
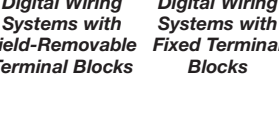
 <p><b>Analog Wiring Systems</b></p>  <p><b>Analog Wiring Systems</b></p>  <p><b>Digital Wiring Systems with Field-Removable Terminal Blocks</b></p>	<p><b>Bulletin 1492 Programmable Controller Wiring Systems</b></p> <ul style="list-style-type: none"> <li>Increases machine building productivity</li> <li>Simplifies design and engineering time</li> <li>Reduces wiring time and wiring errors</li> <li>Benefits from quality-looking panels</li> </ul> <p><b>Standards Compliance and Certifications</b></p> <ul style="list-style-type: none"> <li>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</li> <li>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</li> <li>CE Certifications                      Compliant for all applicable directives</li> </ul>	<p><b>Table of Contents</b></p> <p>Catalog Number                      Explanation ..... 12-129                      Selection Tables ..... 12-141                      Digital IFM Specifications ..... 12-160</p> <p><b>Standards Compliance and Certifications, Continued</b></p> <ul style="list-style-type: none"> <li>UL 508</li> <li>UL 1604</li> <li>CSA C22.2 No. 14</li> <li>CSA C22.2 No. 213</li> <li>EN/IEC 61131-2</li> </ul>
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Bulletin	1746	1756	1762	1764	1769	1794	1771	Bulletin 700H and 700S
<b>Description</b>	SLC 500	ControlLogix	MircoLogix 1200	MicroLogix 1500	CompactLogix	Flex	PLC-5	PowerFlex Drive
<b>Product Selection</b>	Web *	<b>12-142</b>	<b>12-153</b>	<b>12-153</b>	<b>12-148</b>	<b>12-154</b>	Web *	<b>12-157</b>

\* Information for this product is available on the Industrial Controls Catalog website: [www.ab.com/catalogs](http://www.ab.com/catalogs)

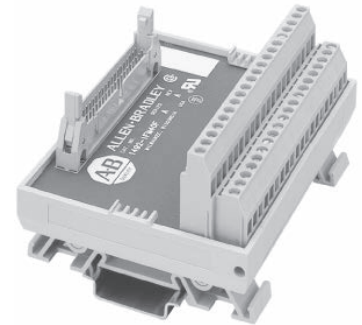
## Digital Interface Modules (IFMs)

### 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

$$1492 - \frac{IFM}{a} \quad \frac{20}{b} \quad \frac{F120}{c} - \frac{2}{d}$$

*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*

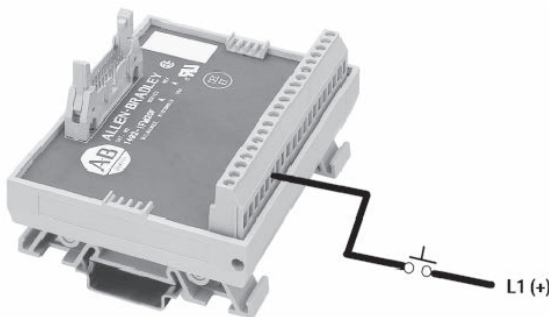
Digital Cable Connector Size	
Code	Description
20	20 pins
40	40 pins

*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

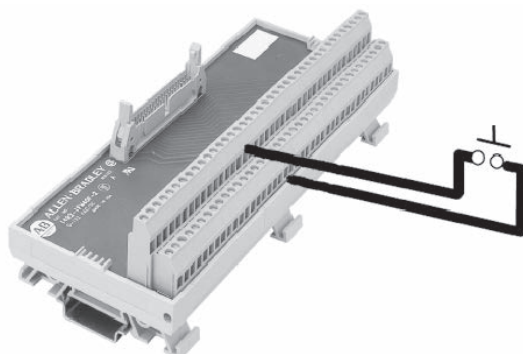
*d*

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)

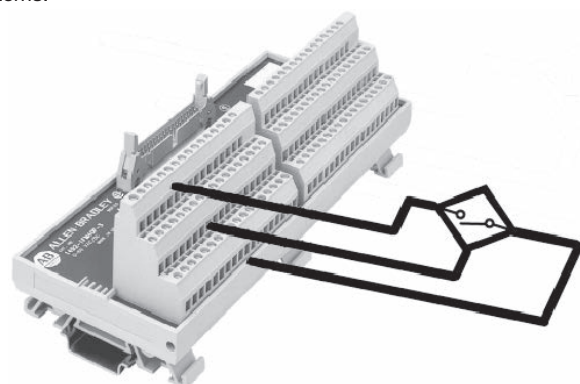


Standard Terminal Interface Module

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.



