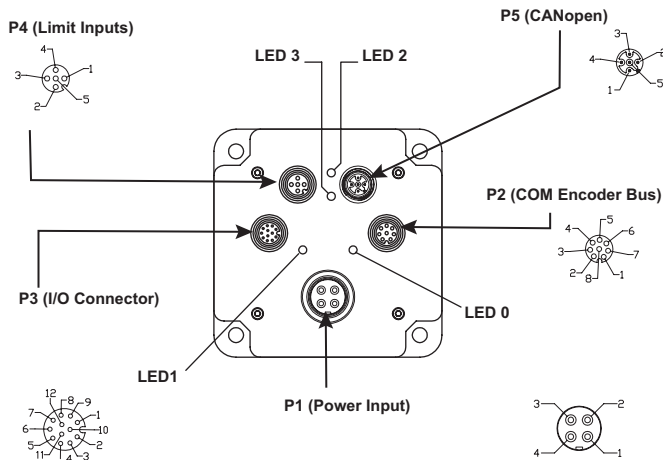


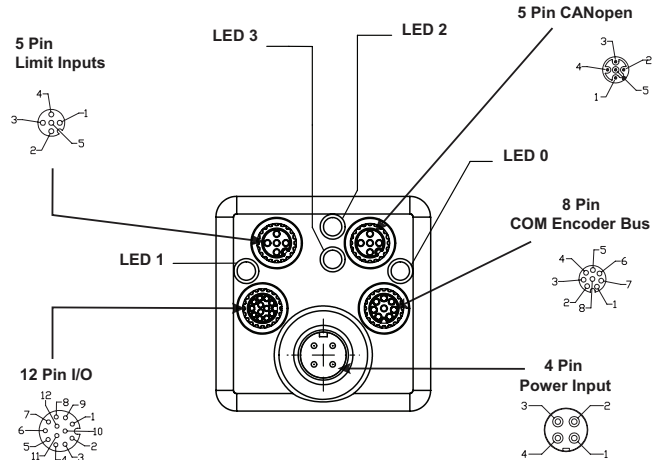
The information in this section has been superseded.  
Please see the information in the latest product catalog at:  
[www.animatics.com/support/moog-animatics-catalog.html](http://www.animatics.com/support/moog-animatics-catalog.html)

# SM34165MT and SM23165MT

## SM34165MT



## SM23165MT



**NOTE:** LED operation for IP-sealed motors is the same as for standard motors.

### LED 0: Drive Status Indicator

Off	No Power
Solid green	Drive On
Flashing green	Drive Off
Flashing red	Watchdog Fault
Solid red	Major Fault
Alt. red/green	In Boot Load, Needs Firmware

### LED 1: Trajectory Status Indicator

Off	Not Busy
Solid green	Drive On, Trajectory In Progress

### LED 2: CAN Bus Network Fault (Red LED)

Off	No Error
Single Flash.	At least One Error exceeded Limit
Double Flash	Heartbeat or Guard Error
Solid	Busy Off State

### LED 3: CAN Bus Network Status (Green LED)

Blinking	Pre-Operational State, (during boot-up)
Solid	Normal Operation
Single	Device is in Stopped State

### LED Status Power-up:

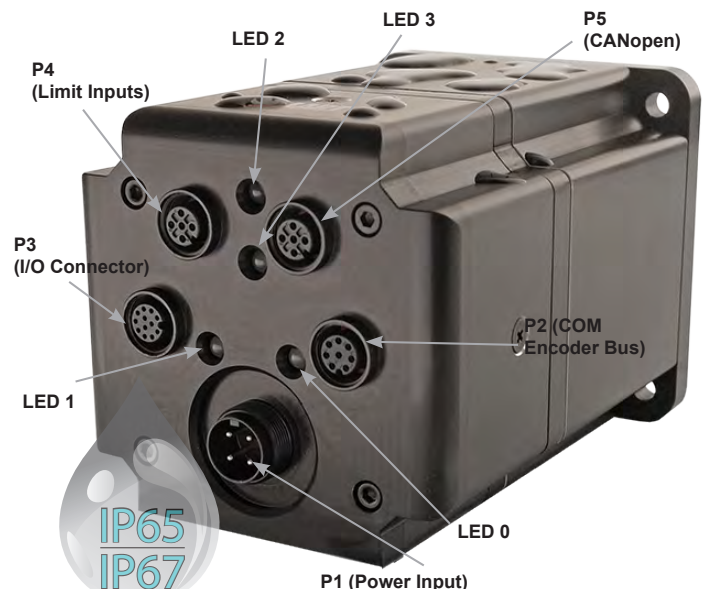
- With no program the travel limit inputs are low:  
LED0 will be solid red indicating the motor is in a fault state due travel limit fault.  
LED1 will be off

### LED Status Power-up:

- With no program and the travel limits are high:  
LED0 will be solid red for 500 milliseconds and then begin flashing green.  
LED1 will be off

