

Extended Run Time Power Supply



Product Manual

Edition: 2

Part number: 17158385-1

June 13, 2018

INDUSTRIAL

SCIENTIFIC

Industrial Scientific Corporation, Pittsburgh, PA USA

Industrial Scientific Co., Ltd. Shanghai, China

© 2017, 2018 Industrial Scientific Corporation

All rights reserved. Published 2018

Revision 2



www.indsci.com/radius






Contents

- Warnings and Cautionary Statements v
- Product Information 1
 - Overview 1
 - Compatibilities 1
 - Specifications 1
 - Hardware Overview and Use Restrictions 6
- Setup, Operation, and Service 7
 - Setup 7
 - Unpack 7
 - Site considerations 7
 - Instruction 8
 - Operation 9
 - Service 10
- Warranty 11
 - Limitation of Liability 11
- Contact Information 12

Tables and figures

Table 1.1 ERTPS compatibilities	1
Table 1.2 ERTPS specifications	2
Table 1.3 ERTPS input and output parameters	2
Figure 1.1 Control drawing 1810D9387-200 revision 3.....	3
Figure 1.2.A Control drawing 1810D9509-200 revision 1	4
Figure 1.2.B Control drawing 1810D9509-200 revision 1	5
Figure 1.3 Hardware overview.....	6
Table 2.1 Package contents	7
Figure 2.1 Connecting the ERTPS.....	9
Figure 2.2 Disconnecting the ERTPS (Radius BZ1 shown).....	9
Table 2.3 Extended run time power-supply accessories.....	10
Figure 2.3 Port cap replacement.....	10

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 drawings 1810D9387-200](#) (Figure 1.1), and 1810D9509-200 (Figure 1.2.A and 1.2.B).
-  When the Extended Run Time Power Supply is not in use and the compatible Industrial Scientific product is placed in a hazardous-classified location, ensure the unused ports are capped.
-  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

Compatibilities

Specifications

Hardware Overview and Use restrictions

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

Item	Related resources
Industrial Scientific products	
Radius® BZ1 Area Monitor with Intrinsic Safety Cable (part number 17156261)	Radius BZ1 Area Monitor <i>Product Manual</i> (part number 17155915)
RGX™ Gateway with Intrinsic Safety Cable Adapter (part number 18109575) and Intrinsic Safety Cable (part number 17156261)	RGX Gateway <i>Product Manual</i> (part number 17158071)

Specifications

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

Table 1.2 ERTPS specifications

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

Table 1.3 ERTPS input and output parameters

Item	Value
Input parameters	
Input voltage range	110/230 VAC ± 10%
Input frequency	48 to 62 Hz
Output parameters	
Um	250V
Uo	16.1 VDC
Io	270 mA
Po	2150 mW
Co IIC ^a	451 nF
Lo IIC ^a	0.9 mH
Co IIB ^a	2690 nF
Lo IIB ^a	3 mH

^aWhen 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 and 1810D9509-200 in Figure 1.2.A and 1.2.B.

