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**PBM MOTOR AND FAN(SUZHOU) CO.,LTD**



Axial Fan



Backward & Forward Curved Centrifugal Fan



Blower

# CONTENTS

## EC-AC Series

■ Axial Fans	02-26
■ Backward Curved Centrifugal Fans	27-63
■ Forward Curved Centrifugal Fans	64-77
■ Single Inlet Blowers	78-90
■ Dual Inlet Blowers	91-95

## EC-DC Series

■ Axial Fans	97-100
■ Backward Curved Centrifugal Fans	101-112
■ Forward Curved Centrifugal Fans	113-118
■ Single Inlet Blowers	119-124

## Technology

■ Accessories	125-128
■ Wiring Diagrams	129-133
■ Technical Support	134-140

# About us



## Company Profile

PBM is a China mainland EC(Electronically Commutated) brushless motor manufacturing and technology consulting company offering an extensive range of EC motors, fans and intelligent ventilation solutions for air-moving precisely and constantly with maintenance-free throughout the life cycle of products in last decades.

## R&D and Technical Support

Our R&D and technical support team commits to combine interactively external motor technology, integrated electronic control circuit and aerodynamic design of fan impeller that satisfied customers' requirements in different applications by innovative fan solutions, with leading experiment equipment, meters, tools in laboratory for motor reliability and fan air performance testing. We are pursuing extremely compact brushless permanent magnet synchronous external rotor motor to drive various impeller types and sizes: diagonal axial, backward and forward curved centrifugal, radial, single inlet and dual inlet blower, tangential, cross flow, from minimum 30mm to 560mm diameter with airflow maximum to 12,000CMH cubic meter per hour (equal to approx. 7,000CFM cubic feet per minutes). Maximum motor input power goes to 1.5KW (equal to 2 horsepower) at rotor diameter 138mm.

## Production and Quality Control

Economical efficient supply chain guarantees our manufacturing team and quality management team could constantly offer stable products within promised competitive lead time. We continuously invest on semi-automatic or automatic motor and fan assembly lines, equipment, fixtures and jigs to enhance our cost advantage production capability. Not only adopted in ISO9001 Quality Management System ISO 14000 Environment Management System and ISO 45001 Occupational Health and Safety Management system, but also adopted in a long-term Eco-friendly and People-oriented sustainable development of company for last 10 years.

## Marketing and Sales

Hundreds of worldwide ventilation, refrigeration, air purification, home appliance, companies from more than fifty countries are adopting PBM EC green-tech motorized fans in their product units and systems that were protecting natural environment and indoor environment of our home to be sustainable green and clean. Our agent and distributor network and online service team covered popular EC fan markets to ensure prompt technical support.

## Vision and Mission

Focus on EC fan only and protect our world with intelligent energy efficient motor and fan solutions are our goal in an attempt to make tomorrow a greener & healthier world.

# EC Fans Technical Features Overview

## Intelligent EC Fan Technology Introduction

PBM series EC (Electronically Commuted) Fans combine interactively external motor technology, integrated electronic control circuit and aerodynamic design of fan impeller that satisfied customers' requirements in different applications and industries by innovative air-moving solutions.

We are pursuing Ultra-low Energy Consumption fans by extremely compact brushless permanent magnet synchronous external rotor motor to drive various of aerodynamic optimized impeller and scroll-housing types and sizes: diagonal axial, backward and forward curved centrifugal, radial, single inlet and dual inlet blower, tangential, cross flow.

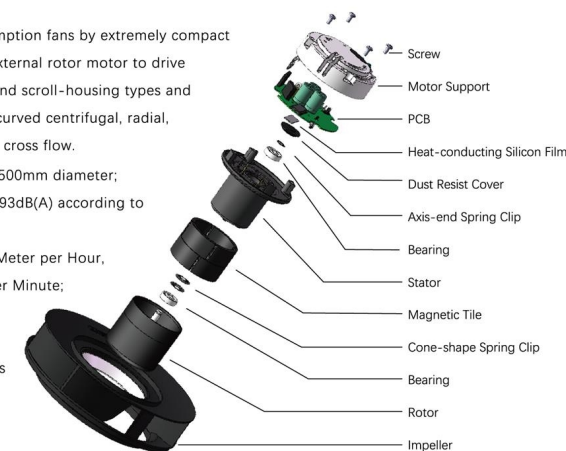
**Impeller Sizes:** From minimum 30mm to 500mm diameter;

**Sound Level:** From 31dB(A) to maximum 93dB(A) according to different rotation speed;

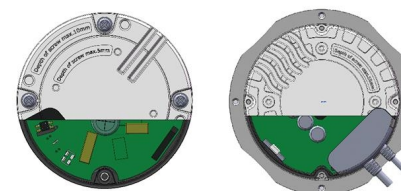
**Air Flow:** Maximum to 8,700CMH, Cubic Meter per Hour, equal to approx. 5,120CFM, Cubic Feet per Minute;

**Air Pressure:** Maxim 1,600Pa, equal to 163.5mm H<sub>2</sub>O and to 6.42 inH<sub>2</sub>O;

**Power:** Maximum motor input power goes to 3.1KW (equal to 4.2hp, horsepower) at motor diameter 138mm.



## Eco-friendly EC Motor Technology Introduction



### EC=Electronically Commutated

EC brushless permanent magnet synchronous external rotor motor compact with integrated electronic controller built-in for fan applications.

- Variable speed setting by 0~10V DC or PWM signal input;
- AC(1~ or 3~phase) public power grid supply connects to motor directly without transformer, voltage stabilizer with silicon rectifier; no surge current by soft-start and PFC circuit integrated;
- Motor efficiency goes up to Maximum 91% for energy-saving and emissions-reducing;
- Low noise by sine wave 3-core brushless commutation motor design with oblique magnetization;
- Always rotation in the correct direction;
- Operating at either 50Hz and 60Hz; 184~270 VAC 1~;
- Operating at a wide voltage range; 304~456 VAC 3~;
- Operating temperature rise is much cooler in electric motors for longer lifespan.

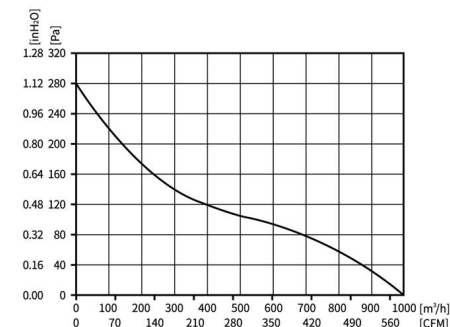




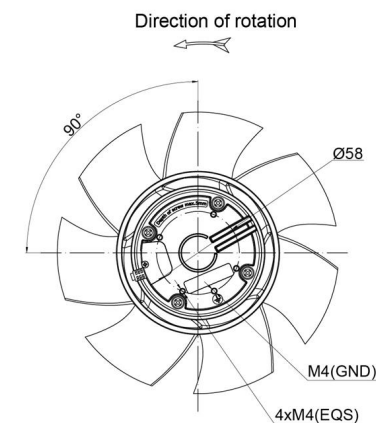
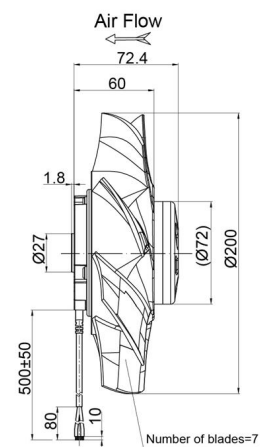
## EC-DC Series



## DC Axial Fan Ø200x72.4mm



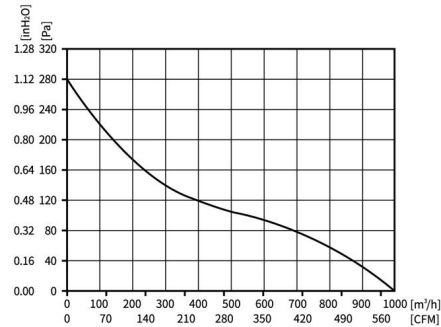
Motor Type	Speed Control	Protection Type	Insulation Class	Operating Temperature	Weight	Wiring Mode
DC BRUSHLESS EXTERNAL ROTOR MOTOR	0-10VVDC/PWM	IP55	B	-25°C ~ +60°C	1.2KG	D1



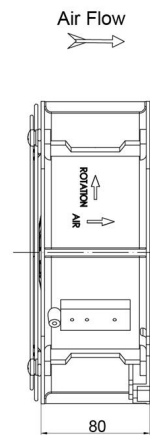
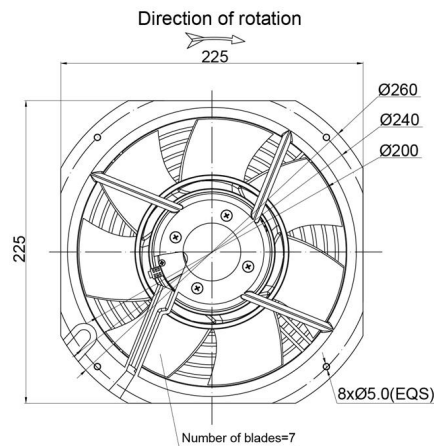
Model	Motor	Bearing System	Rated Voltage	Operating Voltage	Rated Current	Rated Power	Rated Speed	Air Flow	Air Pressure	Sound Level
Part No.	Type	B/S	VDC	VDC	A	W	RPM	M³/H	Pa	dB(A)
PA3N200B24-RN0	BE72DC	BALL	24	16~28	2.2	52.8	3000	1000	280	62
PA3N200B48-RN0	BE72DC	BALL	48	36~57	1.1	52.8	3000	1000	280	62



## DC Axial Fan Ø200x80mm

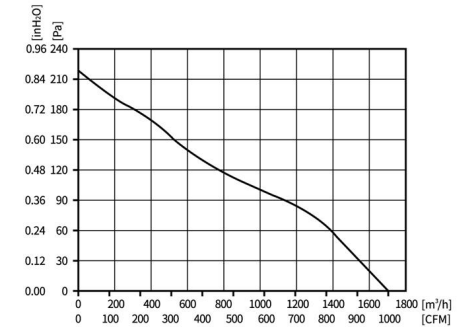


Motor Type	Speed Control	Protection Type	Insulation Class	Operating Temperature	Weight	Wiring Mode
DC BRUSHLESS EXTERNAL ROTOR MOTOR	0-10V VDC/PWM	IP55	B	-25°C ~ +60°C	1.86KG	D1

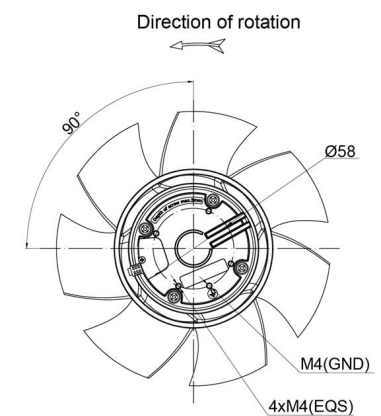
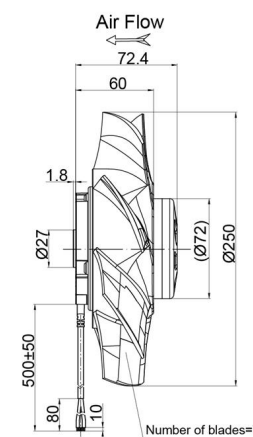


Model	Motor	Bearing System	Rated Voltage	Operating Voltage	Rated Current	Rated Power	Rated Speed	Air Flow	Air Pressure	Sound Level
Part No.	Type	B/S	VDC	VDC	A	W	RPM	M³/H	Pa	dB(A)
PA3N200B24-RZ0	BE72DC	BALL	24	16~28	2.2	52.8	3000	1000	280	62
PA3N200B48-RZ0	BE72DC	BALL	48	36~57	1.1	52.8	3000	1000	280	62