### LED Status Power-up:

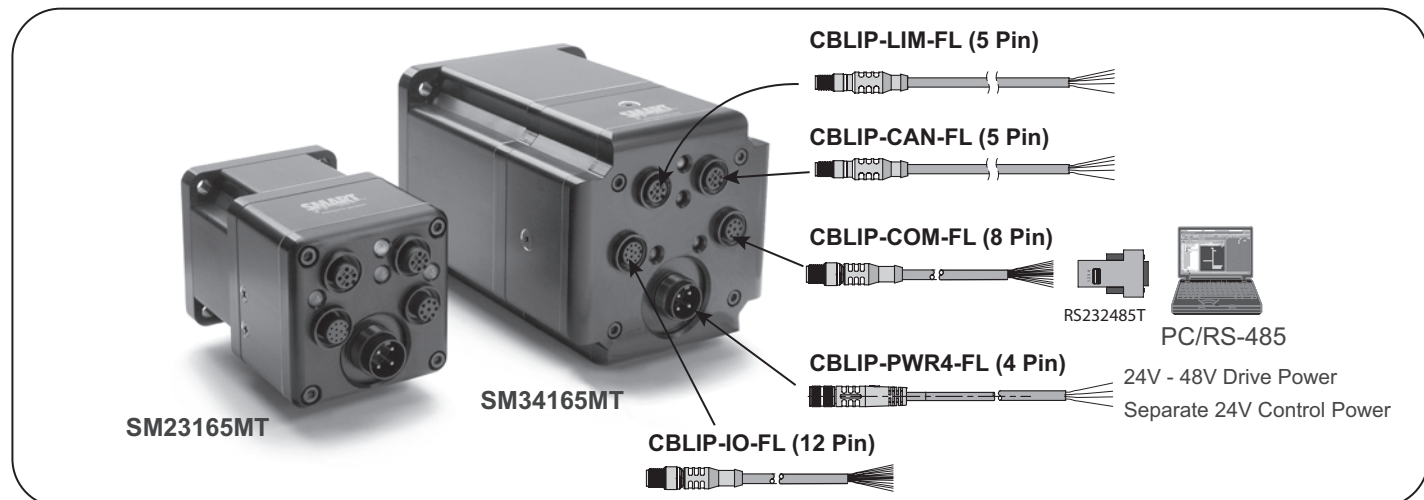
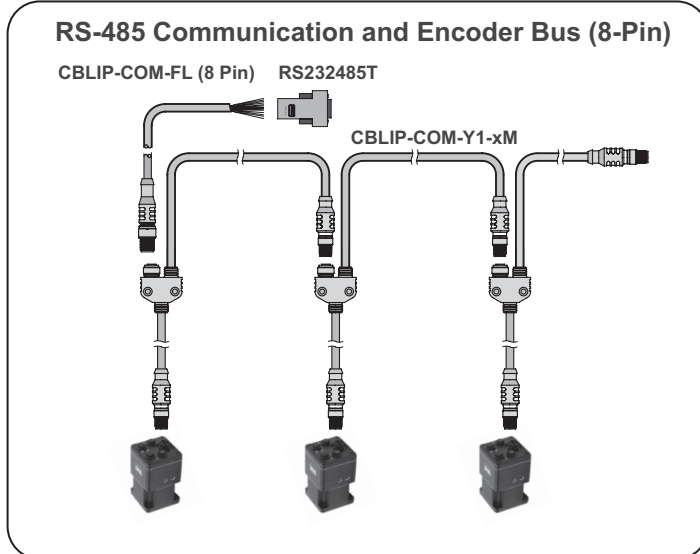
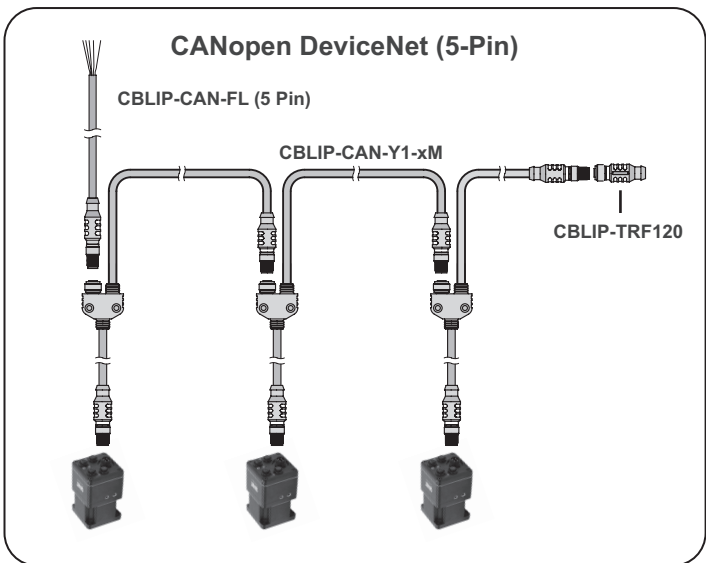
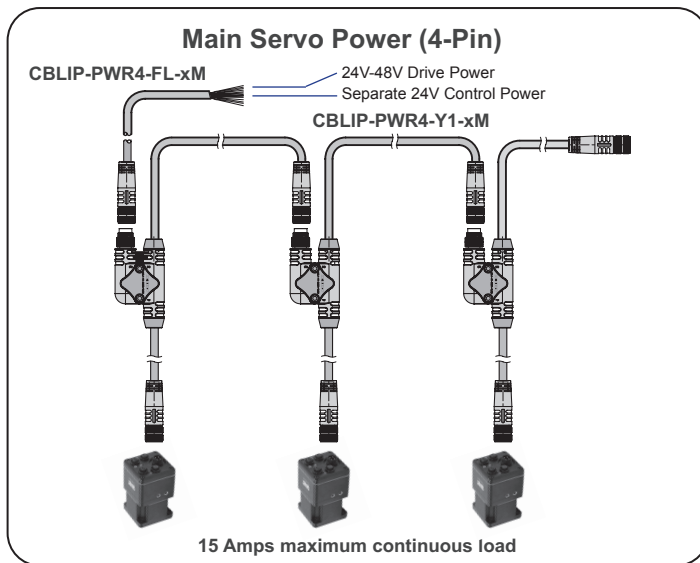
- With a program that only disables travel limits and nothing else  
LED0 will be solid red for 500 milliseconds and then begin flashing green.  
LED1 will be off



IP65  
IP67

IP rating depends on motor options.

## Class 5 Multi-Axis Connection Maps (M-Style Models)

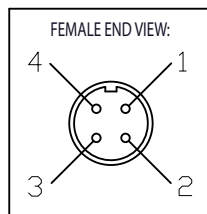
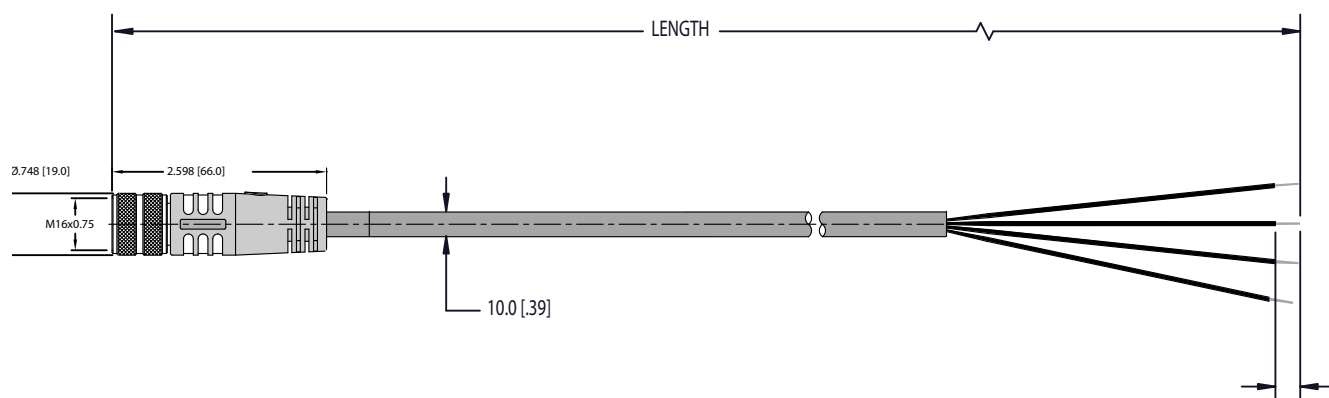


