

CJ-series B7A Interface Unit

CJ1W-B7A

It transmits 16 points of I/O signals per word with a pair of cables.

Easy and minimized wiring effort,

- The B7A Interface Unit and B7A Link Terminal can be used in the same way as a standard Basic I/O Unit and I/O Terminal without any need to worry about communications. This characteristic reduces the wiring when using more than one relatively remote sensor or actuator.

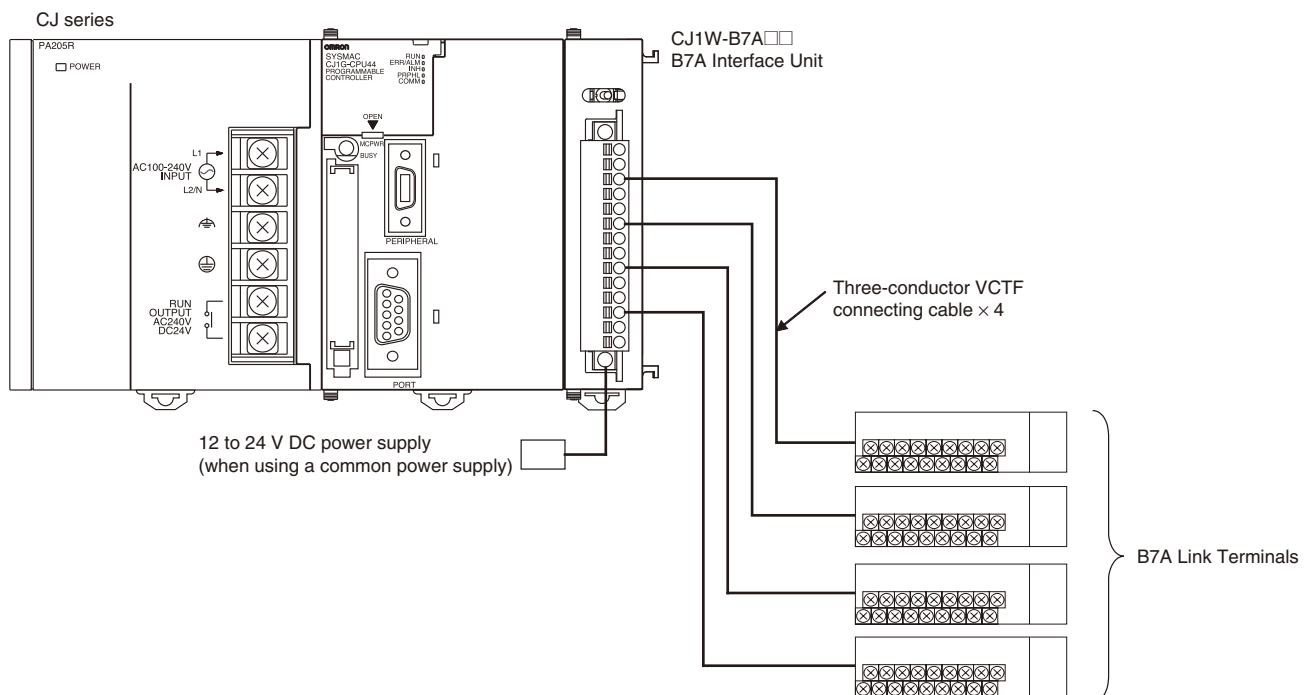


CJ1W-B7A14

Features

- A CJ1W-B7A unit can transmit 64 points of I/O signals.
- The slim body can downsize machines to which CJ1W-B7A is connected.
- It is a basic I/O unit. No complicated setting and programs are required.

