

Model:ECF(K)6E310-PLHDAJ11-PR
F

Fan type:EC Backward curved
centrifugal fan



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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	6.55 kg
Size	φ310 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

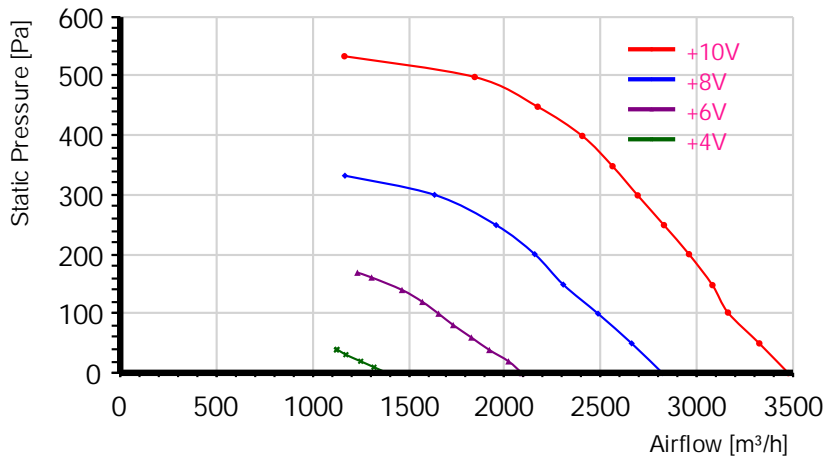
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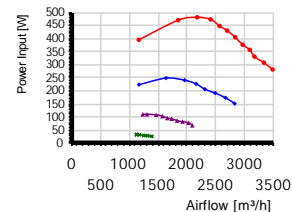
Rated voltage	230 VAC
Power input	470 W
Rated current	2.1 A
Rated speed	2020 r/min
Max airflow	3500 m ³ /h (Static pressure=0Pa)
Acoustic	69 dB(A) measured at 1.0m from inlet side
ErP level	2020

Performance curve

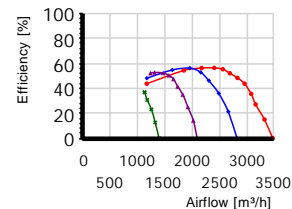
Airflow curve



Power input curve



Efficiency on static pressure



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

TestID	2019080707			Control voltage	10 VDC	
Test environment						
Outlet size	Outlet area	Temperature	Humidity	Baropressure	Density	
389.4mm	0.1191m ²	33°C	60%	100.3kPa	1.2kg/m ³	

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	m ³ /h	Pa	Pa	Pa	Pa	mm
234.1	50	2016	395	1.72	1166	533	4	537	200	150+189*0
231.7	50	2016	470	2.06	1844	498	10	508	198	+189*1
232.8	50	2016	481	2.09	2172	448	14	463	274	+189*1
230	50	2016	473	2.09	2404	399	18	417	335	+189*1
230.5	50	2016	448	1.98	2561	348	20	368	380	+189*1
231.4	50	2016	430	1.89	2692	299	22	321	420	+189*1

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232	50	2016	405	1.78	2829	249	25	274	463	+189*1
231.4	50	2016	376	1.66	2959	200	27	227	506	+189*1
231.9	50	2016	357	1.57	3081	148	29	178	208	150+189*1
231.9	50	2016	331	1.46	3162	102	31	132	219	150+189*1
231.8	50	2016	308	1.37	3325	50	34	84	242	150+189*1
232.3	50	2016	282	1.27	3476	0	37	37	264	150+189*1

TestID	2019080708			Control voltage	8 VDC					
Test environment										
Outlet size	Outlet area	Temperature	Humidity	Baropressure	Density					
389.4mm	0.1191m ²	33℃	62%	100.3kPa	1.2kg/m ³					

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	m ³ /h	Pa	Pa	Pa	Pa	mm
231.3	50	1619	224	1.02	1169	332	4	336	201	150+189*0
228.3	50	1619	249	1.15	1635	300	8	308	392	150+189*0
232.5	50	1619	241	1.1	1956	249	12	261	222	+189*1
230.4	50	1619	227	1.04	2156	200	14	214	270	+189*1
230.1	50	1619	207	0.96	2305	149	16	166	308	+189*1
229.9	50	1619	192	0.91	2486	100	19	119	358	+189*1
230.1	50	1619	174	0.83	2661	50	22	72	410	+189*1
230.2	50	1619	152	0.74	2821	0	24	25	460	+189*1

TestID	2019080709			Control voltage	6 VDC					
Test environment										
Outlet size	Outlet area	Temperature	Humidity	Baropressure	Density					
389.4mm	0.1191m ²	33℃	63%	100.3kPa	1.2kg/m ³					

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	m ³ /h	Pa	Pa	Pa	Pa	mm
231.4	50	1212	111	0.58	1234	169	5	174	224	150+189*0
230.1	50	1212	111	0.59	1308	161	5	167	251	150+189*0
233	50	1212	109	0.58	1466	140	7	147	315	150+189*0
232.7	50	1212	104	0.56	1572	120	8	128	362	150+189*0
231.9	50	1212	97	0.53	1656	100	8	108	402	150+189*0
231.1	50	1212	94	0.52	1732	81	9	90	439	150+189*0
231.3	50	1212	87	0.5	1827	60	10	70	488	150+189*0
231.2	50	1212	83	0.49	1920	39	11	51	539	150+189*0
231.9	50	1212	79	0.48	2020	20	12	33	596	150+189*0
232.4	50	1212	69	0.45	2090	0	13	14	637	150+189*0

