

# GV350 SERIES

## 1000V CONTACTOR

Sensata | GIGAVAC GV350 Series contactors are hermetically sealed, gas filled contactors suitable for use in harsh environments. With contact voltage ratings from 12Vdc to 1000Vdc and a hot switchable continuous carry current of 500A, the compact GV350 Series is ready to solve your next challenging application problem. Like all Sensata | GIGAVAC advanced switching solutions these contactors can be mounted in any axis or orientation and are sealed to withstand a variety of harsh environments.



### Features

- Gas filled design offers lower resistance than non-hermetic switches resulting in higher system efficiency and less heat generation.
- Suppression gas allows high fault interrupt capability and prohibits oxidation.
- Smaller, lighter, and more efficient than non-hermetic switches.
- Optional auxiliary contacts for dependable feedback for HVIL circuits.
- Optional joint resistance and voltage sensing pins for easy system diagnosis.

### Applications

- Battery electric vehicles
- DC fast charging
- Energy storage systems
- DC motor drive protection
- Photovoltaic controls

## SPECIFICATIONS

Specifications		Units	Data
Rated Voltage <sup>6</sup>		V	1000
Nominal Current		A	500
Contact Arrangement	Main	Form X	SPST-NO
	Auxiliary <sup>1</sup>	Form A or B	SPST-NO or SPST-NC
Mechanical Life		cycles	1,000,000
Contact Resistance	Max	mohms	0.2
	Typical	mohms	0.15
Insulation Resistance <sup>2</sup>		Mohms	100
Dielectric at sea level (leakage < 1mA)		VRMS	4000
Shock, 1/2 Sine, 11ms	Actuated (closed)	G	50
	Non Actuated (open)	G	25
Vibration, Sinusoidal (10-2000 Hz peak)		G	25
Environmental Seal		Exceeds IP67 & IP69K	
Salt Fog		MIL-STD-810	
Short Circuit Current (20ms)		A	4000
Max Break Current @ 400V (1 cycle)		A	3000
Max Break Current @ 800V (1 cycle)		A	900

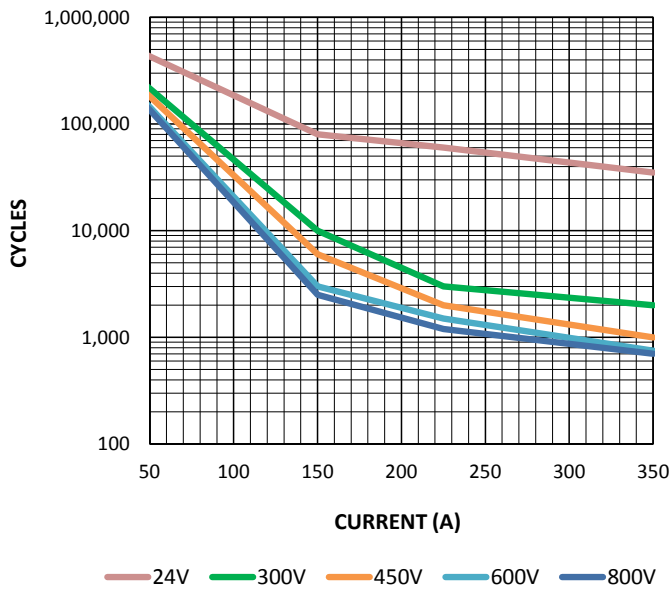
## Coil Ratings at 25°C

Coil P/N Designation	P	R
Coil Voltage, Nominal (VDC)	12/24	12/24
Coil Type	External PWM <sup>4</sup>	
Coil Resistance (ohms)	1.45	5
Operate Time, Max (ms) <sup>5</sup>	20	
Release Time, Max (ms)	12	



