



ECM Vector Motor

www.wolong-electric.com

WOLONG
Power your future

Specifications

2

Introduction
Type

Wolong Vector Motor

Electronically controlled motors (ECM) are commonly applied in advanced HVAC and fan systems, which meet energy efficiency levels of IE4 (and above) while supporting multiple control and operation modes.

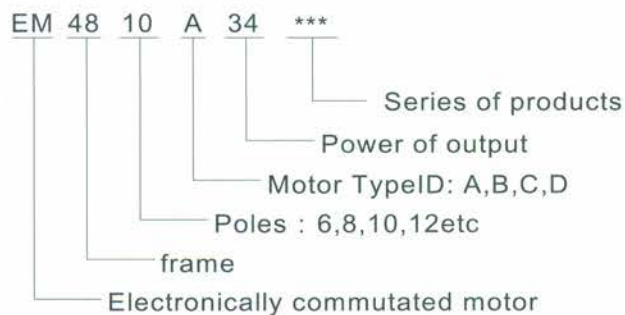
EM48 Series Motor Features

- » Constant Torque & Constant Speed modes
- » Constant air flow customization
- » COM, PWM, 0-10VDC speed control
- » Up to 5 discrete speed selections by 24VAC
- » 200-2000rpm rotate speed options
- » 115/230VAC single phase power supply (50Hz/60Hz)
- » Advanced electronic protection features built-in
- » CW and CCW rotation
- » IP20-IP55 options for indoor & outdoor applications
- » Complies with UL 63730 CLASS B requirements

Motor Technology

- » Optimal control at all speed ranges to maximize torque
- » Robust control, not sensitive to parameter variations
- » High torque and precise speed controls
- » Interior PM motor, concentrated flux design
- » Magnet protection to avoid demagnetization
- » Direct flux control technology, high power density

Type Designation



Motor Parameters

» Low speed series

Model	Output	Rated (RPM)	Voltage Supply (VAC)	Max Current at 60 Hz(A)	Efficiency (%)
EM4810B14***	1/4HP	1050	115	2.9	80
			208-230	1.7	81
EM4810B12***	1/3HP & 1/2HP	1050	115	3.5/5.5	81
			208-230	2.3/3.1	82
EM4810A34***	3/4HP	1050	115	7.8	82
			208-230	4.2	83
EM4810A11***	1HP	1050	115	10.8	84
			208-230	5.5	85

Motor Parameters

» High speed series

Model	Output	Rated (RPM)	Voltage Supply (VAC)	Max Current at 60 Hz(A)	Efficiency (%)
EM4810D14***	1/4HP	1800	115	3.2	81
			208-230	1.7	82
EM4810D12***	1/2HP	1800	115	5.8	84
			208-230	3.0	87
EM4810C34***	3/4HP	1800	115	8.2	85
			208-230	4.3	87
EM4810C11***	1HP	1800	115	10.7	85
			208-230	5.5	88

** Motor choices include IP20-IP55 options

** Shaft diameter selection: $\Phi 12.7/\Phi 15/\Phi 15.87$

Specifications

4

Type A, B, C

Type A: 5 Speed Motor with Insert Terminal

- ✔ Constant speed mode
- ✔ 24VAC speed control,
- ✔ Up to 5 discrete speeds
- ✔ Speed range 200-2000rpm
- ✔ 115/230VAC single phase power supply (50Hz/60Hz)
- ✔ Motor protection IP20 to IP22
- ✔ Open structure for indoor applications



Type B: Multi Speed Design for Replacement Applications

- ✔ Constant speed mode
- ✔ 24VAC speed supply
- ✔ Up to 5 discrete speeds
- ✔ Selectable direction of rotation
- ✔ Speed range 200-2000rpm
- ✔ 115/230VAC single phase power supply (50Hz/60Hz)
- ✔ Motor protection IP20 to IP44
- ✔ Suitable for indoor and outdoor applications



