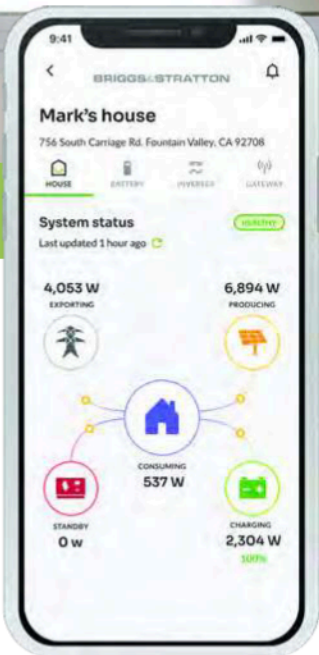




CONNECT / MONITOR / CONTROL

EnergyTrak™ Gateway 2.0 Installation Instructions



BRIGGS & STRATTON
ENERGY SOLUTIONS

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General Information and Product Compatibility

Thank you for purchasing a Briggs & Stratton EnergyTrak™ gateway. This device should be installed in accordance with the specifications laid out in this installation manual.

When installed correctly, the EnergyTrak gateway will provide access to detailed battery information that can ensure a healthy energy storage system.

This gateway is compatible with the following Briggs & Stratton battery products:


- SimpliPHI® 6.6 Battery system
- AmpliPHI™ 3.8 Battery

Warranty Statement

The following abbreviated guidelines do NOT encompass all EnergyTrak Warranty details. Failure to adhere to the Warranty and Installation Manual requirements will violate the terms of the Warranty. Read the complete Warranty and Installation Manual related to EnergyTrak and its connected Briggs & Stratton® Energy Solutions products prior to installation, which can be found at www.energy.briggsandstratton.com.

Operator Safety

Safety Alert Symbol and Signal Words

The safety alert symbol  identifies safety information about hazards that could result in personal injury. A signal word (**DANGER**, **WARNING**, or **CAUTION**) is used to indicate the likelihood and the potential severity of injury. In addition, a hazard symbol is used to represent the type of hazard.

DANGER indicates a hazard which, if not avoided, **will** result in death or serious injury.

WARNING indicates a hazard which, if not avoided, **could** result in death or serious injury.

CAUTION indicates a hazard which, if not avoided, **could** result in minor or moderate injury.

NOTICE indicates information considered important but not hazard-related.

Le symbole d'alerte de sécurité  identifie l'information de sécurité relative aux dangers qui pourraient causer des blessures. Un mot de signalisation (**DANGER**, **AVERTISSEMENT** ou **ATTENTION**) est utilisé pour indiquer la possibilité et la gravité des blessures potentielles. En plus, un symbole de danger est utilisé pour représenter un type de danger.





DANGER indique un danger qui, si non évité, **provoquera** la mort ou des blessures graves.

AVERTISSEMENT indique un danger qui, si non évité, **pourrait** causer la mort ou des blessures graves.

ATTENTION indique un danger qui, si non évité, **pourrait** causer une blessure mineure ou modérée.

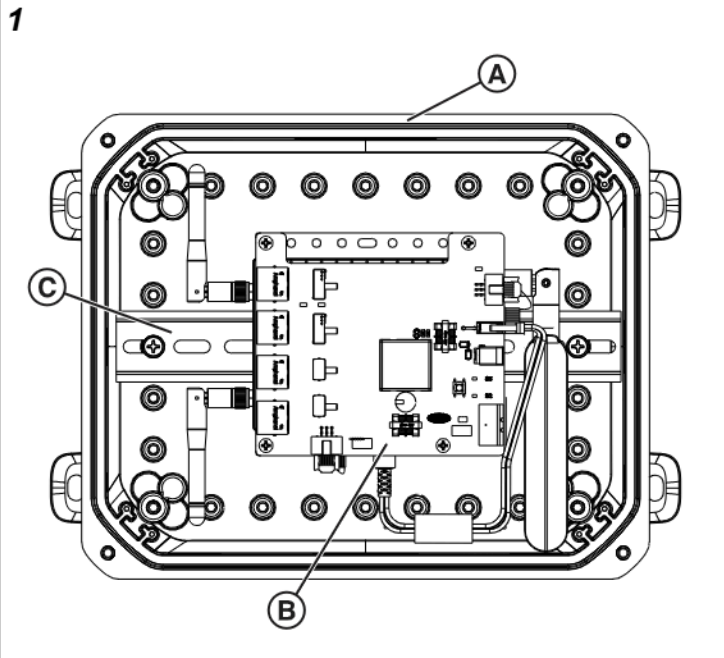
AVIS indique des informations considérées importantes, mais non liées aux dangers.

