



## EC AXIAL FAN

### 1. 整体说明

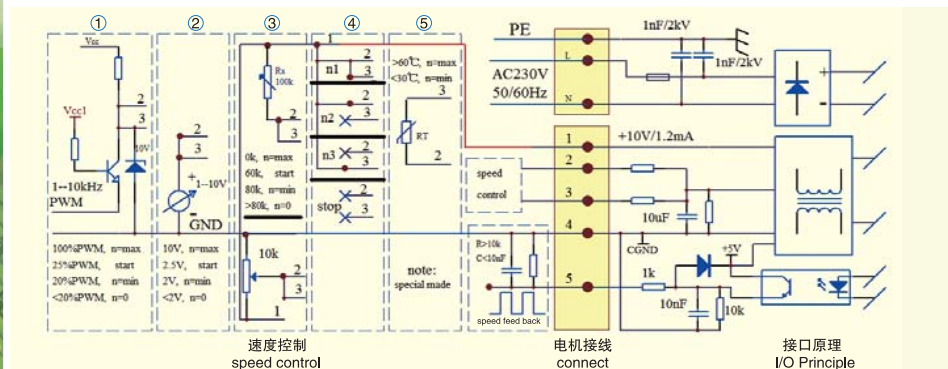
电动机为钢铁外壳的低噪声外转子永磁无刷直流电机，电动机端盖及控制盒盖由铝合金制造。风机整体黑色，F级绝缘，IP45，单相风机主功率因数校正，所有控制信号已与强电隔离。

主要性能特点是大风量、低噪声、大范围高效率调速，风机静压效率超过ERP2015。

### 1. General information

Low noise PM-BLDC motor with steel housing, motor end cover and controller box made by aluminum alloy. Axial fan motor in black, insulation level is class F, protection grade is IP45. Single-phase fan could active power factor corrective and all control signals are insulated with power current.

Main performance is large air volume, low noise and wide range of high efficiency speed change. And the static pressure efficiency of fans already reaches the ERP 2015 requirement.



该接地（PE）线在控制器内部与相线之间接有防雷和抗静电器件，使用时需接地。电气强度试验时，二根电源线一起，对外壳进行DC1500V/1分钟耐压试验，漏电流不大于5mA。Lightning protection and anti-static devices equip between the grounding (PE) line and phase line in the controller. The PE should be grounded when use. It will use DC1500V/1 minutes to do the high voltage test between two power line and motor casing during electric strength test. The leakage current should be less than 5mA.

### 3. 速度控制

控制线不小于0.25mm<sup>2</sup>。

按接线图自左至右(区域①~⑤)分别为：

- ① PWM控制：控制电压峰值5~10V，频率1~10kHz。
- ② 0~10V电平控制：小于2V时，电机速度为零，10V时为最高转速。
- ③ 外部可变电阻控制：可按上下两种接法；
- ④ 3档调速控制：可按上下分4种接法，当2,3同时和1短接时为最高速度n<sub>1</sub>；当2,3均与1断开时，电机停转。每档速度大小可根据要求定制。
- ⑤ 热敏电阻自动温控：风机需特别定制，用户选择自动温控时，用户应提供最高和最低转速时热敏电阻的传感温度，以及最低转速的大小。同时不具备速度反馈和其它控制功能。

### 4. 速度反馈

速度反馈信号5与GND之间输出方波信号，V<sub>p</sub>=5V，频率为f<sub>n</sub>。速度大小为：n=20f<sub>n</sub>/ (2P) (r/min)，2P为电机极数。

### 3. Speed control

Control wire not smaller than 0.25mm<sup>2</sup>.

The control models showed in connect diagram from left to right(block①~⑤) are:

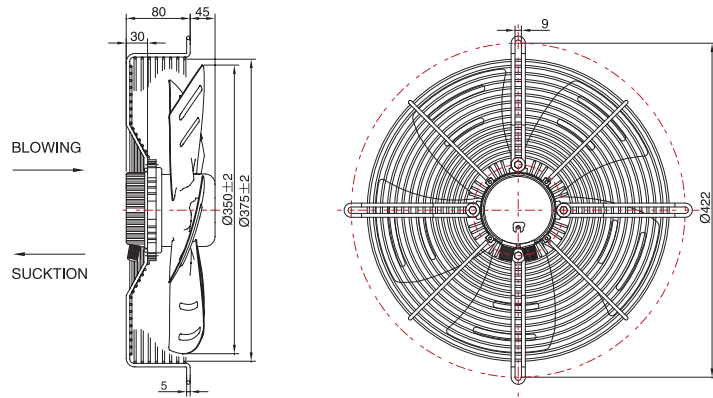
- ① PWM control: peak value of control voltage is 5~10V and frequency is 1~10kHz.
- ② 0~10V voltage control: when voltage is lower than 2V, speed is 0 and 10V is the highest speed.
- ③ Outside changeable resistance control: this model has 2 wiring patterns.
- ④ Three Steps speed control: this model has 4 wiring patterns. When terminal 2, 3 are connected with 1, the speed is highest speed n<sub>1</sub> and when 2, 3 are disconnected, the fan is stopped. Every step speed could be set according to customers' requirements.
- ⑤ Automatic temperature control of thermistor: when customer chooses this model, it need to be special produced. Users should offer the temperature at the highest and lowest speed, and the value of lowest speed. The custom-made fans would have not the functions of speed feedback or other control.

### 4. Speed feedback

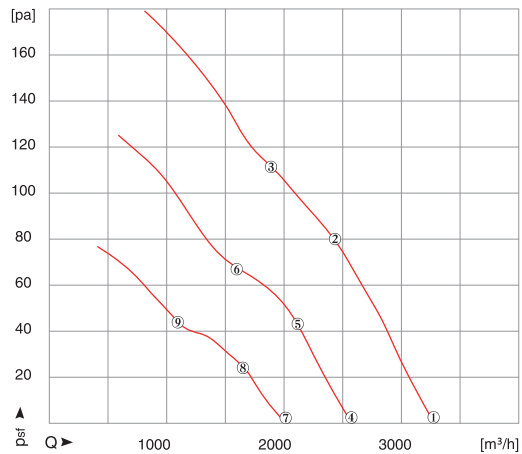
Speed feedback signal Speed terminal-5 is the output square echo signal between GND-4 and speed V<sub>p</sub>=5V, frequency is f<sub>n</sub>. Speed is n=20f<sub>n</sub>/ (2P) (r/min), 2P is motor pole numbers. The connection is show in block "speed feed back".

EC AXIAL FAN

Φ 350



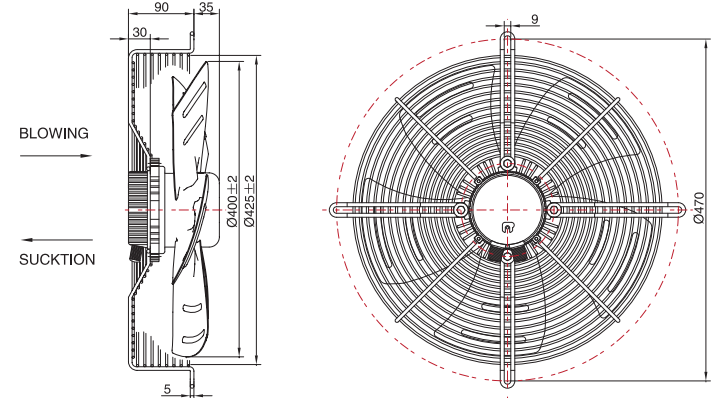
型号 MODEL	电压 UAC	频率 f	输入功率 P1	转速 n	电流 I	静压 P <sub>sf</sub>	环境温度 Temp.	静压效率 η <sub>sf</sub>	能效值 EFF. Grade	噪声 Noise	净重 N.W.	备注 Note
PMDWF84L40P6-422N-350	V	Hz	W	r/min	A	Pa	°C	%	N	dB(A)	kg	
	1~230±10%	50/60	220	1580	1	140	-25~+65	29.90	40.7	68	4.7	



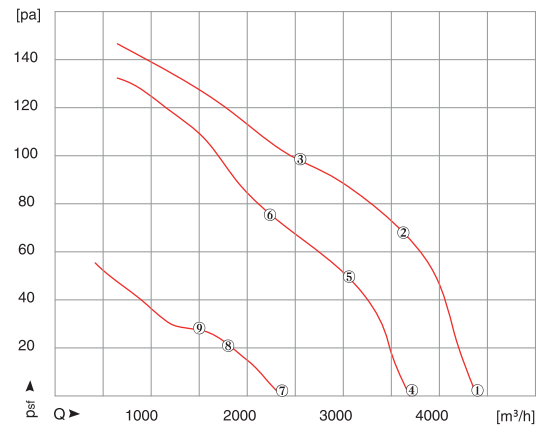
	n	P1	I
	r/min	W	A
①	160	0.73	
②	1580	180	0.82
③		210	0.95
④		87	0.41
⑤	1300	100	0.47
⑥		112	0.52
⑦		45	0.24
⑧	1000	50	0.25
⑨		54	0.27

