
 <p>Analog Wiring Systems</p>  <p>Digital Wiring Systems with Field-Removable Terminal Blocks</p>	<p>Bulletin 1492 Programmable Controller Wiring Systems</p> <ul style="list-style-type: none"> Increases machine building productivity Simplifies design and engineering time Reduces wiring time and wiring errors Benefits from quality-looking panels <p>Standards Compliance and Certifications</p> <ul style="list-style-type: none"> Agency Certifications for Modules and Cables cULus: Hazardous Locations: Class I Div 2 (all except modules with relays); Groups A, B, D, and D. Temperature Code: T3C @ 60 °C. UL File No. E10314, Guide No. NRAQ cULus: Ordinary Locations; Module with relays; UL File No. E11372 Guide No. NRAQ Agency Certification Modules Factory Mutual (FM): Hazardous Locations; Class I Div 2 (all except modules with relays); Groups A, B, C, and D. Temperature Rating: T3C @ 60 °C. FM file J.I.3000590 CE Certifications Compliant for all applicable directives 	<p>Table of Contents</p> <p>Catalog Number Explanation 12-129 Selection Tables 12-141 Digital IFM Specifications 12-160</p> <p>Standards Compliance and Certifications, Continued</p> <ul style="list-style-type: none"> UL 508 UL 1604 CSA C22.2 No. 14 CSA C22.2 No. 213 EN/IEC 61131-2
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Bulletin	1746	1756	1762	1764	1769	1794	1771	Bulletin 700H and 700S
Description	SLC 500	ControlLogix	MircoLogix 1200	MicroLogix 1500	CompactLogix	Flex	PLC-5	PowerFlex Drive
Product Selection	Web *	12-142	12-153	12-153	12-148	12-154	Web *	12-157

* Information for this product is available on the Industrial Controls Catalog website: www.ab.com/catalogs

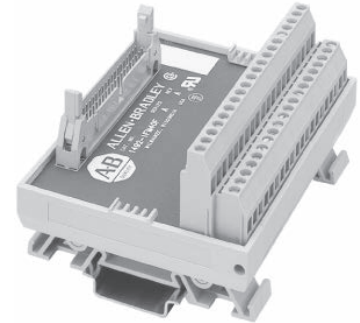
Digital Interface Modules (IFMs)

General Information

Digital IFMs are available with either a 20- or 40-pin cable connector. This is determined by the number of connections required for the I/O module.

Important: The following catalog number breakdown is for explanatory purposes only. It is not a product configurator. Not all combinations of fields are valid catalog numbers. Use this breakdown for verification and explanation only.

The cables used for Relay Master/Expander XIMs are the same as those used for Digital I/O Modules with the exception of the Cat. No. 1746-OA16 output module, which uses the 1492-CABLE*CR cable.



40-pin Connection Interface Module

1492 – IFM 20 F120 – 2
 a *b* *c* *d*

a

Modules	
Code	Description
IFM	Digital Interface Modules with Fixed Terminal Block
RIFM	Digital Interface Modules with Removable Terminal Block
TIFM	Digital Interface Module for SIL2 (Safety Integrity Level 2)

b

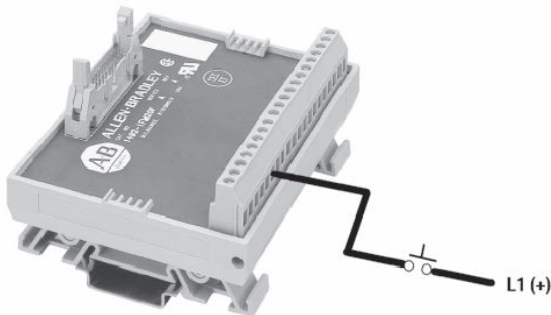
Digital Cable Connector Size	
Code	Description
20	20 pins
40	40 pins

c

Module Type (all types do not configure a catalog number)	
Code	Description
A	Input Module
F	Feedthrough
F24	Fused 24 Volt
F120	Fused 120 Volt
FS	Fused Isolated
D	LEDs
N	Narrow
24	24 Volt
120	120 Volt
240	240 Volt

d

Number of Field Side Wiring Terminals	
Code	Description
Blank	One per I/O connection (Standard Terminals)
2	Two per I/O connection (Extra Terminals)
3	Three per I/O connection (Sensor Terminals)
4	Four per I/O connection (Special Terminal)