Hazard Symbols and Meanings

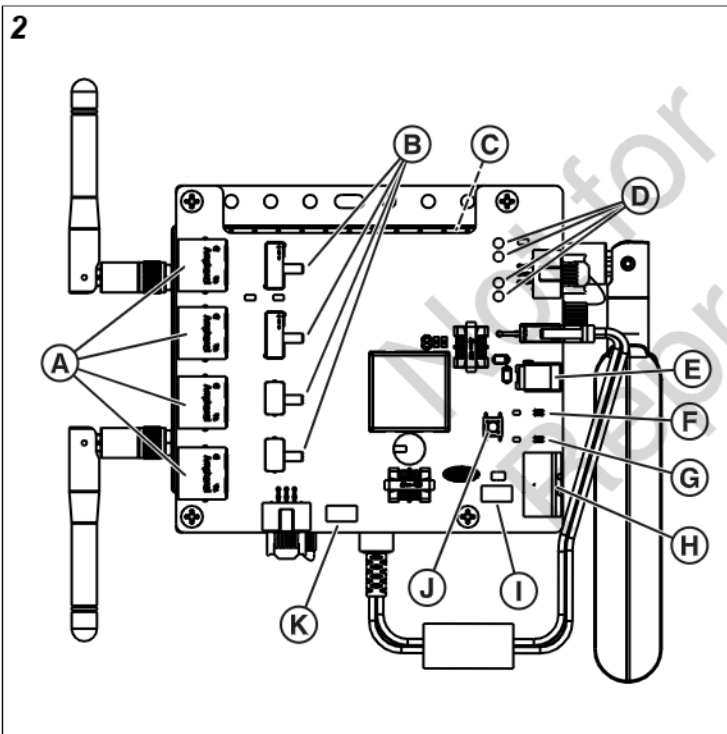
 <p>Safety information about hazards that can result in personal injury.</p> <p>---</p> <p>Information de sécurité au sujet des dangers qui peuvent causer de blessures corporelles.</p>	 <p>Read and understand the Operator's Manual before operation or servicing the unit.</p> <p>---</p> <p>Lire et assimiler le Manuel d'utilisation avant de faire fonctionner ou d'entretenir l'unité.</p>
 <p>Electric shock hazard</p> <p>---</p> <p>Risque de décharge électrique</p>	 <p>Installation of the EnergyTrak Gateway by qualified persons is highly recommended.</p> <p>---</p> <p>L'installation de la passerelle EnergyTrak Gateway par une personne qualifiée est recommandée.</p>

Product Features

Compare Figures 1 and 2 with the tables following.



A	Gateway Enclosure
B	Gateway Assembly
C	DIN Rail



A	8P8C Connectors
B	Configuration Switches
C	Gateway On/Off Switch (hidden)
D	BAT_CAN / SYS_CAN Test Pads
E	12VDC Power Input
F	12VDC Power Input Status LED
G	48VDC Power Input Status LED
H	48VDC Power Input
I	Fuse
J	Power Check Button

Installation

WARNING  
Electric Shock Hazard

Installation of the EnergyTrak Gateway involves potential exposure to electric shock, and could result in serious injury or death.

Before installation, turn off and disconnect all batteries and inverters. Refer to the battery and inverter operator's manuals for more information.

AVERTISSEMENT

Risque de décharge électrique

L'installation de la passerelle EnergyTrak Gateway pose un risque d'exposition à des décharges électriques et peut entraîner la mort ou des blessures graves.

Avant de procéder à l'installation, éteindre et débrancher toutes les batteries et tous les inverseurs. Consulter le manuel d'utilisation relatif à la batterie et à l'inverseur pour en savoir plus.

CAUTION  
 Installation of the EnergyTrak Gateway by qualified persons is highly recommended.

ATTENTION

L'installation de la passerelle EnergyTrak Gateway par une personne qualifiée est recommandée.

Suitable Installation Locations

The EnergyTrak gateway is designed to be installed indoors or outdoors. The gateway empowers connectivity to the components that comprise your energy storage system. The hardwired connections to the gateway include:

- 48V DC power from the battery bank,
- Redundant 12V power from an AC/DC power supply,
- Battery module level communication,
- Aggregated battery bank level communication,
- Inverter communication,
- Ethernet.

The gateway also uses a number of wireless communication channels including:

- 2.4 GHz / 5.0 GHz WiFi
- Bluetooth 5.3 BLE

These physical and wireless connections should be considered when choosing a suitable mounting location for the gateway.

AC/DC Power Supply: The length of the included AC/DC power supply 12V cable is 1.2 m (3.9 ft).

Battery Module Communication: The combined length of the communications cables participating in the BAT_CAN communication bus cannot exceed 100 m (328 ft) in length.

Aggregated Battery Bank/Inverter Communication: The combined length of the communications cables participating in the SYS_CAN communication bus cannot exceed 100 m (328 ft) in length.

Wireless Communication: The installation location of the gateway influences the speed and stability of wireless communications. When selecting the mounting location of the gateway consider the straightline path between the gateway and the wireless access point. Hardwired ethernet cables offer the fastest and most reliable connection, so we strongly recommend their use with the EnergyTrak gateway.

