CJ/CS Series ID Sensor Unit

CJ1W-V680C11/-V680C12
CS1W-V680C11/-V680C12

CSM_C_1W-V680C1_DS_E_1_1

Communication Unit Dedicated for RFID V680 Allowing Direct Connection to OMRON PLC CJ/CS/NJ-series

- Communication unit for connecting RFID V680-series, which can be used around the world, directly to PLC.
- Allows batch transfer of data up to 32 kbytes.

Features

- Easy reading and writing of data by simply setting parameters in PLC memory area.
- Simpler device configuration compared to serial communication allows faster data processing.
- Function Block (FB) library in Ladder Program facilitates generation of communication programs.

Note: For system configuration, refer to V680-series catalog (Q151). For specification of controllers, refer to the manual of each controller.

Ordering Information

Type	Appearance	Connected ID System		External power supply	No. of unit numbers used	Current consumption (A)			Model
						5 V	24 V	External	
CJ Special I/O Unit		V680 Series	1 Head	–	1 unit number	0.26	0.13 ✻	–	**CJ1W-V680C11**
			2 Heads		2 unit number	0.32	0.26	–	**CJ1W-V680C12**

Type	Appearance	Connected ID System		External power supply	No. of unit numbers used	Current consumption (A)			Model
						5 V	26 V	External	
CS Special I/O Unit		V680 Series	1 Head	–	1 unit number	0.26	0.13 ✻	–	**CS1W-V680C11**
			2 Heads	24 VDC	2 unit number	0.32	–	0.36	**CS1W-V680C12**

✻ When connected to the V680-H01-V2: 0.28 A

CJ1W-V680C11/-V680C12 CS1W-V680C11/-V680C12

General Specification

Item	Model	CJ1W-V680C11	CJ1W-V680C12	CS1W-V680C11	CS1W-V680C12
Current consumption	Internal: 5 V	0.26 A	0.32 A	0.26 A	0.32 A
	Internal: 24 V/26 V	0.13 A ✻	0.26 A	0.13 A ✻	–
	External: 24 V	–	–	–	0.36 A
Ambient operating temperature		0 to 55°C			
Ambient storage temperature		–20°C to 75°C			
Ambient operating humidity		10% to 90% (with no condensation)			
Insulation resistance		20 mΩ min. at 500 VDC			
Dielectric strength		1,000 VAC for 1 minute			
Degree of protection		Mounted in panel (IP30)			
Vibration resistance		10 to 57 Hz variable vibration, 0.075-mm double amplitude and 57 to 150 Hz variable vibration at 9.8 m/s^2 acceleration, with 10 sweeps in X, Y, and Z directions for 8 minutes each			
Shock resistance		147 m/s^2 in X, Y, and Z directions 3 times each			
Appearance		31 × 65 × 90 mm (excluding protrusions)		35 × 130 × 101 mm (excluding protrusions)	
Weight		120 g max.	130 g max.	180 g max.	300 g max.

✻ When connected to the V680-H01-V2: 0.28 A.

Performance Specifications

For CJ1 Series

Item / Model	CJ1W-V680C11			CJ1W-V680C12
Unit classification	Special I/O Unit			
Influence on CPU Unit's cycle time	0.15 ms			0.3 ms
Mounting location	CJ1-series CPU Rack or CJ1-series Expansion Rack (Cannot be mounted to C200H Expansion I/O Racks or SYSMAC BUS Slave Racks.)			
Connectable Antennas	V680-series Amplifiers and Antennas ✻1			
Applicable RF Tags	V680-series RF Tags			
No. of allocated units	1			2
No. of allocated words	10 words			20 words
Control protocol	Special protocol			
Data exchange methods with CPU Unit	Special I/O Unit Area in CIO Area: CIO 2000 to CIO 2959	Constant data exchange of 10 words/ Unit	CPU Unit to ID Sensor Unit	Unit controls, communications processing specification, data storage area specification
			ID Sensor Unit to CPU Unit	Unit information, results information, processing results monitor
	Special I/O Unit words in DM Area: D20000 to D29599	100 words/Unit transferred when power is turned ON or when restarting the Unit	CPU Unit to ID Sensor Unit	System Settings, Auto Wait Time Setting, Write Protection Disable Setting, Antenna Connection Setting, Results Monitor Output, Test Setting, Run/Test Switching Method Setting
Data transfer quantity	2,048 bytes max. (160 bytes/scan) ✻2			2,048 bytes max./channel (160 bytes/scan) ✻2
Operating modes	Run Mode			
	Test Mode	• Communications tests • Distance level measurements • Read speed level measurements • Write speed level measurements • Noise level measurements • Communications success rate measurements		
Diagnostic functions	(1) CPU watchdog timer (2) Communications error detection with RF Tag (3) Antenna power supply error			

✻1. V680-H01 and V680-H01-V2 can be connected to 1CH-type ID Sensor Units only. They are not supported by 2CH-type ID Sensor Units.
✻2. If using Intelligent I/O Instructions is specified as the data transfer method, up to 2,048 bytes can be transferred in one scan.

