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***PLC  
Cable and  
Wiring Guide***

**OMRON**<sup>®</sup>

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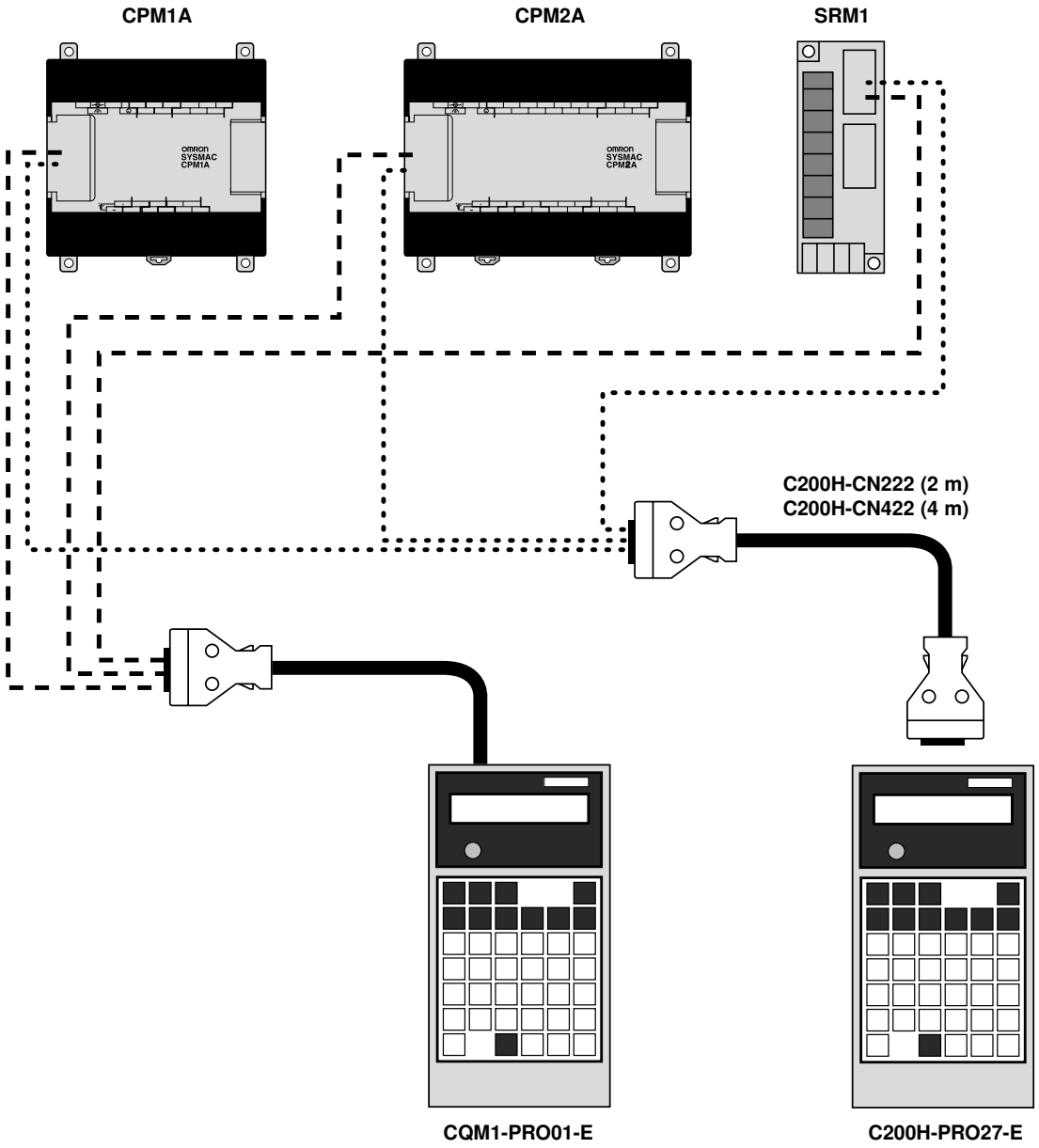
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# Reference Information

## PLC Connections

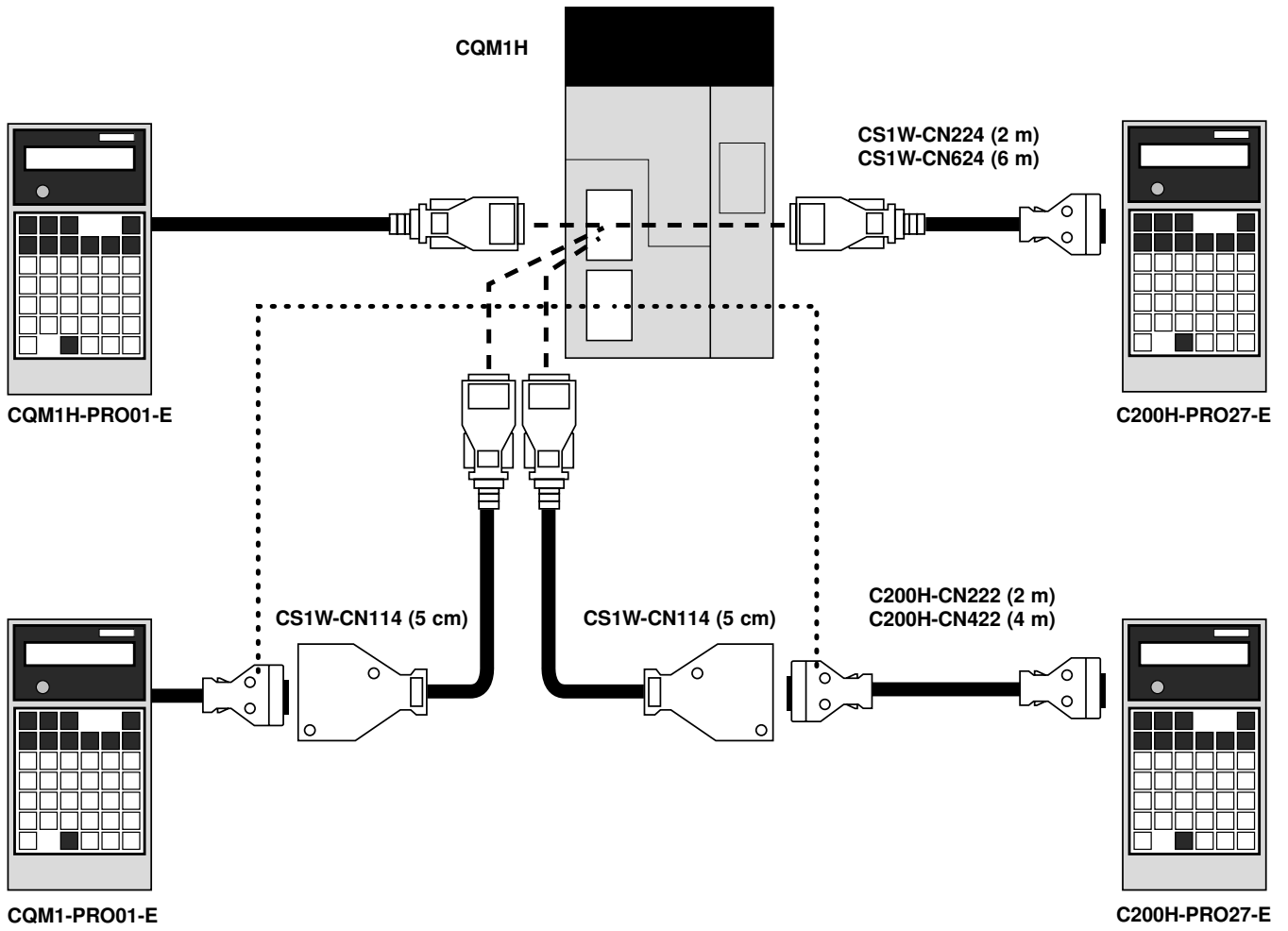
The following pages illustrate the cabling options for connecting Omron programmable controllers with computers, Omron's HMI's, hand-held programmers, high-density I/O modules and I/O terminal blocks.

