CS-series DeviceNet Unit

CS1W-DRM21-V1

CSM_CS1W-DRM21-V1_DS_E_5_4

A DeviceNet Unit for the CS Series That Boasts Industry-leading Performance and Functions

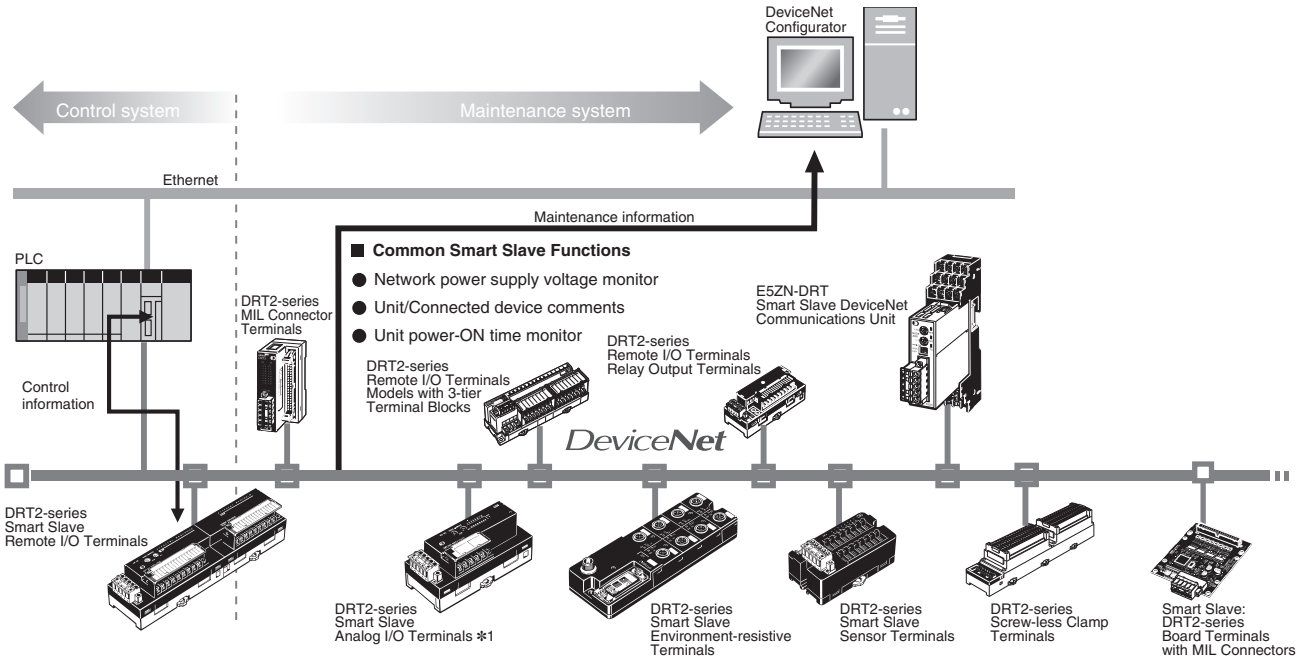


CS1W-DRM21-V1

Features

- Allows control of up to 32,000 points (2,000 words) per master, and ensures a high degree of simultaneity between data.
- Can be used as both a master and a slave at the same time.
- Equipped with settings and monitor functions aimed at improving both design and startup efficiency. Achieve maximum performance by using in combination with a Configurator.
- Files of master and slave settings can be uploaded and downloaded using memory cards, allowing effective debugging and easier setup.

