

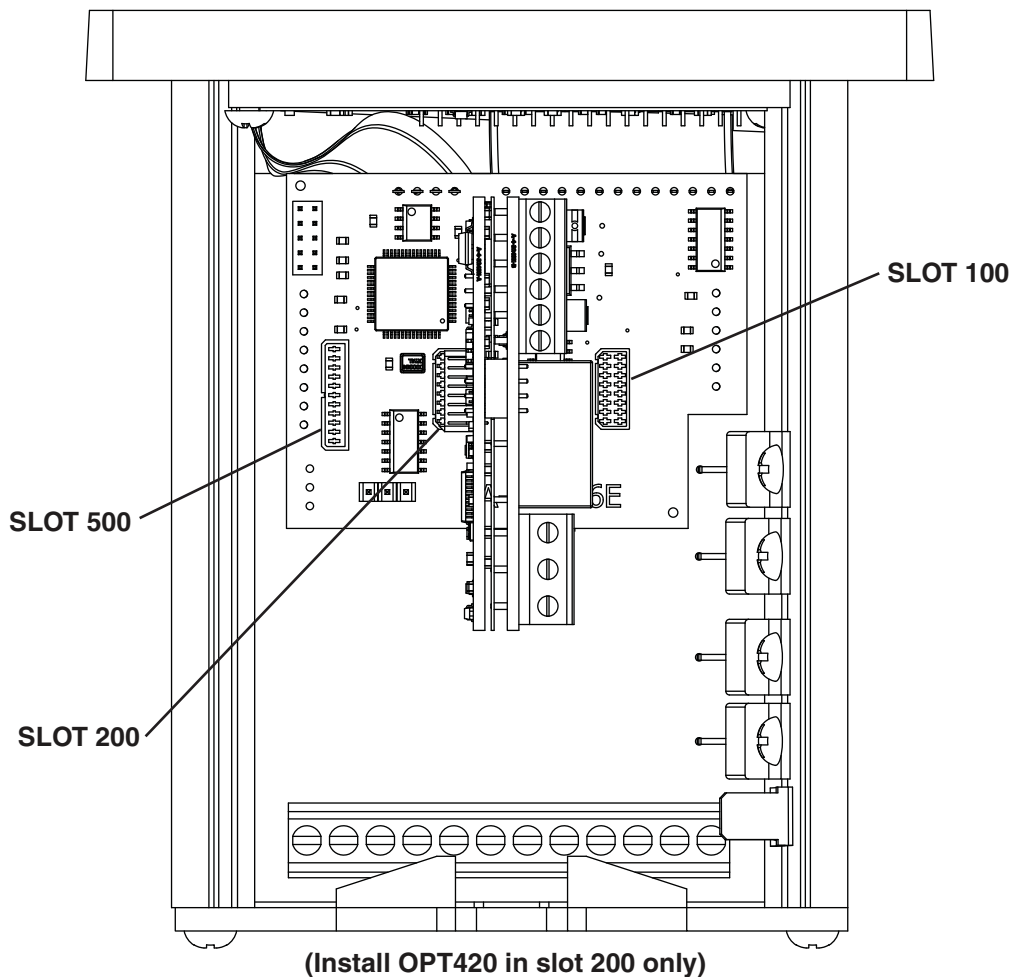
OPT420 Installation & Diagrams

Installing the OPT420 in Slot 200 (ONLY!) of the Host Drive

The OPT420 is a Dart ModularBus "option card" featuring an Optically-Isolated 4-20mA Current Loop Input and an Optically-Isolated 4-20mA Current Loop Output. Both the input and output are Optically-Isolated from the Host Drive, circuit common, earth ground, and from each other. In addition, a non-isolated SPST switch input is provided. In the typical application with an MD40/50-420, that switch is used to determine where the Host Drive gets its "Target Speed" setting from. Additionally, the MD40P-420, MD50P-420 and MD50E-420 have an "Auto/Manual" LED Annunciator which displays whether the source of the Target Setting comes from the 4-20mA input ("Auto") or from the "front panel" Target setting ("Manual").

In "Manual Mode", the Host Drive uses its normal Front Panel display and Up/Down buttons to set the Target Speed (or Time). However, in "Auto Mode", the Host Drive follows the OPT420's 4-20mA Current Loop signal. In either mode, the OPT420's Current Loop Output provides a real-time updating 4-20mA signal that represents the Host Drive motor's Actual (Tach) Speed. This is primarily used by a SCADA system to provide "feedback" that the SCADA's speed setting was received and acted upon by the Host Drive.

OPT 420 INSTALLATION



IMPORTANT: THE OPT420 MAY ONLY BE INSTALLED IN MODULARBUS SLOT "200". Installing in any other slot will simply result in the OPT420 "not working". Normal operation will resume when the OPT420 is placed in the Host Drive's ModularBus Slot "200".

Also, the OPT420 comes with Default Values that should allow a simple checkout procedure to verify that everything is hooked-up correctly and functioning. See the OPT420 Item (Parameter) Table for further details.

When the OPT420 is first installed, the following message will appear on the display.

