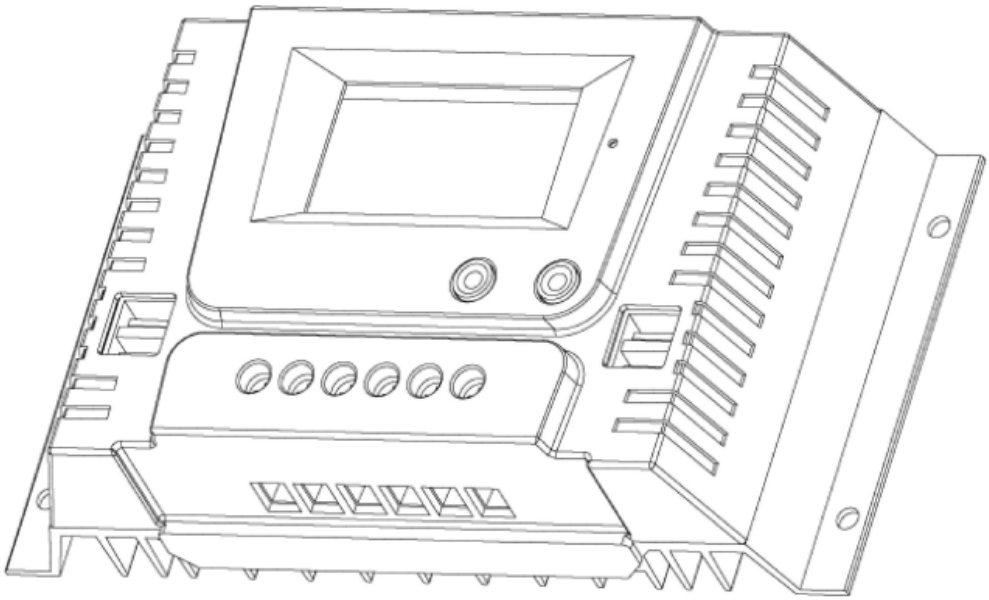


Solar Charge Controller User's Manual

Welcome

Thank you for purchasing the DSLR-C40 Solar Charge Controller. Before operating your new product, please read these operating instructions carefully. They contain important information for safe use, installation and maintenance of the product.

Please keep this instruction manual for future reference. The manufacturer does not accept responsibility for any damages that may arise due to improper use. If you have any further questions regarding our products, please contact us at:

