

OMRON

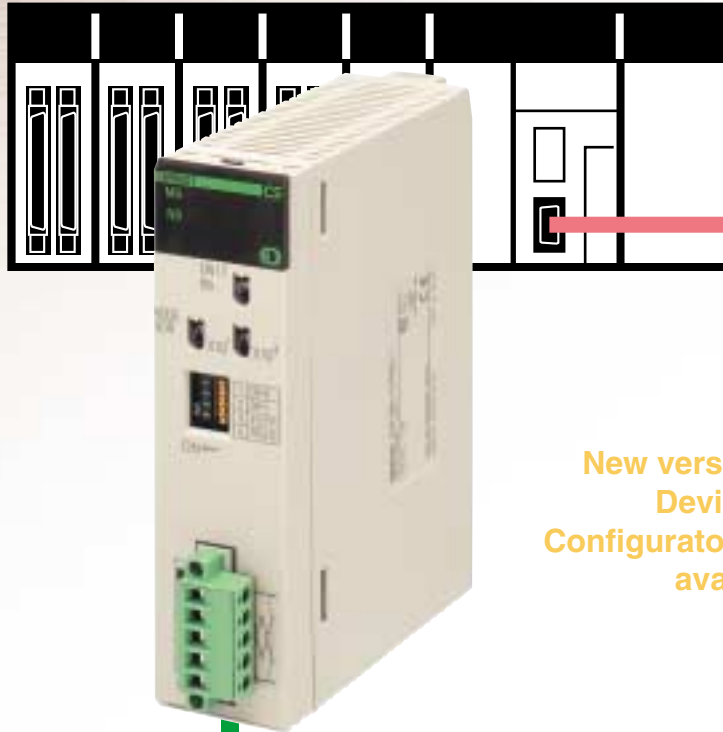
Leading the Industry in Performance and Functionality

Setting new levels of performance with a variety of features, including a shorter scan time and automatic scan list creation.

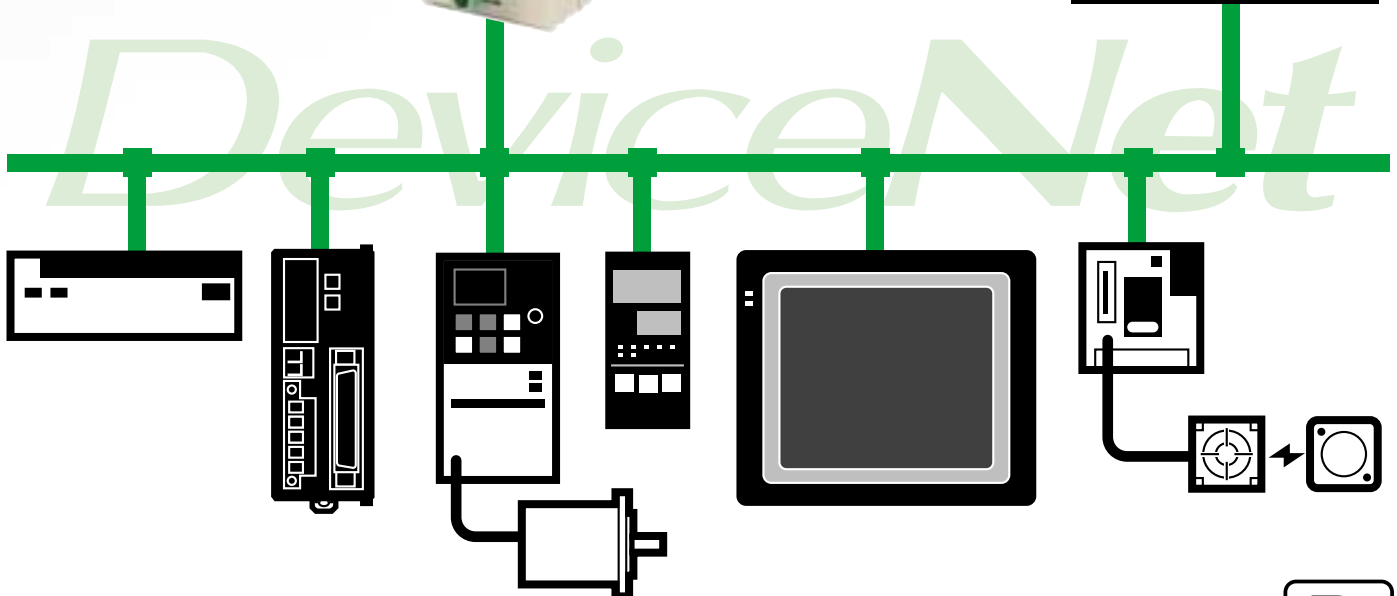
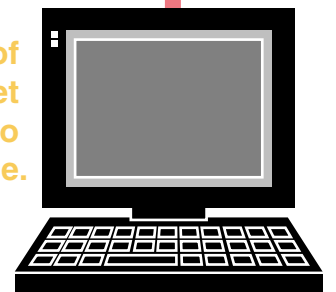
DeviceNet™ Unit