Type C: Serial and PWM Motor

- ✔ Constant torque, constant speed modes
- ✔ PWM speed control with serial communication
- ✔ Selectable direction of rotation
- ✔ Speed range 200-2000rpm
- ✔ 115/230VAC single phase power supply (50Hz/60Hz)
- ✔ Supports maximum speed limit
- ✔ Motor protection IP20 to IP55,
- ✔ Suitable for indoor and outdoor applications



Type D: 0-10V Speed Control Motor

- ✔ Constant speed mode
- ✔ Speed range 200-2000rpm
- ✔ 0-10VDC speed control with high-linearity
- ✔ 115/230VAC single phase power supply (50Hz/60Hz)
- ✔ Customizable mounting options
- ✔ Motor protection IP44 to IP55
- ✔ Enclosed for outdoor applications



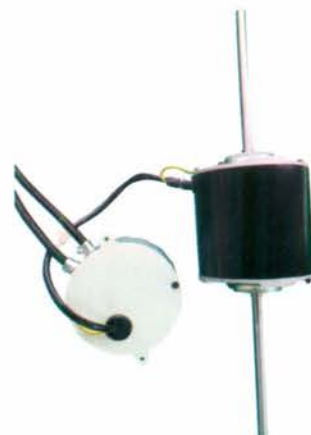
Type E: Separable Control Motor

- ✔ Constant torque, constant speed modes
- ✔ Selectable direction of rotation
- ✔ Supports maximum speed limit
- ✔ COM, PWM, 0-10VDC, or 5 discrete speeds
- ✔ Speed range 200-2000rpm
- ✔ 115/230VAC single phase power supply (50Hz/60Hz)
- ✔ Motor protection IP42 to IP55,
- ✔ Enclosed for outdoor applications



Type F: Double Shaft Motor

- ✔ Constant torque, constant speed modes
- ✔ Selectable direction of rotation
- ✔ COM, PWM, 0-10VDC, or 5 discrete speeds
- ✔ Speed range 200-2000rpm
- ✔ 115/230VAC single phase power supply (50Hz/60Hz)
- ✔ Steel shell motor, customizable mounting options
- ✔ Motor protection IP20 to IP44,
- ✔ Suitable for indoor applications



Technical Data

6

Motor Features
Technical Data

The successful 3 phase controller vector motor series serves commercial and industrial HAVC applications.



Motor Features

- » 380-480VAC three phase power supply (50 Hz/60 Hz)
- » Speed range 200-1800rpm
- » Maximum output power 3.7kw
- » 0-10VDC analog speed control or PWM speed control
- » Supports customizable serial communication
- » Up to 91% system efficiency, comply with IE4 motor efficiency
- » IP54-IP66 motor protection and advanced electronic protection

Technical Data

Type	Voltage Supply (VAC)	Freq. (Hz)	Output power (KW)	Input current (A)	Rated (r/min)	Torque (NM)	Eff (%)	Poles
EM56	380-480	50/60	1.1	2.2	1000	10.5	85	10
	380-480	50/60	1.1	2.1	1500	7.0	87	10
	380-480	50/60	1.5	2.9	1500	9.6	88	10
	380-480	50/60	1.1	2.09	1800	5.8	88	10
	380-480	50/60	1.5	2.89	1800	8.0	89	10

Technical Data

» Technical Data (Continued)

