RUGGEDCOM®
INDUSTRIAL STRENGTH NETWORKS™

RuggedPower™ RP100

Hardware Installation Guide

Revision 100 - June 13, 2011

www.RuggedCom.com

RuggedPower™ RP100: Hardware Installation Guide

All Rights Reserved

Disclaimer Of Liability

We have checked the contents of this manual against the hardware and software described. However, deviations from the description cannot be completely ruled out.

RuggedCom shall not be liable for any errors or omissions contained herein or for consequential damages in connection with the furnishing, performance, or use of this material.

The information given in this document is reviewed regularly and any necessary corrections will be included in subsequent editions. We appreciate any suggested improvements. We reserve the right to make technical improvements without notice.

Registered Trademarks

ROX™, RuggedRated™ and eRSTP™ are trademarks of RuggedCom Inc. RuggedRouter® is a registered trademark of RuggedCom Inc. RuggedBackbone™ is a trademark of RuggedCom Inc. Other designations in this manual might be trademarks whose use by third parties for their own purposes would infringe the rights of the owner.

Linux® is the registered trademark of Linus Torvalds in the U.S. and other countries.

The registered trademark Linux® is used pursuant to a sublicense from LMI, the exclusive licensee of Linus Torvalds, owner of the mark on a world-wide basis.

Warranty

Five (5) years from date of purchase, return to factory. For warranty details, visit www.RuggedCom.com or contact your customer service representative.

Contacting RuggedCom

Corporate Headquarters	US Headquarters	Europe Headquarters
RuggedCom Inc. 300 Applewood Crescent, Concord, Ontario Canada, L4K 5C7 Tel: +1 905 856 5288 Fax: +1 905 856 1995 Toll-free: 1 888 264 0006	RuggedCom 1930 Harrison Street, Suite 209 Hollywood, Florida USA, 33020 Tel: +1 954 922 7938 ext.103 Fax: +1 954 922 7984 Toll-free: 1 888 264 0006	RuggedCom Unit 41, Aztec Centre, Aztec West, Almondsbury, Bristol United Kingdom BS32 4TD Tel: +44 1454 203 404 Fax: +44 1454 203 403
Email: RuggedSales@RuggedCom.com		

Technical Support
Toll Free (North America): 1 866 922 7975 International: +1 905 856 5288 Email: Support@RuggedCom.com

Web: www.RuggedCom.com

Table of Contents

List of Figures

List of Tables

Cautions

Caution: Service

This product contains no user-serviceable parts. Attempted service by unauthorized personnel shall render all warranties null and void.

Changes or modifications not expressly approved by RuggedCom Inc. could invalidate specifications, test results, and agency approvals, and void the user's authority to operate the equipment.

Should this device require service, refer to Appendix A, Warranty in this guide.

Caution: Physical Access

This product should be installed in a restricted access location where access can only be gained by service personnel or users who have been instructed about the reasons for the restrictions applied to the location and about any precautions that shall be taken; and access is through the use of a tool or lock and key, or other means of security, and is controlled by the authority responsible for the location.

1. Product Overview

1.1. Functional Overview

The RuggedPower™ RP100 is a wide mouth power injector. Data presented on the 10/100 TX port is coupled with power on the RuggedMax port. This allows for a single CAT-5E STP (shielded twisted pair) cable between the RP100 and the powered device, providing both data and power.

The RP100 can be ordered with one of two power supply options:

- "LO" power supply option: the RP100 operates on DC power in the range of 10 VDC to 60 VDC and can deliver power up to 36 W.
- "HI" power supply option: the RP100 operates on AC power in the range of 90 VAC to 264 VAC, or on DC power in the range of 88 VDC to 300 VDC, and can deliver power up to 25 W.

The RP100 can be ordered with one of two application options:

- "RM" option: the RP100 is intended for RuggedMax WiMax devices only.
- "AT" option: the RP100 complies with the IEEE802.3at specification.