Standard Terminal Interface Module

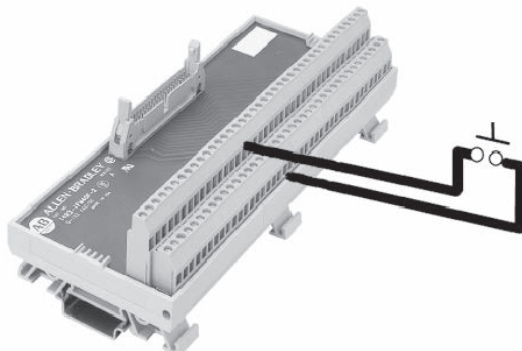
Extra terminal IFMs provide **two or four field-side** terminals per input or output point. Non-isolated IFMs have two terminals per input or output point. Isolated IFMs have two or four terminals per input or output.

The number of terminals varies with the type of IFM — from one to four terminals per I/O point.

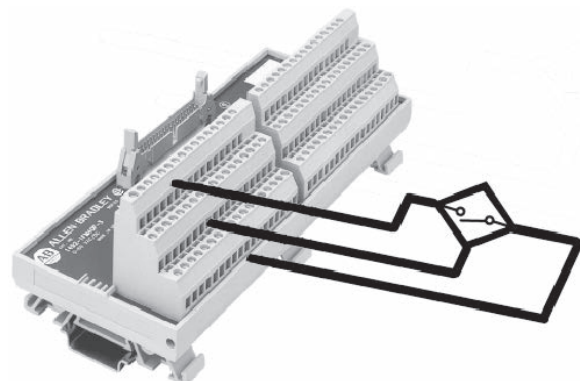
Standard terminal IFMs provide **one field-side** wiring terminal per programmable controller input or output point, as well as enough terminals for the I/O module power connections. The standard terminals are ideal for applications where the I/O device commons are terminated in the field or remotely from the I/O panel.

Isolated IFMs have terminals isolated into 8 or 16 groups, which allows each group of I/O devices to reference a different power source. The extra terminal IFMs are beneficial in applications where the I/O devices are terminated within the same panel as the I/O modules — eliminating the need for many additional terminal blocks.

Sensor IFMs provide three field-side terminals per input point. The middle and lower rows of the terminals are commoned together in groups of 18, and serve as power busses for 3-wire sensor types of devices — eliminating additional terminals, blocks, and jumpering systems.



