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# OMRON®

## SYSMAC Remote Transistor Module

G730-V

### Ultra-compact Remote I/O Modules to Match Most Applications

- 4-point, 8-point and 16-point models
- 4-point models measure 82 W x 32 D x 64.5 H mm; 8- and 16-point models measure 115 W x 32 D x 63 H mm
- Two-conductor cable communications to Omron Wired Remote I/O Master Modules (C200H-RM201 and C500-RM201) simplifies installation
- Two independent power supplies can be used since I/O terminals are isolated from the internal circuits
- Optional DIN track mounting brackets available



### Ordering Information

#### ■ REMOTE TRANSISTOR I/O MODULES

| I/O classification | Internal I/O circuit common | I/O points | Rated voltage | I/O rated voltage | Part number       |
|--------------------|-----------------------------|------------|---------------|-------------------|-------------------|
| Input              | NPN (+ common)              | 4          | 24 VDC        | 24 VDC            | G730-VID04 DC24   |
| Output             | NPN (- common)              |            |               |                   | G730-VOD04 DC24   |
| Input              | NPN (+ common)              | 8          |               |                   | G730-VID08 DC24   |
|                    | PNP (- common)              |            |               |                   | G730-VID08-1 DC24 |
| Output             | NPN (+ common)              |            |               |                   | G730-VOD08 DC24   |
|                    | PNP (- common)              |            |               |                   | G730-VOD08-1 DC24 |
| Input              | NPN (+ common)              | 16         |               |                   | G730-VID16 DC24   |
| Output             | NPN (- common)              |            |               |                   | G730-VOD16 DC24   |

#### ■ DIN TRACK MOUNTING ADAPTERS

| Description       | Applicable remote I/O modules | Part number |
|-------------------|-------------------------------|-------------|
| DIN track adapter | G730-V□D04                    | G730-Y31    |
|                   | G730-V□D08                    | G730-Y30    |
|                   | G730-V□D16                    |             |

## Specifications

### ■ RATINGS

#### Inputs

**G730-VID04, G730-VID08, G730-VID08-1, G730-VID16**

|                   |                      |
|-------------------|----------------------|
| Input current     | 10 mA max./point     |
| ON delay          | 1.5 ms max.          |
| OFF delay         | 1.5 ms max.          |
| ON voltage        | 5 VDC max. at 24 VDC |
| OFF current       | 0.2 mA min.          |
| Insulation method | Photocoupler         |
| Input indicators  | LED (orange)         |

Note: Connection conditions to input devices are indicated.

#### Outputs

**G730-VOD04, G730-VOD08, G730-VOD08-1, G730-VOD16**

|                      |                        |
|----------------------|------------------------|
| Rated output current | 0.3 A/point (See Note) |
| Residual voltage     | 0.6 V max.             |
| Leakage current      | 0.1 mA max.            |
| Insulation method    | Photocoupler           |
| Output indicators    | LED (orange)           |

Note: Use at 2.4 A or less per common.

