

# ***PLC Cable and Wiring Guide***

**OMRON®**

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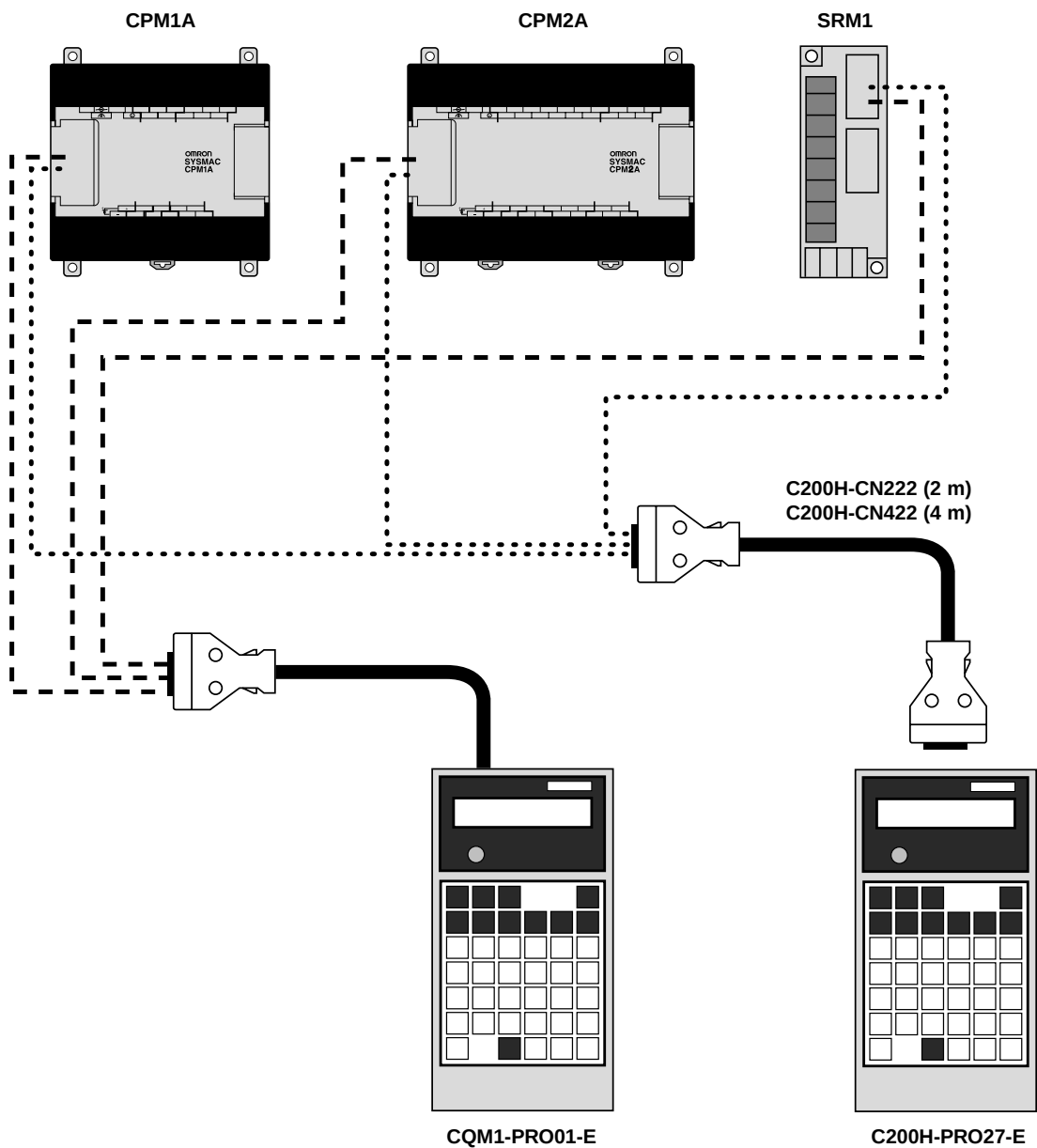
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# Reference Information

## PLC Connections

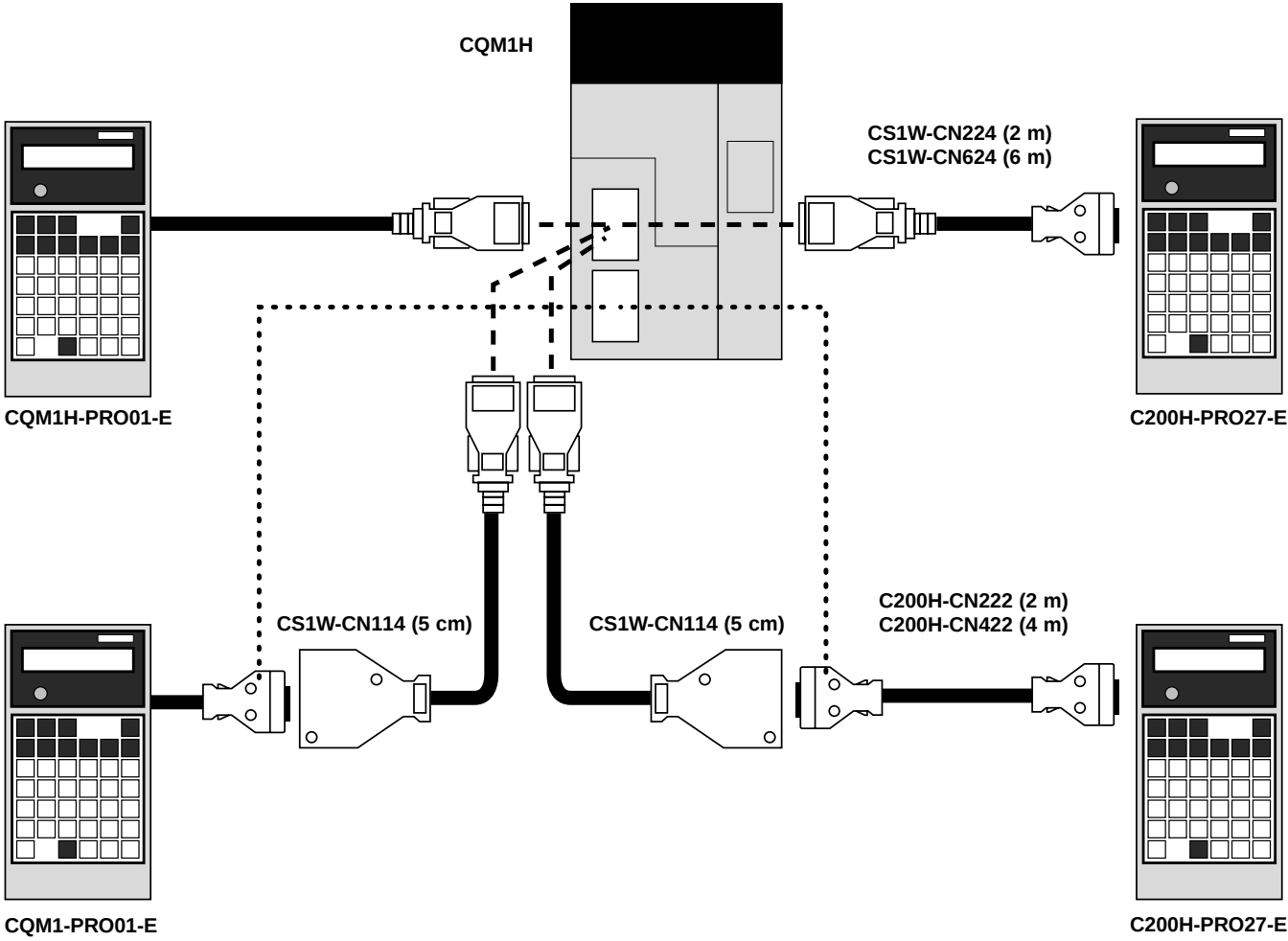
The following pages illustrate the cabling options for connecting Omron programmable controllers with computers, Omron's HMI's, hand-held programmers, high-density I/O modules and I/O terminal blocks.