CS1W-DRM21 For CS1-series PLCs

SYSMAC CS1-series Programmable Controller



New version of DeviceNet Configurator also available.



DeviceNet



Simple system design and simple maintenance. The DeviceNet Unit delivers a wealth of functionality to CS1-series PLCs.

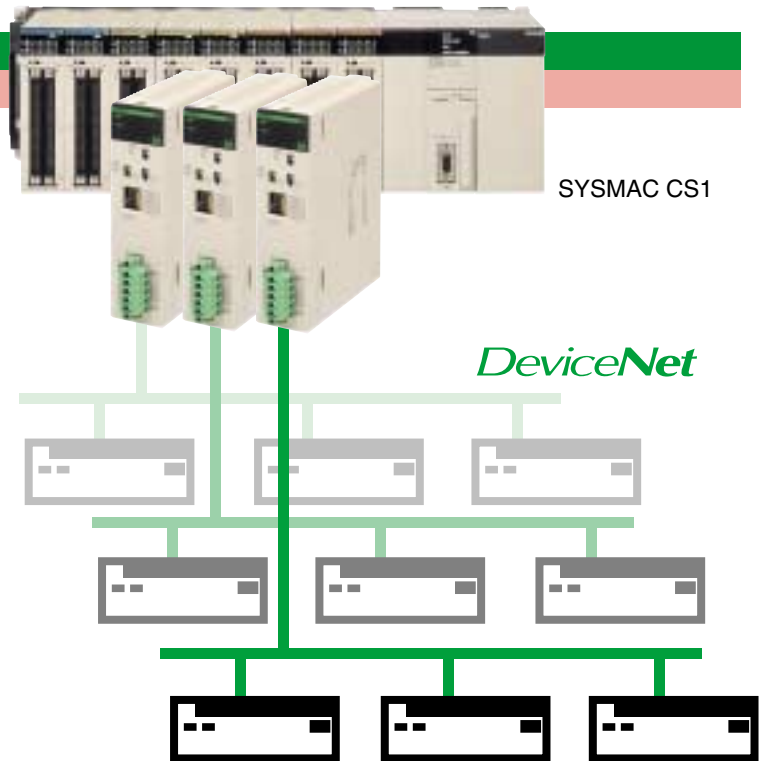
Equipped with a variety of additional functions, the DeviceNet Unit significantly widens the scope of DeviceNet applications. Greater support for message communications and increased compatibility with device profiles allows a larger number of devices to be connected to the network.

Increased I/O Capacity

Control of 32,000 points (2,000 words) per master.

The CS1W-DRM21 boasts 2,048 fixed allocation I/O points (128 words) and up to 3 Units can be mounted. This compares favorably with the C200HW-DRM21-V1, with which only 1,600 fixed allocation I/O points (100 words) are available and only 1 Unit can be mounted.

The number of automatically allocated I/O points has substantially increased from 4,800 (300 words) to 32,000 (2,000 words). The number of control points per slave has increased from 512 (64 words) to 3,200 (200 words), ensuring a greater degree of consistency between data. This means that systems can be designed without being restricted by the number of control points, and can be changed or expanded easily.

