

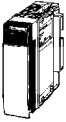
B7A Link Remote I/O Components Overview

Parts Summary and Configuration Guide to Build a Wire-Saving B7A Link Remote I/O System

- Just two wires transmit data, simplifies installation and troubleshooting
- High-speed (100 m max. at 3 ms) and long distance (500 m max. at 19.2 ms) configurations available
- Wide range of transistor and relay blocks to meet application needs

Ordering Information

■ PLC MASTER LINK MODULES

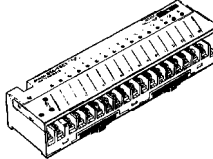
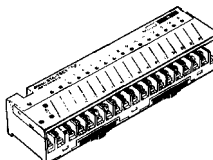
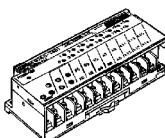
Appearance	I/O classification	I/O configuration	System compatibility	Part number	Standards
	16-point output, long distance and high-speed systems	Use B7A/B7AS input and output terminals	CQM1 compact PLCs	CQM1-B7A02	UL CSA CE (See Note)
	32-point output, long distance and high-speed systems			CQM1-B7A03	
	16-point input, long distance and high-speed systems			CQM1-B7A12	
	32-point input, long distance and high-speed systems			CQM1-B7A13	
	16-point input/16-point output, long distance and high-speed systems			CQM1-B7A21	
	16-point input, long distance system	Use B7A/B7AS input and output terminals	CS1, C200H Alpha and C200HS PLCs, Special I/O	C200H-B7A11	UL CSA CE (See Note)
	16-point output, long distance system			C200H-B7A01	
	32-point output, long distance and high-speed systems		CS1, C200H Alpha and C200HS PLCs, Group-2 Special I/O	C200H-B7A02	
	32-point input, long distance and high-speed systems			C200H-B7A12	
	Mixed I/O, 16-point input/ 16-point output; long distance and high-speed systems			C200H-B7A21	
	Mixed I/O, 32-point input/ 32-point output; long distance and high-speed systems			C200H-B7A22	

Note: Information on EC Directives

Individual OMRON products that comply with EC Directives conform to the common emission standards of EMC Directives. However, the emission characteristics of these products installed on customers' equipment may vary depending on the configuration, wiring, layout, and other conditions of the control panel used. For this reason, customers are requested to check whether the emission characteristics of the entire machine or equipment comply with the EMC Directives.

16-POINT TERMINALS

Transistor I/O Link Modules

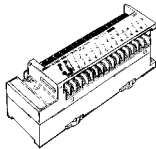
Appearance	I/O classification	I/O configuration	I/O delay (typical)	Internal I/O common	Error processing (See Note 1)	Part number	Standards	
	Input, 16 points	NPN compatible	Normal speed 19.2 ms	- common	---	B7A-T6A1 (See Note 2)	UL CSA CE (See Note 5)	
				+/- common	---	B7A-T6B1 (See Note 2)		
		PNP compatible		+/- common	---	B7A-T6C1		
		NPN compatible	High speed 3 ms	- common	---	B7A-T6A6 (See Note 2)		
				+/- common	---	B7A-T6B6 (See Note 2)		
		PNP compatible		+/- common	---	B7A-T6C6		
	Output, 16 points	NPN open collector 100 mA/point	Normal speed 19.2 ms	+ common	HOLD	B7A-R6B11	UL CSA CE (See Note 5)	
					LOAD OFF	B7A-R6B31		
		NPN open collector 500 mA/point (See Note 3)			HOLD	B7A-R6C11		
					LOAD OFF	B7A-R6C31		
		PNP open collector 100 mA/point	High speed 3 ms	- common	HOLD	B7A-R6F11		
					LOAD OFF	B7A-R6F31		
		PNP open collector 500 mA/point (See Note 4)			HOLD	B7A-R6G11		
					LOAD OFF	B7A-R6G31		
		NPN open collector 100 mA/point		+ common	HOLD	B7A-R6B16		
					LOAD OFF	B7A-R6B36		
		NPN open collector 500 mA/point (See Note 3)			HOLD	B7A-R6C16		
					LOAD OFF	B7A-R6C36		
		PNP open collector 100 mA/point		- common	HOLD	B7A-R6F16		
					LOAD OFF	B7A-R6F36		
		PNP open collector 500 mA/point (See Note 4)			HOLD	B7A-R6G16		
					LOAD OFF	B7A-R6G36		
	Input, 16 points	NPN compatible	Normal speed 19.2 ms	+/- common	---	B7AS-T6B1	UL CSA CE (See Note 5)	
			High speed 3 ms		---	B7AS-T6B6		
	Output, 16 points	NPN open collector 100 mA/point	Normal speed 19.2 ms		HOLD	B7AS-R6B11		
					LOAD OFF	B7AS-R6B31		
			High speed 3 ms		HOLD	B7AS-R6B16		
					LOAD OFF	B7AS-R6B36		

Note: 1. HOLD: The previous output condition will be on hold when an error occurs.
LOAD OFF: All outputs will be OFF when an error occurs.