1.2. RP100 Front Panel Description

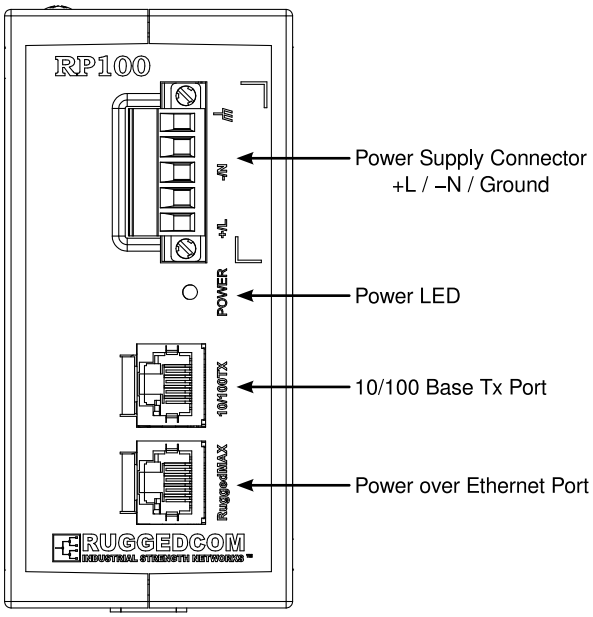

Figure 1.1. RP100 Front Panel

The front panel LED provides the following indication:

LED	Activity	Description
Power	Solid (Green)	Power On

Table 1.1. RP100 Front Panel LED

1.3. RP100 Top View

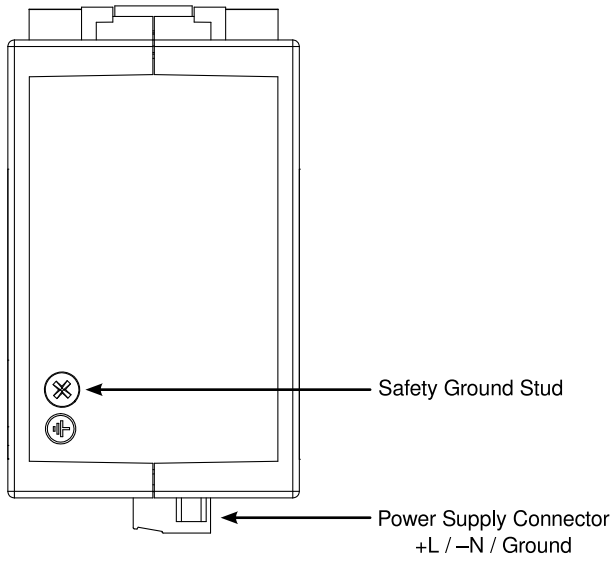

Figure 1.2. RP100 Top View

1.4. RP100 Side View

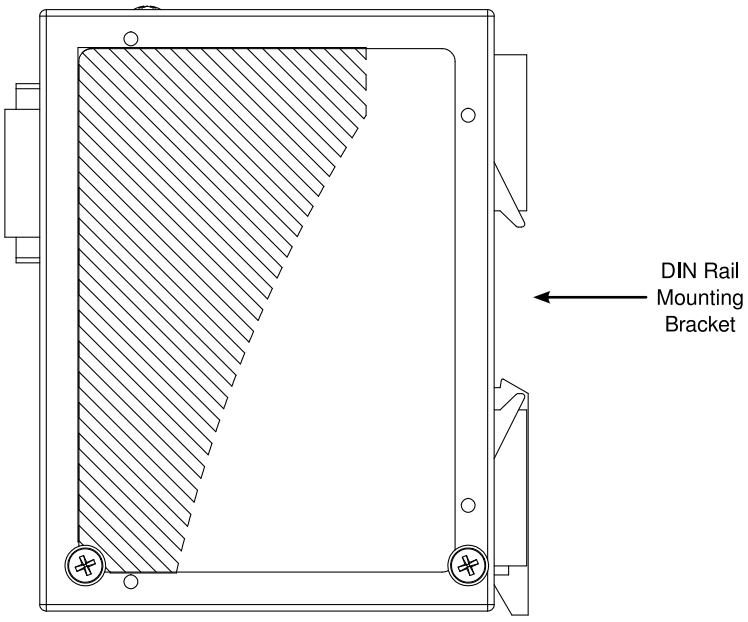

Figure 1.3. RP100 Side View

2. Installation

2.1. DIN Rail Mounting

The RP100 comes with a standard DIN rail mounting bracket. Figure 2.1, “RP100 DIN Rail Mounting” details the mounting configuration for a standard 1" DIN rail.

