

# GV35 SERIES

## 1000V CONTACTOR

Sensata | GIGAVAC GV35 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 GV35 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	

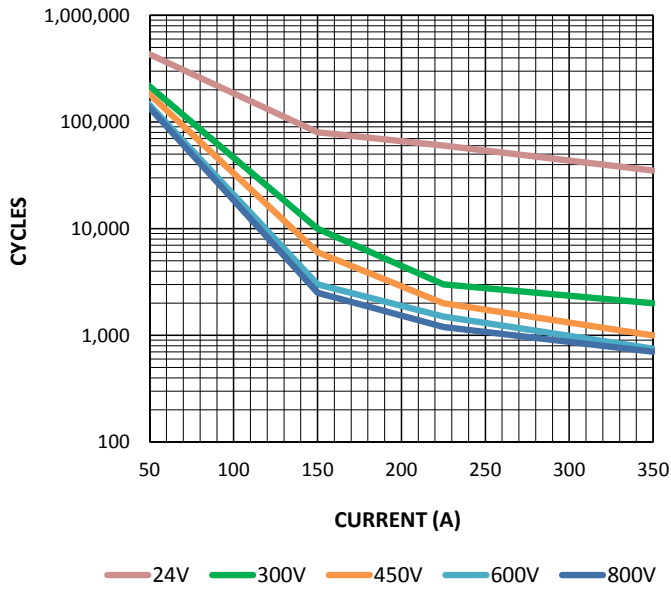
## Coil Ratings at 25°C

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	



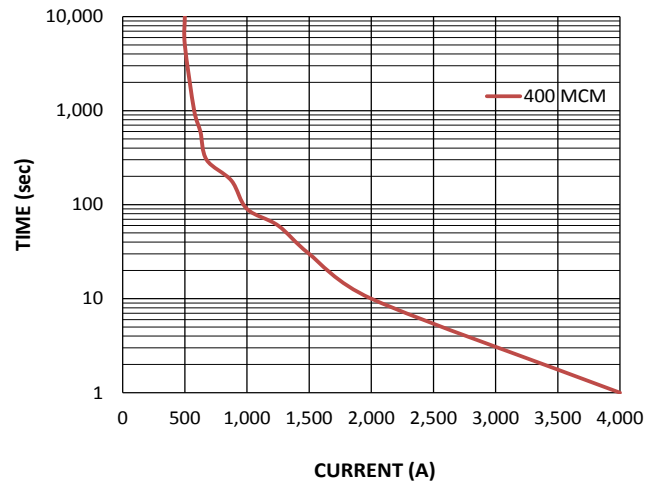
## POWER SWITCHING AND CURRENT CARRY RATINGS

### DC POWER SWITCHING CYCLES



### CURRENT CARRY vs TIME

with 85°C terminal temperature rise

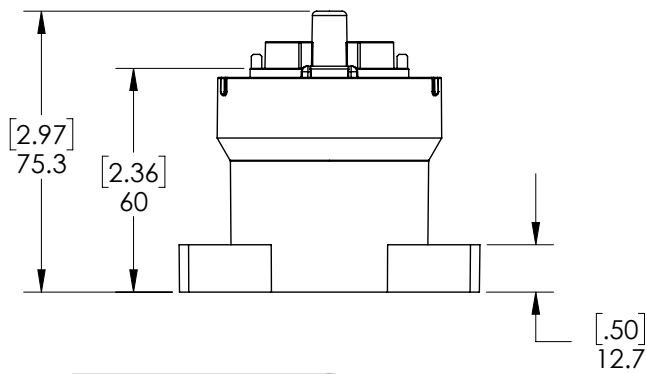
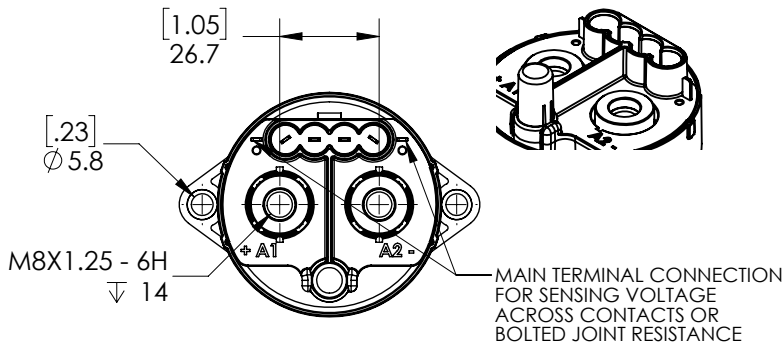




