



This Datasheet is for the

IC693CBL311

I/O Interface Cables for Power Mate APM Modules

<http://www.qualitrol.com/shop/p-14599-ic693cbl311.aspx>

Provides the wiring diagrams and installation guidelines for this GE Series 90-30 module.

For further information, please contact Qualitrol Technical Support at

1-800-784-9385

[**support@qualitrol.com**](mailto:support@qualitrol.com)

IC693CBL311/317/319/320

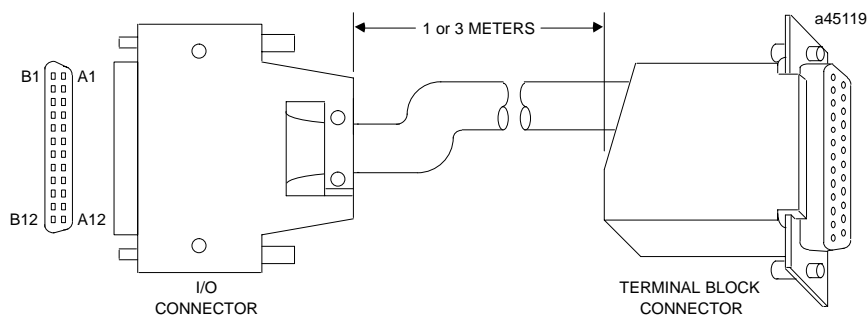
I/O Interface Cables for Power Mate APM Modules

Function of cable

The I/O Interface Cable assembly consists of a 24-pin I/O connector, a cable, and a 25-pin D-type terminal block connector. This cable is used to connect the Power Mate APM Modules (IC693APU301 and IC693APU302) to drives and machines. There are two male 24-pin connectors mounted on the front of each Power Mate APM. Two of these I/O Interface cables are required for connections to and from the drive and machine. Catalog number IC693CBL311 is 10 feet (3 meters) in length and IC693CBL319 is 3 feet (1 meter) in length. The cable wire code list for these cables is provided in Table H-4.

An I/O cable assembly similar to IC693CBL311 and IC693CBL319, but with the drain shield wire disconnected from pin B12 and brought outside of the cable housing through an 8" pigtail, is also available in two lengths. Catalog number IC693CBL317 is 10 feet (3 meters) in length and IC693CBL320 is 3 feet (1 meter) in length. *This cable improves the Power Mate APM's noise immunity.* The cable wire code list for these cables is provided in Table 10-5.

To make wiring to the drive and machine easier, each connector on the module is typically connected by a short cable (the I/O Interface cable) to a terminal block. The cable that connects from the I/O connector to an external terminal block can be shortened to meet the requirements of your installation. See manuals GFK-0840 (standard moed) or GFK-0781 (follower mode) for details on APM terminal blocks.



* Cable for IC693CBL311/319 shown. Cables IC693CBL317/320 have 8" external wire connected to drain shield.

Figure 10-30. I/O Connector Cable Specifications

Specifications

CableLength	10 feet (3 meters) and 3 feet (1 meter)
Connector	24-pin female, Fujitsu part number FCN-363J024 (crimp wire type).

Wiring Information

You must purchase the mating female (socket type) 24-pin connectors (which mate with the I/O Connector on the faceplate of the APM). This connector is available under catalog number IC693ACC317. This connector has a solder eyelet receptacle and is part of an accessory kit. Optionally, other types of the 24-pin connector (for different physical connections) are also available.

Catalog numbers for these connectors and their associated parts are listed in the following table. The list includes catalog numbers for three types of connectors: solder pin, crimp pin, and ribbon cable. *Each accessory kit contains enough components (D-connectors, backshells, contact pins, etc.) to assemble ten single-ended cables of the type specified for each kit.*

Table 10-5. Catalog Numbers for 24-Pin Connector Kits

GE Fanuc Catalog Number	Vendor Catalog Number	Description
IC693ACC316 (Solder Eyelet Type)	FCN-361J024-AU	Solder eyelet receptacle
	FCN-360C024-B	Backshell (for above)
IC693ACC317 (Crimp Type)	FCN-363J024	Crimp wire receptacle
	FCN-363J-AU	Crimp pin (for above, 24 needed)
	FCN-360C024-B	Backshell (for above)
IC693ACC318 (Ribbon or IDC Type)	FCN-367J024-AUF	IDC (ribbon) receptacle, closed cover
	FCN-367J024-AUH	IDC (ribbon) receptacle, open cover

NOTE: Wire for cables is 12 twisted pairs, #24 AWG (0.22mm²).

