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CJ-series High-speed Data Storage Unit (SPU Unit)

CJ1W-SPU01-V2

CSM_CJ1W-SPU01-V2_DS_E_4_1

High-speed Collection of System Data

The CPU Unit can collect large amounts of process data, operation data, inspection data, and other controlled system data quickly and automatically save the data in external storage media as CSV files.

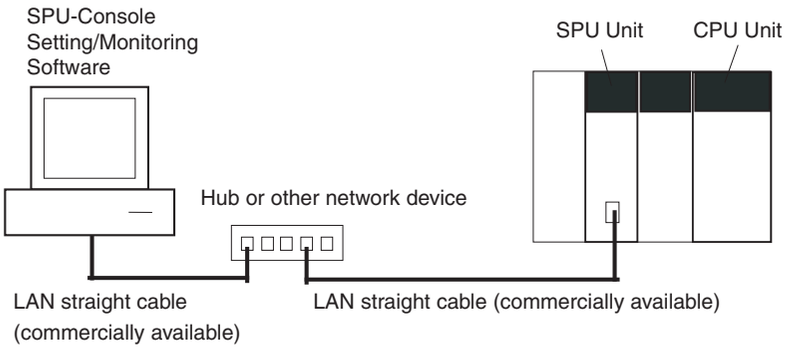


CJ1W-SPU01-V2

Features

- There is no need to write ladder programming to collect data. Even with an existing system, just mount a SPU Unit and add it to the I/O tables to start data collection.
- Use specified times or events as triggers to record the contents of specified words in I/O memory in the CPU Unit.
- In Data Storage Mode, up to 65 data collection patterns are possible with one basic collection pattern and data collection patterns 1 to 64. Combine the collection patterns with events to simultaneously collect many different types of data.
- Collected data can be stored in PC cards or in a computer connected via Ethernet. Data Management Middleware can be used to make a few simple settings to store the data in a host computer.
- Recipes can be used to batch-write numeric or text string data, such as production parameters, in the memory areas of the CPU Unit. Recipe data can be saved in a Memory Card in the SPU Unit to easily enable process switchovers.
- SPU Units with a unit version of 2.1 or later also provide an FTP client. This enables sending files of collected data to an FTP server on a host computer, eliminating the need to write programming to store data in the host computer.

System Configuration



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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.

SPU Unit (High-speed Data Storage Unit)

Unit type	Product name	Specifications		No. of unit numbers allocated	Current consumption (A)		Model	Standards
		PC Card slot	Ethernet (LAN) port		5V	24V		
CJ1 CPU Bus Units	SPU Unit (High-speed Data Storage Unit) 	CF Card Type I/II × 1 slot Use an OMRON HMCEF□□□ Memory Card.	1 port (10/100Base-TX)	1	0.56	—	CJ1W-SPU01-V2	UC1, CE

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

Support Software

Product name	Specifications	Model	Standards
SPU-Console Support Software	Functions : Unit settings, sampling settings, etc., for High-speed Data Collection Units (required for making settings for this Unit) OS : Windows 2000, XP, or Vista	WS02-SPTC1-V2	—

Option

Product name	Specifications		Model	Standards
SPU Unit Data Management Middleware	Function : Data files collected by SPU Unit Data Management Middleware are automatically acquired at the personal computer, and can be registered in a database. OS : Windows 2000, XP, or Vista	1 license	WS02-EDMC1-V2	—
		5 licenses	WS02-EDMC1-V2L05	
Memory Cards	Flash memory, 128MB	Note: Memory Cardis required fordata collection.	HMC-EF183	N, L, CE
	Flash memory, 256MB		HMC-EF283	
	Flash memory, 512MB		HMC-EF583	

Industrial Switching Hubs

Product name	Appearance	Specifications			Current consumption (A)	Model	Standards
		Functions	No. of pors	Failure detection			
Industrial Switching Hubs		Quality of Service (QoS): EtherNet/IP control data priority Failure detection: Broadcast storm and LSI error detection 10/100BASE-TX, Auto-Negotiation	3	No	0.22	W4S1-03B	UC, CE
			5	No	0.22	W4S1-05B	
			5	Yes	0.22	W4S1-05C	CE

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-SPU01-V2	Not Supported		16 Units (per CPU Unit) *1		2 Units *2	Not supported	16 Units (per CPU Unit) *1

*1. The number of Units that can be mounted depends on the power supply capacity.
CJ1W-PA202: 4 Units max.
CJ1W-PA205/CJ1W-PD025: 8 Units max.
*2. A CP1W-EXT01 CJ Unit Adaptor is required.

