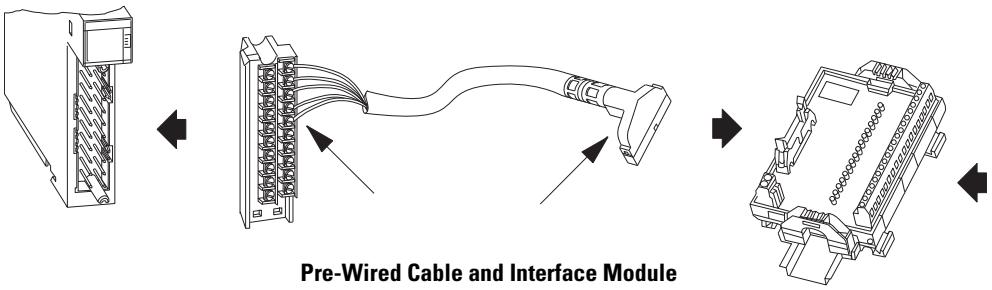
Digital IFM Options and Features, Continued

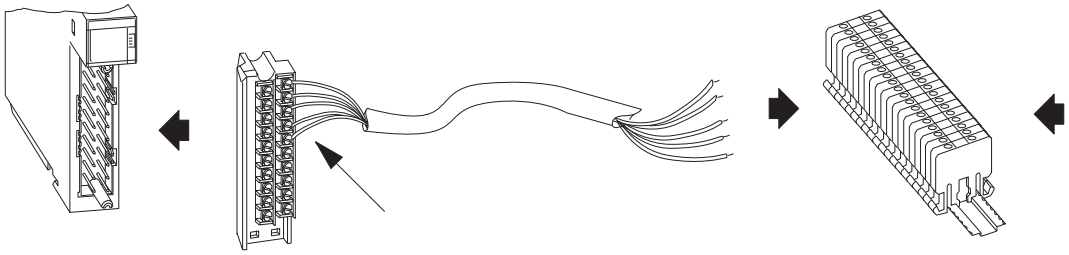
Digital Pre-Wired Cables



Pre-Wired Cable and Interface Module

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 I/O end of the cable and a cable connector on the other end to connect to the IFM. All of the pre-wired cables use #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 cable lengths are also available as build-to-order products. Pre-wired cables are available for many of the Bulletin 1756 ControlLogix, 1769 Compact I/O used with CompactLogix and MicroLogix 1500, 1794 Flex, and 1771 I/O modules. Plus availability for the base I/O of the MicroLogix 1500 and 40 I/O base of the MicroLogix 1200 packaged controllers. A select group of modules are also available for the PowerFlex 700H and 700S drives.

Ready-to-Wire Digital Cables



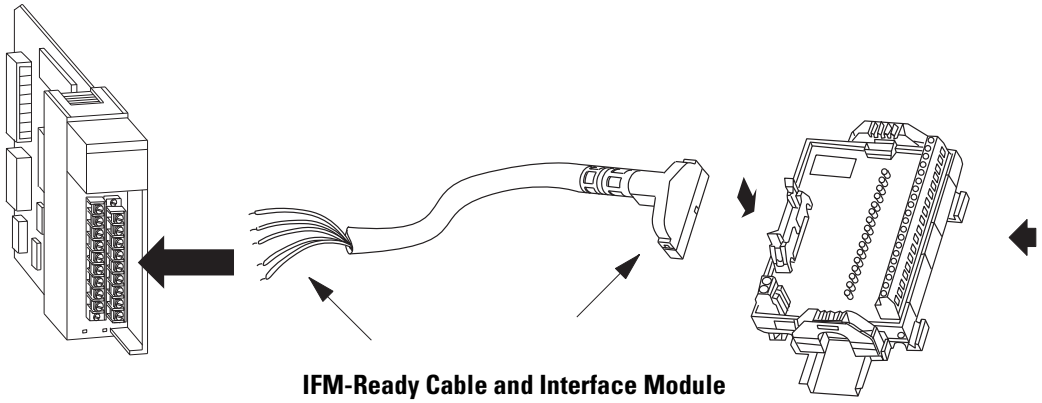
Digital I/O Module-Ready Cable and Standard Terminal Block

