Network Power Supply (A2205-[ ]-CE) - Overview, Installation

The Network Power Supply (NPS) provides regulated +15 VDC to the OctoPlex dual CAN network system. The power supply utilizes one AC and two DC power inputs for redundancy.

Product Highlights:
- 120 VAC Input Power (Carling P/N A2205-1-CE)
- 230VAC Input Power (Carling P/N A2205-2-CE)
- +24V DC Input Power
- Dual CAN Bus Connection/Communications
- 7.5 amp Thermal breakers for each 15 volt output
- Network Health LED Status Indicators

Table 1:

<table>
<thead>
<tr>
<th>LED Indicator</th>
<th>Color</th>
<th>Condition</th>
</tr>
</thead>
<tbody>
<tr>
<td>CAN Bus A</td>
<td>Green</td>
<td>CAN Bus On</td>
</tr>
<tr>
<td></td>
<td>No Indication</td>
<td>CAN Bus Off</td>
</tr>
<tr>
<td>Service</td>
<td>Red</td>
<td>Needs Service</td>
</tr>
<tr>
<td></td>
<td>No Indication</td>
<td>Normal Operation</td>
</tr>
<tr>
<td>CAN Bus B</td>
<td>Green</td>
<td>CAN Bus On</td>
</tr>
<tr>
<td></td>
<td>No Indication</td>
<td>CAN Bus Off</td>
</tr>
</tbody>
</table>

Installation

The Network Power Supply should be installed in a location that allows access to the thermal circuit breakers installed on the connector side of the unit. At least one (1) power input (AC or DC) must be present for the NPS to operate. Depending on network complexity, one (1) or more Network Power Supplies can be installed. See Diagrams for Typical Single or Multiple NPS installations.

This is the only OctoPlex® component, which uses Mini/Thick cable and Mini-C connectors (other components use Micro-C connectors). The drops used for this component should have a Male Mini-C connection on both ends.

*Manufacturer reserves the right to change product specification without prior notice. Please refer to our website for the latest details.*
The required number of Network Power Supplies will be determined by the length of the backbone and the sum of the devices powered on the network. If multiple power sources are required, V+ (NET-S) must be broken (on both Buses) between the sources. The SHIELD (drain) must be connected at only ONE power supply.
Pin Out Connections

<table>
<thead>
<tr>
<th>Connector</th>
<th>Pin</th>
<th>Connection</th>
<th>View</th>
<th>Mating Connector</th>
</tr>
</thead>
<tbody>
<tr>
<td>J1 / J2</td>
<td>1</td>
<td>Shield</td>
<td></td>
<td>Device Net Mini-C Male</td>
</tr>
<tr>
<td></td>
<td>2</td>
<td>Power Output</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>3</td>
<td>Power Return</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>4</td>
<td>CAN HI</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>5</td>
<td>CAN LOW</td>
<td></td>
<td></td>
</tr>
<tr>
<td>J3</td>
<td>1</td>
<td>AC Neutral</td>
<td></td>
<td>DT06-4S</td>
</tr>
<tr>
<td></td>
<td>2</td>
<td>AC Ground</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>3</td>
<td>AC Ground</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>4</td>
<td>AC Line</td>
<td></td>
<td></td>
</tr>
<tr>
<td>J4 / J5</td>
<td>1</td>
<td>DC Power Input</td>
<td></td>
<td>DT06-2S</td>
</tr>
<tr>
<td></td>
<td>2</td>
<td>DC Power Return</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

* Two female Mini-C connectors are provided for connection to the primary and secondary CAN Bus via drop cables.

Maintenance

The Network Power Supply requires no maintenance. Any service or repair issues should be handled by a factory authorized technician.

General Specifications

**Electrical**

- **AC Voltage Input**
  - A2205-1-CE: 90-126VAC; 56Hz - 63Hz
  - A2205-2: 220-264VAC; 47Hz-53Hz
- **AC Input Current (Max)**
  - 2 Amps
- **DC Voltage Input**
  - 18VDC – 36VDC
- **DC Input Current (Max)**
  - 6 Amps
- **CAN Bus Output Voltage**
  - +15 VDC (± 0.5)

**Environmental**

- **Radiated, RF Field Immunity**
  - IEC-61000-4-3
- **Electrical Fast Transient/Burst Immunity**
  - IEC 61000-4-4
- **Voltage Surge Immunity**
  - IEC 61000-4-5
- **Conducted, Immunity**
  - IEC 61000-4-6
- **Conducted Emissions**
  - IEC 60945
- **Voltage Variation Immunity**
  - IEC 61000-4-11
- **Conducted LF Immunity**
  - IEC 61000-4-16
- **ESD Immunity**
  - IEC-61000-4-2
- **Insulation Resistance**
  - IEC-60092-504
- **Operating Temperature**
  - -40°C to +70°C
- **Storage Temperature**
  - -40°C to +85°C
- **Vibration**
  - IEC-60068-2-6 Test Fc
- **Temperature Cycle**
  - IEC 60945
- **Humidity**
  - IEC-60068-2-30 Test Db
- **Corrosion**
  - IEC 60945
- **Weight**
  - 6.0 lbs (2.72 kg) Max

