

# 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	
<b>Rated Voltage<sup>6</sup></b>	V	1000	
<b>Nominal Current</b>	A	500	
<b>Contact Arrangement</b>	<b>Main</b>	Form X	SPST-NO
	<b>Auxiliary<sup>1</sup></b>	Form A or B	SPST-NO or SPST-NC
<b>Mechanical Life</b>	cycles	1,000,000	
<b>Contact Resistance</b>	<b>Max</b>	mohms	0.2
	<b>Typical</b>	mohms	0.15
<b>Insulation Resistance<sup>2</sup></b>	Mohms	100	
<b>Dielectric at sea level (leakage &lt; 1mA)</b>	VRMS	4000	
<b>Shock, 1/2 Sine, 11ms</b>	<b>Actuated (closed)</b>	G	50
	<b>Non Actuated (open)</b>	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		
<b>Short Circuit Current (20ms)</b>	A	4000	

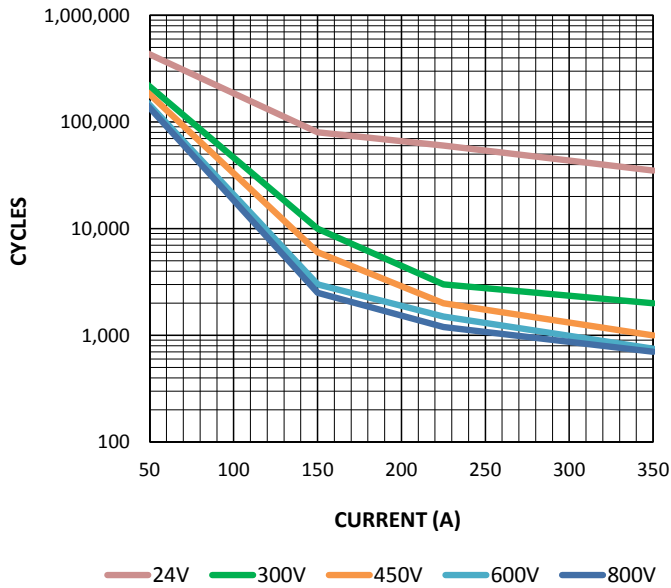
## Coil Ratings at 25°C

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	



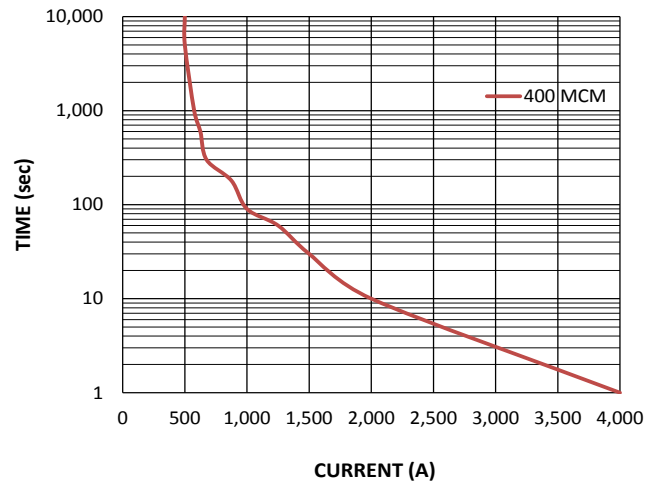
## POWER SWITCHING AND CURRENT CARRY RATINGS

### DC POWER SWITCHING CYCLES



### CURRENT CARRY vs TIME

with 85°C terminal temperature rise

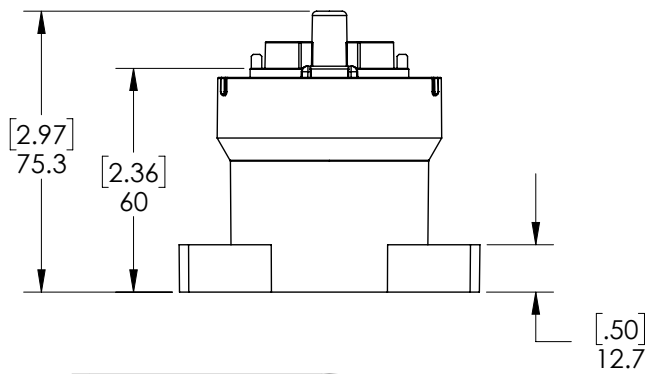
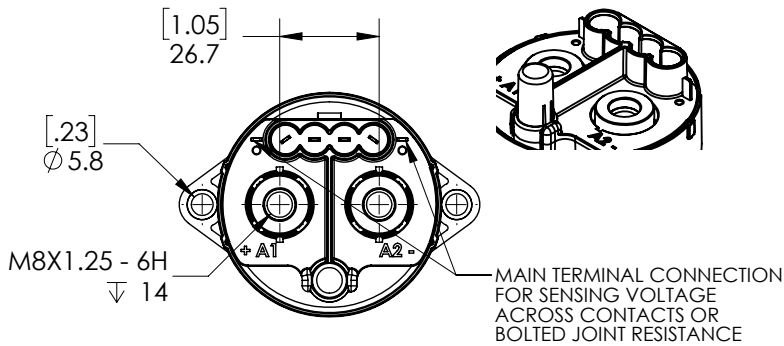




