

■ INPUT SPECIFICATIONS

All of the Input Modules 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 (See Note)		External connection	Inputs/common	Current consumption (5 VDC)	Weight
				ON voltage	OFF voltage	ON delay	OFF delay				
16 pts	24 VDC +10%/15%	10 mA for IN04/05 6 mA for the rest (24 VDC)	2.2 kΩ for IN04/05 3.9 kΩ for the rest	17.4 VDC min.	5.0 VDC max.	8 ms max.	8 ms max.	Terminal block	16	—	—

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

DC Input Modules

Model	Number of inputs	Input voltage	Input current	Input impedance	Operating voltage		Response times (See Note)	
					ON voltage	OFF voltage	ON delay	OFF delay
CQM1-ID211	8 pts	12 to 24 VDC +10%/15%	10 mA (24 VDC)	2.4 kΩ	10.2 VDC min.	3.0 VDC max.	8 ms max.	8 ms max.
CQM1-ID111	16 pts	12 VDC +10%/15%	6 mA (12 VDC)	1.8 kΩ	8.0 VDC min.	3.0 VDC max.	8 ms max.	8 ms max.
CQM1-ID212	16 pts	24 VDC +10%/15%	6 mA (24 VDC)	3.9 kΩ	14.4 VDC min.	5.0 VDC max.	8 ms max.	8 ms max.
CQM1-ID112	32 pts	12 VDC +10%/15%	4 mA (12 VDC)	2.2 kΩ	8.0 VDC min.	3.0 VDC max.	8 ms max.	8 ms max.
CQM1-ID213	32 pts	24 VDC +10%/15%	4 mA (24 VDC)	5.6 kΩ	14.4 VDC min.	5.0 VDC max.	8 ms max.	8 ms max.

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

Model	Number of inputs	External connection	Inputs/common	Current consumption (5 VDC)	Weight
CQM1-ID211	8 pts	Terminal block	8 independent commons	50 mA max.	180 g max.
CQM1-ID111	16 pts		16	85 mA max.	180 g max.
CQM1-ID212	16 pts		16	85 mA max.	180 g max.
CQM1-ID112	32 pts	Connector	32	170 mA max.	160 g max.
CQM1-ID213	32 pts		32	170 mA max.	160 g max.
CQM1-ID214	32 pts		32	170 mA max.	160 g max.

AC Input Modules

Model	Number of inputs	Input voltage	Input current	Input impedance	Operating voltage		Response times	
					ON voltage	OFF voltage	ON delay	OFF delay
CQM1-IA121	8 pts	100 to 120 VAC +10%/15%	5 mA (100 VAC)	20 kΩ (50 Hz) 17 kΩ (60 Hz)	60 VAC min.	20 VAC max.	35 ms max.	55 ms max.
CQM1-IA221	8 pts	200 to 240 VAC +10%/15%	6 mA (200 VAC)	38 kΩ (50 Hz) 32 kΩ (60 Hz)	150 VAC min.	40 VAC max.	35 ms max.	55 ms max.

Model	Number of inputs	External connection	Inputs/common	Current consumption (5 VDC)	Weight
CQM1-IA121	8 pts	Terminal block	8	50 mA max.	210 g max.
CQM1-IA221	8 pts		8	50 mA max.	210 g max.

■ OUTPUT MODULE SPECIFICATIONS

All of the Output Modules have LED output indicators.

Contact Output Modules

Model	Number of outputs	Max. switching capacity	Min. switching capacity	Response times		External connector	Leakage current
				ON delay	OFF delay		
CQM1-OC221	8 pts	2 A, 250 VAC (cosφ= 1) 2 A, 250 VAC (cosφ= 0.4) 2 A, 24 VDC (16 A/Unit)	10 mA, 5 VDC	10 ms max.	5 ms max.	Terminal block	—
CQM1-OC222	16 pts	2 A, 250 VAC (cosφ= 1) 2 A, 250 VAC (cosφ= 0.4) 2 A, 24 VDC (8 A/Unit)	10 mA, 5 VDC	10 ms max.	5 ms max.		
CQM1-OC224	8 pts	2 A, 250 VAC (cosφ= 1) 2 A, 250 VAC (cosφ= 0.4) 2 A, 24 VDC (16 A/Unit)	10 mA, 5 VDC	15 ms max.	5 ms max.		

Model	Number of outputs	Outputs/common	Fuses	External power supply capacity	Internal current consumption (5 VDC)	Weight
CQM1-OC221	8 pts	Independent commons	None	—	430 mA max.	200 g max.
CQM1-OC222	16 pts	16 pts to one common		—	850 mA max.	230 g max.
CQM1-OC224	8 pts	Independent commons		—	440 mA max.	270 g max.

Transistor Output Modules

Model	Number of outputs	Max. switching capacity	Min. switching capacity	Response times		External connector	Leakage current
				ON delay	OFF delay		
CQM1-OD211 (NPN, sinking)	8 pts	2 A at 24 VDC +10%/–15% 5 A/Unit	—	0.1 ms max.	0.3 ms max.	Terminal block	0.1 mA max.
CQM1-OD212 (NPN, sinking)	16 pts	50 mA at 4.5 VDC to 300 mA at 26.4 V	—	0.1 ms max.	0.4 ms max.		0.1 mA max.
CQM1-OD213 (NPN, sinking)	32 pts	16 mA at 4.5 VDC to 100 mA at 26.4 V	—	0.1 ms max.	0.4 ms max.	Connector	0.1 mA max.
CQM1-OD214 (PNP, sourcing)	16 pts	50 mA at 4.5 VDC to 300 mA at 26.4 V	—	0.1 ms max.	0.4 ms max.	Terminal block	0.1 mA max.
CQM1-OD215 (PNP, sourcing)	8 pts	1.0 A at 24 VDC +10%/–15% 4 A/Unit	—	0.2 ms max.	0.8 ms max.		0.1 mA max.
CQM1-OD216 (PNP, sourcing)	32 pts	0.5 A at 24 VDC +10%/–15% 5 A/Unit	—	0.1 ms max.	0.3 ms max.	Connector	0.1 mA max.