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Functional and Performance Specifications

Item		Specifications
Unit model number		CJ1W-SPU01-V2
Applicable CPU Units		CJ Series
Unit classification		CPU Bus Unit
Unit number		0 to F
Mounting location		CPU Backplane or CJ-series Expansion Backplane
No. of Units per PLC		16 Unit max.
Interfaces	**PC card slot**	Memory Card slot Used by mounting a Memory Card. *
	COMM port	Connects to an uninterruptive power supply (UPS) for detection of power failure.
	Ethernet (LAN) ports	One port (10/100Base-TX, RJ45 Modular Connector)
	UPS power failure input	None (UPS connected to COMM port.)
Settings and operation	**Unit number switch (UNIT)**	Rotary switch : Sets the unit number of the Unit as a CPU Bus Unit.
	Select switch (SELECT)	Toggle switch : Sets the number of the command to execute.
	Enter button (ENTER)	Pushbutton switch : Confirms and starts execution of the command number set using the select switch.
	DIP switch (DIPSW)	DIP switch : System settings
	Card button	Pressed to release the Memory Card inserted in the Memory Card slot. The Memory Card can then be removed.
Indications	**LED indicators**	RUN, ERC, ERH, COMM, LAN1, LAN2, and CARD
	7-segment display	• Displays error information and operating status of the SPU Unit. • Displays the command number set on the select switch. • Displays the IP address. • Display other information.
Functions		• Sampling • Saving files • Network communications • Recipe function
Operating modes		Data Storage Mode and Sampling Mode (Either mode can be selected with the Change Operating Mode command.)
Current consumption		5 VDC, 560 mA max. (SPU Unit only) Other: Memory Card (HMC-EF□□□): 120 mA max. (Supplied from Power Supply Unit.)
Dimensions		51 × 90 × 65 mm (W × H × D)
Weight		180 g max.

* Memory Card: HMC-EF□□□ Memory Card from OMRON or commercially available compact flash card. Normal operation may not be possible with commercially available compact flash cards depending on the manufacturer and model of the card.

General Specifications: Specifications conform to the general specifications of the CJ-series CPU Units.

