



Synaccess SynLink PDU

Installation and Quick Start Guide



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1. Important Safety Instructions

Read the following before installing or operating the Power Distribution Units (PDUs)

- PDU must be plugged into a grounded outlet
- Ensure that all cables, plugs, and receptacles are in good condition.
- Ensure that the AC Power source's voltage is within the range specified.
- Do not attempt to modify the PDU, including inlet plugs, and outlet receptacles.
- Do not mount the PDU to an unstable surface.
- Do not exceed an individual outlet's load rating or the overall load rating of the PDU.

2. Installation & Mounting

2.1 1U Rack Mounting

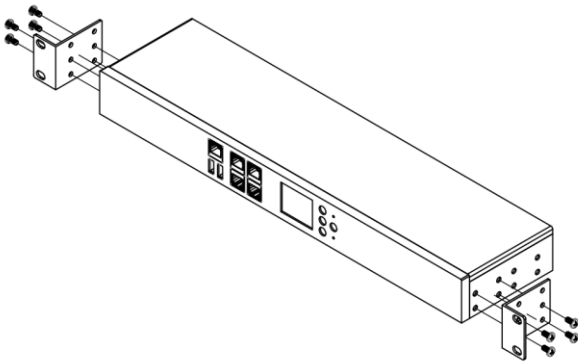


Figure 1.

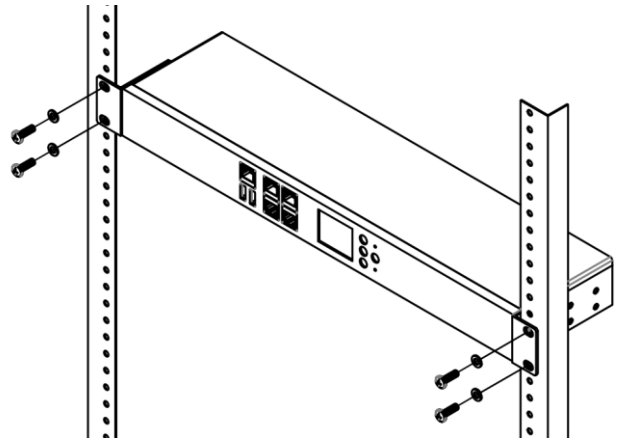


Figure 2.

Attach the 1U mounting brackets to your 1U PDU with the provided M4 screws as shown in Figure 1.

Install the PDU on a rack by inserting 4 screws through the holes of the mounting bracket and onto the mounting holes of the rack rail as shown in Figure 2.

2.2 2U Rack Mounting

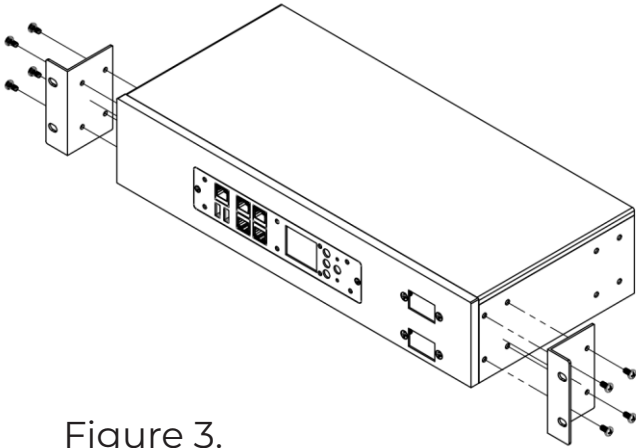


Figure 3.

