Product specification

Model:ECF(K)8D400-PLHDAJ0-RF

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	22 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;

Technical parameters

Supply	3P,380~480V
Frequency	50/60 Hz

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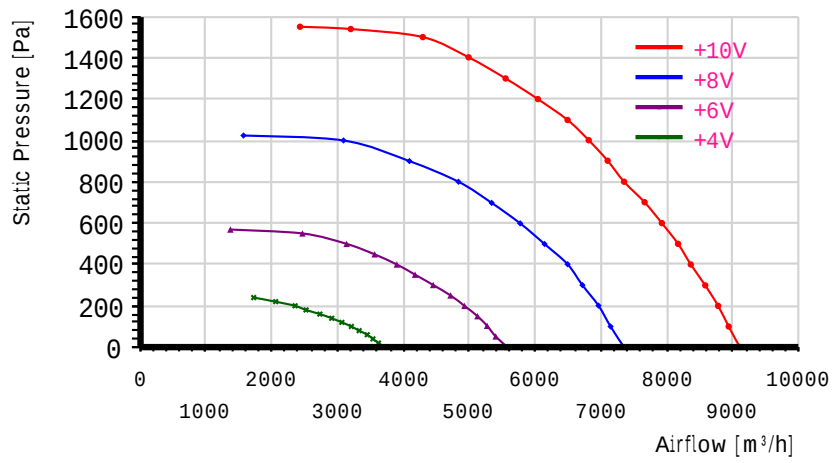
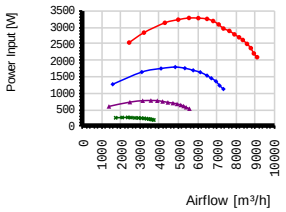
Rated voltage	400 VAC
Power input	3350 W
Rated current	5.0 A
Rated speed	2640 r/min
Max airflow	9100 m³/h (Static pressure=0Pa)
Acoustic	86 dB(A) measured at 1.0m from inlet side
ErP level	2015

Performance curve

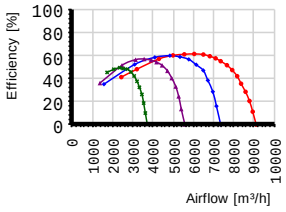
Airflow curve



Power input curve



Efficiency on static pressure



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

TestID	2018011525	Control voltage	10 VDC

Test environment					
Outlet size	Outlet area	Temperature	Humidity	Baropressure	Density
477mm	0.1787㎡	13℃	81%	101.8kPa	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
398	50	2650	2538	4.01	2431	1550	9	1559	369	+189*1
402.7	50	2650	2841	4.4	3200	1539	15	1555	241	150+189*1
401	50	2650	3138	4.84	4294	1500	28	1527	433	150+189*1
402.3	50	2650	3234	4.98	4989	1402	37	1439	225	150+189*2
399.1	50	2650	3285	5.06	5552	1300	46	1346	279	150+189*2
398.8	50	2650	3280	5.08	6041	1200	54	1255	330	150+189*2

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400.1	50	2650	3257	5.04	6493	1099	63	1162	380	150+189*2
400.4	50	2650	3192	4.91	6813	1001	69	1070	419	150+189*2
400.4	50	2650	3090	4.78	7100	902	75	977	240	150+189*3
401.3	50	2650	2965	4.58	7351	800	81	881	257	150+189*3
399	50	2650	2892	4.49	7661	701	88	789	278	150+189*3
399.7	50	2650	2788	4.33	7923	600	94	694	298	150+189*3
400.1	50	2650	2697	4.19	8169	500	100	600	316	150+189*3
400.4	50	2650	2617	4.09	8363	400	104	504	332	150+189*3
399.4	50	2650	2499	3.92	8582	299	110	409	349	150+189*3
400.3	50	2650	2371	3.74	8778	200	115	315	365	150+189*3
400.5	50	2650	2207	3.48	8937	100	119	219	378	150+189*3
400.3	50	2650	2094	3.32	9107	1	124	125	393	150+189*3

