East West

Motor Offerings

Fueled by passion—United in innovation

About East West—

GLOBAL MANUFACTURING

East West is first and foremost a global solutions company focused on the realization of products, from design to distribution. As specialists in onshore, near-shore, and offshore manufacturing, we offer a seamless path to scale and an exceptional speed-to-market strategy while driving down costs and adhering to the highest quality standards. We are one integrated family, working together to support our customers throughout the entire product life cycle.

DESIGN SERVICES

By providing custom design and manufacturing solutions, our U.S.-based engineering team becomes an extension of yours. Working with a company providing both design and manufacturing services streamlines the transition from design to manufacturing. We can recommend design improvements, reduce manufacturing costs, enhance functionality and improve quality. Benefits of design services include cost analysis and reduction programs, SKU consolidation opportunities, reverse engineering and drop-in replacement products.

DISTRIBUTION & U.S.-BASED CUSTOMER SUPPORT

East West offers warehousing, distribution and cross-docking services. From loading containers to customs clearance, full logistics management to paperwork and administrative functions, we handle every detail—so you don't have to! Our Atlanta-based customer support team works closely with our logistics team to ensure your product is delivered on time. We are only a phone call away if you have any questions or concerns about your order.

SELECT CAPABILITIES

ENGINEERED PRODUCTS

Complex, critical-to-function components, sub-assemblies, and complete products. This division focuses on projects that include precision metal, specialty rubber products and custom plastic parts.

ELECTRONIC MANUFACTURING SERVICES (EMS)

We offer scalable, state-of-the-art facilities to manufacture PCBAs and complete box build assemblies. Our customers can scale with us through our multiple EMS facilities, never sacrificing quality.

MOTORS, FANS, BLOWERS, PUMPS

We provide a range of customized fans, blowers, pumps and AC/DC/EC motors to meet a variety of needs. East West's quality products will differentiate your company from the rest of the field.

Let's talk motors—

ENGINEERING & MOTOR DESIGN SERVICES

As an Original Design Manufacturer (ODM), we become an extension to your overburdened engineering team and bring expertise in offshore manufacturing. Our technical knowledge and expertise ensure that your manufacturing is done right while saving you money and enabling you to focus your efforts on what you do best.

East West's Motor Design Services Team specializes in designing custom motors tailored specifically to any customer application. We can provide solutions from our catalog of products or develop semi- to fully customized designs to best fit your budget and performance needs.

AREAS OF EXPERTISE

- AC, DC & EC motors
- CFD (Computational Fluid Dynamics)
- Electronic PCBAs
- Electrical subassembly/box builds
- FEA (Finite Element Analysis)
- IoT devices
- In-house fan & motor performance testing capabilities
- Metal castings, stampings and forgings
- OEM customized fan, blower and pump solutions
- Plastic injection molding and tool making
- Custom motor design services (Ansys Maxwell software used for electro-magnetic design)



WORLD-CLASS MANUFACTURING FACILITIES

East West was founded by engineers who understand both products and Design for Manufacturability (DFM). Our modern manufacturing facilities located in both China & Vietnam were designed from the ground up with quality, efficient production in mind. Our highly automated motor factory houses a UL-approved, dynamometer and application test facility that allows reverse engineering from your existing motors.

WE UNDERSTAND UL

Our factory has a UL-certified lab which provides speed and expertise for testing your products. You save the time and hassle of having your products shipped off to a UL-testing facility, which could take months for testing to be completed and reviewed. Our engineering team has years of experience with UL allowing us to manufacture products to effortlessly meet UL standards the first time.

IN-HOUSE TESTING

With a UL-approved dynamometer test facility, we're able to perform various testing applications on motors, axial fans and blowers including:

- Airflow Testing
- Thermal Shock
- Stop/Start Cycling
- Continuous Run
- Locked Rotor
- Acoustic
- Vibration
- Highly Accelerated Life Testing
- Extreme Temperature

DID YOU KNOW?

East West manufactures more than 2 million motors each year.