System Configuration



B7A Communications Specifications

Item	Specifications		
Transmission method	One-way time-sharing multiplex transmissions		
Transmission delay (communications delay on transmission path)	High-speed	3 ms typical, 5 ms max.	
	Standard	19.2 ms typical, 31 ms max.	
Transmission points	CJ1W-B7A14	64 inputs (4 ports)	
	CJ1W-B7A04	64 outputs (4 ports)	
	CJ1W-B7A22	32 inputs (2 ports), 32 outputs (2 ports)	
External power supply voltage *1	12 to 24 V DC (allowable voltage range: 10.8 to 26.4 V)		
External supply current *2	CJ1W-B7A14	40 mA min.	
	CJ1W-B7A04	150 mA min.	
	CJ1W-B7A22	80 mA min.	
Minimum input time *3	High-speed	16 ms	
	Standard	2.4 ms	
Transmission distance	High-speed	Power supply on one side (common power supply)	10 m max. 50 m max. (with shielded cable)
		Power supply on both sides (separate power supplies)	10 m max. 100 m max. (with shielded cable)
	Standard	Power supply on one side (common power supply)	100 m max.
		Power supply on both sides (separate power supplies)	500 m max.
Cables	VCTF, 0.75 mm ² , 3 conductors (power supply on one side (common power supply)) VCTF, 0.75 mm ² , 2 conductors (power supply on both sides (separate power supplies)) Shielded cable, 0.75 mm ² , 3 conductors (power supply on one side (common power supply)) Shielded cable, 0.75 mm ² , 2 conductors (power supply on both sides (separate power supplies))		

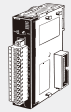
*1. We recommend OMRON S8□□-series Power Supply Units for the external power supplies.

*2. The capacity of the external supply current does not include the capacity required by the B7A Link Terminal.

*3. The minimum input time is the minimum time required by the B7A Interface Unit to read the input signals from the CPU Unit.

Note: 1. When separate power supplies are used, the B7A Interface Unit and B7A Link Terminal are supplied by separate external power supplies.
2. When a common power supply is used, the B7A Interface Unit and B7A Link Terminal are supplied by the same external power supply.

Ordering Information

Unit type	Name	Specifications		No. of words allocated	Current consumption (A)		Model	Standards
		I/O points	External connection		5 V	24 V		
CJ1 Basic I/O Units		64 inputs	Removable terminal block	4 words	0.07	–	CJ1W-B7A14	UC1, CE
		64 outputs			0.07	–	CJ1W-B7A04	
		32 inputs/outputs			0.07	–	CJ1W-B7A22	

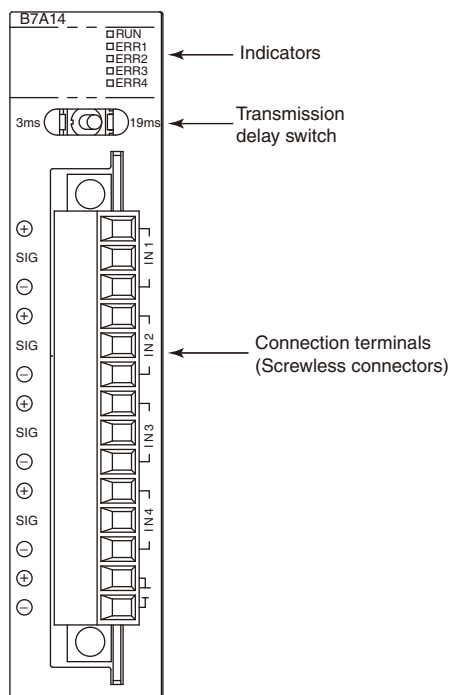
International Standards

- The standards indicated in the "Standards" column are those current for UL, CSA, cULus, cUL, NK, and Lloyd standards and EC Directives as of the end of May 2008. (The standards are abbreviated as follows: U: UL, U1: UL Class I Division 2 Products for Hazardous Locations, C: CSA, US: cULus Class I Division 2 Products for Hazardous Locations, CU: cUL, N: NK, L: Lloyd, and CE: EC Directives.)
- Ask your OMRON representatives for the conditions under which the standards were met.

Specifications

Items	Mode	Standard mode	High-speed mode
Applicable PLC		CJ-series PLCs	
Unit type		CJ1 Basic I/O Unit	
I/O points		IN 32 / OUT 32 (CJ1W-B7A22) IN 64 (CJ1W-B7A14) OUT 64 (CJ1W-B7A04)	
Transmission method		One-way time-sharing multiplex transmissions	
Transmission distance		500m max.	100m max.
Transmission delay		19.2ms (typical)	3ms (typical)
Minimum input time		16ms	2.4ms
Power Supply voltage (allowable voltage range)		12 to 24VDC (10.8 to 26.4VDC)	
I/O memory Allocations		Each Unit is allocated 4 words in the I/O Area (which starts at CIO 0000). The words are allocated according to the mounting position of the Unit.	
Transmission error bit		A transmission error bit for each input port is allocated to the CPU Units Auxiliary Area.	
Cable		VCTF, 0.75mm ² recommended.	

