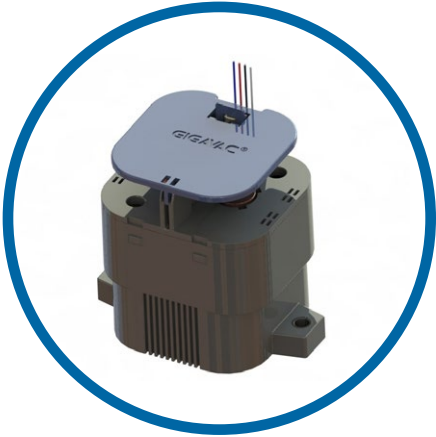




| GTM500 SERIES

500 AMP 1500 VDC CONTACTOR



Features

- Small, compact contactor for switching 1500 Vdc.
- UL and CE recognition planned Q1 2024
- 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)

Applications

- Energy Storage System
- DC fast charging
- Photovoltaic controls

SPECIFICATIONS

		Units	Data
Contact Arrangement	Main	Form X	SPST-NO
	Auxiliary (3A, 24VDC)⁹	Form A or B	SPDT or SPST
Mechanical Life		Cycles	300,000
Contact Resistance¹	Max	mohms	0.4
	Typical	mohms	0.15 to 0.2
Operate Time²	Max	ms	40
	Typical	ms	20
Release Time, Max		ms	12
Insulation Resistance³		Mohms	100
Dielectric At Sea Level (Leakage < 1mA)		VRMS	5,400
Shock, 1/2 Sine, 11ms		G	20
Vibration, Sinusoidal (500-2000 Hz Peak)		G	15
Ambient Temp Range	Operating⁴	°C	-40 to +85
	Storage	°C	-70 to +150
Weight, Typical		Kg (Lb)	<0.98 (2.2)
Environmental Seal		Exceeds IP67 & IP69K	
Salt Fog		MIL-STD-810	

COIL RATINGS AT 25°C

Coil P/N Designation	B	C	F	M (PWM)
Coil Voltage, Nominal	12 VDC	24 VDC	48 VDC	12/24 VDC
Coil Voltage, Max	16 V	32 V	60 V	36 V
Pick-Up Voltage, Max^{5,7}	8 V	16 V	40 V	8.5 V
Drop-Out Voltage	0.5 to 4 V	2 to 7.5 V	4 to 15 V	6.5 V
Pick-Up Current, Max (75 ms)^{6,7}	4.3 A	1.6 A	0.98 A	3.6 A
Coil Current⁶	0.24 A	0.09 A	0.044 A	0.13 A (12) 0.07 A (24)
Coil Power⁶	2.9 W	2.1 W	2.1 W	1.7 W
Internal Coil Suppression				
Coil Back EMF	55 V	55 V	125 V	0 V
Transients, Max (13 ms)	±50 V	±50 V	±75 V	±60 V
Reverse Polarity	16 V	32 V	64 V	100 V

DC POWER SWITCHING CYCLES⁸

DIMENSIONS

CURRENT CARRY
with 85°C terminal temperature rise
500A 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