Type	Voltage Supply (VAC)	Freq. (Hz)	Output power (KW)	Input current (A)	Rated (r/min)	Torque (NM)	Eff (%)	Poles
EC112	380-480	50/60	1.1	2.2	1000	10.5	85	10
	380-480	50/60	1.5	2.9	1000	14.3	86	10
	380-480	50/60	1.1	2.1	1500	7.0	87	10
	380-480	50/60	1.5	2.9	1500	9.6	88	10
	380-480	50/60	2.2	4.1	1500	14.0	89	10
	380-480	50/60	1.1	2.09	1800	5.8	88	10
	380-480	50/60	1.5	2.89	1800	8.0	89	10
	380-480	50/60	2.2	4.03	1800	11.7	91	10
EC132	380-480	50/60	1.1	2.2	1000	10.5	85	10
	380-480	50/60	1.5	2.9	1000	14.3	86	10
	380-480	50/60	2.2	4.2	1000	21.0	87	10
	380-480	50/60	3.0	5.6	1000	28.7	89	10
	380-480	50/60	1.1	2.1	1500	7.0	87	10
	380-480	50/60	1.5	2.9	1500	9.6	88	10
	380-480	50/60	2.2	4.1	1500	14.0	90	10
	380-480	50/60	3.0	5.6	1500	19.1	90	10
	380-480	50/60	1.1	2.09	1800	5.8	88	10
	380-480	50/60	1.5	2.89	1800	8	89	10
	380-480	50/60	2.2	4.03	1800	11.7	91	10
	380-480	50/60	3.0	5.5	1800	15.9	91	10
	380-480	50/60	3.7	6.8	1800	19.6	91	10

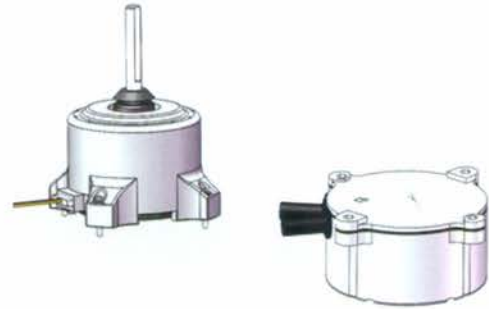
Technical Data

8

Resin Motor Series
Motor Parameters
Dimension Figure

Resin Motor Series

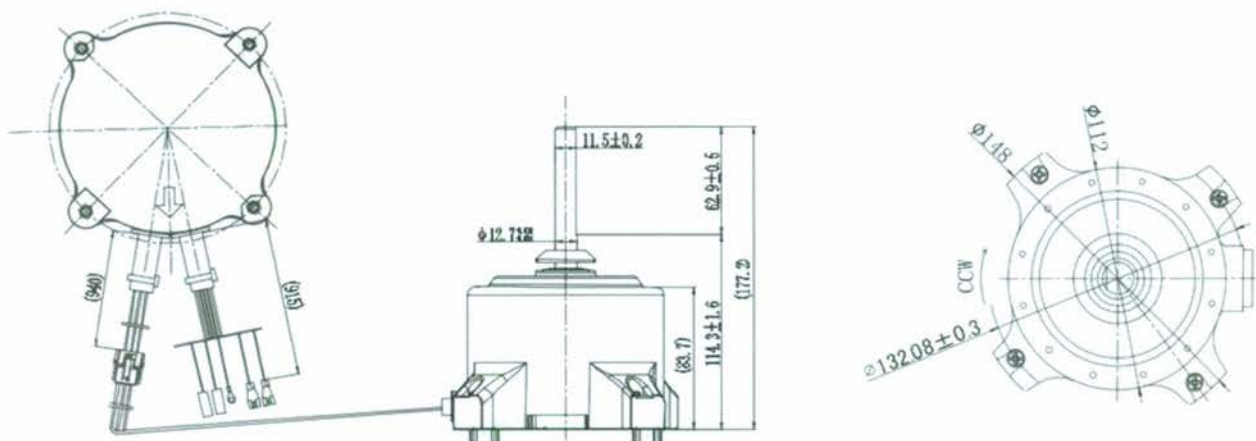
1. PWM and COM speed control
2. Constant speed mode
3. Speed range 200-1300rpm, customizable
4. Multi-protection features
5. Plastic resin motor structure, high protection
6. Separation structure and lift on lift-off type



