Chipsmall Limited consists of a professional team with an average of over 10 year of expertise in the distribution of electronic components. Based in Hongkong, we have already established firm and mutual-benefit business relationships with customers from,Europe,America and south Asia,supplying obsolete and hard-to-find components to meet their specific needs.

With the principle of "Quality Parts,Customers Priority,Honest Operation,and Considerate Service",our business mainly focus on the distribution of electronic components. Line cards we deal with include Microchip,ALPS,ROHM,Xilinx,Pulse,ON,Everlight and Freescale. Main products comprise IC,Modules,Potentiometer,IC Socket,Relay,Connector.Our parts cover such applications as commercial,industrial, and automotives areas.

We are looking forward to setting up business relationship with you and hope to provide you with the best service and solution. Let us make a better world for our industry!

Contact us

CJ-series FL-net Unit
CJ1W-FLN22

Connect to Multivendor Controller Networks

This Unit allows you to connect to FL-net, an open network based on Ethernet. Multivendor FL-net networks can be built to combine CJ-series PLCs with CNC machines, robots, and PLCs from other manufacturers.

CJ1W-FLN22

Features

- Conforms to FL-net, a quickly spreading standard.
- FL-net is a multivendor FA network at the controller/machine level that is based on Ethernet. (It uses UDP/IP.)
- FL-net supports message transmissions and cyclic data transmissions. (Message transmissions are also possible using FINS communications.)
- A CJ-series PLC can be used to interface communications between Ethernet information networks, OMRON's Controller Link FA network, and DeviceNet field bus.

