

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

Enclosures

Tools

Pneumatics

Appendix

Product Index

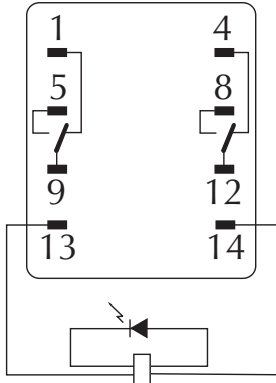
Part # Index

| 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) | | | | | | | |

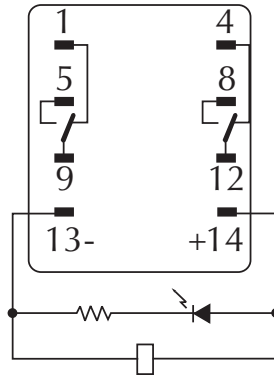
QM Series Wiring Diagrams and Derating Curves

Wiring diagrams

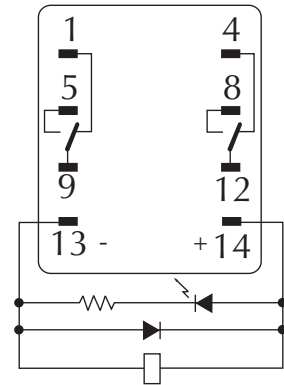
QM2N1-A120
QM2N1-A220



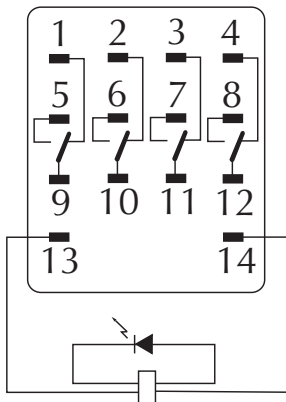
QM2N1-D24



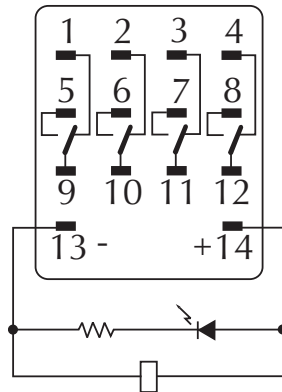
QM2X1-D24



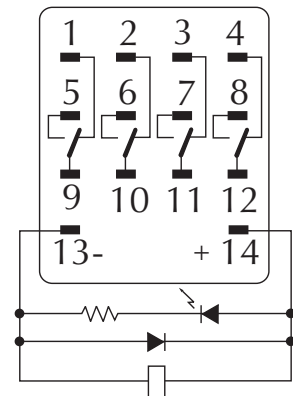
QM4N1-A120
QM4N1-A220



QM4N1-D24



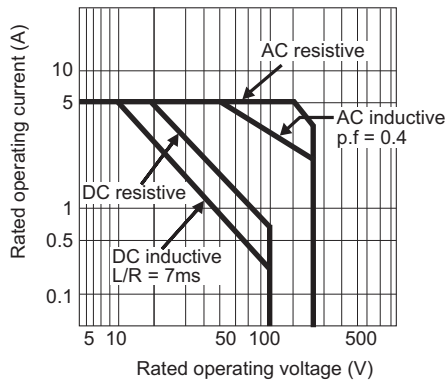
QM4X1-D24



Derating curves

DPDT

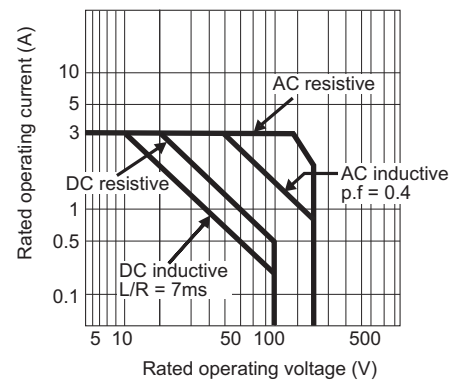
Max. Switching capacity



QM DPDT

4PDT

Max. Switching capacity



QM 4PDT



QM Series Dimensional Drawings

Dimensions

mm [inches]

