IPS

Internet Power Stone

Instruction and Programming Manual

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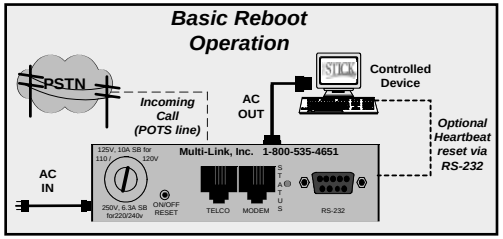
The IPS is a device designed to manually and/or remotely control availability of power to a device connected to its output. The IPS can be sourced with either 110/120 or 220/240 volts. The IPS is fused at 6.3A. A larger SLO-BLO fuse, up to 10A, may be used for heavier loads on 110/120 volts ONLY. DO NOT USE FUSE LARGER THAN 6.3A ON 220/240 VOLTS.

LEDs (Operational)

AC IN	On = Power available on the IN connector
AC Out	On = Power available on the OUT connector

STATUS

Green	= Standby
Red	= Armed
Red Flash Fast	= Auto Re-Arm
Red Flash Slow	= Power Reset
Flash .5 Second	= Command received from the RS-232 port (Heart Beat)
Flash Rapid	= Ring signal
Red/Green Flash	= Standby ring reset



Operating Modes and Instructions for use of the IPS:

1. Manual Control:

For manual control you only need the IPS device, an IN AC Adapter Cable, an OUT AC Adapter Cable, and the device you want to control. The specifications for the cables, depending on where they are going to be used are the following:

IN AC Adapter Cables:
North America, 110-115V, NEMA 5-15
Receptacle to IEC C13
(Europe 6 feet two prong)

OUT AC Adaptor Cables:
PC extension, IEC 320-C13 to IEC 320-C14
or Cable ICE 320-C13 to NEMA 5-15

Connect cables from the wall power outlet to the IN connector on the IPS, and from the OUT connector on the IPS to the device you want to control. Simply push the ON/OFF Reset button on the front of the IPS to reverse the current power state of the output. By pushing the RESET button for 3 seconds, you will change the “ring timing’ between the *slow* North American ring and the *quick* International ring.The LED on the front of the IPS will be red(N.A.) or green (International).

2. Telco Ring Control

You can recycle power via the telephone line. Connect the phone line to the port labeled "TELCO" on the front of the IPS. If con trolling a computer, connect another phone cable (RJ-11) to the port labeled "MODEM" on the IPS, and from there connect the other end of that cable to the Modem on the computer.

Call into the IPS. If a computer or other auto-answer device is connected to the IPS through the Modem jack, the IPS will recycle power to the connected device(s) if no device answers before the ring count trigger of the IPS (Default = 6 rings) is reached.

3. Direct Serial Port Control

When connected to a serial port of a PC or Controller, the IPS can accept Setup and Control commands directly from the PC/Controller. It also returns the unit's status to the serial port. You need to connect the PC/Controller to the IPS unit through the RS-232 port. Also need to connect the power cables as described on previous sections in this manual. *(Cont’d)*

(Cont’d)
Now you need to configure your serial port if using direct PC control. To do that, one easy way would be to go on your computer to Programs/ Accessories/ Communications/ Hyper Terminal. Once there, enter the following data:

Connect using: COM(x) port (for serial port)
Bits per second: 300
Data bits: 8
Parity: None
Stop bits: 2

When you close this connection, be sure to Save this connection configuration for future use.

Once you do this, your serial port is set to start communicating with the IPS. When you want to communicate to the IPS, you need to open this connection in your computer. To do that, go again to Hyper Terminal and open the file name you gave to the connection when you created and saved it.

The following are the Setup and Control commands for the IPS:

*FRT	Factory Reset	
*PRy	Change recycle time to (10x y sec)	
*PRO	Change recycle time to 5sec.	
*PON	Power ON (LED = ON)	
*POF	Power OFF (LED = OFF)	
*PRC	Recycle AC power	
*PUx	Power Up State of IPS	
*ARM	Arms the IPS (LED = Red)	
*SRx	Auto Re-Arm timeout (x-min)	
*RCx	Ring count trigger (x-rings)	
*RTx	Ring Timing Control	
*RVx	Reverse Sense of Command Port	
*STB	Standby mode (LED = Green)	
*TNx	Tandem Operation Enable	
*D.5	0.5 min delay- Code 1	
*D1.	1 min delay	Code 2
*D2.	2 min delay	Code 3
*D4.3	4 min delay	Code 4
*D8.	8 min delay	Code 5
*D16	16 min delay	Code 6
*D32	32 min delay	Code 7

*?PS IPS Returns the system status in following format: x.y1100600000$

To interpret the response string returned by *?PS command and the IPS, use the following chart to define each character's meaning:

