

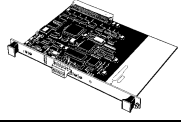
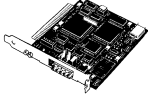
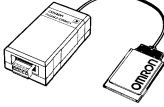


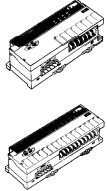
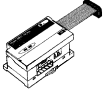
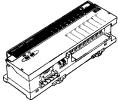
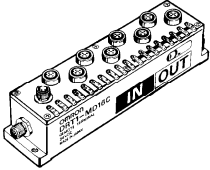
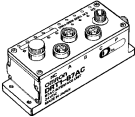
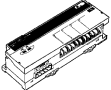
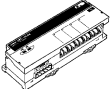
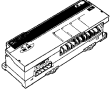

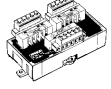

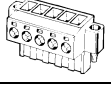
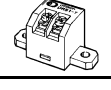

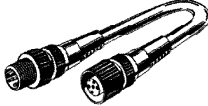
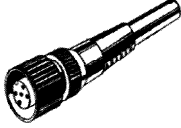
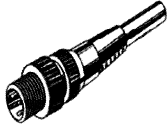


## Ordering Information

| Product                | Appearance  | Model           | Specifications   | Standards |
|------------------------|---|-----------------|--|-----------|
| Master                 |    | CVM1-DRM21-V1   | For CVM1/CV Series   | U, C, CE  |
|                        |    | C200HW-DRM21-V1 | For SYSMAC C200HS, C200HX, C200HG, and C200HE                  |           |
|                        |    | 3G8B3-DRM21-E   | VME Board  |           |
| DeviceNet Configurator |    | 3G8F5-DRM21-E   | ISA Board (provided with software running on Windows 95 or NT) | ---       |
|                        |    | 3G8E2-DRM21-E   | PC Card (provided with software running on Windows 95)         |           |
| I/O Link Module        |   | C200HW-DRT21    | For C200HX/HG/HE   | U, C, CE  |
|                        |  | CQM1-DRT21      | For CQM1   |           |
| Remote I/O Module      |  | DRT1-ID08       | 8 transistor inputs for terminals with NPN, positive common    | U, C      |
|                        |   | DRT1-ID08-1     | 8 transistor inputs for terminals with PNP, negative common    |           |
|                        |   | DRT1-ID16       | 16 transistor inputs for terminals with NPN, positive common   |           |
|                        |   | DRT1-ID16-1     | 16 transistor inputs for terminals with PNP, negative common   |           |
|                        |   | DRT1-OD08       | 8 transistor outputs for terminals with NPN, positive common   |           |
|                        |   | DRT1-OD08-1     | 8 transistor outputs for terminals with PNP, negative common   |           |
|                        |   | DRT1-OD16       | 16 transistor outputs for terminals with NPN, positive common  |           |
|                        |   | DRT1-OD16-1     | 16 transistor outputs for terminals with PNP, negative common  |           |

