



# SERIP-100 Serial Device Server

## Installation guide

IGSERIP100-0901

### SAFETY PRECAUTIONS

#### HAZARD OF ELECTRIC SHOCK, EXPLOSION, OR ARC FLASH

- This equipment must be installed and serviced only by qualified personnel. Such work should be performed only after reading this entire set of instructions.
- NEVER work alone.
- Before performing visual inspections, tests, or maintenance on this equipment, disconnect all sources of electric power. Assume that all circuits are live until they have been completely de-energized, tested, and tagged. Pay particular attention to the design of the power system. Consider all sources of power, including the possibility of backfeeding.
- Apply appropriate personal protective equipment and follow safe electrical practices.
- Turn off all power supplying the equipment in which the SERIP-100 is to be installed before installing and wiring the SERIP-100.
- Always use a properly rated voltage sensing device to confirm that power is off.
- Beware of potential hazards, wear personal protective equipment, and carefully inspect the work area for tools and objects that may have been left inside the equipment.
- The successful operation of this equipment depends upon proper handling, installation, and operation. Neglecting fundamental installation requirements may lead to personal injury as well as damage to electrical equipment or other property.

**Failure to follow these instructions will result in death or serious injury!**

### INTRODUCTION

#### Package Contents

- SERIP-100 unit
- Installation Guide
- 2-pin terminal block plug
- 6-pin terminal block plug

#### Documentation and Additional Resources

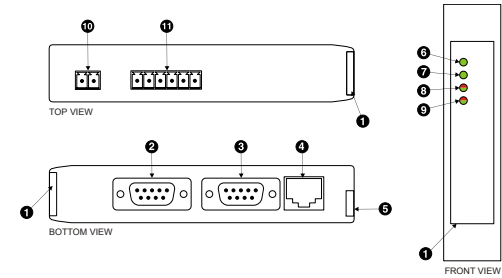
This Installation Guide must be used in conjunction with the SERIP-100 *User Manual*.

The SERIP-100 *User Manual* and supplemental software packages can be downloaded from the SERIP-100 web site: <http://www.proconx.com/serip100>

#### Quick Start Checklist

- Mount the unit.
- Connect the power. Do not connect yet serial ports.
- Configure the Ethernet communications settings with a web browser (using an Ethernet crossover cable) or with a terminal program like *HyperTerminal* (using a null modem cable)
- Configure the communications settings.
- Configure the device.
- Wire serial ports.

### DESCRIPTION



- Clear front cover
- RS-232
- Diagnostic RS-232
- Ethernet connector
- DIN rail clip
- Power LED
- Ethernet link LED
- Status 1 LED
- Status 2 LED
- Power terminal block socket
- RS-485

### INSTALLATION

#### Regulatory notes



1. The SERIP-100 module is suitable for use in non-hazardous locations only.
2. The SERIP-100 module is not authorized for use in life support devices or systems.
3. Wiring and installation must be in accordance with applicable electrical codes in accordance with the authority having jurisdiction.
4. The SERIP-100 is designed for installation into an electrical switchboard or cubical as part of a fixed installation.

#### Unpacking and handling

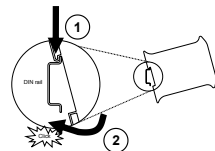
1. Please read this set of instructions carefully before opening the module or fitting it into your system.
2. Keep all original packaging material for future storage or warranty shipments of the module.
3. Do not exceed the specified temperatures.

#### Before connecting anything

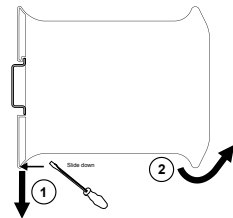


1. Before installing or removing the module or any connector, ensure that the system power and external supplies have been turned off.
2. Check the system supply voltage with a multimeter for correct voltage range and polarity.
3. Connect the power supply cable and switch on the system power. Check if the Power LED is lit.
4. Turn off system power.
5. Connect all I/O cables.
6. Once you are certain that all connections have been made properly, restore the power.

#### DIN rail mounting and removal



To mount the module on a DIN rail, slot the top part of the SERIP-100 into the upper guide of the rail and lower the enclosure until the bottom of the red hook clicks into place.



To remove the SERIP-100 from the DIN rail, use a screw driver as a lever by inserting it in the small slot of the red hook and push the red hook downwards. Then remove the module from the rail by raising the bottom front edge of the enclosure.