Figure 1 QM2 Series

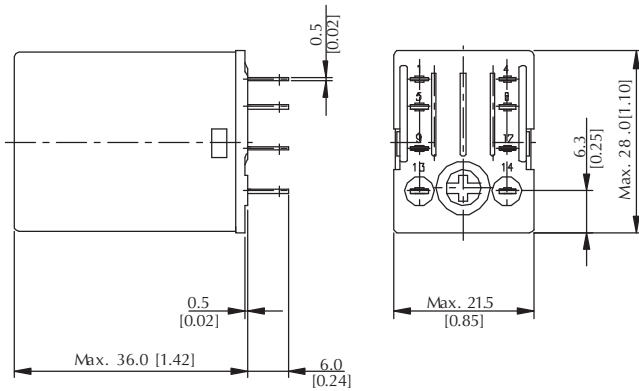
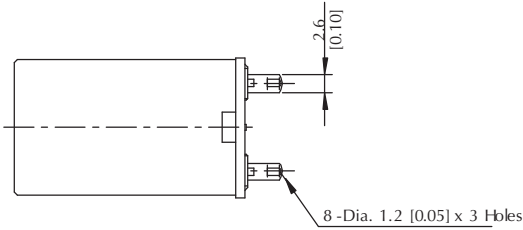
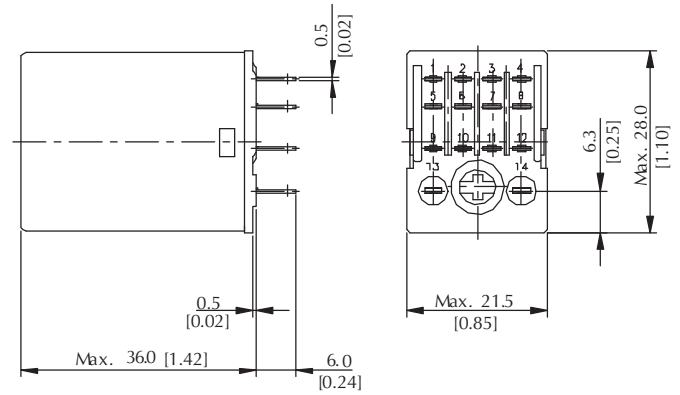
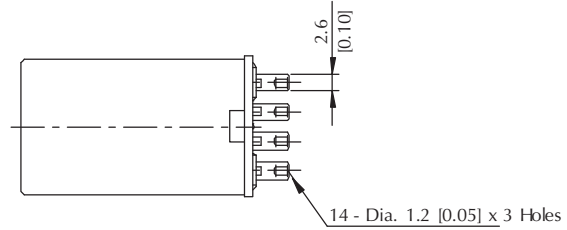


Figure 2 QM4 Series



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

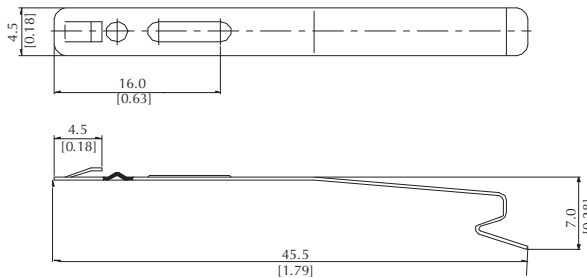
<--->

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.

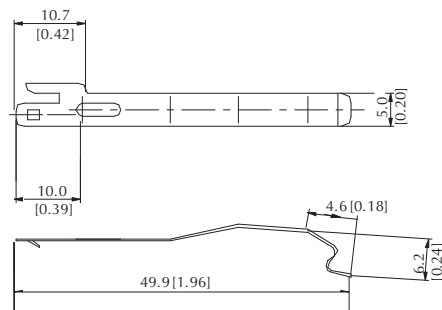
Note: Order sockets separately; holding clips are included with sockets.

Holding Clip Dimensions mm [in]



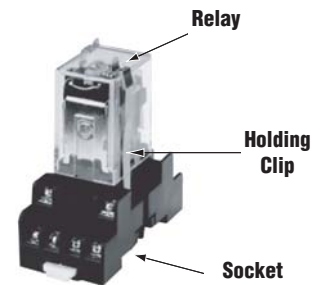
Holding clip for QL4 series relays is included with SQL14D sockets.

