

QL Series Electromechanical Relay Selection Guide



QL 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
- ARC Barrier equipped
- Silver Cadmium Oxide contact
- High dielectric strength (1,800 VAC)
- High reliability and long life
- Ultra-high sensitivity with quick response time (25 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 available on 24 VDC models, which protects contacts and electronic components from back EMF
- UL recognized, CE certified, CSA approval pending
- DPDT and 4PDT models

Note: Order socket separately

QL Series Selection Guide								
Part Number	Price	Drawing Link	Coil Voltage	Configuration	Contact Rating	Relay Socket Part Number	Price	Drawing Link
QL2N1-A120		PDF	110/120VAC	2PDT	10A	SQL08D		PDF
QL4N1-A120		PDF		4PDT	10A	SQL14D		PDF
QL2N1-A220		PDF	220VAC	2PDT	10A	SQL08D		PDF
QL4N1-A220		PDF		4PDT	10A	SQL14D		PDF
QL2N1-D24		PDF	24VDC	2PDT	10A	SQL08D		PDF
QL2X1-D24		PDF		2PDT	10A	SQL08D		PDF
QL4N1-D24		PDF		4PDT	10A	SQL14D		PDF
QL4X1-D24		PDF		4PDT	10A	SQL14D		PDF

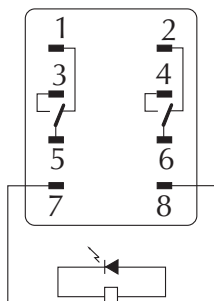
QL Series Electromechanical Relays Specifications

QL Series Specifications Table								
Part Numbers	QL2N1-A120	QL2N1-A220	QL4N1-A120	QL4N1-A220	QL2N1-D24	QL2X1-D24	QL4N1-D24	QL4X1-D24
Contact Specifications								
Current Rating	10A							
Contact Type	DPDT		4PDT		DPDT		4PDT	
Terminal Type	Spade Plug-In Socket							
Rated Max. Resistive Load	10A @110VAC/10A@24VDC							
Rated Max. Inductive Load	7.5 A @110VAC/ 5A@24VDC							
Minimum Recommended Load	1mA @ 5VDC							
Max. Switching Cap. (Resistive Load)	1,100VAC/240W							
Max. Switching Cap. (Inductive Load)	825VAC/120W							
Max. Contact Rating	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 /10.8 mA	6.2/6.8 mA	17/19 mA	11.5/13.1 mA	36.9 mA		69mA	
Rated Current at 60Hz	8.4/9.2 mA	5.3/5.8 mA	18/16.4 mA	9.8/11.2 mA	36.9 mA		69mA	
Coil Resistance	4.43 kΩ	12.95 kΩ	2.2 kΩ	6.7 kΩ	650Ω		350Ω	
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	25ms max							
Release Time	25ms max							
Ambient Temperature	-25C to 70° C (-13 to 158° F)							
Ambient Humidity	45% to 85% Relative Humidity							
Contact Material	Silver Cadmium Oxide							
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 1.0 mm							
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)							

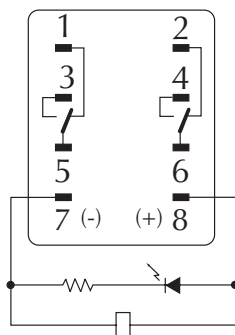
QL Series Wiring Diagrams and Derating Curves