**Mechanical**

- **Dimensions**
  - 7.80” X 8.84” X 3.85”
- **CAN Bus Connectors**
  - Two (2) Mini Female
- **AC Power Input Connector**
  - Deutsch P/N DT06-4S
- **DC Power Input Connector**
  - Two (2) Deutsch P/N DT06-2S
  - 4 each 4 x 0.16 #6 hardware
- **Mounting Orientation**
  - N/A

**Certifications**

- **NMEA 2000**
- **Lloyd’s Register**
  - Category B
  - Lloyd’s Type Approved, Test Specification #1, Env 2
- **CE**
  - IEC 60533 Electrical and Electronic Installations in Ships
  - IEC 60945 Maritime Navigation and Radio Communication Equipment and Systems
### Dimensional Specifications: in. [mm]

**Network Power Supply**
**A2205-[ ]-CE**

<table>
<thead>
<tr>
<th>Dimension</th>
<th>Description</th>
<th>Measurement</th>
</tr>
</thead>
<tbody>
<tr>
<td>6.10 in. [154.94 mm]</td>
<td>Power Label</td>
<td></td>
</tr>
<tr>
<td>3.85 in. [97.79 mm]</td>
<td>Identification Plate</td>
<td></td>
</tr>
<tr>
<td>7.80 in. [198.12 mm]</td>
<td>Power Label</td>
<td></td>
</tr>
<tr>
<td>6.10 in. [154.94 mm]</td>
<td>Identification Plate</td>
<td></td>
</tr>
<tr>
<td>8.00 in. [203.20 mm]</td>
<td>0.16 Wide Slot for #6 Screw</td>
<td></td>
</tr>
<tr>
<td>8.84 in. [224.53 mm]</td>
<td>7 per 2 A Circuit Breaker</td>
<td></td>
</tr>
</tbody>
</table>

![Network Power Supply Diagram](image-url)
The Battery Monitor is capable of measuring one (1) Current, two (2) DC Voltages, and up to four (4) individual battery temperatures. The Battery Monitor Cable Harness (P/N A2225-[]), see Table 1 and 2) enables the monitor to connect to the batteries. The Battery Shunt 200 Amp, 50mV (P/N MS91587-2), is needed to measure the current that is installed on the high side of the installation. The Battery Monitor is NMEA 2000® certified, allowing the user to view all DC information over an NMEA 2000 network.

**Product Highlights:**
- Capable of Monitoring the following:
  - Current Measurement
  - Two (2) DC Voltage Measurements
  - Four (4) Temperature Measurements
- Configurable Alerts/Alarms
- Single CAN BUS Communication

**Installation**
The Battery Monitor was designed to be installed in a protected, non-explosive area of the vessel. Take precautions to install the Battery Monitor in an area that will be away from direct exposure to the weather and combustible fumes.

**CAN Connections**
One male Micro-C connectors is provided on the top of the Battery Monitor for connection to the primary CAN bus via drop cable.

*Use the shortest drop length possible when connecting the Battery Monitor to the CAN backbone. NMEA 2000 spec is maximum 6 meters for drop cables.*

*Manufacturer reserves the right to change product specification without prior notice. Please refer to our website for the latest details.*
Typical Installation Diagram

When no High Side Shunt is used, tie the orange, green and blue wires directly to the V1+ side of the battery. Installer must follow applicable industry standards i.e. ABYC/CE for properly wiring and utilizing external protective devices i.e. fuses as required.

CAUTION!

When no High Side Shunt is used, tie the orange, green and blue wires directly to the V1+ side of the battery. Installer must follow applicable industry standards i.e. ABYC/CE for properly wiring and utilizing external protective devices i.e. fuses as required.

Battery Monitor Harness Cable

Table 1:

<table>
<thead>
<tr>
<th>Part Number</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>A2225-4</td>
<td>Battery Monitor Cable Harness - 4’</td>
</tr>
<tr>
<td>A2225-6</td>
<td>Battery Monitor Cable Harness - 6’</td>
</tr>
<tr>
<td>A2225-8</td>
<td>Battery Monitor Cable Harness - 8’</td>
</tr>
<tr>
<td>A2225-14</td>
<td>Battery Monitor Cable Harness - 14’</td>
</tr>
<tr>
<td>A2225-16</td>
<td>Battery Monitor Cable Harness - 16’</td>
</tr>
<tr>
<td>MS91587-2</td>
<td>Battery Shunt 200Amp, 50mV</td>
</tr>
</tbody>
</table>