### Hand-held Programmers and CPM1A, CPM2A, SRM1 Peripheral Port



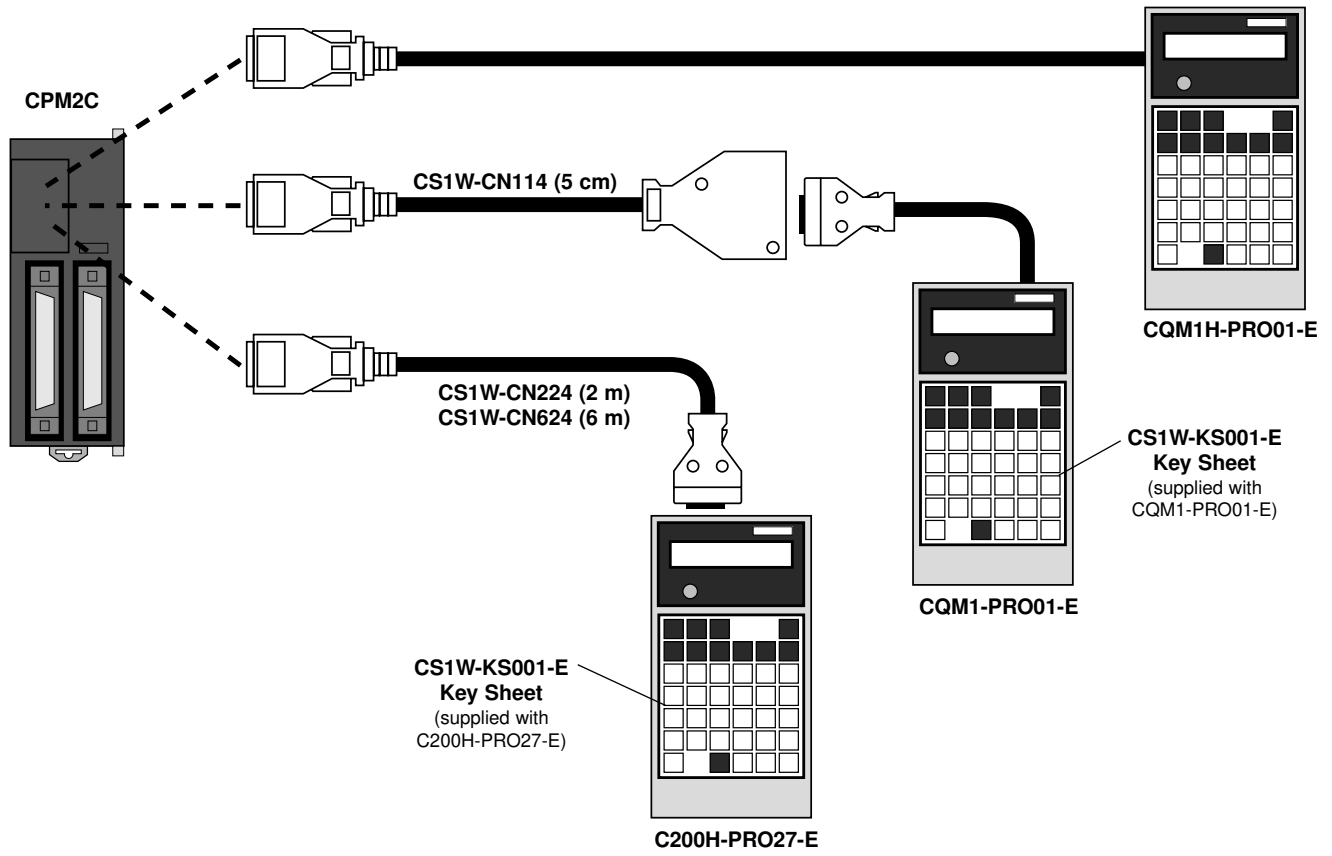
# Reference Information

## Hand-held Programmings and CQM1H Peripheral Port



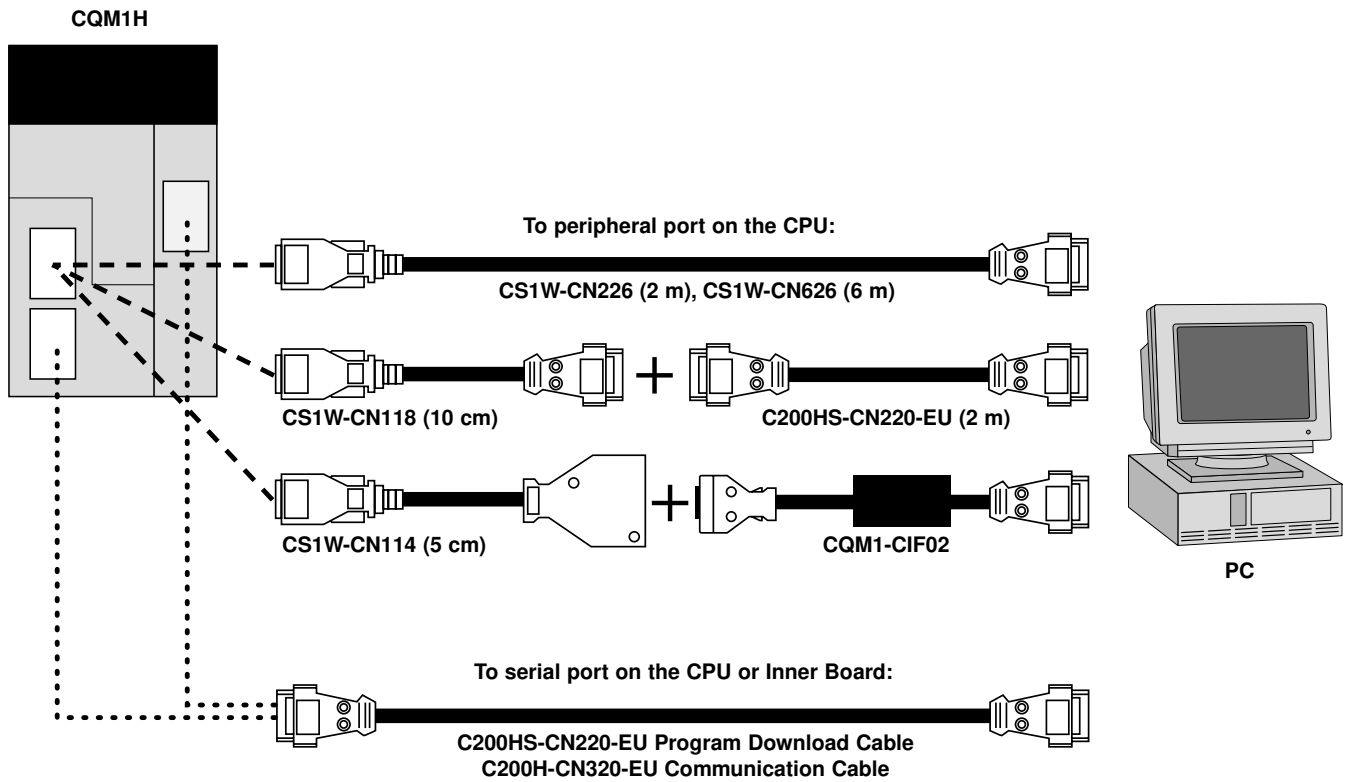
# Reference Information

## Hand-held Programmer and CPM2C Communication Port

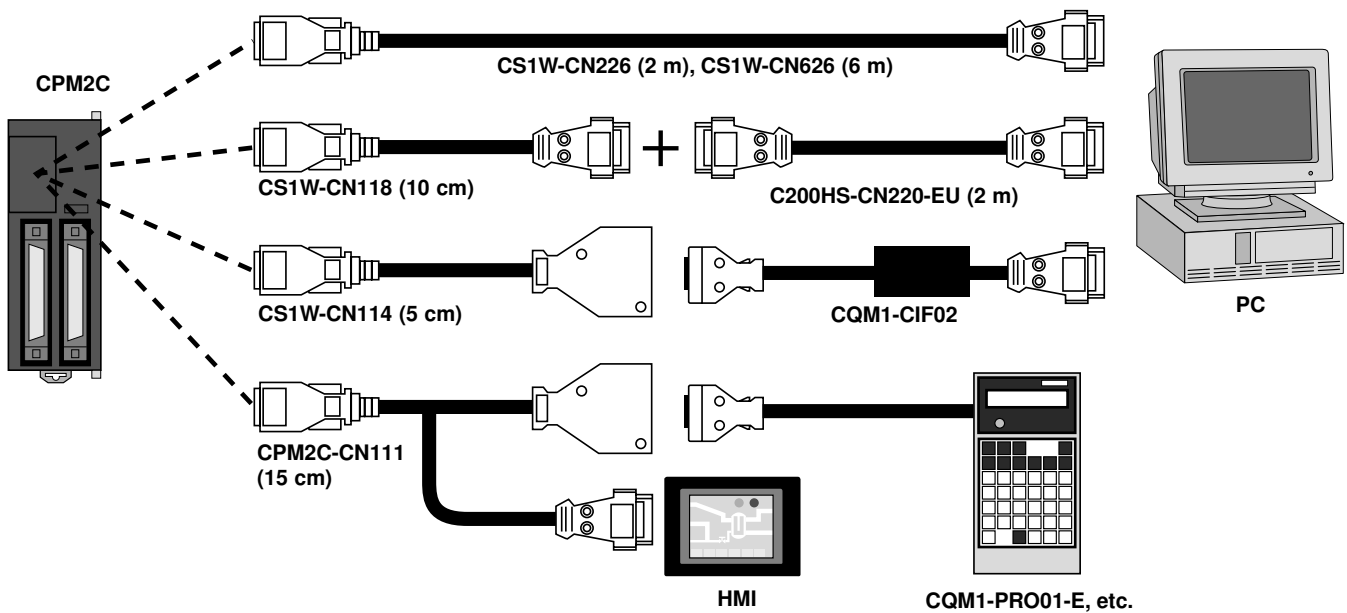


# Reference Information

## CQM1H and PC

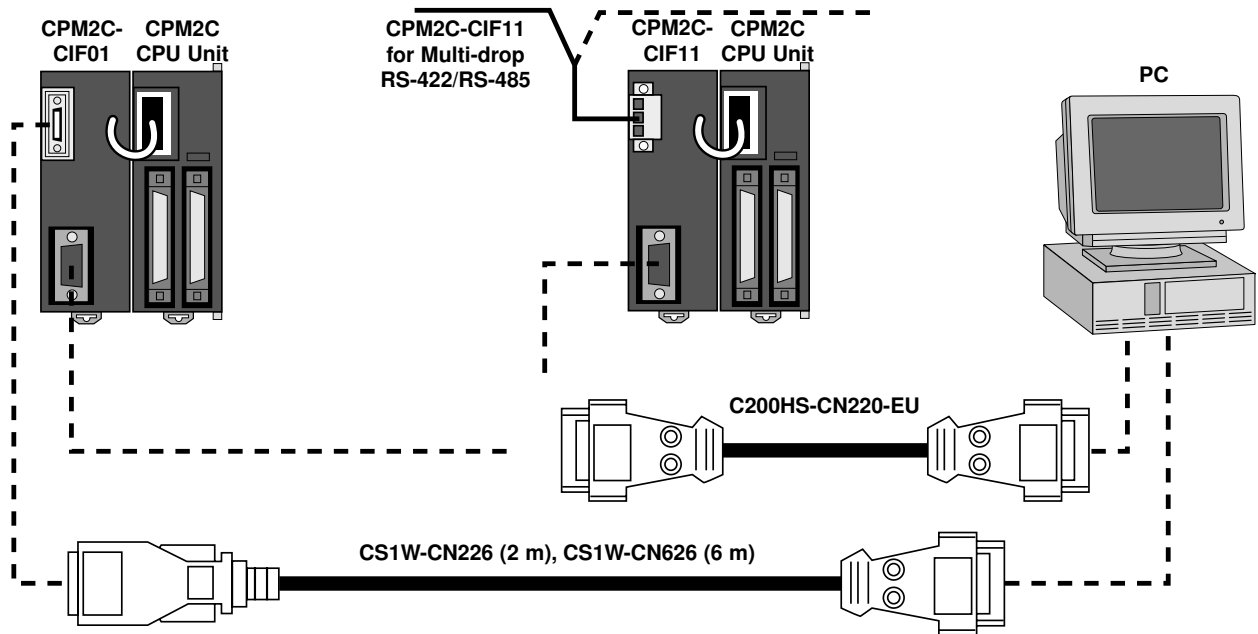


## CPM2C and PC



# Reference Information

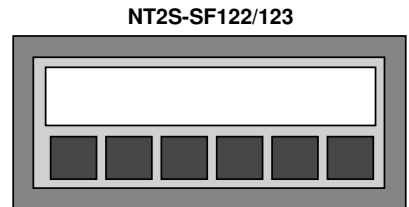
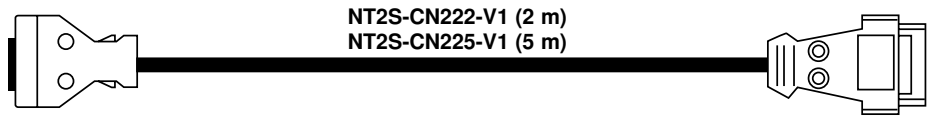
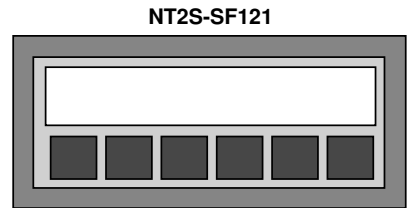
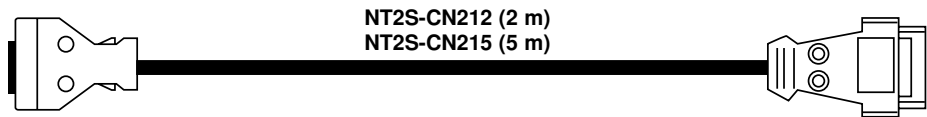
## CPM2C + Serial Communication Adapter and PC