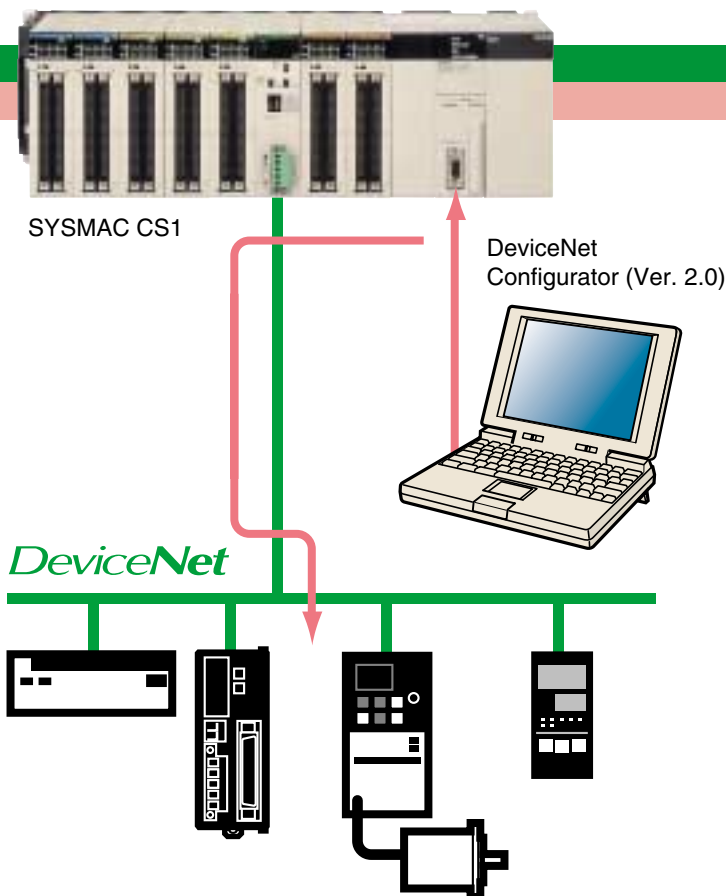


Easier Operability

Improvements in design efficiency.

User-set I/O allocations, which were possible only using the Configurator, can now be performed with allocated DM Area words. The Configurator has been upgraded to be compatible with the CS1 Series and boasts many new features. Not only can it be connected to a CS1-series CPU Unit via the RS-232C port or the peripheral port, it also supports the offline construction of virtual networks.

This means network settings that previously were only possible after connection can now be performed offline with ease, simplifying system design. Furthermore, if the Configurator is connected via the CPU Unit's peripheral port, it need not participate as a node in the network.

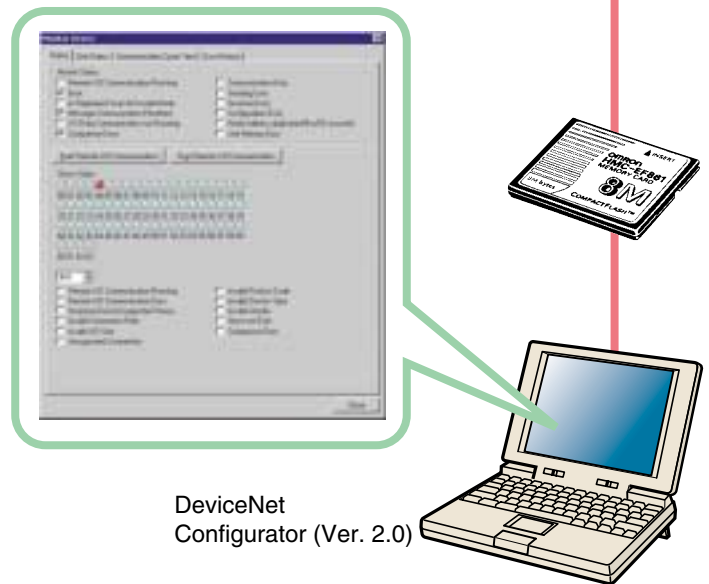


Faster Setup

Improvements in debugging and setup efficiency.

With this DeviceNet Unit, setup files can be downloaded from or uploaded to Memory Cards, enabling swift on-site response when setting up mass-production systems.

Faster system debugging is possible using the Unit status data. Furthermore, the DeviceNet Configurator (Ver. 2.0) enables easy monitoring of the status and settings for network devices, and error data for masters.



DeviceNet Configurator (Ver. 2.0)

Master



SYSMAC CS1

Poll

COS



Slave

Expansion Functions

Easier system expansion with a range of new functions.

The CS1W-DRM21 can act as a slave as well as a master. (It can also be used as a slave and a master at the same time.) In addition to conventional message communications, COS/cyclic message communications are also supported. This feature allows operation where the master outputs data to a COS/cyclic-compatible slave when that data changes, and not with every communications cycle, improving communications efficiency in the network.

Furthermore, two types of message communications can be performed with just one slave.

