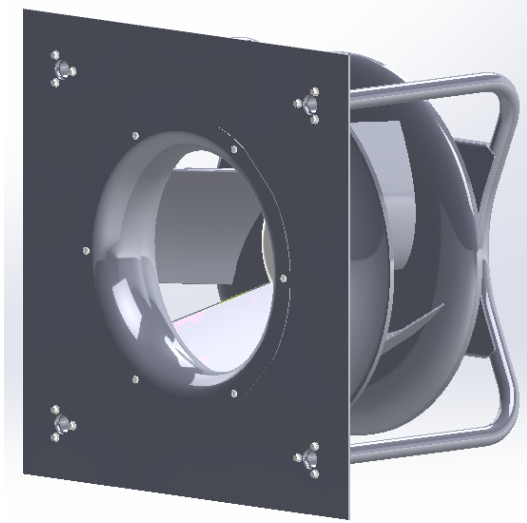


Model:ECF(K)10D500-PLHDAL1Y-RF

Fan type:EC Radial plug 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..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.

Model:ECF(K)10D500-PLHDAL1Y-RF

Fan type:EC Radial plug fan

## 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	53 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; With bracket; With panel;

## Technical parameters

Supply	3P,380~480V
Frequency	50/60 Hz
Rated voltage	400 VAC

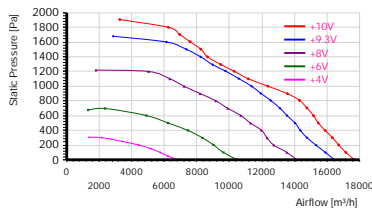
Model: ECF(K)10D500-PLHDAL1Y-RF

Fan type: EC Radial plug fan

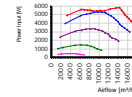
Power input	5600 W
Rated current	9.26 A
Rated speed	2180 r/min
Max airflow	17850 m <sup>3</sup> /h (Static pressure=0Pa)
Acoustic	86 dB(A) measured at 1.0m from inlet side
ErP level	2020

## Performance curve

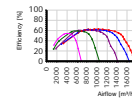
Airflow curve



Power input curve



Efficiency on static pressure



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

TestID	2022031901			Control voltage	10 VDC
Test environment					
Outlet size	Outlet area	Temperature	Humidity	Baropressure	Density
616mm	0.298m <sup>2</sup>	22°C	61%	101.2kPa	1.2kg/m <sup>3</sup>

Test data										
Voltage	Frequency	Speed	Power input	Current	Airflow	Static pressure	Dynamic pressure	Total pressure	Pressure Difference	Nozzle Size
V	Hz	r/min	W	A	m <sup>3</sup> /h	Pa	Pa	Pa	Pa	mm
398.5	50	2270	4917	7.61	3271	1905	6	1911	243	150+189*1
399	50	2229	5598	8.67	6250	1800	20	1820	340	150+189*2
399.6	50	2200	5556	8.57	6942	1703	25	1728	419	150+189*2
399.4	50	2183	5532	8.54	7583	1604	30	1634	499	150+189*2
399.9	50	2165	5504	8.48	8245	1502	35	1537	590	150+189*2
400.7	50	2143	5442	8.39	8659	1398	39	1437	211	150+189*4
400.7	50	2125	5435	8.36	9464	1295	46	1342	252	150+189*4
400.2	50	2115	5472	8.42	10290	1203	55	1258	298	150+189*4

Model:ECF(K)10D500-PLHDAL1Y-RF

Fan type:EC Radial plug fan

400.7	50	2131	5466	8.42	11156	1100	64	1164	349	150+189*4
400	50	2180	5647	8.67	12364	1000	79	1079	210	150+189*6
399.8	50	2270	5774	8.87	13558	898	95	993	252	150+189*6
399.6	50	2270	5810	8.91	14309	807	106	913	281	150+189*6
398.5	50	2270	5495	8.49	14757	705	113	817	298	150+189*6
399.7	50	2270	5229	8.08	15166	599	119	718	315	150+189*6
400.2	50	2270	4980	7.68	15451	501	123	625	327	150+189*6
399	50	2270	4760	7.4	15878	399	130	529	345	150+189*6
400	50	2270	4522	7.01	16322	300	138	437	364	150+189*6
401	50	2270	4257	6.59	16712	201	144	345	382	150+189*6
401	50	2270	3961	6.13	17150	100	152	252	402	150+189*6
401.6	50	2270	3697	5.73	17680	0	162	162	427	150+189*6

