

# SP PRO Ethernet Adaptor Lead for LAN connection Installation Notes



## SP PRO Ethernet Adaptor Lead for LAN connection

### Introduction

Connecting an SP PRO series II inverter to a Local Area Network (LAN) requires an optional adaptor lead and a simple configuration of SP LINK. Once connected the SP PRO can be accessed via SP PLINK from any PC computer connected to the same LAN.

The adaptor lead is also suitable for connecting to the SP PRO series I with the addition of a "Powered Console DB9M-RJ45 lead" (Stock code 004349).

### Attention

*When using the Ethernet Adaptor lead connection both the USB and the COM1 connections are not available. If a USB connection is required at the SP PRO inverter then first unplug the Ethernet adaptor from the DB9 connector in the SP PRO, plug in the USB lead and connect to computer. When the USB connection is concluded, simply unplug the USB lead and reconnect the Ethernet lead. The SP PRO will again be available on the LAN.*

### Overview

The diagram shows the configuration of the Ethernet adaptor lead.



Ethernet adaptor lead plugged into SP PRO



PC connected to the LAN



Connect to LAN via Hub, wireless router or wired router using network cable

# SP PRO Ethernet Adaptor Lead for LAN connection Installation Notes



## System Requirements

To successfully install the Ethernet Adaptor lead the following system requirements need to be met.

- The computer operating system must be Windows XP SP3, Vista SP1, 7, 8, 8.1 or 10. You must have administrator permissions on the computer to install SP LINK software.
- Your LAN must have an active DHCP server (which is the case for most networks). The DHCP server automatically assigns the SP PRO its IP address.
- Suitable for a SP PRO Series II (revision 20 or higher).
- *Can be used with a Series I SP PRO with the addition of a "Powered Console DB9M-RJ45 lead" (Stock code 004349).*

## Installation

1. Check that the Communication Port 1 Baud Rate is 57600. This is the default setting and should be correct if it was not changed during installation of the SP PRO.

If you are not sure of the Baud Rate setting then

- Connect a computer with SP LINK installed to the SP PRO inverter using the cables supplied with the SP PRO and follow the instructions in the SP LINK manual (found in the "help" menu of SP LINK).
- On the **Configuration Settings** tab, click the **Get SP PRO's configuration** button.
- Click on the **System** tab and check the **Port 1 Baud Rate**.

The screenshot shows the configuration software interface with the following details:

- Navigation tabs: Site Information, Configuration Settings (selected), QuickView, Data View, Service Settings.
- Configuration File: C:\SP PRO Sites\Selectronic Demo System\Selectronic Demo System Config1.SPLC
- Buttons: Get SP PRO's Configuration, Configure SP PRO
- Quick Start section:
  - Unit Application: Off Grid
  - Battery Type: Sealed
  - AC Source Power: 2.4 kVA
  - SoC Control: Enabled
  - Battery Capacity: 660 Ah
- System\* tab selected, showing:
  - Alarm: Beeper (Locked Out), Lock Out Start Time (22:00), Lock Out End Time (08:00), AC Source Disconnect Beeper (Disabled)
  - Time: Year to Date Rollover Date (01/01), Detailed Data Log Interval (15 min)
  - Power Up Output Mode: Idle
  - Automatic Fault Recovery: System Fault Recovery (Enabled), Unit Fault Recovery (Enabled)
  - Communication: Port 1 Baud Rate\* (57600), Port 1 DTR/DCD (Enabled), Port 2 Baud Rate (9600), Port 2 DTR/DCD (Enabled)

Unplug the USB lead from the SP PRO series II inverter, and then plug the Ethernet adaptor lead into the DB9 connector at the base of inverter. Screw in the thumb screws on each side of the DB9 plug to prevent the Ethernet adaptor lead from falling out.

# SP PRO Ethernet Adaptor Lead for LAN connection Installation Notes



Using the supplied network cable connect the other end of the Ethernet adaptor plug to your local network. If the supplied cable is not long enough then any standard network cable may be used.