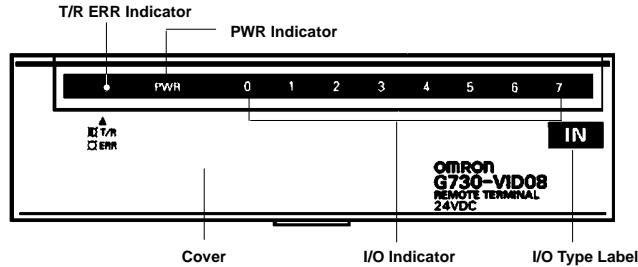
### ■ CHARACTERISTICS

|                                |   |
|--------------------------------|---|
| Master module                  | For SYSMAC BUS Wired Remote I/O Systems: C200H-RM201, C500-RM201  |
| Communication method           | Two-conductor, half duplex  |
| Synchronization method         | Asynchronous  |
| Transmission distance          | 200 m (total length)  |
| Transmission speed             | 187.5 kbps  |
| Transmission path              | Two-conductor cable (VCTF 0.75 x 2 C is recommended)  |
| Interface                      | RS-485  |
| Operating voltage range        | 24 VDC +10%/-15%  |
| Current consumption (See Note) | Output: 80 mA max. at 24 VDC<br>Input: 70 mA max. at 24 VDC   |
| Insulation resistance          | 20 M $\Omega$ min. at 250 VDC   |
| Dielectric strength            | 500 VAC for 1 min between the input terminals and power supply and transmission paths, and between the power supply terminals and transmission terminals  |
| Noise immunity                 | Power supply normal: 600 V for 10 min with a pulse width of 100 ns to 1 $\mu$ s<br>Power supply common: 1.5 kV for 10 min with a pulse width of 100 ns to 1 $\mu$ s<br>Coiling around transmission path: 1.5 kV for 10 min with a pulse width of 100 ns to 1 $\mu$ s<br>Coiling around Unit: 600 V for 10 min with a pulse width of 100 ns to 1 $\mu$ s |
| Vibration resistance           | 10 to 55 Hz, 0.75-mm double amplitude for 2 hrs each in X, Y, and Z directions  |
| Shock resistance               | Destruction: 300 m/s <sup>2</sup> (approx. 30G)<br>Malfunction: 200 m/s <sup>2</sup> (approx. 20G)  |
| Ambient temperature            | Operating: 0°C to 55°C (32°F to 131°F)<br>Storage: -20°C to 65°C (-4°F to 149°F)  |
| Ambient humidity               | Operating: 35% to 85%   |
| Mounting strength              | No damage when 5 kgf (49N) pull load was applied for 10 s in all directions   |
| Terminal strength              | Tightening strength: 10 kgf • cm (0.98 N • m) for 10 s<br>Pulling strength: 5 kgf (50 N) for 10 s   |
| Weight                         | 4-point model: Approx. 97 g (G730-Y31: approx. 19 g)<br>8-point/16-point models: Approx. 150 g (G730-Y30: approx. 27 g)   |
| Approvals                      | UL recognized, File No. E41515; CSA certified, File No. LD31928   |

Note: The above current consumption is a value with all 4, 8, and 16 points turned ON excluding the current consumption of the external sensor connected to the input Remote Module and the current consumption of the load connected to the output Remote Module.

## Nomenclature

### ■ EIGHT-POINT MODEL



### T/R ERR

| Display  | Function  |
|----------|---|
| Flashing | Flashes during normal transmission.   |
| Lit      | Lit while the Master Module is waiting for transmission or when a transmission error results. |
| Not lit  | Turns OFF if a CPU error is detected during watchdog timer monitoring.                        |

### PWR Indicator

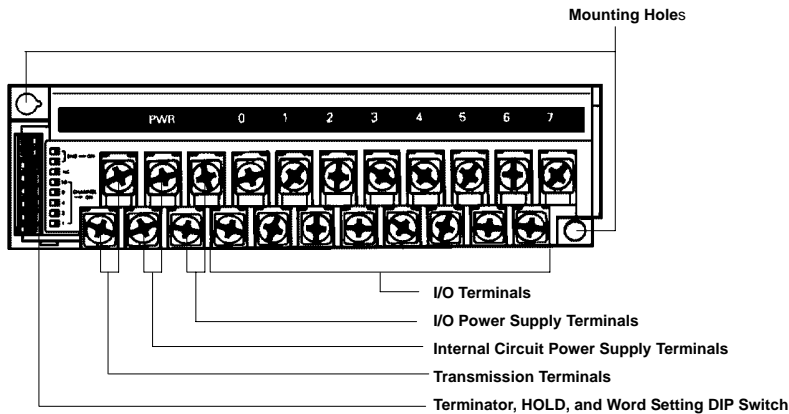
Lit when power is supplied.

### I/O Indicator

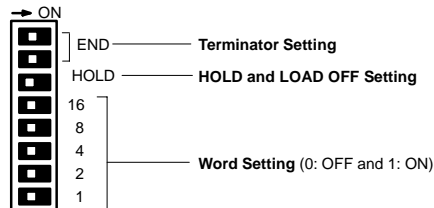
Indicates the ON and OFF conditions of the I/O of the G730.

### Cover

There are DIP switch terminals under the cover as shown in the illustration below.



Note: Be sure to turn off the G730-V before setting the DIP switch.



### Mounting Hole

Use an M4 screw to mount the DIP switch terminals.

### I/O Power Supply Terminals

Connect to a 24 VDC power supply.