Vertex®

EC MOTOR SERIES

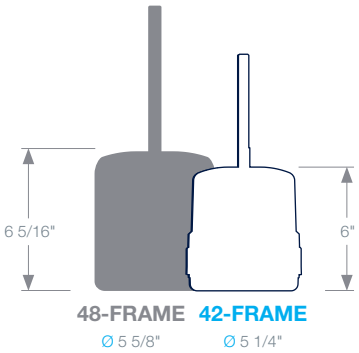
Introducing HVAC's most innovative motor

THE FIRST OF ITS KIND

This motor was developed with composite material—allowing for optimized geometry, competitive pricing and lower weight—as well as interior permanent magnets (IPM), which are less likely to detach due to centrifugal force and allow for higher torque/speed and energy savings.

YOUR IDEAL SINGLE SKU SOLUTION

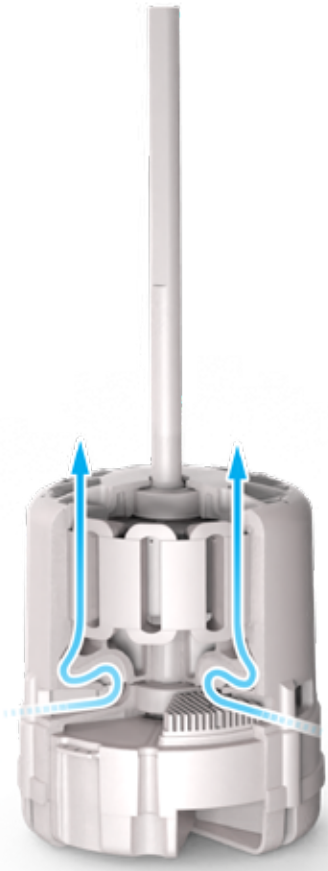
The motor's extremely wide peak efficiency range, with maximum efficiency of 88%, allows one motor SKU to be used to cover a range of application duty points. Optimized electro-magnetics enable maximum output power to be achieved from 1200 to 2000 RPM covering both standard 4-pole and 6-pole applications. Vertex 1/2 HP can be used for 120/208–277 VAC, 50/60 Hz input with consistent performance throughout the nominal voltage range without manual configuration.



PATENTED ACTIVE COOLING**

East West's patented active cooling system, illustrated to the right, helps the motor achieve a significant increase in power density. For the Vertex 1/2 HP, this means providing the same performance as a typical 48-frame EC motor but in a 42-frame package size.

** S. Andrew Semidey, "Electronically commutated DC motor," U.S. Patent 11 552 520, Jan. 10, 2023.



Learn more about Vertex—

FEATURES

High voltage inputs (120/208–277 VAC) for 3-speed/torque operation

Low voltage inputs (12–30 VAC or 3.3–30 VDC) for 4-speed/torque operation

0–10 VDC/PWM (pulse width modulation) for variable speed/torque operation

Tachometer output/diagnostic output (1-pulse/rev)

3.3 VDC output (50 mA max) to power digital inputs when external controller does not have this output as an option

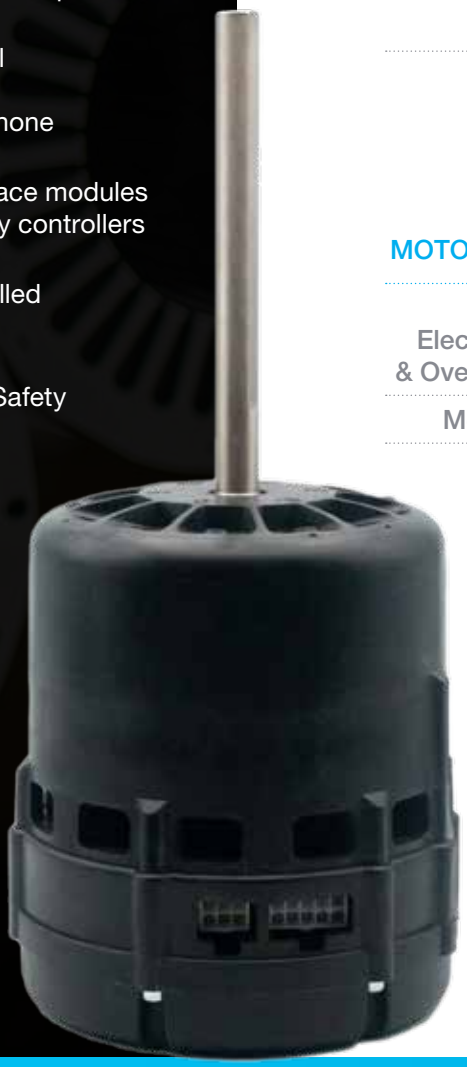
Motor configuration via serial communication for PC and Bluetooth dongle for smartphone

