	50	1708	180	0.84	1392	250	12	262	402	30+40+50+70+100
229.8	50	1708	178	0.82	1356	250	11	261	297	150+189*0
230.8	50	1708	170	0.8	1566	200	15	215	395	150+189*0
231.1	50	1708	161	0.76	1754	150	18	168	494	150+189*0
233.3	50	1708	151	0.72	1915	100	22	122	589	150+189*0
231.2	50	1708	137	0.66	2027	50	25	75	262	+189*1
231.4	50	1708	124	0.61	2138	1	27	29	292	+189*1

TestID	2018011310	Control voltage	4 VDC

Test environment					
Outlet size	Outlet area	Temperature	Humidity	Baropressure	Density
339mm	0.0903㎡	9℃	41%	102.8kPa	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
231.3	50	1138	33	0.31	47	144	0	144	229	30
230.9	50	1138	47	0.35	291	140	0	140	286	30+40+50
231.7	50	1138	58	0.38	670	130	3	133	676	30+40+70
230.9	50	1138	60	0.38	804	120	4	124	237	30+40+50+100
230.4	50	1138	62	0.39	1001	100	6	106	209	30+40+50+70+100
229.8	50	1138	59	0.39	1115	80	7	88	259	30+40+50+70+100
229.6	50	1138	55	0.37	1215	60	9	69	307	30+40+50+70+100
229.8	50	1138	52	0.36	1311	40	10	50	358	30+40+50+70+100
229.8	50	1138	48	0.35	1387	20	12	31	400	30+40+50+70+100
229.5	50	1138	44	0.34	1447	0	12	13	435	30+40+50+70+100

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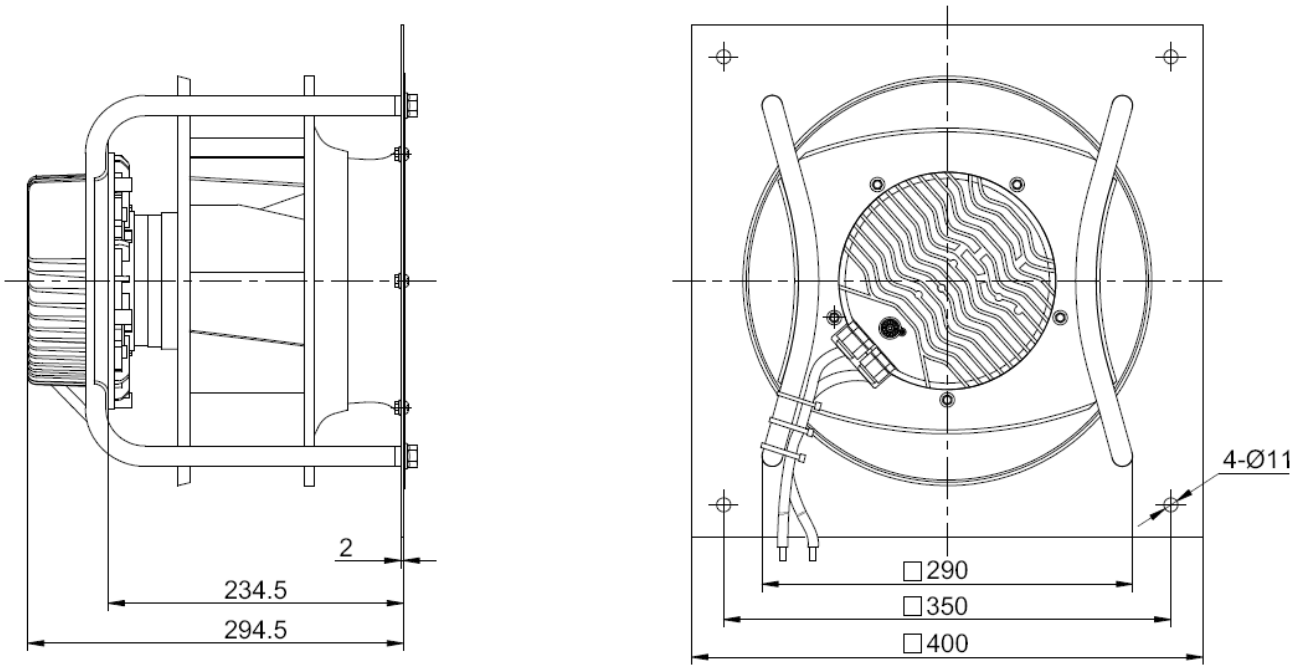
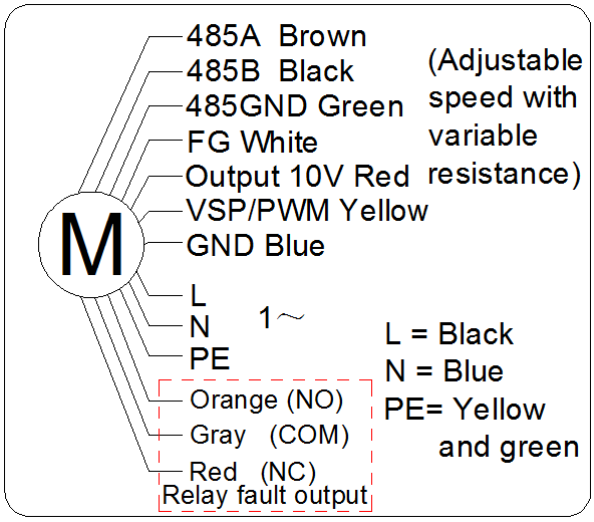
Dimensions(in mm)