Digital I/O module-ready cables have an I/O removable terminal block or wiring arm pre-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. Most 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. Digital I/O

module ready cables are available for many of the Bulletin 1756 ControlLogix, 1769 Compact I/O used with CompactLogix and MicroLogix 1500, 1794 Flex, and 1771 I/O modules. Plus availability for the base I/O of the MicroLogix 1500 and 40 I/O base of the MicroLogix 1200 packaged controllers. A select group of modules are also available for the PowerFlex 700H and 700S drives.

Digital IFM Options and Features, Continued

Ready-to-Wire Digital Cables, Continued



IFM-Ready Cable and Interface Module

IFM-ready cables have a cable connector that attaches to the IFM pre-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 Catalog Number Explanation for Digital I/O Modules

Important: The following IFM catalog number breakdown is for explanation purposes only. It is **not** a product configurator. Not all combinations of fields are valid product catalog numbers. First, select the desired IFM using the steps in Ordering Digital and Analog Wiring Systems on page 28. Then, use this breakdown for verification and explanation only.

IFM and XIM Cable Catalog Number Explanation for Digital I/O Modules

Important: Use the following tables as a product configurator for pre-wired, IFM-ready, and I/O module-ready cables for Bulletins **1746**, **1756**, and **1771** digital I/O module cables. All combinations of these fields make valid product catalog numbers. Refer to selection tables for IFM/XIM compatibility and ordering.

1492–CABLE 010 A

Bulletin No.

Digital Interface Cable

Standard or Build-to-Order Length Cable		
005	0.5 m (1.64 ft)	Standard Length
010	1.0 m (3.28 ft)	
025	2.5 m (8.20 ft)	
050	5.0 m (16.40 ft)	
001…020	0.1…2.0 m (0.328…6.56 ft) 0.1 m (0.328 ft) increments	Build-to-Order Length
020…100	2.0…10.0 m (6.56…32.8 ft) 0.5 m (1.64 ft) increments	
100…300	10.0…30.0 m (32.8…98.4 ft) 1.0 m (3.28 ft) increments	

Cable Type	
A, B, C, D, E, G, N, S	Pre-wired cables for 8-point isolated and 16-point digital Bulletin 1746 I/O modules ❶
CR	Pre-wired cable for Catalog Number 1746-OA16 (XIM only)
F, T	Pre-wired cable for digital Bulletin 1771 I/O modules ❷
FF	Pre-wired cable with fused wiring arm for 16-point digital Bulletin 1771 output modules ❷
H	Pre-wired cable for 32-point digital Bulletin 1746 I/O modules ❶
J, K, L, M, R	Pre-wired cables for 16-point isolated and 32-point digital Bulletin 1771 I/O modules ❷
U, V, W, X	Pre-wired cables for 8- and 16-point digital Bulletin 1756 I/O modules ❸
Y, Z	Pre-wired cables for 16-point isolated and 32-point digital Bulletin 1756 I/O modules ❸
P	Digital IFM-ready cable with 20 conductors
Q	Digital IFM-ready cable with 40 conductors
N3	Digital I/O module-ready cable with 40-point Catalog Number 1746-N3 cable connector
RTBB	Digital I/O module-ready cable with 16-point Catalog Number 1746-RT25B terminal block (blue)
RTBO	Digital I/O module-ready cable with 16-point Catalog Number 1746-RT25C terminal block (orange)
RTBR	Digital I/O module-ready cable with 16-point Catalog Number 1746-RT25R terminal block (red)
TBCH	Digital I/O module-ready cable with 36-pin Catalog Number 1756-TBCH removable terminal block
TBNH	Digital I/O module-ready cable with 20-pin Catalog Number 1756-TBNH removable terminal block
WA	Digital I/O module-ready cable with Catalog Number 1771-WA 8-point wiring arm
WD	Digital I/O module-ready cable with Catalog Number 1771-WD 6-point wiring arm
WH	Digital I/O module-ready cable with Catalog Number 1771-WH 16-point wiring arm
WHF	Digital I/O module-ready cable with Catalog Number 1771-WHF 16-point fused wiring arm
WN	Digital I/O module-ready cable with Catalog Number 1771-WN 32-point wiring arm

❶ To make sure the Bulletin 1746 SLC 500 digital I/O module is compatible with the IFM/XIM, refer to pages 29, 31, and 34.