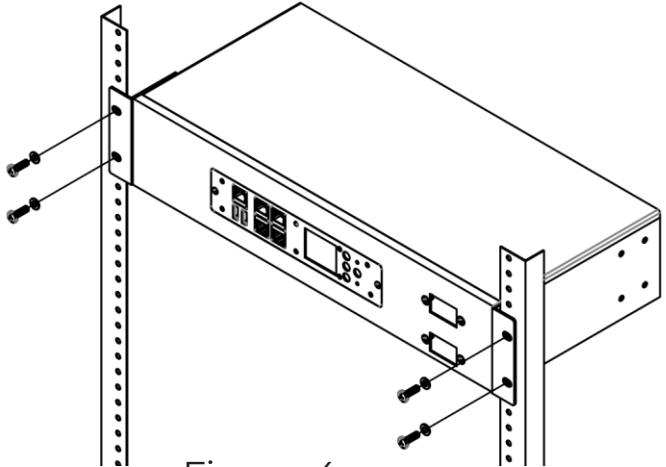


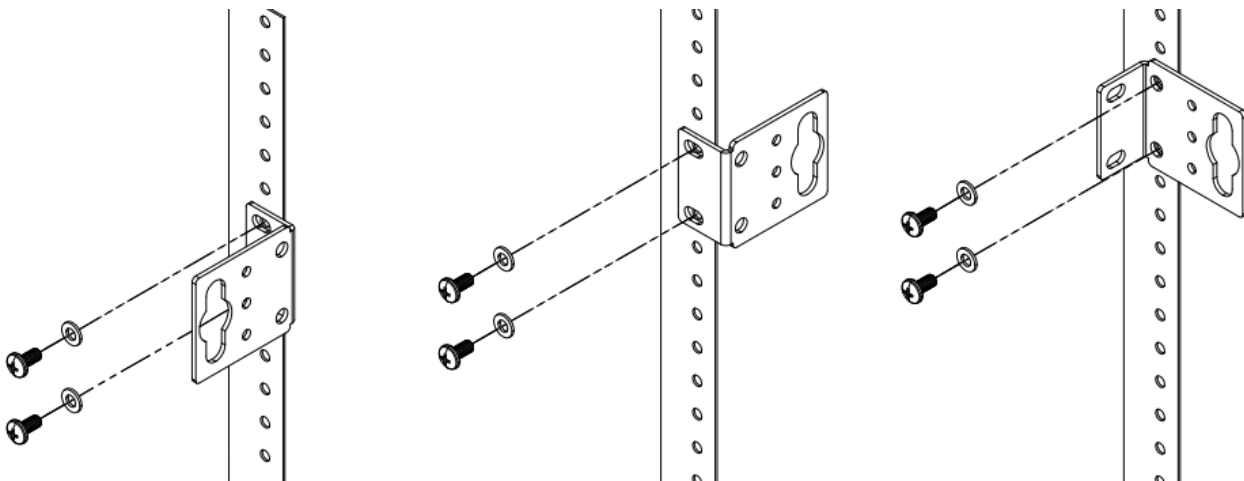
Figure 4.

Attach the 2U mounting brackets to your 2U PDU with the provided M4 screws as shown in Figure 3.

Install the PDU on a rack by inserting 4 screws through the holes of the mounting bracket and onto the mounting holes of the rack rail as shown in Figure 4.

2.3 0U Rack Mounting

2.3.1 Attaching 0U Brackets onto Server Rack



Attach the provided 0U mounting bracket onto a rack using one of these options.

2.3.2 Method #1: Mounting 0U PDU with Button Mount

Attach the button mounts to the 0U PDU with the provided screws as shown in Figure 5. Align the button mount to the button slot on the 0U mounting bracket. Insert and slide down to lock firmly in place as shown in the illustration below (Figure 6)

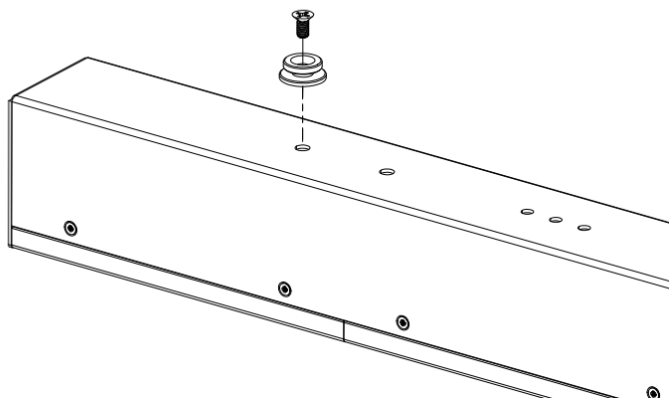


Figure 5.