System Configuration

10BASE-T
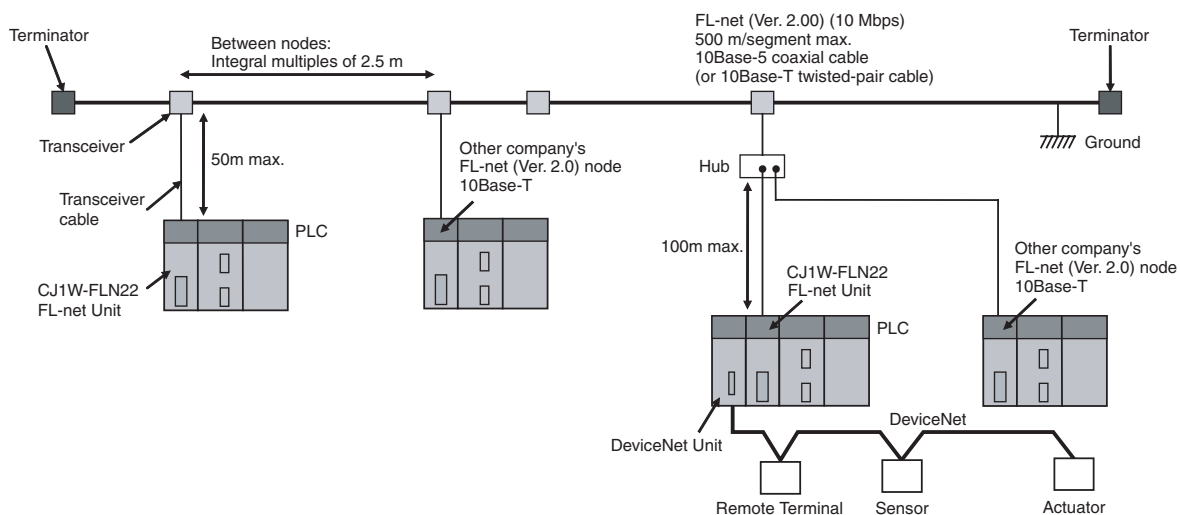
100BASE-TX
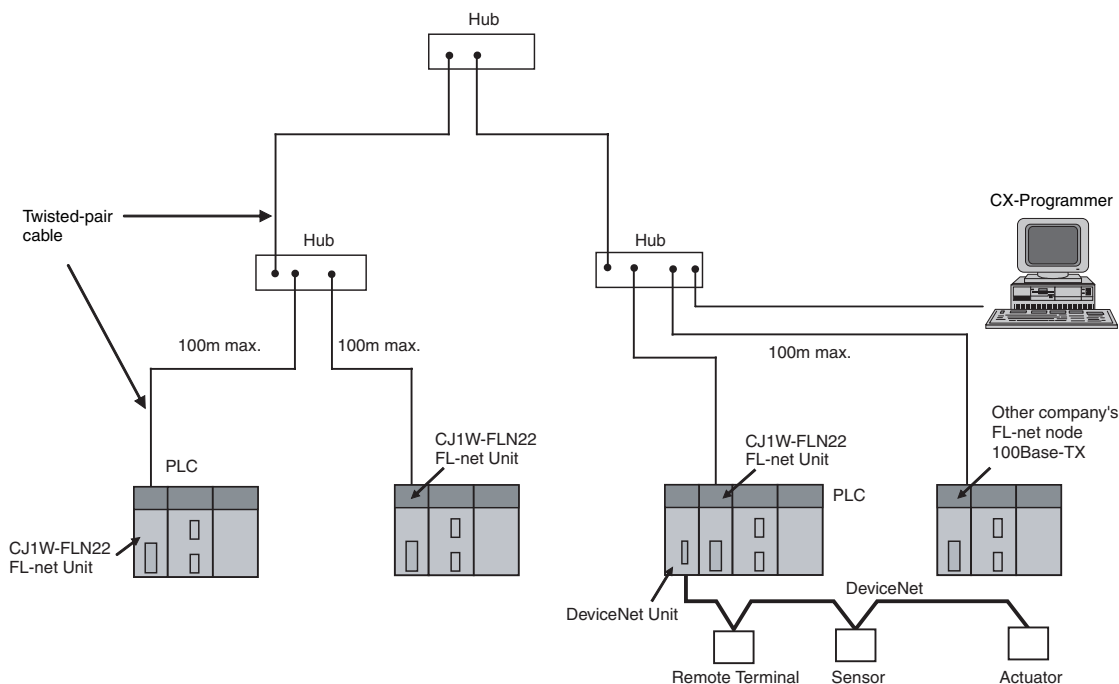
Note: Do not combine nodes using a baud rate of 10 Mbps with nodes using a baud rate of 100 Mbps in the same configuration, where possible. If nodes with a baud rate of 10 Mbps are used, use a baud rate of 10 Mbps for all the connected devices in the configuration.

About FL-net

FL-net is an open network that is based on Ethernet and that is being promoted as a standard by the Special Committee for Network. Promotion organized by JEMA (The Japan Electrical Manufacturers' Association). FL-net enables multivendor, multi-model connections at the controller/machine level. FL-net provides the following features.

- Ethernet-based FA Network
- NL-net defines a new Ethernet-based FL link protocol.
- The standard UDP/IP communications protocol of Ethernet is used.
- Cables, hubs, and other network components are easy to obtain.

- Message Transmissions and Cyclic Data Transmissions
- Interlocks between devices, manufacturing instructions, collection of manufacturing results can be achieved on the same network.
- Master-less, Token System
- Prevents data collisions and provides consistent transmission times.
- Nodes can be automatically added to or removed from the network.
- Communications are maintained between all nodes that are capable of communicating even if a power interruption occurs or a fault occurs in network devices or cables.

Ordering Information

FL-net Unit

Unit type	Product name	Specifications			No. of unit numbers allocated	Current consumption (A)		Model	Standards
		Communications interface	Communications functions	Max. Units mountable per CPU Units		5V	24V		
CJ1 CPU Bus Unit	FL-net Unit	100BASE-TX	With FL-net Ver. 2.0 specifications (OPCN-2) Data links and message service	4	1	0.37	—	**CJ1W-FLN22**	UC1, CE

Note: 1. There is no accessory for the CJ-series Ethernet Unit.
    2. This unit cannot be used with the Machine Automation Controller NJ-series.

