

I/O Specifications

Input Specifications

All of the Input Units listed in the following tables have photocoupler isolation and LED input indicators.

CPU Units

Number of inputs	Input voltage	Input current	Input impedance	Operating voltage		Response times		External connection	Inputs/common	Current consumption (5 V DC)	Weight
				ON voltage	OFF voltage	ON delay	OFF delay				
16 pts	24 V DC +10%/15%	10 mA for IN04/05 6 mA for the rest (24 V DC)	2.2 kΩ for IN04/05 3.9 kΩ for the rest	17.4 V DC min.	5.0 V DC max.	8 ms max. (see note)	8 ms max. (see note)	Terminal block	16	---	---

DC Input Units

Model	Number of inputs	Input voltage	Input current	Input impedance	Operating voltage		Response times		External connection	Inputs/common	Current consumption (5 V DC)	Weight
					ON voltage	OFF voltage	ON delay	OFF delay				
CQM1-ID211	8 pts	12 to 24 V DC +10%/15%	10 mA (24 V DC)	2.4 kΩ	10.2 V DC min.	3.0 V DC max.	8 ms max. (see note)	8 ms max. (see note)	Terminal block	8 independent commons	50 mA max.	180 g max.
CQM1-ID111	16 pts	12 V DC +10%/15%	6 mA (12 V DC)	1.8 kΩ	8.0 V DC min.	3.0 V DC max.	8 ms max. (see note)	8 ms max. (see note)		16	85 mA max.	180 g max.
CQM1-ID212	16 pts	24 V DC +10%/15%	6 mA (24 V DC)	3.9 kΩ	14.4 V DC min.	5.0 V DC max.	8 ms max. (see note)	8 ms max. (see note)		16	85 mA max.	180 g max.
CQM1-ID112	32 pts	12 V DC +10%/15%	4 mA (12 V DC)	2.2 kΩ	8.0 V DC min.	3.0 V DC max.	8 ms max. (see note)	8 ms max. (see note)	Connector	32	170 mA max.	160 g max.
CQM1-ID213	32 pts	24 V DC +10%/15%	4 mA (24 V DC)	5.6 kΩ	14.4 V DC min.	5.0 V DC max.	8 ms max. (see note)	8 ms max. (see note)		32	170 mA max.	160 g max.
CQM1-ID214	32 pts	24 V DC +10%/15%	6 mA (24 V DC)	3.9 kΩ	15.4 V DC min.	5.0 V DC max.	8 ms max. (see note)	8 ms max. (see note)		32	170 mA max.	160 g max.

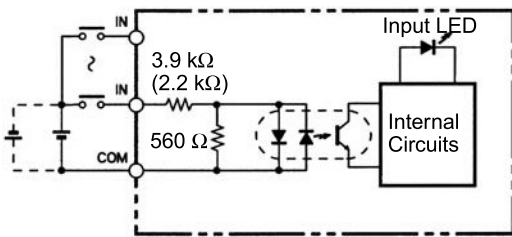
AC Input Units

Model	Number of inputs	Input voltage	Input current	Input impedance	Operating voltage		Response times		External connection	Inputs/common	Current consumption (5 V DC)	Weight
					ON voltage	OFF voltage	ON delay	OFF delay				
CQM1-IA121	8 pts	100 to 120 V AC +10%/15%	5 mA (100 V AC)	20 kΩ (50 Hz) 17 kΩ (60 Hz)	60 V AC min.	20 V AC max.	35 ms max.	55 ms max.	Terminal block	8	50 mA max.	210 g max.
CQM1-IA221	8 pts	200 to 240 V AC +10%/15%	6 mA (200 V AC)	38 kΩ (50 Hz) 32 kΩ (60 Hz)	150 V AC min.	40 V AC max.	35 ms max.	55 ms max.		8	50 mA max.	210 g max.

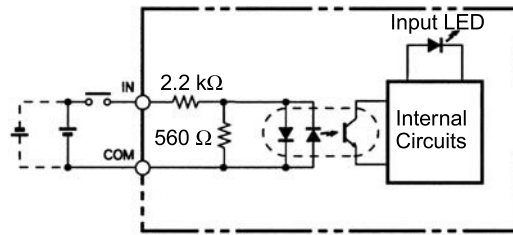
Note: Selectable from 1 to 128 ms in the PLC Setup.