System Configurations



Reduce Setup Time

- Network power supply monitor function
- Input filter function
- Power-ON inrush current protection function
- Communications speed auto-detect function
- Scaling function
- User compensation function
- Cumulative counter
- Moving average processing function
- Number of A/D conversion points (conversion cycle) setting
- Peak/bottom hold function
- Top/valley hold function
- Percentage change calculation function

Reduce Downtime

- Unit comments function
- Connected device comments function
- I/O power supply monitor function
- Sensor power supply short-circuit detection function
- External load short-circuit detection function
- Disconnected sensor detection function

Improve Maintenance

- Operation time monitor function
- Contact operations counter (See note.)
- Unit conduction time monitor function
- Total ON time monitor function (See note.)
- Network power supply voltage monitor function
- Communications error log function
- Last maintenance date
- Comparator function
- Selectable output value after error

Note: The number of contact operations monitor function and the cumulative ON time monitor function cannot be used simultaneously for the same contact.

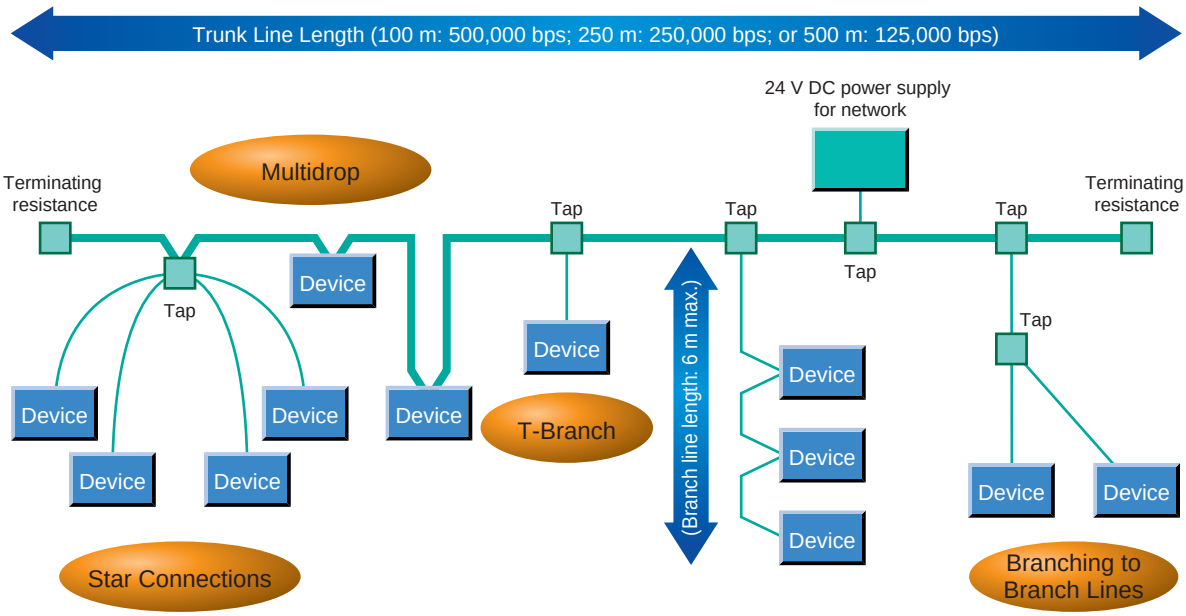
✻1. Analog Output Terminal in this catalog have been discontinued.

Communications Specifications

Item	Specifications			
Communications protocol	DeviceNet			
Connection methods	Multi-drop and T-branch connections can be combined (for trunk and branch lines) ✻1			
Baud rate	500 Kbps, 250 Kbps, or 125 Kbps			
Communications media	Special 5-wire cables (2 signal lines, 2 power lines, 1 shield line) Special 4-wire flat cables (2 signal lines, 2 power lines)			
Communications distances for special 5-wire cables	Baud rate	Network length	Branch line length	Total branch line length
	500 kbps	100 m max.	6 m max.	39 m max.
	250 kbps	250 m max. ✻2	6 m max.	78 m max.
	125 kbps	500 m max. ✻2	6 m max.	156 m max.
Communications distances for special 4-wire flat cables	Baud rate	Network length	Branch line length	Total branch line length
	500 kbps	75 m max.	6 m max.	35 m max.
	250 kbps	150 m max.	6 m max.	48 m max.
	125 kbps	265 m max.	6 m max.	135 m max.
Communications power supply	24 V DC supplied externally			
Max. number of nodes	64 nodes (including Masters, Slaves, and Configurator)			

✻1. Terminators are required at both ends of trunk line.
✻2. Indicates the maximum network length when thick cables are used. Reduce the network length to 100 m max. when using thin cables.