| Product                         | Appearance  | Model          | Specifications  | Standards |
|---------------------------------|---|----------------|---|-----------|
| Remote Adapter                  |    | DRT1-ID16X     | 16 inputs with pull-wire connectors for adapters with NPN, positive common      | U, C      |
|                                 |   | DRT1-ID16X-1   | 16 inputs with pull-wire connectors for adapters with PNP, negative common      |           |
|                                 |   | DRT1-OD16X     | 16 outputs with pull-wire connectors for adapters with NPN, positive common     |           |
|                                 |   | DRT1-OD16X-1   | 16 outputs with pull-wire connectors for adapters with PNP, negative common     |           |
| Sensor Module                   |    | DRT1-HD16S     | 8 points for sensors with self-diagnostic function                              | ---       |
|                                 |   | DRT1-ND16S     | 8 points for sensors with automatic teaching function                           |           |
| Dura Blocs                      |    | DRT1-ID08C     | 8 transistor inputs   | CE        |
|                                 |   | DRT1-OD08C     | 8 transistor outputs  |           |
|                                 |   | DRT1-MD16C     | 8 transistor inputs, 8 transistor outputs                                       |           |
| B7AC Interface Module           |    | DRT1-B7AC      | 10 inputs x 3 Units   | CE        |
| Analog I/O Module               |   | DRT1-AD04      | 4 points  | CE        |
|                                 |   | DRT1-AD04H     |   | ---       |
|                                 |  | DRT1-DA02      | 2 points  | CE        |
| Temperature Input Module        |  | DRT1-TS04T     | 4 points  | ---       |
|                                 |   | DRT1-TS04P     |   |           |
| RS-232C Module                  |  | DRT1-232C2     | 2 ports   | U, C, CE  |
| T-branch Tap                    |  | DCN1-1C        | T-branch Tap for 1 branch line (with connector), standard terminating resistor  | ---       |
|                                 |   | DCN1-3C        | T-branch Tap for 3 branch lines (with connector), standard terminating resistor |           |
| Shielded T-branch Tap Connector |  | DCN2-1         | Connector for 1 branch line   | ---       |
| Connector                       |  | XW4B-05C1-H1-D | ---   | ---       |
| Terminal-block Terminator       |  | DRS1-T         | Resistance of 121 Ω   | ---       |

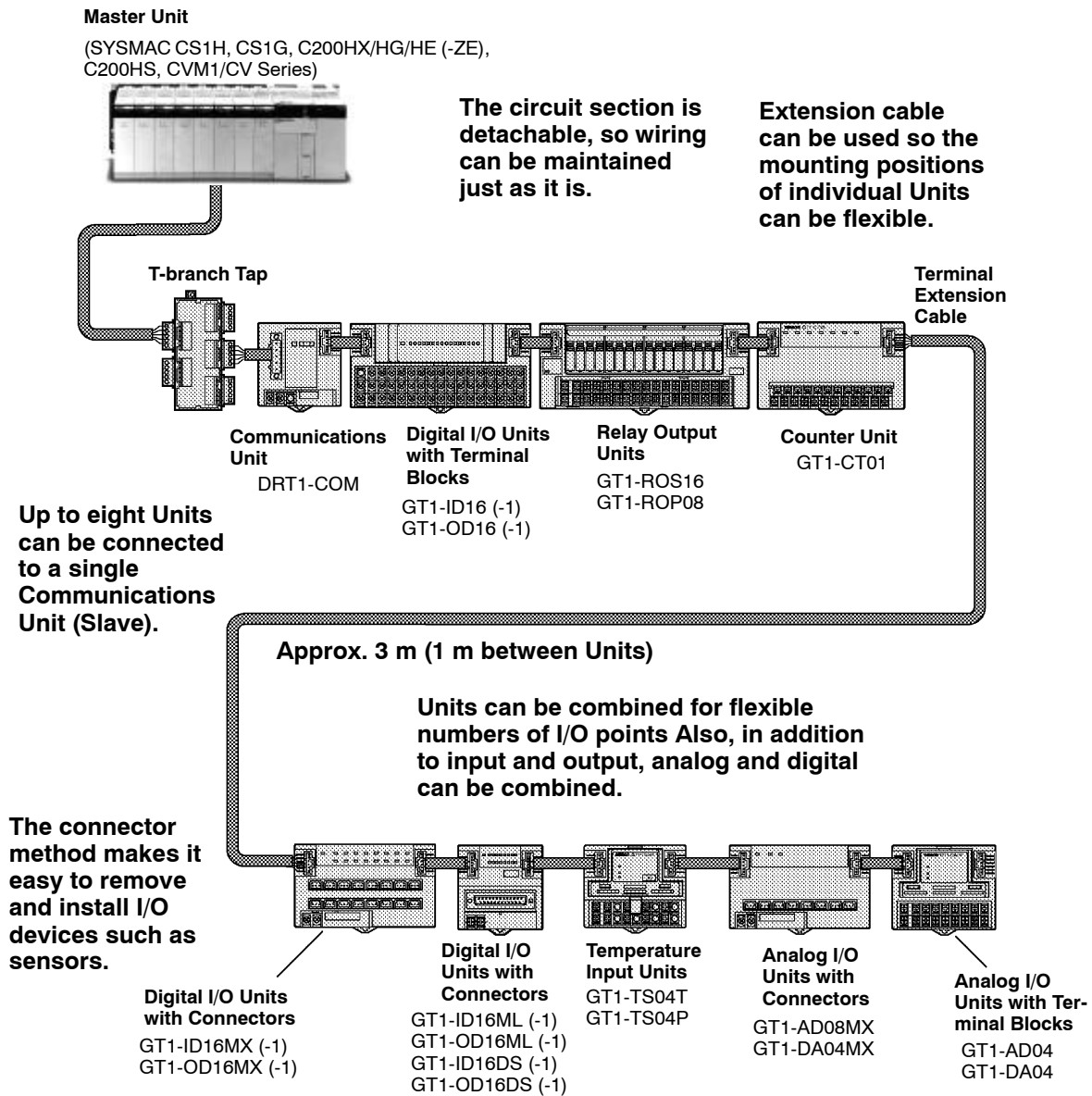
| Product   | Appearance  | Model        | Specifications | Standards |
|---|---|--------------|----------------|-----------|
| Shielded Terminating Resistor   |  | DR2S-1       | Plug model     | ---       |
|   |   | DR2S-2       | Socket model   |           |
| Shielded Connector Cable  |  | DCA1-5CNC5W1 | 0.5 m cable    | ---       |
|   |   | DCA1-5CN01W1 | 1 m cable      |           |
|   |   | DCA1-5CN02W1 | 2 m cable      |           |
|   |   | DCA1-5CN03W1 | 3 m cable      |           |
|   |   | DCA1-5CN05W1 | 5 m cable      |           |
|   |   | DCA1-5CN10W1 | 10 m cable     |           |
|   |  | DCA1-5CNC5F1 | 0.5 m cable    | ---       |
|   |   | DCA1-5CN01F1 | 1 m cable      |           |
|   |   | DCA1-5CN02F1 | 2 m cable      |           |
|  | DCA1-5CNC5H1  | 0.5 m cable  | ---            |           |
|   | DCA1-5CN01H1  | 1 m cable    |                |           |
|   | DCA1-5CN02H1  | 2 m cable    |                |           |
|   | DCA1-5CN03H1  | 3 m cable    |                |           |
|   | DCA1-5CN05H1  | 5 m cable    |                |           |
|   | DCA1-5CN10H1  | 10 m cable   |                |           |


