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PBM MOTOR AND FAN(SUZHOU) CO.,LTD



Axial Fan



Backward & Forward Curved Centrifugal Fan



Blower

CONTENTS

IP44 Type

| | |
|-------------------|---------|
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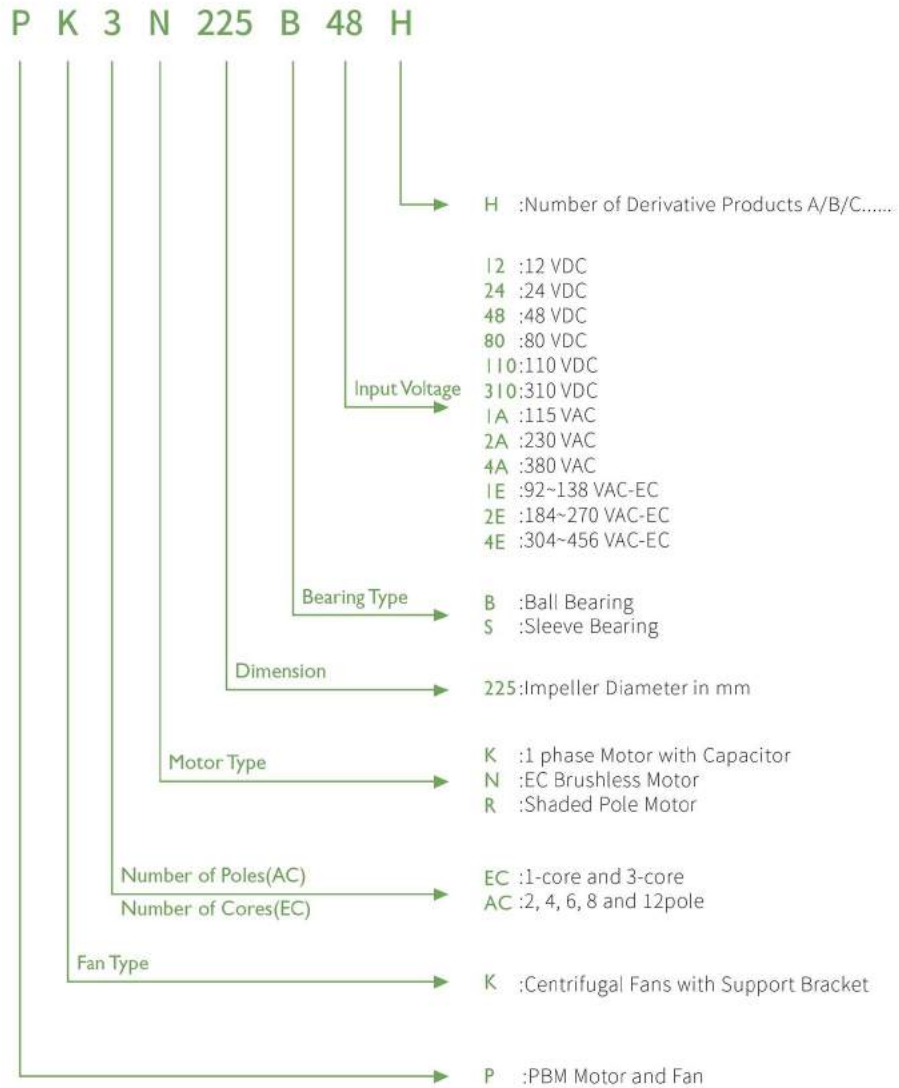
IP55 Type

| | |
|-------------------|---------|
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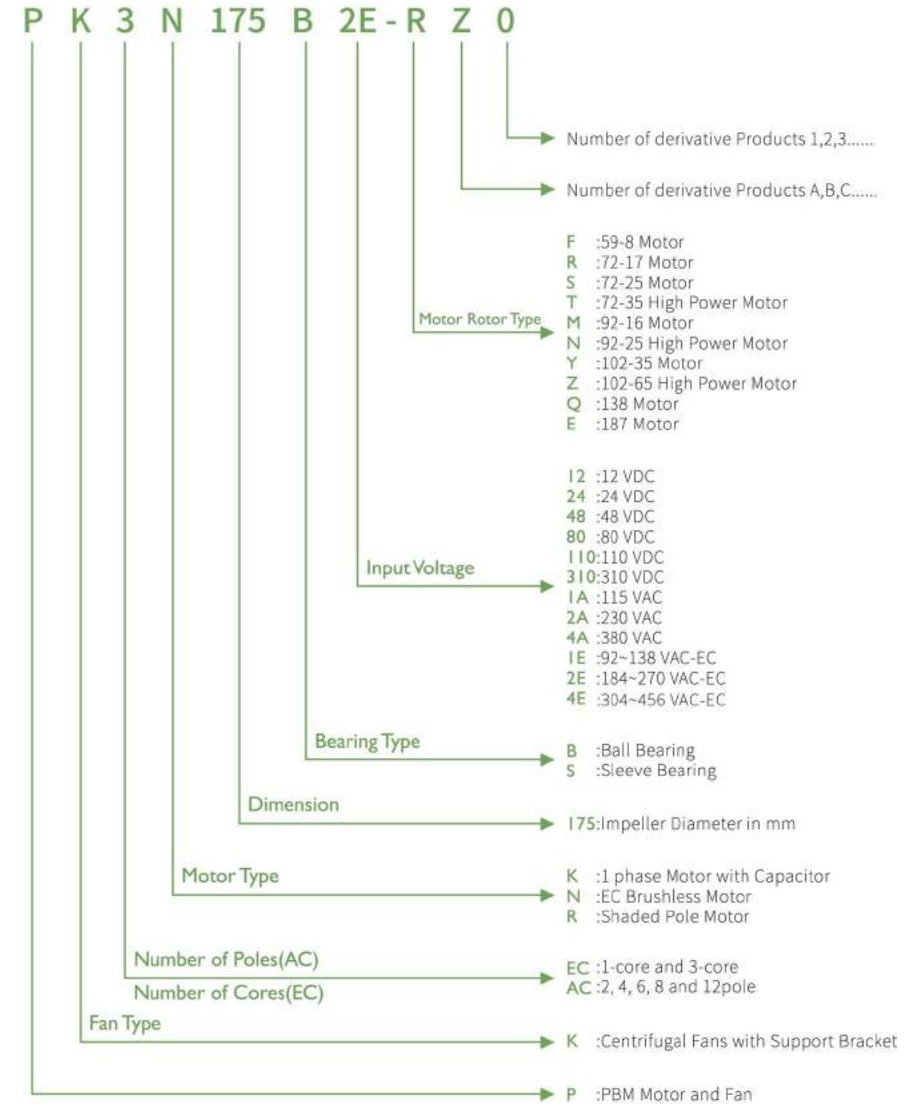
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IP44 Part Number System



IP55 Part Number System



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.



IP55 Type

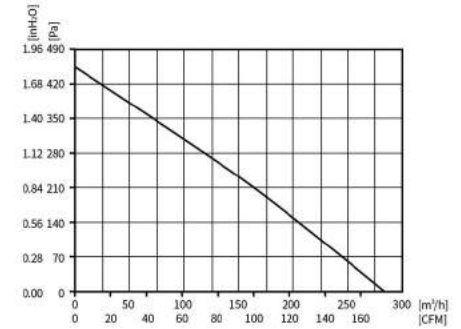
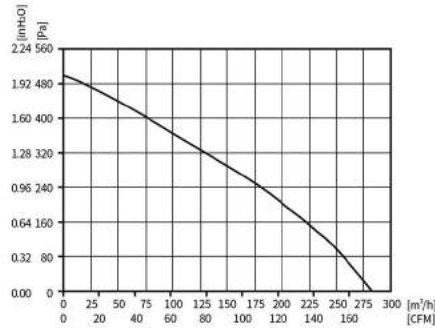


EC Fan with Support Bracket 165x165x75.8mm

EC Fan with Support Bracket 165x165x75.8mm

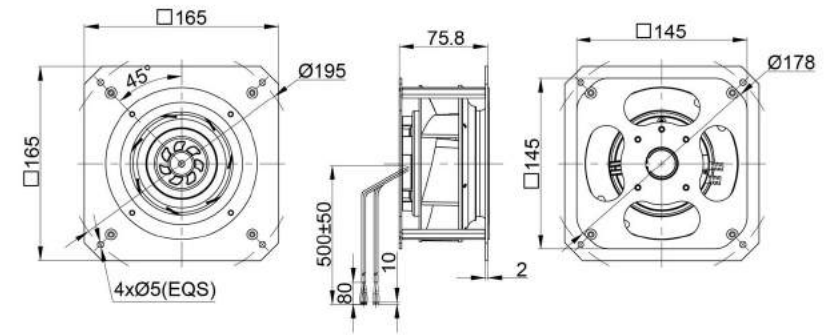
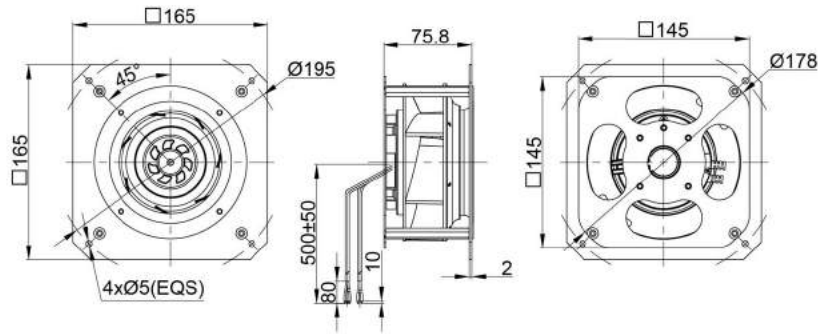
EC-AC-Series

EC-AC-Series



| | | | | | | |
|--|-------------------------------|--------------------------|------------------------|---------------------------------------|------------------|--------------------|
| Motor Type: EC BRUSHLESS EXTERNAL ROTOR MOTOR | Speed Control: 0-10VDC/PWM | Protection Type: IP55 | Insulation Class: B | Operating Temperature: -25°C~+60°C | Weight: 2.6KG | Wiring Mode: E1 |
|--|-------------------------------|--------------------------|------------------------|---------------------------------------|------------------|--------------------|

| | | | | | | |
|--|-------------------------------|--------------------------|------------------------|---------------------------------------|------------------|--------------------|
| Motor Type: EC BRUSHLESS EXTERNAL ROTOR MOTOR | Speed Control: 0-10VDC/PWM | Protection Type: IP55 | Insulation Class: B | Operating Temperature: -25°C~+60°C | Weight: 2.6KG | Wiring Mode: E1 |
|--|-------------------------------|--------------------------|------------------------|---------------------------------------|------------------|--------------------|



| Model | Motor | Bearing System | Rated Voltage | Frequency | Rated Current | Rated Power | Rated Speed | Air Flow | Air Pressure | Sound Level |
|----------------|--------|----------------|---------------|-----------|---------------|-------------|-------------|----------|--------------|-------------|
| Part No. | Type | B/S | VAC | Hz | A | W | RPM | M³/H | Pa | dB(A) |
| PK3N133B2E-FZ5 | BE59EC | BALL | 230 | 50/60 | 0.25 | 34 | 4450 | 280 | 500 | 65 |

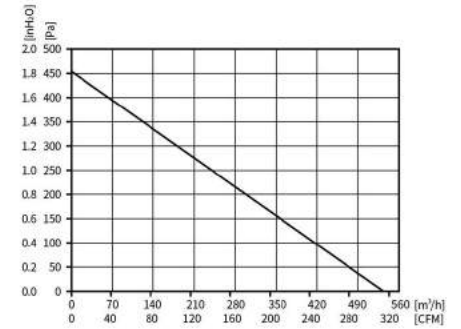
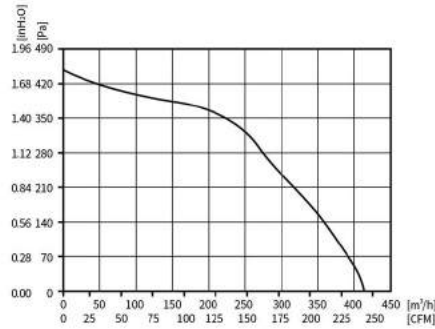
| Model | Motor | Bearing System | Rated Voltage | Frequency | Rated Current | Rated Power | Rated Speed | Air Flow | Air Pressure | Sound Level |
|----------------|--------|----------------|---------------|-----------|---------------|-------------|-------------|----------|--------------|-------------|
| Part No. | Type | B/S | VAC | Hz | A | W | RPM | M³/H | Pa | dB(A) |
| PK3N133B2E-FZ0 | BE59EC | BALL | 230 | 50/60 | 0.2 | 30 | 4250 | 281 | 459 | 64 |

EC Fan with Support Bracket 165x165x122.8mm

EC Fan with Support Bracket 226x226x81.6mm

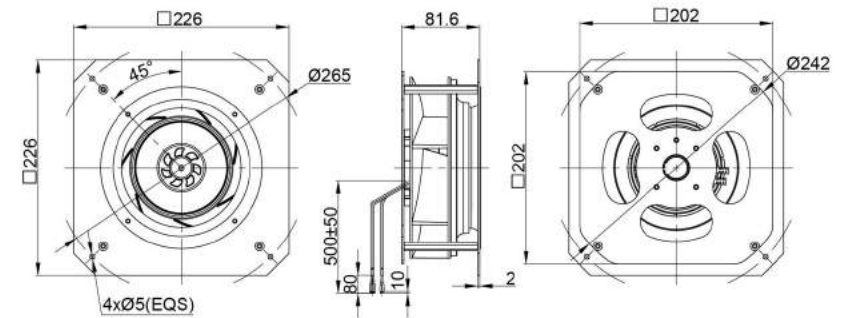
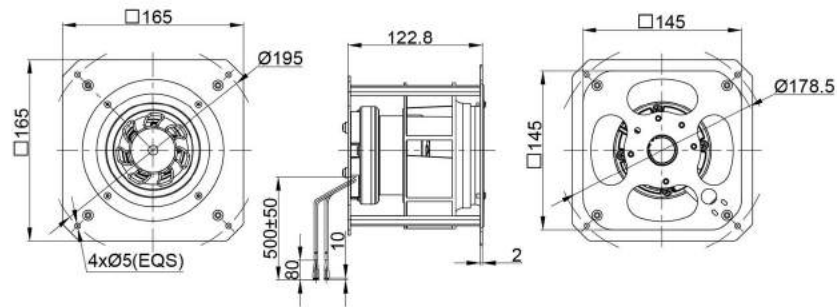
EC-AC-Series

EC-AC-Series



| | | | | | | |
|--|-------------------------------|--------------------------|------------------------|---------------------------------------|-------------------|--------------------|
| Motor Type: EC BRUSHLESS EXTERNAL ROTOR MOTOR | Speed Control: 0-10VDC/PWM | Protection Type: IP55 | Insulation Class: B | Operating Temperature: -25°C~+60°C | Weight: 2.65KG | Wiring Mode: E1 |
|--|-------------------------------|--------------------------|------------------------|---------------------------------------|-------------------|--------------------|

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|--|-------------------------------|--------------------------|------------------------|---------------------------------------|-------------------|--------------------|
| Motor Type: EC BRUSHLESS EXTERNAL ROTOR MOTOR | Speed Control: 0-10VDC/PWM | Protection Type: IP55 | Insulation Class: B | Operating Temperature: -25°C~+60°C | Weight: 2.75KG | Wiring Mode: E1 |
|--|-------------------------------|--------------------------|------------------------|---------------------------------------|-------------------|--------------------|



| Model | Motor | Bearing System | Rated Voltage | Frequency | Rated Current | Rated Power | Rated Speed | Air Flow | Air Pressure | Sound Level |
|----------------|--------|----------------|---------------|-----------|---------------|-------------|-------------|-------------------|--------------|-------------|
| Part No. | Type | B/S | VAC | Hz | A | W | RPM | M ³ /H | Pa | dB(A) |
| PK3N133B2E-RB2 | BE72EC | BALL | 230 | 50/60 | 0.3 | 43 | 4400 | 415 | 450 | 70 |

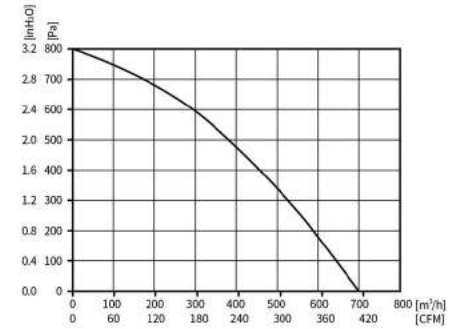
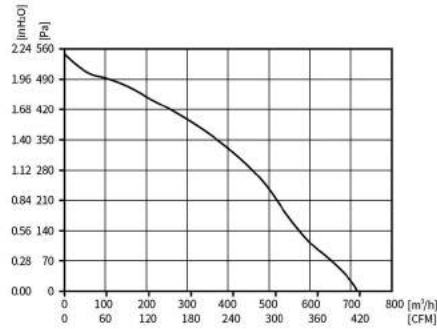
| Model | Motor | Bearing System | Rated Voltage | Frequency | Rated Current | Rated Power | Rated Speed | Air Flow | Air Pressure | Sound Level |
|----------------|--------|----------------|---------------|-----------|---------------|-------------|-------------|-------------------|--------------|-------------|
| Part No. | Type | B/S | VAC | Hz | A | W | RPM | M ³ /H | Pa | dB(A) |
| PK3N175B2E-FZ5 | BE59EC | BALL | 230 | 50/60 | 0.3 | 40 | 3200 | 535 | 451 | 65 |

EC Fan with Support Bracket 226x226x81.6mm

EC Fan with Support Bracket 226x226x81.6mm

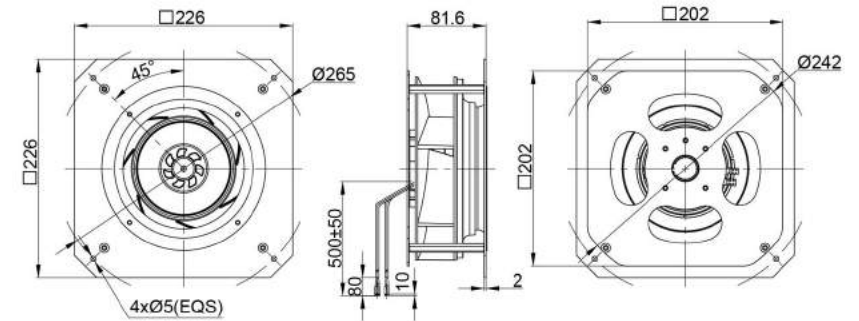
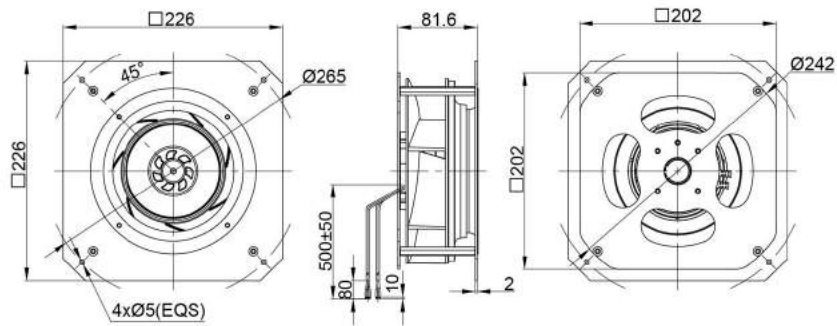
EC-AC-Series