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Detailed Specifications

Item		Specifications		
Sampling	Sampling Mode	Sampling patterns	Realtime sampling: 1 pattern Normal sampling : Up to 3 patterns	
		Starting methods	Any one of the following methods can be used: • Start automatically when SPU Unit is started. • Start with an SPU-Console operation. • Start with the SPU Unit's front-panel command buttons. (Specify the command number.) • Start from the CPU Unit's ladder program.	
		Interval	User-specified intervals: *1 Realtime sampling: 5 ms min. Normal sampling : 100 ms min.	
	Data Storage Mode (Unit Ver. 1.2 or later)	Data Collection Patterns	Basic Collection Pattern : 1 pattern (required) Data Collection Patterns : Up to 64 patterns	
		Starting methods	Basic Collection Pattern (required)	Any one of the following methods can be used: • Start when a specified event occurs. (Use a memory event or scheduled event. For details, see the description of Data Collection Patterns 1 to 64 below.) • Start automatically when SPU Unit is started. • Start with an SPU-Console operation. • Start with the SPU Unit's front-panel command buttons. (Specify the command number.) • Start from the CPU Unit's ladder program.
			Data Collection Patterns 1 to 64	Either of the following methods can be used to start when an event occurs: • Memory events: Start when a CPU Unit bit or word value matches a specified condition. Up to 500 memory events can be specified. • Scheduled events: Start at a specified time or time interval. Up to 16 scheduled events can be specified.
		Interval	User-specified intervals: *2 *3 Basic Collection Pattern: 5 ms min. Data Collection Patterns: 100 ms min.	
	Data Storage Mode (Unit Ver. 2.0 or later)	Copy option	Basic Collection Pattern: Cannot be set. Data Collection Patterns: Up to 10 patterns.	
	Shared Sampling Mode and Data Storage Mode settings	Applicable CPU Unit I/O memory areas	CIO Area, WR Area, HR Area, AR Area, DM Area, and EM Area banks 0 to C (CJ2: 0 to 18)	
		Specifying I/O memory areas	Specify the desired CPU Unit I/O memory area (data area) with a variable. The data type can be specified with the variable. The variables can be managed in groups.	
			Variable data types	BOOL, INT, UINT, DINT, UDINT, REAL, LREAL, STRING, CHANNEL, UINT BCD, UDINT BCD, WORD, DWORD, CHANNEL BLOCK
		Record Condition setting	Set whether or not to use a record condition. If a record condition is used, sampling data is stored within the SPU Unit only when the record condition is met. For example, sampling data can be recorded only while a specified bit is ON or a specified word contains a particular value (comparison).	
		Data exchange with the CPU Unit	CPU Bus Unit Area • CPU Unit to SPU Unit: Command execution (such as starting/stopping sampling, clearing a sampling file, or saving a sampling file). • SPU Unit to CPU Unit: SPU Unit status information	
Saving files		Collected data file format	CSV files	Indices (record number), time stamps (hh:mm:ss:ms), ns, sampling indices (serial numbers starting at 0 when sampling is started), data for each symbol delimited with comma, records delimited with carriage returns
			Record contents	
		Number of sampling result records stored in one file	Any one of the following methods can be used. • The number of records can be specified. • A time period can be specified. (The number of records is calculated automatically from the time period and interval between samples.) • With a version 1.2 or later SPU Unit, the number of records can be left unspecified. (In this case, data is added to the file until data collection is stopped. Records are added to one file from the start of data collection until the end.)	
		Scaling	Instead of directly storing the values collected from the CPU Unit's I/O memory, the collected values can be scaled with a linear equation or upper/lower limit range before storage (unit version 1.2 or later).	
		File size	2 GB per file	
		Record size	Specified by user.	
		Number of records	Specified by user or calculated automatically.	
		Saving method	Data can be saved to a single file or multiple files (up to 1,200 files).	
Network communications		Windows network shared folders	Files in the Memory Card inserted in the PC card slot in the SPU Unit can be shared with a Windows 2000/XP/Vista personal computer.	
		FTP	FTP server/client provided.	
Network communications		FINS communications	• FINS server to execute FINS command • Routing to transfer FINS messages	

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Item		Specifications	
Recipe function	**Data Storage Mode (Unit Ver. 2.0 or later)**	Number of fields	10,000
		Recipe files	File format : CSV The file size is restricted by the size of file that can be stored in the recipe folder. Records : Specified by the user.
		Number of records	No limit, but restricted by the file size that can be stored in the recipe folder.
		Writing method	Conversion method: Each field is written to the specified address in the specified data type. Continuous region method: Data written to continuos memory addresses.
		Searching for recipe keys	Searching within files : The text string that was passed as the key is searched for in the target search columns in the recipe files and the rows for any matches that are found are extracted as recipe data. Searching for file names : The text string that was passed as the key is searched for in the recipe file names (i.e., a search is made for key.csv), and the files with matching files names are used as recipe files just like previous versions. Key list search : A search is made for recipe keys with the method used for unit version 2.0.

*1. In both cases, the sampling cannot be performed faster than the CPU Unit's cycle time. The actual sampling interval will always be longer than the CPU Unit's cycle time even if the sampling interval is set shorter than the cycle time.
*2. The Data Collection Patterns use the data collected by the Basic Collection Pattern, so the data will be collected at the Basic Collection Pattern's interval even if the Data Collection Pattern's interval is set shorter than the Basic Collection Pattern's interval.
*3. The actual Basic Collection Pattern interval will always be longer than the CPU Unit's cycle time even if the sampling interval is set shorter than the cycle time.

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SPU-Console (Setting/Monitoring Software) Specifications

The SPU-Console is a software product used for OMRON's Storage and Processing Unit (called the SPU Unit) to set and operate the SPU Unit, monitor operating status/errors, display trend graphs, and perform other operations from a personal computer.

