



MVRXE SERIES

Dual Redundant Medium Voltage Solid State Starters

*with next generation **MX³** technology*



- Solid state reduced voltage starting
- Full voltage ATL emergency backup
- NEMA 12 enclosure
- UL 347, Class E-2 combination
- Load break disconnect switch
- Built-in self test
- Digital protection and metering
- UL zero sequence ground fault





MVRXE Series dual redundant, severe duty reduced voltage solid state starters ...

2,300V to 1,500HP
4,160V to 3,000HP



RediStart™ *MVRXE Series* starters provide solid state reduced voltage starting for normal operation and full voltage emergency back-up starting for mission critical motor control applications.

Benshaw's RediStart™ pre-packaged dual redundant solid state starters are microprocessor controlled reduced voltage starters for three phase induction motors. These starters provide closed-loop soft start control for smooth stepless motor acceleration, and emergency full voltage back up starting capability, if required. They are supplied in a rugged, free-standing NEMA 12 or NEMA 3R enclosure.

Each enclosure consists of two distinct compartments; the medium voltage (power pole) section is located in the main body of the enclosure, and the low voltage section containing control logic is located in an isolated compartment.

MVRXE medium voltage starters are supplied with a load break / fault make isolation switch, Class "R" motor fuses, inline vacuum contactor, solid state power poles, and a vacuum bypass contactor, which is used to bypass the SCR power poles once the motor is up to full speed.

MX³ control technology

Benshaw's powerful MX³ controls provide precise, user-selectable digital starting and stopping capabilities, motor protection, metering, diagnostics and communications. It also provides the circuitry required to drive the power semi-conductors, which are located in the power section.

Dual redundant design

All RediStart™ MVRXE prepackaged medium voltage controls provide solid state reduced voltage starting for normal operation and full voltage emergency back-up starting—with complete electronic motor protection—at the flip of a switch. This unique, dual redundant design is ideal for mission critical applications where downtime is extremely disruptive and cannot be tolerated.

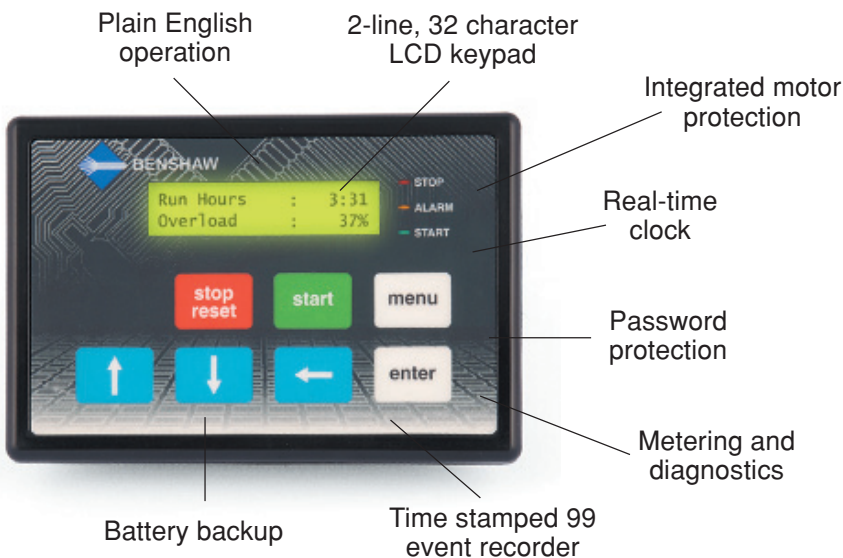
Web stocked

MVRXE solid state starters are web stocked for same day or next day shipment. Visit www.BenshawExpress.com for more information.