■ Circuit Configuration

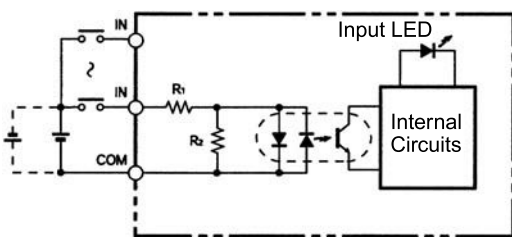
CQM1H-CPU11/21/51/61



CQM1-ID211

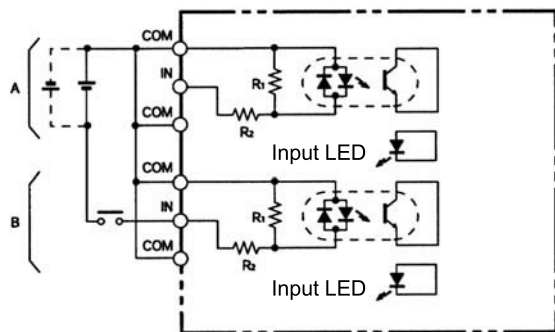


CQM1-ID1111/212



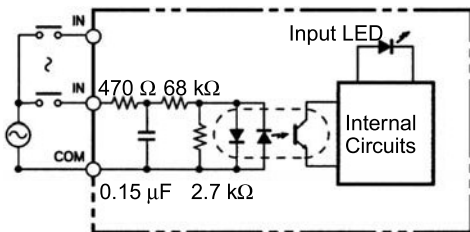
ID111
R₁: 1.8 kΩ
R₂: 620 Ω
ID211
R₁: 3.9 kΩ
R₂: 560 Ω

CQM1-ID1112/213/214

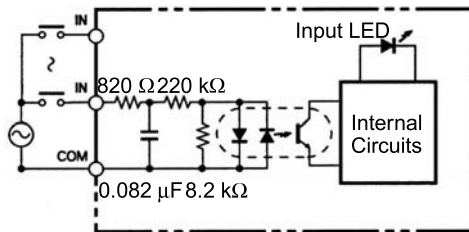


ID112
R₁: 750 Ω
R₂: 2.2 kΩ
ID213
R₁: 620 Ω
R₂: 5.6 kΩ
ID214
R₁: 620 Ω
R₂: 3.9 kΩ

CQM1-IA121



CQM1-IA221



■ Output Unit Specifications

All of the Output Units have LED output indicators.

Contact Output Units

Model	Number of outputs	Max. switching capacity	Min. switching capacity	Response times		External connector	Leakage current	Outputs/ common	Fuses (see note)	External power supply capacity	Internal current consumption (5 V DC)	Weight
				ON delay	OFF delay							
CQM1-OC221	8 pts	2 A, 250 V AC (cosφ= 1) 2 A, 250 V AC (cosφ= 0.4) 2 A, 24 V DC (16 A/Unit)	10 mA, 5 V DC	10 ms max.	5 ms max.	Terminal block	---	Independent commons	None	---	430 mA max.	200 g max.
CQM1-OC222	16 pts	2 A, 250 V AC (cosφ= 1) 2 A, 250 V AC (cosφ= 0.4) 2 A, 24 V DC (8 A/Unit)	10 mA, 5 V DC	10 ms max.	5 ms max.			16		---	850 mA max.	230 g max.
CQM1-OC224	8 pts	2 A, 250 V AC (cosφ= 1) 2 A, 250 V AC (cosφ= 0.4) 2 A, 24 V DC (16 A/Unit)	10 mA, 5 V DC	15 ms max.	5 ms max.			Independent commons		---	440 mA max.	270 g max.

