

Model CBM4070 Current Booster Module (CBM) is an optically isolated high current MOSFET switch which can be used to greatly increase the load switching capability of Solar Boost charge controllers with load control outputs. In this application the charge controller load control output serves as the input control signal to the CBM and the CBM provides all high current switching for the load. The CBM can also serve as a PWM power driver for the Solar Boost 3024 DUO-Option wind/hydroelectric diversion charge control system.

### Installation and wiring

The CBM's MOSFET output turns on when a 3 – 32VDC signal is present on it's input terminals. Input to output optical isolation allows the output to serve as either a low side or high side switch. Up to 70 amps can be switched in a DC on/off application or up to 40 amps in a 3024 DUO-Option PWM diversion application.

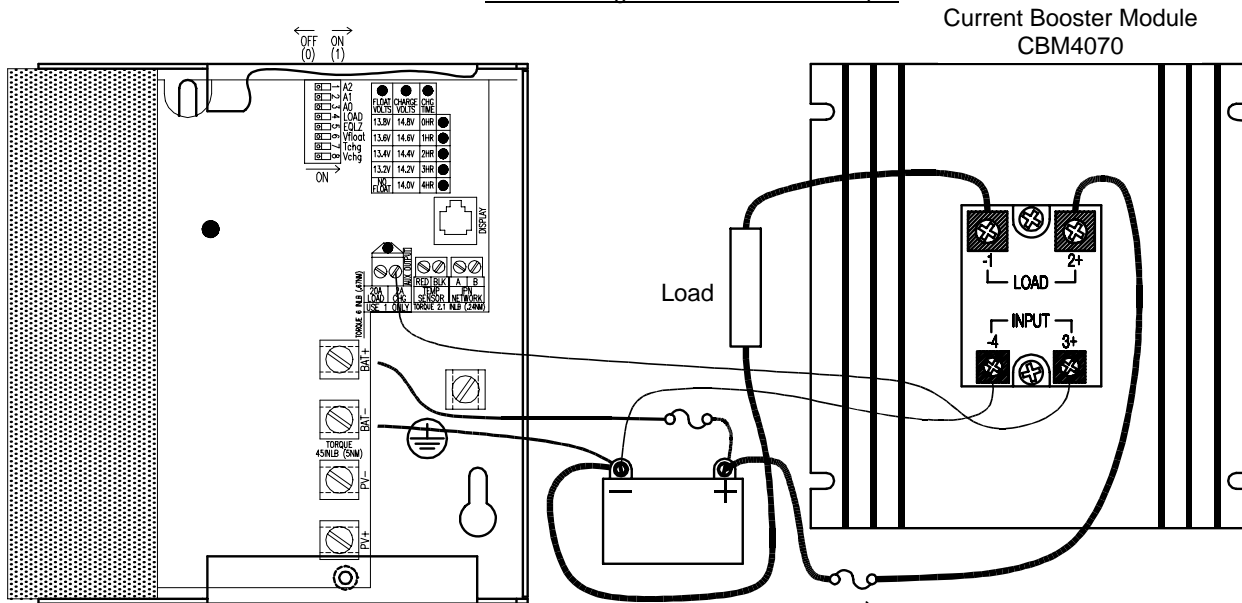


➤ **WARNING:** CBM4070 must be mounted with heatsink fins oriented vertically as shown in the diagram below to facilitate convection cooling. Do not separate power module from heatsink, enclose in a confined space or restrict air flow. Do not connect Input or Output reverse polarity. Over current protection may be required between the charge controller Load control output and CBM Input, consult charge controller manual. Install and wire the load in accordance with the load manufacturers installation and safety instructions and National Electrical Code, ANSI/NFPA 70. Tighten CBM Input terminals to 7 in-lb (0.80 Nm) and Load terminals to 10 in-lb (1.13 Nm) These instructions show generalized connections only and are not intended to show all wiring, circuit protection and safety requirements.

Do not exceed 70 ampere load current in DC on/off applications ( $F_{ON/OFF} < 0.50\text{Hz}$ ). To reduce the risk of fire in DC on/off applications, connect CBM4070 to 80 ampere maximum over current protection in accordance with National Electrical Code, ANSI/NFPA 70.

Do not exceed 40 ampere load current in 100Hz PWM applications (DUO-Option diversion). To reduce the risk of fire in 100Hz PWM applications, connect CBM4070 to 50 ampere maximum over current protection in accordance with National Electrical Code, ANSI/NFPA 70.