#### Mounting rules



- Avoid splash water and water drops
- Avoid aggressive gas, steam or liquids
- Avoid dusty environments
- Make sure there is sufficient air ventilation and clearance to other devices mounted next to the module
- Do not exceed the specified operational temperatures.
- Mount inside a sealed electrical switchboard or cubicle
- Observe applicable local regulations like EN60204 / VDE0113

#### Powering the SERIP-100

Before connecting power please follow the rules in the section called "SAFETY PRECAUTIONS" and the section called "Before connecting anything".



1	V+	Positive voltage supply (10 - 30 V DC)
2	V-	Negative voltage supply, ground



Make sure that the polarity of the supply voltage is correct before connecting any device to the serial ports! A wrong polarity can cause high currents on the ground plane between the V- power supply pin and the serial port GND pins, which can cause damage to the device.

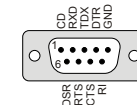
#### Wiring the RS-485 interface



3	Port 0	GND	Signal ground
4	Port 0	D+	Non-inverting transceiver terminal
5	Port 0	D-	Inverting transceiver terminal
6	Port 1	GND	'must be left unconnected'
7	Port 1	D+	'must be left unconnected'
8	Port 1	D-	'must be left unconnected'

- The bus must be terminated at both ends with its characteristic impedance, typically a 120 Ohm resistor.
- The bus lines are to be biased (polarized) at one point, typically at the master connection.
- The cable must be a twisted pair (for D+/D-) and a third wire (for the common).
- Maximum number of RS-485 nodes without repeater is 32.
- Maximum cable length to 1200 m (4000 ft).
- Stub connections off the main line should be avoided if possible or at least be kept as short as possible.
- To assure a high degree of electromagnetic compatibility and surge protection, the RS-485 cable must be shielded and the shield must be connected to a protective ground at a single point.
- The shield must *not* be connected to the GND pin.

#### Wiring the RS-232 interface



1	DCD	Data carrier detect	in
2	RXD	Receive data	in
3	TXD	Transmit data	out
4	DTR	Data terminal ready	out
5	GND	Signal ground	
6	DSR	Data set ready	in
7	RTS	Request to send	out
8	CTS	Clear to send	in
9	RI	Ring indicator	in

- Maximum cable length is 15 m (50 ft) or a length equal to a line capacitance of 2500 pF, both at the maximum standard bit rate of 20 kbps.

- If operating at higher bit rates the maximum cable length drops to 3 m (10 ft) at a bit rate of 57.6 kbps.

- The RS-232 cable must be shielded and the shield must be connected to a protective ground at a single point to assure a high degree of electromagnetic compatibility and surge protection.

- The shield must *not* be connected to the GND pin or the connector shell.



## Connecting Ethernet

1	TX+	Non-inverting transmit signal
2	TX-	Inverting transmit signal
3	RX+	Non-inverting receive signal
4	Internal termination network	
5	Internal termination network	
6	RX-	Inverting receive signal
7	Internal termination network	
8	Internal termination network	

- We recommend to use Category 5 shielded twisted pair network cable.
- Maximum cable length is 100 m (3000 ft).
- The network cable must be shielded and the shield must be connected to a protective ground at a single point to assure a high degree of electromagnetic compatibility and surge protection.
- The shield must *not* be connected to the connector frame.



## Connecting to the diagnostic port

1	NC	
2	RxD	Receive data
3	TxD	Transmit data
4	NC	
5	GND	Signal ground
6	NC	
7	NC	
8	NC	
9	NC	

- Maximum cable length is 15 m (50 ft) or a length equal to a line capacitance of 2500 pF, both at the maximum standard bit rate of 20 kbps. If operating at higher bit rates the maximum cable length drops to 3 m (10 ft) at a bit rate of 57.6 kbps.
- The cable must be shielded and the shield must be connected to a protective ground at a single point to assure a high degree of electromagnetic compatibility and surge protection.
- The shield must *not* be connected to the GND pin or the connector shell.

## LED indicators

A LED test is exercised at power-up, cycling each LED off, green and then red for approximately 0.25 seconds. At the same time the power-on self test of the module is performed.

