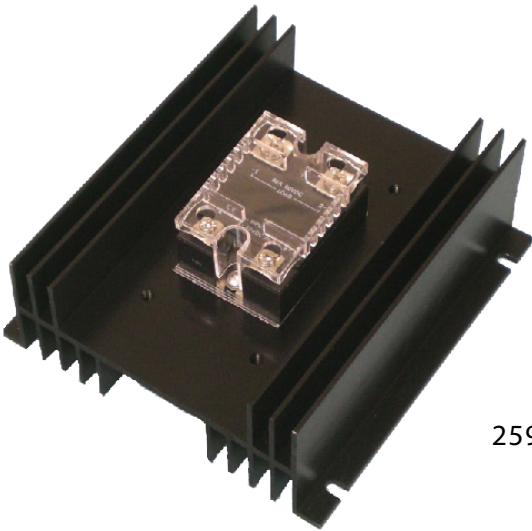


CBM4070 Manual

Current Booster Module

The 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 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.



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MANUAL REVISION REV E | 2022

**This manual includes important safety instructions
for the CBM4070. Save these instructions.**

Installation and Wiring

The CBM's MOSFET output turns on when a 6 – 32V DC signal is present on its input terminals. Input to output optical isolation allows the output to serve as either a low side or high side switch. Up to 70 A can be switched in a DC on/off application or up to 40 A in a 3024 DUO-Option PWM diversion application.



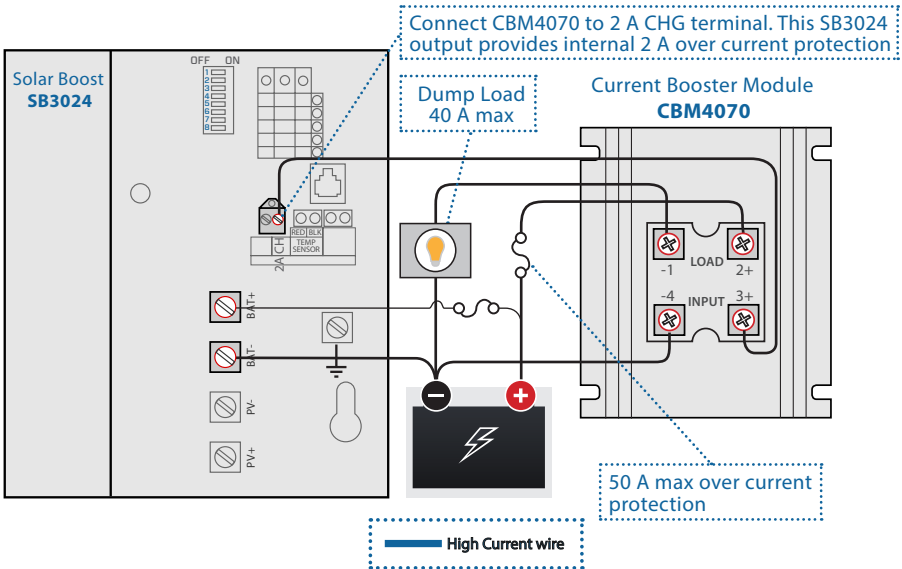
SAFETY INSTRUCTIONS: To achieve maximum current capability, mount CBM4070 with heatsink fins oriented vertically as shown in the diagram below to facilitate convection cooling. Do not separate lower module from heatsink, enclose in a confined space or restrict air flow. Do not connect Input or Output 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 the National Electrical Code or the standard in your installation location. Tighten CBM Input terminals to 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 A load current in DC on/off applications (ON/OFF < 0.50 Hz). To reduce the risk of fire in DC on/off applications, connect CBM4070 to 80 A maximum over current protection in accordance with National Electrical Code, ANSI/NFPA 70.

Do not exceed 40 A load current in 100 Hz PWM applications (DUO-Option diversion). To reduce the risk of fire in 100 Hz PWM applications, connect CBM4070 to 50 A maximum over current protection in accordance with the National Electrical Code or the standard in your installation location.

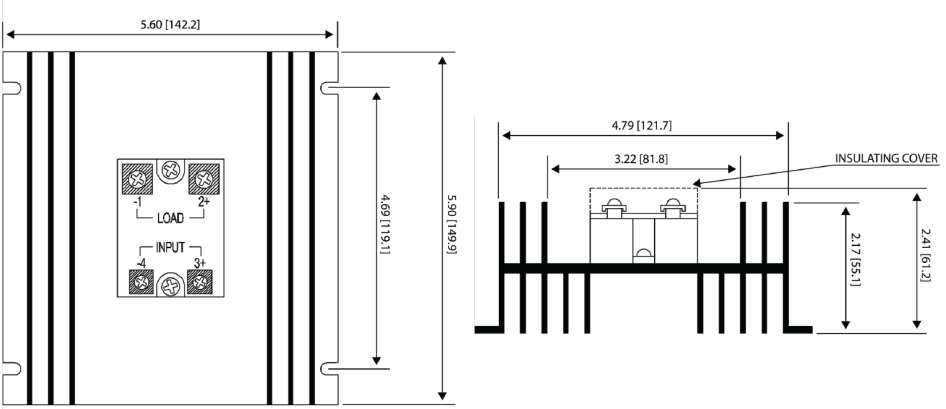
CBM4070 over current protection:
80 A Max, DC on/off (ON/OFF < 0.50 Hz)
50 A Max, DUO-Option 100 Hz PWM

SB3024iL High Side Load Drive Example



NOTE: Our controllers drive the CBM with battery voltage, and if a battery voltage of >32 V is expected, a zener diode should be used in series with the CBM to reduce the drive voltage (contact factory for details).

Dimensional Drawing



Dimensions in inches [mm]

Troubleshooting Guide

Symptom	Probable cause	Item to examine or correct
Output does not turn ON or deliver power to load	Input signal disconnected or reverse polarity	Correct Input signal wiring. An "ON" input signal must be within the range of 6 – 32V DC on CBM input terminals and be of the proper polarity.
	Charge controller Load output OFF	Create conditions where charge controller load output turns ON.
	Load over current protection tripped	Correct fault, reset over current protection.
Output does not turn OFF and continues to deliver power to load	Signal present on CBM input	Charge controller load output ON. Create conditions where charge controller load output turns OFF.
	CBM input miswired so input signal is always present	Correct Input signal wiring. An "OFF" input signal must be less than 1.0 V on CBM input terminals.
	CBM output wired reverse polarity	Reverse polarity CBM output acts like a diode and passes current. Heatsink will be hotter than normal.

Specifications

Specifications	CBM4070 (referred to 25 °C unless otherwise indicated)
Input ON voltage	6 – 32V DC
Input ON current	25 mA
Switched Voltage	35 VDC continuous, 50 VDC peak
Max Output Current at 40 °C ambient	70 A DC on/off 40 A Duo-Option 100 Hz PWM
Max Surge Current	200 A for 10 mS
In/Out Isolation Voltage	1000VAC, 50/60Hz, 1minute

5 year limited warranty

Visit <https://sunforge.com/cbm> for more information.