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### Space-saving Remote I/O Terminal with Consolidated Functions Reduces Wiring

- Vertical type with 202 (W) x 63 (H) x 45 (D).
- Each Output Terminal transmits 16-point signals to the C500-or C200H-RM201 Remote I/O Master Unit and the Input Terminal receives 16-point signals from the Remote I/O Master Unit.
- Can share transmission lines with the G71, G7TC, or G72C.
- Isolated transmission lines eliminate noise interference.
- I/O signals can be confirmed with the easy-to-see LED indicators.

### Ordering Information

Internal I/O circuit common	Rated voltage	Model
NPN	24 VDC	G720-VID16C

### ■ Accessories (Order Separately)

Mounting Track	PFP-100N, PFP-50N, PFP-100N2
End Plates	PFP-M
Spacers	PFP-S

### Specifications

#### ■ Ratings

##### Input Terminal

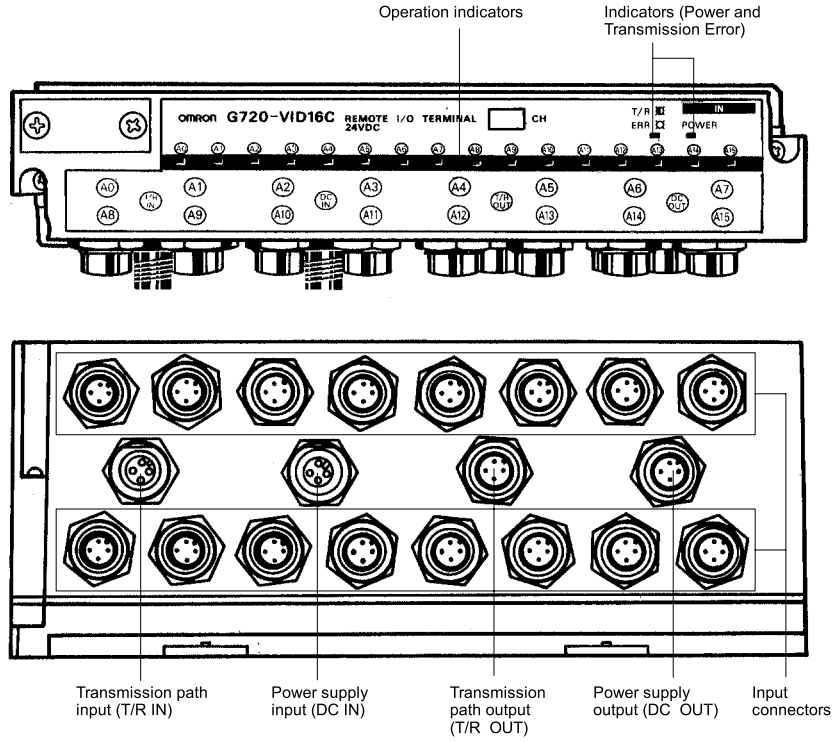
Rated input voltage	24 VDC
Input current	9.7 mA/point
ON delay time	1.5 ms max.
OFF delay time	1.5 ms max.
Number of circuits	16 points/common
ON voltage	15 VDC max.
OFF voltage	5.6 VDC min.
Insulation method	Photocoupler
Input indication	LEDs (green)