**NOTE:** User can download their choice of CANopen or DeviceNet firmware from the Moog Animatics website.  
24V I/O and CAN or DN are standard on all M-Style SmartMotors.

## Drive and Control Power Cable

Main Power Input Cable supplies connection point to drive power and control power. This cable is required to power up all DC input sealed motors. Standard M16 threaded connector, brass pins with gold plating, maximum 12.0A, foil shield with black PVC jacket, ~7.4mm diameter.

Part Number	Description	Length
CBLIP-PWR4-FL-1M	Flying Lead Straight Connector	1 meter
CBLIP-PWR4-FL-3M	Flying Lead Straight Connector	3 meters
CBLIP-PWR4-FL-5M	Flight Lead Straight Connector	5 meters
CBLIP-PWR4-FL-10M	Flight Lead Straight Connector	10 meters
CBLIP-PWR4-FL-1MRA	Right Angle Connector	1 meter
CBLIP-PWR4-FL-3MRA	Right Angle Connector	3 meters
CBLIP-PWR4-FL-5MRA	Right Angle Connector	5 meters



CONNECTIONS

PIN #	COLOR	SIGNAL
1	WHITE	CONTROL POWER 24VDC*
2	GREEN	CHASSIS GND/EARTH
3	BLACK	GND COMMON
4	RED	DRIVE POWER 48V MAX

**NOTE:** Drive Power and Control Power are Separate Inputs. Control power is rated to a maximum range of 18 to 32VDC. Drive Power is from 18 to 48VDC max.

**WARNING:** Exceeding 32VDC into control power or any of the +24V pins could cause immediate damage to internal electronics. Exceeding a sustained voltage of 48V to pin 4 of the P1 Power pin could cause immediate damage to internal electronics. Exceeding these voltage limits will void the warranty.

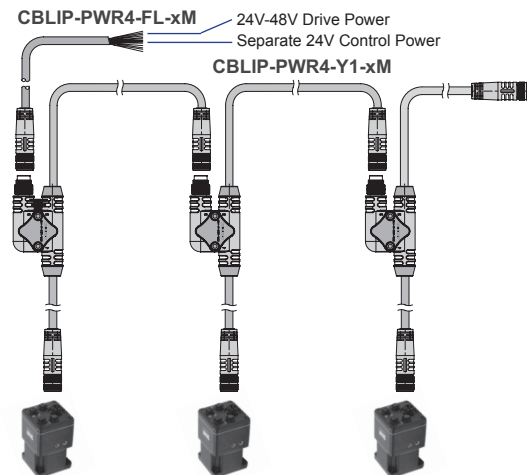
**CBLIP-PWR4-Y1-xM**

**CBLIP-PWR4-Y1-xM Add-A-Motor cable for IP65 series motor Drive and Control Power Daisy chain cable for power distribution to multiple motors.**

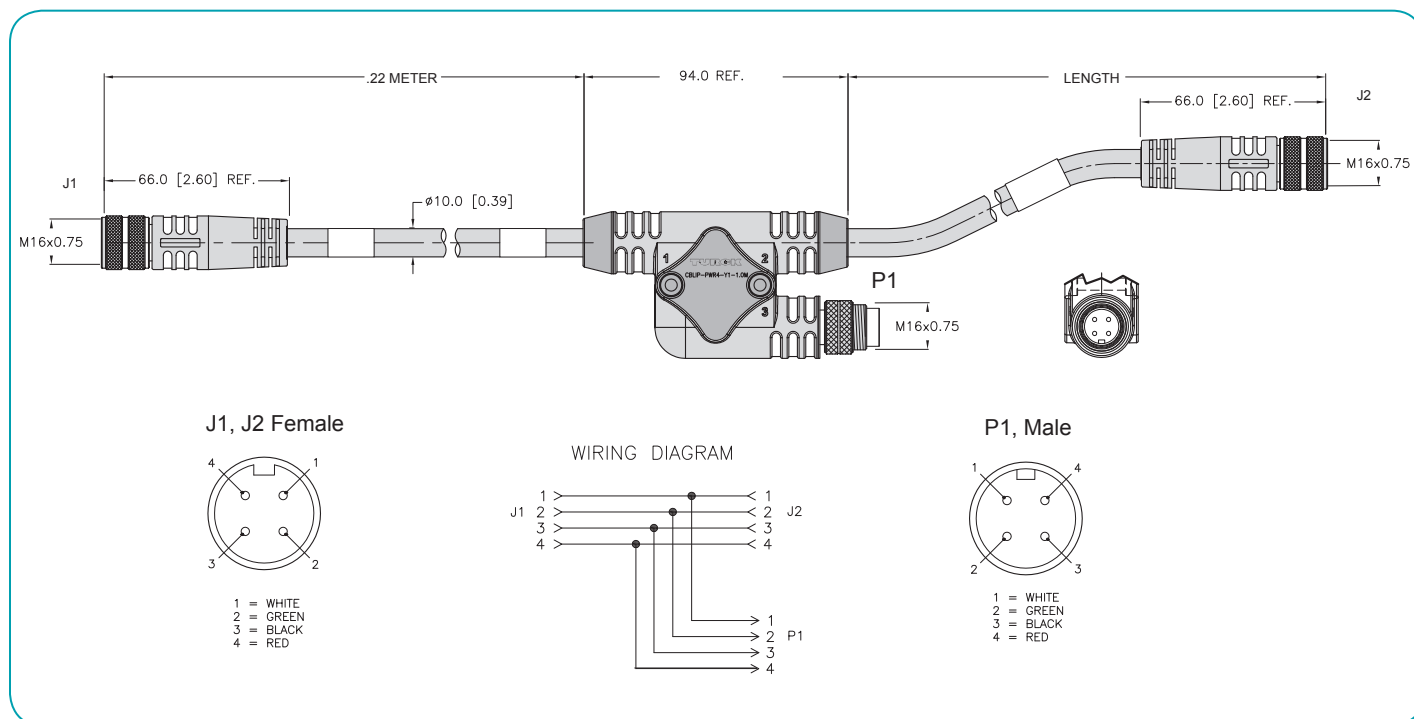
**CBLIP-PWR4-Y1-xM** series is the main power cable for IP65 motors featuring easy daisy chaining of both drive and control power to multiple motors.