Possible elimination of interface modules when connecting to 3rd party controllers

Soft start allowing for controlled ramp-up to full speed

Control interface is a SELV (Safety Extra Low Voltage) system

Over-temperature protected electronics



MOTOR SPECIFICATIONS

Tri Voltage	120/208–277 VAC 50/60 Hz
Speed Range	300 to 2000 RPM
Insulation	Class F
Bearing Type	Sealed ball bearing
Controller	Integrated
Direction of Rotation	Reversible via user configuration Default direction is CCWDE
Electronic Safety Features	Locked rotor Over-current Over-temperature protection
Mounting Options	Belly band: single shaft Resilient mount: dual shaft Custom mounting: upon request
Approvals	UL 1004-7, UL 60730-1, CAN CSA E60730-1, CSA C22.2 NO. 77-14, CSA C22.2 NO. 100-14

MOTOR MATERIALS

Motor Casing, Electronics Housing & Over-molded Stator	PET composite with flammability rating UL94-5VA
Mounting Bracket	G30 zinc plated steel
Shaft	#45 steel coated with SR70 rust proof oil

NO ONE SOLUTION FITS ALL—That's why we designed our Vertex motors in three efficiency tiers, which offer you the flexibility to choose the option best suited to your needs.

** Higher max. ambient temperature possible depending upon application requirements. Consult with your EW Account Manager for further details.

1/2 HP EFFICIENCY TABLE

	PREMIUM	HIGH	STANDARD
Peak Efficiency	**88%**	87%	85%
Max. Output Power	**450 W**	373 W	373 W
Max. Power Input	570/560–544 W	480/477–466 W	510/508–492 W
Current Draw	6.5/4.0-3.0 A	5.5/3.4-2.5	5.6/3.6-2.9 A
Operating Temp.	-20 ºC to **60 ºC** **	-20 ºC to 50 ºC **	-20 ºC to 40 ºC **
Rated Torque	3.6 Nm @ 1200 RPM 2.2 Nm @ 2000 RPM	3 Nm @ 1200 RPM 1.8 Nm @ 2000 RPM	3 Nm @ 1200 RPM 1.8 Nm @ 2000 RPM
Winding Material	Copper	Copper	Aluminum
Magnet Material	Neodymium-Ferrite	Ferrite	Ferrite

1/3 HP EFFICIENCY TABLE

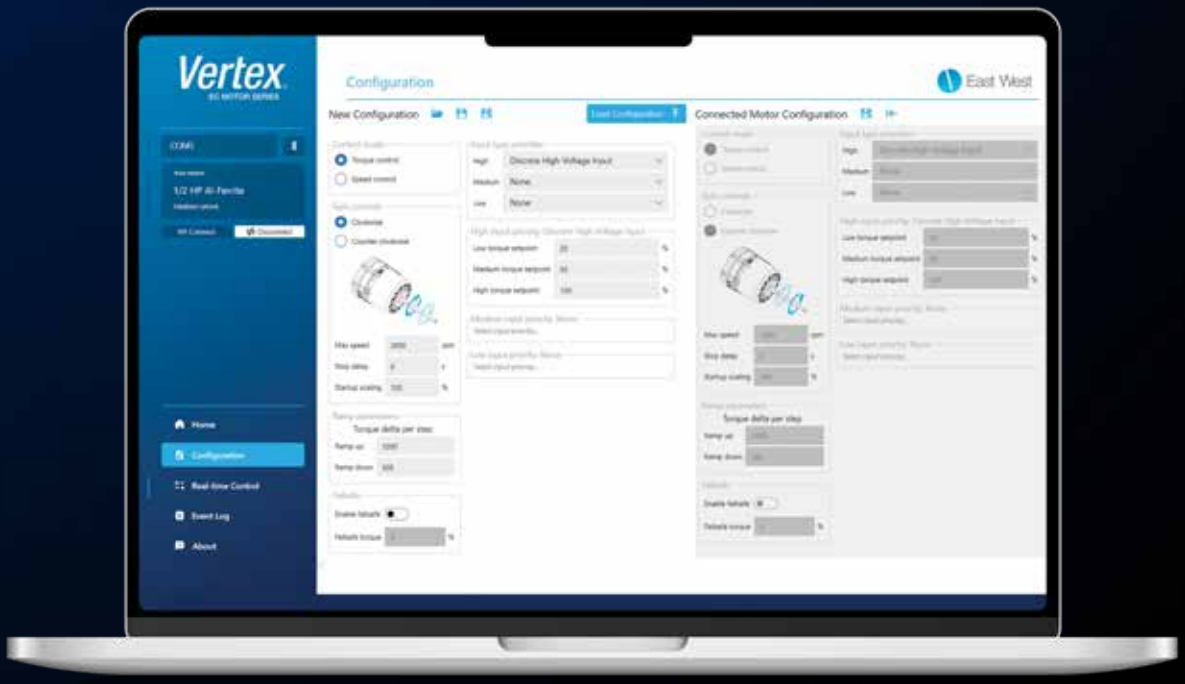
	PREMIUM	HIGH	STANDARD
Peak Efficiency	**87%**	85%	84%
Max. Output Power	**299 W**	249 W	249 W
Max. Power Input	341/335–334 W	300/296–295 W	320/314–313 W
Current Draw	4.1/2.6-2.0 A	3.6/2.3-1.8 A	3.8/2.4-1.9 A
Operating Temp.	-20 ºC to **60 ºC** **	-20 ºC to 50 ºC **	-20 ºC to 40 ºC **
Rated Torque	2.4 Nm @ 1200 RPM 1.4 Nm @ 2000 RPM	2 Nm @ 1200 RPM 1.2 Nm @ 2000 RPM	2 Nm @ 1200 RPM 1.2 Nm @ 2000 RPM
Winding Material	Copper	Copper	Aluminum
Magnet Material	Neodymium-Ferrite	Ferrite	Ferrite

