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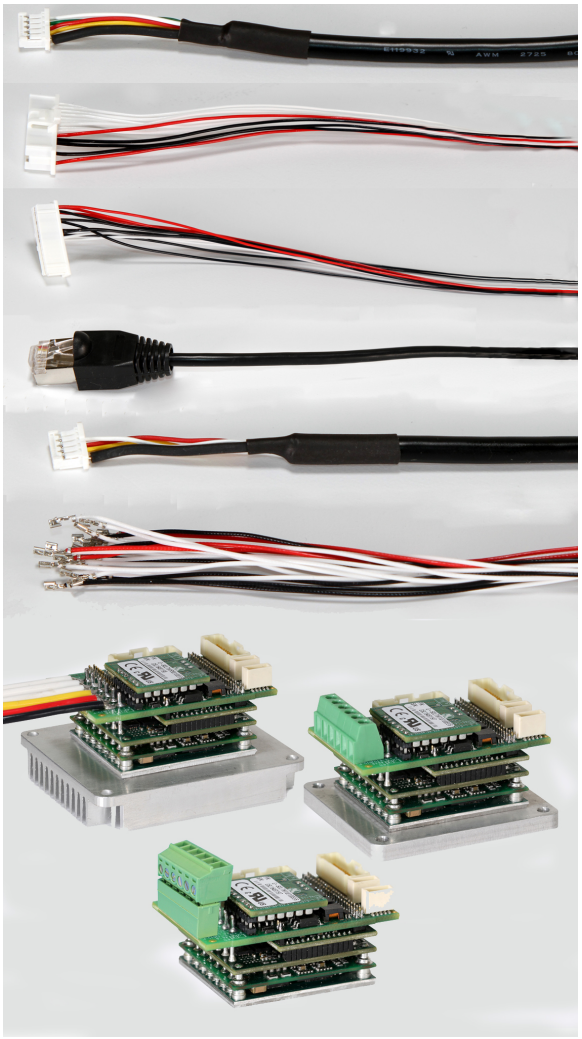
Gold Solo Twitter Cable Kit



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Document no. MAN-G-SOLTWI-CBLKIT (Ver. 1.001)

Catalog Number

CBL-GSOLTWIKIT03

CBL-GSOLTWIKIT04

CBL-GSOLTWIKIT05

Revision History

Version	Date	Details
Ver. 1.000	Feb 2017	Initial release
Ver. 1.001	Mar 2017	Updated Pin No. types, and length of EtherCAT link cable

Chapter 1: Introduction

This document provides the wiring details for the cables used to connect the Gold Solo Twitter with the end-user application. The servo drive-side pinouts are provided in the drive's installation guide.

Note: The power cable is not provide within the kit.

The standard cables come in the following lengths:

- 1 meter (39.4 inches) for the EtherCAT/CAN cable
- 0.25 meter (9.84 inches) for the COM, I/O, STO, and Feedback wires
- 0.06 meter (2.36 inches) for the EtherCAT Link cable

For other optional lengths of cable, refer to Elmo.

1.1. Cable Kits and Tools

There are three optional cable kits available:

Part Number	General Description	Cables Included	Detailed Description
CBL-GSOLTWIKIT03	Kit cable for EtherCAT model	CBL-GTWICOMIO02	USB, I/O, STO
		CBL-GTWIECAT01-1 (x2)	EtherCAT IN/OUT
		CBL-GTWIECATLINK01	EtherCAT link cable daisy chain between G-SOLTWI Drives
		CBL-GTWIFB01	Feedback cable for Ports A, B, C, and VL
		CBL-GTWISPARE01	21 Spare crimping wires
		JCB-131001F2 (x45)	45 Pins
CBL-GSOLTWIKIT04	Kit cable for CAN model	CBL- GTWICOMIO03	RS-232, I/O, STO
		CBL-GTWICAN01-1	CAN IN/OUT
		CBL-GTWIFB01	Feedback cable for Ports A, B, C, and VL
		CBL-GTWISPARE01	21 Spare crimping wires
		JCB-131001F2 (x45)	45 Pins
CBL-GSOLTWIKIT05	CONNECTORS AND PINS KIT	JCB-131001F (x13)	13 Pins
		JCB-131001F2 (x66)	66 Pins
		JCW-131005F (x2)	Mating connectors for CAN/EtherCAT (5-Pin connector)

Part Number	General Description	Cables Included	Detailed Description
		JCW-131030F (x2)	Mating connectors for Feedback/COM I/O (30-Pin connector)