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



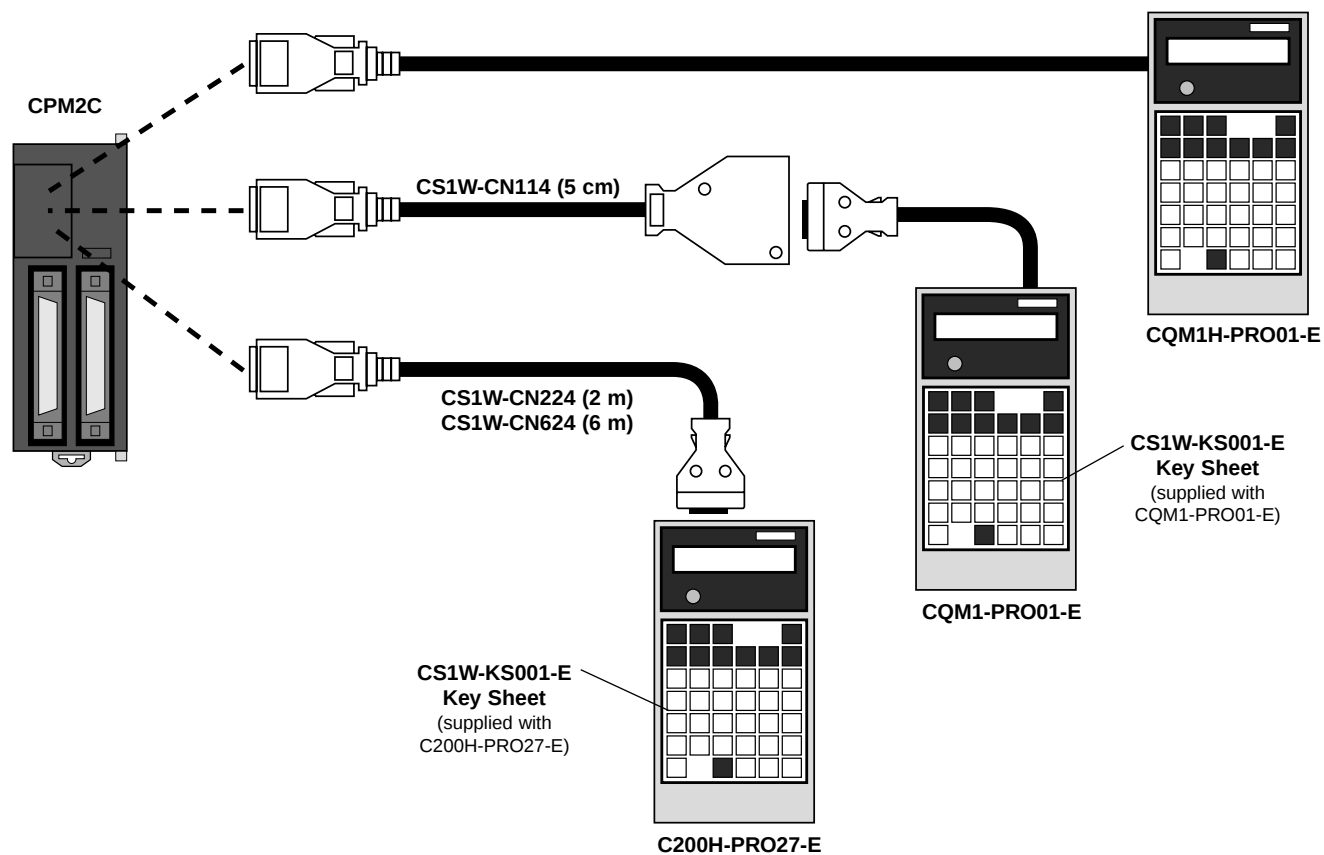
# Reference Information

## Hand-held Programm器和 CQM1H 外围端口



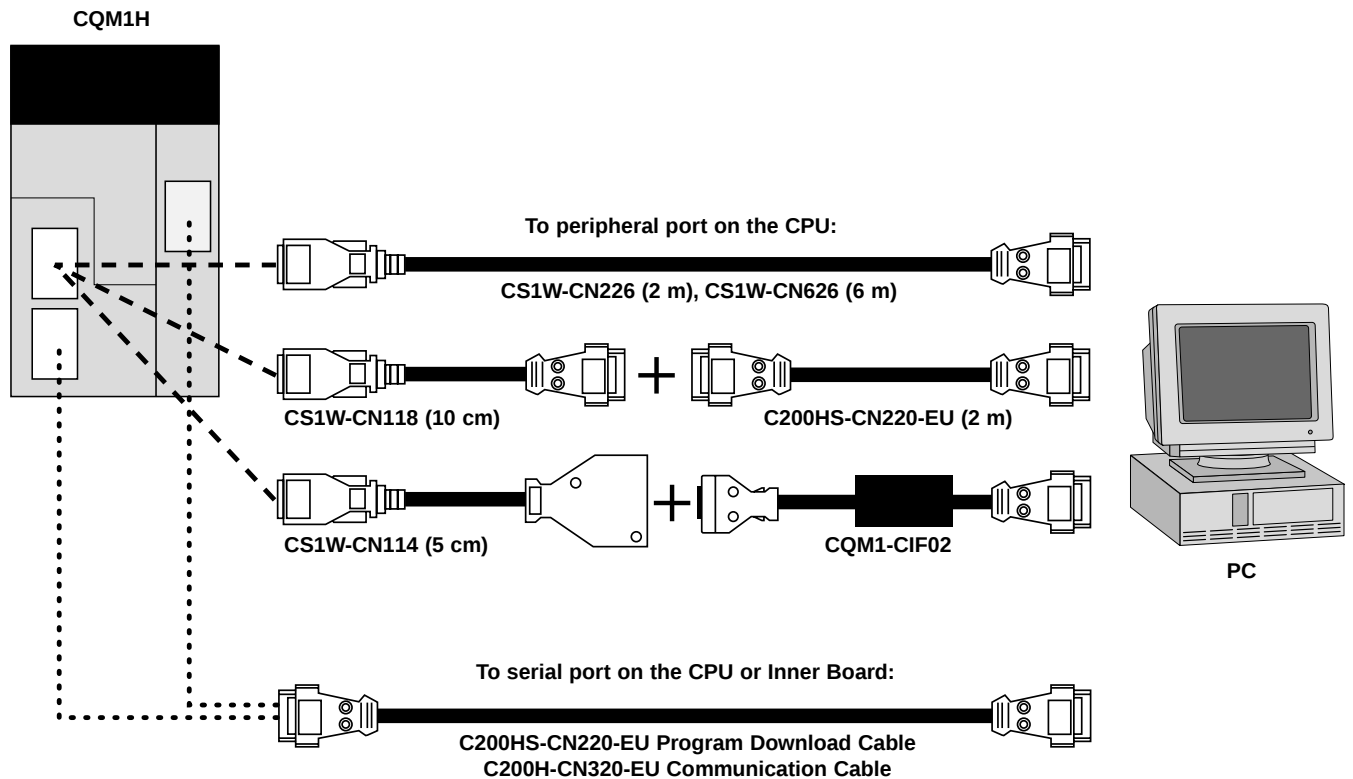
# Reference Information

## Hand-held Programmer and CPM2C Communication Port

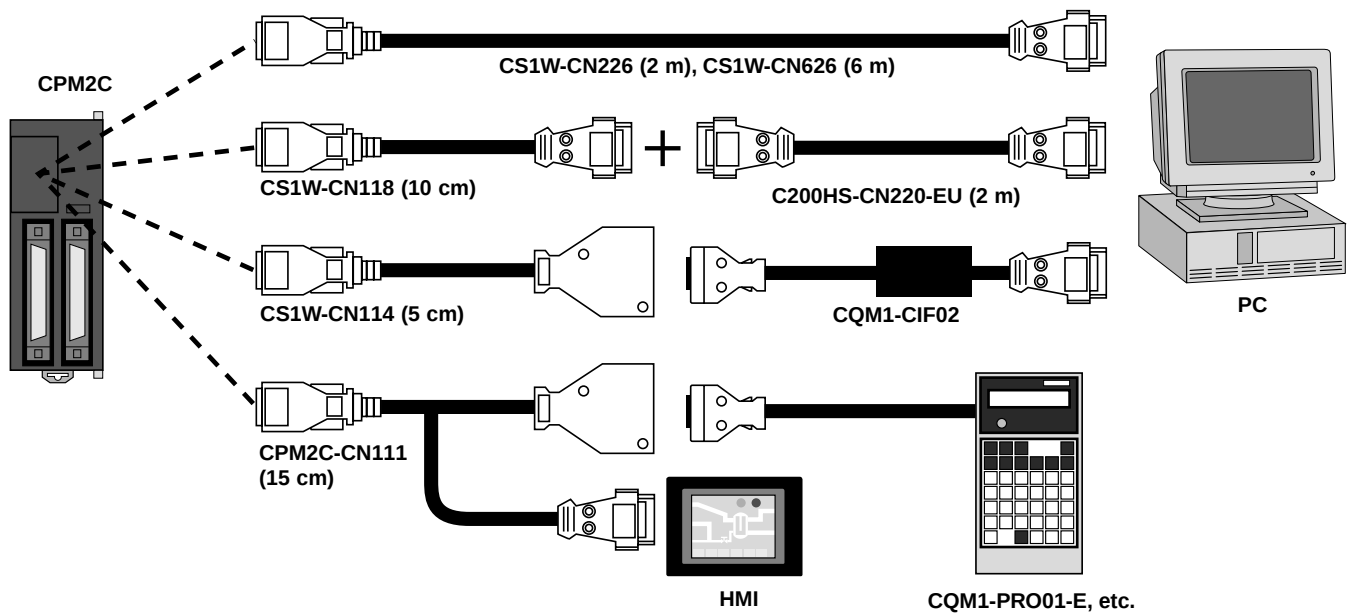


# Reference Information

## CQM1H and PC

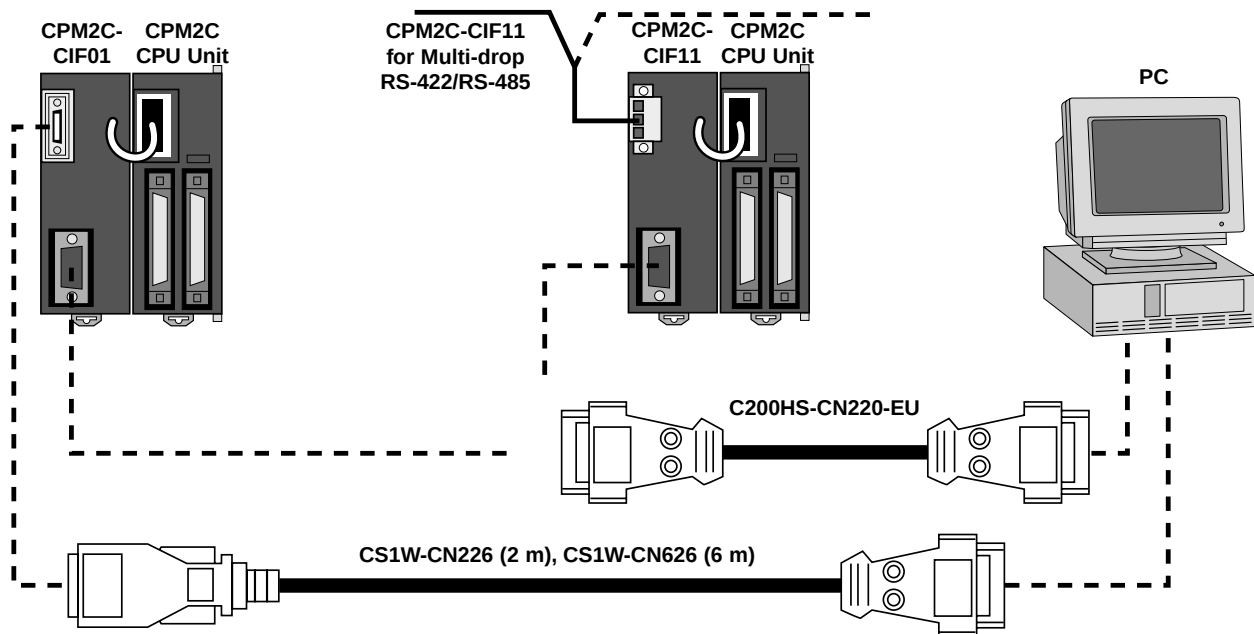


## CPM2C and PC



# Reference Information

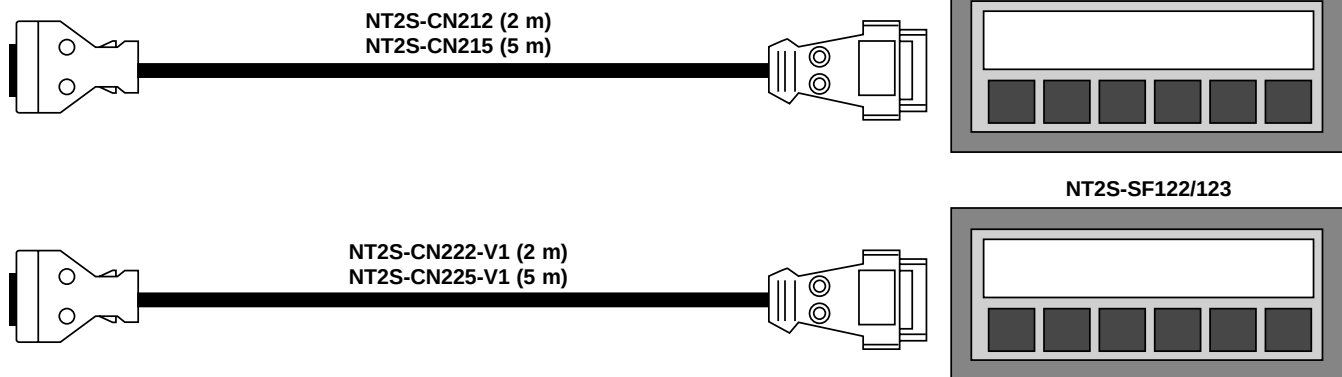
## CPM2C + Serial Communication Adapter and PC