## ■ Characteristics

<b>Communication method</b>	Two-conductor, half duplex
<b>Synchronization method</b>	Asynchronous
<b>Transmission distance</b>	200 m (total length)
<b>Transmission speed (baud rate)</b>	187.5 kbps (transmission time: 2 ms max. per G720)
<b>Interface</b>	RS-485
<b>Operating voltage range</b>	24 VDC +10%/-15%
<b>Current consumption</b>	24 VDC: 200 mA max. (see Note)
<b>Diagnosis</b>	Transmission error check (BCC plus inverted 2-transmission verification check) and CPU error monitor
<b>Insulation resistance</b>	20 MW min. (at 250 VDC)
<b>Dielectric strength</b>	2,000 VAC, 50/60 Hz for 1 min between transmission circuits and DIN rail
<b>Noise immunity</b>	Noise level: 1.5 kV; pulse width: 100 ns to 1 ms (transmission path line winding noise only)
<b>Vibration resistance</b>	10 to 55 Hz, 0.75-mm double amplitude for 2 hrs each in X, Y, and Z directions (both mounted and not mounted to DIN rail)
<b>Shock resistance</b>	300 m/s <sup>2</sup> (approx. 30G)
<b>Ambient temperature</b>	Operating: 0°C to 55°C Storage: -20°C to 65°C
<b>Ambient humidity</b>	Operating: 35% to 85%
<b>Mounting strength</b>	No damage when 5 kgf (49N) pull load was applied for 1 s in all directions (except for 1 kgf (9.8 N) in direction of rail)
<b>Enclosure rating</b>	Drip-proof construction
<b>Weight</b>	Approx. 680 g

**Note:** The current consumption shows the current that is consumed when all 16 points are ON excluding the current consumed by the external sensor. When all points are OFF, the current consumption will be 40 mA max. at 24 VDC.

# Nomenclature

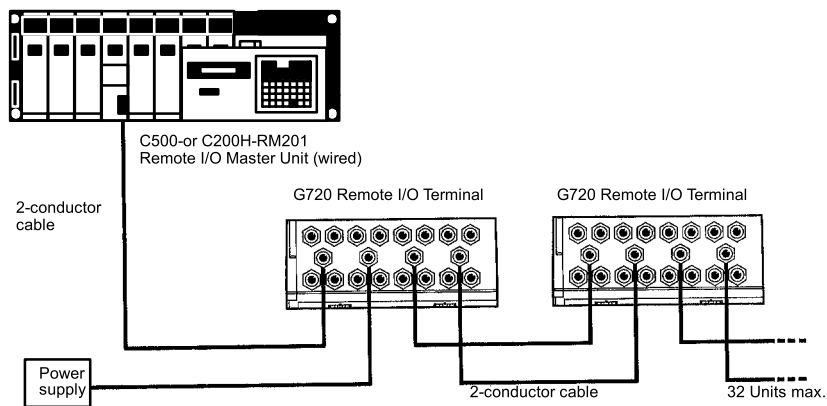


## LED Operation

Display		Function
POWER	Lit	Lit when power is supplied and the unit is operating.
	Not lit	Not lit when power supply is abnormal.
T/R ERR	Flashing	Flashes during normal data transmission.
	Lit	Lit during standby and transmission error.
	Not lit	Not lit during CPU (watchdog timer) error.

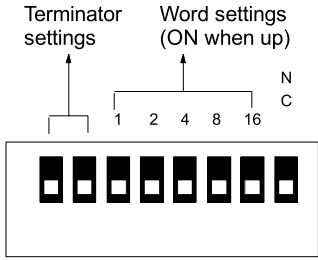
## Operation

### ■ System Configuration



### ■ Setting the Back-panel DIP Switch

Turn off the power supply before setting the DIP switch.



#### Terminator Settings

To specify the Terminal as the terminator and connect terminator resistance, turn ON both pins. These pins must be turned ON on only the End Slave for each Master. The terminals are not factory-set as a terminator.

Assign words to the Terminals starting backward from word 31. The Terminal is factory-set to word 31.