## DC Axial Fan Ø250x72.4mm



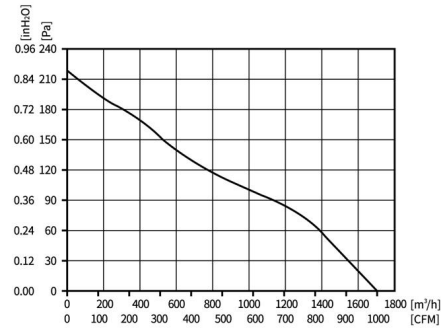
Motor Type	Speed Control	Protection Type	Insulation Class	Operating Temperature	Weight	Wiring Mode
DC BRUSHLESS EXTERNAL ROTOR MOTOR	0-10V VDC/PWM	IP55	B	-25°C ~ +60°C	1.4KG	D1



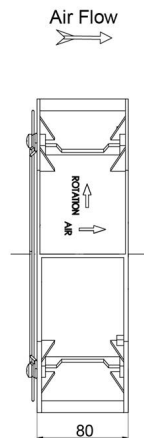
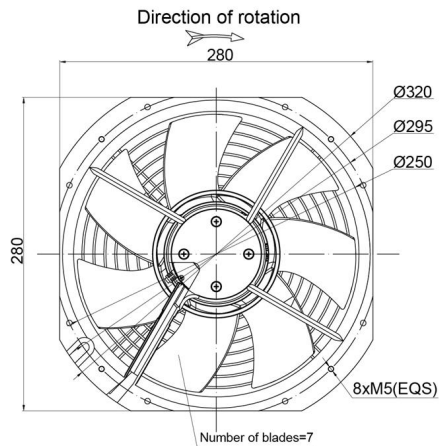
Model	Motor	Bearing System	Rated Voltage	Operating Voltage	Rated Current	Rated Power	Rated Speed	Air Flow	Air Pressure	Sound Level
Part No.	Type	B/S	VDC	VDC	A	W	RPM	M³/H	Pa	dB(A)
PA3N250B24-RN0	BE72DC	BALL	24	16~28	2.8	67.2	2500	1700	220	64
PA3N250B48-RN0	BE72DC	BALL	48	36~57	1.4	67.2	2500	1700	220	64

## DC Axial Fan Ø250x80mm

Axial Fans



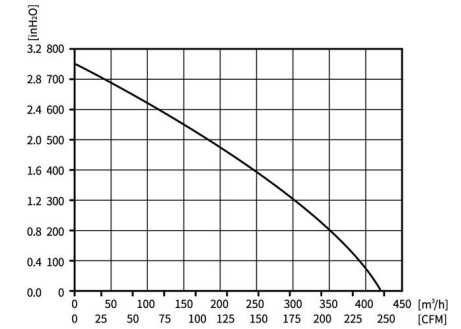
Motor Type	Speed Control	Protection Type	Insulation Class	Operating Temperature	Weight	Wiring Mode
DC BRUSHLESS EXTERNAL ROTOR MOTOR	0-10V VDC/PWM	IP55	B	-25°C ~ +60°C	2.2KG	D1



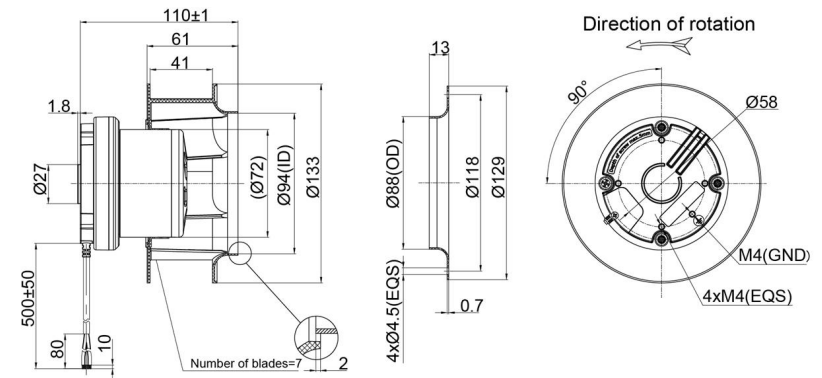
Model	Motor	Bearing System	Rated Voltage	Operating Voltage	Rated Current	Rated Power	Rated Speed	Air Flow	Air Pressure	Sound Level
Part No.	Type	B/S	VDC	VDC	A	W	RPM	M³/H	Pa	dB(A)
PA3N250B24-RZ0	BE72DC	BALL	24	16~28	2.8	67.2	2500	1700	220	64
PA3N250B48-RZ0	BE72DC	BALL	48	36~57	1.4	67.2	2500	1700	220	64

## DC Centrifugal Fan Backward Curved Ø133x110mm

Backward Curved Centrifugal Fans

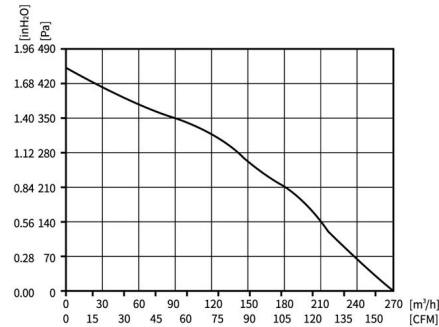


Motor Type	Speed Control	Protection Type	Insulation Class	Operating Temperature	Weight	Wiring Mode
DC BRUSHLESS EXTERNAL ROTOR MOTOR	0-10V VDC/PWM	IP55	B	-25°C ~ +60°C	0.65KG	D1

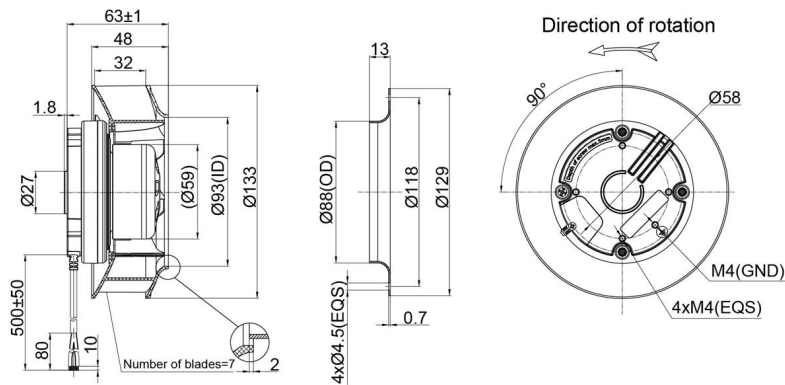


Model	Motor	Bearing System	Rated Voltage	Operating Voltage	Rated Current	Rated Power	Rated Speed	Air Flow	Air Pressure	Sound Level
Part No.	Type	B/S	VDC	VDC	A	W	RPM	M³/H	Pa	dB(A)
PB3N133B24-RB0	BE72DC	BALL	24	16~28	2.1	50	5000	420	750	71
PB3N133B48-RB0	BE72DC	BALL	48	36~57	1.05	50	5000	420	750	71

## DC Centrifugal Fan Backward Curved Ø133x63mm

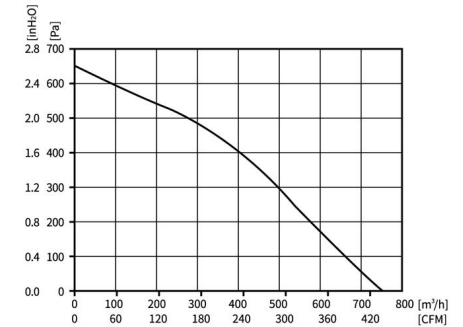


Motor Type	Speed Control	Protection Type	Insulation Class	Operating Temperature	Weight	Wiring Mode
DC BRUSHLESS EXTERNAL ROTOR MOTOR	0-10V VDC/PWM	IP55	B	-25°C ~ +60°C	0.6KG	D1

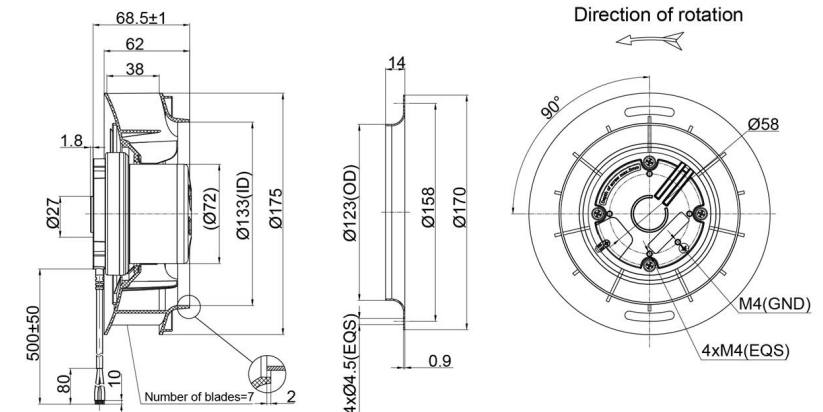


Model	Motor	Bearing System	Rated Voltage	Operating Voltage	Rated Current	Rated Power	Rated Speed	Air Flow	Air Pressure	Sound Level
Part No.	Type	B/S	VDC	VDC	A	W	RPM	M³/H	Pa	dB(A)
PB3N133B24-FZ5	BE59DC	BALL	24	16~28	1.4	33	4500	270	450	68
PB3N133B48-FZ5	BE59DC	BALL	48	36~57	0.7	33	4500	270	450	68

## DC Centrifugal Fan Backward Curved Ø175x68.5mm



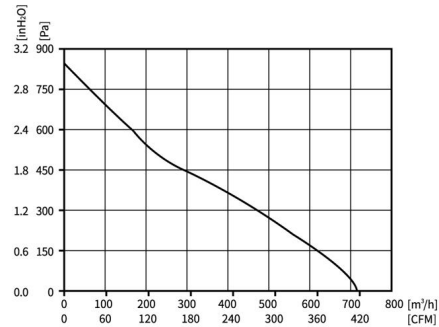
Motor Type	Speed Control	Protection Type	Insulation Class	Operating Temperature	Weight	Wiring Mode
DC BRUSHLESS EXTERNAL ROTOR MOTOR	0-10V VDC/PWM	IP55	B	-25°C ~ +60°C	1.2KG	D1



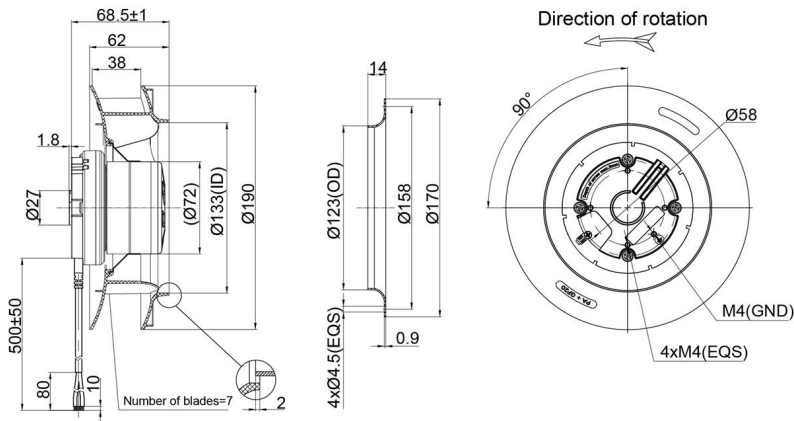
Model	Motor	Bearing System	Rated Voltage	Operating Voltage	Rated Current	Rated Power	Rated Speed	Air Flow	Air Pressure	Sound Level
Part No.	Type	B/S	VDC	VDC	A	W	RPM	M³/H	Pa	dB(A)
PB3N175B24-RZ0	BE72DC	BALL	24	16~28	3.6	85	4300	750	650	72
PB3N175B48-RZ0	BE72DC	BALL	48	36~57	1.8	85	4300	750	650	72



## DC Centrifugal Fan Backward Curved Ø190x68.5mm

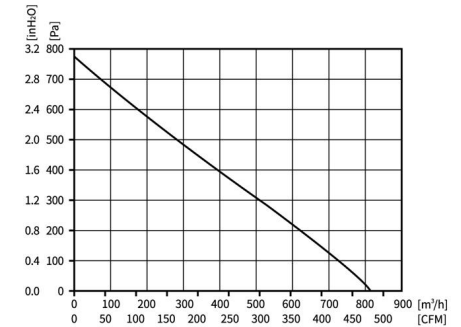


Motor Type	Speed Control	Protection Type	Insulation Class	Operating Temperature	Weight	Wiring Mode
DC BRUSHLESS EXTERNAL ROTOR MOTOR	0-10V VDC/PWM	IP55	B	-25°C ~ +60°C	1.2KG	D1