# UPRIGHT MOUNT DIMENSIONS

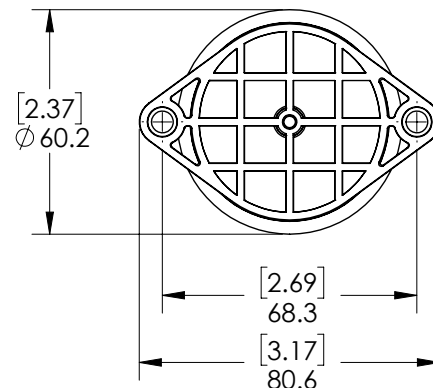
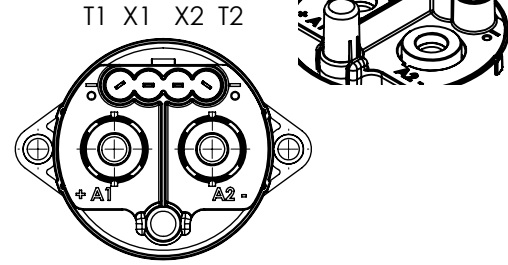
## Upright Mount

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



## Upright Mount

(Auxiliary Shown)

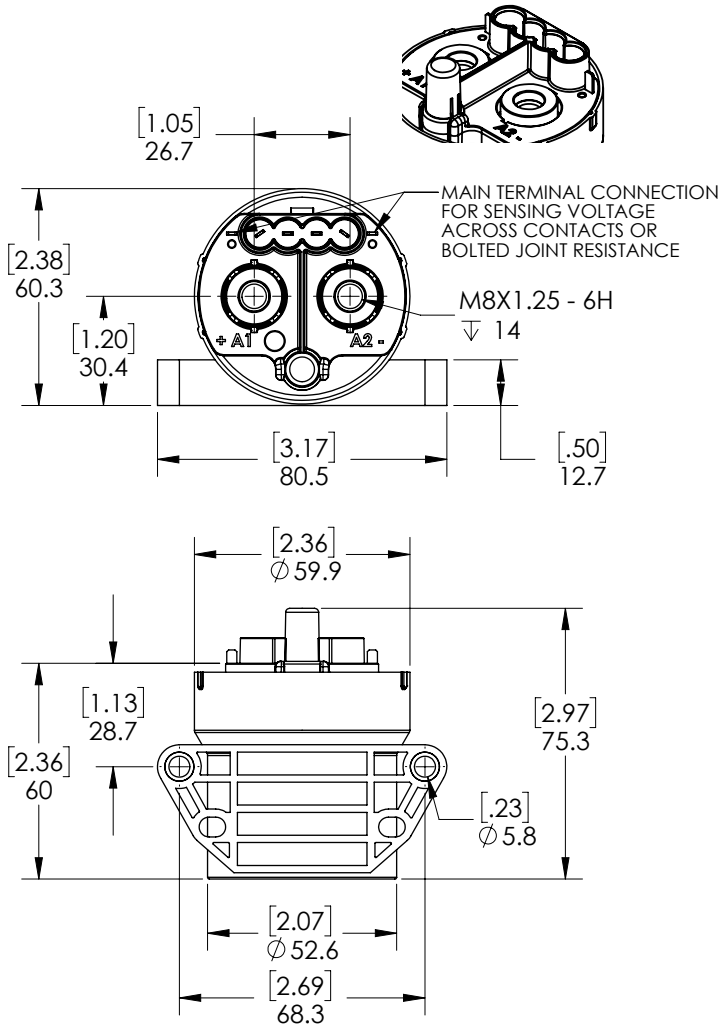




# SIDE MOUNT DIMENSIONS

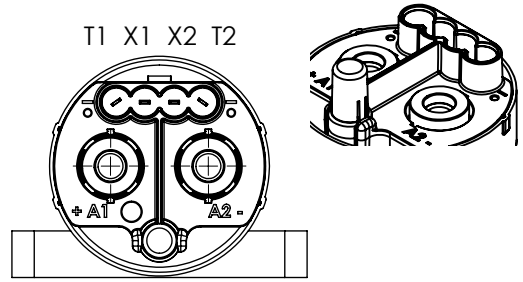
## Side Mount

(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

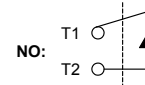
## Mounting

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

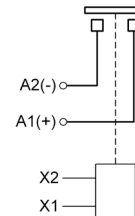
## Auxiliary Contacts (Optional)