1.2. Crimping Tool

A specific Crimping Tool (available for purchase from Elmo) is required to mount extra connecting pins on the wires. A number of wires are provided in the cable kit as pre-crimped for convenience:

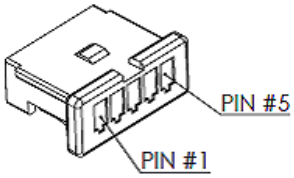
Crimping Tool	Pins	
Molex P/N 63819-1500 Elmo P/N TOOL-P000040	MOLEX PIN_501334-0100	Tin plated
	Elmo P/N JCB-131001F	
	MOLEX PIN_501193-3000	Gold plated
	Elmo P/N JCB-131001F2	

Chapter 2: CAN Ports Communication Cable (CBL-G-TWICAN01-1)

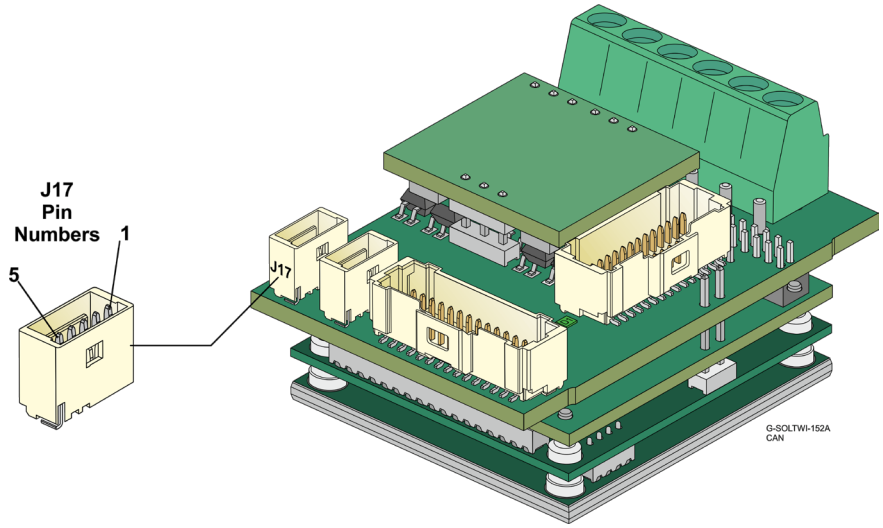
The standard CAN Ports Communication cable is supplied in 1.0 m lengths. For cable lengths larger than those supplied in this kit, refer to Elmo.

The CAN port cable consists of a double-pair 30-AWG drain and braid cable. At one end of the cable is a wire to board 5-pin, 1 mm pitch, female Molex connector, and at the other end an RJ-45 standard communication connector.

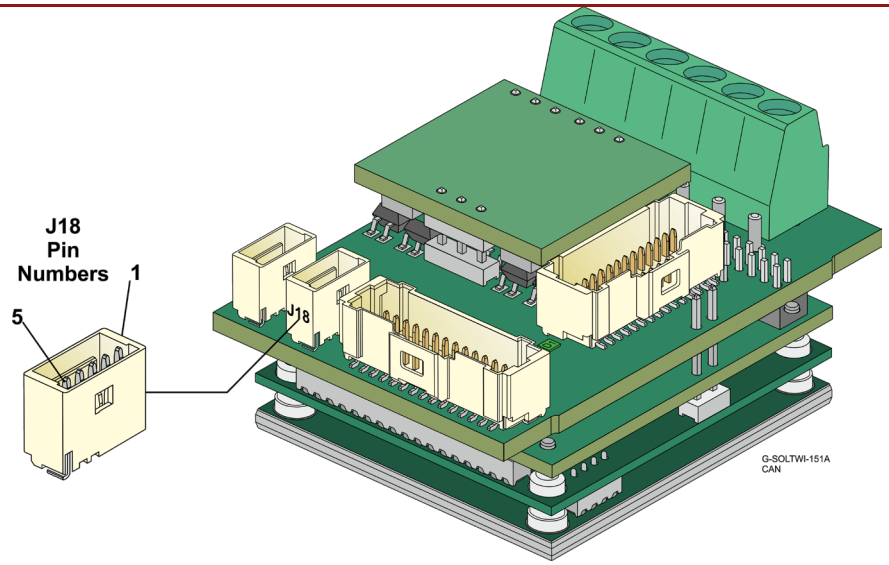
The general pinout of the CAN ports cable is as follows:

J17, J18 Pins From Molex Connector	To Pins RJ-45 Connector	Color	Function	Molex Plug
2	3	WHITE	COMRET	
3	1	RED	CAN_H	
4	2	YELLOW	CAN_L	
5	RJ-45 BODY	Drain wire	Shield drain wire	