TestID	2022032104			Control voltage	9.3 VDC	
Test environment						
Outlet size	Outlet area	Temperature	Humidity	Baropressure	Density	
616mm	0.298m <sup>2</sup>	18°C	72%	101.9kPa	1.2kg/m <sup>3</sup>	

Test data										
Voltage	Frequency	Speed	Power input	Current	Airflow	Static pressure	Dynamic pressure	Total pressure	Pressure Difference	Nozzle Size
V	Hz	r/min	W	A	m <sup>3</sup> /h	Pa	Pa	Pa	Pa	mm
401.1	50	2110	3965	6.1	2866	1678	4	1683	191	150+189*1
399.8	50	2110	4884	7.51	6144	1600	20	1620	336	150+189*2
400.9	50	2110	5057	7.73	7359	1500	28	1528	253	150+189*3
400.6	50	2110	5151	7.9	8233	1399	36	1435	316	150+189*3
398.5	50	2110	5272	8.08	8970	1292	42	1334	232	150+189*4
399.3	50	2110	5308	8.13	9756	1206	50	1256	274	150+189*4
401.9	50	2110	5304	8.11	10572	1103	59	1162	321	150+189*4
399.7	50	2110	5218	7.99	11366	999	68	1067	370	150+189*4
400.7	50	2110	5030	7.68	11931	902	75	977	408	150+189*4
400.2	50	2110	4848	7.43	12537	806	83	889	220	150+189*6
400	50	2110	4630	7.11	13110	699	91	790	241	150+189*6
401	50	2110	4395	6.74	13535	601	97	698	257	150+189*6
400.7	50	2110	4170	6.41	14037	498	104	602	276	150+189*6
400	50	2110	3883	5.98	14359	399	109	508	289	150+189*6
399.7	50	2110	3684	5.68	14760	300	115	415	305	150+189*6
400.2	50	2110	3456	5.3	15321	199	124	322	328	150+189*6
400.5	50	2110	3233	4.97	15893	100	133	233	353	150+189*6
399.2	50	2110	2991	4.6	16449	0	143	143	378	150+189*6

Model:ECF(K)10D500-PLHDAL1Y-RF

Fan type:EC Radial plug fan

TestID	2022032101			Control voltage	8 VDC
Test environment					
Outlet size	Outlet area	Temperature	Humidity	Baropressure	Density
616mm	0.298m <sup>2</sup>	17°C	72%	101.9kPa	1.2kg/m <sup>3</sup>

Test data										
Voltage	Frequency	Speed	Power input	Current	Airflow	Static pressure	Dynamic pressure	Total pressure	Pressure Difference	Nozzle Size
V	Hz	r/min	W	A	m <sup>3</sup> /h	Pa	Pa	Pa	Pa	mm
402.1	50	1812	2394	3.75	1801	1219	2	1220	503	150+189*0
399.9	50	1812	3081	4.78	5042	1200	13	1213	227	150+189*2
400.2	50	1812	3204	4.96	6341	1101	21	1122	358	150+189*2
401	50	1812	3325	5.14	7220	999	28	1026	244	150+189*3
401.1	50	1812	3349	5.16	8197	900	36	936	314	150+189*3
400	50	1812	3340	5.16	9161	802	44	846	241	150+189*4
400.1	50	1812	3216	4.97	9897	700	52	752	281	150+189*4
401.4	50	1812	3104	4.79	10698	602	60	662	328	150+189*4
401	50	1812	2882	4.46	11293	499	67	566	366	150+189*4
401.5	50	1812	2736	4.24	11967	401	76	477	410	150+189*4
400.5	50	1812	2496	3.89	12309	299	80	379	213	150+189*6
402	50	1812	2305	3.59	12721	200	86	285	227	150+189*6
401.5	50	1812	2149	3.36	13526	101	97	198	256	150+189*6
401.4	50	1812	1944	3.07	14130	0	106	106	280	150+189*6