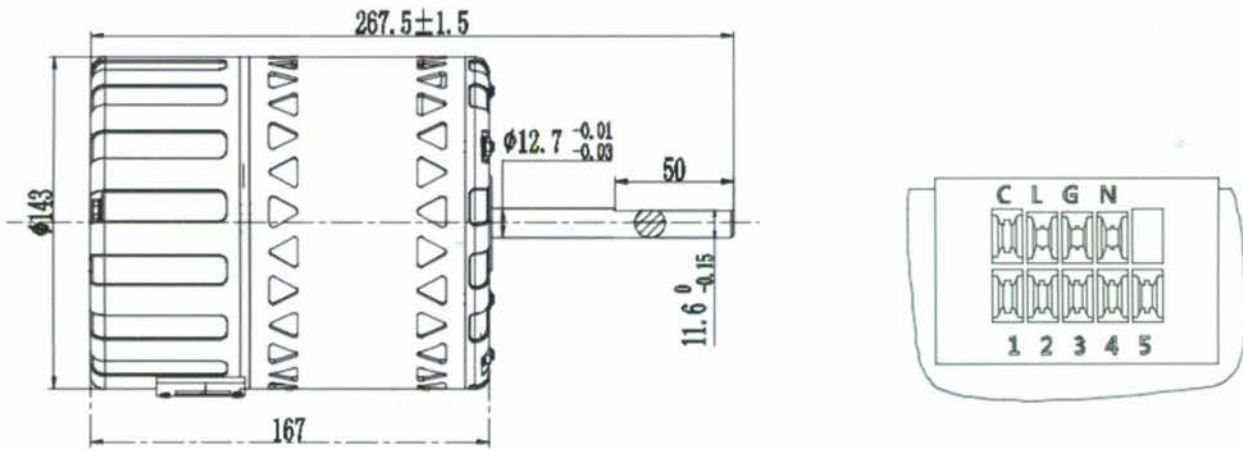
Motor Parameters

Type	Controller Type	Voltage (VAC)	Freq. (Hz)	Current (A)	Output (W)	Rated (r/min)	Torque (NM)
ZWB4710L03A	ECA001A	240	60	2.52	308	1050	2.8
ZWB4710L03A	ECA001B	240	60	2.28	269	917	2.8
ZWB4710L03A	ECA001C	240	60	1.83	200	682	2.8