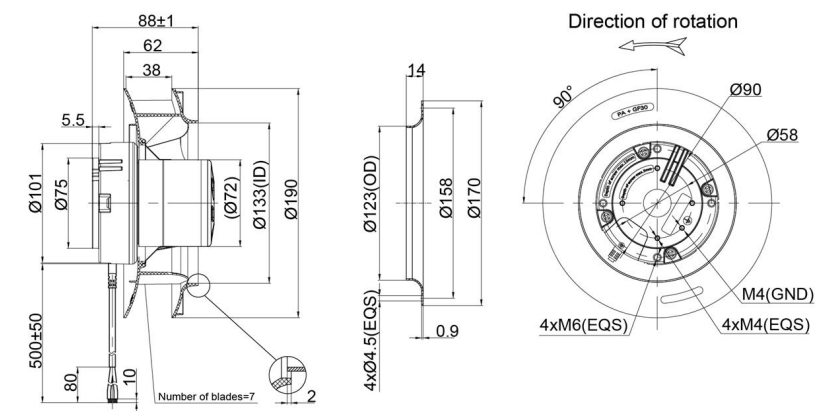


Model	Motor	Bearing System	Rated Voltage	Operating Voltage	Rated Current	Rated Power	Rated Speed	Air Flow	Air Pressure	Sound Level
Part No.	Type	B/S	VDC	VDC	A	W	RPM	M³/H	Pa	dB(A)
PB3N190B24-RZ0	BE72DC	BALL	24	16~28	3.6	85	3500	710	840	68
PB3N190B48-RZ0	BE72DC	BALL	48	36~57	1.8	85	3500	710	840	68

## DC Centrifugal Fan Backward Curved Ø190x88mm

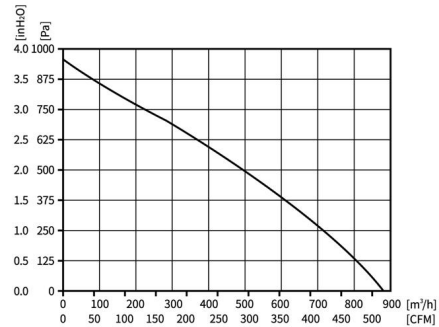


Motor Type	Speed Control	Protection Type	Insulation Class	Operating Temperature	Weight	Wiring Mode
DC BRUSHLESS EXTERNAL ROTOR MOTOR	0-10V VDC/PWM	IP55	B	-25°C ~ +60°C	1.8KG	D1

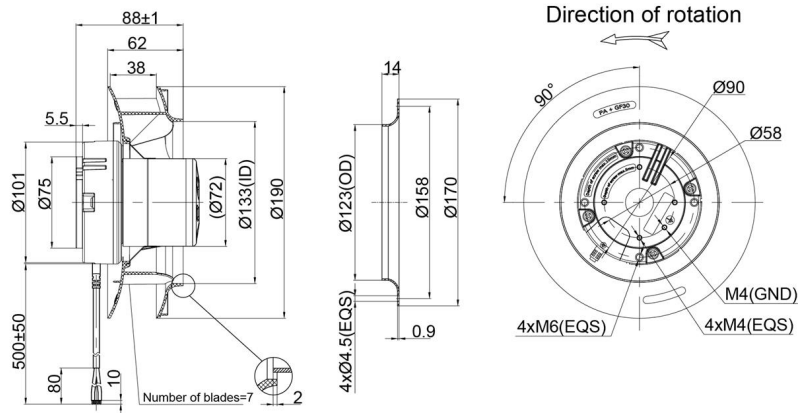


Model	Motor	Bearing System	Rated Voltage	Operating Voltage	Rated Current	Rated Power	Rated Speed	Air Flow	Air Pressure	Sound Level
Part No.	Type	B/S	VDC	VDC	A	W	RPM	M³/H	Pa	dB(A)
PB3N190B24-TZ0	BE72DC	BALL	24	16~28	5.0	120	4050	820	780	72
PB3N190B48-TZ0	BE72DC	BALL	48	36~57	2.5	120	4050	820	780	72

## DC Centrifugal Fan Backward Curved Ø190x88mm

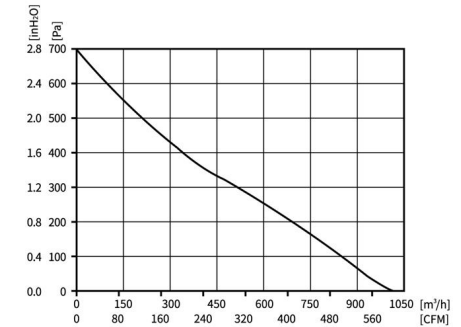


Motor Type	Speed Control	Protection Type	Insulation Class	Operating Temperature	Weight	Wiring Mode
DC BRUSHLESS EXTERNAL ROTOR MOTOR	0-10V VDC/PWM	IP55	B	-25°C ~ +60°C	1.8KG	D1

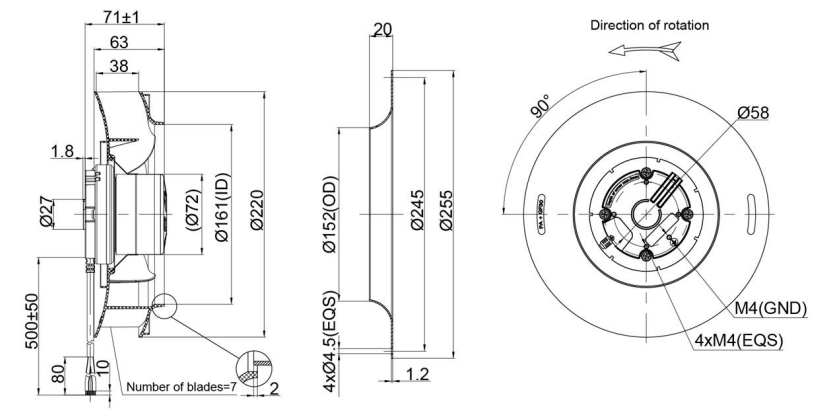


Model	Motor	Bearing System	Rated Voltage	Operating Voltage	Rated Current	Rated Power	Rated Speed	Air Flow	Air Pressure	Sound Level
Part No.	Type	B/S	VDC	VDC	A	W	RPM	M³/H	Pa	dB(A)
PB3N190B24-TZ1	BE72DC	BALL	24	16~28	6.4	153.6	4400	880	950	74
PB3N190B48-TZ1	BE72DC	BALL	48	36~57	3.2	153.6	4400	880	950	74

## DC Centrifugal Fan Backward Curved Ø220x71mm

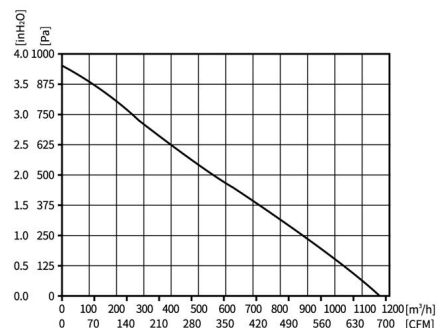


Motor Type	Speed Control	Protection Type	Insulation Class	Operating Temperature	Weight	Wiring Mode
DC BRUSHLESS EXTERNAL ROTOR MOTOR	0-10V VDC/PWM	IP55	B	-25°C ~ +60°C	1.6KG	D1

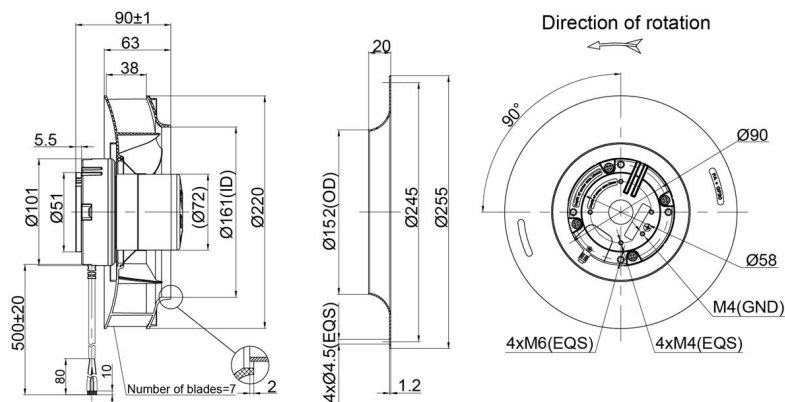


Model	Motor	Bearing System	Rated Voltage	Operating Voltage	Rated Current	Rated Power	Rated Speed	Air Flow	Air Pressure	Sound Level
Part No.	Type	B/S	VDC	VDC	A	W	RPM	M³/H	Pa	dB(A)
PB3N220B24-RZ0	BE72DC	BALL	24	16~28	3.4	85	2600	1010	700	71
PB3N220B48-RZ0	BE72DC	BALL	48	36~57	1.7	85	2600	1010	700	71

## DC Centrifugal Fan Backward Curved Ø220x90mm

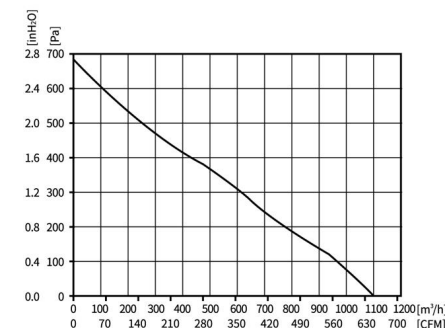


Motor Type	Speed Control	Protection Type	Insulation Class	Operating Temperature	Weight	Wiring Mode
DC BRUSHLESS EXTERNAL ROTOR MOTOR	0-10VDC/PWM	IP55	B	-25°C ~ +60°C	2.4KG	D1

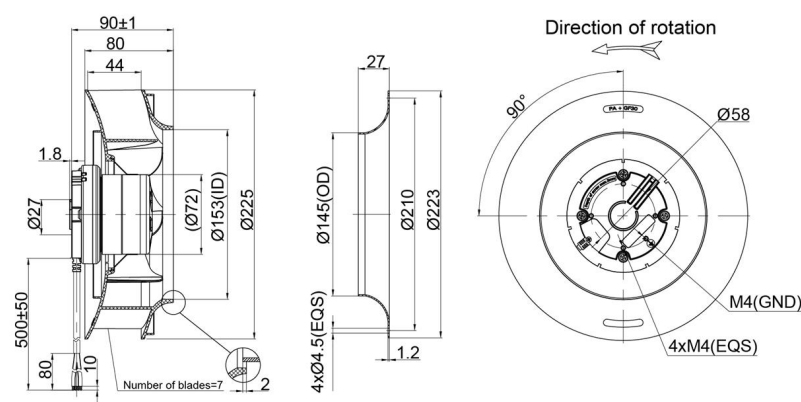


Model	Motor	Bearing System	Rated Voltage	Operating Voltage	Rated Current	Rated Power	Rated Speed	Air Flow	Air Pressure	Sound Level
Part No.	Type	B/S	VDC	VDC	A	W	RPM	M³/H	Pa	dB(A)
PB3N220B24-TZ0	BE72DC	BALL	24	16~28	7.6	182.4	3500	1165	950	72
PB3N220B48-TZ0	BE72DC	BALL	48	36~57	3.8	182.4	3500	1165	950	72

## DC Centrifugal Fan Backward Curved Ø225x90mm



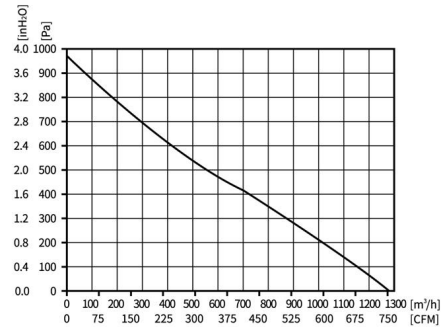
Motor Type	Speed Control	Protection Type	Insulation Class	Operating Temperature	Weight	Wiring Mode
DC BRUSHLESS EXTERNAL ROTOR MOTOR	0-10VDC/PWM	IP55	B	-25°C ~ +60°C	1.5KG	D1



