Celebrating 50 years Est. 1969

Power Electronics® International, Inc.

American Made Quality and Reliability since 1969

Micro-Speed®
Smart-Move®

3 PHASE AC VARIABLE SPEED DRIVE

MICRO-SPEED®CX™

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 CX™ SERIES

About the CX™ Series

Micro-Speed® CX™ Variable Frequency Drives

The Micro-Speed® CX™ series AC variable speed drives are heavy-duty industrial VFDs with the highest current and temperature ratings in the industry. Built with the demands of material handling in mind, they 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. Use CX™ series drives on fans, pumps, conveyors and other applications with superior results. All CX™ series drives have a dedicated brake relay output to control a brake contactor and are programmed for hoist or travel motion.

Models

- **CXR™:** Standard units are PE-Preset™* for travel motion. The controlled ramp-to-stop deceleration helps save you time and money by virtually eliminating brake wear (use brake contactor). Can be used on conical rotor motors.
- **CXRP™:** Micro-Speed® with solid-state rbake control (travel only) heavy-duty industrial VFDs with the highest current and temperature ratings in the industry. Built-in, two-pole solid-state single-phase line voltage rated AC brake control board. Can eliminate the need for brake contactor on the travel motion.
- **CXRH™:** Micro-Speed® Hoist VFD are PE-Preset™* for use in hoists or other coast-to-stop applications. Only for use with hoists that have a mechanical load brake or self-locking worm drive hoists. See Ultra™ series for hoists requiring encoder feedback and other safety systems.

Size	Length (in)	Width (in)	Depth (in)	Weight (lbs)
a2	9	6	5.63	6.5
a2d	9	6	6.63	7
b	12	8	6.75	15
d3	14	12.31	9.63	35
d2	18	12.31	9.63	45

CX™ Series 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-F
- AISE TR6 Class 1 to 4
- ASME HST- 4 H1 to H5
- HMI H1 to H5

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

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CX™ SERIES SPECIFICATIONS

High Surge Power	Up to 300% of rated load (FLA). **Best in Class!**
Dynamic Brake Circuit	All drives have internal dynamic braking transistors included. Internal resistors are built-in select **CX™** models. Regen resistors are available for other **CX™** models.
AC Voltages	208-230, 385-415, 460 ±10%; 480 +10%/-15%; 575 +10% or -15%.
Hp (kW) Rating	Model size range fractional through 20 Hp (through 15 kW). See model listing.
Frequency Input	50 or 60 Hz ±10% nominal (others available).
Control Type	Fully digital sine-wave three-phase PWM.
Output Hz	0.1 to 120 Hz standard (others on request).
Speed Range	Up to 40:1
Speed Controls	Up to seven distinct adjustable speed inputs 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 required (horizontal travel motion). Available on **RP™** models only.
Programmable Relay	High-reliability auxiliary Form C relay with user programmability.
Analog Input	0-5 VDC; 10 V and 20 mA levels are jumper selectable. Includes onboard 5 VDC supply.
Motor Overload	Thermal inputs, electromechanical overload input, and internal programmable I^2T.
Power Supply	Onboard power supply for analog (5 VDC) controls.
Circuit Protection	Ground fault
Voltage Protection	Overvoltage and undervoltage bus trips.
DC Bus Indicator	Indicator LED remains on until DC bus voltage drops below 50 VDC.
Conformal Coating	Safeguard unit from corrosive gases, liquids, and excessive moisture (optional).
Enclosure	Powder coated steel (not plastic)enclosures for increased EMI protection and higher resistance to atypical shock and vibration.
Temperature	**Ambient:** 14°F to 140°F (-10°C to +60°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® CX™ MODELS

208-230 VAC (50/60 Hz)

