

Model:ECF(K)8D400-PLHDAJ1-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/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	13 kg
Size	φ400 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;

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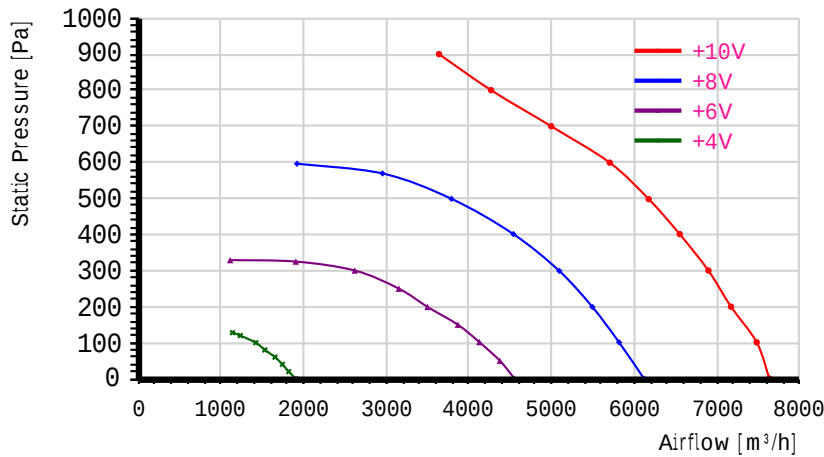
Fan type:EC Backward curved centrifugal fan

Technical parameters

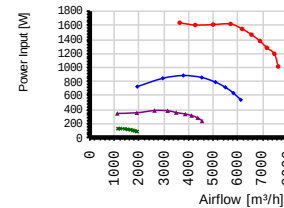
Supply	3P,380~480V
Frequency	50/60 Hz
Rated voltage	400 VAC
Power input	1580 W
Rated current	2.5 A
Rated speed	2100 r/min
Max airflow	7600 m³/h (Static pressure=0Pa)
Acoustic	77 dB(A) measured at 1.0m from inlet side
ErP level	2015

Performance curve

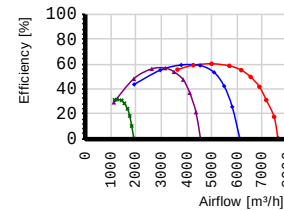
Airflow curve



Power input curve



Efficiency on static pressure



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

TestID		2018011103		Control voltage			10 VDC			
Test environment										
Outlet size		Outlet area		Temperature		Humidity		Baropressure		Density
476.9mm		0.1786m²		10℃		42%		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
399.9	50	2128	1638	2.55	3638	900	20	921	319	150+189*1
400.8	50	2118	1606	2.5	4268	800	28	828	438	150+189*1

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401.2	50	2100	1613	2.51	4994	700	38	738	231	150+189*2
400.2	50	2120	1621	2.53	5703	599	50	649	301	150+189*2
401.2	50	2128	1550	2.41	6174	498	58	557	353	150+189*2
400.4	50	2128	1469	2.3	6549	401	66	467	397	150+189*2
399.3	50	2128	1378	2.17	6897	300	73	372	440	150+189*2
400.5	50	2128	1283	2.02	7170	200	79	279	475	150+189*2
400.3	50	2128	1196	1.9	7481	101	86	187	517	150+189*2
400.1	50	2128	1016	1.64	7633	1	89	90	538	150+189*2

TestID		2018011104		Control voltage		8 VDC					
Test environment											
Outlet size		Outlet area		Temperature		Humidity		Baropressure		Density	
476.9mm		0.1786m²		10℃		40%		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	m ³ /h	Pa	Pa	Pa	Pa	mm
401.6	50	1692	729	1.25	1920	596	6	602	236	+189*1
399.1	50	1692	848	1.4	2955	569	13	583	557	+189*1
399.2	50	1692	887	1.47	3788	499	22	521	346	150+189*1
401.4	50	1692	859	1.42	4537	401	32	433	495	150+189*1
399	50	1692	793	1.32	5092	299	40	339	240	150+189*2
400.5	50	1692	719	1.21	5493	199	46	245	280	150+189*2
402.5	50	1692	638	1.1	5817	101	52	152	313	150+189*2
401.1	50	1692	541	0.97	6118	0	57	58	346	150+189*2

TestID		2018011105		Control voltage		6 VDC					
Test environment											
Outlet size		Outlet area		Temperature		Humidity		Baropressure		Density	
476.9mm		0.1786m²		10℃		39%		103kPa		1.2kg/m³	