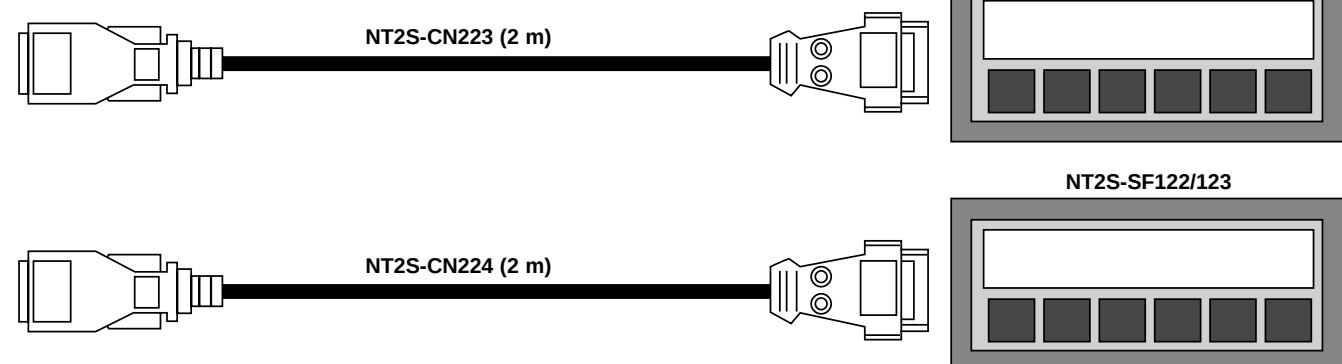
## NT2S Message Display and Programmable Controllers