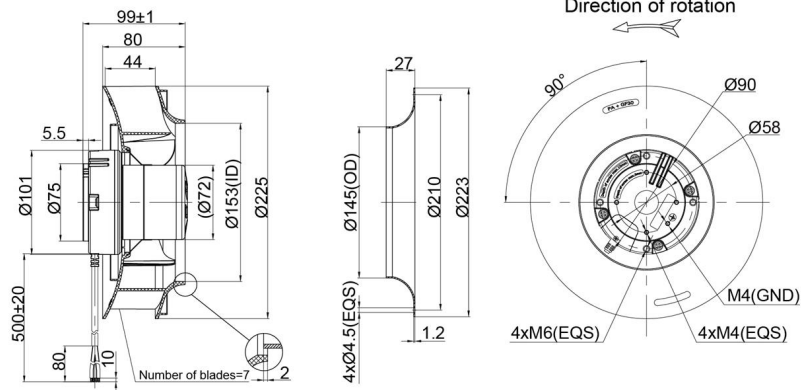
Model	Motor	Bearing System	Rated Voltage	Operating Voltage	Rated Current	Rated Power	Rated Speed	Air Flow	Air Pressure	Sound Level
Part No.	Type	B/S	VDC	VDC	A	W	RPM	M³/H	Pa	dB(A)
PB3N225B24-RG0	BE72DC	BALL	24	16~28	4.0	96	2400	1100	690	68
PB3N225B48-RG0	BE72DC	BALL	48	36~57	2.0	96	2400	1100	690	68



## DC Centrifugal Fan Backward Curved Ø225x99mm

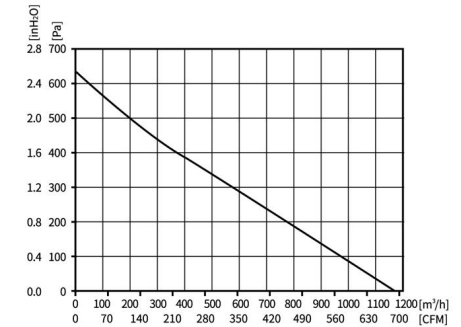


Motor Type	Speed Control	Protection Type	Insulation Class	Operating Temperature	Weight	Wiring Mode
DC BRUSHLESS EXTERNAL ROTOR MOTOR	0-10VDC/PWM	IP55	B	-25°C ~ +60°C	2.4KG	D1

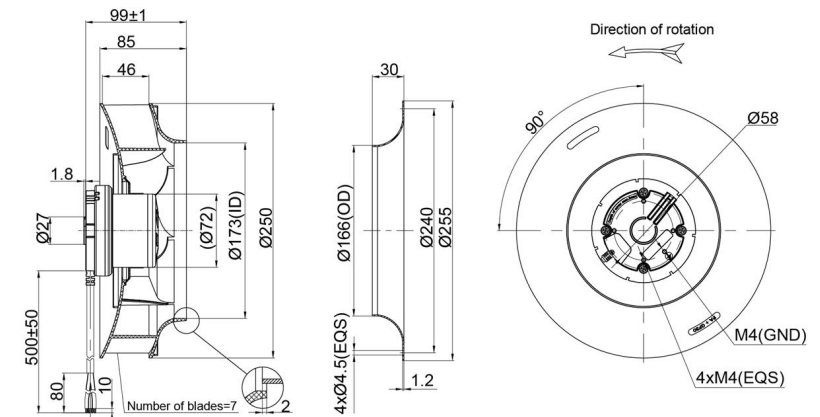


Model	Motor	Bearing System	Rated Voltage	Operating Voltage	Rated Current	Rated Power	Rated Speed	Air Flow	Air Pressure	Sound Level
Part No.	Type	B/S	VDC	VDC	A	W	RPM	M³/H	Pa	dB(A)
PB3N225B24-TG0	BE72DC	BALL	24	16~28	7.0	168	3000	1280	960	72
PB3N225B48-TG0	BE72DC	BALL	48	36~57	3.5	168	3000	1280	960	72

## DC Centrifugal Fan Backward Curved Ø250x99mm

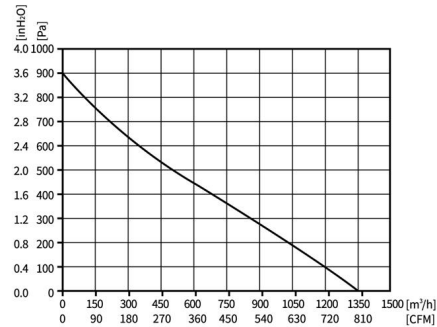


Motor Type	Speed Control	Protection Type	Insulation Class	Operating Temperature	Weight	Wiring Mode
DC BRUSHLESS EXTERNAL ROTOR MOTOR	0-10VDC/PWM	IP55	B	-25°C ~ +60°C	1.7KG	D1

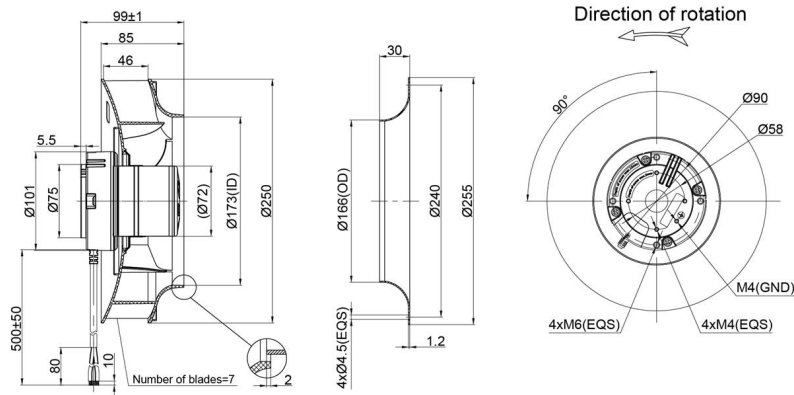


Model	Motor	Bearing System	Rated Voltage	Operating Voltage	Rated Current	Rated Power	Rated Speed	Air Flow	Air Pressure	Sound Level
Part No.	Type	B/S	VDC	VDC	A	W	RPM	M³/H	Pa	dB(A)
PB3N250B24-R20	BE72DC	BALL	24	16~28	3.6	86.4	2000	1170	630	68
PB3N250B48-R20	BE72DC	BALL	48	36~57	1.8	86.4	2000	1170	630	68

## DC Centrifugal Fan Backward Curved Ø250x99mm

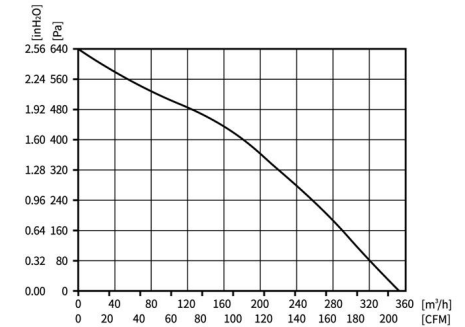


Motor Type	Speed Control	Protection Type	Insulation Class	Operating Temperature	Weight	Wiring Mode
DC BRUSHLESS EXTERNAL ROTOR MOTOR	0-10VDC/PWM	IP55	B	-25°C ~ +60°C	2.4KG	D1

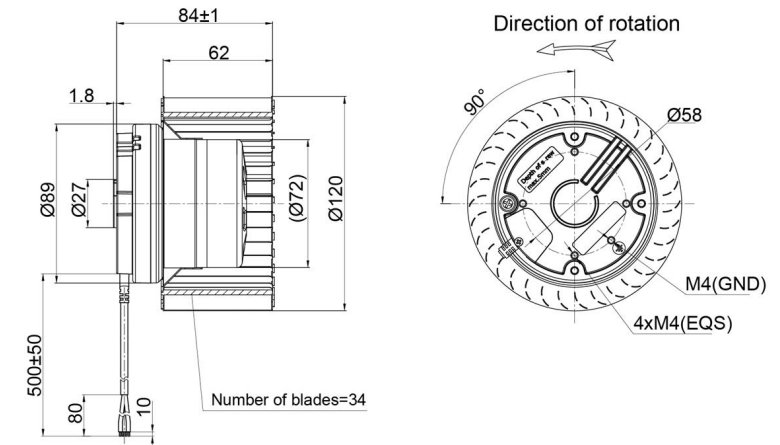


Model	Motor	Bearing System	Rated Voltage	Operating Voltage	Rated Current	Rated Power	Rated Speed	Air Flow	Air Pressure	Sound Level
Part No.	Type	B/S	VDC	VDC	A	W	RPM	M³/H	Pa	dB(A)
PB3N250B24-TZ0	BE72DC	BALL	24	16~28	6.4	153.6	2700	1350	900	70
PB3N250B48-TZ0	BE72DC	BALL	48	36~57	3.2	153.6	2700	1350	900	70

## DC Centrifugal Fan Forward Curved Ø120x84mm

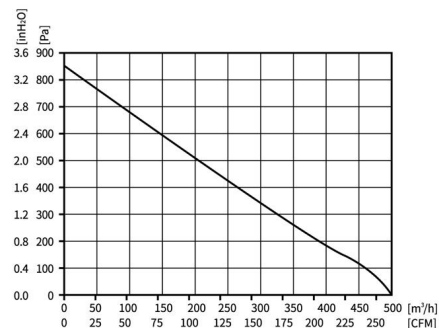


Motor Type	Speed Control	Protection Type	Insulation Class	Operating Temperature	Weight	Wiring Mode
DC BRUSHLESS EXTERNAL ROTOR MOTOR	0-10VDC/PWM	IP55	B	-25°C ~ +60°C	1.05KG	D1

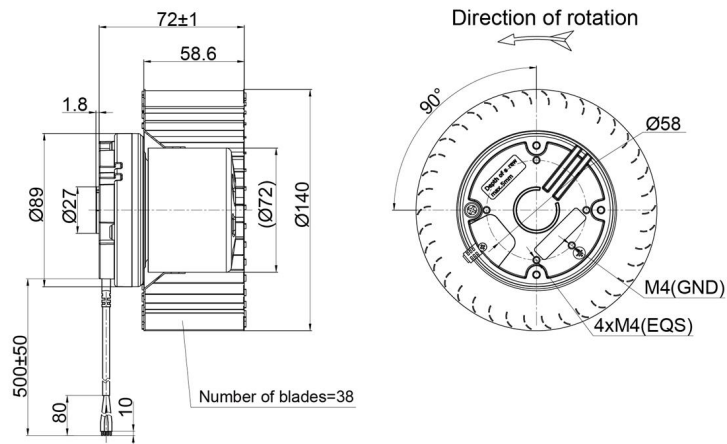


Model	Motor	Bearing System	Rated Voltage	Operating Voltage	Rated Current	Rated Power	Rated Speed	Air Flow	Air Pressure	Sound Level
Part No.	Type	B/S	VDC	VDC	A	W	RPM	M³/H	Pa	dB(A)
PF3N120B24-RZ0	BE72DC	BALL	24	16~28	2.8	67.2	2400	350	640	67
PF3N120B48-RZ0	BE72DC	BALL	48	36~57	1.4	67.2	2400	350	640	67

## DC Centrifugal Fan Forward Curved Ø140x72mm

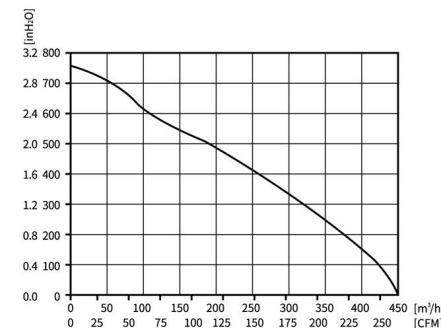


Motor Type	Speed Control	Protection Type	Insulation Class	Operating Temperature	Weight	Wiring Mode
DC BRUSHLESS EXTERNAL ROTOR MOTOR	0-10V VDC/PWM	IP55	B	-25°C ~ +60°C	1.0KG	D1