❷ To make sure the Bulletin 1771 PLC digital I/O module is compatible with the IFM/XIM, refer to pages 59, 60, and 62.

❸ To make sure the Bulletin 1756 ControlLogix digital I/O module is compatible with the IFM/XIM, refer to pages 36, 38, and 40.

The cables used for Relay Master/Expander XIMs are the same as those used for Digital I/O Modules (page 28) with the exception of the Catalog Number 1746-OA16 output module, which uses the 1492-CABLE*CR cable.

Ordering Digital and Analog Wiring Systems

To order the proper IFM/XIM/AIFM pre-wired cable:

1. Determine the PLC or PowerFlex I/O platform (e.g., Bulletin 1746, 1756, 1769, 1771, 1794, 700H,700S) you are using and the catalog number of the I/O module being specified (e.g., 1746-IB16).
2. Determine whether you require field-side LEDs, fusing for over-current protection, or relays (check voltage ratings for LEDs, fuse blown indication, relay, and coil voltage).
3. Determine your field-side wiring requirements. Are extra terminals needed?
4. Determine your desired PLC I/O module to IFM/XIM/AIFM cable length (0.5 m, 1.0 m, 2.5 m, 5.0 m, or build-to-order) based on wiring needs.
5. Refer to selection tables as follows:

Selection Table Quick Reference

Platform	Page No.
Bulletin 1746 Digital (IFM/XIM)	29
Bulletin 1746 Analog (AIFM)	35
Bulletin 1756 Digital (IFM/XIM)	36
Bulletin 1756 Analog (AIFM)	41
Bulletin 1762/1764	43
Bulletin 1769 Digital (IFM/XIM)	45
Bulletin 1769 Analog (AIFM)	52
Bulletin 1794 (IFM/XIM)	53
Bulletin 1794 (AIFM)	58
Bulletin 1771 Digital (IFM/XIM)	59
Bulletin 1771 Analog (AIFM)	63
Bulletin 700 PowerFlex	66

Ordering Digital IFM-Ready Cables for IFMs/XIMs

(Refer to page 14 for definition of IFM-ready)

For pinout and wiring information, refer to IFM-Ready Cable Specifications on page 138 and the selection table on page 65.

Ordering Digital I/O Module-Ready Cables

(Refer to page 13 for the definition of I/O module-ready cables) To order the proper digital I/O module-ready cable, the following information is required:

- Type of connector needed for the I/O module(s) (catalog number of the wiring arm or removable terminal block).
- Code for the desired cable length:
  - **010** = 1.0 m
  - **025** = 2.5 m
  - **050** = 5.0 m
  - Build-to-order length

Selection Tables

Using Bulletin 1746 Selection Tables to Make Valid Bulletin 1492 Wiring System Module Catalog Numbers

Follow these steps when using the selection tables to make valid catalog numbers:

1. Find the appropriate table based on the catalog numbers of the 1746 I/O module.
2. Find the column for the 1746 I/O module.
3. Follow the column down to determine which Wiring Systems Modules are compatible with the I/O module as indicated by letter code. If there is no letter code, the Bulletin 1492 Wiring System Module is not compatible with the I/O module. NOTE: The letter codes designate the compatible Bulletin 1492 cable for that 1746 I/O and Bulletin 1492 Wiring System Module combination.
4. Select the desired Bulletin 1492 Wiring System Module.
5. Configure the cable catalog number using 1492-CABLE❶ (for digital cables) or 1492-ACABLE❶ (for analog cables). See footnote ❶ on pages 34 and 35.