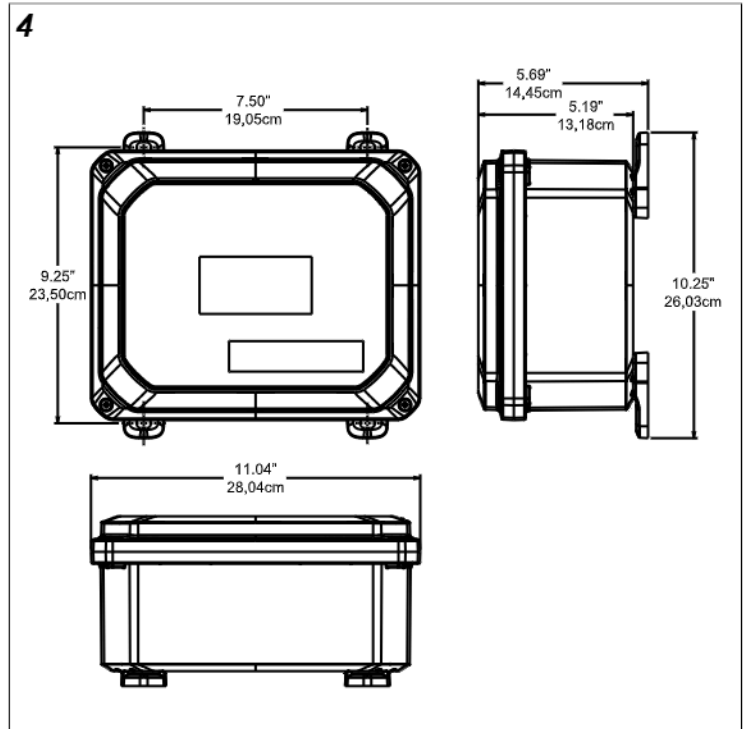
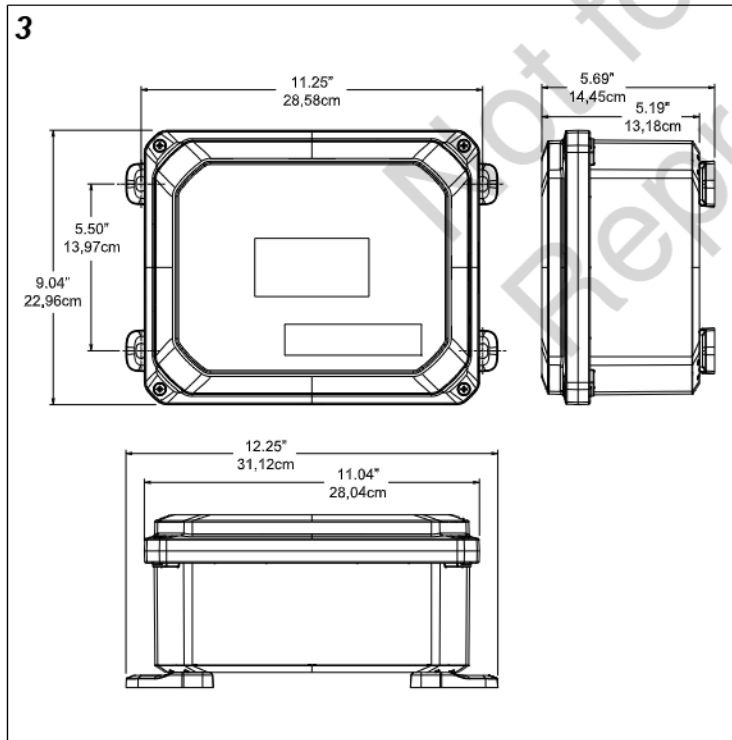
Provide adequate clearance around the gateway enclosure to allow access to the mounting screws and for installation of the necessary conduit connectors.

Gateway Mounting

Mounting feet are included with the gateway enclosure. The mounting feet can be adjusted to allow the gateway to better fit in the installation location.

Mounting hardware type and material will vary depending on the installation location and operating environment. Stainless steel hardware is recommended for outdoor installations. (Mounting hardware is not included with the gateway.)

See Figure 3 or 4 for gateway enclosure dimensions.



Enclosure Entry Point

A conduit entry point must be made in the gateway enclosure.

The conduit must be large enough for the power and communications cables. Conduit of 1 inch (2,5 cm) trade size or greater outside diameter (OD) is recommended. (The 12 V DC power supply cable includes a ferrite bead with an outside diameter (OD) of approximately 0.75 inches (1,9 cm).)

Choose an entry point location that works best to provide cable access to the gateway assembly. To prevent water damage, entry points on the top of the gateway enclosure are not recommended for outdoor installations.