CPU Unit Descriptions

Transistor Output Units

Model	Number of outputs	Max. switching capacity	Min. switching capacity	Response times		External connector	Leakage current	Outputs/common	Fuses (see note)	External power supply capacity	Internal current consumption (5 V DC)	Weight
				ON delay	OFF delay							
CQM1-OD211	8 pts	2 A at 24 V DC $+10\%$ / -15% 5 A/Unit	---	0.1 ms max.	0.3 ms max.	Terminal block	0.1 mA max.	8	7A (one fuse/common)	24 V DC $+10\%$ / -15% 15 mA min.	90 mA max.	200 g max.
CQM1-OD212	16 pts	50 mA at 4.5 V DC to 300 mA at 26.4 V	---	0.1 ms max.	0.4 ms max.		0.1 mA max.	16	5A (one fuse/common)	5 to 24 V DC $\pm 10\%$ 40 mA min.	170 mA max.	180 g max.
CQM1-OD213	32 pts	16 mA at 4.5 V DC to 100 mA at 26.4 V	---	0.1 ms max.	0.4 ms max.	Connector	0.1 mA max.	32	3.5A (one fuse/common)	5 to 24 V DC $\pm 10\%$ 110 mA min.	240 mA max.	180 g max.
CQM1-OD214 (PNP, sourcing)	16 pts	50 mA at 4.5 V DC to 300 mA at 26.4 V	---	0.1 ms max.	0.4 ms max.	Terminal block	0.1 mA max.	16	3.5A (two fuses/common)	5 to 24 V DC $\pm 10\%$ 60 mA min.	170 mA max.	210 g max.
CQM1-OD215 (PNP, sourcing)	8 pts	1.0 A at 24 V DC $+10\%$ / -15% 4 A/Unit	---	0.2 ms max.	0.8 ms max.		0.1 mA max.	8	Short-circuit protection function	24 V DC $+10\%$ / -15% 24 mA min.	110 mA max.	240 g max.
CQM1-OD216 (PNP, sourcing)	32 pts	0.5 A at 24 V DC $+10\%$ / -15% 5 A/Unit	---	0.1 ms max.	0.3 ms max.	Connector	0.1 mA max.	32	7A (one fuse/common)	24 V DC $+10\%$ / -15% 160 mA min.	240 mA max.	210 g max.

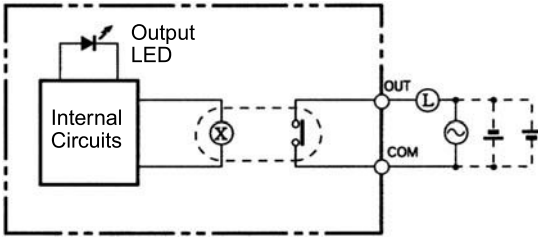
AC Output Units

Model	Number of outputs	Max. switching capacity	Min. switching capacity	Response times		External connector	Leakage current	Outputs/common	Fuses (see note)	External power supply capacity	Internal current consumption (5 V DC)	Weight
				ON delay	OFF delay							
CQM1-OA221	8 pts	0.4 A at 100 to 240 V AC	---	6 ms max.	1/2 cycle + 5 ms max.	Terminal block	1 mA max. at 100 V AC, 2 mA max. at 200 V AC	4 each (2 circuits)	2A (one fuse/common)	---	110 mA max.	240 g max.
CQM1-OA222	6 pts	0.4 A at 100 to 240 V AC	100 mA at 10 V AC 50 mA at 24 V AC 10 mA at 100 V AC 10 mA at 240 V AC	1 ms max.	Load frequency of 1/2 cycle + 1 ms max.		4 and 2 (2 circuits)	5A (one fuse/common)	---	250 mA max.	240 g max.	

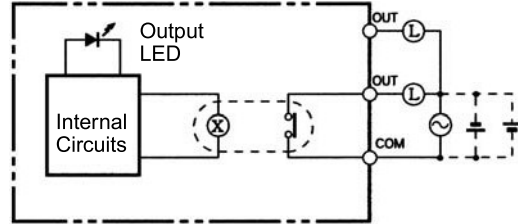
Note: Fuses are not user-serviceable.