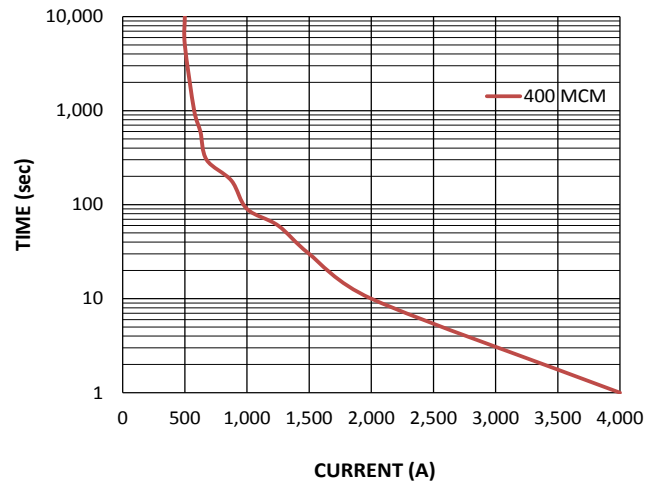
## POWER SWITCHING AND CURRENT CARRY RATINGS

### DC POWER SWITCHING CYCLES



### CURRENT CARRY vs TIME

with 85°C terminal temperature rise

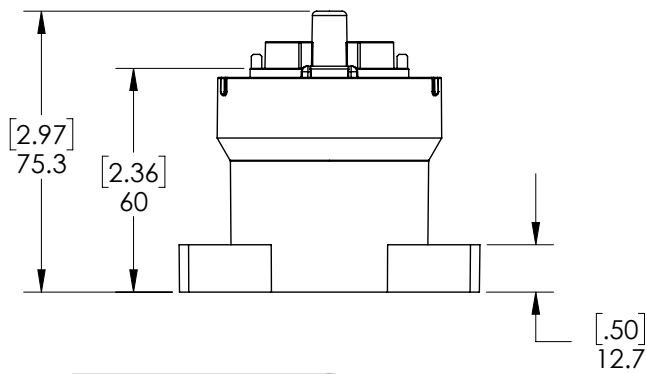
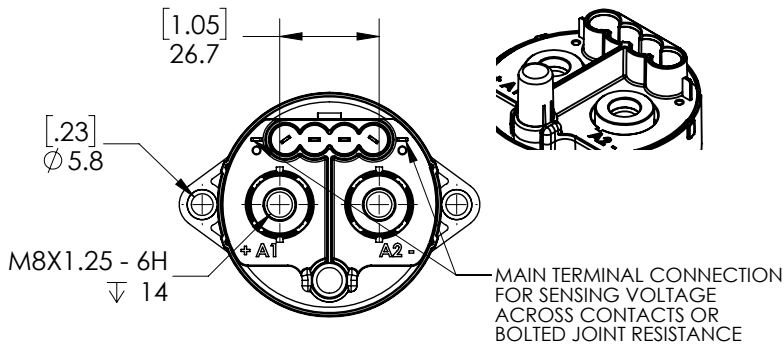




# UPRIGHT MOUNT DIMENSIONS

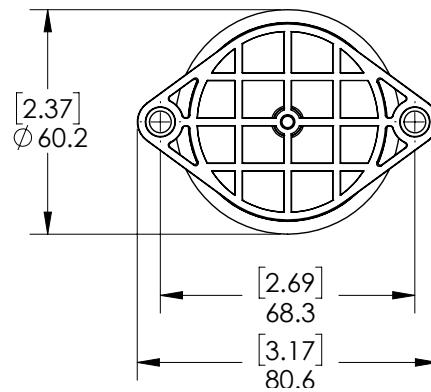
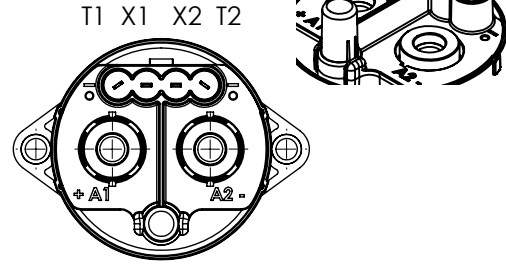
## Upright Mount

(Auxiliary with Main Terminal Connection for Sensing Voltage Across Contacts or Bolted Joint Resistance Shown)



## Upright Mount

(Auxiliary Shown)