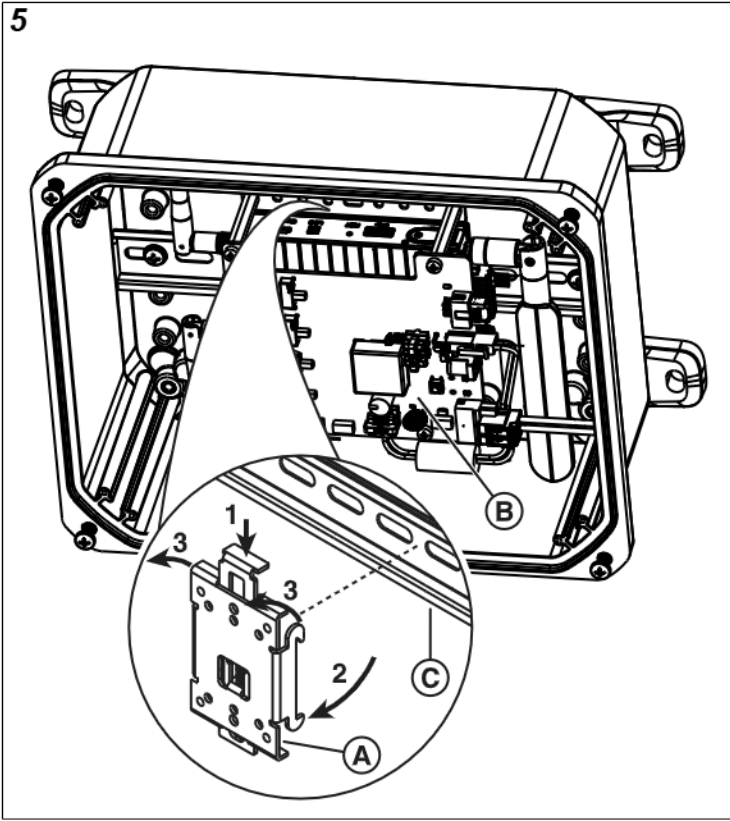
To prevent damage to the gateway assembly, remove the assembly from the gateway enclosure before you drill (see Figure 5):

1. Push the plunger of the mounting bracket (A), attached to the back side of the gateway assembly (B).

NOTE: Mounting bracket shown without gateway assembly for clarity.

2. Rotate the bottom of the gateway assembly forward and away from the DIN rail (C).
3. Lift and remove the gateway assembly from the DIN rail and gateway enclosure.