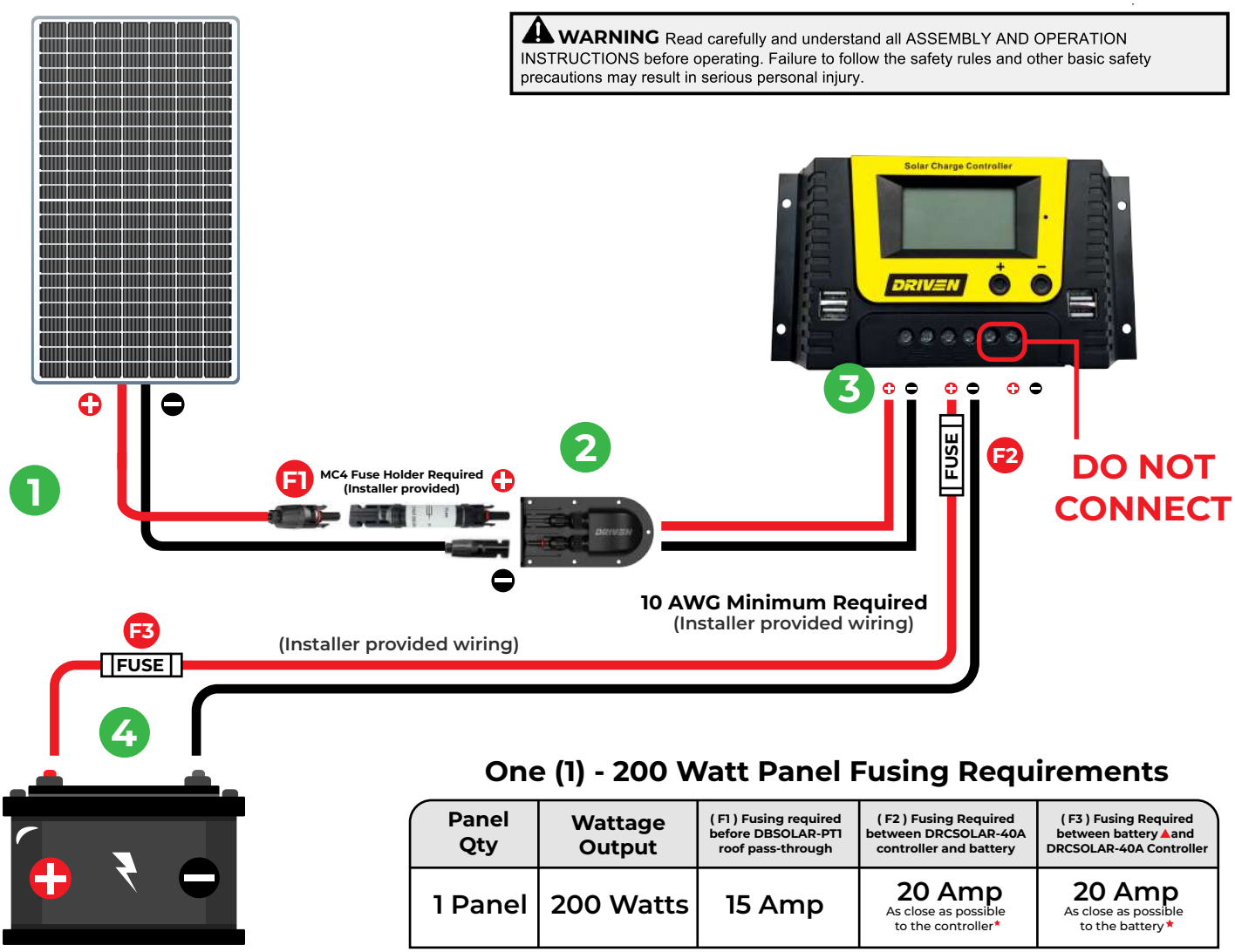
support@drivenelectronics.com

1. Product Features:

The DSLR-C40 Controller is a PWM charge controller with built-in LCD that adopts the most advanced digital techniques. The multiple load control modes enable it to be widely used on solar off grid systems, traffic signals, solar street lights, etc.

- System voltage of 12V with automatic recognition.
- Intelligent 4 stages PWM charging: Bulk, Absorption, Equalize, Float
- LCD display with Back-lighting shows device's operating data and working conditions.
- 2 button operation; Adjustable charge-discharge control parameters.
- Supports: Lead-acid battery (Sealed, Gel, Deep Cycle) and Lithium battery (LiCoMnNiO2, LiFePO4). Factory default is lead acid battery.
- Double USB output 5V/2A. (Can be used for charging cell phones or other USB A type devices).

2. One (1) 200 Watt Panel System Connections



One (1) - 200 Watt Panel Fusing Requirements

Panel Qty	Wattage Output	(F1) Fusing required before DBSOLAR-PT1 roof pass-through	(F2) Fusing Required between DRCSOLAR-40A controller and battery	(F3) Fusing Required between battery ▲and DRCSOLAR-40A Controller
1 Panel	200 Watts	15 Amp	20 Amp As close as possible to the controller★	20 Amp As close as possible to the battery★

★Recommended max distance: 18”
▲ User supplied

Step 1: Mount and secure the DSLR-200W solar panel, taking care to make sure that it is properly secured to a stud or backing roof support.

Step 2A: Connect the DSLR-200W solar panel ground MC4 output directly to the DSLR-PT1 roof pass-through ground input.

Step 2B: Connect the DSLR-200W solar panel positive (F1) output to the in-line fuse holder input and then the output to the DSLR-PT1 roof pass-through positive input.

Step 3: Connect the installer-supplied positive and negative power cables to the DSLR-PT1 roof pass-through and safely run and connect these wires to the DSLR-C40 solar panel inputs. (make sure the polarity is correct)

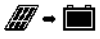
Step 4: Run positive and ground wires from the DSLR-C40 solar controller to the customer-supplied battery. The positive wire must be (F2) fused at the output of the DSLR-C40 solar controller and also (F3) fused at the battery-positive connection.

WARNING: Do not connect the battery leads under full sun light. Cover the solar panels while making these connections.

* It is recommended that the fuses inside the fuse holders are not installed until all wiring has been completely installed and all the connections have been verified.

Images show for illustration purposes only. Final Product may vary.