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

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

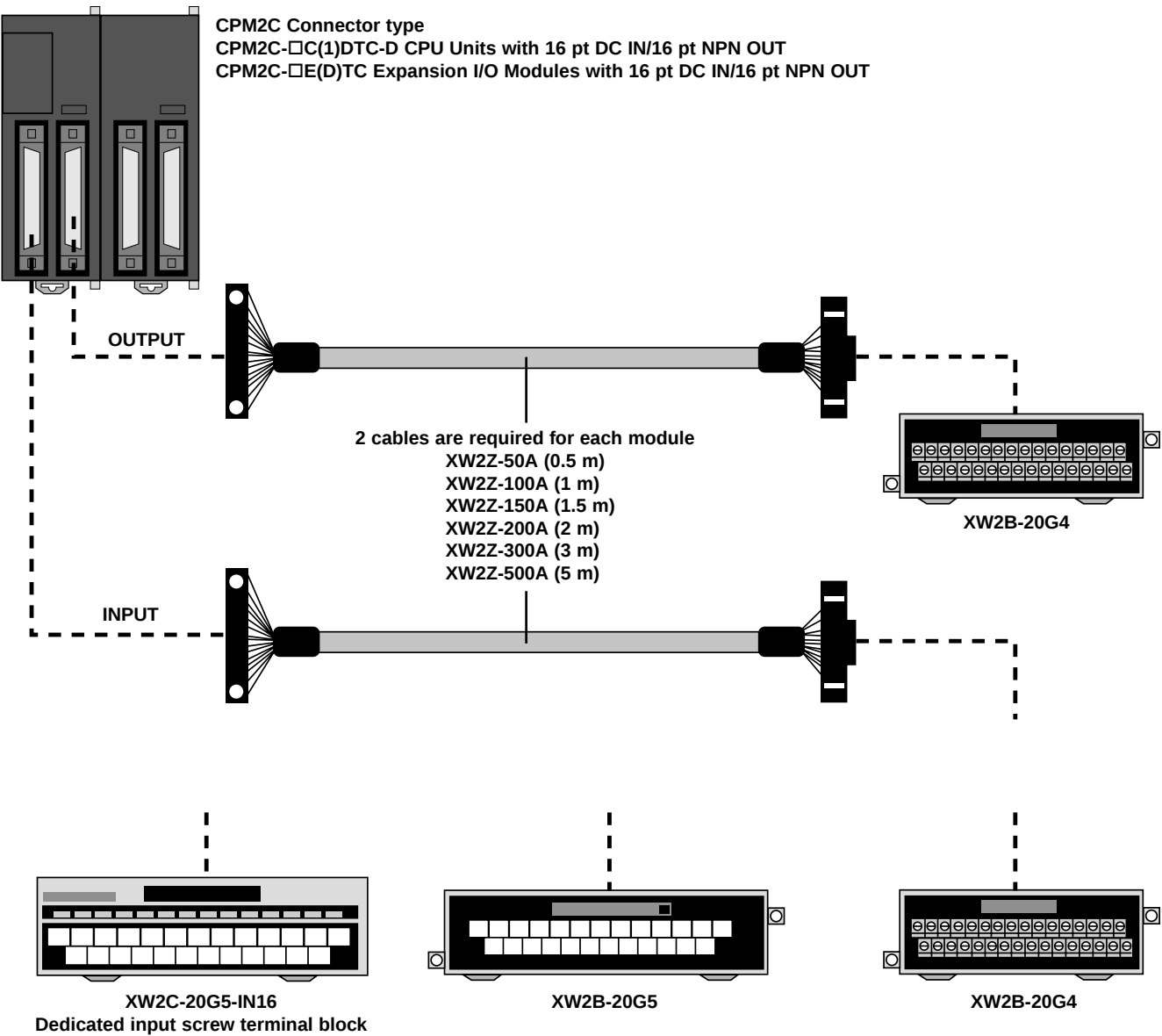


**Peripheral port (New type: CS1, CQM1H, CPM2C)**



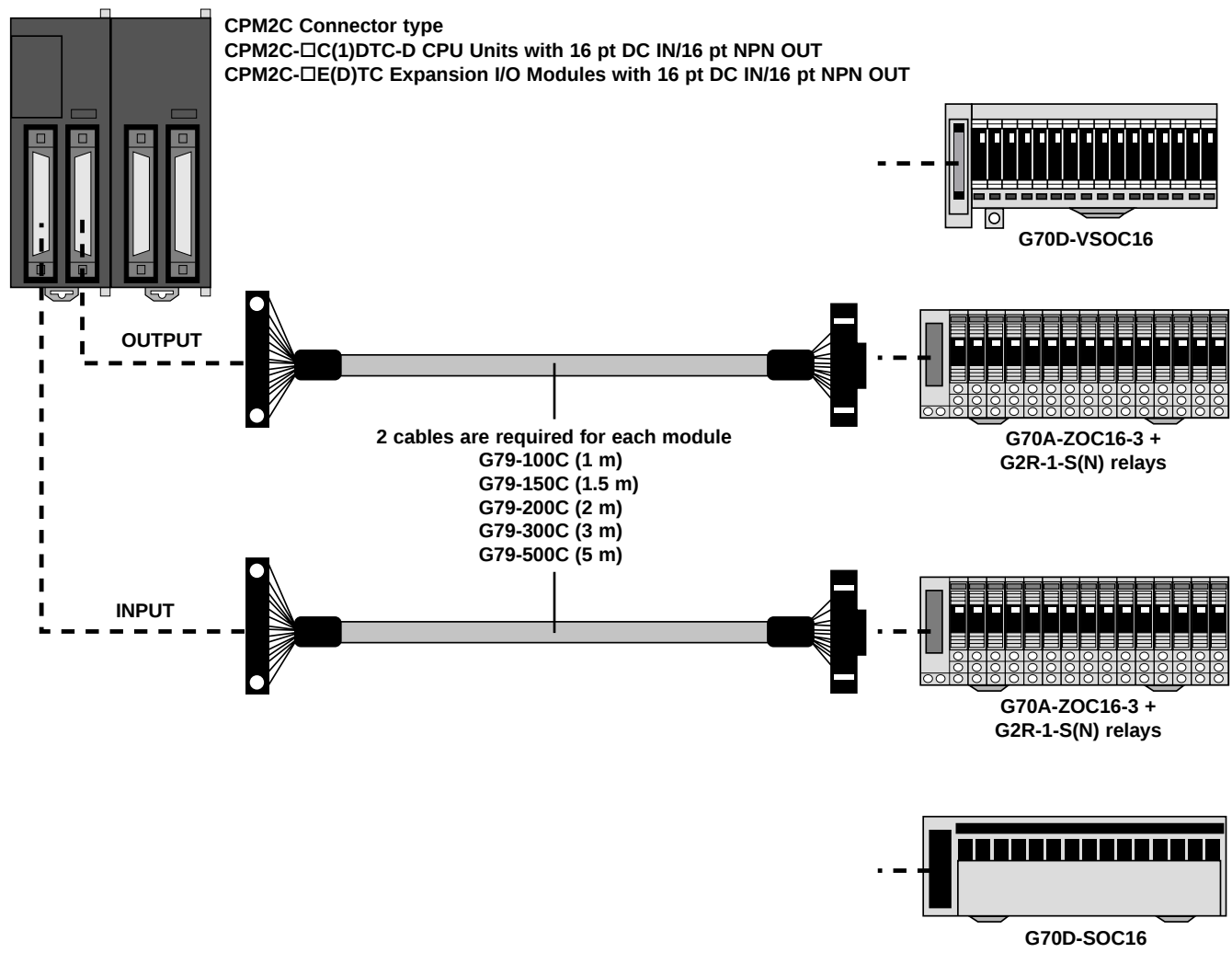
# Reference Information

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

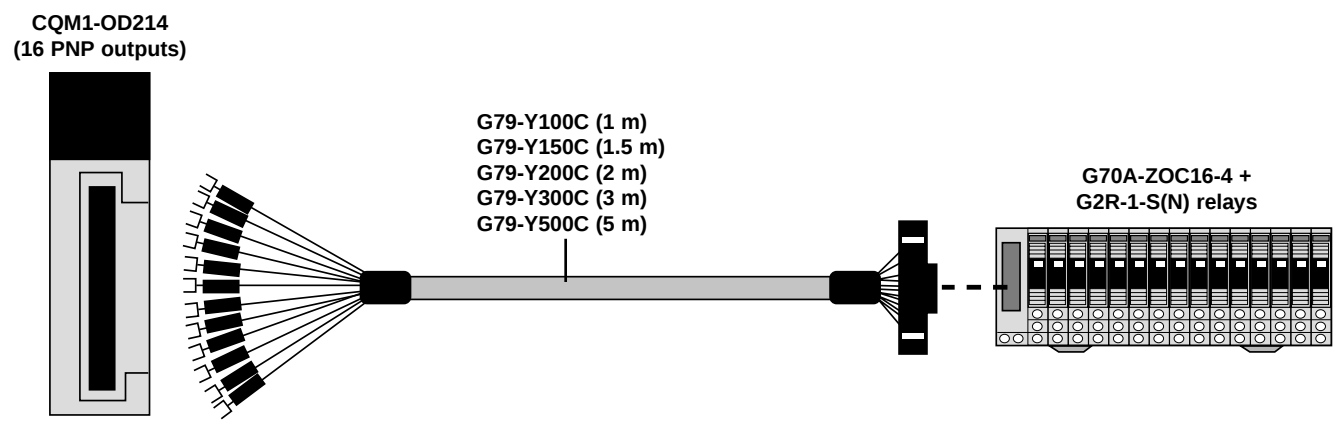


# Reference Information

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



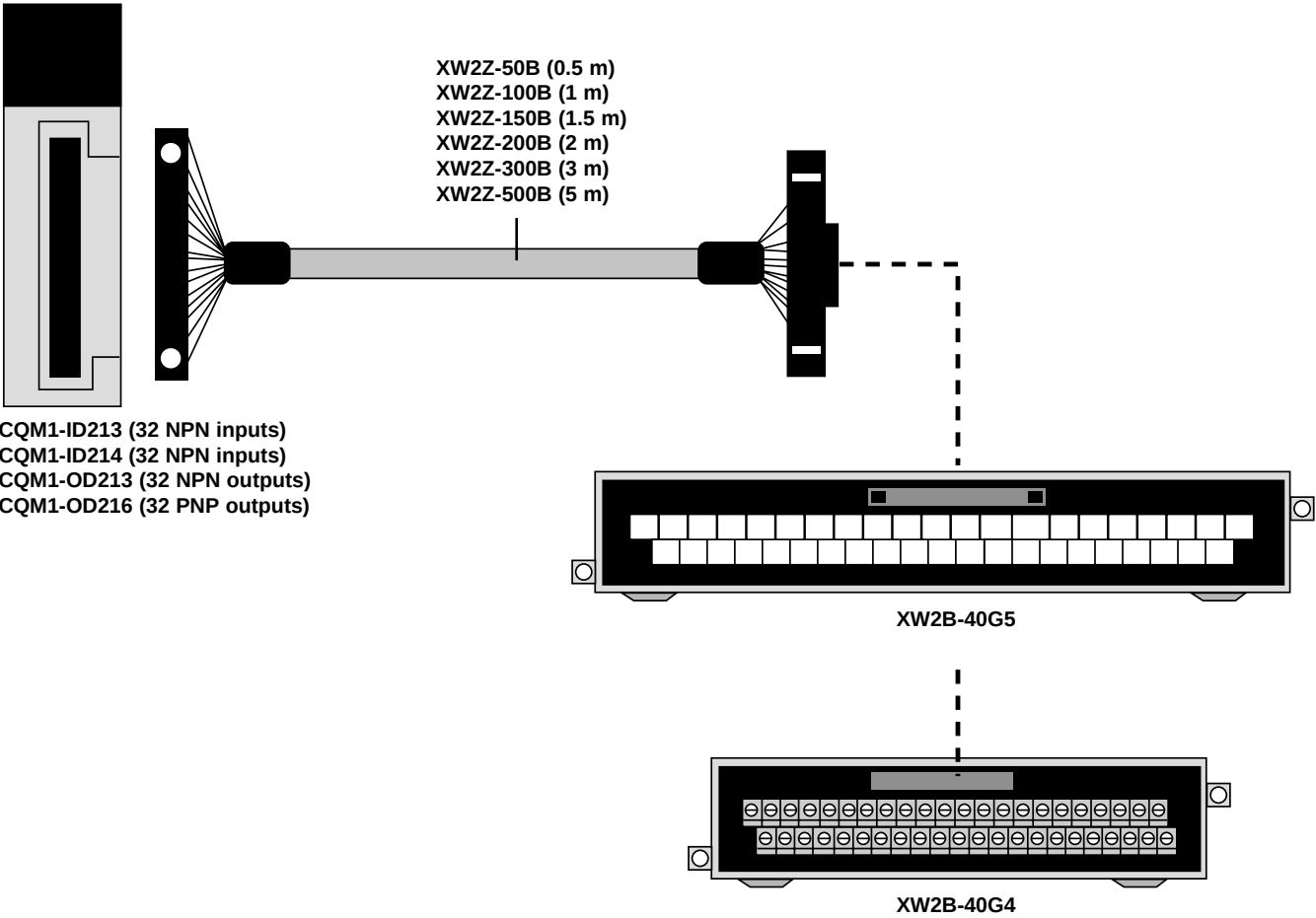