Connect this end  
to network cable



Connect this end to  
the SP PRO

## Connecting Computer to SP PRO

1. Install SP LINK software, which is found on the USB drive provided (if not already installed).
2. Check that the computer is connected to the LAN.
3. Start SP LINK and create a site file, according to the instructions in the SP LINK manual (found in the "help" menu of SP LINK).
4. In the **Site Information** -> **Connection Settings** tab, set **Connection Type** to **Network**.
5. Enter 10001 in the **Port** settings then click the **Scan Local Network** button to search for the SP PRO inverter's IP address. This will appear in the **Detected devices** box.
6. Double clicking on any found IP address will copy it to the **Hostname or IP address** setting.
7. Click the **Connect** button to connect to the SP PRO inverter.

SP PRO Details | Connection Settings | Components

\* Connection Type Network COM3 57600 Scan Local Network

\* Login Password Selectronic SP PRO

Modem Phone Number

Modem Initialisation

\* Hostname or IP Address \* Port 10001 Connect

Detected devices:  
127.0.0.1

## Useful Hints

1. If more than one IP address is detected then note all the IP addresses. Disconnect the Ethernet Adaptor Lead from the network and perform another "Scan Local Network". The IP address that does not reappear is that of the SP PRO.
2. If the SP PRO has been disconnected from the network for a period of time, then its IP address may have changed and this may prevent connection being made. If this occurs then use "Scan Local Network" again to find the new IP address.

# SP PRO Ethernet Adaptor Lead for LAN connection Installation Notes



## Internet Connectivity

Remote communications with an SP PRO installation can provide many advantages, including the ability to monitor system performance, adjust configuration settings and potentially correct problems before they cause power outages.

This section provides overall guidance to enable a SP PRO already connected to a LAN to be accessed remotely via the internet.

The section is targeted at persons who are familiar with general router and gateway configurations, plus operation of Dynamic DNS services. The application note only deals with an example of the general settings required in a router and cannot detail specific step by step instructions for all routers, as this equipment is not supplied by Selectronic and configuration methods vary with modem or router manufacturer.

In summary, the principles are:

1. Assign a fixed local IP address for the Ethernet adaptor lead.  
In this example, 192.168.1.3 will be used, but this will vary depending on your network.
2. Configure the router or modem for Port forwarding.
3. Assign a Dynamic DNS name for the system (optional).

## Assign a fixed local IP address for the Ethernet adaptor lead

If the SP PRO has been disconnected from the network for a period greater than the DHCP lease time, then its IP address may change which will prevent connection being made.

Assigning a fixed IP address is typically within a configuration area called "DHCP Server", and is often under an "Advanced" configuration section.

The screenshot shows the 'Advanced' configuration page of the SP PRO device. The 'Configuration' section is expanded to show the 'DHCP Server' settings. Under 'Fixed Host', there are three input fields for Host Name, MAC Address, and IP Address. Below these fields is a warning message: '\*\*\* Please note that the IP Address cannot be set within the DHCP server's range. \*\*'. There are 'Add', 'Edit/Delete', and 'Return' buttons. A table below shows the current configuration:

Edit	Host Name	MAC Address	IP Address	Delete
<input type="radio"/>	SPPRO	00:80:a3:97:3b:a4	192.168.1.3	<input type="checkbox"/>
<input type="radio"/>				<input type="checkbox"/>

Once assigned, the Ethernet adaptor lead's IP address will not change, no matter how long it is unplugged from the network.

# SP PRO Ethernet Adaptor Lead for LAN connection Installation Notes



## Configure the router or modem for Port Forwarding

Routers typically have inbuilt firewalls that prevent unwanted network traffic from reaching the internal network. The router must be configured to:

1. Firewall - Allow specific requests to enter,
2. Forwarding - Send those requests to the Ethernet adaptor lead.

The router needs to have one port forwarded, allowed to enter, then forwarded to the Ethernet adaptor lead.