1/4 HP EFFICIENCY TABLE

	PREMIUM	HIGH	STANDARD
Peak Efficiency	**86%**	84%	81%
Max. Output Power	**225 W**	187 W	187 W
Max. Power Input	253/256–250 W	238/234–233 W	261/255–254 W
Current Draw	3.2/2-1.6 A	2.9/1.8-1.5 A	3.0/2.0-1.6 A
Operating Temp.	-20 ºC to **60 ºC** **	-20 ºC to 50 ºC **	-20 ºC to 40 ºC **
Rated Torque	1.8 Nm @ 1200 RPM 1.1 Nm @ 2000 RPM	1.5 Nm @ 1200 RPM 0.9 Nm @ 2000 RPM	1.5 Nm @ 1200 RPM 0.9 Nm @ 2000 RPM
Winding Material	Copper	Copper	Aluminum
Magnet Material	Neodymium-Ferrite	Ferrite	Ferrite

Vertex®

EC MOTOR SERIES



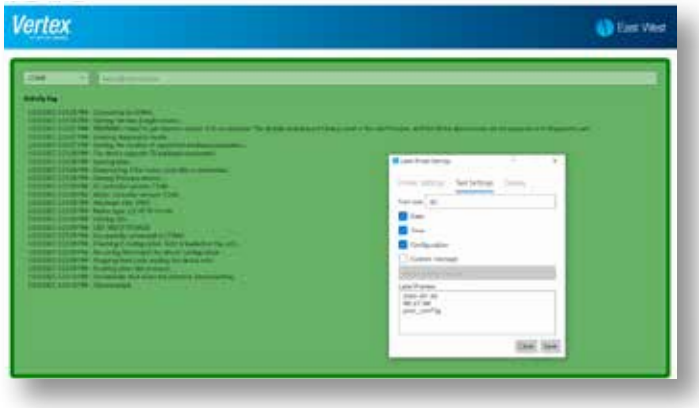
Real Data in Real Time

The Vertex app's real-time control capability provides real data in real-time, empowering users to fine-tune performance and make decisions with speed and precision. This ensures engineers can focus on optimizing motor performance without unnecessary complexity.

Effortless User Experience

Effortless Data Capture

Our app collects wireless data via Bluetooth, allowing for seamless testing in the application and eliminating the need for cumbersome wiring. By enabling an unobstructed performance analysis, our app enhances usability and ensures accuracy under real-world conditions.

