

QM Series Electromechanical Relay Selection Guide



QM series relays are general purpose relays designed for a wide range of applications, from power to sequence controls in various factory machines and control panels. They are ideal for electric control panels requiring stable and reliable relays.

Features

- Small package design
- DPDT has a fine silver contact with 5A capability
- 4PDT has a gold-plated silver contact with 3A capability
- High dielectric strength (1,800 VAC)
- High reliability and long life
- Ultra-high sensitivity with quick response time (20 ms max.)
- High vibration and shock resistance
- LED indicator on all models, so you can easily see if relay is working properly without using a voltmeter
- Diode protection on some 24 VDC models protects contacts and electronic components from back EMF
- UL recognized, CE certified, CSA certified (218218)

• **ORDER SOCKET SEPARATELY**

QM Series Selection Guide								
Part Number	Price	Coil Voltage	Configuration	Contact Rating	Dimensions (see page 24-11)	Relay Socket Part Number	Price	Dimensions (see page 24-13)
QM2N1-A120	<--->	110/120VAC	2PDT	5A	Figure 1	SQM08D	<--->	Figure 5
QM4N1-A120	<--->		4PDT	3A	Figure 2	SQM14D	<--->	Figure 6
QM2N1-A220	<--->	220VAC	2PDT	5A	Figure 1	SQM08D	<--->	Figure 5
QM4N1-A220	<--->		4PDT	3A	Figure 2	SQM14D	<--->	Figure 6
QM2N1-D24	<--->	24VDC	2PDT	5A	Figure 1	SQM08D	<--->	Figure 5
QM2X1-D24	<--->		2PDT	5A	Figure 1	SQM08D	<--->	Figure 5
QM4N1-D24	<--->		4PDT	3A	Figure 2	SQM14D	<--->	Figure 6
QM4X1-D24	<--->		4PDT	3A	Figure 2	SQM14D	<--->	Figure 6



QM Series Electromechanical Relay Specifications

Company Information

Systems Overview

Programmable Controllers

Field I/O

Software

C-more & other HMI

Drives

Soft Starters

Motors & Gearbox

Steppers/Servos

Motor Controls

Proximity Sensors

Photo Sensors

Limit Switches

Encoders

Current Sensors

Pressure Sensors

Temperature Sensors

Pushbuttons/Lights

Process

Relays/Timers

Comm.

Terminal Blocks & Wiring

Power

Circuit Protection

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Pneumatics

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Part # Index

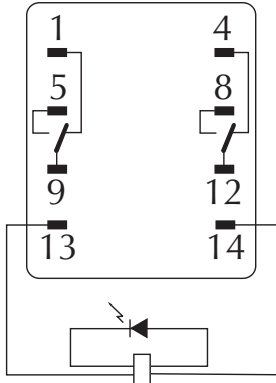
QM Series Specification Table

Part Numbers	QM2N1-A120	QM2N1-A220	QM4N1-A120	QM4N1-A220	QM2N1-D24	QM2X1-D24	QM4N1-D24	QM4X1-D24
Contact Specifications								
Current Rating	5A		3A		5A		3A	
Contact Type	DPDT		4PDT		DPDT		4PDT	
Terminal Type	Spade plug-in socket							
Rated Max. Resistive Load	5A @ 220VAC/5A @ 24VDC		3A @ 220VAC/3A @ 24VDC		5A @ 220VAC/5A @ 24VDC		3A @ 220VAC/3A @ 24VDC	
Rated Max. Inductive Load	2A @ 220VAC/2A @ 24VDC		1.5A @ 220VAC/0.8A @ 24VDC		2A @ 220VAC/2A @ 24VDC		1.5A @ 220VAC/0.8A @ 24VDC	
Minimum Recommended Load	1mA @ 1VDC							
Max. Switching Cap. (Resistive Load)	1,100VA/120W		660VA/72W		1,100VA/120W		660VA/72W	
Max. Switching Cap. (Inductive Load)	440VA/48W		176VA/36W		440VA/48W		176VA/36W	
Max. Contact Rating	250VAC/125VDC				250VAC/125VDC			
Coil Specifications								
Options	LED Indicator				LED Indicator/Diode Protection	LED Indicator	LED Indicator/Diode Protection	
Coil Input Voltage	110/120VAC	220/240VAC	110/120VAC	220/240VAC	24VDC			
Rated Current at 50Hz	9.9 /10.8mA	6.2/6.8mA	9.9/10.8mA	6.2/6.8mA	36.9mA			
Rated Current at 60Hz	8.4/ 9.2mA	5.3/5.8mA	8.4/9.2mA	5.3/5.8mA				
Coil Resistance	4.43kΩ	12.95kΩ	4.43kΩ	12.95kΩ	650Ω			
Power Consumption	Approx. 0.9W to 1.1W (at 60Hz)				Approx. 0.9W			
Dropout Voltage (% of rated voltage)	Min. 30%				Min. 10%			
Pick-Up Voltage (Must operate voltage)	Max. 80% of the rated coil voltage							
Max. Voltage (Max. continuous voltage)	110% of the rated coil voltage							
Min. Operating Voltage	80% of the rated coil voltage							
General Specifications								
Service Life	Mechanical: AC: Min. 50 million operations; DC: Min. 100 million operations (at operating frequency of 18,000 operations/hour)							
	Electrical: DPDT: Min. 500k operations; 4PDT: Min. 200k operations (at operating frequency of 1,800 operations/hour)							
Operate Time	20ms max							
Release Time	20ms max							
Ambient Temperature	-25° C to 75° C (-13° F to 167° F)							
Ambient Humidity	45% RH to 85% RH							
Contact Material	Fine Silver		Gold-plated Silver		Fine Silver		Gold-plated Silver	
Contact Resistance	50mΩ max							
Operating Frequency	Mechanical: 18,000 operations/hour; Electrical: 1,800 operations/hour							
Vibration Resistance	10Hz to 55Hz at double amplitude of 1.0mm							
Shock Resistance	1,000m/s ² (approx. 100G)							
Weight	35g (1.24oz.)							
Agency Approvals and Standards	UL Recognized (#E222847), CE Certified (9667186-9811), CSA Certified (218218)							

