BMPRO OWNER'S MANUAL

BC300 EXTERNAL SHUNT COMMLINK

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BMPRO

POWERING YOUR ADVENTURES

With over 50 years' experience in power solutions combined with manufacturing and design facilities in Melbourne, Australia, BMPRO are the leading experts in RV power and control management.

Inspired by the great outdoors, we have created a range of rugged, smart and reliable products to power your adventures.

Our range of battery, power and RV management and control systems gives you peace of mind when you are on the road, so that you can relax in even the most far flung destinations, knowing you have control over your power needs.

To learn more about the BMPRO range of products, please visit our website **teambmpro.com**

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SAFETY PRECAUTIONS

Please read the Safety Precautions before installing or using the BC300 External Shunt and CommLink. Be sure to observe all precautions without fail. Failure to observe these instructions properly may result in personal damage or personal injury which, depending on the circumstances, may be serious and cause loss of life.

⚠	Correct installation is the most critical factor in ensuring the safe use of the device. If every consideration of these instructions has been satisfied, the device will be safe to operate.
⚠	Metal conducts electricity. Take care not to drop or touch metal objects onto the battery terminals. If contact is made, this may cause short circuits or lead to serious personal injury. Take care and remove unwanted metal objects from the vicinity of the battery. Remove any personal metal adornment such as chain, watch or ring before handling the battery.
⚠	Batteries are electrically live at all times and must be treated with extreme caution. They can supply high short circuit currents, even if they appear damaged or undamaged.
⚠	Do not drop or shake the product vigorously as this may cause damage to the product. Do not shock the equipment, batteries and charger, as this may cause device or battery failure, fire or explosion.
⚠	Keep the device dry; do not expose it to water. Do not use it where it can fall into water (such as near a pool, pond, bath etc.). Do not let the device, battery or charger come into contact with water vapour or operate it with wet hands. Contact with water will cause the device to short-circuit, corrode or cause electric shock.
⚠	Do not use this product where it is excessively hot, cold, dusty or humid, or where it is exposed to strong magnetic fields or long periods of sunshine. Such exposure may cause device or battery failure, fire or explosion.

	Only use the device with the cable supplied. Use of other accessories not recommended in this manual may cause damage to the unit and will void the warranty.
	Clean the housing of the device lightly with a dry or moist cotton cloth if required. Do not use alcohol, thinners, benzene or any other chemical cleaner.
	This device is a high precision electronic product. It contains no user-serviceable parts inside. Do not try to dismantle, modify or repair it yourself. Disassembly by unauthorised persons will void the warranty.
	Product specifications are subject to change and improve without notice.

Contents

MANUAL PART **036326**
REV **4.0**

Designed by BMPRO, one of Australia's leading power solution experts, the BMPRO product range is proudly designed and manufactured in Melbourne, Australia and represents a high-quality product that will provide years of service.

ABOUT THE BC300 EXTERNAL SHUNT AND COMMLINK

The BMPRO BC300 External Shunt and CommLink devices provide wireless battery monitoring for high current BatteryPlus35 and J35 systems.

The addition of the BC300 External Shunt and CommLink to BP35 and J35 systems allows high current loads to be directly connected to the battery via the BC300 External Shunt. This enhances the system behavior with temperature monitoring of the battery for greater protection. It also maintains Time Remaining and State of Charge determination of the battery even at high currents and with directly connected loads.

The BC300 External Shunt is designed for 12V batteries up to 800Ah in capacity. The shunt is rated for ±240A of continuous current and transmits monitored data wirelessly.

The BC300 External Shunt monitors the following battery properties:

- Voltage
- Charging/discharging current
- Energy usage (Ah)
- Temperature

Note: when installing the BC300 External Shunt a direct connection to the battery is required.

The CommLink provides wireless reception of the battery data transmitted by the BC300 External Shunt. Data received by the CommLink is forwarded to the CAN communication bus for reception by a BatteryPlus35 or J35. The CAN communication bus also provides operating power for the CommLink.

The CAN communication bus can also be used to connect to a BMPRO Battery Monitor, such as the BMPRO Odyssey or Trek3.

DESCRIPTION OF PARTS

BC300 EXTERNAL SHUNT

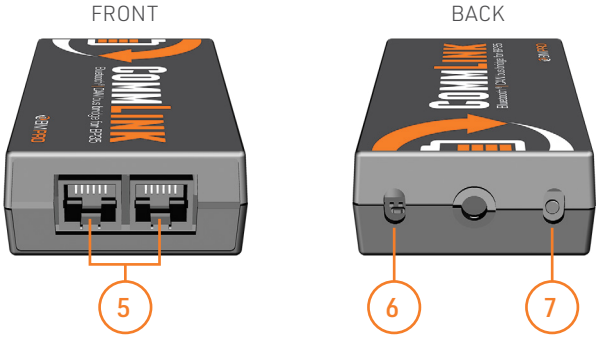
1. NEGATIVE BATTERY CONNECTION
2. NEW NEGATIVE TERMINAL CONNECTION

Connects to the load.