SPU-Console Specifications

Item		Specifications
Model number		WS02-SPTC1-V2 (SPU-Console Ver. 2.1)
System requirements	**Computer hardware**	Computer that meets the system requirements for Microsoft Windows XP Professional
	CD-ROM drive	Required for installation.
	Display	Super VGA (800 × 600) or better high-resolution video adapter and monitor
	Mouse	Must conform to the models supported by the applicable OS.
	Network card	A separate Ethernet network card is required for computers that do not have a LAN port.
	OS	Microsoft Windows 2000 Professional Microsoft Windows XP Home Edition Microsoft Windows XP Professional Microsoft Windows Vista
	Application platform	Microsoft.NET Framework Version 1.1 Microsoft.NET Framework Version 2.0
Communications platform		FinsGateway Version 2003
Functions		Unit information, Unit setup, variable settings, collection pattern settings, event settings, recipe settings, trend graphs, and reports
Unit information	**Monitor**	SPU Unit operating status and error information are displayed.
	Operation	Operations, such as starting sampling
Unit setup		IP network settings
		FINS network settings
Variable settings		Setting items to sample (by specifying I/O memory addresses using variables)
Collection pattern settings		Collection pattern settings (period, file designations for saving, etc.)
Recipe settings (Data Storage Mode)		Recipe settings (recipe file, write destination, key, etc.)
Event settings (in Data Storage Mode)	**Memory event settings**	Settings for conditions according to changes in memory (e.g., bits turning ON)
	Scheduler settings	Settings for schedules (e.g., specific times, time intervals)
Trend graphs	**Historical trends**	CSV files are read and displayed.
	Realtime trends (Sampling Mode)	Current sampling data is read and displayed in trend graphics in real time.

Software Package Contents

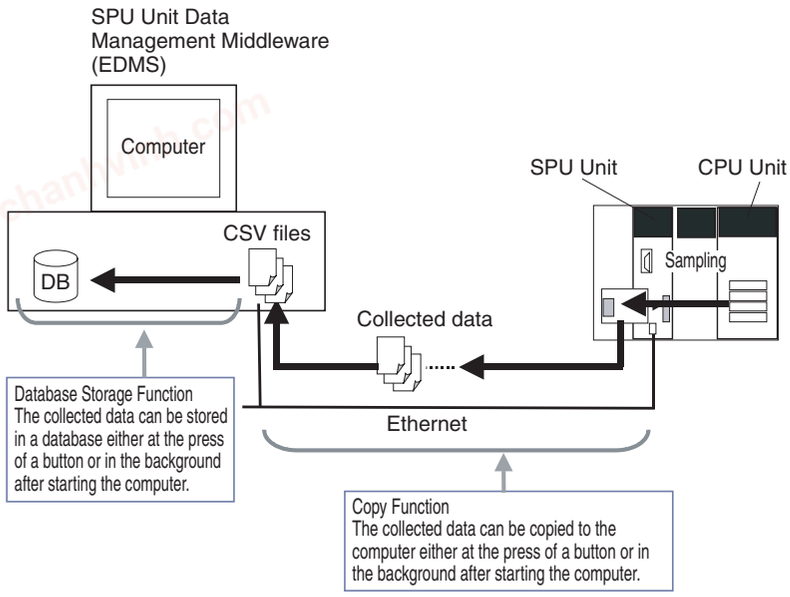
The WS02-SPTC1-V2 contains the following software and data.

- **SPU-Console Execution Program**
  The program that performs SPU Unit settings and operations.
- **Microsoft .NET Framework Version 1.1 Redistribution Package**
  Microsoft .NET Framework Version 1.1 is required to run the SPU-Console. The Microsoft .NET Framework Version 1.1 Redistribution Package provided in the package can be used to install Microsoft .NET Framework in the computer.
- **SPU Unit System Data**
  This system data is transferred to the SPU Unit.
- **FinsGateway Version 2003**
  This communications middleware is required to run the SPU-Console.
- **Manual Data**
  The manual data includes the SPU Unit Operation Manual (Cat. No. V236), the SPU-Console Operation Manual (Cat. No. V230), the SPU-Console Version 1.3 Operation Manual (Cat. No. V231), and the SPU-Console Version 2.1 Operation Manual (Cat. No. V237) in PDF (portable document format).

