



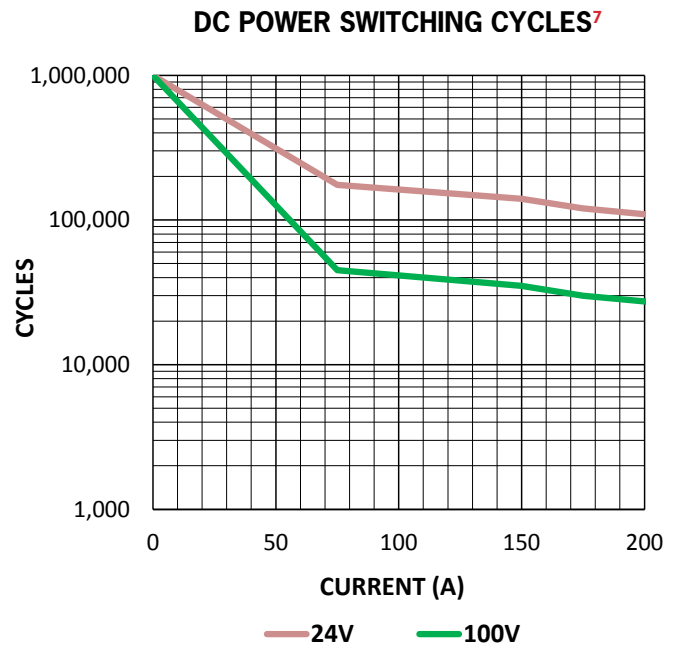
## FEATURES

- 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.
- Built-in coil suppression for all DC coils – Saves you engineering time and parts cost to add external coil suppression.
- Stainless steel hardware and brass mounting inserts, for years of corrosion free service.
- Not position sensitive – can be mounted in any position for ease of installation.


### PRODUCT SPECIFICATIONS

Specifications	Units	Data
<b>Rated Voltage</b>	V	100
<b>Contact Arrangement</b>		
Main	Form X	SPST-NO
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>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	35
Non Actuated (open)	G	25
<b>Vibration, Sinusoidal (10-2000 Hz Peak)</b>	G	25
<b>Environmental Seal</b>	Exceeds IP67 & IP69K	
<b>Salt Fog</b>	MIL-STD-810	

### POWER SWITCHING



### COIL RATINGS at 25°C

Coil P/N Designation	B	C	F
<b>Coil Voltage, Nominal (VDC)</b>	12	24	48
<b>Coil Voltage, Max (V)</b>	16	32	64
<b>Pick-Up Voltage, Max (V)<sup>6</sup></b>	8	16	28
<b>Drop-Out Voltage, Max (V)<sup>6</sup></b>	3	7	10
<b>Drop-Out Voltage, Min (V)<sup>6</sup></b>	0.5	0.5	1.8
<b>Coil Current (A)<sup>6</sup></b>	0.68	0.28	0.16
<b>Coil Power (W)<sup>6</sup></b>	8	6.8	7.6
<b>Operate Time, Max (ms)<sup>3</sup></b>	20	20	30
<b>Release Time, Max (ms)</b>	12	12	12
<b>Internal Coil Suppression</b>	TVS 		
<b>Coil Back EMF (V)</b>	55	55	80

Consult GIGAVAC for additional coil options



## UPRIGHT MOUNT DIMENSIONS

### Auxiliary Leads

B=SPST-NO  
 Blue Lead = T1  
 White Lead = T2  
 C=SPST-NC  
 Orange Lead = T1  
 White Lead = T2  
 (Refer to Part Number System on page 7)

### Coil Leads

Red Lead = X1(+)  
 Black Lead = X2(-)  
 (Refer to Part Number System on page 7)

