



P E® Power Electronics® International, Inc.

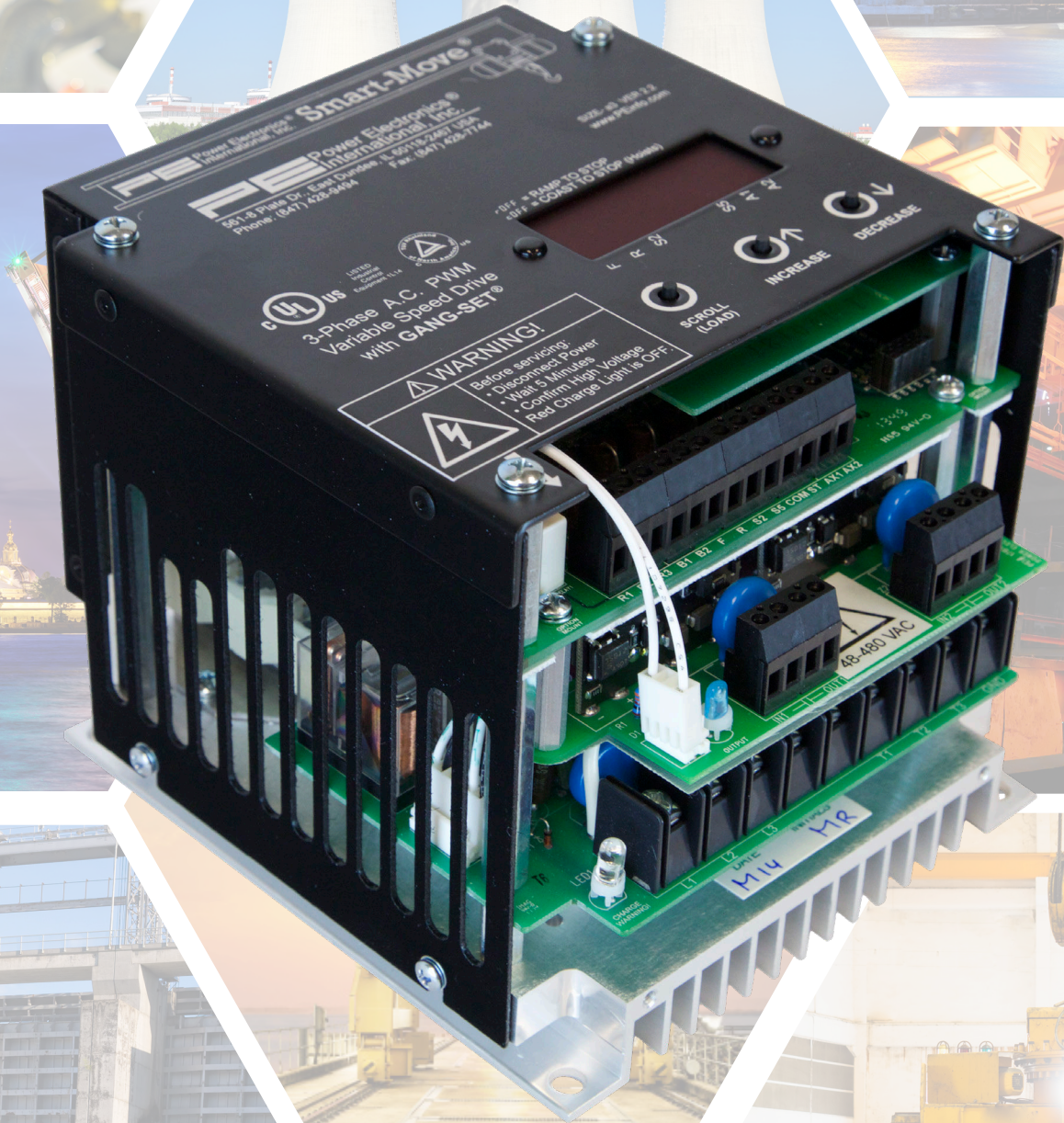
American Made Quality and Reliability since 1969



Micro-Speed®
Smart-Move®

3 PHASE AC VARIABLE SPEED DRIVE

MICRO-SPEED® SMART-MOVE®



DESIGNED FOR HOIST AND CRANE MODERNIZATION, NEW CRANE APPLICATIONS, CONVEYORS, PUMPS, FANS, AND OTHER HIGH-RELIABILITY INDUSTRIAL PROJECTS