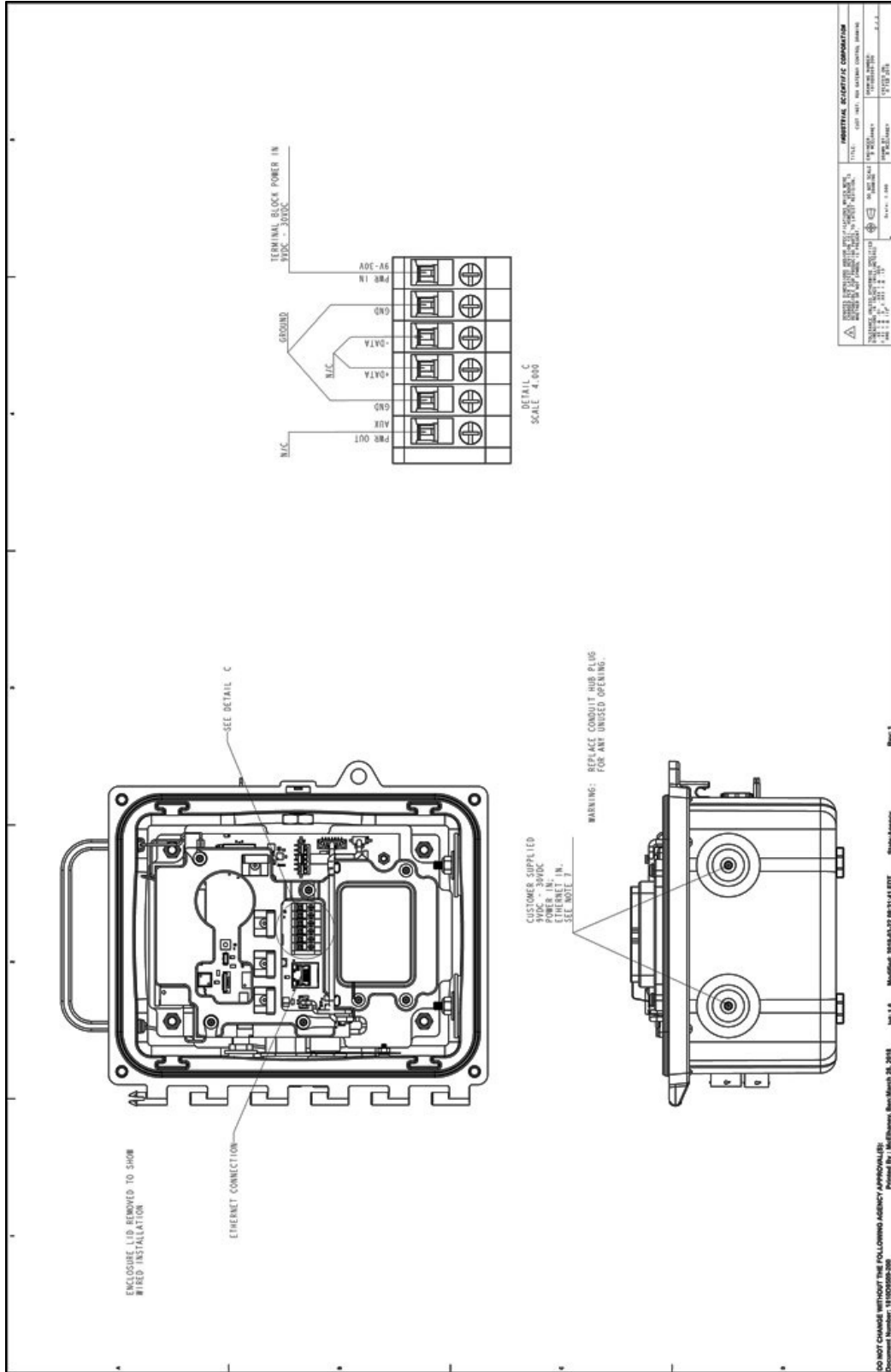


Figure 1.2.B Control drawing 1810D9509-200 revision 1

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.