Bulletin 1746 SLC 500 IFMs and Cables

Bulletin 1746 Digital 16-Point and 8-Point Isolated I/O Modules ❷

Description of 20-PIN IFM	Cat. No. for Wiring System Module with Fixed Terminal Block	Cat. No. for Wiring System Module with Removable Terminal Block Socket Assembly (order plugs separately)	I/O Module Catalog Number 1746-…																								
			IA16	IB16	IC16	IG16	IH16	IM16	IN16	ITB16	ITV16	IV16	OA16	OB16	OB16E	OBP16	OG16	OV16	OVP16	OW16	OX8	sc-IA8I❽	sc-IB8I❽	scIC8I❽	scOAP81❽
Feed-through																											
Standard 264V AC/DC Max.	1492-IFM20F	1492-RIFM20F❼	A	B	B	E	B	A	B	B	B	B	C	E	E	E	E	E	E	D	D	A	B	B	A
Narrow standard 132V AC/DC Max.	1492-IFM20FN	1492-RIFM20FN❽	A	B	B	E	B	—	B	B	B	B	G	E	E	E	E	E	E	N	N	A	B	B	A
Extra terminals (2 per I/O) 264V AC/DC Max.	1492-IFM20F-2	1492-RIFM20F-2❼	A	B	B	E	B	A	B	B	B	B	C	E	E	E	E	E	E	D	—	—	—	—	—
3-wire sensor type input devices 132V AC/DC Max.	1492-IFM20F-3	—	A	B	B	E	B	—	B	B	B	B	—	—	—	—	—	—	—	—	—	—	—	—	—
LED Indicating																											
Standard with 24V AC/DC LEDs	1492-IFM20D24	—	—	B	—	—	—	—	B	B	B	B	—	E	E	E	—	E	E	D	—	—	—	—	—
Narrow standard with 24V AC/DC LEDs	1492-IFM20D24N	—	—	B	—	—	—	—	B	B	B	B	—	E	E	E	—	—	—	N	—	—	—	—	—

Note: Footnotes are on page 31.

Selection Tables, Continued

Bulletin 1756 ControlLogix IFMs and Cables, Continued

These **pre-wired cables** have a pre-wired RTB on one end to connect to the front of a Bulletin 1756 digital I/O module and a connector on the other end to plug into a 20- or 40-terminal IFM/XIM. You must first select the IFM/XIM from one of the preceding selection tables.

Pre-Wired Cables for Bulletin 1756 Digital I/O Modules

Cable Cat. No.	Standard Cable Lengths	Build-to-Order Available	No. of Conductors	Mating 1756 I/O Module Catalog Number
1492-CABLE❶U	0.5, 1.0, 2.5, 5.0 m	Yes	20	1756-IA8D, -OA8, -OA8D, -OA8E, -OB8, -OC8, -ON8
1492-CABLE❶V	0.5, 1.0, 2.5, 5.0 m	Yes	20	1756-OA8D, -OA8E
1492-CABLE❶W	0.5, 1.0, 2.5, 5.0 m	Yes	20	1756-OA8, -OB8, -OC8, -ON8
1492-CABLE❶X	0.5, 1.0, 2.5, 5.0 m	Yes	20	1756-IA16, -IB16, -IC16, -IN16, -IV16, -OA16, -OB16E, -OV16E
1492-CABLE❶Y	0.5, 1.0, 2.5, 5.0 m	Yes	40	1756-IA16I, -IB16D, -IB16I, -IH16, -IM16I, -OA16I, -OB8EI, -OB16D, -OB16I, -OB16IS, -OH8I, -OW16I, -OX8I
1492-CABLE❶Z	0.5, 1.0, 2.5, 5.0 m	Yes	40	1756-IB32, -OB32, -IV32, -OV32E

❶ Cables are available in standard lengths of 0.5 m, 1.0 m, 2.5 m, and 5.0 m. To order, insert the code for the desired cable length into the catalog number (005 = 0.5 m, 010 = 1.0 m, 025 = 2.5 m, and 050 = 5.0 m). Example: **Catalog Number 1492-CABLE005Y** is for a 0.5 m cable that could be used to connect a Catalog Number 1492-IFM40F IFM to a Catalog Number 1756-IA16I I/O module.