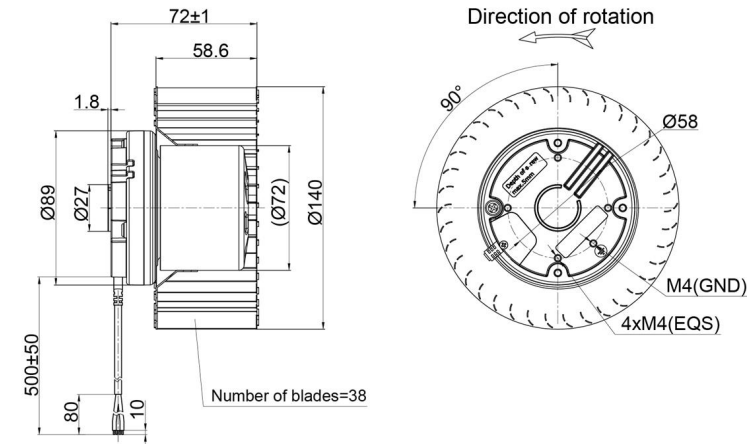


Model	Motor	Bearing System	Rated Voltage	Operating Voltage	Rated Current	Rated Power	Rated Speed	Air Flow	Air Pressure	Sound Level
Part No.	Type	B/S	VDC	VDC	A	W	RPM	M³/H	Pa	dB(A)
PF3N140B24-RP0	BE72DC	BALL	24	16~28	2.2	52.8	1600	500	850	64
PF3N140B48-RP0	BE72DC	BALL	48	36~57	1.1	52.8	1600	500	850	64

## DC Centrifugal Fan Forward Curved Ø140x72mm



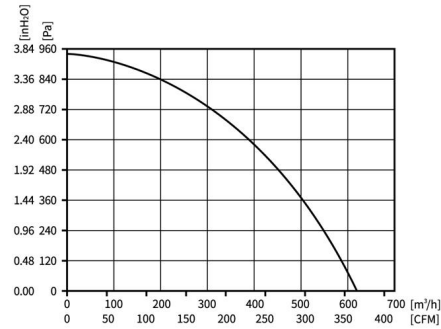
Motor Type	Speed Control	Protection Type	Insulation Class	Operating Temperature	Weight	Wiring Mode
DC BRUSHLESS EXTERNAL ROTOR MOTOR	0-10V VDC/PWM	IP55	B	-25°C ~ +60°C	1.2KG	D1



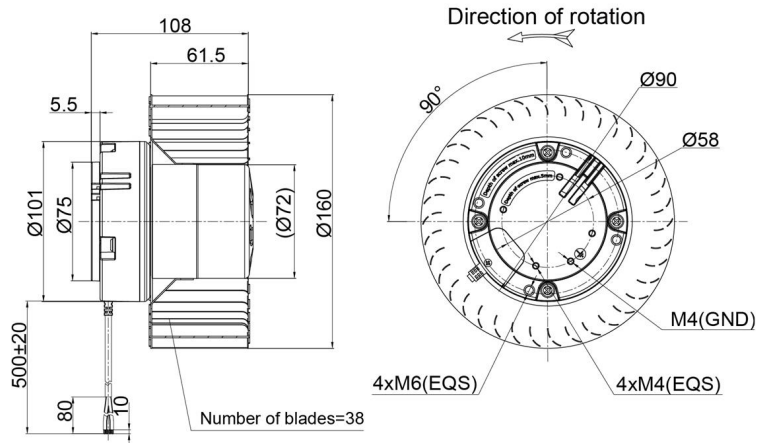
Model	Motor	Bearing System	Rated Voltage	Operating Voltage	Rated Current	Rated Power	Rated Speed	Air Flow	Air Pressure	Sound Level
Part No.	Type	B/S	VDC	VDC	A	W	RPM	M³/H	Pa	dB(A)
PF3N140B24-RZ0	BE72DC	BALL	24	16~28	2.4	57.6	1600	450	760	64
PF3N140B48-RZ0	BE72DC	BALL	48	36~57	1.2	57.6	1600	450	760	64



## DC Centrifugal Fan Forward Curved Ø160x108mm

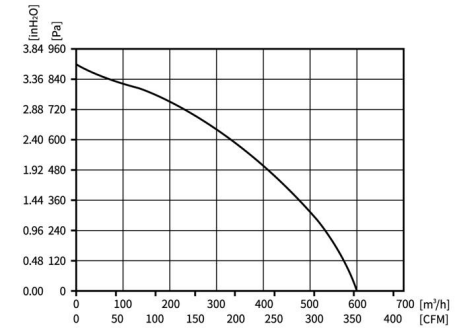


Motor Type	Speed Control	Protection Type	Insulation Class	Operating Temperature	Weight	Wiring Mode
DC BRUSHLESS EXTERNAL ROTOR MOTOR	0-10VDC/PWM	IP55	B	-25°C~+60°C	1.3KG	D1

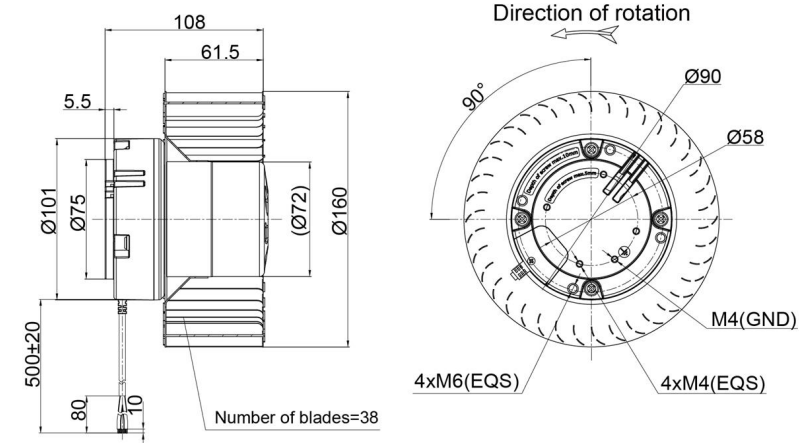


Model	Motor	Bearing System	Rated Voltage	Operating Voltage	Rated Current	Rated Power	Rated Speed	Air Flow	Air Pressure	Sound Level
Part No.	Type	B/S	VDC	VDC	A	W	RPM	M³/H	Pa	dB(A)
PF3N160B24-TP0	BE72DC	BALL	24	16~28	6.8	163.2	2000	620	940	70
PF3N160B48-TP0	BE72DC	BALL	48	36~57	3.4	163.2	2000	620	940	70

## DC Centrifugal Fan Forward Curved Ø160x108mm

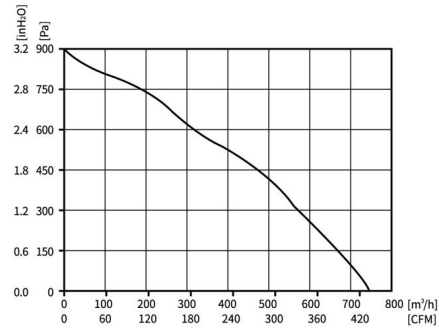


Motor Type	Speed Control	Protection Type	Insulation Class	Operating Temperature	Weight	Wiring Mode
DC BRUSHLESS EXTERNAL ROTOR MOTOR	0-10VDC/PWM	IP55	B	-25°C~+60°C	1.5KG	D1

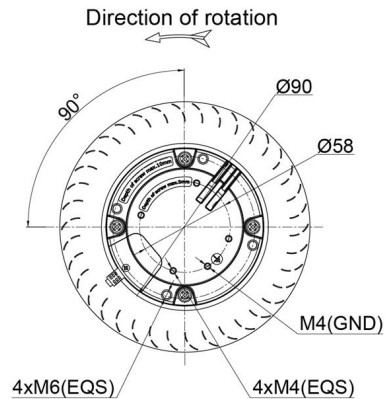
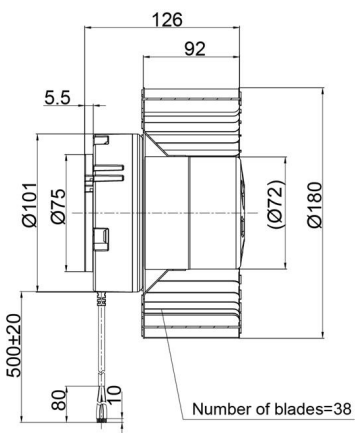


Model	Motor	Bearing System	Rated Voltage	Operating Voltage	Rated Current	Rated Power	Rated Speed	Air Flow	Air Pressure	Sound Level
Part No.	Type	B/S	VDC	VDC	A	W	RPM	M³/H	Pa	dB(A)
PF3N160B24-TZ0	BE72DC	BALL	24	16~28	6.8	163.2	2000	600	900	69
PF3N160B48-TZ0	BE72DC	BALL	48	36~57	3.4	163.2	2000	600	900	69

## DC Centrifugal Fan Forward Curved Ø180x126mm

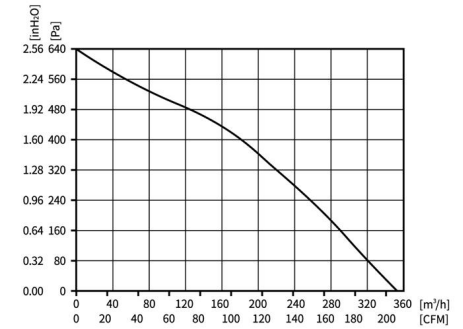


Motor Type	Speed Control	Protection Type	Insulation Class	Operating Temperature	Weight	Wiring Mode
DC BRUSHLESS EXTERNAL ROTOR MOTOR	0-10VDC/PWM	IP55	B	-25°C ~ +60°C	1.8KG	D1

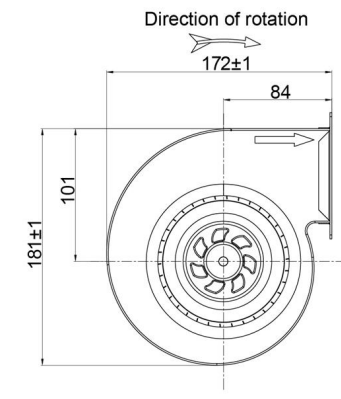
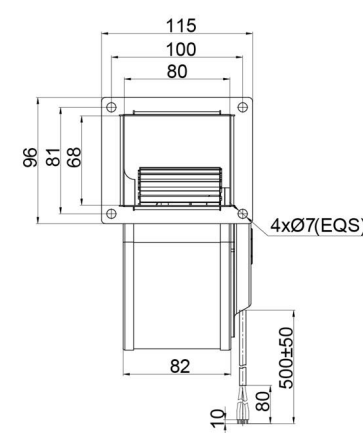


Model	Motor	Bearing System	Rated Voltage	Operating Voltage	Rated Current	Rated Power	Rated Speed	Air Flow	Air Pressure	Sound Level
Part No.	Type	B/S	VDC	VDC	A	W	RPM	M³/H	Pa	dB(A)
PF3N180B24-TZ0	BE72DC	BALL	24	16~28	5.2	124.8	1350	740	900	66
PF3N180B48-TZ0	BE72DC	BALL	48	36~57	2.6	124.8	1350	740	900	66

## DC Blower Single Inlet Ø120mm

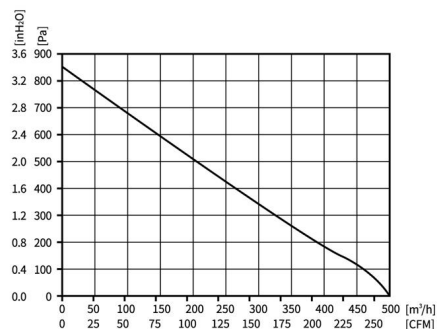


Motor Type	Speed Control	Protection Type	Insulation Class	Operating Temperature	Weight	Wiring Mode
DC BRUSHLESS EXTERNAL ROTOR MOTOR	0-10VDC/PWM	IP55	B	-25°C ~ +60°C	1.5KG	D1

