

FEATURES

- Senses alternator charge voltage, connects crank & trolling motor batteries together to charge (for 40 Amp alternators or less)
- Disconnects batteries from each other when not charging to preventing a dead start battery
- Works with existing 12V trolling motor wiring, including on-board 120VAC chargers
- DBCM kit includes both battery charge cables and grounding cables for easy installation
- **Meets U.S. Coast Guard Title 33, Section 183.410 electrical requirements for recreational boats**

DESCRIPTION & OPERATION

The DBCM-40A connects both main crank and trolling motor 12 volt lead-acid batteries together only when the alternator is putting out a charge current. When not charging, both batteries remain separated, preventing both from discharging. The main crank battery is always connected to the alternator to absorb the charge current. The DBCM module eliminates the need for a diode type battery isolator, with its associated .7 voltage drop. This allows the batteries to reach a full charge voltage over 14 volts which prevents early sulfidation and shortened battery life. The contactor handles the current supplied to the second battery only.

The DBCM-40A is powered by the red main battery wire, (drawing less than 2mA continuous current). When the alternator output voltage exceeds 13.5 volts ($\pm 1V$), the DBCM switches on the contactor lighting a LED, sharing the charge current between the two batteries. To prevent short cycling of the contactor, the DBCM does not de-energize the contactor unless the combined battery voltage drops below 13.0V (the result of the motor turning off, the starter being energized, or the battery voltage settling back to a fully charged condition). If the main battery is almost fully discharged, the DBCM waits until the main battery's charging voltage exceeds 13.5 volts before connecting the second battery.

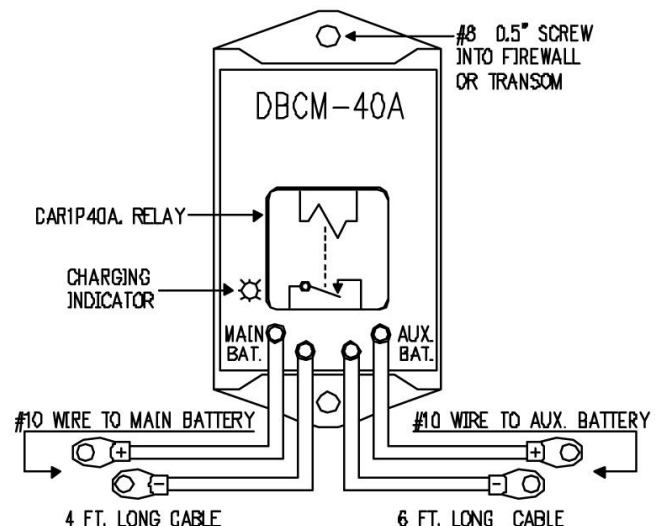
The DBCM is thermally protected to disconnect in case of internal arcing or other high temperature conditions. The battery lead length serves as a current limit in case of a short circuit condition in the trolling motor battery. **Do not use on any system other than a 12VDC, and with outboard motor alternator rated output of greater than 40 Amps.** For higher output alternators use the DBCM-75A.