Pin Positions



J17 CAN Connector Pin Assignments



J18 CAN Connector Pin Assignments

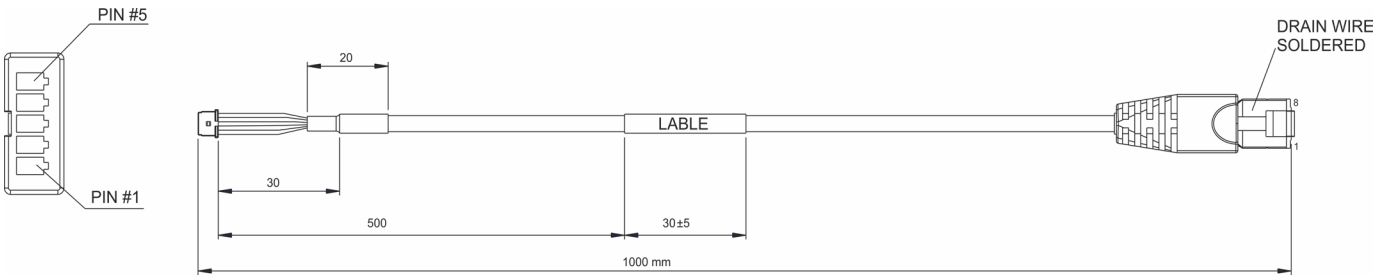


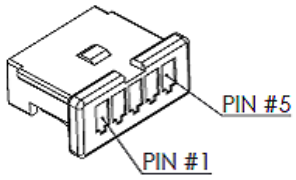
Figure 1 CAN Cable

Chapter 3: EtherCAT Ports Communication Cable (CBL-G-TWIECAT01-1)

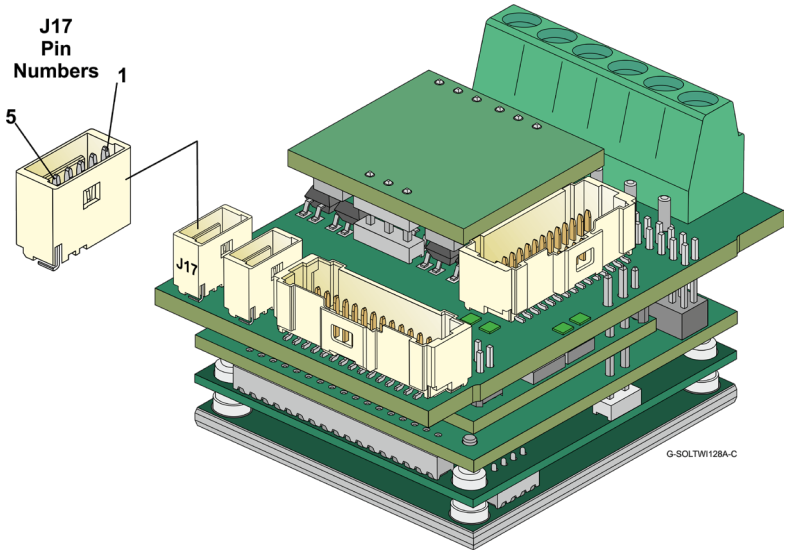
The standard EtherCAT Ports Communication cable is supplied in 1.0 m lengths. For cable lengths larger than those supplied in this kit, refer to Elmo.

The EtherCAT ports cable consists of a double-pair 30-AWG drain and braid cable. At one end of the cable is a wire to board 5-pin, 1 mm pitch, female Molex connector, and at the other end an RJ-45 standard communication connector.

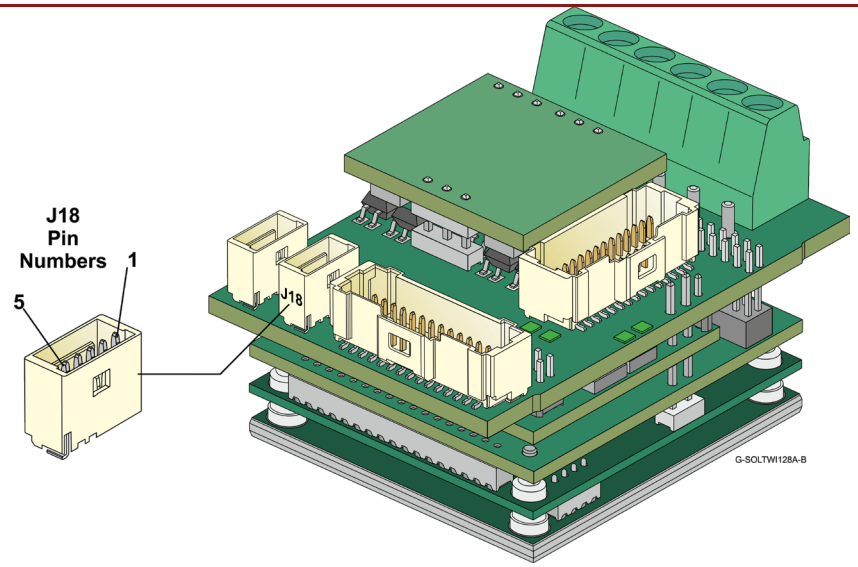
The general pinout of the EtherCAT ports cable for either J17 or J18 connection is as follows:

J17, J18 Pins From Molex Connector	To Pins RJ-45 Connector	Color	Function	Molex Plug
1	1	WHITE	ECAT TX+	
2	2	GREEN	ECAT TX-	
3	3	RED	ECAT RX+	
4	6	YELLOW	ECAT RX-	
5	RJ-45 BODY	Drain wire	Shield drain wire	

Pin Positions



EtherCAT IN / Ethernet Pin Assignments



EtherCAT OUT Pin Assignments

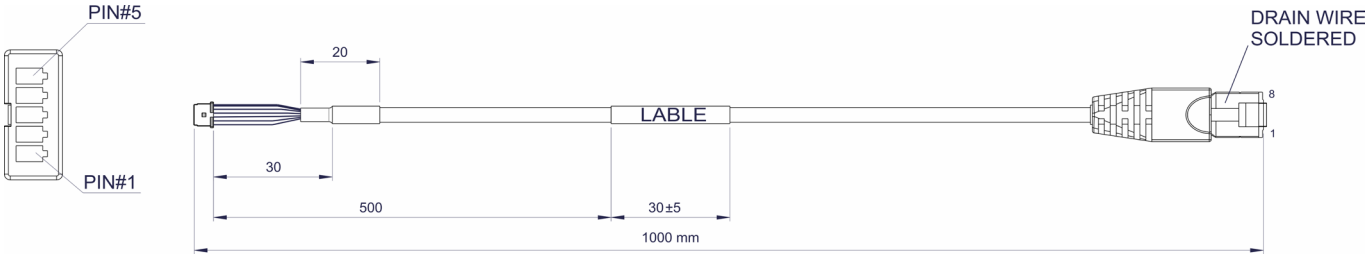


Figure 2 EtherCAT Cable

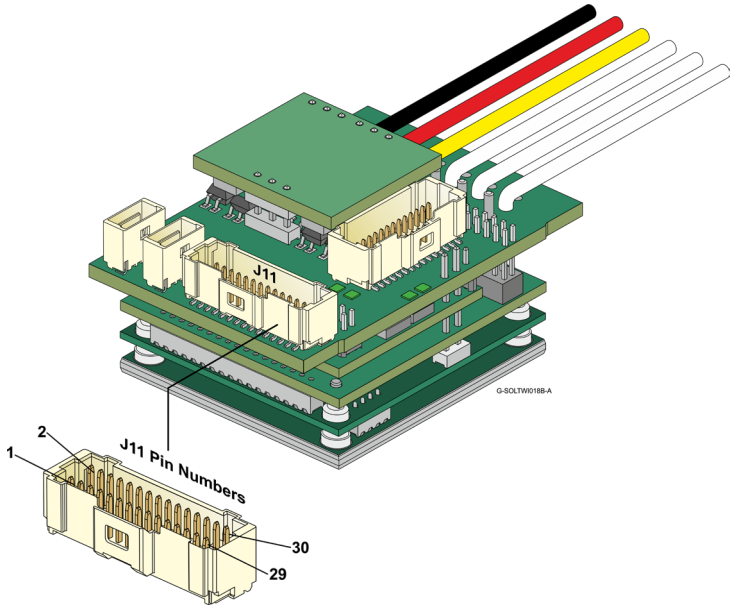
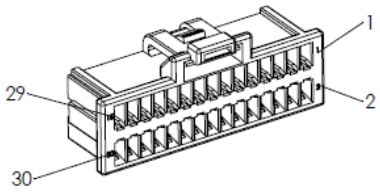
Chapter 4: Communication, STO, and I/O Cable (CBL-GTWICOMIO02)

Note: **This cable is only relevant to the EtherCAT kit.**

The Communication, STO, and I/O cable is a 30-AWG Teflon isolation set of wires of length 250 mm. It is connected using a 1.0 mm female housing 2x15 pins Molex connector and 1.0 mm single-pin crimp terminal at one end to the J11 connector on the Gold Solo Twitter, with the cable open at the other end so that it can be connected to the relevant controller interface connectors.