Note: This terminal has flat sides.

3. '+' POSITIVE FLYING LEAD AND TEMPERATURE SENSOR
4. LED STATUS INDICATOR

COMMLINK

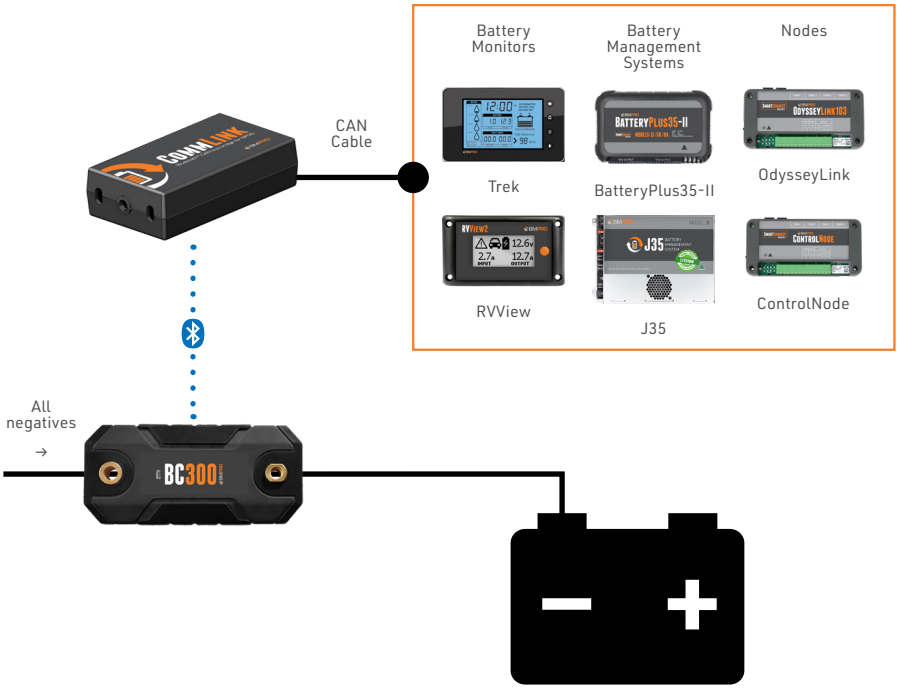


5. CAN BUS SOCKETS

Used to connect to other BMPRO devices, such as the BatteryPlus35 or J35, or BMPRO Battery Monitors such as the BMPRO Odyssey or Trek3.

6. RECESSED STATUS INDICATOR

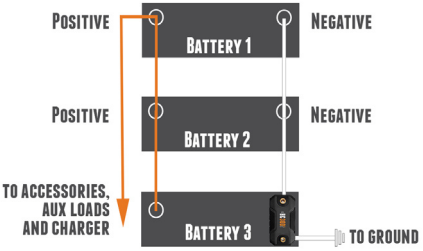
7. RECESSED PAIR BUTTON



MOUNTING

The BC300 External Shunt has two mounting terminals. Using these terminals the BC300 External Shunt is wired in series with the negative terminal of the battery being monitored and the negative battery loads. The '+' flying lead provides a connection to the positive terminal of the battery to power the BC300 External Shunt. This lead is also used to measure the battery temperature and voltage and must be directly connected to the positive terminal of the battery.

Please ensure that all loads connected to the battery are disconnected or turned off before beginning the installation procedure below to avoid sparks being generated during this process.



INSTALLATION

Please note that if your device requires pairing at Step 7, a pen or similar will be required for operation of the recessed button.

1. Please practice standard safety precautions and remove all connections to the battery
2. Connect the CommLink to the BatteryPlus35 or J35 CAN bus with the provided CommLink data cable. The data cable can be plugged into either CAN bus socket on the CommLink ⑤
3. Connect ① to the battery negative terminal using the connector provided or directly to the battery. It is important that the correct terminal on both the battery and the BC300 External Shunt is used.
4. Connect all negative load connections to ② on the BC300 External Shunt.

Note: Steps 5, 6 and 7 must be completed before the BC300 External Shunt's battery indicator stops flashing **blue** - 2 minutes from the time the BC300 External Shunt battery positive is connected.

5. Connect all positive load connections including the BC300 External Shunt's positive flying lead ③ to the battery positive terminal. Once these connections are made the BatteryPlus35, CommLink and BC300 External Shunt are all powered. The BC300 External Shunt's battery indicator will flash **blue** for 2 minutes after power up.
6. Now check the CommLink status indicator ⑥

    a. If the CommLink status indicator is now flashing **green** at 5 second intervals the CommLink is already paired and is receiving data from the BC300 External Shunt. Go to step 8.

    b. If the CommLink status indicator is flashing **orange** this indicates it requires pairing to the BC300 External Shunt. Continue to step 7.

    c. If the CommLink status indicator is flashing **red** it is paired to a BC300 External Shunt, but not receiving data. Clear the pairing by pressing the CommLink pair button ⑦ with a pen or similar until the CommLink status indicator changes from flashing **red** to flashing **orange**. This should occur after 5 seconds. Continue to step 7.