# UPRIGHT MOUNT DIMENSIONS

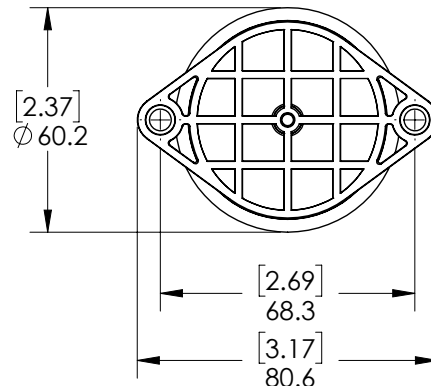
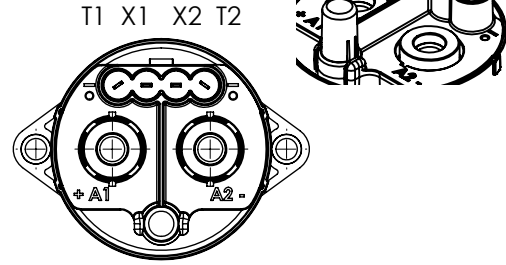
## Upright Mount

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



## Upright Mount

(Auxiliary Shown)

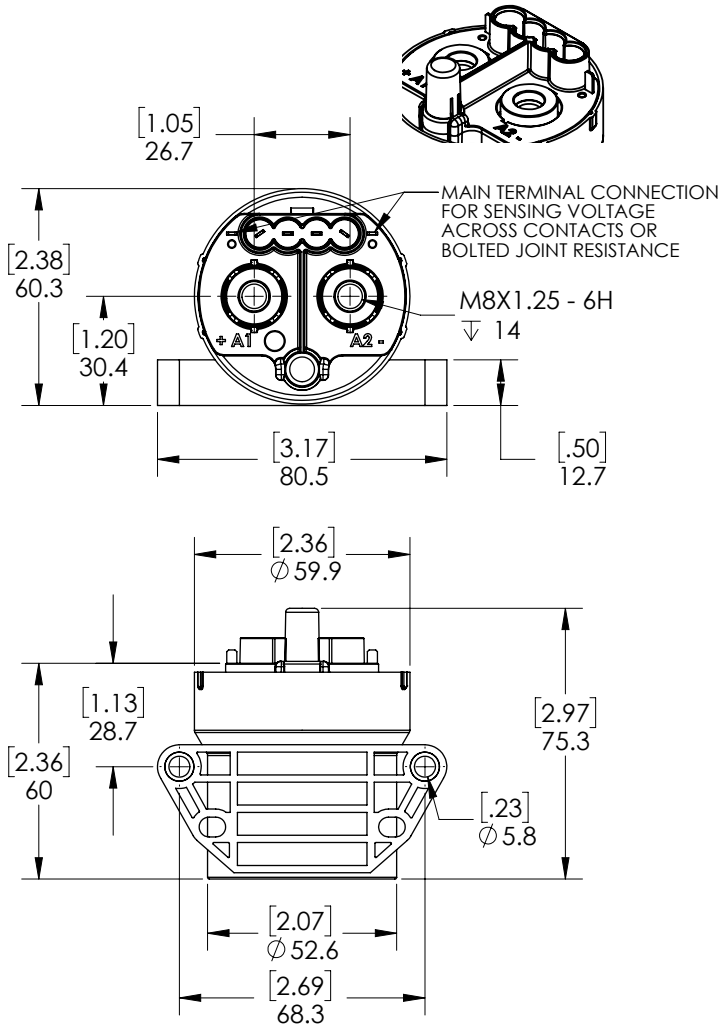




# SIDE MOUNT DIMENSIONS

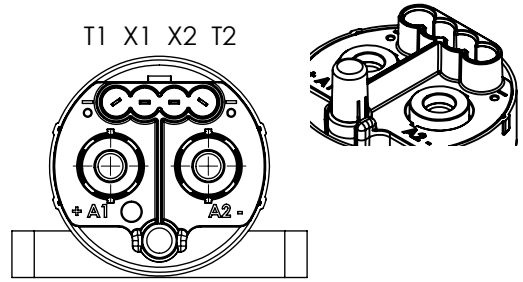
## Side Mount

(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

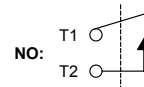
## Mounting

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

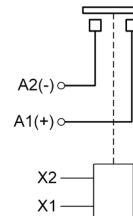
## Auxiliary Contacts (Optional)



## 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



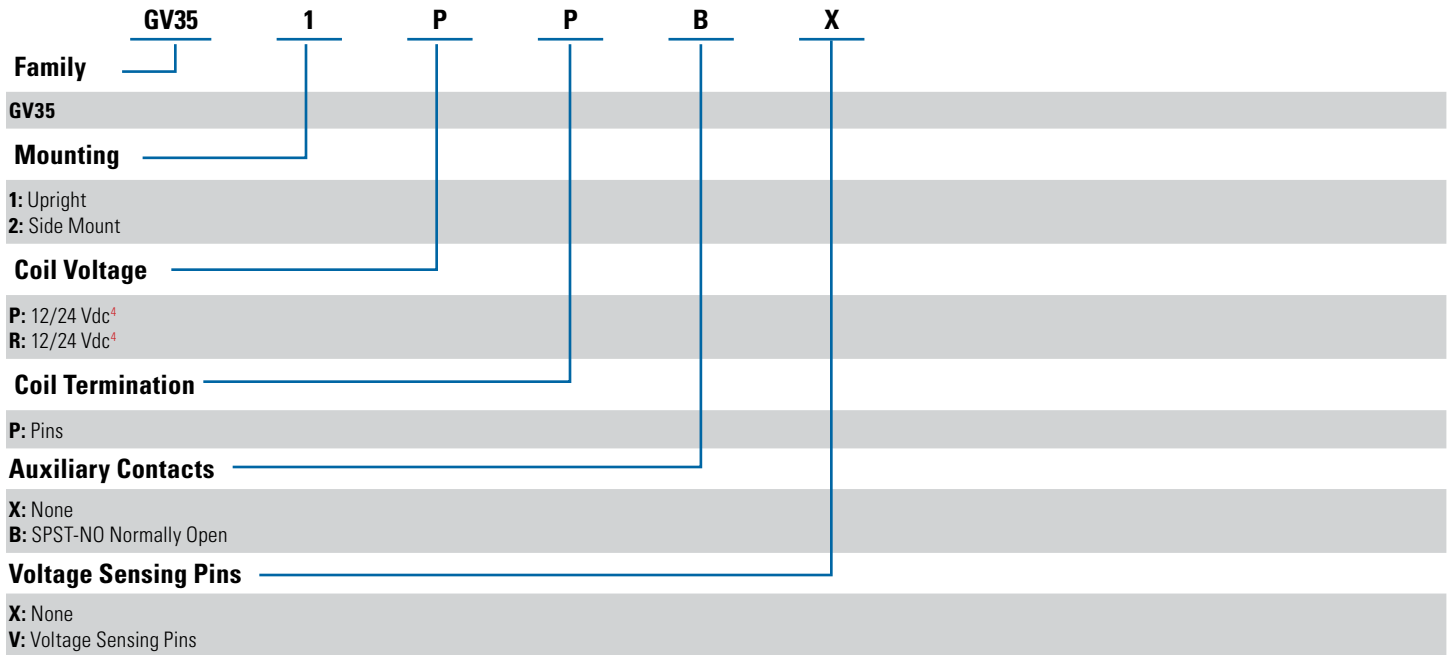
## Packaging

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



## ORDERING OPTIONS

Example : GV351PPBX



## GENERAL NOTES

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



## TECHNICAL NOTES

1. 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.
2. Applications with capacitors will require a [pre-charge](#) circuit.
3. 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.
4. End of life is defined as when the dielectric, insulation resistance or contact resistance exceeds the specifications listed.

Page 5

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