The **I/O module-ready cables** have a pre-wired RTB on one end to plug onto the front of a Bulletin 1756 I/O module and 20 or 40 individually colored #18 AWG conductors on the other end. These cables provide the convenience of pre-wired connections at the I/O module end, while still allowing the flexibility to field-wire to standard terminal blocks of your choice.

I/O Module-Ready Cables for Bulletin 1756 Digital I/O Modules ❸

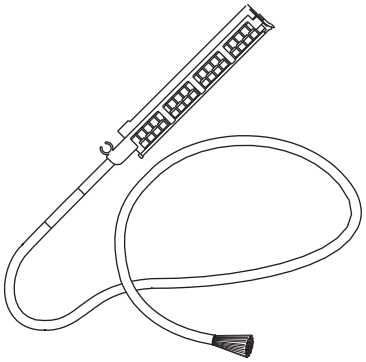
Cable Cat. No.	Standard Cable Lengths	Build-to-Order Available	No. of Conductors	Mating 1756 I/O Module Catalog Number
1492-CABLE❷TBNH	1.0, 2.5, 5.0 m	Yes	20	1756-IA8D, -IA16, -IB16, -IC16, -IN16, -IV16, -OA8, -OA8D, -OA8E, -OA16, -OB8, -OB16E, -OC8, -ON8, -OV16E
1492-CABLE❷TBCH	1.0, 2.5, 5.0 m	Yes	40	1756-IA16I, -IA32, -IB16D, -IB16I, -IB32, -IV32, -IH16I, -IM16I, -OA16I, -OB8EI, -OB16D, -OB16I, -OB16IS, -OB32, -OV32E, -OH8I, -OW16I, -OX8I

❷ Cables are available in standard lengths of 1.0 m, 2.5 m, and 5.0 m. To order, insert the code for the desired cable length into the catalog number (010 = 1.0 m, 025 = 2.5 m, and 050 = 5.0 m). Example: **Catalog Number 1492-CABLE050TBNH** is for a 5.0 m cable with a pre-wired Catalog Number 1756-TBNH RTB on one end.

❸ Discrete I/O ready cables should not be used with PLC analog I/O modules as cable shield and drain wires are not provided.

Digital Cable Specifications, Continued

I/O Module-Ready Cables



The I/O module-ready cables have a pre-wired wiring arm or removable terminal block on one end to connect the programmable controller I/O module and 12…40 individually colored #18 or #22 AWG conductors on the other. These cables provide the convenience of a pre-wired I/O module connector, while still allowing the flexibility to wire to standard terminal blocks.

Pre-wired I/O module connectors include:

- Catalog Number 1746-N3 40-point plug-in connector (Catalog Number CABLE❶N3)
- Bulletin 1746 16-point removable terminal blocks in Red, Blue, and Orange (Catalog Number CABLE❶RTBR, ❶RTBB, ❶RTBO)
- Catalog Number 1756-TBCH 36-point removable terminal block (Catalog Number CABLE❶TBCH)
- Catalog Number 1756-TBNH 20-point removable terminal block (Catalog Number CABLE❶TBNH)
- Catalog Number 1769-RTBN10 8-point removable terminal block (Catalog Number CABLE❶RTN10)
- Catalog Number 1769-RTBN18 20-point removable terminal block (Catalog Number CABLE❶RTN18)
- Catalog Number 1769-RTBN32I and 1769-RTBN320 for 32-point 1769 I/O modules
- Catalog Number 1771-WH 16-point wiring arm (Catalog Number CABLE❶WH)
- Catalog Number 1771-WN 32-point wiring arm (Catalog Number CABLE❶WN)
- Catalog Number 1771-WHF 16-point fused wiring arm (with fuses) (Catalog Number CABLE❶WHF)
- Catalog Number 1771-WD 6-point wiring arm (Catalog Number CABLE❶WD)
- Catalog Number 1771-WA 8-point wiring arm (Catalog Number CABLE❶WA)