The following table outlines the indicator condition and the corresponding status after the power-on self test has been completed:

LED	Function	Condition	Indication
Power	Power	Off	No power applied to the device.
Link	Ethernet	Off	No Ethernet link
Link	Ethernet	Green	Ethernet link OK
Sta-Device	Device status	Off	No Ethernet connection. No data on serial port 0.
Sta-Device	Device status	Flashing green	Connection on Ethernet but no data transmission or reception on serial port 0.
Sta-Device	Device status	Green	Connection on Ethernet and data transmitting or receiving on serial port 0.
Flashing red			No connection on Ethernet but data is received on serial port 0.
Red			The device has an unrecoverable fault; may need replacing. Flashing sequence and rate of Status2 LED indicates fault class.

## Maintenance

The SERIP-100 does not require maintenance, nor does it contain any user-serviceable parts. If the SERIP-100 requires service, contact us directly for assistance.

Refer to the technical support contacts provided at the end of this document.

Do not open the SERIP-100 enclosure; this will void the product warranty agreement.

## Diagnostics and troubleshooting

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- This equipment must be installed and serviced only by qualified personnel.
- Qualified persons performing diagnostics or troubleshooting that require electrical conductors to be energized must comply with and follow safe electrical work practices.

**Failure to follow these instructions will result in death or serious injury!**

The status web pages served by the SERIP-100, display diagnostic data that may be helpful in troubleshooting communication problems.

In addition the About page contains information about your specific SERIP-100, including the serial number and media access control (MAC) address. Some of these pages show a Clear Counter button. Clicking this button clears all cumulative readings shown on this particular page. If power to the SERIP-100 is lost, all values reset to zero.

## SPECIFICATIONS

<b>Enclosure</b>	Self-extinguishing PC/ABS blend (UL 94-V0)
Material	35 mm DIN rail (EN 60715)
Mounting	IP 20 / NEMA Type 1
<b>Power supply</b>	10-30 V DC
Current	30 mA typical @ 24 V DC
Intrinsic consumption	750 mW
<b>Environmental</b>	
Operating temperature	0 to 60 °C / 32 to 140 °F
Storage temperature	-25 to 85 °C / -13 to 185 °F
Humidity	10 to 95% non condensing
Operating ambience	Free from corrosive gas, minimal dust
<b>Physical</b>	
Dimensions	101 x 22.5 x 120 mm / 3.98 x 0.886 x 4.72 in
Weight	0.12 kg / 0.265 lb

## CONTACT

This product is designed and manufactured by:

**proconX Pty Ltd**  
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Tel +61-7-3376 3911 Fax +61-7-3102 9206

Email: [mail@proconX.com](mailto:mail@proconX.com)

## Technical Support

We provide an electronic support and feedback system for our *proconX* products. It can be accessed through the following web link:

<http://www.proconX.com/support>

## Product Returns

Before returning any product for service, repair or warranty, obtain first a RMA (Returned Material Authorization) number by contacting our technical support.

method.

Please consult the SERIP-100 *User Manual* for further details on this

## IP setup using a terminal program like HyperTerminal

- Disconnect your PC from your corporate network. If your computer is configured for DHCP it should now automatically fall back to use a default IP address from the APIPA range 169.254.x.x (Windows PCs only). If your computer is configured with a static IP address or does not support APIPA, it must be changed manually to be part of the 169.254.0.0/16 subnet, for example to 169.254.0.20.
- Connect an Ethernet crossover cable from the SERIP-100 to the computer.
- Start *Internet Explorer*.
- In the address box, type **169.254.0.10** and then press **Enter**.
- Click **Configurati...** and then **Ethernet & IP** in the menu on the left side of the page.
- Enter the IP address, subnet mask, and gateway address assigned to your SERIP-100, then click **Save**.
- Reconnect your computer to your corporate network. If you assigned a static IP address to your computer in step 1, you must restore your computer's original settings before reconnecting to your network.

## IP setup using a web browser and a cross-over network cable

Use a web browser or a terminal program like *HyperTerminal* to configure the SERIP-100's TCP/IP settings with this information.

The factory default IP address of the SERIP-100 is 169.254.0.10 which is in the Automatic Private IP Addressing (APIPA) address range. In order to connect to the SERIP-100 via TCP/IP, your PC must be on same IP subnet as the gateway.

## Ethernet & IP configuration

Before configuring the SERIP-100, obtain a unique static IP address, subnet mask, and default gateway address from your network administrator.

## Configuring and commissioning

The configuration pages are accessed using the integrated web server:



Please consult the SERIP-100 *User Manual* for further details how to setup the SERIP-100.

- Gateway IP address
- Main menu
- Configuration sub-menu
- Information area

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