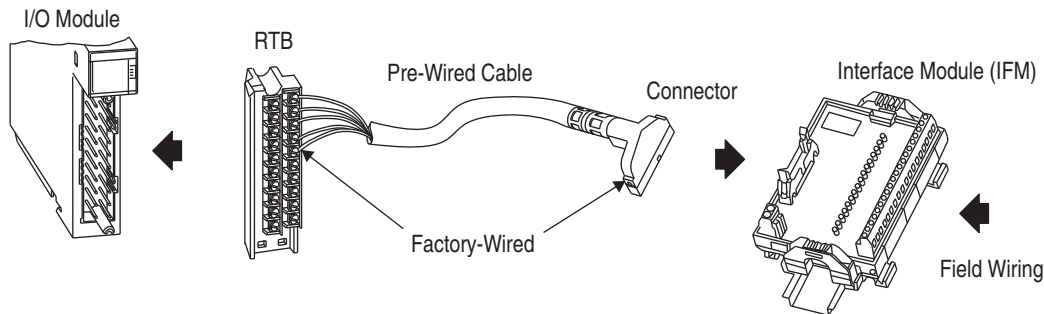
Extra Terminal Interface Module



Three-Level Sensor Terminal Interface Module

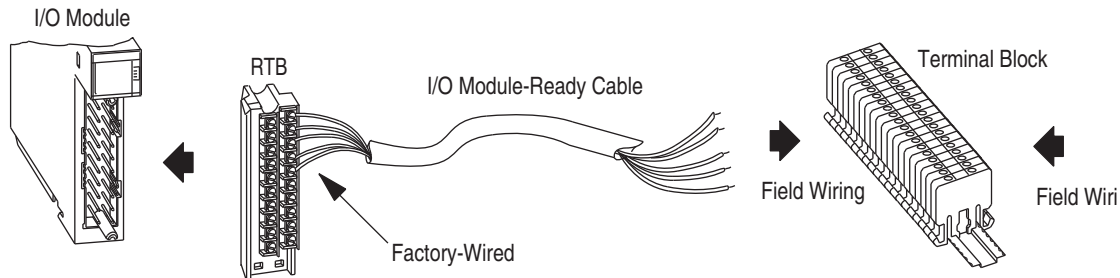
Digital Cables Pre-Wired

Bulletin 1492 pre-wired cables are designed to minimize control wiring in a panel. Pre-wired cables, when used with an IFM, replace the point-to-point wiring between Allen-Bradley programmable controller I/O modules and individual terminal blocks. The pre-wired cables have a removable terminal block or wiring arm at the PLC end of the cable and a cable connector on the other end to connect to the IFM. All of the pre-wired cables use a #22 AWG wire and are 100% tested for continuity to make a perfect connection every time. The digital pre-wired cables are offered in four standard lengths of 0.5, 1.0, 2.5, and 5.0 m to fit a variety of applications. Other length cables are also available as build to order products. Pre-wired cables are available for many of the 1746 SLC I/O, 1756 ControlLogix I/O, 1794 Flex I/O, 1769 Compact I/O, MicroLogix 1500 base I/O, MicroLogix 1200 (1762-L40xx) embedded I/O, and 1771 PLC-5 I/O.



Digital Cables I/O-Ready

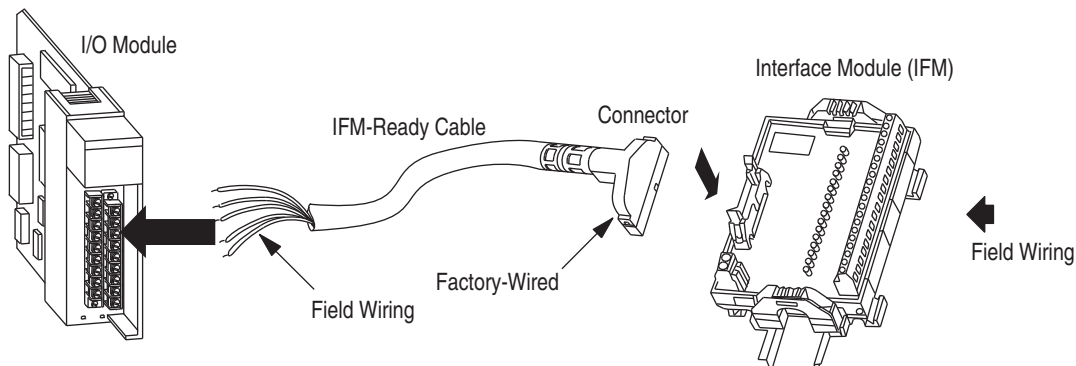
I/O-ready cables have an I/O removable terminal block or wiring arm factory-wired to one end to of the cable and free connectors on the other end for wiring into standard terminal blocks or other type of connectors. I/O-ready cables have individual color-coded conductors for quick wire-to-terminal coordination. The I/O-ready cables use #18 AWG conductors for higher current applications or longer cable runs. The I/O-ready cables are offered in standard lengths of 1.0, 2.5, and 5.0 m to fit a variety of applications. Other cable lengths are also available as build-to-order products. Pre-wired cables are available for the Bulletin 1746 SLC I/O, Bulletin 1756 ControlLogix I/O, Bulletin 1769 Compact I/O, 1794 Flex I/O, MicroLogix 1500 base I/O, MicroLogix 1200 (1762-L40xx) embedded I/O, and Bulletin 1771 PLC-5 I/O.