Recommended Network Devices
The following products are recommended for use with the FL-net Unit.

Part	Maker	Model number	Specification
Twisted-pair cable	100BASE-TX		
	Fujikura	F-LINE-E 0.5mm × 4P	STP (shielded twisted-pair) cable: Category 5,5e Note: Impedance is limited 100 Ω.
	Fujikura	CTP-LAN5 0.5mm × 4P	UTP (unshielded twisted-pair) cable: Category 5,5e
	100BASE-TX		
	Fujikura	F-LINE-E 0.5mm × 4P	STP (shielded twisted-pair) cable: Category 3,4,5,5e Note: Impedance is limited 100 Ω.
	Fujikura	CTP-LAN5 0.5mm × 4P	UTP (unshielded twisted-pair) cable: Category 3,4,5,5e
Connector (Modular plug)	STP Plug		
	Panduit Corp	MPS588	—
	UTP Plug		
	Panduit Corp	MP588-C	—

Mountable Racks

Model	NJ system		CJ system (CJ1, CJ2)		CP1H system	NSJ system	
	CPU Rack	Expansion Rack	CPU Rack	Expansion Backplane	CP1H PLC	NSJ Controller	Expansion Backplane
CJ1W-FLN22	Not supported		4 Units (per CPU Unit)		2 Units *	Not supported	4 Units (per CPU Unit)

* A CP1W-EXT01 CJ Unit Adaptor is required.

FL-net Unit Specifications

Item		Specifications	
Model number		CJ1W-FLN22	
Type		100Base-TX (10Base-T is also possible)	
Applicable PLCs		CJ-series PLCs	
Unit classification		CJ-series CPU Bus Unit	
Mounting location		CPU Rack or Expansion Rack	
Number of Units that can be mounted		4 max. (including Expansion Racks)	
Transfer specifications	**Media access method**	CSMA/CD	
	Modulation	Baseband	
	Transmission paths	Star	
	Baud rate	100 Mbps (100Base-TX)	10 Mbps (10Base-T)
	Transmission media	Unshielded twisted-pair (UTP) cable Categories: 5, 5e Shielded twisted-pair (STP) cable Categories: 100 Ω at 5, 5e	Unshielded twisted-pair (UTP) cable Categories: 3, 4, 5, 5e Shielded twisted-pair (STP) cable Categories: 100 Ω at 3, 4, 5, 5e
	Transmission distance	100 m max. (distance between hub and node)	
	Number of cascade connections with repeater hub	2	4
Current consumption (Unit)		370 mA max. at 5 VDC	
Vibration resistance		Conforms to JIS 0040. 10 to 57 Hz, 0.075-mm amplitude, 57 to 150 Hz, acceleration: 9.8 m/s^2 in X, Y, and Z directions for 80 minutes each (Time coefficient; 8 minutes × coefficient factor 10 = total time 80 minutes)	
Shock resistance		Conforms to JIS 0041. 147 m/s^2 three times each in X, Y, and Z directions	
Ambient temperature		Operating: 0 to 55°C Storage: −20 to 75°C	
Humidity		10% to 90% (with no condensation)	
Atmosphere		Must be free from corrosive gas.	
Weight		100 g max.	
Dimensions		31 × 90 × 65 mm (W × H × D)	

CX-FLnet

CX-FLnet

The CX-FLnet Support Software is used to make settings for OMRON FL-net Units mounted to Programmable Controllers (PLCs). The CX-FLnet Support Software is installed on a computer running Windows 2000 (Service Pack 4 or higher), XP, Vista, or 7.
The CX-FLnet can be used to make settings for the following FL-net Units:
CJ1W-FLN22, CS1W-FLN22, CS1W-FLN02/12

CX-FLnet Functions

The CX-FLnet provides mainly the following functions.