Extra Terminal Interface Module



Three-Level Sensor Terminal Interface Module

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

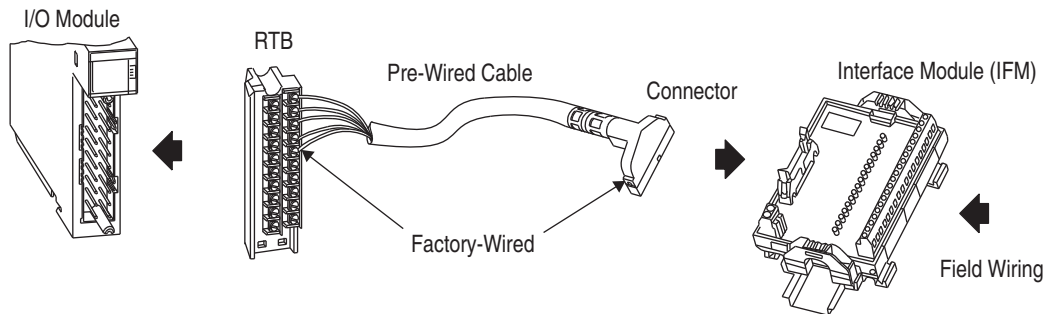
Standard terminal IFMs provide **one field-side** wiring terminal per programmable controller input or output point, as well as enough terminals for the I/O module power connections. The standard terminals are ideal for applications where the I/O device commons are terminated in the field or remotely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

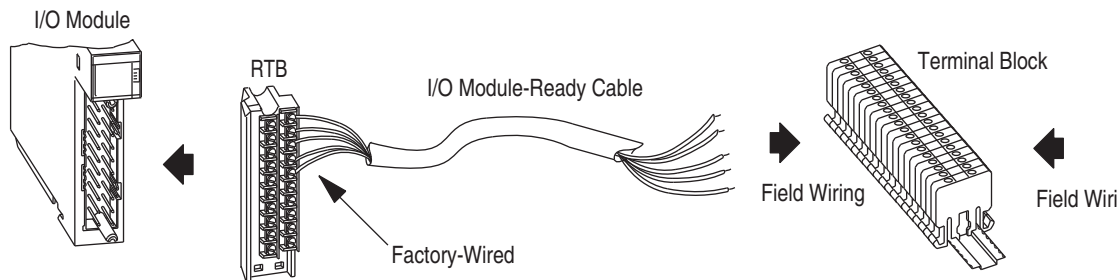
### Digital Cables Pre-Wired

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

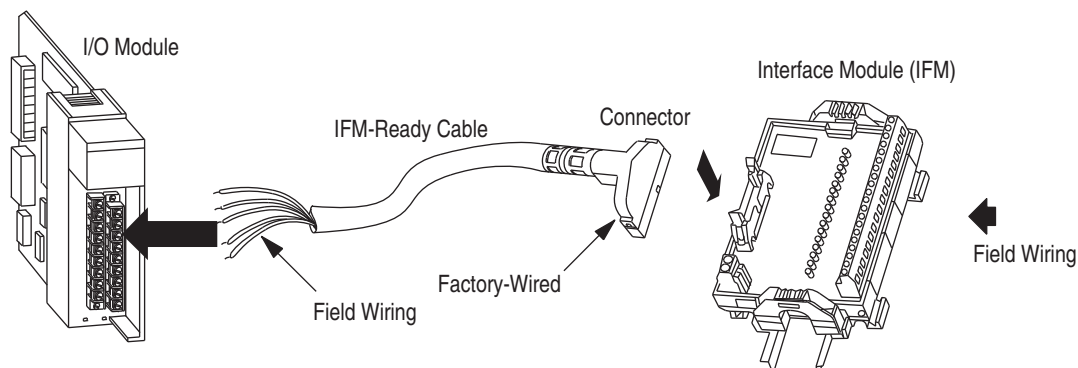
I/O-ready cables have an I/O removable terminal block or wiring arm factory-wired to one end of the cable and free connectors on the other end for wiring into standard terminal blocks or other type of connectors. I/O-ready cables have individual color-coded conductors for quick wire-to-terminal coordination. 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

## Catalog Number Explanation

### Catalog Number Explanation

#### Digital Cables for Bulletin 1762, 1764, 1769 and 1794

**Important:** Use the following tables as a product configurator for pre-wired, and I/O module-ready cables for **Bulletins 1746, 1762, 1764, 1769, and 1794** - 40 I/O controller digital I/O cables. All combination of these fields make valid product catalog numbers. Refer to selection tables for IFM compatibility, additional cables, and ordering.