TestID	2018011526	Control voltage	8 VDC

Test environment					
Outlet size	Outlet area	Temperature	Humidity	Baropressure	Density
477mm	0.1787㎡	13℃	79%	101.8kPa	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
400.8	50	2150	1273	2.15	1573	1024	4	1028	390	150+189*0
400.1	50	2150	1644	2.68	3092	1000	14	1014	595	+189*1
401.8	50	2150	1752	2.84	4092	900	25	926	394	150+189*1
400.1	50	2150	1794	2.92	4835	800	35	835	212	150+189*2
400.1	50	2150	1760	2.87	5339	698	42	741	258	150+189*2
399.7	50	2150	1695	2.74	5773	599	50	649	301	150+189*2
401	50	2150	1638	2.68	6142	499	56	556	341	150+189*2
400.5	50	2150	1537	2.53	6492	401	63	464	380	150+189*2
400.1	50	2150	1456	2.43	6717	300	67	367	407	150+189*2
400.7	50	2150	1362	2.28	6962	201	72	273	437	150+189*2
398.7	50	2150	1236	2.09	7144	100	76	176	460	150+189*2
399.9	50	2150	1127	1.93	7350	0	80	81	487	150+189*2

TestID	2018011527	Control voltage	6 VDC

Test environment					
Outlet size	Outlet area	Temperature	Humidity	Baropressure	Density
477mm	0.1787㎡	13℃	80%	101.8kPa	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
401.6	50	1608	601	1.21	1374	569	3	572	298	150+189*0

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Fan type:EC Backward curved centrifugal fan

401.1	50	1608	732	1.4	2466	550	9	559	379	+189*1
399.2	50	1608	773	1.43	3137	500	15	515	232	150+189*1
399.7	50	1608	780	1.47	3562	449	19	468	299	150+189*1
399	50	1608	774	1.47	3900	400	23	422	358	150+189*1
399.7	50	1608	751	1.45	4177	351	26	377	410	150+189*1
400.6	50	1608	723	1.37	4451	301	30	330	465	150+189*1
399.9	50	1608	701	1.31	4716	250	33	283	522	150+189*1
400.4	50	1608	677	1.35	4927	200	36	236	220	150+189*2
399.4	50	1608	644	1.26	5124	150	39	189	238	150+189*2
402.3	50	1608	613	1.25	5271	103	41	144	251	150+189*2
400.6	50	1608	573	1.15	5400	52	43	95	264	150+189*2
400.7	50	1608	532	1.12	5576	1	46	48	281	150+189*2

TestID	2018011528	Control voltage	4 VDC

Test environment					
Outlet size	Outlet area	Temperature	Humidity	Baropressure	Density
477mm	0.1787㎡	13℃	80%	101.8kPa	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
399.9	50	1072	254	0.65	1727	240	4	244	470	150+189*0
399.8	50	1072	262	0.62	2061	220	6	227	266	+189*1
401.1	50	1072	265	0.67	2355	200	8	208	346	+189*1
399.7	50	1072	259	0.64	2522	180	10	190	397	+189*1
400.4	50	1072	252	0.65	2732	160	11	171	465	+189*1
400.7	50	1072	248	0.63	2912	140	13	152	200	150+189*1
400.3	50	1072	242	0.62	3066	120	14	134	222	150+189*1
400.3	50	1072	237	0.6	3210	100	15	116	243	150+189*1
400.5	50	1072	228	0.59	3328	80	16	96	261	150+189*1
400.3	50	1072	219	0.6	3451	60	18	78	280	150+189*1
401.1	50	1072	210	0.6	3538	40	19	59	295	150+189*1
400.6	50	1072	200	0.56	3621	20	20	40	309	150+189*1
400.2	50	1072	187	0.53	3716	1	21	21	325	150+189*1