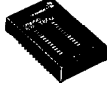
- The 16-point B7A-T6A□ and 16-point B7A-T6B□ are different from each other in terminal configuration.
- N-channel MOSFET open drain output
- P-channel MOSFET open drain output
- Information on EC Directives

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16-point Relay Output Link Modules

Appearance	I/O classification	I/O configuration	I/O delay (typical)	Error processing (See Note 1)	Part number	Standards
	Output, 16 points (SPST-NO)	Relay outputs G6D-1A DC24	Normal speed 19.2 ms (See Note 2)	HOLD	G70D-R6R11-B7A	UL CSA CE (See Note 3)
		Power MOSFET relay outputs G3DZ-2R6PL DC24		LOAD OFF	G70D-R6R31-B7A	
				HOLD	G70D-R6M11-B7A	
				LOAD OFF	G70D-R6M31-B7A	

PCB Models

Appearance	I/O classification	I/O configuration	I/O delay (typical)	Error processing (See Note 1)	Part number	Standards
	Input, 16 points	TTL input	Normal speed 19.2 ms	---	B7A-T6D2	UL CSA CE (See Note 3)
			High speed 3 ms	---	B7A-T6D7	
	Output, 16 points	NPN open collector 50 mA/point	Normal speed 19.2 ms	HOLD/LOAD OFF selected by wiring	B7A-R6A52	
			High speed 3 ms		B7A-R6A57	

■ LINK MASTER ADAPTERS FOR HIGH-DENSITY I/O PLC MODULES

16-point Adapters

Appearance	I/O classification	I/O configuration	I/O delay (typical)	Error processing (See Note 1)	Part number	Standards
	Input, 16 points	NPN compatible	Normal speed 19.2 ms	---	B7A-T6E3	UL CSA CE (See Note 3)
			High speed 3 ms	---	B7A-T6E8	
	Output, 16 points	NPN open collector 50 mA/point	Normal speed 19.2 ms	HOLD	B7A-R6A13	
				LOAD OFF	B7A-R6A33	
			High speed 3 ms	HOLD	B7A-R6A18	
				LOAD OFF	B7A-R6A38	

32-point Adapters

Appearance	I/O classification	I/O configuration	I/O delay (typical)	Error processing (See Note 1)	Part number	Standards
	Input, 32 points	NPN compatible	Normal speed 19.2 ms	---	B7A-T3E3	UL CSA CE (See Note 3)
			High speed 3 ms	---	B7A-T3E8	
	Output, 32 points	NPN open collector 50 mA/point	Normal speed 19.2 ms	HOLD	B7A-R3A13	
				LOAD OFF	B7A-R3A33	
			High speed 3 ms	HOLD	B7A-R3A18	
				LOAD OFF	B7A-R3A38	

Note: 1. HOLD: The previous output condition will be on hold when an error results.

LOAD OFF: All outputs will be OFF when an error results.

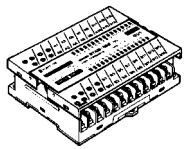
2. These G70D Relay Output Link Modules cannot be connected to high-speed B7A.

3. Information on EC Directives

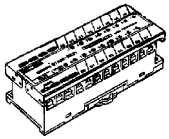
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■ MIXED I/O LINK MODULES

Screw Terminal Model (with 16 Input and 16 Output Points)

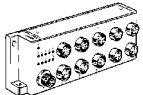
Appearance	I/O configuration	I/O delay (typical)	Error processing (See Note 1)	Part number	Standards
	NPN compatible/ NPN open collector 100 mA/point 16 input/16 output points	Normal speed 19.2 ms High speed 3 ms (switch selectable)	HOLD/ LOAD OFF (switch setting)	B7AM-6BS	---

Screw Terminal Models (with 8 Input and 8 Output Points)

