

Model:ECF(K)8D500-PLHDAJ2-RF

Fan type:EC Backward curved centrifugal fan



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

ADD:The Central Industry Zone, Chengnan Town, WenLing City, Zhejiang Province, China

TEL:0086-576-86268888

FAX:0086-576-86268020

Mail:info1@cnsanmu.com

WEB:http://www.cnsanmu.com

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	22 kg
Size	φ500 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	3P,380~480V
Frequency	50/60 Hz

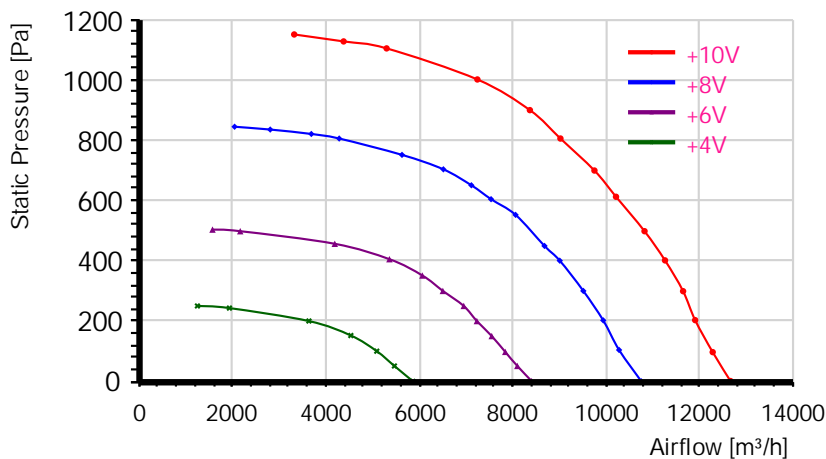
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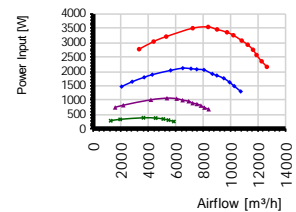
Rated voltage	400 VAC
Power input	3460 W
Rated current	5.75 A
Rated speed	1830 r/min
Max airflow	12660 m ³ /h (Static pressure=0Pa)
Acoustic	86 dB(A) measured at 1.0m from inlet side
ErP level	2015

Performance curve

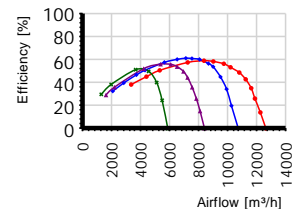
Airflow curve



Power input curve



Efficiency on static pressure



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

TestID	2016062701			Control voltage	10 VDC					
Test environment										
Outlet size	Outlet area	Temperature	Humidity	Baropressure	Density					
561mm	0.2472m ²	27°C	78%	100.6kPa	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
404.2	50	1828	2774	4.56	3323	1150	8	1158	646	+189*1
401.1	50	1827	3041	4.95	4382	1127	14	1141	425	150+189*1
402.2	50	1830	3213	5.23	5302	1104	20	1124	240	150+189*2
399.9	50	1830	3505	5.67	7244	1001	38	1039	235	150+189*3
398	50	1830	3546	5.76	8369	899	51	950	313	150+189*3
400.8	50	1830	3460	5.74	9023	805	59	864	224	150+189*4

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400.5	50	1829	3363	5.55	9749	699	69	768	261	150+189*4
400.1	50	1828	3259	5.41	10213	612	76	688	286	150+189*4
402.2	50	1832	3075	5.12	10822	498	85	584	321	150+189*4
401.3	50	1830	2930	4.92	11262	401	92	493	348	150+189*4
401.1	50	1832	2754	4.61	11648	299	99	398	372	150+189*4
399.7	50	1829	2575	4.32	11906	203	103	306	388	150+189*4
401.4	50	1830	2356	3.95	12281	97	110	207	413	150+189*4
400	50	1833	2163	3.69	12663	1	117	118	439	150+189*4

TestID	2016062706			Control voltage			8 VDC			
Test environment										
Outlet size	Outlet area	Temperature	Humidity	Baropressure	Density					
561mm	0.2472m ²	28℃	76%	100.6kPa	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
401	50	1555	1477	2.42	2048	844	3	847	619	150+189*0
399.2	50	1555	1645	2.66	2811	835	6	841	462	+189*1
400.9	50	1556	1799	2.89	3690	820	10	830	301	150+189*1
401.8	50	1556	1891	3.04	4286	805	13	818	405	150+189*1
401.5	50	1563	2040	3.23	5630	751	23	774	269	150+189*2
401.3	50	1556	2117	3.31	6516	703	31	734	360	150+189*2
402.6	50	1555	2101	3.31	7115	650	37	686	226	150+189*3
401.5	50	1555	2078	3.29	7538	604	41	645	253	150+189*3
403.7	50	1554	2056	3.21	8063	552	47	600	290	150+189*3
402.8	50	1554	1917	3.02	8680	449	55	504	207	150+189*4
401.8	50	1553	1862	2.96	9009	400	59	459	223	150+189*4
401.2	50	1555	1765	2.8	9513	300	66	366	248	150+189*4
400.2	50	1553	1626	2.58	9939	202	72	274	271	150+189*4
400.9	50	1552	1494	2.4	10279	104	77	181	289	150+189*4
400.7	50	1554	1307	2.14	10754	0	84	85	316	150+189*4

TestID	2016062708			Control voltage			6 VDC			
Test environment										
Outlet size	Outlet area	Temperature	Humidity	Baropressure	Density					
561mm	0.2472m ²	28℃	76%	100.6kPa	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
406.3	50	1201	754	1.27	1576	503	2	505	368	150+189*0
404.9	50	1201	833	1.43	2168	498	3	501	276	+189*1