TestID	2022032102			Control voltage	6 VDC
Test environment					
Outlet size	Outlet area	Temperature	Humidity	Baropressure	Density
616mm	0.298m <sup>2</sup>	18°C	71%	101.9kPa	1.2kg/m <sup>3</sup>

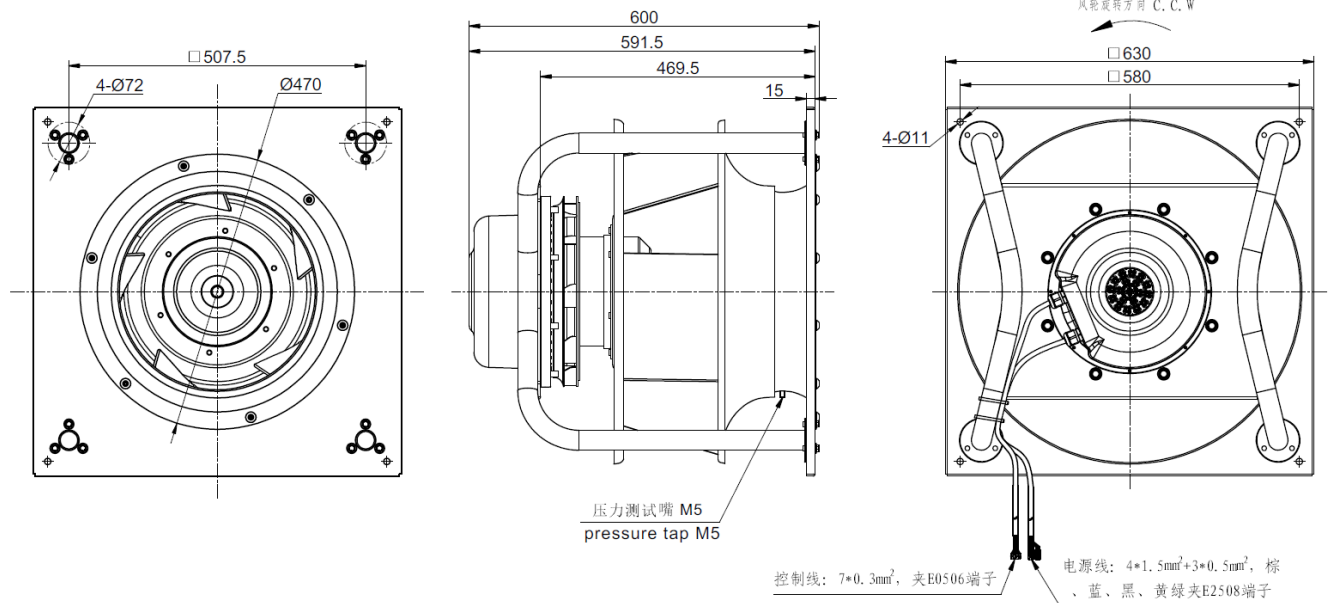
Test data										
Voltage	Frequency	Speed	Power input	Current	Airflow	Static pressure	Dynamic pressure	Total pressure	Pressure Difference	Nozzle Size
V	Hz	r/min	W	A	m <sup>3</sup> /h	Pa	Pa	Pa	Pa	mm
400.9	50	1360	1033	1.87	1325	676	1	677	273	150+189*0
399.8	50	1360	1168	2.04	2377	697	3	700	347	+189*1
400.4	50	1360	1421	2.41	4897	602	13	615	214	150+189*2
400.7	50	1360	1466	2.46	6233	500	20	520	346	150+189*2
400.1	50	1360	1425	2.44	7452	399	29	429	493	150+189*2
400.8	50	1360	1298	2.22	8346	298	37	335	200	150+189*4
399.7	50	1360	1172	2.02	9020	202	43	244	234	150+189*4
397	50	1360	1011	1.82	9632	100	49	149	266	150+189*4
400.9	50	1360	852	1.6	10484	0	58	58	315	150+189*4