Additional tools from Fujitsu are required to properly assemble the crimped contact and ribbon cable type connectors. *The solder eyelet connectors (as provided in IC693ACC316) do not require any special tooling.*

Crimped Contact Connectors (as provided in IC693ACC317) require :

Hand Crimping Tool	FCN-363T-T005/H
Contact Extraction Tool	FCN-360T-T001/H

Ribbon Cable Connectors (as provided in IC693ACC318) require :

Cable Cutter	FCN-707T-T001/H
Hand Press	FCN-707T-T101/H
Locator Plate	FCN-367T-T012/H

These tools need to be ordered from an authorized Fujitsu distributor. Three of the largest US distributors for Fujitsu connectors are Marshall at (800)522-0084, Milgray at (800)MILGRAY, and Vantage at (800)843-0707. If none of these distributors service your area, then contact Fujitsu Microelectronics in San Jose, California, USA via telephone at (408) 922-9000 or via fax at (408) 954-0616 for further information.

It is recommended that you order any necessary connector tooling with sufficient lead time to meet your assembly requirements for these connectors. These tools are generally not stock items and can have significant lead times from distribution. If you have any further questions about this issue, please feel free to contact the GE Fanuc PLC Hotline at 1-800-GE FANUC (1-800-433-2682) or 804-978-6036.

The following tables provides wiring information for the I/O Interface cables:

Table 10-6. I/O Cable Wire Coding for IC693CBL311 and IC693CBL319

I/O Connector Pin Number	Cable Wire	25-Pin Connector Terminal Number*
no connection	Wire 1 Pair 1	25
A1	Wire 2 Pair 1	12
B1	Wire 1 Pair 2	24
A2	Wire 2 Pair 2	11
B2	Wire 1 Pair 3	23
A3	Wire 2 Pair 3	10
B3	Wire 1 Pair 4	22
A4	Wire 2 Pair 4	9
B4	Wire 1 Pair 5	15
A5	Wire 2 Pair 5	2
B5	Wire 1 Pair 6	14
A6	Wire 2 Pair 6	1
B6	Wire 1 Pair 7	16
A7	Wire 2 Pair 7	3
B7	Wire 1 Pair 8	17
A8	Wire 2 Pair 8	4
B8	Wire 1 Pair 9	21
A9	Wire 2 Pair 9	8
B9	Wire 1 Pair 10	20
A10	Wire 2 Pair 10	7
B10	Wire 1 Pair 11	19
A11	Wire 2 Pair 11	6
B11	Wire 1 Pair 12	18
A12	Wire 2 Pair 12	5
B12	Drain Wire (Shield)	13

* Same as Terminal Block Terminal Number. See manuals GFK-0840 (standard mode) or GFK-0781 (follower mode) for terminal block details.

Table 10-7. I/O Cable Wire Coding for IC693CBL317 and IC693CBL320

I/O Connector Pin Number	Cable Wire Color Codes	25-Pin Connector Terminal Number ¹
no connection	Wire 1 Pair1(Brown/Black)	25
A1	Wire 2 Pair 1 (Brown)	12
B1	Wire 1 Pair 2 (Red/Black)	24
A2	Wire 2 Pair 2 (Red)	11
B2	Wire 1 Pair3(Orange/Black)	23
A3	Wire 2 Pair 3 (Orange)	10
B3	Wire 1 Pair 4 (Yellow/Black)	22
A4	Wire 2 Pair 4 (Yellow)	9
B4	Wire 1 Pair5(Green/Black)	15
A5	Wire 2 Pair 5 (Green)	2
B5	Wire 1 Pair6(Blue/Black)	14
A6	Wire 2 Pair 6 (Blue)	1
B6	Wire 1 Pair 7 (Violet/Black)	16
A7	Wire 2 Pair 7 (Violet)	3
B7	Wire 1 Pair8(White/Black)	17
A8	Wire 2 Pair 8 (White)	4
B8	Wire 1 Pair9(Gray/Black)	21
A9	Wire 2 Pair 9 (Gray)	8
B9	Wire 1 Pair 10 (Pink/Black)	20
A10	Wire 2 Pair 10 (Pink)	7
B10	Wire 1 Pair11 (LightBlue/Black)	19
A11	Wire 2 Pair 11 (Light Blue)	6
B11	Wire 1 Pair 12 (Light Green/Black)	18
A12	Wire 2 Pair 12 (Light Green)	5
External Ring Terminal	Drain Wire (Shield) ²	13

¹ Same as Terminal Block Terminal Number.

² 16 gauge wire, green w/yellow tracer. 8" length (from back of connector), terminates with a #10 ring terminal.