THE LATEST IN VARIABLE SPEED DRIVE TECHNOLOGY

MICRO-SPEED® SMART-MOVE®

About the MSM® Series

Micro-Speed® Smart-Move® Variable Frequency Drive

The Micro-Speed® Smart-Move® series AC variable speed drives are the most compact of the Micro-Speed® line of variable frequency drives from PE®. MSM® are rated in amps instead of horsepower and have heavy-duty (CMAA D) internal braking resistors for travel motions built into all models. Designed and manufactured with the demands of material handling in mind. MSM™ series drives are perfect for hoists with mechanical load brakes, bridge cranes, trolleys and monorails—or any other heavy-duty application where precision motor speed control and safety are required. Models are available for hoist and travel cranes. For larger horsepower use the Micro-Speed® CX™ or Ultra™ series.

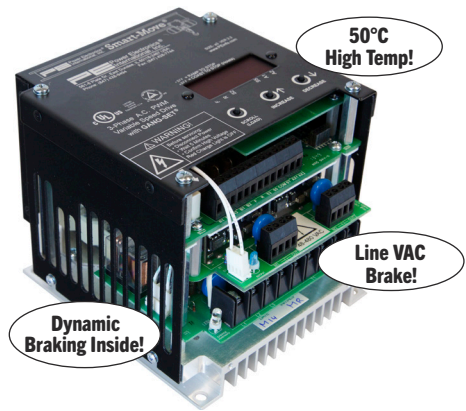
Models

- **MSM-R™**: Standard Version units are PE-Preset™* for travel motion. The controlled ramp-to-stop deceleration saves you time and money by virtually eliminating brake wear. MSM-R™ are perfect for travel applications including but not limited to bridge, trolley, monorail, or conveyor. Can be used on conical rotor motors. See MX-Ultra™ for drives through 600 horsepower.
- **MSM-RH™**: Micro-Speed® Smart-Move® hoist VFD are PE-Preset™* for use in hoisting, lifting, or other applications that have an internal mechanical load brake or self-locking worm drive hoists. See MV-Ultra™ VFD if closed-loop control for hoist is required.
- **MSM-RP™**: Micro-Speed® Smart-Move® with solid-state brake control (travel only) can simplify control panels with built-in two-pole solid-state high voltage AC brake control (up to the drive's rated line voltage). Eliminate the need for a separate brake contactor. Save panel space, components, and wiring. Solid-state brake control should not be used on hoists.

Size	Length (in)	Width (in)	Depth (in)	Weight (lbs)
a3	6	5.5	5.38	4.25

Micro-Speed® Smart-Move® Footprint & Weight Chart
(see website for dimension drawings)

*PE-Preset™: The same high-reliability Smart-Move® but preset for hoist and travel motion allowing for fast and simple installation. Can be changed in the field if necessary.



Service Classes

- All CMAA Class A-D
- AISE TR6
- ASME HST- 4
- HMI H1 to H3

Certification

- ETL/CETL Listed

Up-Grade-Path™ Philosophy

- We engineer all our equipment for quick and easy upgrade or future replacement in the field
- This philosophy includes equipment sizes, electrical connections and software settings
- Past and present methods of programming are subsets of future drive models
- Years from now, you can be confident that your company, equipment, investment, and technicians won't be left behind!

Meets FAR Buy American Act (BAA) USC41



American Made Quality and Reliability since 1969

561- 8 Plate Dr.,
East Dundee, IL
60118-2467 USA
+1 847-428-9494
Fx: +1 847-428-7744
Sales@PEinfo.com
www.PEinfo.com