Appearance	I/O configuration	I/O delay (typical)	Error processing (See Note 1)	Part number	Standards
	NPN compatible/ NPN open collector 100 mA/point 8 input/8 output points	Normal speed 19.2 ms	HOLD	B7AM-8B11	---
			LOAD OFF	B7AM-8B31	
		High speed 3 ms	HOLD	B7AM-8B16	
			LOAD OFF	B7AM-8B36	
	PNP compatible/ PNP open collector 100 mA/point 8 input/8 output points	Normal speed 19.2 ms	LOAD OFF	B7AM-8F31	

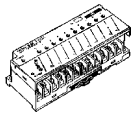
■ INPUT LINK CONNECTOR MODULE (M12 CONNECTORS)

10-point Terminal Models

Appearance	Description	I/O configuration	I/O delay (typical)	Enclosure rating	Part number	Standards
	B7A 10-point sealed input module	NPN compatible	19.2 ms	IP67	B7AC-T10A1	UL CSA CE (See Note 3)
	DeviceNet interface module connects up to 3 B7AC modules			IP66	DRT1-B7AC	

■ 10-POINT TERMINALS

Transistor I/O Link Modules

Appearance	I/O classification	I/O configuration	Internal I/O common	Error processing (See Note 1)	Part number	Standards
	Input, 10 points (See Note 2)	NPN compatible (No two-wire sensor can be connected.)	- common	---	B7A-T10S1	UL CSA CE (See Note 3)
			+/- common	---	B7A-T10S3	
	Output, 10 points	NPN open collector 100 mA/point	+ common	HOLD	B7A-R10SC01	

Printed Circuit Board Models

Appearance	I/O classification	I/O configuration	Error processing (See Note 1)	Part number	Standards
	Input, 10 points	TTL input	---	B7A-T10M2	UL CSA CE (See Note 3)
	Output, 10 points	NPN open collector 50 mA/point	HOLD	B7A-R10MC	

Note: 1. HOLD: The previous output condition will be on hold when an error results.

LOAD OFF: All outputs will be OFF when an error results.

