



IPC International AC Power Control

Control AC Power Anywhere in the World
110 to 250 V
Common AC Connectors

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Start the application version from the program menu. It will install in the System Tray of the Task Bar (lower right hand corner). The configuration window will appear the first time it is run. Follow the prompts.

You will be asked several questions in both versions. They are explained in the "help file". The following is an overview:

Com Port? Which you intend to use.
Beat Period? - The time interval between each heartbeat. It is important that this be less than the REBOOT TIME OUT. In fact, set it to about 1/2 of the TIME-OUT.
Initial Delay? The time allowed to reload your program(s) after a reset occurs, if operating in the Automatic Mode. Be sure to set this to a longer time than it takes to reload your programs.

Reboot Time-out? The "dead time" that the rebooter will wait for a "heartbeat" before recycling the AC power on the AC OUT connector, normally 2 min.

In the application version, the Heart Beat icon in the system tray exhibits the current state of the program. Click the left mouse button to display the settings. A Right click stops the program.

"start.config" sends the configuration commands to the IPC: See "Heartbeat Commands" on the "IPC Command Chart"

INTRODUCTION

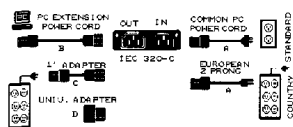
The International AC power Controller (IPC) base unit is an AC power control device. It automatically handles AC power voltages from 110 to 250 volts and has two standard IEC 320 connectors that are relay controlled from signals received through its RS-232 or Telco ports.

This combination makes it easy to install anywhere in the world with locally available power cords ends that match the country AC plug requirement. Power cord "A" in the diagram is normally the cable supplied with your PC. Check your closet for extras. Cord "B" is a PC extension cord also used for monitors.

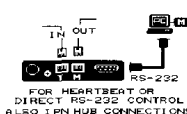
The 9 pin RS 232 port is primarily used to configure the unit, if necessary. However, it can also receive "Control Commands" from a near-by PC or the same PC if being controlled through the IPC Heartbeat feature.

The RJ-11 Telco Port is used to receive "Control Commands" from a CPS Controller or to count

AC POWER SIDE OPTIONS



CONTROL SIDE OPTIONS



rings when connected directly to a phone line. It will re-cycle the AC power after 1-9 unanswered rings. A modem or other potential answering device can be connected to the other RJ-11 port.

The IPC has a great deal of flexibility provided through the Setup Commands. As an example you might use an extra long power ON delay (*PDx) to avoid the continuous momentary interruptions associated with a lightning power outage. Take a minute to review the setup options from the "Commands Chart" on the reverse side.

There are three methods of initiating the power Control Commands through two "Control Ports" (RS-232 or Telco) plus manual control. Any or all may be used.

1. DIRECT RS-232 CONTROL METHOD
The "Control PC" can transmit commands directly to the IPC through the RS-232 port. This is normally used for custom programming applications or used with the Heartbeat software. It is also used to re-configure other settings if necessary.

Connect the 9 pin RS-232 cable and configure the

3. RING COUNT RESET METHOD (Telco RJ-11s)
Connects to the phone line and the modem. If the modem does not answer, and the ring count is met (*RCx command, default 6), the AC power on the OUT connector will recycle. After a Ring Reset additional rings are ignored for 60 seconds. Note that an answering device is not necessary for dedicated resets.

Connect the CO telephone phone line to the RJ-11 Port labeled "Telco" and the modem, if used, to the "Modem" Port.

4. MANUAL PUSH BUTTON METHOD
Pressing the push button momentarily toggles the A C power outlet to its opposite state (ON/OFF). It can be left in the OFF state and powered ON with any of the reset methods or a serial *PON command.

LEDs (Operational)
AC IN ON = Power on the main
AC OUT ON = Power ON the OUT connector
STATUS
GREEN = Standby
RED = Armed
RED FLASH FAST = Auto -re-ARM
RED FLASH SLOW = Power Reset
FLASH .5 SEC. = Command received from the RS-232 port (heartbeat)
RAPID FLASH = Ring signal
RED/GRN FLASH = Standby ring reset

serial port on the PC for 300 baud, 8-N-2. DTR must be ON.

DTR is connected to CTS in the IPC.
Tip: The PC can use the CTS/DTR to determine if the IPC is connected to the com port.