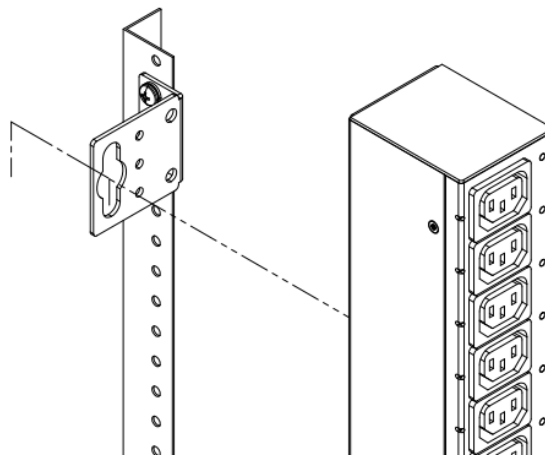


Figure 6.

2.3.3 Method #2: Mounting 0U PDU with M4 Screws

Mount the 0U PDU to mounting bracket using three M4 screws as shown in the illustration below (Figure 7).

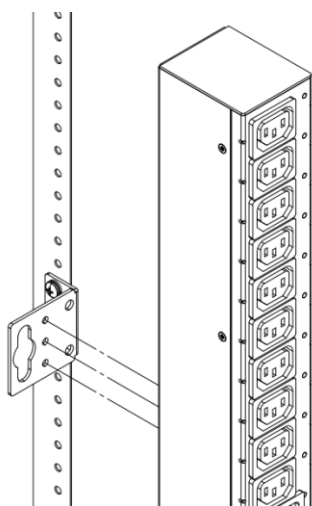


Figure 7.

3. Connecting to the SynLink PDU

3.1 Using the LCD Display

The LCD display and button interface on the front panel enables easy setup and network configuration. Configure IP address, IP address assignment type (DHCP or STATIC), subnet mask, and gateway IP.

You can use this interface to view power metrics, sensor data, and toggle outlets.

To Factory Reset, press and hold the two outer buttons simultaneously for 10 seconds.

3.2 Connecting to the USB-Serial COM Port

SynLink Command Line Interface is a text-based terminal shell that enables retrieval of PDU information and control of PDU functionality. Press tab to autocomplete commands.

*Default Credentials are: **admin** for username, and **admin** for password*

Connect a USB Type A to USB Type A cable from the SynLink front panel port labeled 'COM' to a host PC (Windows, Linux, or Mac).

3.2.1 Instructions for Windows

If you are using a Windows computer to access the serial port, we recommend using PuTTY.

After connecting the PDU to your computer, open PuTTY and select the 'Serial' option as shown in Figure 8.

The default baud rate (speed) is 115200. Identify your Serial Line (COM1 or COM2...; See section 3.2.1.1) and click Open to start a command line interface session with a SynLink Shell. Log in with the default credentials and type help or '?' to see a list of available commands.