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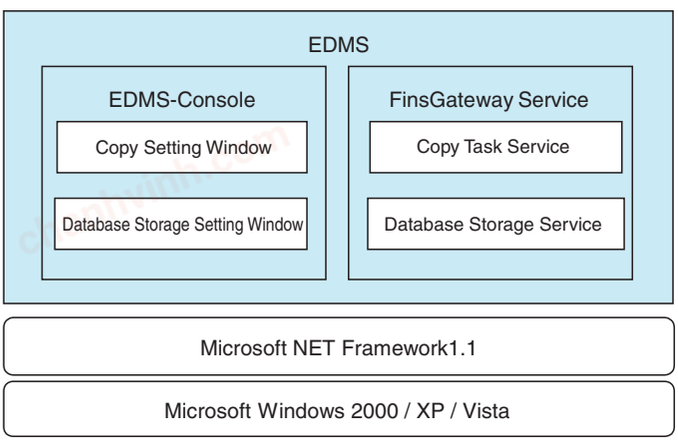
SPU Unit Data Management Middleware (EDMS)

The SPU Unit Data Management Middleware (hereafter the EDMS) is software that reads CSV-format files from an SPU Unit and copies the files to a specified folder on a computer hard disk over an Ethernet network.
With version 2.0 or higher, the collected data can be stored in a database.



EDMS Structure

The EDMS consists of the following programs.



- **Copy Task Service**
  The Copy Task Service copies files from an SPU Unit and saves them to a computer hard disk on the same network. The service operates in the background and is used to monitor SPU Units.
- **Database Storage Service**
  The Database Storage Service stores the files that are copied to the computer into a database. The service operates in the background.
- **EDMS-Console**
  The EDMS-Console is a user-interface program that provides access to the setting windows. It accesses the Copy Setting Window, for example, to allow the user to input Copy Task Service settings, specify operations, and monitor operating conditions. The program displays the files that have been copied to the computer in a list that can be used for data management.
  The Database Storage Windows enable setting the database storage service, controlling the storage operation, and monitoring operating status.

EDMS Specifications

Item		Description
Model		WS02-EDMC1-V2
System requirements	**Processor**	Intel Pentium, Celeron, or compatible processor
	CD-ROM drive	Required for installation
	Display	Super VGA (800 x 600) or better high-resolution video adaptor and monitor
	Mouse	Mouse supported by the applicable OS.
	Network card	Computers without a LAN port require an Ethernet network card (sold separately).

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Item		Description	
System requirements	**OS**	Microsoft Windows 2000 Professional Microsoft Windows XP Home Edition Microsoft Windows XP Professional Microsoft Windows 2003 Server Microsoft Windows Vista	
	Application platform (execution environment)	Microsoft .NET Framework version 1.1 Microsoft Data Access component 2.6 or later	
Communications platform		FinsGateway version 2003	
Other software requirements		SPU-Console (sold separately) required to input SPU Unit settings.	
Registration of applicable SPU Units		SPU Units can be registered by specifying the IP address and name of the Unit (same for the SPU-Console).	
Copy function		Copies files from the Memory Card in a registered SPU Unit to a specified folder on a computer hard disk. The function is enabled only when two or more is set in the Number of files Field from the SPU-Console.	
		Settable number of copies	256 max.
		Copy start conditions	Start Button or automatically on computer startup.
		Copy timing	Files will be saved to the computer hard disk over the network automatically when copying is enabled (data collection has stopped or files have been transferred).
		Storage location	Any specified folder
		Saved file name	File names can be created automatically using one or any combination of the following objects: Any text string, the name of the copy, the name of the source SPU Unit, the time or date (month, day, year) the file was copied, consecutive file numbers, the date or time of the start record, and the date or time of the last record.
		Copy monitoring cycle	Settable cycle for monitoring when copying is enabled. Default: 10 s
		Status indicators	Used to check starting, started (monitoring copying), copying, stopped, and error status conditions.
		Log display	Press the Display of log Button to display the operating status or an error log list that shows the month/day/year, time, event ID, and description.
Database storage function		Data files that are copied to a specified folder on a computer hard disk are stored in a database. The function is enabled only when three or more is set in the Number of files Field from the SPU-Console.	
		Settable number of data base storage services	65 max.
		Database storage start conditions	Start Button or automatically on computer startup.
		Storage timing	Files will be automatically stored in the database as soon as storable files are detected.
		Applicable databases	Microsoft Access 2000, 2002, 2003 Microsoft SQL Server 2000, 2005 Oracle Database 10g2
		Copy folder monitoring cycle	Settable cycle for monitoring when there are storable files. Default: 10 s
		Status indicators	Used to check whether storage is in progress (monitoring for storable files) or stopped.
		Log display	Press the Display of log Button to display the operating status or an error log list that shows the month/day/year, time, and description.
SPU clock synchronization function		The SPU Unit (version 1.2 or later only) and CPU Unit clocks are periodically synchronized with the computer clock.	

