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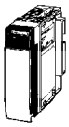
B7A Link Remote I/O Components Overview

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

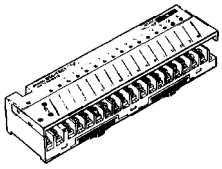
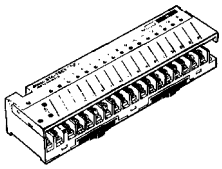
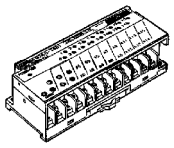
Appearance	I/O classification	I/O configuration	System compatibility	Part number	Standards
	16-point output, long distance and high-speed systems	Use B7A/B7AS input and output terminals	CQM1 compact PLCs	**CQM1-B7A02**	UL CSA CE (See Note)
	32-point output, long distance and high-speed systems			**CQM1-B7A03**	
	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-B7AI1**	UL CSA CE (See Note)
	16-point output, long distance system			**C200H-B7AO1**	
	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.

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■ 16-POINT TERMINALS

Transistor I/O Link Modules

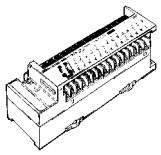
Appearance	I/O classification	I/O configuration	I/O delay (typical)	Internal I/O common	Error processing (See Note 1)	Part number	Standards
	Input, 16 points	NPN compatible	Normal speed 19.2 ms	– common	---	**B7A-T6A1** (See Note 2)	UL CSA CE (See Note 5)
				+/– common	---	**B7A-T6B1** (See Note 2)	
		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		– 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	High speed 3 ms	+ 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.

2. The 16-point B7A-T6A□ and 16-point B7A-T6B□ are different from each other in terminal configuration.
3. N-channel MOSFET open drain output
4. P-channel MOSFET open drain output
5. 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.

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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)
				LOAD OFF	**G70D-R6R31-B7A**	
		Power MOSFET relay outputs G3DZ-2R6PL DC24		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.

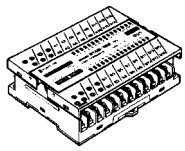
2. These G70D Relay Output Link Modules cannot be connected to high-speed B7A.

3. Information on EC Directives
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.

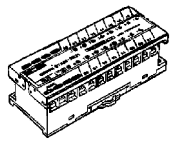
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■ MIXED I/O LINK MODULES

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

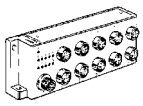
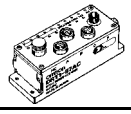
Appearance	I/O configuration	I/O delay (typical)	Error processing (See Note 1)	Part number	Standards
	NPN compatible/ NPN open collector 100 mA/point 16 input/16 output points	Normal speed 19.2 ms High speed 3 ms (switch selectable)	HOLD/ LOAD OFF (switch setting)	**B7AM-6BS**	---

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**	

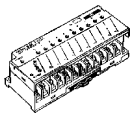
■ INPUT LINK CONNECTOR MODULE (M12 CONNECTORS)

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.