## CQM1H 16-point PNP Output Module + G70A Relay I/O Block



# Reference Information

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

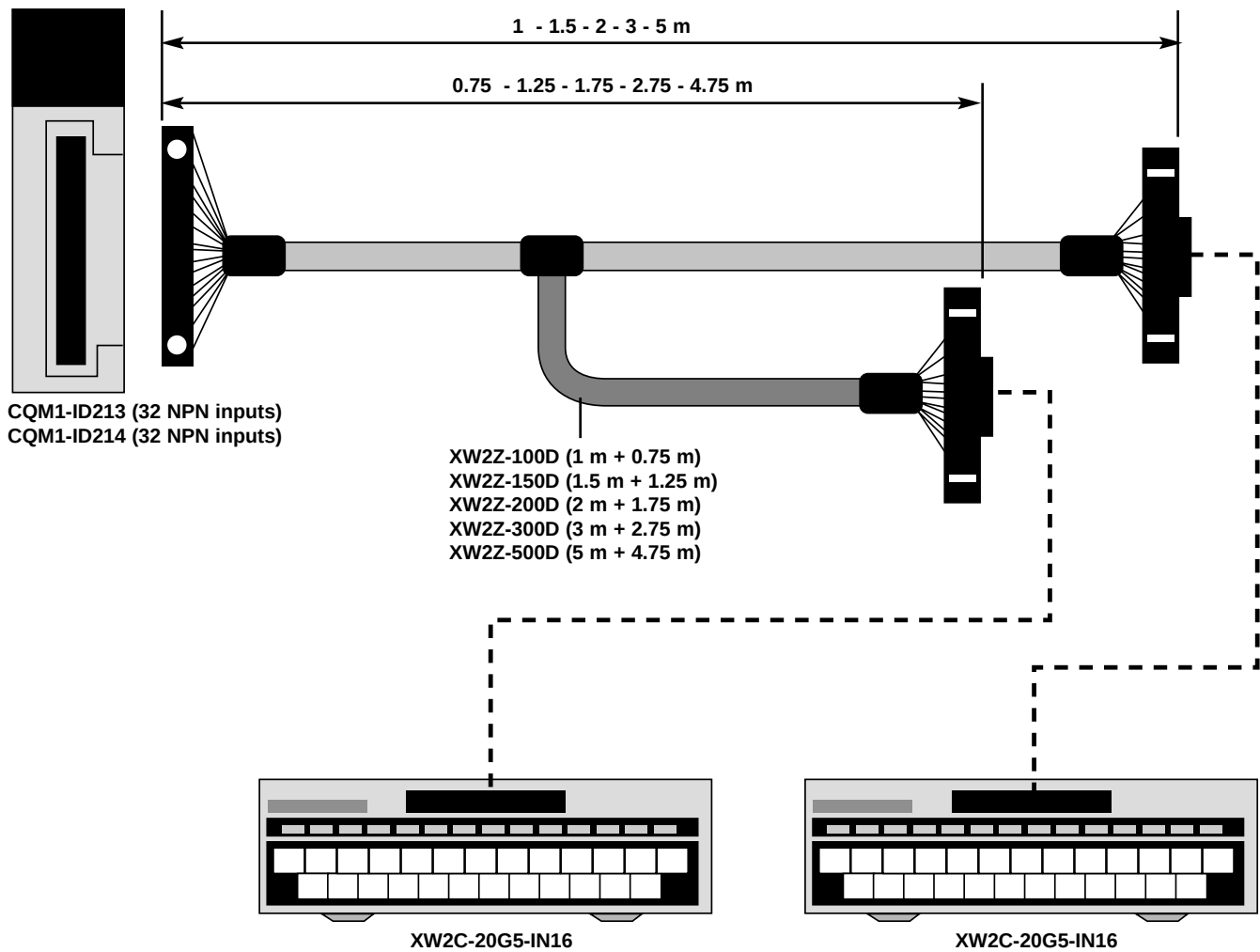
CQM1H 32-Point I/O Modules



# Reference Information

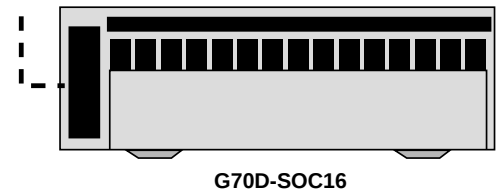
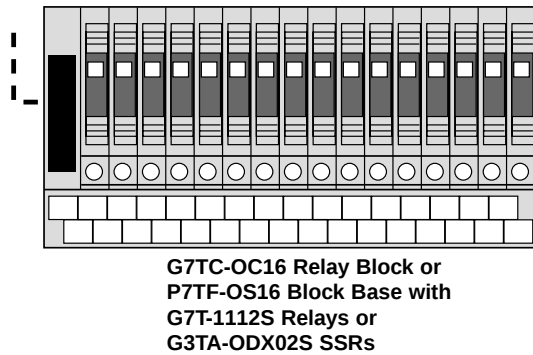
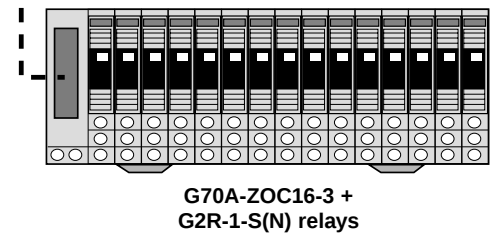
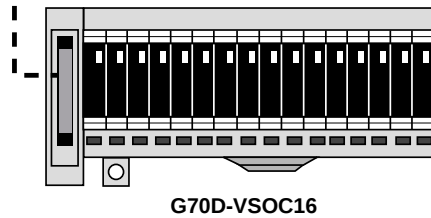
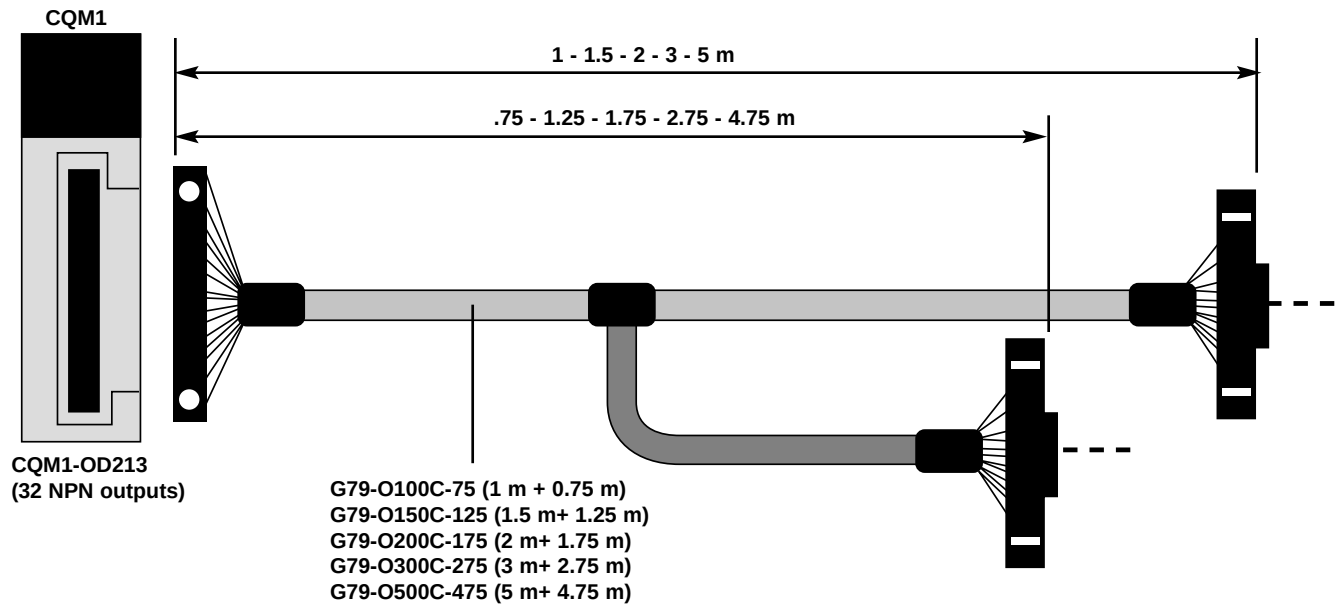
## CQM1H High-Density Input Modules + XW2C Input Screw Terminal Blocks