### Terminator Setting

The pins of the terminator must be set to ON. If these pins of the terminator are set to ON, the terminator resistance of the terminator is turned ON. There must be only one terminator in a system. The G730-V located farthest from the Master on the transmission path must be the terminator. These pins are factory-set to OFF.

### Internal Circuit Power Supply Terminals

Connect to a 24 VDC power supply.

### Transmission Terminals

Connect a transmission cable.

**G730-V**

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**G730-V**

**HOLD and LOAD OFF Setting**

| HOLD  | LOAD OFF   |
|---|--|
| If there is a Slave transmission error during signal transmission, the signal being transmitted is put on hold. | If there is a Slave transmission error during signal transmission, the output of the G730-V is turned OFF. |

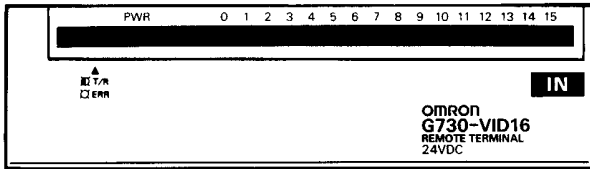
Note: If the Master has a data error or if there is no data from the Master, a Slave transmission error will result. The HOLD/LOAD OFF selector is factory-set to LOAD OFF.

**Word Settings**

| Word | Switch |     |     |     |     | Word | Switch |     |     |     |    |
|------|--------|-----|-----|-----|-----|------|--------|-----|-----|-----|----|
|      | 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 |

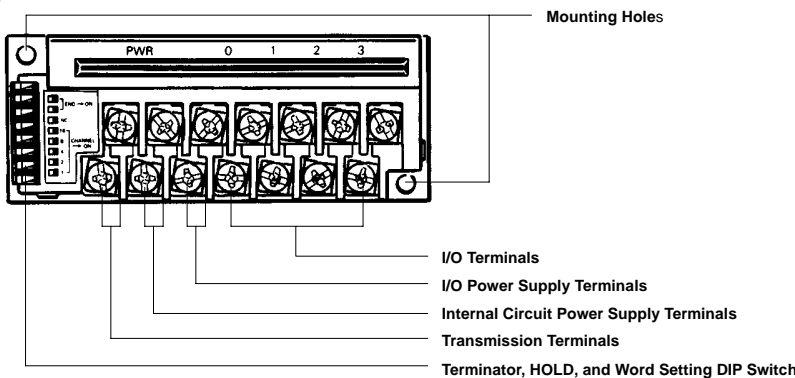
Note: The word is factory-set to 0.

**16-POINT MODEL**



Note: I/O displays and I/O terminals are different from 8-point models. The appearance is otherwise the same as 8-point models. Terminal arrangement and I/O device connection examples are shown at the end of this data sheet.

**4-POINT MODEL**



Note: The LED indicators, terminator, HOLD, and word setting methods are the same as for 8-point models.

**Mounting Hole**

Use an M4 screw to mount the DIP switch terminals.

**I/O Power Supply Terminals**

Connect to a 24 VDC power supply.

**Internal Circuit Power Supply Terminals**

Connect to a 24 VDC power supply.

**Transmission Terminals**

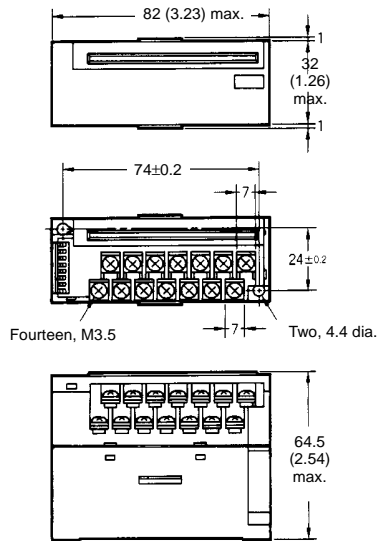
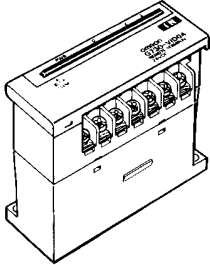
Connect a transmission cable.

