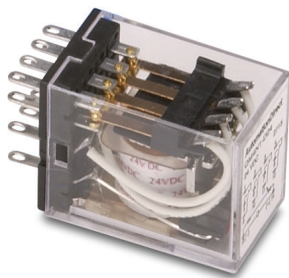


QM Series Electromechanical Relay Selection Guide



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	\$4.75	110/120VAC	2PDT	5A	Figure 1	SQM08D	\$3.25	Figure 5
QM4N1-A120	\$4.75		4PDT	3A	Figure 2	SQM14D	\$3.25	Figure 6
QM2N1-A220	\$4.75	220VAC	2PDT	5A	Figure 1	SQM08D	\$3.25	Figure 5
QM4N1-A220	\$8.25		4PDT	3A	Figure 2	SQM14D	\$3.25	Figure 6
QM2N1-D24	\$4.75	24VDC	2PDT	5A	Figure 1	SQM08D	\$3.25	Figure 5
QM2X1-D24	\$9.25		2PDT	5A	Figure 1	SQM08D	\$3.25	Figure 5
QM4N1-D24	\$4.75		4PDT	3A	Figure 2	SQM14D	\$3.25	Figure 6
QM4X1-D24	\$9.25		4PDT	3A	Figure 2	SQM14D	\$3.25	Figure 6

QM Series Electromechanical Relay Specifications

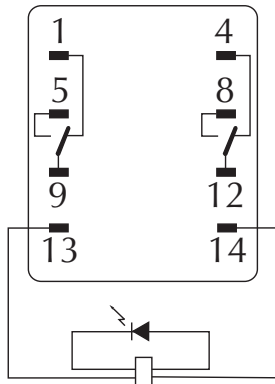
QM Series Specification Table								
Part Numbers	QM2N1-A120	QM2N1-A220	QM4N1-A120	QM4N1-A220	QM2N1-D24	QM2X1-D24	QM4N1-D24	QM4X1-D24
Contact Specifications								
Current Rating	5A		3A		5A		3A	
Contact Type	DPDT		4PDT		DPDT		4PDT	
Terminal Type	Spade plug-in socket							
Rated Max. Resistive Load	5A @ 220VAC/5A @ 24VDC		3A @ 220VAC/3A @ 24VDC		5A @ 220VAC/5A @ 24VDC		3A @ 220VAC/3A @ 24VDC	
Rated Max. Inductive Load	2A @ 220VAC/2A @ 24VDC		1.5 A @ 220VAC/0.8 A @ 24VDC		2A @ 220VAC/2A @ 24VDC		1.5A @ 220VAC/0.8 A @ 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	110/120 VAC	220/240 VAC	110/120 VAC	220/240 VAC	24VDC			
Rated Current at 50Hz	9.9 /10.8 mA	6.2/6.8 mA	9.9/10.8 mA	6.2/6.8 mA	36.9 mA			
Rated Current at 60Hz	8.4/ 9.2 mA	5.3/5.8 mA	8.4/9.2 mA	5.3/5.8 mA				
Coil Resistance	4.43 kΩ	12.95 kΩ	4.43 kΩ	12.95 kΩ	650Ω			
Power Consumption	Approx. 0.9 W to 1.1 W (at 60Hz)				Approx. 0.9 W			
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/s² (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