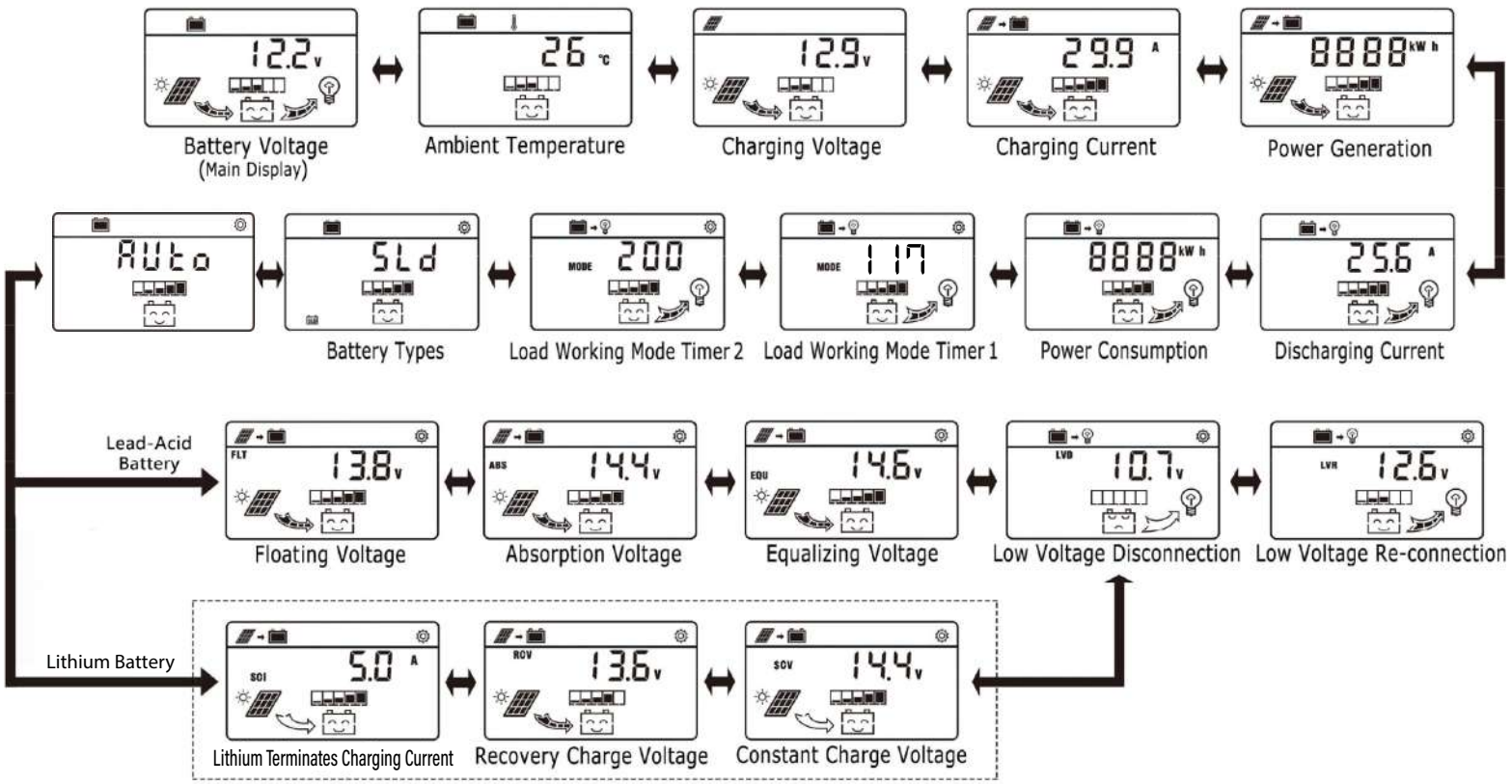
3. LCD System Icon Descriptions

Icon	Meaning	Icon	Meaning	Icon	Meaning
	Day		Data Relates to Charging	**FLT**	Float Charging
	Night		Data Relates to Discharging	**ABS**	Absorption Charging
	Charging		Data Relates to Temperature	**EQU**	Equalizing Charging
	No Charging		Data Adjustable	**SCI**	Lithium Terminates Charging Current
	Load On		Data Not Adjustable	**RCV**	Recovery Charging Voltage
	Load Off		Sealed Battery	**SCV**	Constant Charging Voltage
	System Works Normally		GEL Battery	**LVD**	Low Voltage Disconnection Voltage
	System Works Abnormally		Flooded Battery	**LVR**	Low Voltage Re-connection Voltage
	DC Load / Light Control On		Timer DC Load / Light Control On		