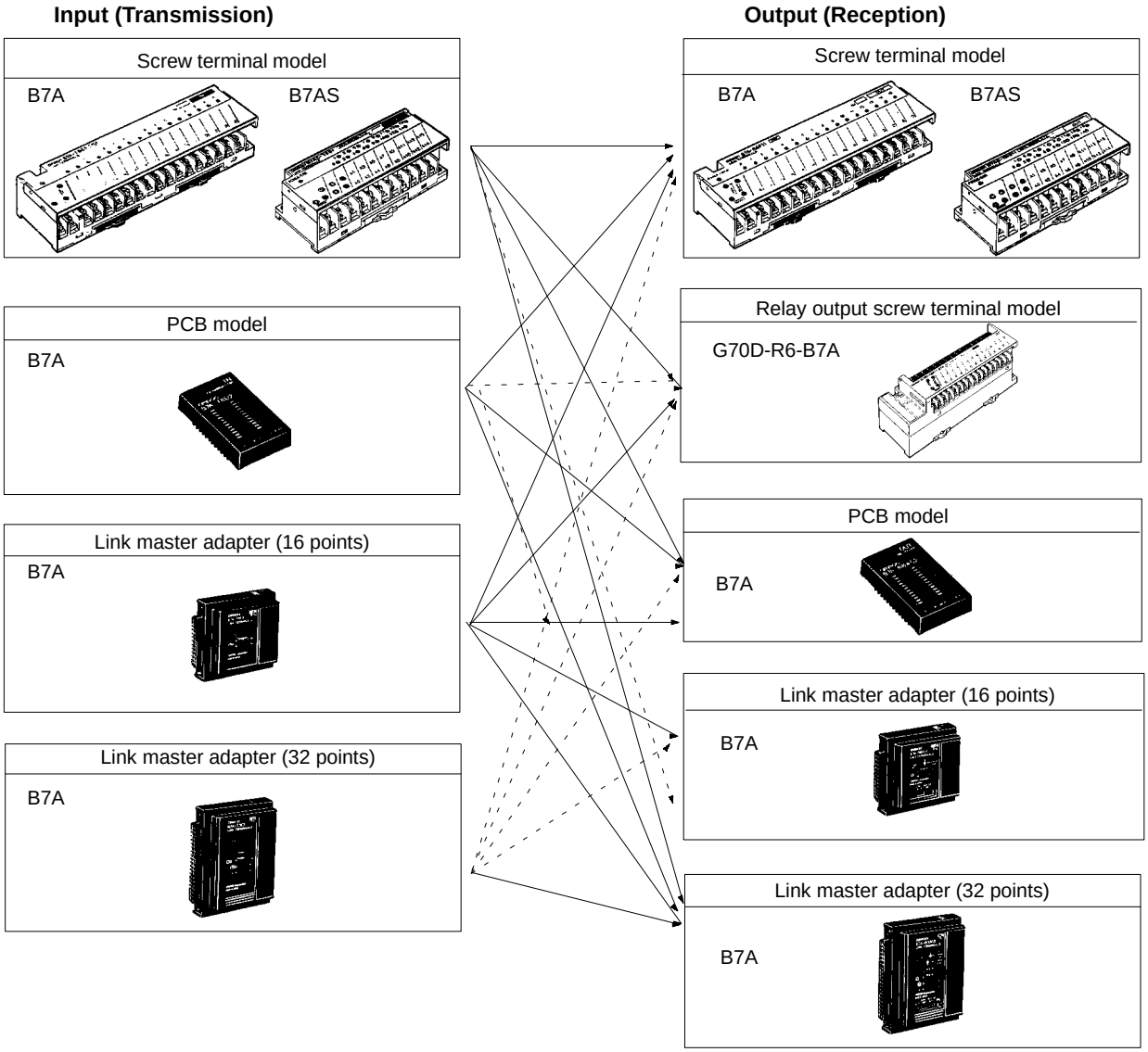
2. The 10-point B7A-T10S1 and 10-point B7A-T10S3 are different from each other in terminal configuration.