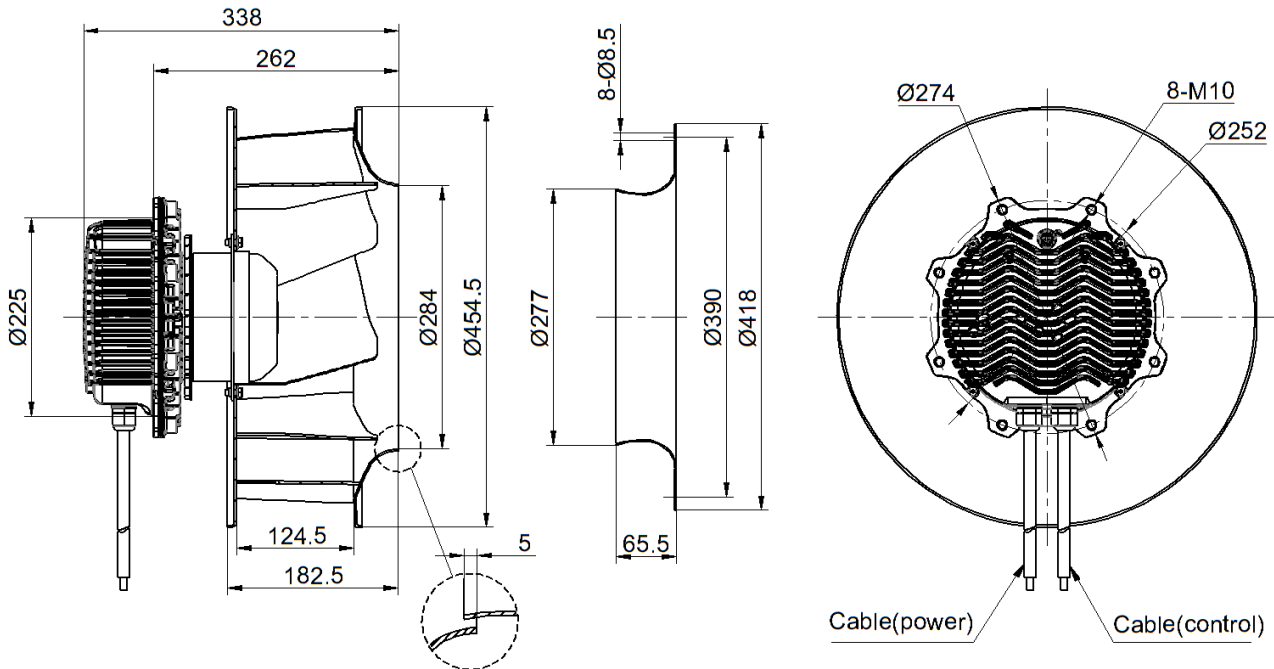
Test data										
Voltage	Frequency	Speed	Power input	Current	Airflow	Static pressure	Dynamic pressure	Total pressure	Pressure Differenc	Nozzle Size
V	Hz	r/min	W	A	m ³ /h	Pa	Pa	Pa	Pa	mm
401.8	50	1268	347	0.68	1110	329	2	331	200	150+189*0
400.4	50	1268	357	0.7	1904	325	6	331	233	+189*1
401	50	1268	389	0.75	2619	300	10	311	438	+189*1
400	50	1268	386	0.73	3152	250	15	266	240	150+189*1
400.6	50	1268	360	0.7	3499	199	19	218	295	150+189*1
399.8	50	1268	339	0.66	3865	150	23	172	360	150+189*1
401	50	1268	317	0.62	4125	102	26	128	410	150+189*1
400.9	50	1268	285	0.6	4374	50	29	79	460	150+189*1
399.5	50	1268	241	0.53	4549	1	32	33	498	150+189*1

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TestID			2018011106			Control voltage			4 VDC	
Test environment										
Outlet size		Outlet area		Temperature		Humidity		Baropressure		Density
476.9mm		0.1786m²		10℃		38%		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
400.5	50	845	130	0.37	1139	128	2	130	210	150+189*0
401.7	50	845	131	0.36	1233	120	2	122	246	150+189*0
401.3	50	845	128	0.36	1421	100	3	103	327	150+189*0
401.6	50	845	120	0.36	1530	80	4	84	379	150+189*0
400.3	50	845	115	0.34	1654	60	4	64	442	150+189*0
400.5	50	845	106	0.32	1742	40	5	45	489	150+189*0
400	50	845	100	0.32	1819	20	5	25	533	150+189*0
399.8	50	845	90	0.28	1907	0	6	6	586	150+189*0

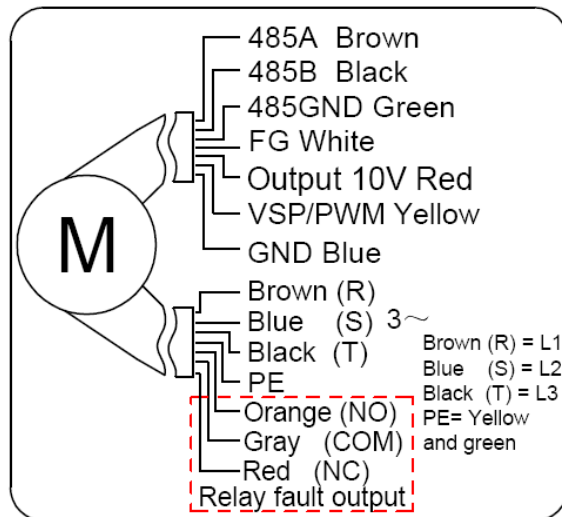
Dimensions(in mm)



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Wiring diagram



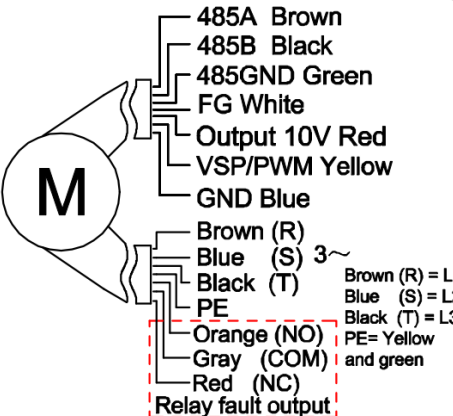
Electrical connections

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
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) 8D400-PLHDAJ1-RF		
Volt.:400V	Freq.:50/60Hz	Amp.:2.50A		
Input:1580W	Speed:2100r/min	Airflow:4760m ³ /h		
Pst:700Pa	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.

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;