

# HX360 Series

800 AMP 1500 VDC CONTACTOR



## Features

- Robust High Voltage/High Power load break bi-directional DC contactor
- Designed for high voltage Power conversion equipment OEM's: Photovoltaic/Battery inverters, battery pack designers, DC combiner boxes and other HVDC industrial drive systems
- Excellent isolation performance: 10kv withstand between open contacts for critical safety applications
- Mechanically linked SPDT auxiliary contacts for critical safety applications.
- Reliable indication of the main contacts in the closed position
- Hermetically Sealed - Exceeds IP67-69 specifications. No exposed arcing to open air environments.
- Designed to meet UL1604 for hazardous locations.

## Applications

- Energy Storage System
- DC fast charging
- Photovoltaic controls

## SPECIFICATIONS

Specifications		Units	Data
Contact Arrangement	Main	Form X	SPST-NO
	Auxiliary	Form C	SPDT
Mechanical Life		cycles	300,000
Auxiliary Mechanical Life <sup>1</sup>		cycles	300,000
Contact Resistance <sup>2</sup>	Max @ rated carry current	mohms	0.3
	Typical @ rated carry current	mohms	0.15
Operate time, 25°C	Close (includes bounce) Max	ms	60
	Close (includes bounce) Typical	ms	40
Release time		ms	10
Release time (high current)		ms	40
Insulation Resistance <sup>3</sup>		Mohms	100
Dielectric at sea level (leakage < 1mA)		V	5,375
Impulse Withstand Voltage (per IEC 61000-4-5)		kV	10
Voltage Withstand (open contacts, 1 min. <1mA leakage)		kV	10
Shock, ½ Sine, 11ms	Actuated (open)	G peak	20
	Non-Actuated (closed)	G peak	50
Vibration, Sinusoidal (500-2000 Hz peak)		G	12
Temperature	Operating ambient Temp Range	-55 to +85°C	
	Storage ambient Temp Range	-70 to +125°C	
Weight, typical		2.87Kg(6.3Lb)	
Environmental Seal		Exceeds IP67 & IP69K	
Salt Fog		MIL-STD-810	

## POWER SWITCHING CYCLES

Make & Break	CYCLES
350A@1,500VDC	6,000
500A @ 1,200VDC	3,750 <sup>3</sup>
600A @ 1,000VDC	3,750 <sup>3</sup>

## CONTINUOUS CARRY CURRENT @ 85°C Ambient

Current	Conductor
400A <sup>4</sup>	400mcm/203mm <sup>2</sup>
600A <sup>4</sup>	600mcm/304mm <sup>2</sup>
800A <sup>4</sup>	950mcm/481mm <sup>2</sup>

## COIL RATINGS at 25°C

Coil P/N Designation	B	C	F
Coil Voltage, Nominal (VDC)	12	24	48
Coil Type	Dual		
Coil Voltage, Max (V)	14	30	64
Pick-up, Volts, Max (V)	8	16	40
Coil Current <sup>5,6,7</sup> (A)	0.75	0.37	0.19
Coil Power <sup>5,6,7</sup> (W)	9		
Internal Coil Suppression	TVS		
Coil Back EMF (V)	55	55	130



## FAULT INTERRUPT

Break Only	Iterations
1,000A/1,500VDC	1

## SHORT CIRCUIT CURRENT

Current	Time
8,000A	150ms
10,000A	100ms
12,000A	80ms

## DIMENSIONS

### Mounting Hardware (customer supplied)

M6 or 1/4-20  
Torque: 6.8 Nm (60 in-lb)