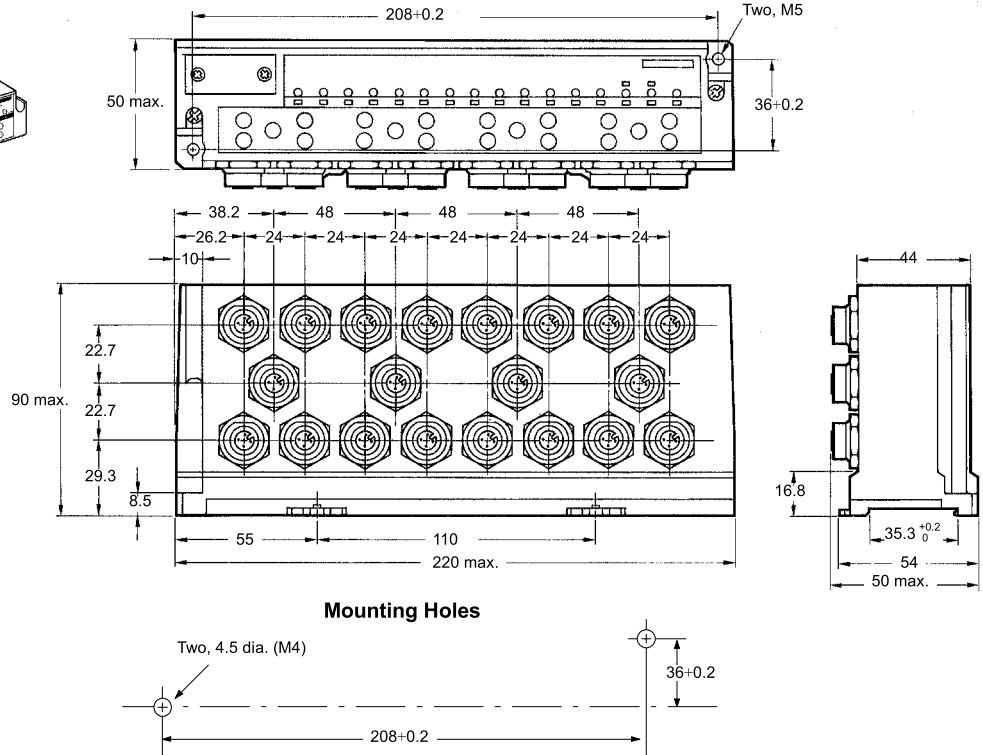
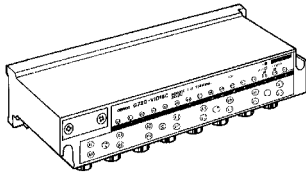
#### Word Settings

Word	Pin					Word	Pin				
	1	2	4	8	16		1	2	4	8	16
0	OFF	OFF	OFF	OFF	OFF	16	OFF	OFF	OFF	OFF	ON
1	ON	OFF	OFF	OFF	OFF	17	ON	OFF	OFF	OFF	ON
2	OFF	ON	OFF	OFF	OFF	18	OFF	ON	OFF	OFF	ON
3	ON	ON	OFF	OFF	OFF	19	ON	ON	OFF	OFF	ON
4	OFF	OFF	ON	OFF	OFF	20	OFF	OFF	ON	OFF	ON
5	ON	OFF	ON	OFF	OFF	21	ON	OFF	ON	OFF	ON
6	OFF	ON	ON	OFF	OFF	22	OFF	ON	ON	OFF	ON
7	ON	ON	ON	OFF	OFF	23	ON	ON	ON	OFF	ON
8	OFF	OFF	OFF	ON	OFF	24	OFF	OFF	OFF	ON	ON
9	ON	OFF	OFF	ON	OFF	25	ON	OFF	OFF	ON	ON
10	OFF	ON	OFF	ON	OFF	26	OFF	ON	OFF	ON	ON
11	ON	ON	OFF	ON	OFF	27	ON	ON	OFF	ON	ON
12	OFF	OFF	ON	ON	OFF	28	OFF	OFF	ON	ON	ON
13	ON	OFF	ON	ON	OFF	29	ON	OFF	ON	ON	ON
14	OFF	ON	ON	ON	OFF	30	OFF	ON	ON	ON	ON
15	ON	ON	ON	ON	OFF	31	ON	ON	ON	ON	ON