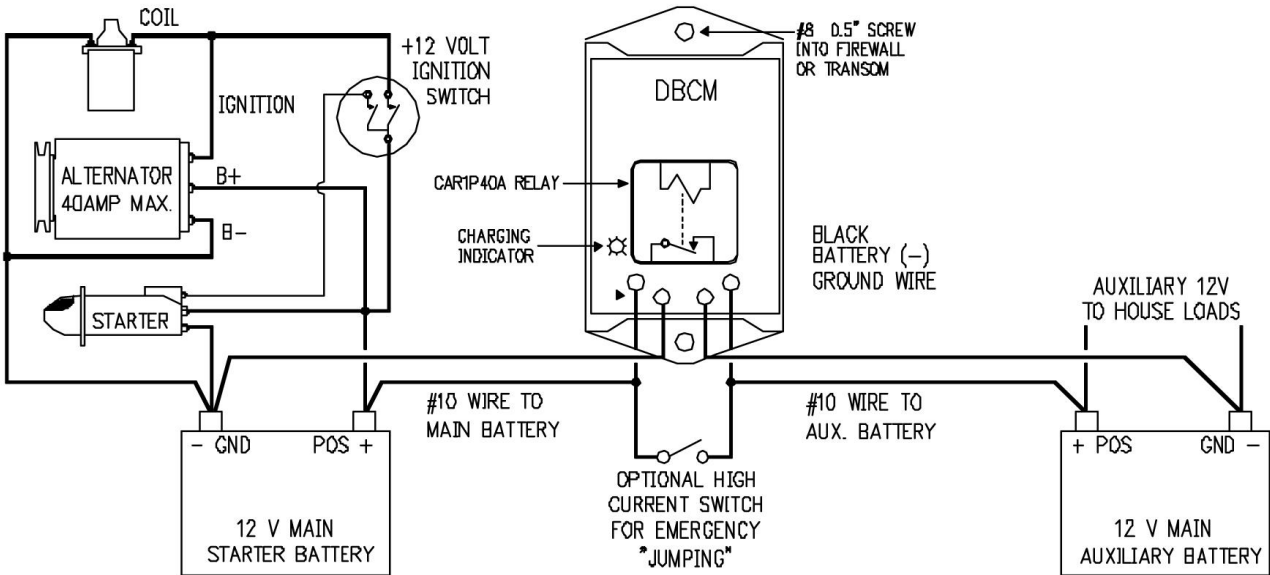
SPECIFICATIONS

SIZE:	1.20"W x 3.20"L x 1.2"H
WEIGHT:	16 ounces with 40 Amp contactor and 10 feet of battery cable
ENCLOSURE:	Epoxy potted in PVC plastic for weather resistance, vibration resistance and to prevent ignition sparks
MOUNTING:	Single #6 x 1.5" screw
POWER:	8 to 15 VDC from battery
CONNECTIONS:	Two 4' #10 AWG Main-Bat cable Two 6' #10 AWG trolling-Bat cable
CURRENT CONSUMPTION:	Sleep mode $\leq 2mA$ Charge mode $\leq 120mA$
THRESHOLD:	On @ 13.5VDC $\pm 0.1VDC$ Off @ 13.0VDC $\pm 0.1VDC$
INDICATION:	LED indicates charge mode
CAPACITY:	Up to 40 Amps alternator systems DBC-40A uses VF4-41F11 contactor with a current rating 40A continuous
THERMAL PROTECTION:	In-operative above 85°C
TEMPERATURE:	-30 to 75°C

INSTALLATION CONFIGURATION

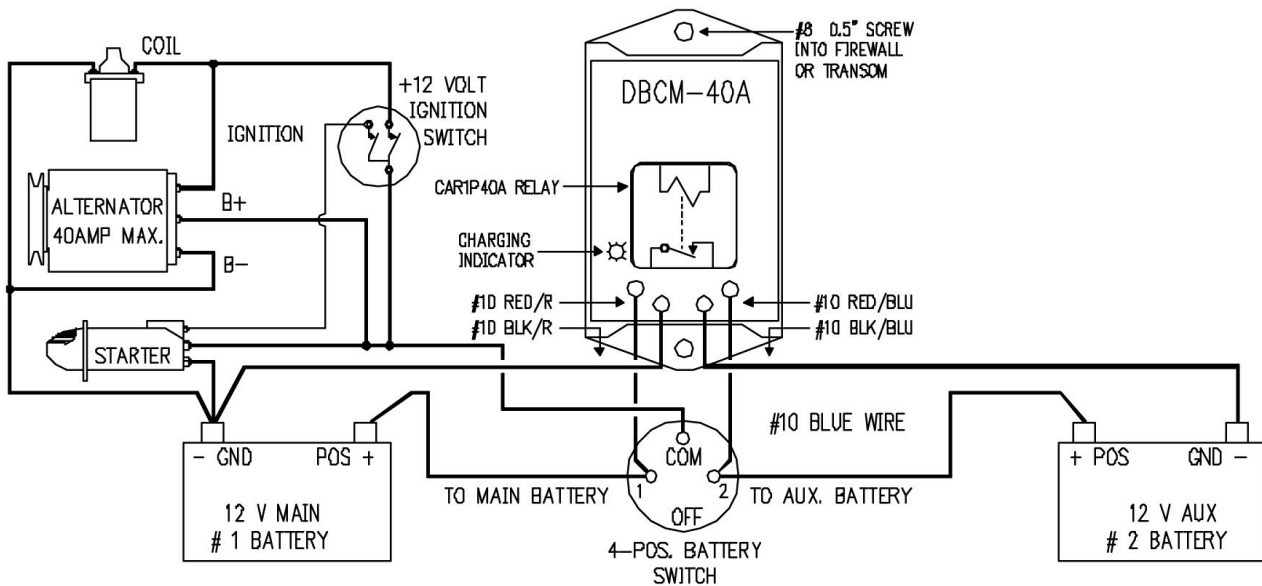


APPLICATION 1
SEPARATE BATTERIES FOR STARTING & 12V TROLLING MOTOR LOADS



The start or crank battery should be permanently connected to the alternator output. The auxiliary or trolling battery and crank battery are connected in parallel through the DBCM-40A relay only when the alternator is charging.

APPLICATION 2
BATTERIES IN PARALLEL - WITH SWITCH FOR CRANKING FROM SECOND BATTERY



The alternator output should be continuously connected to battery #1 thru PERKO switch. Both batteries are connected in parallel through the DBCM-40A relay to receive charging current only when the alternator is charging.

Not for 24VDC or higher trolling motor battery systems!

Installation Instructions for DBCM-40Amp, 12VDC battery systems only:

1. Determine which battery is the crank battery and which is the trolling or auxiliary battery. Use a meter to measure 12VDC for positive and negative terminals if necessary.
2. If the batteries are wired in series to provide 24VDC to run a trolling motor **DO NOT PROCEED OR A HAZARDOUS SITUATION COULD RESULT!** You require a MBCM for 24VDC systems.
3. Connect the 4' red labeled cable pair to the crank battery, red wire to positive terminal and black wire to the negative terminal.
4. Connect the 6' blue labeled cable pair to the trolling motor or auxiliary battery, red wire to positive terminal and black wire to the negative terminal.
5. Start the outboard motor and "rev" above idle. The alternator should start charging the crank battery and when it reaches 13.5VDC the DBCM-40 Amp relay will close, lighting the red LED and charging both batteries in parallel from the alternator. The DBCM relay will drop out, isolating the batteries when the alternator stops charging such as when the outboard motor shuts off.

NOTE: The DBCM's long term battery discharge rate is about 1 Amp-hour per month. If this is a problem for long term storage, disconnect the main battery positive wire going to the DBCM's contactor terminal. DO NOT shorten battery charge wires as this will VOID the warranty and reduce current limiting capability!

