L0VX0101 Smart Contactor Dual-Reversing 160A NEMA4 (Generic)

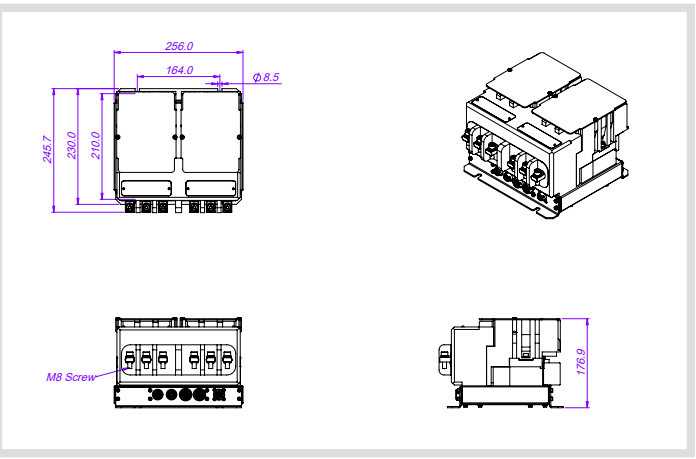
The Type L0VX Dual-Reversing Smart Contactor is a 1.5kV 3-phase contactor module with embedded industrial electronics that integrates motor switching and motor protection in a single, sophisticated package.

The module incorporates two (2) separate 3-phase contactors implementing a phase reversing 3-phase supply for one or two motors. One contactor is used for forward motor operation and the other is for reverse motor operation.

Motor protection parameters (for both left and right motors) are field programmable and support Instant Overload, Thermal Overload, Phase Imbalance and No Load Protection.

Safety is a primary feature with redundant transistors used to switch the contactor coils. Operation is closed-loop with internal contactor position monitoring and additional 3-phase current monitoring. If either the contactor position or current monitoring fails to meet expectation, the contactor is tripped and an event is flagged for the host system to diagnose via CAN messaging.

Support has also been provided for installation of the standard EATON auxiliary contact block to provide additional monitoring and/or down-stream contactor interlocking.



Standards Compliance

- AS/IEC 60947.4
- AS 4240.1:2009
- IEEE C37.96-2000
- NEMA Protection Curves
- NEMA 10,15,20,30

Typical Applications

- Continuous Miners
- Shuttle Cars
- Mobile Bolters
- Mobile Roof Supports
- Long Wall Shearers

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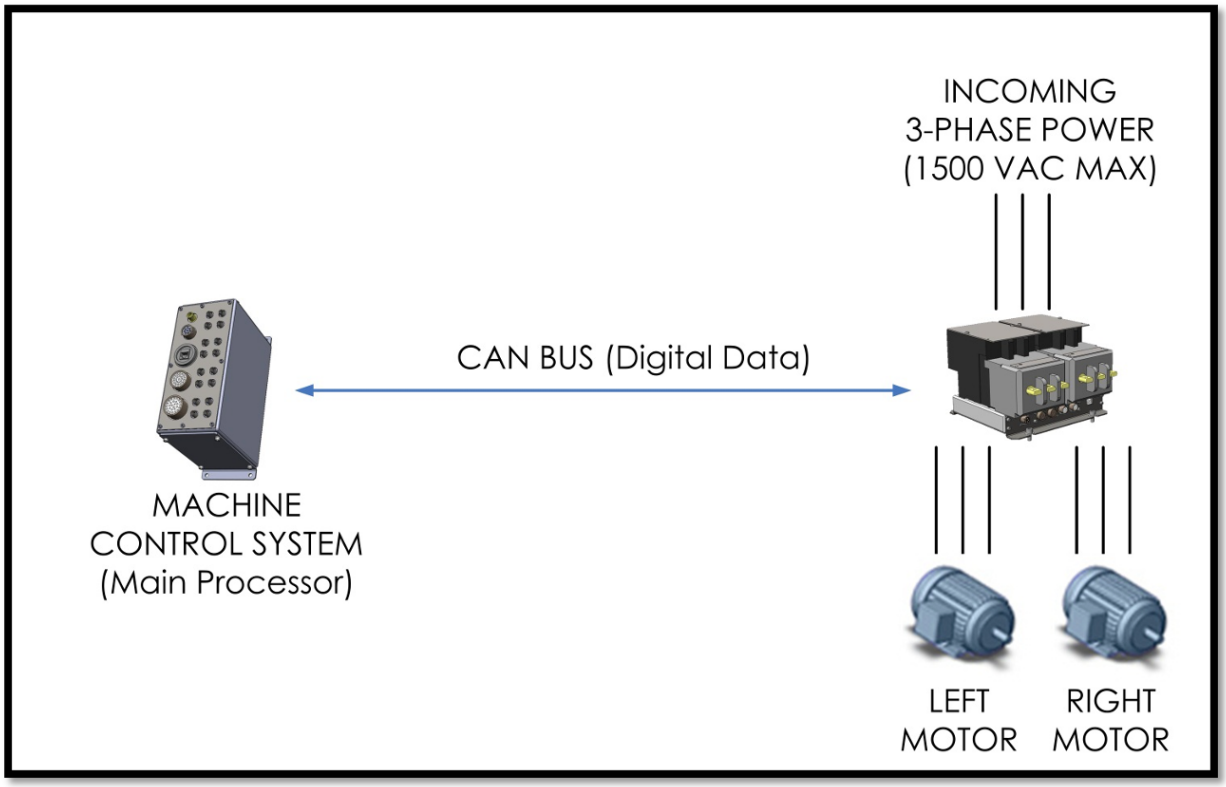
Accessories

