



# OWNER'S MANUAL

iP 15 SNMP Series  
SNMP CONTROLLED  
AC POWER DISTRIBUTION

8/16



## **INTRODUCTION**

### **iP 15 SNMP Series SNMP BASED REMOTE POWER CONTROL**

The Juice Goose iP15 SNMP series are microcontroller based power distribution devices that can be accessed via Internet or intranet communications using Ethernet or RS232 connection. With this remote access, individual AC receptacles can be turned on and off.

The iP1515-SNMP has a 15 amp capacity. The Ip1520-SNMP has a 20 amp capacity. Both provide AC line conditioning and surge protection.

## **SAFETY PRECAUTIONS**

The iP15 Series products are designed to operate at 120 volts, 60 hertz. Operation with any voltage or frequency other than that can damage the equipment and create an unsafe situation.

CAUTION #1: These devices must be grounded. If a power extension cord is required, use a properly insulated and grounded cord. Failure to ground the device could expose the user to dangerous electric shock.

CAUTION #2: These devices should be installed only by qualified electrical technicians using appropriate mounting hardware and correct installation techniques. Before installing make sure main power is off.

CAUTION #3: Do not expose these products to moisture or salty air. Doing so could cause significant damage and create an unsafe condition.

## **DISCLAIMER**

Juice Goose shall under no circumstances be held responsible for any losses, damage, or injury resulting directly or indirectly from the use of the iP15 device in a manner contrary to accepted safe operating methods or any instructions contained in this document. The user should determine prior to use whether this product is adequate, suitable and safe for the application intended. Since individual applications can be subject to extreme variation Juice Goose makes no representation or guarantee as to the suitability of the iP15 series products for any generally described application.

## DETAIL SPECIFICATIONS

CHASSIS.....	16 Gauge Steel
DIMENSIONS (inches).....	1.72H x 19.0W x 7.0D
WEIGHT (lbs).....	10.0
CIRCUIT BREAKER.....	15A (iP1515) or 20A (iP1520) back panel, thermal
POWER INPUT CORD.....	7 Foot, SJTW with NEMA 5/15P (iP1515) or 5/20P (iP1520) (Note: iP1520 requires a NEMA 5/20R receptacle)
VOLTAGE INPUT.....	120 VAC at 60 Hz
POWER OUTPUTS	
iP1515.....	Six NEMA 5/15R (controlled), one NEMA 5/15R (unswitched)
iP1520.....	Six NEMA 5/20R (controlled), one NEMA 5/20R (unswitched)
NUMBER OF CONTROLLABLE PODS.....	Three
RELAY CURRENT RATING (amps).....	30
POWER LINE FILTRATION.....	Multi-stage Filter (48dB at 30 MHz)
MICROCONTROLLER.....	Microchip PIC18F97J60
COMMUNICATIONS LINES	
Ethernet (Network).....	RJ-45 (8 Wire)
RS232.....	RJ-11 (3 Wire)
COMMUNICATIONS PROTOCOL.....	SNMP, RS232
MONTIOR FEATURES	
Front Panel.....	Power On and Network Connection LEDs
OPERATING TEMPERATURE RANGE (degrees Fahrenheit)	
Operating.....	32 to 158
Storage.....	-40 to 185

### FRONT PANEL FEATURES

**ROCKER SWITCH** - The primary intent is for the iP15 to be controlled via a remote RS232 or Ethernet link. This switch serves as a fail safe control device in the event a remote RS232 or Ethernet connection is not available or functioning. Moving this switch to the UP position will cause the iP15 to turn on the three power PODs in a prescribed timed sequence. The timing is two seconds between each POD activation. Moving this switch to the DOWN position will cause the unit to turn off the POD outlets in the reverse order.

**RECESSED SLIDE SWITCH** - As a second fail safe control point, this switch can be used to manually turn on all POD outlets in the unlikely event of failure of the control circuitry contained in the iP15. This switch will turn on all POD outlets simultaneously. When the switch is returned to it's "off" position the iP15 will revert to the prior state the unit was in.