This cable plugs into the M16 4-pin connector allowing split off to another cable and motor.

Part Number	Length
CBLIP-PWR4-Y1-0.5M	0.5 meters
CBLIP-PWR4-Y1-1.0M	1 meter
CBLIP-PWR4-Y1-3.0M	3 meters
CBLIP-PWR4-Y1-0.5MRA	0.5 meters
CBLIP-PWR4-Y1-3.0MRA	3 meters



**NOTE: Maximum of 15 Amps continuous RMS load per total daisy chain transmission line.**



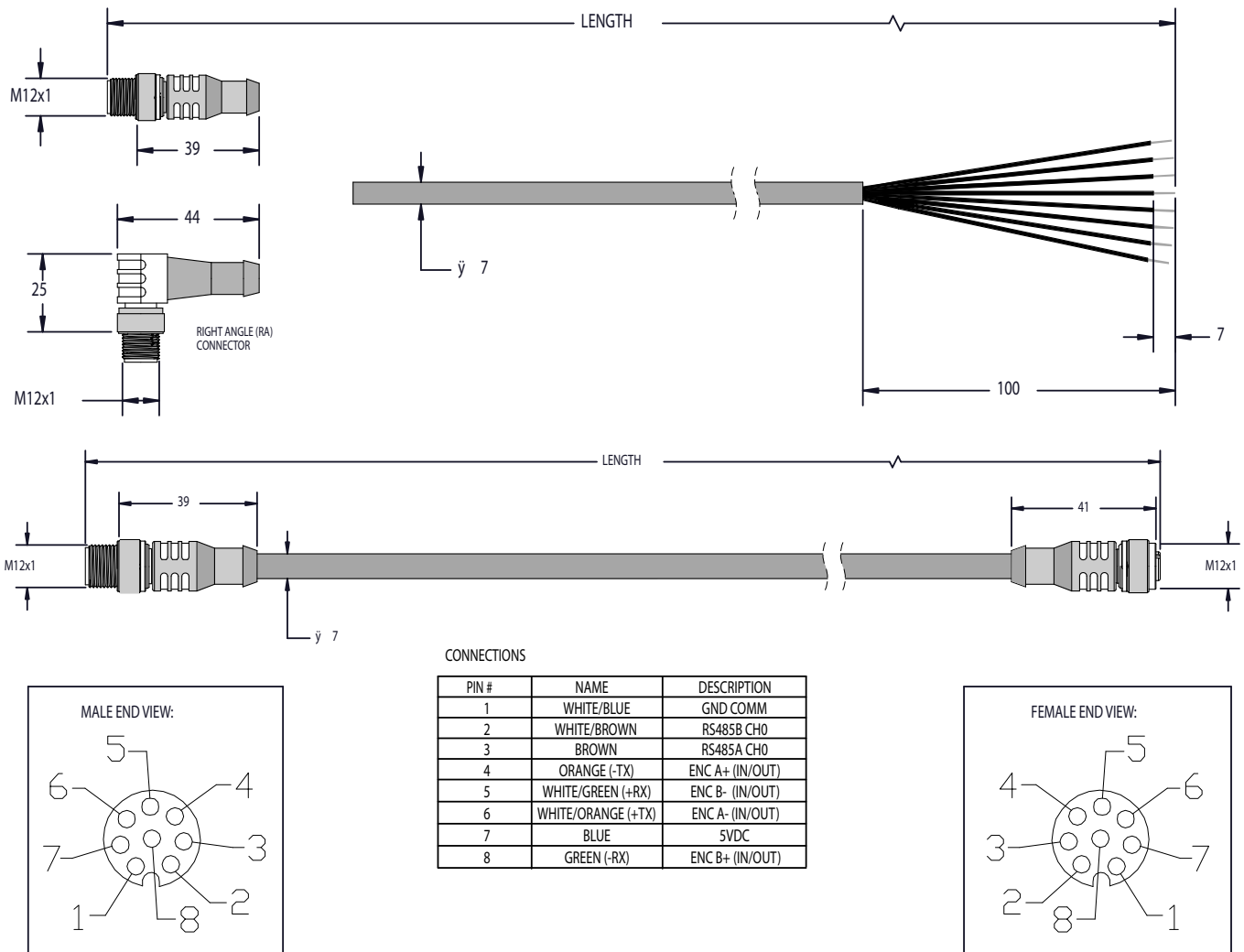
**NOTE: Drive Power and Control Power are Separate Inputs. Control power is rated to a maximum range of 18 to 32VDC. Drive Power is from 18 to 48VDC max.**

**WARNING: Exceeding 32VDC into control power or any of the +24V pins could cause immediate damage to internal electronics. Exceeding a sustained voltage of 48V to pin 4 of the P1 Power pin could cause immediate damage to internal electronics. Exceeding these voltage limits will void the warranty.**

## Communications and Encoder Bus Flying Lead Cable

This cable is required for basic communications to the main RS-485 port. The communications port also contains pins for the bidirectional encoder bus. Rated to >1MHz data transmission rate. CBLIP-COM series cables are sealed M12 threaded connector, brass pins with gold plating, maximum 2.0A, foil shield with black PVC jacket, ~7.4mm diameter.