5

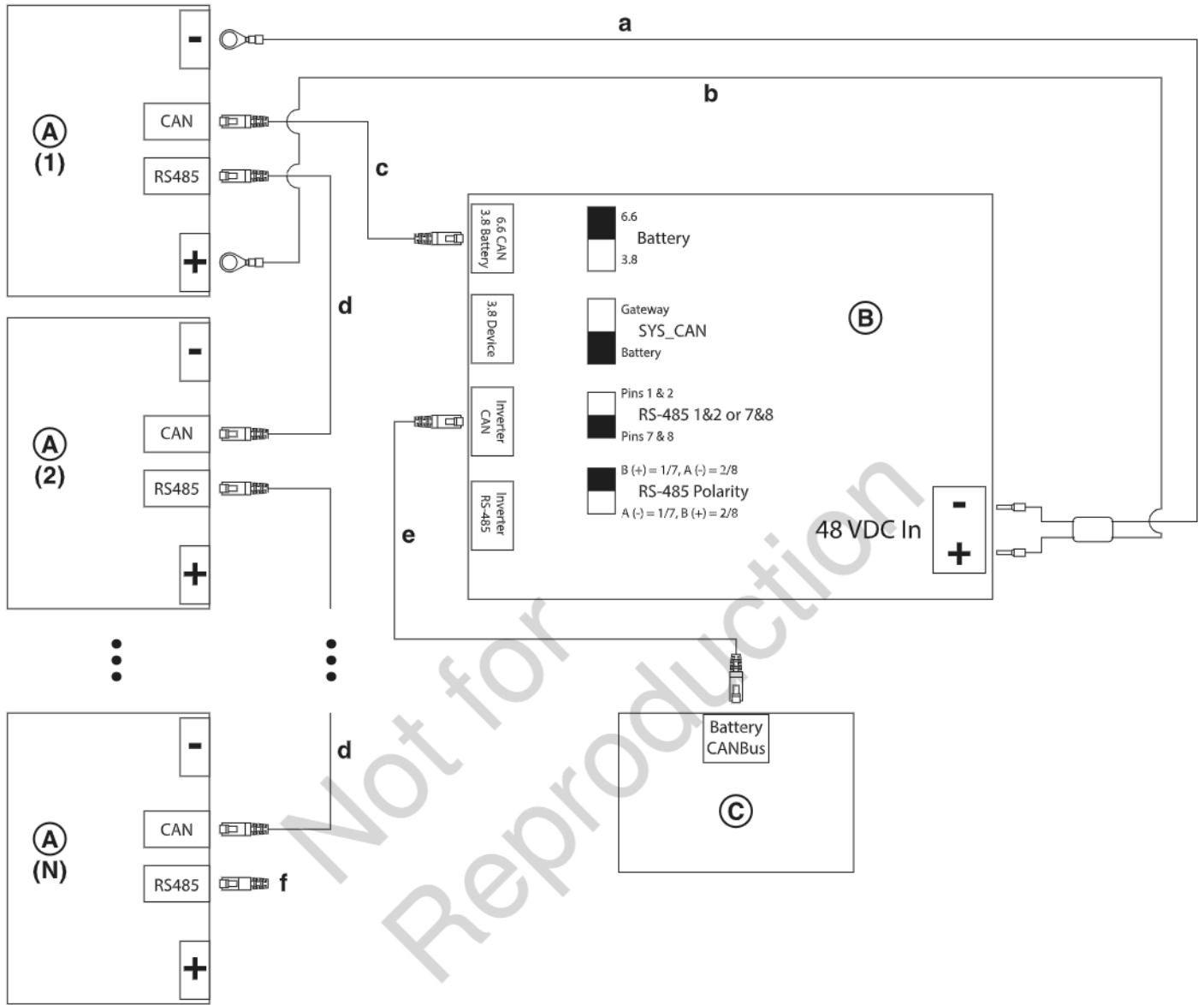


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Installation Diagrams

Systems with SimpliPHI 6.6 Battery Stacks (Figure 6)

6



Components	
A (1, 2, ...N)	Battery Controller
B	Gateway Connection Hub
C	Inverter

Wiring		
	From	To
a	Battery Negative (-)	Gateway Connection Hub - "48VDC IN" (-)
b	Battery Positive (+)	Gateway Connection Hub - "48VDC IN" (+)
c	Battery - "CAN"	Gateway Connection Hub - "6.6 CAN"
d	Battery - "RS485"	Battery - "CAN"
e	Inverter - "Battery CANBus"	Gateway Connection Hub - "Inverter CAN"
f	Battery - "RS485"	Communications Terminator

Configuration Switch Settings (Gateway Connection Hub)	
Switch	Setting
"Battery"	"6.6"
"SYS_CAN"	"Battery"
"RS-485 1&2 or 7&8"	"Pins 7&8"
"RS-485 Polarity"	"B(+) = 1/7, A(-) = 2/8"

Components included with gateway:

- AC/DC Power Supply (P/N 80137472)
- Ring Terminal, 3/8 inch, 18-22 AWG (P/N 80150136) - Qty 2
- Power Connector for Incoming 48 V Battery Power (P/N 80139232)
- Snap-on Ferrite Bead (P/N 80150004)

Components included with batteries:

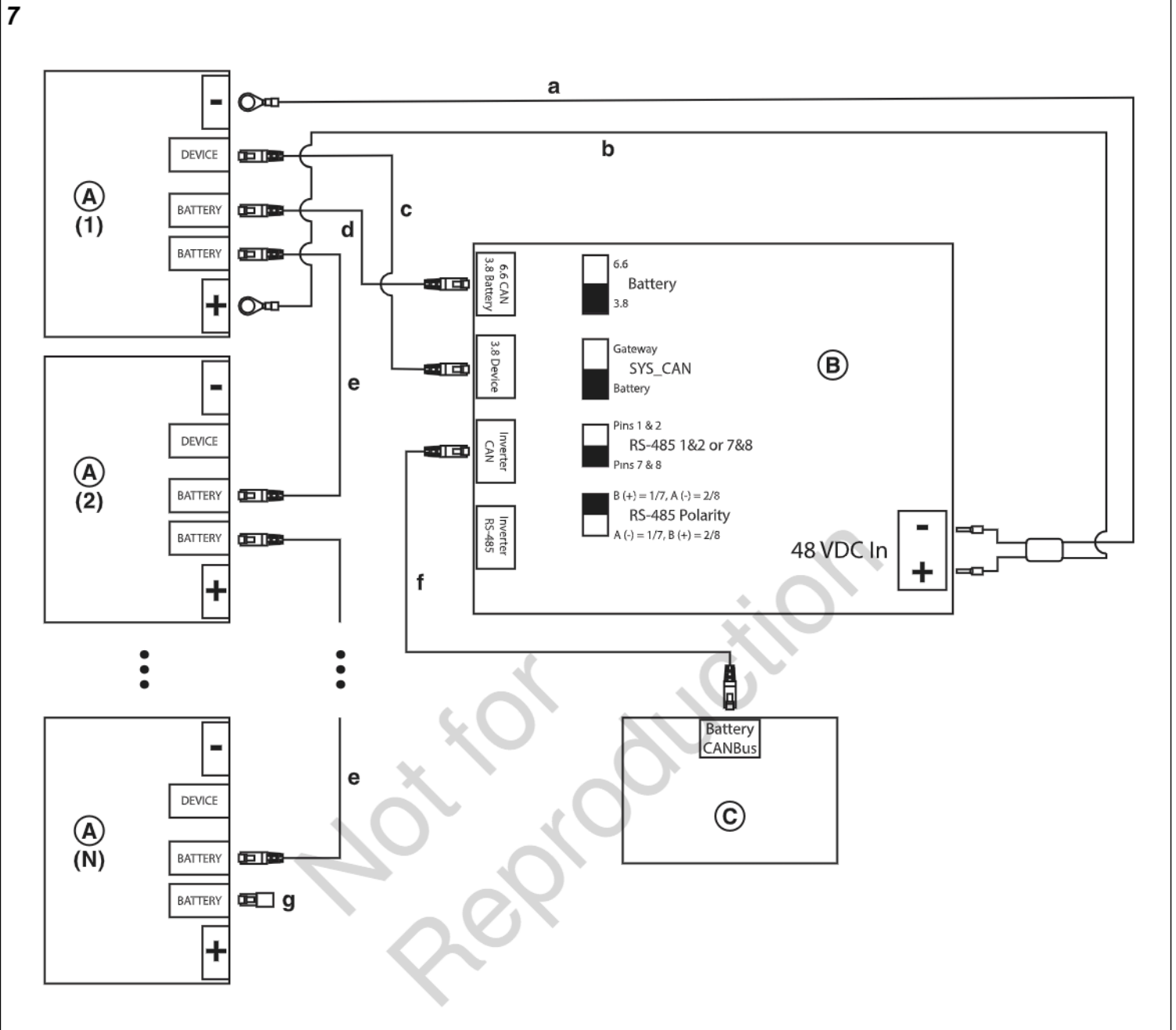
- Communications terminator specific to SimpliPhi 6.6 batteries