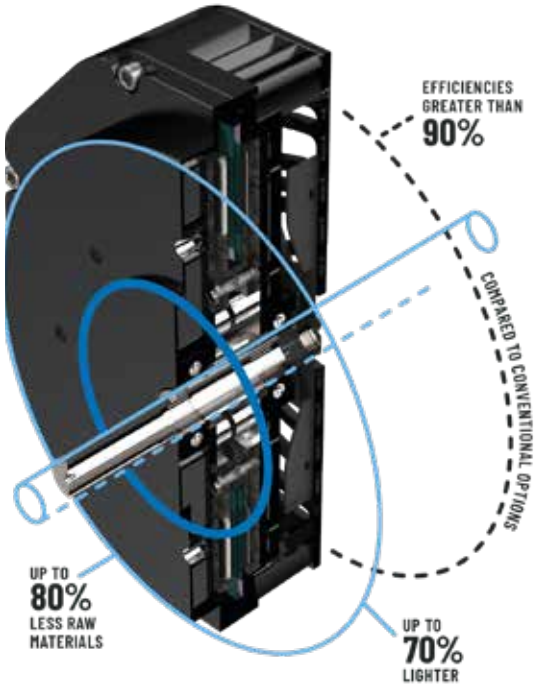


Simplify Your Workflow

Easily migrate final setpoints from the lab to production-ready files, generate barcodes for seamless production line scanning, and automatically trigger label printing - all through a user-friendly interface with supervisor controls.

East West

ecm PCB STATOR TECH



Partners in Innovation

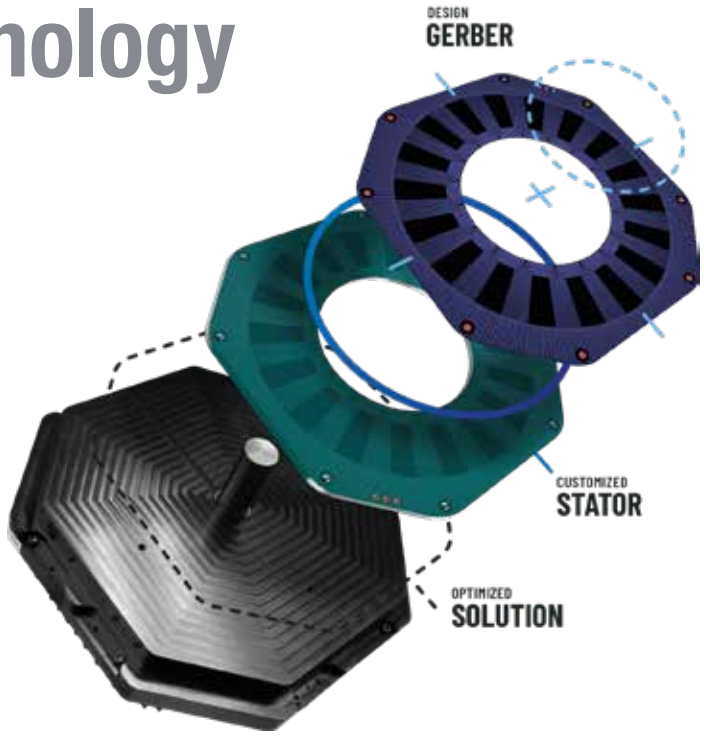
East West has strategically partnered with ECM PCB Stator Tech to leverage ECM's award-winning PrintStator Motor CAD optimization platform to its client network.

PCB Stator Technology

This technology eliminates the need for copper windings used in conventional machines, creating a new type of axial flux electric motor for the next 100 years of electrification.

This breakthrough allows for the optimization of copper geometries and winding patterns, ensuring high efficiency with minimal environmental impact. PCB Stator motors designed via PrintStator are up to 70% lighter than conventional options—while achieving efficiencies in the excess of 90% and requiring just 20% of the raw materials. PCB Stator motors can achieve power of up to 20kW, speeds of up to 30,000 RPM, and torque ratings of up to 100Nm.

Advantages of PCB Stator Technology



High Efficiency
PCB Stator technology has been incorporated into motors, achieving efficiencies exceeding 90%. This integration results in reduced operating costs, extended battery life, and lower carbon footprint.

Streamlined Motor Design
ECM's PrintStator software streamlines motor design by rapidly generating prototype-ready designs, allowing engineers to move quickly from concept to testing, accelerating development timelines.

Increased Durability
PCB Stator's continuous coil design and fully encapsulated windings prevent common failures found in traditional motors, boosting overall durability. Rigorous HALT testing validates their reliability.

