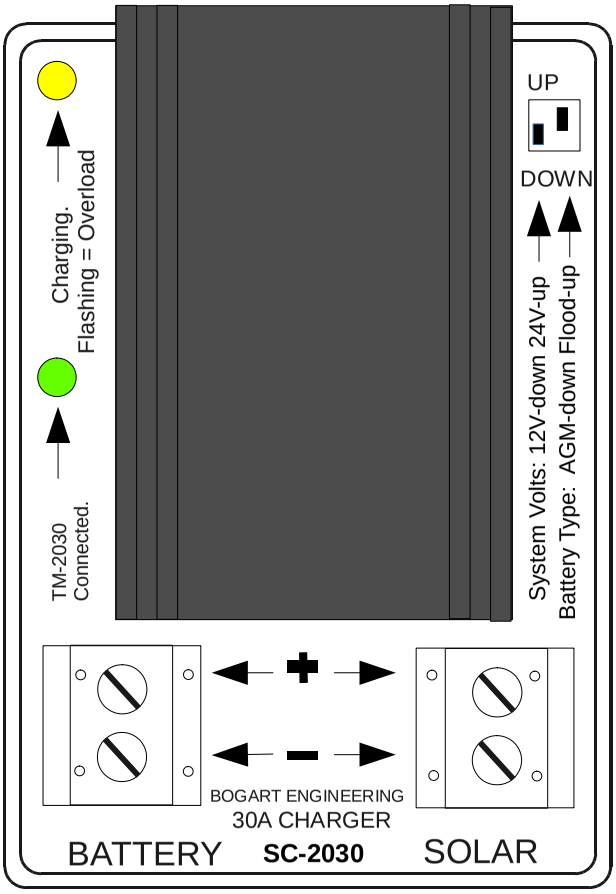
SC-2030

Solar Charge Controller

Installation and User Guide



Use Jumpers for Standalone mode (only)

Warranty: All items produced by Bogart Engineering have a 3 year limited warranty covering any item that does not perform according to specifications stated or implied in our instructions, provided the failure is not due to abuse or misapplication. We will repair or replace any such item at our option. A return authorization is required for all merchandise returned to Bogart Engineering. View our complete warranty policy at bogartengineering.com/support

Please contact us directly before attempting to return any product for repair or replacement.

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SC-2030 Installation

Crossover Modular Cable to SC-2030 or serial data connection

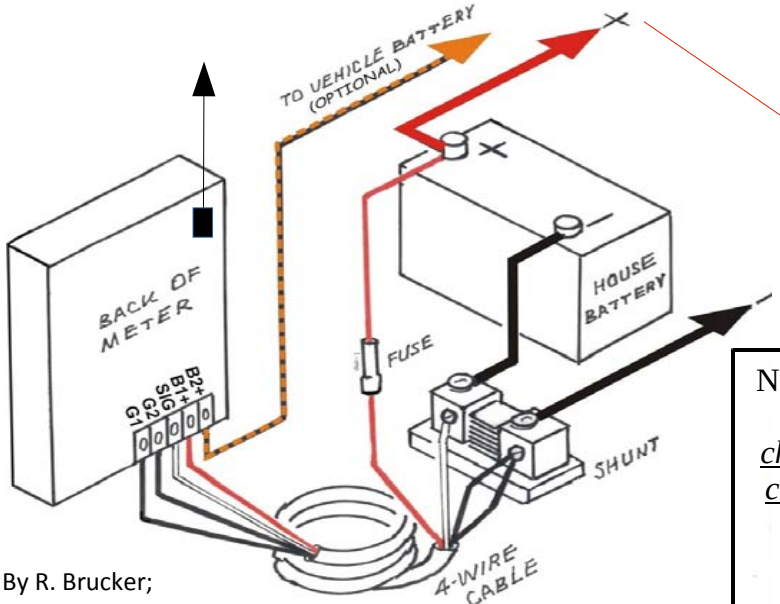
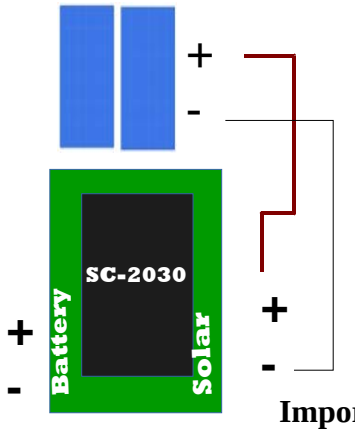


Illustration By R. Brucker;
Used with Permission

Negative from *all loads and charging sources connect to shunt*
-Inverter
-SC-2030
-Alternator
-Chassis Ground

Solar panels
"12" or "24 volt" types
(36 or 72 cells per panel)



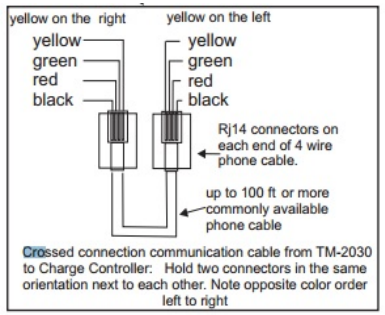
-30 amps max charging current
-Open Circuit Voltage limit from Solar Panels: 55 V

Important!