## Dimensions

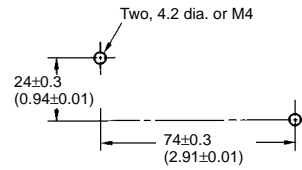
Unit: mm (inch)

### ■ FOUR-POINT MODULES

**G730-VID04**  
**G730-VOD04**

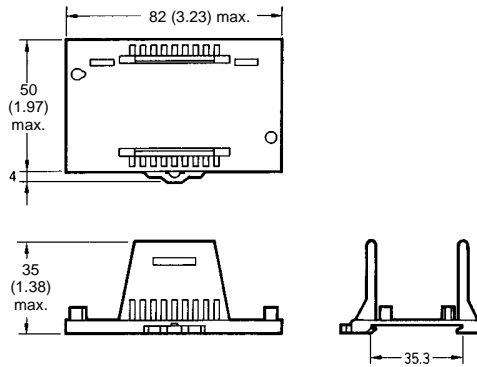
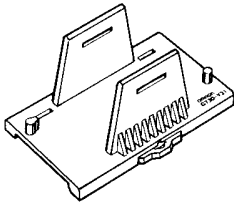


### Mounting Holes

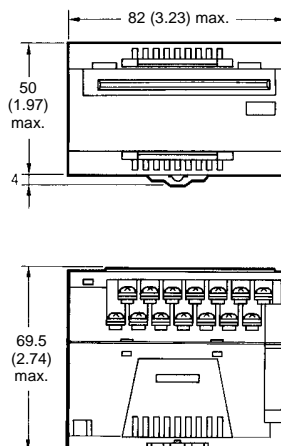
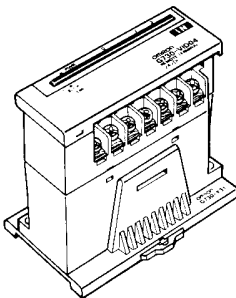


### ■ DIN TRACK ADAPTER

**G730-Y31**



### Dimensions with Module Mounted in Adapter



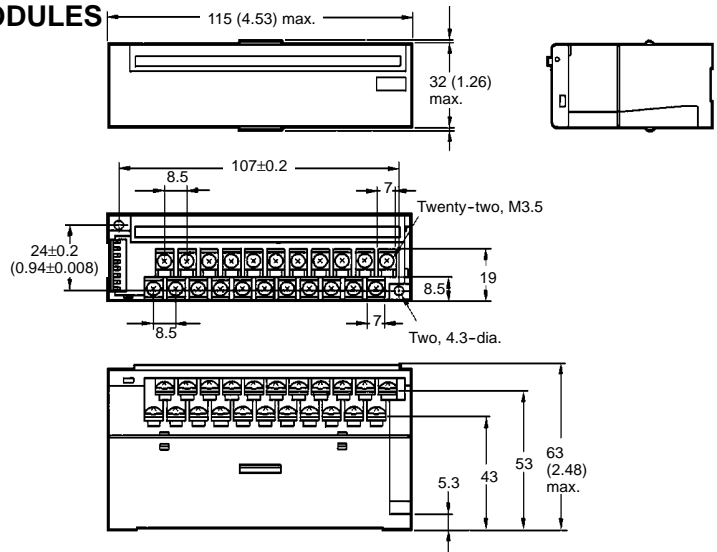
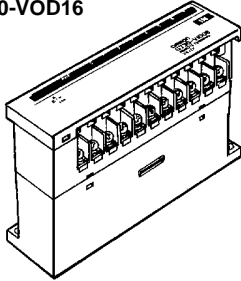
**G730-V**

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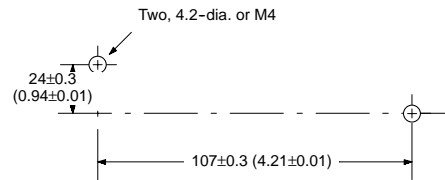
**G730-V**

■ **8- AND 16-POINT MODULES**

G730-VID08  
G730-VID08-1  
G730-VOD08  
G730-VOD08-1  
G730-VID16  
G730-VOD16

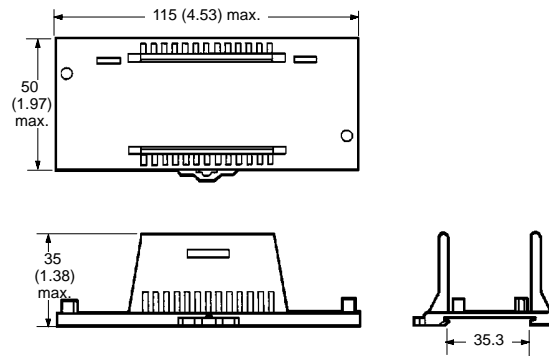
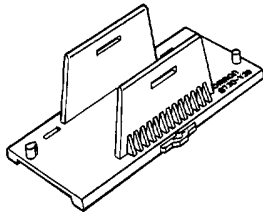