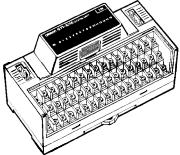
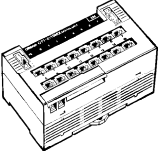
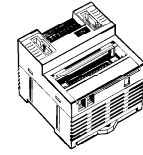
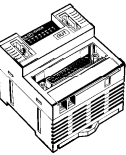
### MULTIPLE I/O TERMINAL

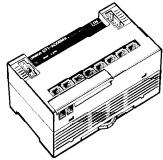
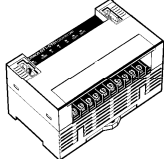
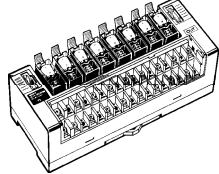
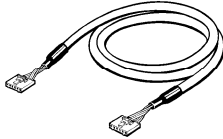
A MULTIPLE I/O TERMINAL with a flexible combination of numerous versatile I/O Units handles digital I/O, analog I/O, counter inputs, or relay outputs and boosts on-site productivity higher than ever. Using a MULTIPLE I/O TERMINAL, one Slave (Communications Unit) can connect to a maximum of eight I/O Units to achieve control of a maximum of 1,024 I/O points.

- Note: 1. Using the DeviceNet Configurator (purchased separately) enables up to 4,800 points to be used with CS1G, CS1H, or C200HX/HG/HE (-ZE) Master and up to 6,400 points with a CVM1/CV-series Master.  
 2. The number of I/O points under control may be restricted by the application. Refer to the *DeviceNet MULTIPLE I/O TERMINAL Operation Manual (W348)* for details.