4. Button Functions

Modes	Operation
Browse Interface	Short press button “＋” or “－”.
Load On/Off	When load in 24H working mode, short press button “－” in main interface.
Parameter Setting	In the settable interface, long press button “＋” into setting, and then short press “＋” or “－” to set parameter, long press button “＋” to save and exit. (Long press button “－” to cancel the parameter and back to last setting)
Factory Reset	Long press button “＋” for 5s in the interface of ambient temperature.

5. Browse Interface



NOTE:

1. After the battery is connected, the LCD will go into the interface that automatically recognized the battery voltage level. 3 seconds later it will enter the main interface of LCD.
2. Equalization charging will occur after the controller has operated continuously for 30 days or after the controller has detected 30 days and nights.
3. Default lithium battery termination charge current is 2A, but it can be adjusted by users within the rated current range.
4. Under the interface of accumulated KWH, long press button “+” to clear the value.
5. When there has been no operation for 20s, the back-light will turn off.

6. Battery Types

Under the interface of battery types, long press button "+" into the type setting, then short press button "+" or "-" to choose battery type, and then long press "+" again to save and exit.

Icon	Battery Type
SLD	Sealed Battery
GEL	Gel Battery
FLD	Flooded Battery
USR1	Lead-Acid Battery (User-defined - DEFAULT)
3.2-4	LiFePO4: 3.2V-4S
3.2-5	LiFePO4: 3.2V-5S
3.7-3	LiCoMnNiO2: 3.7V-3S
3.7-4	LiCoMnNiO2: 3.7V-4S
USR2	Lithium Battery (User-defined)

7. Battery Voltage Automatic Indentification Range

Battery Types	Lead-Acid Battery
12V System	≤18V

8. Control Parameters of Lead-acid Battery

Lead-Acid Battery Types	SLD	GEL	FLD
Battery Voltage Level	12V	12V	12V
Float Charging Voltage	13.8V	13.8V	13.8V
Absorption Charging Voltage	14.4V	14.2V	14.6V
Equalizing Charging Voltage	14.6V	NO	14.8V
Charging time of Absorption/Equalizing	2 Hours		

Lead-Acid Battery Types	SLD / GEL / FLD
Battery Voltage Level	12V
Low Voltage Disconnection	10.8V
Low Voltage Re-connection	12.6V
Load Over-Voltage Disconnection	16V
Load Over-Voltage Re-connection	15.5V

9. Control Parameters of Lithium Battery

Lithium Battery Type	LiFePO4	
Icon	**3.2-4**	**3.2-5**
Battery Serial Number	**4S**	**5S**
Recovery Charging Voltage	13V	16.2V
Constant Charging Voltage	14.4V	18V
Stop Charging Current	2A	2A
Low Voltage Disconnection	11.2V	14V
Low Voltage Re-connection	12.8V	16V
Load Over-Voltage Disconnection	15V	19.2V
Load Over-Voltage Re-connection	15.4V	18.7V

10. Protections

Solar Panel Reverse-Polarity

If the solar panel is connected with controller in reversed polarity, controller will not be damaged and will work as normal when correctly connected.

Battery Reverse-Polarity

If the battery is connected with the controller in reversed polarity(solar controller is not connected with solar panel, controller will not be damaged and will work as normal when correctly connected.

Battery Reverse-Discharge

Controller is able to protect battery from reversed discharging to solar panel at night.

Overheating Protection

Once the internal temperature is detected to be higheer than a certain value by the controller, it will stop charging the battery. After the temperature drops, recharging the battery will automatically resume.

Battery Overcurrent

Controller will stop charging when excess current is detected from the solar panel, and it will resume automatically after 2 minutes.

Load Overload

The load will be turned off when the output current of the load exceeds its rated current for a while, and turned on automatically after 2 minutes.

Battery Low-Voltage

Controller will turn off the load when the battery voltage is lower than the value preset for low-voltage disconnection. and turn on the load when the battery voltage reaches the value preset for low-voltage re-connection. The value for low-voltage disconnection and low-voltage re-connection can be set by users to a specific range.