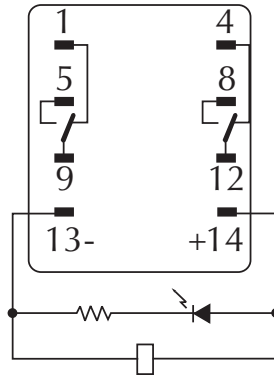
QM Series Wiring Diagrams and Derating Curves

Wiring diagrams

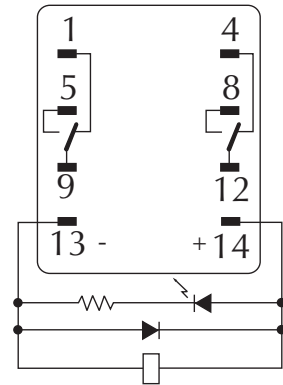
QM2N1-A120
QM2N1-A220



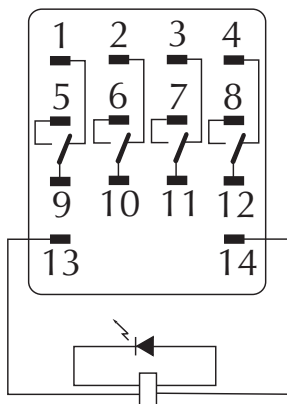
QM2N1-D24



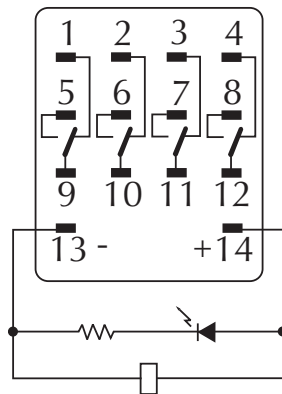
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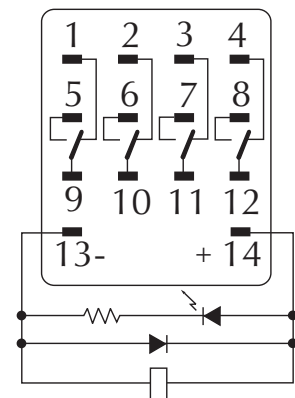
QM4N1-A120
QM4N1-A220



QM4N1-D24



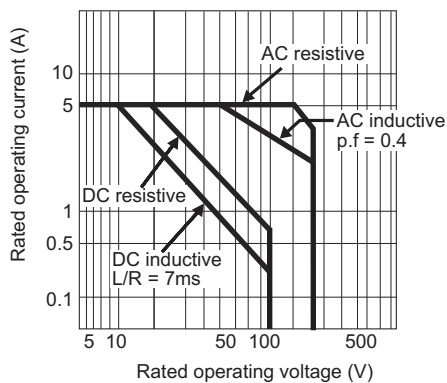
QM4X1-D24



Derating curves

DPDT

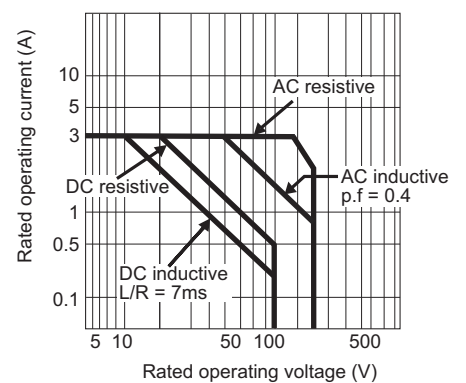
Max. Switching capacity



QM DPDT

4PDT

Max. Switching capacity



QM 4PDT



QM Series Dimensional Drawings

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Dimensions

mm [inches]