**Mounting Holes**

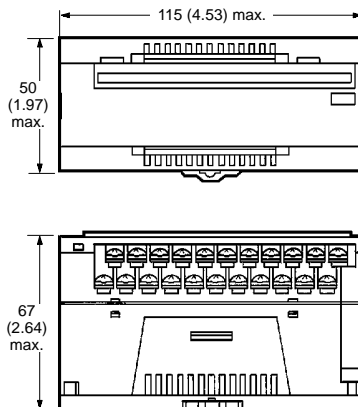
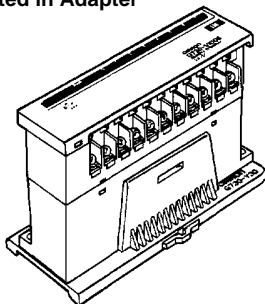


■ **DIN TRACK ADAPTER**

G730-Y30



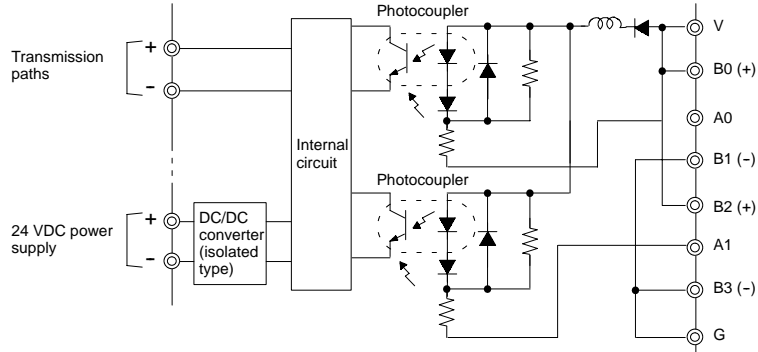
**Dimensions with Module Mounted in Adapter**