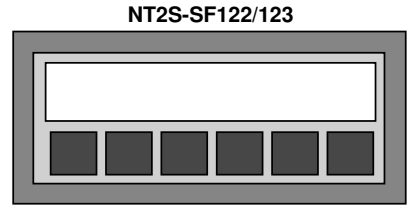
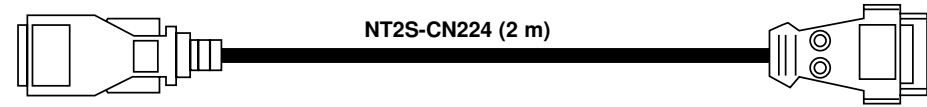
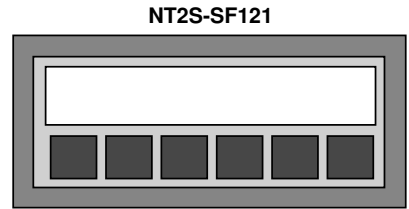
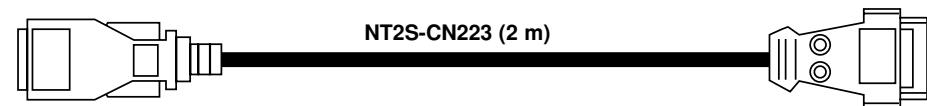
## NT2S Message Display and Programmable Controllers

Peripheral port (Old type: C200H, SRM1, CPM2A, CPM1A, CPM2B\*)

\*Note: CPM2B must use CS1W-CN114 adapter.



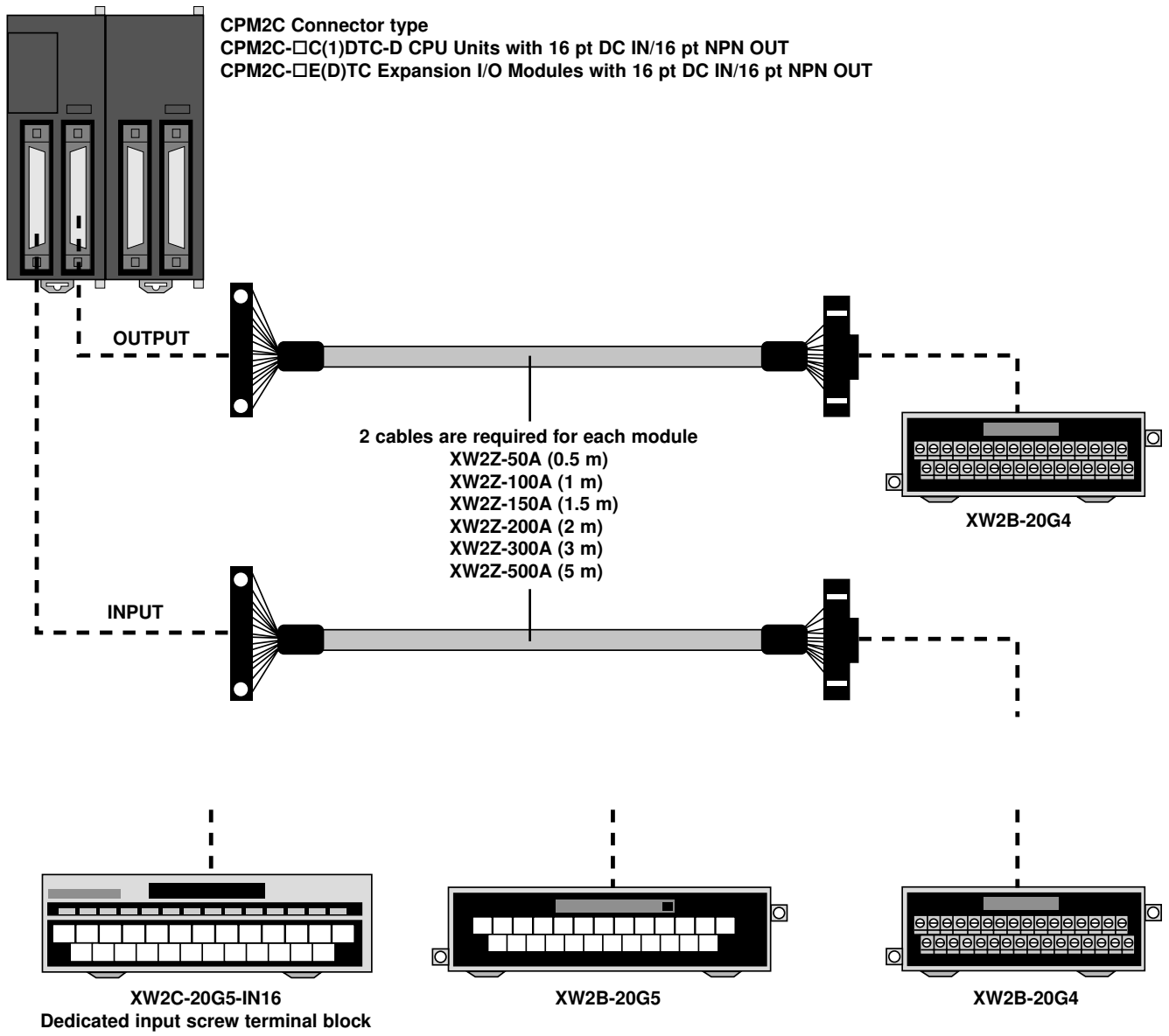
Peripheral port (New type: CS1, CQM1H, CPM2C)