The general pinout of the Communication, STO, and I/O cable is as follows:

J11 Pins From Molex Connector	Signal	Color	Function
15	STO1	WHITE	STO 1 input opto isolated from control COMRET
16	STO2	WHITE	STO 2 input opto isolated from control COMRET
17	STORET	BLACK	STO signal return. The two digital STO inputs are optically isolated from the other parts of the drive, and share one return line.
18	STORET	BLACK	STO signal return. The two digital STO inputs are optically isolated from the other parts of the drive, and share one return line.
19	COMRET	BLACK	Common return
23	COMRET	BLACK	Common return
24	COMRET	BLACK	Common return
27	USB_VBUS	RED	USB VBUS detector
28	COMRET	BLACK	Common return
29	USBD+	RED	USB _P line
30	USBD-	RED	USB _N line

Pin Positions	Cable Connector
 **J11 Communication, STO, and I/O Connector**	 **J11 Female cable 1mm housing 2x15pins Connector**

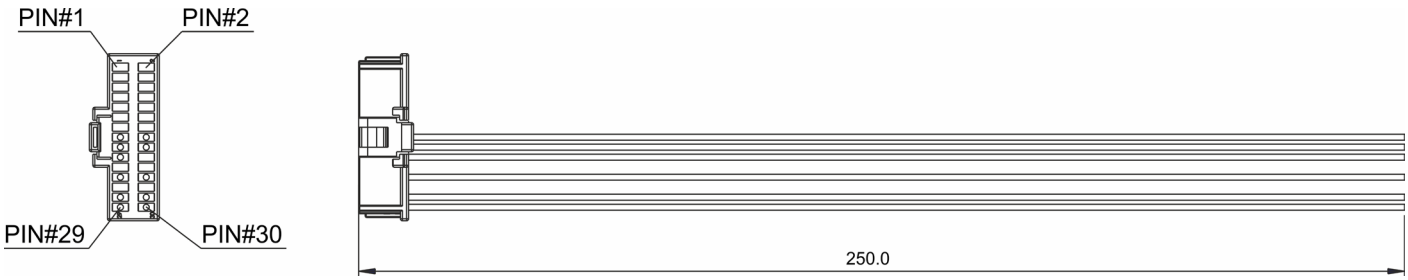


Figure 3 Communication, STO, and I/O Cable

Chapter 5: Communication, STO, and I/O Cable (CBL-GTWICOMIO03)

Note: **This cable is only relevant to the CAN kit.**

The Communication, STO, and I/O cable is a 30-AWG Teflon isolation set of wires of length 250 mm. It is connected using a 1.0 mm female housing 2x15 pins Molex connector and 1.0 mm single-pin crimp terminal at one end to the J11 connector on the Gold Solo Twitter, with the cable open at the other end so that it can be connected to the relevant controller interface connectors.

The general pinout of the Communication, STO, and I/O cable is as follows:

Pins From J11 Molex Connector	Signal	Color	Function
15	STO1	WHITE	STO 1 input opto isolated from control COMRET
16	STO2	WHITE	STO 2 input opto isolated from control COMRET
17	STORET	BLACK	STO signal return. The two digital STO inputs are optically isolated from the other parts of the drive, and share one return line.
18	STORET	BLACK	STO signal return. The two digital STO inputs are optically isolated from the other parts of the drive, and share one return line.
19	COMRET	BLACK	Common return
23	COMRET	BLACK	Common return
24	COMRET	BLACK	Common return
25	RS-232_TX	RED	RS-232 Transmit
26	RS-232_RX	RED	RS-232 Receive