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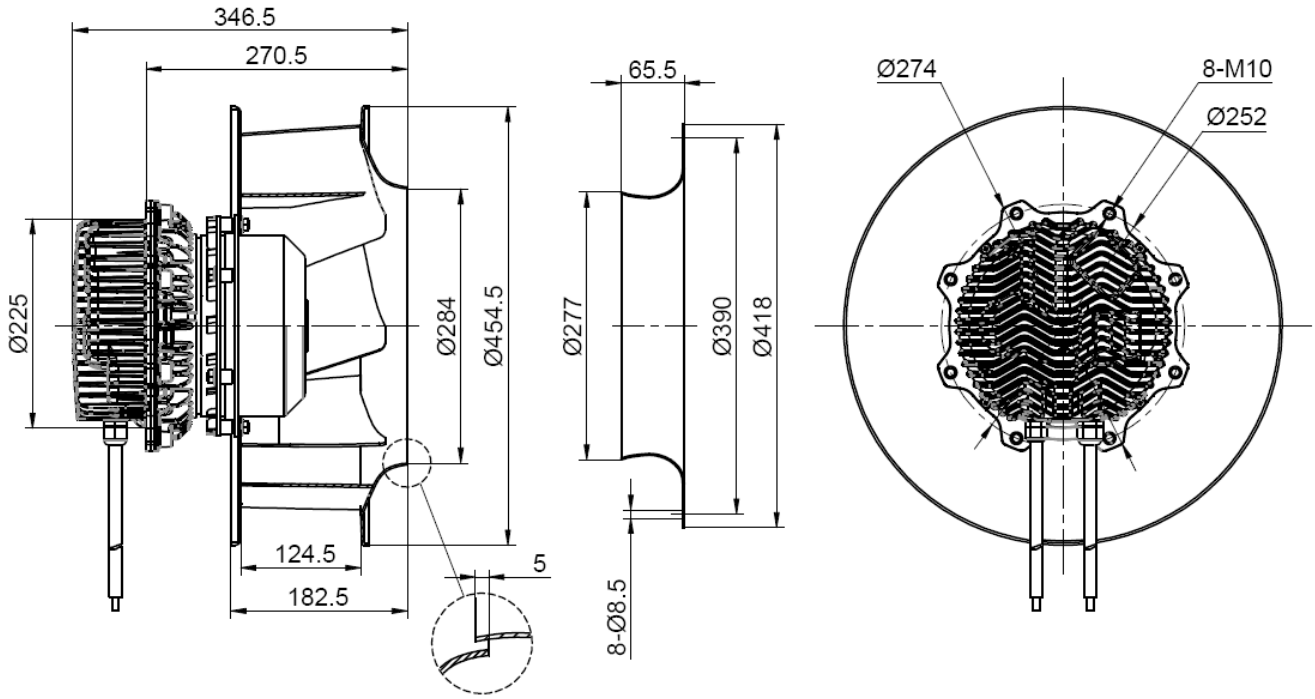
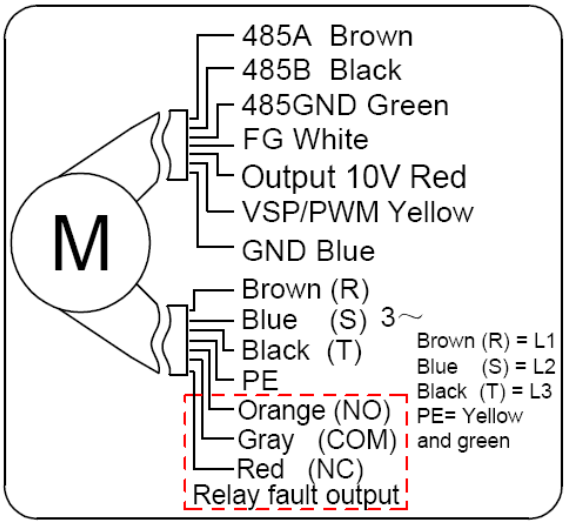
Dimensions(in mm)



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 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;