EC-AC-Series



| | | | | | | |
|--|-------------------------------|--------------------------|------------------------|---------------------------------------|------------------|--------------------|
| Motor Type: EC BRUSHLESS EXTERNAL ROTOR MOTOR | Speed Control: 0-10VDC/PWM | Protection Type: IP55 | Insulation Class: B | Operating Temperature: -25°C~+60°C | Weight: 3.3KG | Wiring Mode: E1 |
|--|-------------------------------|--------------------------|------------------------|---------------------------------------|------------------|--------------------|

| | | | | | | |
|--|-------------------------------|--------------------------|------------------------|---------------------------------------|------------------|--------------------|
| Motor Type: EC BRUSHLESS EXTERNAL ROTOR MOTOR | Speed Control: 0-10VDC/PWM | Protection Type: IP55 | Insulation Class: B | Operating Temperature: -25°C~+60°C | Weight: 3.5KG | Wiring Mode: E1 |
|--|-------------------------------|--------------------------|------------------------|---------------------------------------|------------------|--------------------|



| Model | Motor | Bearing System | Rated Voltage | Frequency | Rated Current | Rated Power | Rated Speed | Air Flow | Air Pressure | Sound Level |
|----------------|--------|----------------|---------------|-----------|---------------|-------------|-------------|----------|--------------|-------------|
| Part No. | Type | B/S | VAC | Hz | A | W | RPM | M³/H | Pa | dB(A) |
| PK3N175B2E-RZO | BE72EC | BALL | 230 | 50/60 | 0.6 | 72 | 4050 | 710 | 550 | 72 |

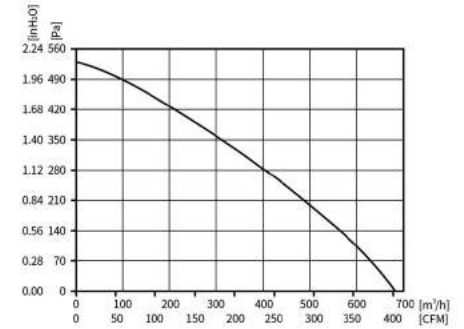
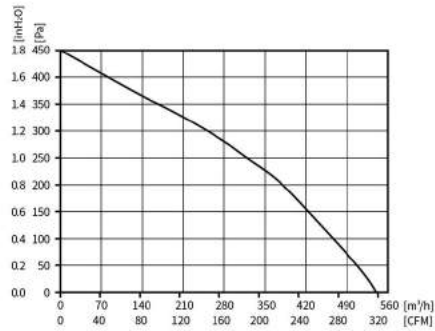
| Model | Motor | Bearing System | Rated Voltage | Frequency | Rated Current | Rated Power | Rated Speed | Air Flow | Air Pressure | Sound Level |
|----------------|--------|----------------|---------------|-----------|---------------|-------------|-------------|----------|--------------|-------------|
| Part No. | Type | B/S | VAC | Hz | A | W | RPM | M³/H | Pa | dB(A) |
| PK3N175B2E-SZO | BE72EC | BALL | 230 | 50/60 | 0.75 | 110 | 4600 | 700 | 800 | 74 |

EC Fan with Support Bracket 226x226x81.6mm

EC Fan with Support Bracket 226x226x81.6mm

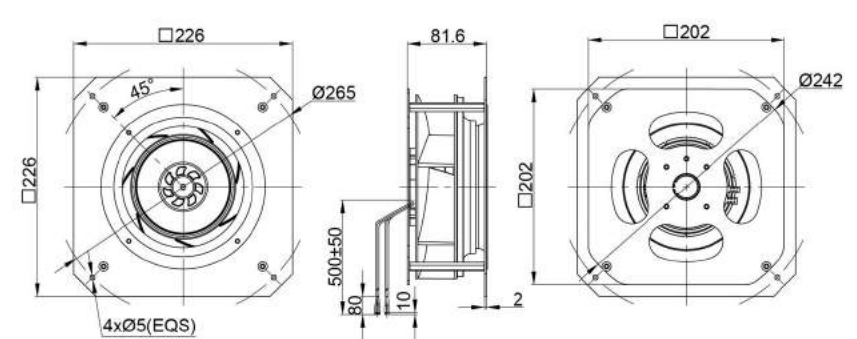
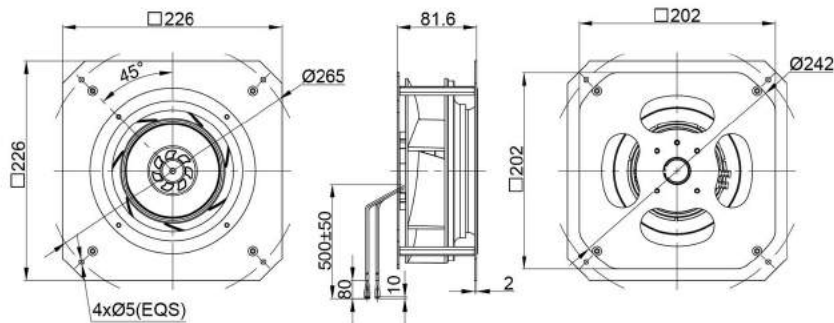
EC-AC-Series

EC-AC-Series



| | | | | | | |
|---|------------------------------|-------------------------|-----------------------|--------------------------------------|------------------|-------------------|
| Motor Type EC BRUSHLESS EXTERNAL ROTOR MOTOR | Speed Control 0-10VDC/PWM | Protection Type IP55 | Insulation Class B | Operating Temperature -25°C~+60°C | Weight 3.35KG | Wiring Mode E1 |
|---|------------------------------|-------------------------|-----------------------|--------------------------------------|------------------|-------------------|

| | | | | | | |
|---|------------------------------|-------------------------|-----------------------|--------------------------------------|------------------|-------------------|
| Motor Type EC BRUSHLESS EXTERNAL ROTOR MOTOR | Speed Control 0-10VDC/PWM | Protection Type IP55 | Insulation Class B | Operating Temperature -25°C~+60°C | Weight 3.35KG | Wiring Mode E1 |
|---|------------------------------|-------------------------|-----------------------|--------------------------------------|------------------|-------------------|



| Model | Motor | Bearing System | Rated Voltage | Frequency | Rated Current | Rated Power | Rated Speed | Air Flow | Air Pressure | Sound Level |
|----------------|--------|----------------|---------------|-----------|---------------|-------------|-------------|----------|--------------|-------------|
| Part No. | Type | B/S | VAC | Hz | A | W | RPM | M³/H | Pa | dB(A) |
| PK3N190B2E-R20 | BE72EC | BALL | 230 | 50/60 | 0.4 | 52 | 2940 | 540 | 450 | 65 |

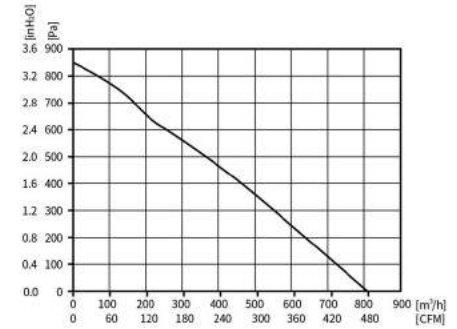
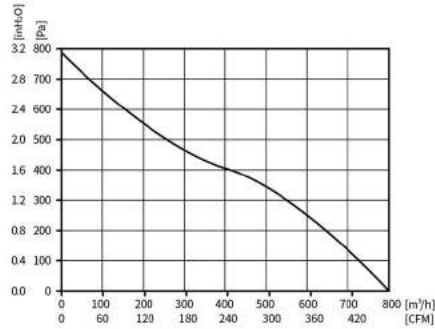
| Model | Motor | Bearing System | Rated Voltage | Frequency | Rated Current | Rated Power | Rated Speed | Air Flow | Air Pressure | Sound Level |
|----------------|--------|----------------|---------------|-----------|---------------|-------------|-------------|----------|--------------|-------------|
| Part No. | Type | B/S | VAC | Hz | A | W | RPM | M³/H | Pa | dB(A) |
| PK3N190B2E-RZ1 | BE72EC | BALL | 230 | 50/60 | 0.6 | 70 | 3300 | 685 | 530 | 68 |

EC Fan with Support Bracket 226x226x81.6mm

EC Fan with Support Bracket 226x226x81.6mm

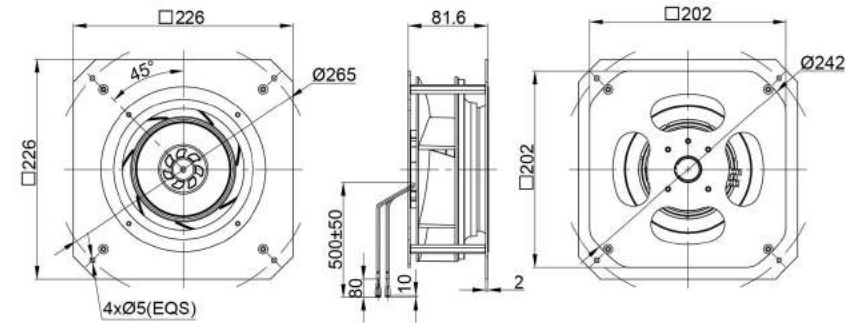
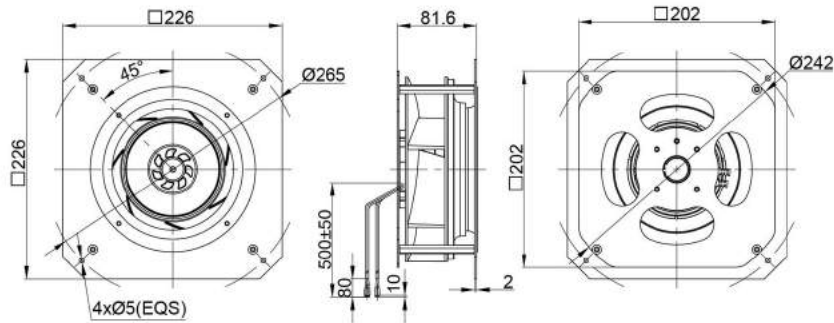
EC-AC-Series

EC-AC-Series



| | | | | | | |
|--|-------------------------------|--------------------------|------------------------|---------------------------------------|-------------------|--------------------|
| Motor Type: EC BRUSHLESS EXTERNAL ROTOR MOTOR | Speed Control: 0-10VDC/PWM | Protection Type: IP55 | Insulation Class: B | Operating Temperature: -25°C~+60°C | Weight: 3.35KG | Wiring Mode: E1 |
|--|-------------------------------|--------------------------|------------------------|---------------------------------------|-------------------|--------------------|

| | | | | | | |
|--|-------------------------------|--------------------------|------------------------|---------------------------------------|-------------------|--------------------|
| Motor Type: EC BRUSHLESS EXTERNAL ROTOR MOTOR | Speed Control: 0-10VDC/PWM | Protection Type: IP55 | Insulation Class: B | Operating Temperature: -25°C~+60°C | Weight: 3.45KG | Wiring Mode: E1 |
|--|-------------------------------|--------------------------|------------------------|---------------------------------------|-------------------|--------------------|



| Model | Motor | Bearing System | Rated Voltage | Frequency | Rated Current | Rated Power | Rated Speed | Air Flow | Air Pressure | Sound Level |
|----------------|--------|----------------|---------------|-----------|---------------|-------------|-------------|-------------------|--------------|-------------|
| Part No. | Type | B/S | VAC | Hz | A | W | RPM | M ³ /H | Pa | dB(A) |
| PK3N190B2E-RZ2 | BE72EC | BALL | 230 | 50/60 | 0.9 | 110 | 3700 | 800 | 790 | 70 |

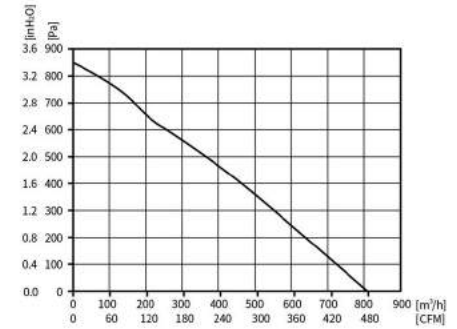
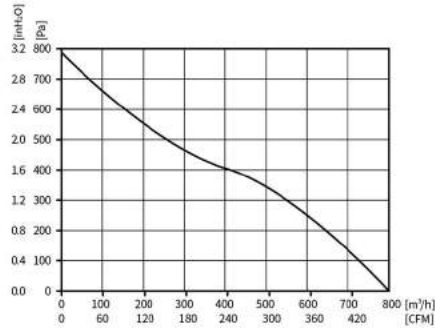
| Model | Motor | Bearing System | Rated Voltage | Frequency | Rated Current | Rated Power | Rated Speed | Air Flow | Air Pressure | Sound Level |
|----------------|--------|----------------|---------------|-----------|---------------|-------------|-------------|-------------------|--------------|-------------|
| Part No. | Type | B/S | VAC | Hz | A | W | RPM | M ³ /H | Pa | dB(A) |
| PK3N190B2E-SZ0 | BE72EC | BALL | 230 | 50/60 | 0.8 | 110 | 3800 | 810 | 850 | 71 |

EC Fan with Support Bracket 226x226x81.6mm

EC Fan with Support Bracket 226x226x81.6mm

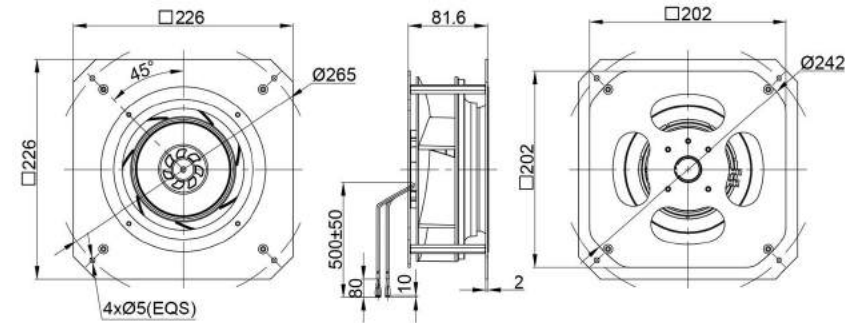
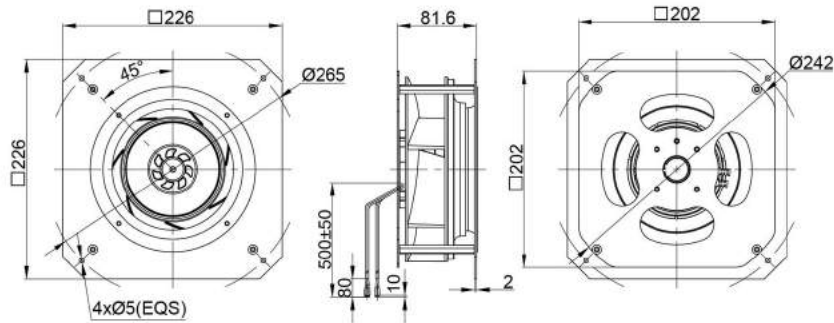
EC-AC-Series

EC-AC-Series



| | | | | | | |
|--|-------------------------------|--------------------------|------------------------|---------------------------------------|-------------------|--------------------|
| Motor Type: EC BRUSHLESS EXTERNAL ROTOR MOTOR | Speed Control: 0-10VDC/PWM | Protection Type: IP55 | Insulation Class: B | Operating Temperature: -25°C~+60°C | Weight: 3.35KG | Wiring Mode: E1 |
|--|-------------------------------|--------------------------|------------------------|---------------------------------------|-------------------|--------------------|

| | | | | | | |
|--|-------------------------------|--------------------------|------------------------|---------------------------------------|-------------------|--------------------|
| Motor Type: EC BRUSHLESS EXTERNAL ROTOR MOTOR | Speed Control: 0-10VDC/PWM | Protection Type: IP55 | Insulation Class: B | Operating Temperature: -25°C~+60°C | Weight: 3.45KG | Wiring Mode: E1 |
|--|-------------------------------|--------------------------|------------------------|---------------------------------------|-------------------|--------------------|



| Model | Motor | Bearing System | Rated Voltage | Frequency | Rated Current | Rated Power | Rated Speed | Air Flow | Air Pressure | Sound Level |
|----------------|--------|----------------|---------------|-----------|---------------|-------------|-------------|-------------------|--------------|-------------|
| Part No. | Type | B/S | VAC | Hz | A | W | RPM | M ³ /H | Pa | dB(A) |
| PK3N190B2E-RZ2 | BE72EC | BALL | 230 | 50/60 | 0.9 | 110 | 3700 | 800 | 790 | 70 |

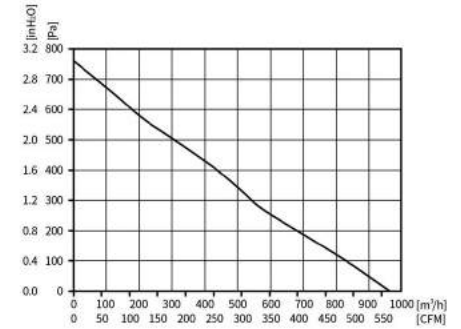
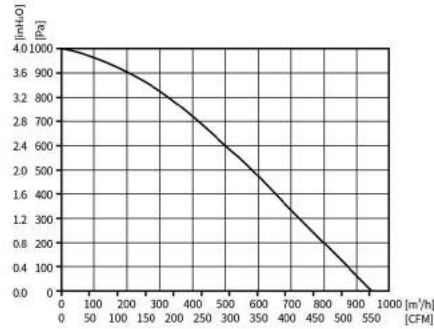
| Model | Motor | Bearing System | Rated Voltage | Frequency | Rated Current | Rated Power | Rated Speed | Air Flow | Air Pressure | Sound Level |
|----------------|--------|----------------|---------------|-----------|---------------|-------------|-------------|-------------------|--------------|-------------|
| Part No. | Type | B/S | VAC | Hz | A | W | RPM | M ³ /H | Pa | dB(A) |
| PK3N190B2E-SZ0 | BE72EC | BALL | 230 | 50/60 | 0.8 | 110 | 3800 | 810 | 850 | 71 |

EC Fan with Support Bracket 225x225x95.6mm

EC Fan with Support Bracket 270x270x89.8mm

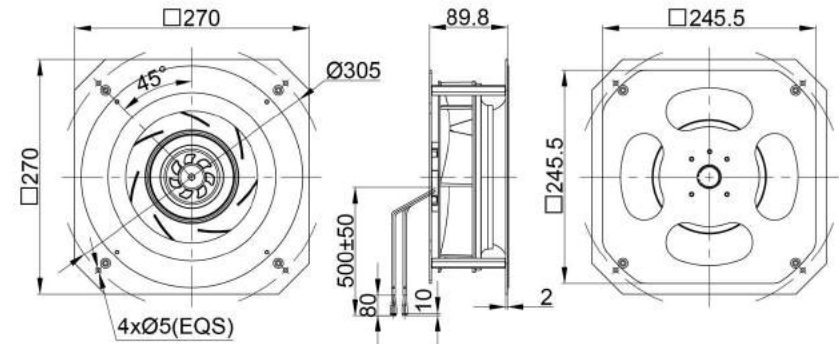
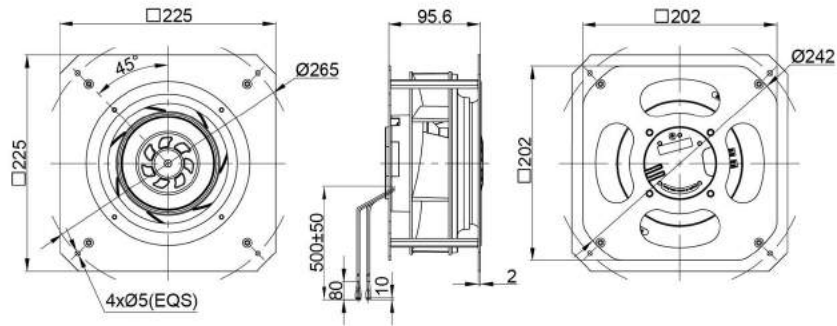
EC-AC-Series

EC-AC-Series



| | | | | | | |
|--|-------------------------------|--------------------------|------------------------|---------------------------------------|-------------------|--------------------|
| Motor Type: EC BRUSHLESS EXTERNAL ROTOR MOTOR | Speed Control: 0-10VDC/PWM | Protection Type: IP55 | Insulation Class: B | Operating Temperature: -25°C~+60°C | Weight: 3.85KG | Wiring Mode: E1 |
|--|-------------------------------|--------------------------|------------------------|---------------------------------------|-------------------|--------------------|

| | | | | | | |
|--|-------------------------------|--------------------------|------------------------|---------------------------------------|------------------|--------------------|
| Motor Type: EC BRUSHLESS EXTERNAL ROTOR MOTOR | Speed Control: 0-10VDC/PWM | Protection Type: IP55 | Insulation Class: B | Operating Temperature: -25°C~+60°C | Weight: 3.8KG | Wiring Mode: E1 |
|--|-------------------------------|--------------------------|------------------------|---------------------------------------|------------------|--------------------|



| Model | Motor | Bearing System | Rated Voltage | Frequency | Rated Current | Rated Power | Rated Speed | Air Flow | Air Pressure | Sound Level |
|----------------|--------|----------------|---------------|-----------|---------------|-------------|-------------|-------------------|--------------|-------------|
| Part No. | Type | B/S | VAC | Hz | A | W | RPM | M ³ /H | Pa | dB(A) |
| PK3N190B2E-T20 | BE72EC | BALL | 230 | 50/60 | 1.2 | 170 | 4550 | 945 | 1000 | 72 |