I/O-Ready Cable and Standard Terminal Blocks

Digital Cables IFM-Ready

IFM-ready cables have a cable connector that attached to the IFM factory wired to one end and free connectors ready to wire to I/O modules or other components on the other end. IFM-ready cables use #22 AWG wire and have individual color-coded conductors for quick wire-to-terminal coordination. The digital IFM-ready cables are offered in standard lengths of 1.0, 2.5, and 5.0 m to fit a variety of applications. Other cable lengths are also available as build-to-order products.



IFM-Ready Cable and Interface Module

Programmable Controller Wiring Systems

Bulletin 1756 ControlLogix Modules

Digital IFMs and Cables for Bulletin 1756 ControlLogix 16-point Isolated and 32-point I/O Modules

Voltage [V]	Term. per I/O	Description	Fixed Terminal Block	Removable Terminal Block	RTB Plugs ❖	Bulletin 1756 ControlLogix I/O Module																	
						1756-IA16I	1756-IB16D	1756-IB16I	1756-IA32	1756-IB32	1756-IV32	1756-IH16I	1756-IM16I	1756-OA16I	1756-OB8EI	1756-OB16D	1756-OB16I	1756-OB16IS	1756-OB32	1756-OV32E	1756-OH8I	1756-OW16I	1756-OX8I
			Cat. No.	Cat. No.	Cat. No.	Digital Cable Cat. No. Suffix ➦																	
Feed-through																							
24... 120	1	Standard	1492-IFM40F	1492-RIFM40F	1492-RTB20❖	Y	Y	Y	Z	Z	Z	Y		Y	Y	Y	Y	Y	Z	Z	Y	Y	Y
	2	Extra Terminals	1492-IFM40F-2	1492-RIFM40F-2	1492-RTB20❖		Y		Z	Z	Z					Y			Z	Z			
	3	Sensor	1492-IFM40F-3	—	—					Z	Z												
LED Indicating																							
24	1	Standard	1492-IFM40D24	1492-RIFM40D24	1492-RTB20❖					Z	Z								Z	Z			
	2	Extr.Term.	1492-IFM40D24-2	—	—														Z	Z			
	2	Extr.Term. (input)	1492-IFM40D24A-2	1492-RIFM40D24A-2	1492-RTB20❖					Z	Z												
	3	Sensor	1492-IFM40D24-3	—	—					Z	Z												
	4	Isolated	1492-IFM40DS24-4	—	—									Y	Y ¹³	Y	Y					Y	Y
120	4	Isolated (input)	1492-IFM40DS24A-4	—	—		Y	Y															
	2	Extr.Term. (input)	1492-IFM40D120A-2	—	—					Z													
	4	Isolated	1492-IFM40DS120-4	—	—									Y								Y	Y
240	4	Isolated (input)	1492-IFM40DS120A-4	—	—	Y																	
	4	Isolated (input)	1492-IFM40DS240A-4	—	—								Y										
Fusible																							
24	2	Blown fuse LED	1492-IFM40F-F24-2	1492-RIFM40F-F24-2	1492-RTB20❖														Z	Z			
	2	Blown fuse LED	1492-IFM40F-F24D-2	—	—										Y								
	4	Blown fuse LED	1492-IFM40F-F24AD-4	—	—		Y																
24... 120	2	Extra Terminals	1492-IFM40F-F-2	—	—														Z	Z			
Fusible - Isolated																							
24	2	Extr. Term.	1492-IFM40F-FS24-2	—	—										Y	❖	Y ¹²	Y ¹²				Y	Y
	4	Blown fuse LED	1492-IFM40F-FS24-4	—	—										Y	❖	Y ¹²	Y ¹²				Y	Y
	4	Blown fuse LED (input)	1492-IFM40F-FS24A-4	—	—		‡	Y															
24... 120	2	Extr. Term.	1492-IFM40F-FS-2	—	—									Y	Y	Y	Y ¹²	Y ¹²			Y	Y	Y
	4	Extr. Term.	1492-IFM40F-FS-4	—	—									Y	Y	Y	Y ¹²	Y ¹²			Y	Y	
	4	Blown fuse LED (input)	1492-IFM40F-FSA-4	—	—		Y	Y	Y			Y											
120	2	Blown fuse LED	1492-IFM40F-FS120-2	1492-RIFM40F-FS120-2	1492-RTB20❖									Y							Y	Y	Y
	4	Blown fuse LED	1492-IFM40F-FS120-4	1492-RIFM40F-FS120-4	1492-RTB17❖									Y								Y	Y
	4	Blown fuse LED (input)	1492-IFM40F-FS120A-4	1492-RIFM40F-FS120A-4	1492-RTB17❖	Y						Y											
240	4	Blown fuse LED	1492-IFM40F-FS240-4	—	—									Y								Y	Y
	4	Blown fuse LED	1492-IFM40F-FS240A-4	—	—								Y										
Safety Integrity Level (SIL) ¹⁴																							
24	2	Blown fuse LED (input)	1492-TIFM40F-F24A-2	—	—															Z	Z		
	2	Blown fuse LED	1492-TIFM40F-24-2	—	—										Y								