Software Package Contents

The WS02-EDMC1-V2 software package contains the following items.

- **EDMS Installation Program**
  The EDMS installation program is used to install the Copy Task Service and EDMS-Console on a computer.
- **Microsoft .NET Framework Version 1.1 Redistributable Package**
  Microsoft .NET Framework Version 1.1 is required to run the SPU-Console. The Redistributable Package provided in the software package can be used to install .NET Framework on the computer.
- **FinsGateway Version 2003**
  The FinsGateway version 2003 communications middleware is required to run the SPU-Console.
- **Operation Manual**
  The SPU Unit Data Management Middleware User's Manual (Cat. No. V232) is included in PDF format in the software package.

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Functions Supported by SPU Units According to Unit Versions

CJ1W-SPU01-V2

Function \ Unit version of SPU Unit	Unit Ver. 1.0	Unit Ver. 1.2	Unit Ver. 1.3	Unit Ver. 2.0	**Unit Ver.2.1**
Data Storage Mode added as a sampling operating mode.	Not supported	Supported			
Scaling function for collection data	Not supported	Supported			
Recording without specifying the number of records	Not supported	Supported			
Terminology changes	Sampling Condition setting	Record Condition setting			
Recipe function	Not supported			Supported	
Expanded recipe function	**Not supported**			**Not supported**	**Supported**
Copy option	Not supported			Supported	
CHANNEL_BLOCK data type added	Not supported			Supported	
FTP communications	**Not supported**			**Not supported**	**Supported**

SPU-Console Compatibility with Unit Versions of SPU Units

CJ1W-SPU01-V2

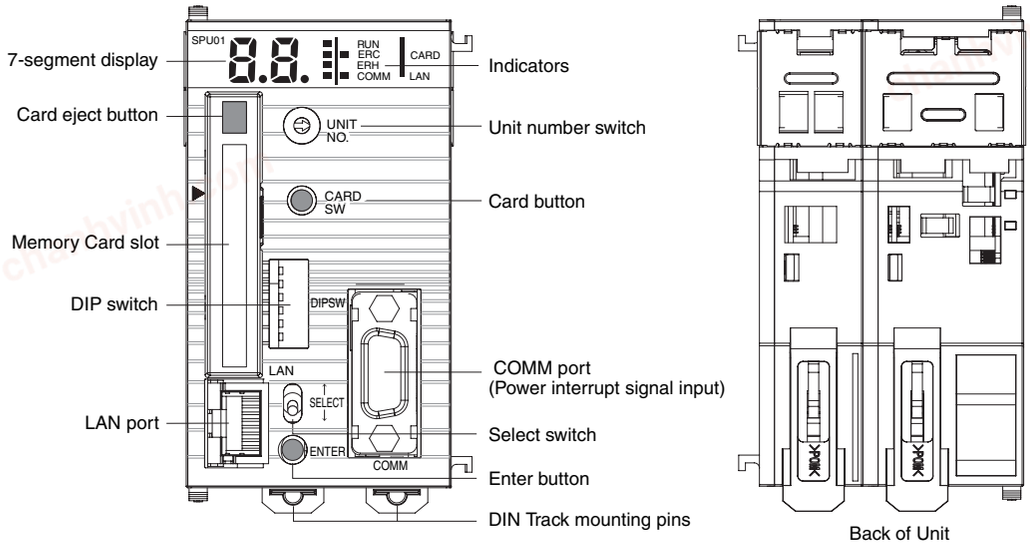
SPU-Console version \ Unit version of SPU Unit	Unit Ver. 1.0	Unit Ver. 1.2	Unit Ver. 1.3	Unit Ver. 2.0	Unit Ver. 2.1
SPU-Console Ver.1.0	Can be connected.	Cannot be connected.	Cannot be connected.	Cannot be connected.	Cannot be connected.
SPU-Console Ver.1.2	Can be connected, but operates as the unit version that is the same as the unit version of the Unit. (Operates as SPU-Console Ver. 1.0.)	Cannot be connected.	Cannot be connected.	Cannot be connected.	Cannot be connected.
SPU-Console Ver.1.3		Can be connected, but operates as the unit version that is the same as the unit version of the Unit. (Operates as SPU-Console Ver. 1.2.)	Can be connected.	Cannot be connected.	Cannot be connected.
SPU-Console Ver.2.0			Can be connected, but operates as the unit version that is the same as the unit version of the Unit. (Operates as SPU-Console Ver. 1.3.)	Can be connected.	Can be connected.
SPU-Console Ver.2.1				Can be connected, but operates as the unit version that is the same as the unit version of the Unit. (Operates as SPU-Console Ver. 2.0.)	Can be connected.