Battery Over-Voltage

Controller will turn off the load when the battery voltage is higher than the value preset for over-voltage protection, and turn on the load when the battery voltage decreases to the normal range.

11. Troubleshooting

Error Code	Cause	Solution
Ex1	Battery under voltage	Undervoltage protection, load off Battery overvoltage
Ex2	Battery overvoltage	Overvoltage protection, load off, charging stop
Ex3	Overload protection	Check the load wiring or reduce the load device
Ex4	Overheating protection	Controller internal overheat protection, charging stopped automatic recovery after cooling
Ex5	Overcurrent protection	Charging overcurrent protection, rated current +2A, 60 second protection:1.25 times, 5-second protection: automatic recovery in 2 minutes

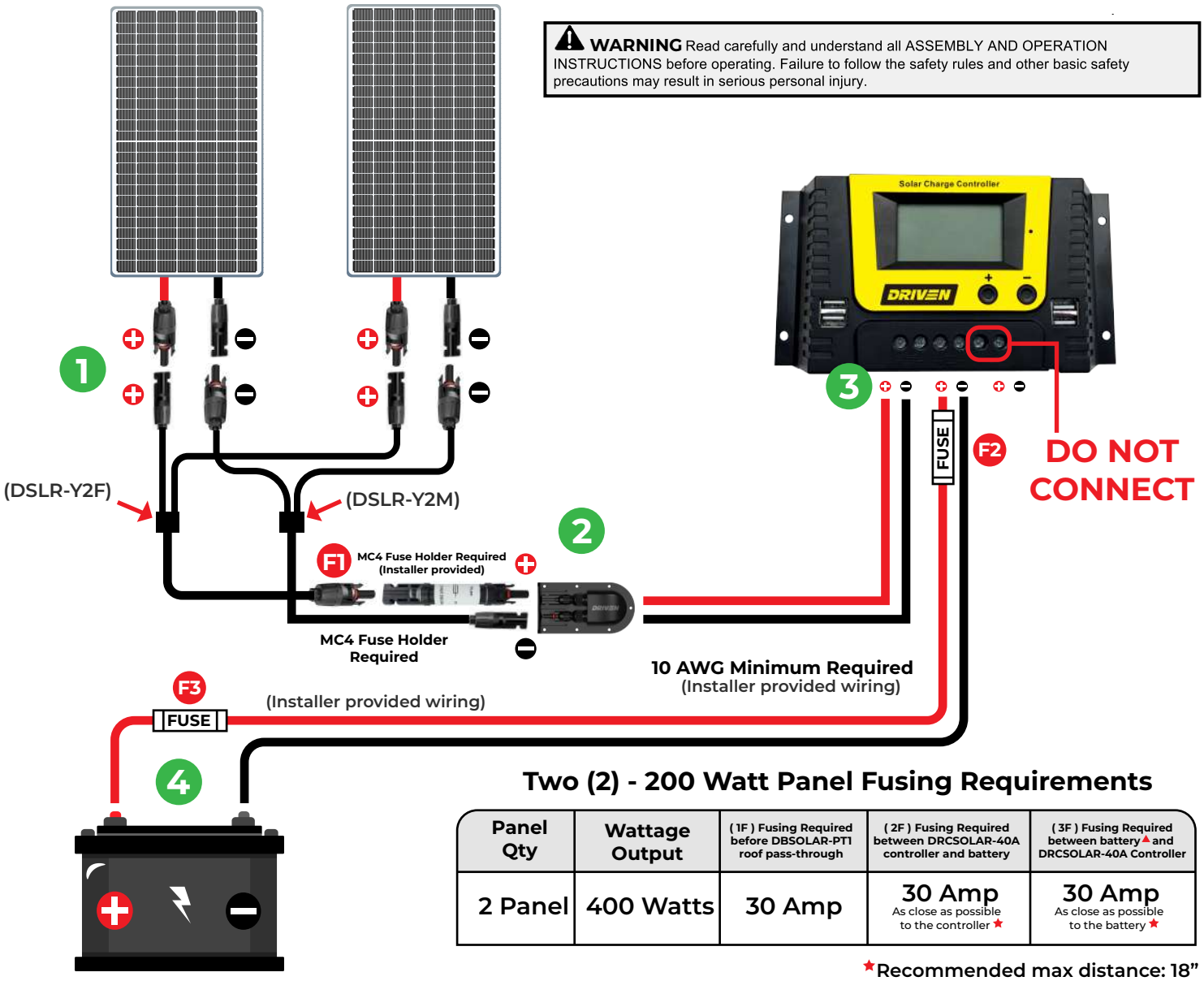
"E" stands for **"Error"**;
"X" indicates the number of errors. If there are multiple errors, press **"+"** or **"-"** to check the loop.
"1-6" indicates the code name.