Dimension Figure

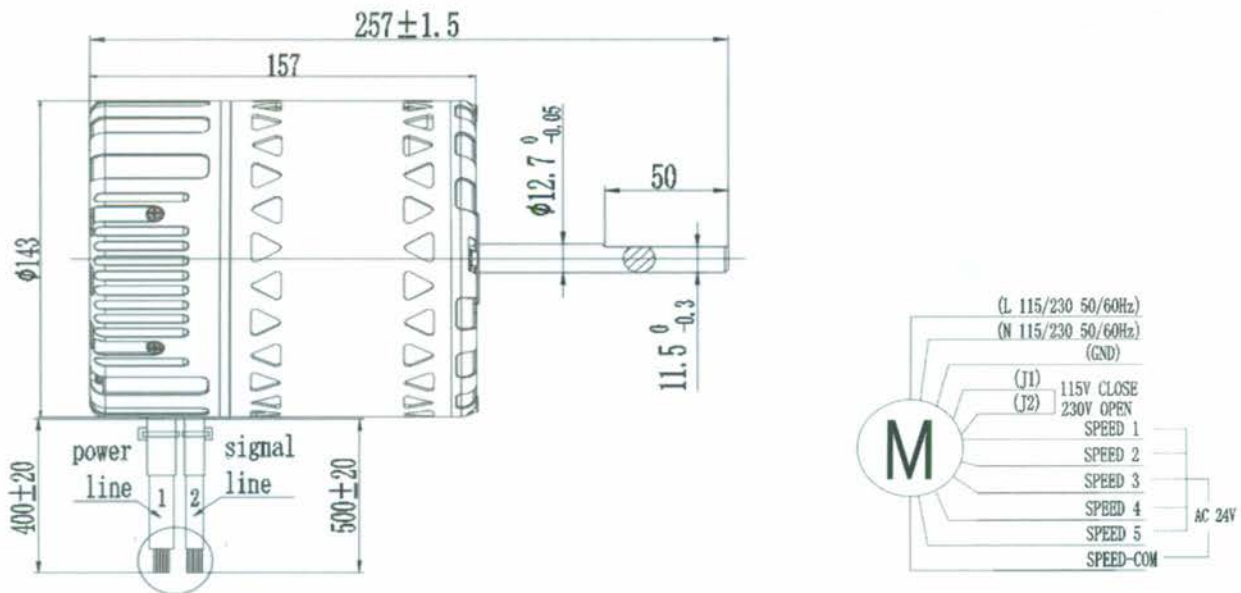


Type A 5 Speed Motor with Insert Terminal



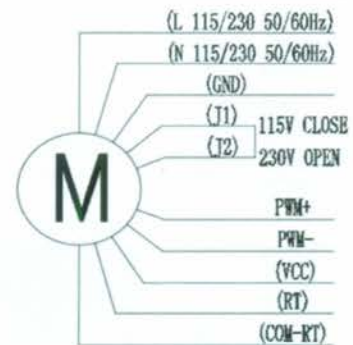
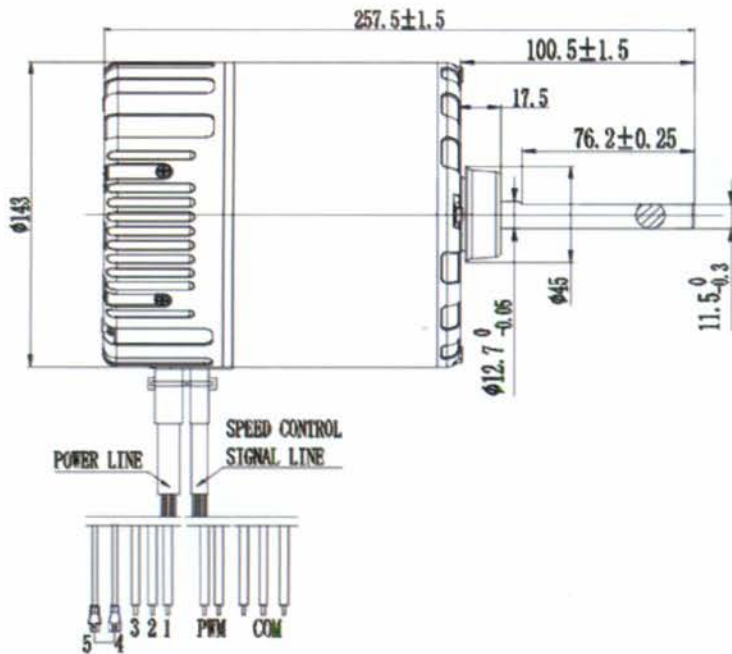
**Motor shaft diameter, shaft length and outgoing line can be customized

Type B Multi-speed Design for Replacement Applications



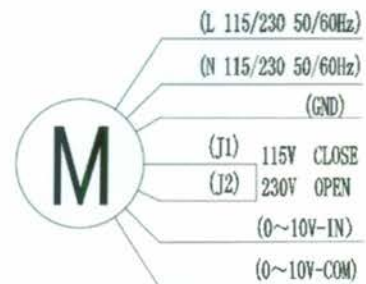
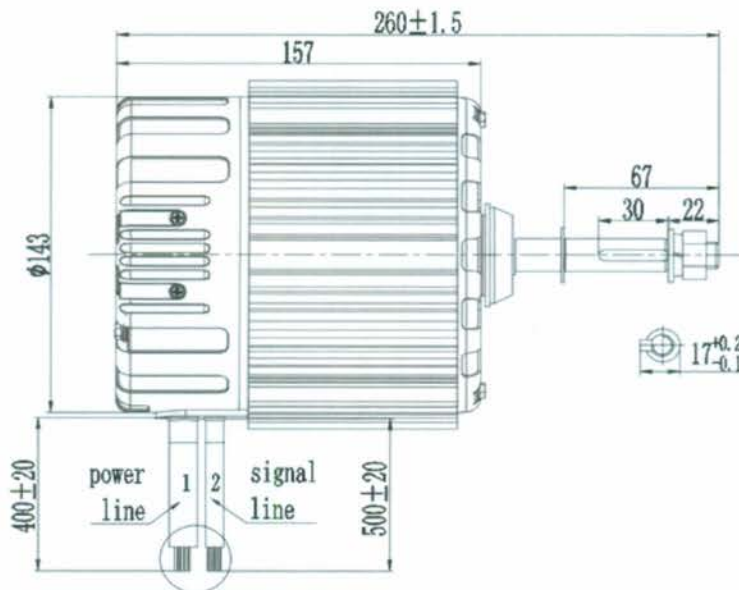
**Motor shaft diameter, shaft length and outgoing line can be customized