#### MULTIPLE I/O TERMINAL Configuration Example



|                         |   |  |   |          |   |
|-------------------------|---|--|---|----------|---|
| MULTIPLE I/O<br>MODULES |    | DRT1-COM   | Communications Module   | U, C, CE |   |
|                         |    | GT1-ID16   | Digital Input Module for NPN,<br>positive common terminal block<br>model          | U, C, CE |   |
|                         |   | GT1-ID16-1   | Digital Input Module for PNP,<br>negative common terminal block<br>model          |          |   |
|                         |   | GT1-OD16   | Digital Output Module for NPN,<br>positive common terminal block<br>model         |          |   |
|                         |   | GT1-OD16-1   | Digital Output Module for PNP,<br>negative common terminal block<br>model         |          |   |
|                         |   | GT1-ID16MX   | Digital Input Module for NPN,<br>positive common connector model                  |          |   |
|                         |   | GT1-ID16MX-1   | Digital Input Module for PNP,<br>negative common connector model                  |          |   |
|                         |   | GT1-OD16MX   | Digital Output Module for NPN,<br>positive common connector model                 |          |   |
|                         |   | GT1-OD16MX-1   | Digital Output Module for PNP,<br>negative common connector model                 |          |   |
|                         |    | GT1-ID16ML   | Digital Input Module for NPN,<br>positive common connector model                  | CE       |   |
|                         |   | GT1-ID16ML-1   | Digital Input Module for PNP,<br>negative common connector model                  |          |   |
|                         |   | GT1-OD16ML   | Digital Output Module for NPN,<br>positive common connector model                 |          |   |
|                         |   | GT1-OD16ML-1   | Digital Output Module for PNP,<br>negative common connector model                 |          |   |
|                         |   |  | GT1-ID16DS  |          | Digital Input Module for NPN,<br>positive common high-density<br>connector model  |
|                         |   |  | GT1-ID16DS-1  |          | Digital Input Module for PNP,<br>negative common high-density<br>connector model  |
|                         |   |  | GT1-OD16DS  |          | Digital Output Module for NPN,<br>positive common high-density<br>connector model |
|                         |   |  | GT1-OD16DS-1  |          | Digital Output Module for PNP,<br>positive common high-density<br>connector model |
|                         |  | GT1-ID32ML   | Digital Input Module for NPN,<br>positive common high-density<br>connector model  | U, C, CE |   |
|                         |   | GT1-ID32ML-1   | Digital Input Module for PNP, positive<br>common high-density connector<br>model  |          |   |
|                         |   | GT1-OD32ML   | Digital Output Module for NPN,<br>positive common high-density<br>connector model |          |   |
| GT1-OD32ML-1            |   | Digital Output Module for PNP,<br>positive common high-density<br>connector model  |   |          |   |

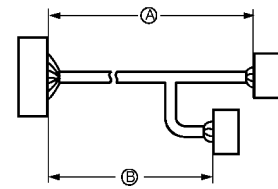
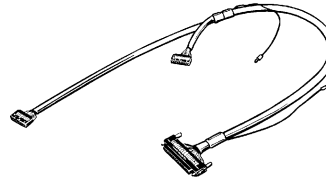
|                         |   |            |  |          |
|-------------------------|---|------------|--|----------|
| MULTIPLE I/O<br>MODULES |  | GT1-AD08MX | Analog Input Module with 8 points                            | U, C, CE |
|                         |   | GT1-AD04   | Analog Input Module with 4 points                            |          |
|                         |   | GT1-DA04MX | Analog Output Module with 4 points                           |          |
|                         |   | GT1-DA04   |  |          |
|                         |  | GT1-CT01   | Counter Module with 1 input and 2 outputs                    | CE       |
|                         |  | GT1-ROP08  | Relay Output Module with 8 points                            | U, C, CE |
|                         |   | GT1-ROS16  | Relay Output Module with 16 points                           | CE       |
|                         |  | GCN1-100   | I/O Module Cable   | ---      |
|                         |   | GCNI-004A  | Bag of 10 communications connectors for multiple I/O modules | ---      |

Note: 1. The abbreviations of standards correspond as follows: U = UL; C = CSA; CE = EC.

