# ATS OWNER'S MANUAL





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## 1. ATS Overview

The ArcTiv Automatic Transfer Switch (ATS) is a highly reliable switch that provides redundant power to connected equipment. If the primary power source becomes unavailable, the ATS will seamlessly switch to the secondary power source automatically. ATS products are offered in basic and intelligent types. The user can upgrade the basic ATS to an intelligent model by inserting a hot swappable Network Management Card, which enables the user to monitor and manage the ATS via web interface or SNMP browser.

# 2. Functional Description

- 1. Switching: Switch over between Source A and Source B automatically, transfer time 10≤16ms
- 2. Monitoring: Load current; input and output voltage; source A and source B power input; device status
- 3. **Remote Controlling:** Switch over between Source A and Source B. Set the threshold for the total load current and input voltage.
- 4. Automatic Alarms: Triggers when thresholds are exceeded
- 5. **System Default Alarming:** When total load current/voltage exceed the limit value, when only single source power up when automatically switching occur
- 6. Alarming Method: Buzz and flesh alarming. E-mail alarming(only intelligent type)
- 7. Log Recording: record and save the log of the device running and alarming information. User can view and export the data history
- 8. System Support: Single user operation system, support software update
- 9. Account Management: set the authorization of the account
- 10. Access Method: Ethernet connection, web interface through IE browser, SNMP(V1), access and control through standard network management, Serial Connection (Modbus protocol by defaulted)
- 11. System Settings: system time, lock devices, voltage threshold, transfer time.

## 3. Applications

ATS series product are compliant to the physical requirements of server racks, network cabinets, etc. ATS series products are in accordance with the regulation of RoHS.

# 4. Product Schematic



Basic ATS (1U)



#### Basic ATS (2U)

- 1. Alarm: the port of buzz and flesh, used to connect to external annunciator
- 2. RS485: Serial communication port, connect the device to local PC
- 3. LED screen: display the current; voltage; IP address and hardware version
- 4. Reset: Rest button
- 5. Preference: to select the preferred power source
- 6. Input indicator of source B
- 7. Output indicator of source B
- 8. RUN: Operation indicator
- 9. NET: Ethernet Port
- 10. Press to select data: To view power date and information
- 11. Preference indicator of source A
- 12. Preference indicator of source B
- 13. Input indicator of source A
- 14. Output indicator of source A

# 5 Mounting Method

Horizontal rack mounting. Choose a suitable installation location for the ATS which occupies 1 or 2 RMU rack space. Insert cage nuts on each EIA vertical mounting rail in your rack.Align the bracket's mounting holes with the cage nuts. Insert and tighten the screws.



## 6 Hardware Introduction

6.1 Self-check when powering on

The buzzer beeps once when powering on. The LED indicator always lights on, digital screen display load current after self-checking **8.8.8.** 

6.2 Operation status viewing

Through the "press to select date" button, the user can view the voltage, IP address (only intelligent type) and device version number.

6.3 Select the preferred power source

Use the Preferred button to select the primary power source. The user has 3 options:

- 1. Set the source A as the preferred power source
- 2. Set the source B as the preferred power source
- 3. Leave open

The corresponding indicator will always light on if a selection was made. If not, the two indicators will remain off. Please note that with the intelligent ATS Lock function, if the user cannot complete the setting above, please log on to the Web interface to unlock.

6.4 Reset operation

To manually reset the ATS, Press the Reset button to reset the device without affecting the outlet status.

6.5 Restore to factory settings

Press and hold the "press to select data" button for 6 seconds, the LED screen will display "IP" when released. Then press Reset to restore the default IP 192.168.1.163, User name and password.

6.6 Serial connection

Using the supplied serial cable, insert the RJ45 connector to the RS485 communication port and connect the other end to the serial port of a local PC.

6.7 External speaker connection

> Use the supplied terminal to connect the external speaker. The max voltage of 50VDC and load current of 5A

Ethernet connection (only intelligent type) 6.8

Using the supplied network cable, connect one side to the NET port of the device and the other end to the network.