See footnotes on the following page.



Analog AIFMs and Cables for Bulletin 1756 ControlLogix Isolated, RTD, Thermocouple and Specialty Modules

Voltage [V]	Term. per I/O	Description	Fixed Terminal Block	Removable Terminal Block	RTB Plugs ❖	Bulletin 1756 Analog I/O Module*															
						1756-IF6I (Current)	1756-IF6I (Voltage)	1756-IF6CIS	1756-OF6CI	1756-OF6VI	1756-IR6I	1756-IT6I	1756-IT6I2	1756-IF8H (Voltage with HART)	1756-IF8H (Current with HART)	1756-IF16H (Single-ended with HART)	1756-IF16H (Differential with HART)	1756-OF8H (Voltage with HART)	1756-OF8H (Current with HART)	1756-HSC (12...24V DC)	1756-HSC (5V DC)
			Cat. No.	Cat. No.	Cat. No.	Analog Cable Cat. No. Suffix +															
Feed-through																					
24	3..4	6-ch isolated	1492-AIFM6S-3	1492-RAIFM6S-3	1492-RTB12❖	X	Y	Z	Y	Y	Z										
	3	8-ch differential, 16-ch single-ended	1492-AIFM8-3	1492-RAIFM8-3	1492-RTB16❖									UC	UD			WA	WB		
Thermocouple																					
24	3	6-ch	1492-AIFM6TC-3	—	—							Y	YT								
High-Speed Counter/Encoder																					
24	1	2-ch, counter input 4 outputs	1492-AIFMCE4	—	—														XA	XB	
Fusible High-Speed Counter/Encoder																					
24	1	2-ch, fused counter input, fused outputs	1492-AIFMCE4-F	—	—														XA	XB	
Fusible Analog																					
24	5	8-ch w/ blown fuse LED	1492-AIFM8-F-5	—	—									UC	UD						
	3	16-ch w/ blown fuse LED	1492-AIFM16-F-3	—	—											UB	❖				
	1	8 input/ 2 output ch	1492-AIFMPI	—	—																M

+ To order a Pre-wired Cable, add the **Suffix No.** from the table above to the end of the **Cat. No.** below.