Character	***Description***
x.y	Software revision x.y
1 or 0	Current State of Relay, 0=Off and 1 = On
1 or 0	The initial power up state of the IPS, 0 = Off and 1 = On (default = 1), *PUx
1 or 0	Ring Timing Control *RTx (default = 0) - See below
1 or 0	Tandem Operation Enable *TNx (default = 0) - See below
0 to 9	Number of Rings to reboot (default = 6) *RCx
0 to 7	Current Delay Code *Dxx (default = 0), Heart Beat Timeout
0 to 9	Current Reset Duration (default = 0 = 5secs all others seconds = n x 10 secs) *PRy
0 to 9	Secondary Reboot Time (in minutes) (default = 0) *SRx, Auto Rearm
0 or 1	Reverse sense of Command Port (0 = Normal 1 = Reverse (Default = 0) *RVx - See below.
0 or 1	Date Rate, 0 = 300, 1 = 600 BPS (default = 0) - See below
$	End of response indicator

The value of character in the string reflect the settings and status of the IPS.
RTx note: Ring Timing control allows setup for "North American" (1) or "Short/International" (0 = Default) rings. The default for the "Short/International" rings is used as it has been found to work for "North American" standard rings.
RVx note: Reverse Control actually reverses the command received through the RJ jack (Analog Port) from one of the Reboot Controllers. This allows putting two IPSs on one line and having them work in opposite modes from each other.

Default is 0 = Normal, 1 = Reversed.
TNx note: Tandem Operation is for setting the IPS up in an Alternating (Tandem) installation. In this arrangement the Alternating IPSs work in pairs, communicating with each other so that one IPS will always be on. Default is 0 = Normal, 1 = Tandem.

The IPS also keeps the PC updated as to its operating status. These event codes are transmitted as they occur. The codes are:

P	Power up with relay ON
p	Power up with relay OFF
M	Push button control to ON
m	Push button control OFF
T	Reset due to Auto Re-Arm
R	Reset via ARM time out
r	Reset via Ring Count
S	Reset via Command port
C	Command port power change to ON
c	Command port power change to OFF
54321	Reset Ring Count.

Programming Notes:
* The IPS will return a "$" to acknowledge a good command and a "!" as a NAK to a bad command.
* There is a three second timeout for each character and all data is echoed back to the source (serial port).
* There are times when the IPS cannot receive/echo data i.e., during a RESET, so the source must be able to retransmit the data and wait until a time exceeded by the *PRx time.
* The data rate can be increased to 600 bps with a *DR1 command (*DR0 = 300, Default).

4. Automatic Heartbeat Control

The IPS has an RS-232 serial port interface to the PC or other target device. It will automatically recycle the AC power if that target hardware or any linked application hangs. For this option, you need a "Heart Beat" software that sells separately. Please contact our Sales Department for more information on this "Windows" based software.

This method will automatically recycle the AC power on the OUT connector of the IPS. Power is restored after a customizable recycle time (Default is 5 seconds), if the hardware or a linked application hangs for a configure-able period of time (no heartbeat is detected on the serial port).

Connect the RS-232 cable to the selected Com Port. Use a DB-25 to DB-9 adapter cable, if required, and load the software for the Heartbeat. Remember, a Windows system is required.

Start "Heart Beat Rebooter" from the program menu. It will install in the System Tray of the Task Bar. The configuration window will appear the first time it is run. You will be asked several questions, which are explained in the "Help" file.

The Heart Beat icon in the system's tray exhibits the current state of the program. You can display the Re-Boot window to verify settings or make modifications by clicking on the icon with the left mouse button. To stop the program, click on the icon with the right mouse button and select CLOSE.

The "Heart Beat" method has 5 operational modes. *Standby, Armed, Auto Re-Arm, Power Reset and ARR Standby.*

HEART BEAT OPERATION MODES

1. ***STANDBY:*** Entered when the IPS is first powered up and immediately after the IPS issues a RESET or a STB to the unit from the serial port. The IPS monitors rings on the Telco port and commands from a xP-RRC on the Telco port.

2. ***ARMED:*** Entered by issuing ARM to the IPS from the serial port. IPS monitors the serial port and stays in the Armed mode as long as it receives ARM before its timeout period as determined by the *Dxy command.

3. ***AUTO RE-ARM:*** Entered if the IPS has issued an ARM timeout caused RESET and the Auto Re-Arm timeout (*SRx) is greater than zero. In this mode, if an ARM or STANDBY command is not received within the Auto Re-Arm timeout period, the RESET is issued again.

4. ***POWER RESET:*** This is the time when the power to the controlled device has been temporarily turned OFF due to an ARM timeout, phone ring overflow or a serial reboot command. The time duration is controlled by the configuration command *PRx. In this state all other commands and rings are ignored. The STAT LED flashes Red slowly. The RESET can be cancelled with the pushbutton.