SB3024iL high side load drive example



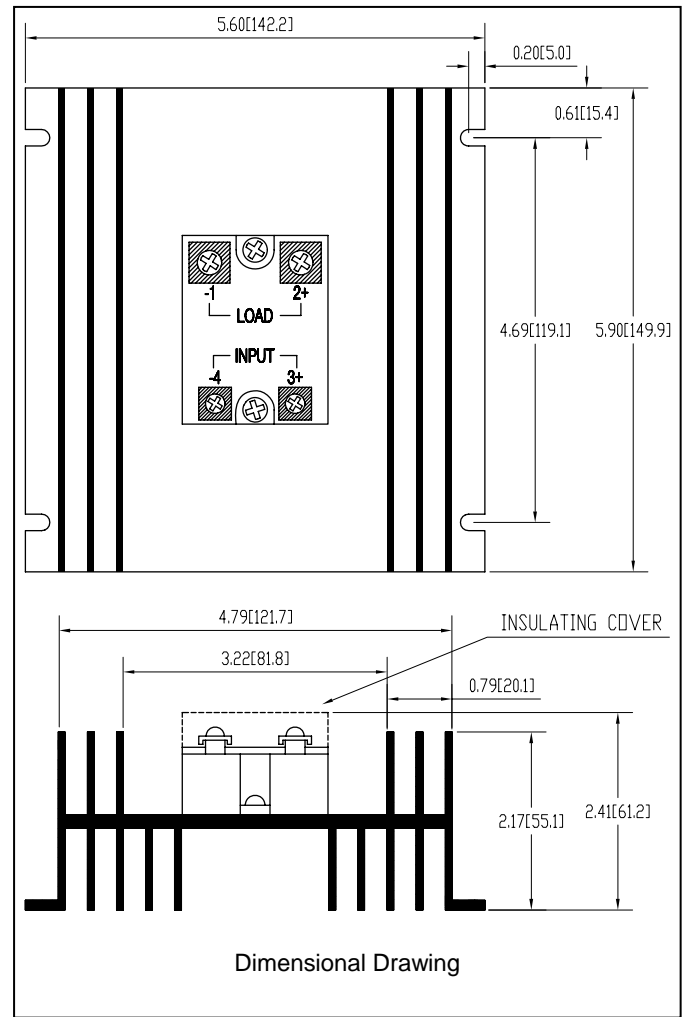
SPECIFICATIONS	
25°C unless Otherwise Indicated	
Input ON voltage	3 – 32VDC
Input ON current	25mA
Max Switched Voltage	50VDC
Max Output Current at 40°C ambient	70A DC on/off 40A Duo-Option 100Hz PWM
Max Surge Current	200A for 10mS
In/Out Isolation Voltage	1000VAC, 50/60Hz, 1 minute

CBM4070 over current protection  
80A Max, DC on/off ( $F_{ON/OFF} < 0.50\text{Hz}$ )  
50A Max, DUO-Option 100Hz PWM

## One year limited warranty

Blue Sky Energy, Inc. (hereinafter BSE), hereby warrants to the original consumer purchaser, that the product or any part thereof will be free from defects due to defective workmanship or materials for a period of one (1) year subject to the conditions set fourth below. If within the coverage of this limited warranty, BSE will repair or replace the product at BSE's discretion. The original consumer purchaser is responsible for all transportation costs and insurance related to returning the product to BSE. BSE will cover standard ground transportation costs and insurance to return the product to the original consumer within the continental US.

1. This limited warranty is extended to the original consumer purchaser of the product, and is not extended to any other party.
2. The limited warranty period commences on the date the product is sold to original consumer purchaser.
3. This limited warranty does not apply to any product or part thereof damaged by; a) alteration or disassembly, b) repair or service not rendered by a BSE authorized repair facility, c) accident or abuse, d) corrosion, e) lightning or other act of God, or f) operation or installation contrary to instructions pertaining to the product.
4. BSE's liability for any defective product or any part thereof shall be limited to the repair or replacement of the product, at BSE's discretion. BSE will not be liable for any loss or damage to person or property, or any other damages, whether incidental, consequential or otherwise, caused by any defect in the product or any part thereof. Some states do not allow exclusions or limitations of incidental or consequential damages, so the above limitation may not apply to you.
5. Any implied warranty for merchantability or fitness for a particular purpose is limited in duration to the length of this warranty. Some states do not allow exclusions or limitations on how long an implied warranty lasts, so the above limitation may not apply to you.
6. This warranty gives you specific legal rights, and you may also have other rights which vary from state to state.
7. To obtain warranty repairs, contact BSE at 800-493-7877 or 760-597-1642 to obtain a Returned Goods Authorization (RGA) number. Mark the outside of the package with the RGA number and return the product, postage prepaid and insured to the address below. A copy of the purchase receipt identifying original consumer purchaser and date purchased must accompany the product to obtain warranty repairs.



## Troubleshooting guide

SYMPTOM	PROBABLE CAUSE	ITEMS TO EXAMINE OR CORRECT
Output does not turn ON or deliver power to load	Input signal disconnected or reverse polarity Charge controller Load output OFF Load over current protection tripped	Correct Input signal wiring. An "ON" input signal must be within the range of 3 – 32VDC on CBM input terminals and be of the proper polarity. Create conditions where charge controller load output turns ON. Correct fault, reset over current protection.
Output does not turn OFF and continues to deliver power to load	Signal present on CBM input CBM input miswired so input signal is always present CBM output wired reverse polarity	Charge controller load output ON. Create conditions where charge controller load output turns OFF. Correct Input signal wiring. An "OFF" input signal must be less than 1.0V on CBM input terminals. Reverse polarity CBM output acts like a diode and passes current. Heatsink will be hotter than normal.
Heatsink hot	May be Normal Operation Installed improperly	When properly mounted in a vertical position with unrestricted airflow and operated at maximum specified current of 70A DC, or 40A DUO-Option 100Hz PWM, heatsink may reach ≈30°C above ambient temp. For operation at high power heatsink must be mounted vertically to promote convection cooling and airflow must be unrestricted. Unit must not be enclosed in a confined space.