Superior Quality of Motion
PCB Stator motors offer unparalleled motion quality, free from cogging and delivering smooth torque. They eradicate cogging through their innovative air core design and utilization of iron-free PCB Stators.

High Torque Density
Powered by PrintStator software, efficient copper utilization yields torque-dense machines, enabling high power density with minimal axial length and weight. Multiple PCB Motors can be stacked on a single shaft.

Low Noise and EMI
The encapsulation of PCB Stator coils within a composite structure effectively eliminates acoustic noise and reliability issues caused by vibration and other forces affecting traditional stator windings. Results are up to 30dB quieter.

Increased Thermal Performance
PCB Stator motors feature patented thermal management for safe continuous operation. Using a continuous copper path, heat is conducted from the stator's center to the case's edge, then dissipated into the environment.

Sustainable
Through meticulous optimization of magnet and steel mass and the use of PCB Stators requiring less copper, these motors set a new standard for resource efficiency. PCB Stator Motors reduce material usage by up to 80%.

ECR2 Series

Our premier EC motor for refrigeration

TYPICAL APPLICATIONS

- Bottle coolers
- Vending machines
- Heat pump water heaters
- Reach-in display cases
- Other refrigeration equipment

KEY FEATURES

- High efficiency—up to 70%
- High power factor—up to 0.95
- RoHs & REACH compliant
- SKU reduction—reduces inventory & boosts economies of scale
- Highly reliable—design life L10 of 90,000 hours

MOTOR SERIES SPECIFICATIONS

Speed Options	3-speed, reversible or timed reverse options
EMC Protection	4000 V (per EN61000-6-2)
Noise	SWL 37 dBA @ 1300 RPM (per ISO1680)
Insulation	Class A (105°C)
Motor Protection	Electronic protection, locked rotor, automatic thermal derating
Refrigerant Compatibility	HFC, CO2 and hydrocarbon (per IEC60335-2-89 Annex BB)
ATEX (EX)	IEC 60079-15 Group 2, Category 3G
IP rating	IP67 (wash-down duty)
Operating Range	-30°C to +50°C (-22°F to +122°F)
Storage Temp. Range	-40°C to +80°C (-40°F to +176°F)
Approvals	CE VDE Ex RoHS cULus

ECR2 13W MOTOR SPECIFICATIONS

Dual Voltage	115/230 VAC, 100-240 VAC, 50/60 Hz (all models)
Output Power	13 W max.
Speed Range	300 to 1800 RPM
Max. Efficiency	70%
Weight	0.54 kg (1.2lb)
Max. Input Current	0.10 A (@ 230 VAC) 0.20 A (@ 115 VAC)
Power Factor	Up to 0.95 depending on load and voltage

ECR2+ 26W MOTOR SPECIFICATIONS

Dual Voltage	115/230 VAC, 100-240 VAC, 50/60 Hz (all models)
Output Power	26 W max.
Speed Range	300 to 2300 RPM
Max. Efficiency	74%
Weight	0.69 kg (1.5lb)
Max. Input Current	0.35A (@115 VAC)
Power Factor	Up to 0.96 depending on load and voltage

ECR2 13W SUITABLE FANS

Speed	150MM (6”) 172MM (7”)	200mm (8”)				230mm (9”)			254mm (10”)	
	All Pitches	22°	28°	34°	40°	22°	28°	19°	22°	28°
1300 rpm	+	+	+	+	+–	+	+	+	+	+–
1550 rpm	+	+	+	+	+–	+	+–	+–	+–	–
	+	+	+	+–	–	+–	–	–	–	–

+ Achieve rated rpm – Does not achieve rated rpm +– May not achieve rated rpm at all back pressures

ECR2+ 26W SUITABLE FANS

Speed	200mm (8”)	230mm (9”)			254mm (10”)		
	34°	22°	28°	34°	22°	28°	34°
1300 rpm	+	+	+	+	+	+	+–
1550 rpm	+	+	+	+	+	+	–
1800 rpm	+	+	+	–	+	+–	–
	+	+	+–	–	+–	–	–

+ Achieve rated rpm – Does not achieve rated rpm +– May not achieve rated rpm at all back pressures

SCS

Refrigeration controller

KEY BENEFITS

- Advanced refrigeration controls
- Energy saving
- Smart connectivity
- Commercial performance
- Asset management
- Technical diagnostics
- Digital engagement