EC AXIAL FAN

Φ 400



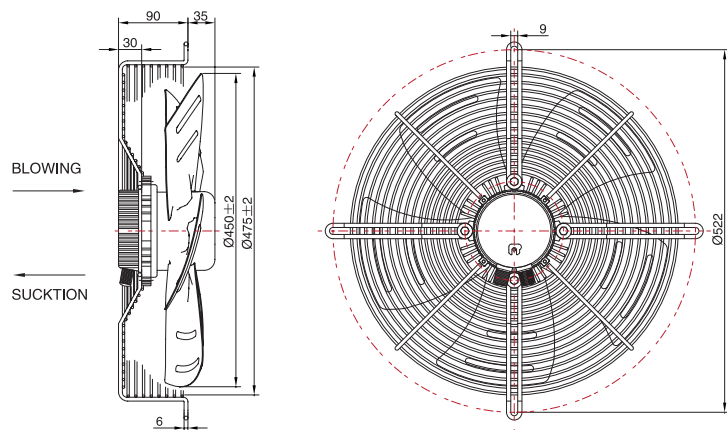
型号 MODEL	电压 UAC	频率 f	输入功率 P1	转速 n	电流 I	静压 P <sub>sf</sub>	环境温度 Temp.	静压效率 η <sub>sf</sub>	能效值 EFF. Grade	噪声 Noise	净重 N.W.	备注 Note
PMDWF84L40P6-470N-400	V	Hz	W	r/min	A	Pa	°C	%	N	dB(A)	kg	
	1~230±10%	50/60	250	1580	1.10	120	-25~+65	33.30	43.5	70	5	



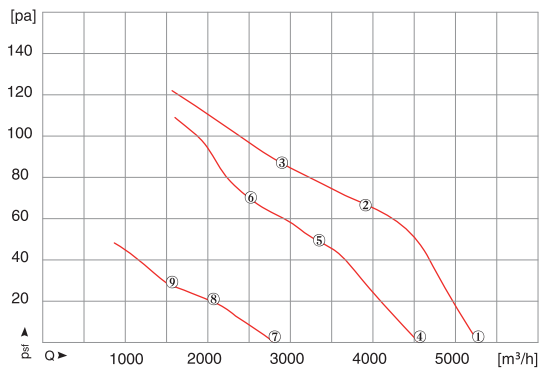
	n	P1	I
	r/min	W	A
①		230	1.03
②	1580	250	1.12
③	1520	250	1.12
④		135	0.61
⑤	1300	149	0.67
⑥		156	0.70
⑦		36	0.20
⑧	830	40	0.22
⑨		43	0.22

## EC AXIAL FAN

Φ 450



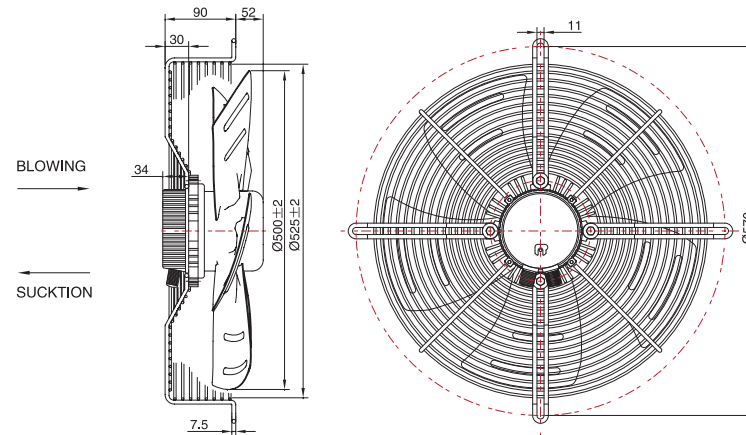
型号 MODEL	电压 UAC	频率 f	输入功率 P1	转速 n	电流 I	静压 P <sub>st</sub>	环境温度 Temp.	静压效率 η <sub>st</sub>	能效值 EFF. Grade	噪声 Noise	净重 N.W.	备注 Note
	V	Hz	W	r/min	A	Pa	°C	%	N	dB(A)	kg	
PMDWF84L40P6-522N-450	1~230±10%	50/60	250	1360	1.1	120	-25~+65	31.40	41.7	68	5.4	



