

# GIGAVAC®

400+ Amp 12-100 Vdc  
Latching Contactor

## GVL140 Series



PCB Mount shown, PC Board  
not included

## FEATURES

- > PCB mountable option allows lowest cost OEM solution by eliminating need for cables, wires and connector.
- > Hermetically Sealed – Designed to meet: UL1604 for Class I & II, Div 2 and Class III for use in hazardous locations, IP67 for temporary water immersion for 30 min, SAE J1171 - external ignition protection, and ISO8846 for protection against ignition around flammable gasses.
- > Meets CE Conformance standards.
- > Not position sensitive – can be mounted in any position for ease of installation.

ADVANCED SWITCHING SOLUTIONS

Rev A 10/30/18

### PRODUCT SPECIFICATIONS

Specifications	Units	Data
<b>Rated Voltage</b>	V	100
<b>Contact Arrangement</b>		
Main	Form	Bi-Stable
Auxiliary <sup>1</sup>	Form A or B	SPST-NO or SPST-NC
<b>Mechanical Life</b>	cycles	1,000,000
<b>Contact Resistance<sup>2</sup></b>		
Max	mohms	0.4
Typical	mohms	0.3
<b>Set (Close) Time<sup>3</sup></b>		
Max	ms	20
Typical	ms	13
<b>Reset (Open) Time, Max</b>	ms	12
<b>Insulation Resistance<sup>4</sup></b>	Mohms	100
<b>Dielectric at sea level (leakage &lt; 1mA)</b>	VRMS	2,500
<b>Shock, 1/2 Sine, 11ms</b>		
Actuated (closed)	G	30
Non Actuated (open)	G	18
<b>Vibration, Sinusoidal (10-2000 Hz peak)</b>	G	20
<b>Environmental Seal</b>	Exceeds IP67 & IP69K	
<b>Salt Fog</b>	MIL-STD-810	

### COIL RATINGS at 25°C

Coil P/N Designation	B	C
<b>Coil Voltage, Nominal</b>	12 VDC	24 VDC
<b>Coil Voltage, Max<sup>7</sup></b>	16 V	32 V
<b>Set and Reset Voltage, Max<sup>6,7</sup></b>	7.5 V	15 V
<b>Set and Reset Current, Max<sup>6,7</sup></b>	2 A	1 A

#### Temperature and Weight

Operating ambient Temp Range = -55 to +85°C<sup>5</sup>

Storage ambient Temp Range = -70 to +150°C

Weight, typical:

Upright Mount = 0.45 kg (0.99 lb)

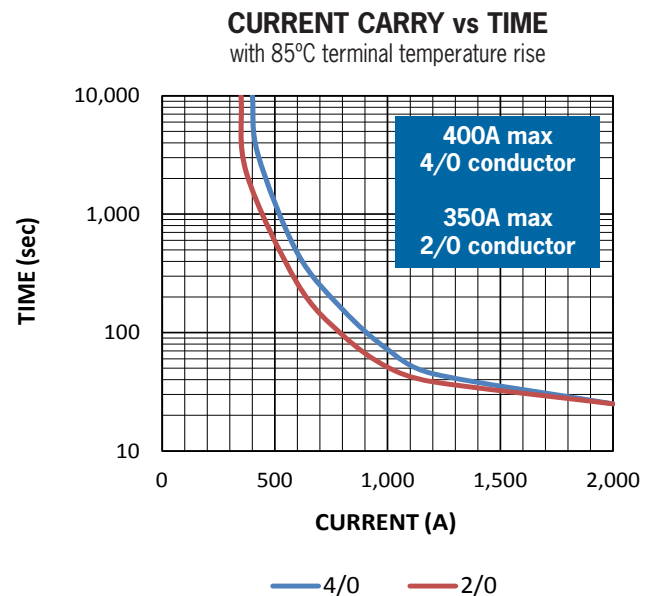
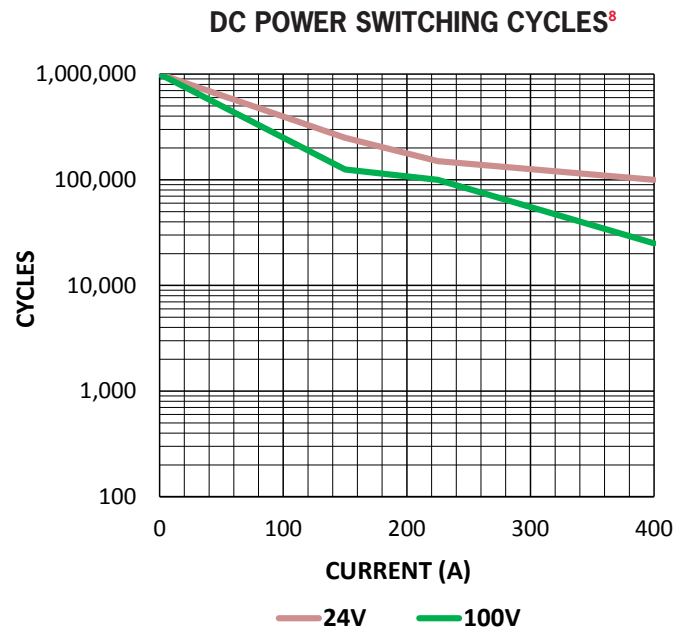
PCB Mount = 0.39 kg (0.86 lb)