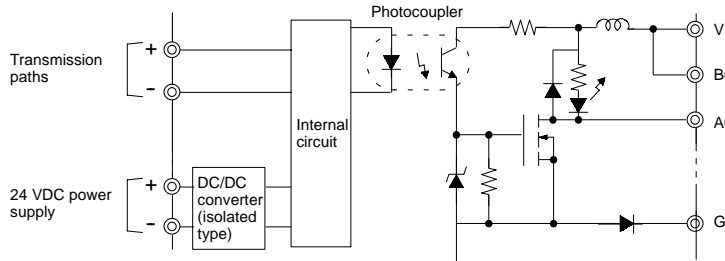
# Installation

## INTERNAL CIRCUIT CONFIGURATION

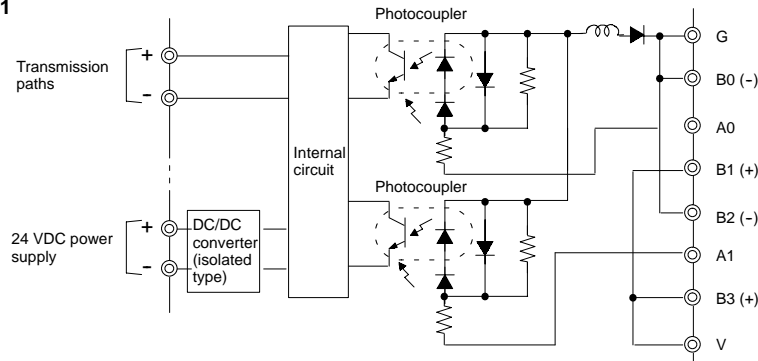
**G730-VID04**  
**G730-VID08**



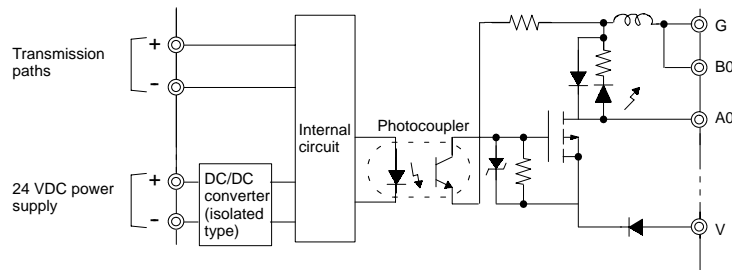
**G730-VOD04**  
**G730-VOD08**



**G730-VID08-1**

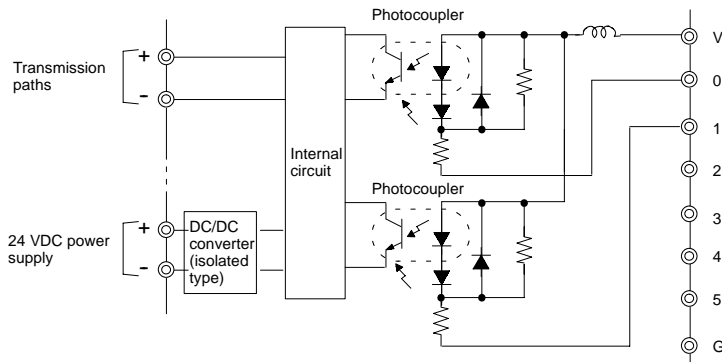


**G730-VOD08-1**

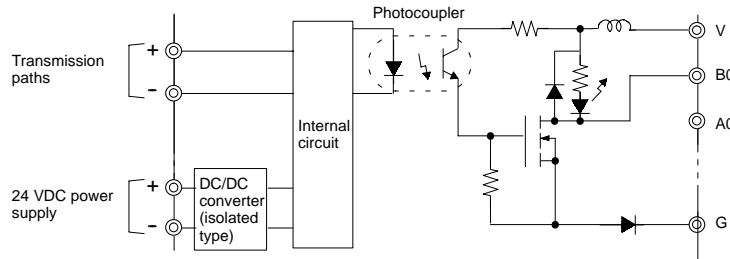




**G730-VID16**



**G730-VOD16**

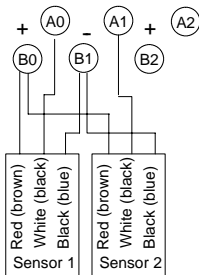


**EXTERNAL CONNECTIONS**

No relay terminal boards for the sensor loads are required.

