



 **Allen-Bradley**

DeviceNet™ and IntelliCENTER for CENTERLINE® Medium Voltage Motor Controllers

1500 / 1900

Specification Guide

HMI's **Rockwell**
Automation

DeviceNet™ CENTERLINE® Medium Voltage Motor Controllers

Specification Guide

1.0 General

The MV motor controller (MVMC) shall have DeviceNet cabling integrated throughout the sections.

Each Motor Starter and Soft Starter in the MVMC line-up shall be supplied with a means to communicate via DeviceNet, and have the capability of monitoring at least 2 devices in each starter.

2.0 DeviceNet Cable

The DeviceNet cable used for the trunk line and drop lines shall be *flat* cable rated 8 amperes, 600V, Class 1.

The DeviceNet cable used to connect a DeviceNet unit to a DeviceNet port shall be round cable rated 8 amperes, 600V, Class 1.

The addition or removal of a unit from the DeviceNet system shall not interrupt the operation of other units within the system.

3.0 DeviceNet Cable Layout

A DeviceNet trunkline shall be routed through the low voltage wireway, located on the top of each MVMC section to prevent accidental mechanical damage during MVMC installation.

A DeviceNet dropline shall be routed into the low voltage control panel of each MVMC unit.

Two (2) DeviceNet ports shall be provided in the low voltage control panel of each unit to simplify installation of DeviceNet products.

4.0 Power Supplies

The MVMC manufacturer shall check the user's design to ensure adequate power supplies have been specified to conform with DeviceNet requirements. The power supply shall provide 24Vdc for the DeviceNet system and be rated no less than 8.0 amperes.

5.0 DeviceNet System Performance

The DeviceNet system shall be designed to operate at 500k Baud to maximize the system performance, unless precluded by the cumulative length of the trunk and drop lines.

The DeviceNet system is to be qualified to communicate and perform under normal and adverse MVMC electrical environments, e.g. vacuum contactor electrical operation and unit short circuit fault.

6.0 DeviceNet Units

6.1 Motor Starter Units

Each motor starter shall have an electronic overload relay that can be monitored using DeviceNet communication. There shall be more than one type of overload protection available. The available overload relays shall include some of the following features:

- § LEDs for status indication
- § Test/Reset button
- § Adjustable trip class (5 to 30)
- § General purpose I/O (minimum 2I/1O, optional 4I/2O)
- § Protective functions with programmable trip level, warning level, time delay and inhibit window
- § Current Monitoring Functions
- § Diagnostic Information

6.1.1 Alternative for Non-Critical Motor Starter Applications

The motor starter may be controlled over DeviceNet via a DeviceNet I/O module containing at least 4 inputs and 2 outputs. The inputs of the DeviceNet I/O module shall be rated for 110-120Vac or 24Vdc as specified on drawings. The module shall be prewired to the motor vacuum contactor auxiliary contact, disconnect auxiliary contact and overload relay auxiliary contact, where applicable.

6.2 Solid-State Controllers

Each solid-state controller unit shall have a DeviceNet communication module to communicate the status over DeviceNet.

The DeviceNet communication module shall have 4 input points.

6.3 Main and Feeder Disconnects

Where required, fusible and non-fusible main and feeder disconnect circuits shall have a DeviceNet I/O module containing at least 2 inputs and 1 output. The inputs of the DeviceNet I/O module shall be rated for 110-120Vac or 24Vdc as specified on drawings.

7.0 Programming of Parameters

The DeviceNet MAC ID number (node address) shall be loaded into each unit per the drawings. All other parameters shall be left at the factory default setting.

The DeviceNet System components shall be preconfigured to operate at the appropriate baud rate.

8.0 Software

The DeviceNet MVMC shall be provided with pre-configured software. The software shall be capable of viewing multiple MVMC line-ups. The software communication driver shall allow the software to be installed and located on Ethernet, ControlNet, or DeviceNet. The software shall be capable of displaying the following:

- Elevation View
 - Dynamically configured based on reading data from devices in MVMC line-up
 - Sizeable view to allow ease of viewing multiple MVMC line-ups
 - Unit nameplate information
 - Unit status indicators (ready, running, warning, fault, no communication)
- Unit Monitor View
 - Pre-configured for specific unit
 - Real time monitoring via analog dials and trending
 - Data configurable for customized monitoring
 - Modifying device parameters
- Spreadsheets View
 - User configurable for customized monitoring
 - Sorting and cascading functions
 - Custom user fields
- Event Log
 - Track history of MVMC unit
 - Automatic logging of trips, alarms, and changes
 - Manual entry of events
- Documentation
 - Front elevation drawings
 - One-line drawings
 - Unit wiring diagrams
 - User manuals
 - Spare parts lists

9.0 Testing

The interwired DeviceNet MVMC shall be powered up, configured and tested in an ISO9001 facility to ensure each unit communicates properly prior to shipment.

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Americas Headquarters, 1201 South Second Street, Milwaukee, WI 53201-2496, USA, Tel: (1) 414 382-2000, Fax: (1) 414-382-4444
European Headquarters SA/NV, Boulevard du Souverain 36, 1170 Brussels, Belgium, Tel: (32) 2 663 0600, Fax: (32) 2 663 0640
Asia Pacific Headquarters, 27/F Citicorp Centre, 18 Whitfield Road, Causeway Bay, Hong Kong, Tel: (852) 2887 4788, Fax: (852) 2508 1846

Medium Voltage Products, 135 Dundas Street, Cambridge, ON N1R 5X1 Canada, Tel: (1) 519 623-1810, Fax: (1) 519 623-8930
Web site: www.ab.com/mvb

