Continuous Energy

PV FOR TELECOM

QUICK WIRING GUIDE
Rev 5.5
Gen4 PVT Panels and Cabinets
IMPORTANT SAFETY INSTRUCTIONS

DANGER -- HIGH VOLTAGE

WARNINGS:

- During the installation of this product, you will be exposed to wires from the Solar PhotoVoltaic (PV) panel array which are energized with high voltage.

- **The high voltage is present during all daylight hours.**

- If a Combiner Box is wired in the system, turn all the Circuit Breakers in all the Combiner Boxes OFF before opening the Apollo PVT Cabinet doors. If a Combiner Box is NOT wired in series with the PV Array, carefully disconnect the PV Array at the most convenient location and do not re-connect it until the work in the Apollo PVT Cabinet is complete and the doors are closed.

- **This system is energized from multiple sources.** In addition to the PV Array, the Battery also provides dangerous power to the Apollo PVT Cabinet. Disconnect the Battery after the PV Array is de-energized.

To Prevent Damage:

- **ALWAYS TURN THE BATTERY POWER TO THE T80HV CHARGE CONTROLLERS ON BEFORE TURNING ON THE PV INPUTS.**

- **ALWAYS TURN THE PV INPUT OFF BEFORE TURNING THE BATTERY POWER OR THE T80HV OUTPUT CIRCUIT BREAKERS OFF.**
STEP BY STEP WIRING INSTRUCTIONS:

Left and Right side Gland Plates with labels at bottom of Cabinet

WAGO Cage Clamp Connectors - Insert small screwdriver for easy wire entry

GLANDS
1. Feed wires from outside up from the bottom.
2. Tighten gland by hand.
3. Connect wire to proper point inside the cabinet.
REQUIRED CONNECTIONS:

| OUTSIDE OF THE APOLLO CABINET | INSIDE THE APOLLO CABINET |

AMBIENT TEMPERATURE SENSOR

- Hang in the shade under the cabinet
- 150mm (6in.)

ANTENNA FOR GSM MODEM

- Put GSM antenna on top of cabinet
- 3 meters of RG-174 coax supplied

PLUG GSM ANTENNA WIRE INTO MAIN 3G/4G CONNECTOR

- The GSM modem is under the ASC

THE GSM MODEM IS UNDER THE ASC
**Apollo Solar**

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Gen4 PV for Telecom Systems – Quick Wiring Guide Rev 5.5

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**Earth Ground**

- Keep short and straight
- To main Earth Ground

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**Battery Temperature Sensor**

- Stick to side of battery
- 15 meters (49 ft.) supplied

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**Alarm Sense Wires at PV Array**

- Theft Alarm Wire
- Wire Frame
- 1mm² (AWG 18) Wires

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**Irradiance Sensor**

- Mount on Top of PV Array

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**With Enhanced Surge Protection**

- SPD DLAH-24D3

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23 F. J. Clarke Circle
Bethel, Connecticut 06801 USA

Apollo Solar, Inc.  
www.ApolloSolar.com

Phone: +1 203 790-6400  
Fax: +1 203 792-0300
BATTERY VOLTAGE SENSE WIRES

1.0mm² (AWG 18) WIRES

K
J
BATTERY - N
5 AMP
M
5 AMP
BATTERY
BATTERY +

MAKE CONNECTIONS TO BATTERY LAST

48 VOLT BATTERY CABLES

95mm² (AWG 4/0) WIRES

MAKE BATTERY CONNECTIONS LAST

ADD 1 or 2 MORE BREAKERS FOR MORE BATTERIES

TORQUE TO 20.3 N-m (180 in-lbs)
WIRING FOR **OPTIONAL** FEATURES:

EXTERNAL GENERATOR AND RECTIFIER WITH AWG 4/0 DC INPUT CABLES:

<table>
<thead>
<tr>
<th>DC INPUT FROM RECTIFIER</th>
</tr>
</thead>
<tbody>
<tr>
<td>DIESEL GENERATOR</td>
</tr>
<tr>
<td>GEN START N.O., COM &amp; N.C.</td>
</tr>
<tr>
<td>1mm² (AWG 18) Wires</td>
</tr>
<tr>
<td>-48V OUT</td>
</tr>
<tr>
<td>RECTIFIER</td>
</tr>
<tr>
<td>+48V OUT</td>
</tr>
<tr>
<td>50 to 90mm² (AWG 1/0 to 4/0) Wires</td>
</tr>
</tbody>
</table>

ALARM OUTPUTS TO DRY CONTACT INPUTS ON THE BTS SYSTEM:

<table>
<thead>
<tr>
<th>DRY CONTACT ALARM INPUTS ON BTS SYSTEM</th>
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</thead>
<tbody>
<tr>
<td>BAT BREAKER TRIPPED</td>
</tr>
<tr>
<td>LOAD BREAKER TRIPPED</td>
</tr>
<tr>
<td>LOW BATTERY VOLTAGE</td>
</tr>
<tr>
<td>ENCLOSURE TEMP HIGH</td>
</tr>
<tr>
<td>HIGH BATTERY VOLTAGE</td>
</tr>
<tr>
<td>HIGH BATTERY TEMPERATURE</td>
</tr>
<tr>
<td>6 PAIRS OF 0.75mm² (AWG 20) WIRES</td>
</tr>
<tr>
<td>THIS FEATURE IS OPTIONAL</td>
</tr>
</tbody>
</table>

FANS ON THE CABINET DOORS:

<table>
<thead>
<tr>
<th>FANS IN THE CABINET DOORS OPTIONAL</th>
</tr>
</thead>
<tbody>
<tr>
<td>48V FANS</td>
</tr>
<tr>
<td>FAN IN THE CABINET DOOR</td>
</tr>
<tr>
<td>1mm² (AWG 18) Wires</td>
</tr>
<tr>
<td>48V FANS</td>
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<tr>
<td>FUSE</td>
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<tr>
<td>10A</td>
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<tr>
<td>DOOR</td>
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23 F. J. Clarke Circle  
Bethel, Connecticut 06801 USA

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Phone: +1 203 790-6400  
fax: +1 203 792-0300
WIRING FOR OPTIONAL FEATURES - CONTINUED

DC OUTPUT DISTRIBUTION BREAKERS:

**48 VOLT DC DISTRIBUTION BREAKERS - OPTION**

- 500 WATT +
  48V LOAD +
- 1000 WATT +
  48V LOAD +
- 1000 WATT +
  48V LOAD +
- 2000 WATT +
  48V LOAD +
- 2000 WATT +
  48V LOAD +

**NOTE:** TOTAL MAXIMUM CURRENT IS 100AMPS

**100 AMP OUTPUTS TO ESSENTIAL AND NON-ESSENTIAL LOADS:**

**100 AMP ESSENTIAL & NON-ESSENTIAL LOADS**

- UP TO 4800 WATT NON-ESSENTIAL LOADS
  50mm² (AWG 1/0) WIRES MAXIMUM
  100 AMP MAX OUTPUT

- UP TO 4800 WATT ESSENTIAL LOAD
  50mm² (AWG 1/0) WIRES MAXIMUM
  100 AMP MAX OUTPUT

**WIRING FROM MASTER CABINET TO SLAVE CABINET WITH BATTERY BREAKERS:**

**MASTER TO SLAVE CABINET ALARM WIRES**

- 6 CONDUCTOR CABLE

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