**1492 – CAB    010 – A62**

*a                      b                      c*

*a*

Digital Interface Cable
-------------------------

*b*

Standard or Build-to-Order Length Cables		
Code	Length	Description
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...98.42 ft) 1.0 m (3.28 ft increments)	

*c*

Code	Description
<b>For use with Bulletin 1762 MicroLogix 1200 Modules</b>	
A62, B62	Pre-wired cables for Bulletin 1762 I/O controllers
X62	I/O-ready cable for 1762-L40AWA, and -L40BWA
T62	I/O-ready cable for 1762-L40AWA, -L40BXB, and -L40BWA outputs
<b>For use with Bulletin 1764 MicroLogix 1500 Modules</b>	
A64, B64, C64, F64	Pre-wired cables for Bulletin 1764 I/O base units
W64	I/O-ready cable for 1762-24AWA, and -24BWA base unit inputs
T64	I/O-ready cable for 1762-24AWA, -24BWA base units outputs
U64	I/O-ready cable for 1764-28BXB base unit outputs
<b>For use with Bulletin 1746, and 1769 Digital Modules</b>	
A69, B69, C69, D69, E69, F69, G69, H69, J69, K69, L69, M69	Pre-wired cables for 8-, 16-, and 32-channel Bulletin 1769 digital I/O modules
RTN18	I/O-ready cable with Cat. No. 1746-RTBN18 terminal block
RTN10	I/O-ready cable with Cat. No. 1746-RTBN10 terminal block
RTN32I	I/O-ready for 32-channel 1769-IQ32
RTN32O	I/O-ready for 32-channel 1769-OB32
<b>For Use with Bulletin 1794 Flex I/O, Cat. Nos. 1794- TB37DS, and 1794-TB62DS base units</b>	
A94	Pre-wired cables for Bulletin 1794 Flex digital I/O using the Bulletin 1794-TB37DS base
B94	Pre-wired cables for Bulletin 1794 Flex digital I/O using the Bulletin 1794-TB62DS base
G94	Digital I/O-ready cable with Cat. No. 1746-RTBN10 terminal block
H94	Digital I/O ready cable for digital I/O using the Bulletin 1794 TB62DS base



## Programmable Controller Wiring Systems

Digital Cables — I/O Ready

## Digital Cables — I/O-Ready for Bulletin 1756 ControlLogix-✳

Cable Cat. No.	Standard Cable Lengths	Build-to-Order Available	No. of Conductors	Mating I/O Module Cat. No.
1492-CABLE* <b>TBNH</b>	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-CABLE* <b>TBCH</b>	1.0, 2.5, 5.0 m	Yes	40	1756-IA16I, -IA32, -IB16D, -IB16I, -IB32, -IV32, -IH16I, -IM16I, -OA16I, -OB8EI, -OB16D, -OB16IS, -OB16I, -OB32, -OV32E, -OH8I, -OW16I, -OX8I

\* 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 cat. no. (010 = 1.0 m, 025 = 2.5 m, and 050 = 5.0 m). Example: **Cat. No. 1492-CABLE050TBNH** is for a 5.0 m cable with a pre-wired Cat. No. 1756-TBNH RTB on one end.

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

## Digital Cables - I/O-Ready for Bulletin 1769 CompactLogix-❖

Cable Cat. No.	Standard Cable Lengths	Build-to-Order Available	No. of Conductors	Mating 1769 I/O Module Cat. No.
1492-CAB* <b>RTN10</b>	1.0, 2.5, 5.0 m	Yes	12	1769-OA8, -OW8, -OB8
1492-CAB* <b>RTN18</b>	1.0, 2.5, 5.0 m	Yes	20	1769-IA8I, -IA16, -IQ16, IQ16F, -OA16, -OB16, -OV16, -OW16, -OW8I, -IM12, -OW16, -OB8
1492-CAB* <b>RTN32I</b>	1.0, 2.5, 5.0 m	Yes	40+	1769-IQ32
1492-CAB* <b>RTN32O</b>	1.0, 2.5, 5.0 m	Yes	40+	1769-OB32
1492-CABLE* <b>N3</b>	1.0, 2.5, 5.0 m	Yes	40+	1769-IQ32T, -OB32T, -OV32T

\* Cables are available in standard lengths of 1.0, 2.5, and 5.0 m. To order, insert the code for the desired cable length into the cat. no. (010 = 1.0 m, 025 = 2.5 m, and 050 = 5.0 m). Example: **Cat. No. 1492-CAB050RTN10** is for a 5.0 m cable with a wired Cat. No. 1769-RTBN10 on one end.

