



3.5A Power Supply Expander Installation Guide

Model: RP432EPS35

**For use with RISCO's LightSYS Plus
Security Systems**

Table of Contents

Introduction.....	3
Main Features	3
Mounting the Power Supply	4
Power Supply Terminal Wiring.....	4
Power Supply Components.....	5
LEDs Indication	5
Programming the Power Supply	5
Installer Programming Menu	5
User Programming Menu	6
Event Log Messages.....	6
Troubleshooting.....	7
Post Installation Tests	7
Technical Specifications.....	7
General.....	7
Input	8
Output.....	8
Environmental	8
About Wires	8
Ordering Part Numbers	10

Introduction

The Power Supply is a reliable, supervised power supply expansion module, for use with RISCO's LightSYS Plus security systems.

It provides a total current capacity of up to 3.5A with extensive remote diagnostics features that comply with EN50131 requirements. It supports a standby battery and is supervised for loss of Mains, Battery failure of its auxiliary output power.

Up to 32 modules can be added to the system to ensure reliable operation of the system with its multiple devices and accessories.

Main Features

- ◆ 3.5A switching mode power supply with self supervision
- ◆ Advanced remote diagnostics – includes remote Upload/download or keypad reading of voltage output and current under load
- ◆ Automatic battery protection and remote voltage reading
- ◆ 80% Battery capacity charge within 24H (EN50131-6 grade 3)
- ◆ Deep discharge protection with Automatic override
- ◆ Supervise Back-Up Battery (with load) status

The Power Supply components are shown in Figure 1:

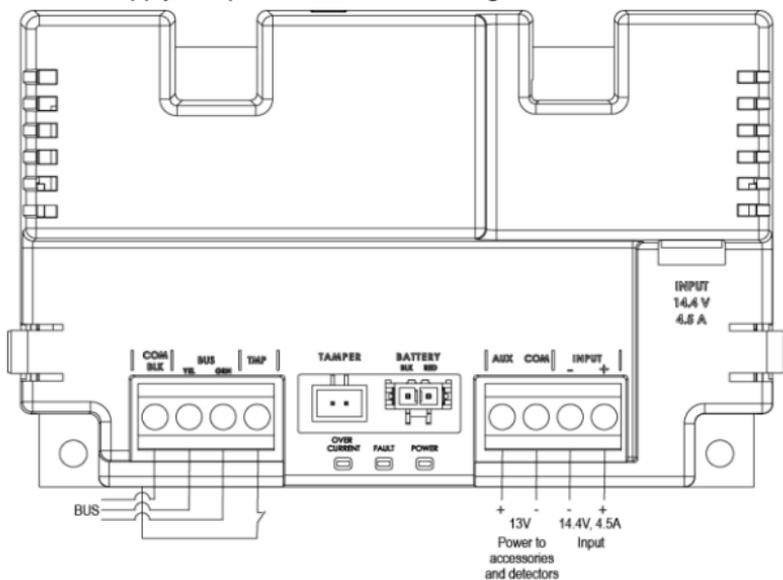


Figure 1: Power Supply – General View

Mounting the Power Supply

For mounting the Power Supply and the backup battery inside a box, refer to the *5IN3009 LightSYS Plus 3.5A Power Supply Installation Instructions*.



IMPORTANT:

The Power Supply should be serviced by qualified personnel only!
Unless serviced, the Power Supply box must be closed with screws at all times!
Use only safety-approved wires in accordance with the national rules! (See Table 1: Wire Guide" on page 8).
The Power Supply is designed for indoor use only!

Power Supply Terminal Wiring

Terminal	Description/Action
COM BLK	BUS terminals: used to connect the Power Supply to the LightSYS Plus communication Bus. Connect the wires respectively, point to point, according to the indicated colors.
BUS YEL	
BUS GRN	



NOTE:

Maximum permitted wire run for Bus wiring from the Power Supply to the LightSYS Plus is 300m (1000 ft)!