3. Information on EC Directives
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.

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Configuration Guidelines

■ 16-POINT TRANSISTOR I/O LINK MODULES

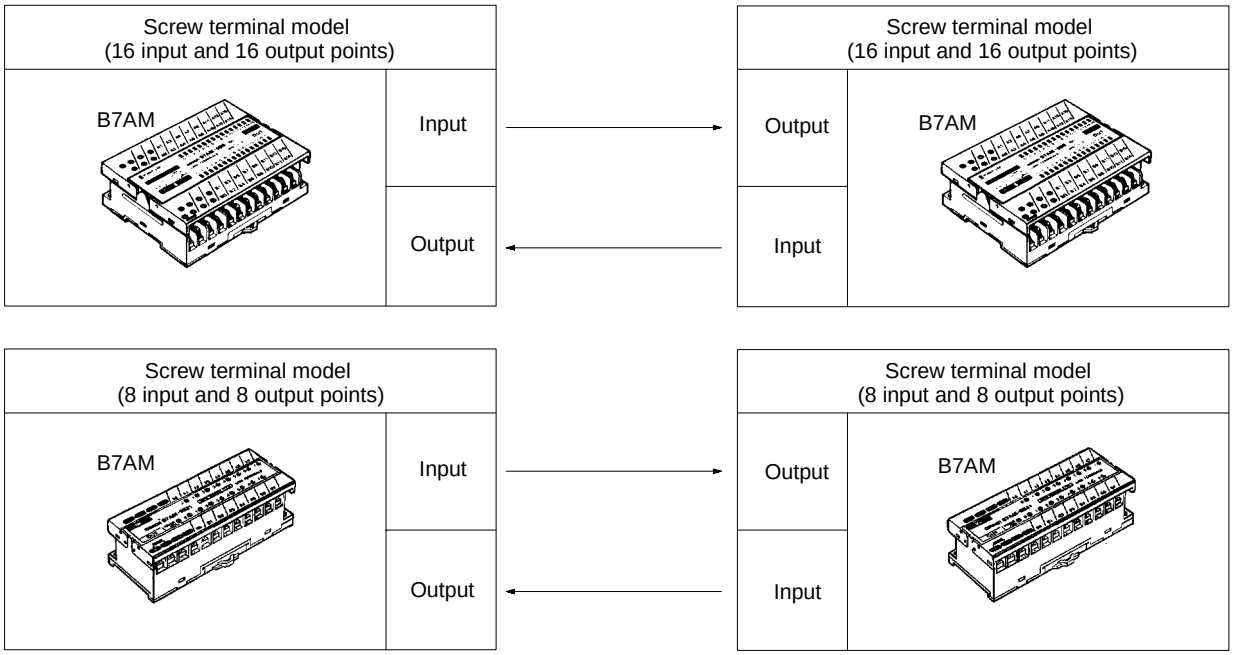


Note: The I/O delay time values of 16-point Link Terminals with Adapters are either 3 ms (typical, for high-speed models) or 19.2 ms (typical, for normal-speed models). Use a combination of an Input and an Output Link Terminal with the same I/O delay time. Connect two 32-point Link Terminals with Adapters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

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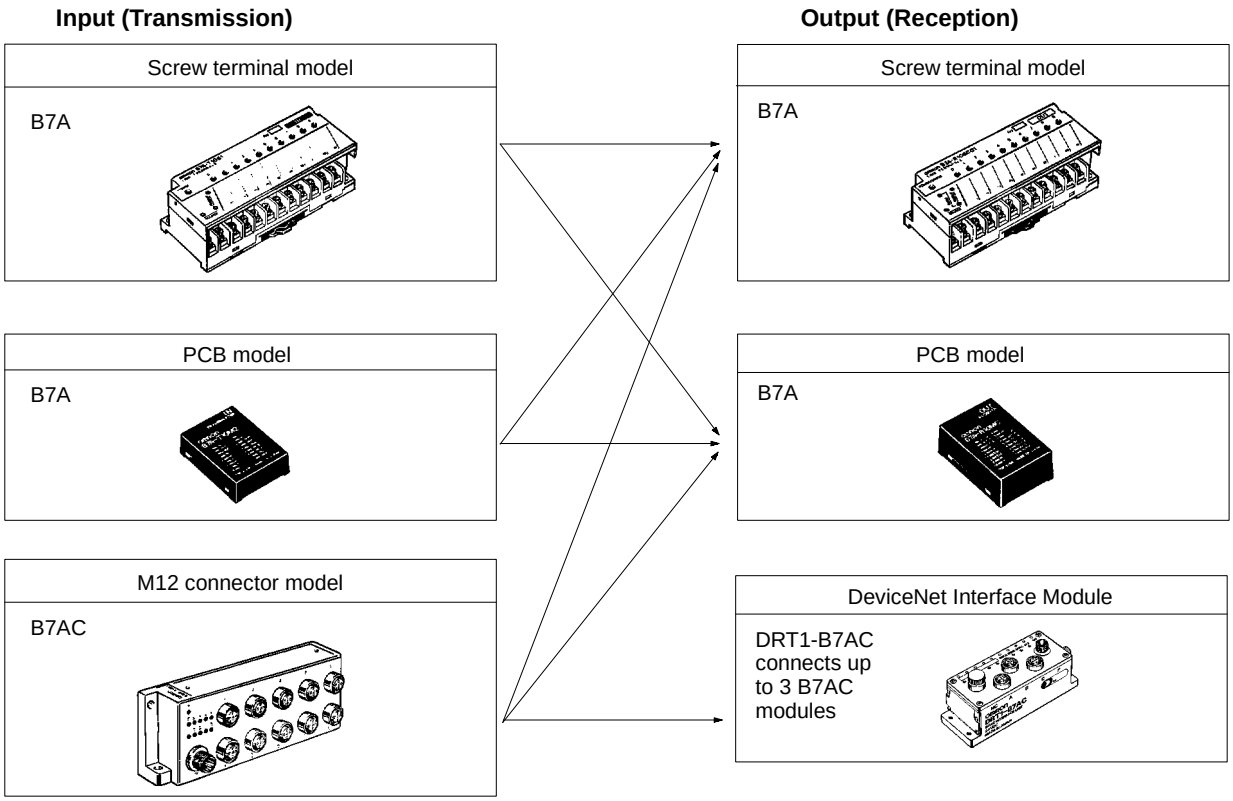
■ MIXED I/O LINK MODULES

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.

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

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