### CQM1H 32-Point Input Modules



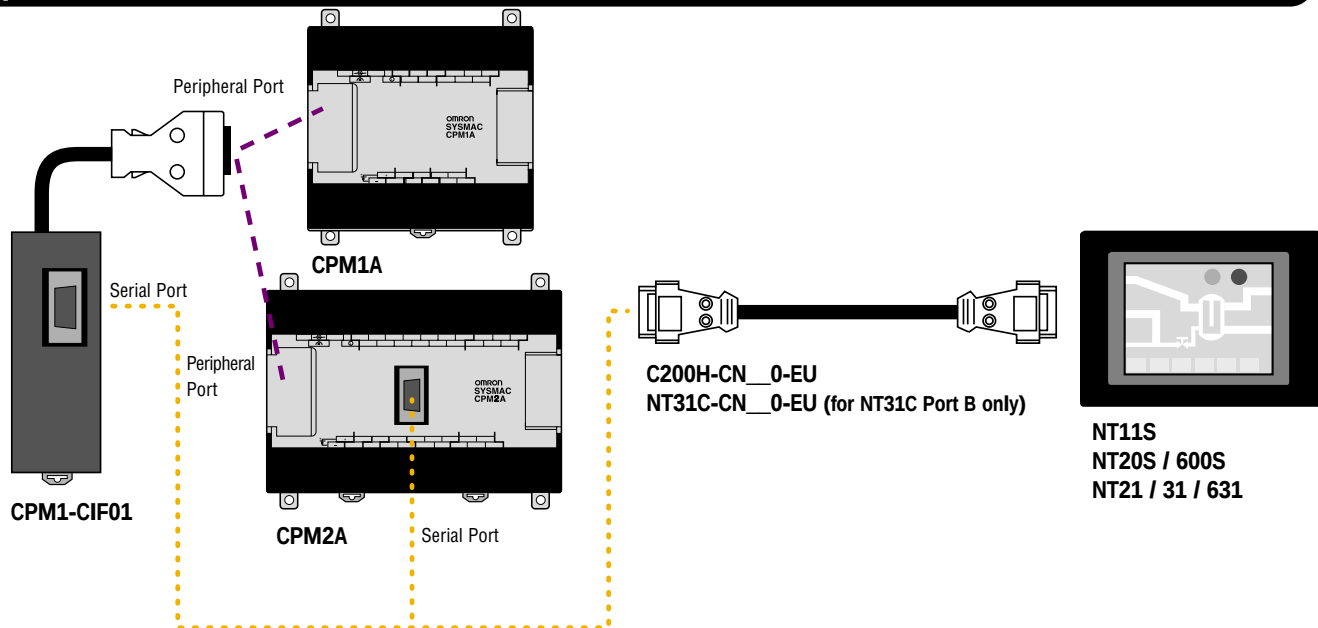
# Reference Information

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

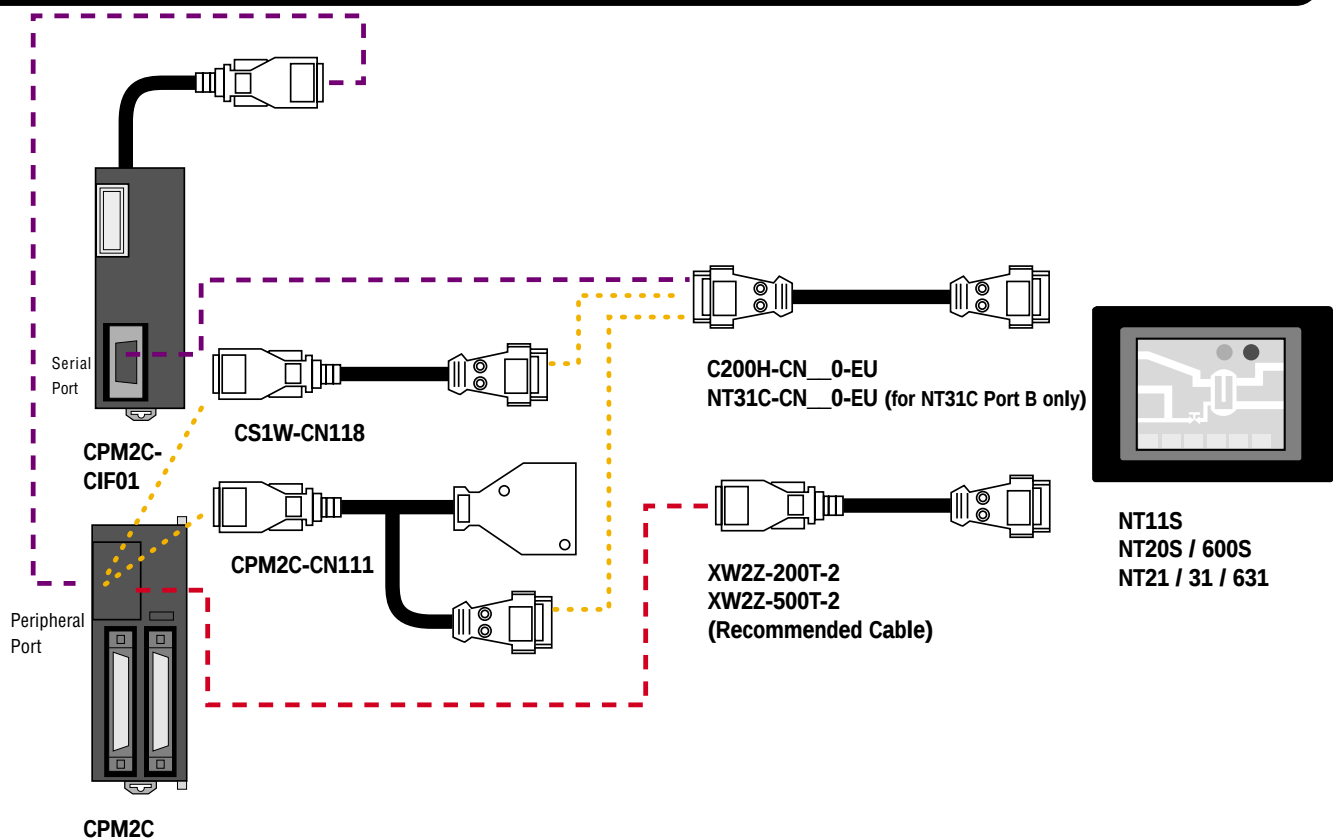


# Cable Solutions for Omron PLCs

## Operator Interface Terminals and CPM1A/CPM2A

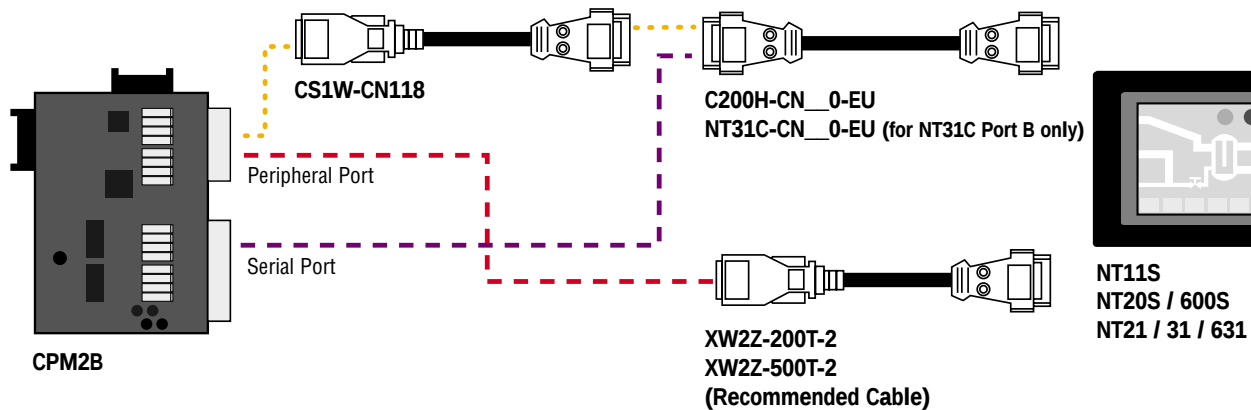


## Operator Interface Terminals and CPM2C PLC

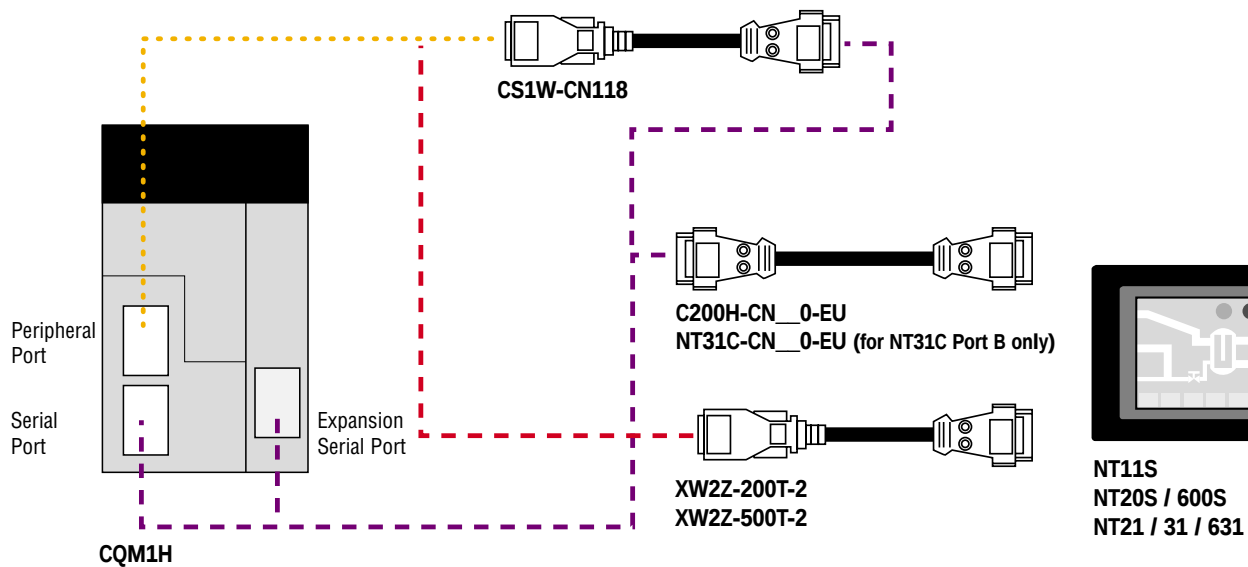


# Cable Solutions for Omron PLCs

## Operator Interface Terminals and CPM2B PLC

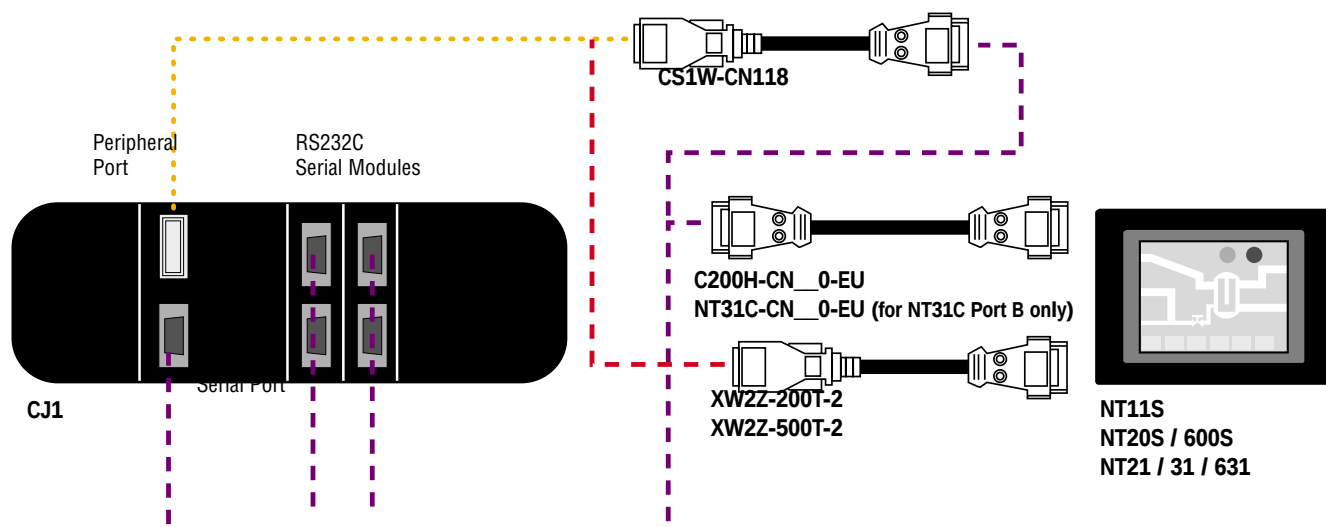


## Operator Interface Terminals and CQM1H PLC

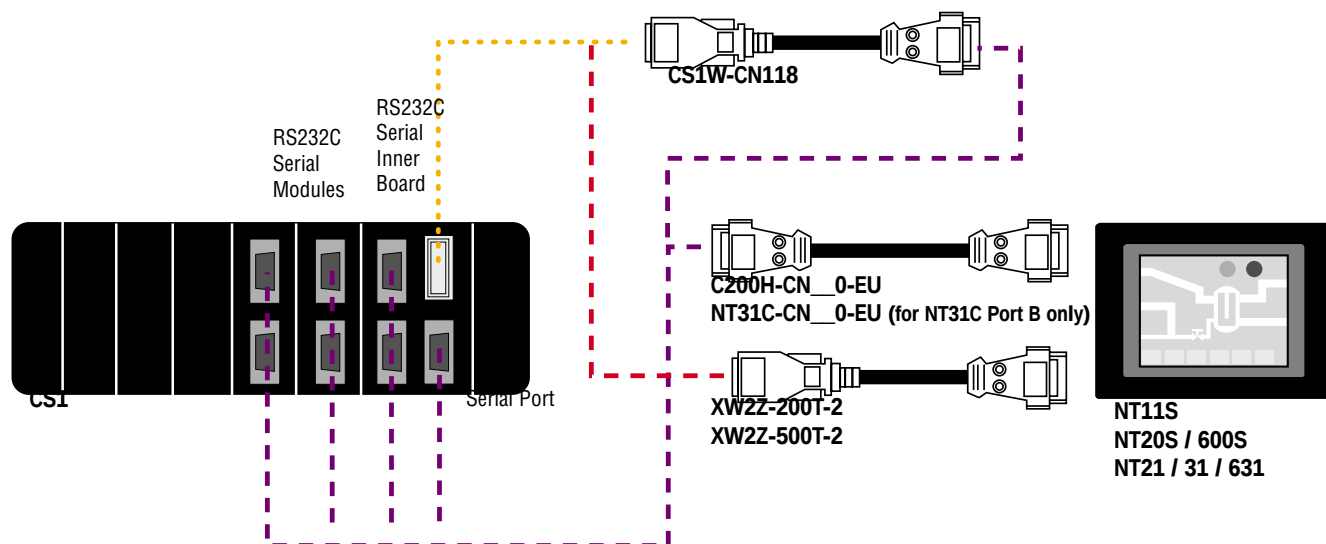


# Cable Solutions for Omron PLCs

## Operator Interface Terminals and CJ1 PLC



## Operator Interface Terminals and CS1 PLC



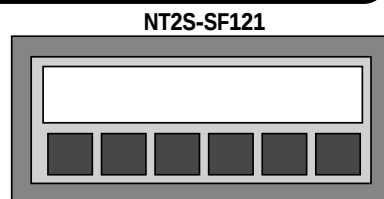
# Cable Solutions for Omron PLCs

## NT2S Message Display and Programmable Controllers

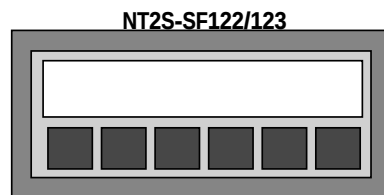
Peripheral port (Old type: C200H, SRM1, CPM2A, CPM1A)



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



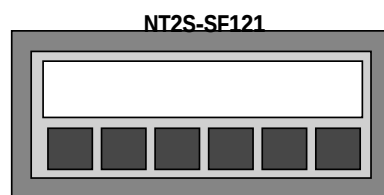
NT2S-CN222-V1 (2 m)  
NT2S-CN225-V1 (5 m)



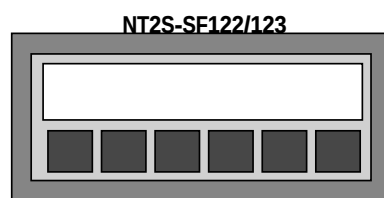
Peripheral port (New type: CJ1, CS1, CQM1H, CPM2C)



NT2S-CN223-V1 (2 m)



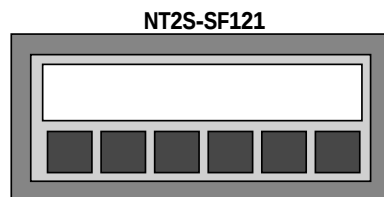
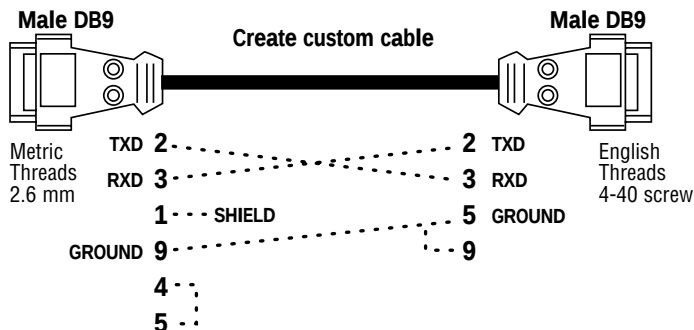
NT2S-CN224-V1 (2 m)



## NT2S Custom Cables

Any Omron  
PLC Serial Port

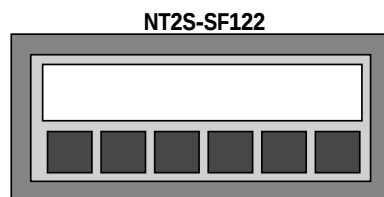
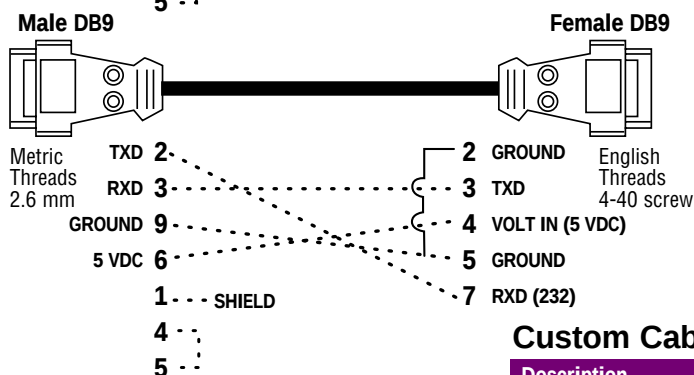
RS232C



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

Any Omron  
PLC Serial Port

RS232C



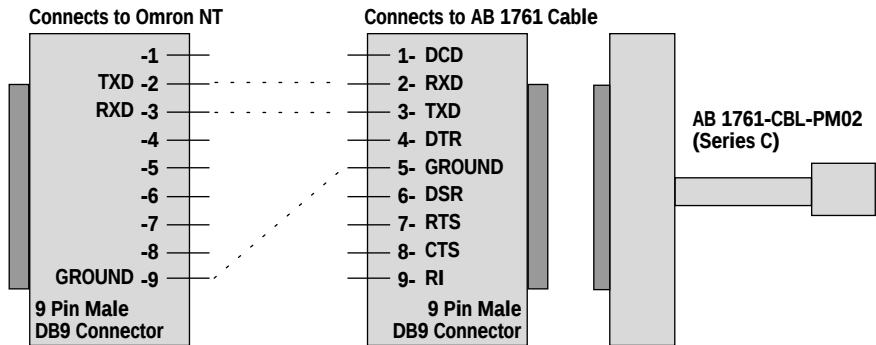
## Custom Cable Ordering Information

| 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:

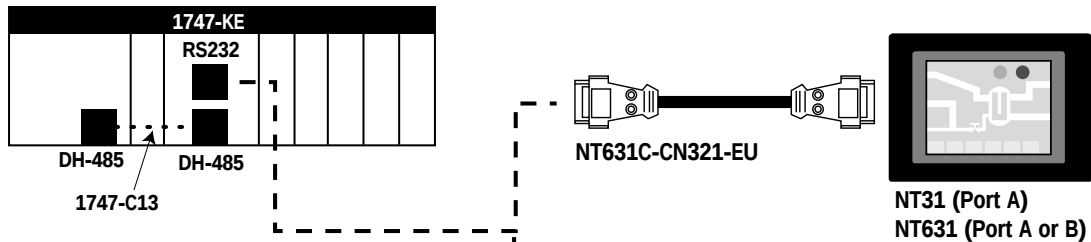


| AB MicroLogix 1200 Communication Cables |                                                 |
|-----------------------------------------|-------------------------------------------------|
| 1761-CBL-PM02(Series C)                 | DB9 to 8 pin mini-din connector (order from AB) |