IMPORTANT

DO NOT connect the AUX (RED) terminal to the LightSYS Plus BUS. Ensure that the incoming AUX (usually red) wire from the LightSYS Plus Bus is disconnected!

TMP	Used for connection of the box's tamper switch between the TMP and the COM terminals (normally closed).
AUX RED(+)	Used together with the COM (-) terminal to apply power to Aux. devices (e.g. PIRs, smoke/glass break detectors and any other devices that require 12VDC power supply). Total current consumption from the Power Supply (Via The Aux./COM and BELL/LS terminals) is 3.5A.
Input + -	Used for connection of the DC terminals (refer to the <i>5IN3009 LightSYS Plus 3.5A Power Supply Installation Instructions</i>) from the AC/DC adaptor (100-240V, 50/60Hz, 14.4V – 4.5A).

Power Supply Components

The LEDs and terminals functions are described herein.

LEDs Indication

LED	Description
Power (Green LED)	Indicates communication status between the Power Supply and the Main Panel
	On: Normal communication with the Main Panel
	Off: No input power
	Flashing: AC fail, Low battery or no battery
Faults (Red LED)	Indicates internal faults
	On: Internal fault
	Off: No faults
	Flashing: BUS trouble
Over Current (Orange LED)	Indicates an actual/potential (calculated) overload
	On: Total current consumption from the AUX output exceeded 3.5A (power consumption from output will be disconnected).
	Off: Normal current draw

Programming the Power Supply

The following section describes additional dedicated Power Supply software functions added to the LightSYS Plus software.

It is recommended to read and fully understand the LightSYS Plus installation procedure before programming the Power Supply!

Up to 32 PS modules may be to the LightSYS Plus.

Installer Programming Menu

Function	Quick Key	Description
Add/Delete Power Supply Module:	[7] [1] [2] [2]	<ol style="list-style-type: none">1. From the Installer Programming menu, select Install → Bus Device → Add device → By SN, and then press OK (✓).2. Enter the device's 12-digit serial number, and then press OK (✓).

User Programming Menu

Function	Description
View Trouble	Enter Grand Master Code → View → Trouble
Power Supply Diagnostics	Enter Installer Code → Maintenace → Diagnostics → scroll to Power Supply and then press OK .

Event Log Messages

The following list details Power Supply dedicated event messages, as displayed on the keypad LCD:

Event Message	Meaning
S=X OVER. RC=YY	Overload in Power Supply X. Reset by user YY
OVERLOAD PS=X	Overload from Power Supply joined by the Power Supply ID =X
OVERLOAD RS PS=X	Overload restore from Power Supply, joined by Power Supply ID (1-32)=X
LOW BAT RS PS=X	Low Bat indication, joined by the Power Supply ID (1-32)=X
LOW BAT RS PS=X	Low Bat restore from Power Supply joined by Power Supply ID (1-32)=X

Troubleshooting

This section describes possible system problems and their solution.

Always perform the following preliminary checks before referring to the troubleshooting table.

Perform a complete visual inspection of the Power Supply, its battery, and AC/DC adaptor for signs of mechanical damage, loose connections, or torn wires.

Check the connections of the incoming AC power source, AC/DC adaptor, and battery.

Trouble	Probable Meaning / Cause	Response
AC Failure Trouble	Indicates problem with mains power	Check the mains input and panel box fuse. Replace if necessary, with a fuse of the same rating.
Low Battery Trouble	No battery, battery is faulty, or needs recharging	Check battery voltage: replace if necessary or wait until battery is recharged.
No Output Power from Power Supply	Faulty Power Supply	View PS troubles using the LightSYS Plus LCD keypad. Check system for shorts. Perform restore to the Power Supply (see User Programming Menu on page 6).
Bus Test less than 98%	Communication with PS is not stable	The distance between LightSYS Plus and Power Supply is too long; verify appropriate distance and gauge of wiring (refer to Table 1: Wire Gauge).

