

Installation Manual

ATS Remote Annunciator Catalog 5310

The ASCO 5310 ATS Remote Annunciator is listed under the Underwriter’s Laboratories Standard UL-1008 for Automatic Transfer Switch accessories. This stand-alone device provides individual status monitoring and control of an ASCO Automatic Transfer Switch (ATS) over an ethernet network. The ATS must have an ASCO 5150 Connectivity Module (CM) (Acc. 72E) connected to it. The Catalog 5310 can communicate with these ATSSs:

- 7000 & 4000 Series (Group 5 Controller)
- Series 300 (Group 1 Controller)
- Series 185 (Group 4 Controller)

The ASCO 5310 complies with US UL requirements. It also has IEC Certification (CE Mark).

Product Functions and General Descriptions:

Separate lights indicate switch status and position.

- ATS switch position
- ATS source availability
- ATS alarm condition
- ATS time delay active

Separate push buttons initiate transfer switch operation / testing, alarm silence, and reset.

- ATS transfer test (*Transfer*) / bypass (cancel) time delay
- Silence alarm
- Reset

The ATS Remote Annunciator can also be setup in multiple locations to monitor the same device. This arrangement allows for redundant annunciation of business-critical ATSSs.

After the ATS Remote Annunciator is installed and configured refer to User’s Guide 381333-316.

DANGER

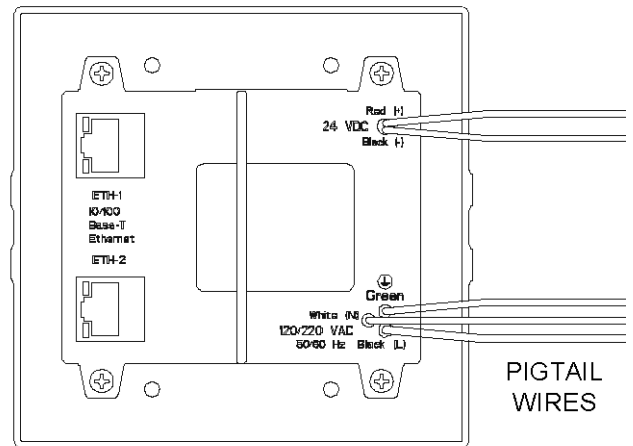
DANGER is used in this manual to warn of a hazard situation which, if not avoided, will result in death or serious injury.

WARNING

WARNING is used in this manual to warn of a hazardous situation which, if not avoided, could result death or serious injury.



Front view



Rear view

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381333-317 A

Specifications

Power Requirements: 120-220 V ac nominal
(90-264 V ac)
auxiliary 24 V dc nominal (9-36 V dc)
can be a battery or UL rated
Class 1 dc power supply
max. power 10 watts ac or 5 watts dc
Dimensions: 4.47" H x 4.61" W x 3.91" D
(11.35 cm H x 11.7 cm W x 9.92 cm D)
Weight: 15.3 oz. (0.437 kg)
Ethernet Communication Cable Requirements:
Belden 1583A or equiv. UTP CAT 5e or CAT 6
with RJ45 connectors (untwisted pair or higher)
Ethernet Port Connectors:
Two built-in 10/100 Base T (RJ45) 10/100 Mbps
Configuration Parameters:
(The parameters required to make an Ethernet connection)
IP Address 169.254.1.200
Subnet Mask 255.255.255.0
Gateway
TCP Port No. 10001
A label on the back shows the default settings.
Protocol Support: ASCO II and Modbus/TCP
Ambient Temperature:
Operating -4 to 158 deg F (-20 to 70 deg C)
@ 5-85 % humidity
Storage -40 to 185 deg F (-40 to 85 deg C)
Number of Channels 1
Internal Alarm Buzzer

1 Factory Default Information

A label on the back to the ATS Remote Annunciator lists several important settings that you will need to do the configuration. **Write down this information below before installing it (and after changing these settings).**

IP Addr	_____
factory default:	169.254.1.200
Login	_____
factory default:	admin and user
	(see page 4 for Login names)
Password	_____
factory default:	ASCO (capital letters)
Configured IP Address	_____
factory default:	169.254.1.200
	(customer's IP address)

Installation

The ASCO 5310 ATS Remote Annunciator can be attached to a double gang box (supplied). Refer to the installation drawing 834979 and wiring diagram 850281 at the back of this manual.