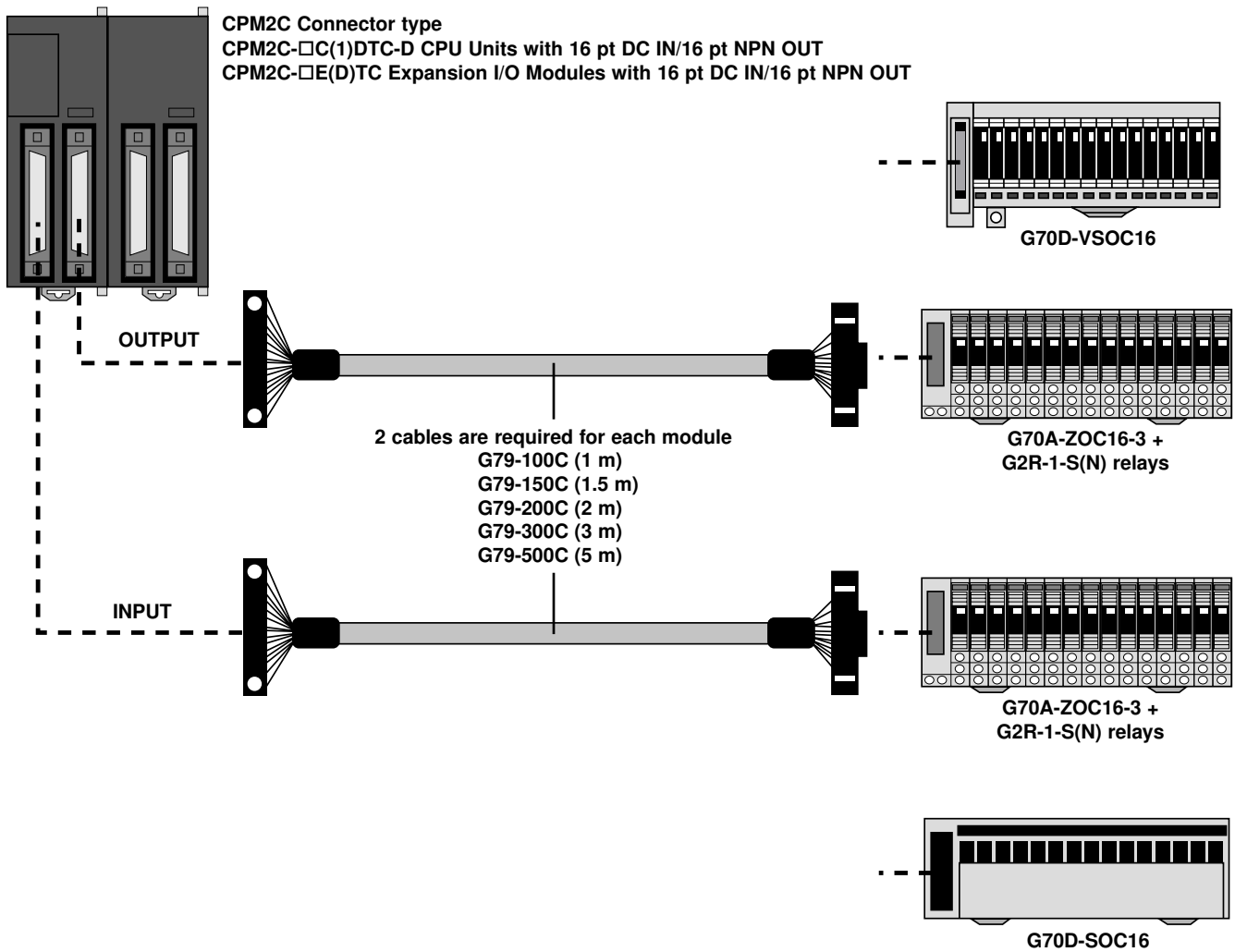
# Reference Information

## CPM2C CPU and Expansion I/O + XW2B/XW2C 20-pin Screw Terminal Blocks

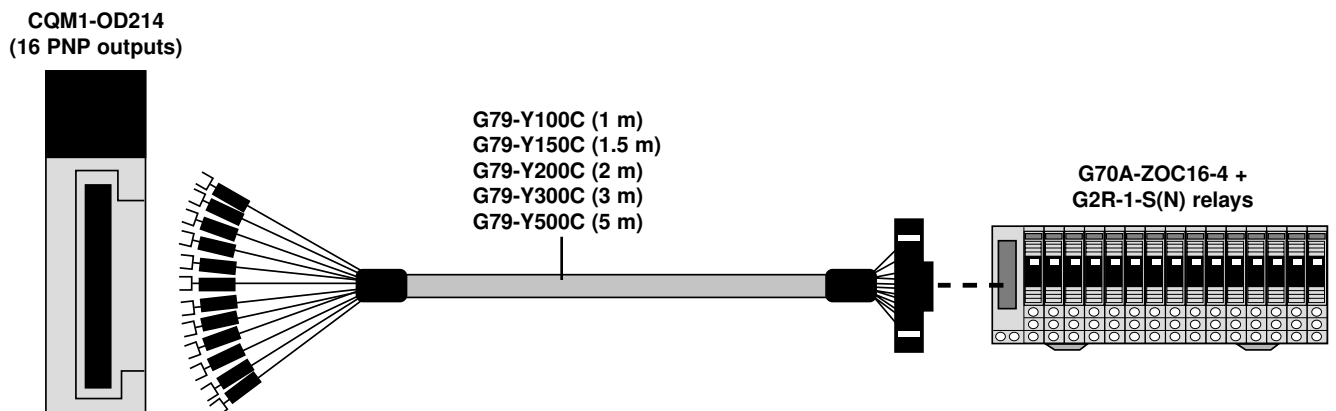


# Reference Information

## CPM2C CPU and Expansion I/O + G70A, G70D Relay I/O Blocks



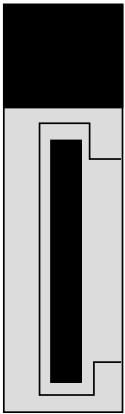
## CQM1H 16-point PNP Output Module + G70A Relay I/O Block



# Reference Information

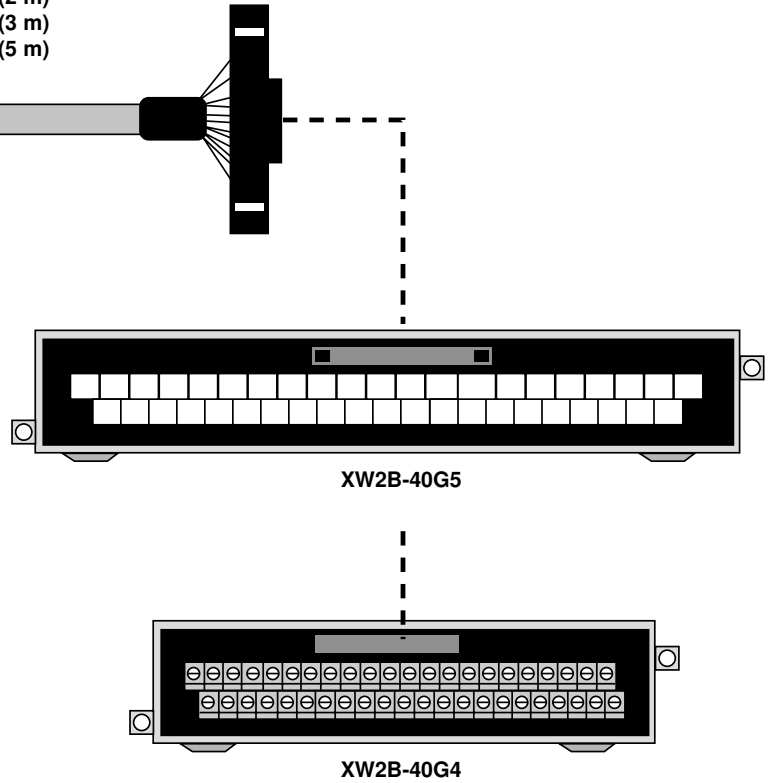
## CQM1H High-Density I/O Modules + XW2B Screw Terminal Blocks

CQM1H 32-Point I/O Modules



- CQM1-ID213 (32 NPN inputs)
- CQM1-ID214 (32 NPN inputs)
- CQM1-OD213 (32 NPN outputs)
- CQM1-OD216 (32 PNP outputs)

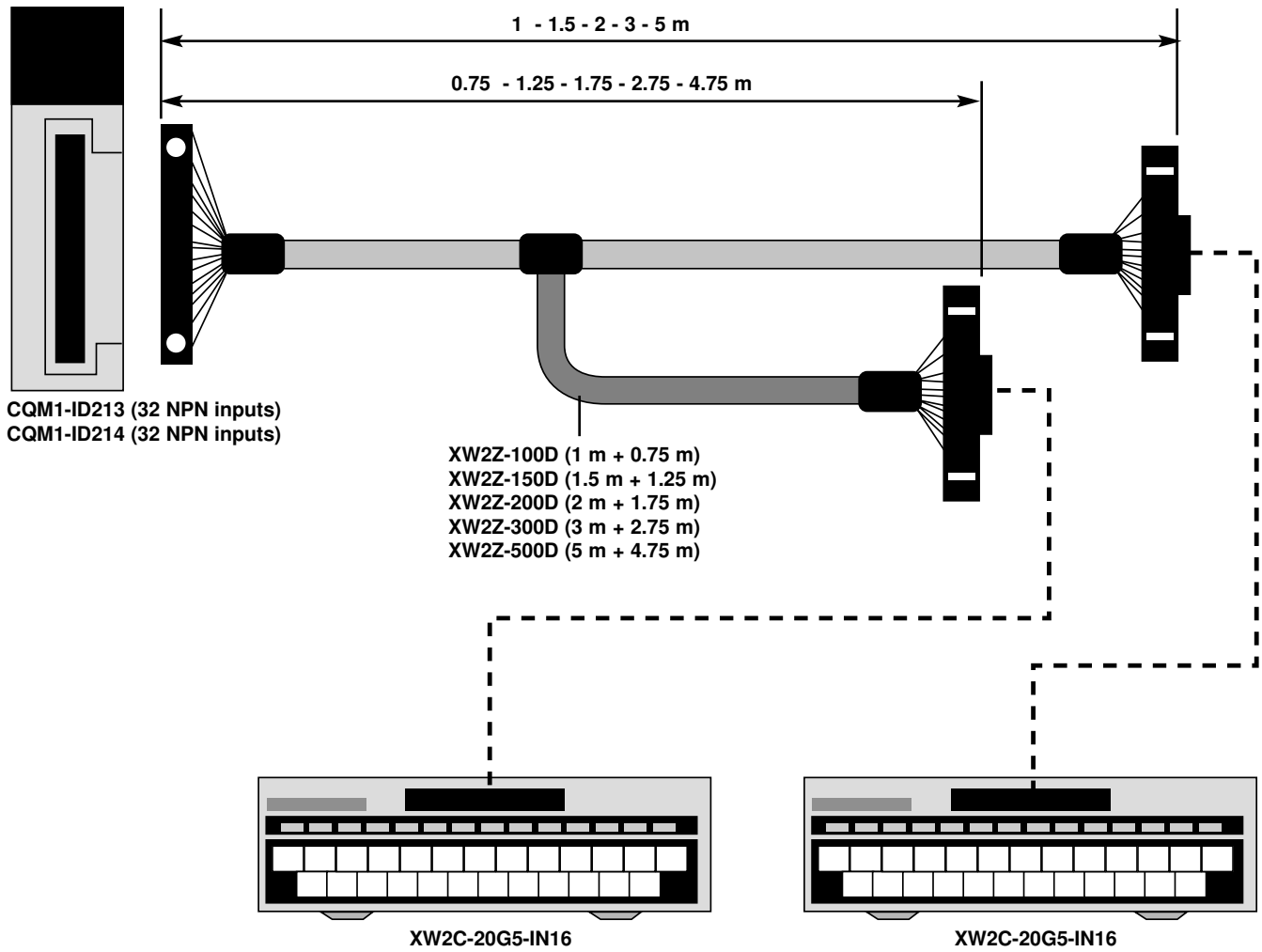
- XW2Z-50B (0.5 m)
- XW2Z-100B (1 m)
- XW2Z-150B (1.5 m)
- XW2Z-200B (2 m)
- XW2Z-300B (3 m)
- XW2Z-500B (5 m)



# Reference Information

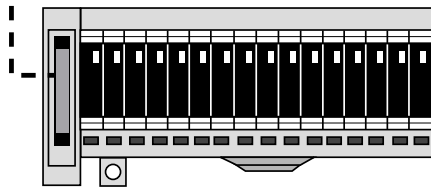
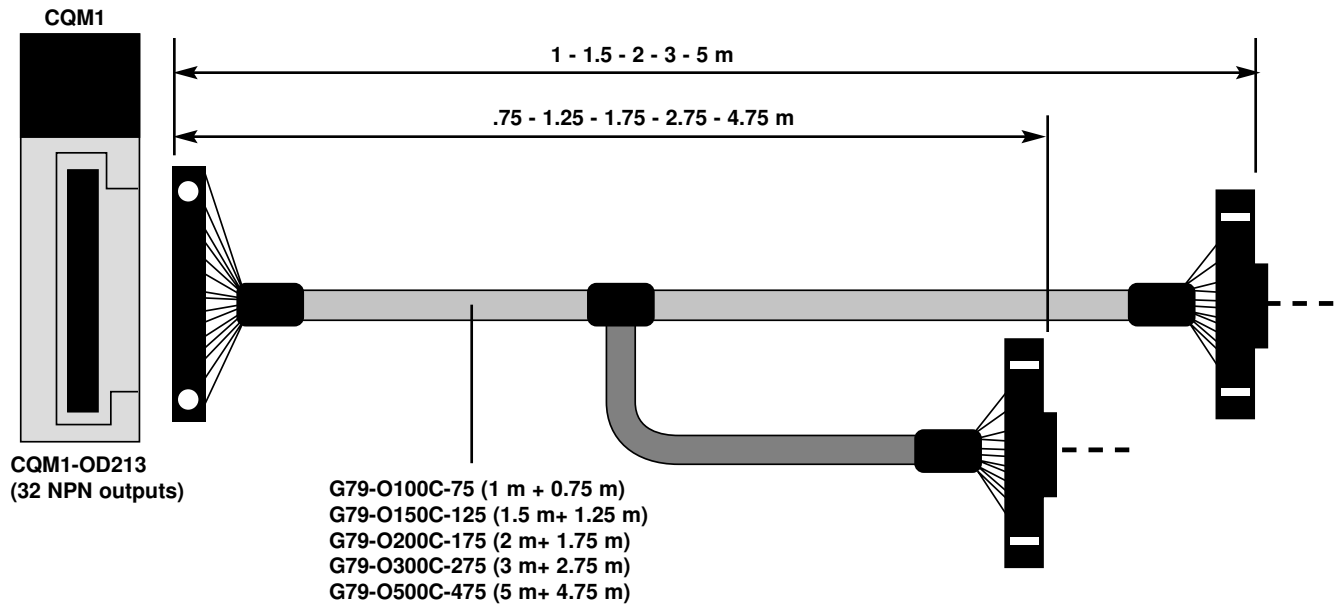
## CQM1H High-Density Input Modules + XW2C Input Screw Terminal Blocks