Parts and Names



Terminal Arrangement

Terminal	Name	Function	Word	Appearance
(1)	Port 1 power supply: V1	Connect to the + terminal of the B7A Link Terminal to be connected to port 1 (only when using a common power supply).	n	<p>(1) V1 (2) SIG1 (3) G1 (4) V2 (5) SIG2 (6) G2 (7) V3 (8) SIG3 (9) G3 (10) V4 (11) SIG4 (12) G4 (13) V (14) G</p>
(2)	Port 1 signal: SIG1	Connect to the SIG terminal of the B7A Link Terminal to be connected to port 1.		
(3)	Port 1 ground: G1	Connect to the - terminal of the B7A Link Terminal to be connected to port 1.		
(4)	Port 2 power supply: V2	Connect to the + terminal of the B7A Link Terminal to be connected to port 2 (only when using a common power supply).	n+1	
(5)	Port 2 signal: SIG2	Connect to the SIG terminal of the B7A Link Terminal to be connected to port 2.		
(6)	Port 2 ground: G2	Connect to the - terminal of the B7A Link Terminal to be connected to port 2.		
(7)	Port 3 power supply: V3	Connect to the + terminal of the B7A Link Terminal to be connected to port 3 (only when using a common power supply).	n+2	
(8)	Port 3 signal: SIG3	Connect to the SIG terminal of the B7A Link Terminal to be connected to port 3.		
(9)	Port 3 ground: G3	Connect to the - terminal of the B7A Link Terminal to be connected to port 3.		
(10)	Port 4 power supply: V4	Connect to the + terminal of the B7A Link Terminal to be connected to port 4 (only when using a common power supply).	n+3	
(11)	Port 4 signal: SIG4	Connect to the SIG terminal of the B7A Link Terminal to be connected to port 4.		
(12)	Port 4 ground: G4	Connect to the - terminal of the B7A Link Terminal to be connected to port 4.		
(13)	+ power supply: V	Connect to the + terminal of the external power supply.	-	
(14)	- power supply: G	Connect to the - terminal of the external power supply.		

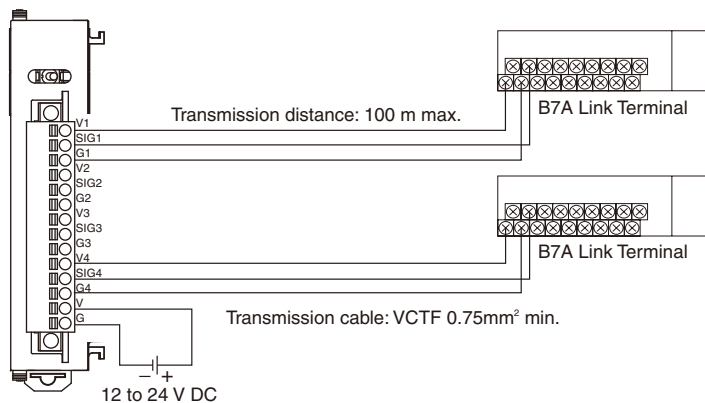
Note: Terminals V1, V2, V3, V4, and V are connected internally in the Unit, and terminals G1, G2, G3, G4, and G are connected internally in the Unit.

Wiring Methods

Standard Mode

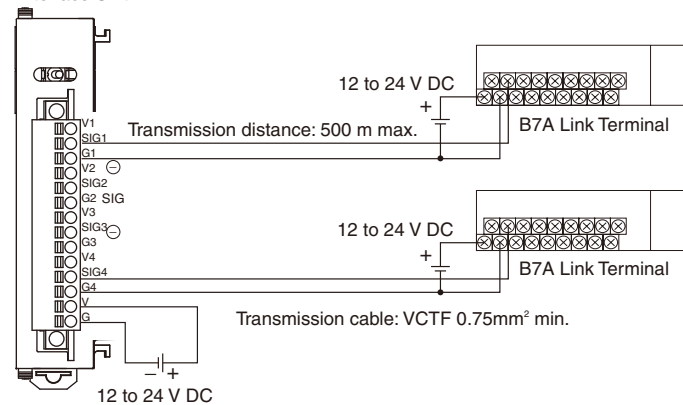
Power Supply on One Side (Common Power Supply)