# Dimensions

**Note:** All units are in millimeters unless otherwise indicated.

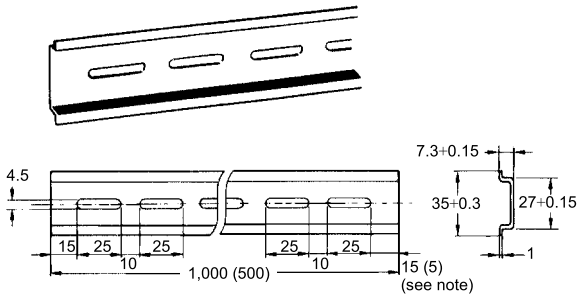
## G720-VID16C



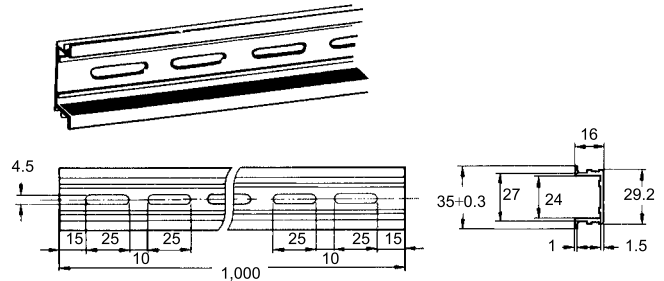
## Accessories

### Mounting Track

PFP-100N/PFP-50N



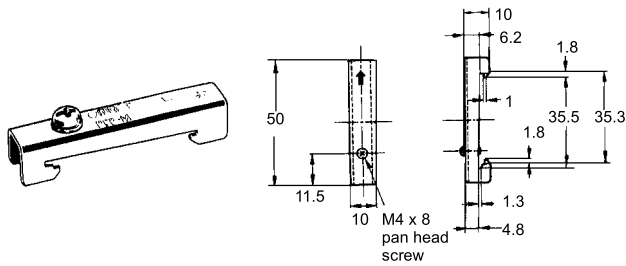
### PFP-100N2



**Note:** The values shown in parenthesis are for the PFP-50N.

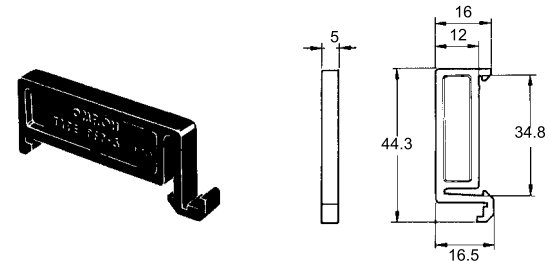
### End Plates

PFP-M



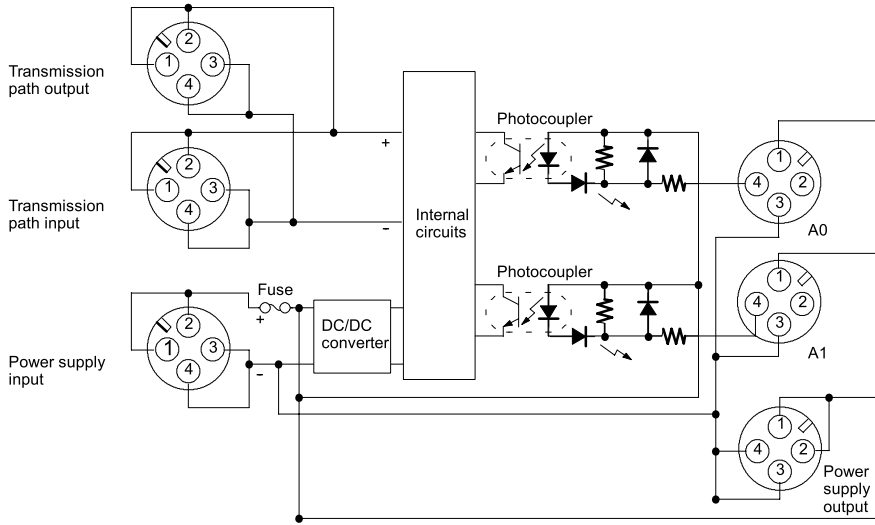
### Spacers

PFP-S



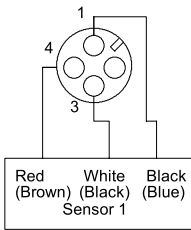
# Installation

## Internal Circuit Configuration

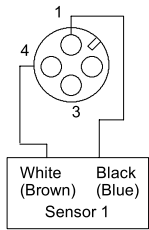


## External Circuit Configuration

### Three-wire Connection



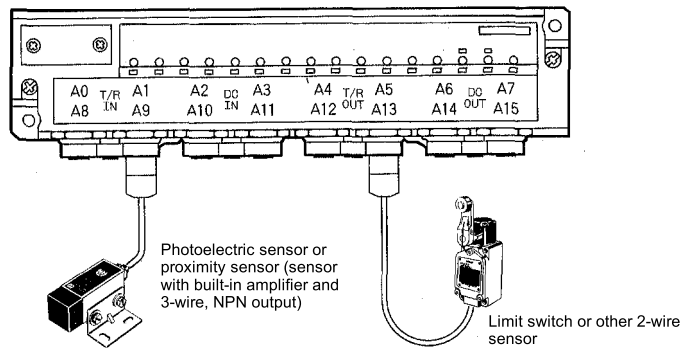