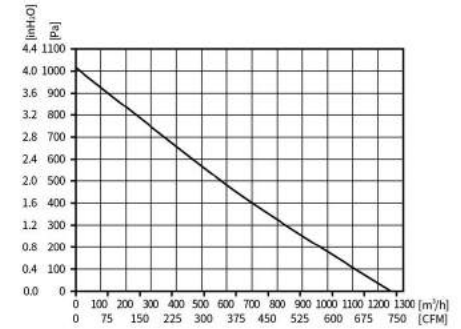
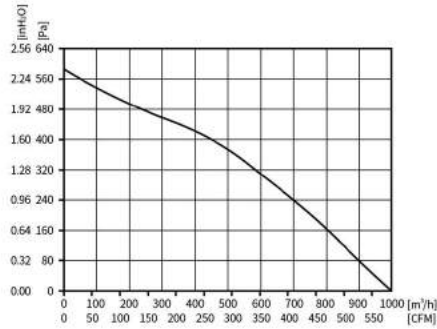
| Model | Motor | Bearing System | Rated Voltage | Frequency | Rated Current | Rated Power | Rated Speed | Air Flow | Air Pressure | Sound Level |
|----------------|--------|----------------|---------------|-----------|---------------|-------------|-------------|-------------------|--------------|-------------|
| Part No. | Type | B/S | VAC | Hz | A | W | RPM | M ³ /H | Pa | dB(A) |
| PK3N220B2E-R20 | BE72EC | BALL | 230 | 50/60 | 0.65 | 85 | 2670 | 960 | 760 | 68 |

EC Fan with Support Bracket 270x270x89.8mm

EC Fan with Support Bracket 270x270x103.3mm

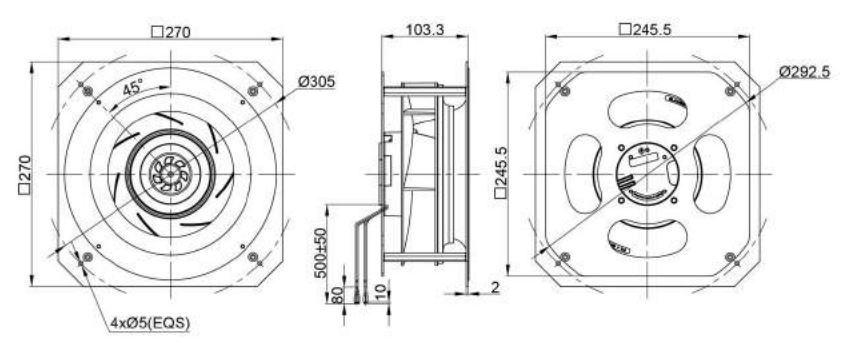
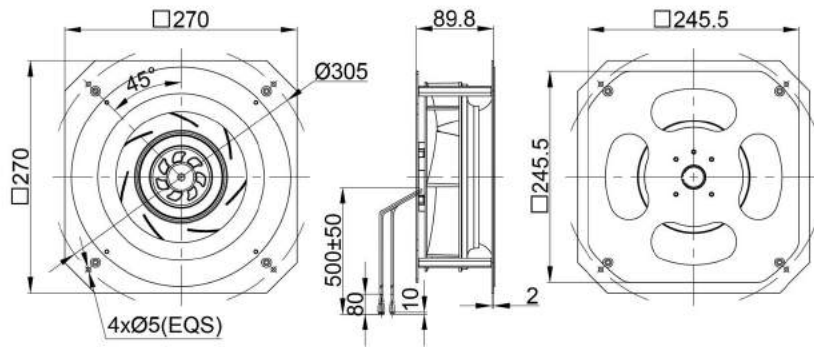
EC-AC-Series

EC-AC-Series



| | | | | | | |
|--|-------------------------------|--------------------------|------------------------|---------------------------------------|------------------|--------------------|
| Motor Type: EC BRUSHLESS EXTERNAL ROTOR MOTOR | Speed Control: 0-10VDC/PWM | Protection Type: IP55 | Insulation Class: B | Operating Temperature: -25°C~+60°C | Weight: 3.7KG | Wiring Mode: E1 |
|--|-------------------------------|--------------------------|------------------------|---------------------------------------|------------------|--------------------|

| | | | | | | |
|--|-------------------------------|--------------------------|------------------------|---------------------------------------|-------------------|--------------------|
| Motor Type: EC BRUSHLESS EXTERNAL ROTOR MOTOR | Speed Control: 0-10VDC/PWM | Protection Type: IP55 | Insulation Class: B | Operating Temperature: -25°C~+60°C | Weight: 4.45KG | Wiring Mode: E1 |
|--|-------------------------------|--------------------------|------------------------|---------------------------------------|-------------------|--------------------|



| Model | Motor | Bearing System | Rated Voltage | Frequency | Rated Current | Rated Power | Rated Speed | Air Flow | Air Pressure | Sound Level |
|----------------|--------|----------------|---------------|-----------|---------------|-------------|-------------|----------|--------------|-------------|
| Part No. | Type | B/S | VAC | Hz | A | W | RPM | M³/H | Pa | dB(A) |
| PK3N220B2E-S20 | BE72EC | BALL | 230 | 50/60 | 0.8 | 110 | 3100 | 1000 | 580 | 69 |

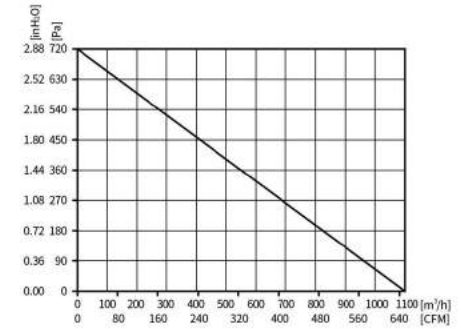
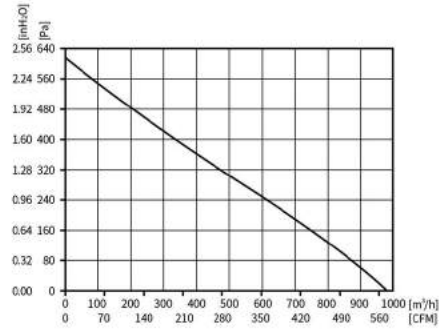
| Model | Motor | Bearing System | Rated Voltage | Frequency | Rated Current | Rated Power | Rated Speed | Air Flow | Air Pressure | Sound Level |
|----------------|--------|----------------|---------------|-----------|---------------|-------------|-------------|----------|--------------|-------------|
| Part No. | Type | B/S | VAC | Hz | A | W | RPM | M³/H | Pa | dB(A) |
| PK3N220B2E-T20 | BE72EC | BALL | 230 | 50/60 | 1.2 | 170 | 3500 | 1255 | 1010 | 70 |

EC Fan with Support Bracket 270x270x115.3mm

EC Fan with Support Bracket 270x270x115.3mm

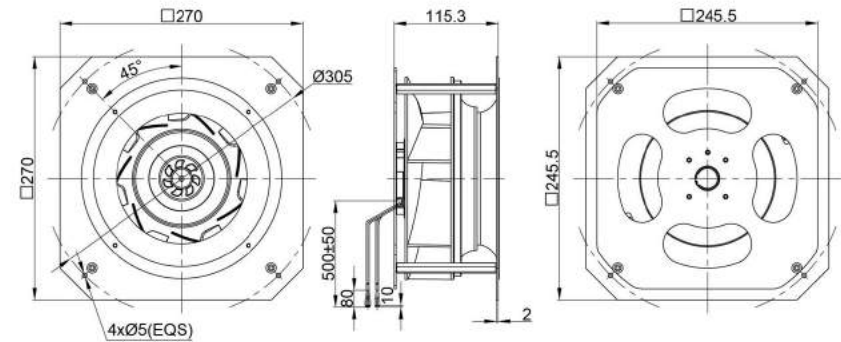
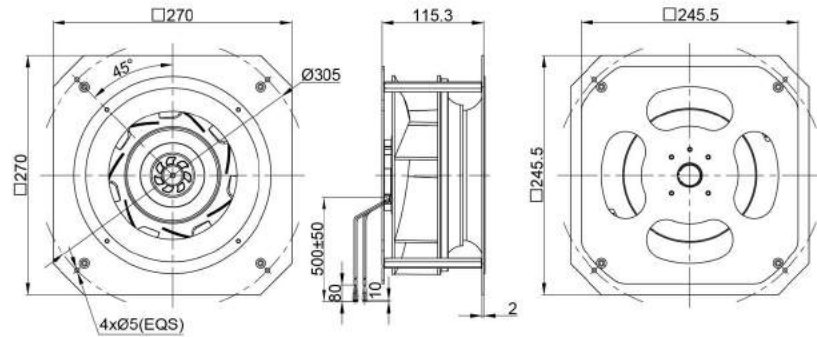
EC-AC-Series

EC-AC-Series



| | | | | | | |
|--|-------------------------------|--------------------------|------------------------|---------------------------------------|-------------------|--------------------|
| Motor Type: EC BRUSHLESS EXTERNAL ROTOR MOTOR | Speed Control: 0-10VDC/PWM | Protection Type: IP55 | Insulation Class: B | Operating Temperature: -25°C~+60°C | Weight: 3.52KG | Wiring Mode: E1 |
|--|-------------------------------|--------------------------|------------------------|---------------------------------------|-------------------|--------------------|

| | | | | | | |
|--|-------------------------------|--------------------------|------------------------|---------------------------------------|-------------------|--------------------|
| Motor Type: EC BRUSHLESS EXTERNAL ROTOR MOTOR | Speed Control: 0-10VDC/PWM | Protection Type: IP55 | Insulation Class: B | Operating Temperature: -25°C~+60°C | Weight: 3.52KG | Wiring Mode: E2 |
|--|-------------------------------|--------------------------|------------------------|---------------------------------------|-------------------|--------------------|



| Model | Motor | Bearing System | Rated Voltage | Frequency | Rated Current | Rated Power | Rated Speed | Air Flow | Air Pressure | Sound Level |
|----------------|--------|----------------|---------------|-----------|---------------|-------------|-------------|-------------------|--------------|-------------|
| Part No. | Type | B/S | VAC | Hz | A | W | RPM | M ³ /H | Pa | dB(A) |
| PK3N225B2E-RG0 | BE72EC | BALL | 230 | 50/60 | 0.6 | 85 | 2300 | 975 | 620 | 65 |

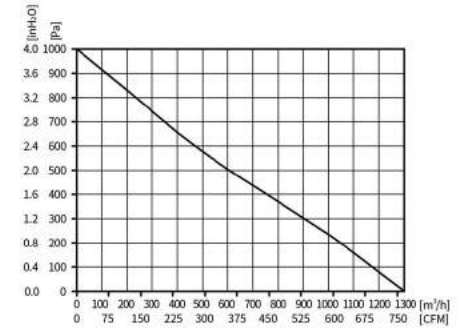
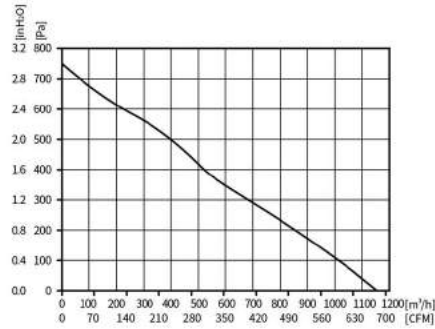
| Model | Motor | Bearing System | Rated Voltage | Frequency | Rated Current | Rated Power | Rated Speed | Air Flow | Air Pressure | Sound Level |
|----------------|--------|----------------|---------------|-----------|---------------|-------------|-------------|-------------------|--------------|-------------|
| Part No. | Type | B/S | VAC | Hz | A | W | RPM | M ³ /H | Pa | dB(A) |
| PK3N225B2E-RG1 | BE72EC | BALL | 230 | 50/60 | 0.75 | 100 | 2450 | 1100 | 720 | 66 |

EC Fan with Support Bracket 270x270x115.3mm

EC Fan with Support Bracket 270x270x119.8mm

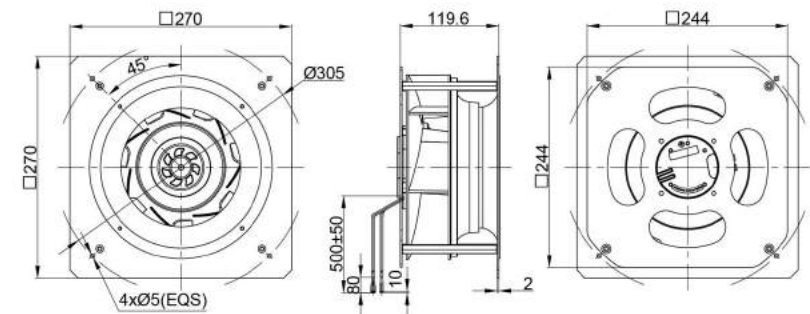
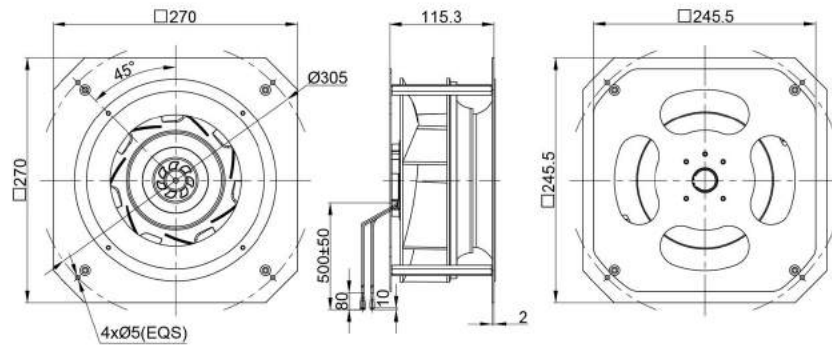
EC-AC-Series

EC-AC-Series



| | | | | | | |
|--|-------------------------------|--------------------------|------------------------|---------------------------------------|-------------------|--------------------|
| Motor Type: EC BRUSHLESS EXTERNAL ROTOR MOTOR | Speed Control: 0-10VDC/PWM | Protection Type: IP55 | Insulation Class: B | Operating Temperature: -25°C~+60°C | Weight: 3.65KG | Wiring Mode: E1 |
|--|-------------------------------|--------------------------|------------------------|---------------------------------------|-------------------|--------------------|

| | | | | | | |
|--|-------------------------------|--------------------------|------------------------|---------------------------------------|-------------------|--------------------|
| Motor Type: EC BRUSHLESS EXTERNAL ROTOR MOTOR | Speed Control: 0-10VDC/PWM | Protection Type: IP55 | Insulation Class: B | Operating Temperature: -25°C~+60°C | Weight: 4.47KG | Wiring Mode: E1 |
|--|-------------------------------|--------------------------|------------------------|---------------------------------------|-------------------|--------------------|



| Model | Motor | Bearing System | Rated Voltage | Frequency | Rated Current | Rated Power | Rated Speed | Air Flow | Air Pressure | Sound Level |
|----------------|--------|----------------|---------------|-----------|---------------|-------------|-------------|-------------------|--------------|-------------|
| Part No. | Type | B/S | VAC | Hz | A | W | RPM | M ³ /H | Pa | dB(A) |
| PK3N225B2E-SG0 | BE72EC | BALL | 230 | 50/60 | 0.8 | 110 | 2600 | 1150 | 750 | 68 |

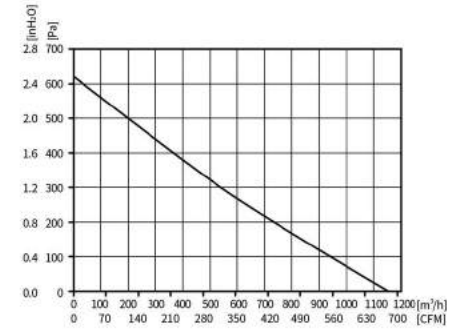
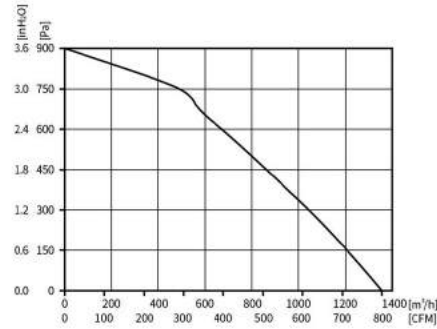
| Model | Motor | Bearing System | Rated Voltage | Frequency | Rated Current | Rated Power | Rated Speed | Air Flow | Air Pressure | Sound Level |
|----------------|--------|----------------|---------------|-----------|---------------|-------------|-------------|-------------------|--------------|-------------|
| Part No. | Type | B/S | VAC | Hz | A | W | RPM | M ³ /H | Pa | dB(A) |
| PK3N225B2E-TG0 | BE72EC | BALL | 230 | 50/60 | 1.2 | 170 | 3200 | 1300 | 1000 | 71 |

EC Fan with Support Bracket 270x270x119.6mm

EC Fan with Support Bracket 300x300x127.8mm

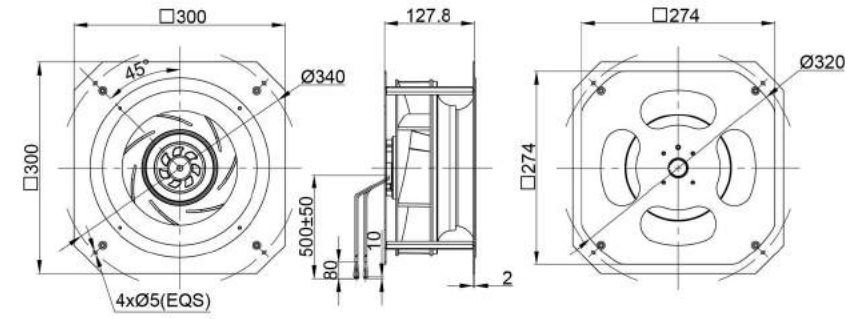
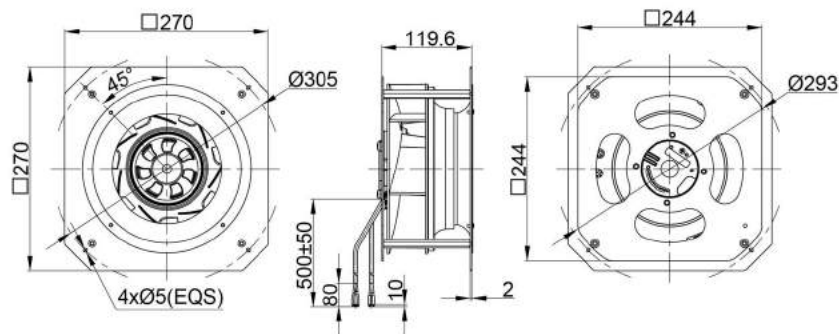
EC-AC-Series

EC-AC-Series



| | | | | | | |
|--|-------------------------------|--------------------------|------------------------|---------------------------------------|------------------|--------------------|
| Motor Type: EC BRUSHLESS EXTERNAL ROTOR MOTOR | Speed Control: 0-10VDC/PWM | Protection Type: IP55 | Insulation Class: B | Operating Temperature: -25°C~+60°C | Weight: 5.1KG | Wiring Mode: E2 |
|--|-------------------------------|--------------------------|------------------------|---------------------------------------|------------------|--------------------|

| | | | | | | |
|--|-------------------------------|--------------------------|------------------------|---------------------------------------|-------------------|--------------------|
| Motor Type: EC BRUSHLESS EXTERNAL ROTOR MOTOR | Speed Control: 0-10VDC/PWM | Protection Type: IP55 | Insulation Class: B | Operating Temperature: -25°C~+60°C | Weight: 3.72KG | Wiring Mode: E1 |
|--|-------------------------------|--------------------------|------------------------|---------------------------------------|-------------------|--------------------|



| Model | Motor | Bearing System | Rated Voltage | Frequency | Rated Current | Rated Power | Rated Speed | Air Flow | Air Pressure | Sound Level |
|----------------|--------|----------------|---------------|-----------|---------------|-------------|-------------|----------|--------------|-------------|
| Part No. | Type | B/S | VAC | Hz | A | W | RPM | M³/H | Pa | dB(A) |
| PK3N225B2E-MG0 | BE92EC | BALL | 230 | 50/60 | 1.6 | 220 | 3500 | 1350 | 900 | 72 |