For example, it is possible to use poll communications for I/O control and use COS communications for slave status, enabling communications with a more intelligent slave.

Specifications

Available Models

Compatible PLCs		Maximum number of control points			Model
		Fixed allocations		User-set allocations	
				Using allocated DM Area words	
CS1 Series	When used as a Master	Inputs: 1,024 points Outputs: 1,024 points Total: 2,048 points (128 words)	Inputs: 8,000 points Outputs: 8,000 points Total: 16,000 points (1,000 words)	Inputs: 8,000 points x 2 blocks Outputs: 8,000 points x 2 blocks Total: 32,000 points (2,000 words)	CS1W-DRM21
	When used as a Slave	Inputs: 16 points Outputs: 16 points Total: 32 points (2 words)	Inputs: 1,600 points Outputs: 1,600 points Total: 3,200 points (200 words)	Inputs: 1,600 points x 1 block Outputs: 1,600 points x 2 blocks Total: 4,800 points (300 words)	

Communications Specifications (Conform to DeviceNet Communications)

Item	Specifications																
Communications protocol	DeviceNet																
Connection form	Combinations of multi-drop and T-branch connections (See note 1.)																
Baud rate	500 kbps, 250 kbps, 125 kbps (switchable)																
Communications media	Special 5-wire cables (2 signal lines, 2 power lines, 1 shield line)																
Communications distances	<table border="1"> <thead> <tr> <th>Baud rate</th> <th>Network length (See note 2.)</th> <th>Drop line length</th> <th>Total drop line length</th> </tr> </thead> <tbody> <tr> <td>500 kbps</td> <td>100 m max. (See note 3.)</td> <td>6 m max.</td> <td>39 m max.</td> </tr> <tr> <td>250 kbps</td> <td>250 m max. (See note 3.)</td> <td>6 m max.</td> <td>78 m max.</td> </tr> <tr> <td>125 kbps</td> <td>500 m max. (See note 3.)</td> <td>6 m max.</td> <td>156 m max.</td> </tr> </tbody> </table>	Baud rate	Network length (See note 2.)	Drop line length	Total drop line length	500 kbps	100 m max. (See note 3.)	6 m max.	39 m max.	250 kbps	250 m max. (See note 3.)	6 m max.	78 m max.	125 kbps	500 m max. (See note 3.)	6 m max.	156 m max.
	Baud rate	Network length (See note 2.)	Drop line length	Total drop line length													
	500 kbps	100 m max. (See note 3.)	6 m max.	39 m max.													
	250 kbps	250 m max. (See note 3.)	6 m max.	78 m max.													
125 kbps	500 m max. (See note 3.)	6 m max.	156 m max.														
Maximum number of nodes	64 nodes (This figure includes the master. The maximum number of connectable slaves is 63.)																
Error controls	CRC error check, node address duplication check, scan list verification																

Note 1: Connect external terminating resistance.
 Note 2: Distance between the farthest nodes.
 Note 3: If thin, special cables are used for the main lines, this figure will be 100 m max.

Master/Slave Specifications

Item	Specifications	
Communications power supply voltage	11 to 25 VDC (supplied from the communications connector) (See note 1.)	
Current consumption	Communications power supply: 30 mA max.; Internal circuit power supply: 290 mA max.	
Maximum number of connectable slaves	Remote I/O communications or message communications 63 Units (See note 2.)	
Maximum number of I/O points per DeviceNet Unit	Fixed allocations	
	When used as a master	
	When used as a slave	
	User-set allocations	
	Using allocated DM Area words	
	Using Configurator	
Number of words allocated	Fixed allocations	
	When used as a master	
	When used as a slave	
	User-set allocations	
	Using allocated DM Area words	
	When used as a master	
	When used as a slave	
	Using Configurator	
When used as a master		
When used as a slave		
Maximum message length	542 bytes (See notes 4 and 5.)	
Number of Units that can be mounted to PLC	Fixed allocations	
	User-set allocations	
Weight	172 g	

Note 1: For details on communications power supply specifications, refer to the operation manual.

Note 2: One node is used to connect to the master and so the maximum number of connectable slaves is 63.

Note 3: When the DeviceNet Unit is used as a slave, "input" and "output" respectively refer to input from the master to the slave and output from the slave to the master.