Part Number	Description
H0SU1101	Connector Assembly A93 Flying Lead
H0SU1301	Connector Assembly A93 Patch
H0SU1601	CAN ID Plug A113 CAN ID #0
H0SU1701	CAN ID Plug A113 CAN ID #1
H0SU1801	CAN ID Plug A113 CAN ID #2
H0SU1901	CAN ID Plug A113 CAN ID #3
H0SU2001	CAN ID Plug A113 CAN ID #4
H0SU2301	Connector Assembly A112 Flying Lead
H0SU2401	Connector Assembly A112 Patch
H0SU2601	CAN ID Plug A113 CAN ID #5
H0SU2701	CAN ID Plug A113 CAN ID #6
H0SU2801	CAN ID Plug A113 CAN ID #7
H0SU3201	CAN Bus A112 EOL Terminator

Example Application



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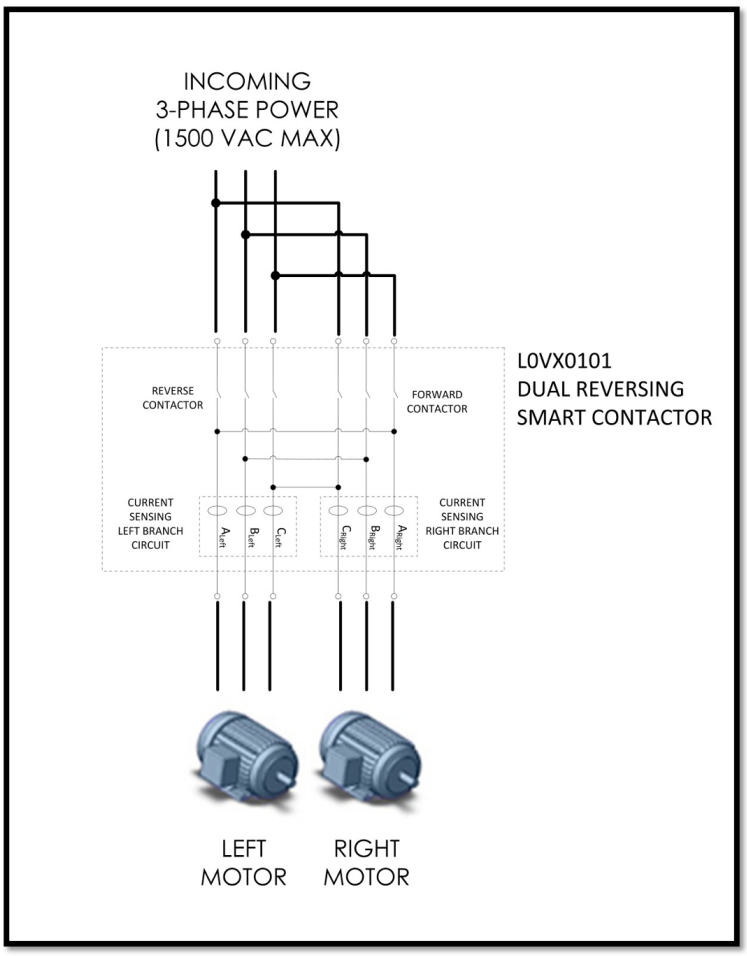
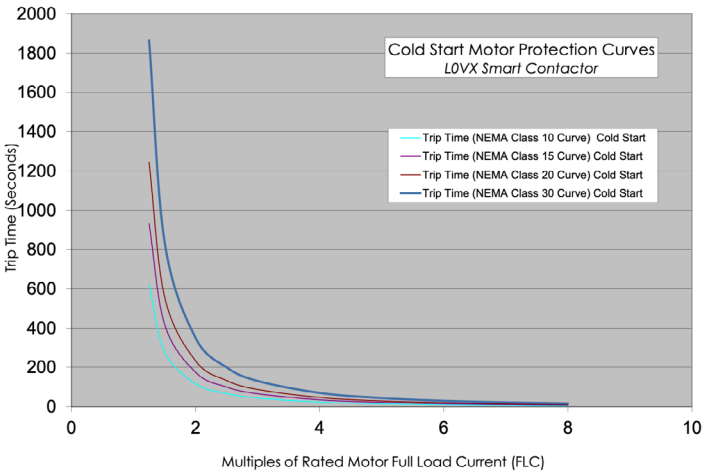
Power Switching Topology



Motor Protection Curves (Cold Start)



Notes

- Trip times in are shown for a cold motor start and for constant current.
- Trip times conform to IEEE C37.96-2000 and NEMA motor overload curve classifications.
- It is the responsibility of the host control system to configure the contactor with the correct full-load current (FLC) and NEMA Class protection number to achieve the required motor protection.
- Following a thermal overload trip, the contactor enforces a 4-minute cool-down period. During this period the contactor cannot be re-started.
- If either branch circuit experiences an over load the common contactor (forward or reverse) to both circuits is opened.