12. Technical Specifications

Max Current	**40A**
Battery Voltage	12V
Max PV Open Circuit Voltage	100V
Self-Consumption	≤30mA
Loop Voltage Drop	≤0.3V
USB Output	5V/2A *2
Temperature Compensation	-4mV/℃/2V (25℃)
Operating Temperature	-20℃~+50℃
Protection Category	IP32
Humidity	95%, non-condensing
Terminals	6AWG/16mm²
Mounting Hole Size	190*69mm-Φ5mm
Dimension	200*106*47mm
Weight	0.4KG

Optional Dealer Installed 2 Panel - 400 Watt Kit Wiring Guide

WARNING Read carefully and understand all ASSEMBLY AND OPERATION INSTRUCTIONS before operating. Failure to follow the safety rules and other basic safety precautions may result in serious personal injury.



Two (2) - 200 Watt Panel Fusing Requirements

Panel Qty	Wattage Output	(1F) Fusing Required before DBSOLAR-PT1 roof pass-through	(2F) Fusing Required between DRCSOLAR-40A controller and battery	(3F) Fusing Required between battery ▲ and DRCSOLAR-40A Controller
2 Panel	400 Watts	30 Amp	30 Amp As close as possible to the controller ★	30 Amp As close as possible to the battery ★

★Recommended max distance: 18”
▲ User supplied

Step 1: Mount each of the DSLR-200W solar panels taking care to make sure that each panel is properly secured to a stud or backing roof support.

Step 2: Connect each of the DSLR-200W solar panels to the DSLR-YF2 and DSLR-YM2 splitter connectors as shown in the above illustration.

Step 3: Connect the DSLR-YM2 splitter into the DSLR-PT1 roof pass-through negative input.

Step 4: Connect the DSLR-YF2 splitter to the (F1) in-line fuse holder input and then the output to the DSLR-PT1 roof pass-through positive input.

Step 5: Connect the installer-supplied positive and negative power cables to the DSLR-PT1 roof pass-through and safely run and connect these wires to the DSLR-C40 solar panel inputs. (Make sure the polarity is correct)

Step 6: Run positive and ground wires from the DSLR-C40 solar controller to the customer-supplied battery. The positive wire must be (F2) fused at the output of the DSLR-C40 solar controller and also (F3) fused at the battery-positive connection.

WARNING: Do not connect the battery leads under full sun light. Cover the solar panels while making these connections.

* It is recommended that the fuses inside the fuse holders are not installed until all wiring has been completely installed and all the connections have been verified.