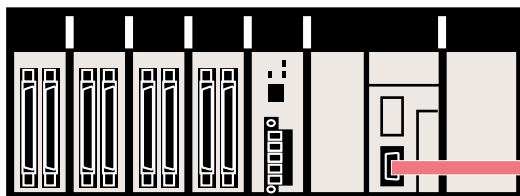
Note 4: The maximum message length includes the command code when using the CMND instruction.

Note 5: The CS1W-DRM21 cannot perform message communications with the E5ZE-8□D1□B. Use the E5ZE-8□D1□B-V2, which is a later version.

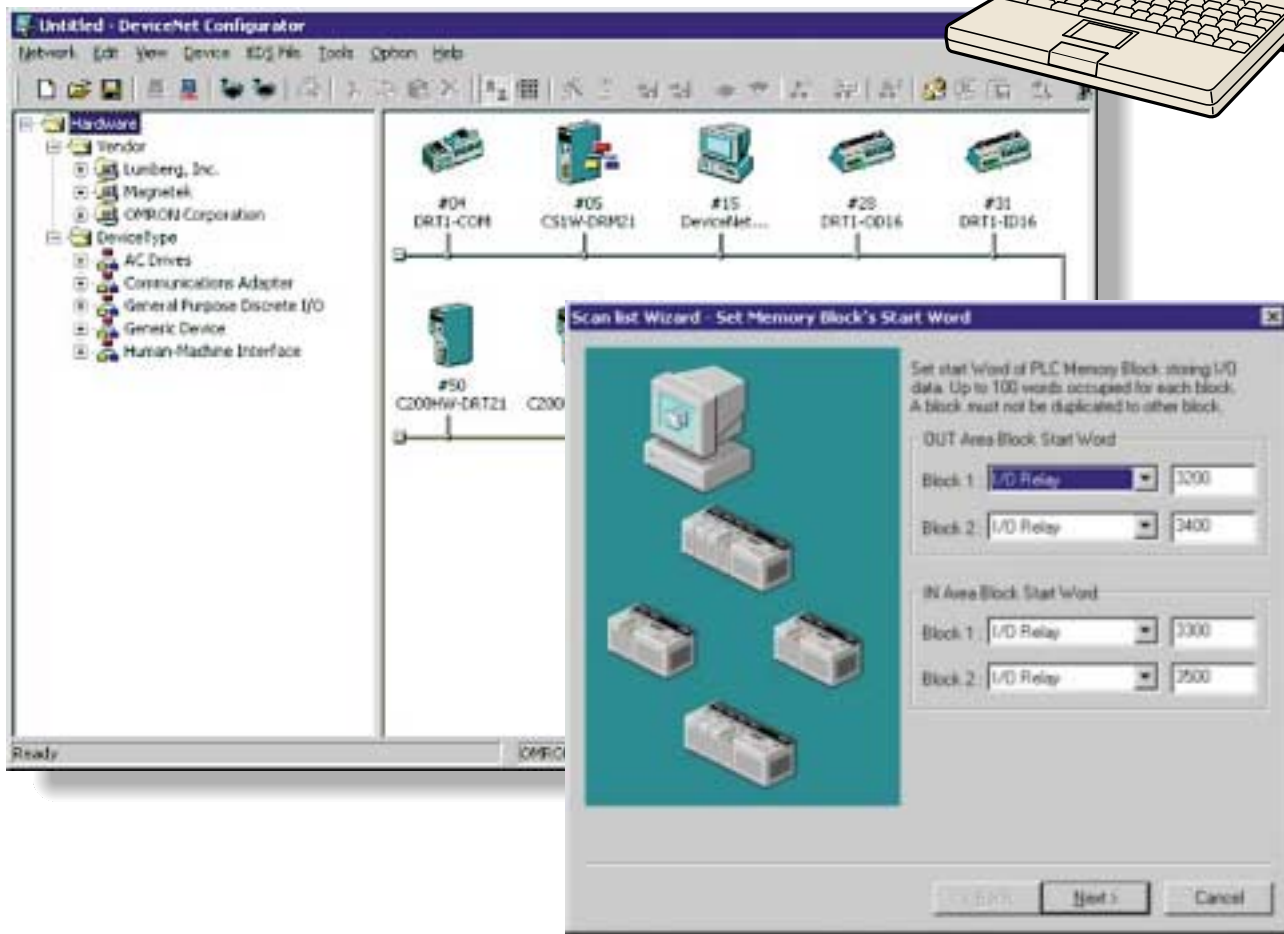
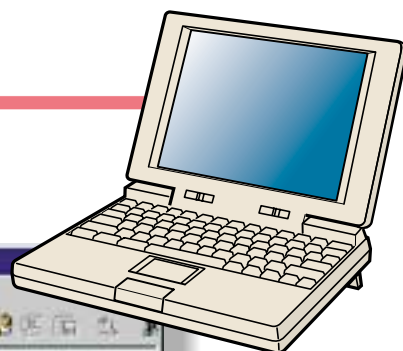
For details on the E5ZE-8□D1□B-V2, refer to the catalog for the product itself.

