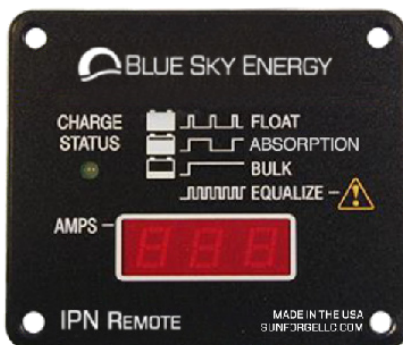


# IPN Remote Manual

## Installation and Operation Manual

IPN™ NETWORK COMPATIBLE CHARGE  
CONTROLLER AND BATTERY SYSTEM MONITOR



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BLUE SKY ENERGY IPN REMOTE MANUAL, REV G | 2022

This manual includes important safety instructions  
for the IPN Remote (IPNREM).  
Save these instructions.

## Product Certifications



### CONFORMS TO:<sup>(\*)</sup>

EN 61000-6-2:2005

EN 61000-6-3:2007 + A1:2011

AS/NZS 60000-6-3:2012

### FCC CFR 47 Part 15 Subpart B<sup>(\*)</sup>

This device complies with part 15 of the FCC rules. Operation is subject to the following two conditions:

- 1) This device may not cause harmful interference, and 2) This device must accept any interference received, including interference that may cause undesired operations.

(\*) See Electromagnetic Compatibility below.

## Setup

A four position DIP switch configures the output current display. To show output current from a single controller IPN network address of the display and charge controller must match.

| Dip Switch      | IPN Address - Output Current of Single Charger |            |            |            |            |            |            |            | Total Output Current of All Chargers on IPN Network |
|-----------------|--|------------|------------|------------|------------|------------|------------|------------|---|
|                 | 0  | 1          | 2          | 3          | 4          | 5          | 6          | 7          |   |
| # 1 (A2)        | OFF<br>(0)                                     | OFF<br>(0) | OFF<br>(0) | OFF<br>(0) | ON<br>(1)  | ON<br>(1)  | ON<br>(1)  | ON<br>(1)  | X   |
| # 2 (A1)        | OFF<br>(0)                                     | OFF<br>(0) | ON<br>(1)  | ON<br>(1)  | OFF<br>(0) | OFF<br>(0) | ON<br>(1)  | ON<br>(1)  | X   |
| # 3 (A0)        | OFF<br>(0)                                     | ON<br>(1)  | OFF<br>(0) | ON<br>(1)  | OFF<br>(0) | ON<br>(1)  | OFF<br>(0) | ON<br>(1)  | X   |
| # 4 (IPN Total) | OFF<br>(0)                                     | OFF<br>(0) | OFF<br>(0) | OFF<br>(0) | OFF<br>(0) | OFF<br>(0) | OFF<br>(0) | OFF<br>(0) | ON (1)  |

## Installation

This unit is designed to be used with Integrated Power Net™ (IPN™) compatible charge controllers. Do not plug into anything other than an IPN compatible communications port. Each charge controller includes an IPN DISPLAY connector which provides power and IPN network connection. The IPN-Remote can plug into any charge controller on the network using the standard 4 conductor RJ-11 voice telephone cable supplied. Standard 4-pin telephone cables swap pin numbers end-to-end. If cables are custom terminated or cable couplers are used, be certain pin swap is maintained. Do not expose to rain, snow or excessive moisture. Total maximum cable length should be limited to approximately 500 feet (152.4 m).

### Electromagnetic Compatibility (CE and FCC Marks)

To comply with electromagnetic compatibility requirements the IPN Remote must be installed with a clamp on type ferrite suppressor (included with the products). The clamp suppressor must be installed around the remote display cable with the cables looped to pass through the core 2 times. Additional suppressors can be ordered as BSE p/n 523-0005-01.

# Operation

The IPN Remote provides a digital display of battery voltage and output charge current. The display alternates between voltage and output current when charging. Current is displayed when the "AMPS" indicator is ON and can be the total of all controllers on the IPN network (factory default), or the current of a single controller on the IPN network. An automatic night time dimming feature reduces display brightness when PV (Panel) charge is OFF.