Network Specifications



Ordering Information

International Standards

- The standards are abbreviated as follows: U: UL, U1: UL(Class I Division 2 Products for Hazardous Locations), C: CSA, UC: cULus, UC1: cULus (Class I Division 2 Products for Hazardous Locations), CU: cUL, N: NK, L: Lloyd, and CE: EC Directives.
- Contact your OMRON representative for further details and applicable conditions for these standards.

Product	Appearance	Specifications		Model	Standards
		Number of licenses	Media		
DeviceNet Unit		For CS Series Functions as either a master or a slave. 2,048 I/O points		**CS1W-DRM21-V1**	UC1, N, L, CE
CX-One FA Integrated Tool Package Ver.4.□		The CX-One is a package that integrates the Support Software for OMRON PLCs and components. CX-One runs on the following OS. OS: Windows XP (Service Pack 3 or higher, 32-bit version) / Windows Vista (32-bit/64-bit version) / Windows 7 (32-bit/64-bit version) / Windows 8 (32-bit/64-bit version) / Windows 8.1 (32-bit/64-bit version) / Windows 10 (32-bit/64-bit version) CX-One Ver.4.□ includes CX-Integrator Ver.2.□. For details, refer to the CX-One catalog (Cat. No. R134).	1 license ✻	DVD	**CXONE-AL01D-V4**	–

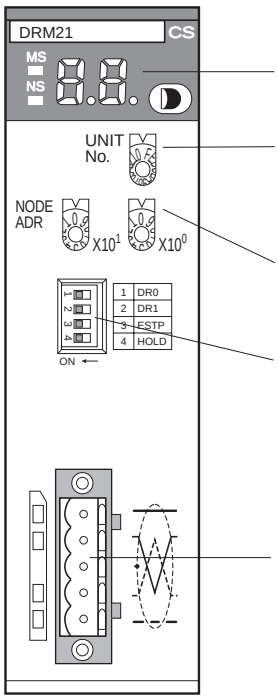
✻ Multi licenses (3, 10, 30, or 50 licenses) and DVD media without licenses are also available for the CX-One.

Specifications

Communications power supply voltage				11 to 25 VDC ✻1
Current consumption				Communications: 30 mA max. Internal circuit: 290 mA max.
Max. number of connectable slaves	**Remote I/O, explicit message service**			63 ✻2
Max. number of I/O points	**Fixed allocations**		**When used as a master**	2,048 points
			When used as a slave	32 points
	User-set allocations	**Using allocated DM Area words**	**When used as a master**	16,000 points
			When used as a slave	3,200 points
		Using Configurator	**When used as a master**	32,000 points
			When used as a slave	4,800 points
Number of allocated words	**Fixed allocations**		**When used as a master**	64 input and 64 output words Software switch/status area: 25 words
			When used as a slave	1 input word, 1 output word ✻3
	User-set allocations	**Using allocated DM Area words**	**When used as a master**	500 input and 500 output words Software switch/status area: 25 words
			When used as a slave	100 input and 100 output words ✻3 Software switch/status area: 25 words
		Using Configurator	**When used as a master**	500 input words x 2 blocks, 500 output words x 2 blocks Software switch/Status area: 25 words
			When used as a slave	100 input words x 1 blocks, 100 output words x 2 blocks Software switch/Status area: 25 words
Max. message length				542 bytes ✻4
Max. number of Units mountable to PLC	**Fixed allocations**			3
	User-set allocations			16
Weight				172 g max.

