

# 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
<a href="#">QL2N1-A120</a>	\$11.50	<a href="#">PDF</a>	110/120VAC	2PDT	10A	<b>Retired</b>	<--->	<a href="#">PDF</a>
<a href="#">QL4N1-A120</a>	\$14.00	<a href="#">PDF</a>		4PDT	10A	<b>Retired</b>	<--->	<a href="#">PDF</a>
<a href="#">QL4N1-A220</a>	\$14.50	<a href="#">PDF</a>	220VAC	4PDT	10A	<b>Retired</b>	<--->	<a href="#">PDF</a>
<a href="#">QL2N1-D24</a>	<----->	<a href="#">PDF</a>	24VDC	2PDT	10A	<b>Retired</b>	<--->	<a href="#">PDF</a>
<a href="#">QL2X1-D24</a>	<----->	<a href="#">PDF</a>		2PDT	10A	<b>Retired</b>	<--->	<a href="#">PDF</a>
<a href="#">QL4X1-D24</a>	\$18.00	<a href="#">PDF</a>		4PDT	10A	<b>Retired</b>	<--->	<a href="#">PDF</a>

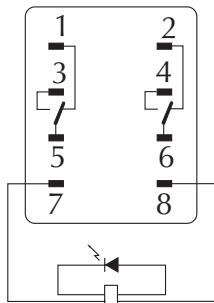
# QL Series Electromechanical Relays Specifications

QL Series Specifications Table						
Part Numbers	QL2N1-A120	QL4N1-A120	QL4N1-A220	QL2N1-D24	QL2X1-D24	QL4X1-D24
<b>Contact Specifications</b>						
<b>Current Rating</b>	10A					
<b>Contact Type</b>	DPDT	4PDT		DPDT	4PDT	
<b>Terminal Type</b>	Spade Plug-In Socket					
<b>Rated Max. Resistive Load</b>	10A @110VAC/10A@24VDC					
<b>Rated Max. Inductive Load</b>	7.5 A @110VAC/ 5A@24VDC					
<b>Minimum Recommended Load</b>	1mA @ 5VDC					
<b>Max. Switching Cap. (Resistive Load)</b>	1,100VAC/240W					
<b>Max. Switching Cap. (Inductive Load)</b>	825VAC/120W					
<b>Max. Contact Rating</b>	250VAC/125VDC					
<b>Coil Specifications</b>						
<b>Options</b>	LED Indicator				LED Indicator/ Diode Protection	LED Indicator/Diode Protection
<b>Coil Input Voltage</b>	110/120VAC	110/120VAC	220/240VAC	24VDC		
<b>Rated Current at 50Hz</b>	9.9 /10.8 mA	17/19 mA	11.5/13.1 mA	36.9 mA	69mA	
<b>Rated Current at 60Hz</b>	8.4/9.2 mA	18/16.4 mA	9.8/11.2 mA	36.9 mA	69mA	
<b>Coil Resistance</b>	4.43 kΩ	2.2 kΩ	6.7 kΩ	650Ω	350Ω	
<b>Power Consumption</b>	Approx. 0.9 W to 1.1 W (at 60Hz)			Approx. 0.9 W		
<b>Dropout Voltage (% of rated voltage)</b>	Min. 30%			Min. 10%		
<b>Pick-Up Voltage (Must operate voltage)</b>	Max. 80% of the rated coil voltage					
<b>Max. Voltage (Max. Continuous Voltage)</b>	110% of the rated coil voltage					
<b>Min. Operating Voltage</b>	80% of the rated coil voltage					
<b>General Specifications</b>						
<b>Service Life</b>	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)					
<b>Operate Time</b>	25ms max					
<b>Release Time</b>	25ms max					
<b>Ambient Temperature</b>	-25C to 70° C (-13 to 158° F)					
<b>Ambient Humidity</b>	45% to 85% Relative Humidity					
<b>Contact Material</b>	Silver Cadmium Oxide					
<b>Contact Resistance</b>	50mΩ max.					
<b>Operating Frequency</b>	Mechanical 18,000 operations/hour; Electrical 1,800 operations/hour					
<b>Vibration Resistance</b>	10Hz to 55Hz at double amplitude of 1.0 mm					
<b>Shock Resistance</b>	1,000m/s <sup>2</sup> (approx. 100G)					
<b>Weight</b>	35g (1.24oz.)					
<b>Agency Approvals and Standards</b>	UL Recognized (#E222847), CE Certified (9667186-9811), CSA Certified (218218)					