Part Number	Description	Length
CBLIP-COM-FL-1M	Flying Lead Straight Connector	1 meter
CBLIP-COM-FL-3M	Flying Lead Straight Connector	3 meters
CBLIP-COM-FL-1MRA	Flying Lead Right Angle Connector	1 meter
CBLIP-COM-FL-3MRA	Flying Lead Right Angle Connector	3 meters
CBLIP-COM-EXT-1M	Comm. Extension Cable	1 meters
CBLIP-COM-EXT-2M	Comm. Extension Cable	2 meters
CBLIP-COM-EXT-3M	Comm. Extension Cable	3 meters



## Communications and Encoder Bus Y Cable

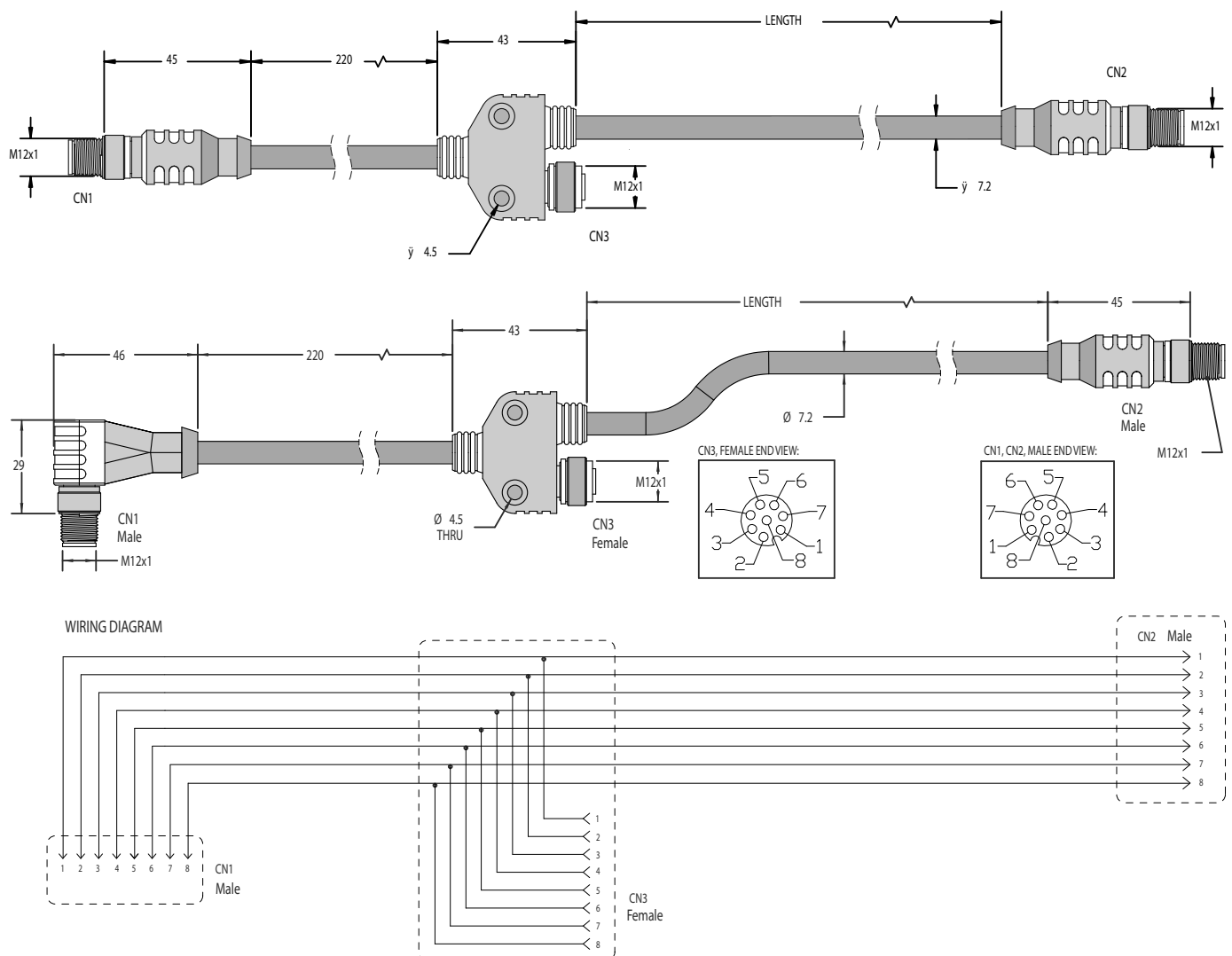
This cable allows for daisy chain connection from one motor to the next. The communications port also contains pins for the bidirectional encoder bus. Rated to >1MHz data transmission rate. CBLIP-COM series cables are sealed M12 threaded connector brass pins w /gold plating, maximum 2.0A. foil shield with black PVC jacket ~7.4mm diameter.

### Straight Connector

Part Number	Length
CBLIP-COM-Y1-0.5M	0.5 meters
CBLIP-COM-Y1-1M	1 meters
CBLIP-COM-Y1-3M	3 meters

### Right Angle Connector

Part Number	Length
CBLIP-COM-Y1-0.5MRA	0.5 meters
CBLIP-COM-Y1-1MRA	1 meters
CBLIP-COM-Y1-3MRA	3 meters