CQM1H 32-Point Input Modules

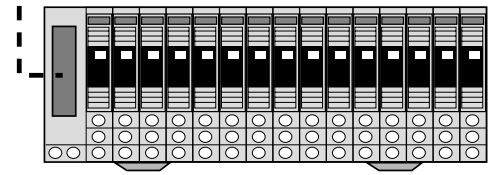


# Reference Information

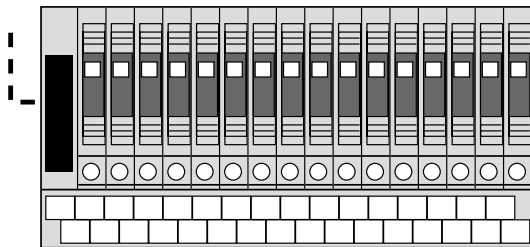
## CQM1H High-Density Output Modules + Output Relay Blocks



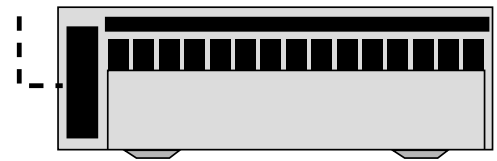
**G70D-VSOC16**



**G70A-ZOC16-3 +  
G2R-1-S(N) relays**



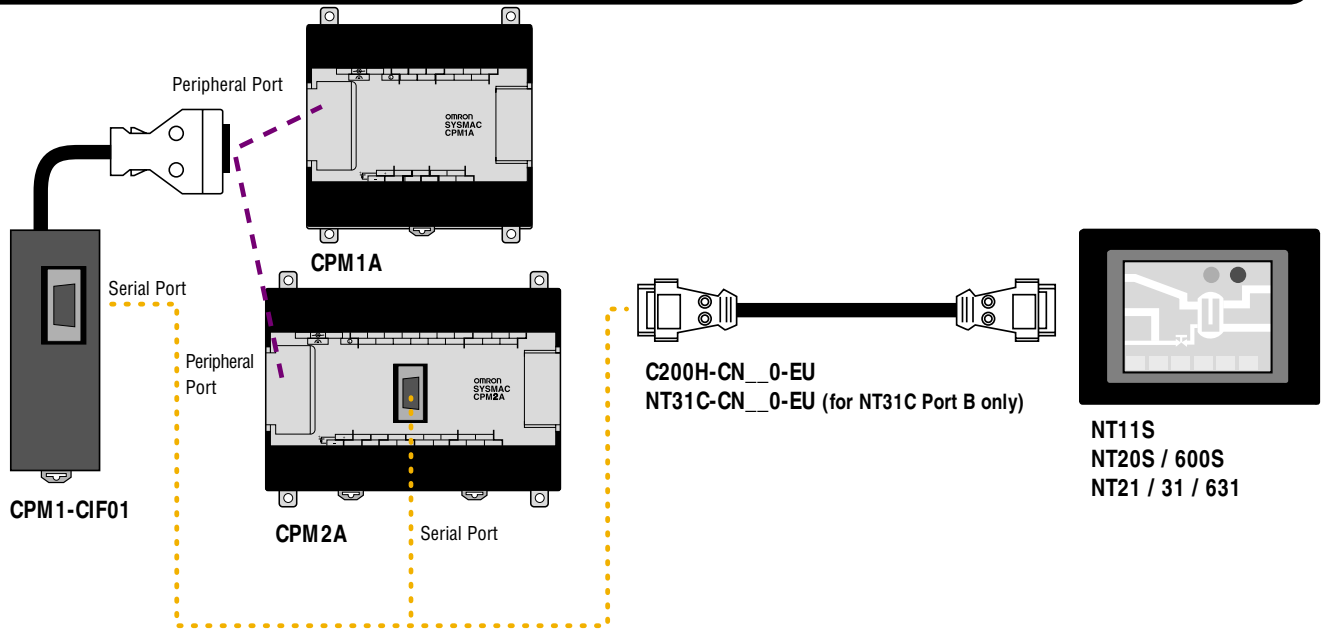
**G7TC-OC16 Relay Block or  
P7TF-OS16 Block Base with  
G7T-1112S Relays or  
G3TA-ODX02S SSRs**