MSM™ SERIES SPECIFICATIONS

High Surge Power	Up to 300% of rated load (FLA). Best in Class!
Dynamic Brake Circuit	All drives have internal dynamic braking regeneration resistors built into unit! (CMAA D rated) Best in Class!
Universal Auto-Detect™	Automatically detects input voltage and switches between 230 V and 460 V which reduces the amount of models needed to stock.
AC Voltages	208-230, 385-415, 460 ±10%; 480 +10% or -15%; 575 +10% or -15%.
Hp (kW) Rating	Model size range fractional through 3 Hp (.5-2.2 kW) at 460 V (see model listing).
Frequency Input	50 or 60 Hz ±10% nominal (others available).
Control Type	Fully digital three-phase PWM variable frequency.
Output Hz	0.1 to 120 Hz standard (others on request).
Speed Range	Up to 40:1
Speed Controls	Up to three distinct adjustable speeds and infinitely variable control. Set speeds from 0.1 to 120 Hz (extended Hz version available). By using the two and three position infinitely variable speed control setting the machine operator can select any intermediate speed between high and low speeds. Use any two or three position pushbutton station or radio/IR control.
Setting Method	Gang-Set® programming allows for the instant setting of different crane/hoist types. Hold three buttons down, select a Gang-Set® number and instantly set complete drive settings for many standard crane/hoist processes in seconds. Also, over 50 individually adjustable parameters available for almost any industrial application.
Dedicated Brake Relay Output	Can switch up to 230 VAC, .5 Amp max to control an external brake contactor coil.
Solid-State Line VAC Brake Board (RP™)	Drives are equipped with a two-pole line voltage rated solid-state AC brake controller. No external brake contactor may be required for horizontal travel motion. Available on RP™ models only.
DC Injection Braking	DC power is injected into the motor winding near the stopping speed point. Effectively stops the motor without wear on mechanical holding brakes. Also works great on motions which do not require brakes!
Programmable Relay	High-reliability auxiliary Form C relay with user programmability.
Motor Overload Circuit Protection	Thermal inputs, electromechanical overload input, internal programmable I ² T Ground fault
Voltage Protection	Overvoltage and undervoltage bus trips.
DC Bus Indicator	Indicator LED on until DC bus voltage drops below 50 VDC.
Conformal Coating	Safeguard electronics from corrosive gases, liquids and excessive moisture (optional).
Enclosure	Powder coated steel (not plastic) for increased EMI protection, and higher resistance to atypical shock and vibration.
Temperature	Ambient: 14°F to 122°F (-10°C to +50°C) standard. Best in Class! Storage: From -4°F to +158°F (-20°C to +70 °C).
Humidity	Non-condensing
Limit Switch Inputs	Left and right optically isolated limit switch inputs. Programmable slowdown and stop.
Optically Isolated Speed Inputs	F (forward), R (reverse), S2 (second speed) through S5 (fifth speed); 115 VAC standard, others available. Standard control inputs are optically isolated. No external input cards necessary (115 VAC standard, 24 VAC, and others available by request).
Specifications Subject to Change without Notice.	

MICRO-SPEED® SMART-MOVE® MODELS

208-230 VAC (50/60 Hz)

Model			FLA	Hp	kW	Size
MSM-R™	MSM-RP™	MSM-RH™ (hoist)**				
MSM2A23R	MSM2A23RP	MSM2A23RH	2.4	.5	0.37	a3
MSM4A23R	MSM4A23RP	MSM4A23RH	4.3	1	0.75	a3
MSM5A23R	MSM5A23RP	MSM5A23RH	5.9	1.5	1.1	a3
MSM7A23R	MSM7A23RP	MSM7A23RH	7.5	2	1.5	a3

RP™= with installed two-pole single-phase (up to drive rated voltage) solid-state break contactor

Universal 208-230/460 VAC (50/60 Hz)

The MSM5ARP is the perfect drive to keep in any technician's truck!

This drive automatically adjusts to all three-phase voltages 208 through 460. Perfect replacement for a quick retrofit from contactor control all without the need of any external components. Regen Resistor Built-in!

Universal Voltage Model			FLA	Hp (460 V)	kW	Size
MSM-R™	MSM-RP™	MSM-RH™ (hoist)**				
MSM1AR	MSM1ARP	MSM1ARH	1.2	.5	0.37	a3
MSM2AR	MSM2ARP	MSM2ARH	2.4	1	0.75	a3
MSM4AR	MSM4ARP	MSM4ARH	4	2	1.5	a3
MSM5AR	MSM5ARP	MSM5ARH	5.4	3	2.2	a3

*Hp/kW listed are for 460 VAC RP™= with installed two-pole single phase 460 VAC solid-state break contactor

575 VAC (50/60 Hz)

Model			FLA	Hp	kW	Size
MSM-R™	MSM-RP™	MSM-RH™ (hoist)**				
MSM1A57R	MSM1A57RP	MSM1A57RH	1.5	.5	0.37	a3
MSM2A57R	MSM2A57RP	MSM2A57RH	2.4	1	0.75	a3
MSM3A57R	MSM3A57RP	MSM3A57RH	3	1.5	1.5	a3
MSM4A57R	MSM4A57RP	MSM4A57RH	4	3	2.2	a3

RP™= with installed two-pole single-phase 575 VAC solid-state break contactor

380-415 VAC (50/60 Hz)