Model			FLA	Hp	kW	Size
CXR™	CXRP™	CXRH™ (hoist)				
M123CXR*	M123CXRP*†	M123CXRH*	4.3	1	.75	a2
M223CXR*	M223CXRP*†	M223CXRH*	8.6	2	1.5	a2
M323CXR*	M323CXRP*†	M323CXRH*	10	3	2.2	a2
M523CXR*	-	M523CXRH*	16.5	5	4	a2d
M723CXR	-	M723CXRH	24	7.5	5.5	b
M1023CXR	-	M1023CXRH	32	10	7.5	b
M1523CXR	-	M1523CXRH	48	15	11	d3
M2023CXR	-	M2023CXRH	56	20	15	d3

***Regen Resistors Built-in Heavy Duty Class D** **†Built-in Solid-State Brake Relay**

460 VAC (380-415 VAC) (50/60 Hz)

For 380-415 VAC models substitute the 46 with 38 and only use FLA to size

Model			FLA	Hp	kW	Size
CXR™	CXRP™	CXRH™ (hoist)				
M146CXR*	M146CXRP*†	M146CXRH*	2.4	1	.75	a2
M246CXR*	M246CXRP*†	M246CXRH*	4	2	1.5	a2
M346CXR*	M346CXRP*†	M346CXRH*	5.6	3	2.2	a2
M546CXR*	M546CXRP*†	M546CXRH*	9	5	4	a2
M746CXR	-	M746CXRH	12.5	7.5	5.5	b
M1046CXR	-	M1046CXRH	16.5	10	7.5	b
M1546CXR	-	M1546CXRH	24	15	11	d3
M2046CXR	-	M2046CXRH	29	20	15	d3

***Regen Resistors Built-in Heavy Duty Class D** **†Built-in Solid-State Brake Relay**

575 VAC (50/60 Hz)

Model			FLA	Hp	kW	Size
CXR™	CXRP™	CXRH™ (hoist)				
M157CXR*	M157CXRP*†	M157CXRH*	1.8	1	.75	a2
M257CXR*	M257CXRP*†	M257CXRH*	3.2	2	1.5	a2
M357CXR*	M357CXRP*†	M357CXRH*	4.7	3	2.2	a2
M557CXR*	M557CXRP*†	M557CXRH*	7.2	5	4	a2
M757CXR	-	M757CXRH	9.7	7.5	5.5	b
M1057CXR	-	M1057CXRH	13	10	7.5	b
M1557CXR	-	M1557CXRH	19	15	11	d3
M2057CXR	-	M2057CXRH	23	20	15	d2

***Regen Resistors Built-in Heavy Duty Class D** **†Built-in Solid-State Brake Relay**

How to Make a Model Number

Ex: M1046CXRH

Micro-Speed® + 10 Hp + 460 V + CXR™ + Hoist +115 VAC control inputs (standard)

Ex: M238CXRP-24

Micro-Speed® + 2 Hp (1.5 Kw) + 380 VAC + CXRP™ + 24 VAC control inputs

Other Models to Fit your Requirements

- Also, see **Smart-Move®** for small and powerful compact drives
- For larger horsepower use the **Micro-Speed® MX-Ultra™**
- See **Micro-Speed® MV-Ultra™** for more features and 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.

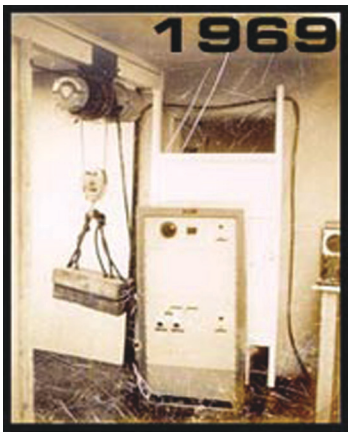
Victor applied the concept of robust electronics for reliability and safety to all PE® drives and equipment. PE® products are at their core, built to last. With high temperature hardened circuitry and high vibration resistant all American steel frames. Power Electronics® International, Inc.® continues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

CMAA® CRANE MANUFACTURERS ASSOCIATION OF AMERICA, INC. Member Company

MHI Member Company

AIST ASSOCIATION FOR IRON & STEEL TECHNOLOGY

SMA STEEL MANUFACTURERS ASSOCIATION

NECMA Electrification & Controls Manufacturers Association Member Company