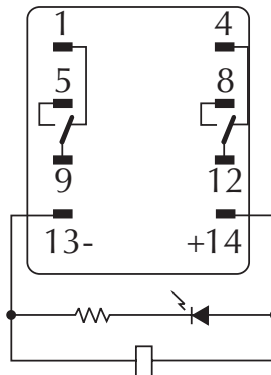
Wiring diagrams

QM2N1-A120

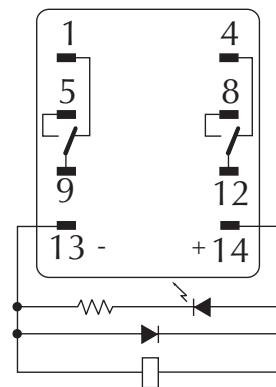
QM2N1-A220



QM2N1-D24

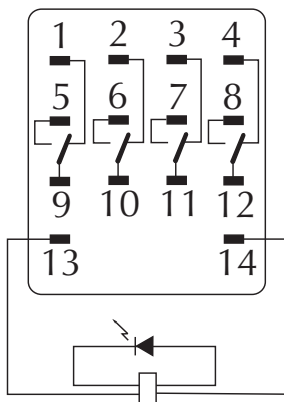


QM2X1-D24

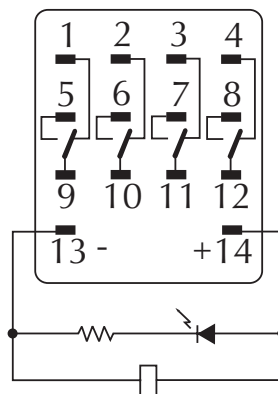


QM4N1-A120

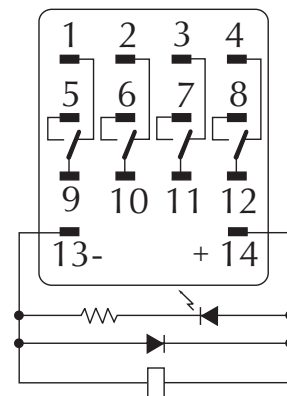
QM4N1-A220



QM4N1-D24



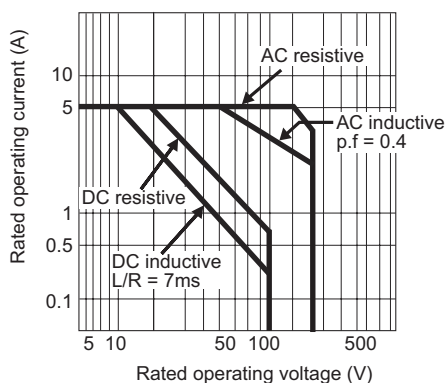
QM4X1-D24



Derating curves

DPDT

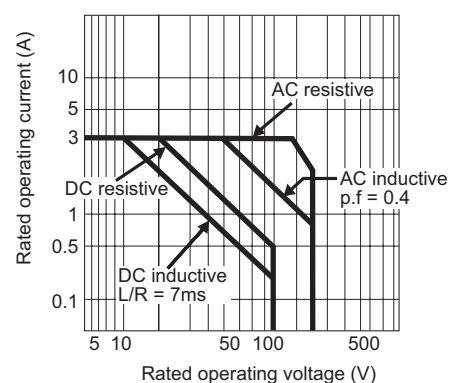
Max. Switching capacity



QM DPDT

4PDT

Max. Switching capacity



QM 4PDT

QM Series Dimensional Drawings

Dimensions

mm [inches]

Figure 1
QM2 Series

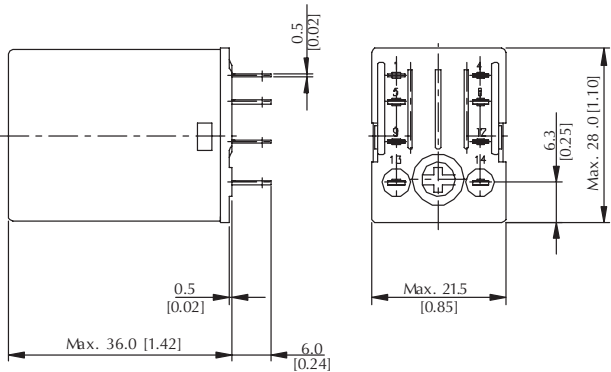
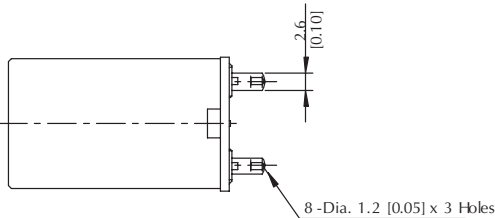
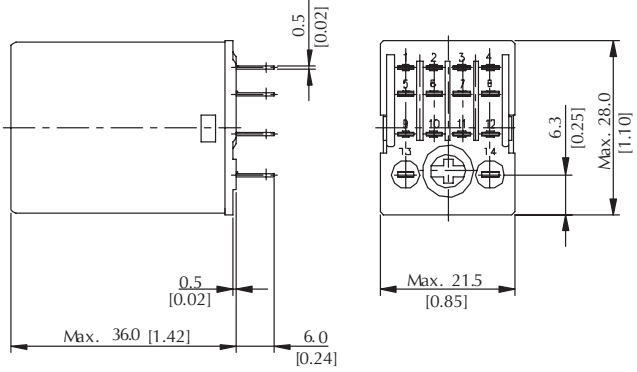
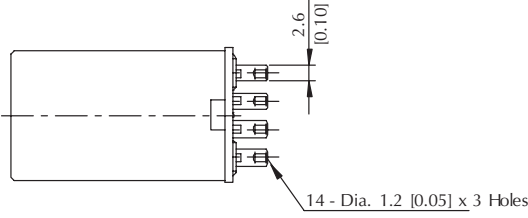