1 Gang Box Mounting

Refer to installation drawing 834979 sheet 1. After the wiring is completed, four screws (supplied) attach the unit to the gang box. The front bezel snaps onto the unit after it is attached to the gang box.



To avoid shock, burns, or death, deenergize all electrical sources before making connections.

2 Power Wiring

A licensed electrician should install the ATS Remote Annunciator. All national and local codes must be followed.

Refer to wiring diagram 850281. The unit has pigtail wires. Wire nuts are provided to connect power wiring inside the gang box. Recommended wiring is #18 AWG stranded flexible wire. If the power wiring is solid wire, pigtail it with stranded flexible wiring to the ATS Remote Annunciator.

The white divider must be installed on the back on the unit.



Be sure to install plastic divider on the back of the unit to separate power wiring from ethernet wiring.

3 Communication Wiring (Ethernet)

Refer to wiring diagram 850281. The communication wiring and ac power wiring must be isolated. Use Belden 1583A cable or equivalent UTP CAT 5e or CAT 6 with RJ-45 connectors (untwisted pair or higher). Connect the Ethernet Port to the network.

3-1 Communication Architecture

Refer to wiring diagram 850281. Overall communication architectures are shown on the drawings.

Functional Test

After installing the ATS Remote Annunciator communications must be established to configure it. A *Windows*-based laptop computer is needed. You must have access to the other end of the communication cable that is connected to the ATS Remote Annunciator. You also need to know the factory default settings on the label (see page 2).

1 Initial checks

After the ATS Remote Annunciator is mounted and wired (both power and communication) perform these tests:

1. Turn on the power to energize the ASCO 5310.
2. Verify that the power light is illuminated (upper left).
3. Turn the **Control** key switch to the right (unlocked).

2 Communication check

A laptop computer running *Windows Xp & 7* and *Internet Explorer 6.0 +* will be used in these steps to configure the ATS Remote Annunciator. You will need to temporarily disconnect the other end of the communication cable from ATS Remote Annunciator and connect it instead to the laptop computer.

1. Connect the Ethernet cable from the ATS Remote Annunciator to the laptop computer's Ethernet jack.
2. Start *Windows*, click the **Start** button, then **Control Panel**.
3. Select **Network Connections** (*Windows Xp*) or **Network and Internet** and/or **Network and Sharing Center** (*Windows 7*).
4. Double click the **Local Area Connections** icon to display the properties screen (*Windows Xp*), or select **Local Area Connections** then click the **Properties** button (*Windows 7*).
5. On the **Local Area Connection Status** screen click the **Properties** button.
6. On the **Local Area Connection Properties** screen:

Windows Xp

Scroll to verify that *Internet Protocol (TCP/IP)* is selected and highlighted, then click the **Properties** button.

Window 7

Scroll to verify that *Internet Protocol Version 6 (TCP/IPv6)* is deselected, *Internet Protocol Version 4 (TCP/IPv4)* is selected and highlighted, then click the **Properties** button.

7. Set the IP setting of the laptop computer (see Figure 1):
 IP Address 169.254.1.100 (last digit must be different than ASCO 5310 Default IP)
 Subnet Mask 255.255.255.0 (same as ASCO 5310)
 Default Gateway leave blank
 (This is needed only if communicating to a different LAN.)
8. Click *OK* and click *Close*. Close the *Local Area Connection* window.
9. Once the TCP/IP setup is complete at the laptop computer, restart the computer (click **Start** button, then click **Restart**).
10. Restart *Windows*, then click the **Start** button.
Windows Xp
 Select **All Programs > Accessories > Command Prompt**.
Windows 7
 In *Command Prompt* window type **cmd** and press **ENTER**.
11. In the command prompt window type **ipconfig** and press **ENTER**. The settings are displayed.
12. In the command prompt window type **ping 169.254.1.200** and press **ENTER**.
 You should see: *Reply from 169.254.1.200*
 This reply confirms communication between the laptop computer and the ATS Remote Annunciator. Close the command prompt window. Proceed to the Configuration, *Login* screen.



Figure 1: Internet protocol

NOTE: If you have multiple ATS Remote Annunciators, each one must be checked and configured separately in this way.

ATS Remote Annunciator Configuration

The ATS Remote Annunciator must be configured. First log in. The ATS Remote Annunciator sends HTML files to the client computer. *Internet Explorer* interprets these HTML files, formats them, and displays the embedded web pages to the user.