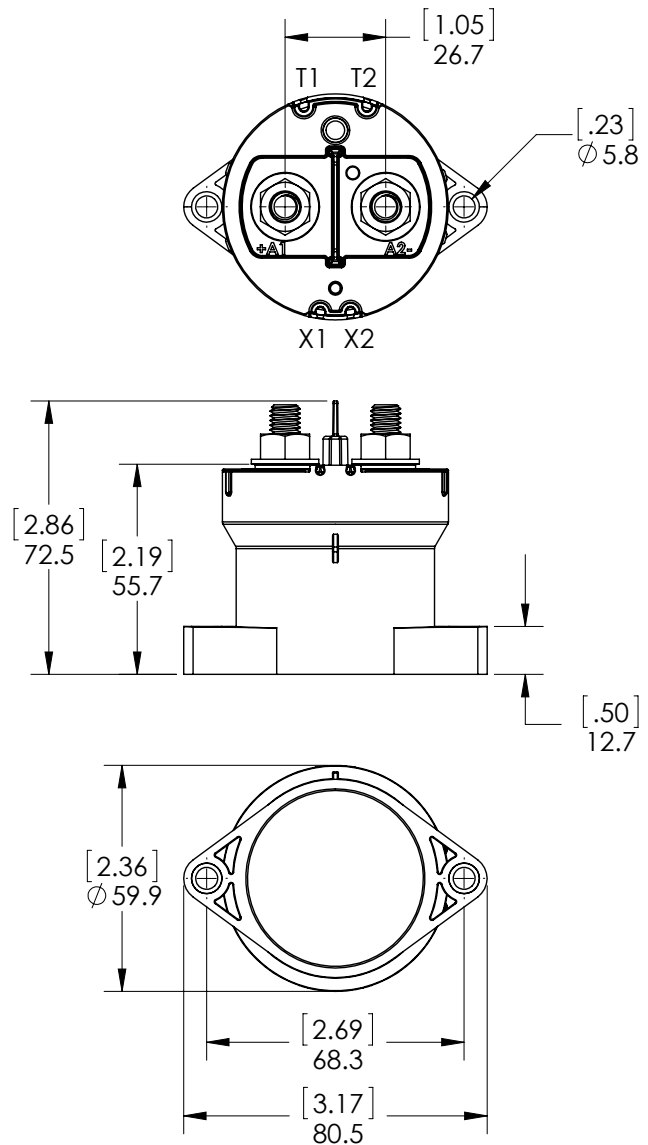
### Upright Mounting

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

### Upright Mount



### SIDE MOUNT DIMENSIONS



#### Auxiliary Leads

B=SPST-NO  
 Blue Lead = T1  
 White Lead = T2  
 C=SPST-NC  
 Orange Lead = T1  
 White Lead = T2  
 (Refer to Part Number System on page 7)

#### Coil Leads

Red Lead = X1(+)  
 Black Lead = X2(-)  
 (Refer to Part Number System on page 7)