## 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.

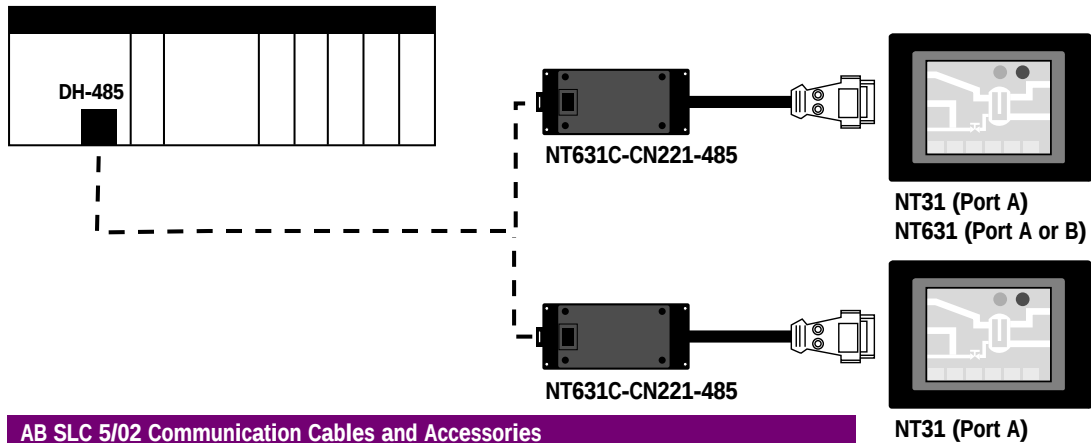
### AB SLC 5/02



## 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

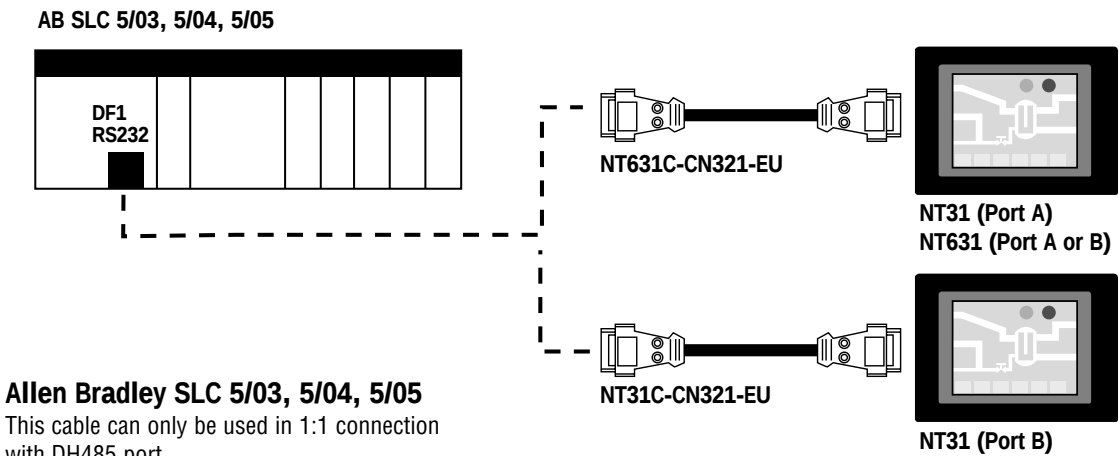


| AB SLC 5/02 Communication Cables and Accessories |                                            |
|--------------------------------------------------|--------------------------------------------|
| NT31C-CN321-EU                                   | 3.0 m cable, 25 to 9 pin, NT to AB SLC PLC |
| NT631C-CN321-EU                                  | 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

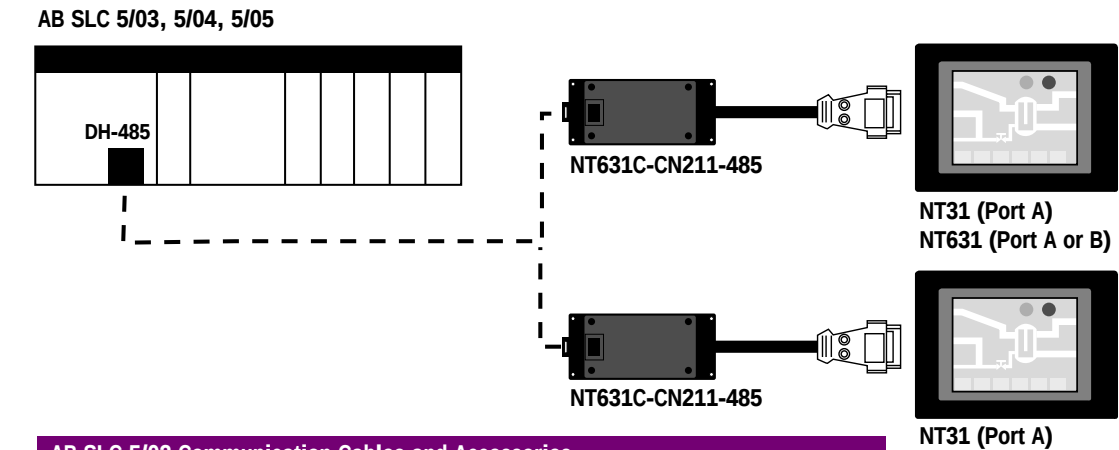
## Allen Bradley SLC 5/03, 5/04, 5/05

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.



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

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

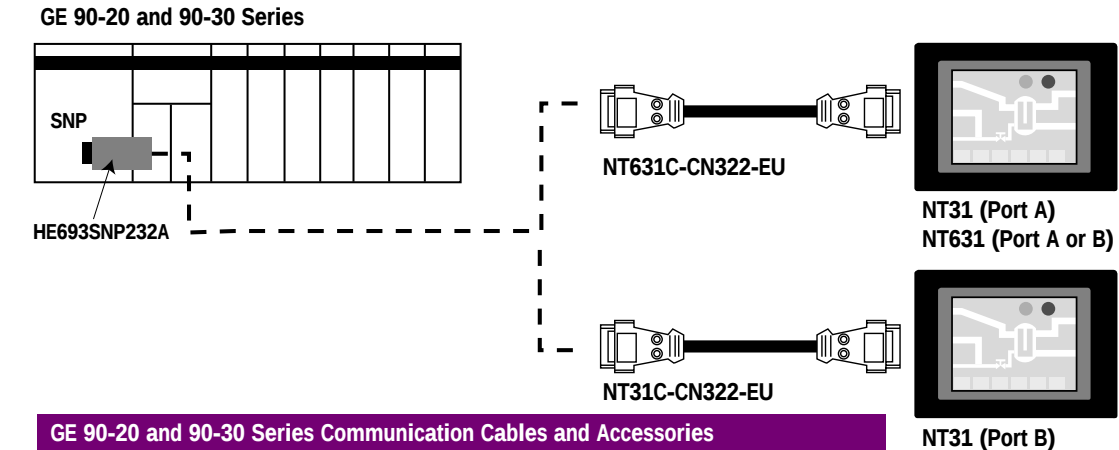


### AB SLC 5/02 Communication Cables and Accessories

|                 |                                            |
|-----------------|--------------------------------------------|
| 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 Communication Cables and Accessories

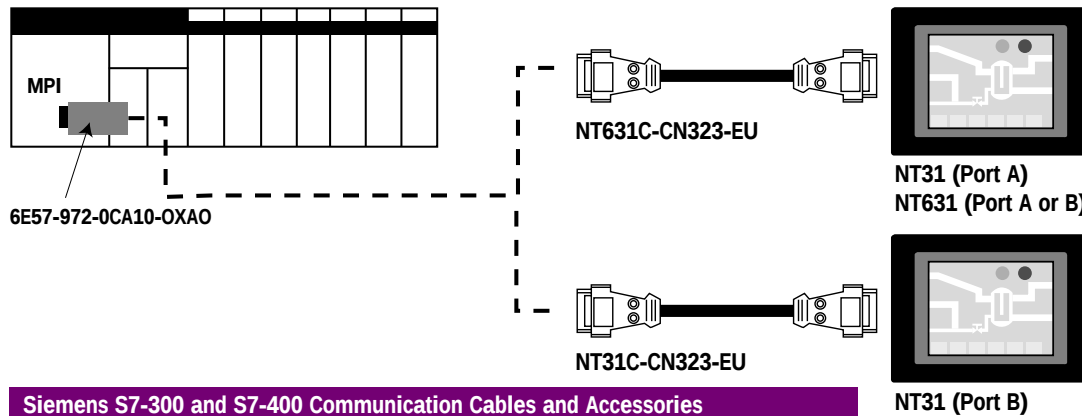
|                 |                                            |
|-----------------|--------------------------------------------|
| NT31C-CN322-EU  | 3.0 m cable, 25 to 9 pin, NT to GE PLC     |
| NT631C-CN322-EU | 3.0 m cable, 9 to 9 pin, NT to GE PLC      |
| HE693SNP232A    | RS232 to RS422 adapter (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



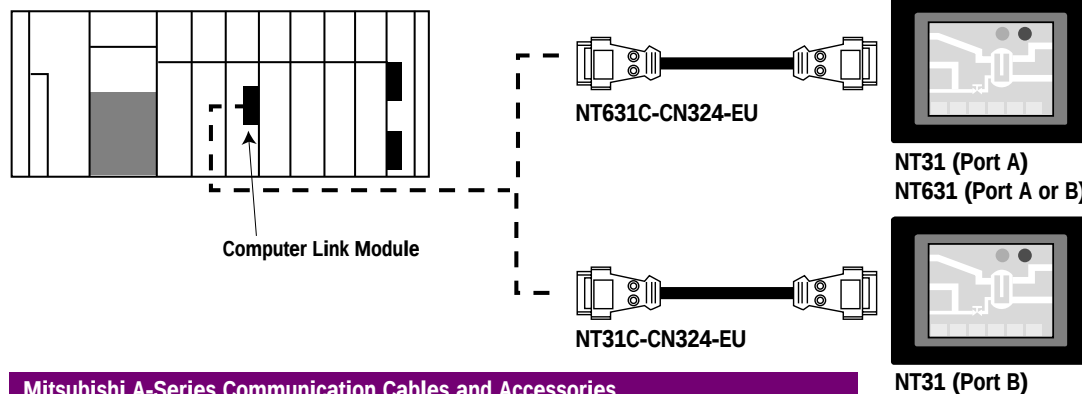
### Siemens S7-300 and S7-400 Communication Cables and Accessories

|                     |                                                   |
|---------------------|---------------------------------------------------|
| 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