❶ Cables are available in lengths of 1.0 m, 2.5 m, and 5.0 m. To order, insert the code for the desired cable length into the catalog number (010 = 1.0 m, 025 = 2.5 m, and 050 = 5.0 m). Example: **Catalog Number 1492-CABLE025WH** is for a 2.5 m cable with a pre-wired 1771-WH Wiring Arm on one end. Also refer to Build-to-Order Length Cables on page 65.

Digital Cable Specifications, Continued

I/O Module-Ready Cables, Continued

I/O Module-Ready Cable Specifications

Catalog Number	Cable Lengths	Insulation Rating	Number of Conductors	Conductor Size	Nominal Outer Diameter	I/O Module Connector
1492-CABLE❶N3	1.0, 2.5, 5.0 m	300V 80°C	40	#22 AWG	11.2 mm (0.44 in.)	1746-N3 (40-Point) Plug-in Connector
1492-CABLE❶RTBB	1.0, 2.5, 5.0 m	300V 80°C	20	#18 AWG	11.4 mm (0.45 in.)	1746-RT25B Blue Removable Terminal Block
1492-CABLE❶RTBO	1.0, 2.5, 5.0 m	300V 80°C	20	#18 AWG	11.4 mm (0.45 in.)	1746-RT25C Orange Removable Terminal Block
1492-CABLE❶RTBR	1.0, 2.5, 5.0 m	300V 80°C	20	#18 AWG	11.4 mm (0.45 in.)	1746-RT25R Red Removable Terminal Block
1492-CABLE❶TBCH	1.0, 2.5, 5.0 m	300V 80°C	40	#18 AWG	14.1 mm (0.55 in.)	1756-TBCH (36-Point) Removable Terminal Block
1492-CABLE❶TBNH	1.0, 2.5, 5.0 m	300V 80°C	20	#18 AWG	11.4 mm (0.45 in.)	1756-TBNH (20-Point) Removable Terminal Block
1492-CAB❶T62	1.0, 2.5, 5.0 m	300V 80°C	25	#18 AWG	13.2 mm (0.52 in.)	1762-L40xxx Output Connector
1492-CAB❶X62	1.0, 2.5, 5.0 m	300V 80°C	40	#22 AWG	11.7 mm (0.46 in.)	1762-L40xxx Input Connector
1492-CAB❶T64	1.0, 2.5, 5.0 m	300V 80°C	20	#18 AWG	11.4 mm (0.45 in.)	1764-24AWA, -24BWA Output Terminal
1492-CAB❶U64	1.0, 2.5, 5.0 m	300V 80°C	20	#18 AWG	11.4 mm (0.45 in.)	1764-28BXB Output Terminal
1492-CAB❶W64	1.0, 2.5, 5.0 m	300V 80°C	20	#22 AWG	9.0 mm (0.36 in.)	1764-24AWA, -BWA Input Terminal
1492-CAB❶X64	1.0, 2.5, 5.0 m	300V 80°C	20	#22 AWG	9.0 mm (0.36 in.)	1764-28BXBH Input Terminal
1492-CAB❶RTN10	1.0, 2.5, 5.0 m	300V 80°C	12	#18 AWG	9.0 mm (0.36 in.)	1769-RTBN10 Removable Terminal Block
1492-CAB❶RTN18	1.0, 2.5, 5.0 m	300V 80°C	20	#18 AWG	11.4 mm (0.45 in.)	1769-RTBN18 (20-Point) Removable Terminal Block
1492-CAB❶RTN32I	1.0, 2.5, 5.0 m	300V 80°C	40	#22 AWG	11.7 mm (0.46 in.)	(2) 1769-RTBN18 (20-Point) Removable Terminal Block
1492-CAB❶RTN32O	1.0, 2.5, 5.0 m	300V 80°C	40	#22 AWG	11.7 mm (0.46 in.)	(2) 1769-RTBN18 (20-Point) Removable Terminal Block
1492-CAB❶G94	1.0, 2.5, 5.0 m	300V 80°C	20	#22 AWG	9.0 mm (0.36 in.)	37-pin male D-shell❷
1492-CAB❶H94	1.0, 2.5, 5.0 m	300V 80°C	40	#22 AWG	11.7 mm (0.46 in.)	62-pin male D-shell❸
1492-CABLE❶WA	1.0, 2.5, 5.0 m	300V 80°C	12	#18 AWG	9.0 mm (0.36 in.)	1771-WA (8-Point/10 Terminal) Wiring Arm
1492-CABLE❶WD	1.0, 2.5, 5.0 m	300V 80°C	12	#18 AWG	9.0 mm (0.36 in.)	1771-WD (6-Point/12 Terminal) Wiring Arm
1492-CABLE❶WH	1.0, 2.5, 5.0 m	300V 80°C	20	#18 AWG	11.4 mm (0.45 in.)	1771-WH (16-Point/21 Terminal) Wiring Arm
1492-CABLE❶WHF	1.0, 2.5, 5.0 m	300V 80°C	20	#18 AWG	11.4 mm (0.45 in.)	1771-WHF (16-Point/21 Terminal) Fused Wiring Arm
1492-CABLE❶WN	1.0, 2.5, 5.0 m	300V 80°C	40	#18 AWG	14.1 mm (0.55 in.)	1771-WN (32-Point/40 Terminal) Wiring Arm