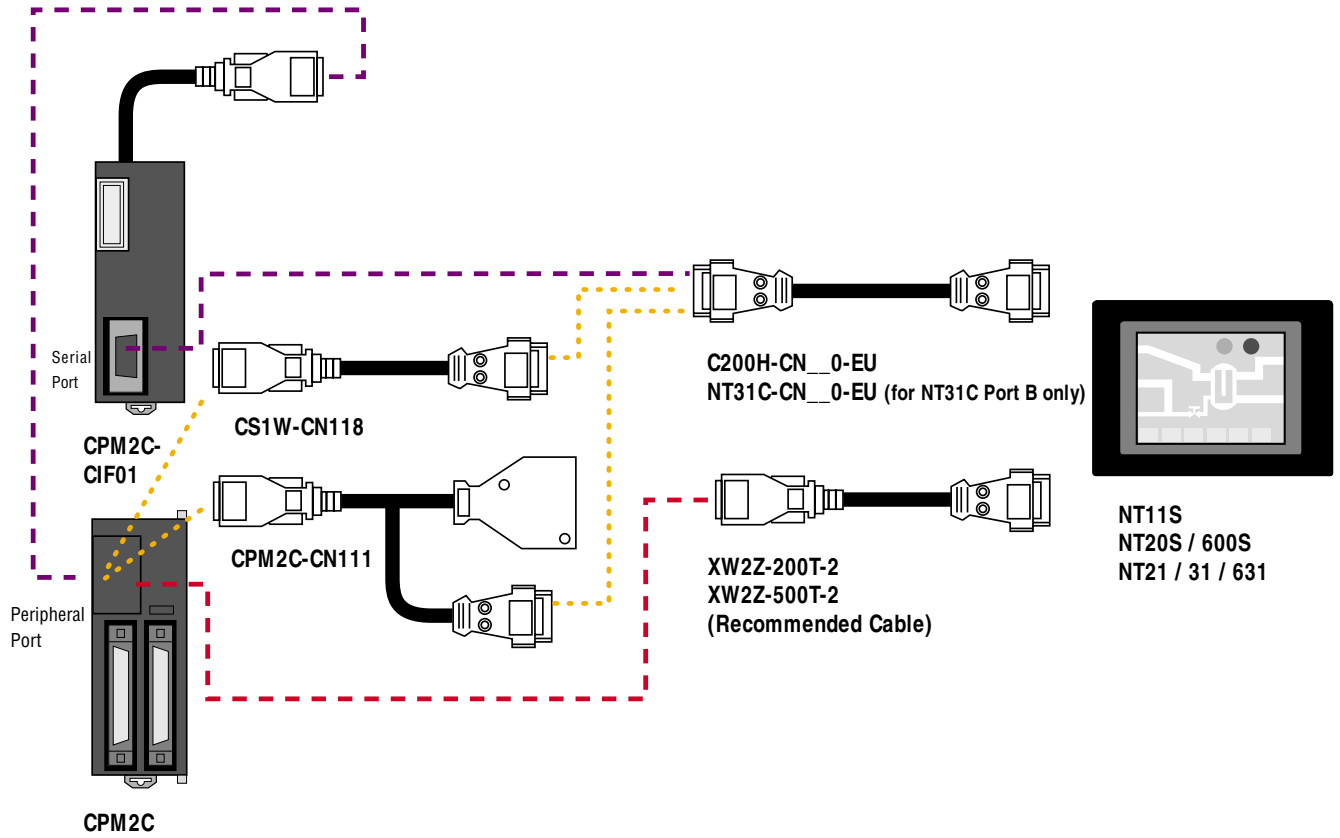
**G70D-SOC16**

# Cable Solutions for Omron PLCs

## Operator Interface Terminals and CPM1A/CPM2A

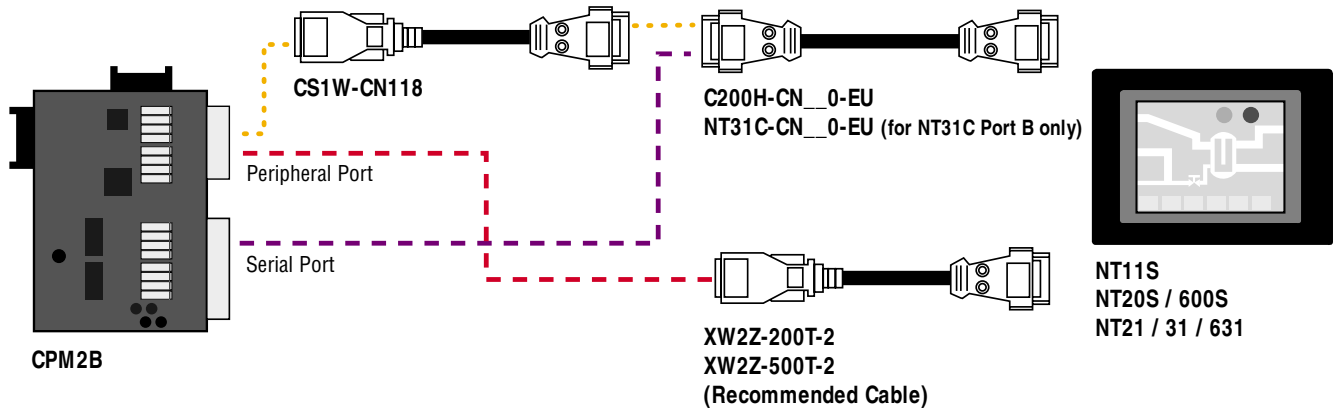


## Operator Interface Terminals and CPM2C PLC

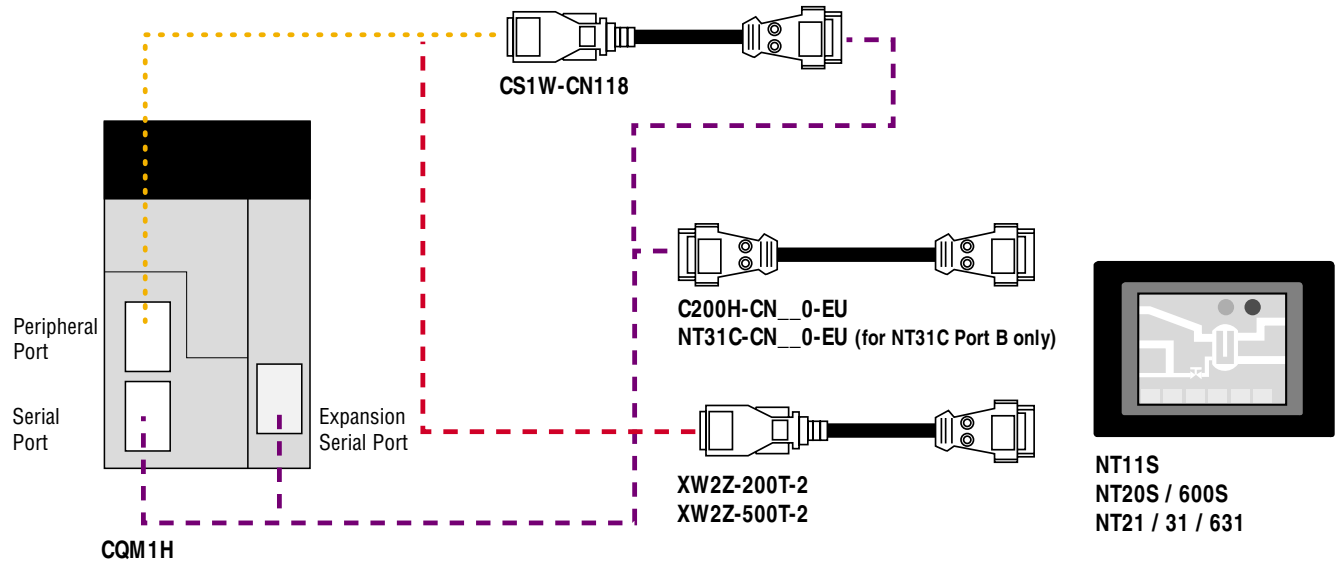


# Cable Solutions for Omron PLCs

## Operator Interface Terminals and CPM2B PLC

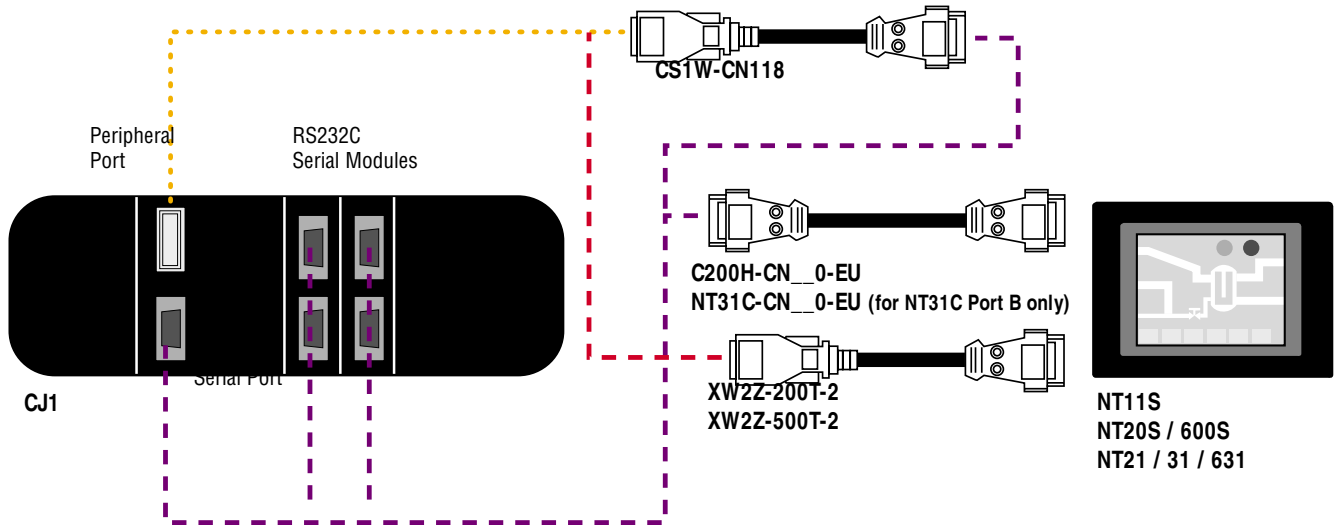


## Operator Interface Terminals and CQM1H PLC

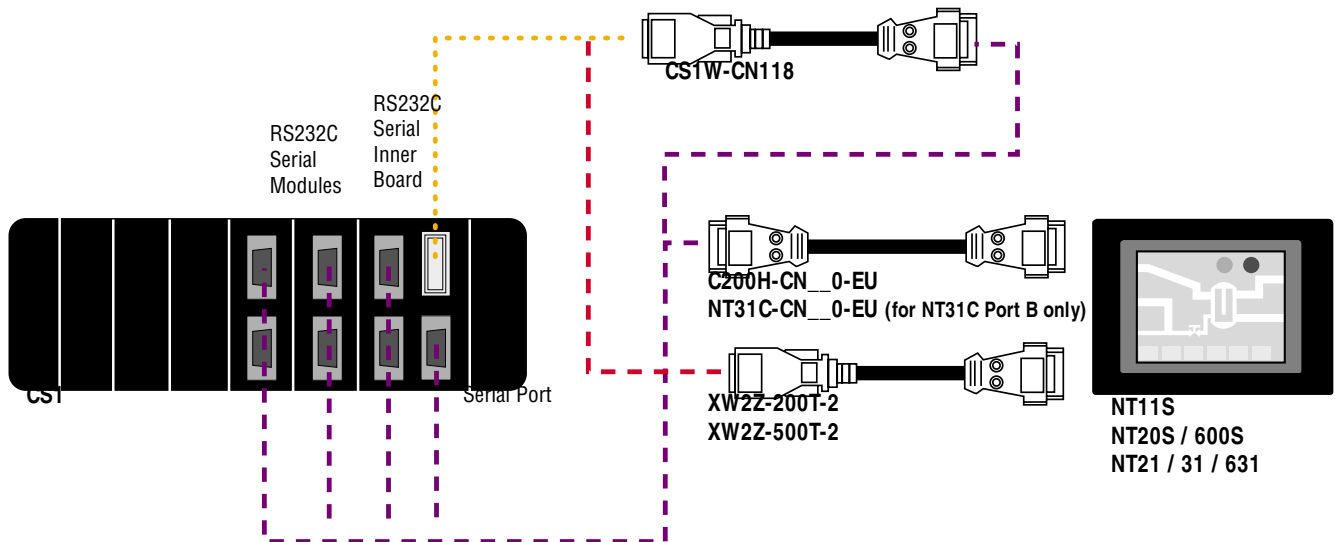


# Cable Solutions for Omron PLCs

## Operator Interface Terminals and CJ1 PLC



## Operator Interface Terminals and CS1 PLC





# Cable Solutions for Omron PLCs

## NT2S Message Display and Programmable Controllers

Peripheral port (Old type: C200H, SRM1, CPM2A, CPM1A)



NT2S-CN212 (2 m)  
NT2S-CN215 (5 m)

NT2S-SF121



NT2S-CN222-V1 (2 m)  
NT2S-CN225-V1 (5 m)

NT2S-SF122/123

Peripheral port (New type: CJ1, CS1, CQM1H, CPM2C)



NT2S-CN223-V1 (2 m)

NT2S-SF121



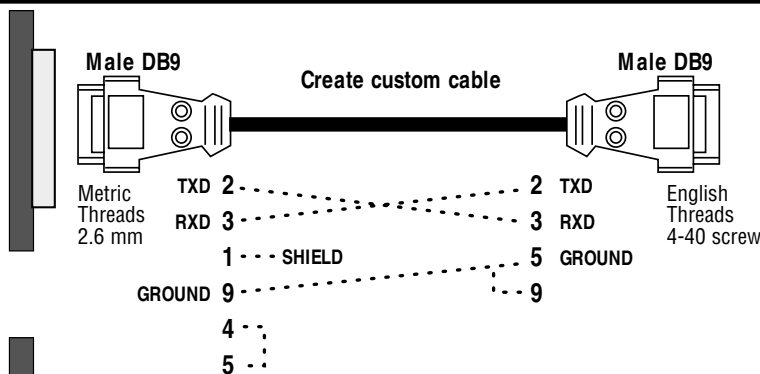
NT2S-CN224-V1 (2 m)

NT2S-SF122/123

## NT2S Custom Cables

Any Omron PLC Serial Port

RS232C

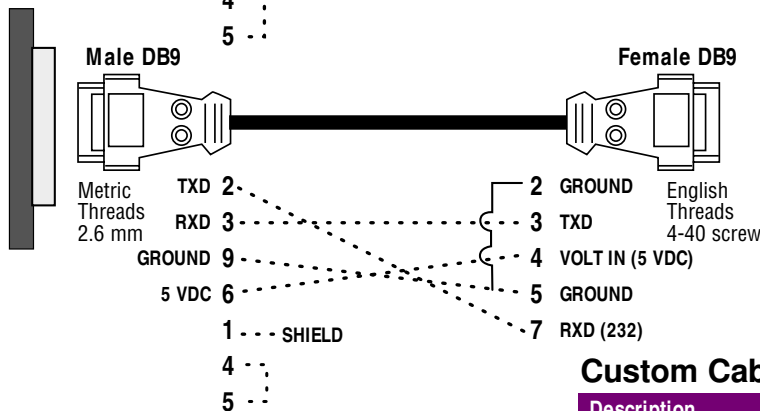


NT2S-SF121

(Purchase Omron's C200H-CN320-EU and short pins 5 and 9 on NT side as shown)