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



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

Enclosures

Tools

Pneumatics

Appendix

Product Index

Part # Index

Dimensions

mm

Figure 3
SQL08D (for QL2 Series Relays)

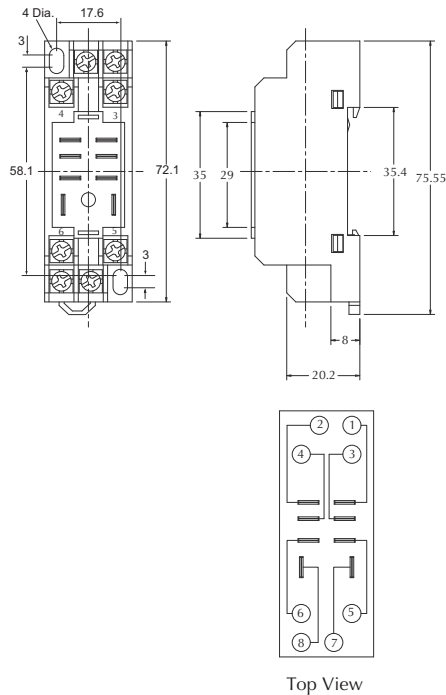


Figure 4
SQL14D (for QL4 Series Relays)

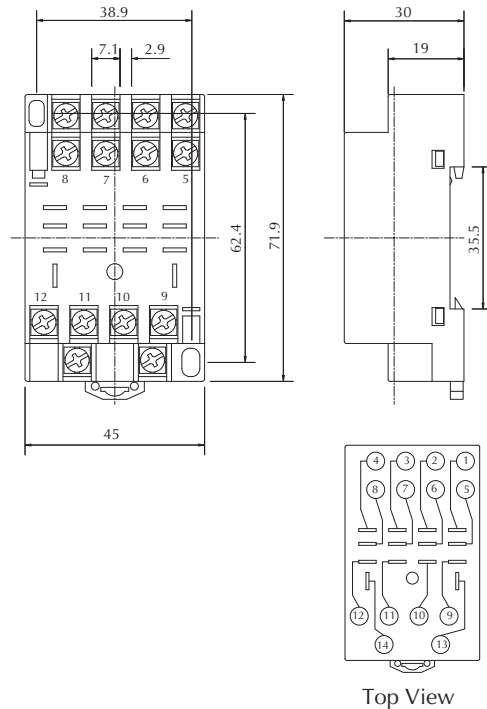


Figure 5
SQM08D (for QM2 Series Relays)

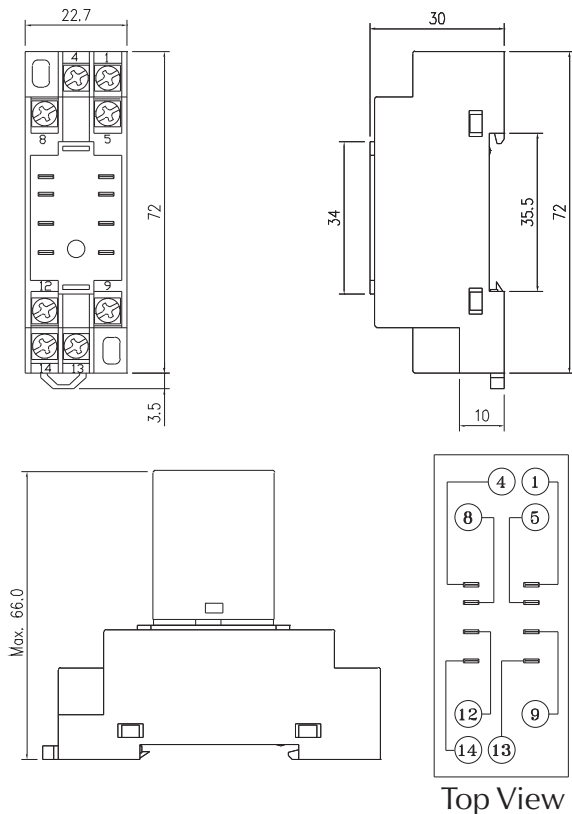


Figure 6
SQM14D (for QM4 Series Relays)