**NETWORK LED** - This LED will light up solid when the iP15 is connected to an Ethernet network connection. It will blink quickly when an Ethernet cable is at-

tached but no network can be found. When no network cable is connected or when using RS232 the light will blink slowly indicating the unit is powered up.

POD LEDs - As each of the POD duplex receptacles on the back of the iP15 turns on a corresponding LED on the front of the unit will light. Each LED will turn off when the POD turns off.

### **BACK PANEL FEATURES**

**NETWORK (Ethernet) PORT** - This RJ45 connector is for connecting to your PC, router or local area network using a TCP/IP link.

**RS232 PORT**- This RJ11 connector can be used for remote control of the iP15 via RS232 protocol over distances not to exceed 50 feet.

**PODs 1 -3** - There are three duplex receptacles on the back of the iP15. Each is rated for a maximum twenty amp load on the iP1520-SNMP and a maximum of fifteen amp load on the iP1515-SNMP, each is controllable to turn on or off independently of the others. When the on board sequencing process is used POD 1 will turn on first, followed in order by POD 2 and POD 3. They will turn off in reverse order using this same process.

**UNSWITCHED OUTLET** - This single outlet is rated for a maximum load of fifteen amps on the iP1515 and twenty amps on the iP1520. It will have power any time the iP device is plugged into a live AC receptacle.

## INSTALLATION AND SETUP

Unbox the unit. The box contains: the iP15 unit, the iP15 manual and a warranty card .

Mount the iP15 in a 19" wide rack with metal mounting rails, designed with 1.75" spacing. Use appropriate rack mounting hardware. Always power the IP15 on a grounded outlet. **Do not defeat the grounding feature of the iP15 power cord.**

### SET UP DETAIL

The SNMP command set that is currently supported is snmpset.

On Linux systems, snmpset is part of the operating system.

On Windows systems, snmpset becomes available after installing the netsnmp command suite from: <http://www.net-snmp.org/>

SNMP commands can be issued from the command line or by a user created command program/batch file.

The only action that is supported is turning Pods on, off and power cycling them.

Units ship with a default IP address of 192.168.1.77. This can be changed via Terminal Console and using the appropriate RS232 cable, see page 7 and 8 for the RS232 commands to do this.

The variable 101 is used for relay control. All other variables are ignored. The variable to the right of 101 can be 1,2,3 or 4 indicating the relay number. All other relay numbers are ignored. This is followed by integer indicator "i" and a numeric value of 0,1 or 2.

0 means the corresponding relay will be OFF

1 means the corresponding relay will be ON

2 means the corresponding relay will be power cycled for 3 seconds (OFF - Wait3 seconds - ON)

All other values are ignored.

Typical command syntax assuming an IP address of 192.168.1.77 and an SNMP community of "public" (default value):

To turn Relay1 off:

```
snmpset -v 2c -c public 192.168.1.77 1.3.6.4.47857.101.1 i 0
```

To turn Relay1 on:

```
snmpset -v 2c -c public 192.168.1.77 1.3.6.4.47857.101.1 i 1
```

To cycle Relay1:

```
snmpset -r 0 -t 10 -v 2c -c public 192.168.1.77 1.3.6.4.47857.101.1 i 2
```

To turn Relay2 off:

```
snmpset -v 2c -c public 192.168.1.77 1.3.6.4.47857.101.2 i 0
```

To turn Relay2 on:

```
snmpset -v 2c -c public 192.168.1.77 1.3.6.4.47857.101.2 i 1
```

To cycle Relay2:

```
snmpset -r 0 -t 10 -v 2c -c public 192.168.1.77 1.3.6.4.47857.101.2 i 2
```

To turn Relay3 off:

```
snmpset -v 2c -c public 192.168.1.77 1.3.6.4.47857.101.3 i 0
```

To turn Relay3 on:

```
snmpset -v 2c -c public 192.168.1.77 1.3.6.4.47857.101.3 i 1
```

To cycle Relay3:

```
snmpset -r 0 -t 10 -v 2c -c public 192.168.1.77 1.3.6.4.47857.101.3 i 2
```

Where 47857 is the SNMP Private Enterprise Number (PEN) for Juice Goose.

Note that `-r 0` in the cycle command shows that there should be no retries of SNMP requests; otherwise multiple power cycles could be initiated by the board.