6.9 The software or hardware update method



6.9.2 Open the software update file

6.9.1 Save the software update file ATS\_hex provided by supplier to the local PC.



, double-click the setup.exe file to install

6.9.3 Run the software as below when the installation is finished.

			aon enny i	
lash Programming		Erase / Blank		Communication
	Filename:	-		Connected To Po
C:\Documents and Set	tings\linhuashan\桌正	Blank Check	Entire Device     Coloridation	COM1:
r a a a ann f	Eucouto Codo		T selected sectors	Use Baud Ra
Upload to Flash	after Upload		L Start Sector	57600
		Erase		
Compare Flash	Manual Reset		End Sector:   8	Time-Out [sec]:
· · ·				
Pevice Devices				Use DTR/RTS
Device: LPC	2132 <b>•</b> Bea	d   Part I	D:	for Reset and

6.9.4 Insert the RJ45 connector of the update signal cable into the RS485 port of the ATS front panel, connect the other end to the port COM1 of local PC.



, other items please refer to the above pictures.

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6.9.6 Click the from from and submit the file ATS_hex to the frame
6.9.7 Power on the ATS.
6.9.8 Click Read Device ID, Read Part ID Successfully will be displayed on the interface if read success. If not, please double-check the cable connection and communication port.
6.9.9 Click Frase , Erased LPC2000 Flash Successfully will be displayed on the interface if erase
success, if not, please double-check the cable connection and communication port
6.9.10 Click Upload to Flash , Executing Uploaded Code will be displayed on the interface if loading success

- If not, please double check the cable and communication port
- 6.9.11 Power off the ATS.

6.9.12 Power on on the ATS, digital screen will display the new hardware version number, it can perform normal communication after software update success.

# 7 Hyper Terminal User Guide

7.1 Using the supplied serial cable, connect one end to the RS485 port and the other end to serial port of

local PC. Running the Hyper terminal program (like Windows Hyper terminal), click:

 $\mathsf{Start} \to \mathsf{Programs} \to \mathsf{Accessories} \to \mathsf{Communication} \to \mathsf{Hyper} \, \mathsf{Terminal}$ 

7.2 The dialog box as below will pop up if it is the first time that the PC has run the Hyper Terminal

Location Information	? 🔀
	Before you can make any phone or modem connections, Windows needs the following information about your current location. What country/region are you in now? China Vhat area code (or city code) are you in now? If you need to specify a carrier code, what is it? If you need to specify a carrier code, what is it? If you dial a number to access an outside line, what is it? The phone system at this location uses: The phone system at this location uses:
	OK Cancel

7.3 Enter one or several numbers at random when it requires your area code, for instance 0755 and click

OK.

hone and Modem Options Dialing Rules Modems Advar	nced
The list below displays location from which yo	the locations you have specified. Select the u are dialing.
Location	Area Code
My Location	0755
N	lew Edit Delete
	OK Cancel Apply

7.4 The link description window will pop-up as below:

Connection Description	?×
New Connection	
Enter a name and choose an icon for the connection:	
Name:	
ATS	
lcon:	
🍋 🍪 🖾 🍪	8
	>
OK Can	cel

7.5 Enter a Device Name (such as ATS) and click OK.

Connect To	? 🛛
🧞 ats	
Enter details for	the phone number that you want to dial:
Country/region:	China (86)
Area code:	0755
Phone number:	
Connect using:	СОМ1 💌
	OK Cancel

7.6 Select the COM port that will be used and click OK.

7.7 Set the baud rate of ATS as 19200 and enter configuration information for data bits, parity and flow

control as provided below. Then click OK.