DIRECT RS-232 Control Commands.
Use any ASCII terminal emulator such as Hyperterm to transmit the following commonly used Control Commands:
*PON - Power ON (LED = ON)
*POF - Power OFF (LED = OFF)
*PRC - Recycle AC power

See Chart for complete RS-232 Control, Setup and Heartbeat Commands.

2. AUTOMATIC HEARTBEAT METHOD RS-232 - Win 95 or greater is required.
This feature will automatically recycle the AC power on the OUT AC connector if the PC or a linked application hangs (no Heartbeat is detected on the serial port). The target PC system should be configured to reload the software after a reset occurs. See attached "Defeating Scan Disk", if necessary.

Connect the IPC to the serial port in the same manner as previously described and load the Heartbeat Software.

Two versions are available. One runs as an application out of the system tray and the other runs as service on NT or greater machines. Down load your choice from:
www.cpscom.com/software

Troubleshooting

If the AC OUT LED fails to illuminate, try pushing the Manual push button switch. If it still does not illuminate, the fuse has probably blown. Replace it.

Replacing the Fuse
CAUTION Disconnect the input power cord from the unit before replacing the fuse.

For 110/120 V operation use only a 250V, 10amp or 6.3amp SLO-BLO fuse.
For 220/240 V operation use only a 250V 6.3 amp SLOBLO fuse.

When using the IPC on 110 VAC Circuits, the 6.3 amp fuse may be used or the 10 amp for heavier load requirements. DO NOT USE THE 10 AMP FUSE ON 220/240 VAC Mains.

Note: Some countries may require government approval before connecting to the telephone network.

Specifications
The maximum load rating for this device is:
a. 250 Volts, at 50 Hz at 6.3 amps.
b. 120 Volts, 50 -60 Hz at 10 amps.

Software

The CPS Software that is compatible with this product:
HEARTBEAT Runs as an application.
HEARTBEAT-S Runs as a service w/c-mail.
SERIAL NET For remote serial port control over a network.
SERIAL DLL Provides programming calls and serial port configuration for custom programming.
COMMANDER Phone number & Commands database.
www.cpscom.com/software

Programming Notes

The IPC will return a "\$" sign to ack 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 only).

There are times when the IPC cannot receive/echo data i.e., during a reset, so the source must be able to re-transmit the data and wait to a time exceeded by the *PR time.

Hyperterm comment:

When using Hyperterm, it may be necessary to close it and save your settings then reopen it.

CONTROLLERS

The CPS Controllers that are compatible with this product are:
SP-RRC Single Port Remote Reset Touch-tone Controller
3P-RRC Three Port Remote Reset Touch-tone Controller
N-RRC TCP/IP Network Remote Reset Controller
MP-RRC Multi Port Controller (4-8 ports).
C-RC Cell network Controller
K-RRC Security Key based Controller

You can use any of the RS-232 or manual methods of control (not Ring Count) along with control events initiated by a Remote Controller. www.cpscom.com/rebooters

IPC TANDEM OPERATION ONLY

The IPC Tandem requires two specially configured IPCs and a special cable that allow the two units to communicate with each other. They operate in pairs. Do not use with the standard -S models. The objective is to have one unit ON and the other OFF at all times. It is primarily used in backup operations.

The Tandem has a few additional serial port commands, but operate very similar to the standard IPCs. In this mode of operation, instead of recycling power to the attached device, the "Master" powers OFF and sends a message to the "Stand-by Alternate" to power ON. If the Stand-by Alternate fails to acknowledge the power ON command, the Master will recycle the AC power to its attached device. If the transferee is acknowledged, the Alternate will remain powered ON until it resets and reverses the handshake (powers OFF and tells the Master to power ON). The Tandem Mode is enabled with *TM1 command and disabled with the *TMO serial port command. A power up command (*PUx) is also used with the Tandem units. The Master 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 it reset. It may also be a good idea to use the Auto Re-arm Timer, in the event that the attached PC does not Arm the IPC. The Auto Re-arm will reset the attached device three times before it will perform an Alternate power transfer.