Figure 2
QM4 Series

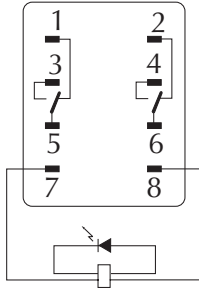


QL Series Wiring Diagrams and Derating Curves

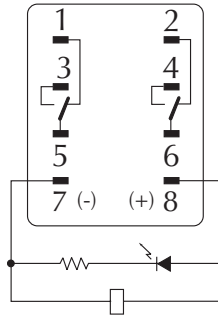
Wiring Diagrams

QL2N1-A120

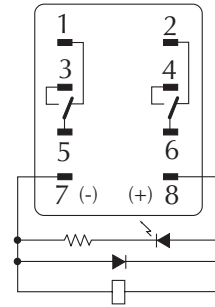
QL2N1-A220



QL2N1-D24

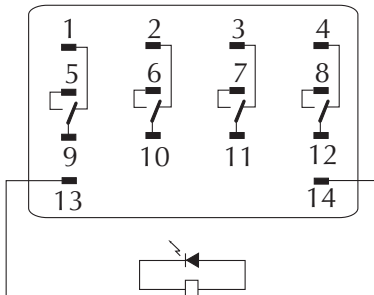


QL2X1-D24

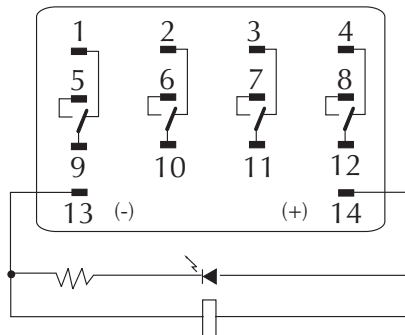


QL4N1-A120

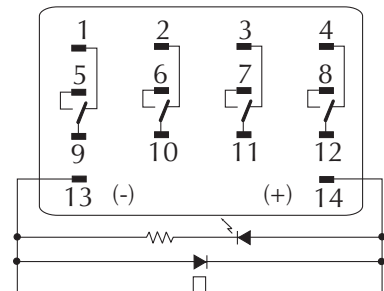
QL4N1-A220



QL4N1-D24



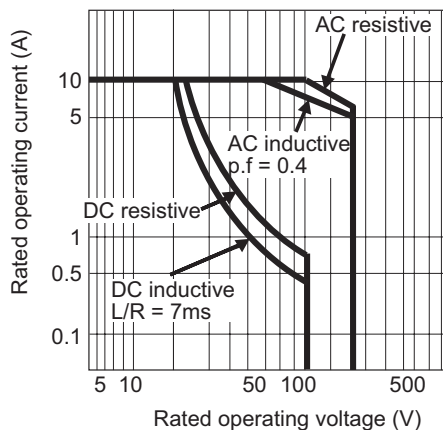
QL4X1-D24



Derating Curves

2PDT

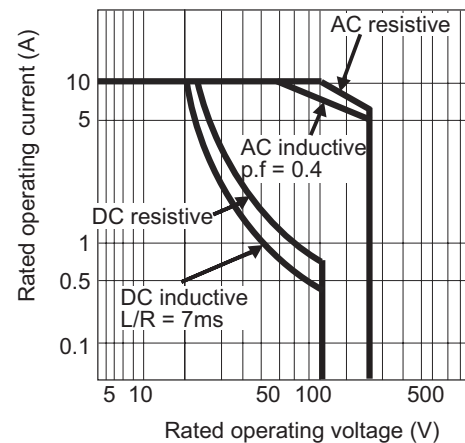
Max. Switching capacity



QL 2PDT

4PDT

Max. Switching capacity



QL 4PDT

QL Series Dimensional Drawings

Dimensions

mm [inches]