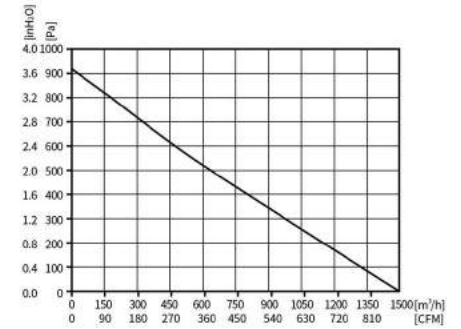
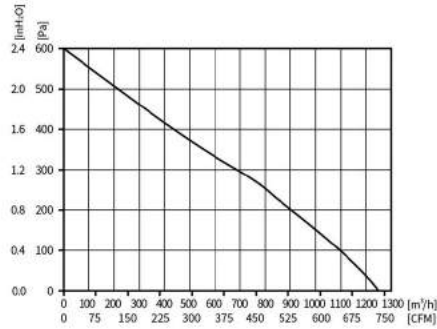
| Model | Motor | Bearing System | Rated Voltage | Frequency | Rated Current | Rated Power | Rated Speed | Air Flow | Air Pressure | Sound Level |
|----------------|--------|----------------|---------------|-----------|---------------|-------------|-------------|----------|--------------|-------------|
| Part No. | Type | B/S | VAC | Hz | A | W | RPM | M³/H | Pa | dB(A) |
| PK3N250B2E-RZ0 | BE72EC | BALL | 230 | 50/60 | 0.65 | 85 | 2100 | 1150 | 610 | 62 |

EC Fan with Support Bracket 300x300x127.8mm

EC Fan with Support Bracket 300x300x122.3mm

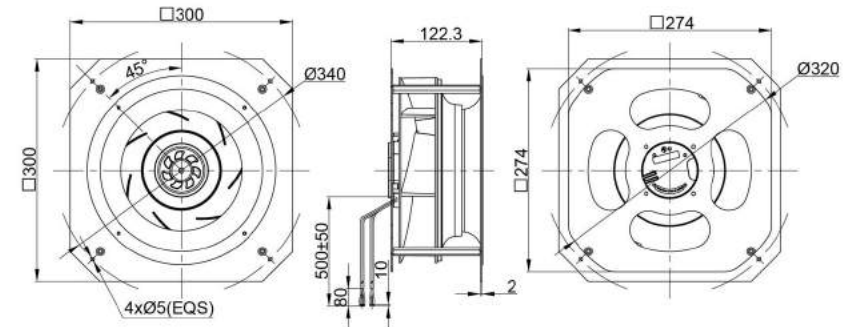
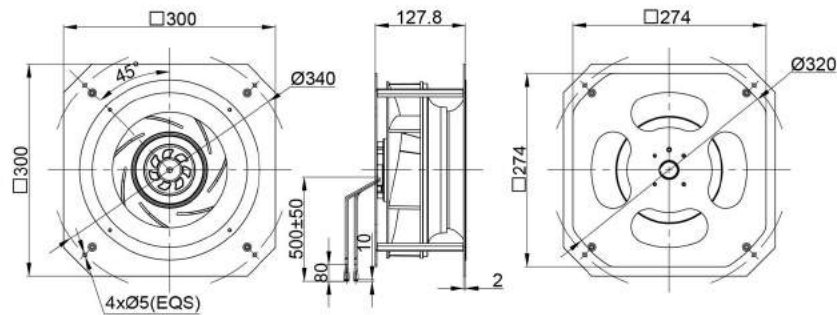
EC-AC-Series

EC-AC-Series



| | | | | | | |
|--|-------------------------------|--------------------------|------------------------|---------------------------------------|-------------------|--------------------|
| Motor Type: EC BRUSHLESS EXTERNAL ROTOR MOTOR | Speed Control: 0-10VDC/PWM | Protection Type: IP55 | Insulation Class: B | Operating Temperature: -25°C~+60°C | Weight: 3.82KG | Wiring Mode: E1 |
|--|-------------------------------|--------------------------|------------------------|---------------------------------------|-------------------|--------------------|

| | | | | | | |
|--|-------------------------------|--------------------------|------------------------|---------------------------------------|-------------------|--------------------|
| Motor Type: EC BRUSHLESS EXTERNAL ROTOR MOTOR | Speed Control: 0-10VDC/PWM | Protection Type: IP55 | Insulation Class: B | Operating Temperature: -25°C~+60°C | Weight: 4.42KG | Wiring Mode: E1 |
|--|-------------------------------|--------------------------|------------------------|---------------------------------------|-------------------|--------------------|



| Model | Motor | Bearing System | Rated Voltage | Frequency | Rated Current | Rated Power | Rated Speed | Air Flow | Air Pressure | Sound Level |
|----------------|--------|----------------|---------------|-----------|---------------|-------------|-------------|-------------------|--------------|-------------|
| Part No. | Type | B/S | VAC | Hz | A | W | RPM | M ³ /H | Pa | dB(A) |
| PK3N250B2E-SZ0 | BE72EC | BALL | 230 | 50/60 | 0.85 | 115 | 2350 | 1250 | 600 | 68 |

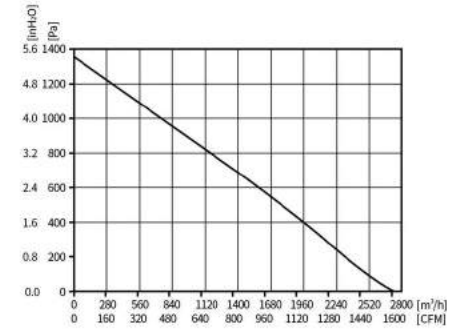
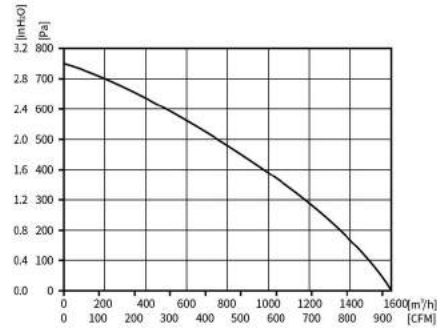
| Model | Motor | Bearing System | Rated Voltage | Frequency | Rated Current | Rated Power | Rated Speed | Air Flow | Air Pressure | Sound Level |
|----------------|--------|----------------|---------------|-----------|---------------|-------------|-------------|-------------------|--------------|-------------|
| Part No. | Type | B/S | VAC | Hz | A | W | RPM | M ³ /H | Pa | dB(A) |
| PK3N250B2E-TZ0 | BE72EC | BALL | 230 | 50/60 | 1.2 | 170 | 2750 | 1500 | 915 | 71 |

EC Fan with Support Bracket 300x300x133.3mm

EC Fan with Support Bracket 400x400x254.5mm

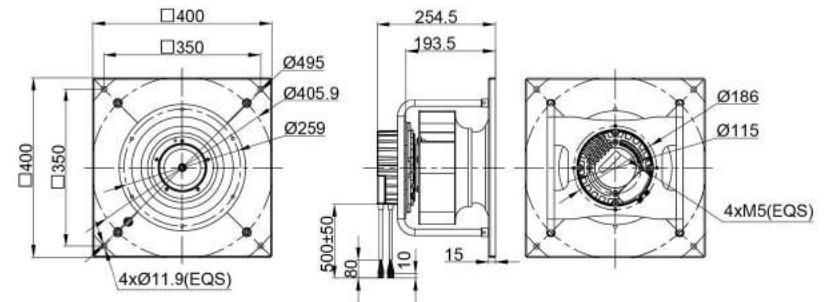
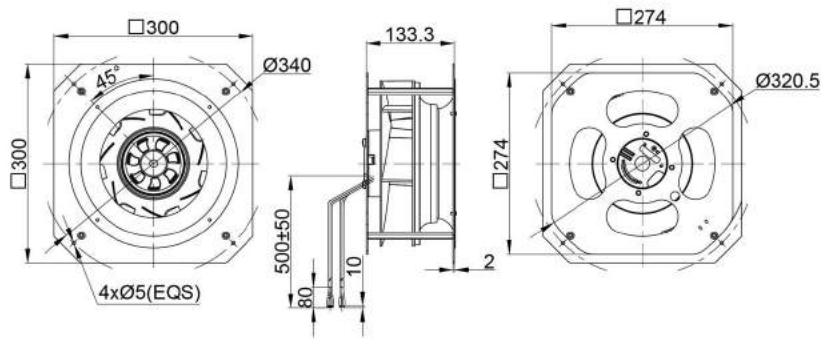
EC-AC-Series

EC-AC-Series



| | | | | | | |
|--|-------------------------------|--------------------------|------------------------|---------------------------------------|-------------------|--------------------|
| Motor Type: EC BRUSHLESS EXTERNAL ROTOR MOTOR | Speed Control: 0-10VDC/PWM | Protection Type: IP55 | Insulation Class: B | Operating Temperature: -25°C~+60°C | Weight: 5.42KG | Wiring Mode: E2 |
|--|-------------------------------|--------------------------|------------------------|---------------------------------------|-------------------|--------------------|

| | | | | | | |
|--|-------------------------------|--------------------------|------------------------|---------------------------------------|-------------------|--------------------|
| Motor Type: EC BRUSHLESS EXTERNAL ROTOR MOTOR | Speed Control: 0-10VDC/PWM | Protection Type: IP55 | Insulation Class: F | Operating Temperature: -25°C~+60°C | Weight: 7.91KG | Wiring Mode: E3 |
|--|-------------------------------|--------------------------|------------------------|---------------------------------------|-------------------|--------------------|



| Model | Motor | Bearing System | Rated Voltage | Frequency | Rated Current | Rated Power | Rated Speed | Air Flow | Air Pressure | Sound Level |
|----------------|--------|----------------|---------------|-----------|---------------|-------------|-------------|-------------------|--------------|-------------|
| Part No. | Type | B/S | VAC | Hz | A | W | RPM | M ³ /H | Pa | dB(A) |
| PK3N250B2E-MZ0 | BE92EC | BALL | 230 | 50/60 | 1.6 | 220 | 3100 | 1600 | 750 | 72 |

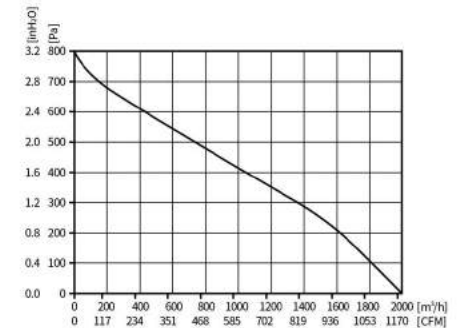
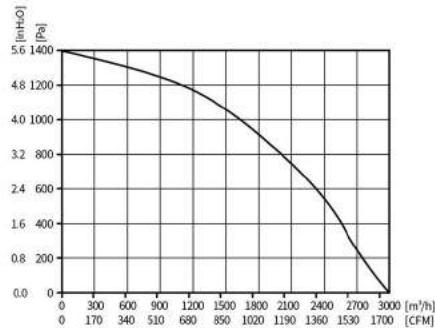
| Model | Motor | Bearing System | Rated Voltage | Frequency | Rated Current | Rated Power | Rated Speed | Air Flow | Air Pressure | Sound Level |
|----------------|---------|----------------|---------------|-----------|---------------|-------------|-------------|-------------------|--------------|-------------|
| Part No. | Type | B/S | VAC | Hz | A | W | RPM | M ³ /H | Pa | dB(A) |
| PK3N250B2E-YZ5 | BE102EC | BALL | 230 | 50/60 | 2.5 | 550 | 3600 | 2750 | 1330 | 85 |

EC Fan with Support Bracket 400x400x254.5mm

EC Fan with Support Bracket 400x400x254.5mm

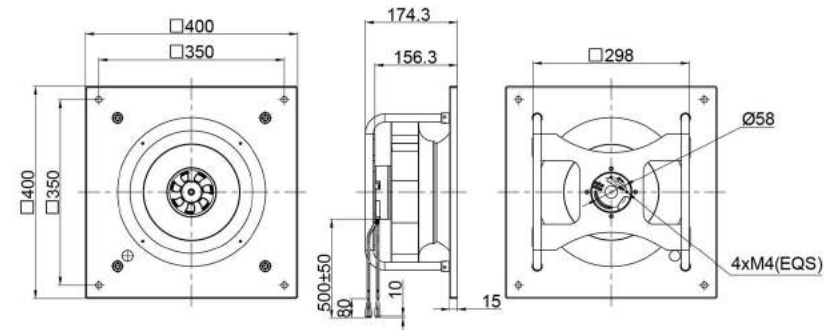
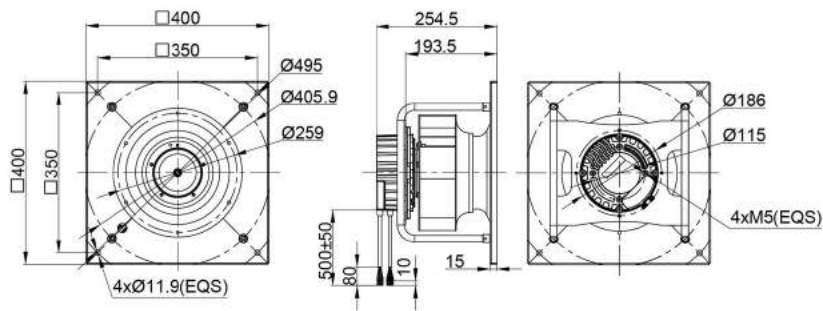
EC-AC-Series

EC-AC-Series



| | | | | | | |
|--|-------------------------------|--------------------------|------------------------|---------------------------------------|-------------------|--------------------|
| Motor Type: EC BRUSHLESS EXTERNAL ROTOR MOTOR | Speed Control: 0-10VDC/PWM | Protection Type: IP55 | Insulation Class: F | Operating Temperature: -25°C~+60°C | Weight: 7.91KG | Wiring Mode: E4 |
|--|-------------------------------|--------------------------|------------------------|---------------------------------------|-------------------|--------------------|

| | | | | | | |
|--|-------------------------------|--------------------------|------------------------|---------------------------------------|-------------------|--------------------|
| Motor Type: EC BRUSHLESS EXTERNAL ROTOR MOTOR | Speed Control: 0-10VDC/PWM | Protection Type: IP55 | Insulation Class: B | Operating Temperature: -25°C~+60°C | Weight: 5.67KG | Wiring Mode: E2 |
|--|-------------------------------|--------------------------|------------------------|---------------------------------------|-------------------|--------------------|



| Model | Motor | Bearing System | Rated Voltage | Frequency | Rated Current | Rated Power | Rated Speed | Air Flow | Air Pressure | Sound Level |
|----------------|---------|----------------|---------------|-----------|---------------|-------------|-------------|-------------------|--------------|-------------|
| Part No. | Type | B/S | VAC | Hz | A | W | RPM | M ³ /H | Pa | dB(A) |
| PK3N250B4E-YZ5 | BE102EC | BALL | 380 | 50/60 | 1.17 | 750 | 4100 | 3000 | 1400 | 91 |

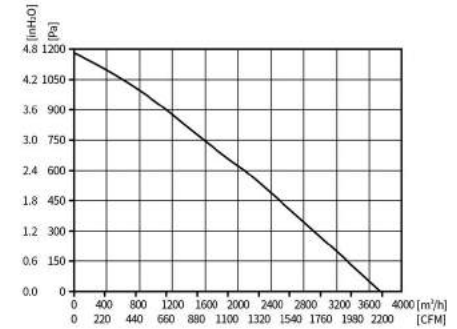
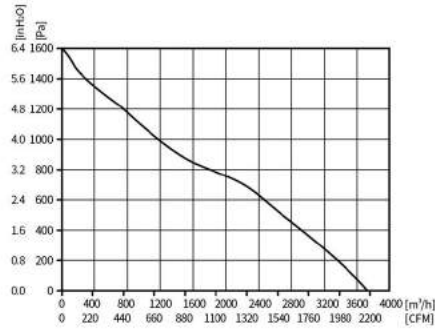
| Model | Motor | Bearing System | Rated Voltage | Frequency | Rated Current | Rated Power | Rated Speed | Air Flow | Air Pressure | Sound Level |
|----------------|--------|----------------|---------------|-----------|---------------|-------------|-------------|-------------------|--------------|-------------|
| Part No. | Type | B/S | VAC | Hz | A | W | RPM | M ³ /H | Pa | dB(A) |
| PK3N280B2E-MZ0 | BE92EC | BALL | 230 | 50/60 | 1.5 | 210 | 2600 | 2000 | 800 | 70 |

EC Fan with Support Bracket 400x400x274mm

EC Fan with Support Bracket 400x400x274mm

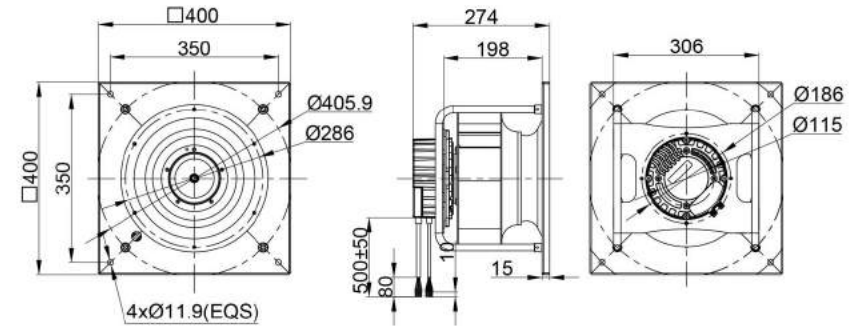
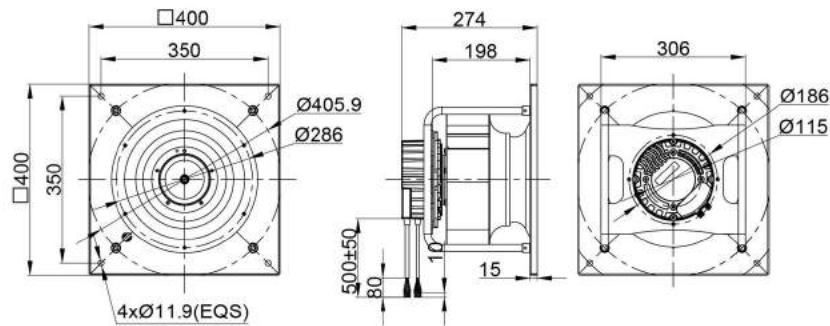
EC-AC-Series

EC-AC-Series



| | | | | | | |
|--|-------------------------------|--------------------------|------------------------|---------------------------------------|------------------|--------------------|
| Motor Type: EC BRUSHLESS EXTERNAL ROTOR MOTOR | Speed Control: 0-10VDC/PWM | Protection Type: IP55 | Insulation Class: F | Operating Temperature: -25°C~+60°C | Weight: 8.4KG | Wiring Mode: E3 |
|--|-------------------------------|--------------------------|------------------------|---------------------------------------|------------------|--------------------|

| | | | | | | |
|--|-------------------------------|--------------------------|------------------------|---------------------------------------|------------------|--------------------|
| Motor Type: EC BRUSHLESS EXTERNAL ROTOR MOTOR | Speed Control: 0-10VDC/PWM | Protection Type: IP55 | Insulation Class: F | Operating Temperature: -25°C~+60°C | Weight: 8.4KG | Wiring Mode: E4 |
|--|-------------------------------|--------------------------|------------------------|---------------------------------------|------------------|--------------------|



| Model | Motor | Bearing System | Rated Voltage | Frequency | Rated Current | Rated Power | Rated Speed | Air Flow | Air Pressure | Sound Level |
|----------------|---------|----------------|---------------|-----------|---------------|-------------|-------------|-------------------|--------------|-------------|
| Part No. | Type | B/S | VAC | Hz | A | W | RPM | M ³ /H | Pa | dB(A) |
| PK3N280B2E-YZ5 | BE102EC | BALL | 230 | 50/60 | 3.1 | 700 | 3300 | 3720 | 1600 | 85 |