2. The 10-point B7A-T10S1 and 10-point B7A-T10S3 are different from each other in terminal configuration.

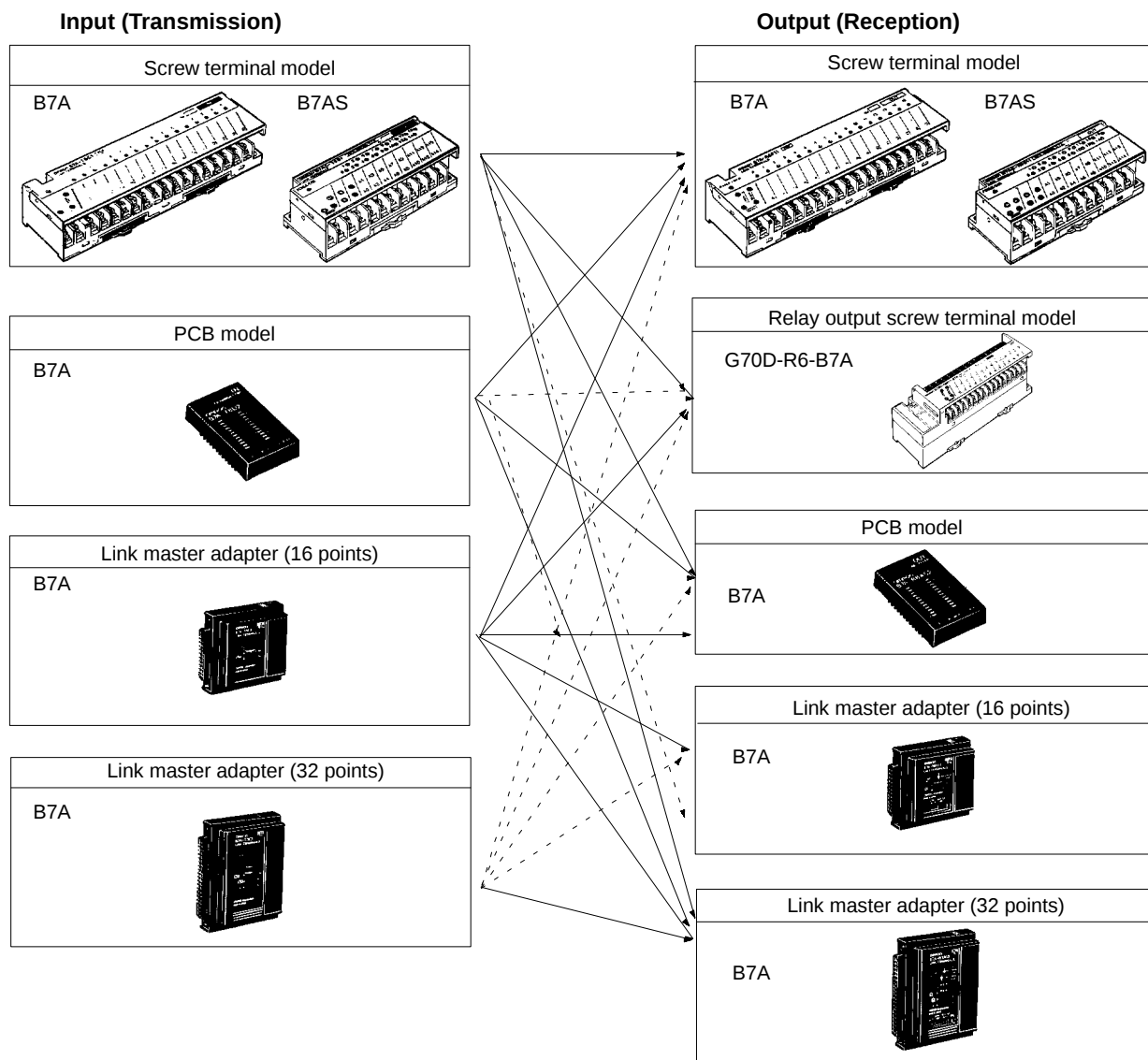
3. Information on EC Directives

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However, the emission characteristics of these products installed on customers' equipment may vary depending on the configuration, wiring, layout, and other conditions of the control panel used. For this reason, customers are requested to check whether the emission characteristics of the entire machine or equipment comply with the EMC Directives.

Configuration Guidelines

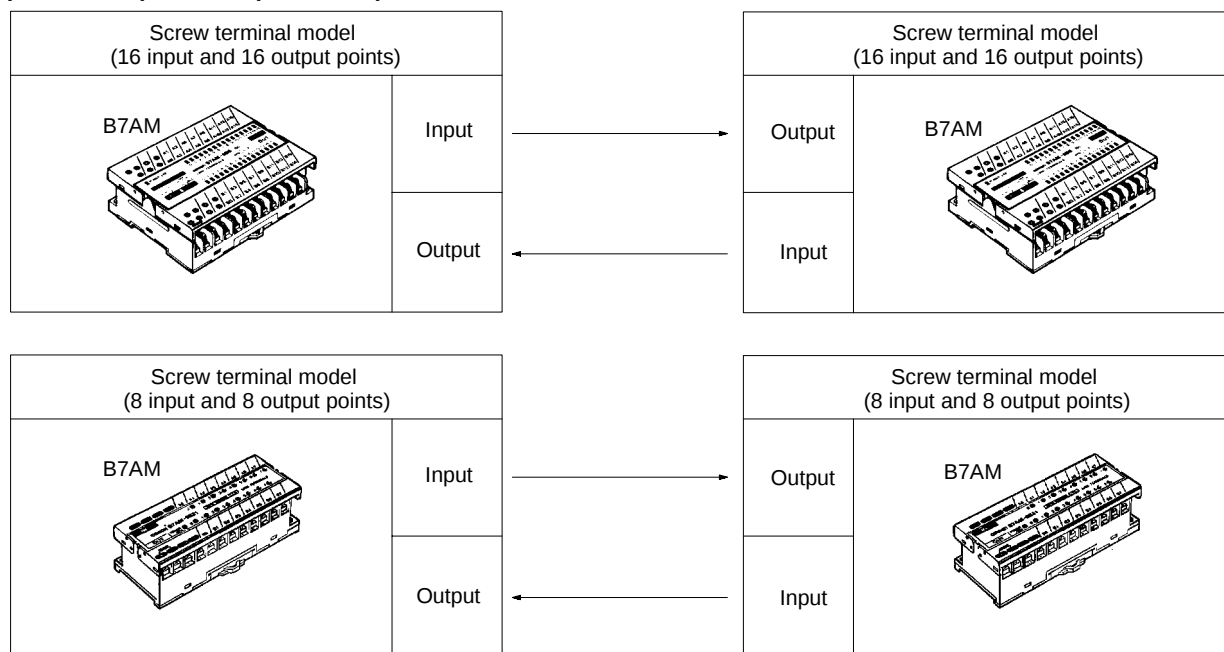
■ 16-POINT TRANSISTOR I/O LINK MODULES



Note: The I/O delay time values of 16-point Link Terminals with Adapters are either 3 ms (typical, for high-speed models) or 19.2 ms (typical, for normal-speed models). Use a combination of an Input and an Output Link Terminal with the same I/O delay time. Connect two 32-point Link Terminals with Adapters together or a 32-point Link Terminal with an Adapter to two 16-point Link Terminals.