### Two-wire Connection



## Terminal Arrangement/I/O Device Connection Examples

A power supply relay terminal block is not required for sensors/loads.

### Input Terminal

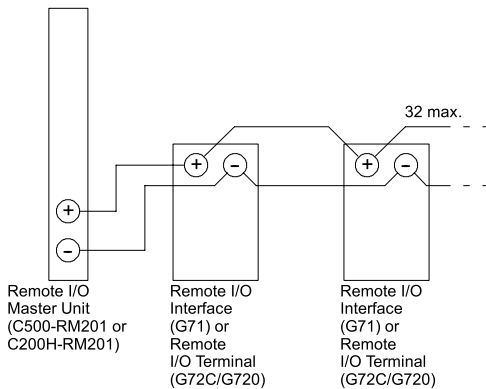


# Precautions

## Connection Example

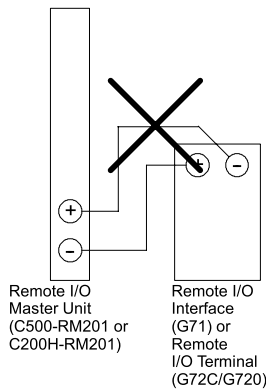
### Correct Example

Connect the Slaves in series starting from the Master.



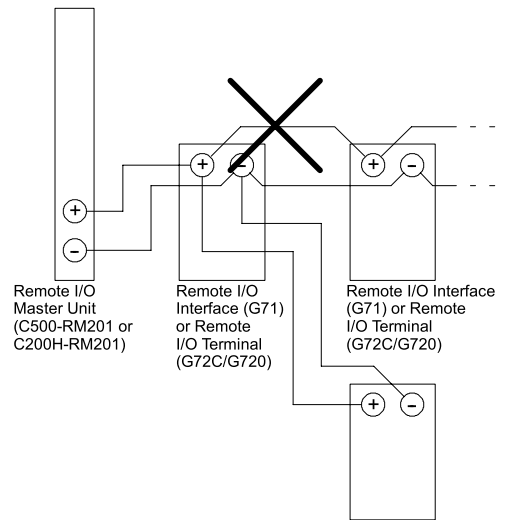
### Incorrect Example 1

Do not reverse polarity.



### Incorrect Example 2

Do not branch connections.



## Recommended Connecting Methods of OMRON's Sensor and Connector with Cable

When connecting a sensor I/O connector to OMRON's sensor, refer to the following table and select the colors of the cable conductor covers for the purposes of unification and easy maintenance.