Type C Serial and PWM Motor



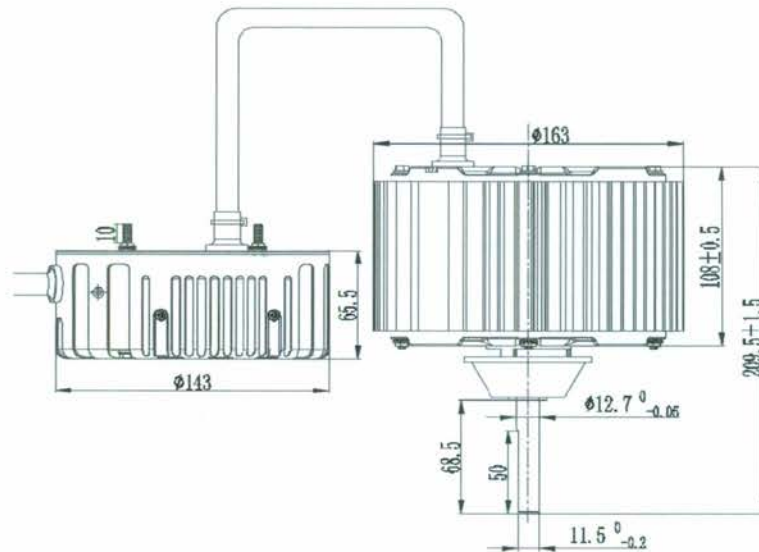
**Motor shaft diameter, shaft length and outgoing line can be customized

Type D 0-10V Speed Control Motor



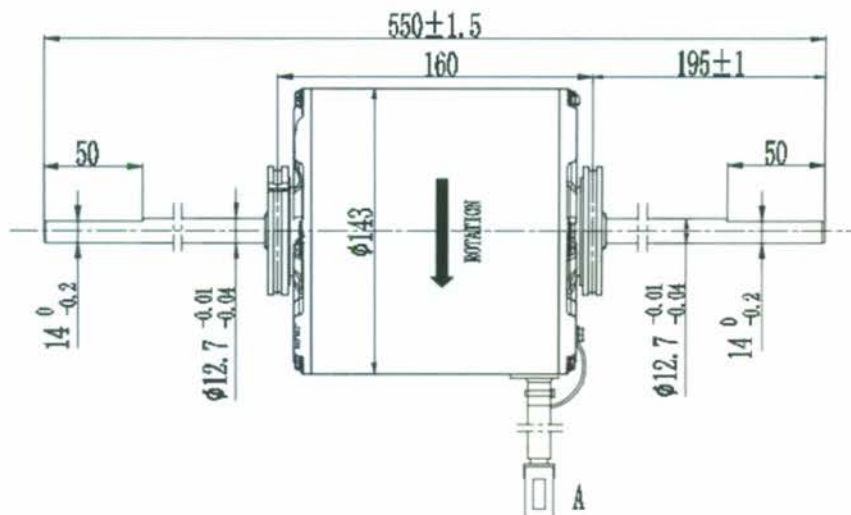
**Motor shaft diameter, shaft length and outgoing line can be customized