The DeviceNet Configurator (Ver. 2.0) allows easy user-set allocations and expansion of I/O capacity for CS1 PLCs, as well as enabling the offline creation of virtual networks.

SYSMAC CS1



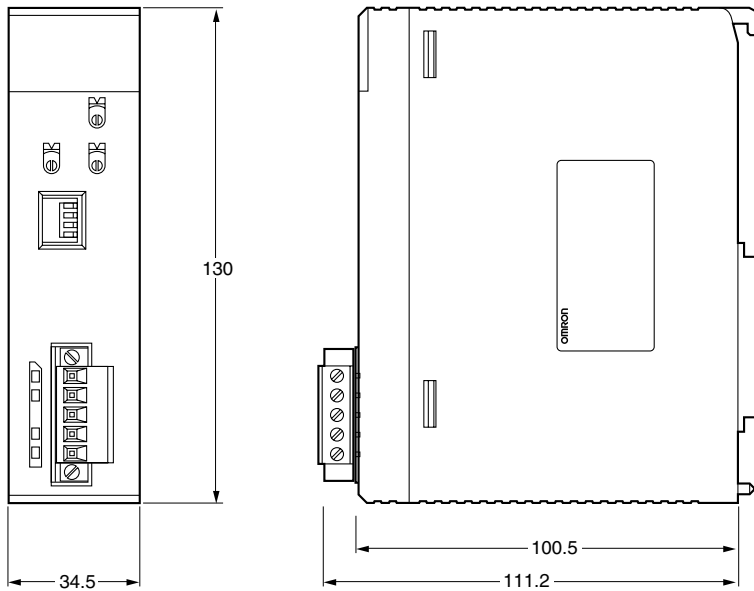
DeviceNet Configurator (Ver. 2.0)



DeviceNet Configurator WS02-CFDC1-E

Item		Specifications
Operating environment	Hardware	Personal computer: IBM PC/AT or compatible CPU: Pentium 166 MHz or higher (with Windows NT) Memory: 32 Mbytes Hard disk: A minimum of 15 Mbytes
	OS	Windows 95, 98, 2000, or NT4.0
Network connection method	Dedicated Board/Card	3G8F5-DRM21-E: Dedicated ISA Board 3G8E2-DRM21-E: Dedicated PCMCIA Card
	Serial connection (to DeviceNet network with gateway)	Peripheral port or RS-232C port of CPU Unit, or RS-232C port of Serial Communications Board/Unit, of PLC with DeviceNet Unit mounted.

External Dimensions



- DeviceNet is a registered trademark of the ODVA (Open DeviceNet Vendor Association, Inc.).
- CompoBus/D is a trademark for OMRON products supporting DeviceNet connections.
- CompoBus/D indicates products that meet DeviceNet standards.

Note: Do not use this document to operate the Unit.

OMRON Corporation

FA Systems Division H.Q.
66 Matsumoto
Mishima-city, Shizuoka 411-8511
Japan
Tel: (81)559-77-9181
Fax: (81)559-77-9045

Regional Headquarters

OMRON EUROPE B.V.
Wegalaan 67-69, NL-2132 JD Hoofddorp
The Netherlands
Tel: (31)2356-81-300/Fax: (31)2356-81-388

OMRON ELECTRONICS, INC.
1 East Commerce Drive, Schaumburg, IL 60173
U.S.A.
Tel: (1)847-843-7900/Fax: (1)847-843-8568

OMRON ASIA PACIFIC PTE. LTD.
83 Clemenceau Avenue,
#11-01, UE Square,
Singapore 239920
Tel: (65)835-3011/Fax: (65)835-2711

Authorized Distributor:

Note: Specifications subject to change without notice.

Cat.No.R072-E1-1
Printed in Japan
1000-10M