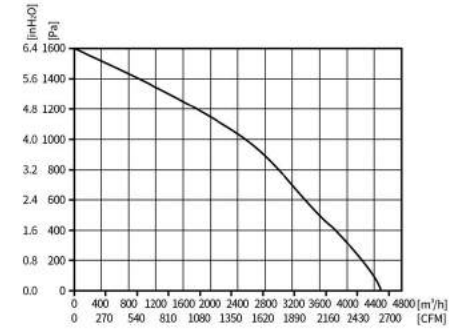
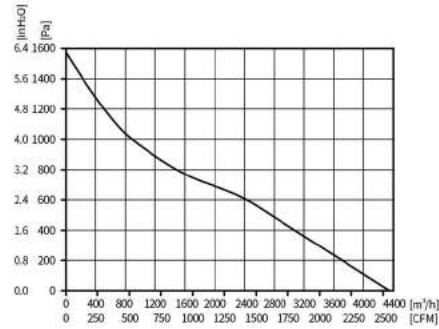
| Model | Motor | Bearing System | Rated Voltage | Frequency | Rated Current | Rated Power | Rated Speed | Air Flow | Air Pressure | Sound Level |
|----------------|---------|----------------|---------------|-----------|---------------|-------------|-------------|-------------------|--------------|-------------|
| Part No. | Type | B/S | VAC | Hz | A | W | RPM | M ³ /H | Pa | dB(A) |
| PK3N280B4E-YZ5 | BE102EC | BALL | 380 | 50/60 | 1.26 | 800 | 3400 | 3700 | 1180 | 93 |

EC Fan with Support Bracket 440x440x276.5mm

EC Fan with Support Bracket 440x440x276.5mm

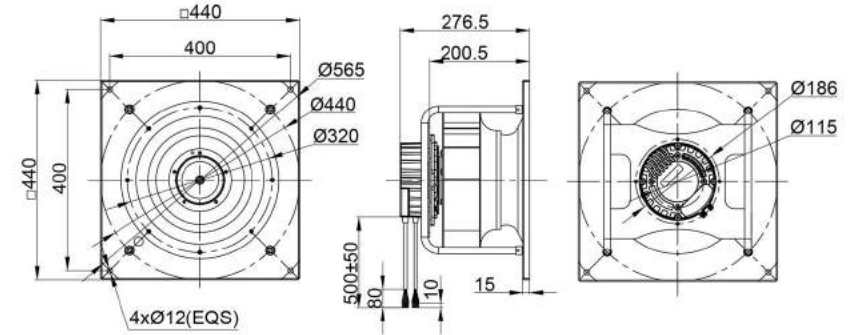
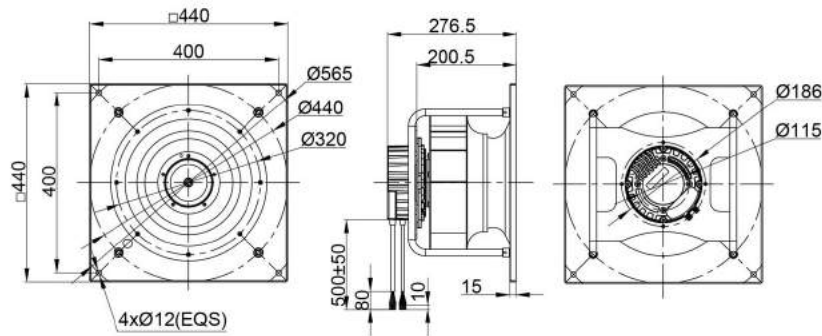
EC-AC-Series

EC-AC-Series



| | | | | | | |
|--|-------------------------------|--------------------------|------------------------|---------------------------------------|-------------------|--------------------|
| Motor Type: EC BRUSHLESS EXTERNAL ROTOR MOTOR | Speed Control: 0-10VDC/PWM | Protection Type: IP55 | Insulation Class: F | Operating Temperature: -25°C~+60°C | Weight: 7.91KG | Wiring Mode: E3 |
|--|-------------------------------|--------------------------|------------------------|---------------------------------------|-------------------|--------------------|

| | | | | | | |
|--|-------------------------------|--------------------------|------------------------|---------------------------------------|-------------------|--------------------|
| Motor Type: EC BRUSHLESS EXTERNAL ROTOR MOTOR | Speed Control: 0-10VDC/PWM | Protection Type: IP55 | Insulation Class: F | Operating Temperature: -25°C~+60°C | Weight: 7.91KG | Wiring Mode: E4 |
|--|-------------------------------|--------------------------|------------------------|---------------------------------------|-------------------|--------------------|



| Model | Motor | Bearing System | Rated Voltage | Frequency | Rated Current | Rated Power | Rated Speed | Air Flow | Air Pressure | Sound Level |
|----------------|---------|----------------|---------------|-----------|---------------|-------------|-------------|-------------------|--------------|-------------|
| Part No. | Type | B/S | VAC | Hz | A | W | RPM | M ³ /H | Pa | dB(A) |
| PK3N310B2E-YZ5 | BE102EC | BALL | 230 | 50/60 | 3.1 | 700 | 2850 | 4380 | 1590 | 85 |

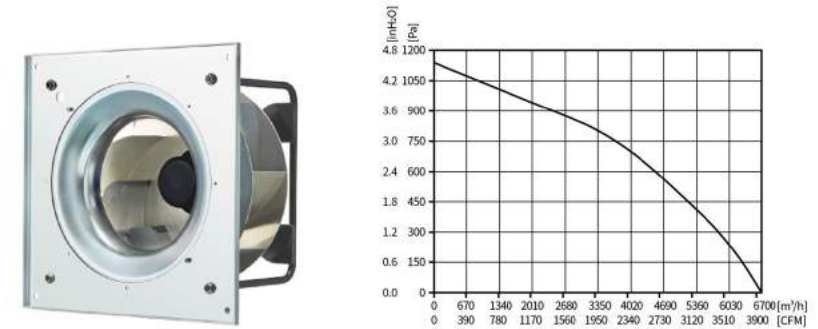
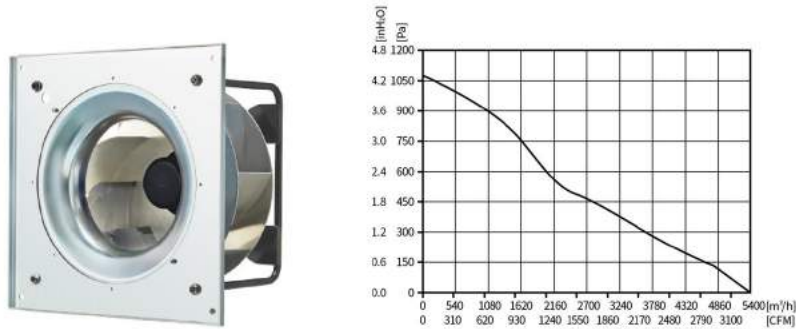
| Model | Motor | Bearing System | Rated Voltage | Frequency | Rated Current | Rated Power | Rated Speed | Air Flow | Air Pressure | Sound Level |
|----------------|---------|----------------|---------------|-----------|---------------|-------------|-------------|-------------------|--------------|-------------|
| Part No. | Type | B/S | VAC | Hz | A | W | RPM | M ³ /H | Pa | dB(A) |
| PK3N310B4E-YZ5 | BE102EC | BALL | 380 | 50/60 | 1.2 | 1100 | 3000 | 4500 | 1600 | 87 |

EC Fan with Support Bracket 500x500x322mm

EC Fan with Support Bracket 500x500x322mm

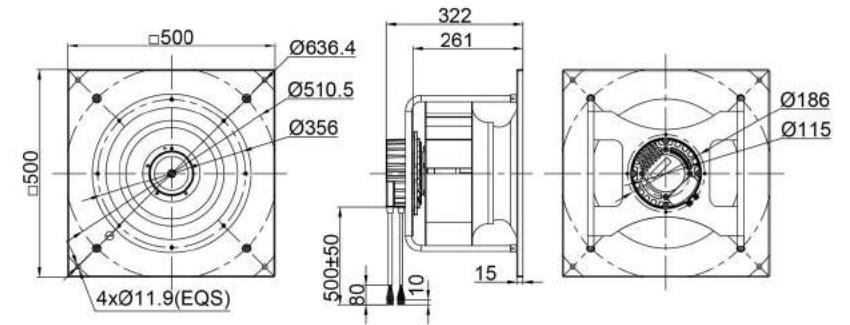
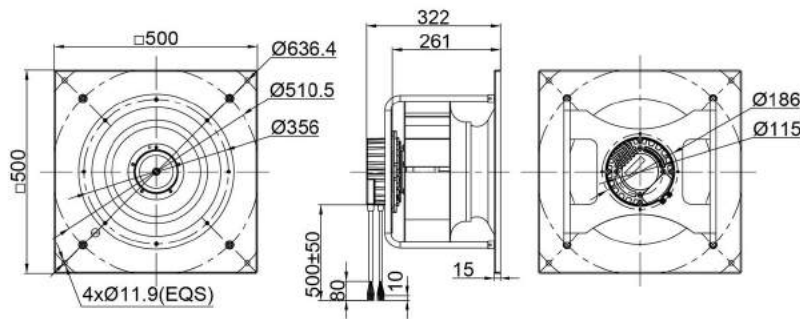
EC-AC-Series

EC-AC-Series



| | | | | | | |
|--|-------------------------------|--------------------------|------------------------|---------------------------------------|-------------------|--------------------|
| Motor Type: EC BRUSHLESS EXTERNAL ROTOR MOTOR | Speed Control: 0-10VDC/PWM | Protection Type: IP55 | Insulation Class: F | Operating Temperature: -25°C~+60°C | Weight: 9.44KG | Wiring Mode: E3 |
|--|-------------------------------|--------------------------|------------------------|---------------------------------------|-------------------|--------------------|

| | | | | | | |
|--|-------------------------------|--------------------------|------------------------|---------------------------------------|-------------------|--------------------|
| Motor Type: EC BRUSHLESS EXTERNAL ROTOR MOTOR | Speed Control: 0-10VDC/PWM | Protection Type: IP55 | Insulation Class: F | Operating Temperature: -25°C~+60°C | Weight: 7.91KG | Wiring Mode: E4 |
|--|-------------------------------|--------------------------|------------------------|---------------------------------------|-------------------|--------------------|



| Model | Motor | Bearing System | Rated Voltage | Frequency | Rated Current | Rated Power | Rated Speed | Air Flow | Air Pressure | Sound Level |
|----------------|---------|----------------|---------------|-----------|---------------|-------------|-------------|-------------------|--------------|-------------|
| Part No. | Type | B/S | VAC | Hz | A | W | RPM | M ³ /H | Pa | dB(A) |
| PK3N355B2E-ZW5 | BE102EC | BALL | 230 | 50/60 | 3.0 | 700 | 2150 | 5400 | 1080 | 84 |

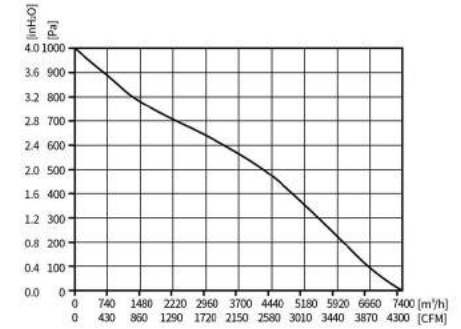
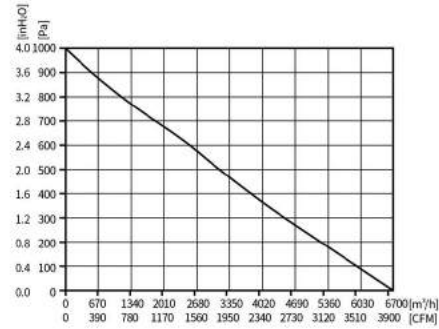
| Model | Motor | Bearing System | Rated Voltage | Frequency | Rated Current | Rated Power | Rated Speed | Air Flow | Air Pressure | Sound Level |
|----------------|---------|----------------|---------------|-----------|---------------|-------------|-------------|-------------------|--------------|-------------|
| Part No. | Type | B/S | VAC | Hz | A | W | RPM | M ³ /H | Pa | dB(A) |
| PK3N355B4E-ZW5 | BE102EC | BALL | 380 | 50/60 | 1.8 | 1100 | 2500 | 6700 | 1150 | 86 |

EC Fan with Support Bracket 500x500x350.5mm

EC Fan with Support Bracket 500x500x350.5mm

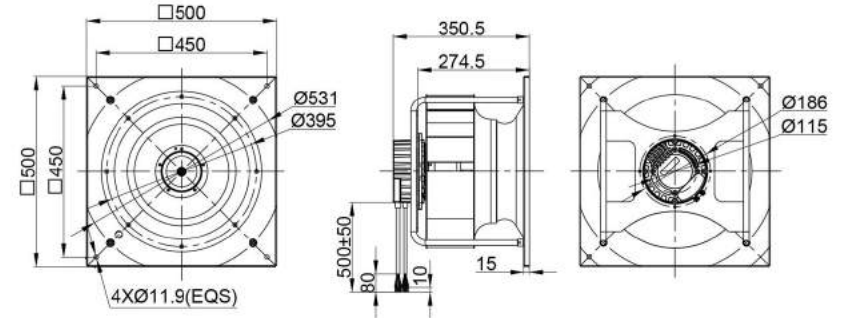
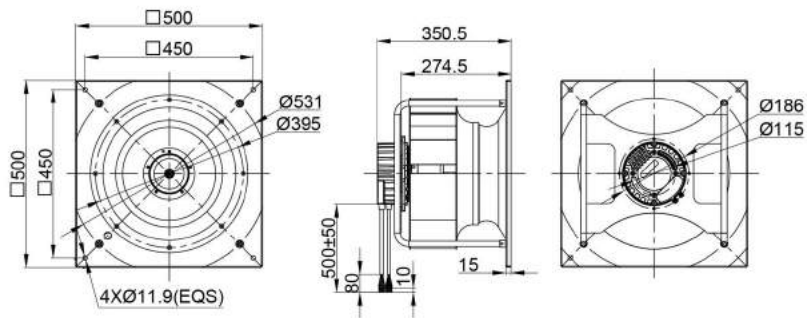
EC-AC-Series

EC-AC-Series



| | | | | | | |
|--|-------------------------------|--------------------------|------------------------|---------------------------------------|--------------------|--------------------|
| Motor Type: EC BRUSHLESS EXTERNAL ROTOR MOTOR | Speed Control: 0-10VDC/PWM | Protection Type: IP55 | Insulation Class: F | Operating Temperature: -25°C~+60°C | Weight: 11.94KG | Wiring Mode: E3 |
|--|-------------------------------|--------------------------|------------------------|---------------------------------------|--------------------|--------------------|

| | | | | | | |
|--|-------------------------------|-------------------------|------------------------|---------------------------------------|--------------------|--------------------|
| Motor Type: EC BRUSHLESS EXTERNAL ROTOR MOTOR | Speed Control: 0-10VDC/PWM | Protection Type: IP5 | Insulation Class: F | Operating Temperature: -25°C~+60°C | Weight: 11.94KG | Wiring Mode: E4 |
|--|-------------------------------|-------------------------|------------------------|---------------------------------------|--------------------|--------------------|



| Model | Motor | Bearing System | Rated Voltage | Frequency | Rated Current | Rated Power | Rated Speed | Air Flow | Air Pressure | Sound Level |
|----------------|---------|----------------|---------------|-----------|---------------|-------------|-------------|-------------------|--------------|-------------|
| Part No. | Type | B/S | VAC | Hz | A | W | RPM | M ³ /H | Pa | dB(A) |
| PK3N400B2E-ZW5 | BE102EC | BALL | 230 | 50/60 | 3.1 | 700 | 1750 | 6700 | 1000 | 83 |

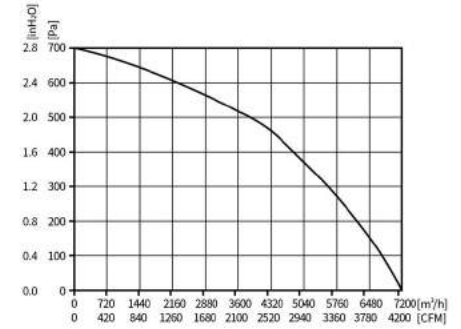
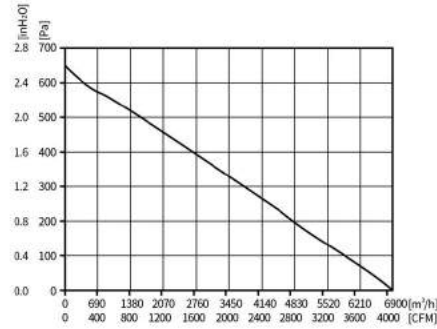
| Model | Motor | Bearing System | Rated Voltage | Frequency | Rated Current | Rated Power | Rated Speed | Air Flow | Air Pressure | Sound Level |
|----------------|---------|----------------|---------------|-----------|---------------|-------------|-------------|-------------------|--------------|-------------|
| Part No. | Type | B/S | VAC | Hz | A | W | RPM | M ³ /H | Pa | dB(A) |
| PK3N400B4E-ZW5 | BE102EC | BALL | 380 | 50/60 | 1.2 | 1300 | 2000 | 7400 | 1000 | 85 |

EC Fan with Support Bracket 630x630x364.3mm

EC Fan with Support Bracket 630x630x364.3mm

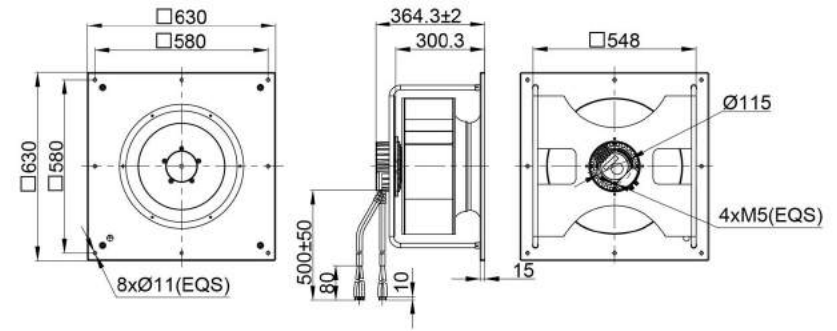
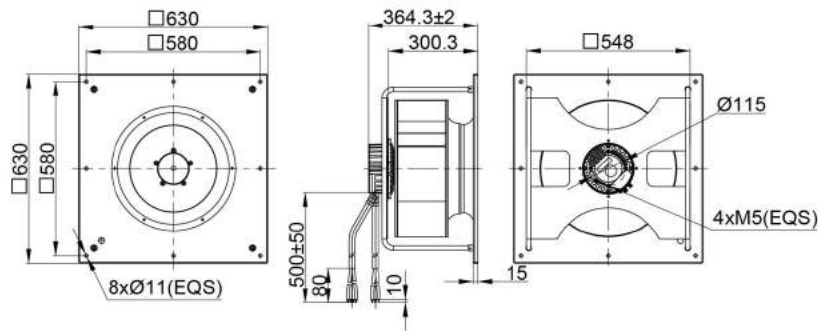
EC-AC-Series