Type E Separable Control Motor



**Motor shaft diameter, shaft length and outgoing line can be customized

Type F Double Shaft Motor



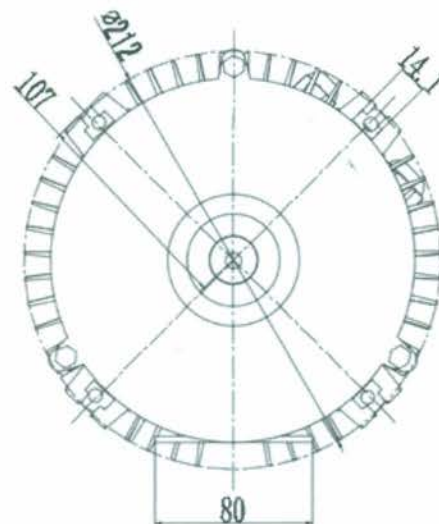
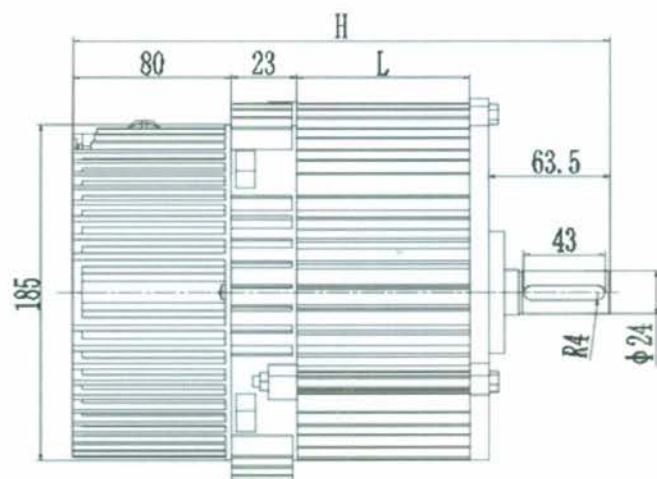
**Motor shaft diameter, shaft length and outgoing line can be customized

Technical Data

12

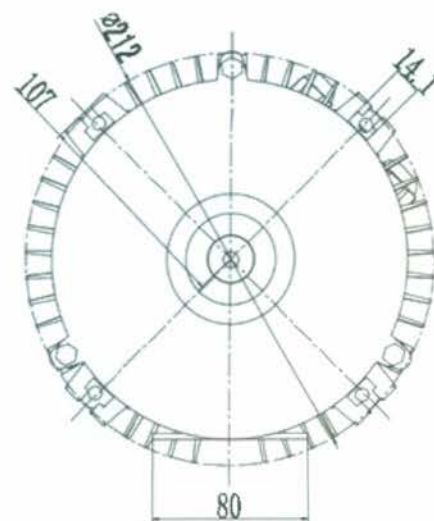
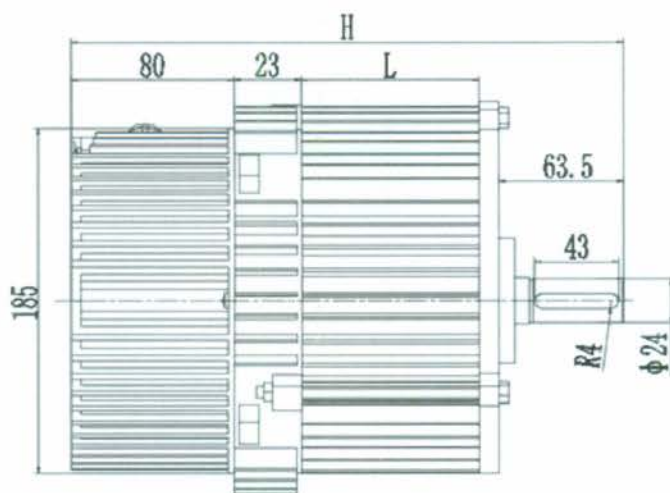
EM56 Vector Motor
EC112 Vector Motor