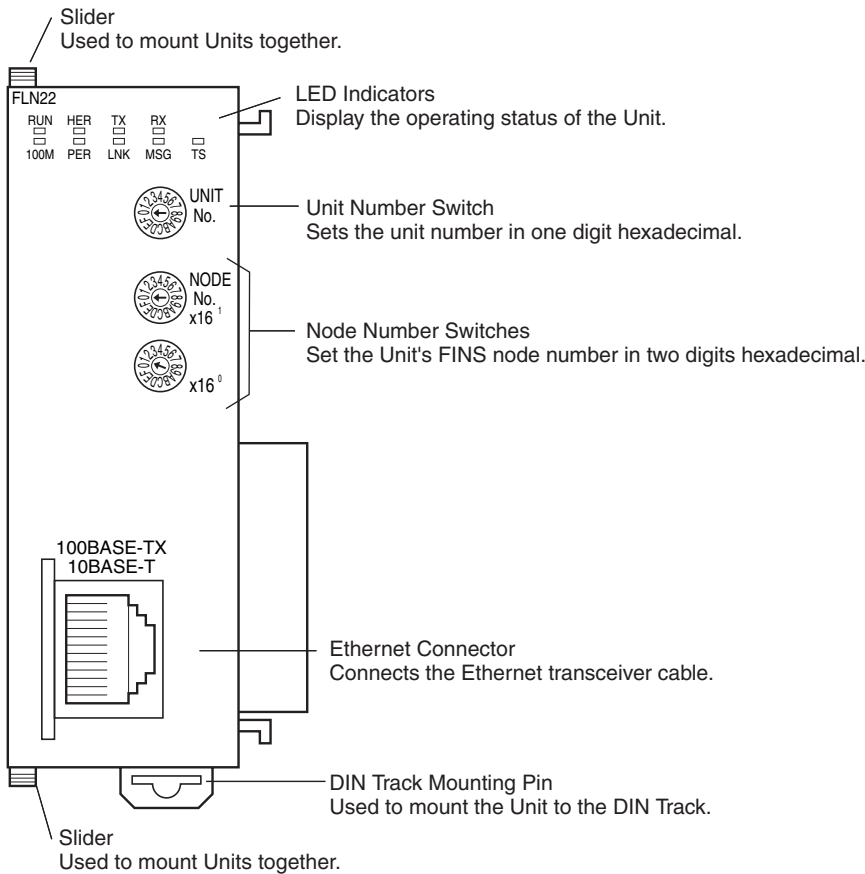| Function	Description

Online connection	The following two methods can be used for connection.
	• Direct PLC Connection
	  Perform the settings after making a direct serial connection to each PLC to which FL-net Units are mounted.
	• Connection via a Network
	  Online connection and settings are made from the PLC connected to the computer running CX-FLnet (i.e., the gateway PLC) to each PLC (i.e., the target PLCs) to which FL-net Units are mounted via the FL-net network or other networks (e.g., Ethernet or Controller Link).

Settings	The following settings can be made.
	• CPU Bus Unit Setup Area
	• Data Link Setup
	  - Local Node Setup Area
	  - Other Node Setup Area
	  - Extension Setting
	  - Unit Area Setup (token watchdog timer)

File	Communications settings for the online connection and data link settings can be saved and read in CSV format.
Monitor	• Data Link Status • FL-net Unit Status (FA Link active status, transceiver power supply, received message or not, token monitoring timeout setting exceeded, and IP address setting error) • Communications Cycle Time • Message Sequential Status • FL-net Unit Error Log • Status of nodes participating in the FL-net network

CX-FLnet Availability

The CX-FLnet is available only as a component of the CX-One FA Integrated Tool Package. Refer to the CX-One Setup Manual (W463, provided with the CX-One) for the CX-One installation and uninstallation procedures.
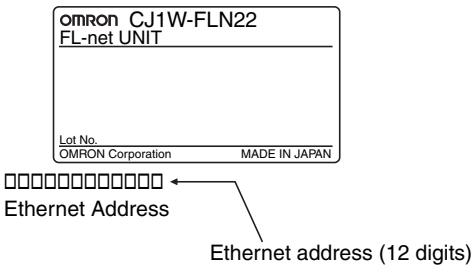For detalis on CX-FLnet Support Software Operations refer to the FL-net Units Operation Manual (W440).