Figure 1 QM2 Series

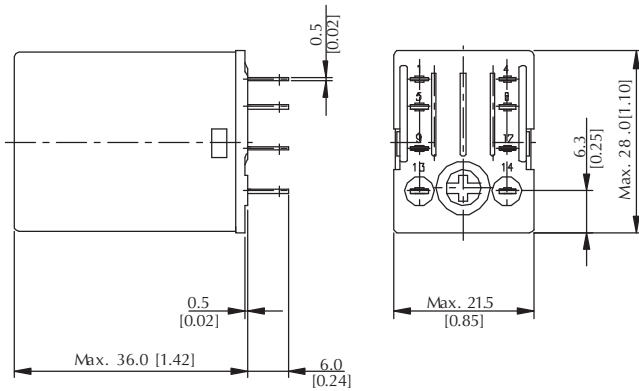
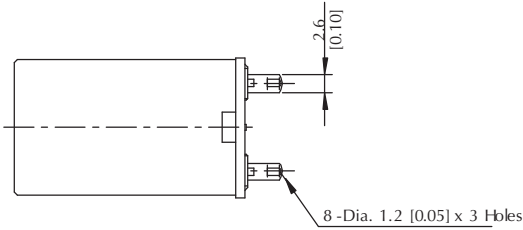
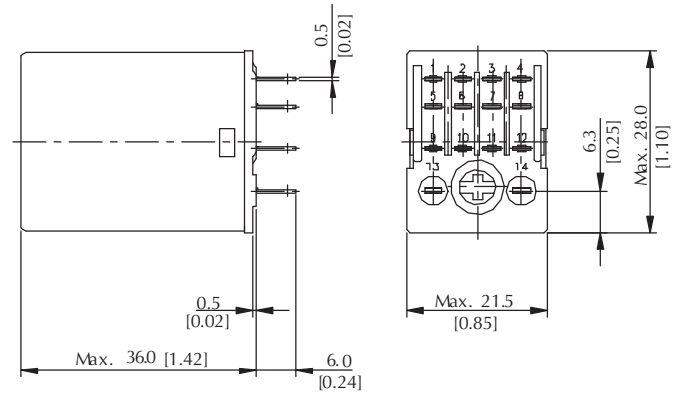
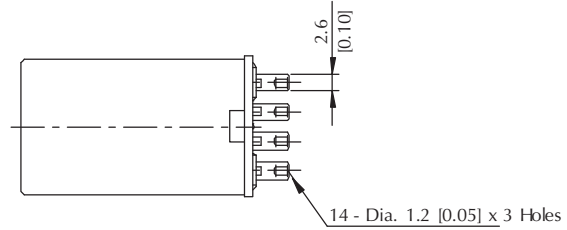


Figure 2 QM4 Series



Sockets for QL/QM Series Relays

SQL08D



Din-rail mounting, DPDT, for use with QL2 series relays

<--->

SQL14D



Din-rail mounting, 4PDT, for use with QL4 series relays

<--->

SQM08D



Din-rail mounting, DPDT, for use with QM2 series relays

<--->

SQM14D



Din-rail mounting, 4PDT, for use with QM4 series relays

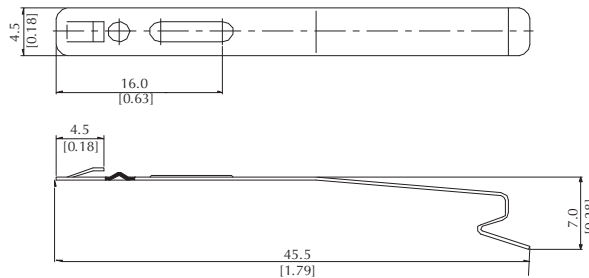
<--->

Holding Clips

Holding clips for the QL2, QL4, QM2 and QM4 series relays can be removed by pushing the side of the inserting hole with a sharp object.

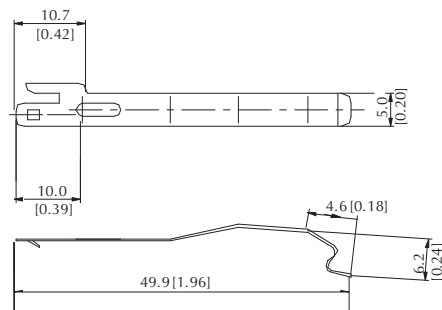
Note: Order sockets separately; holding clips are included with sockets.