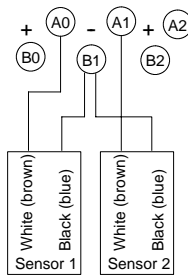
**Three-wire System**

**G730-VID04/G730-VID08 with NPN Output**  
**G730-VID08-1 with PNP Output**

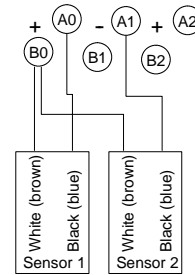


**Two-wire System**

**G730-VID04/G730-VID08**

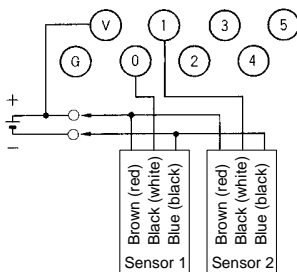


**G730-VID08-1**



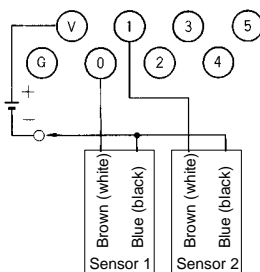
**Input Blocks**

**G730-VID16 with NPN Output**



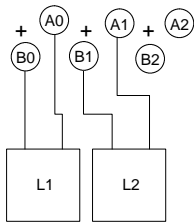
**Two-wire System**

**G730-VID16**

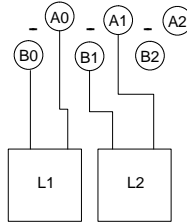


**Output Blocks**

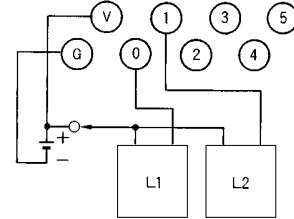
**G730-VOD04/G730-VOD08**



**G730-VOD08-1**



**G730-VOD16**



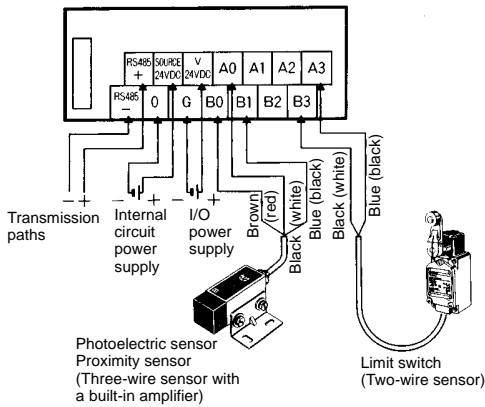
**■ TERMINAL ARRANGEMENT AND I/O DEVICE CONNECTION EXAMPLES**

Note: 1. The connections examples shown are for NPN models.

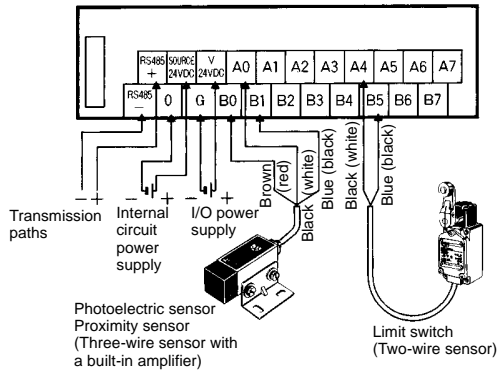
2. Wire colors have been changed as a result of changes in JIS standards for photoelectric and proximity sensors. Colors in parentheses are the old colors.

**Input Terminals**

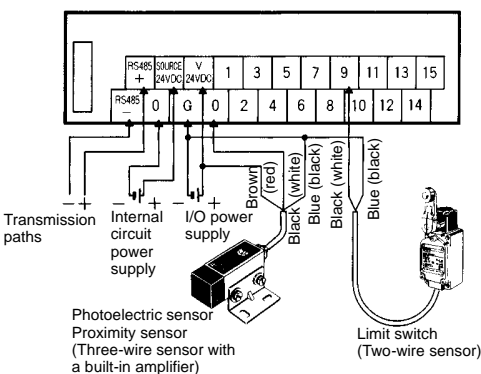
**G730-VID04**



**G730-VID08**



**G730-VID16**



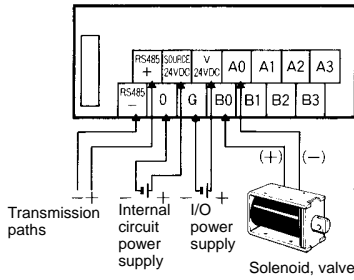
**G730-V**

**OMRON**

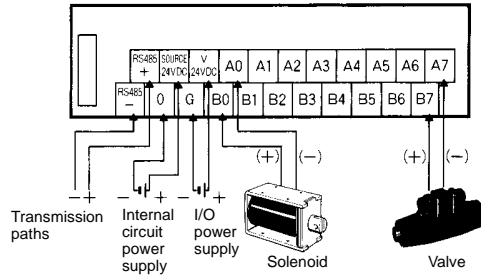
**G730-V**

**Output Terminals**

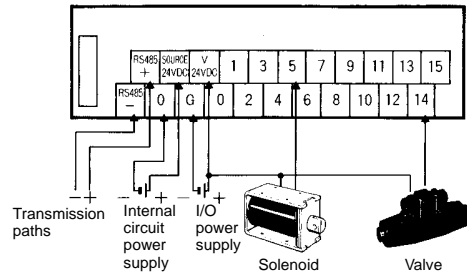
**G730-VOD04**



**G730-VOD08**



**G730-VOD16**



**NOTE: DIMENSIONS SHOWN ARE IN MILLIMETERS. To convert millimeters to inches divide by 25.4.**

**OMRON**<sup>®</sup>  
**OMRON ELECTRONICS, INC.**  
 One East Commerce Drive  
 Schaumburg, IL 60173  
**1-800-55-OMRON**

**OMRON CANADA, INC.**  
 885 Milner Avenue  
 Scarborough, Ontario M1B 5V8  
**416-286-6465**