5. **ARR STANDBY:** Entered after an ARR reset caused by receiving phone rings which exceed the Ring Count Reset Trigger (*RCx). The ARR Standby lasts 60 seconds after the last ring. Its purpose is to ignore rings during this period to give the server adequate time to boot up in case another call came in which would otherwise cause another RESET. It still monitors the xP-RRC commands on the Telco port.

TANDEM OPERATION

IPS Tandem Operations requires two specially configured IPSs and a special cable that allows the two units to communicate with each other. The objective of the tandem operation is to have one unit ON and the other OFF at all times. It is primarily used in backup operation scenarios.

The Tandem operates very similar to the standard IPS, but has a few additional serial port commands. The main difference in this mode of operation is that instead of recycling power to the attached device, the "Main" unit powers OFF and sends a message to the "Standby Alternate" unit to power ON. If the Standby Alternate fails to acknowledge the power on command, the Main will recycle the AC power to its attached device.

If the transferee is acknowledged, the Alternate will remain powered ON until it resets and the reverse handshake occurs (powers OFF and tells the Main to power ON).

The Tandem Mode is enabled with the *TN1 command and disabled with the *TN0 serial port command.

A power up command (*PUx) is also used with the Tandem units. The master unit should power ON (*PU1) when power is applied and the Alternate should be set to be powered OFF (*PU0). These are stored commands and will go away if reset.

DIRECT POWER Transferee Methods

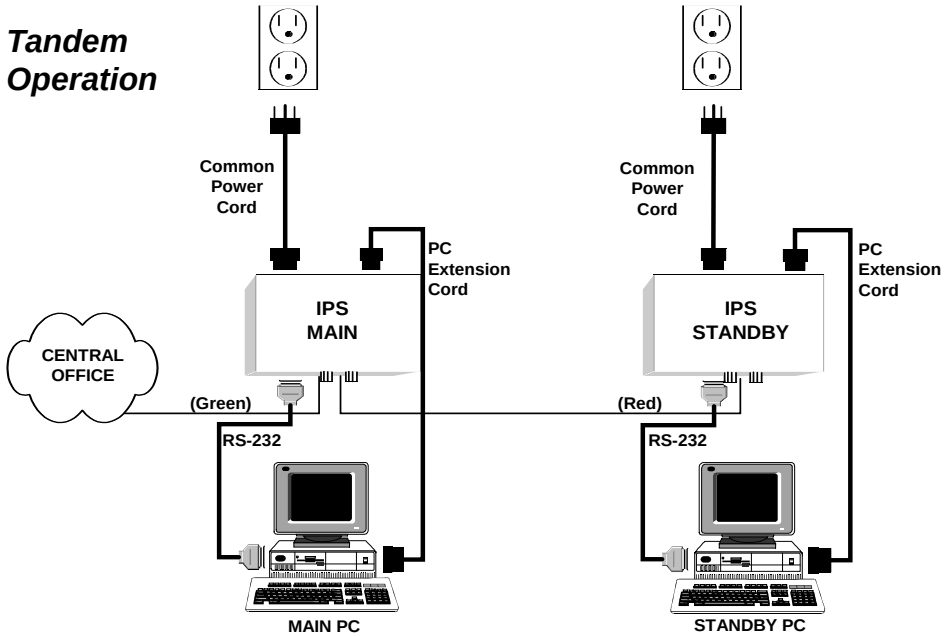
Pressing the pushbutton switch on either unit will cause the power to be transferred to the other unit.

Transferring power can also be accomplished with the *PRC (Recycle Power) command or by using the Ring Count Reset feature.

INSTALLATION

Install the IPS TANDEMs according to the diagram below. Identify the Telco cables with the Red and Green tape before you begin.

Tandem Operation



IPS SPECIFICATIONS:

Weight	6.9oz (unit); 1lb (ship)
Dimensions	4.5” W x 3” D x 1.25” H
Connectors	(2) RJ-11 Telco/Control; (2) IEC-C13/14 (AC); (1) DB-9 Female RS-232
LEDs	(3) Power, Status
Switches	(1) Pushbutton reset
Bell	None
Cables	(1) 6’ DB-9 Female (1) 6’ RJ-11Cable
Adaptor	None
AC Power	115V/60Hz, 10 Amps to 220V/50Hz, 6.3 Amps

Award Winning Product Line:

The Stick - 1x4 phone line sharing device

ACP Series - Industrial grade line sharing device in 3, 5, and 9 ports

Stick II - 2x5 auto call processor

The LineHunter - 4x12 call processor

SR Series - Selective ring call processor

The Power Stone - Call activated AC power reboot device; Manual and automatic control

Push Button Reset - Reset device for PC's with ATX style motherboards