#### Packaging

24 units per shipping box

21 in x 18 in x 4 in shipping box

### POWER SWITCHING AND CURRENT CARRY RATINGS





## UPRIGHT MOUNT DIMENSIONS

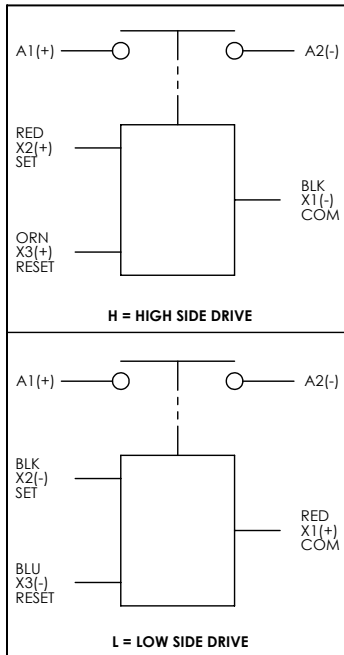
### Upright Mounting

M5 or No. 10 Screws  
Torque 1.7-4 Nm [15-35 in-lb]

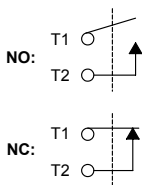
### Upright Mount Power Connection

Silver Plated Copper M8x1.25 stud  
Stainless M8x1.25 flanged nut  
Torque 10 Nm [90 in-lb] max