EC-AC-Series



| | | | | | | |
|--|-------------------------------|--------------------------|------------------------|---------------------------------------|--------------------|--------------------|
| Motor Type: EC BRUSHLESS EXTERNAL ROTOR MOTOR | Speed Control: 0-10VDC/PWM | Protection Type: IP55 | Insulation Class: F | Operating Temperature: -25°C~+60°C | Weight: 11.23KG | Wiring Mode: E3 |
|--|-------------------------------|--------------------------|------------------------|---------------------------------------|--------------------|--------------------|

| | | | | | | |
|--|-------------------------------|-------------------------|------------------------|---------------------------------------|--------------------|--------------------|
| Motor Type: EC BRUSHLESS EXTERNAL ROTOR MOTOR | Speed Control: 0-10VDC/PWM | Protection Type: IP5 | Insulation Class: F | Operating Temperature: -25°C~+60°C | Weight: 11.23KG | Wiring Mode: E4 |
|--|-------------------------------|-------------------------|------------------------|---------------------------------------|--------------------|--------------------|



| Model | Motor | Bearing System | Rated Voltage | Frequency | Rated Current | Rated Power | Rated Speed | Air Flow | Air Pressure | Sound Level |
|----------------|---------|----------------|---------------|-----------|---------------|-------------|-------------|----------|--------------|-------------|
| Part No. | Type | B/S | VAC | Hz | A | W | RPM | M³/H | Pa | dB(A) |
| PK3N450B2E-ZW5 | BE102EC | BALL | 230 | 50/60 | 3.2 | 700 | 1550 | 6900 | 650 | 80 |

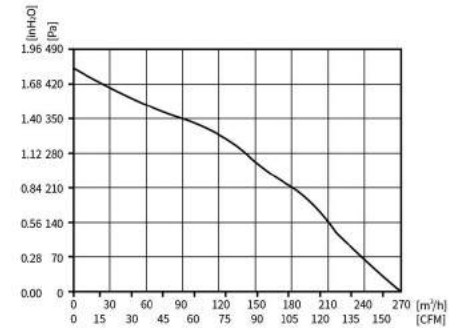
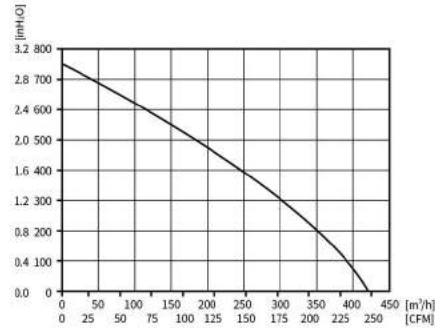
| Model | Motor | Bearing System | Rated Voltage | Frequency | Rated Current | Rated Power | Rated Speed | Air Flow | Air Pressure | Sound Level |
|----------------|---------|----------------|---------------|-----------|---------------|-------------|-------------|----------|--------------|-------------|
| Part No. | Type | B/S | VAC | Hz | A | W | RPM | M³/H | Pa | dB(A) |
| PK3N450B4E-ZW5 | BE102EC | BALL | 380 | 50/60 | 1.5 | 1000 | 1800 | 7200 | 700 | 83 |

DC Fan with Support Bracket 165x165x122.8mm

DC Fan with Support Bracket 165x165x75.8mm

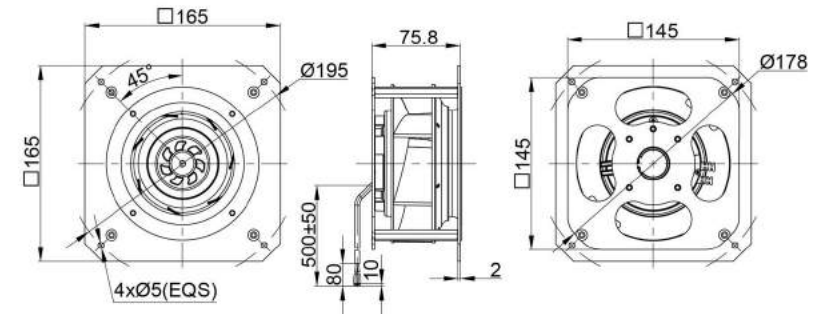
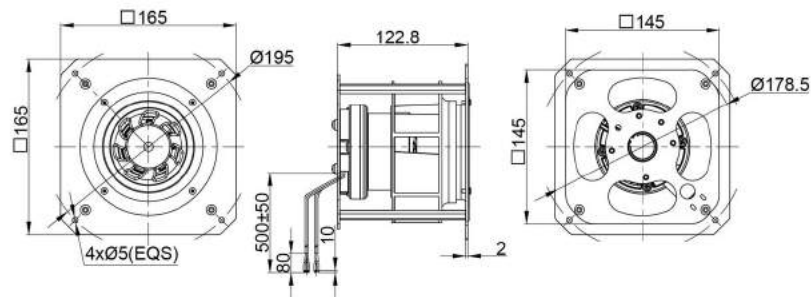
EC-DC-Series

EC-DC-Series



| | | | | | | |
|--|-------------------------------|--------------------------|------------------------|---|-------------------|--------------------|
| Motor Type: DC BRUSHLESS EXTERNAL ROTOR MOTOR | Speed Control: 0-10VDC/PWM | Protection Type: IP55 | Insulation Class: B | Operating Temperature: -25°C ~ +60°C | Weight: 2.65KG | Wiring Mode: D1 |
|--|-------------------------------|--------------------------|------------------------|---|-------------------|--------------------|

| | | | | | | |
|--|-------------------------------|--------------------------|------------------------|---|------------------|--------------------|
| Motor Type: DC BRUSHLESS EXTERNAL ROTOR MOTOR | Speed Control: 0-10VDC/PWM | Protection Type: IP55 | Insulation Class: B | Operating Temperature: -25°C ~ +60°C | Weight: 2.6KG | Wiring Mode: D1 |
|--|-------------------------------|--------------------------|------------------------|---|------------------|--------------------|



| Model Part No. | Motor Type | Bearing System B/S | Rated Voltage VDC | Operating Voltage VDC | Rated Current A | Rated Power W | Rated Speed RPM | Air Flow M³/H | Air Pressure Pa | Sound Level dB(A) |
|----------------|------------|--------------------|-------------------|-----------------------|-----------------|---------------|-----------------|---------------|-----------------|-------------------|
| PK3N133B24-RB0 | BE72DC | BALL | 24 | 16-28 | 2.1 | 50 | 5000 | 420 | 750 | 71 |
| PK3N133B48-RB0 | BE72DC | BALL | 48 | 36-57 | 1.05 | 50 | 5000 | 420 | 750 | 71 |

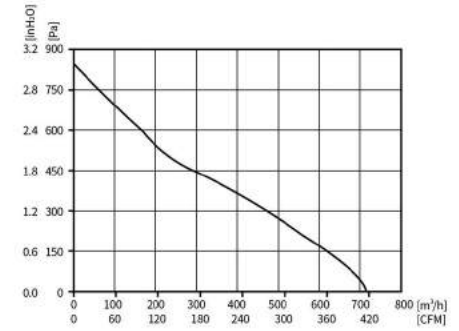
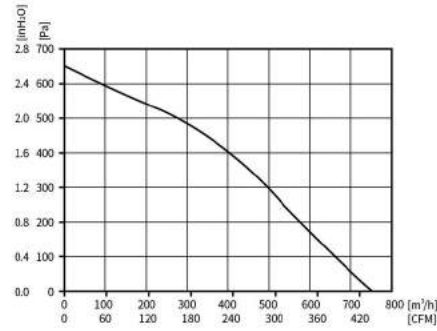
| Model Part No. | Motor Type | Bearing System B/S | Rated Voltage VAC | Operating Voltage VDC | Rated Current A | Rated Power W | Rated Speed RPM | Air Flow M³/H | Air Pressure Pa | Sound Level dB(A) |
|----------------|------------|--------------------|-------------------|-----------------------|-----------------|---------------|-----------------|---------------|-----------------|-------------------|
| PK3N133B24-FZ5 | BE59DC | BALL | 24 | 16-28 | 1.4 | 33 | 4500 | 270 | 450 | 68 |
| PK3N133B48-FZ5 | BE59DC | BALL | 48 | 36-57 | 0.7 | 33 | 4500 | 270 | 450 | 68 |

DC Fan with Support Bracket 226x226x81.6mm

DC Fan with Support Bracket 226x226x81.6mm

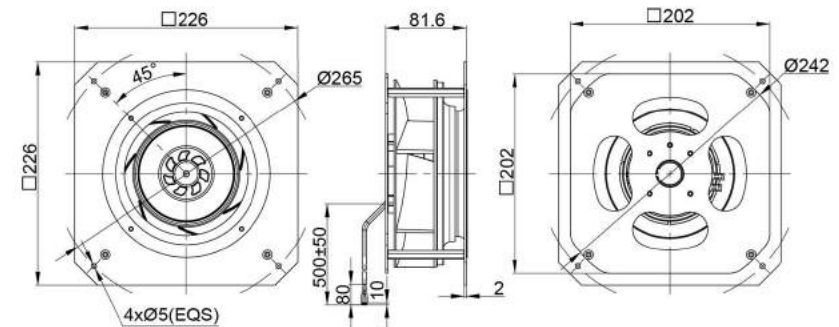
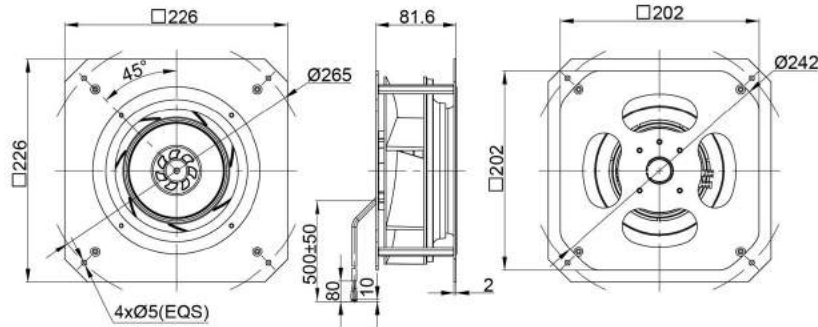
EC-DC Series

EC-DC Series



| | | | | | | |
|--|-------------------------------|--------------------------|------------------------|---|------------------|--------------------|
| Motor Type: DC BRUSHLESS EXTERNAL ROTOR MOTOR | Speed Control: 0-10VDC/PWM | Protection Type: IP55 | Insulation Class: B | Operating Temperature: -25°C ~ +60°C | Weight: 3.2KG | Wiring Mode: D1 |
|--|-------------------------------|--------------------------|------------------------|---|------------------|--------------------|

| | | | | | | |
|--|-------------------------------|--------------------------|------------------------|---|------------------|--------------------|
| Motor Type: DC BRUSHLESS EXTERNAL ROTOR MOTOR | Speed Control: 0-10VDC/PWM | Protection Type: IP55 | Insulation Class: B | Operating Temperature: -25°C ~ +60°C | Weight: 3.2KG | Wiring Mode: 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) |
| PK3N175B24-RZ0 | BE72DC | BALL | 24 | 16-28 | 3.6 | 85 | 4300 | 750 | 650 | 72 |
| PK3N175B48-RZ0 | BE72DC | BALL | 48 | 36-57 | 1.8 | 85 | 4300 | 750 | 650 | 72 |

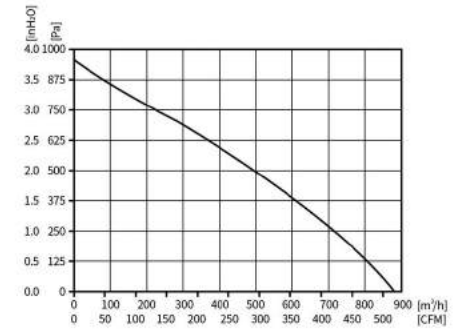
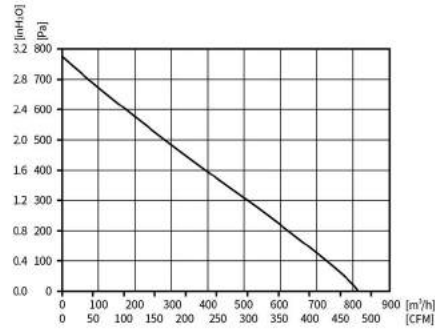
| Model | Motor | Bearing System | Rated Voltage | Operating Voltage | Rated Current | Rated Power | Rated Speed | Air Flow | Air Pressure | Sound Level |
|----------------|--------|----------------|---------------|-------------------|---------------|-------------|-------------|----------|--------------|-------------|
| Part No. | Type | B/S | VAC | VDC | A | W | RPM | M³/H | Pa | dB(A) |
| PK3N190B24-RZ0 | BE72DC | BALL | 24 | 16-28 | 3.6 | 85 | 3500 | 710 | 840 | 68 |
| PK3N190B48-RZ0 | BE72DC | BALL | 48 | 36-57 | 1.8 | 85 | 3500 | 710 | 840 | 68 |

DC Fan with Support Bracket 225x225x95.6mm

DC Fan with Support Bracket 225x225x95.6mm

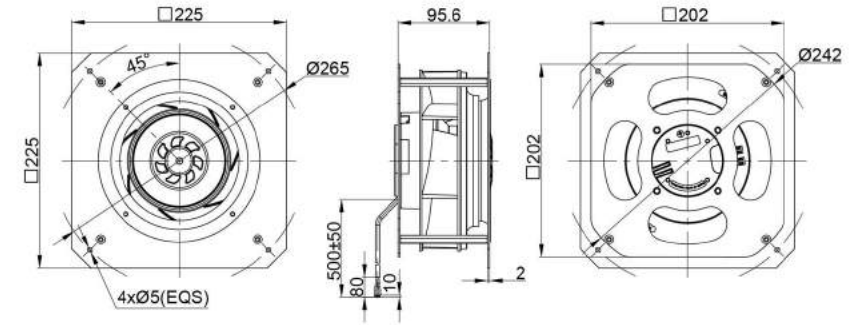
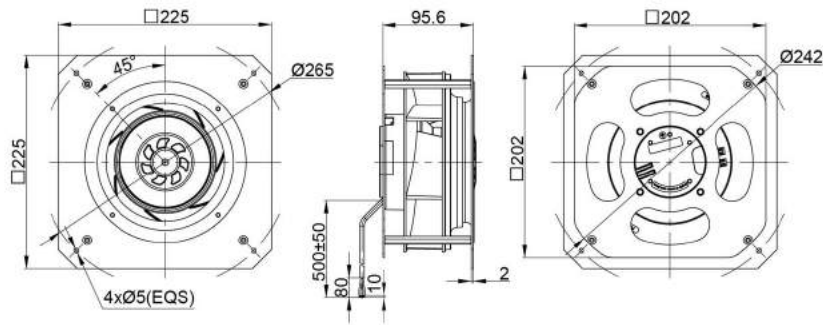
EC-DC Series

EC-DC Series



| | | | | | | |
|--|-------------------------------|--------------------------|------------------------|---|------------------|--------------------|
| Motor Type: DC BRUSHLESS EXTERNAL ROTOR MOTOR | Speed Control: 0-10VDC/PWM | Protection Type: IP55 | Insulation Class: B | Operating Temperature: -25°C ~ +60°C | Weight: 3.8KG | Wiring Mode: D1 |
|--|-------------------------------|--------------------------|------------------------|---|------------------|--------------------|

| | | | | | | |
|--|-------------------------------|--------------------------|------------------------|---|------------------|--------------------|
| Motor Type: DC BRUSHLESS EXTERNAL ROTOR MOTOR | Speed Control: 0-10VDC/PWM | Protection Type: IP55 | Insulation Class: B | Operating Temperature: -25°C ~ +60°C | Weight: 3.2KG | Wiring Mode: 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 | M ³ /H | Pa | dB(A) |
| PK3N190B24-TZ0 | BE72DC | BALL | 24 | 16-28 | 5.0 | 120 | 4050 | 820 | 780 | 72 |
| PK3N190B48-TZ0 | BE72DC | BALL | 48 | 36-57 | 2.5 | 120 | 4050 | 820 | 780 | 72 |

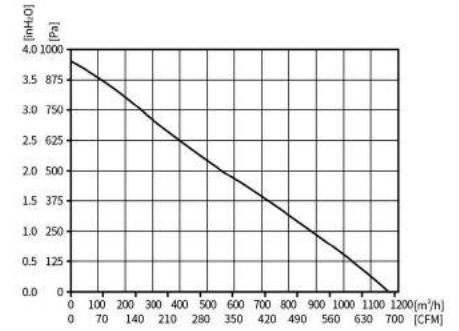
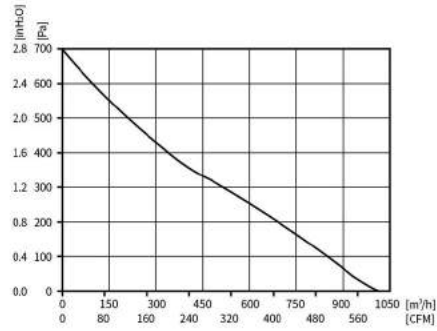
| Model | Motor | Bearing System | Rated Voltage | Operating Voltage | Rated Current | Rated Power | Rated Speed | Air Flow | Air Pressure | Sound Level |
|----------------|--------|----------------|---------------|-------------------|---------------|-------------|-------------|-------------------|--------------|-------------|
| Part No. | Type | B/S | VAC | VDC | A | W | RPM | M ³ /H | Pa | dB(A) |
| PK3N190B24-TZ1 | BE72DC | BALL | 24 | 16-28 | 6.4 | 153.6 | 4400 | 880 | 950 | 74 |
| PK3N190B48-TZ1 | BE72DC | BALL | 48 | 36-57 | 3.2 | 153.6 | 4400 | 880 | 950 | 74 |

DC Fan with Support Bracket 270x270x89.8mm

DC Fan with Support Bracket 270x270x103.3mm

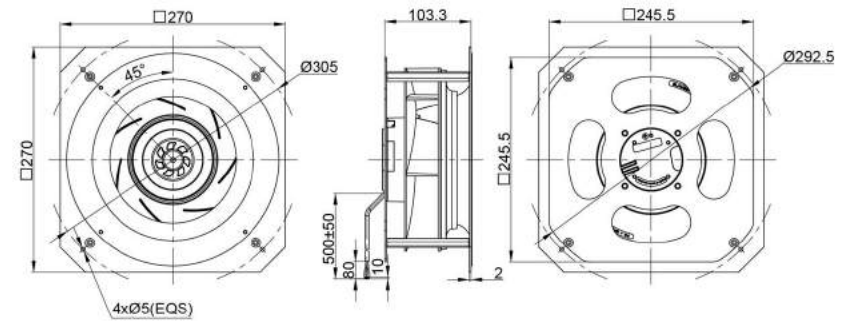
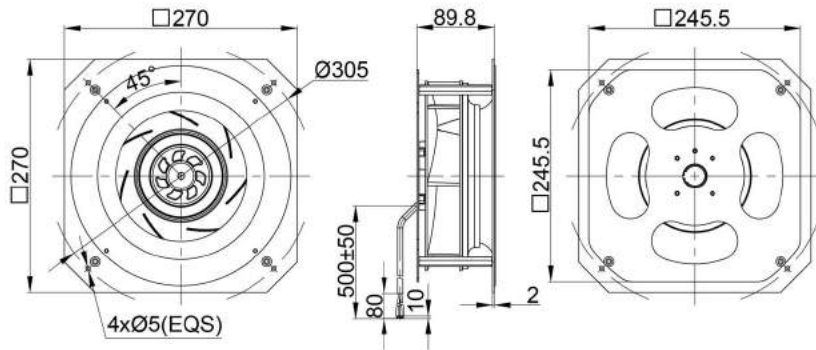
EC-DC Series

EC-DC Series



| | | | | | | |
|---|------------------------------|-------------------------|-----------------------|--|-----------------|-------------------|
| Motor Type DC BRUSHLESS EXTERNAL ROTOR MOTOR | Speed Control 0-10VDC/PWM | Protection Type IP55 | Insulation Class B | Operating Temperature -25°C ~ +60°C | Weight 3.6KG | Wiring Mode D1 |
|---|------------------------------|-------------------------|-----------------------|--|-----------------|-------------------|

| | | | | | | |
|---|------------------------------|-------------------------|-----------------------|--|-----------------|-------------------|
| Motor Type DC BRUSHLESS EXTERNAL ROTOR MOTOR | Speed Control 0-10VDC/PWM | Protection Type IP55 | Insulation Class B | Operating Temperature -25°C ~ +60°C | Weight 3.2KG | Wiring Mode D1 |
|---|------------------------------|-------------------------|-----------------------|--|-----------------|-------------------|



| Model Part No. | Motor Type | Bearing System B/S | Rated Voltage VDC | Operating Voltage VDC | Rated Current A | Rated Power W | Rated Speed RPM | Air Flow M³/H | Air Pressure Pa | Sound Level dB(A) |
|----------------|------------|--------------------|-------------------|-----------------------|-----------------|---------------|-----------------|---------------|-----------------|-------------------|
| PK3N220B24-RZ0 | BE72DC | BALL | 24 | 16-28 | 3.4 | 85 | 2600 | 1010 | 700 | 71 |
| PK3N220B48-RZ0 | BE72DC | BALL | 48 | 36-57 | 1.7 | 85 | 2600 | 1010 | 700 | 71 |