## 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



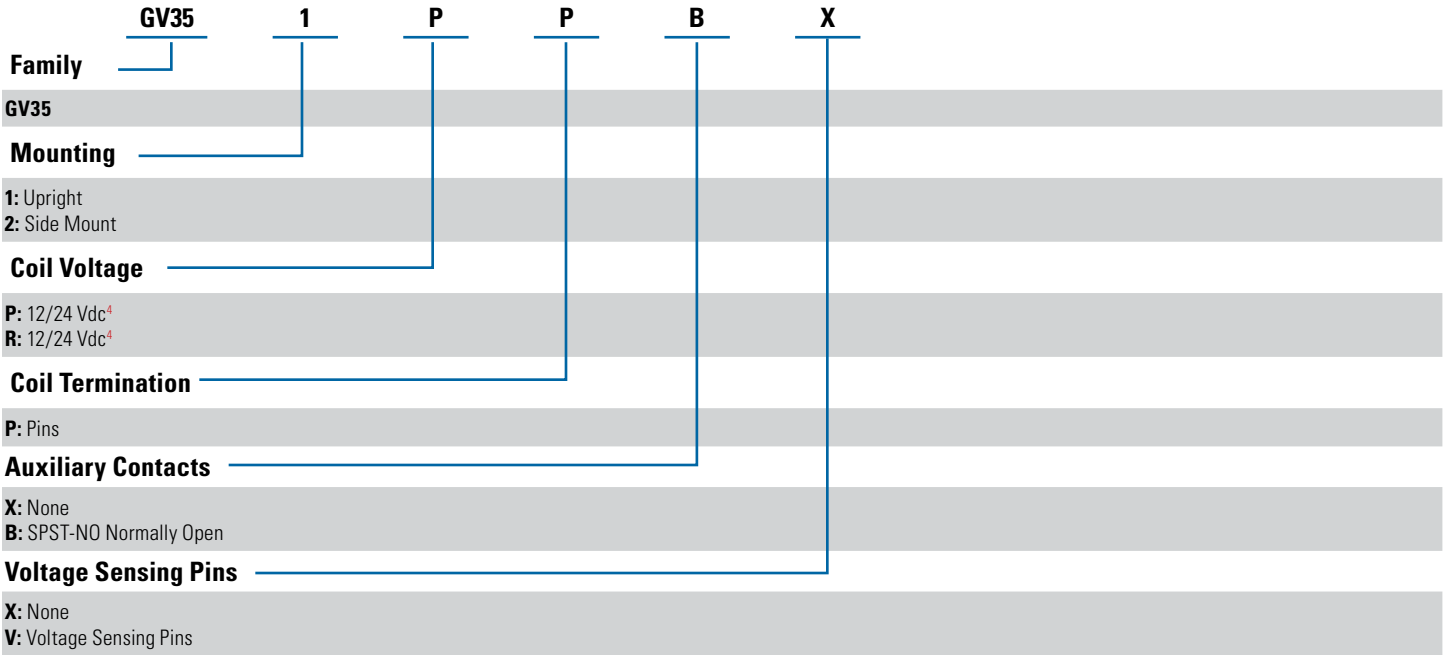
## Packaging

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.

Sensata Technologies, Inc. ("Sensata") data sheets are solely intended to assist designers ("Buyers") who are developing systems that incorporate Sensata products (also referred to herein as "components"). Buyer understands and agrees that Buyer remains responsible for using its independent analysis, valuation, and judgment in designing Buyer's systems and products. Sensata data sheets have been created using standard laboratory conditions and engineering practices. Sensata has not conducted any testing other than that specifically described in the published documentation for a particular data sheet. Sensata may make corrections, enhancements, improvements, and other changes to its data sheets or components without notice.

Buyers are authorized to use Sensata data sheets with the Sensata component(s) identified in each particular data sheet. HOWEVER, NO OTHER LICENSE, EXPRESS OR IMPLIED, BY ESTOPPEL OTHERWISE TO ANY OTHER SENSATA INTELLECTUAL PROPERTY RIGHT, AND NO LICENSE TO ANY THIRD PARTY TECHNOLOGY OR INTELLECTUAL PROPERTY RIGHT, IS GRANTED HEREIN. SENSATA DATA SHEETS ARE PROVIDED "AS IS". SENSATA MAKES NO WARRANTIES OR REPRESENTATIONS WITH REGARD TO THE DATA SHEETS OR USE OF THE DATA SHEETS, EXPRESS, IMPLIED, OR STATUTORY, INCLUDING ACCURACY OR COMPLETENESS. SENSATA DISCLAIMS ANY WARRANTY OF TITLE AND ANY IMPLIED WARRANTIES OF MERCHANTABILITY, FITNESS FOR A PARTICULAR PURPOSE, QUIET ENJOYMENT, QUIET POSSESSION, AND NON-INFRINGEMENT OF ANY THIRD PARTY INTELLECTUAL PROPERTY RIGHTS WITH REGARD TO SENSATA DATA SHEETS OR USE THEREOF.

All products are sold subject to Sensata's terms and conditions of sale supplied at [www.sensata.com](http://www.sensata.com) SENSATA ASSUMES NO LIABILITY FOR APPLICATIONS ASSISTANCE OR THE DESIGN OF BUYERS' PRODUCTS. BUYER ACKNOWLEDGES AND AGREES THAT IT IS SOLELY RESPONSIBLE FOR COMPLIANCE WITH ALL LEGAL, REGULATORY, AND SAFETY-RELATED REQUIREMENTS CONCERNING ITS PRODUCTS, AND ANY USE OF SENSATA COMPONENTS IN ITS APPLICATIONS, NOTWITHSTANDING ANY APPLICATIONS-RELATED INFORMATION OR SUPPORT THAT MAY BE PROVIDED BY SENSATA.

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

## CONTACT US

### 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)

### 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)