Benshaw MVRXE -vs- any autotransformer

MOTOR CONTROL & PROTECTION FUNCTIONS	ANY AUTO TRANSFORMER	BENSHAW MVRXE
Reduced voltage start	YES	YES
Soft start	NO	YES
Soft stop	NO	YES
Full voltage bypass starting	NO	YES
Load break disconnect switch	NO	YES
Built-in self test	NO	YES
UL 347/service entrance rated	NO	YES
3 year warranty	NO	YES
Plain English digital display	NO	YES
Electronic overload protection	NO	YES
Electronic power quality monitoring	NO	YES
Digital metering	NO	YES
Plain English diagnostics	NO	YES
Embedded Modbus RS485	NO	YES
Incoming line landing pad	NO	YES
Integrated control and protection	NO	YES
UL zero sequence ground fault	NO	YES
Space saving design (in.)	92h x 54w x 36d	92h x 36w x 30d

Powerful, intuitive user interface:



Guaranteed ... for three full years.

Only Benshaw has a three year guarantee.

Every Benshaw solid state starter is guaranteed for three full years*. Other manufacturers limit their warranties to just one year. But at Benshaw, we believe that, because we build them better, we can guarantee them longer. We call that "the Benshaw Promise."



*3 Year warranty requires authorized startup - 1 year warranty without authorized startup

Standard Features:

- ◆ Dual redundant, UL347 listed, Class E-2 solid state starter
- ◆ NEMA 12 or NEMA 3R enclosure
- ◆ 45KV BIL
- ◆ 200MVA (2300VAC) / 350MVA (4160VAC) short circuit fault rated
- ◆ 500% - 30 seconds rated
- ◆ 8,000 PIV at 2.4KV
- ◆ 12,000 PIV at 4.2KV
- ◆ Fiber optic firing
- ◆ Solid state or full voltage operation via selector switch
- ◆ Load matched Class R fusing with blown fuse indication
- ◆ 400A load break, 600A continuous, 5KV rated disconnect with viewing window, grounding assembly and lockable handle. Mechanically interlocked for safety.
- ◆ 120VAC, 1000VA CPT with primary and secondary fusing
- ◆ Start duty rated vacuum contactors for isolation and SCR bypass
- ◆ Separately mounted "SPE" series Class 10-30 adjustable overload:
 - Phase imbalance/loss protection
 - 1 NO/1 NC trip contact
 - Phase reversal protection
 - "Trip free" design
- ◆ Built-in self test (BIST) feature for "quick commissioning"
- ◆ Door mounted start/stop pushbuttons, LCD keypad, run indication light, local/off/remote switch, reset button
- ◆ Terminal strip in LV compartment for remote starting/stopping and up-to-speed, run, fault indication
- ◆ ModBus communications

Modular Options:*

- ◆ Communications bridges
- ◆ Space heater
- ◆ E-stop pushbutton
- ◆ NEMA 3R enclosure package
- ◆ Top hat enclosure module
- ◆ 8 channel RTD modules
- ◆ 16 channel RTD modules

* Shipment within 2 weeks

World-class after-market service and support—whenever and wherever needed...

7x24

Benshaw provides comprehensive support, with web-based tools and dedicated, knowledgeable staff available 7-days-a-week, 24-hours-a-day to answer your questions, dispatch a field service technician or coordinate an emergency parts request.

Repairs, spares, field engineering, retrofits and training services—whenever and wherever needed—are all part of Benshaw's commitment.



www.BenshawExpress.com offers a guaranteed two-hour emergency response on many starters and drives from warehouses around the country

- ◆ 7x24 same day shipment.
- ◆ Air or truck delivery.
- ◆ Airport pick-up or door-to-door service.



7x24 Phone Support from Benshaw operations centers in Pittsburgh, Listowel (Canada), Detroit and Phoenix provides:

- ◆ Technical assistance.
- ◆ Overnight parts shipment.
- ◆ Service dispatch.



Training courses are available in a classroom or a hands-on environment:

- ◆ Basic electrical maintenance.
- ◆ Electronic maintenance and diagnostics.
- ◆ New product orientations.
- ◆ Customized systems (maintenance- or operations-based).



Regional/International Field Service by a skilled technician, engineer or complete team, if needed, is available for:

- ◆ Start-up commissioning.
- ◆ Field repairs.
- ◆ Field analysis/data collection.
- ◆ Preventive maintenance.



Repairs are made by trained, experienced personnel, using the latest diagnostic and test equipment to service:

- ◆ Printed circuit boards.
- ◆ Power electronic control assemblies.
- ◆ Electrical sub-assemblies.

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