❶ Cables are available in lengths of 1.0 m, 2.5 m, and 5.0 m. To order, insert the code for the desired cable length into the catalog number (010 = 1.0 m, 025 = 2.5 m, and 050 = 5.0 m). Example: **Catalog Number 1492-CABLE025WH** is for a 2.5 m cable with a pre-wired 1771-WH Wiring Arm on one end. Also refer to Build-to-Order Length Cables on page 65.

❷ Mates with Bul. 1794 Flex D-shell style base: Cat. No. 1794-TB37DS.

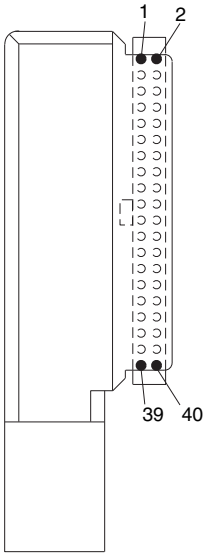
❸ Mates with Bul. 1794 Flex D-shell style base: Cat. No. 1794-TB62DS.

Digital Cable Specifications, Continued

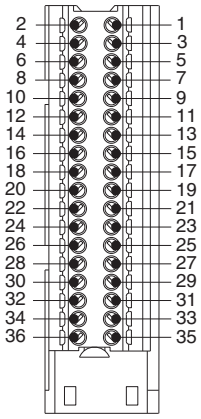
I/O Module-Ready Cables, Continued

Below is the wire color table for I/O module-ready cables. Each conductor is given a reference number in the table on page 151. The reference number is used in the illustrations that follow to indicate the corresponding screw terminal.