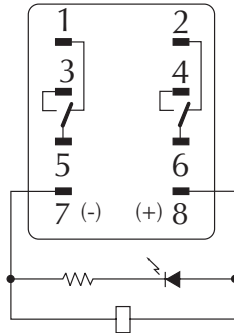
# QL Series Wiring Diagrams and Derating Curves

## Wiring Diagrams

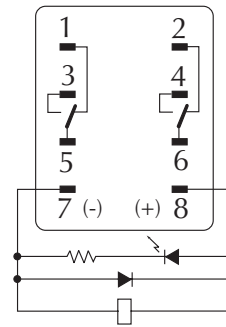
QL2N1-A120



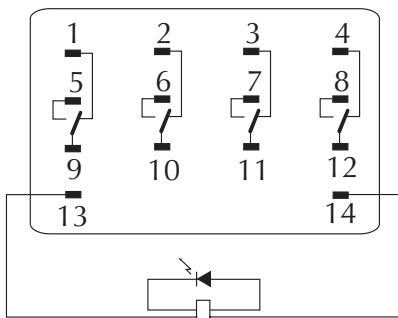
QL2N1-D24



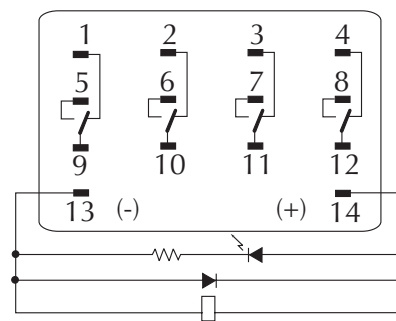
QL2X1-D24



QL4N1-A120  
QL4N1-A220

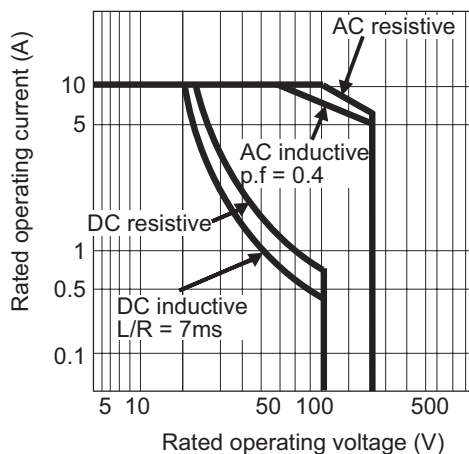


QL4X1-D24



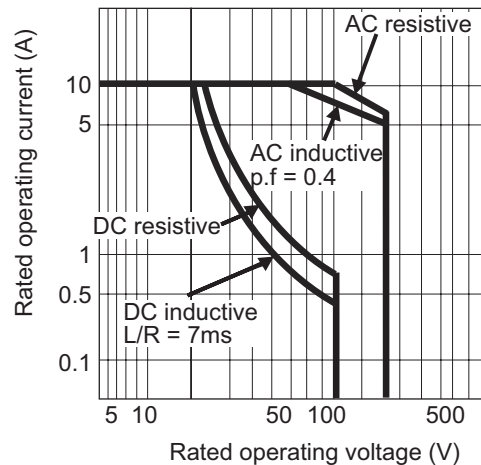
## Derating Curves

Max. Switching capacity



QL 2PDT

Max. Switching capacity



QL 4PDT

# Sockets for QL/QM Series Relays



**SQM08D**

Sockets for QL/QM Series Relays			
Part Number	Price	Description	Drawing Link
<b><u>SQM08D</u></b>	\$4.00	AutomationDirect relay socket, 35mm DIN rail or panel mount. For use with QM2 series relays.	<a href="#">PDF</a>

## 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.