Make battery side connections on SC-2030 <u>before</u> connecting solar wires

Refer to http://www.nfpa.org for electrical wiring standards and information

Important: *Crossover* type modular cable required to connect SC-2030 to TM-2030



Visit www.bogartengineering/support for more information.

Programming the TM-2030 when using the SC-2030

Programming Instructions for the TM-2030: **http://www.bogartengineering.com/wp-content/uploads/docs/EnterP1Data.pdf**

The SC-2030 will operate as a standalone charger with minimal function unless connected to the TM-2030.

Table 3: Shows "absorb volts" and "float volts" for jumper settings –TM-2030 not connected

SC-2030 Battery type jumper setting	System Voltage jumper setting	Absorb voltage (temperature compensated to 25° C if sensor is connected)	Float voltage (after 2 hours at Absorb)
Liquid electrolyte	**12V**	14.7V	13.2V
Gel or AGM	**12V**	14.2V	13.2V
Liquid electrolyte	**24V**	29V	26.4V
Gel or AGM	**24V**	28.4V	26.4V

The following settings apply only when using the SC-2030 Solar Charge controller with the TriMetric monitor. **P8-P21** are accessible only when Program **P7** is set to L3 or L4. Default values shown below are automatically installed when switching from L4 or L3 into L2 or L1.

Enter program values based on Battery Manufacturer Recommendations: Usually located in the battery user manual or battery data sheet. SC-2030 Charging Parameters Calculator: visit http://www.bogartengineering.com/support/charging-parameters/ then enter your battery system information.

The Trimetric is compatible with all battery chemistries including lead acid, AGM, Gel, Nickel Iron, Lithium, etc.

Note for Lithium batteries: When used with the SC-2030, P8-P21 must be programmed to adhere to strict charging guidelines.

Visit bogartengineering.com/support for more information.

P8: Maximum voltage limit: Limits the maximum charging voltage. **Default 65. Note: P8 overrides P15. Set above P15 value.**

P14: Maximum finish-charge time in hours until float (0.0-5.0 Hr.). When P21 is off, time starts at P1 voltage. When P21 is on, time starts at P15 voltage. Time counting stops when volts drop below value.

P15: Maximum finish charge voltage (10.0-65.0 V)

P16: Float voltage (10.0-65.0 V)

P20: Percentage overcharge compared to last discharge until float (1-20%)

P21: Finish charge current: Enter 0-10% of battery capacity **P3.**

Important: Program P21 at least 0.10 % below P2. Default 1.5 %

To select 3 stage charge control, P21 must be "off".

SC-2030 Solar Charger LED light indicators

Yellow LED: Marked "over-current" when lighted indicates that **at least 0.4 amp solar current is available from solar panels**. If the current exceeds 31 amps, this LED will flash while the SC-2030 limits current to a safe value. Open circuit voltage from solar panels must not exceed 55V.

Green LED: Marked "TM-2030 Connected" indicates the charging state of the battery. When the green LED is on most of the time, this indicates the TM-2030 is connected *and* solar current is available to charge the batteries. When the green LED is off most of the time and blinking, this means the TM-2030 is not connected, or that no solar current is available. **The number of flashes indicates charging stage.**

Not flashing: ready to bulk charge, but not enough solar input to charge batteries.

One flash: bulk charging.

Two flashes: battery at "absorb" voltage.

Three flashes: battery is in "float" mode.

Four flashes: battery in "finish charge" mode with the SC-2030 limiting the current to P21 value.

Five flashes: battery in "finish charge" mode with the SC-2030 limiting the voltage to P15 value.

Six flashes: battery is between 98-100% charged after having been in "float".

The following secondary displays will appear *only* if solar current is available to the panels and if the TM-2030 and SC-2030 are connected and communicating:

SOL: Solar amperes: the amount of current being delivered by the solar panels to the SC-2030.

UPr: Unused solar power in watts: shows if extra power is available from the sun that can be used when battery charging is tapering down in the afternoon. Displays "**YES**" when nearly all solar power is available for extra use; if a number is displayed, it shows watts available.

°C: The battery temperature in degrees Celsius (with temperature sensor present).