Post Installation Tests

Upon installation completion, verify that the Power Supply is functioning by conducting the “Verify Modules” and Bus Communication tests, from the LightSYS Plus menu.

Technical

General

- ◆ Efficiency: 3.5A full load
- ◆ Power Supply card dimensions (LxWxD): 110x70x25 mm
- ◆ Current consumption: 20.32mA
- ◆ Weight: 100 gr.
- ◆ Main Panel Connection: RS485, 3 Wire Bus, up to 300m from Main panel.

Input

- ◆ Power: 14.4V (+/-5%) – 4.5A PS
- ◆ Rechargeable Standby Battery: 12V Up To 21 Amp-Hours (AH)
- ◆ Low Battery Threshold: 11.2V

Output

- ◆ Auxiliary output: 13V \pm 10%, 3.5.A Max.

Environmental

- ◆ Operating temperature: -10°-55°C
- ◆ Average relative humidity: 75%

Certification

- ◆ EN50131-1, EN50131-6 Type A, Grade 3 ENV Class II, PD6662:2017
- ◆ Certification Body Applica Test & Certification: Certification Body Applica Test & Certification

About Wires

Appropriate use of wires and cables is necessary for the successful installation and operation of the Power Supply module. It is important to select wire of the correct thickness to minimize power loss and ensure reliable operation. Take into account both the current requirements and the wiring distances involved.

Table 1: Desired Wire Gauge AWG

Amp	32 (0.031mm2)		30 (0.049mm2)		28 (0.08 mm2)		26 (0.13 mm2)		24 (0.2 mm2)	
	Max Run		Max Run		Max Run		Max Run		Max Run	
	Met.	Feet	Met.	Feet	Met.	Feet	Met.	Feet	Met.	Feet
0.2	8.	27.	30	42.	19.	63.	32.8	10	51.4	169
04	4.	13.	12.	21.	9.7	31.	16.4	53.	25.7	84.4
06	2.	9.0	6.4	14.	6.5	21.	10.9	35.	17.1	56.2
08	2.	6.7	4.3	10.	4.8	15.	8.2	26.	12.9	42.2
1	1.	5.4	3.2	8.4	3.9	12.	6.6	21.	10.3	33.7
1.2	1.	4.5	2.6	7.0	3.2	10.	5.5	18.	8.6	28.1
1.4	1.	3.9	2.1	6.0	2.8	9.1	4.7	15.	7.3	24.1
1.6	1.	3.4	1.8	5.3	2.4	8.0	4.1	13.	6.4	21.1
1.8	0.	3.0	1.6	4.7	2.2	7.1	3.6	12.	5.7	18.7
2	0.	2.7	1.4	4.2	1.9	6.4	3.3	10.	5.1	16.9
2.2	0.	2.5	1.3	3.8	1.8	5.8	3.0	9.8	4.7	15.3
2.4	0.	2.2	1.2	3.5	1.6	5.3	2.7	9.0	4.3	14.1
2.6	0.	2.1	1.1	3.2	1.5	4.9	2.5	8.3	4.0	13.0
2.8	0.	1.9	1.0	3.0	1.4	4.5	2.3	7.7	3.7	12.1
3.0	0.	1.8	0.9	2.8	1.3	4.2	2.2	7.2	3.4	11.2