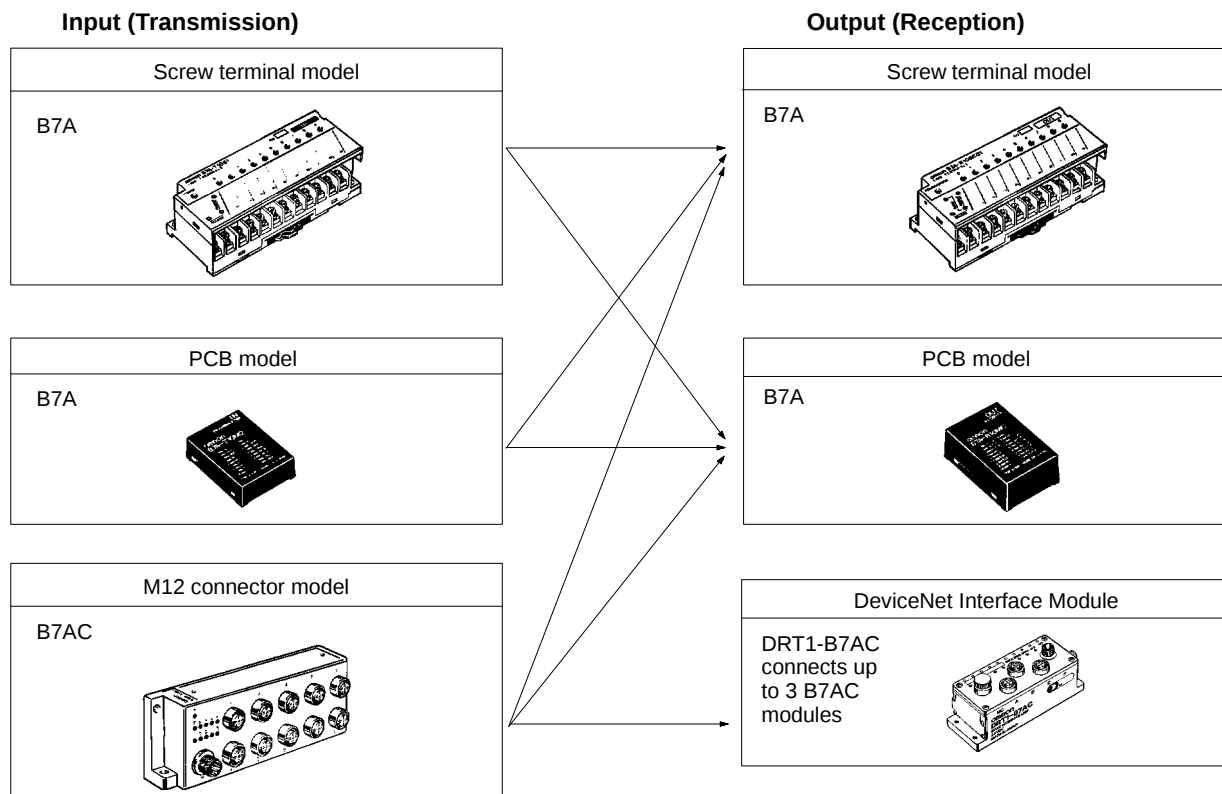
■ MIXED I/O LINK MODULES

16 Inputs/16 Output or 8 Inputs/8 Outputs



Note: The Mixed I/O Link Terminals are either 3 ms (typical, for high-speed models) or 19.2 ms (typical, for normal-speed models). Use a combination of an Input and an Output Link Terminal with the same transmission speed (I/O delay time).

■ 10-POINT TRANSISTOR I/O LINK MODULES



Note: The 10-point model has a normal I/O delay of 19.2 ms (typical); 10-point models with short I/O delay are not available. The transmission signals of the 16-point Link Master Adapters are not compatible with those of the 10-point model. The 16-point Link Master Adapter models and 10-point models cannot be used in combination.

NOTE: DIMENSIONS SHOWN ARE IN MILLIMETERS. To convert millimeters to inches divide by 25.4.

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