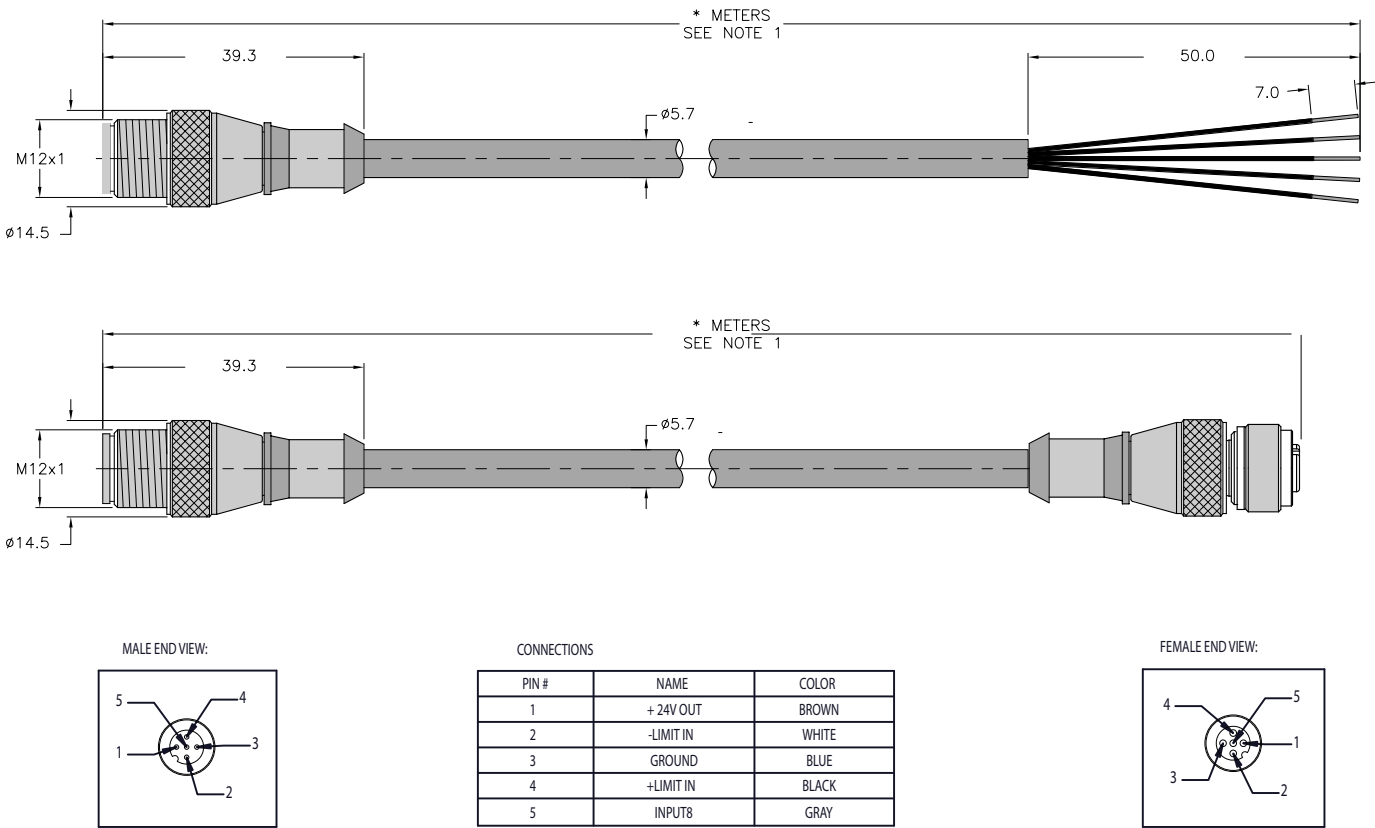


### Travel Limit Input Cables

The Limit FL cables are standard unshielded cables intended for use with I/O signals only.

CBLIP series cables are sealed M12 threaded connector, brass pins with gold plating, maximum 4.0A 250V, foil shield with black PVC jacket, ~7.4mm diameter.

Part Number	Description	Length
CBLIP-LIM-FL-1M	Flying Lead Straight Connector	1 meter
CBLIP-LIM-FL-3M	Flying Lead Straight Connector	3 meters
CBLIP-LIM-EXT-1M	Limit Bus Extension Cable	1 meter
CBLIP-LIM-EXT-2M	Limit Bus Extension Cable	2 meters
CBLIP-LIM-EXT-3M	Limit Bus Extension Cable	3 meters