Model:ECF(K)10D500-PLHDAL1Y-RF

Fan type:EC Radial plug fan

TestID	2022032103			Control voltage	4 VDC					
Test environment										
Outlet size	Outlet area	Temperature	Humidity	Baropressure	Density					
616mm	0.298m <sup>2</sup>	18℃	72%	101.9kPa	1.2kg/m <sup>3</sup>					
Test data										
Voltage	Frequency	Speed	Power input	Current	Airflow	Static pressure	Dynamic pressure	Total pressure	Pressure Difference	Nozzle Size
V	Hz	r/min	W	A	m <sup>3</sup> /h	Pa	Pa	Pa	Pa	mm
400.8	50	900	371	0.94	1386	306	1	307	299	150+189*0
400.6	50	900	415	0.95	2152	301	2	304	285	+189*1
401.3	50	900	447	0.92	3420	250	6	256	272	150+189*1
400.3	50	900	454	0.95	4432	200	10	210	454	150+189*1
399.2	50	900	434	0.87	5179	151	14	165	239	150+189*2
401.4	50	900	389	0.88	5756	100	18	117	295	150+189*2
400.6	50	900	344	0.8	6231	50	20	70	345	150+189*2
400.9	50	900	295	0.7	6854	1	25	26	417	150+189*2

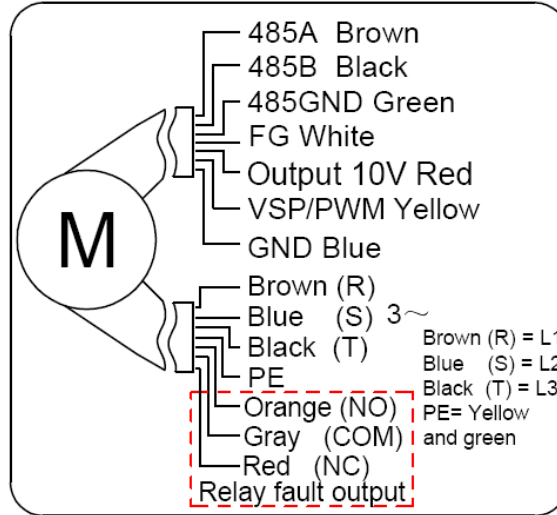
## Dimensions(in mm)



Model:ECF(K)10D500-PLHDAL1Y-RF

Fan type:EC Radial plug fan

## Wiring diagram



## Electrical connections



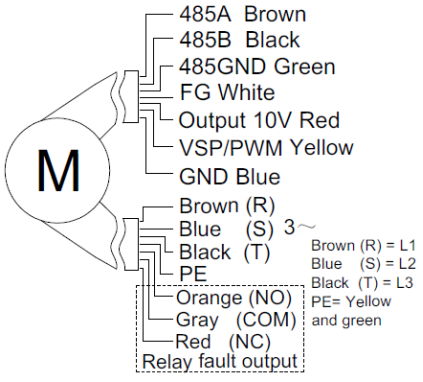

Connection	Assignment/function
L1、L2、L3	Three-phase supply connection, voltage range 380-480VAC, frequency 50/60Hz
PE	Protective earth
485A	RS485 interface for MODBUS-RTU
485B	RS485 interface for MODBUS-RTU
485GND	Reference ground for control interface
NC	Status relay, mode2--close on normal, open on 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



Model:ECF(K)10D500-PLHDAL1Y-RF

Fan type:EC Radial plug fan

## NamePlate

 <b>SANMU<sup>®</sup></b>		<b>ECF(K)10D500-PLHDAL1Y-RF</b>			
Volt.:400V    Freq.:50/60Hz    Amp.:9.26A					
Input:5600W    Speed:2180r/min    Airflow:10150m <sup>3</sup> /h					
Pst:1300Pa    IP54    CL.F    ErP2020					
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;



Model:ECF(K)10D500-PLHDAL1Y-RF

Fan type:EC Radial plug fan

- ★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 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;