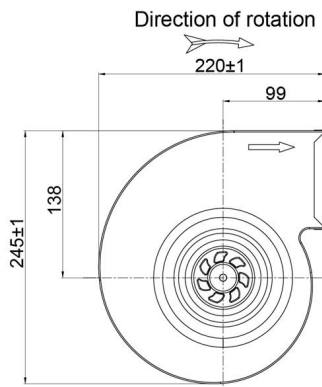
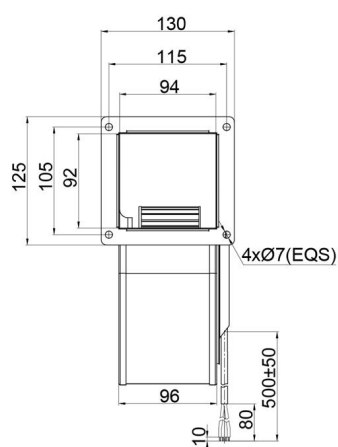


Model	Motor	Bearing System	Rated Voltage	Operating Voltage	Rated Current	Rated Power	Rated Speed	Air Flow	Air Pressure	Sound Level
Part No.	Type	B/S	VDC	VDC	A	W	RPM	M³/H	Pa	dB(A)
PS3N120B24-RZ0	BE72DC	BALL	24	16~28	2.8	67.2	2400	350	640	67
PS3N120B48-RZ0	BE72DC	BALL	48	36~57	1.4	67.2	2400	350	640	67

## DC Blower Single Inlet Ø140mm

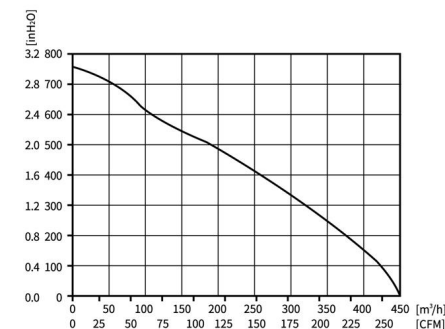


Motor Type	Speed Control	Protection Type	Insulation Class	Operating Temperature	Weight	Wiring Mode
DC BRUSHLESS EXTERNAL ROTOR MOTOR	0-10VDC/PWM	IP55	B	-25°C ~ +60°C	2.1KG	D1

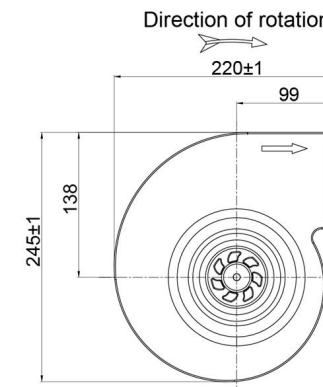
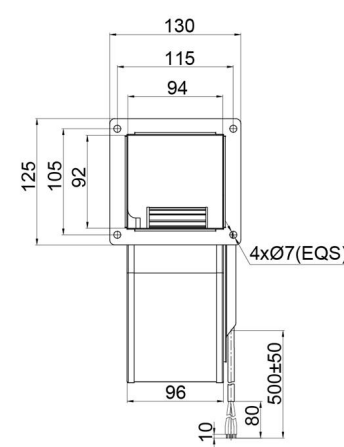


Model	Motor	Bearing System	Rated Voltage	Operating Voltage	Rated Current	Rated Power	Rated Speed	Air Flow	Air Pressure	Sound Level
Part No.	Type	B/S	VDC	VDC	A	W	RPM	M³/H	Pa	dB(A)
PS3N140B24-RP0	BE72DC	BALL	24	16~28	2.2	52.8	1600	500	850	64
PS3N140B48-RP0	BE72DC	BALL	48	36~57	1.1	52.8	1600	500	850	64

## DC Blower Single Inlet Ø140mm



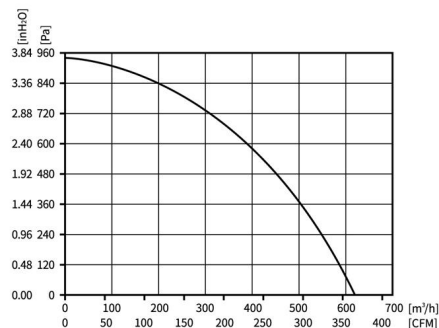
Motor Type	Speed Control	Protection Type	Insulation Class	Operating Temperature	Weight	Wiring Mode
DC BRUSHLESS EXTERNAL ROTOR MOTOR	0-10VDC/PWM	IP55	B	-25°C ~ +60°C	2.4KG	D1



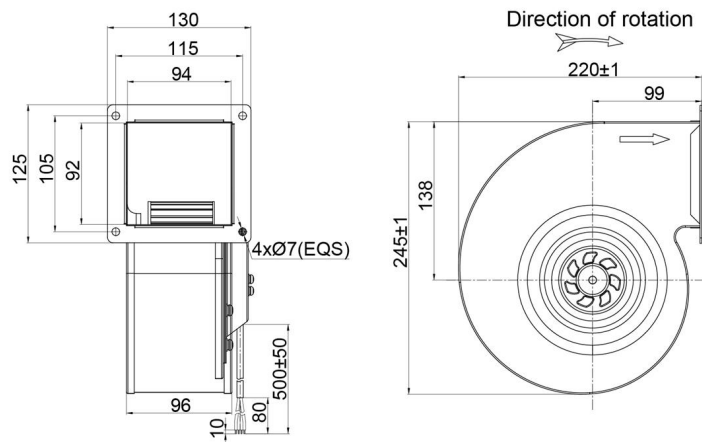
Model	Motor	Bearing System	Rated Voltage	Operating Voltage	Rated Current	Rated Power	Rated Speed	Air Flow	Air Pressure	Sound Level
Part No.	Type	B/S	VDC	VDC	A	W	RPM	M³/H	Pa	dB(A)
PS3N140B24-RZ0	BE72DC	BALL	24	16~28	2.4	57.6	1600	450	760	64
PS3N140B48-RZ0	BE72DC	BALL	48	36~57	1.2	57.6	1600	450	760	64



## DC Blower Single Inlet Ø160mm

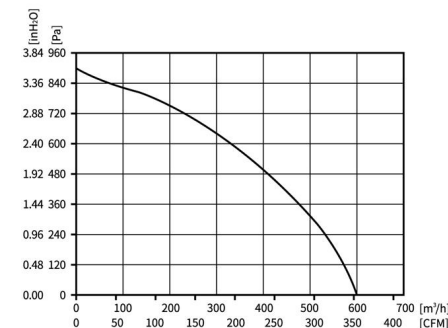


Motor Type	Speed Control	Protection Type	Insulation Class	Operating Temperature	Weight	Wiring Mode
DC BRUSHLESS EXTERNAL ROTOR MOTOR	0-10VDC/PWM	IP55	B	-25°C ~ +60°C	2.4KG	D1

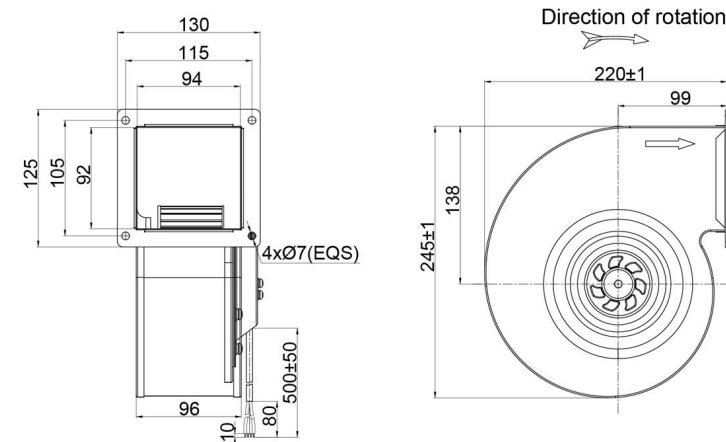


Model	Motor	Bearing System	Rated Voltage	Operating Voltage	Rated Current	Rated Power	Rated Speed	Air Flow	Air Pressure	Sound Level
Part No.	Type	B/S	VDC	VDC	A	W	RPM	M³/H	Pa	dB(A)
PS3N160B24-TP0	BE72DC	BALL	24	16~28	6.8	163.2	2000	620	940	70
PS3N160B48-TP0	BE72DC	BALL	48	36~57	3.4	163.2	2000	620	940	70

## DC Blower Single Inlet Ø160mm

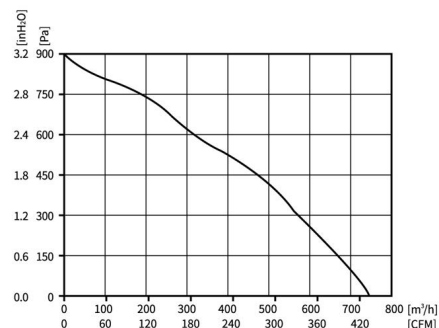


Motor Type	Speed Control	Protection Type	Insulation Class	Operating Temperature	Weight	Wiring Mode
DC BRUSHLESS EXTERNAL ROTOR MOTOR	0-10VDC/PWM	IP55	B	-25°C ~ +60°C	2.8KG	D1

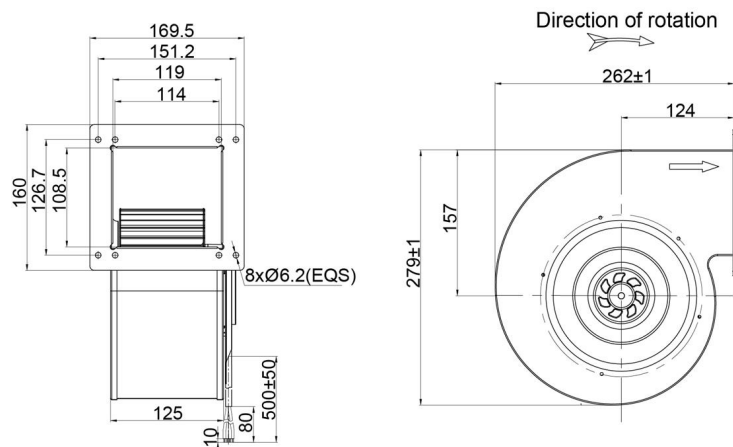


Model	Motor	Bearing System	Rated Voltage	Operating Voltage	Rated Current	Rated Power	Rated Speed	Air Flow	Air Pressure	Sound Level
Part No.	Type	B/S	VDC	VDC	A	W	RPM	M³/H	Pa	dB(A)
PS3N160B24-TZ0	BE72DC	BALL	24	16~28	6.8	163.2	2000	600	900	69
PS3N160B48-TZ0	BE72DC	BALL	48	36~57	3.4	163.2	2000	600	900	69

## DC Blower Single Inlet Ø180mm

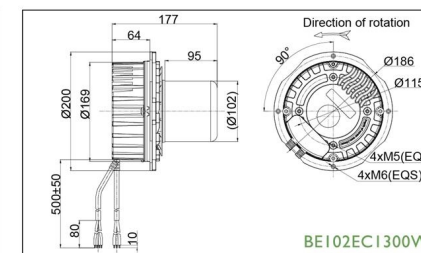
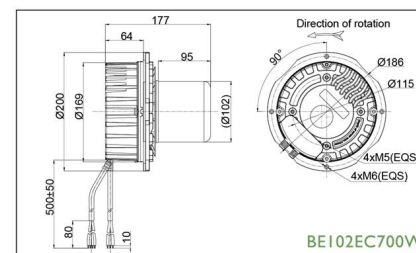
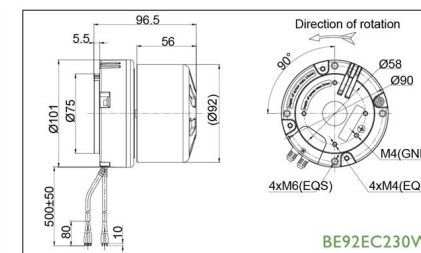
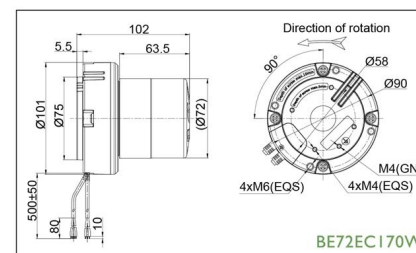
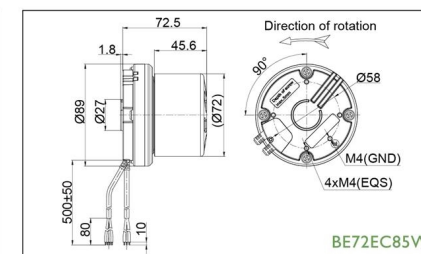
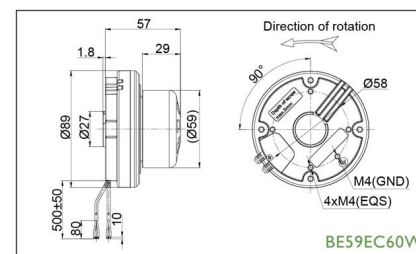