External Interface

CJ1W-FLN22, 100BASE-TX

Slider
Used to mount Units together.

FLN22

RUN	HER	TX	RX	
100M	PER	LNK	MSG	TS

LED Indicators
Display the operating status of the Unit.

UNIT No.

Unit Number Switch
Sets the unit number in one digit hexadecimal.

NODE No. x16 ^{1}

x16 ^{0}

Node Number Switches
Set the Unit's FINS node number in two digits hexadecimal.

100BASE-TX
10BASE-T

Ethernet Connector
Connects the Ethernet transceiver cable.

DIN Track Mounting Pin
Used to mount the Unit to the DIN Track.

Slider
Used to mount Units together.

Individual Ethernet addresses are assigned to all communications devices connected to an Ethernet system. With the FL-net Unit, the Ethernet address is shown in 12 digits, hexadecimal, on the right side of the Unit.

OMRON CJ1W-FLN22
FL-net UNIT

Lot No.
OMRON Corporation   MADE IN JAPAN

□□□□□□□□□□□□ ← Ethernet Address

Ethernet address (12 digits)

Note: The Ethernet address can also be checked by means of the FINS command CONTROLLER DATA READ.
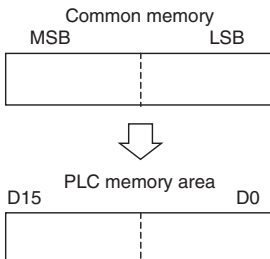
Ethernet Connectors

The following standards and specifications apply to the connectors for the Ethernet twisted-pair cable.
- Electrical specifications: Conforming to IEEE802.3 standards.
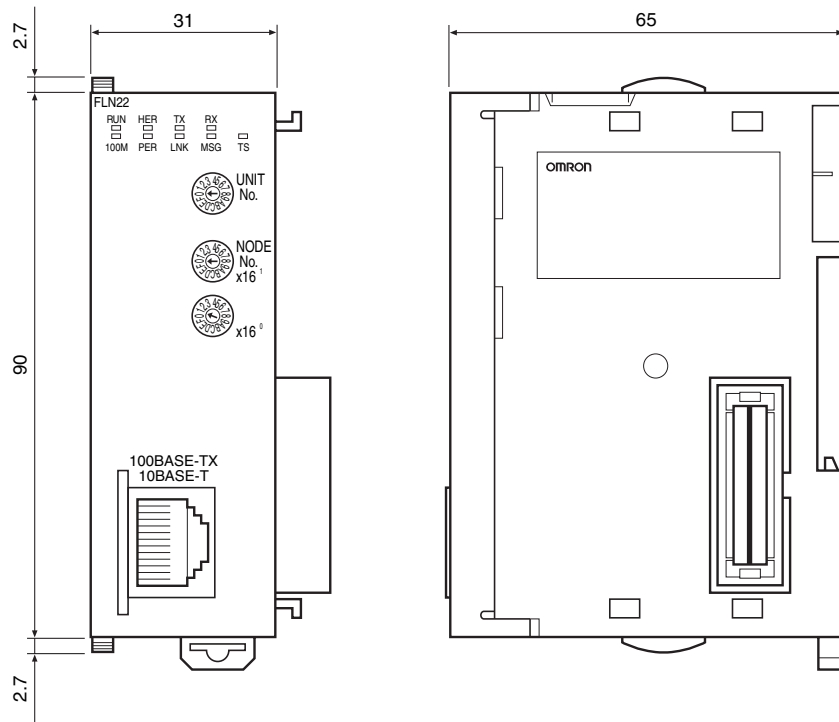- Connector structure: RJ45 8-pin Modular Connector (conforming to ISO 8877)
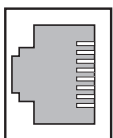
Connector pin	Signal name	Abbr.	Signal direction
1	Transmission data +	TD+	Output
2	Transmission data –	TD–	Output
3	Reception data +	RD+	Input
4	Not used.	—	—
5	Not used.	—	—
6	Reception data –	RD–	Input
7	Not used.	—	—
8	Not used.	—	—
Hood	Frame ground	FG	—