Figure 1
QL2

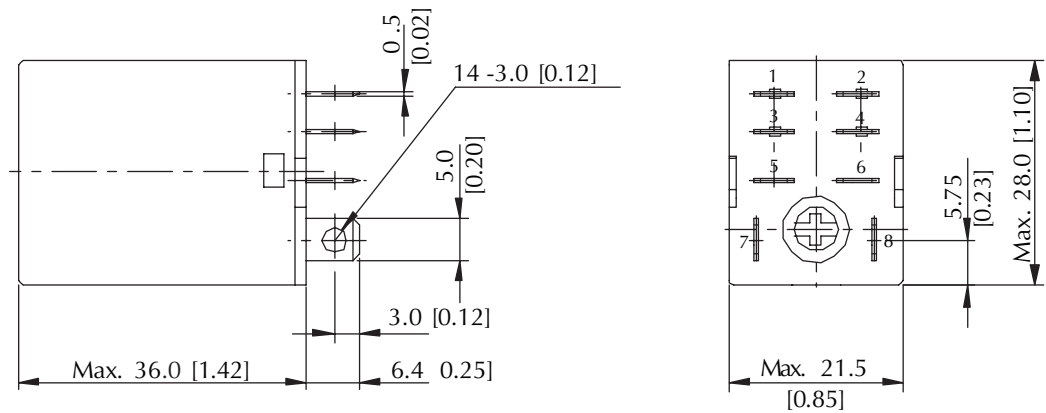
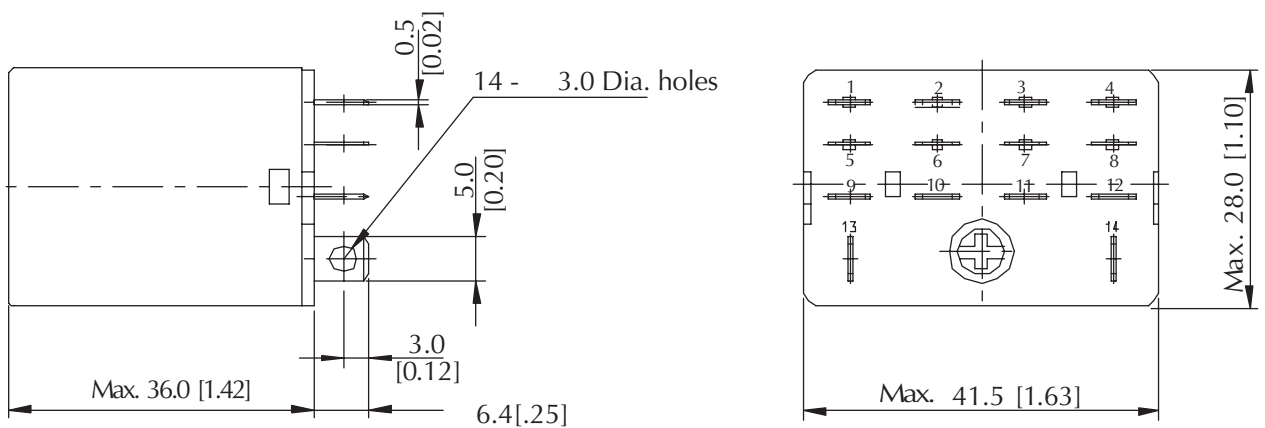


Figure 2
QL4



Sockets for QL/QM Series Relays

SQL08D



Din-rail mounting,
DPDT, for use with
QL2 series relays
\$4.00

SQL14D



Din-rail mounting,
4PDT, for use with
QL4 series relays
\$4.50

SQM08D



Din-rail mounting,
DPDT, for use with
QM2 series relays
\$3.25

SQM14D



Din-rail mounting,
4PDT, for use with
QM4 series relays
\$3.25

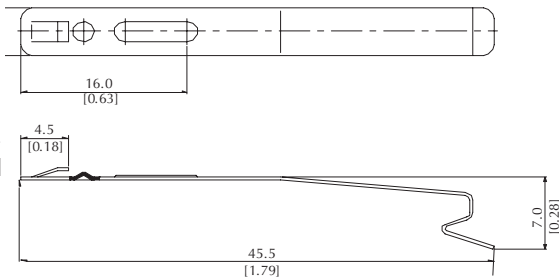
Holding Clips

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.

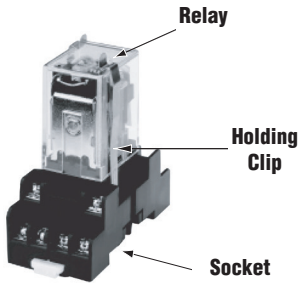
Note: Order sockets separately; holding clips are included with sockets.