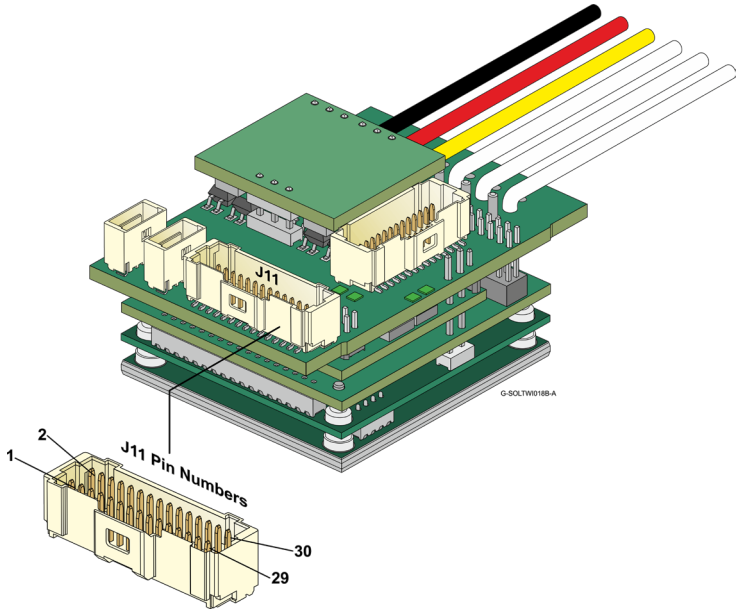
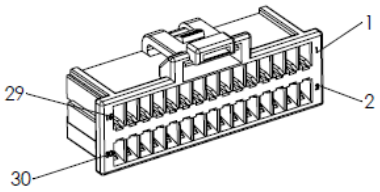
Pin Positions	Cable Connector
 **J11 Communication, STO, and I/O Connector**	 **J11 Female cable 1mm housing 2x15pins Connector**

Figure 4 Communication, STO, and I/O Cable

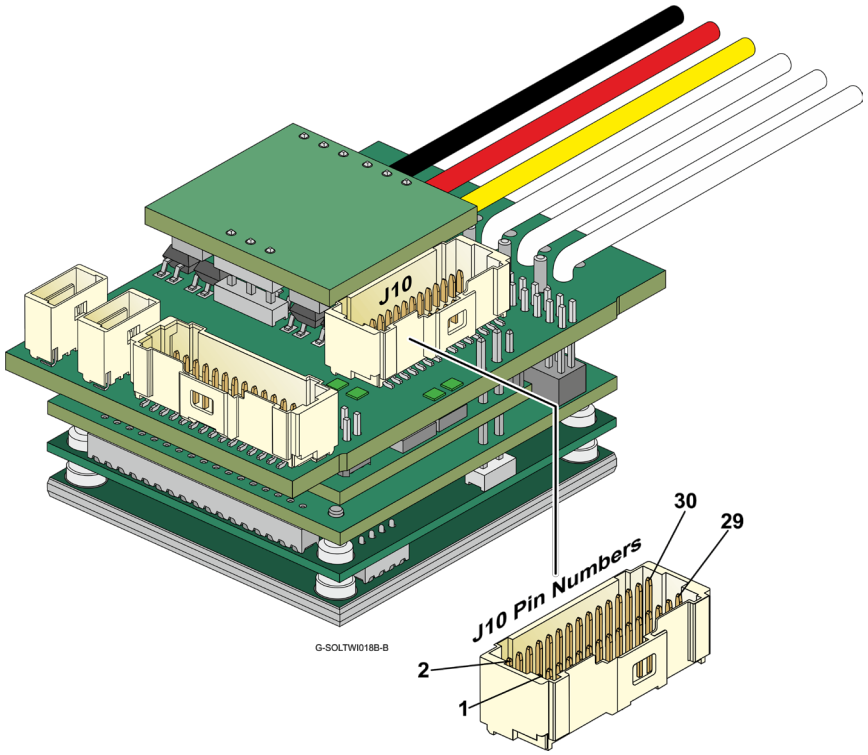
Chapter 6: VL and Feedback Cable (CBL-GTWIFB01)

The VL and Feedback Cable is a 30-AWG Teflon isolation set of wires of length 250 mm. It is connected using a 1.0 mm female housing 2x15 pins Molex connector and 1.0 mm single-pin crimp terminal at one end to the J10 connector on the Gold Solo Twitter, with the cable open at the other end so that it can be connected to the relevant controller interface connectors.

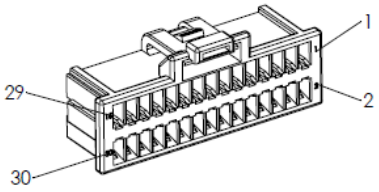
The general pinout of the VL and Feedback Cable is as follows:

J10 Pins From Molex Connector	Signal	COLOR	Function
1	PortA_ENC_A+ / ABS_CLK+	WHITE	Channel A+ / Abs encoder clock +
3	PortA_ENC_A- / ABS_CLK-	WHITE	Channel A- / Abs encoder clock -
5	PortA_ENC_B+ / ABS_DATA+	WHITE	Channel B+ / Abs encoder data +
7	PortA_ENC_B- / ABS_DATA-	WHITE	Channel B- / Abs encoder data -
9	PortA_ENC_INDEX+	WHITE	Index+
11	PortA_ENC_INDEX-	WHITE	Index-
13	HA	WHITE	Hall sensor A
15	HB	WHITE	Hall sensor B
17	HC	WHITE	Hall sensor C
19	+5V	RED	Encoder +5V supply with a total allowable maximum consumption of 200mA using Pins 19 and 26.
21	COMRET	BLACK	Common return
23	COMRET	BLACK	Common return
29	VL-	BLACK	Control 24V supply return
30	VL+	RED	Control 24V supply