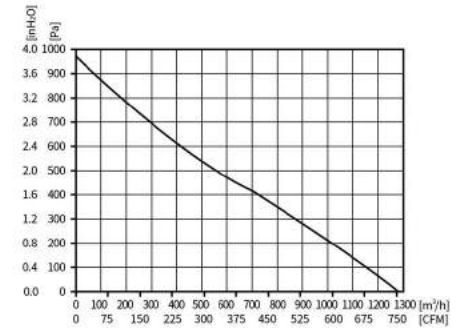
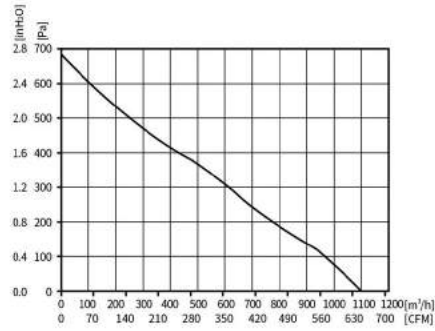
| Model Part No. | Motor Type | Bearing System B/S | Rated Voltage VAC | Operating Voltage VDC | Rated Current A | Rated Power W | Rated Speed RPM | Air Flow M³/H | Air Pressure Pa | Sound Level dB(A) |
|----------------|------------|--------------------|-------------------|-----------------------|-----------------|---------------|-----------------|---------------|-----------------|-------------------|
| PK3N220B24-TZ0 | BE72DC | BALL | 24 | 16-28 | 7.6 | 182.4 | 3500 | 1165 | 950 | 72 |
| PK3N220B48-TZ0 | BE72DC | BALL | 48 | 36-57 | 3.8 | 182.4 | 3500 | 1165 | 950 | 72 |

DC Fan with Support Bracket 270x270x115.3mm

DC Fan with Support Bracket 270x270x119.6mm

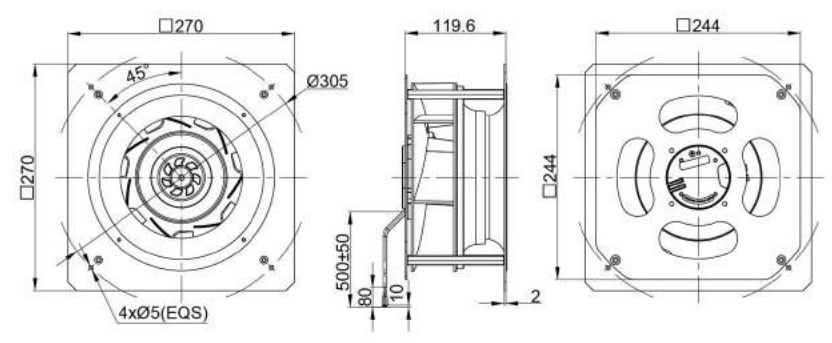
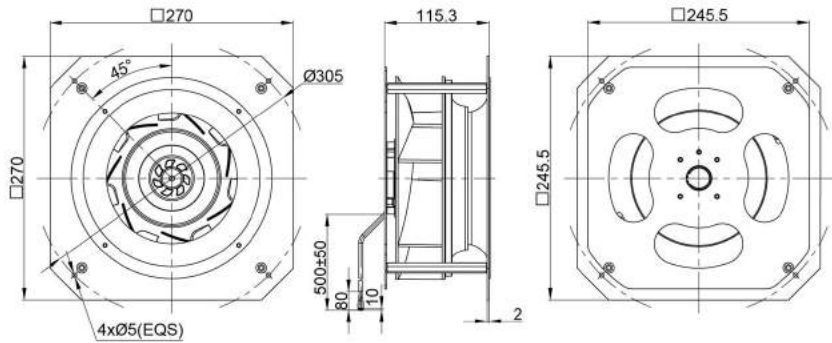
EC-DC Series

EC-DC Series



| | | | | | | |
|--|-------------------------------|--------------------------|------------------------|---|------------------|--------------------|
| Motor Type: DC BRUSHLESS EXTERNAL ROTOR MOTOR | Speed Control: 0-10VDC/PWM | Protection Type: IP55 | Insulation Class: B | Operating Temperature: -25°C ~ +60°C | Weight: 3.5KG | Wiring Mode: D1 |
|--|-------------------------------|--------------------------|------------------------|---|------------------|--------------------|

| | | | | | | |
|--|-------------------------------|--------------------------|------------------------|---|------------------|--------------------|
| Motor Type: DC BRUSHLESS EXTERNAL ROTOR MOTOR | Speed Control: 0-10VDC/PWM | Protection Type: IP55 | Insulation Class: B | Operating Temperature: -25°C ~ +60°C | Weight: 4.4KG | Wiring Mode: D1 |
|--|-------------------------------|--------------------------|------------------------|---|------------------|--------------------|



| Model Part No. | Motor Type | Bearing System B/S | Rated Voltage VDC | Operating Voltage VDC | Rated Current A | Rated Power W | Rated Speed RPM | Air Flow M³/H | Air Pressure Pa | Sound Level dB(A) |
|----------------|------------|--------------------|-------------------|-----------------------|-----------------|---------------|-----------------|---------------|-----------------|-------------------|
| PK3N225B24-RG0 | BE72DC | BALL | 24 | 16-28 | 4.0 | 96 | 2400 | 1100 | 690 | 68 |
| PK3N225B48-RG0 | BE72DC | BALL | 48 | 36-57 | 2.0 | 96 | 2400 | 1100 | 690 | 68 |

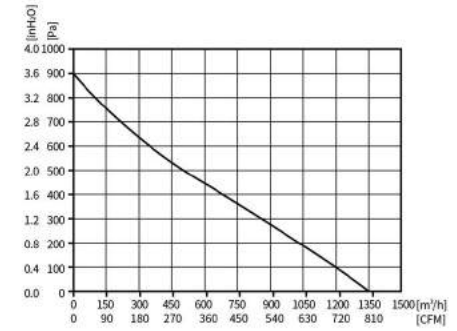
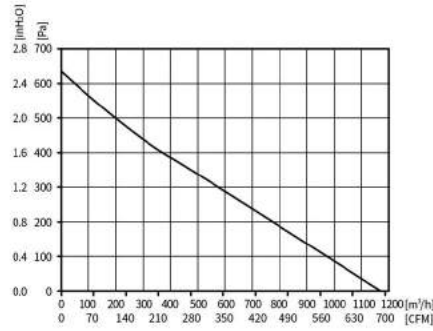
| Model Part No. | Motor Type | Bearing System B/S | Rated Voltage VAC | Operating Voltage VDC | Rated Current A | Rated Power W | Rated Speed RPM | Air Flow M³/H | Air Pressure Pa | Sound Level dB(A) |
|----------------|------------|--------------------|-------------------|-----------------------|-----------------|---------------|-----------------|---------------|-----------------|-------------------|
| PK3N225B24-TG0 | BE72DC | BALL | 24 | 16-28 | 7.0 | 168 | 3000 | 1290 | 960 | 72 |
| PK3N225B48-TG0 | BE72DC | BALL | 48 | 36-57 | 3.5 | 168 | 3000 | 1290 | 960 | 72 |

DC Fan with Support Bracket 300x300x122.3mm

DC Fan with Support Bracket 300x300x122.3mm

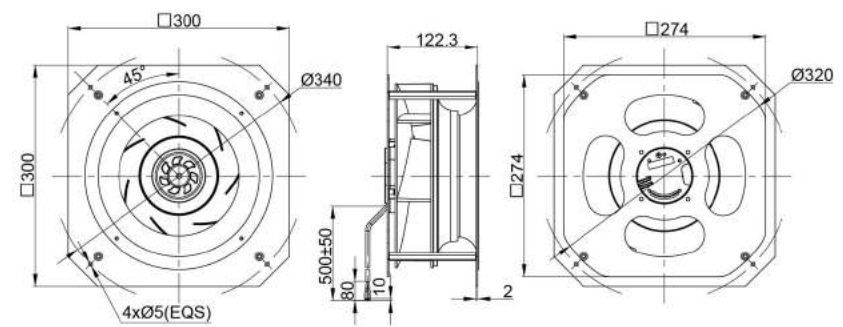
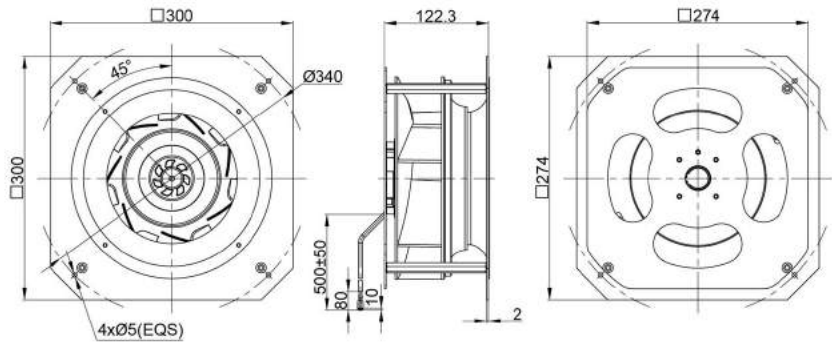
EC-DC Series

EC-DC Series



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

| | | | | | | |
|---|------------------------------|-------------------------|-----------------------|--|-----------------|-------------------|
| Motor Type DC BRUSHLESS EXTERNAL ROTOR MOTOR | Speed Control 0-10VDC/PWM | Protection Type IP55 | Insulation Class B | Operating Temperature -25°C ~ +60°C | Weight 4.4KG | Wiring Mode D1 |
|---|------------------------------|-------------------------|-----------------------|--|-----------------|-------------------|

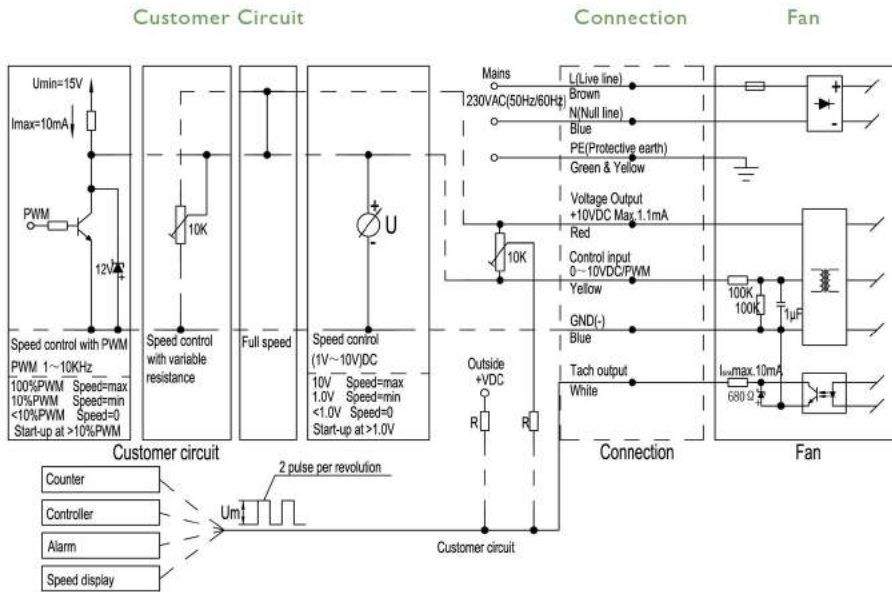


| Model | Motor | Bearing System | Rated Voltage | Operating Voltage | Rated Current | Rated Power | Rated Speed | Air Flow | Air Pressure | Sound Level |
|----------------|--------|----------------|---------------|-------------------|---------------|-------------|-------------|----------|--------------|-------------|
| Part No. | Type | B/S | VDC | VDC | A | W | RPM | M³/H | Pa | dB(A) |
| PK3N250B24-RZ0 | BE72DC | BALL | 24 | 16-28 | 3.6 | 86.4 | 2000 | 1170 | 630 | 68 |
| PK3N250B48-RZ0 | BE72DC | BALL | 48 | 36-57 | 1.8 | 86.4 | 2000 | 1170 | 630 | 68 |

| 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 | VAC | VDC | A | W | RPM | M³/H | Pa | dB(A) |
| PK3N250B24-TZ0 | BE72DC | BALL | 24 | 16-28 | 6.4 | 153.6 | 2700 | 1350 | 900 | 70 |
| PK3N250B48-TZ0 | BE72DC | BALL | 48 | 36-57 | 3.2 | 153.6 | 2700 | 1350 | 900 | 70 |

Wiring Diagram

IP55 EI-EC Motor 59.72 (Nominal voltage 115-230VAC)



| Line1(AC) | Color | Assignment/Function |
|-------------------------------------|-------|---------------------|
| Brown= L(Live Line) | | |
| Blue= N(Null Line) | | |
| Green & Yellow=PE(Protective Earth) | | |

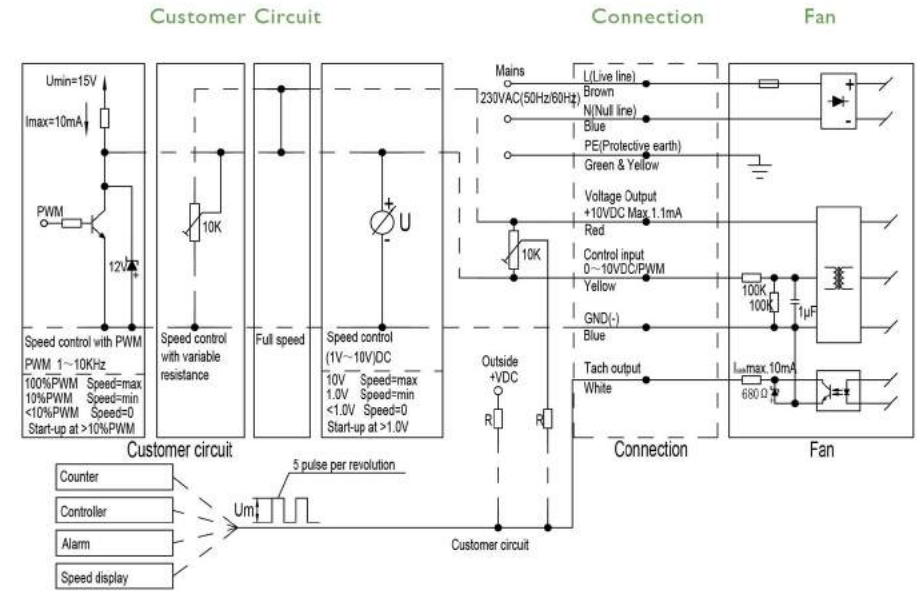
| Line2(DC) | Color | Assignment/Function |
|----------------------------|-------|---------------------|
| Red= Voltage Output +10VDC | | |
| Yellow= 0-10VDC/PWM | | |
| White= FG | | |
| Blue= GND | | |

| Signal | Color | Assignment/Function |
|--------|----------------|------------------------|
| L | Brown | Mains 50/60 Hz.phase |
| N | Blue | Mains 50/60 Hz.neutral |
| PE | Green & Yellow | Protective Earth |

| Signal | Color | Assignment/Function |
|-------------|--------|------------------------------------|
| +10VDC | Red | Voltage Output +10VDC max.1.1mA |
| 0-10VDC/PWM | Yellow | Control Input |
| Tach Output | White | Tach Output:12 puls per revolution |
| GND | Blue | GND |

Wiring Diagram

IP55 E2-EC Motor 92 (Nominal voltage 115-230VAC)



| Line1(AC) | Color | Assignment/Function |
|-------------------------------------|-------|---------------------|
| Brown= L(Live Line) | | |
| Blue= N(Null Line) | | |
| Green & Yellow=PE(Protective Earth) | | |

| Line2(DC) | Color | Assignment/Function |
|----------------------------|-------|---------------------|
| Red= Voltage Output +10VDC | | |
| Yellow= 0-10VDC/PWM | | |
| White= FG | | |
| Blue= GND | | |

| Signal | Color | Assignment/Function |
|--------|----------------|------------------------|
| L | Brown | Mains 50/60 Hz.phase |
| N | Blue | Mains 50/60 Hz.neutral |
| PE | Green & Yellow | Protective Earth |

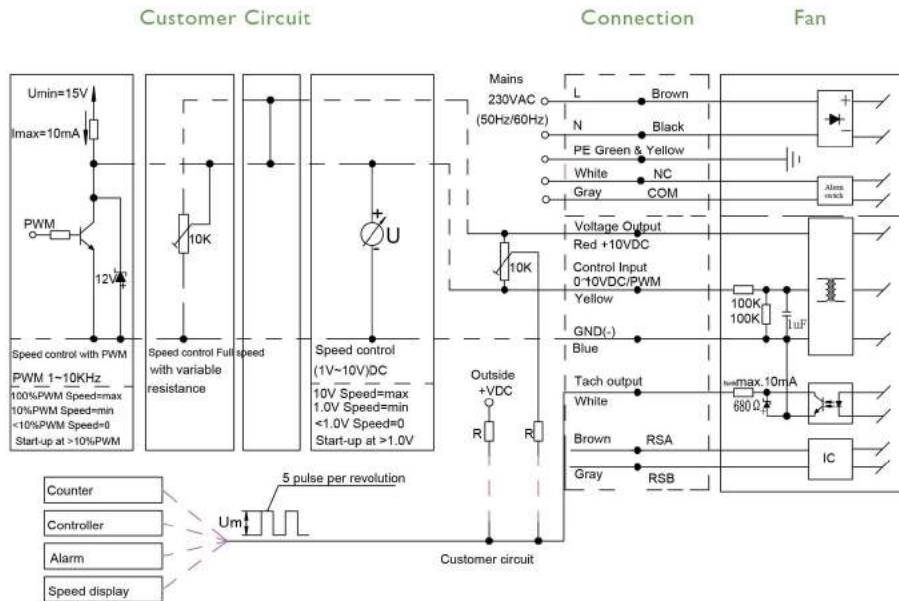
| Signal | Color | Assignment/Function |
|-------------|--------|-----------------------------------|
| +10VDC | Red | Voltage Output +10VDC max.1.1mA |
| 0-10VDC/PWM | Yellow | Control Input |
| Tach Output | White | Tach Output:5 puls per revolution |
| GND | Blue | GND |

Wiring Diagrams

Wiring Diagrams

Wiring Diagram

IP55 E3-EC Motor 102-230VAC-Modbus-Alarm

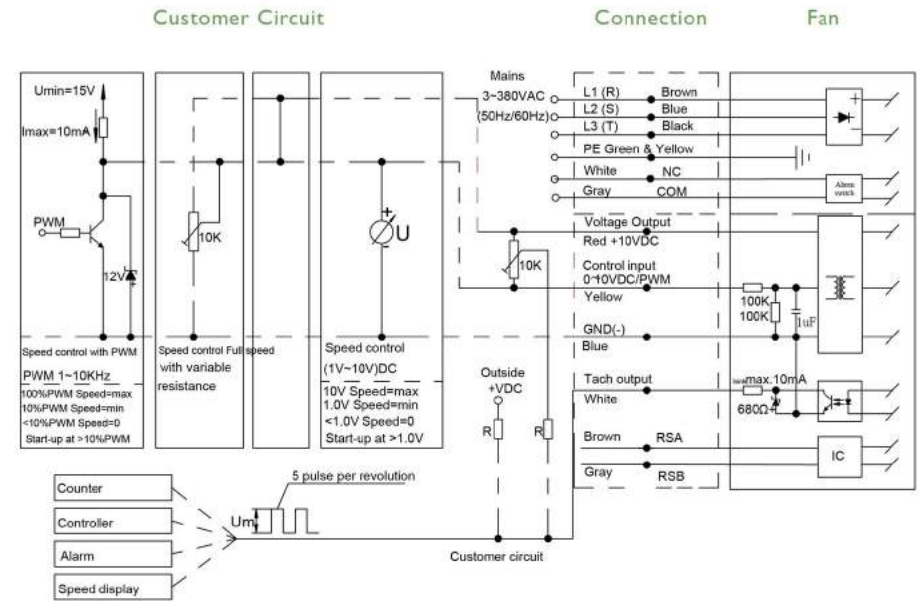


| Signal | Color | Assignment/Function |
|--------|----------------|-------------------------|
| L | Brown | Mains 50/60 Hz, phase |
| N | Blue | Mains 50/60 Hz, neutral |
| PE | Green & Yellow | Protective Earth |
| NC | White | Alarm switch |
| COM | Gray | Alarm switch |

| Signal | Color | Assignment/Function |
|-------------|--------|-----------------------------------|
| +10VDC | Red | Voltage Output +10VDC max.1.1mA |
| 0-10VDC/PWM | Yellow | Control Input |
| Tach Output | White | Tach Output:5 puls per revolution |
| GND | Blue | GND |
| RSA | Brown | Modbus-RS485A |
| RSB | Gray | Modbus-RS485B |