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

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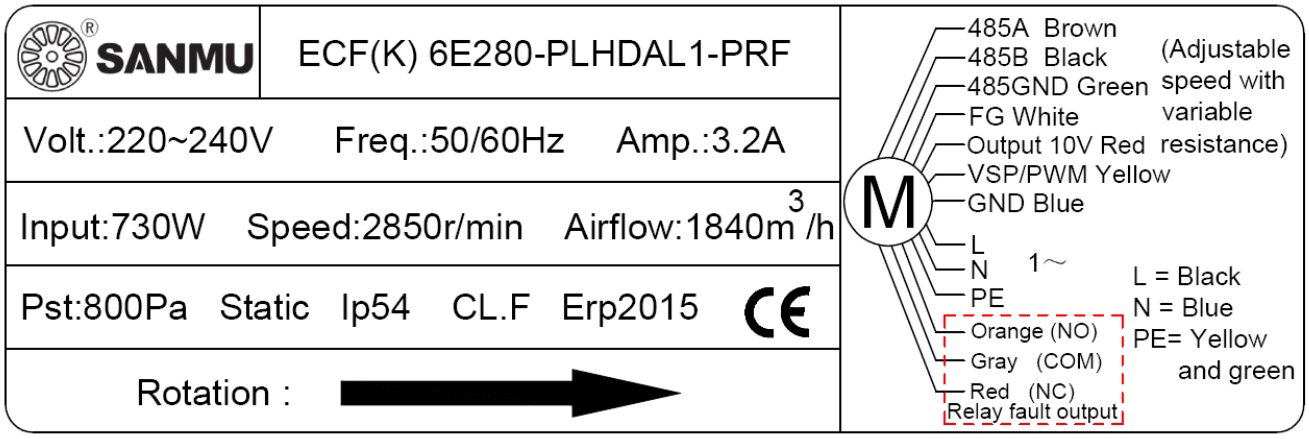
485B	RS485 interface for MODBUS-RTU
485GND	Reference ground for control interface
NC	Status relay, mode2--close on normal, open on fault
COM	Common connection of status relay, contact rating 250VAC/3A
NO	Status relay, mode2--open on normal, close on fault
FG	Speed feedback pulse output, 2 pulses per 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.

Service life, maintenance, warranty and Disclaimer

●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;