Comparison with Previous Models (CS1W-FLN02, CS1W-FLN12)

Model	CS1W-FLN22 CJ1W-FLN22	CS1W-FLN02/12
Type	100Base-TX (10Base-T is also possible)	10Base-5 (CS1W-FLN02) 10Base-T (CS1W-FLN12) This model is discontinued.
Switches/indicators	100M indicator provided This indicator indicates when baud rate of 100 Mbps is being used.	No 100M indicator
	No rotary switch for setting the IP address. The IP address is set using the CX-FLnet or FL-net Unit Support Software. Either of the following two methods can be used to set the IP address. 1.192.168.250 + node number 2.Setup area	Rotary switch provided on rear of Unit for setting the IP address. Either of the following four methods can be used to set the IP address 1.192.168.250 + node number 2.Rotary switch on rear of Unit. 3.Rotary switch on rear of Unit + node number 4.Setup area
Data link functions	Total capacity: 8,704 words (Area 1: 512 words, Area 2: 8,192 words) If the total number of words in Area 1 and Area 2 for a single node exceeds 7,677 words, the data for the corresponding node will be refreshed over two scans of the CPU Unit. The data will be split from the 7,678th word counted from the beginning of the combined Area 1 and Area 2.	Total capacity: 8,704 words (Area 1: 512 words, Area 2: 8,192 words) Data link tables that exceed the following conditions, however, cannot be set. Number of words in local node setup area (Area 1 and Area 2) $\leq$ 7,677 words. Number of words in local node setup area (Area 1 and Area 2) + the number of words in setup area (Area 1 and Area 2) for node with the largest setup area size (except local node) $\leq$ 7,677 words
	The order of the upper and lower byte in the word data can be swapped for each node when exchanging data between the data link area in the PLC and the FL-net.	The data order cannot be changed and is fixed as shown in the following diagram. Common memory MSB LSB PLC memory area D15 D0
Simple backup function	Supported.	Not supported.
Support Software	CX-FLnet or FL-net Unit Support Software version 1.60 or higher (CS1W-FLN22 and CJ1W-FLN22 settings cannot be made using Ver. 1.51 or lower)	FL-net Unit Support Software Ver. 1.51 or higher (CS1W-FLN02 and CS1W-FLN12 settings can also be made using Ver. 1.60 or higher)

Dimensions

(Unit : mm)

CJ1W-FLN22

Related Manuals

Name	Cat. No.	Contents
SYSMAC CS/CJ Series CS1W-FLN22 (100Base-TX) and CJ1W-FLN22 (100Base-TX) FL-net Units Operation Manual	W440	Describes the installation and operation of the CS1W-FLN22 and CJ1W-FLN22 FL-net Units. Refer to the Communications Commands Reference Manual (W342) for information on FINS commands that can be addressed to CS/CJ-series CPU Units.
CXONE-AL□□C-V□/AL□□D-V□ CX-One FA Integrated Tool Package Setup Manual	W463	Provides an overview of the CX-One FA Integrated Tool and installation procedures.

Read and Understand This Catalog

Please read and understand this catalog before purchasing the products. Please consult your OMRON representative if you have any questions or comments.

Warranty and Limitations of Liability

WARRANTY

OMRON's exclusive warranty is that the products are free from defects in materials and workmanship for a period of one year (or other period if specified) from date of sale by OMRON.

OMRON MAKES NO WARRANTY OR REPRESENTATION, EXPRESS OR IMPLIED, REGARDING NON-INFRINGEMENT, MERCHANTABILITY, OR FITNESS FOR PARTICULAR PURPOSE OF THE PRODUCTS. ANY BUYER OR USER ACKNOWLEDGES THAT THE BUYER OR USER ALONE HAS DETERMINED THAT THE PRODUCTS WILL SUITABLY MEET THE REQUIREMENTS OF THEIR INTENDED USE. OMRON DISCLAIMS ALL OTHER WARRANTIES, EXPRESS OR IMPLIED.