Wiring Diagram

IP55 E4-EC Motor 102-380VAC-Modbus-Alarm



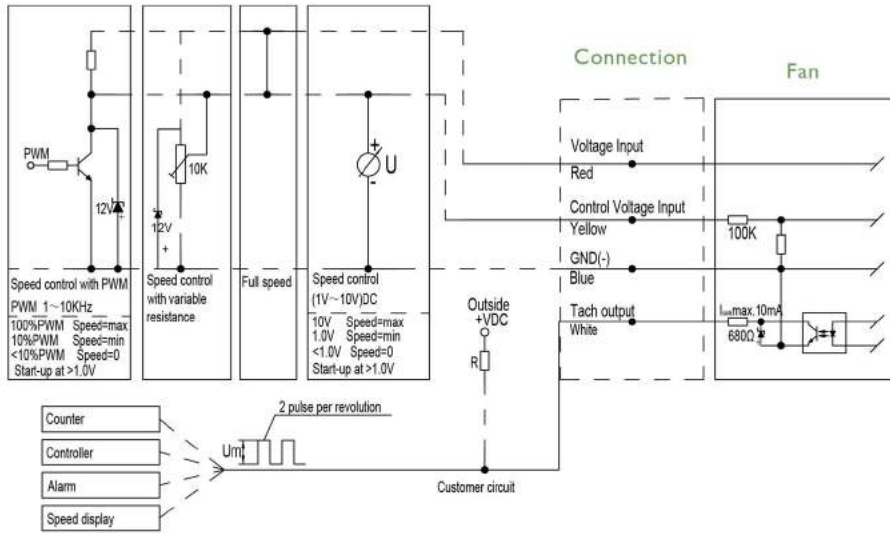
| Signal | Color | Assignment/Function |
|--------|----------------|--------------------------|
| L1 | Blue | Mains AC380V 50/60 Hz, R |
| L2 | Brown | Mains AC380V 50/60 Hz, S |
| L3 | Black | Mains AC380V 50/60 Hz, T |
| PE | Green & Yellow | Protective Earth |
| NC | White | Alarm switch |
| COM | Gray | Alarm switch |

| Signal | Color | Assignment/Function |
|-------------|--------|-----------------------------------|
| +10VDC | Red | Voltage Output +10VDC max.1.1mA |
| 0-10VDC/PWM | Yellow | Control Input |
| Tach Output | White | Tach Output:5 puls per revolution |
| GND | Blue | GND |
| RSA | Brown | Modbus-RS485A |
| RSB | Gray | Modbus-RS485B |

Wiring Diagram

IP55 DI-DC Motor 72 (2,4,4,8,8,5,11,0,31,0VDC)

Customer Circuit

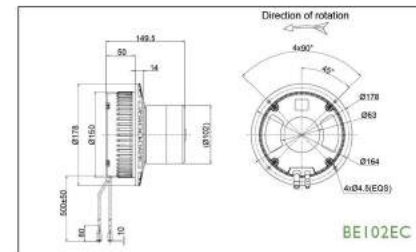
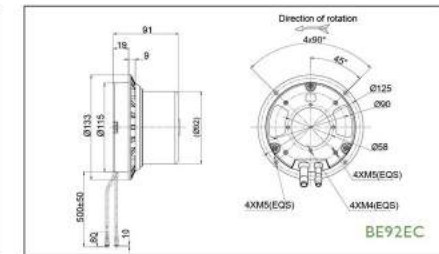
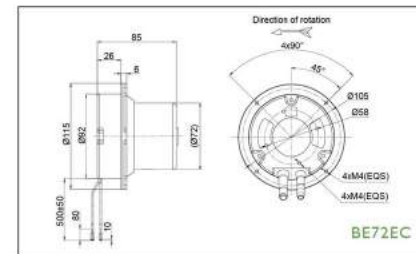


Wiring Diagrams

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

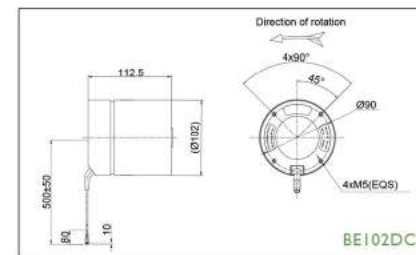
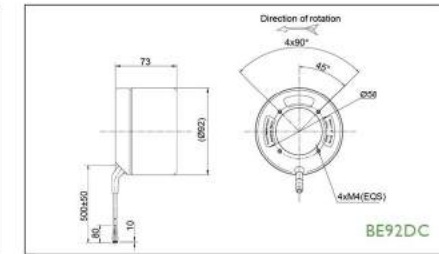
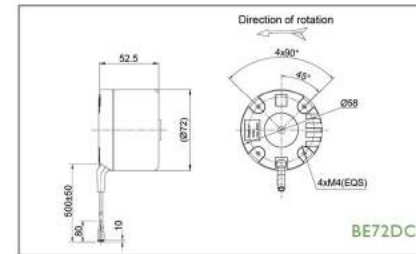
| Signal | Color | Assignment/Function |
|-------------|--------|------------------------------------|
| + | Red | Voltage Input |
| 0-10VDC/PWM | Yellow | Control Input |
| Tach output | White | Tach output: 2 puls per revolution |
| GND | Blue | GND |

IP44 EC-AC Motor



| Motor | BE72EC120W | BE92EC230W | BE102EC600W |
|-----------------------|---------------|---------------|---------------|
| Voltage | 230V | 230V | 230V |
| Frequency | 50Hz | 50Hz | 50Hz |
| Current | 1.0A | 1.7A | 4.3A |
| Power | 120W | 230W | 600W |
| Speed | 400-448RPM | 400-360RPM | 400-355RPM |
| Operating Temperature | -25°C ~ +60°C | -25°C ~ +60°C | -25°C ~ +60°C |
| Wiring Mode | E1 | E2 | E3 |

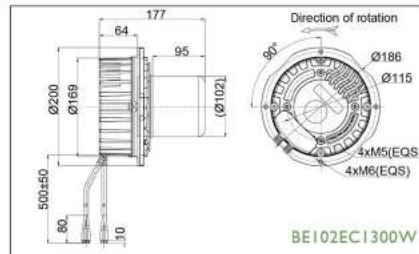
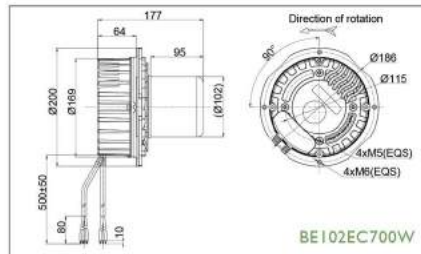
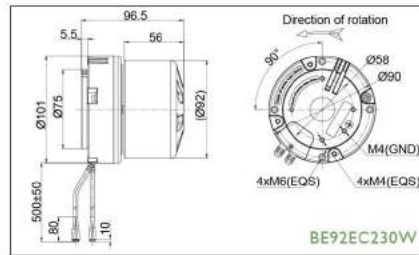
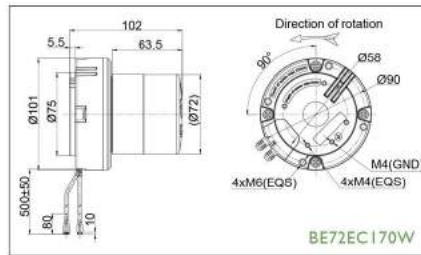
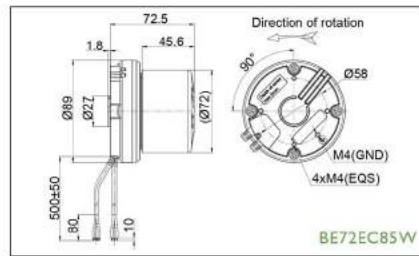
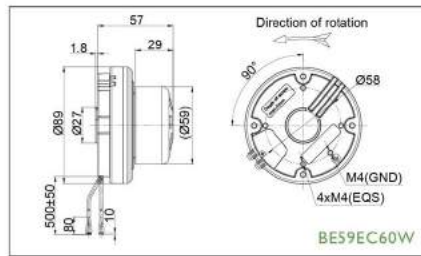
IP44 EC-DC Motor



| Motor | BE72DC120W | BE92DC230W | BE102DC480W |
|-----------------------|---------------|---------------|---------------|
| Voltage | 48V | 48V | 48V |
| Current | 2.5A | 4.8A | 10A |
| Power | 120W | 230W | 480W |
| Speed | 400-445RPM | 400-330RPM | 400-220RPM |
| Operating Temperature | -25°C ~ +60°C | -25°C ~ +60°C | -25°C ~ +60°C |
| Wiring Mode | D1 | D2 | D3 |

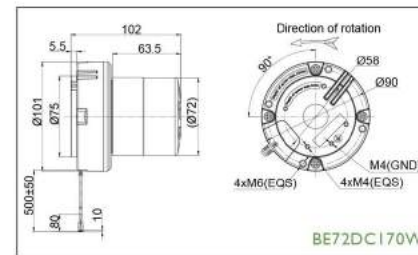
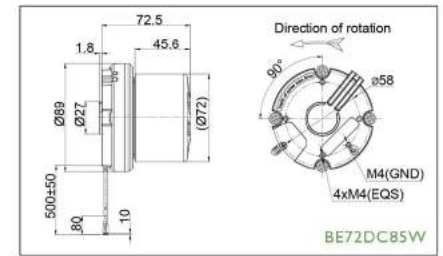
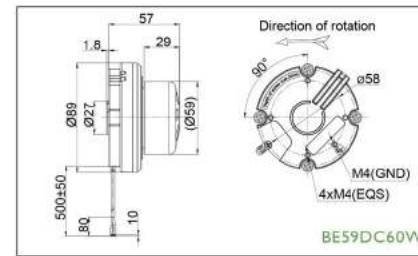
Accessories

IP55 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 |

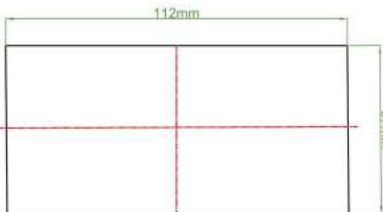
IP55 EC-DC Motor



| Motor | BE59DC60W | BE72DC85W | BE72DC170W |
|-----------------------|-------------|-------------|-------------|
| Voltage | 48V | 48V | 48V |
| Current | 1.25A | 1.77A | 3.54A |
| Power | 60W | 85W | 170W |
| Speed | 400~4450RPM | 400~4450RPM | 400~4450RPM |
| Operating Temperature | -25°C~+60°C | -25°C~+60°C | -25°C~+60°C |
| Wiring Mode | D1 | D1 | D1 |



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

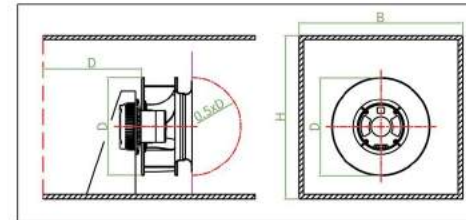
The controller is powered by the fan without external power supply; the controller is equipped with 2P and 4P quick connect terminals for connection, making the connection simpler and more convenient. The product is designed as a panel installation method, which is convenient for installation and construction. 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.

Effects of installation space

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



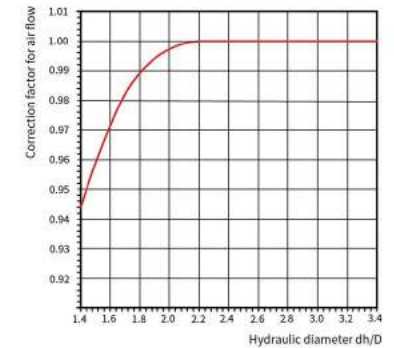
dh = Hydraulic diameter

Formula: $dh = 2 \times B \times H / (B + H)$

B = Width of box

H = Height of box

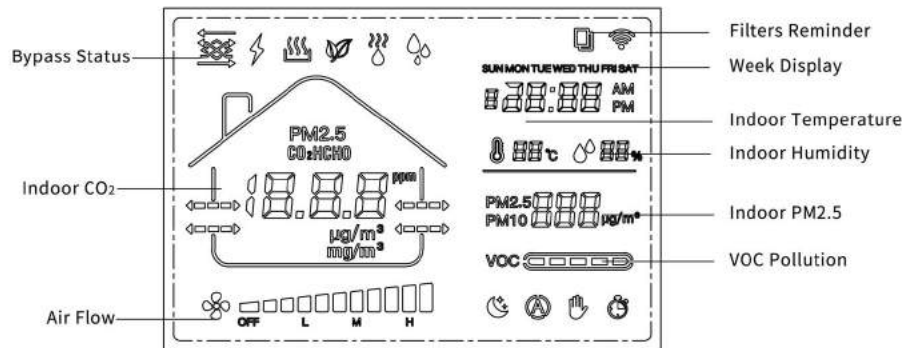
D = Outer diameter of the fan



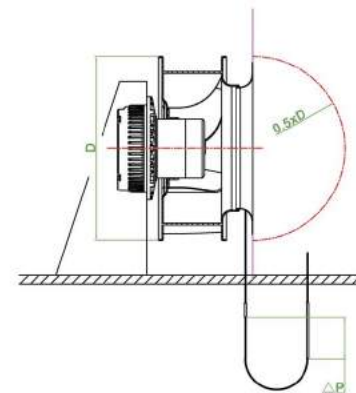
PS2 intelligent multi-functional touch screen controller

1. General description

PS2-PM2.5/CO₂ controller adopts touch technology, which is flexible and convenient. There are sensors which can monitor the indoor temperature, humidity, PM2.5 and CO₂ 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.



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:

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

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

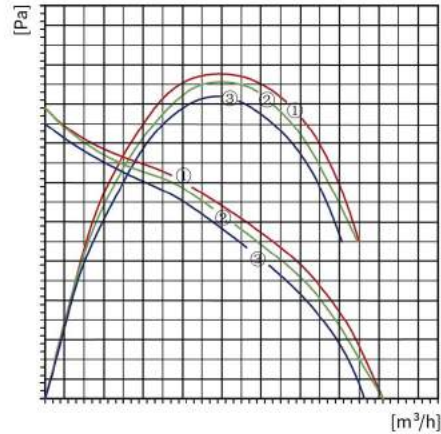
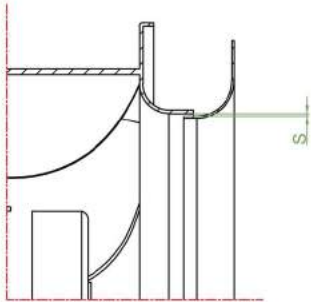
$$\Delta p = qv^2 : k^2$$

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 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:

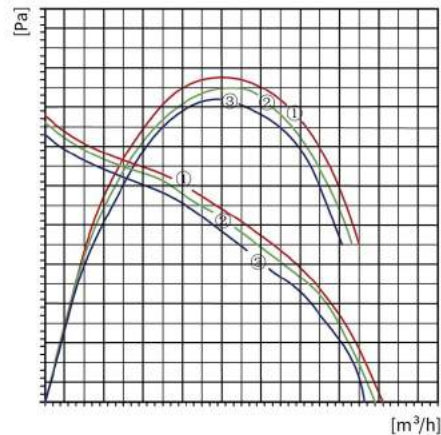
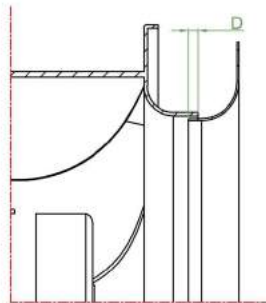
- ①: $s / D = 0.4\%$
- ②: $s / D = 1.0\%$
- ③: $s / D = 1.4\%$



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.

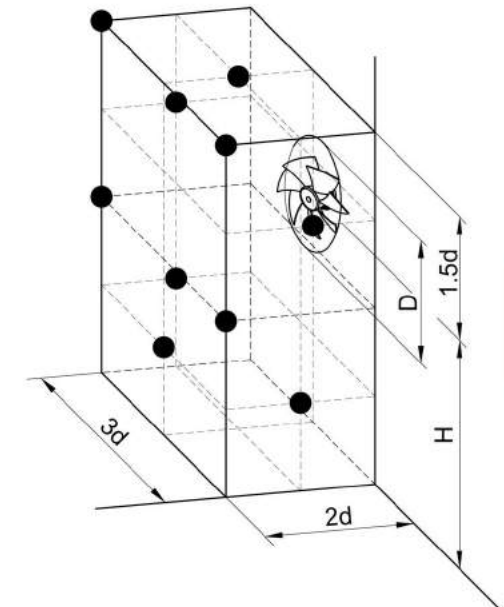
To measure the sound power level (L_w), 10 microphones are distributed over an enveloping surface on the intake side of the fan being tested (see graphic). The sound power level measured can be roughly calculated from the sound pressure level by adding 7 dB.

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

$$d \cong D$$

$$H = 1.5d \dots 4.5d$$

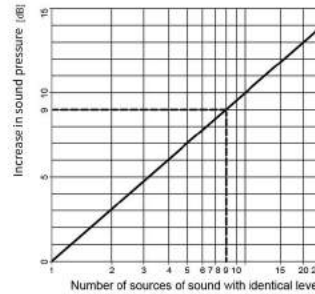
$$\text{Measurement area } S = 6d^2 + 7d(H + 1.5d)$$



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.

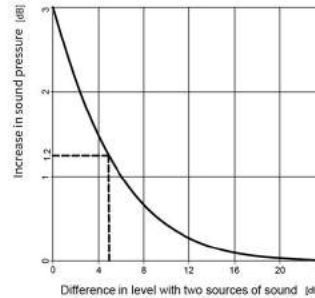
Example: 9 PCS PK3N190B2EM axial fans are on a condenser. According to the data sheet, the sound pressure level of a fan is approximately 72 dB(A). The level increase measured from the diagram is 9 dB. Thus the overall sound level of the installation can be expected to be 79 dB(A).



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.

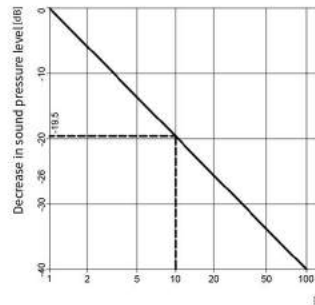
Example: There is an axial fan PK3N225B2EH with a sound pressure level of 71 dB(A) at the operating point and an axial fan PK3N220B2EH with 76 dB(A) in a ventilation unit. The level difference is 5 dB. The level increase can now be read in the diagram as approx. 1.2 dB. This means that the overall sound level of the unit can be expected to be 77.2 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 PK3N225B2EM, a sound pressure level of 66 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 46.5 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:

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

in which: H = Hot transformation quantity

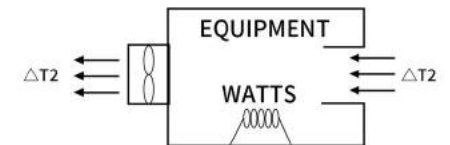
Cp = Air specific heat

ΔT = In the equipment rises temperature

W = Air flow weight

We know (W = CFM x 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:

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

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

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

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 air flow which is for the cooling equipment needs.

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 (M ³ /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 | | | |

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