

## Prototype Development Cable PD14-2334-FL3 — I/O

IMS recommends the Prototype Development Cable PD14-2334-FL3 for interfacing I/O and Logic to the MDrive34Plus<sup>2</sup> Motion Control. IMS recommends the Prototype Development Cable PD14-2334-FL3 with the first order of an MDrive34Plus<sup>2</sup> Motion Control to mate with the 14-pin locking wire crimp connector P1. 14 (7 Twisted Pair) Flying Leads interface to the user's control electronics at the un-terminated end of the cable.

Care should be observed to ensure that the black leads are connected in the correct location in relation to their paired color.

| Wire Color Code |                   |                            |                              |               |
|-----------------|-------------------|----------------------------|------------------------------|---------------|
| Pair Number     | Color Combination | Signal Name (Expanded I/O) | Signal Name (Remote Encoder) | P1 Pin Number |
| 1               | Black             | Direction                  | Index –                      | 14            |
|                 | White             | Step Clock                 | Index +                      | 13            |
| 2               | Black             | Analog In                  | Analog In                    | 12            |
|                 | Green             | Capture In/Trip Out        | Capture In/Trip Out          | 11            |
| 3               | Black             | I/O 12                     | Channel B –                  | 10            |
|                 | Blue              | I/O 11                     | Channel B +                  | 9             |
| 4               | Black             | I/O 10                     | Channel A –                  | 8             |
|                 | Yellow            | I/O 9                      | Channel A +                  | 7             |
| 5               | Black             | I/O 4                      | I/O 4                        | 6             |
|                 | Brown             | I/O 3                      | I/O 3                        | 5             |
| 6               | Black             | I/O 2                      | I/O 2                        | 4             |
|                 | Orange            | I/O 1                      | I/O 1                        | 3             |
| 7               | Black             | I/O GND                    | I/O GND                      | 2             |
|                 | Red               | I/O Power                  | I/O Power                    | 1             |

Table E.2: PD16-2334-FL3 Wire Color Codes

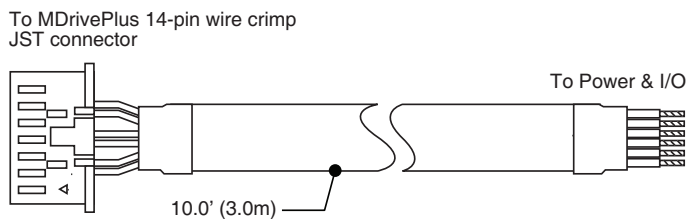


Figure E.14: PD14-2334-FL3

### Connector Detail and Mating Connector Kit

Should you choose to create your own interface cable IMS now has mating connector kits available which assist you in creating interface cables in small quantities. These kits come with the connector shells and crimp pins to create five interface cables.

#### Connector Details

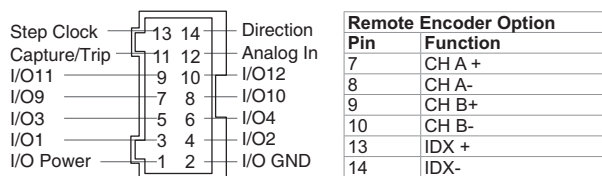


Figure E.15: 14-Pin Wire Crimp

#### Mating Connector Kit p/n: CK-09

Description: 5 mating connector shells and crimp pins. Recommend JST Crimp tool (Not included).

JST Parts: Shell: PADP-14V-1-S  
Pins: SPH-001T-P0.5L  
Crimp Tool: YHT2622

## Prototype Development Cable PD20-3400-FL3 — I/O and Remote Encoder

The PD20-3400-FL3 is a 10' (3.0 M) Prototype Development Cable used to connect to the 20-Pin Locking Wire Crimp Connector. The Connector end plugs into the P1 Connector of the MForce PowerDrive Plus with Optional Remote Encoder. This Prototype Development Cable consists of 2 cables paired together at the P1 end. The Flying Lead end of Cable #1 connects to a Control Interface such as a PLC. The Flying Lead End of Cable #2 Connects to the Encoder.