■ Circuit Configuration

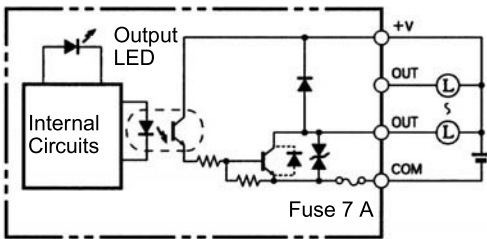
CQM1-OC221



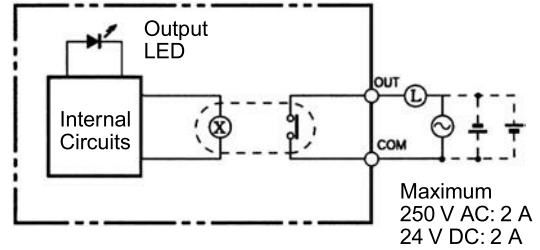
CQM1-OC222



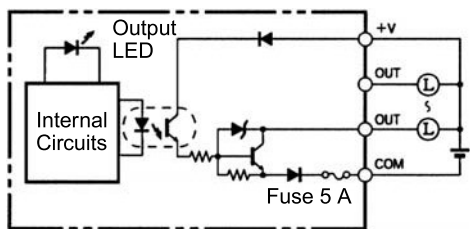
CQM1-OD211



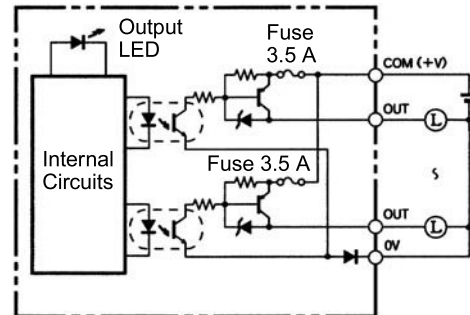
CQM1-OC224



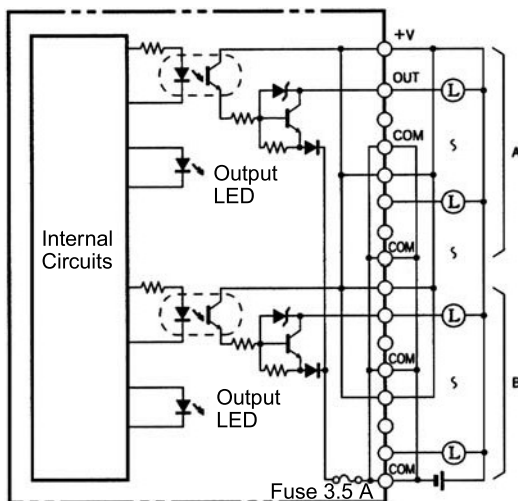
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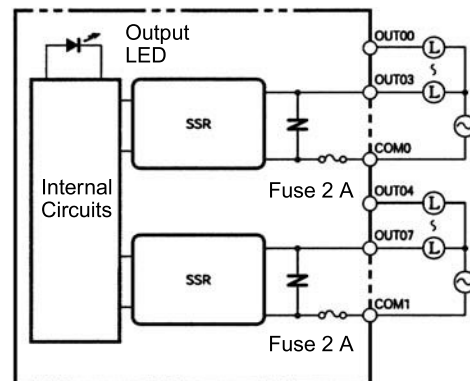
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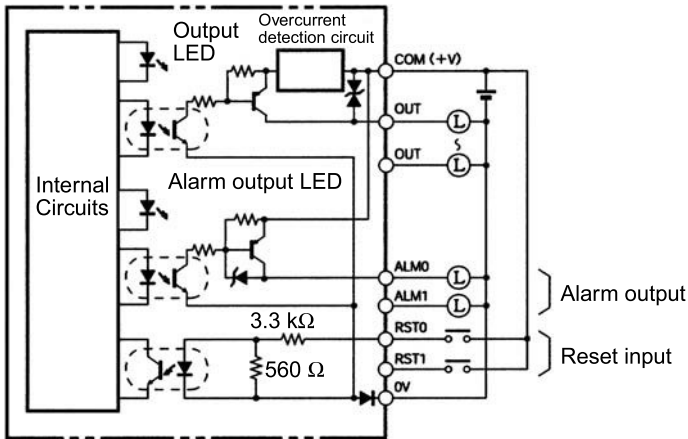
CQM1-OD213



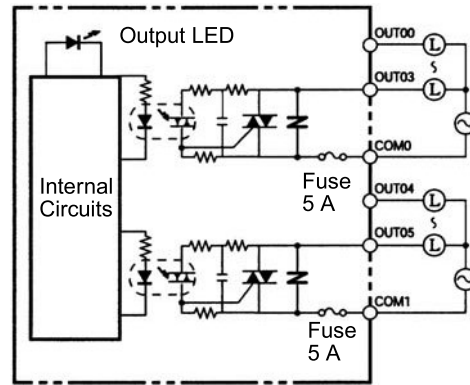
CQM1-OA221



CQM1-OD215



CQM1-OA222



CQM1-OD216