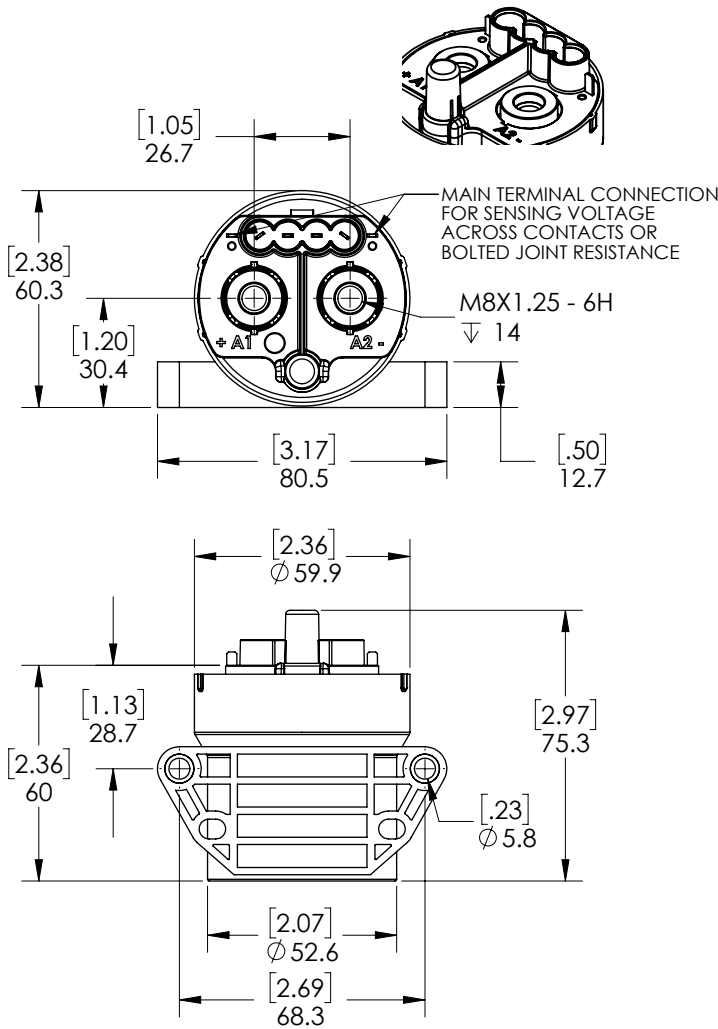




# SIDE MOUNT DIMENSIONS

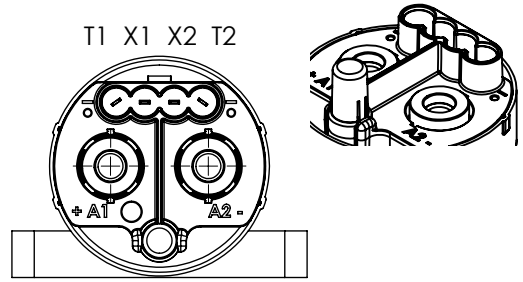
## Side Mount

(Auxiliary with Main Terminal Connection for Sensing Voltage Across Contacts or Bolted Joint Resistance Shown)



## Side Mount

(Auxiliary Shown)



## Coil/Auxiliary Connector

Coil: Tin Plated Brass  
Auxiliary: Tin Plated Beryllium Copper

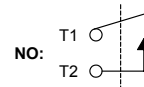
## Mounting

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

## Power Connection

Silver Plated Copper M8x1.25 Terminals  
Torque 10 Nm [90 in-lb] max

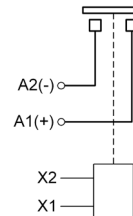
## Auxiliary Contacts (Optional)



## Temperature and Weight

Operating ambient Temp Range = -55 to +85°C<sup>3</sup>  
Storage ambient Temp Range = -70 to +150°C  
Weight, typical = 0.39 kg (0.86 lb)

## Power Contacts



## Packaging

24 units per shipping box  
21 in x 18 in x 4 in shipping box



## ORDERING OPTIONS

Example : GV351PPBX

	GV35	1	P	P	B	X
<b>Family</b>	GV35					
<b>Mounting</b>	1: Upright 2: Side Mount					
<b>Coil Voltage</b>	P: 12/24 Vdc <sup>4</sup> R: 12/24 Vdc <sup>4</sup>					
<b>Coil Termination</b>	P: Pins					
<b>Auxiliary Contacts</b>	X: None B: SPST-NO Normally Open					
<b>Voltage Sensing Pins</b>	X: None V: Voltage Sensing Pins					



## GENERAL NOTES

- 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.
- Insulation resistance is 50 Mohms after life.
- Contactors can operate up to 125°C in special cases - contact Sensata for details.
- See Application Note [AN-022](#) for PWM instructions.
- Operation time is measured at 25°C and includes maximum 7ms bounce.
- Rated voltage refers to max voltage for which make/break load cycles are provided. Contactors can be used in higher voltage systems. Contact Sensata for more info.



## TECHNICAL 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 Sensata to confirm suitability. Direction of current flow is not relevant during make or when flowing on closed contacts. For bi-directional contactors, please contact Sensata.
- 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.

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Mailing Address: Sensata Technologies, Inc., 529 Pleasant Street, Attleboro, MA 02703, USA.

### Americas

Sensata GIGAVAC  
 Contactor Center of Excellence  
 6382 Rose Lane  
 Carpinteria, CA 93013  
 USA  
 Tel: +1 (805) 684 8401  
 Email: [gigavac@sensata.com](mailto:gigavac@sensata.com)  
 Sensata Global Headquarters  
 Sensata Technologies  
 529 Pleasant Street  
 Attleboro, MA 02703  
 USA

### Europe, Middle East & Africa

Sensata Technologies Holland B.V.  
 Jan Tinbergenstraat 80  
 7559 SP Hengelo  
 The Netherlands  
 Tel: +31743578000  
 Email: [gigavac-info-eu@list.sensata.com](mailto:gigavac-info-eu@list.sensata.com)

## CONTACT US

### Asia Pacific

China  
 Sensata Technologies China Co., Ltd.  
 BM Intercontinental Business Center  
 30th Floor  
 100 Yu Tong Road  
 Shanghai 200070  
 People's Republic of China  
 Tel: +8621 2306 1500  
 Email: [contactorasia@list.sensata.com](mailto:contactorasia@list.sensata.com)  
 Japan  
 Sensata Technologies Japan Ltd.  
 Shin Yokohama Square Bldg. 7F  
 2-3-12 Shin-yokohama  
 Kohoku-ku, Yokohama-shi,  
 Kanagawa 222-0033  
 Tel: +81 45 277 7001  
 Email: [contactorasia@list.sensata.com](mailto:contactorasia@list.sensata.com)