Connector terminal number	Recommended color	Sensor output stage		
		Two-wire	Three-wire	Four-wire
1	Red	Not used	Power supply (+V)	Power supply (+V)
2	Orange (see note)	Not used	Not used	Output (2)
3	Black	Power supply (0 V)	Power supply (0 V)	Power supply ( 0 V)
4	White	Output (1)	Output (1)	Output (1)

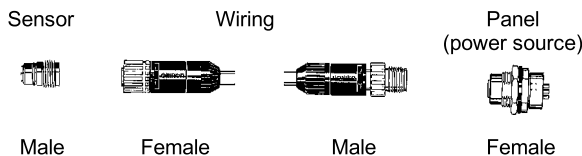
## Recommended Cables

Any cable available on the market with an external diameter of 3 to 6 mm with a conductor size of 0.18 to 0.75 mm<sup>2</sup> (crimp-type) or 0.5 mm<sup>2</sup> (solder-type) can be used as a cable for an Assembly-type Connector. If water-tight and oil resistive capabilities are required, use the following cable.

Maker: Shinagawa Densen  
Model: S-FLEX [V1] SKCVV

## Connector Wiring

When configuring a system using a Sensor I/O Connector, for safety reasons, always attach a male connector to the sensor cable and a female connector to the sensor end of the power source cable when wiring from a Sensor I/O Connector to the control panel. Similarly, the power supply end of the connector cable should be male, and the power outlet connector should be female.



## Inserting and Removing the Connector

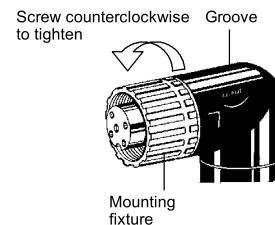
Be sure to turn off the power before inserting or removing any connector.

Before mating any connector, insert the mateable part fully, and tighten the anchors so as not to damage the threads.

When tightening the anchors, do not use a tool, but tighten firmly (4 to 5 kgf \$ cm (0.39 to 0.49 N \$ m)) by hand so that the threads cannot be seen.

When removing a connector, do not loosen the cap, but loosen the anchor.

Loosen the anchor in the direction of the groove.



## Tightening the Cap

1. Use of pliers or other tools may damage the cap. Tighten the cap firmly by hand. (4 to 5 kgf \$ cm) (0.39 to 0.49 N \$ m)
2. If the cap is not on tight enough, it may not be possible to use the IP67 protective housing. Also, it may become loose from vibration.



## The Protective Housing

Do not use the IP67 device in a place where it will be continually under stress. This may decrease its protective ability.

The IP67 is not completely waterproof. Do not use it in a place where it will be continually underwater.

The IP67 body is made of resin. Do not step on it, or put heavy objects on top of it.

## Assembly Instructions (for XS2B/XS2C/XS2G)

### Check the Final Diameters of the Connector and Cable

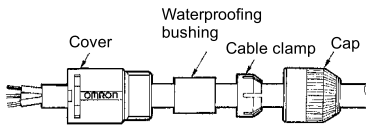
Recommended cables are 6-mm (diameter 5 to 6 mm), 4-mm (diameter 4 to 5 mm), and 3-mm (diameter 3 to 4 mm).

Before assembling, make sure that a proper size cable is used.

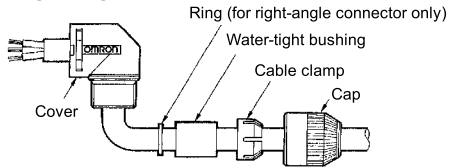
The cable clamp for the 6-mm cable is white. The cable clamp for the 4-mm and the 3-mm cable is black.

### Insertion

#### Straight Connector

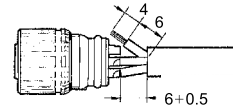


#### Right-angle connector



If using a cable that has been prepared as shown previously, assemble all parts as shown here.

## Wiring (Connecting the Cable Terminals)



The wire should extend 10 mm (0.39 in.) from the cable sheath, and the core should be exposed 4 mm (0.16 in.) from the covering.

The core guide and the solder cup should be pre-soldered before final soldering.

Soldering iron: 30 to 60 W

Iron temperature: 280°C to 340°C

Soldering time: Under 3 seconds

If the cable length is more than 6.5 mm (0.26 in.) after soldering, then the protective housing cannot be used.

**ALL DIMENSIONS SHOWN ARE IN MILLIMETERS.**

To convert millimeters into inches, multiply by 0.03937. To convert grams into ounces, multiply by 0.03527.



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