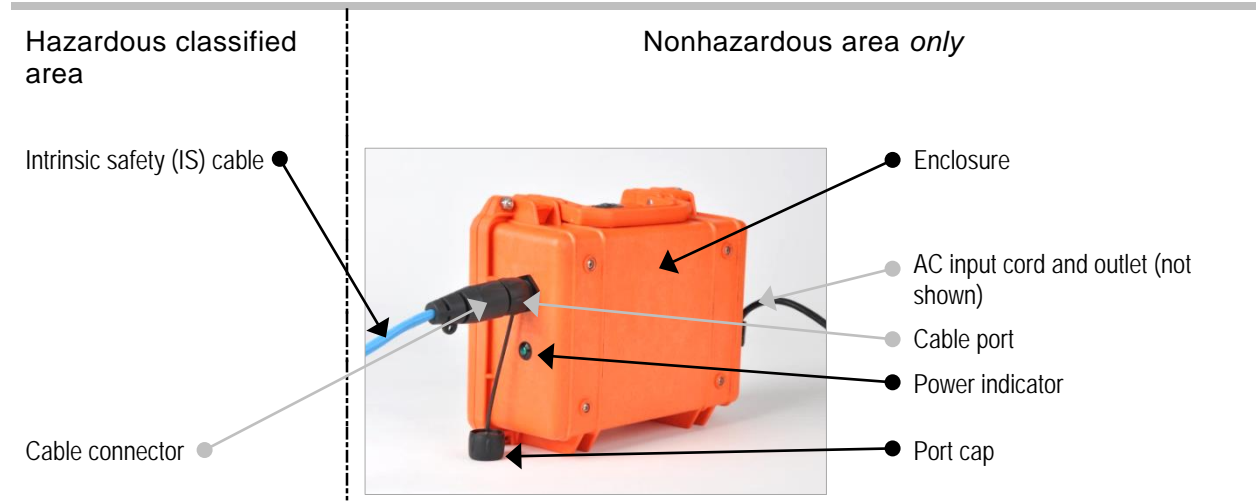


Figure 1.3 Hardware overview

Setup, Operation, and Service

Setup

Operation

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

Quantity	Item	Description
As ordered	Extended Run Time Power Supply	Plug is compatible with one region as ordered (North America, Europe, Australia, or UK)
As ordered	Intrinsic Safety Cable	50 m (164 ') long
1	Insert	<i>Warnings and Cautionary Statements</i>

Site considerations

Ensure the site selection achieves the following:

- Adheres to all use restrictions as shown in figures 1.1, 1.2, and 1.3.
- 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

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

Radius BZ1

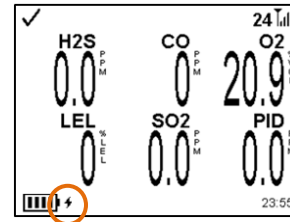


Turn the port cap counterclockwise to expose the port for use.

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 Area Monitor, verify that the power-supply symbol (⚡) is featured on the instrument's display. This symbol indicates the instrument is receiving power.

RGX Gateway



Connect the IS Cable to the RGX IS Cable Adapter.

Turn its swivel connector clockwise (approximately 45°) until it clicks closed.



Remove the IS Power port cap and connect the IS Cable Adapter.

Turn its swivel connector clockwise (approximately 45°) until it clicks closed or a full-stop connection impact is felt.

Verify the charging status indicator light is on.



Indicator light (charging status)

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.



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.

Figure 2.2 Disconnecting the ERTPS (Radius BZ1 shown)

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 (⚡).
- The instrument's low-battery indicator (🔋) 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.

If used with the RGX Gateway, the following applies.

- The RGX's charging status indicator light will remain on while the ERTPS is connected.

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

Service tasks that can be completed by Industrial Scientific customers are described in this "Product Manual." Table 2.3 indicates which accessories are customer replaceable. All other service tasks should be performed only by Industrial Scientific or an authorized service center.

Table 2.3 Extended run time power-supply accessories

Item	Orderable part number	Contents
Extended Run Time Power Supply Kit	18109388- XA ^b	ERTPS unit and 50 m IS Cable
Intrinsic Safety Cable	17156261	50 m IS cable (Connects the ERTPS unit to a compatible Industrial Scientific product.)
Intrinsic Safety Power Port Cap	17155932	Replacement ERTPS port cap

^bWhere X indicates regional power-cord type (1 for NA, 2 for EU, 3 for AU, and 4 for UK).

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

THE WARRANTY SET FORTH ABOVE IS STRICTLY LIMITED TO ITS TERMS AND IS IN LIEU OF ALL OTHER WARRANTIES, GUARANTEES, EXPRESS OR IMPLIED, ARISING BY OPERATION OF LAW, COURSE OF DEALING, USAGE OF TRADE OR OTHERWISE. INDUSTRIAL SCIENTIFIC MAKES NO OTHER WARRANTIES, EITHER EXPRESSED OR IMPLIED, INCLUDING BUT NOT LIMITED TO THE WARRANTIES OF MERCHANTABILITY OR FITNESS FOR PARTICULAR PURPOSE.