CONTROLLER SPECIFICATIONS

Input Voltage Range	90-240 VAC 50/60 Hz
IP Rating	Front panel IP68 (back IPx5)
Max. Power Consumption	3.5W
Relay ratings	1x UL: 7.2FLA & 34.8LRA, IEC: 8A 1x UL: 3A, IEC: 3A 2 x 0.4A (triac solid state)
Low Voltage Output Ratings	1 x 5Vdc 100mA 4 x 0-24Vdc, 1A per channel*
EMC Protection	4000V (per EN61000-6-2)
Refrigerant Compatibility	HFC, CO_2, Hydrocarbon (per IEC 60335-2-89)
Operating Temperature Range	IEC -20°C to +55°C (-4°F to +131°F) UL -20°C to +50°C (-4°F to +122°F)
Storage Temperature Range	-40°C to +80°C (-40°F to +176°F)
Weight	130g (4.6oz)
Storage Temp. Range	-40°C to +80°C (-40°F to +176°F)
Weight	0.86 kg (1.9 lb)

ECF2

Our EC fan assembly for refrigeration

TYPICAL APPLICATIONS

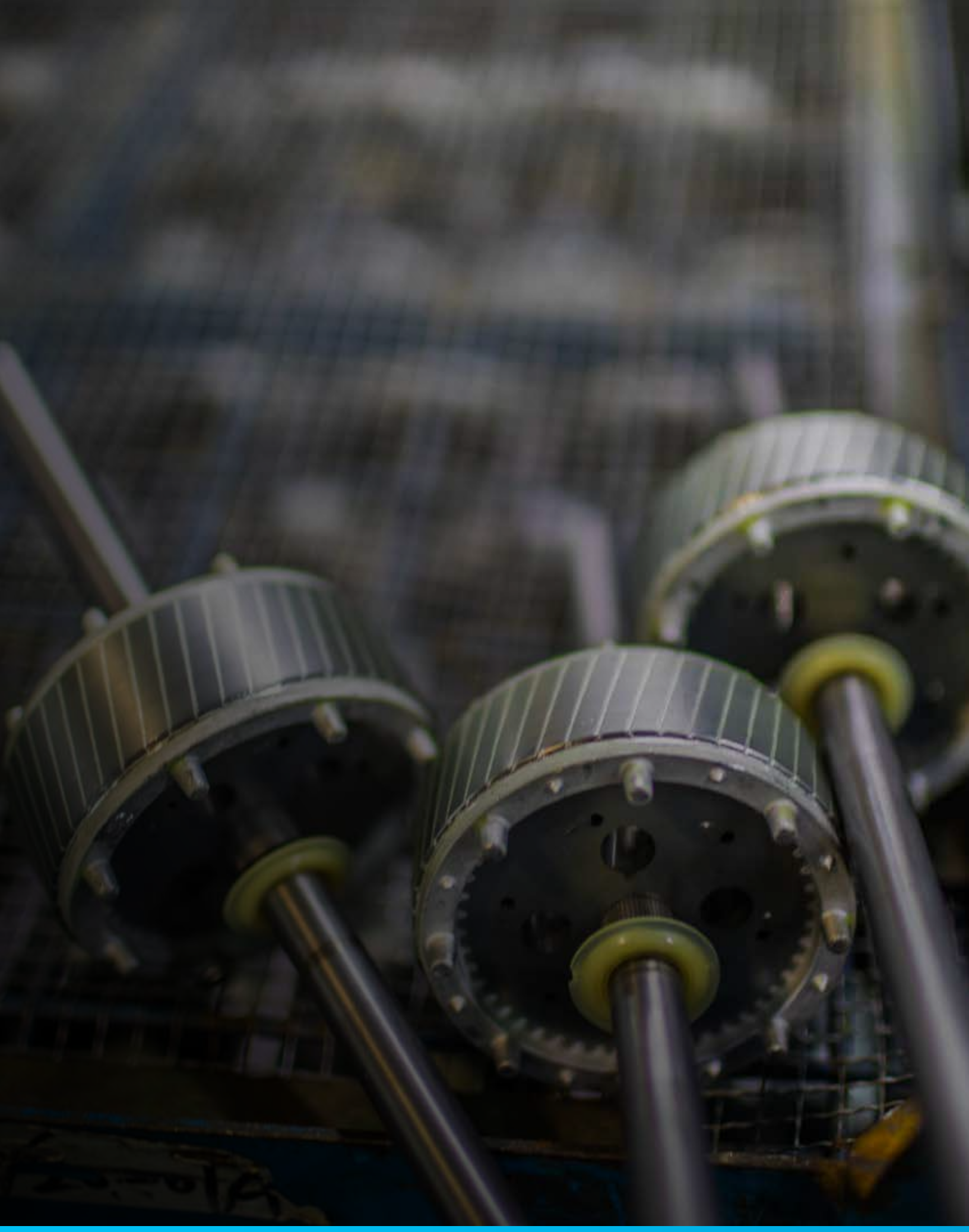
- Bottle coolers
- Vending machines
- Heat pump water heaters
- Reach-in display cases
- Other refrigeration equipment