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400.3	50	1201	1020	1.69	4191	456	13	468	388	150+189*1
406.5	50	1201	1078	1.77	5362	405	21	426	244	150+189*2
403.5	50	1200	1060	1.71	6068	351	27	378	312	150+189*2
404.6	50	1200	1007	1.64	6506	300	31	331	359	150+189*2
400.1	50	1201	972	1.59	6952	250	35	285	216	150+189*3
398.7	50	1202	906	1.51	7234	200	38	238	233	150+189*3
399.4	50	1201	876	1.43	7552	150	41	192	254	150+189*3
401	50	1201	819	1.33	7840	98	45	142	274	150+189*3
400.6	50	1200	748	1.25	8100	51	48	98	292	150+189*3
400.4	50	1202	693	1.21	8405	1	51	53	314	150+189*3

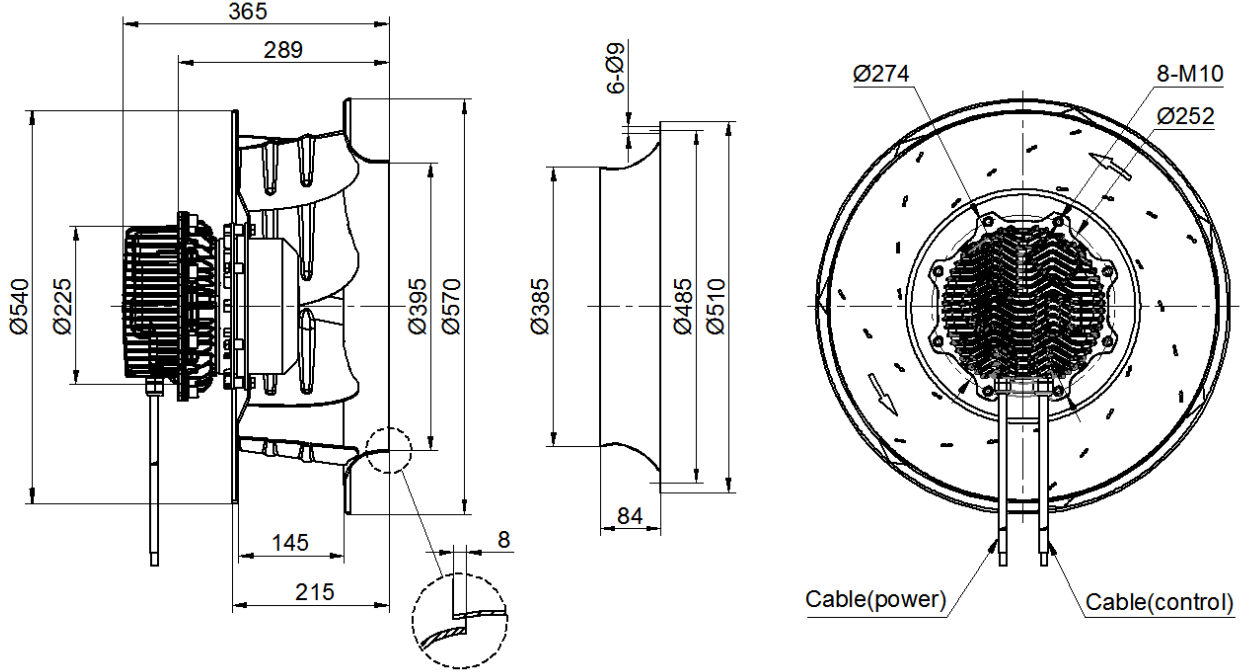
TestID	2016062709			Control voltage	4 VDC	
Test environment						
Outlet size	Outlet area	Temperature	Humidity	Baropressure	Density	
561mm	0.2472m ²	29℃	76%	100.6kPa	1.2kg/m ³	

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
404.9	50	841	292	0.56	1252	250	1	251	233	150+189*0
402.5	50	841	341	0.64	1937	243	3	245	221	+189*1
396.4	50	842	395	0.73	3639	200	10	210	293	150+189*1
402.4	50	841	385	0.7	4536	152	15	167	454	150+189*1
401.6	50	842	353	0.65	5091	100	19	118	220	150+189*2
401.4	50	841	315	0.59	5469	51	22	73	254	150+189*2
401	50	841	266	0.51	5866	0	25	25	292	150+189*2

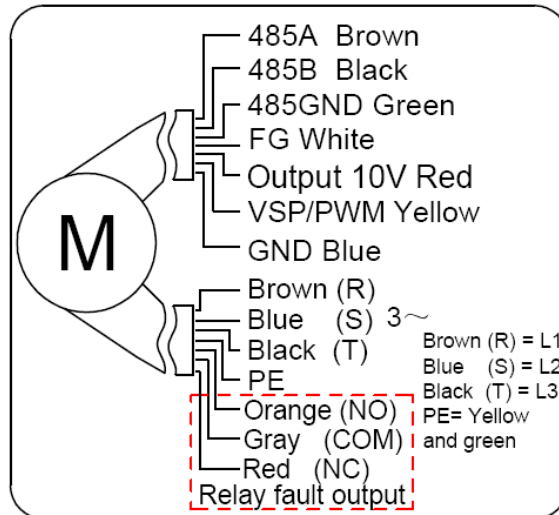
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Dimensions(in mm)



Wiring diagram



Electrical connections

Connection	Assignment/function
L1、L2、L3	Three-phase supply connection, voltage range 380-480VAC, 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

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;