Amp	22 (0.33 mm2)		20 (0.5 mm2)		18 (0.82 mm2)		16 (1.3 mm2)		14 (2 mm2)	
	Max Run		Max Run		Max Run		Max Run		Max Run	
	Met.	Feet	Met.	Feet	Met.	Feet	Met.	Feet	Met.	Feet
0.2	87.	28	132	43	206	67	346	1,13	527	1,7
04	43.	14	66.0	21	103	33	173	568	264	864
06	29.	95	44.0	14	68.5	22	115	379	176	576
08	21.	71	33.0	10	51.4	16	87	284	132	432
1	17.	57	26.4	86.	41.1	13	69	227	105	346
1.2	14.	47	22.0	72.	34.2	11	58	189	88	288
1.4	12.	40	18.9	61.	29.4	96	50	162	75	247
1.6	10.	35	16.5	54.	25.7	84	43	142	66	216
1.8	9.7	31	14.7	48.	22.8	75	39	126	59	192
2	8.7	28	13.2	43.	20.5	67	35	114	53	173
2.2	7.9	26	12.0	39.	18.7	61	32	103	48	157
2.4	7.3	23	11.0	36.	17.1	56	29	95	44	144
2.6	6.7	22	10.2	33.	15.8	52	27	87	41	133
2.8	6.2	20	9.4	30.	14.7	48	25	81	38	123
3.0	5.8	19	8.8	28.	13.7	45	23	76	35	115

Amp	12 (3.3 mm2)		10 (5.26 mm2)		8 (8 mm2)		6 (13.6 mm2)		4 (21.73mm2)		2 (34.65 mm2)	
	Max Run		Max Run		Max Run		Max Run		Max Run		Max Run	
	Met.	Feet	Met.	Feet	Met.	Feet	Met.	Feet	Met.	Feet	Met.	Feet
0.2	833	2,734										
04	417	1,367	662	2,171	1,023	3,355						
06	278	911	441	1,447	682	2,237	1,00	3,281				
08	208	684	331	1,086	511	1,678	750	2,461				
1	167	547	265	868	409	1,342	600	1,969	1,12	3691		
1.2	139	456	221	724	341	1,118	500	1,640	938	3076		
1.4	119	391	189	620	292	959	429	1,406	804	2636		
1.6	104	342	165	543	256	839	375	1,230	703	2307	1,125	3,691
1.8	93	304	147	482	227	746	333	1,094	625	2051	1,000	3,281
2	83	273	132	434	205	671	300	984	563	1845	900	2,953
2.2	76	249	120	395	186	610	273	895	511	1678	818	2,684
2.4	69	228	110	362	171	559	250	820	469	1538	750	2,461
2.6	64	210	102	334	157	516	231	757	433	1420	692	2,271
2.8	60	195	95	310	146	479	214	703	402	1318	643	2,109
3.0	56	182	88	289	136	447	200	656	375	1230	600	1,969

Ordering Part Numbers

Part Number	Description
RP432EPS350A	3.5A Power Supply Expander

UKCA and CE EMC Compliance Statement:

Hereby, RISCO Group declares that this equipment is in compliance with the essential requirements of the UKCA Electromagnetic Compatibility Regulations 2016 and CE Directive 2014/30/EU.

For the UKCA and CE Declaration of Conformity please refer to our website: www.riscogroup.com

Standard Limited Product Warranty

RISCO Ltd. ("RISCO") guarantee RISCO's hardware products ("**Products**") to be free from defects in materials and workmanship when used and stored under normal conditions and in accordance with the instructions for use supplied by RISCO, for a period of (i) 24 months from the date of delivery of the Product (the "**Warranty Period**"). This Limited Warranty covers the Product only within the country where the Product was originally purchased and only covers Products purchased as new.

Contact with customers only. This Limited Warranty is solely for the benefit of customers who purchased the Products directly from RISCO or from an authorized distributor of RISCO. RISCO does not warrant the Product to consumers and nothing in this Warranty obligates RISCO to accept Product returns directly from end users who purchased the Products for their own use from RISCO's customer or from any installer of RISCO, or otherwise provide warranty or other services to any such end user directly. RISCO's authorized distributor or installer shall handle all interactions with its end users in connection with this Limited Warranty. RISCO's authorized distributor or installer shall make no warranties, representations, guarantees or statements to its end users or other third parties that suggest that RISCO has any warranty or service obligation to, or any contractual privity with, any recipient of a Product.