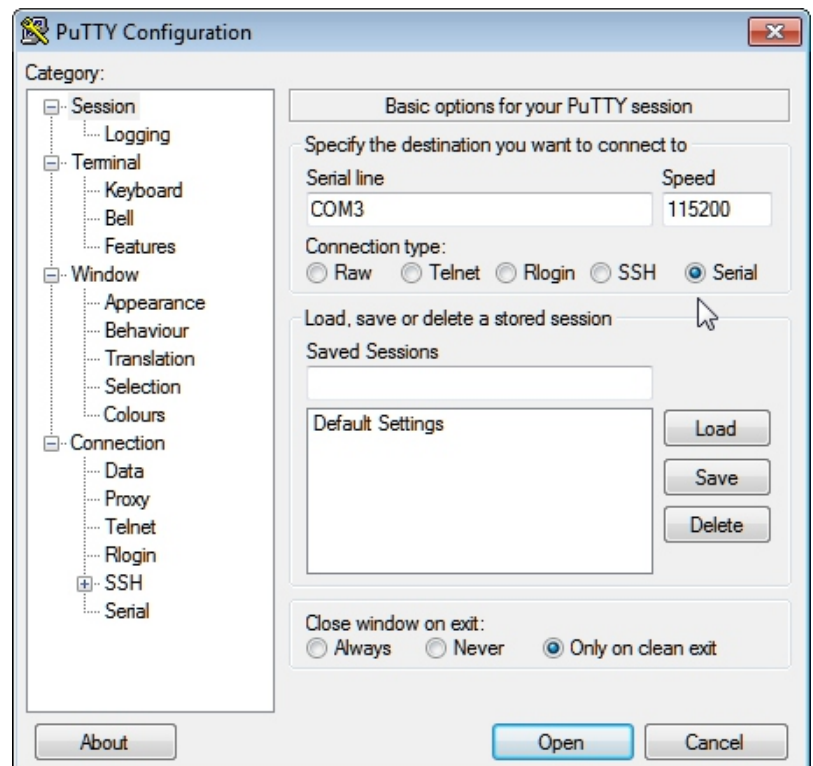
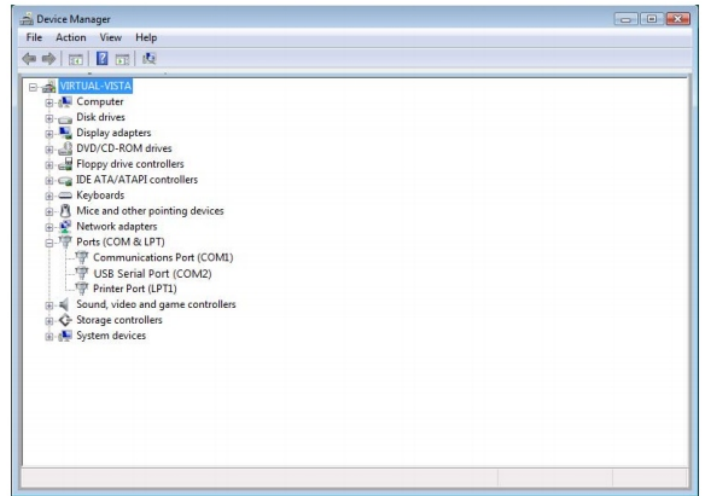


Figure 8.

3.2.1.1 Identify Serial Line on Windows Vista/7/10

1. Click on Start Button on the bottom left corner of your screen.
2. Type: devmgmt.msc, and hit enter on your keyboard to open the Device Manager.
3. Inside the Device Manager, look for a section called “Ports (COM & LPT)”, and expand the section
4. The device will be listed as a USB Serial Port, the Serial Line COM port number is shown in parentheses. If you don't see the device, try the following:
 - Reconnect the USB cable.
 - Click on ‘View’ -> ‘Show hidden devices’ in Device Manager.



3.2.2 Instructions for Linux

If you are using a Linux Machine, we use Minicom or Screen to access the device. To install minicom

```
$ sudo apt install minicom
```

To identify the /dev of the USB-Serial port you can use type dmesg after the usb connection is made.

```
$ dmesg
```

Look for ‘Manufacturer: Synaccess LLC’ or ‘Product: SynLink USB COM Port’. You can find the /dev device in the dmesg output, in this example it is: ttyUSB0.

```
[60254.609649] usb 1-1: new full-speed USB device number 12 using xhci_hcd
[60254.767479] usb 1-1: New USB device found, idVendor=0403, idProduct=6015, bcdDevice=10.00
[60254.767485] usb 1-1: New USB device strings: Mfr=1, Product=2, SerialNumber=3
[60254.767488] usb 1-1: Product: SynLink USB COM Port
[60254.767491] usb 1-1: Manufacturer: Synaccess LLC
[60254.767493] usb 1-1: SerialNumber: DT04CY2E
[60255.340378] usbcore: registered new interface driver usbserial_generic
[60255.340402] usbserial: USB Serial support registered for generic
[60255.346013] usbcore: registered new interface driver ftdi_sio
[60255.346052] usbserial: USB Serial support registered for FTDI USB Serial Device
[60255.346476] ftdi_sio 1-1:1.0: FTDI USB Serial Device converter detected
[60255.346543] usb 1-1: Detected FT-X
[60255.347865] usb 1-1: FTDI USB Serial Device converter now attached to ttyUSB0
```