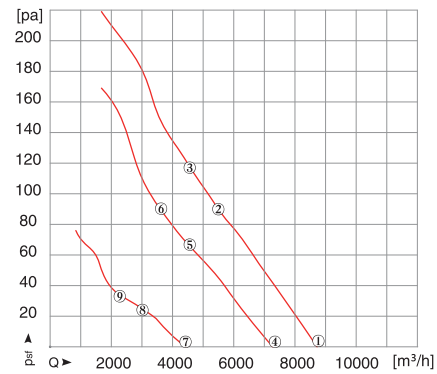
	n	P1	I
	r/min	W	A
①	1360	213	0.96
②	1340	232	1.05
③	1280	242	1.10
④	1400	128	0.58
⑤		144	0.65
⑥		159	0.71
⑦	700	36	0.20
⑧		39	0.21
⑨		44	0.24

## EC AXIAL FAN

Φ 500



型号 MODEL	电压 UAC	频率 f	输入功率 P1	转速 n	电流 I	静压 P <sub>st</sub>	环境温度 Temp.	静压效率 η <sub>st</sub>	能效值 EFF. Grade	噪声 Noise	净重 N.W.	备注 Note
	V	Hz	W	r/min	A	Pa	°C	%	N	dB(A)	kg	
PMDWF116L50P8-570N-500	1~230±10%	50/60	470	1220	2.1	180	-25~+65	32.70	41.7	72	10	

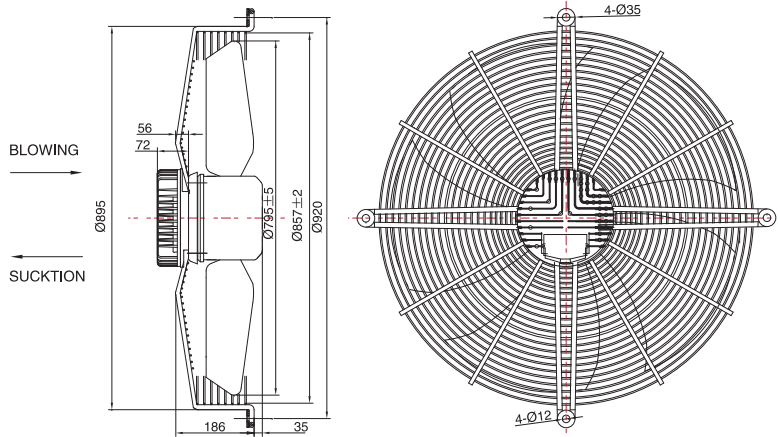


	n	P1	I
	r/min	W	A
①	1220	433	1.93
②		439	1.96
③		466	2.07
④	1020	257	1.16
⑤		262	1.19
⑥		279	1.25
⑦	700	69	0.37
⑧		73	0.39
⑨		77	0.42

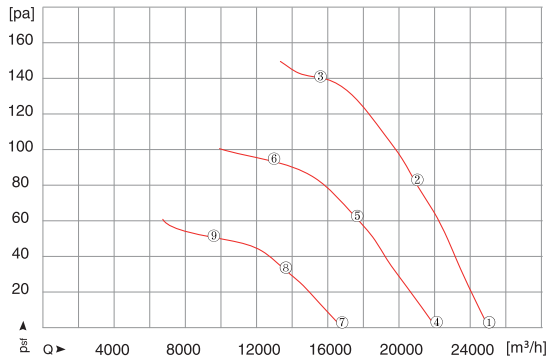


## EC AXIAL FAN

# Φ 800



型号 MODEL	电压 UAC	频率 f	输入功率 P1	转速 n	电流 I	静压 P <sub>sf</sub>	环境温度 Temp.	静压效率 η <sub>sf</sub>	能效值 EFF. Grade	噪声 Noise	净重 N.W.	备注 Note
	V	Hz	W	r/min	A	Pa	°C	%	N	dB(A)	kg	
PMSWF150L84P10-920N-800	3~400±10%	50/60	1830	1000	4.1	140	-25~+65	39.85	45	76	31	



	n	P1	I
	r/min	W	A
①	1000	1658	3.68
②		1722	3.82
③		1829	4.06
④	800	1080	2.60
⑤		1147	2.76
⑥		1196	2.88
⑦	600	469	1.23
⑧		503	1.32
⑨		505	1.33