Remedies. In the event that a material defect in a Product is discovered and reported to RISCO during the Warranty Period, RISCO shall accept return of the defective Product in accordance with the below RMA procedure and, at its option, either (i) repair or have repaired the defective Product, or (ii) provide a replacement product to the customer.

Return Material Authorization. In the event that you need to return your Product for repair or replacement, RISCO will provide you with a Return Merchandise Authorization Number (RMA#) as well as return instructions. Do not return your Product without prior approval from RISCO. Any Product returned without a valid, unique RMA# will be refused and returned to the sender at the sender's expense. The returned Product must be accompanied with a detailed description of the defect discovered ("**Defect Description**") and must otherwise follow RISCO's then-current RMA procedure published in RISCO's website at www.riscogroup.com in connection with any such return. If RISCO determines in its reasonable discretion that any Product returned by customer conforms to the applicable warranty ("**Non-Defective Product**"), RISCO will notify the customer of such determination and will return the applicable Product to customer at customer's expense. In addition, RISCO may propose and assess customer a charge for testing and examination of Non-Defective Product.

Entire Liability. The repair or replacement of Products in accordance with this Limited Warranty shall be RISCO's entire liability and customer's sole and exclusive remedy in case a material defect in a Product is discovered and reported as required herein. RISCO's obligation and this Limited Warranty are contingent upon the full payment by customer for such Product and upon a proven weekly testing and examination of the Product functionality.

Limitations. This Limited Warranty is the only warranty made by RISCO with respect to the Products. The warranty is not transferable to any third party. To the maximum extent permitted by applicable law, this Limited Warranty shall not apply and will be void if: (i) the conditions set forth above are not met (including, but not limited to, full payment by customer for the Product and a proven weekly testing and examination of the Product functionality); (ii) if the Products or any part or component thereof: (a) have been subjected to improper operation or installation; (b) have been subjected to neglect, abuse, willful damage, abnormal working conditions, failure to follow RISCO's instructions (whether oral or in writing); (c) have been misused, altered, modified or repaired without RISCO's written approval or combined with, or installed on products, or equipment of the customer or of any third party; (d) have been damaged by any factor beyond RISCO's reasonable control such as, but not limited to, power failure, electric power surges, or unsuitable third party components and the interaction of software therewith or (e) any failure or delay in the performance of the Product attributable to any means of communication provided by any third party service provider, including, but not limited to, GSM interruptions, lack of or internet outage and/or telephony failure. BATTERIES ARE EXPLICITLY EXCLUDED FROM THE WARRANTY AND RISCO SHALL NOT BE HELD RESPONSIBLE OR LIABLE IN RELATION THERETO, AND THE ONLY WARRANTY APPLICABLE THERETO, IF ANY, IS THE BATTERY MANUFACTURER'S WARRANTY. RISCO does not install or integrate the Product in the end user's security system and is therefore not responsible for and cannot guarantee the performance of the end user's security system which uses the Product or which the Product is a component of.

This Limited Warranty applies only to Products manufactured by or for RISCO. Further, this Limited Warranty does not apply to any software (including operating system) added to or provided with the Products or any third-party software, even if packaged or sold with the RISCO Product. Manufacturers, suppliers, or third parties other than RISCO may provide their own warranties, but RISCO, to the extent permitted by law and except as otherwise specifically set forth herein, provides its Products "AS IS". Software and applications distributed or made available by RISCO in conjunction with the Product (with or without the RISCO brand), including, but not limited to system software, as well as P2P services or any other service made available by RISCO in relation to the Product, are not covered under this Limited Warranty. Refer to the Terms of Service at:

www.riscogroup.com/warranty for details of your rights and obligations with respect to the use of such applications, software or any service. RISCO does not represent that the Product may not be compromised or circumvented; that the Product will prevent any personal injury or property loss by burglary, robbery, fire or otherwise, or that the Product will in all cases provide adequate warning or protection. A properly installed and maintained alarm may only reduce the risk of a burglary, robbery or fire without warning, but it is not insurance or a guarantee that such will not occur or will not cause or lead to personal injury or property loss.