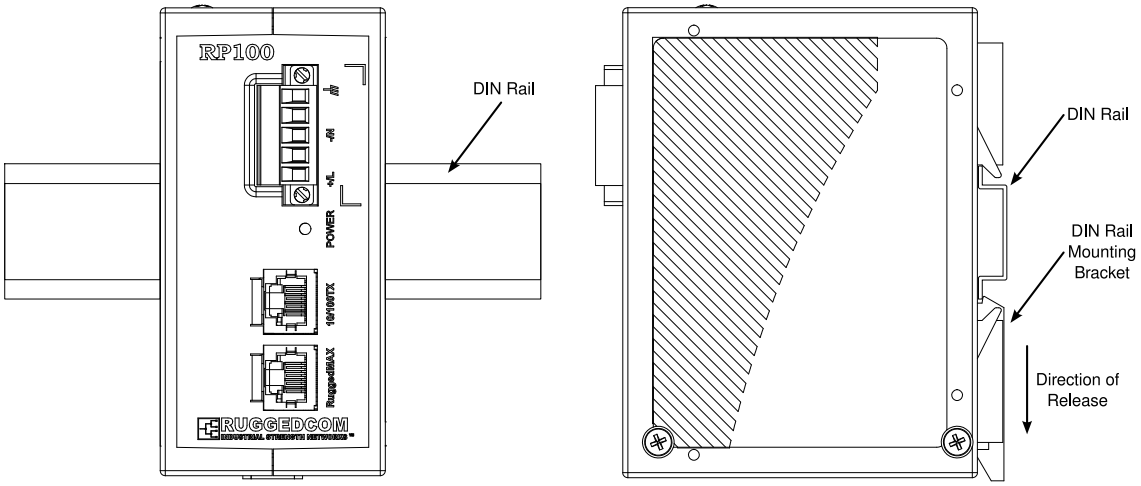

Figure 2.1. RP100 DIN Rail Mounting

2.2. AC Power Supply Wiring and Grounding

> *This section applies only to RP100 units equipped with the “HI” power supply option.*

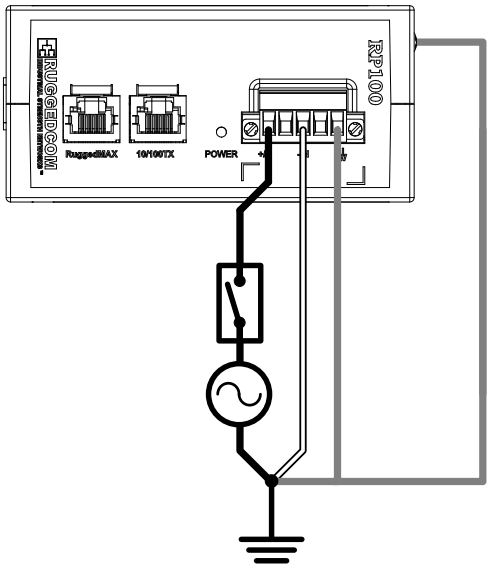

Figure 2.2. AC Power Supply and Ground Connections

Connect the AC power supply as follows:

1. **+/L** = **AC HOT**, and is connected to the HOT terminal of the AC power source.

2. **-/N** = **AC NEUTRAL**, and is connected to the NEUTRAL terminal of the AC power source.
3. Ground must be connected to the Safety Ground via a braided cable or other appropriate grounding wire.
4. Safety Ground should be connected to the power supply ground or equipment ground bus.

2.3. DC Power Supply Wiring and Grounding

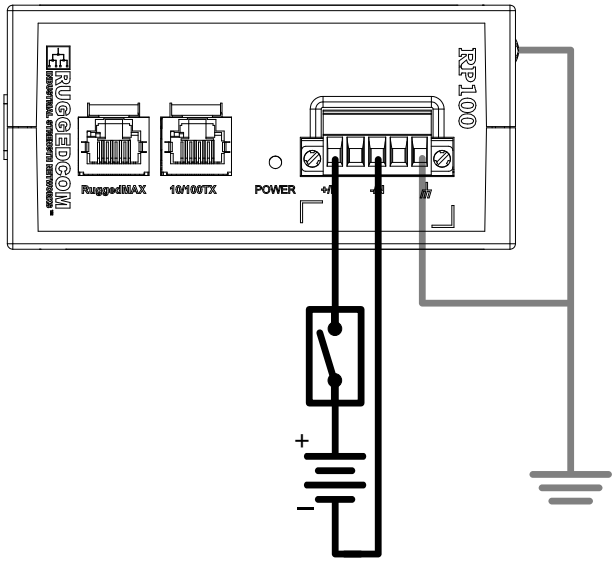

Figure 2.3. DC Power Supply and Ground Connections

Connect the DC power supply as follows:

1. **+/L** = **DC (+)**, and is connected to the positive (+) terminal of the DC power source.
2. **-/N** = **DC (-)**, and is connected to the negative (-) terminal of the DC power source.
3. Ground must be connected to the Safety Ground via a braided cable or other appropriate grounding wire.
4. Safety Ground should be connected to the power supply ground or equipment ground bus.

Ground must be disconnected from Chassis Ground during HIPOT (Dielectric strength) testing.

2.4. RJ45 Ports – Signal Description

2.4.1. 10/100 TX Port

10/100Base-TX ports allow connection to standard CAT-5E STP (shielded twisted pair) cable with RJ45 male connectors. The RJ45 receptacles are directly connected to the chassis ground on the unit and can accept CAT-5E STP (shielded twisted pair) cables. When shielded cables are used, care must be taken to ensure that a ground loop is not formed via the shield wire and the RJ45 receptacles at either end. Figure 2.4, “RJ45 Port Pinout” shows the RJ45 port pinout.

2.4.2. RuggedMAX Power Port / IEEE802.3at Port

The RuggedMax Power port takes data received on the 10/100 Base TX port and injects power on pins 4, 5 and 7, 8. CAT-5E STP (shielded twisted pair) cable should be used to connect this port to the powered device. For RP100 units with the “AT” IEEE802.3at-compliance option, the unit only delivers power when an IEEE802.3at-compliant powered device is attached.

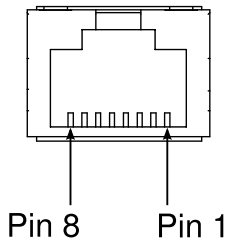

Figure 2.4. RJ45 Port Pinout

RuggedMax Power		10/100 Base Tx	
Pin	**Signal**	**Pin**	**Signal**
1	+Tx	1	+Tx
2	-Tx	2	-Tx
3	+Rx	3	+Rx
4	V+	4	Terminated
5	V+	5	Terminated
6	-Rx	6	-Rx
7	V-	7	Terminated
8	V-	8	Terminated
Case	Shield (Chassis Ground)	Case	Shield (Chassis Ground)

Table 2.1. RJ45 Ethernet Port Pinout

The unused pins, 4, 5, 7, and 8 of the 10/100Tx port are terminated to Chassis Ground via a network that improves EMI and ESD performance.

3. Specifications

3.1. Power Supply Specifications

Power Supply Type	Minimum Input	Maximum Input	Fuse Rating	Output Voltage	Output Power @ 85°C
RP100 HI AC/DC	90 VAC	264 VAC	3.15 A	54 V	25 W
	88 VDC	300 VDC	3.15 A	54 V	25 W

Table 3.1. RP100 HI AC/DC Power Supply Specifications

Power Supply Type	Minimum Input	Maximum Input	Fuse Rating	Output Voltage	Output Power @ 85°C
RP100 LO DC	10 VDC	60 VDC	5 A	54 V	24 W @ 12 Vin 36 W @ 24-48 Vin

Table 3.2. RP100 LO DC Power Supply Specifications

3.2. Mechanical Specifications

Specification	Value
Dimensions (Length × Width × Depth)	4.625 × 2.225 × 3.75 inches (117 × 57 × 95 mm)
Weight	1.92 lb (0.87 Kg)
Enclosure	Die cast aluminum