2. OMRON devices that comply with EC Directives also conform to the related EMC standards so that they can be more easily built into other devices or the overall machine. The actual products have been checked for conformity to EMC standards. Whether the products conform to the standards in the system used by the customer, however, must be checked by the customer. EMC-related performance of the OMRON devices that comply with EC Directives will vary depending on the configuration, wiring, and other conditions of the equipment or control panel on which the OMRON devices are installed. The customer must, therefore, perform the final check to confirm that devices and the overall machine conform to EMC standards.

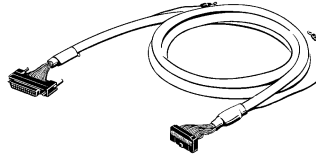
## ■ Cable with Connectors/G79-□C\*

| Size (mm) |       | Input         | Output        |
|-----------|-------|---------------|---------------|
| A         | B     | Model         |               |
| 1,000     | 750   | G79-I100C-75  | G79-O100C-75  |
| 1,500     | 1,250 | G79-I150C-125 | G79-O150C-125 |
| 2,000     | 1,750 | G79-I200C-175 | G79-O200C-175 |
| 3,000     | 2,750 | G79-I300C-275 | G79-O300C-275 |
| 5,000     | 4,750 | G79-I500C-475 | G79-O500C-475 |

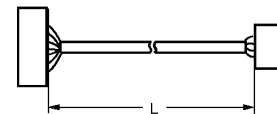


Length (without any bending)

| Cable length L (mm) | Model    |
|---------------------|----------|
| 1,000               | G79-100C |
| 1,500               | G79-150C |
| 2,000               | G79-200C |
| 3,000               | G79-300C |
| 5,000               | G79-500C |



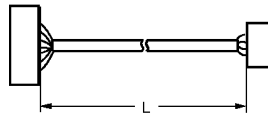
Cable length L (mm)



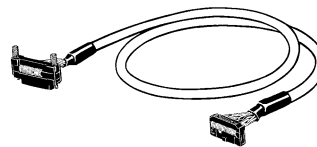
## ■ Cable with Connectors/XW2Z\*

| Cable length L (mm) | Model     |
|---------------------|-----------|
| 500                 | XW2Z-050B |
| 1,000               | XW2Z-100B |
| 1,500               | XW2Z-150B |
| 2,000               | XW2Z-200B |
| 3,000               | XW2Z-300B |
| 5,000               | XW2Z-500B |

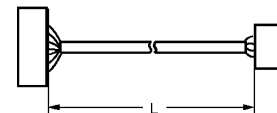
Cable length L (mm)



| Cable length L (mm) | Model     |
|---------------------|-----------|
| 500                 | XW2Z-050A |
| 1,000               | XW2Z-100A |
| 1,500               | XW2Z-150A |
| 2,000               | XW2Z-200A |
| 3,000               | XW2Z-300A |
| 5,000               | XW2Z-500A |



Cable length L (mm)



\* Use these cables with connectors to connect DeviceNet modules with "ML" designation to relay terminals or wiring terminals, e.g., G7TC, G70A, XW2B.

## ■ Model Number Legend

DRT1-□□□□□

1 2 3 4 5

### 1. I/O Module Replacement

None: Impossible

### 2. I/O Specifications

I: Input  
 O: Output  
 H: 2 inputs (with self-diagnostic output)  
 N: Input and output (with remote teaching)  
 AD: Analog input  
 DA: Analog output  
 TS: Temperature sensor input

### 4. I/O Points

08: 8 points

### 5. I/O Connection Method

None: Screw terminals  
 S: Connector  
 X: Flat cable connector

### 3. I/O Voltage Specifications

D: DC  
 None: Analog I/O

16: 16 points

T: Thermocouple input  
 P: Platinum resistance thermometer input

## DIP Switch Settings vs. Node Addresses

The following indicate DIP switch settings for corresponding node addresses. The name or pin orientation of the DIP switch of the Slave Unit may vary with the Slave Unit model. Each pin, however, corresponds to a binary digit.