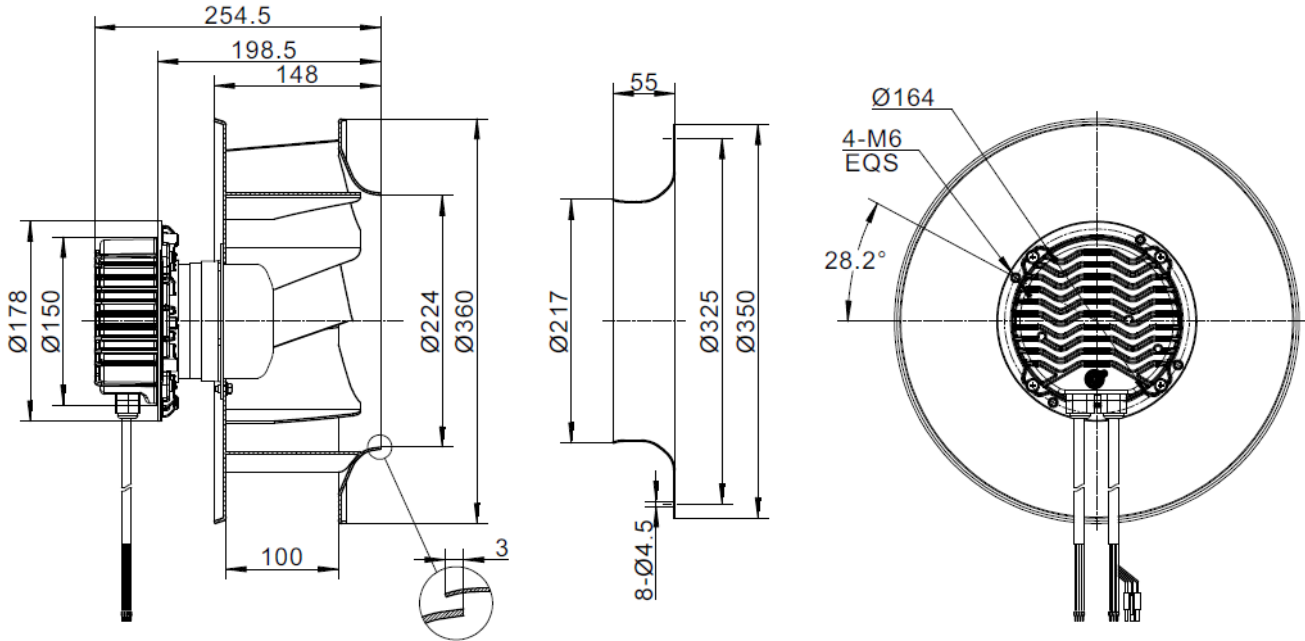
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TestID	2019080710			Control voltage	4 VDC
Test environment					
Outlet size	Outlet area	Temperature	Humidity	Baropressure	Density
389.4mm	0.1191m ²	33℃	63%	100.3kPa	1.2kg/m ³

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	m ³ /h	Pa	Pa	Pa	Pa	mm
232.5	50	806	33	0.35	1125	39	4	43	186	150+189°0
232.7	50	806	34	0.36	1128	40	4	44	187	150+189°0
233.2	50	806	33	0.35	1174	31	4	35	203	150+189°0
233	50	806	30	0.34	1251	20	5	25	230	150+189°0
232.8	50	806	29	0.34	1320	10	5	16	256	150+189°0
233	50	806	27	0.35	1391	0	6	6	284	150+189°0

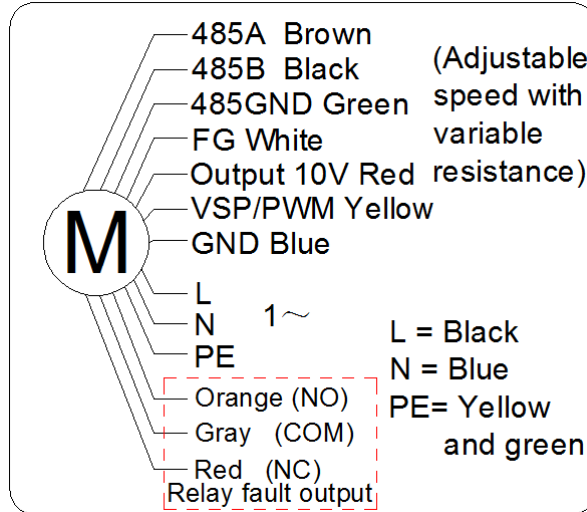
Dimensions(in mm)



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Wiring diagram




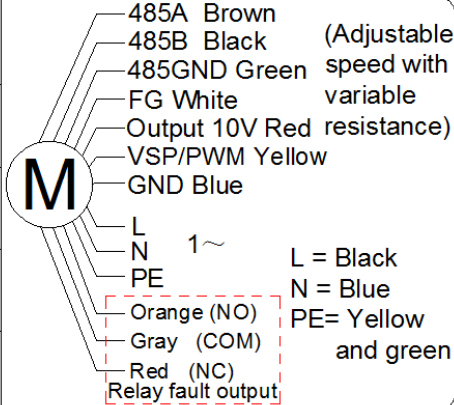


Electrical connections

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
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

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NamePlate

	SANMU	ECF(K) 6E310-PLHDAJ11-PRF		
Volt.:220~240V		Freq.:50/60Hz		Amp.:2.1A
Input:470W	Speed:2020r/min	Airflow:2400m ³ /h		
Pst:400Pa	Static	Ip54		CL.F Erp2015 
Rotation :				

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;
- ★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;

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★When the fan is installed, check and ensure there 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°C 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;