Table 3.3. Mechanical Specifications

3.3. Physical Dimensions

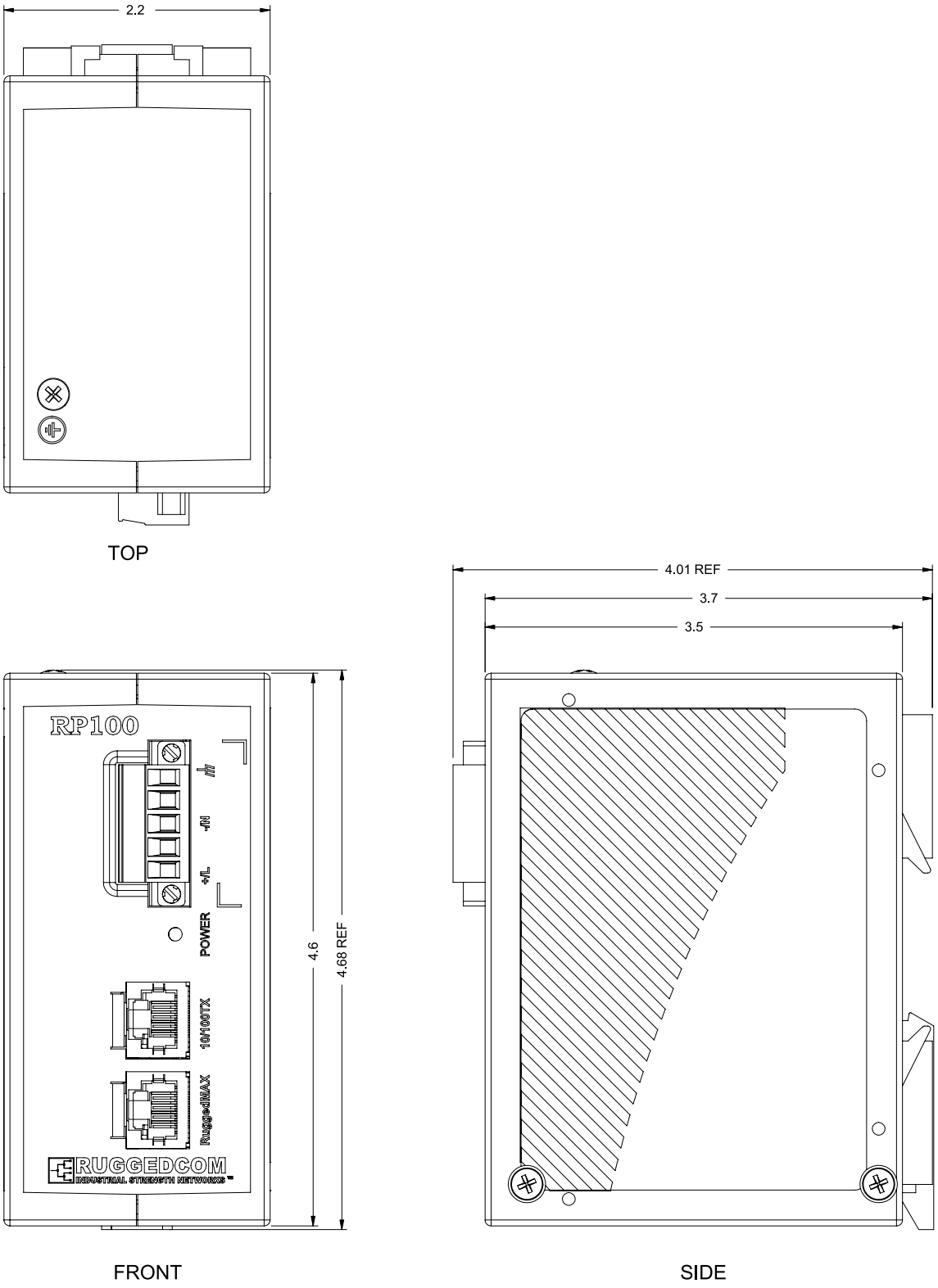

Figure 3.1. RP100 Dimensions

Appendix A. Warranty

RuggedCom warrants this product for a period of five (5) years from the date of purchase. This product contains no user-serviceable parts. Attempted service by unauthorized personnel shall render all warranties null and void. For warranty details, visit www.RuggedCom.com or contact your customer service representative.

Should this product require service, contact the factory at:

RuggedCom Inc.
300 Applewood Crescent
Concord, Ontario
Canada L4K 5C7
Phone: +1 905 856 5288
Fax: +1 905 856 1995