External Port	Protocol	Internal Port	Internal Address
10001	TCP	10001	192.168.1.3

The router may, or may not:

- Instead of a single port, request Start and End numbers (Use the same number for both).
- Request a name for the service. This is a helpful reminder if you use many ports.
- Automatically create a firewall rule when you create a forwarding rule. In the router example below it is two separate steps.

## Firewall

A rule is created to allow requests to TCP Port 10001 to enter the modem.

**Advanced**

- Basic
- ▶ Status
- Quick Start
- ▼ Configuration
  - ▶ LAN
  - ▶ WAN
  - ▶ System
  - ▶ Firewall
    - Packet Filter
    - Ethernet MAC Filter
    - Wireless MAC Filter
    - Intrusion Detection
    - Block WAN PING
    - URL Filter
  - ▶ VPN
  - QoS
  - ▶ Virtual Server
  - Wake on LAN
  - Time Schedule
  - ▶ Advanced

External IP Address  ~

Protocol TCP Protocol Number  Action drop

Internal Port  ~  External Port  ~

Direction outgoing Time Schedule Always On Log

Add Edit / Delete Reorder

Edit	Order	Rule Name	IP Version	Internal IP Address External IP Address	Protocol	Internal Port External Port	Direction	Action	Time Schedule	Delete
<input type="radio"/>	↓		4	Any	TCP	Any	incoming	forward	Always On	<input type="checkbox"/>
<input type="radio"/>	↕	SPLINK	4	Any	TCP	10001 ~ 10001	incoming	forward	Always On	<input type="checkbox"/>
<input type="radio"/>	↑		4	Any	TCP	Any	incoming	drop	Always On	<input type="checkbox"/>
		Default		Any	Any	Any	outgoing	forward	Always On	

# SP PRO Ethernet Adaptor Lead for LAN connection Installation Notes



## Forwarding

A rule is created to forward TCP 10001 messages to the IP address of the Ethernet adaptor lead.

**Advanced**

- Basic
- Status
- Quick Start
- Configuration
  - LAN
  - WAN
  - System
  - Firewall
  - VPN
  - QoS
  - Virtual Server
    - Port Mapping**
    - DMZ
    - One-to-One NAT
    - ALG
    - Wake on LAN
    - Time Schedule
  - Advanced

**Configuration**

▼ Port Mapping

Parameters

Application: [ ] << [--select--] (type or select from listbox)

Protocol: TCP Protocol Number: [ ] External Port: [ ] ~ [ ]

Internal IP Address: [ ] << [--select--] (type or select from listbox)

Internal Port: [ ] Time Schedule: Always On

Port ranges forwarded internally will be the same as Externally.

Add Edit/Delete

Edit	Application	Protocol	External Port	Internal IP Address	Internal Port	Time Schedule	Delete
<input type="radio"/>	SPLINK	TCP	10001	192.168.1.3	10001	Always On	<input type="checkbox"/>

## Assign a Dynamic DNS name for the system (optional)

Every device connected to the internet has an IP address. These addresses can be either "fixed" (locked to the device) or they can be "dynamic" (assigned when connecting to the internet). The remote computer wanting to connect to the SP PRO needs to know the public IP address of the router in order to connect through to the Ethernet adaptor lead. Addresses may be assigned names such as [www.sppro.com.au](http://www.sppro.com.au), which is easier to remember than 218.214.211.220.

If your internet service provides a fixed IP address, you only need to determine what this address is and it can be used in SP LINK.

But if you are not given a fixed IP address, you have a Dynamic IP address which can only be determined at the router itself. However the router can be assigned a "host name" which remains the same though the IP address may change. To achieve this, the router must have a built in Dynamic DNS (Domain Name System) service.

## Assigning a Dynamic DNS name

In order to use Dynamic DNS you must

1. Register an account with a service provider.
2. Create a host name, which can then be used in SP LINK software.
3. Enter the host name and account details into the router.

Check which service providers are supported by your router. No-IP.com provides some free Dynamic DNS services which work very well. <http://www.noip.com/remote-access>