COM1 Properties		?>
Port Settings		
Bits per second:	19200	~
Data bits:	8	~
Parity:	None	~
Stop bits:	1	~
Flow control:	None	~
		Restore Defaults
	K C	Cancel Apply

7.8 If it is not the first time that the PC has run the Hyper Terminal, it will go directly to the window as initem 4 of this section. Follow instructions 4 – 7 and enter the Hyper Terminal monitoring interface as below:

🍣 ATS - HyperTermi	nal								×
File Edit View Call T	ransfer Help								
D 🛩 💿 🌋 🗈	<mark>ð</mark> 🕈								
									^
									Ш
									~
<			Ш					>	
Connected 0:00:26	Auto detect	Auto detect	SCROLL	CAPS	NUM	Capture	Print echo		

#### 7.9 Setup ASCII Code

7.9.1 Click the file in the main menu and select attributes or click on the icon 🖆 directly.

<

ATS Properties	
Connect To Settings	
Function, arrow, and ctrl keys act as	
<ul> <li>Terminal keys</li> <li>Windows keys</li> </ul>	
Backspace key sends	
Otrl+H O Del O Ctrl+H, Space, Ctrl+H	
Emulation:	
Auto detect	
Telnet terminal ID: ANSI	
Backscroll buffer lines: 500	
Play sound when connecting or disconnecting	
Input Translation ASCII Setup	
OK Cance	əl

7.9.2 Click on ASCII Setup

ASCII Setup
ASCII Sending
Send line ends with line feeds
Echo typed characters locally
Line delay: 0 milliseconds.
Character delay: 0 milliseconds.
ASCII Receiving Append line feeds to incoming line ends Force incoming data to 7-bit ASCII Wrap lines that exceed terminal width
OK Cancel

7.9.3 Tick the boxes as window above, then click the OK button and return to the monitoring interface.



7.10 Press Enter, following message will be displayed in the interface if setting success.



#### Main Menu

1-Device Manager

2-Set Current And Voltage Limit

3-System Time

#### 7.11 View the ATS status.

Enter 1 and press Enter, the ATS status will be displayed in the interface as below:

🗞 ATS - HyperTerminal	
File Edit View Call Transfer Help	
D 🥔 📨 🐉 📫 🎦	
<pre>&gt; 1 Device Manager Source A Voltage: 227 Volt Source B Voltage: 226 Volt Output Current : 0.0 Amp Selected Source : Source B Preferred Source: Source B Back To The Main Power Supply Time: 10 1- Set The Preferred Source 2- Set Switchover Time 0- Main Menu Select And Press ENTER Key Or Press ENTER Key To Refresh &gt;</pre>	
Connected 0:11:26 Auto detect 19200 8-N-1 SCROLL CAPS NUM Capture Print echo	

Device Manager: Device Manager

Source A Voltage: The voltage of the source A

Source B Voltage: The voltage of the source B

Output Current: The output current

Selected Source: The current input power is source B

Preferred Source: The preferred input power is source A

Back To The Main Power Supply Time: Re-transfer time is 10 seconds

1- Set The Preferred Source: Enter 1 then press Enter to set the primary power source

2- Set Switchover Time: Enter 2 then press Enter to set the Re-transfer time

0- Main Menu: Enter 0 then press Enter to return to main menu

7.12 Set the preferred power input, follow up the path step by step:

#### Main Menu =>1 Device Manager => 1

Set the Preferred Source, it will show the following window



7.12.1 Enter the corresponding code, for example:

Enter 1 then press Enter to select input A as the preferred power input. The interface will return to the Device Manager interface. See the window below for reference.

**Preferred Source:** Source A means that input A was select as the primary power source.



7.13 Set the Re-transfer time:

#### Main Menu => 1 (Device Manager) => 2 (Set Switchover Time)

Enter the preferred value, then press Enter. The Re-transfer time ranges from 10 to 60 seconds. The ATS will transfer to the preferred input power after defined time when the user gives the order to transfer or the preferred input line recovers from a power failure.