EM56 Vector Motor



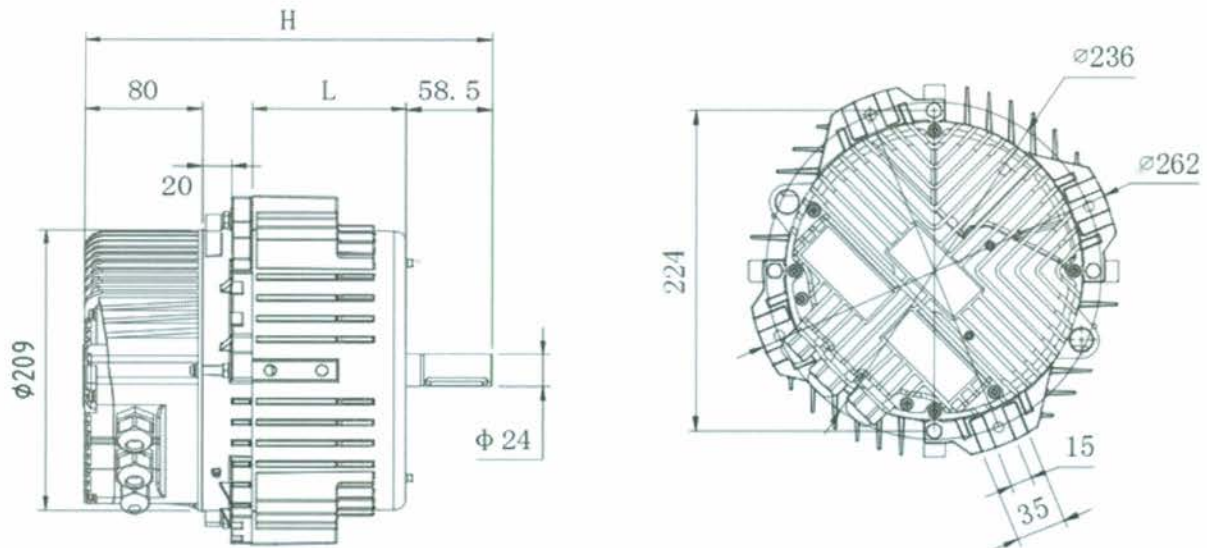
H(mm)	L(mm)
284,294	90,100

EC112 Vector Motor



H(mm)	L(mm)
267.5, 277.5	90,100

EC132 Vector Motor



H(mm)	L(mm)
263, 277	90, 104

MOTOR TYPE

- | | | |
|-----------|-----------|-----------|
| £ Type: A | £ Type: B | £ Type: C |
| £ Type: D | £ Type: E | £ Type: F |
| £ EM48 | £ EM56 | £ EC112 |
| £ EC132 | | |

RUNNING MODE

- | | | |
|------------------|-------------------|---------------------|
| £ Constant speed | £ Constant torque | £ Constant air flow |
|------------------|-------------------|---------------------|

SPEED CONTROL MODE [Multiple Choices]

- | | | |
|---------------------|-------|-----------|
| £ Serial | £ PWM | £ 0-10VDC |
| £ 5 discrete speeds | | |

MOTOR STRUCTURE

- | | | |
|---------------|------------------|---------------|
| £ Steel shell | £ Aluminum shell | £ Resin shell |
|---------------|------------------|---------------|

SHAFT DIAMETER

- | | | |
|-----------------|---------------|------------------|
| £ Φ 12.7mm | £ Φ 15mm | £ Φ 15.87mm |
| £ Φ 14.0mm | £ Φ 24mm | £ Other |

MOTOR HEIGHT

- | | | |
|-----------|-----------|---------|
| £ 257.5mm | £ 267.5mm | £ Other |
|-----------|-----------|---------|

WOLONG

Power your future



WL_HA_01_ECM_201909_EN_VER1.0



BROOK CROMPTON



GE INDUSTRIAL MOTORS

LAURENCE SCOTT

MORLEY



SCHORCH



WOLONG