- SPU-Console versions lower than version 2.0 cannot connect to SPU Units with unit versions of 2.0 or later.
- SPU-Console version 2.1 can be connected to SPU Units with unit versions earlier than 2.1, but the SPU-Console's operations will be limited to SPU-Console operations for the lower unit version.
- Microsoft .NET Framework 1.1 is required to connect to SPU Units with unit versions 1.0, 1.2, or 1.3.

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External Interface

CJ1W-SPU01-V2



Name	Function
Unit number switch (UNIT NO.)	Sets the unit number of the SPU Unit as a one-digit hexadecimal value. Do not set the same unit number for more than one CPU Bus Unit under the same CPU Unit.
DIP switch (DIP SW)	Used for system settings.
Card button (CARD SW)	Press this button to allow the Memory Card inserted in the Memory Card slot to be removed.
Card eject button	Press to remove the Memory Card.
Select switch	Sets the command to be executed. The command number will be displayed on the seven-segment display.
Enter button	Executes the command set using the select switch.
Indicators	The following indicators show the operating status of the Unit: RUN, ERC, ERH, COMM, CARD, and LAN.
Seven-segment display	Displays error information and the operating status of the SPU Unit. Displays the command number when the select switch is operated. Displays the IP address and other results of command execution.
Memory Card slot	The slot used to insert a Memory Card.
LAN port	LAN communications port. Connects to 10Base-T/100Base-TX cables.
COMM port	Connects to the power failure signal from an uninterruptive power supply (UPS).

Connecting the Power Failure Signal

CJ1W-SPU01-V2

With the CJ1W-SPU01-V2, the power failure signal from an uninterruptive power supply (UPS) is connected to the COMM port. Special Cable can be used when either the BU70XS or BU606F (both by OMRON) is used as the uninterruptive power supply.

Connecting the BU70XS or BU606F by Special Cable

Connect the Uninterruptive Power Supply to the COMM port on the CJ1W-SPU01-V2 using the Special Cable. For the UPS setting in the Setup Tool, set the power failure signal as a negative logic input.

UPS	Applicable Special Cable
BU606F	BUC10
BU70XS	BUC16

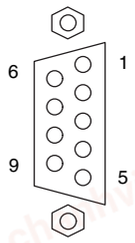
Connecting the BU70XS or BU606F by Cable or Connecting to Another UPS

The SPU Unit detects a power failure by the CS signal input turning ON. Therefore, wire the connection between the CJ1W-SPU01-V2 and the uninterruptive power supply (UPS) so that when a power failure occurs the RS signal output from the COMM port at the SPU Unit is returned to the CS signal input. For the UPS setting in the Setup Tool, set the power failure signal as a positive logic input.