KEY FEATURES

- High efficiency—up to 70%
- High power factor—up to 0.95
- RoHs & REACH compliant
- SKU reduction—reduces inventory & boosts economies of scale
- Highly reliable—design life L10 of 90,000 hours

MOTOR SPECIFICATIONS

Dual Voltage	115/230 VAC, 100-240 VAC, 50/60 Hz (all models)
Output Power	0–13 W max.
CFM Range	0–355 CFM (3 speed programmable)
Speed Range	300–1800 RPM field programmable in 50 RPM increments
Speed Options	3-speed, reversible or timed reverse options
Max. Input Power	20.5 W
Max. Input Current	0.10 A (@ 230 V) 0.20 A (@ 115 V)
Power Factor	Up to 0.95 depending on load and voltage
EMC Protection	4000 V (per EN61000-6-2)
Insulation	Class A (105°C)
Motor Protection	Electronic protection, locked rotor, automatic thermal derating
Refrigerant Compatibility	HFC, CO2 and hydrocarbon (per IEC60335-2-89 Annex BB)
ATEX (EX)	IEC 60079-15 Group 2, Category 3G
IP rating	IP67 (wash-down duty)
Operating Range	-30°C to +50°C (-22°F to +122°F)
Storage Temp. Range	-40°C to +80°C (-40°F to +176°F)
Weight	0.86 kg (1.9 lb)
Approvals	CE VDE Ex RoHS cULus



Additional motor offerings—

DEVELOPED FOR YOU

East West offers our customers a wide range of motors. In addition to the motors listed in this brochure, we can also provide custom developments to meet your unique needs.

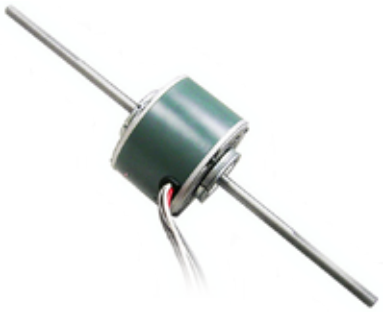
Contact our East West OEM Motor Sales Team to learn more about what we can provide for you!

TYPICAL APPLICATIONS

- Condenser fan
- Direct drive furnace blower
- Evaporative coolers
- Fan coil
- Filtration/room air cleaners
- Heat exchangers
- Heat pump water heaters
- Hot air convection fans
- Induced draft blowers
- Laboratory equipment
- Pump motors
- PTAC (packaged terminal air conditioner)
- Refrigeration
- Ventilation

3.3”-FRAME AC MOTOR

Frame Size	3.3"
HP Range	40 W to 1/12 HP
Voltage Range	115–230
Rpm Range	1325–3450
No. of Speeds	1 or 3
No. of Shafts	1



42-FRAME AC MOTOR

Frame Size	42
HP Range	1/30 to 1/2
Voltage Range	115–230
Rpm Range	1075–3450
No. of Speeds	1 or 3
No. of Shafts	1 or 2

48-FRAME AC MOTOR

Frame Size	48
HP Range	1/6 to 3/4
Voltage Range	115–230
Rpm Range	825–3450
No. of Speeds	1, 2 or 3
No. of Shafts	1 or 2

56-FRAME SPLIT PHASE MOTOR

Frame Size	56
HP Range	1/3 to 1
Voltage Range	115–230
Rpm Range	1140–1725
No. of Speeds	1 or 2
No. of Shafts	1

East West

East West offers our customers a wide range of products including shaded pole, brushed DC, brushless DC/EC, and universal motors.

Contact our OEM Motor Sales Team to learn more!

OEMmotorsales@ewmfg.com

www.ewmfg.com