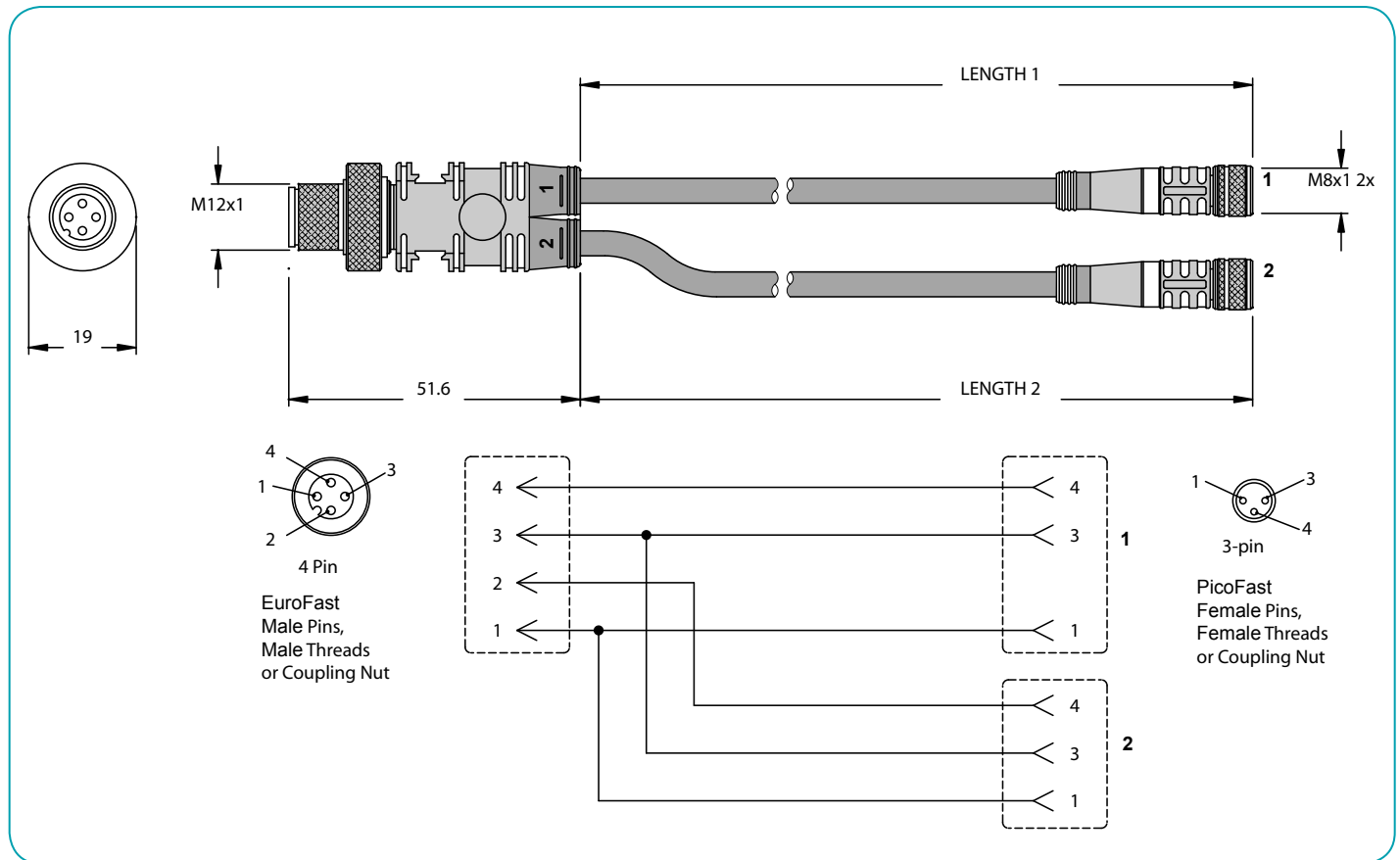


## CBLIP-LIM-Y1-xM-xm (Travel Limit Breakout Cables)

**CBLIP-LIM-Y1** series cables are intended as a break out cable for the travel limit input connectors of the M-Style SmartMotors. As seen below, this cable terminates to two PicoFast standard sensor connectors allowing direct field connection to various proximity sensors on the market.

Length options are based on connector 1 and 2 where the first length is for cable length to connector 1 and the second is for length to connector 2.

Part Number	Length
CBLIP-LIM-Y1-0.5M-1M	IP Limit Y Cable, 0.5 X 1.0 Meter
CBLIP-LIM-Y1-0.5M-2M	IP Limit Y Cable, 0.5 X 2.0 Meter
CBLIP-LIM-Y1-3M-3M	IP Limit Y Cable, 3.0 M X 3.0 Meter

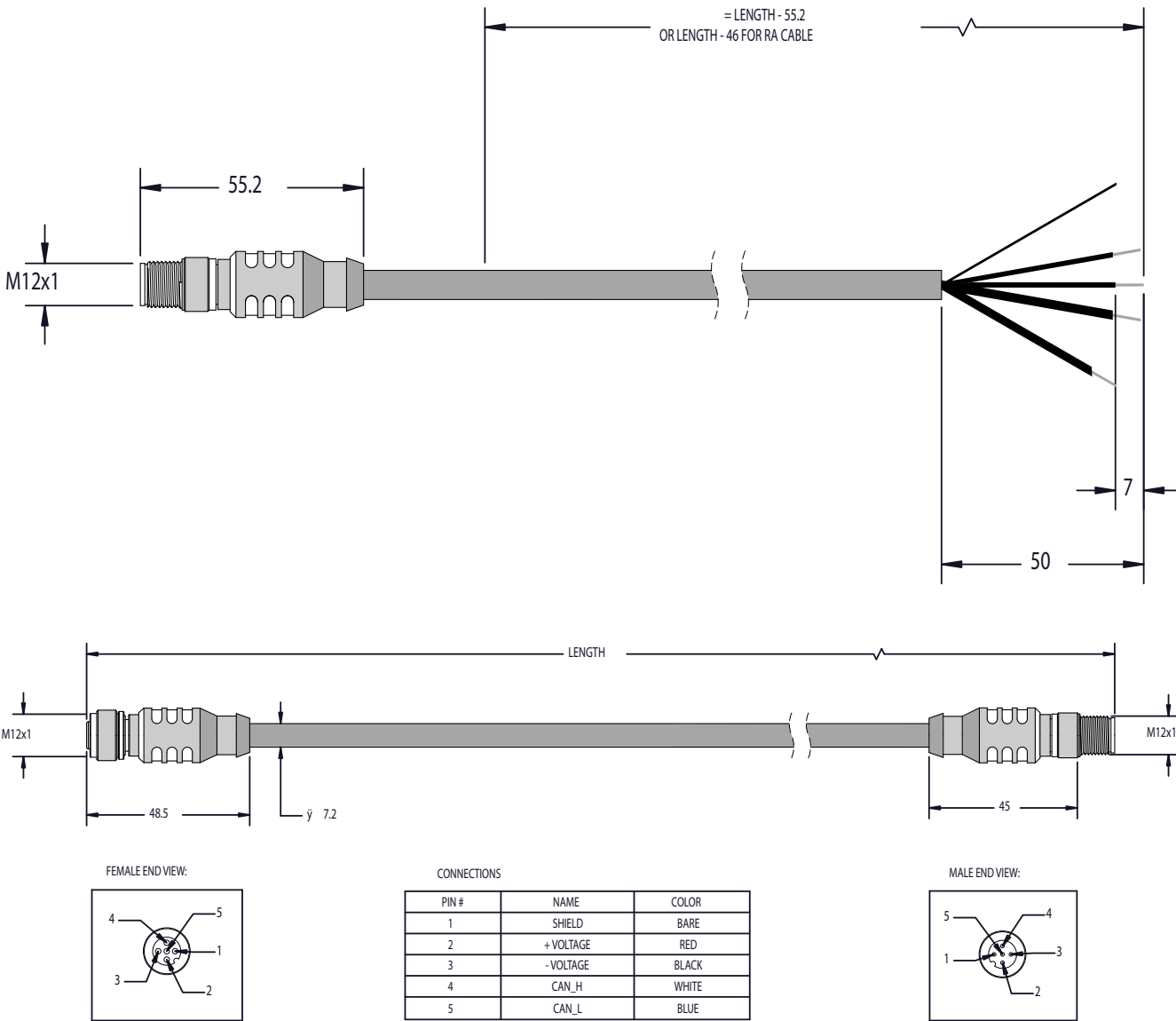


CAN Bus Flying Lead Cables, Straight

The CAN FL cables are standard CAN bus communications cables rated to >1MB data transmission rates.

CBLIP series cables are sealed M12 threaded connector brass pins with gold plating, maximum 4.0A. 250V foil shield with black PVC jacket ~7.4mm diameter.