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• COMM Port Specifications

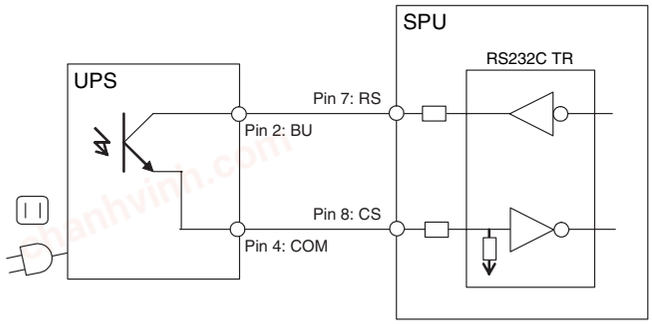
Connector type: D-Sub 9-pin male (#4-40UNC)



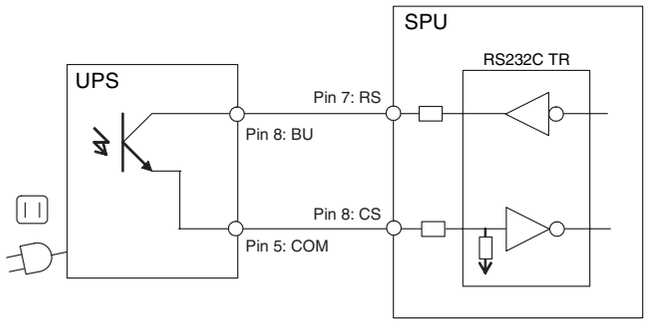
Connector Pin Arrangement

Pin No.	Abbrev.	Signal name	I/O
1	NC	Not used.	—
2	RD	Receive Data	Input
3	SD	Send Data	Output
4	NC	Not used.	—
5	SG	Signal Ground	—
6	NC	Not used.	—
7	RS	Request to Send	Output
8	CS	Clear to Send	Input
9	NC	Not used.	—
Shell	FG	Shield	

Connection Example 1: Connecting the BU606F with Cable



Connection Example 2: Connecting the BU70XS with Cable



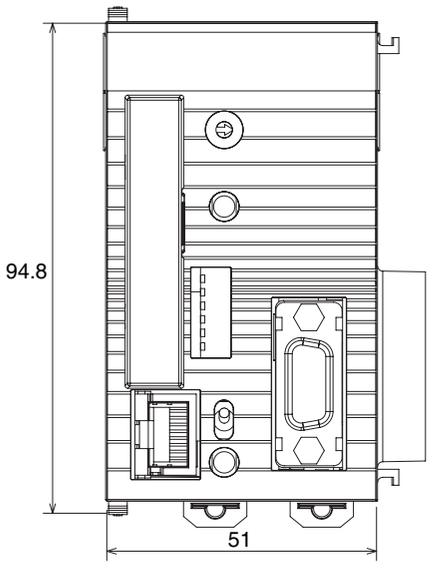
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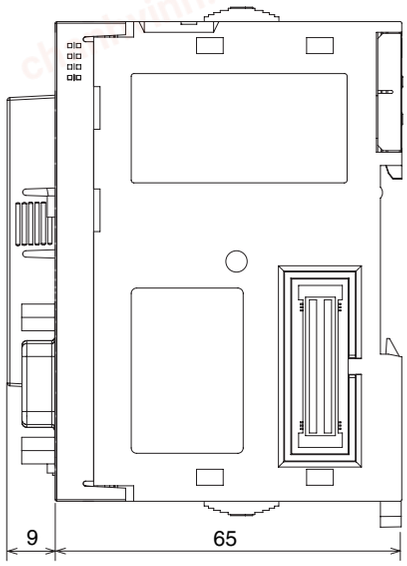
Dimensions

(Unit: mm)

CJ1W-SPU01-V2







Related Manuals

Name	Cat. No.	Contents
CS1W-SPU01-V2/SPU02-V2 CJ1W-SPU01-V2 SPU Units Operation Manual	V236	Describes the installation and operation of the SPU Units.
WS02-SPTC1-V2 SPU-Console Ver. 2.1 Operation Manual	V237	Describes the installation and operation of the SPU-Console Ver. 2.1.
WS02-EDMC1-V2 SPU Unit Data Management Middleware User's Manual	V232	Describes the installation and operation of the SPU Unit Data Management Middleware (EDMS).

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