1 Login Screen

To login follow these steps:

1. Be sure that the computer is still connected (page 4).
2. Start the *Internet Explorer* browser on the computer.
3. In the address bar, type in the default address of the ATS Remote Annunciator, then press **Enter**:
http://169.254.1.200
4. The ATS Remote Annunciator login page should appear. Enter the default Login (admin) and Password (ASCO) from the label (see page 2) and click **Login**. See Figure 3.

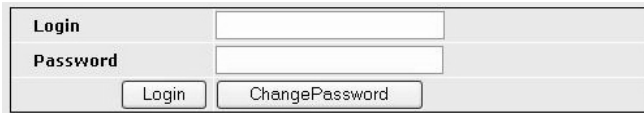


Figure 2: Login screen

1-1 Login Names

Two predefined login names are provided:

admin for administrator (can change configuration and diagnostic functions).

user can only see diagnostic screens in the web interface. The user cannot change any configurations.

1-2 Change Password

The default password is on the label (ASCO).

To change the password, click **Change Password**. The password can be up to 15 characters (do not use spaces). You can set only one password. Type in the *Old Password*, the *New Password*, and *ReType* [new] *Password*. Then press **OK** to save it. If you make a mistake click **Reset** and start over.



Figure 3: Change password screen

2 Annunciator Configuration

5. On the left pane, under *Configurations*, click *Annunciator* to configure the ATS Remote Annunciator. See Figure 4.

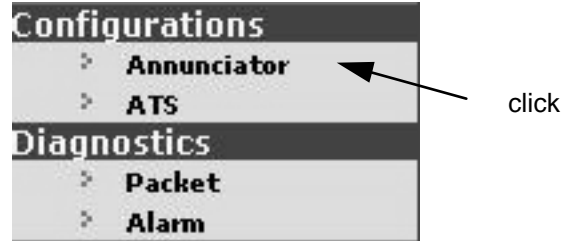


Figure 4: Configurations > Annunciator

6. The Configurations > Annunciator screen appears. See Figure 5. The configurations features are:

Annunciator name, software upgrade, IP address, subnet mask, gateway address, port, encryption, buzzer mode.

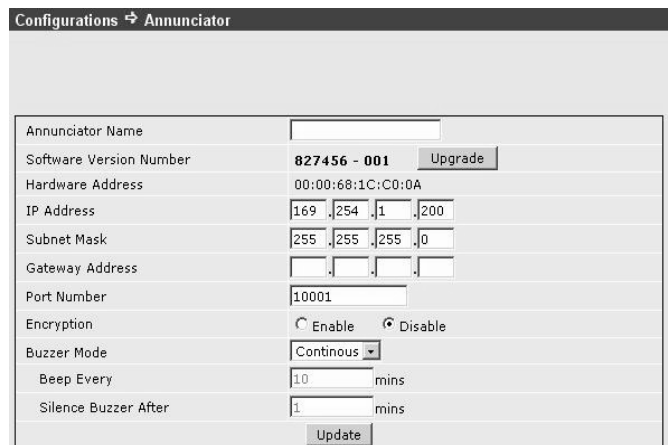


Figure 5: Configurations > Annunciator

2-1 Annunciator Name

Enter a name for the ATS Remote Annunciator.

Also write the name here _____.

2-2 Software Upgrade

Write the software version here _____.

The firmware in the ATS Remote Annunciator can be upgraded. Before upgrading, write down all configuration settings of the ATS Remote Annunciator. These settings may have to be made after the upgrade is completed.

1. Write down all configuration settings.
2. Click **Browse**, then click the file with **.spb** extension.
3. Click **Upgrade**. See Figure 6.

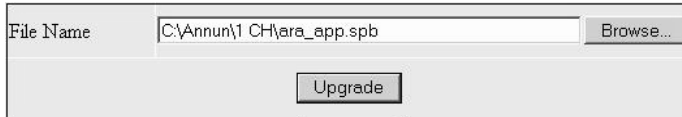


Figure 6: Firmware update screen

NOTICE

Before updating the firmware, write down all configuration settings.

2-3 IP Address, Subnet Mask, Gateway

1. The default IP address parameter is: 169.254.1.200. If the ATS Remote Annunciator is on a LAN, enter an available IP address (from your network administrator). The ATS Remote Annunciator’s IP address must not conflict with any other Ethernet device on the network. The default subnet mask parameter is: 255.255.255.0, and the gateway address is blank.
2. Write the IP address here _____.
3. Write the Subnet Mask here _____.
4. Write the Gateway Address here _____.