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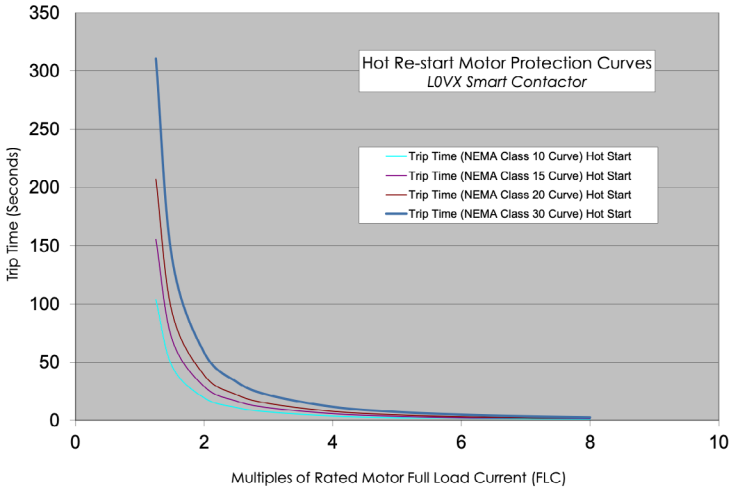
Motor Protection Curves (Hot Start)



Notes

- These trip times are based on re-start of the contactor 4-minutes after an initial thermal overload trip has occurred.
- Re-start is only possible after the 4-minute cool-down period has been observed.
- Trip times in are shown for a hot motor start and for constant current.

Product Specifications

General

Parameter	Value
Voltage (electronics)	24VDC ± 10%
Current (electronics)	100 mA
Voltage (contactor coil)	110VAC ± 15%
Current (contactor coil)	3 Amperes (pull-in) / 150 mA (hold-in)
Operating Temperature	-20°C to +70°C
Mass	19 kilograms

Power Switching Element

Parameter	Value
Switching Voltage	1500 VAC (Max)
Switching Current	160A continuous / 1000A (1- second turn on peak)
Type	3-Phase Vacuum Bottles (V201KRCJZ1)
Protection	Thermal Overload (Nema Standard Curves Class 10, 15, 20 and 30)
	Instant Overload
	Phase Imbalance
	No Load
	Protection against both forward and reverse contactors closing together

Data Communications

Parameter	Value
Type	CAN (Controller Area Network) Bus 2.0B
Medium	Copper Twisted Pair
Speed	500 kbps

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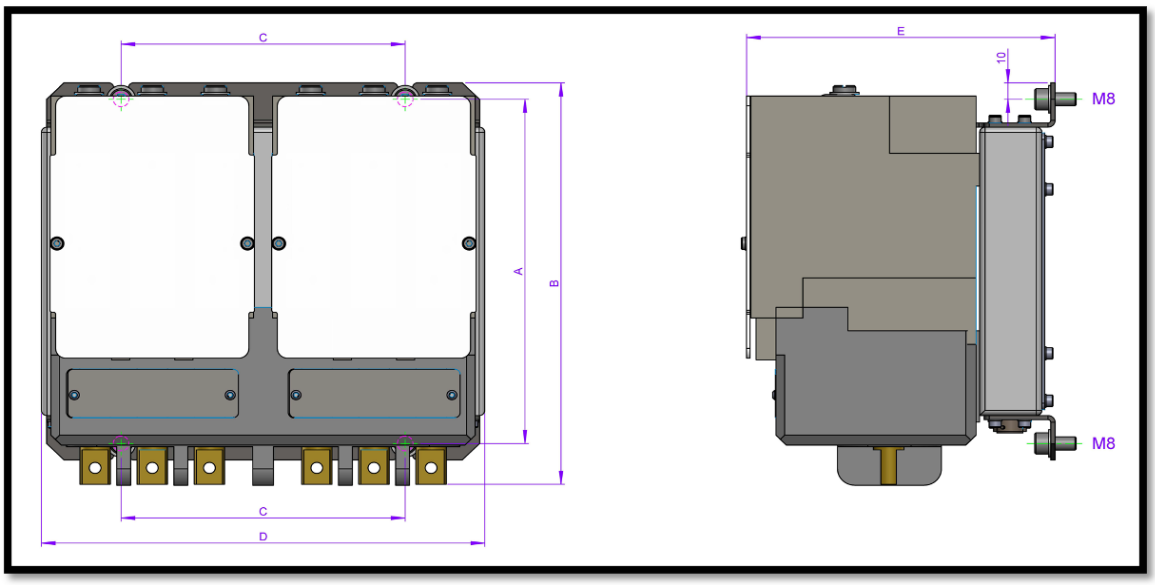
Mounting Information



Dimension	Measurement (mm)	Notes
A	210	Height Mounting Centre
B	245	Height
C	164	Width Mounting Centre
D	256	Width
E	178	Depth