Model	Number of outputs	Outputs/common	Fuses (See Note)	External power supply capacity	Internal current consumption (5 VDC)	Weight
CQM1-OD211 (NPN, sinking)	8 pts	8	7 A (one fuse/common)	24 VDC +10%/–15% 15 mA min.	90 mA max.	200 g max.
CQM1-OD212 (NPN, sinking)	16 pts	16	5 A (one fuse/common)	5 to 24 VDC ±10% 40 mA min.	170 mA max.	180 g max.
CQM1-OD213 (NPN, sinking)	32 pts	32	3.5 A (one fuse/common)	5 to 24 VDC ±10% 110 mA min.	240 mA max.	180 g max.
CQM1-OD214 (PNP, sourcing)	16 pts	16	3.5 A (two fuses/common)	5 to 24 VDC ±10% 60 mA min.	170 mA max.	210 g max.
CQM1-OD215 (PNP, sourcing)	8 pts	8	Short-circuit protection function	24 VDC +10%/–15% 24 mA min.	110 mA max.	240 g max.
CQM1-OD216 (PNP, sourcing)	32 pts	32	7 A (one fuse/common)	24 VDC +10%/–15% 160 mA min.	240 mA max.	210 g max.

Note: Fuses are not user-serviceable.

AC Output Modules

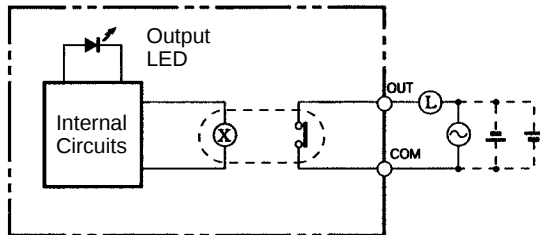
Model	Number of outputs	Max. switching capacity	Min. switching capacity	Response times		External connector	Leakage current
				ON delay	OFF delay		
CQM1-OA221	8 pts	0.4 A at 100 to 240 VAC	—	6 ms max.	1/2 cycle + 5 ms max.	Terminal block	1 mA max. at 100 VAC, 2 mA max. at 200 VAC
CQM1-OA222	6 pts	0.4 A at 100 to 240 VAC	100 mA at 10 VAC 50 mA at 24 VAC 10 mA at 100 VAC 10 mA at 240 VAC	1 ms max.	Load frequency of 1/2 cycle + 1 ms max.		

Model	Number of outputs	Outputs/common	Fuses (See note)	External power supply capacity	Internal current consumption (5 VDC)	Weight
CQM1-OA221	8 pts	4 each (2 circuits)	2 A (one fuse/common)	—	110 mA max.	240 g max.
CQM1-OA222	6 pts	4 and 2 (2 circuits)	5 A (one fuse/common)	—	250 mA max.	240 g max.

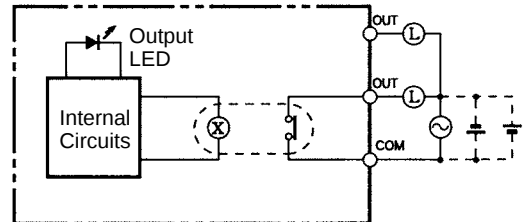
Note: Fuses are not user-serviceable.

■ OUTPUT CIRCUIT CONFIGURATION

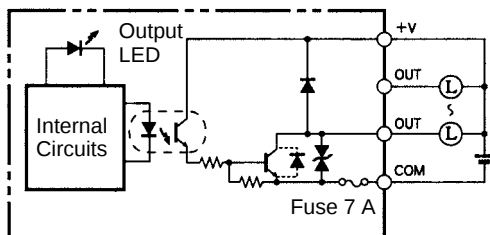
CQM1-OC221



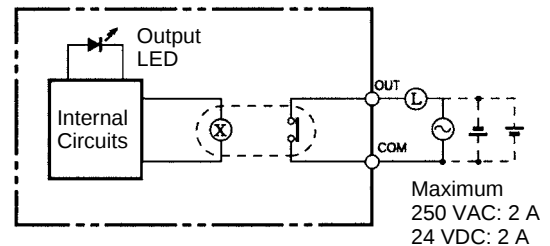
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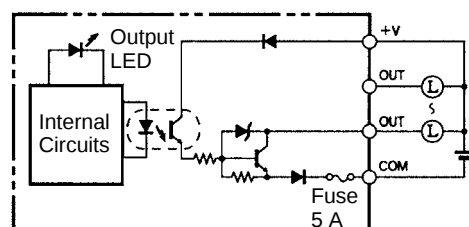
CQM1-OD211



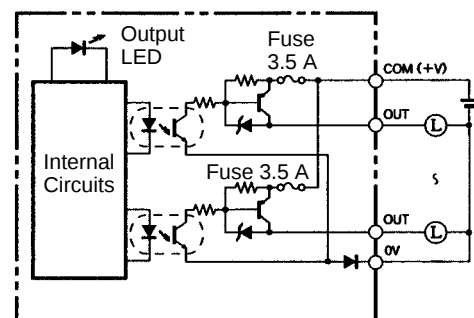
CQM1-OC224



CQM1-OD212



CQM1-OD214



(Output Circuit Configuration continues on the next page.)