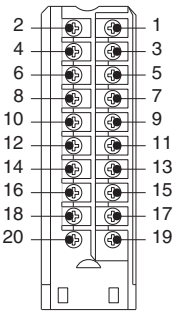
1492-CABLE❶N3



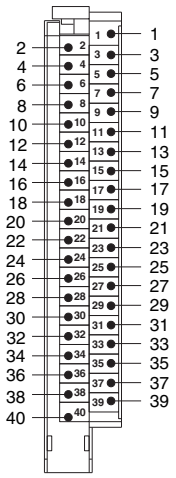
1492-CABLE❶TBCH



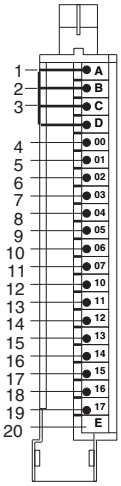
1492-CABLE❶TBNH



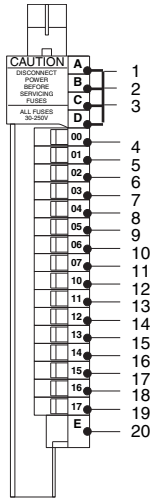
1492-CABLE❶WN



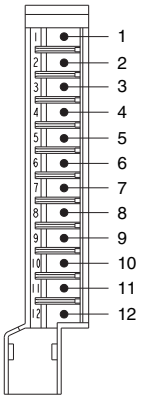
1492-CABLE❶WH



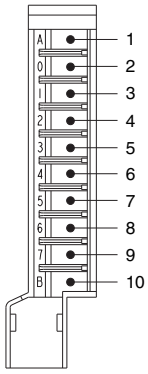
1492-CABLE❶WF



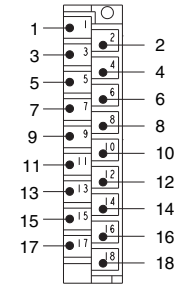
1492-CABLE❶WD



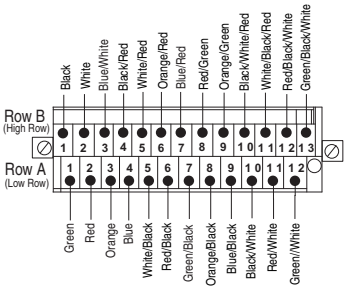
1492-CABLE❶WA



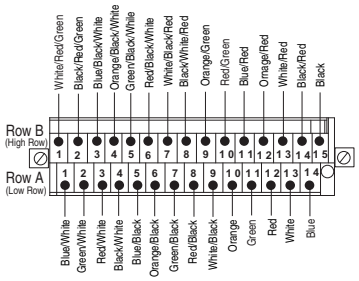
1492-CABLE❶RTBR
1492-CABLE❶RTBB
1492-CABLE❶RTBO



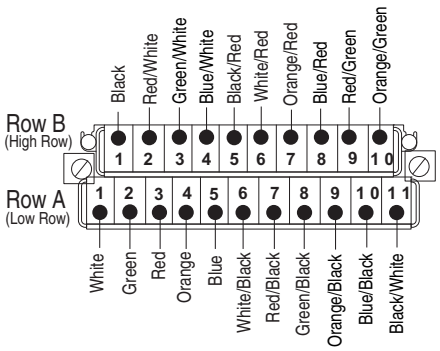
1492-CAB❶T62



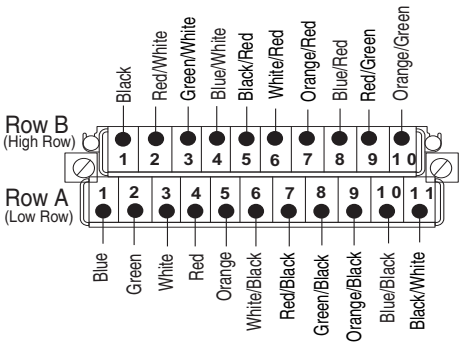
1492-CAB❶X62



1492-CAB❶T64



1492-CAB❶U64



❶ Cables are available in lengths of 1.0 m, 2.5 m, and 5.0 m. To order, insert the code for the desired cable length into the catalog number (010 = 1.0 m, 025 = 2.5 m, and 050 = 5.0 m). Example: **Catalog Number 1492-CABLE025WH** is for a 2.5 m cable with a pre-wired 1771-WH Wiring Arm on one end. Also refer to Build-to-Order Length Cables on page 65.

❷ The 1492-CABRTN32F and -RTN320 are made up of two (2) individual 18-pin terminal blocks (L = Left, R=Right) connected to a single cable assembly.