For CS1 Series

Item / Model	CS1W-V680C11			CS1W-V680C12
Unit classification	Special I/O Unit			
Influence on CPU Unit's cycle time	0.15 ms			0.3 ms
Mounting location	CS1-series CPU Rack or CS1-series Expansion Rack (Cannot be mounted to C200H Expansion I/O Racks or SYSMAC BUS Slave Racks.)			
Connectable Antennas	V680-series Amplifiers and Antennas ✻1			
Applicable RF Tags	V680-series RF Tags			
No. of allocated units	1			2
No. of allocated words	10 words			20 words
Control protocol	Special protocol			
Data exchange methods with CPU Unit	Special I/O Unit Area in CIO Area: CIO 2000 to CIO 2959	Constant data exchange of 10 words/ Unit	CPU Unit to ID Sensor Unit	Unit controls, communications processing specification, data storage area specification
			ID Sensor Unit to CPU Unit	Unit information, results information, processing results monitor
	Special I/O Unit words in DM Area: D20000 to D29599	100 words/Unit transferred when power is turned ON or when restarting the Unit	CPU Unit to ID Sensor Unit	System Settings, Auto Wait Time Setting, Write Protection Disable Setting, Antenna Connection Setting, Results Monitor Output, Test Setting, Run/Test Switching Method Setting
Data transfer quantity	2,048 bytes max. (160 bytes/scan) ✻2			2,048 bytes max./channel (160 bytes/scan) ✻2
Operating modes	Run Mode			
	Test Mode	• Communications tests • Distance level measurements • Read speed level measurements • Write speed level measurements • Noise level measurements • Communications success rate measurements		
Diagnostic functions	(1) CPU watchdog timer (2) Communications error detection with RF Tag (3) Antenna power supply error			

✻1. V680-H01 and V680-H01-V2 can be connected to 1CH-type ID Sensor Units only. They are not supported by 2CH-type ID Sensor Units.
✻2. If using Intelligent I/O Instructions is specified as the data transfer method, up to 2,048 bytes can be transferred in one scan.

For NJ Series

Item / Model	CJ1W-V680C11	CJ1W-V680C12
Unit classification	Special I/O Unit	
Mounting location	NJ-series CPU Rack or NJ-series Expansion Rack	
Connectable Antennas	V680-series Amplifiers and Antennas ✻	
Applicable RF Tags	V680-series RF Tags	
Operating modes	Run Mode	
	Test Mode	• Communications tests • Distance level measurements • Read speed level measurements • Write speed level measurements • Noise level measurements • Communications success rate measurements
Data exchange methods with CPU Unit	Data exchange by using I/O ports	
Diagnostic functions	(1) CPU watchdog timer (2) Communications error detection with RF Tag (3) Antenna power supply error	

✻ V680-H01 and V680-H01-V2 can be connected to 1CH-type ID Sensor Units only. They are not supported by 2CH-type ID Sensor Units.

CJ1W-V680C11/-V680C12 CS1W-V680C11/-V680C12

Communications Function Specifications

Item / Model	CJ1W-V680C11	CJ1W-V680C12
Communications control	(1) RF Tag Communications Speed (Normal Mode or High-speed Mode) (2) Write Verification Processing (3) Auto Wait Time Setting (4) UID Addition Setting (5) Write Protection Setting (6) Antenna Connection Setting (One-channel ID Sensor Unit (CJ1W-V680C11)) (7) Results Monitor Setting	
Commands	Read Write Bit Set/Bit Clear Mask Bit Write Calculation Write Data Fill Data Check Number of Writes Control Read with Error Correction Write with Error Correction UID Read Noise Measurement	Read Write Bit Set/Bit Clear Mask Bit Write Calculation Write Data Fill Data Check Number of Writes Control Copy Read with Error Correction Write with Error Correction UID Read Noise Measurement
Communications specification	Single trigger Single auto Repeat auto FIFO trigger ✻ FIFO repeat ✻ Multi-access trigger ✻ Multi-access repeat ✻	

✻ FIFO trigger, FIFO repeat, Multi-access trigger, and Multi-access repeat specification cannot be used for communicating with V680-D1KP□□ RF Tags.