### ■ DIP SWITCH SETTINGS AND CORRESPONDING NODE ADDRESSES

| Node address | Pin 1 | Pin 2 | Pin 3 | Pin 4 | Pin 5 | Pin 6 | Node address | Pin 1 | Pin 2 | Pin 3 | Pin 4 | Pin 5 | Pin 6 |
|--------------|-------|-------|-------|-------|-------|-------|--------------|-------|-------|-------|-------|-------|-------|
|              | 1     | 2     | 4     | 8     | 16    | 32    |              | 1     | 2     | 4     | 8     | 16    | 32    |
| #0           | 0     | 0     | 0     | 0     | 0     | 0     | #32          | 0     | 0     | 0     | 0     | 0     | 1     |
| #1           | 1     | 0     | 0     | 0     | 0     | 0     | #33          | 1     | 0     | 0     | 0     | 0     | 1     |
| #2           | 0     | 1     | 0     | 0     | 0     | 0     | #34          | 0     | 1     | 0     | 0     | 0     | 1     |
| #3           | 1     | 1     | 0     | 0     | 0     | 0     | #35          | 1     | 1     | 0     | 0     | 0     | 1     |
| #4           | 0     | 0     | 1     | 0     | 0     | 0     | #36          | 0     | 0     | 1     | 0     | 0     | 1     |
| #5           | 1     | 0     | 1     | 0     | 0     | 0     | #37          | 1     | 0     | 1     | 0     | 0     | 1     |
| #6           | 0     | 1     | 1     | 0     | 0     | 0     | #38          | 0     | 1     | 1     | 0     | 0     | 1     |
| #7           | 1     | 1     | 1     | 0     | 0     | 0     | #39          | 1     | 1     | 1     | 0     | 0     | 1     |
| #8           | 0     | 0     | 0     | 1     | 0     | 0     | #40          | 0     | 0     | 0     | 1     | 0     | 1     |
| #9           | 1     | 0     | 0     | 1     | 0     | 0     | #41          | 1     | 0     | 0     | 1     | 0     | 1     |
| #10          | 0     | 1     | 0     | 1     | 0     | 0     | #42          | 0     | 1     | 0     | 1     | 0     | 1     |
| #11          | 1     | 1     | 0     | 1     | 0     | 0     | #43          | 1     | 1     | 0     | 1     | 0     | 1     |
| #12          | 0     | 0     | 1     | 1     | 0     | 0     | #44          | 0     | 0     | 1     | 1     | 0     | 1     |
| #13          | 1     | 0     | 1     | 1     | 0     | 0     | #45          | 1     | 0     | 1     | 1     | 0     | 1     |
| #14          | 0     | 1     | 1     | 1     | 0     | 0     | #46          | 0     | 1     | 1     | 1     | 0     | 1     |
| #15          | 1     | 1     | 1     | 1     | 0     | 0     | #47          | 1     | 1     | 1     | 1     | 0     | 1     |
| #16          | 0     | 0     | 0     | 0     | 1     | 0     | #48          | 0     | 0     | 0     | 0     | 1     | 1     |
| #17          | 1     | 0     | 0     | 0     | 1     | 0     | #49          | 1     | 0     | 0     | 0     | 1     | 1     |
| #18          | 0     | 1     | 0     | 0     | 1     | 0     | #50          | 0     | 1     | 0     | 0     | 1     | 1     |
| #19          | 1     | 1     | 0     | 0     | 1     | 0     | #51          | 1     | 1     | 0     | 0     | 1     | 1     |
| #20          | 0     | 0     | 1     | 0     | 1     | 0     | #52          | 0     | 0     | 1     | 0     | 1     | 1     |
| #21          | 1     | 0     | 1     | 0     | 1     | 0     | #53          | 1     | 0     | 1     | 0     | 1     | 1     |
| #22          | 0     | 1     | 1     | 0     | 1     | 0     | #54          | 0     | 1     | 1     | 0     | 1     | 1     |
| #23          | 1     | 1     | 1     | 0     | 1     | 0     | #55          | 1     | 1     | 1     | 0     | 1     | 1     |
| #24          | 0     | 0     | 0     | 1     | 1     | 0     | #56          | 0     | 0     | 0     | 1     | 1     | 1     |
| #25          | 1     | 0     | 0     | 1     | 1     | 0     | #57          | 1     | 0     | 0     | 1     | 1     | 1     |
| #26          | 0     | 1     | 0     | 1     | 1     | 0     | #58          | 0     | 1     | 0     | 1     | 1     | 1     |
| #27          | 1     | 1     | 0     | 1     | 1     | 0     | #59          | 1     | 1     | 0     | 1     | 1     | 1     |
| #28          | 0     | 0     | 1     | 1     | 1     | 0     | #60          | 0     | 0     | 1     | 1     | 1     | 1     |
| #29          | 1     | 0     | 1     | 1     | 1     | 0     | #61          | 1     | 0     | 1     | 1     | 1     | 1     |
| #30          | 0     | 1     | 1     | 1     | 1     | 0     | #62          | 0     | 1     | 1     | 1     | 1     | 1     |
| #31          | 1     | 1     | 1     | 1     | 1     | 0     | #63          | 1     | 1     | 1     | 1     | 1     | 1     |