Components not included with gateway:

- Battery to Gateway Power (18- AWG shielded, twisted pair)
- Communications Cable with 8P8C modular plugs (stranded Cat 5e or better)

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Systems with AmpliPHI 3.8 Batteries (Figure 7)



Components	
A (1, 2, ...N)	Battery
B	Gateway Connection Hub
C	Inverter

Wiring		
	From	To
a	Battery Negative (-)	Gateway Connection Hub - "48VDC IN" (-)
b	Battery Positive (+)	Gateway Connection Hub - "48VDC IN" (+)
c	Battery - "Device"	Gateway Connection Hub - "3.8 Device"
d	Battery - "Battery" (A(1) Only)	Gateway Connection Hub - "3.8 Battery"
e	Battery - "Battery"	Battery - "Battery"
f	Inverter - "Battery CANBus"	Gateway Connection Hub - "Inverter CAN"
g	Battery - "Battery"	Communications Terminator

Configuration Switch Settings (Gateway Connection Hub)	
Switch	Setting
"Battery"	"3.8"
"SYS_CAN"	"Battery"
"RS-485 1&2 or 7&8"	"Pins 7&8"
"RS-485 Polarity"	"B(+) = 1/7, A(-) = 2/8"

Components included with gateway:

- AC/DC Power Supply (P/N 80137472)
- Ring Terminal, 3/8 inch, 18-22 AWG (P/N 80150136) - Qty 2
- Power Connector for Incoming 48 V Battery Power (P/N 80139232)
- Snap-on Ferrite Bead (P/N 80150004)

Components included with batteries:

- Communications terminator specific to AmpliPhi 3.8 batteries

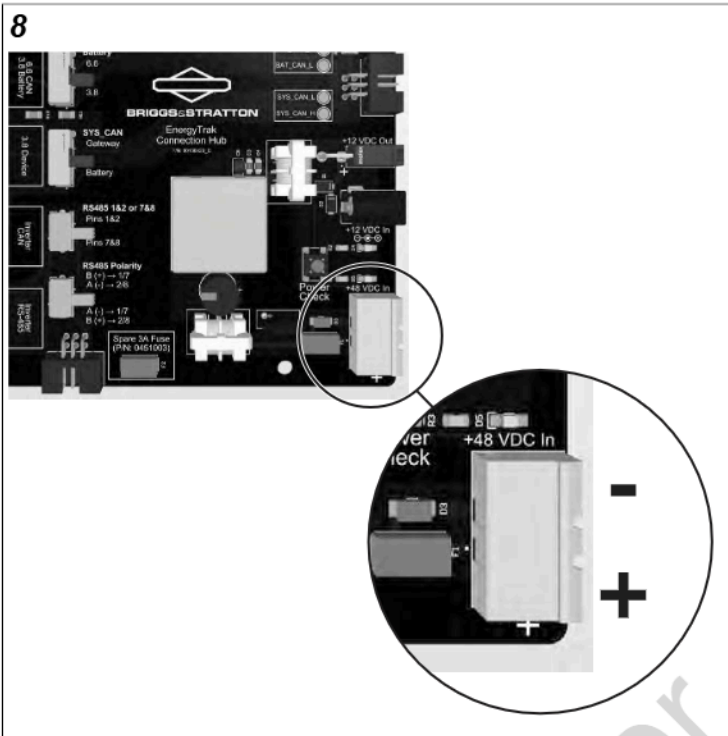
Components not included with gateway:

- Battery to Gateway Power (18- AWG shielded, twisted pair)
- Communications Cable with 8P8C modular plugs (stranded Cat 5e or better)