Open a command line interface with Minicom and the identified serial device. Be sure to turn Hardware Flow Control off with 8N1 as the parity and bits. Default Baud rate is 115200.

```
$ sudo minicom -D /dev/ttyUSB0 -b 115200
```

Log in with the default credentials and type help or ‘?’ to see a list of available commands.

3.3 Connecting over the Network

The SynLink PDU's network settings must be properly configured before the PDU can be accessed remotely.

Network settings can be configured using the front panel interface or a USB-Serial (COM Port) connection. We recommend using the front panel interface for the easiest setup.

To get started, connect the PDU's Ethernet Port (See Section 4: Front Panel Ports) to a network hub, switch, or router.

Default Network Configuration:







IP Assignment: STATIC
IP Address: 192.168.1.100
Subnet Mask: 255.255.255.0
Gateway: 192.168.1.1
Web Port: 80
SSH Port: 22

Default Login Credentials

Username: admin
Password: admin

3.3.2 Setting Up Network Configuration

Configuration with the Front Panel Interface.

1. Use the buttons on the front panel and the corresponding arrow keys on the LCD screen to navigate to the 'Network' page of the menu.
2. Press the middle list () button on the 'Network' page to enter configuration mode.
3. Use the buttons corresponding to the up () and down () arrows to scroll through the list.
4. Highlight a Network Configuration setting and press the middle edit () button to modify the setting.
5. You will be asked for a final confirmation before the changes are applied. Highlight 'YES' and press enter () to confirm.
6. Press back () to exit configuration mode.

Configuration with the USB-Serial (COM Port) Command Line Interface.

1. Follow instructions in Section 3.2 to connect to the SynLink Command Line Interface and log in with the default credentials.
2. Type '?' to see a list of commands. If you don't see a help menu, then there was an issue with step #1.
3. Type 'network ip set' to see the list of configurable network settings.


```
-----
SynLink Shell Help Menu
-----

Usage: [command] [options...]

Press Tab to autocomplete commands

Commands

[n]etwork      Show and configure network info
[s]ystem       Show and Configure PDU power, control, sensors, etc
[se]ttings    Manage PDU settings
[m]odem       Access a connected modem
[l]ogs        See various logs

ping [host]    Send ping to specified host
[h]elp        Returns this message
[ex]amples    Common example commands
[exit]       Exits SynLink Shell

SynLink>
```

4. Example Commands

```
network ip set static_ip 192.168.1.101
```

```
network ip set ip_assign dhcp
```

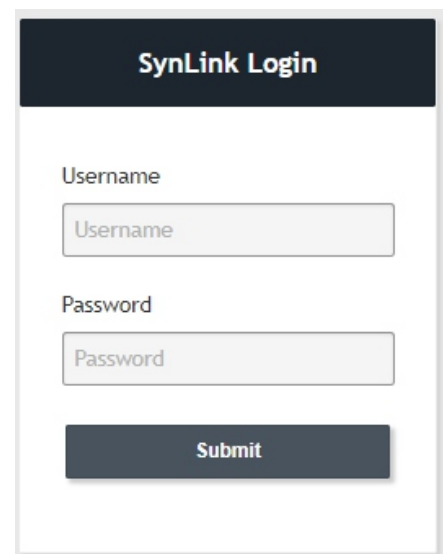
```
network ip set subnet_mask 255.255.0.0
```

After the appropriate settings have been configured for your network, the PDU is ready to be accessed remotely.