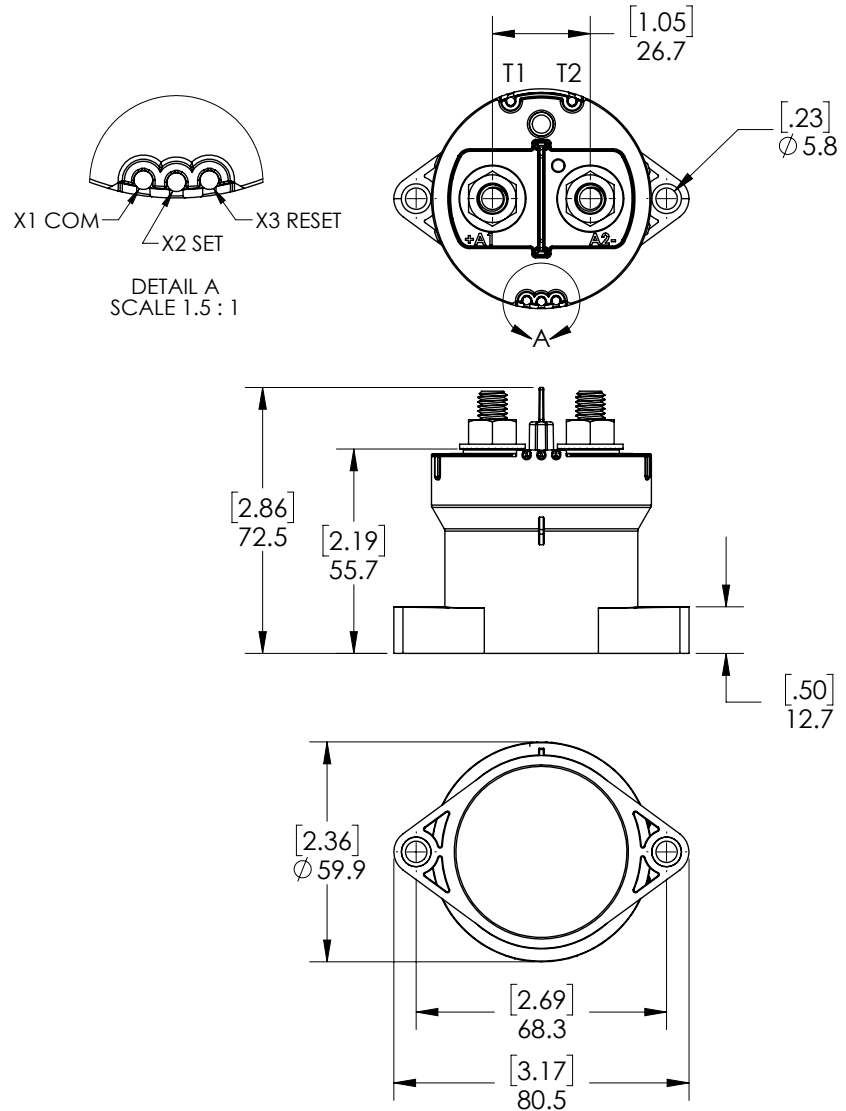
### Power Contacts

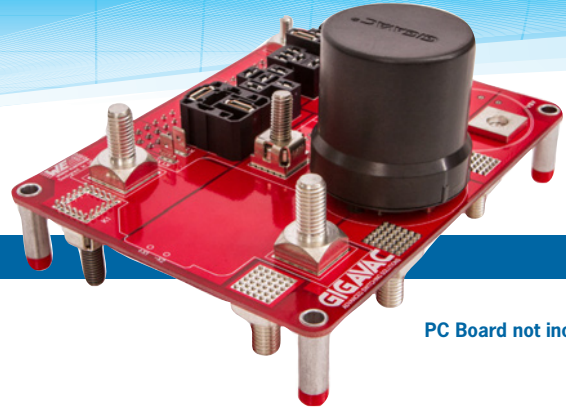


### Auxiliary contacts (optional)



### Upright Mount





PC Board not included

## PCB MOUNT DIMENSIONS

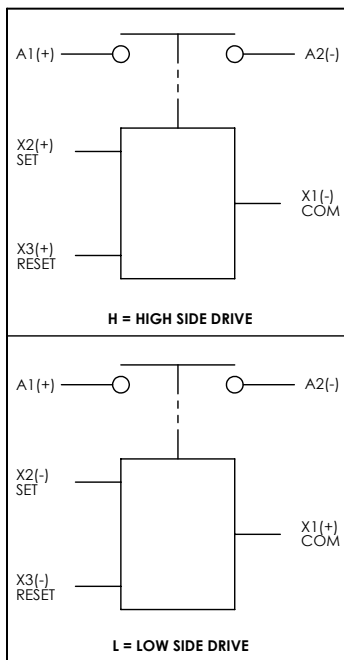
### PCB Mounting / Power Connection

M8x1.25 bolt  
Torque 10 Nm [90 in-lb] max

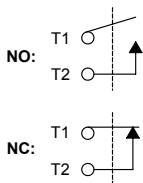
### PCB Coil and Auxiliary Pin Material

510 Phosphor Bronze, Tin Plated

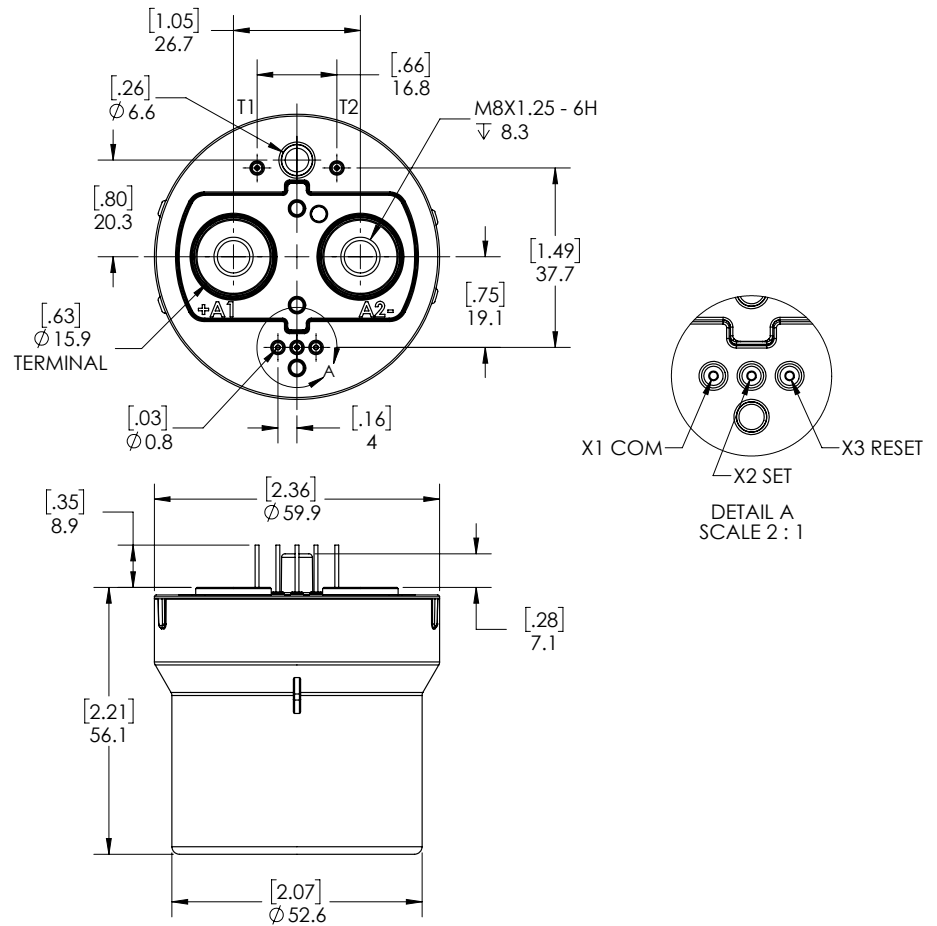
### Power Contacts



### Auxiliary contacts (optional)



### PCB Mount



## PART NUMBER SYSTEM

GVL	L	144	B	P	B
Drive	H = High Side				
	L = Low Side				
Mounting		1 = Upright			
		4 = PCB, M8			
Coil Voltage			B = 12 Vdc		
			C = 24 Vdc		
Coil Termination				A = Flying leads 38 cm (15 in)	
				P = Pins (PCB)	
Auxiliary Contacts					X = None
					B = SPST-NO Normally Open
					C = SPST-NC Normally Closed

## APPLICATION NOTES

- Power switching lifecycles are based on **current flow** from A1(+) to A2(-). For best breaking performance, the contactor should be installed so that current flows from A1(+) to A2(-). There are cases where the contactor will interrupt power in the opposite direction but please contact GIGAVAC to confirm suitability. Direction of current flow is not relevant during make or when flowing on closed contacts. For bi-directional contactors, please contact GIGAVAC.
- Applications with **capacitors** will require a pre-charge circuit.
- Electrical life rating is based on resistive load with 27µH maximum inductance in circuit. Because your application may be different, we suggest you test the contactor in your circuit to verify life is as required.
- End of life is defined as when the dielectric, insulation resistance or contact resistance exceeds the specifications listed.

### Notes & Definitions:

- 1 Auxiliary contact rating is 2A, 24Vdc Resistive load, 100,000 cycles. Minimum current is 0.1mA, 5V. The auxiliary contact is mechanically linked to the main power contacts.
- 2 Contact resistance measured at currents higher than 100A.
- 3 Operation time is measured at 25°C and includes maximum 7ms bounce.
- 4 Insulation resistance is 50 Mohms after life.
- 5 Contactor can operate up to 125°C in special cases - contact GIGAVAC for details.
- 6 Set voltage is voltage required to ensure contacts close. Minimum pulse of 100ms required.
- 7 Contactor is operated by a coil that changes resistance with temperature. Since coil voltage, set and reset voltage, and set and reset current are specified at nominal voltage, they will be lower than indicated at temperatures above 25°C and higher than indicated at temperatures below 25°C.
- 8 Limit make current to 600A to avoid contact welding. For AC power switching cycles, contact factory.