Item / Model	CS1W-V680C11	CS1W-V680C12
Communications control	(1) RF Tag Communications Speed (Normal Mode or High-speed Mode) (2) Write Verification Processing (3) Auto Wait Time Setting (4) UID Addition Setting (5) Write Protection Setting (6) Antenna Connection Setting (One-channel ID Sensor Unit (CS1W-V680C11)) (7) Results Monitor Setting	
Commands	Read Write Bit Set/Bit Clear Mask Bit Write Calculation Write Data Fill Data Check Number of Writes Control Read with Error Correction Write with Error Correction UID Read Noise Measurement	Read Write Bit Set/Bit Clear Mask Bit Write Calculation Write Data Fill Data Check Number of Writes Control Copy Read with Error Correction Write with Error Correction UID Read Noise Measurement
Communications specification	Single trigger Single auto Repeat auto FIFO trigger ✻ FIFO repeat ✻ Multi-access trigger ✻ Multi-access repeat ✻	

✻ FIFO trigger, FIFO repeat, Multi-access trigger, and Multi-access repeat specification cannot be used for communicating with V680-D1KP□□ RF Tags.

Connectable Units

When using V680-HS51/-HS52/-HS63/-HS65 Antenna

Model	NJ System		CJ System		CS System	
	CPU unit	Expansion unit	CPU unit	Expansion unit	CPU unit	Expansion unit
CJ1W-V680C11	4 units	6 units	4 units	4 units	N/A	N/A
CJ1W-V680C12	2 units	3 units	2 units	2 units	N/A	N/A
CS1W-V680C11	N/A	N/A	N/A	N/A	9 units	9 units
CS1W-V680C12	N/A	N/A	N/A	N/A	10 units	10 units

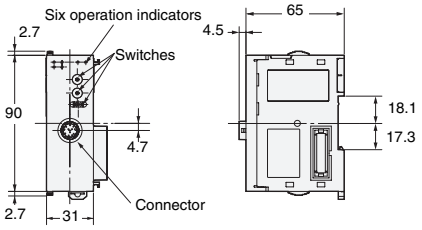
When using V680-H01-V2 Antenna

Model	NJ System		CJ System		CS System	
	CPU unit	Expansion unit	CPU unit	Expansion unit	CPU unit	Expansion unit
CJ1W-V680C11	2 units	2 units	2 units	1 unit	N/A	N/A
CS1W-V680C11	N/A	N/A	N/A	N/A	4 units	4 units

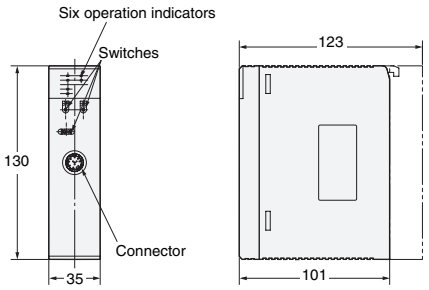
Dimensions

(unit: mm)

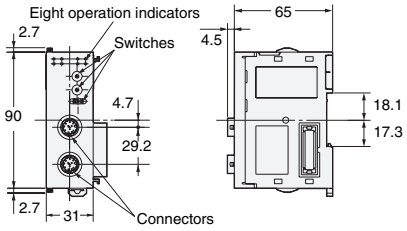
CJ1W-V680C11



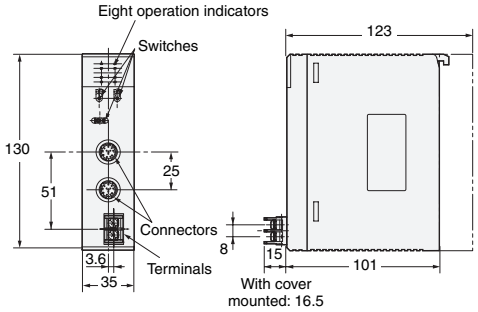
CS1W-V680C11



CJ1W-V680C12



CS1W-V680C12



Related Manuals

Man. No	Model	Manual name	Application	Description
Z271	V680 series CS1W-V680C11 CS1W-V680C12 CJ1W-V680C11 CJ1W-V680C12	ID sensor units User's Manual	When connecting to OMRON PLC CS/CJ-series	Describes the following for the main ID Sensor Unit: • System configuration • Data exchange with CPU units • Functions of ID Sensor Unit • Controlling ID Sensor Unit • Operations when alarm is triggered
Z317	V680 series CJ1W-V680C11 CJ1W-V680C12	ID sensor units User's Manual	When connecting to OMRON PLC NJ-series	Describes the following for the main ID Sensor Unit: • System configuration • Data exchange with CPU units • Functions of ID Sensor Unit • Controlling ID Sensor Unit • Operations when alarm is triggered

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