2-4 Port

The TCP/IP port must match the port used in the Connectivity Module (manual 381333-238). The default port is 10001 for ASCO Bus; port 502 is typically used for Modbus.

Write the port number here _____.

2-5 Encryption

Click **Enable** to turn on encryption, or click **Disable** to turn it off. The default configuration is **Disable** (off). The Connectivity Module (CM) must also have encryption selected.

Write which option is selected here _____.

This feature is only available with encrypted-enabled CMs. All other devices communicating with the CM must be able to read the encrypted data.

2-6 Audible Alarm (buzzer) Mode

Operation of the audible alarm can be configured. In the **Buzzer Mode** list, click **Disable** to turn it off (it will be inactive or silent even if an alarm occurs). Click **Periodic** or **Continuous** to turn on the audible alarm. The default setting is **Continuous**. See Figure 7.

Write which option is selected here _____.



Figure 7: Audible Alarm (buzzer) Mode

In the **Continuous** mode the pulsing buzzer sounds continuously (on-off cycles). In the **Periodic** mode the duration of the pulses and interval between pulses can be set as follows:

- Beep Every (On Time) 0-60 minutes
- Silence Buzzer After (Off Time) 0-2400 minutes

See Figure 8.

2-7 Beep Every (On Time)



Figure 8: Audible Alarm (buzzer) ON - OFF Times

Buzzer total ON time: it is the total time in which the buzzer ON-OFF cycle will repeat in periodic mode from the time the buzzer alarm is initiated. This time period needs to be entered in the **Beep Every** text box. The acceptable range of Buzzer ON time is between 0 to 60 minutes, fractional values are not acceptable. Buzzer silences only if alarm condition ceases or **Buzzer On** time elapses, which ever occurs first.

2-8 Silence Buzzer After (Off Time)

If the Buzzer on time is set to zero, the buzzer ON-OFF cycle repeats infinitely unless the alarm condition ceases or silence alarm key is pressed.

The period of each buzzer ON-OFF cycle: It is the period after which the Buzzer ON-OFF cycle repeats. This time period needs to be entered in the **Silence Buzzer After** text box. The acceptable range of the period is between 0 to 2400 minutes. Fractional values are not acceptable. ON time in each of these cycles is fixed at one second.

2-9 Click Update to Save Configurations !

Be sure to click UPDATE to save the configuration settings and upload them to the ATS Remote Annunciator.

ATS Configuration

The ATS Remote Annunciator must be configured for the ATS that will be monitored and controlled. First log in. The ATS Remote Annunciator sends HTML files to the client computer. *Internet Explorer* interprets these HTML files, formats them, and displays the pages to the user.

1 Login Screen

To login follow these steps:

1. Be sure that the computer is still connected to the Ethernet switch (LAN).
2. Start the *Internet Explorer* browser on the computer.
3. In the address bar, type in the address of the ATS Remote Annunciator, then press **Enter**:
http://169.254.1.1
4. The ATS Remote Annunciator login page should appear. Enter the default Login (admin) and Password (ASCO) from the label (see page 2) and click **Login**. See Figure 9.



Figure 9: Login screen

2 ATS Configuration

5. On the left pane, under *Configurations*, click *ATS* to configure the ATS that will be monitored. See Figure 10.

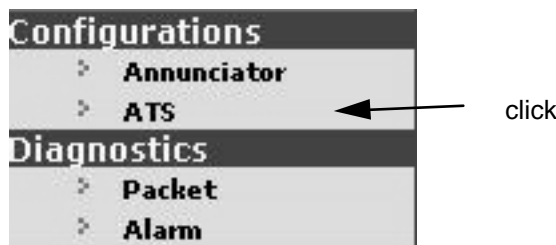


Figure 10: Configurations > ATS

6. The Configurations > ATS screen appears. See Figure 11. The Single ATS communication architecture is shown. Select either **Automatic** or **Manual** configuration.