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🗞 ATS - HyperTerminal	
File Edit View Call Transfer Help	
1- Set The Preferred Source 2- Set Switchover Time 0- Main Menu Select And Press ENTER Key Or Press ENTER Key To Refresh > 2 Input Switchover Time: 10_	
Connected 0:14:30 Auto detect 19200 8-N-1 SCROLL CAPS NUM Capture Print echo	:

7.14 Define the threshold voltage and current.

🗞 ATS - HyperTerminal	
File Edit View Call Transfer Help	
Main Menu	
1- Device Manager 2- Set Current And Voltage Limit 3- System Time	
Select And Press ENTER Key Or Press ENTER Key To Refresh > 2	
Set Current And Voltage Limit Set Current And Voltage Limit	
1- Min Value Of Current Alarm: 0.0 Amp 2- Max Value Of Current Alarm: 32.0 Amp 3- Min Value Of Voltage Alarm: 180 Volt 4- Max Value Of Voltage Alarm: 265 Volt	
0- Main Menu	
Select And Press ENTER Key To Change Value Or Press ENTER Key To Refresh	
Connected 0:15:24 Auto detect 19200 8-N-1 SCROLL CAPS NUM Capture Print echo	.:

Enter corresponding number to re-define the item that user want to change.

- Select 1 to set the minimum value of current to alarm
- Select 2 to set the maximum value of current to alarm
- Select 3 to set the minimum value of voltage to alarm
- Select 4 to set the maximum value of voltage to alarm.

For example, if the user wants to change the value of the minimum current alarm, enter 1 then press Enter:

🗞 ATS - HyperTerminal	
File Edit View Call Transfer Help	
Main Menu 1- Device Manager 2- Set Current And Voltage Limit 3- System Time	
Select And Press ENTER Key Or Press ENTER Key To Refresh > 2	
Set Current And Voltage Limit	
1- Min Value Of Current Alarm: 0.0 Amp 2- Max Value Of Current Alarm: 32.0 Amp 3- Min Value Of Voltage Alarm: 180 Volt 4- Max Value Of Voltage Alarm: 265 Volt	
0- Main Menu	
Select And Press ENTER Key To Change Value Or Press ENTER Key To Refresh > 1	
Input Min Value Of Current Alarm:	
Connected 0:16:24 Auto detect 19200 8-N-1 SCROLL CAPS NUM Capture Print echo	

Enter the preferred value, then press Enter. Return to Set Current And Voltage Limit interface.

#### 7.15 Setup the system time of ATS. Main Menu =>3 (System Time)

🗞 ATS - HyperTerminal	
File Edit View Call Transfer Help	
1- Device Manager	
2- Set Current And Voltage Limit 3- System Time	
Select And Press ENTER Key Or Press ENTER Key To Refresh > 3	
System Time	
1- System Date(yyyy/mm/dd): 2010/12/29 2- System Time(hh:mm:ss) : 9:37: 5	
0- Main Menu	
Select And Press ENTER Key To Change Time Or Press ENTER Key To Refresh	
Connected 0:17:31 Auto detect 19200 8-N-1 SCROLL CAPS NUM Capture Print echo	

7.15.1 Select 1 to modify date. Main Menu =>3 (System Time) = ) 1

🗞 ATS - HyperTerminal	
File Edit View Call Transfer Help	
Main Menu 1- Device Manager 2- Set Current And Voltage Limit 3- System Time	
Select And Press ENTER Key Or Press ENTER Key To Refresh > 3	
1- System Date(yyyy/mm/dd): 2010/12/29 2- System Time(hh:mm:ss) : 9:37: 5	
0- Main Menu	
Select And Press ENTER Key To Change Time Or Press ENTER Key To Refresh > 1 Input The Date(vvvv/mm/dd):	
Connected 0:18:02 Auto detect 19200 8-N-1 SCROLL CAPS NUM Capture Print echo	

Enter the correct date format in the window. For example: 2010/07/22



The above window shows that the setting is a success.