Also, `-t 10` shows a 10 second timeout for the cycle command since a longer timeout is needed due to the time needed for cycling power.

Note `"-v 2c"` can be replaced with `"-v 1c"` for use with Version 1.

The IP address of IP15 can be changed using the RS232 serial console (see page 7 and 8). After the change, a power cycle must be performed for the change to IP15 to take effect.

The SNMP Community of IP15 can be changed using the RS232 serial console using the SETCOMMUN command. For example:

```
SETCOMMUN=public
```

Community names are limited to 8 characters and alphanumeric only and all lowercase.

After the change, a reset ( turn IP15 off and then on or issue the RESTART command from the console ) must be performed for the change to IP15 to take effect.

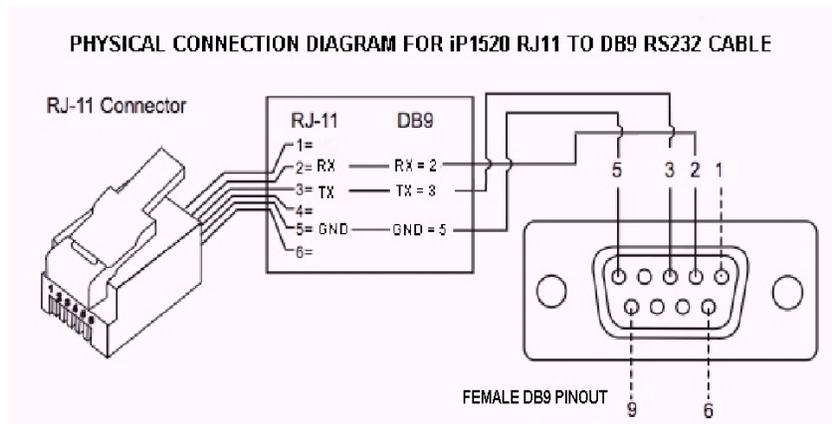
The relay cycle takes 3 seconds. This value is currently hard-coded and cannot be changed.

If IP15 receives a new SNMP command while a cycle is taking place, the new command is ignored.

## RS232 CONTROL AND MONITORING

To operate the iP15 using RS232 you will need a suitable cable from the PC to the iP15 RJ11 RS232 port on the rear of the unit. Below is the pin out for a RJ11 to female DB9 cable. This cable will need to be constructed or purchased.

### RS232 CABLE PINOUT



### RS232 COMMANDS

Using Terminal Software such as Windows Hyper Terminal or Micro Terminal which you can download from our website at <http://juicegoose.com/product-ip-1520.html>

, the following commands can be issued to the iP15.

NOTE: A DEACTIVATE command must be issued first to ensure the physical sequence up/down switch position does not override the RS232 commands.

ACTIVATE - Enables the sequence up/down switch on the front of the iP15

DEACTIVATE - Disables the sequence up/down switch on the front of the iP15

POD1ON – Turns POD 1 on  
POD1OFF – Turns POD 1 off  
POD2ON – Turns POD 2 on  
POD2OFF – Turns POD 2 off  
POD3ON - Turns POD 3 on  
POD3OFF – Turns POD 3 off

ALLON—Turns all PODs on without sequence  
ALLOFF – Turns all PODs off without sequence

SEQUP(X) – Sequences up all PODs from 1 to 3, where (X) is the number of seconds between sequence events (e.g. A 2 second sequence would be SEQUP2)

SEQDOWN(X) Sequences down all PODs from 3 to 1, where (X) is the number of seconds between sequence events (e.g. A 2 second sequence would be SEQDOWN2)

DHCPON - Enables DHCP on the iP15

DHCPOFF - Disables the DHCP on the iP15. You will want to disable DHCP before entering any new network settings via RS232 or the changes will be lost when connecting the unit to a network.

SETIP XXX.XXX.XXX.XXX - Sets the IP address of the unit where 'X' represents your chosen numerals.

SETMASK XXX.XXX.XXX.XXX - Sets the subnet mask of the unit where 'X' represents your chosen numerals.

SETGATEIP XXX.XXX.XXX.XXX - Sets the gateway of the unit where 'X' represents your chosen numerals.