Motor Type	Speed Control	Protection Type	Insulation Class	Operating Temperature	Weight	Wiring Mode
DC BRUSHLESS EXTERNAL ROTOR MOTOR	0-10VDC/PWM	IP55	B	-25°C ~ +60°C	3.7KG	D1



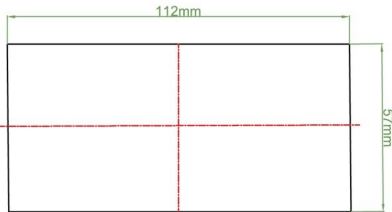
Model	Motor	Bearing System	Rated Voltage	Operating Voltage	Rated Current	Rated Power	Rated Speed	Air Flow	Air Pressure	Sound Level
Part No.	Type	B/S	VDC	VDC	A	W	RPM	M³/H	Pa	dB(A)
PS3N180B24-TZ0	BE72DC	BALL	24	16~28	5.2	124.8	1350	740	900	66
PS3N180B48-TZ0	BE72DC	BALL	48	36~57	2.6	124.8	1350	740	900	66

## EC-AC Motor



Motor	BE59EC60W	BE72EC85W	BE72EC170W	BE92EC230W	BE102EC700W	BE102EC1300W
Voltage	230V	230V	230V	230V	230V	380V
Frequency	50/60Hz	50/60Hz	50/60Hz	50/60Hz	50/60Hz	50/60Hz
Current	0.47A	0.6A	1.1A	2.0A	3.5A	2.5A
Power	60W	85W	170W	230W	700W	1300W
Speed	400~4450RPM	400~4450RPM	400~4450RPM	400~4450RPM	400~4450RPM	400~4450RPM
Operating Temperature	-25°C ~ +60°C	-25°C ~ +60°C	-25°C ~ +60°C	-25°C ~ +60°C	-25°C ~ +60°C	-25°C ~ +60°C
Wiring Mode	E1	E1	E1	E2	E3	E4

## Fan Controller



### 1.Product Introduction

The fan controller is an external Modbus controller, which can realize single control and multiple centralized control. The controller has a built-in Mod-bus communication protocol to control the operation of the fan through the group control system. It is mostly used in FFU group control occasions.

### 2.The Main Function

The controller controls the fan speed through speed feedback, and uses the principle of speed closed-loop control to control the fan operation. Its main functions are:

- Control the start and stop and speed regulation of each fan through the host;
- Remote centralized control and fault diagnosis can be realized;
- Each control unit module has a settable ID address;
- The current speed and current ID number can be displayed;
- With alarm function.

### 3.Product Dimensions and Installation Requirements

The controller is powered by the fan without external power supply; the controller is equipped with 2P and 4P quick connect terminals for connection, making the connection simpler and more convenient. The product is designed as a panel installation method, which is convenient for installation and construction. See the figure below for the opening size: 112mm x 57mm

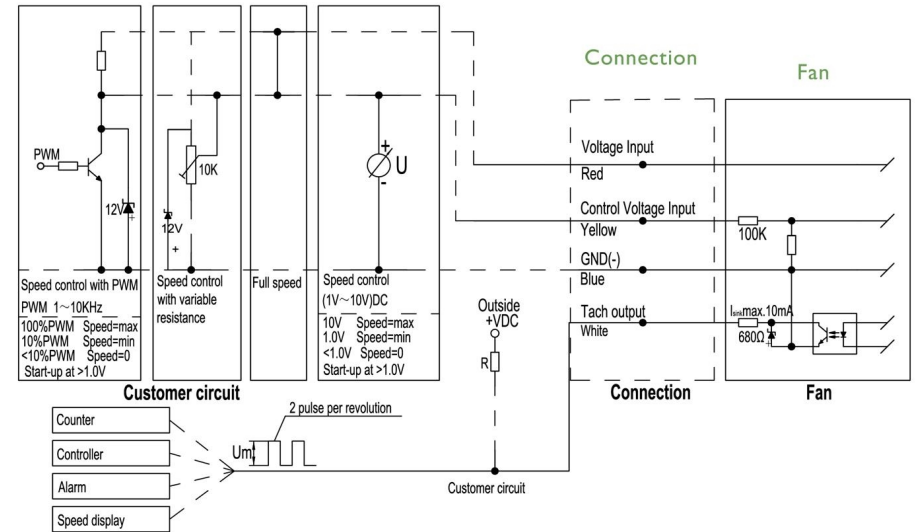
### 4.Product Application Areas

This product is mainly used in the field of FFU, which can make ordinary EC fans realize group control function, and can effectively solve the problem of group control of ordinary fans.

## Wiring Diagram

IP55 DI-DC Motor 72 (24,48,85,110,310VDC)

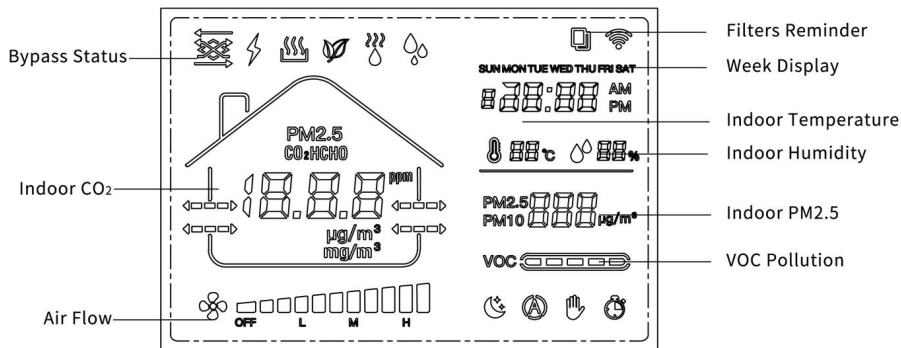
### Customer Circuit



## PS2 intelligent multi-functional touch screen controller

### 1.General description

PS2-PM2.5/CO<sub>2</sub> controller adopts in touch technology, which is flexible and convenient. There are sensors which can monitor the indoor temperature, humidity, PM2.5 and CO<sub>2</sub> concentration detection function. The output signal of controller can directly control the starting and RPM of the fresh air. It can be widely used in residential, commercial and industrial conditions, and effectively improve the air quality, create a healthy, comfortable, efficient, environmental protection and energy-saving living environment.



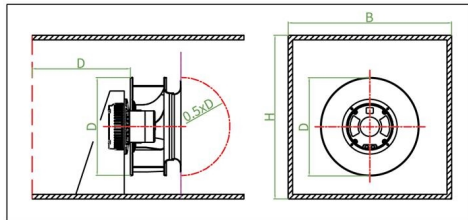
Red= +
Yellow= 0-10VDC/PWM
White= FG
Blue= GND

Signal	Color	Assignment/Function
+	Red	Voltage Input
0-10VDC/PWM	Yellow	Control Input
Tach output	White	Tach output:2 puls per revolution
GND	Blue	GND

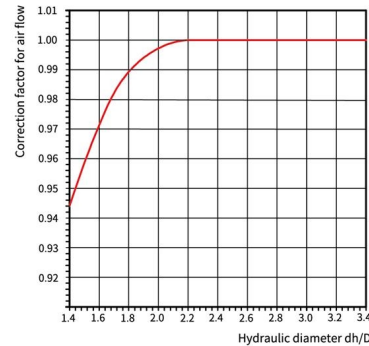


## Effects of installation space

When mounting our product in a rectangular box, air performance might be reduced.



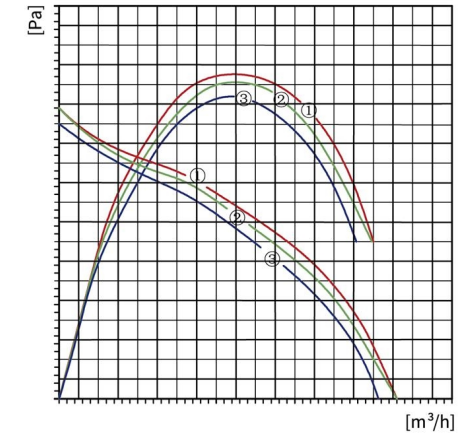
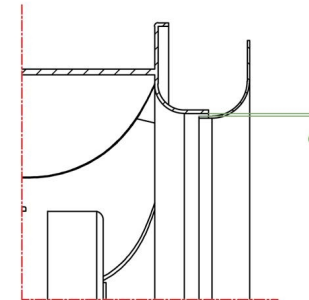
dh = Hydraulic diameter  
Formula:  $dh = 2 \times B \times H / (B + H)$   
B = Width of box  
H = Height of box  
D = Outer diameter of the fan



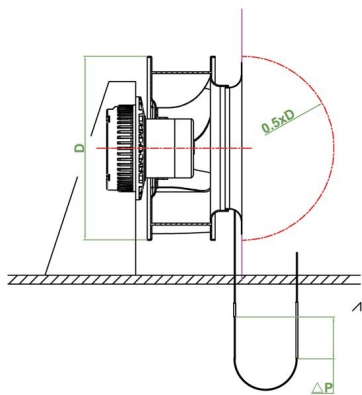
## Effects of centrifugal air gap change

The centrifugal air gap between the inlet ring and the impeller cover affects centrifugal fan air flow and operation efficiency. Changes in the size of the inlet ring air gap affects the following curve:

①:  $s / D = 0.4\%$     ②:  $s / D = 1.0\%$     ③:  $s / D = 1.4\%$



## Defining air flow rate for inlet rings with pressure relief



The differential pressure approach compares the static pressure before the inlet nozzle with the static pressure inside the inlet nozzle. Air flow can be calculated on the basis of the differential pressure (difference in pressure of the static pressures) in keeping with the following equation:

$$qv = k \cdot \sqrt{\Delta p} \quad qv \text{ in } [m^3/h] \text{ and } \Delta p \text{ in } [Pa]$$

If constant air flow is to be controlled, then the nozzle pressure has to be kept constant:

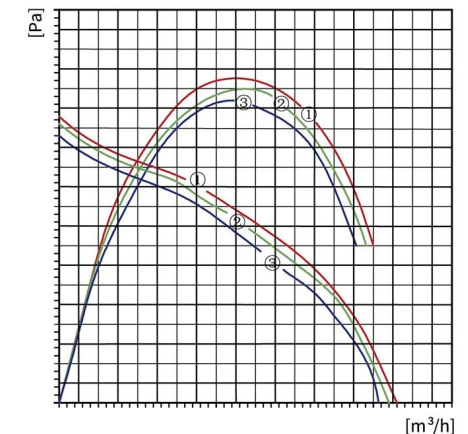
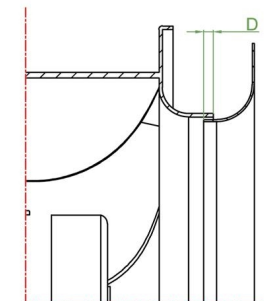
$$\Delta p = qv^2 : k^2$$

k takes into account the specific nozzle characteristics.  
Differences in static pressure are measured in 1/4 measuring point(s) along the circumference of the inlet nozzle. Connection on the customer side is accomplished via a pre-mounted T tube connector. This tube connector is suited for pneumatic hoses with an internal diameter of 4 mm.