Model			FLA	Hp	kW	Size
MSM-R™	MSM-RP™	MSM-RH™ (hoist)**				
MSM1A38R	MSM1A38RP	MSM1A38RH	1.2	-	0.37	a3
MSM2A38R	MSM2A38RP	MSM2A38RH	2.4	-	0.75	a3
MSM4A38R	MSM4A38RP	MSM4A38RH	4	-	1.5	a3
MSM5A38R	MSM5A38RP	MSM5A38RH	5.4	-	1.8	a3

RP™= with installed two-pole single-phase 460 VAC solid-state break contactor

How Our Model Numbers Work

Ex: MSM4A57RH

Micro-Speed® Smart-Move® + 4 full load Amp + 575 V + RH™ (hoist) + 115 V control input (standard)

Ex: MSM5ARP-24

Micro-Speed® Smart-Move® + 5 full load Amp + Universal 208-460 VAC RP™ (two-pole single-phase SSR) + 24 V control input (option)

Important

- All Smart-Move® models have internal regenerative braking circuit; no external parts to install
- **RH™ hoist model is only for use on hoists containing mechanical load brake or self-locking worm drive. Use Micro-Speed® Multi-Vector® Ultra™ drive for other hoists requiring encoder feedback.

MORE ABOUT PE®

Our Company

Dedicated to Quality, Safety, and Reliability

Power Electronics® International, Inc.® began in Chicago, Illinois in 1969 with designing VFDs and cycloconverters. Later, PE® became one of the early pioneers of solid-state AC motor soft-start controls and crane/hoist variable speed equipment. Unlike other brands, all PE® equipment is designed, engineered, and manufactured in our centrally located production facility near Chicago, Illinois, not far from O'Hare International Airport.

Today PE® manufactures Micro-Speed® VFDs, Smooth-Move® reduced torque control units, and custom control panels for all industries. Find PE® products in overhead cranes, hoists, trolleys, bridges, dams, pumps, fans, monorails, conveyors, and other industrial applications. Over the years, PE® has gathered a team of electronic and mechanical engineers and physicists to fulfill all your project requirements.

Since 1969, PE® has maintained the highest product quality and reliability standards set by our founder, Victor J. Habisohn.

Our Founder

Victor J. Habisohn (1931-2013)

US Navy Veteran and former electronic engineer who ran the NASA sponsored, Apollo spacecraft electronic central timing system project. It was an essential part of the Apollo Command Module and Lunar Module which landed on the moon in 1969. The design of the Central Timing Equipment was so robust that it survived splashdown and subsequently reutilized on other Apollo missions. Victor's high-reliability design for the spacecraft used the first integrated circuits ever developed which paved the way for modern miniaturized computers and electronics.

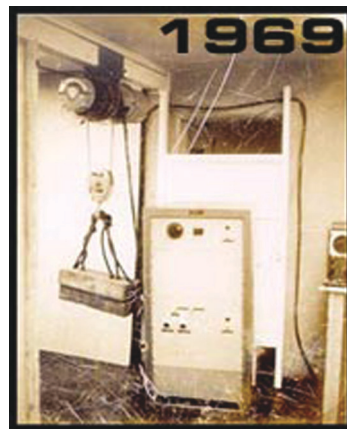
Victor applied the concept of robust electronics for reliability and safety to all PE® drives and equipment. PE® products are at their core, built to last. With high temperature hardened circuitry and high vibration resistant all American steel frames. Power Electronics® International, Inc.® continues Victor's legacy of robust, highly reliable, and easy-to-use electrical equipment.

Find PE® Equipment in...

- Overhead Crane & Hoist
- Bridge & Trolley
- Monorails
- Conveyors
- Elevators
- Automation
- Controls & Control Panels
- Fans & Pumps
- Dams & Bridges
- Food Handling
- All Industries and Applications

Join Our Many Satisfied Customers

- General Electric Co.
- NASA
- Tesla, Inc.
- US Navy
- US Army
- US Airforce
- ArcelorMittal
- Georgia-Pacific, LLC.
- Nucor Steel
- Boeing Aircraft
- TimkenSteel Corp.
- US Army Corps of Engineers
- Kimberly-Clark Corp.
- Lockheed Martin Corp.
- SeaWorld
- Duke Energy Corp.
- Alcoa Corporation
- Ford Motor Company
- General Motors
- Sikorsky Aircraft
- Deere & Company
- Chrysler Corp.
- Georgia Aquarium
- US Steel Corp.
- Kruger, Inc.
- And Many More!



First VFD for hoists in 1969!



Victor J. Habisohn pictured with the first prototype of the Central Timing Equipment used on all Apollo missions including the moon landing.