## Charge Status Indicator

**Charge Off:** Off

**Bulk (<70 % Full):** Continuously On

**Absorption (70 % - 95 % Full):**  
Blinking 1 SEC ON / 1 SEC OFF

**Float (Fully Charged):**  
Blinking 0.2 SEC ON / 1 SEC OFF

**Equalize: Rapid Blinking**  
0.2 SEC ON / 0.2 SEC OFF

**AMPS Indicator**

**BLUE SKY ENERGY**

**CHARGE STATUS**

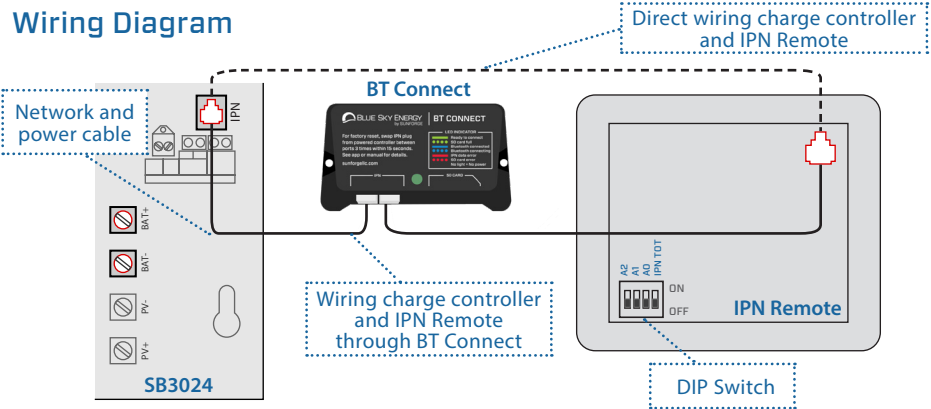
- FLOAT
- ABSORPTION
- BULK
- EQUALIZE

**AMPS** — [Red Display]

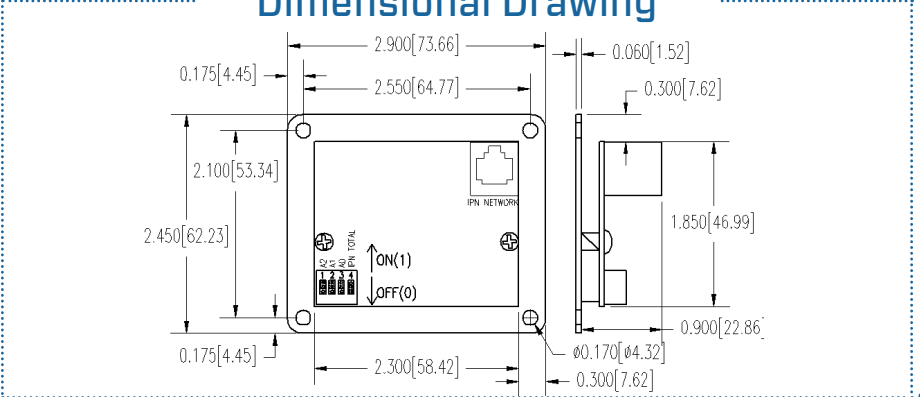
**IPN REMOTE**

MADE IN THE USA  
SUNFORGELLC.COM

## Wiring Diagram



## Dimensional Drawing



# Troubleshooting Guide

| Symptom  | Probable Cause   | Item to Examine or Correct  |
|--|--|---|
| Completely dead, no display  | No battery power   | Battery disconnected, overly discharged (<9 V), or connected reverse polarity. Battery powers unit, not PV (Panel).   |
|  |  | Cable Faulty  |
| Display turns on, but battery voltage displays "----" rather than a number   | Display not communicating with charge controller                                   | Cable faulty  |
|  |  | One charge controller only must be Master.  |
|  |  | Poor or missing BAT- connections preventing communication   |
| When charger turns on, current displays "-- --" rather than a number         | Output current display selection set for an address not present on the IPN network | Configure display IPN network address to a charger present on the IPN network.  |
| When charger turns on, output current displays but the value seems incorrect | Output current display selection set for wrong IPN network address                 | Configure display IPN network address DIP switch to read desired output current.  |
|  | BAT- connected to PV- outside charge controller                                    | PV- & BAT- must be separate external to the unit for proper operation and cannot connect to a common location. External connection prevents proper operation of internal shunts and current measurement system. |

## Specifications

| Specifications             | IPN Remote  |
|----------------------------|---|
| Power Consumption:         | 0.25 W (typical standby), 1.0 W backlit ON                            |
| Display:                   | 3-Digit • 0.30" Low Power LED   |
| Communication and Cabling: | Communication via 25' (7.6 m)<br>RJ-11 4-pin telephone cable provided |
| Operating Temperature:     | -40 °C – 40 °C  |
| Environmental Protection:  | IP00  |
| Weight:                    | 0.017 lb. (42 g)  |
| Dimensions:                | 2.9" x 2.45" x 0.9" (7.4 x 6.2 x 2.3 cm)                              |

NB. As a part of our continuous improvement process specifications are subject to change without prior notice.

### 5 year limited warranty

Visit <https://sunforge.com/ipn-remote/> for more information and terms of the warranty.

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