Holding Clip Dimensions mm [in]



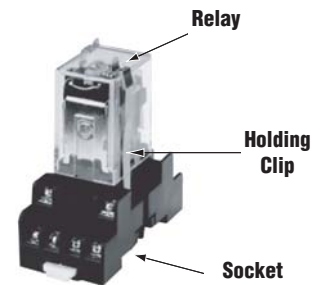
Holding clip for QL4 series relays is included with SQL14D sockets.

Holding Clip Dimensions mm [in]



Holding clip for QL2, QM2 and QM4 series relays is included with SQL08D, SQM08D and SQM14D sockets.

Insert holding clip into the slots provided on the socket.



Socket Dimensions for QL/QM Series Relays



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mm

Figure 3
SQL08D (for QL2 Series Relays)

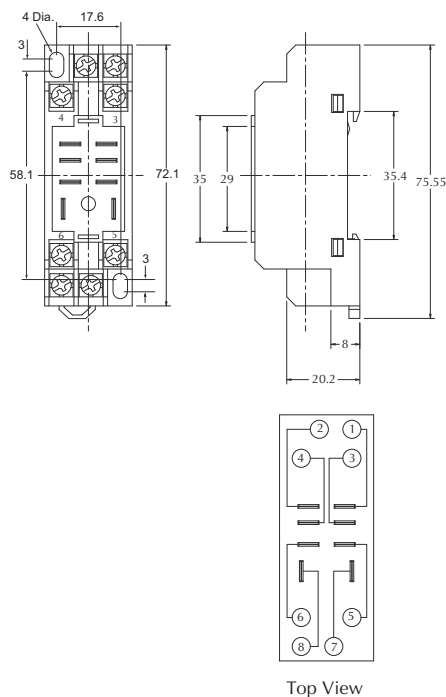


Figure 4
SQL14D (for QL4 Series Relays)

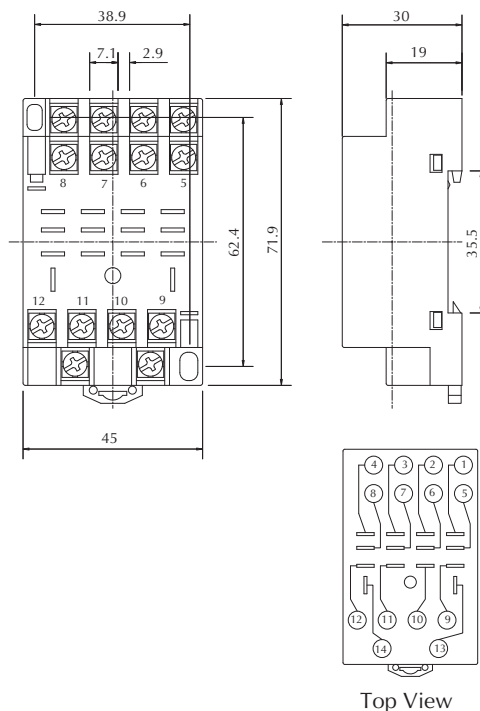


Figure 5
SQM08D (for QM2 Series Relays)

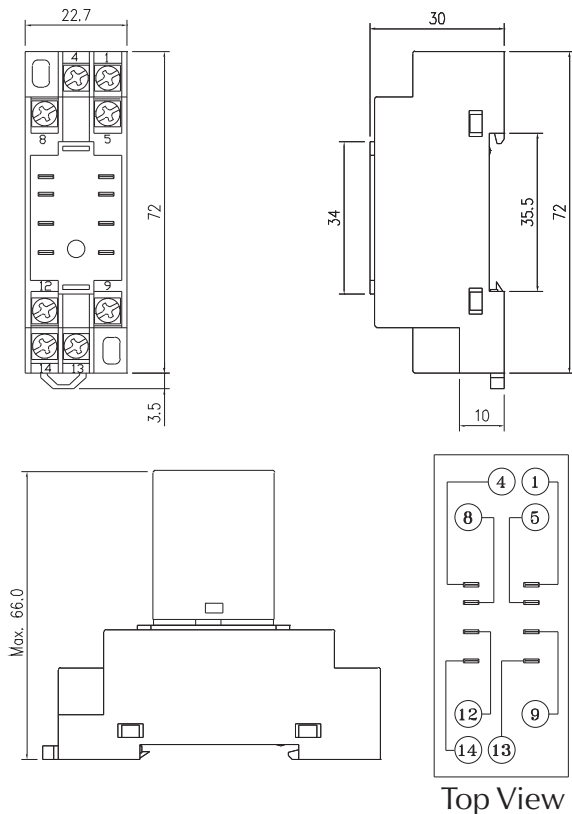


Figure 6
SQM14D (for QM4 Series Relays)

