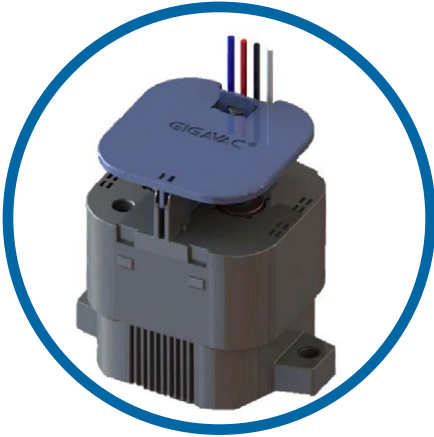


# GTM400 SERIES

400 AMP 1500 VDC HERMETIC SEALED DC CONTACTOR



## Features

- Small, compact contactor for switching 1500 Vdc
- UL and CE recognition planned
- Fully Bidirectional switching
- Hermetic Seal – Exceeds IP67-69 specifications – No exposed arcing to open air environments
- Perfect for solar, photovoltaic, inverter systems, battery packs, combiner boxes, DC arc fault interrupter systems or any other high voltage DC system
- High Efficiency DC Coils – PWM and dual coil. Ideal for systems where low coil power consumption is required
- Upright (Stand-up) mounting, Side mounting housing in process. Custom harnesses available
- Aux switch SPDT (Normally Open, Normally Closed or both)



## SPECIFICATIONS

		Units	Data
<b>Rated Voltage</b>		V	100
<b>Contact Arrangement</b>	<b>Main</b>	Form X	SPST-NO
	<b>Auxiliary (3A, 24VDC)<sup>9</sup></b>	Form A or B	SPDT or SPST
<b>Mechanical Life</b>		Cycles	1,000,000
<b>Contact Resistance<sup>1</sup></b>	<b>Max</b>	mohms	0.4
	<b>Typical</b>	mohms	0.15 to 0.2
<b>Operate Time<sup>2</sup></b>	<b>Max</b>	ms	40
	<b>Typical</b>	ms	20
<b>Release Time, Max</b>		ms	12
<b>Insulation Resistance<sup>3</sup></b>		Mohms	100
<b>Dielectric At Sea Level (Leakage &lt; 1mA)</b>		VRMS	5,400
<b>Shock, 1/2 Sine, 11ms</b>		G	35
<b>Vibration, Sinusoidal (500-2000 Hz Peak)</b>		G	20
<b>Ambient Temp Range</b>	<b>Operating<sup>4</sup></b>	°C	-40 to +85
	<b>Storage</b>	°C	-70 to +150
<b>Weight, Typical</b>		Kg (Lb)	<0.91 (2.0)
<b>Environmental Seal</b>		Exceeds IP67 & IP69K	
<b>Salt Fog</b>		MIL-STD-810	