B7A Interface Unit



Power Supply on Both Sides (Separate Power Supplies)

B7A Interface Unit

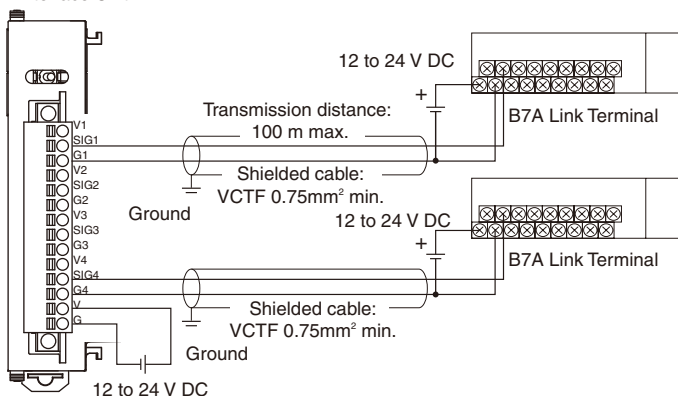


High-speed Mode

Note: If shielded cable is not used, the maximum transmission distance is 10 m regardless of whether a common or separate power supplies are used. (Use VCTF cable of 0.75 mm² or higher.)

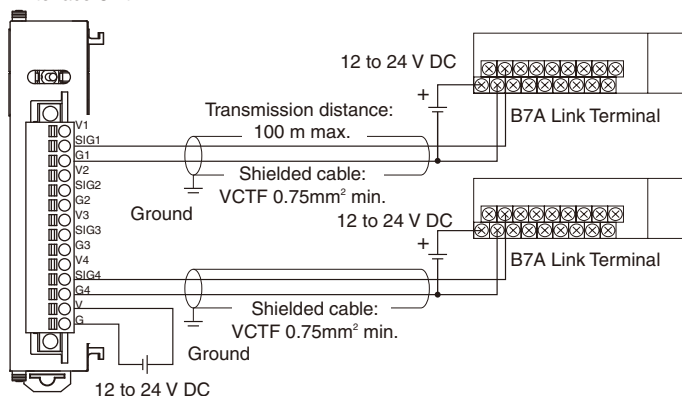
Power Supply on One Side (Common Power Supply)

B7A Interface Unit



Power Supply on Both Sides (Separate Power Supplies)

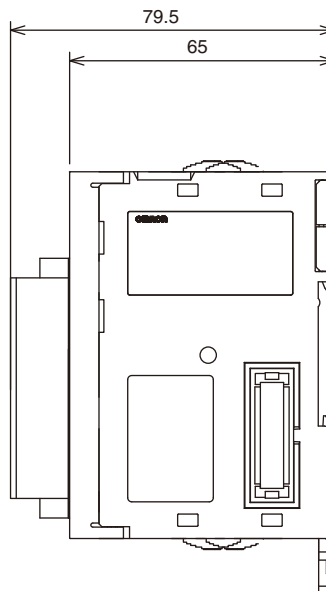
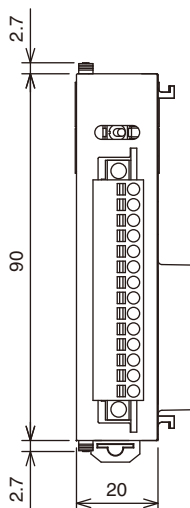
B7A Interface Unit



Dimensions

(Unit: mm)

CJ1W-B7A14/04/22



Related Manual

Cat.No.	Name	Contents
W393	SYSMAC CJ Series CJ1H-CPU□□H-R, CJ1G/H-CPU□□H, CJ1G-CPU□□P, CJ1G-CPU□□, CJ1M-CPU□□ Programmable Controllers OPERATION MANUAL	Provides an outlines of and describes the design, installation, maintenance, and other basic operations for the CJ-series PLCs.

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