7. With a pen or similar make a short press on the CommLink pair button ⑦. This will initiate the pairing between the CommLink and the BC300 External Shunt. The CommLink status indicator ⑥ will now be flashing **blue**. Observe the CommLink status indicator while the pairing is occurring, it may take up to one minute for the pairing to complete

    a. If the pairing is successful the CommLink status indicator ⑥ will stop flashing **blue** and will then begin flashing **green** at 5 second intervals. Continue to step 8.

    b. If pairing fails, the CommLink status indicator ⑥ will return to flashing **orange**. If this happens then disconnect the BC300 External Shunt's positive flying lead ③ from the battery and return to step 5 to repeat the pairing procedure.

Note: if you have multiple pairing failures at this step try installing the CommLink closer to the BC300 External Shunt or identify possible interference sources. This may require a longer data cable to locate the CommLink closer to the BC300 External Shunt. Return to step 5.

8. Congratulations, the BC300 External Shunt + CommLink system installation is complete.

INDICATORS

BC300 EXTERNAL SHUNT BATTERY INDICATORS

LED COLOUR	STATUS
	Available for pairing
	Normal operation
	One or more battery fault conditions detected: • Battery voltage outside 8V - 16C range • Battery current exceeding ±300A • Battery temperature outside -20°C to 70°C range • BC300 External Shunt temperature outside operating limits

COMMLINK STATUS INDICATORS

LED COLOUR	STATUS
	Not paired
	Pairing
	Normal operation
	Not receiving data from the BC300 External Shunt

SPECIFICATIONS

BATTERY MONITORING SPECIFICATIONS	
Voltage Range	8V to 16V
Voltage Resolution	<20mV
Current Resolution	<200mA
Current Range	240A continuous
Overload Protection (100ms without damage)	± 800A
Temperature Range (Battery Terminal)	-20 to 70°C
Temperature Resolution	3°C
Capacity Range	7 to 800Ah

GENERAL SPECIFICATIONS	BC300 External Shunt	CommLink
Input Voltage	8V to 16V	
Quiescent Current Drain (average)	<10mV	<20mV
Operating Temperature	-20 to 70°C	
Humidity Operating	≤ 85% RH non-condensing	
Humidity Non-operating	≤ 95% RH non-condensing	
Dimensions (Approx.)	140 x 65 x 18.6mm	92 x 52 x 25mm
Weight (Approx.)	1kg	150g
IP Rating	IP 54	IP 30

WARRANTY TERMS AND CONDITIONS

Registering your BMPRO product is an important step to ensure that you receive all the benefits you are entitled to. Please visit **teambmpro.com** to complete the online registration form for your new product today.

1. BMPRO goods come with guarantees that cannot be excluded under Australian Consumer Law. For major failures with the service, you are entitled:
   - to cancel your service contract with us; and
   - to a refund for the unused portion, or to compensation for its reduced value.

   You are also entitled to choose a refund or replacement for major failures with goods. If a failure with the goods or a service does not amount to a major failure, you are entitled to have the failure rectified in a reasonable time. If this is not done you are entitled to a refund for the goods and to cancel the contract for the service and obtain a refund of any unused portion. You are also entitled to be compensated for any other reasonably foreseeable loss or damage from a failure in the goods or service.
2. BMPRO warrants products against defects for a period of one year, commencing from the original date of purchase. Proof of purchase is required before you can make a claim under this warranty.

HOW TO PROTECT YOUR RIGHTS UNDER THIS WARRANTY:

3. This warranty does not extend to product failures or defects caused by, or associated with, but not limited to: failure to install or maintain correctly, unsuitable physical or operating environment, accident, acts of God, hazard, misuse, unauthorised repair, modification or alteration, natural disaster, corrosive environment, insect or vermin infestation and failure to comply with any additional instructions supplied with the product.
4. BMPRO may seek reimbursement of any costs incurred by BMPRO when a product is found to be in proper working order or damaged as a result of any of the warranty exclusions mentioned in point
5. To enquire or make a claim under this warranty, please follow these steps:

   a) Prior to returning a BMPRO product, please email **customerservice@teambmpro.com** to obtain a Return Material Authorisation (RMA) number

   b) Package and send the product to:

   BMPRO Warranty Department
   19 Henderson Road
   Knoxfield, VIC 3180

   Please mark RMA details on the outside of the packaging

   c) Please ensure the package also includes: a copy of the proof of purchase, a detailed description of the fault and your contact details including phone number and return address.
6. BMPRO will not be liable for any costs, charges or expenses incurred in the process of returning a product in order to initiate a warranty claim.

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