CONSEQUENTLY, RISCO SHALL HAVE NO LIABILITY FOR ANY PERSONAL INJURY, PROPERTY DAMAGE OR OTHER LOSS BASED ON ANY CLAIM AT ALL INCLUDING A CLAIM THAT THE PRODUCT FAILED TO GIVE WARNING.

EXCEPT FOR THE WARRANTIES SET FORTH HEREIN, RISCO AND ITS LICENSORS HEREBY DISCLAIM ALL EXPRESS, IMPLIED OR STATUTORY, REPRESENTATIONS, WARRANTIES, GUARANTEES, AND CONDITIONS WITH REGARD TO THE PRODUCTS, INCLUDING BUT NOT LIMITED TO ANY REPRESENTATIONS, WARRANTIES, GUARANTEES, AND CONDITIONS OF MERCHANTABILITY, FITNESS FOR A PARTICULAR PURPOSE, TITLE AND WARRANTIES AGAINST HIDDEN OR LATENT DEFECTS, TO THE EXTENT PERMITTED BY LAW. WITHOUT LIMITING THE GENERALITY OF THE FOREGOING, RISCO AND ITS LICENSORS DO NOT REPRESENT OR WARRANT THAT: (i) THE OPERATION OR USE OF THE PRODUCT WILL BE TIMELY, SECURE, UNINTERRUPTED OR ERROR-FREE; (ii) THAT ANY FILES, CONTENT OR INFORMATION OF ANY KIND THAT MAY BE ACCESSED THROUGH THE PRODUCT SHALL REMAIN SECURED OR NON DAMAGED. CUSTOMER ACKNOWLEDGES THAT NEITHER RISCO NOR ITS LICENSORS CONTROL THE TRANSFER OF DATA OVER COMMUNICATIONS FACILITIES, INCLUDING THE INTERNET, GSM OR OTHER MEANS OF COMMUNICATIONS AND THAT RISCO'S PRODUCTS, MAY BE SUBJECT TO LIMITATIONS, DELAYS, AND OTHER PROBLEMS INHERENT IN THE USE OF SUCH MEANS OF COMMUNICATIONS. RISCO IS NOT RESPONSIBLE FOR ANY DELAYS, DELIVERY FAILURES, OR OTHER DAMAGE RESULTING FROM SUCH PROBLEMS. RISCO WARRANTS THAT ITS PRODUCTS DO NOT, TO THE BEST OF ITS KNOWLEDGE, INFRINGE UPON ANY PATENT, COPYRIGHT, TRADEMARK, TRADE SECRET OR OTHER INTELLECTUAL PROPERTY RIGHT IN ANY EVENT RISCO SHALL NOT BE LIABLE FOR ANY AMOUNTS REPRESENTING LOST REVENUES OR PROFITS, PUNITIVE DAMAGES, OR FOR ANY OTHER INDIRECT, SPECIAL, INCIDENTAL, OR CONSEQUENTIAL DAMAGES, EVEN IF THEY WERE FORESEEABLE OR RISCO HAS BEEN INFORMED OF THEIR POTENTIAL.

Contacting RISCO Group

RISCO Group is committed to customer service and product support. You can contact us through our website (www.riscogroup.com) or at the following addresses:

United Kingdom

Tel: +44-161-655-5500

technical@riscogroup.co.uk

Italy

Tel: +39-02-66590054

support@riscogroup.it

Spain

Tel: +34-91-490-2133

support-es@riscogroup.com

Belgium

Tel: +32-2522-7622

support-be@riscogroup.com

China

Tel: +86-21-52-39-0066

support-cn@riscogroup.com

Israel

Tel: +972-3-963-7777

support@riscogroup.com

France

Tel: +33-164-73-28-50

support-fr@riscogroup.com



All rights reserved.

No part of this document may be reproduced in any form without prior written permission from the publisher.
© RISCO Group 01/2024

5IN3027 D