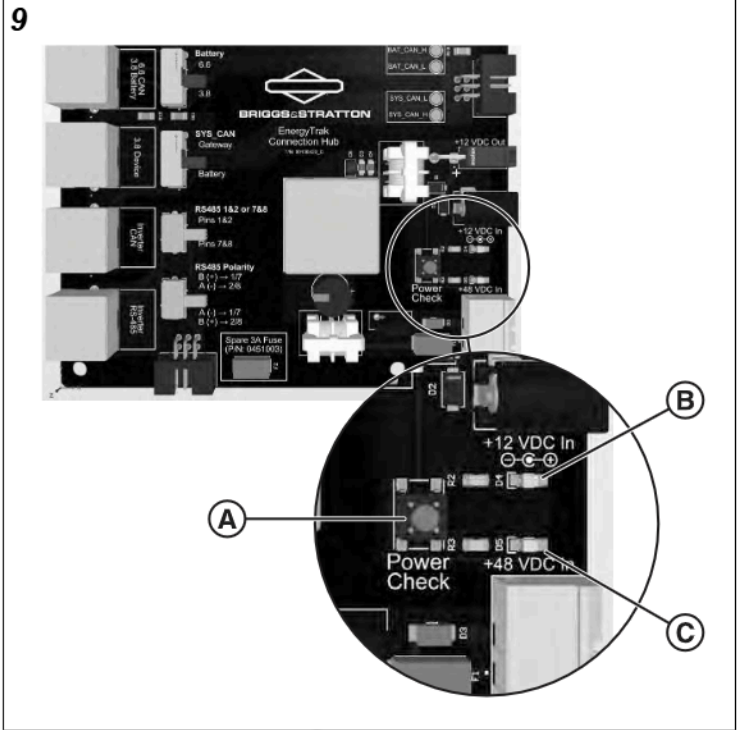
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First Power On

NOTICE Inadvertently reversing the polarity on the incoming 48 V power connection will immediately blow the overcurrent protection fuse. After disconnecting the power source and resolving the reverse polarity condition, the fuse must be replaced. See Figure 8 for correct polarity.

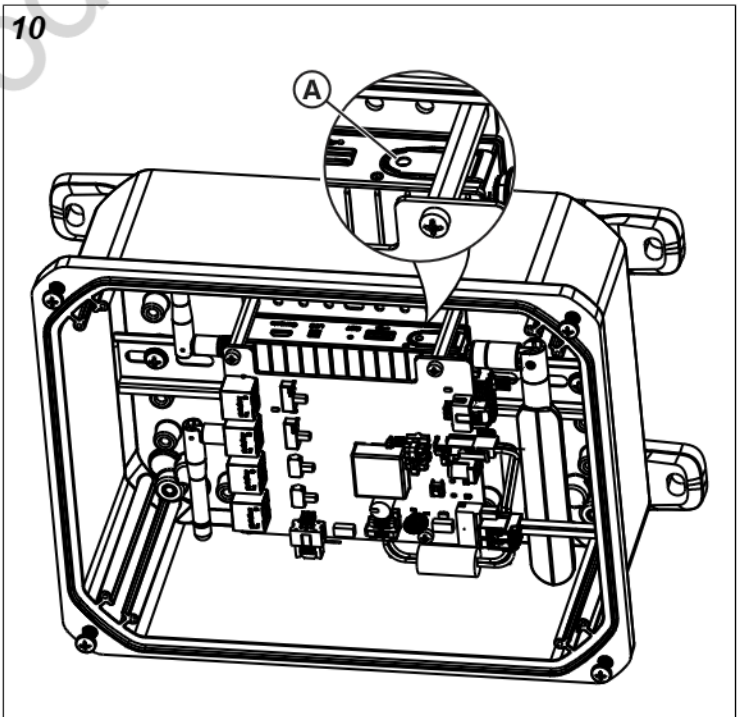


Applying power from either power source will cause the gateway computer to turn on. The presence of power from either source can be confirmed by pressing and holding the “Power Check” button (A, Figure 9). Illuminated LEDs near each power input (B = 12V, C = 48V) will indicate the presence of power at that input. Note that output capacitance on the incoming power sources can cause the LEDs to remain illuminated for a short period of time. The LED on the gateway power button will remain illuminated during the shutdown and will turn off when it is complete.



Smooth shutdown of an operating gateway computer can be initiated by pressing and holding the power button (A, Figure 10) for approximately one second. The shutdown process can take up to 60 seconds to complete.

NOTICE Pressing and holding the power button for five seconds or longer will force an immediate hardware shutdown and should generally be avoided unless otherwise instructed by Briggs & Stratton technical support.