Wiring Diagrams

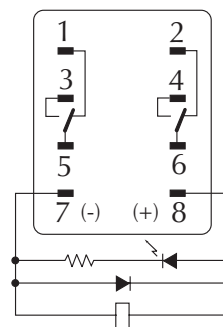
QL2N1-A120
QL2N1-A220



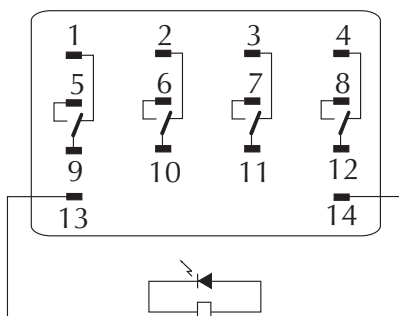
QL2N1-D24



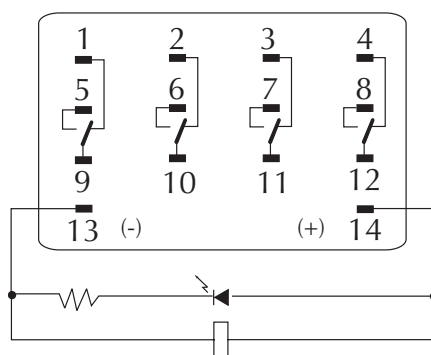
QL2X1-D24



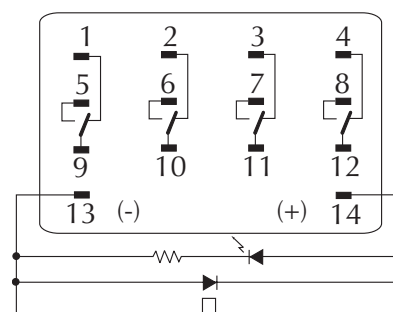
QL4N1-A120
QL4N1-A220



QL4N1-D24

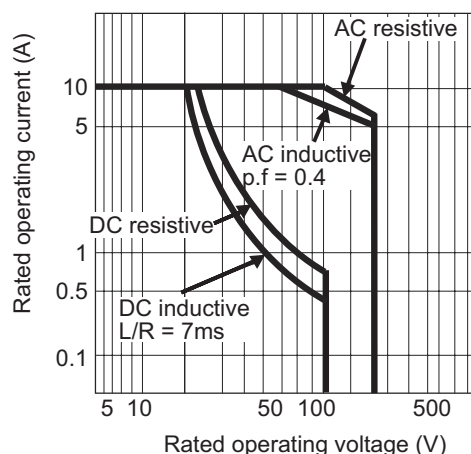


QL4X1-D24



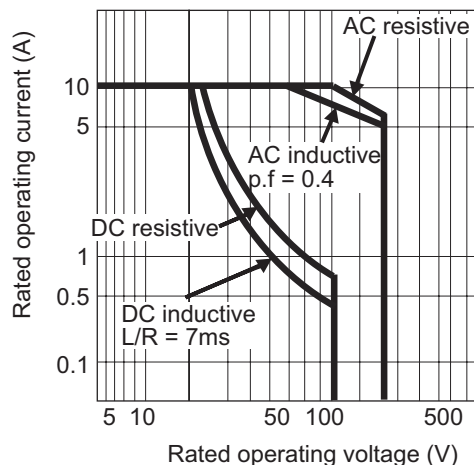
Derating Curves

Max. Switching capacity



QL 2PDT

Max. Switching capacity



QL 4PDT

Sockets for QL/QM Series Relays



[SQL08D](#)



[SQL14D](#)



[SQM08D](#)



[SQM14D](#)

Sockets for QL/QM Series Relays			
Part Number	Price	Description	Drawing Link
<u>SQL08D</u>		AutomationDirect relay socket, 35mm DIN rail or panel mount. For use with QL2 series relays.	<u>PDF</u>
<u>SQL14D</u>		AutomationDirect relay socket, 35mm DIN rail or panel mount. For use with QL4 series relays.	<u>PDF</u>
<u>SQM08D</u>		AutomationDirect relay socket, 35mm DIN rail or panel mount. For use with QM2 series relays.	<u>PDF</u>
<u>SQM14D</u>		AutomationDirect relay socket, 35mm DIN rail or panel mount. For use with QM4 series relays.	<u>PDF</u>

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.

Insert holding clip into the slots provided on the socket.