Any Omron PLC Serial Port

RS232C



NT2S-SF122

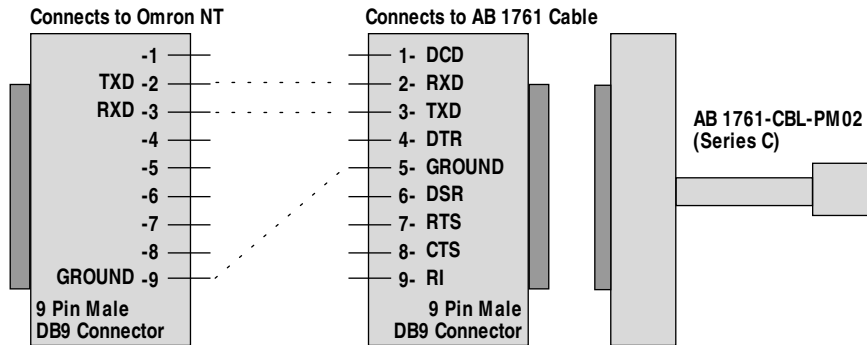
### Custom Cable Ordering Information

Description	Part Number
Metric thread shell and screws - 2.6 mm	XM2S-0911
English thread shell and screws - 4-40 screw	XM2S-0913
Male connector	XM2A-0901
Female connector	XM2D-0901

# Cable Solutions for Multi-Vendor PLCs

## Allen Bradley MicroLogix 1200

An alternative cable configuration uses a custom RS-232 9-to-9 PIN cable connecting to the Allen-Bradley 1767-CBL-PM02(Series C). The diagram below shows the pinouts for the custom RS-232 cable:



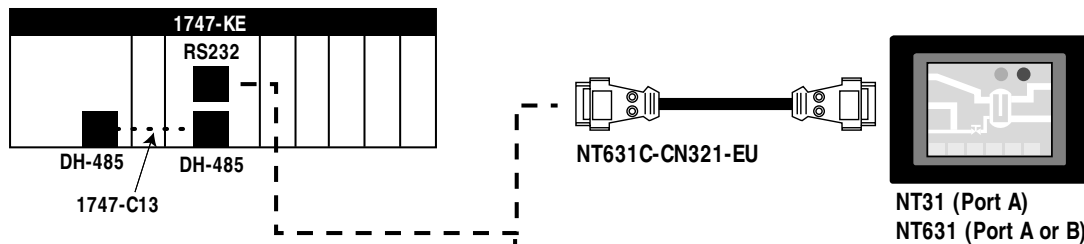
### AB MicroLogix 1200 Communication Cables

1761-CBL-PM02(Series C) DB9 to 8 pin mini-din connector (order from AB)

## Allen Bradley SLC 5/02

Communicates via AB's DF1 protocol. This PLC comes with only a DH-485 port. The Allen-Bradley 1747-KE module must be purchased to provide a serial connection on the SLC 5/02. Connect the communication cable from the NT to the serial port on the 1747-KE module.

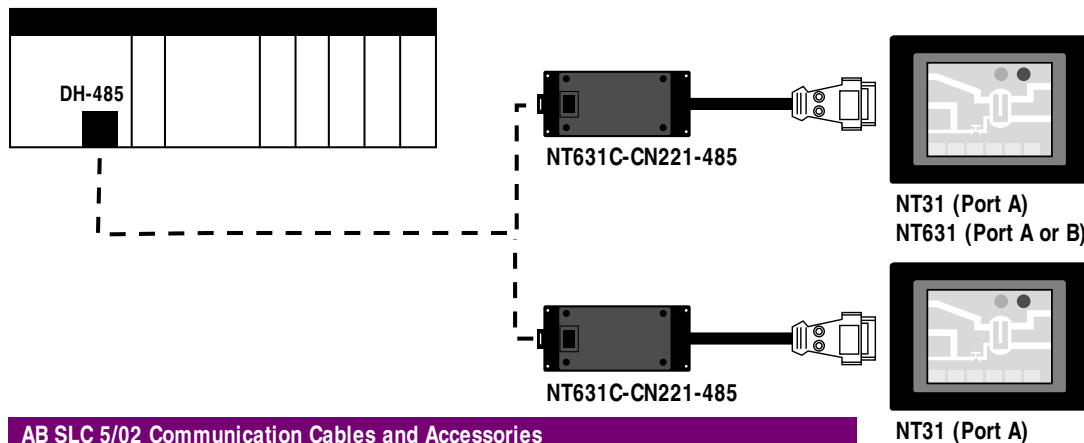
### AB SLC 5/02



## Allen Bradley SLC 5/00, 5/01, 5/02

This cable can only be used in 1:1 connection with DH485 port.

### AB SLC 5/00, 5/01, 5/02



### AB SLC 5/02 Communication Cables and Accessories

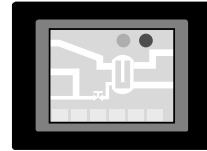
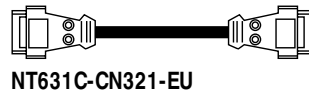
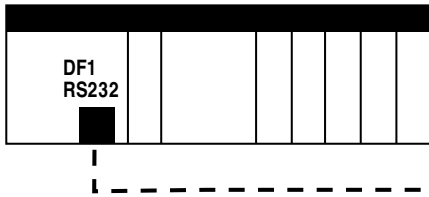
NT31C-CN321-EU	3.0 m cable, 25 to 9 pin, NT to AB SLC PLC
NT631C-CN321-EU	3.0 m cable, 9 to 9 pin, NT to AB SLC PLC
1747-KE	DB9 Serial Port Module (order from AB)
1747-C13	DH-485 module connection cable
V060-E1-2	Operation Manual – Multi-vendor Connection

# Cable Solutions for Multi-Vendor PLCs

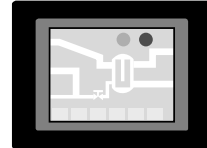
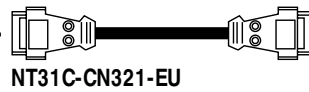
## Allen Bradley SLC 5/03, 5/04, 5/05

Communicates via AB's DF1 protocol. Connect the communication cable from the NT to a serial port on the PLC using Omron cable part numbers.

### AB SLC 5/03, 5/04, 5/05



NT31 (Port A)  
NT631 (Port A or B)

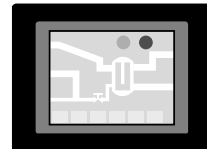
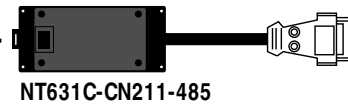
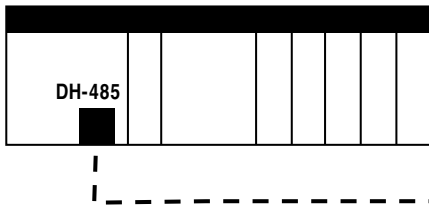


NT31 (Port B)

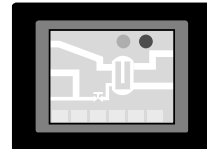
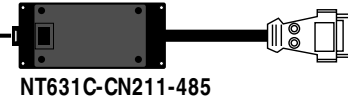
## Allen Bradley SLC 5/03, 5/04, 5/05

This cable can only be used in 1:1 connection with DH485 port.

### AB SLC 5/03, 5/04, 5/05



NT31 (Port A)  
NT631 (Port A or B)



NT31 (Port A)

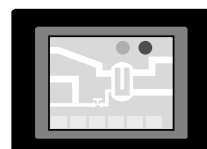
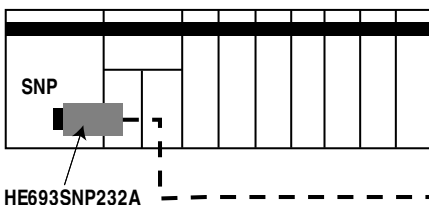
### AB SLC 5/02 Communication Cables and Accessories

NT31C-CN321-EU	3.0 m cable, 25 to 9 pin, NT to AB SLC PLC
NT631C-CN321-EU	3.0 m cable, 9 to 9 pin, NT to AB SLC PLC
V060-E1-2	Operation Manual – Multi-vendor Connection

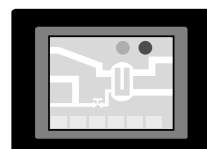
## GE 90-20 and 90-30 Series PLCs

Communicates via GE's SNP-X protocol. The Omron NT is communicating RS-232, while the GE PLC uses RS-422. An RS232 to RS422 converter (HE693SNP232A) is needed to complete communications.

### GE 90-20 and 90-30 Series



NT31 (Port A)  
NT631 (Port A or B)



NT31 (Port B)

### GE 90-20 and 90-30 Series Communication Cables and Accessories

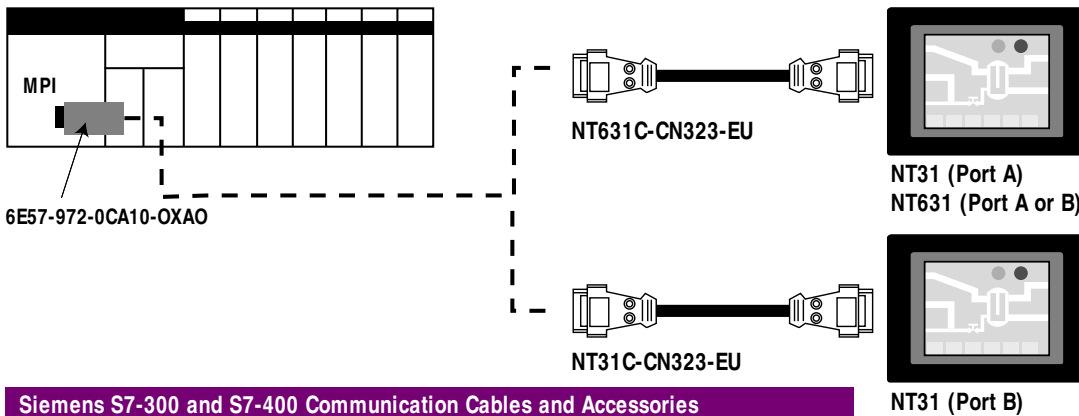
NT31C-CN322-EU	3.0 m cable, 25 to 9 pin, NT to GE PLC
NT631C-CN322-EU	3.0 m cable, 9 to 9 pin, NT to GE PLC
HE693SNP232A	RS232 to RS422 adapter (order from GE)
V060-E1-2	Operation Manual – Multi-vendor Connection

# Cable Solutions for Multi-Vendor PLCs

## Siemens S7-300 and S7-400 Series PLCs

Communicates with Siemens HMI Adapter protocol. The Omron NT is communicating RS-232 to the Siemens HMI adapter, 6E57-972-OCA10-OXA0. The adapter is necessary to convert the HMI Adapter protocol into the Siemens proprietary MPI protocol.

