**Connecting Power and I/O**

Your MDrive product may be configured with power and I/O combined on a single connector. Please refer to the opposite side of this document for connecting details and available connectivity options including Prototype Development Cables and Mating Connector Kits.

**Connecting Communications — RS-422/485**

1. Connect RS-422/485 communications converter to the product and PC.
2. Install the communication converter drivers onto PC (available online).
3. Install and open Motion Control Programmer.
4. Apply power to the product.
5. Within Motion Control Programmer, click into the Terminal Window (shown below).

**Connecting Communications — CANopen**

- Protocol: CANopen
- CANopen Option: CAN 2.0 Active
- Communications Profile: CA025-01
- BAUD Rate: 4.8k, 9.6k, 19.2k, 38.4k, 115.2 kbps
- Protocol RS-422/RS-485
- Communications Profile: CiA DS-301
- Number of Resolutions: 20
- USB to CANopen dongle.

**Mechanical Specifications**

- Single, Double, and Triple Length Motors:
  - Single: 26.40 (87.31)
  - Double: 3.02 (96.71)
  - Triple: 3.98 (128.15)
- Quad Length Motor:
  - Single: 3.28 (106.35)

**Software Specifications**

- Program Storage Type/Size: Flash/6384 Bytes
- User Program Labels and Variables: 152
- Party Mode Addresses: 62

**Notes and Warnings**

Installation, configuration and maintenance must be carried out by qualified technicians only. You must have detailed information to be able to carry out this work. Information can be found in the user manuals.

- Incorrect use may destroy this product and connected components!
- Unexpected dangers may be encountered when working with this product!

**Required for Setup**

- PC running Microsoft® Windows XP Service Pack 2 or greater.
- Motion Control Programmer integrated program editor and terminal emulator (available online).
- +12 to +75 VDC (+12 to +60 VDC if using a quad length motor) unregulated linear or switching power supply. RS-422/485 communication interface (recommended: MD-CC400-001 or MD-CC402-001 communication converters). Or CANopen communications converter (recommended: MD-CC500-000).
- Power interface to 2-pin wire crimp connector (recommended: PD02-2300-F3 prototype development cable).
- If using the 7-pin pluggable terminal we recommend 22 AWG shielded twisted pairs for logic wiring. Wire gauge for power connection varies with the distance from the device and current. See MDrive product manual.
- I/O interface to 14-pin wire crimp connector. (Recommended: PD14-2334-F3 prototype development cable).

"Copyright 2001-2017 by Schneider Electric Motion USA." should appear, verifying that communications is active.
MDrive 23
Motion Control Connectivity Options

I/O & Power

Pluggable Terminal or flying leads

**Pluggable Terminal**

<table>
<thead>
<tr>
<th>Pin</th>
<th>Function</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>I/O</td>
</tr>
<tr>
<td>2</td>
<td>Power</td>
</tr>
<tr>
<td>3</td>
<td>Ground</td>
</tr>
<tr>
<td>4</td>
<td>I/O</td>
</tr>
<tr>
<td>5</td>
<td>Aux-Logic</td>
</tr>
<tr>
<td>6</td>
<td>Power</td>
</tr>
<tr>
<td>7</td>
<td>I/O</td>
</tr>
<tr>
<td>8</td>
<td>Aux-Logic</td>
</tr>
<tr>
<td>9</td>
<td>Power</td>
</tr>
</tbody>
</table>

**Flying Lead Colors**

- Red: I/O Power
- Orange: I/O1
- Yellow: I/O9 CH A+
- Blue: I/O11 CH B+
- Green: TX-
- Black: I/O GND

Use Supplied Recommended Wire: 22 AWG Stranded

**14-pin wire crimp**

- **Step Clock**
  - Pin 1: +V
  - Pin 2: CAN-H
  - Pin 3: CAN-L
  - Pin 4: GND
- **Direction**
  - Pin 5: CAN-Shield
- **Step Encoder**
  - Pin 6: TX-
  - Pin 7: RX-
  - Pin 8: RX+
  - Pin 9: TX+

**Prototype Development Cable p/n: PD14-2334-FL3**

- Speed test and development with pre-wired mating connector.
- Pluggable Terminal Kit p/n: CK-09
  - Use to make your own cables, kit contains 5 mating connector shells with crimp pins. JST crimp tool recommended.

**Power**

- 2-pin wire crimp

**Prototype Development Cable p/n: PD02-2300-FL3**

- Function: Power Interface
- 10.0’ (3.0m)

**Mating Connector Kit p/n: CK-04**

- Use to make your own cables, kit contains 5 mating connector shells with crimp pins. Tyco crimp tool recommended.

**Communications — RS-422/485**

**10-pin wire crimp**

- To MDrive 10-pin friction lock wire crimp connector
- To Communications 6.0’ (1.8m)

**Communications Converter p/n: MD-CC002-001**

- Electrically isolated in-line USB to RS-422/485 converter pre-wired with mating connector to conveniently program and set configuration parameters.

**Communications — CANOpen version**

**DB-9 (male)**

**Communications Converter p/n: MD-CC500-000**

- Electrically isolated in-line USB to CANOpen converter. USB “A” Type connector to DB-9 (Male). An interface cable must be constructed by the user.

**Mating Cable Requirements**

- The following diagram illustrates the parts and connections for an interface cable connecting the MD-CC550-000 to the MDrive. Required Parts: (2) DB-9 (female), +7 to +30 VDC power supply, (1) 1200 terminating resistor.

**DB-9F Connector Front View**

- Pin 1: CAN-V
- Pin 2: CAN-N
- Pin 3: CAN-D
- Pin 4: CAN-A
- Pin 5: CAN-H
- Pin 6: MDrive P2
- Pin 7: CAN-R
- Pin 8: CAN-L
- Pin 9: CAN-H
- Pin 10: CAN-N
- Pin 11: CAN-A
- Pin 12: CAN-D

**DB-9F Power Supply**

- Typical Power Supply: +12 to +30 VDC

**MD-CC550-000**

**Terminated Resistor Required**

**Communications Converter p/n: MD-CC400-001**

- Electrically isolated in-line USB to RS-422/485 converter pre-wired with mating connector to conveniently program and set configuration parameters.

**Mating Connector Kit p/n: CK-01**

- Use to make your own cables, kit contains 5 mating connector shells for making interface cables.

**IDC Parts Shell:** SAMTEC TCS05-05-01-N

**Ribbon Cable:** AMP 1-57051-9

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