Holding Clip Dimensions mm [in]

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

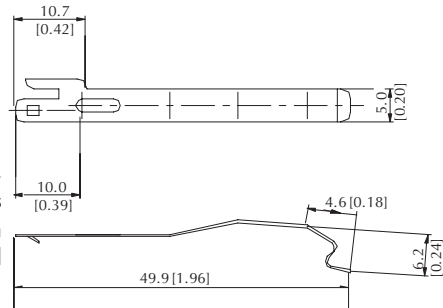


Insert holding clip into the slots provided
on the socket.



Holding Clip Dimensions mm [in]

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



Socket Dimensions for QL/QM Series Relays

Dimensions

mm

Figure 3
SQL08D (for QL2 Series Relays)

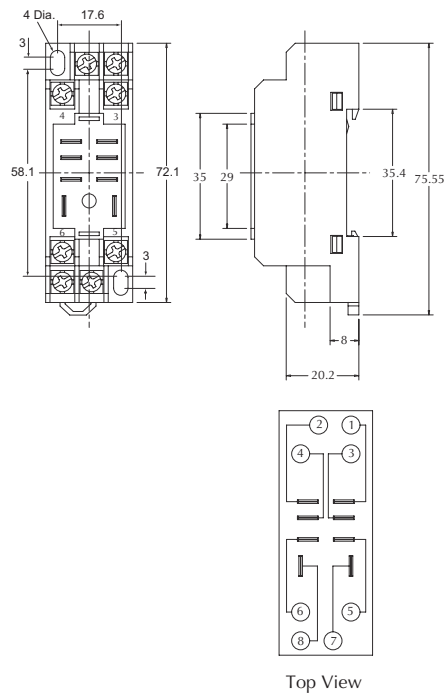


Figure 4
SQL14D (for QL4 Series Relays)

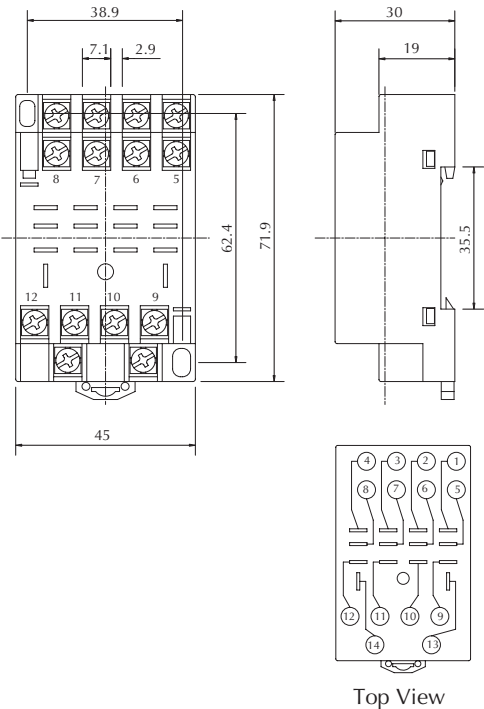


Figure 5
SQM08D (for QM2 Series Relays)

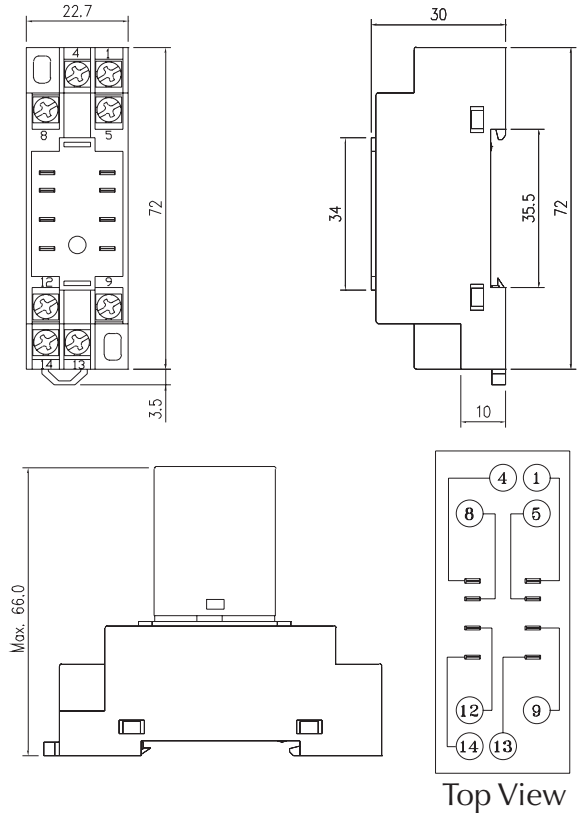


Figure 6
SQM14D (for QM4 Series Relays)