Part Number	Description	Length
CBLIP-CAN-FL-1M	Flying Lead Straight Connector	1 meter
CBLIP-CAN-FL-3M	Flying Lead Straight Connector	3 meters
CBLIP-CAN-EXT-1M	CAN Bus Extension Cable	1 meter
CBLIP-CAN-EXT-2M	CAN Bus Extension Cable	2 meters
CBLIP-CAN-EXT-3M	CAN Bus Extension Cable	3 meters



## CAN Bus Y Cables, Straight Connector

The CAN Y1 series is meant for CAN Bus communications connectivity between two motors with the addition of a T-connector in line. Rated to >1MB data transmission rates.

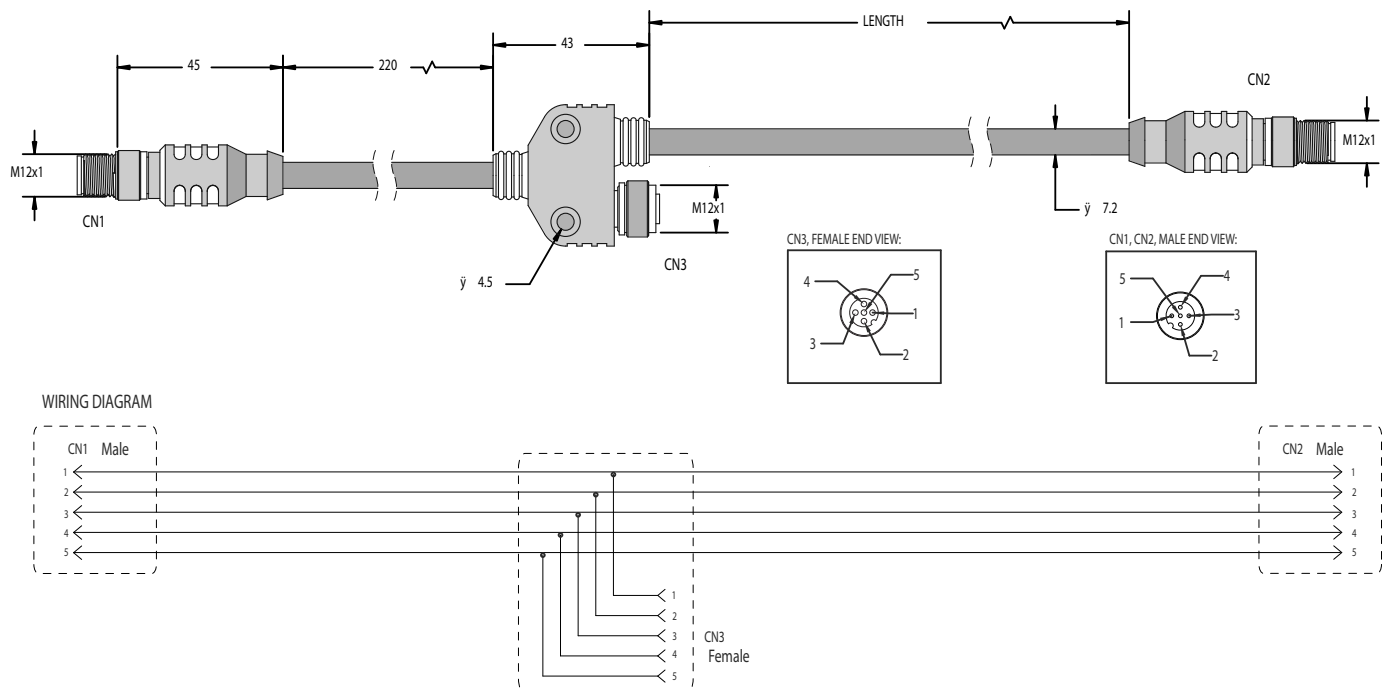
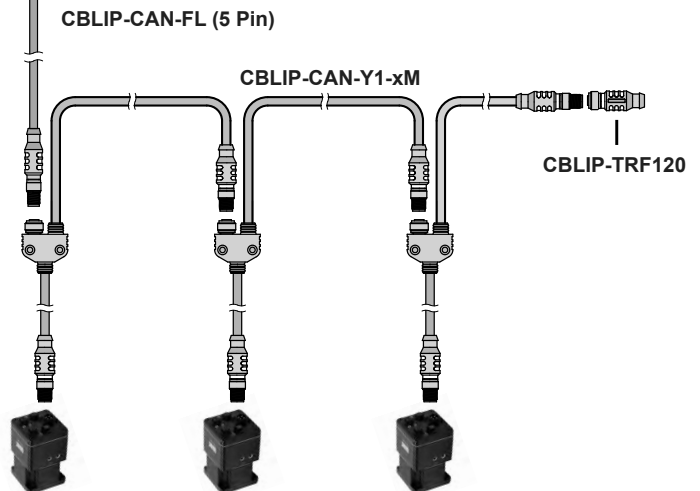
This allows for cascading of multiple SmartMotor servos and the addition of a shunt resistor when required.

CBLIP series cables are sealed M12 threaded connector brass pins w / gold plating, maximum 4.0A. 250V foil shield with black PVC jacket ~7.4mm diameter.

### Straight Connector

Part Number	Length
CBLIP-CAN-Y1-0.5M	0.5 meters
CBLIP-CAN-Y1-1M	1 meters
CBLIP-CAN-Y1-3M	3 meters

### CANopen DeviceNet (5-Pin)



**NOTE:** At least one shunt resistor is required on ALL CAN bus networks. Please consult the factory for additional information.

## CBLIO-IO 24VDC TTL I/O Cable

The expanded I/O cables are for use with the -AD1 expanded I/O option on all Class 5 IP sealed SmartMotors. Each cable is a 12-pin conductor shielded cable. 2 conductors are for +24VDC I/O power. The other 10 are for 10 channels of I/O.

CBLIP series cables are sealed M12 threaded connector brass pins w / gold plating, maximum 4.0A. 250V foil shield with black PVC jacket ~7.4mm diameter.

Part Number	Description	Length
CBLIP-IO-FL-1M	Flying Lead Straight Connector	1 meter
CBLIP-IO-FL-3M	Flying Lead Straight Connector	3 meters
CBLIP-IO-EXT-1M	I/O Extension Cable	1 meters
CBLIP-IO-EXT-2M	I/O Extension Cable	2 meters
CBLIP-IO-EXT-3M	I/O Extension Cable	3 meters