Table 2:

<table>
<thead>
<tr>
<th>Pin</th>
<th>Connection</th>
<th>Color</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>Temperature Sensor 1 Signal</td>
<td>Orange</td>
</tr>
<tr>
<td>2</td>
<td>Shunt High</td>
<td>Orange</td>
</tr>
<tr>
<td>3</td>
<td>Temperature Sensor 2 Signal</td>
<td>Orange</td>
</tr>
<tr>
<td>4</td>
<td>Temperature Sensor 1 Ground</td>
<td>Black</td>
</tr>
<tr>
<td>5</td>
<td>Ground</td>
<td>Black</td>
</tr>
<tr>
<td>6</td>
<td>Shunt Low</td>
<td>Green</td>
</tr>
<tr>
<td>7</td>
<td>Temperature Sensor 3 Signal</td>
<td>Orange</td>
</tr>
<tr>
<td>8</td>
<td>Temperature Sensor 3 Ground</td>
<td>Orange</td>
</tr>
<tr>
<td>9</td>
<td>Temperature Sensor 2 Ground</td>
<td>Orange</td>
</tr>
<tr>
<td>10</td>
<td>Reserved</td>
<td></td>
</tr>
<tr>
<td>11</td>
<td>Battery V2+ 12-30VDC</td>
<td>Red</td>
</tr>
<tr>
<td>12</td>
<td>Temperature Sensor 4 Signal</td>
<td>Orange</td>
</tr>
<tr>
<td>13</td>
<td>Temperature Sensor 4 Ground</td>
<td>Orange</td>
</tr>
<tr>
<td>14</td>
<td>Reserved</td>
<td></td>
</tr>
<tr>
<td>15</td>
<td>Not Used</td>
<td></td>
</tr>
<tr>
<td>16</td>
<td>Not Used</td>
<td></td>
</tr>
<tr>
<td>17</td>
<td>Not Unused</td>
<td></td>
</tr>
<tr>
<td>18</td>
<td>Battery V1+ 12-30VDC (Must be connected to power monitor)</td>
<td>Blue</td>
</tr>
</tbody>
</table>
**Operation**

The Battery Monitor has one (1) configurable parameter; the maximum current value of the high side shunt being used. This parameter is a factory setting. The voltage drop across the high side shunt should not exceed 50 mV for the configured current. For example, if the maximum shunt value selected is 200 amps, then the voltage drop across the high side shunt at 200 Amps should not exceed 50 mV DC.

**Maintenance**

The Battery Monitor requires no maintenance. Any service or repair issues should be handled by a factory authorized technician.

**General Specifications**

**Electrical**

- **Power Input**: 12 VDC – 30VDC, 100 mA max (Blue Wire)
- **DC Voltage Input**: 12 VDC – 30VDC (Red Wire)
- **Shunt Voltage**: 50 mVDC (Orange/Green Wires)
- **CAN Bus Voltage**: +15 VDC (± 0.5)
- **Load Equivalence Number (LEN)**: 1

**Mechanical**

- **Dimensions**: 5.50” X 2.43” X 2.43”
- **CAN Bus Connectors**: One (1) Micro-C Male
- **Mounting**: 4 each 4 x 0.16 #6 hardware
- **Orientation**: N/A

**Certifications**

- **NMEA 2000**: Category B
- **Lloyd’s Register**: Lloyd’s Type Approved, Test Specification #1, Env 2
- **IEC 60533**: Electrical and Electronic Installations in Ships
- **IEC 60945**: Maritime Navigation and Radio Communication Equipment and Systems

**Environmental**

- **Radiated, RF Field Immunity**: IEC-61000-4-3
- **Electrical Fast**: IEC 61000-4-4
- **Transient/Burst Immunity**: IEC 61000-4-5
- **Voltage Surge Immunity**: IEC 61000-4-6
- **Conducted, Immunity**: IEC 61000-4-6
- **Conducted Emissions**: IEC 60945
- **Voltage Variation Immunity**: IEC 61000-4-11
- **Conducted LF Immunity**: IEC 61000-4-16
- **ESD Immunity**: IEC-61000-4-2
- **Insulation Resistance**: IEC-60092-504
- **Operating Temperature**: -40°C to +70°C
- **Storage Temperature**: -40°C to +85°C
- **Temperature Sensor Range**: -20°C to +70°C
- **Vibration**: IEC-60068-2-6 Test Fc
- **Temperature Cycle**: IEC 60945
- **Humidity**: IEC-60068-2-30 Test Db
- **Corrosion**: IEC 60945
- **Weight**: 0.75 lbs (0.34 kg) nominal
Dimensional Specifications: in [mm]

Battery Monitor
A1680-CE

Shunt
Source: www.deltecco.com/MKB-DC.html