Pin Positions



J10 VL and Feedback Connector



1mm housing Female 2x15pins Connector

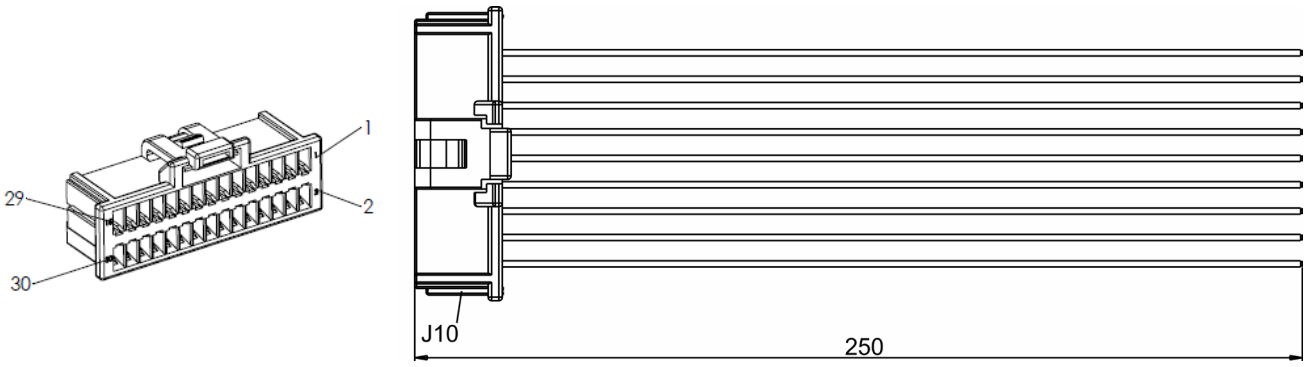


Figure 5 VL and Feedback Cable

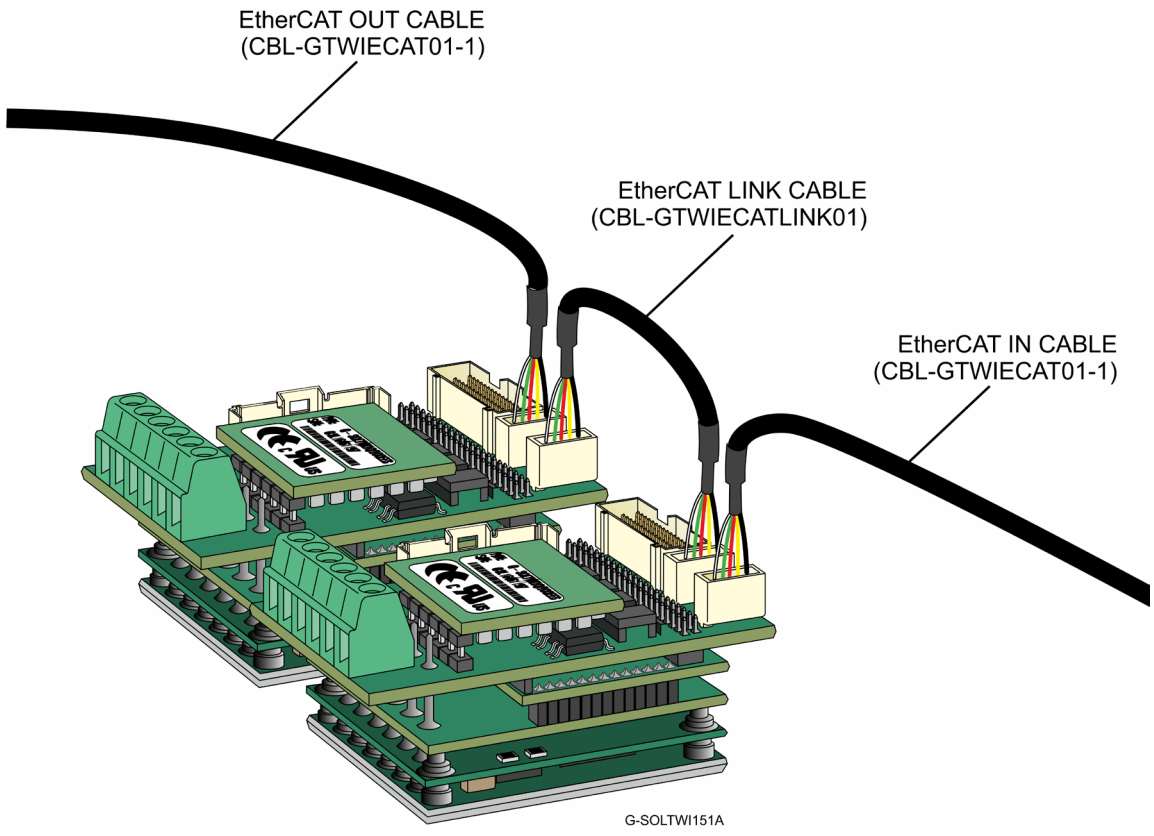
Chapter 7: EtherCAT LINK Cable (CBL-GTWIECATLINK01)