| P1 Connector Pin Configuration |  | Prototype Development Cable PD20-3400-FL3 |              |
|--------------------------------|--|---|--------------|
| Connector P1                   | Function - Expanded I/O & Remote Encoder | Pair Number                               | Wire Color   |
| Cable 1                        |  |   |              |
| Pin 1                          | I/O Power                                | 7   | Red          |
| Pin 2                          | I/O Ground                               |   | Black        |
| Pin 3                          | I/O 1                                    | 6   | Orange       |
| Pin 4                          | I/O 2                                    |   | Black        |
| Pin 5                          | I/O 3                                    | 5   | Brown        |
| Pin 6                          | I/O 4                                    |   | Black        |
| Pin 7                          | I/O 9                                    | 4   | Yellow       |
| Pin 8                          | I/O 10                                   |   | Black        |
| Pin 9                          | I/O 11                                   | 3   | Blue         |
| Pin 10                         | I/O 12                                   |   | Black        |
| Pin 11                         | Capture/Trip                             | 2   | Green        |
| Pin 12                         | Analog Input                             |   | Black        |
| Pin 13                         | Step Clock                               | 1   | White        |
| Pin 14                         | Direction                                |   | Black        |
| Cable 2                        |  |   |              |
| Pin 15                         | Channel A +                              | 1   | White/Blue   |
| Pin 16                         | Channel A -                              |   | Blue/White   |
| Pin 17                         | Channel B +                              | 2   | White/Orange |
| Pin 18                         | Channel B -                              |   | Orange/White |
| Pin 19                         | Index +                                  | 3   | White/Green  |
| Pin 20                         | Index -                                  |   | Green/White  |

Table E.3: PD20-3400-FL3 Wire Color Codes

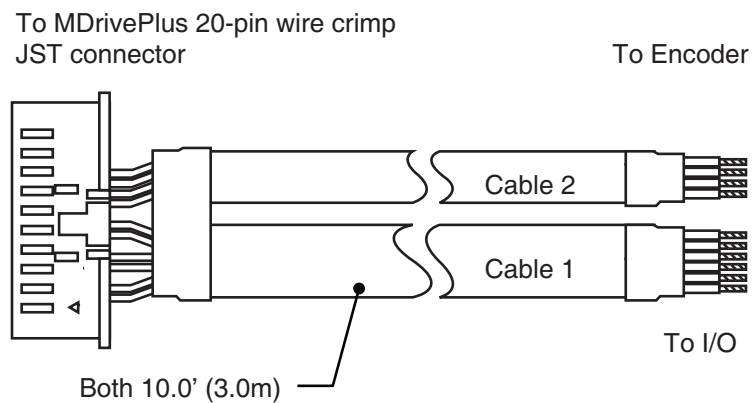


Figure E.16: PD20-3400-FL3

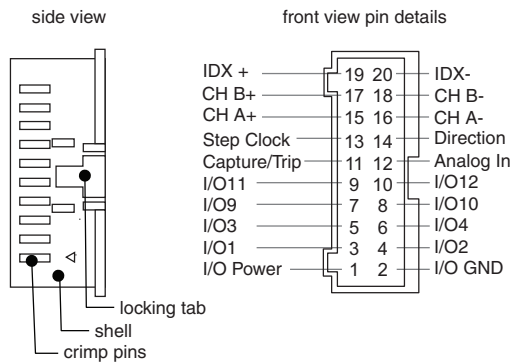


Figure E.17: 20-Pin Wire Crimp

**Mating Connector Kit p/n: CK-11**

- Description: 5 mating connector shells and crimp pins. Recommend JST Crimp tool (Not included).
- JST Parts: Shell: PADP-20V-1-S  
Pins: SPH-001T-P0.5L  
Crimp Tool: YHT2622

**Prototype Development Cable PD02-3400-FL3 — Main Power**

IMS recommends the Prototype Development Cable PD02-3400-FL3 for interfacing power to the MDrive-34Plus<sup>2</sup> Motion Control.

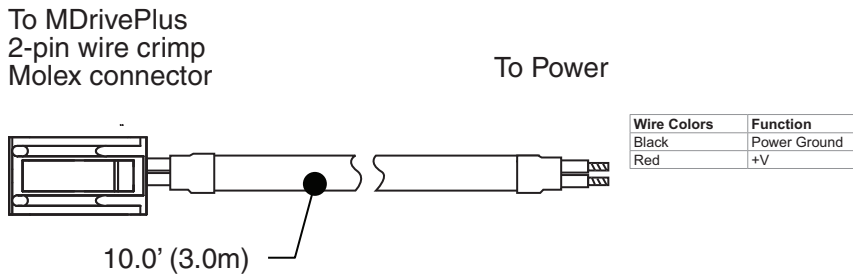


Figure E.18: PD02-3400-FL3

**Connector Details**

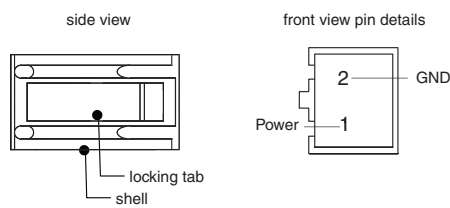


Figure E.19: 2-Pin Wire Crimp

**Mating Connector Kit p/n: CK-05**

- Description: 5 mating connector shells and crimp pins. Recommend Molex Crimp tool (Not included).
- Molex Parts: Shell: 510-67-0200  
Pins: 502-17-9101  
Crimp Tool: 63811-1200