## Effects of overlapping dimension

The axial overlap between the inlet ring and the impeller cover affects centrifugal fan air flow and operation efficiency. Overlap changes affect the following curve:

①:  $x / D = 0.6\%$     ②:  $x / D = 0\%$     ③:  $x / D = -0.8\%$



# Precision Noise Measuring

## Measurement conditions for air and noise measurement

PBM products are measured under the following conditions:

- Axial and diagonal fans in direction of rotation "V" in full nozzle and without guard grille
- Backward curved centrifugal fans, free-running and with inlet nozzle
- Forward curved single and dual inlet centrifugal fans with housing

## Noise measurements

All noise measurements are carried out in low-reflective test rooms with reverberant floor. Thus the PBM acoustic test chambers meet the requirements of precision class 1 according to DIN EN ISO 3745. For noise measurement, the fans being tested are placed in a reverberant wall and operated at nominal voltage (for AC, also at nominal frequency) without additional attachments such as the guard grille.

## Sound pressure level and sound level

All acoustic values are established according to ISO 13347, DIN 45635 and ISO 3744/3745 to accuracy class 2 and given in A-rated form. When the sound pressure level ( $L_p$ ) is measured, the microphone is on the intake side of the fan being tested, usually at a distance of 1 m on the fan axis.

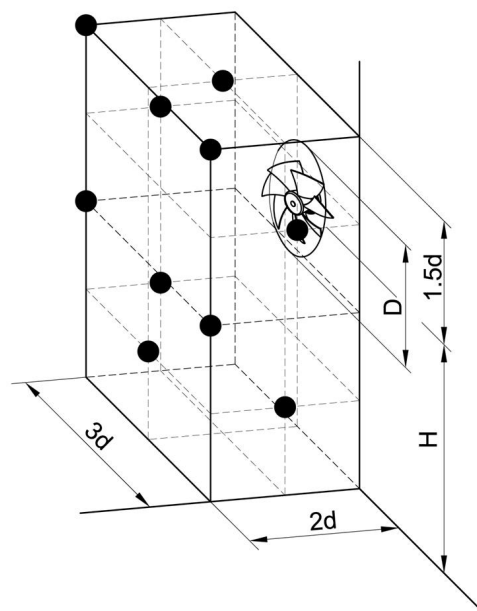
To measure the sound power level ( $L_w$ ), 10 microphones are distributed over an enveloping surface on the intake side of the fan being tested (see graphic). The sound power level measured can be roughly calculated from the sound pressure level by adding 7 dB.

Measuring configuration as per ISO 13347-3 respectively DIN 45635-38:10 measuring points

$d \geq D$

$H = 1.5d \dots 4.5d$

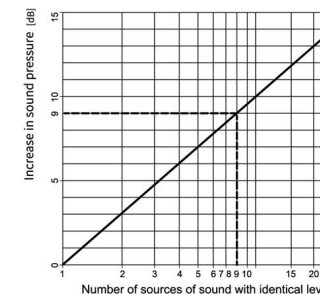
Measurement area  $S = 6d^2 + 7d(H + 1.5d)$



## Combined level of multiple same-level sound sources

Adding 2 noise sources with the same level results in a level increase of approx. 3 dB. The noise characteristics of multiple identical fans can be determined in advance based on the noise values specified in the data sheet. This is shown in the diagram opposite.

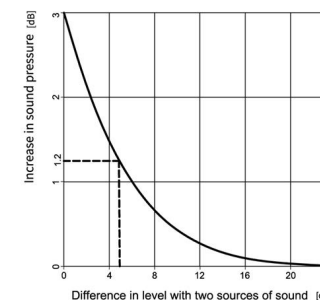
**Example:** 8 PCS PG3N400B2E-MZ0 axial fans are on a condenser. According to the data sheet, the sound pressure level of a fan is approximately 68 dB(A). The level increase measured from the diagram is 9 dB. Thus the overall sound level of the installation can be expected to be 77 dB(A).



## Combined level of two different-level sound sources

The acoustic performance of two different fans can be predetermined based on the sound levels given in the data sheet. This is shown in the diagram opposite.

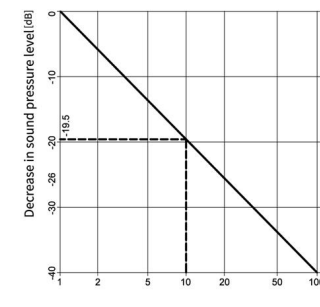
**Example:** There is an axial fan PG3N400B2E-MZ0 with a sound pressure level of 68 dB(A) at the operating point and an axial fan PG3N400B2E-ZW5 with 73 dB(A) in a ventilation unit. The level difference is 5 dB. The level increase can now be read in the diagram as approx. 1.2 dB. This means that the overall sound level of the unit can be expected to be 74.2 dB(A).



## Distance laws

Sound power level is independent from distance to the sound source. In contrast to this, sound pressure level decreases the further away the noise source is. The adjacent diagram shows the decrease in level under far sound field conditions. Far sound field conditions apply whenever the distance between microphone and fan is big when compared to fan diameter and wavelength to be considered. For more information on far sound field, please consult the relevant literature on this complex topic. Per doubling of distance, the level in the far sound field decreases by 6 dB. In the near field of the fan, other correlations apply and the decrease in levels can be considerably smaller. The following example only applies to far sound field conditions and can vary strongly depending on the installation effects.

**Example:** An axial fan PG3N400B2E-MZ0, a sound pressure level of 68 dB(A) was measured at a distance of 1 m. According to the adjacent diagram, at a distance of 10 m we would get a reduction by 19.5 dB, i.e. a sound pressure level of 48.5 dB(A).



# How to Choose Fans Correctly

All need to use is the electrical machinery and electronic products project engineer which the ventilator radiates, a specific system that radiates the needed amount of air flow is a must, the amount of air flow is decided by the understanding system power consumption and the ability of carrying off the enough quantity of heat. Try to prevent the system superheat situation. The fact demonstrated that the system service life can be reduced as a result of the cooling system insufficiency, therefore project engineer also should understand system sales volume and price, possibly because the system service life symbol user did not anticipate drops. If you'd like to choose the correct well ventilated module, the following goals need to be considered:

- Best air transport efficiency
- Smallest suitable size
- Lowest noise
- Smallest power consumption
- Biggest margin of safety and service life
- Reasonable total cost

So following three steps to correctly choose radiation fan or the drum ventilator, help you achieve the above goals:

Total cooling demand, first must understand three key aspects by obtaining the cooling demand the quantity of heat that must be transformed(temperature DT). Counterbalance transformation quantity of heat wattage(W). The detachment quantity of heat needs amount of wind(CFM).

The total cooling demand regarding of system operating effectively is really important. The effective system operation must provide the Ideal operation condition, enables in all systems the module to display the biggest function and the longest service life.

The following available ways are generally used when choosing the ventilator motor:

- Figures out quantity of heat which the equipment interior produces
- Decided the equipment interior can permit temperature rise scope
- Amount of air flow needs which from the equation computation
- If the known system equipment interior heat dissipating capacity and the permission total temperature rise quantity, may obtain the amount of wind which is for the cooling equipment needs.

Following into basic hot transformation equation:

$$H = C_p \times W \times \Delta T$$

in which: H = Hot transformation quantity

$C_p$  = Air specific heat

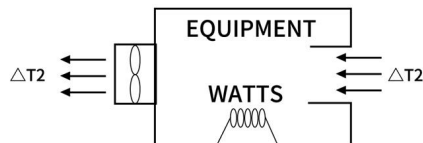
$\Delta T$  = In the equipment rises temperature

W = Air flow weight

We know ( $W = CFM \times D$ ) in which D = is mad the density after the substitution, We obtain,Conversion factors

With the substitution sea level air specific heat and the density, may obtain following radiation equation:

$$CFM = 3160 \times KW / \Delta T$$



Eg(a): The equipment Internal consumption electric power is 500W, the temperature difference is 20 degrees Fahrenheit, please see the computed result below:

$$Q = \frac{3.16 \times 500(W)}{20} = 79CFM \quad \text{or} \quad Q = \frac{0.09 \times 500(W)}{20} = 2.25m^3/Min$$

(b) The equipment internal consumption electric power is 500W, the temperature difference is 10 degrees centigrade:

$$Q = \frac{1.76 \times 500(W)}{20} = 88CFM \quad \text{or} \quad Q = \frac{0.05 \times 500(W)}{20} = 2.5m^3/Min$$

Amount of Wind Conversion Table

CMS	CMM	L/s	L/min	CMH	CFS	CFM
m <sup>3</sup> /s	m <sup>3</sup> /min	L/s	L/min	m <sup>3</sup> /h	ft <sup>3</sup> /s	ft <sup>3</sup> /min
1	60	1x10 <sup>3</sup>	6x10 <sup>4</sup>	3.6x10 <sup>3</sup>	35.30	2.118x10 <sup>3</sup>
0.0167	1	460	1x10 <sup>3</sup>	60	0.5885	35.30
0.001	0.06	1	60	3.60	0.0353	2.12
1.67x10 <sup>-5</sup>	0.001	0.0167	1	0.06	5.88x10 <sup>-4</sup>	0.0353
2.77x10 <sup>-4</sup>	0.0167	0.277	16.7	1	9.81x10 <sup>-3</sup>	0.5885
0.0283	1.698	460	1.69x10 <sup>3</sup>	101.9	1	60
4.7x10 <sup>-4</sup>	0.0283	0.47	28.3	1.698	0.0167	1

Static pressure conversion table

Pa	Bar	Torr	kgf/cm <sup>2</sup>	mmH <sub>2</sub> O	inHg	psi
N/m <sup>2</sup>	Bar	mmHg	kgf/cm <sup>2</sup>	mmH <sub>2</sub> O	inHg	lb/in <sup>2</sup>
1	1x10 <sup>-5</sup>	7.501x10 <sup>-3</sup>	1.02x10 <sup>-5</sup>	0.1021	2.953x10 <sup>-4</sup>	1.45x10 <sup>-4</sup>
1x10 <sup>5</sup>	1	750.10	1.02	1.02x10 <sup>4</sup>	29.53	14.50
133.30	1.33x10 <sup>-3</sup>	1	1.359x10 <sup>-3</sup>	13.61	0.03937	0.01934
9.807x10 <sup>4</sup>	0.9807	735.5	1	1.001x10 <sup>4</sup>	28.96	14.22
9.807	9.807x10 <sup>-5</sup>	0.07348	9.96x10 <sup>-5</sup>	1	2.89x10 <sup>-3</sup>	1.42x10 <sup>-3</sup>
3.386x10 <sup>3</sup>	0.03386	25.4	0.03453	345.6	1	0.4912
6.895x10 <sup>3</sup>	1.013	760	1.033	1.034x10 <sup>4</sup>	29.92	14.7

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## Fan Selection Guide



In order to provide you with more considerate fan selection and technical solution services, please provide your demand information in the following table as much as possible:

Note: The Red * marked is required.		Date	
Project Name		* Client Name	
* Applied to Which Products or Industries		Special Working Conditions to be Reminded	
Fan Mounting Space Size (LxWxH)	mm	Motor Type	
* Blade Type and Materials		* Impeller Size (LxWxH)	mm

Is it possible to provide 《Fan Technical Requirements List 》 or replaced fan specification or replaced fan brand & model number?

Fan's Key Technical Requirements	Key Parameters	P/Q	Replaced Fan Brand	Replaced Fan Model Number	Photo of Replaced Fan Name Plate

### Key Technical Parameter Information For Fan Selection

* Rated Voltage (V)		Max. Current (A)	Frequency (HZ)	
Rated Power(W)		Motor Output Power (W)	Bearing Type	
* Max. Airflow (M³/H)		* Max. Air Pressure (Pa)	* Speed (RPM)	
Operation Point's Air Flow & Air Pressure		Max. Operating Temperature (°C)	Rotation or Air Flow Direction	
* Expected Sound Level (dBA)		Water and Dust Protection Class (IPXX)	Isulation Class	
Motor Operating Protections		Speed Control Type	Certificates	
Operating Voltage Range (V)		Wire Length and Connector Requirements	Wiring Mode	
Fan Efficiency (η)		Motor Efficiency (η)	Fan Operation Control	

### Key Commercial Requirements

Total Quantity Demand		Quantity and Date for the First Order	
Quantity of Sample		Sample Demand Time	
Packing Demand		Type of Shipping	
* Recipient's Name and Mobile Number		* Detail Receiving Address	

Client's Other Requirements:

Such as: non-standard fan size (mm), special installation requirements, special working and operating environment, etc