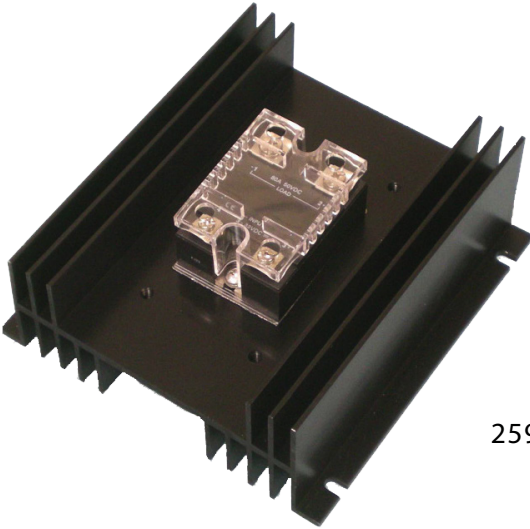


CBM4070 Manual

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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**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 – 32VDC 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 amps can be switched in a DC on/off application or up to 40 amps 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 ampere load current in DC on/off applications (FON/OFF < 0.50Hz). 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.

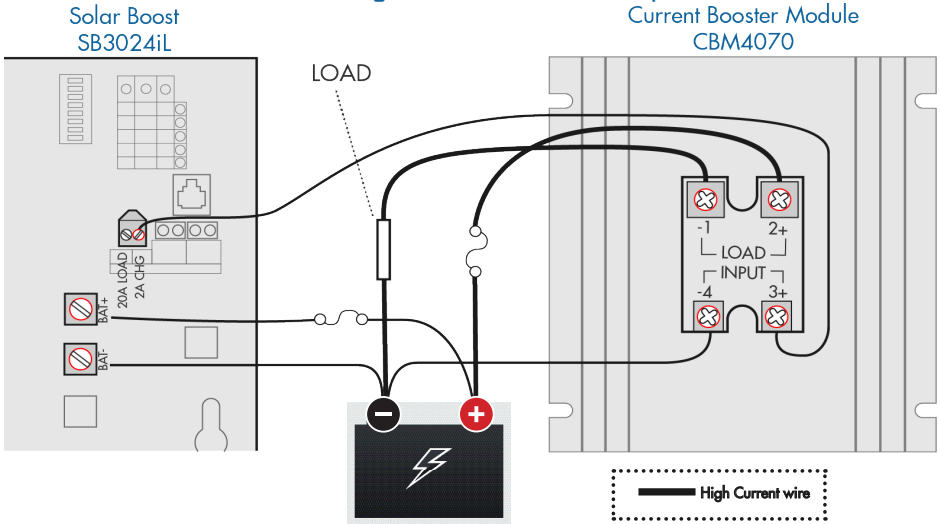
Do not exceed 40 ampere load current in 100Hz PWM applications (DUO-Option diversion). To reduce the risk of fire in 100Hz PWM applications, connect CBM4070 to 50 ampere maximum over current protection in accordance with the National Electrical Code or the standard in your installation location.

CBM4070 over current protection:

80A Max, DC on/off (FON/OFF < 0.50Hz)

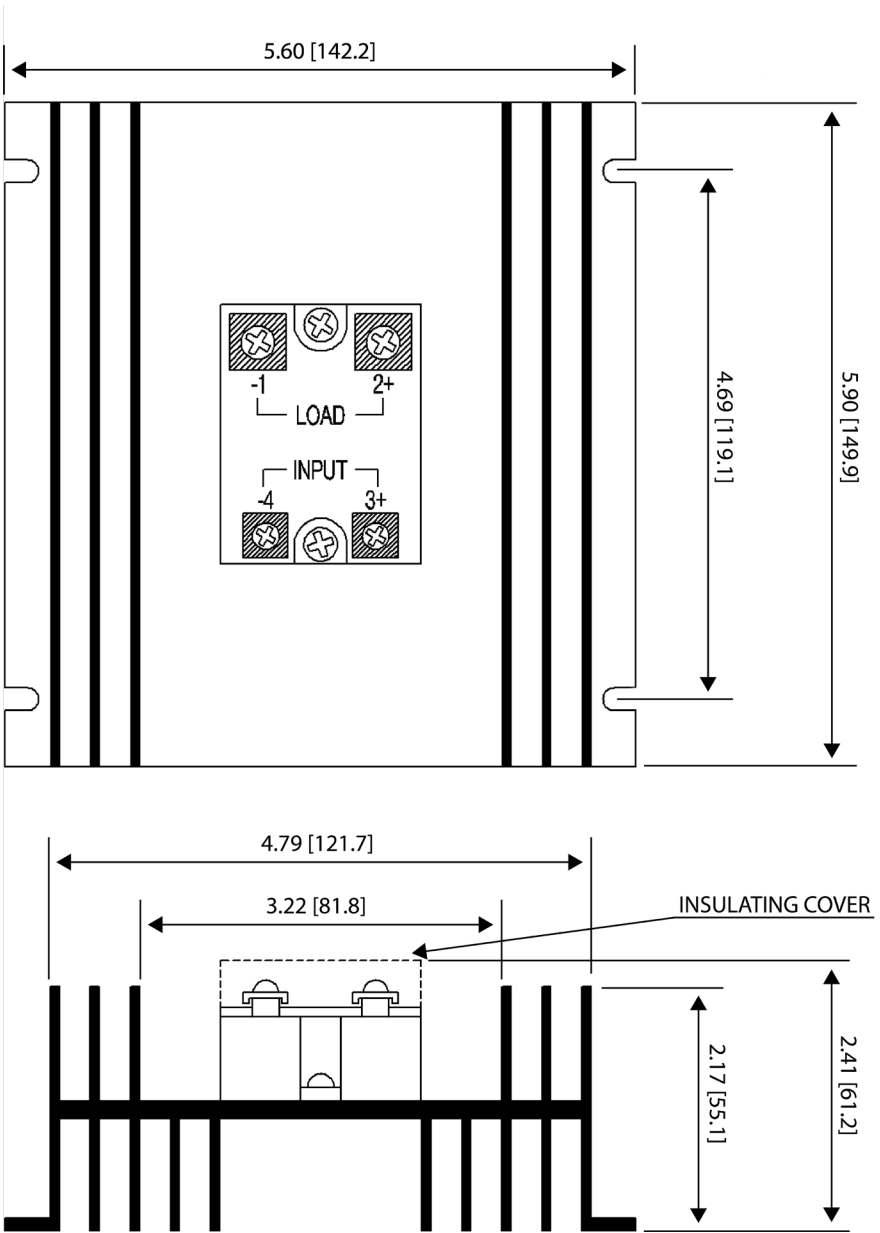
50A Max, DUO-Option 100Hz PWM

SB3024iL High Side Load Drive Example



NOTE: Our controllers drive the CBM with battery voltage, and if a battery voltage of >32V 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]

Specifications

25°C unless otherwise indicated

Input ON voltage	6 – 32VDC
Input ON current	25mA
Switched Voltage	35VDC continuous, 50VDC peak
Max Output Current at 40°C ambient	70A DC on/off 40A Duo-Option 100Hz PWM
Max Surge Current	200A for 10mS

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 – 32VDC 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 1.0V 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.
Heatsink hot	May be normal operation	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.
	Installed improperly	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.

5 year limited warranty

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

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