Connect a host PC to the same network subnet and follow the next set of instructions to connect to the Web Interface or SSH command line.

3.3.3 Connecting to Web Interface

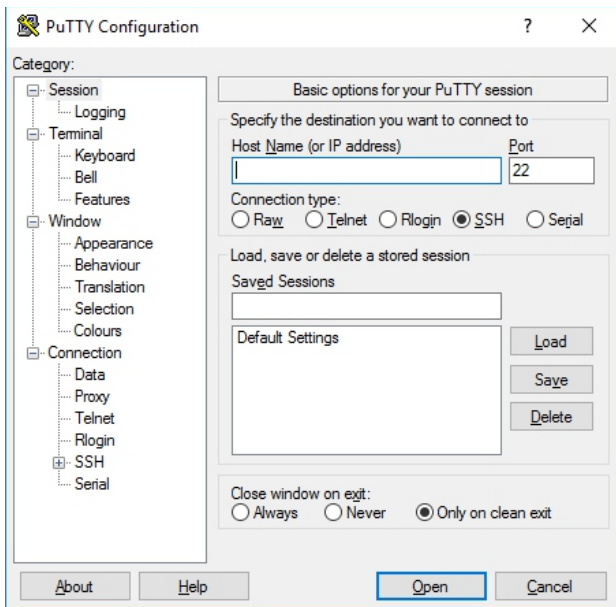
1. Open a supported web browser
2. Type in the IP Address of your PDU in the address bar and press Enter on your keyboard.
3. You should be greeted with a SynLink Login page.
4. Log in for the first time with default credentials:
Username: admin
Password: admin
5. Congratulations! You are now connected to your new SynLink PDU's self-hosted web application

The image shows a web browser window displaying the SynLink Login page. The page has a dark blue header with the text "SynLink Login" in white. Below the header, there are two input fields: "Username" and "Password". The "Username" field has the text "Username" inside it, and the "Password" field has the text "Password" inside it. Below these fields is a dark blue button with the text "Submit" in white.

3.3.4 Connecting to SSH Server

Connecting with Windows PuTTY

1. Open PuTTY and type in USERNAME@IP_ADDRESS of your PDU in the Host Name field.
2. Select 'Connection Type': SSH
3. Click *Open*
4. Log in for the first time with default credentials:
Username: admin
Password: admin
5. Congratulations! You are now connected to your new SynLink PDU's SSH server.



Connecting with Linux

1. Open a new terminal session with keyboard shortcut CTRL+ALT+T
2. Start SSH session with command:

```
$ ssh admin@192.168.1.100
```

3. Log in for the first time with default password:

Password: admin

4. Congratulations! You are now connected to your new SynLink PDU's SSH server.

Controller Front Panel Ports

1. USB-Serial Device Port (FTDI)

Access SynLink Command Line Interface through USB-Serial Port. Connect a USB Type A to USB Type A cable from the COM port to your PC's USB Port.

2. USB 2.0 Host Port

Accessory port. Usable as a USB-Serial Modem port. Connect from the USB port to a USB-serial device to provide out of band management to a connected serial device.

3. Sensor Port A OR Serial Port (RS232)

Configure to either be a sensor port with an additional accessory or configure to be a RS232 serial port. Access the SynLink Command Line Interface with RJ45 RS232 serial interface.

4. Expansion Port

Reserved for future use.

5. Color LCD Display

1.8" True TFT color display with 128x160 color pixels.

6. LCD Buttons

The four buttons control the LCD functionality. Hold down the left and right button (of the row of three) to issue a factory reset if you are holding the PDU in a vertical orientation as shown in this example. Otherwise hold down the bottom button and top button of the row of three next to the LCD.

7. Power Status LED

Solid RED indicates the SynLink control module is powered on.

8. Ethernet Port 10/100 Base T

Connects the SynLink PDU to the network.

9. Dedicated Sensor Port B

Second sensor port with RJ-45 connector.

10. Reset Pin

Press to reset the SynLink PDU without affecting the state of the outlets.