SETPDNS - Sets the primary DNS IP address.

SETSDNS - Sets the secondary DNS IP address.

INFO - Shows all current settings

SETCOMMUN=XXXXXXXX Sets the SNMP Community (default is "public", limit 8 characters in lowercase)

RESTART - Restarts/Reboots the iP15. Use this command after making your changes.

End of line (EOL), or line break, is a special sequence of characters signifying the end of a line of text.

EOL is defined as LF ( line feed, 0x0A ) and CR (carriage return, 0x0D ) combined into one (LF+CR, CR+LF).

The iP15 firmware ignores LF. However, it waits for CR to find the end of command.

In other words, EOL should be present as LF+CR, CR+LF, or CR at the end of every command issued.

## **TROUBLESHOOTING**

The Juice Goose iP15 is ruggedly constructed and contains quality components. There are no user serviceable parts inside this device. Unauthorized service will void all existing warranties and may result in equipment damage and personal injury.

Should improper performance be observed consult the following guidelines for diagnosis.

### **THE iP15 WILL NOT POWER UP.**

- a. Check to see that main utility power is available.
- b. Check that the circuit breaker on the iP15 unit is not tripped.
- c. Check the Network LED on the chassis. If it is not lit the iP15 is probably not receiving power. Remove power from the iP15 by unplugging it or turning off the circuit breaker that feeds the unit. Then restore power.

### **THE iP15 WILL NOT POWER DOWN.**

- a. It is likely that when a unit fails to turn off the cause is similar to that which would cause a unit to fail to turn on.
- b. Follow steps outlined in the power up solution above.

### **I CANNOT CONNECT TO THE iP15 VIA MY NETWORK.**

Ensure your router has DHCP enabled (see your router's user manual to enable this feature).

Check you are using the correct cable, standard CAT5 cable for router connection, crossover cable for direct to PC connection.

If you are connecting directly to a PC you will have to configure your computer to have an IP address of 192.168.1.1. See your operating systems help file on how to do this. We recommend you setup the devices initially on a router.

If you are trying to connect from a remote network ensure you are trying to access using the correct IP address assigned to the unit.

### **THE iP15 TURNS OFF UNEXPECTEDLY.**

- a. The iP15 may have encountered excessive current draw that caused the circuit breaker to trip. Examine the breaker. If it has tripped the button section of the breaker will be extended and can be reset by pushing it in after the unit has been off for a brief period.

- b. Review the current requirement of the equipment plugged into the iP15 and compare it to the amperage rating of the iP15 in question. See the Detail Specification section of this manual on Page 3.

### FACTORY RESET ALL VALUES.

The iP15 can be returned to its default firmware values by pressing a clearly marked button on the iP15 control board (see photograph of board showing location of the factory reset button). This will also reset the IP address and RS232 to their default settings of IP: 192.168.1.77 and Baud rate 19200 and enable the DHCP feature.

**WARNING: The iP15 needs to be powered on to perform the factory reset. Be careful to only touch the factory reset button and ideally use a pencil to press it. There is a risk of shock if you touch anything else inside the iP15.**

To perform the factory reset, unplug the iP15 and remove the top chassis cover by removing all screws on the tops of each side of the chassis and lifting the top. Plug the iP15 back in and press the "Reset" button and hold it for 10 seconds being careful not to touch anything else inside the iP15. The network LED will be lit solid. When the LED goes out the reset is complete.

Unplug the iP15 and replace the top and reinsert the screws. At this point, when power is returned to the unit and network connection restored the setup procedure can be followed as if the unit was being used for the first time.

Below is a photo of iP15 board showing the factory reset on the right (circled).



**I'VE TRIED THESE SOLUTIONS AND STILL HAVE A PROBLEM.**

If the problem can not be remedied, if the encountered problem is not listed here and particularly if any evidence of severe or hazardous performance is observed, immediately disconnect power to the iP device and contact your local Juice Goose dealer or Juice Goose directly.

**SERVICE**

Should your unit require service, contact Juice Goose to receive a service authorization number. This number will allow us to track your returned unit. Please note that no returns will be accepted without such a number.

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