Extended Run Time Power Supply

Product Manual

Edition 1
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INDUSTRIAL
SCIENTIFIC
Tables and figures

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Warnings and Cautionary Statements

⚠️ Read and understand this "Product Manual" before operating or servicing the equipment. Failure to perform certain procedures or note certain conditions may impair the performance of the product, cause unsafe conditions, or both.

⚠️ Before using the Extended Run Time Power Supply accessory, read and understand control drawing 1810D9387-200 (Figure 1.1).

⚠️ When the Extended Run Time Power Supply is not in use and the instrument is placed in hazardous-classified locations, the Radius Base power-supply port cap must be installed.

⚠️ If it appears that the instrument is not working correctly, immediately contact Industrial Scientific.

⚠️ For safety reasons, this equipment must be operated and serviced by qualified personnel only.

**IMPORTANT**: This equipment has been tested and found to comply with the limits for a Class A digital device, pursuant to part 15 of the FCC Rules. These limits are designed to provide reasonable protection against harmful interference when the equipment is operated in a commercial environment. This equipment generates, uses, and can radiate radio frequency energy and, if not installed and used in accordance with the instruction manual, may cause harmful interference to radio communications. Operation of this equipment in a residential area is likely to cause harmful interference in which case the user will be required to correct the interference at his own expense.

The instrument complies with part 15 of the FCC Rules. Operation is subject to the following two conditions:

- This device may not cause harmful interference.
- This device must accept any interference received, including interference that may cause undesired operation.

Changes or modification made that are not expressly approved by the manufacturer could void the user's authority to operate the equipment.

**IMPORTANT**: This device complies with Industry Canada license-exempt RSS standard(s). Operation is subject to the following two conditions: (1) this device may not cause interference, and (2) this device must accept any interference, including interference that may cause undesired operation of the device.
Product Information

Overview

The Extended Run Time Power Supply (ERTPS) and its Intrinsic Safety Cable (IS Cable) are used to power compatible Industrial Scientific products. The ERTPS is not certified for use in hazardous-classified areas; however, its compatible IS Cable, from Industrial Scientific, may be connected to a compatible Industrial Scientific product in the hazardous-classified areas for which that product is certified.

Compatibilities

The ERTPS is only compatible with the Industrial Scientific products listed below.

Table 1.1 ERTPS compatibilities

<table>
<thead>
<tr>
<th>Item</th>
<th>Purpose</th>
<th>Related resources</th>
</tr>
</thead>
<tbody>
<tr>
<td>Industrial Scientific products</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Radius BZ1 Area Monitor</td>
<td>Gas monitoring</td>
<td>Radius BZ1 Area Monitor Product Manual (part number 17155915)</td>
</tr>
<tr>
<td>Intrinsic Safety Cable (part number 17156261)</td>
<td>Connects the ERTPS unit to the Radius BZ1</td>
<td>—</td>
</tr>
</tbody>
</table>

Specifications

The data supplied in tables 1.2 and 1.3 and figures 1.1 and 1.2 are provided to support the successful setup and operation of the power supply.
### Table 1.2 ERTPS specifications

<table>
<thead>
<tr>
<th>Item</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>Size (length x width x depth)</td>
<td>24 x 19.8 x 10.9 cm (9.44 x 7.80 x 4.29&quot;)</td>
</tr>
<tr>
<td>Weight</td>
<td>1.5 kg (3.3 lb)</td>
</tr>
<tr>
<td>Materials</td>
<td>Polypropylene case</td>
</tr>
<tr>
<td>Ingress protection (enclosure only)</td>
<td>IP65</td>
</tr>
<tr>
<td>AC input cord</td>
<td>Plug is compatible with one region as ordered (North America, Europe, Australia, or UK)</td>
</tr>
<tr>
<td>Intrinsic Safety cable</td>
<td>50 m (164&quot;) long</td>
</tr>
<tr>
<td>Buttons or switches</td>
<td>None</td>
</tr>
<tr>
<td>Indicators</td>
<td>One; power indicator</td>
</tr>
<tr>
<td>Operating conditions</td>
<td></td>
</tr>
<tr>
<td>Ambient temperature</td>
<td>−20 °C to +55°C (−4 °F to +131 °F)</td>
</tr>
<tr>
<td>Humidity</td>
<td>15–95% relative humidity (RH) noncondensing (continuous)</td>
</tr>
<tr>
<td>Storage temperature</td>
<td>−20 °C to +55°C (−4 °F to +131 °F)</td>
</tr>
</tbody>
</table>

### Table 1.3 ERTPS input and output parameters

<table>
<thead>
<tr>
<th>Item</th>
<th>Value</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Input parameters</strong></td>
<td></td>
</tr>
<tr>
<td>Input voltage range</td>
<td>110/230 VAC ± 10%</td>
</tr>
<tr>
<td>Input frequency</td>
<td>48 to 62 Hz</td>
</tr>
<tr>
<td><strong>Output parameters</strong></td>
<td></td>
</tr>
<tr>
<td>Um</td>
<td>250V</td>
</tr>
<tr>
<td>Uo</td>
<td>16.1 VDC</td>
</tr>
<tr>
<td>Io</td>
<td>270 mA</td>
</tr>
<tr>
<td>Po</td>
<td>2150 mW</td>
</tr>
<tr>
<td>Co IIC&lt;sup&gt;a&lt;/sup&gt;</td>
<td>451 nF</td>
</tr>
<tr>
<td>Lo IIC&lt;sup&gt;a&lt;/sup&gt;</td>
<td>0.9 mH</td>
</tr>
<tr>
<td>Co IIB&lt;sup&gt;a&lt;/sup&gt;</td>
<td>2690 nF</td>
</tr>
<tr>
<td>Lo IIB&lt;sup&gt;a&lt;/sup&gt;</td>
<td>3 mH</td>
</tr>
</tbody>
</table>

<sup>a</sup>When added together, the Li and Ci entity parameters of the compatible Industrial Scientific power-supply accessory plus the total from the IS Cable must not exceed the power supply entity parameters for Lo and Co. Refer to control drawing 1810D9387-200 in Figure 1.1.
Figure 1.1 Control drawing 1810D9387-200 revision 2
Hardware Overview and Use Restrictions

The unit must be located in a nonhazardous area. Likewise, its ac input cord can only be plugged into a compatible power receptacle that is located in a nonhazardous area.