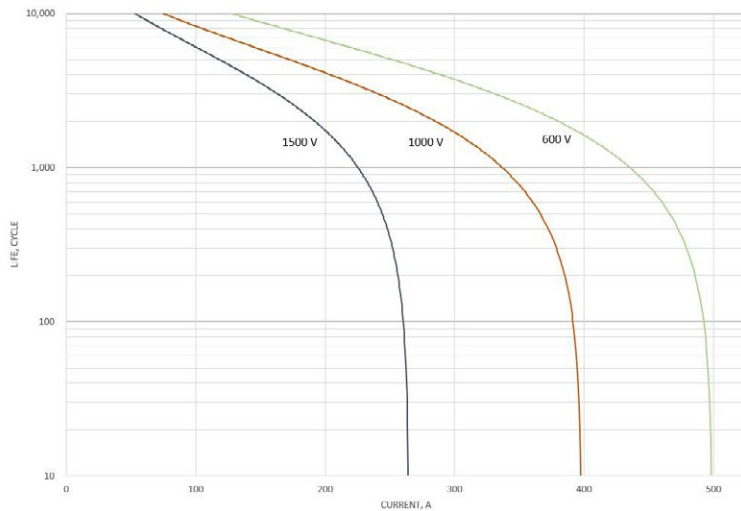


## COIL RATINGS AT 25°C

Coil P/N Designation	B	C	F	M (PWM)
<b>Coil Voltage, Nominal</b>	12 VDC	24 VDC	48 VDC	12/24 VDC
<b>Coil Voltage, Max</b>	16 V	32 V	60 V	36 V
<b>Pick-Up Voltage, Max<sup>5,7</sup></b>	8 V	16 V	40 V	8.5 V
<b>Drop-Out Voltage</b>	0.5 to 4 V	2 to 7.5 V	4 to 15 V	6.5 V
<b>Pick-Up Current, Max (75 ms)<sup>6,7</sup></b>	4.3 A	1.6 A	0.98 A	3.6 A
<b>Coil Current<sup>6</sup></b>	0.24 A	0.09 A	0.044 A	0.13 A (12) 0.07 A (24)
<b>Coil Power<sup>6</sup></b>	2.9 W	2.1 W	2.1 W	1.7 W
<b>Internal Coil Suppression</b>				
<b>Coil Back EMF</b>	55 V	55 V	125 V	0 V
<b>Transients, Max (13 ms)</b>	±50 V	±50 V	±75 V	±60 V
<b>Reverse Polarity</b>	16 V	32 V	64 V	100 V



## DC POWER SWITCHING CYCLES<sup>8</sup>





# DIMENSIONS

## CURRENT CARRY

with 85°C terminal temperature rise  
400A 400MCM or greater

### Mounting

M5 Bolts

### Case Material

DuPont Zytel FR50  
(25% Glass Filled Nylon)

### Power Connection

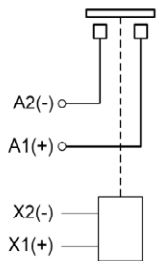
Stainless M8x1.25 Stud  
Stainless M8x1.25 Flanged Nut