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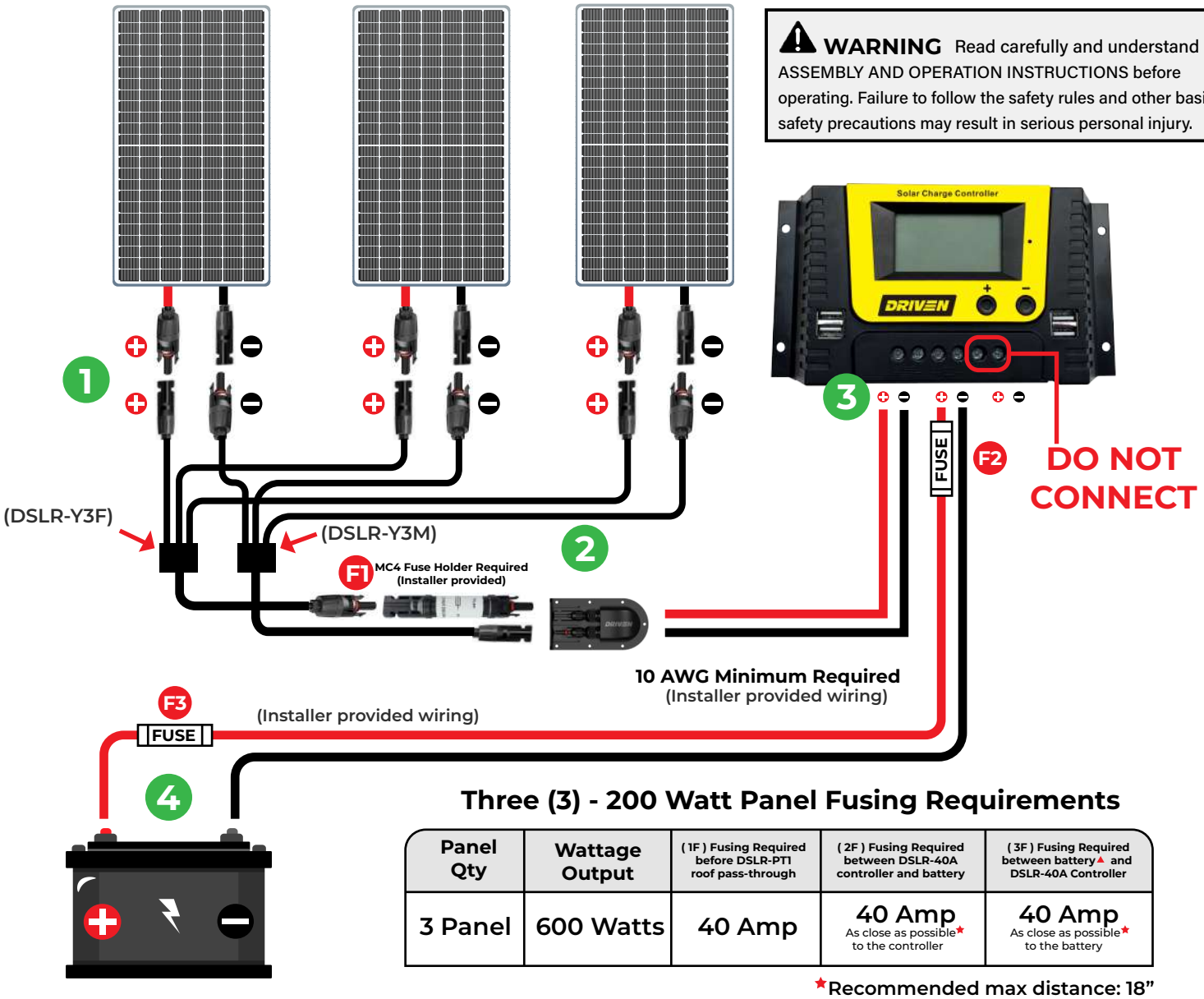
Optional Dealer Installed 3 Panel - 600 Watt Kit Wiring Guide



⚠ WARNING Read carefully and understand all ASSEMBLY AND OPERATION INSTRUCTIONS before operating. Failure to follow the safety rules and other basic safety precautions may result in serious personal injury.

Three (3) - 200 Watt Panel Fusing Requirements

Panel Qty	Wattage Output	(1F) Fusing Required before DSLR-PT1 roof pass-through	(2F) Fusing Required between DSLR-40A controller and battery	(3F) Fusing Required between battery▲ and DSLR-40A Controller
3 Panel	600 Watts	40 Amp	40 Amp As close as possible★ to the controller	40 Amp As close as possible★ to the battery

★Recommended max distance: 18”
▲ User supplied

Step 1: Mount each of the DSLR-200W solar panels taking care to make sure that each panel is properly secured to a stud or backing roof support.

Step 2: Connect each of the DSLR-200W solar panels to the DSLR-Y3F and DRSOLAR-Y3M splitter connectors as shown in the above illustration.

Step 3: Connect the DSLR-YM3 splitter into the DSLR-PT1 roof pass-through negative input.

Step 4: Connect the DSLR-YF3 spliter to the (F1) in-line fuse holder input and then the output to the DSLR-PT1 roof pass-through positive input.

Step 5: Connect the installer-supplied positive and negative power cables to the DSLR-PT1 roof pass-through and safely run and connect these wires to the DSLR-C40 solar panel inputs. (Make sure the polarity is correct)

Step 6: Run positive and ground wires from the DSLR-C40 solar controller to the customer-supplied battery. The positive wire must be (F2) fused at the output of the DSLR-C40 solar controller and also (F3) fused at the battery-positive connection.

WARNING: Do not connect the battery leads under full sun light. Cover the solar panels while making these connections.

* It is recommended that the fuses inside the fuse holders are not installed until all wiring has been completely installed and all the connections have been verified.

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