ltem	Screw terminal models	Modular models	Compact modular models		
	B7A-T6C1/-T6C6	B7A-T6D2/-T6D7	B7A-T6D7-D		
Compatible inputs	Switches, two-wire sensors with DC output, 3-wire PNP sensors	TTLs, switches, 3-wire PNP sensors (see note 2)	TTLs, switches, 3-wire PNP sensors		
Input logic	Active high		Active low		
I/O delay time	B7A-T6C1: normal speed (typical 19.2 ms); B7A-T6C6: high speed (typical 3 ms)	B7A-T6D2: normal speed (typical 19.2 ms); B7A-T6D7: high speed (typical 3 ms)			
Current consumption (see note 3)	120 mA max. with all input terminals ON	60 mA max. with all input terminals ON			
Operating voltage range	12 to 24 VDC	24 VDC			
Input voltage range	0 VDC to supply voltage				
Input current range	3 to 6 mA/point	0.2 to 2 mA/point (input voltage: 5 to 24 VDC)	-1.1 to -0.5 mA/point (flowing out from terminals)		
Minimum input time (see note 4)	B7A-T6C1: 16 ms; B7A-T6C6: 2.4 ms	B7A-T6D2: 16 ms; B7A-T6D7: 2.4 ms	2.4 ms		
ON/OFF threshold	No-contact input: ON voltage: $-4 \text{ V}$ max. OFF voltage: $-6 \text{ V}$ min. Contact input: ON discrimination resistance: $660 \Omega$ max. OFF discrimination resistance: $2 \text{ k}\Omega$ min.	ON voltage: 2.2 V min. OFF voltage: 0.8 V max.	ON voltage: 3 V max. OFF voltage: 6 V max.		
Mounting strength	No damage when 49-N pull is applied for 1 min each in all directions (except in direction of DIN track)				
Terminal strength	No damage when 49-N pull is applied each in all directions				
Tightening torque	0.78 to 1.18 N • m				
Weight	Approx. 160 g	Approx. 23 g	Approx. 25 g		

Note: 1. If there is a possibility of noise interference from the power supply, input, and/or output lines, add appropriate noise protection circuits. Refer to *Noise Protection Circuits* on page 101 for details.

2. A 3-wire NPN sensor with a residual voltage of 0.8 V maximum and a built-in collector load can be used. In this case, however, when the output transistor of the sensor is ON, the B7A will be OFF.

3. Consumption when all 16 points are ON. Excludes external sensor current for Input Terminals.

4. The minimum input time is required for the B7A to read an input signal.

## **Output Models**

Item	Screw terminal models (100 mA/point)			
	B7A-R6B11/-R6B16/ -R6B31/-R6B36	B7AS-R6B11/-R6B16/ -R6B31/-R6B36	B7A-R6F11/-R6F16/ -R6F31/-R6F36	
Output configuration	NPN open collector		PNP open collector	
I/O delay time	B7A□-R6□□1: normal speed (typical 19.2 ms); B7A□-R6□□6: high speed (typical 3 ms)			
Error processing	B7A□-R6□1□: HOLD; B7A□-R6□3□: LOAD OFF			
Current consumption (see note)	80 mA max. with all output terminals ON	120 mA max. with all output terminals ON	80 mA max. with all output terminals ON	
Power supply voltage	12 to 24 VDC			
Rated load voltage	5 to 24 VDC			
Output residual voltage	0.8 V max.			
Output current	Sync. current, 100 mA max./ point	Source current, 100 mA max./ point		
Mounting strength	No damage when 49-N pull is applied for 1 min each in all directions (except in direction of DIN track)			
Terminal strength	No damage when 49-N pull is applied each in all directions (except in direction of DIN track)			
Tightening torque	0.78 to 1.18 N • m			
Weight	Approx. 160 g	Approx. 130 g	Approx. 160 g	

Note: Consumption when all 16 points are ON. Excludes external load current and error load current for Output Terminals.



- Note: 1. The wire colors have been changed in accordance with the revision of the Japanese Industrial Standards for photoelectric sensors and proximity sensors. The colors in parentheses refer to the old colors.
  - 2. Do not short-circuit the SIG terminal with the positive power supply terminal, negative power supply terminal, or a B terminal, otherwise the internal elements of the B7A will be damaged and no transmission will be possible.



Sn C

Valve

Relay

┨┠ 12 to 24 VDC

Indicator

0

A15

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## Product List **32-point Terminals Screw Terminal Models**

Appearance	Model	I/O classification	I/O configuration	I/O delay time (typical)	Internal I/O common	Error processing (see note 1)	Approved standards
Annone -	B7AS-T3BS	Input	NPN compatible	Normal speed 19.2 ms High speed 3 ms (switch selectable)	+/- common		U, CU, CE

## **16-point Terminals Screw Terminal Models**

Appearance	Model	I/O classification	I/O configuration	I/O delay time (typical)	Internal I/O common	Error processing (see note 1)	Approved standards
	B7A-T6A1 (see note 2)	Input	NPN compatible	Normal speed	– common		U, C, CE
The second s	B7A-T6B1 (see note 2)			19.2 ms	+/- common		
	B7A-T6C1		PNP compatible		+/– common		
	B7A-T6A6 (see note 2)		NPN compatible	High speed 3 ms	– common		
	B7A-T6B6 (see note 2)			4	+/- common		
	B7A-T6C6		PNP compatible		+/– common		
	B7A-R6B11	Output	NPN open collector	Normal speed	+ common	HOLD	U, C, CE
	B7A-R6B31			19.2 ms		LOAD OFF	
	B7A-R6C11		NPN open collector 500 mA/point (see			HOLD	CE
	B7A-R6C31		note 3)	-		LOAD OFF	
	B7A-R6F11	-	PNP open collector		- common	HOLD	U, C, CE
	B7A-R6F31			-		LOAD OFF	CE.
	B7A-R6G11 B7A-R6G31		500 mA/point (see			LOAD OFF	CE
	B7A-R6B16		NPN open collector	High speed	+ common	HOLD	U, C, CE
	B7A-R6B36		100 mÅ/point	3 ms		LOAD OFF	
	B7A-R6C16		NPN open collector			HOLD	CE
	B7A-R6C36		note 3)			LOAD OFF	
	B7A-R6F16		PNP open collector		- common	HOLD	U, C, CE
	B7A-R6F36		100 mA/point	-		LOAD OFF	
	B7A-R6G16	-	PNP open collector 500 mA/point (see			HOLD	CE
	B7A-R6G36		note 4)			LOAD OFF	
	B7AS-T6B1	Input	NPN compatible	Normal speed 19.2 ms	+/– common		U, CU, CE
	B7AS-T6B6			High speed 3 ms			
V <sup>bea</sup>	B7AS-R6B11	Output	NPN open collector	Normal		HOLD	U, CU, CE
	B7AS-R6B31		100 mA/point	19.2 ms	-	LOAD OFF	]
	B7AS-R6B16			High speed		HOLD	
	B7AS-R6B36			51115		LOAD OFF	