### Siemens S7-300 and S7-400 Series

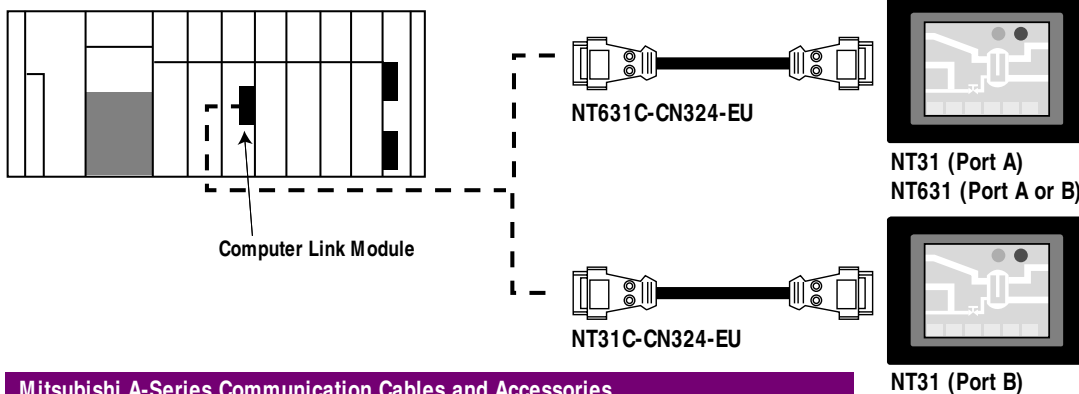


Siemens S7-300 and S7-400 Communication Cables and Accessories	
NT31C-CN323-EU	3.0 m cable, 25 to 9 pin, NT to Siemens PLC
NT631C-CN323-EU	3.0 m cable, 9 to 9 pin, NT to Siemens PLC
6E57-972-OCA10-OXA0	HMI Adapter for MPI protocol (order from Siemens)
V060-E1-2	Operation Manual – Multi-vendor Connection

## Mitsubishi A-Series PLCs

Communicates using Mitsubishi's Computer Link protocol. The Omron NT and the Mitsubishi A-Series PLC are communicating using RS-232 communications. Communications can be RS-422 by using custom cables as specified in Operation Manual V042-E1-1.

### Mitsubishi A-Series



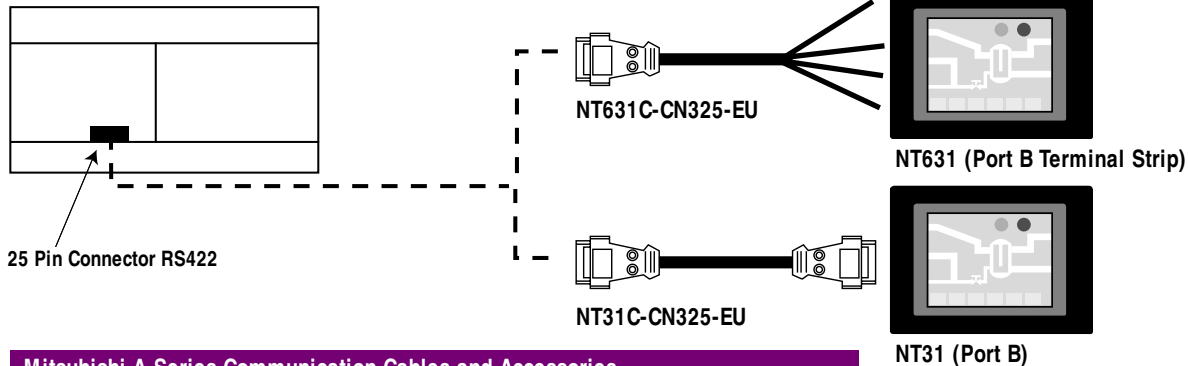
Mitsubishi A-Series Communication Cables and Accessories	
NT31C-CN324-EU	3.0 m cable, 25 to 9 pin, NT to Mits-A PLC
NT631C-CN324-EU	3.0 m cable, 9 to 9 pin, NT to Mits-A PLC
V042-E1-1	Operation Manual – PC (Mitsubishi) Connection

# Cable Solutions for Multi-Vendor PLCs

## Mitsubishi FX-Series PLCs

Communicates via Mitsubishi's Computer Link protocol. The Omron NT and Mitsubishi FX-Series PLC are communicating using RS422 communications. The NT31 cable connects from the 25-pin port B, while the NT631 connects from the RS422 terminal screws for Port B.

### Mitsubishi FX-Series

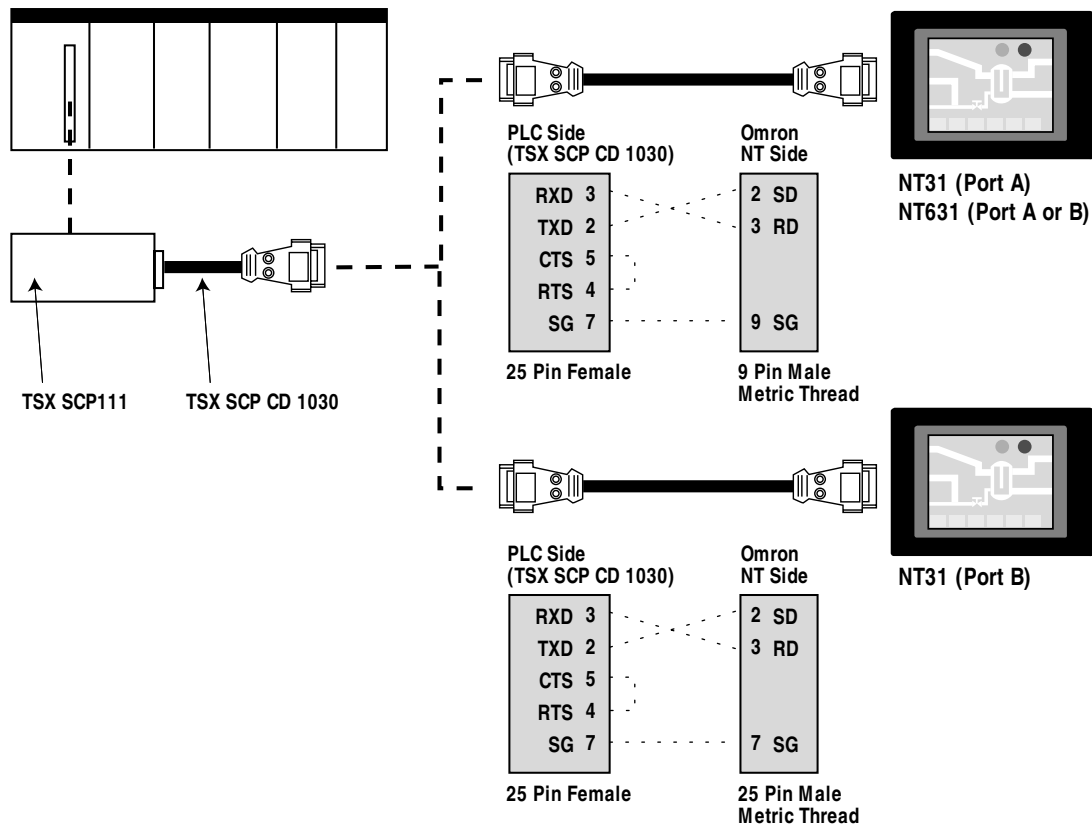


### Mitsubishi A-Series Communication Cables and Accessories

NT31C-CN325-EU	3.0 m cable, 25 to 25 pin, NT to Mits-FX PLC
NT631C-CN325-EU	3.0 m cable, 4 Wires to 25 pin, NT to Mits-FX PLC
FX-20P-CADP	Cable for FX0 & FX0N PLC (buy from Mitsubishi)
V042-E1-1	Operation Manual – PC (Mitsubishi) Connection

## Modicon TSX Micro 37-21/22 & Premium Series PLCs

For RS-232C connection:



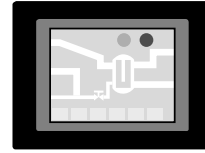
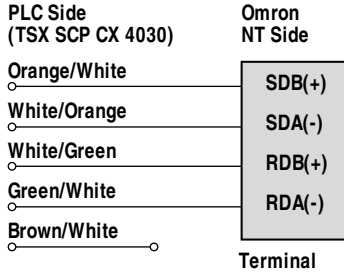
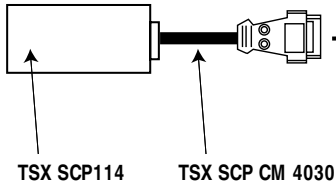
### Modicon TSX Series Communication Cables and Accessories

TSX SCP111	Multi-protocol PCMCIA card for RS-232C
TSX SCP114	Multi-protocol PCMCIA card for RS-422A
TSX SCP CD 1030	Connecting cable for PCMCIA for RS-232C
TSX SCP CM 4030	Connecting cable for PCMCIA for RS-422A

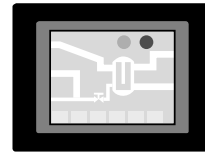
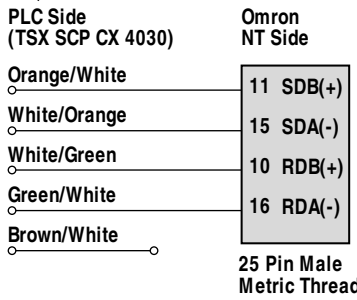
# Cable Solutions for Multi-Vendor PLCs

## Modicon TSX Micro 37-21/22 & Premium Series PLCs

For RS-422A connection:



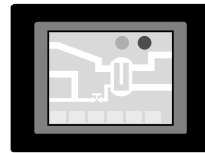
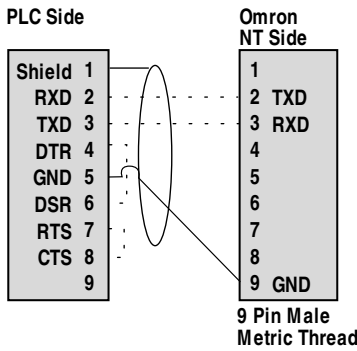
NT631 (Port B Terminal Strip)



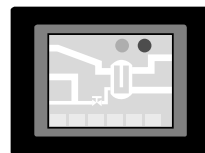
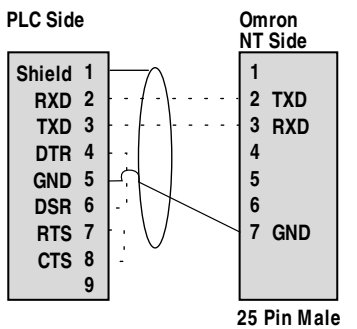
NT31 (Port B)

## Modicon TSX Quantum Series PLCs

For RS-232C connection:



NT31 (Port A)  
NT631 (Port A or B)



NT31 (Port B)



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800.55.OMRON (66766)

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