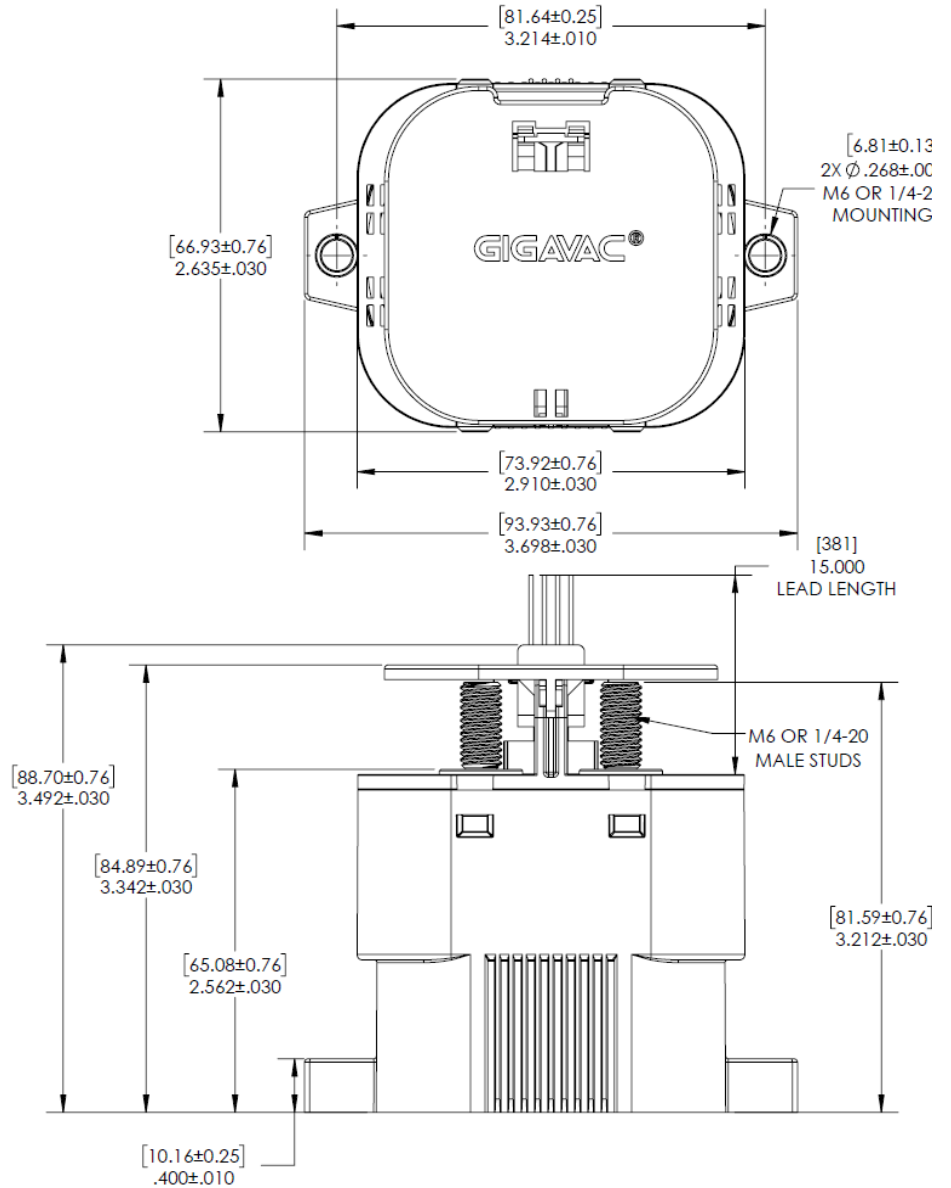
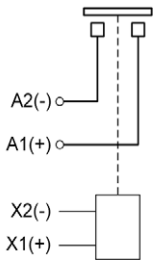
Torque 10Nm [90in-lb] max

Coil Wire

Silicone, 20 AWG, UL: VW-1

Power Contacts

Auxiliary Contacts
(optional)





ORDERING OPTIONS

Example: GTM500BAB

Family	GTM500	B	A	B
GTM500				
Coil Voltage				
B: 12 Vdc, Internal Coil Suppression				
C: 24 Vdc, Internal Coil Suppression				
F: 48 Vdc, Internal Coil Suppression				
M: 12/24 Vdc, Internal PWM				
Coil Termination				
A: Flying leads 38 cm (15 in)				
B: Flying leads 61 cm (24 in)				
C: Flying leads 122 cm (48 in)				
Auxiliary Contact⁸				
Blank: None				
B: SPST, Normally Open				
C: SPST, Normally Closed				
D: SPDT				



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.

Page

CONTACT US

Americas
+1 (805) 684-8401
gigavac@sensata.com

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