0.5M Cable = 1492-ACABLE005_

1.0M Cable = 1492-ACABLE010_

2.5M Cable = 1492-ACABLE025_

5.0M Cable = 1492-ACABLE050_

Custom Length Cable = 1492-CABLEXXX_. See Catalog Number Explanation on page 12-137 for available Custom Length Codes to replace XXX in Cat. No.

❖ Order plugs separately (two plugs per catalog number). Plugs are available in screw style and push in style terminal types. To order, replace the ❖ in the catalog number with the code for the desired terminal style. The code for screw style is **N** and the code for push in style is **P**.

* Some analog I/O modules can be operated in up to four modes (current/voltage, single-ended/differential) based on connections. In all cases, each channel is factory-configured for the same mode. However, you can field configure any channel for another mode. You may need to alter the terminal block wiring to match the application. Refer to the *PLC I/O Module Installation Manual*.

❖ Requires two Cat. No. 1492-AIFM16-F-3, one cable, Cat. No. 14952-AC005005UF, is required.

§ This 1492 module is for use in SIL2 safety systems only. It does not satisfy the requirements for general I/O fault tolerance. To use this module in a SIL2 application, specially developed application software for the ControlLogix processor must be used. To obtain the latest revision of this application software contact Technical Support at 1-440-646-3434.

Programmable Controller Wiring Systems

Specifications

General Wiring System Specifications

	Catalog Number 1492-...
Agency Certifications: Modules and Cables	cULus Listed: Hazardous Locations: Class I Div 2 (all except modules with relays); Groups A, B, D, and D. Temperature Code: T3C @ 60 °C. Standard UL File No. E10314, Guide No. NRAG/NRAG7
Agency Certification Modules	cULus Standard Locations; Module with relays; UL File No. E11372, Guide No. NRAQ/NRAQ7
CE Certifications	Factory Mutual (FM): Hazardous Locations; Class I Div 2 (all except modules with relays); Groups A, B, C, and D. Temperature Rating: T3C @ 60 °C. FM File J.I.3000590
Maximum Peak Transient Voltage	Compliant for all applicable directives 600V ‡
Maximum Current (per circuit)	2 A (except relays) §
Maximum Current (per module)	12 A (except relays) ➤§
Terminal Block Wire Range (Rated Cross Section) *	Fixed Screw Style: #12...#22 AWG (4.0...0.2 mm ²) Removable Screw Style: #12 to #22 AWG 2.5...0.5 mm ²) Removable Push-in Style: #12 to #26 AWG (2.5...0.2mm ²)
Wire Strip Length	Fixed Screw Style: .32 in. (8.0 mm) Removable Screw Style: .28 in. (7.0 mm) Removable Push-in Style: .39 in. (10.0 mm)
Recommended Terminal Block Screw Tightening Torque	Fixed Screw Style: 3.5...4.5 lb-in. (0.38...0.50 Nm) Removable Screw Style: 3.5...4.5 lb-in. (0.38...0.50 Nm) Removable Push-in Style: NA (See Push-in RTB Plug Specifications)
Operating Temperature Range	0...+60 °C
Storage Temperature Cables	-20...+80 °C
Storage Temperature Modules	-40...+85 °C
Operating Humidity	5...95% non-condensing
Pollution Degree	2⊛

Max. AWG	#22	#20	#18	#16	#14	#12
Max. No. of Wires per Terminal *	3	3	3	2	1	1

➤ Cat. Nos. 1492-IFM40F-F24AD-4 and 1492-IFM40F-F24D-2 are rated at 8 A.

* Maximum number of the same gauge stranded copper conductors allowed per wire funnel.

⊛ Pollution Degree 2 is an environment where normally only non-conductive pollution occurs, except for occasional temporary conductivity caused by condensation shall be expected.

‡ For transients >600V, use UL Recognized suppression device rated at 2.5 kV withstand.

§ For relay contact ratings, refer to page 9-42.