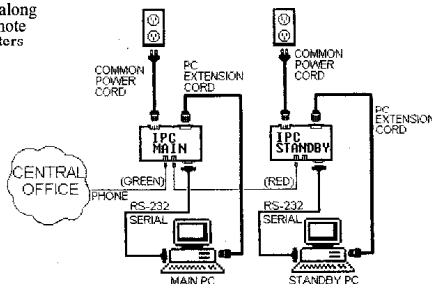
Direct Power transfer methods

Pressing the push button switch on either unit will also 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 Rest feature.

Installation

Install the IPC TANDEM s according to the diagram below. Identify the Telco cables with the RED and GREEN tape before beginning.



IPC TANDEM II LOOK UP DIAGRAM

IPC COMMANDS CHART

Inquiry Commands	
*?PS	Current Configuration - See Status
*?P1	Current State of Timers and States
Power Control Commands	
*PON	Power On
*POF	Power Off
*PRC	Power Recycle
*FRT	Factory Reset - Resets Configuration to Defaults and Recycles Relay
Setup Commands	
*DRx	Serial Data Rate x = 0 = 300BPS (Default) x = 1 = 600BPS
*PDx	Power On Delay after Power Loss (note f.) x = 0 = Disabled/Instant On (Default) x = 1-9 = 5 * x minutes
*PRx	Change Recycle Time, The Off time during a power recycle x = 0 = 5 seconds (Default) x = 1-9 = 10 * x seconds
*PUx	Power Up State x = 0 = Off x = 1 = On (Default) x = 2 = Last Power State x = 3 = Last Power State x = 4 = Off and Auto ReArm is Enabled x = 5 On and Auto ReArm is Enabled
*RCx	Ring Count Trigger, Number of Rings that cause a reboot x = 0 = Disable ring count x = 1-9 Rings (Default=6)
*RDx	Ring Reboot Repetitive Delay (note d.) (exceed server boot-up time) x = 0 = 1 min. (Default) x = 1-9 min. * 2
*RTx	Ring Timing (note a.) x = 1 = Long x = 0 = International (Default)
*RVx	Handling of On/Off Commands (note c.) x = 0 Normal (Default) x = 1 = Reversed
*INx	Tandem Mode (note b.) x = 0 = Disabled (Default) x = 1 = Enabled

Heartbeat Commands

*ARM	Arms the Heartbeat timer (LED=RED)
*STB	Standby mode. Pauses the Heartbeat timer (LED=GREEN)
*D00	Reboot Timeout Disabled - Status # is 0
*D.5	.5 min. Reboot Timeout - Status # is 1
*D1.	1 min. Reboot Timeout - Status # is 2
*D2.	2 min. Reboot Timeout - Status # is 3
*D4.	4 min. Reboot Timeout - Status # is 4
*D8.	8 min. Reboot Timeout - Status # is 5
*D16	16 min. Reboot Timeout - Status # is 6
*D32	32 min. Reboot Timeout - Status # is 7
*SRx	Auto ReArm Timeout (note g.) x = 0 = Disabled (Default) x = 1-9 = x minutes
*PAX	Power Up Arm (note e.) x = 0 Disabled (Default) x = 1-9 = x minutes

Notes:

- Extends the ring time for valid ring recognition.
- Use only when operating two interconnected IPCs in the "Alternating Mode".
- Reverses the action of a command received through the RJ- analog port. Allows the connection of two IPCs to one line.
- Time to wait before another ring will be recognized. Gives server a chance to boot up without second ring interference.
- Similar to the Heartbeat Auto ReArm, but only occurs after the initial power up.
- Will delay IPC power up for an extended period of time after power is restored. Isolate equipment from repetitive disturbances such as lightning strikes.
- Entered if the IPC has issued an ARM timeout caused RESET and an 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.

Configuration Status Sequence Chart *?PS

x.y	Software Revision
Current State of Relay	
0=Off / 1 = On	
0 to 5 Sec	*PUx
0 or 1 Sec	*RTx
0 or 1 Sec	*TNx
0 to 9 Sec	*RCx
0 to 7 Sec	*D00 to *D32
0 to 9 Sec	*PRx
0 to 9 Sec	*SRx
0 or 1 Sec	*RVx
0 or 1 Sec	*DRx
0 to 9 Sec	*RDx
0 to 9 Sec	*PAX
0 to 9 Sec	*PDx
\$	End of Configuration Response