LIMITATIONS OF LIABILITY

OMRON SHALL NOT BE RESPONSIBLE FOR SPECIAL, INDIRECT, OR CONSEQUENTIAL DAMAGES, LOSS OF PROFITS OR COMMERCIAL LOSS IN ANY WAY CONNECTED WITH THE PRODUCTS, WHETHER SUCH CLAIM IS BASED ON CONTRACT, WARRANTY, NEGLIGENCE, OR STRICT LIABILITY.

In no event shall the responsibility of OMRON for any act exceed the individual price of the product on which liability is asserted.

IN NO EVENT SHALL OMRON BE RESPONSIBLE FOR WARRANTY, REPAIR, OR OTHER CLAIMS REGARDING THE PRODUCTS UNLESS OMRON'S ANALYSIS CONFIRMS THAT THE PRODUCTS WERE PROPERLY HANDLED, STORED, INSTALLED, AND MAINTAINED AND NOT SUBJECT TO CONTAMINATION, ABUSE, MISUSE, OR INAPPROPRIATE MODIFICATION OR REPAIR.

Application Considerations

SUITABILITY FOR USE

OMRON shall not be responsible for conformity with any standards, codes, or regulations that apply to the combination of products in the customer's application or use of the products.

At the customer's request, OMRON will provide applicable third party certification documents identifying ratings and limitations of use that apply to the products. This information by itself is not sufficient for a complete determination of the suitability of the products in combination with the end product, machine, system, or other application or use.

The following are some examples of applications for which particular attention must be given. This is not intended to be an exhaustive list of all possible uses of the products, nor is it intended to imply that the uses listed may be suitable for the products:

- Outdoor use, uses involving potential chemical contamination or electrical interference, or conditions or uses not described in this catalog.

- Nuclear energy control systems, combustion systems, railroad systems, aviation systems, medical equipment, amusement machines, vehicles, safety equipment, and installations subject to separate industry or government regulations.

- Systems, machines, and equipment that could present a risk to life or property.

Please know and observe all prohibitions of use applicable to the products.

NEVER USE THE PRODUCTS FOR AN APPLICATION INVOLVING SERIOUS RISK TO LIFE OR PROPERTY WITHOUT ENSURING THAT THE SYSTEM AS A WHOLE HAS BEEN DESIGNED TO ADDRESS THE RISKS, AND THAT THE OMRON PRODUCTS ARE PROPERLY RATED AND INSTALLED FOR THE INTENDED USE WITHIN THE OVERALL EQUIPMENT OR SYSTEM.

PROGRAMMABLE PRODUCTS

OMRON shall not be responsible for the user's programming of a programmable product, or any consequence thereof.

Disclaimers

CHANGE IN SPECIFICATIONS

Product specifications and accessories may be changed at any time based on improvements and other reasons.

It is our practice to change model numbers when published ratings or features are changed, or when significant construction changes are made. However, some specifications of the products may be changed without any notice. When in doubt, special model numbers may be assigned to fix or establish key specifications for your application on your request. Please consult with your OMRON representative at any time to confirm actual specifications of purchased products.

DIMENSIONS AND WEIGHTS

Dimensions and weights are nominal and are not to be used for manufacturing purposes, even when tolerances are shown.

PERFORMANCE DATA

Performance data given in this catalog is provided as a guide for the user in determining suitability and does not constitute a warranty. It may represent the result of OMRON's test conditions, and the users must correlate it to actual application requirements. Actual performance is subject to the OMRON Warranty and Limitations of Liability.

ERRORS AND OMISSIONS

The information in this document has been carefully checked and is believed to be accurate; however, no responsibility is assumed for clerical, typographical, or proofreading errors, or omissions.