The EtherCAT LINK Cable is a double-pair 30-AWG drain and braid cable of 60 mm. It is connected at both ends with wire-to-board 5 Pins 1 mm Pitch female Molex connectors.

The general pinout of the EtherCAT LINK Cable as a daisy chain is as follows:

Molex 1	Molex 2	COLOR	Function
1	1	WHITE	ECAT TX+
2	2	GREEN	ECAT TX-
3	3	RED	ECAT RX+
4	4	YELLOW	ECAT RX-
5	5	Drain wire	Shield Drain wires

Pin Positions



EtherCAT Link Cable

Chapter 8: Spare Wires (CBL-GTWISPARE01)

The Spare Wires assembly consists of 21 variously colored 30-AWG wires of length 250 mm, each with a 1 mm single-pin crimped terminal at one end, to be inserted to any of the connectors as required.

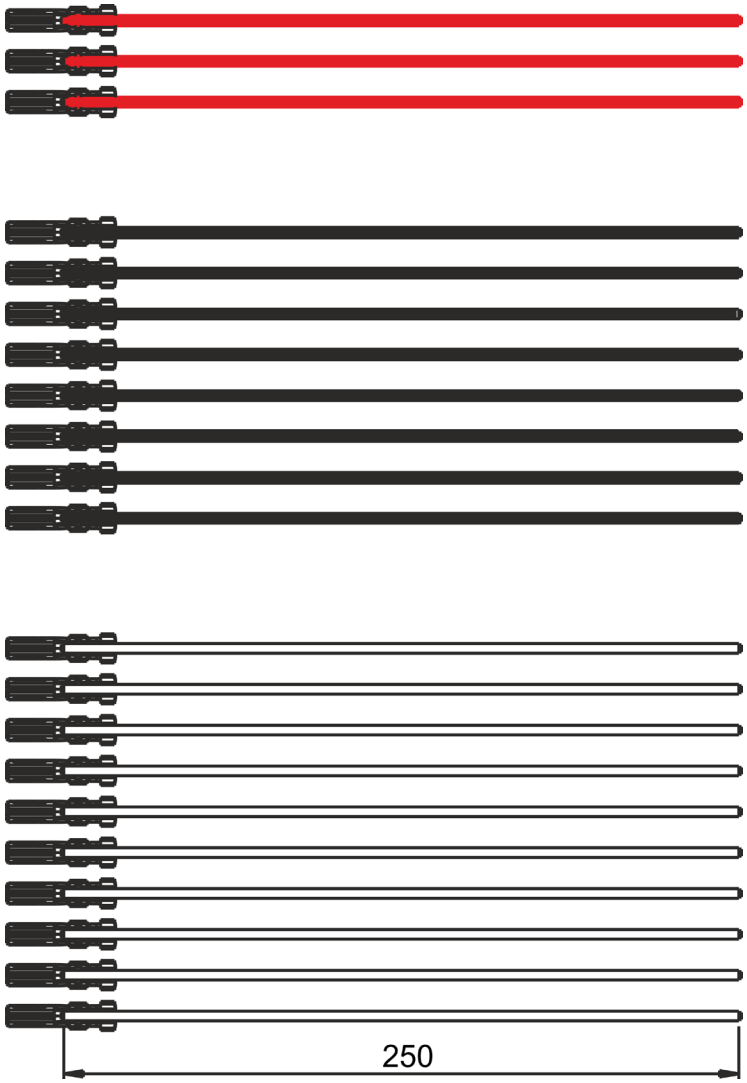


Figure 6 Spare Wires Assembly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