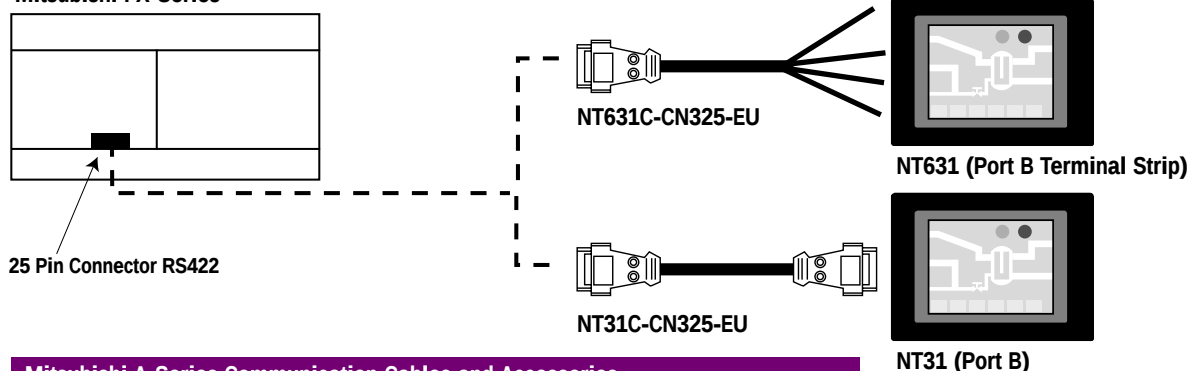
|                 |                                               |
|-----------------|-----------------------------------------------|
| NT31C-CN324-EU  | 3.0 m cable, 25 to 9 pin, NT to Mits-A PLC    |
| NT631C-CN324-EU | 3.0 m cable, 9 to 9 pin, NT to Mits-A PLC     |
| V042-E1-1       | Operation 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

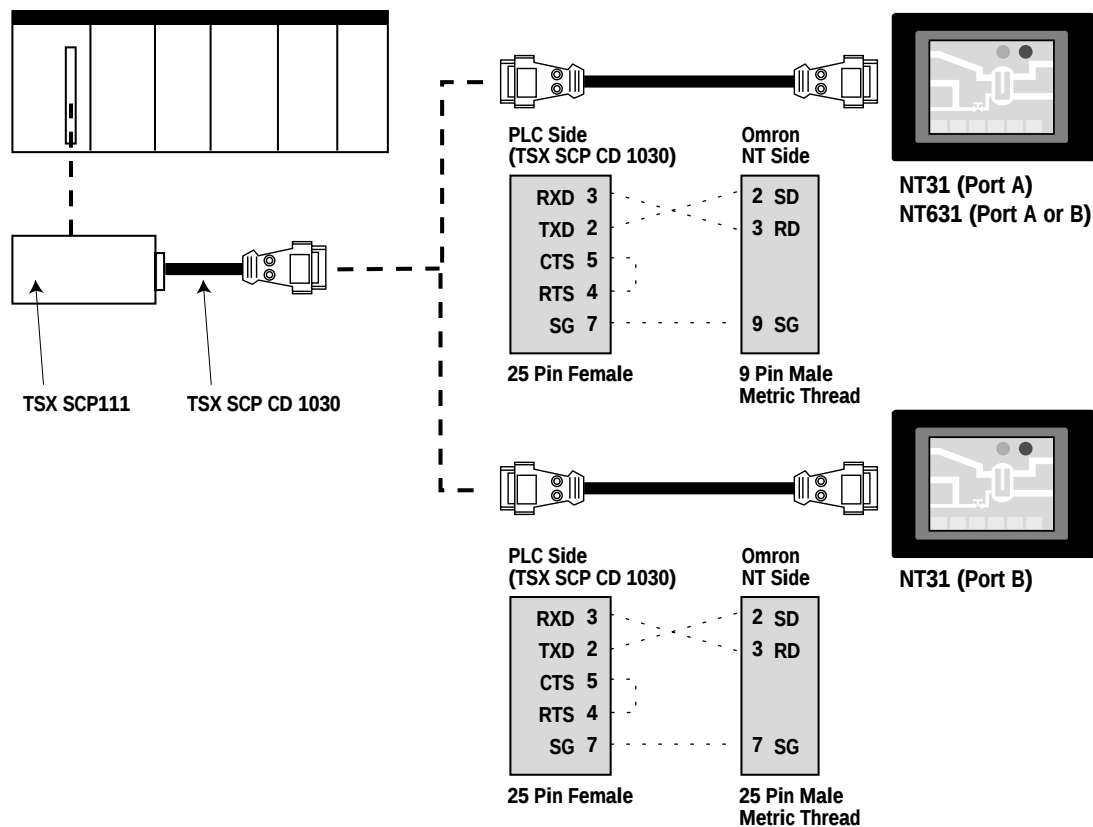


### Mitsubishi A-Series Communication Cables and Accessories

|                 |                                                   |
|-----------------|---------------------------------------------------|
| 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:



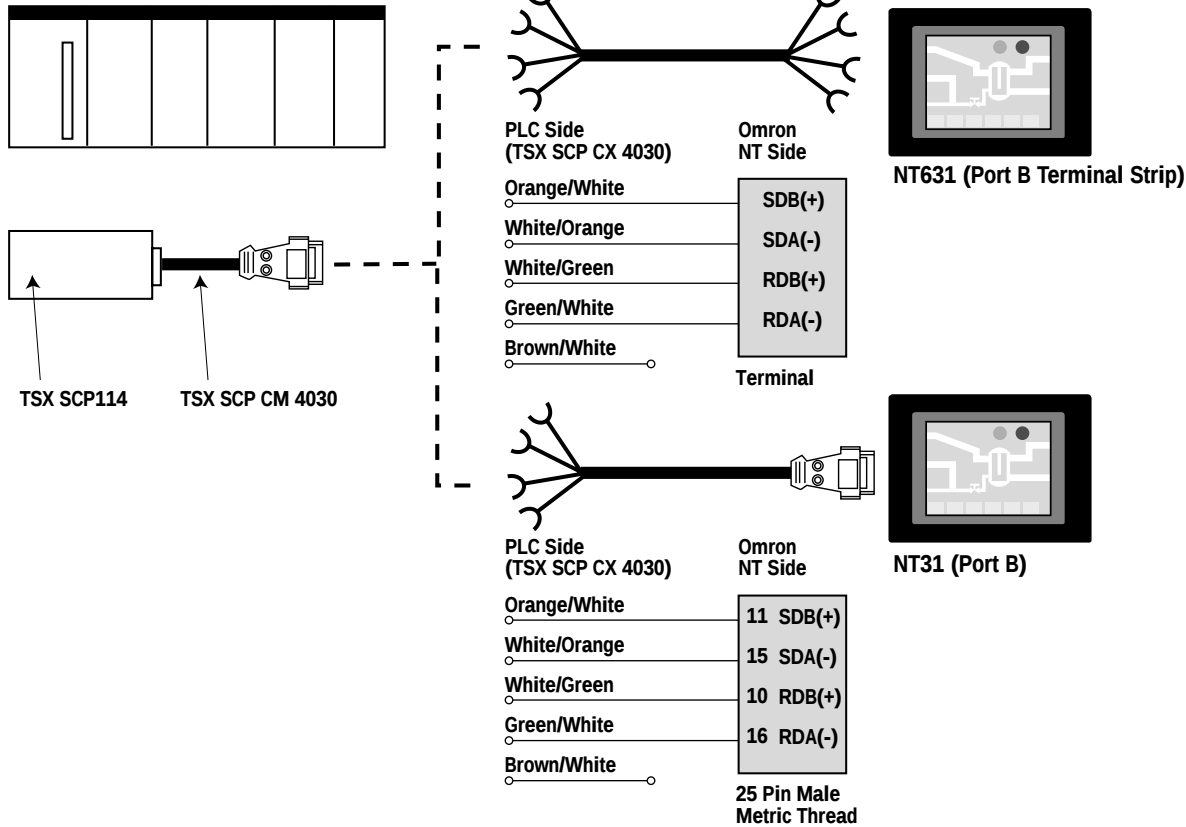
### Modicon TSX Series Communication Cables and Accessories

|                 |                                         |
|-----------------|-----------------------------------------|
| 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

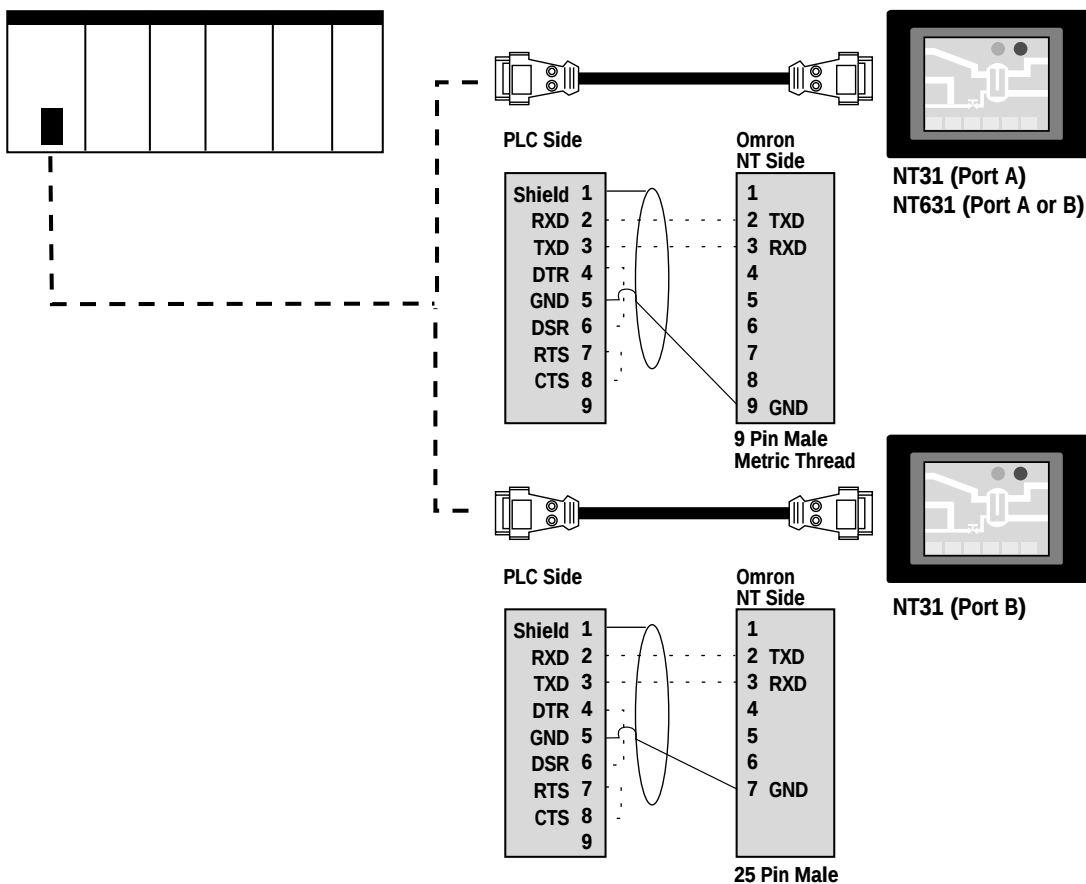
## Modicon TSX Micro 37-21/22 & Premium Series PLCs

For RS-422A connection:



## Modicon TSX Quantum Series PLCs

For RS-232C connection:





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