### Power Connections

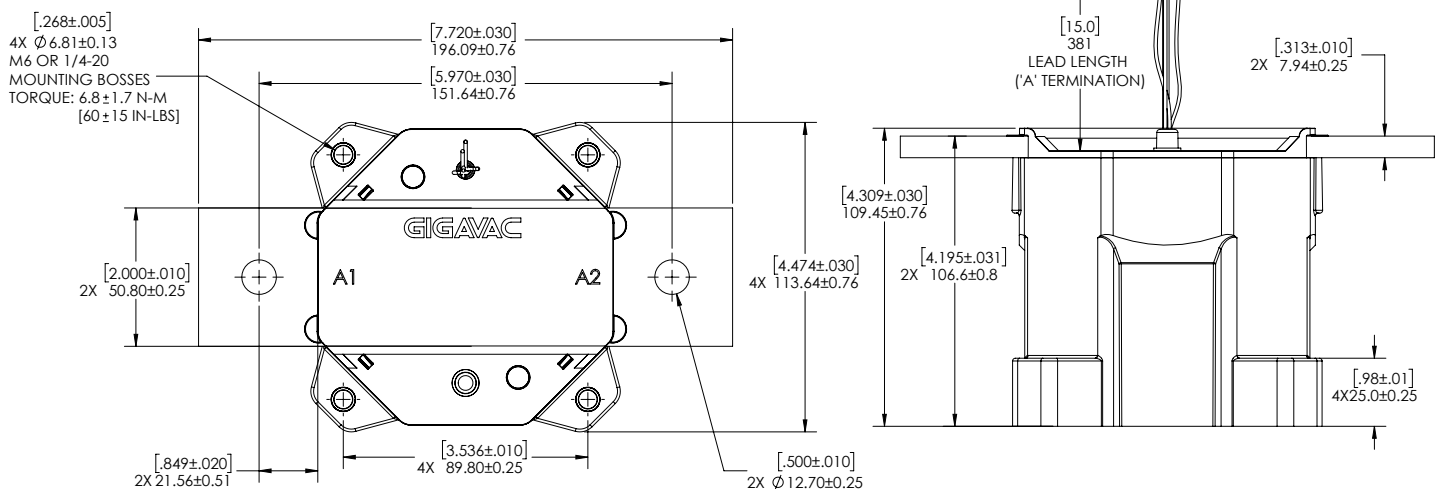
Nickel plated copper busbars

### Case Material

DuPont Zytel FR50  
(25% glass filled nylon)

### Coil Wire / Aux Wire

M22579/43-22, 22AWG



## ORDERING OPTIONS

Example : HX360CAB

	<b>HX360</b>	-	<b>C</b>	-	<b>A</b>	-	<b>B</b>
<b>Family</b>							
<b>HX360</b>							
<b>Coil Voltage</b>							
<b>B:</b> 12 Vdc, dual coil, internal coil suppression							
<b>C:</b> 24 Vdc, dual coil, internal coil suppression							
<b>F:</b> 48 Vdc, dual coil, internal coil suppression							
<b>Coil Termination</b>							
<b>A:</b> Flying leads 38 cm (15 in)							
<b>F:</b> Molex 5-pin Connector 39-01-4050, lead length 28 cm (11 in)							
<b>Auxiliary Contacts</b>							
<b>B:</b> SPDT							
<b>X:</b> None							

## GENERAL NOTES

1. Minimum current is 0.1mA, 5V. The auxiliary contact is mechanically linked to the main power contacts.
2. Contact resistance measured at currents  $\geq 200A$ .
3. Insulation resistance is 50 Mohms after life.
4. Continuous currents assume a 65°C rise on the power terminals. The user must limit terminal temperature to 125°C continuous.
5. The 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 the lowest coil power possible without the use of PWM electronics that have been known to cause EMI emissions and/or cross-talk on your system control power.
6. Because the contactor is operated by a coil that changes resistance with temperature, and because Nominal Coil Voltage has been assumed for the Pick-up Current, Coil Current and Coil Power specifications, Current/Wattage will be lower than indicated at temperatures above 25C and higher than indicated at temperatures below 25C.
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 minimum Pick-up Voltage or Current. Otherwise, the contactor will not pick-up.

## APPLICATION NOTES

- Contactors feature internal transorb for coil suppression.
- For continuous duty coil operation, 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 GIGAVAC for assistance.
- Applications with capacitors will require a pre-charge circuit.
- Electrical life rating is based on resistive load with 27 $\mu$ H 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 exceeds the specifications listed.
- Main power contacts (A1, A2) are not polarity sensitive.

## WARNINGS



### RISK OF MATERIAL DAMAGE AND HOT ENCLOSURE

- The product's side panels may be hot, allow the product to cool before touching
- Follow proper mounting instructions including torque values
- Do not allow liquids or foreign objects to enter this product

**Failure to follow these instructions can result in serious injury, or equipment damage.**



### HAZARD OF ELECTRIC SHOCK, EXPLOSION OR ARC FLASH

- Disconnect all power before installing or working with this equipment
- Verify all connections and replace all covers before turning on power

**Failure to follow these instructions will result in death or serious injury.**

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