✻1. Refer to the DeviceNet Operation Manual (W267) for the communications power supply specifications.
✻2. The Device Unit uses a node, and so connection is possible to 63 slaves only.
✻3. When the DeviceNet is used as a slave, "input" and "output" respectively refer to input from the slave to the master and output from the master to the slave.
✻4. The maximum message length includes the command code when using the CMND instruction

External Interface



Indicators

Unit No. switch

This switch sets the unit number of the DeviceNet Unit as a one-digit hexadecimal value.

Node address switches

These switches set the node address as a two-digit decimal value.

DIP switch

The pins have the following functions:
Pins 1 and 2: Baud rate
Pin 3: Continue/Stop communications for error (when used as a Master)
Pin 4: Hold/clear I/O for communications error (when used as a Slave)

Communications connector

Connect the Network communications cable to this connector. The communications power for this Unit is also supplied through this connector.
A parallel connector with screws (XW4B-05C1-H1-D) is provided for node connection.

Communications Connectors

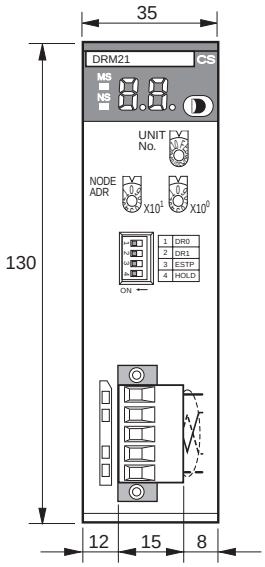
Color stickers that match communications cable colors are attached to the communications connectors. Match the colors when connecting communications cables to the connectors. These colors are given in the following table

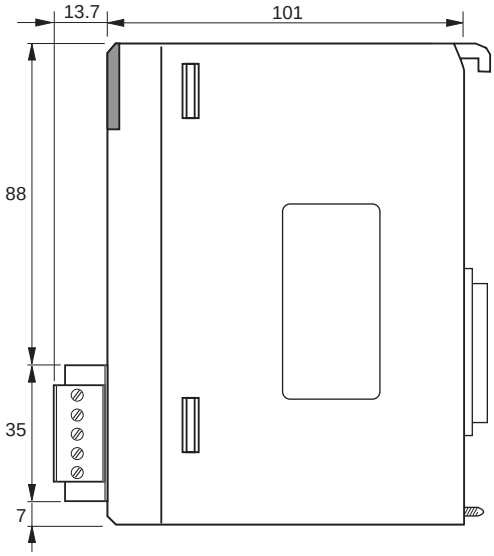
Color	Signal
Black	Power line, negative voltage (V–)
Blue	Communications line, low (CAN L)
–	Shield
White	Communications line, high (CAN H)
Red	Power line, positive voltage (V+)

Dimensions

(Unit: mm)







Related Manuals

Cat. No.	Manual	Products	Contents
W380	CS/CJ-series DeviceNet Unit Operation Manual	CS1W-DRM21(-V1) and CJ1W-DRM21 DeviceNet Units	Information on CS/CJ-series DeviceNet Units.
W267	DeviceNet Operation Manual	C200HW-DRM21-V1 DeviceNet Master Unit CQM1-DRT21 I/O Link Unit DRT1-series DeviceNet Slaves GT1-series DeviceNet Slaves	Information on C200H-series, CVM1, and CV-series DeviceNet Units, as well as general DeviceNet communications specifications and wiring methods.
W404	DRT2 Series DeviceNet Slaves Operation Manual	DRT2-ID/OD/MD32SL(H)(-1) DRT2-MD16S DRT2 Series	Information on DRT2-series DeviceNet Slaves.
W382	DeviceNet Configurator Ver. 2.□ Operation Manual	WS02-CFDC1-E DeviceNet Configurator 3G8F5-DRM21 ISA Board 3G8E2-DRM21 PCMCIA Board	Information on using the Configurator.
W348	DeviceNet MULTIPLE I/O TERMINAL Operation Manual	DRT1-COM GT1 Series	Information on MULTIPLE I/O TERMINALs, one type of DeviceNet slave.

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