+ Use #22 AWG wire.

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

## Digital Cables — I/O-Ready for Bulletin 1762 MicroLogix 1200-&gt;

Cable Cat. No.	Standard Cable Lengths	Build-to-Order Available	No. of Conductors	Mating 1762 Controller I/O Cable Cat. No.
1492-CAB* <b>P62</b>	1.0, 2.5, 5.0 m	No	40	1762-OB32T and 1762-OV32T Output Expansion I/O
1492-CAB* <b>U62</b>	1.0, 2.5, 5.0 m	No	40	1762-IQ32T Input Expansion I/O
1492-CAB* <b>T62</b>	1.0, 2.5, 5.0 m	Yes	25	1762 -L40AWA Outputs, -L40BWA Outputs, -L40BxB Outputs
1492-CAB* <b>X62</b>	1.0, 2.5, 5.0 m	Yes	40	1762-L40AWA Inputs, -L40BWA Inputs, -L40BxB Inputs

\* I/O ready cables are available in standard lengths of 1.0, 2.5, and 5.0 m. To order, insert the code for the desired cable length into the cat. no. (010 = 1.0 m, 025 = 2.5 m, and 050 = 5.0 m). Example: **Cat. No. 1492-CAB010T62** is for a 1.0 m cable that could be used to connect a catalog number 1492-IFM40F to a catalog number 1762-L40AWA Input.

## Digital Cables — I/O-Ready for Bulletin 1764 MicroLogix 1500 -&gt;

Cable Cat. No.	Standard Cable Lengths	Build-to-Order Available	No. of Conductors	Mating 1764 Base I/O Cat. No.
1492-CAB* <b>T64</b>	1.0, 2.5, 5.0 m	Yes	20‡	AWA Outputs, BWA Outputs
1492-CAB* <b>U64</b>	1.0, 2.5, 5.0 m	Yes	20‡	BXB Outputs
1492-CAB* <b>W64</b>	1.0, 2.5, 5.0 m	Yes	20§	AWA Inputs, BWA Inputs
1492-CAB* <b>X64</b>	1.0, 2.5, 5.0 m	Yes	20§	BXB Inputs

\* I/O ready cables are available in standard lengths of 1.0, 2.5, and 5.0 m. To order, insert the code for the desired cable length into the cat. no. (010 = 1.0 m, 025 = 2.5 m, and 050 = 5.0 m). Example: **Cat. No. 1492-CAB050T64** is for a 1.0 m cable that could be used to connect a catalog number 1492-IFM20F to a catalog number 1762-AWA Input.

‡ Uses #18 AWG wire.

§ Uses #22 AWG wire.

## Digital Cables — I/O-Ready for Bulletin 1794 Flex I/O-&gt;

Description	Standard Cable Lengths	Build-to-Order Available	No. of Conductors	Mating I/O Module Cat. No.
1492-CAB* <b>G94</b>	1.0, 2.5, 5.0 m	Yes	20	1794-IB16, -IB8, -IV16, -OB16, -OB16P, -OB8, -OB8EP, -OV16, OV16P, -OW8, -IB10XOB8
1492-CAB* <b>H94</b>	1.0, 2.5, 5.0 m	Yes	40	1794-IB16D, -IB32, OB32P, -IB16XOB16P

\* Cables are available in standard lengths of 1.0, 2.5, and 5.0 m. To order, insert the code for the desired cable length into the cat. no. (010 = 1.0 m, 025 = 2.5 m, and 050 = 5.0 m). Example: **Cat. No. 1492-CAB050G94** is for a 5.0 m cable.

> Not available for Analog I/O Modules

# 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
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
Maximum Peak Transient Voltage	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 <sup>2</sup> ) Removable Screw Style: #12 to #22 AWG 2.5...0.5 mm <sup>2</sup> ) Removable Push-in Style: #12 to #26 AWG (2.5...0.2mm <sup>2</sup> )
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* <sup>⊛</sup>

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.