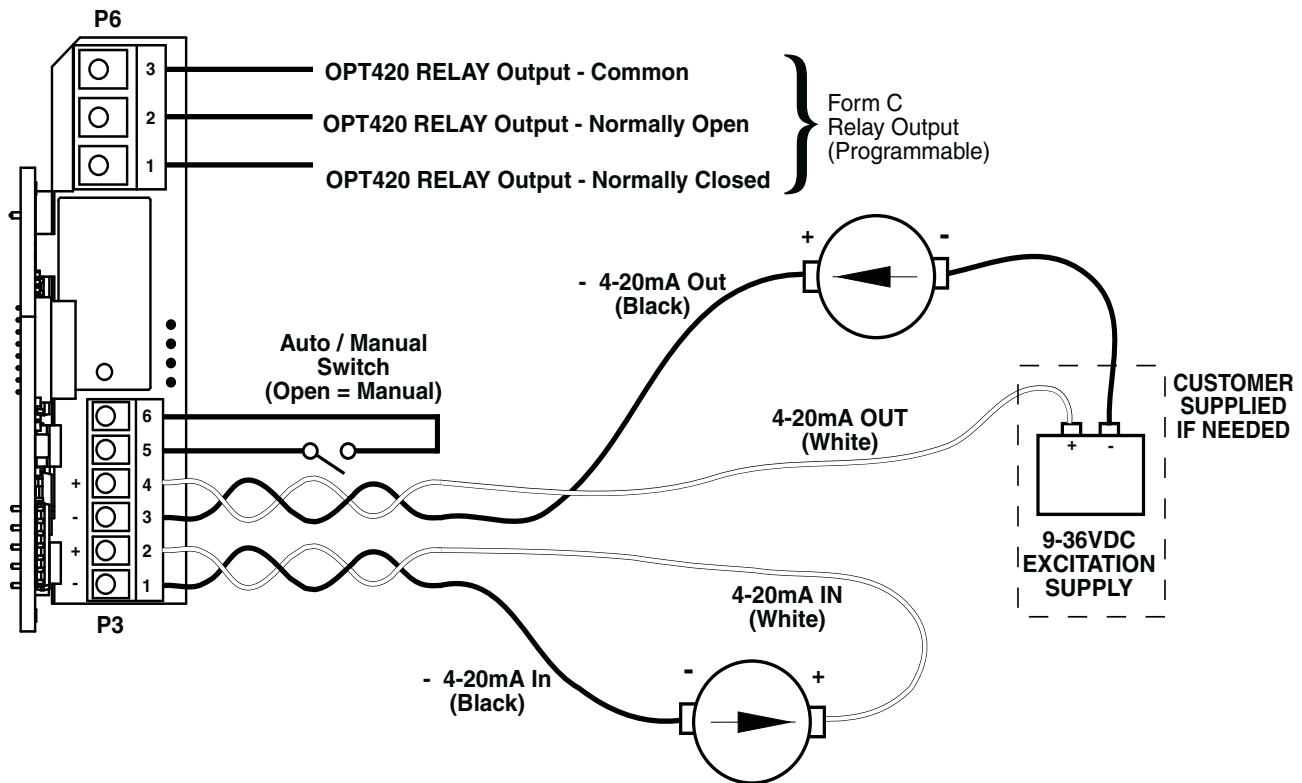
Configuration Change--Card in slot is different than stored configuration--Up button to store factory defaults...dn button to ignore card.

If the up button is pushed, the factory settings will be installed and the card will be initialized. If the down button is pushed, the factory settings will NOT be installed and the card will NOT be initialized.

OPT420 P3 & P6 Terminal Block Hook-Up Diagrams

IMPORTANT: THE OPT420 DOES NOT SUPPLY LOOP "EXCITATION VOLTAGE". If the flowmeter, SCADA system, etc. does not have a Loop Excitation supply, an external voltage must be provided from +9 to +36VDC capable of at least 50mA for each of the two 4-20mA Current Loops (Input and Output), as shown in the diagram below. Additionally, if the Input and Output must be isolated from each other, two excitation supplies may be needed.

OPT 420 HOOK-UP DIAGRAM (TYPICAL)



OPT420 P3 Terminal Block Descriptions

- P3-1 (- 4-20mA Input) – Connect this terminal to the next 4-20mA device in the loop, or, if the OPT420 is the last device in the current loop, then connect this terminal to the - (negative) side of the current loop.
- P3-2 (+ 4-20mA Input) –Connect this terminal to the previous 4-20mA device in the loop, or, if the OPT420 is the first device in the current loop, then connect this terminal to the + (positive) side of the current loop.
- P3-3 (- 4-20mA Output) – Connect this terminal to the next 4-20mA device in the loop, or, if the OPT420 is the last device in the current loop, then connect this terminal to the - (negative) side of the current loop.
- P3-4 (+ 4-20mA Output) –Connect this terminal to the previous 4-20mA device in the loop, or, if the OPT420 is the first device in the current loop, then connect this terminal to the + (positive) side of the current loop.
- P3-5 (S1 Input) – Connect this terminal to one side of a SPST switch to control Auto/Manual Operation. If switch is OPEN (or unconnected), MD40/50-420 Target Speed will come from its Target Speed setting (as usual), if the switch is CLOSED, MD40/50-420 Target Speed will follow the OPT420 4-20mA Current Loop Input. This signal is internally "pulled-up" via a 15K ohm resistor.
- P3-6 (COM) – This is the common point for the control logic. Normally, the other side of the SPST Auto/Manual switch would be connected to this terminal. **Note that this means that the Auto/Manual switch is NOT "isolated".**

OPT420 P6 Terminal Block Descriptions

- P6-1 (NC) – This is the normally-closed contact of the user-assignable OPT420 Alarm 1 relay.
- P6-2 (NO) – This is the normally-open contact of the user-assignable OPT420 Alarm 1 relay.
- P6-3 (C) – This is the common contact of the user-assignable OPT420 Alarm 1 relay.

Refer to the operations manual for programming the control.

Visit www.dartcontrols.com to download the operations manual.