SHOULD THE PRODUCT FAIL TO CONFORM TO THE ABOVE WARRANTY, BUYER'S ONLY REMEDY AND INDUSTRIAL SCIENTIFIC'S ONLY OBLIGATION SHALL BE, AT INDUSTRIAL SCIENTIFIC'S SOLE OPTION, REPLACEMENT OR REPAIR OF SUCH NON-CONFORMING GOODS OR REFUND OF THE ORIGINAL PURCHASE PRICE OF THE NONCONFORMING GOODS.

IN NO EVENT WILL INDUSTRIAL SCIENTIFIC BE LIABLE FOR ANY OTHER SPECIAL, INCIDENTAL, CONSEQUENTIAL, PUNITIVE OR OTHER SIMILAR DAMAGES, INCLUDING LOSS OF PROFIT OR LOSS OF USE, ARISING OUT OF THE SALE, MANUFACTURE OR USE OF ANY PRODUCTS SOLD HEREUNDER WHETHER SUCH CLAIM IS PLEADED IN CONTRACT OR IN TORT, INCLUDING STRICT LIABILITY IN TORT AND WHETHER INDUSTRIAL SCIENTIFIC HAS BEEN ADVISED OF THE POTENTIAL FOR SUCH DAMAGES. Industrial Scientific's total liability hereunder from any cause whatsoever (except liability from personal injury caused by Industrial Scientific's negligence), whether arising under contract, warranty, tort (including negligence), strict liability, products liability or any other theory of liability, will be limited to the lesser of Buyer's actual damages or the price paid to Industrial Scientific for the Products that are the subject of Buyer's claim. All claims against Industrial Scientific must be brought within one year after the cause of action arises, and Buyer expressly waives any longer statute of limitations.

It shall be an express condition to Industrial Scientific's warranty that all products be carefully inspected for damage by Buyer upon receipt, be properly calibrated for Buyer's particular use, and be used, repaired, and maintained in strict accordance with the instructions set forth in Industrial Scientific's product literature. Repair or maintenance by non-qualified personnel will invalidate the warranty, as will the use of non-approved consumables or spare parts. As with any other sophisticated product, it is essential and a condition of Industrial Scientific's warranty that all personnel using the products be fully acquainted with their use, capabilities and limitations as set forth in the applicable product literature.

Buyer acknowledges that it alone has determined the intended purpose and suitability of the goods purchased. It is expressly agreed by the parties that any technical or other advice given by Industrial Scientific with respect to the use of the goods or services is given without charge and at Buyer's risk; therefore, Industrial Scientific assumes no obligations or liability for the advice given or results obtained.

Contact Information

Industrial Scientific Corporation

1 Life Way
Pittsburgh, PA 15205-7500 USA
Web: www.indsci.com
Phone: +1 412-788-4353 or 1-800-DETECTS (338-3287)
E-mail: info@indsci.com
Fax: +1 412-788-8353

Industrial Scientific France S.A.S.

5 Rue Frédéric Degeorge, CS 80097
62002 Arras Cedex, France
Web: www.indsci.com
Téléphone : +33 (0)1 57 32 92 61
E-mail: info@eu.indsci.com
Fax: +33 (0)1 57 32 92 67

英思科传感仪器（上海）有限公司

地址：中国上海市浦东金桥出口加工区桂桥路290号
邮编：201206
电话：+86 21 5899 3279
传真：+86 21 5899 3280
E-mail： info@ap.indsci.com
网址： www.indsci.com
服务热线：+86 400 820 2515

To locate a nearby distributor of our products or an Industrial Scientific service center or business office, visit us at www.indsci.com.

Rendez-vous sur notre site Web www.indsci.com, si vous voulez trouver un distributeur de nos produits près de chez vous, ou, si vous recherchez un centre de service ou un bureau Industrial Scientific.

Besuchen Sie uns unter www.indsci.com, um einen Vertriebshändler unserer Produkte oder ein Servicecenter bzw. eine Niederlassung von Industrial Scientific zu finden.

Para buscar un distribuidor local de nuestros productos o un centro de servicio u oficina comercial de Industrial Scientific, visite www.indsci.com.

如需查找就近的产品经销商或 Industrial Scientific 服务中心或业务办事处，请访问我们的网站 www.indsci.com

INDUSTRIAL
SCIENTIFIC