

OWNER'S MANUAL

BC300 EXTERNAL SHUNT

COMM LINK



SAFETY PRECAUTIONS

Please read the Safety Precautions carefully before installing the power supply. Be sure to observe all precautions without fail.

After completing the installation, conduct a trial operation to check for faults.



CAUTION

Failure to observe these instructions properly may result in property damage or personal injury, which may be serious depending on the circumstances.

Correct installation is the most critical factor in ensuring the safe use of the power supply. If every consideration of these instructions has been satisfied the power supply will be safe to operate.

Take care as dropping or touching of metal objects onto the battery terminals may cause short circuits. Remove any personal metal adornment such as a chain, watch or ring, which could cause short circuits and personal injury.

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 **BC300 External Shunt** and **CommLink** 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.

Specifications are subject to change and improvement without notice.

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Manual Part #030258

The BMPRO **BC300 External Shunt** and **CommLink** are a proudly Australian-made product, manufactured in Melbourne, Australia. Designed by Setec, one of Australia's leading power solutions experts. The **BC300 External Shunt** represents a high quality product that will provide years of service.

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Disclaimer

SETEC accepts no liability for any loss or damage, which may occur as a result of improper or unsafe use of its products. Warranty is only valid if the unit has not been modified or misused by the customer.

INTRODUCTION

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** & **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 $\pm 240A$ 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**.

ACCESSORIES

The following accessories are provided with the **BC300 External Shunt + CommLink** system:

- 1 x CommLink data cable
- 1 x brass battery post
- 1 x brass battery post connector
- foam base supports

Note: the accessories required will be dependent on the monitored battery's connection type.

HARDWARE, MOUNTING AND INSTALLATION

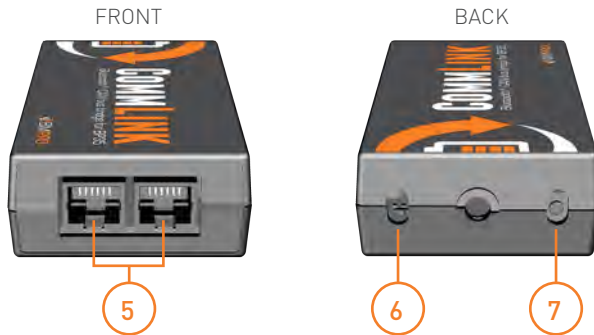
NAME AND FUNCTION OF PARTS

BC300
EXTERNAL
SHUNT



- ① Negative Battery Connection
- ② New Negative Load Connection (connects to load)
Note: this terminal has flat sides.
- ③ '+' Positive Flying Lead and Temperature Sensor
- ④ LED Status indicator

COMMLINK



- ⑤ CAN bus sockets
- 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 1 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.
 - c. 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.





BC300 EXTERNAL SHUNT

Battery Indicator

| LED Colour | Status |
|---|--|
|  BLUE | Available for pairing |
|  GREEN | Normal operation |
|  RED | One or more battery fault conditions detected: <ul style="list-style-type: none">• Battery voltage outside 8V to 16V range• Battery current exceeding $\pm 300\text{A}$• Battery temperature outside -20°C to 70°C range• BC300 External Shunt temperature outside operating limits |

COMMLINK

Status Indicator

| LED Colour | Status |
|---|---|
|  ORANGE | Not Paired |
|  BLUE | Pairing |
|  GREEN | Normal operation |
|  RED | Not receiving data from the BC300 External Shunt |

SPECIFICATIONS

| Battery Monitoring Specifications | | |
|---|-------------------------|-----------------|
| Voltage Range | 8V to 16V | |
| Voltage Resolution | < 20 mV | |
| Current Resolution | < 200 mA | |
| Continuous Current Rating (derates above 45°C) | ±240 A | |
| Current Range | ±300 A | |
| Overload Protection (100ms without damage) | ±800 A | |
| Temperature Range (Battery Terminal) | -20°C to 70°C | |
| Temperature Resolution | 3°C | |
| Capacity Range | 7 to 800 Ah | |
| General Specifications | BC300 External Shunt | CommLink |
| Input Voltage | 8 V to 16 V | |
| Quiescent Current Drain (average) | < 10 mA | < 20mA |
| Operating Temperature | -20°C to 70 °C | |
| Humidity Operating | ≤ 85% RH Non-condensing | |
| Humidity Non-operating | ≤ 95% RH Non-condensing | |
| Dimensions (Approx.) | 140 x 65 x 18.6 mm | 92 x 52 x 25 mm |
| Weight (Approx.) | 1kg | 150g |
| IP Rating | IP 54 | IP 30 |

WARRANTY TERMS AND CONDITIONS

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

BMPRO by Setec goods come with guarantees that cannot be excluded under Australian Consumer Law. You are entitled to a replacement or refund for major failure and for compensation for any reasonably foreseeable loss or damage. You are entitled to have the goods repaired or replaced if the goods fail to be of acceptable quality and the failure does not amount to a major failure. The benefits under this Warranty are in addition to your other rights and remedies under a law in relation to the goods to which this Warranty relates (the Australian Consumer Law).

Setec, as the manufacturer of BMPRO by Setec goods warrants products against defects for a period of two years, 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: The **BC300 External Shunt** and **CommLink** are designed to be installed by a suitably qualified installer. You or your installer should carefully inspect the product before installation for any visible manufacturing defects. We accept no responsibility in addition to our consumer guarantee obligations where a product has been installed incorrectly.

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.

Setec may seek reimbursement of any costs incurred by them when a product is found to be in proper working order or damaged as a result of one or more of the warranty exclusions mentioned in point 4 of this statement.

To enquire or make a claim under this warranty, please follow these steps:

- a. Prior to returning a BMPRO by Setec product, please email **customerservice@teambmpro.com** to obtain a Return Material Authorisation (RMA) number
- b. Package and send the product to: BMPRO by Setec 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

Setec 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

SWITCH OFF. POWER UP.