Single ATS connected to one Connectivity Module (CM) - the ATS has a Connectivity Module

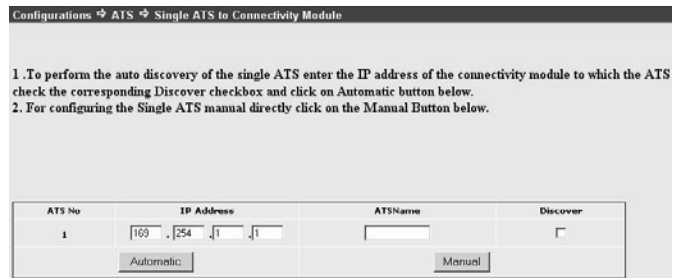


Figure 11: Single ATS configuration

2-1 Single ATS connected to one CM

You must know the IP address of the Connectivity Module (CM) that corresponds with the ATS (and Power Manager, if present) in the network. The ATS Remote Annunciator has an *auto discovery* feature for a scenario in which one ATS is connected to one CM. The user has to input the IP address details of the CM to which the ATS is connected. After performing the auto discovery, the information about the discovered ATS is displayed on the web interface. See Figure 12.

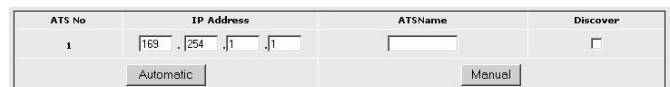


Figure 12: Single ATS screen

1. To perform the auto discovery of the ATS, enter the IP address of the CM to which the ATS is connected, select the check boxes next to the ATS, then click **Automatic**. See Figures 13 and 14.

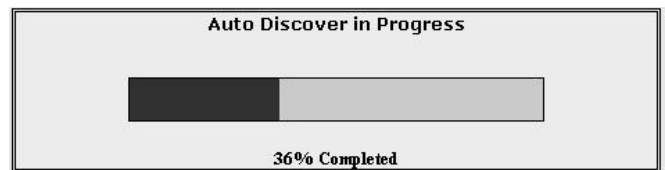


Figure 13: Auto Discover in Progress



Figure 14: Auto Discover Completed

- After auto discover is completed click **Show Results**. The ATS configuration is automatically filled in. Check the screen to be sure the ATS is found. If it is, proceed to step 5. See Figure 15 for an example.

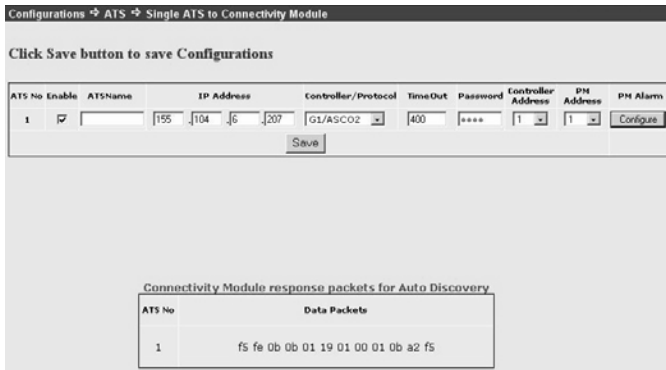


Figure 15: Auto Discover Results

- To manually configure the ATS click **Manual** on the Single ATS screen (Figure 12). See Figure 16.

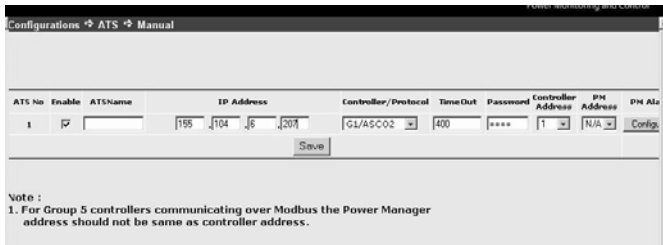


Figure 16: Auto Discover Results

- Click *Enable*, enter the *ATS Name*, and the *IP Address*. On the *Controller/ Protocol* list, *Controller Address*, and *PM Address*, select the appropriate settings. See Figures 17, 18, 19.

For 7000, 4000 Series ATSs select *G5/ASCO2*. ASCO2 is for baud rate 19.2K (ASCObus 2). For *Modbus*, see *Notes* below. All ATSs must use the same protocol. Refer to G5 User’s Guide 381333-126.



For Series 185 or Series 300 ATSs select *G1/ASCO2*. In the Group 1 Controller, visually determine the dash number on the micro-processor’s label (dash number 9 and higher is ASCObus 2). All ATSs must use the same protocol.

Figure 17: Controller/Protocol manual selection

Select the appropriate address that is set in the ATS controller (G1 or G5).



Figure 18: Controller Address manual selection

If *G1/ASCO2* or *G5/ASCO2* protocol is selected (Figure 17), the Power Manager (PM) address must be the same as the address set in the corresponding ATS controller.