Installation Validation and Troubleshooting

CAN Wiring Check with Multimeter and Test Pads

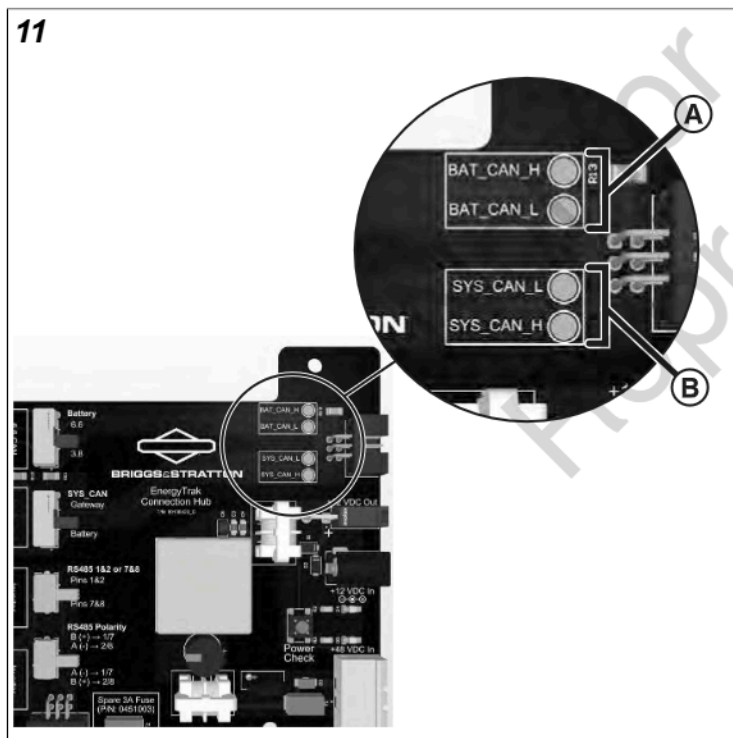
NOTICE Risk of equipment damage. Testing powered equipment can damage system components and test equipment, and produce invalid measurements. Before testing:

- Turn off the gateway. See *First Power On*.
- Turn off all batteries. Refer to the battery manual(s).
- Turn off all inverters. Refer to the inverter manual(s).
- Make sure that all equipment remains unpowered during testing.

Test Procedure

The EnergyTrak Connection Hub includes electrical test pads (A & B, Figure 11) to test CAN bus connections. These pads allow measurement of:

- Terminating resistance between High and Low conductors
- Electrical isolation between separate CAN buses



Test the following points and verify measurements meet specifications:

Node A	Node B	Continuity	Correct Resistance
BAT_CAN_H	BAT_CAN_L	Yes	50 Ω - 60 Ω (ohms)
SYS_CAN_H	SYS_CAN_L		
BAT_CAN_H	SYS_CAN_H	No	> 1 MΩ (megaohm)
BAT_CAN_L	SYS_CAN_L		
BAT_CAN_H	SYS_CAN_L		

BAT_CAN_L	SYS_CAN_H		
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BAT_CAN Measurements

- 50-60 Ω (ohms): Indicates correct installation with two terminating resistors
- 100-120 Ω (ohms): Indicates missing terminating resistor. Check:
 - Configuration switch settings against installation diagram
 - Terminating resistor installation location
 - Cable connections at all jacks
 - Cable pinout configuration
- Above 120 Ω (ohms): Indicates potential wiring faults:
 - Damaged communication cables
 - Loose or disconnected cables
 - Faulty terminating resistors
 - Incorrect wiring connections

SYS_CAN Measurements

- 50-60 Ω (ohms): Indicates correct installation with two terminating resistors
- 100-120 Ω (ohms): Indicates missing terminating resistor. Check:
 - Configuration switch settings against installation diagram
 - Cable connections at all jacks
 - Cable pinout configuration
- Above 120 Ω (ohms): Indicates potential wiring faults:
 - Damaged communication cables
 - Loose or disconnected cables
 - Faulty terminating resistors
 - Incorrect wiring connections

Troubleshooting

“Power Check” shows no incoming 48 VDC power

If the LED next to the 48 VDC power connection does not illuminate when pressing the “Power Check” button, first confirm the presence of +48 VDC on the battery terminals and the +48 VDC input of the Connection Hub. If the LED still does not illuminate, the fuse might have blown. A blown fuse can indicate a prior application of excessive DC voltage or reversed polarity at the +48 VDC input. Check that the positive lead of the +48 VDC power is nearest to the “+” symbol adjacent to the +48 VDC connector on the Connection Hub.

Weak or Frequently Dropped WiFi Connection

For optimal performance, using both hardwired Ethernet and WiFi connections is strongly recommended. When WiFi connectivity is poor or data transfer speeds are slow, switching from 5 GHz to 2.4 GHz WiFi may improve wireless performance. While 5 GHz networks typically offer higher data speeds, 2.4 GHz signals have better penetration through walls and other obstacles, and travel longer distances.

The gateway supports both frequencies, and in outdoor or complex installations, 2.4 GHz often provides more reliable wireless connectivity. To switch to 2.4 GHz:

1. Verify that the wireless access point broadcasts separate SSIDs (network names) for 2.4 GHz and 5 GHz networks. Common naming conventions include "NetworkName_2G" and "NetworkName_5G".
2. In the EnergyTrak app, navigate to the site for this location.
3. Select "Change Configurations" then "WiFi Connection".
4. Connect to the gateway via Bluetooth by selecting it from the available devices list.
5. Select the 2.4 GHz network SSID.
6. Enter the network password and apply the changes.
7. Allow the gateway to reconnect and verify wireless signal strength has improved.

NOTE: If the access point uses a single SSID for both frequencies (band steering), contact the network administrator to create a separate 2.4 GHz network or disable band steering temporarily during installation.

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