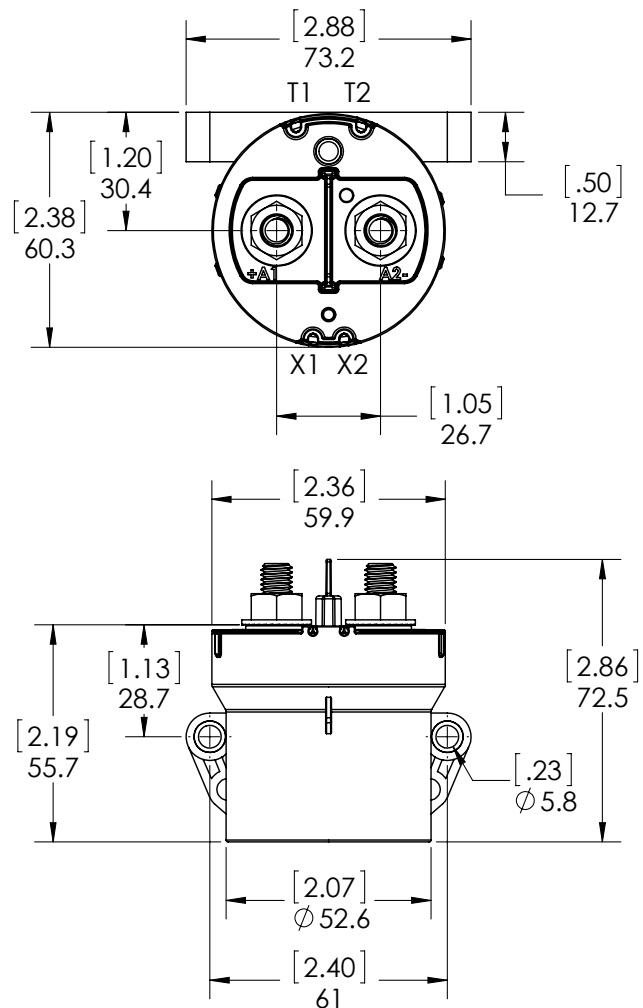
#### Side Mounting

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

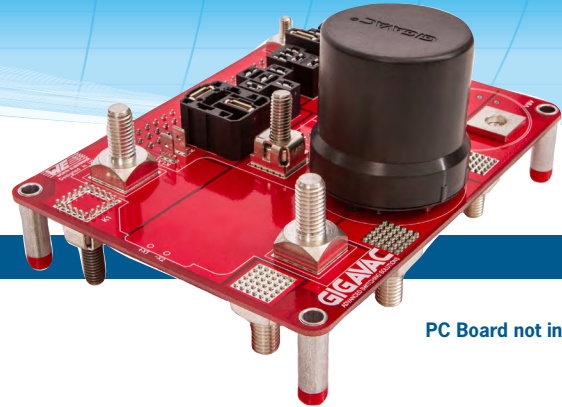
#### Side Mount Power Connection

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

#### Side Mount

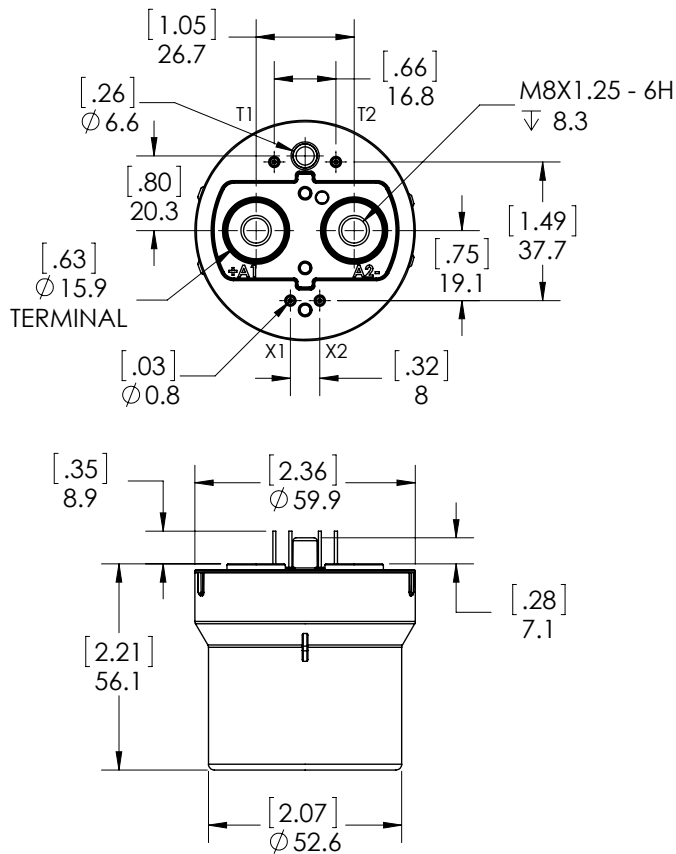


**PCB MOUNT DIMENSIONS**

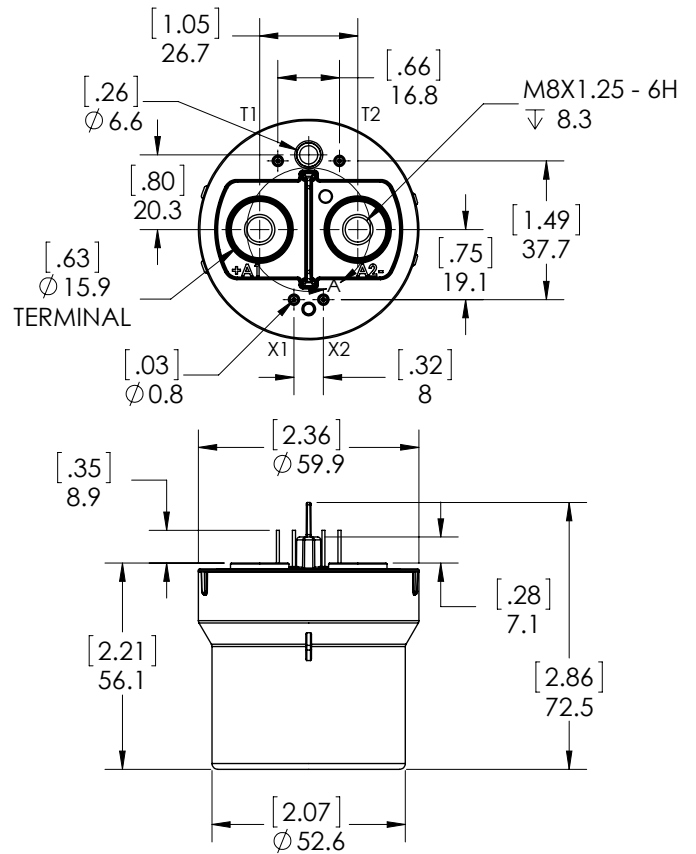


PC Board not included

**PCB Mount**



**PCB Mount with Barrier**

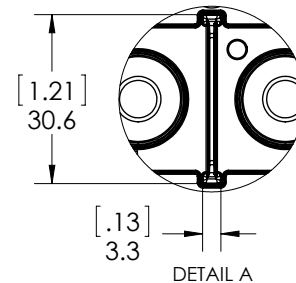


**PCB Mounting / Power Connection**

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

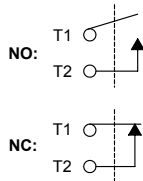
**PCB Coil and Auxiliary Pin Material**

510 Phosphor Bronze, Tin Plated

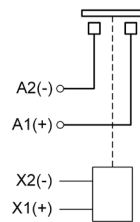


## SPECIFICATIONS AND CURRENT CARRY RATINGS

### Auxiliary contacts (optional)



### Power Contacts



### 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 = 0.44 kg (0.97 lb)

Side Mount = 0.45 kg (0.99 lb)

PCB Mount = 0.38 kg (0.84 lb)

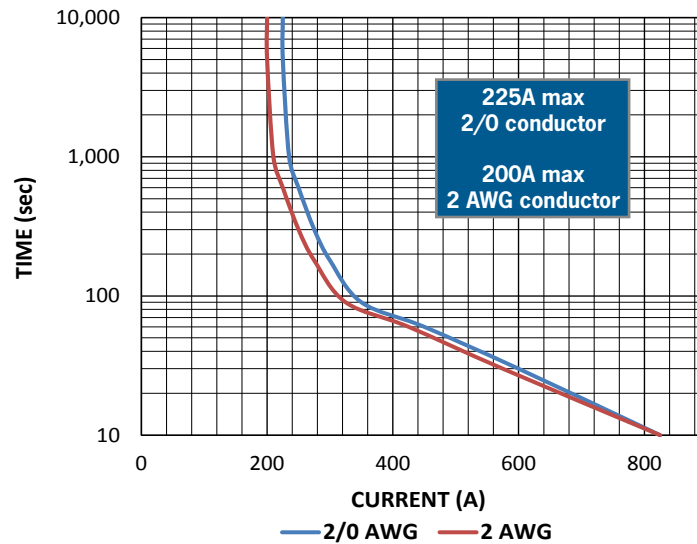
### Packaging

24 units per shipping box

21 in x 18 in x 4 in shipping box

### CURRENT CARRY vs TIME

with 85°C terminal temperature rise



## PART NUMBER SYSTEM

GV12	1	B	A	B
<b>Mounting</b>	1 = Upright			
	2 = Side			
	4 = PCB, M8			
	5 = PCB, M8, with barrier			
<b>Coil Voltage</b>		B = 12 Vdc, Internal Coil Suppression		
		C = 24 Vdc, Internal Coil Suppression		
		F = 48 Vdc, Internal Coil Suppression		
<b>Coil Termination</b>			A = Flying leads 38 cm (15 in)	
			P = Pins (PCB)	
<b>Auxiliary Contacts</b>				X = None
				B = SPST-NO Normally Open
				C = SPST-NC Normally Closed

### Notes & Definitions:

- 1 Auxillary 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 Contactor is operated by a coil that changes resistance with temperature. Since Pick-up Current, Coil Current and Coil Power 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. Similarly, Pick-up and Drop-out Voltages will be higher than indicated at temperatures above 25°C and lower than indicated at temperatures below 25°C.
- 7 Limit make current to 500A to avoid contact welding. For AC power switching cycles, contact factory.

## APPLICATION NOTES

- Contactors feature internal transient voltage suppressor for coil suppression. **No external diodes** should be added across the coil.
- 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.