**Note:** Node addresses are all factory-set to #0.



## DeviceNet™

### Advanced DeviceNet Technology Makes It Possible to Manufacture Highly-functional, Inexpensive and Unique Products Compatible with Products of Different Manufacturers

#### ■ CAN PROTOCOL (ISO 11898, PART A)

OMRON uses the CAN (Control Area Network) protocol for physical and data link layers, thus making it possible to construct inexpensive, high-performance, reliable networks that resist noise. Inexpensive mass-produced communications chips can be supplied from a variety of manufacturers. With the CSMA/NMB (Carrier Sense Multiple Access with Non-destructive Bitwise Arbitration) method, the 100% efficiency of the networks can be assured. Each packet can be placed in priority order, which ensures real-time control data transmission within a certain period while device setting data is transmitted in the same network.

#### ■ SUMMARY OF COMMUNICATIONS SPECIFICATIONS

- Max. number of nodes: 64
- Max. cable length: 500 m for 125,000 bps, 250 m for 250,000 bps, and 100 m for 500,000 bps.
- The trunk or drop-line connection and daisy chain can be used together, which makes it possible to wire cables with ease.

#### ■ OBJECT ORIENTED

The application layer has the standardized device profile, thus ensuring multi-vendor compatibility. This application layer makes it to construct flexible networks that can use the unique data transmission functions of a variety of manufacturers.

- There is no minimum distance for drop lines or between taps. The maximum length of a drop line is 6 m.
- All devices, tap connectors, and cables are standardized and maintained with ease.

**Note:** The device profile consists of specifications for the operation of devices.

### ODVA is Making Efforts to Popularize DeviceNet

The ODVA (Open DeviceNet Vendor Association, Inc.), which was established as a non-profit organization by machine manufacturers, has been mainly controlling the specifications and promotion of the DeviceNet.

#### ■ TECHNOLOGY DEVELOPMENT

The ODVA's SIGs (Special Interest Groups) unify new device profiles, develop new media, and control the specifications of the DeviceNet according to the type of machine or theme.

#### ■ SUPPORT

The ODVA provides machine manufacturers with specification sheets and vendor IDs for the development of machines. Also, the ODVA provides machine users with information through the Internet and catalogs of products conforming to the DeviceNet specifications for easy reference.

#### ■ PROMOTION

The ODVA takes part in exhibitions all over the world to promote the DeviceNet and the products of ODVA members that conform to the DeviceNet specifications.

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

# OMRON®

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