7.15.2 Input the Time Main Menu=>3 (System Time) =>2 🧠 ATS - HyperTerminal - 🗆 🗡 File Edit View Call Transfer Help 🗅 🖨 💿 🔏 🗈 🗃 😭 ---- System Time --1- System Date(yyyy/mm/dd): 2010/ 7/22 2- System Time(hh:mm:ss) : 16:18: 4 0- Main Menu Select And Press ENTER Key To Change Time Or Press ENTER Key To Refresh > 2 Input The Time(hh:mm:ss): \_ > < Auto detect 19200 8-N-1 SCROLL CAPS NUM Capture Print echo Connected 0:01:22

Enter the correct time form in the window. For example: 11:15:23



The above window shows that the setting is a success.

# 8. Performance Parameters

Function	ITEM		Performance Parameters				
	Power Input			2 power input			
	Rating Voltage			220VAC	220VAC		
	Voltage	Rang	je	180VAC~260VAC			
	Rating Power			50/60HZ			
	Frequency Range		ange	Rating power ±5HZ	Rating power ±5HZ		
	Overload & Breaker		Breaker				
Input	Surge Protector			Optional, one of them can be added (not both)			
	Max Load Current			16A, 32A	16A, 32A		
		Power inpu		It method Plug Load current			
	1U	1	IEC 320 C20 x 2			16A	
		2		Cable	IEC60309×2	16A	
	2U	1		Cable	IEC60309×2	32A	
		P	ower output	Connector	Output	Outlet Quantity	
	1U	1	Socket		IEC320 C13	6	
		2	Cabla		IEC320 C19	2	
Output		2	Cable	IEC60309 16A	150220 012	12	
	20	1	Socket		IFC320 C13	4	
	20	2	Cable	IEC60309/32A		1	
	Max Lo	ad Cu	rrent	16A, 32A	16A, 32A		
	Logic Port			Headphone (1) to connect the external speaker			
Communication/alar	Network Port		t	RJ45 (1, Intelligent Models)			
m port	Serial Communication Port		unication Port	RJ45 (1)			
	Phone Alarming Port			RJ11, 1 (Intelligent ATS)			
Tronofor	Transfer Polarity		rity	L、N (Double Polarity)			
Iransfer	Transfer Time		9	10 ≤ 16ms			
	Output Current		ant	Digital Display	LED, three-digit, red		
	Output	Curre		Display Resolution	100mA ±1%+1D		
Display	Output voltage		σe	Digital Display	LED, three-dig	git, red	
			50	Display Resolution	1V ±1% +3D		
	IP Addr	ess		Left Circulation Display, (intelligent ATS)			
Mounting	Horizontal Rack Mount		ack Mount	1U or 2U			
Case color	Color			Black			
Accessories	Brackets			One Set			
	Network Cable		le	2M, Blue (1 piece)			
	User manual			One set (Include a CD)			
Working Temp	-5~40°C						
Storage Temp	-20~70°C						
Op. Humidity	30%~90%, Non-Condensing						

### 9. Accessories List

- 1 x Serial Cable
- 1 x Network Cable (only intelligent ATS)
- 4 x φ6×16mm cross bolt
- 1 x User Manual and CD

**Optional Accessories:** 

- Circuit Breaker
- Surge Protection Module

## 10. Warranty Policy

The product is guaranteed for **2 years (24 months)** from the date of purchase. We will repair or replace the detective products covered by the warranty. If product has already exceeded the warranty period or the problem are caused because of illegal operation, a corresponding fee will be charged. The following cases are not covered by the warranty:

- 4. Problems caused because of improper maintenance
- 5. Problems caused because of unauthorized changes, modifications or improper use
- 6. The device is not used or stored in the appropriate physical environment

#### Repair notice:

- Make sure to use protective hard carton packaging when arranging the shipment to repair. Problem
  occurring during the shipment is not covered by the warranty.
- 2. Include a description of the problem and the operation process.
- 3. Customer to pay for the shipping cost as well as the customs duties.
- 4. Please list your name, address and phone number so that we can contact you at any time.