GTM400 Series

400 Amp 1500 Vdc Hermetic Sealed DC Contactor

The GTM400 contactor features proprietary glass-to-metal seal (GTMS) technology, a sealing is a technique used to create effective electrically-insulative hermetic seal technology.

These contactors provide reliable switching and circuit protection for high voltage applications up to 1500V and 400A, making them ideal choices for energy storage systems (ESS), high power DC fast charging, heavy vehicles, and other high voltage applications.

Highlights

Safety

- Hermetic seal exceeding IP67-69 specifications - no exposed arcing to open air environments
- UL and CE recognitions

Usability

- High efficiency DC Coils (dual coil). Ideal for systems that require low coil power consumption
- Upright and side-mounting housing with custom harnesses if required
- AUX switch SPDT (normally open, normally closed or both)

Performance

- Best in class break performance for improved safety
- Advanced arc suppression for increased reliability and longevity
- Strong short circuit performance with no rupture or fire risk

Features

- High power - up to 1500V / 400A
- Fully bidirectional switching
- Patented GTMS (glass-to-metal seal) technology

Applications

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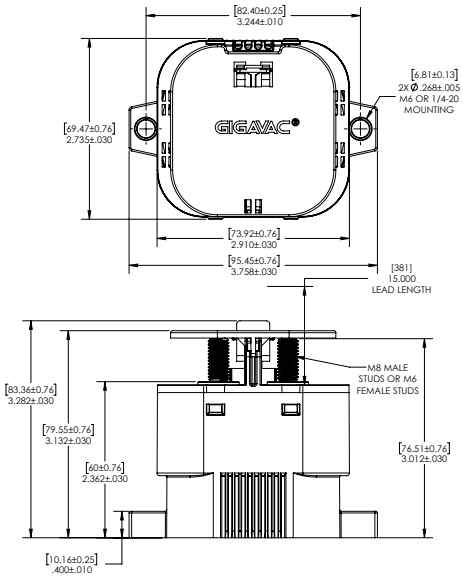
GTM400 Series Technical Specifications



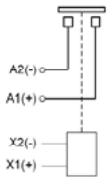
Mounting
M6 or ¼-20

Case Material
Crastin FR684NH1 NC010 (25% glass filled, flame retarded, non halogenated, PBT)

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



		Units	Data
Rated Voltage		V	1500
Contact Arrangement	Main	Form X	SPST-NO
	Auxilary (3A, 24VDC)[9]	Form A or B	SPST
Mechanical Life		Cycles	300,000
Contact Resistance[1]	Max	mohms	0.4
	Typical	mohms	0.15 to 0.2
Operate Time[2]	Max	ms	40
	Typical	ms	20
Release Time, Max		ms	12
Insulation Resistance[3]		Mohms	100
Dielectric At Sea Level (Leakage < 1mA)		VRMS	5,400
Shock, 1/2 Sine, 11ms		G	35
Vibration, Sinusoidal (500-2000 Hz Peak)		G	20
Ambient Temp Range	Operating[4]	˚C	-40 to +85
	Storage	˚C	-70 to +150
Weight, Typical		Kg (Lb)	<0.91 (2.0)
Environmental Seal		Exceeds IP67 & IP69K	
Salt Fog		MIL-STD-810	

COIL RATINGS AT 25˚C

Coil P/N Designation	B	C	F
Coil Voltage, Max	16 V	32 V	60 V
Pick-Up Voltage, Max[5, 7]	9 V	18V	40 V
Drop-Out Voltage	6.5 V max.	12.5 V max	4 to 15 V
Pick-Up Current, Max (75 ms)[6, 7]	4.3 A	1.6 A	0.98 A
Coil Current[6]	0.24 A	0.09 A	0.044 A
Coil Power[6]	2.9 W	2.1 W	2.1 W
Internal Coil Suppression			
Coil Back EMF	55 V	55 V	125 V
Transients, Max (13 ms)	±50 V	±50 V	±75 V

GTM400 Series Technical Specifications

Ordering Options	Example: GTM400 BAB

Family
GTM400

Coil Voltage
B: 12 Vdc, Internal Coil Suppression
C: 24 Vdc, Internal Coil Suppression

Coil Termination
A: Flying leads 38 cm (12 in)
B: Flying leads 61 cm (24 in)
C: Flying leads 122 cm (48 in)

Auxiliary Contact[8]
X: None
B: SPST, Normally Open
C: SPST, Normally Closed

General Notes

1. Contact resisitance measured at currents higher than 100A.
2. Operation time is measured at 25°C and includes maximum 7ms bounce.
3. Insulation resistance is 50 Mohms after life.
4. Contactor can operate up to 125°C in special cases - contact Sensata for details.
5. Contactor 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.
6. Contactor 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.
7. 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.
8. Limit make current to avoid contact welding. Contact Sensata regarding DC Power Switching Cycle Life for part numbers that include auxiliary contacts.
9. Auxillary 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 contact*.

- Contactors feature internal transorb 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.

*Pending confirmation