Torque 10Nm [90in-lb] max

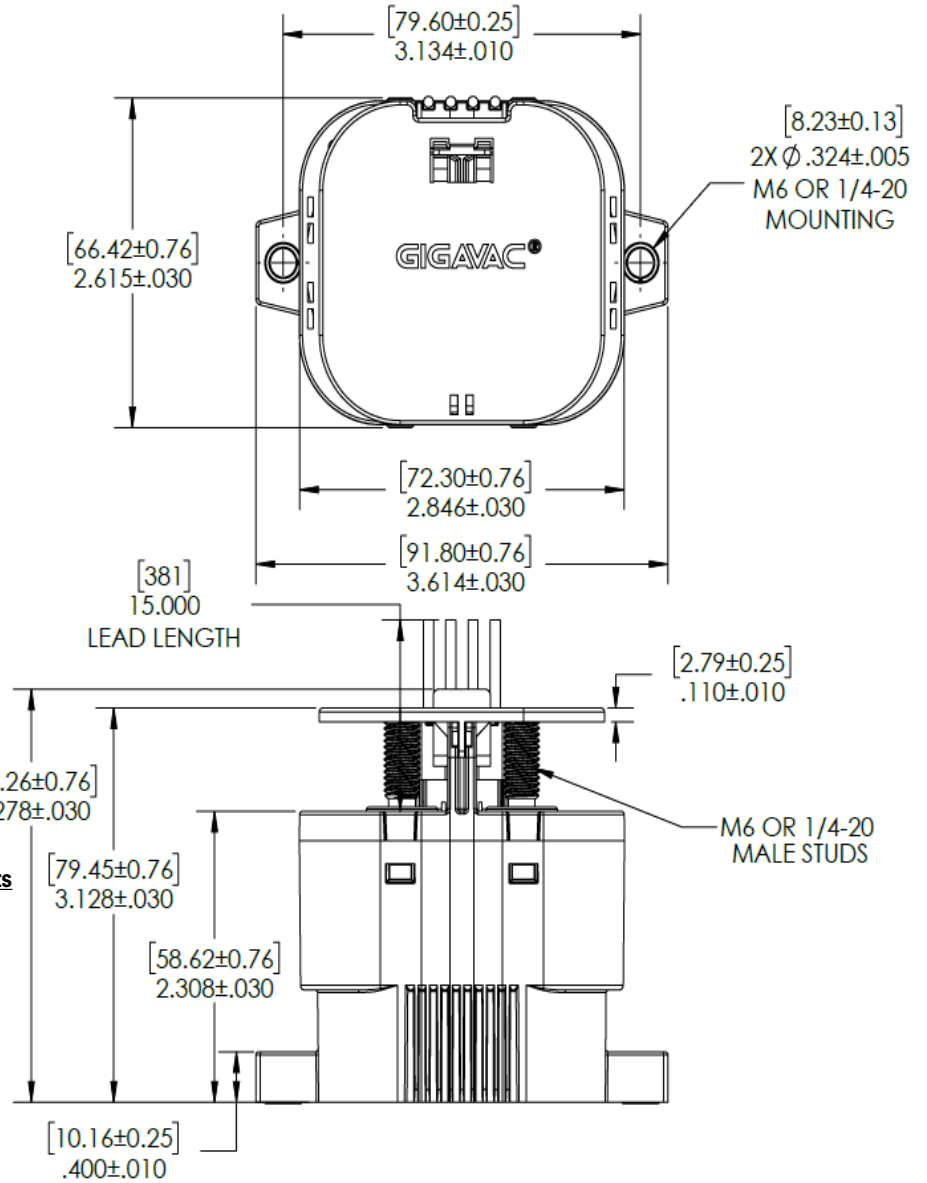
### Coil Wire

Silicone, 20 AWG, UL: VW-1

### Power Contacts



### Auxiliary Contacts *(optional)*





## ORDERING OPTIONS

Example: GTM400BAB

<b>Family</b>	GFP(A)4	B	A	B
<b>GTM400</b>				
<b>Coil Voltage</b>				
<b>B: 12 Vdc, Internal Coil Suppression</b>				
<b>C: 24 Vdc, Internal Coil Suppression</b>				
<b>F: 48 Vdc, Internal Coil Suppression</b>				
<b>M: 12/24 Vdc, Internal PWM</b>				
<b>Coil Termination</b>				
<b>A: Flying leads 38 cm (15 in)</b>				
<b>B: Flying leads 61 cm (24 in)</b>				
<b>C: Flying leads 122 cm (48 in)</b>				
<b>Auxiliary Contact<sup>8</sup></b>				
<b>Blank: None</b>				
<b>B: SPST, Normally Open</b>				
<b>C: SPST, Normally Closed</b>				
<b>D: SPDT</b>				



## GENERAL NOTES

- Contact resistance measured at currents higher than 100A.
  - Operation time is measured at 25°C and includes maximum 7ms bounce.
  - Insulation resistance is 50 Mohms after life.
  - Contact can operate up to 125°C in special cases - contact Sensata for details.
  - Contact has two coils. Both are used for pick-up, and then in approximately 75 milliseconds, one coil is electronically removed from the coil drive circuit. The remaining coil supplies low continuous hold power sufficient for the contactor to meet all of its specified performance specifications. This provides low coil power without PWM electronics that can cause EMI emissions and/or cross-talk on control power.
  - Contact 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.
  - For pick-up testing of contactors with dual coils, the voltage can not be ramped up slowly, but must be applied instantly to at least the maximum pick-up voltage. Otherwise, the contactor will not pick-up.
  - Limit make current to avoid contact welding. Contact Sensata regarding DC Power Switching Cycle Life for part numbers that include auxiliary contacts.
  - 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.
- Contactors feature internal transistor for coil suppression. No external diodes should be added across the coil. The use of additional external coil suppression can slow the release time and invalidate the life cycle ratings, or can cause the contactor not to be able to interrupt the maximum current specified. If lower coil back EMF is required, please contact Sensata for assistance.
  - 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 fails the specifications listed.
  - Contact Sensata regarding DC Power Switching Cycle Life for part numbers that include auxiliary contacts.

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## CONTACT US

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