The unit’s compatible IS Cable, from Industrial Scientific, may be connected to a compatible Industrial Scientific product in the hazardous-classified areas for which that product is certified.

Ensure the use of this product meets any restrictions imposed local, state, or national codes, regulations, standards, permits, or other requirements.

**Figure 1.2 Hardware overview**
Setup, Operation, and Service

Setup

Only qualified personnel should complete setup.

Unpack

Each ordered item should be accounted for during the unpacking process. If any item is missing or appears to have been damaged, contact Industrial Scientific (see back cover) or an authorized distributor of Industrial Scientific products.

Table 2.1 Package contents

<table>
<thead>
<tr>
<th>Quantity</th>
<th>Item</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>As ordered</td>
<td>Extended Run Time Power Supply</td>
<td>Plug is compatible with one region as ordered (North America, Europe, Australia, or UK)</td>
</tr>
<tr>
<td>As ordered</td>
<td>Intrinsic Safety Cable</td>
<td>50 m (164’) long</td>
</tr>
<tr>
<td>1</td>
<td>Insert</td>
<td></td>
</tr>
</tbody>
</table>

Site considerations

Ensure the site selection achieves the following:

- Adheres to all use restrictions as shown in figures 1.1 and 1.2.
- Supports the connection instructions provided below in Figure 2.1.
- Meets all specifications such as operating temperature.
- Meets any restrictions imposed by input and output parameters.
- Supports the placement of the power supply, cord, and cable in a manner that helps prevent injury, damage to the equipment, or excessive strain to the cord or cable.
- Permits the cord and cable to extend from the unit to the electrical receptacle and the compatible Industrial Scientific product, respectively—without incurring sideways or lateral forces.
Instruction

Follow the instruction provided below in Figures 2.1 and 2.2, respectively, to connect and disconnect the power supply.

**ERTPS setup**

*In nonhazardous area only*

Connect the ERTPS ac input cord to a compatible power source. Both the unit and the power source must be in a nonhazardous location.
Verify that the power indicator (circled) is on.

On the power supply, turn the tethered port cap counterclockwise to expose the port for use.
Leave the cap tethered to the unit to help prevent loss of the item.
*Note: Always cap the port when it is not in use.*

Connect the IS Cable to the port and turn its swivel connector clockwise (approximately 45°) until it clicks closed.

**Connect IS Cable to the compatible Industrial Scientific product (Radius BZ1 shown)**

*In compatible product's use-certified hazardous area (or in nonhazardous area)*

On the compatible Industrial Scientific product, turn the port cap counterclockwise to expose the port for use.
Leave the cap tethered to the product to help prevent loss of the item.

Connect the IS Cable to the port and turn its swivel connector clockwise (approximately 45°) until it clicks closed.

If connected to a Radius BZ1, verify that the power-supply symbol (☞) is featured on the instrument's display. This symbol indicates the instrument is receiving power.

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**Figure 2.1 Connecting the ERTPS**
The IS Cable can be disconnected from and connected to any compatible Industrial Scientific product in-field. This allows one product to be removed from service as another is put into service.

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Disconnect the cable from the instrument: turn its swivel connector counterclockwise (approximately 45°).

Recap the port: push the cap slightly, then turn its swivel connector clockwise (approximately 45°) until it clicks closed.

If the cable is not to be connected to another compatible instrument, disconnect it from the power supply: turn its swivel connector counterclockwise (approximately 45°).

Always cap the port when it is not in use.

Disconnect the power cord from the power source.

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**Figure 2.2 Disconnecting the ERTPS**

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**Operation**

The ERTPS must be operated in a nonhazardous area.

Maximize extended run time by starting with a compatible Industrial Scientific product that is fully charged.

If used with the Radius BZ1, the following apply:

- Periodically check the instrument display screen for the presence of the power-supply symbol (ث).
- The instrument's low-battery indicator (٧) will display when it has between two and five hours of remaining operating time. At that time, the instrument should be removed from the hazardous-classified area and be fully charged in a nonhazardous location.

The ERTPS has no power switch or power button; to cycle power, disconnect the plug from its receptacle.

Periodically inspect the ERTPS, and all aspects of the IS Cable and ac input cord, to detect possible physical damage. If any damage is observed, replace the unit.
Service

The ERTPS enclosure and internal components are not customer serviceable. Do not open the enclosure. The tethered port cap is the only external customer-serviceable item on the ISPS. It can be reattached or replaced as shown below.

Turn the connector cap counterclockwise to expose the port.

Gently pull on the cap to detach it from the assembly.

To attach the replacement cap, place its loop around the connector neck, behind the raised notches.

Cover the connector with its cap and turn it clockwise to tighten.

Always cap the port when it is not in use.

Figure 2.3 Port cap replacement
Warranty

Industrial Scientific Corporation’s Extended Run Time Power Supply is warranted to be free from defects in material and workmanship for a period of two years after purchase.

Limitation of Liability

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