If *G5/Modbus* protocol is selected (Figure 17), the PM Address should not be the same as the address set in the ATS’s Group 5 controller. They must have different addresses.



Figure 19: PM Address manual selection

Modbus Notes: The password entered (Figure 20) for the ATS must be the same as the password set in that ATS’s Group 5 controller. Transfer control from the ATS Remote Annunciator wil not function without the proper password. Refer to User’s Guide 381333-126.

- When the ATS configuration is made, click **Save** to upload the configuration to the ATS Remote Annunciator. An *Uploaded Successfully* screen should appear. See Figure 20. The ATS Remote Annunciator should now be monitoring the ATS (observe the status lights).

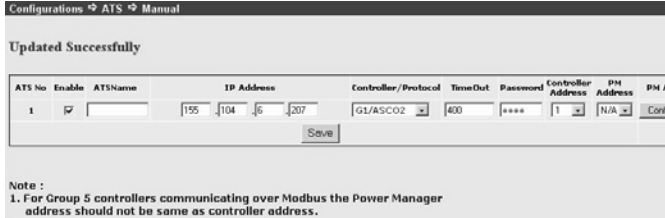


Figure 20: Updated Successfully screen

2-2 Configuring Power Manager Alarms

If a Power Manager (PM) is provided with an ATS, the PM’s eight Status Inputs can be configured to signal an alarm at the ATS Remote Annunciator. At the PM, the Status Input must be set to ACTV (on). Refer to PM manual 381333-199.

- Be sure that a *PM Address* has been set (Figure 19). Then click the **Configure** button (Figure 20) next to *PM Address*.
- The first row (top) is for PM Status Input 1. Click *Enabled*.
- Next, enter a name in the *Digital Input* column, if desired.
- Repeat steps 2 and 3 for each PM Status Input that is ACTV (on). The second row is *Status Input 2*, etc. See Figure 21.
- Click the **Update** button to save these configurations.
- Click the **Save** button to save all configurations to the ATS Remote Annunciator. See Figure 20.

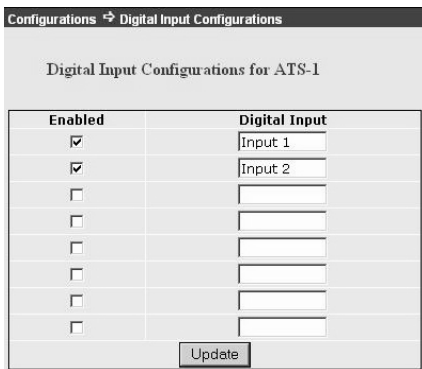


Figure 21: PM Status Input configuration

Diagnostics

Diagnostics can be used to check communication packets and to check for ATS alarms (to determine why the *Alarm* light is on).

If necessary, reconnect the laptop computer that was used to configure the ATS Remote Annunciator. Then log in as described on page 5.

1 Packets

On the left pane, under *Diagnostics*, click *Packet* to check send and receive packets from the Connectivity Module to the ATS Remote Annunciator. See Figure 22.

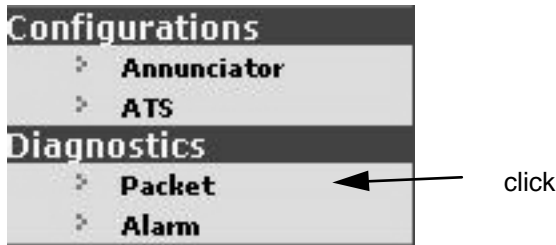


Figure 22: Diagnostics > Packet

The *Diagnostics > Packet* screen shows the ATS. It lists the *ATS No.*, *ATS Name*, *IP Address*, *DeviceType* (controller/protocol), *Packets Sent* (TX), *Packets Received* (RX), and *Packets Dropped*. The number of packets dropped indicates the communication quality (lower is better). To reset the counters, click the **Reset** button. See Figure 23.

ATS No	ATS Name	IP Address	DeviceType	PacketsTX	PacketsRX	Packets Dropped	Reset Counters
1	ATS1	192.168.174.242	G5/ASCO2	23589	23580	9	<input type="button" value="Reset"/>

Figure 23: Diagnostics > Packet screen

2 Alarm

On the left pane, under *Diagnostics*, click *Alarm* to see the status of all ATS alarms that are configured. See Figure 24.

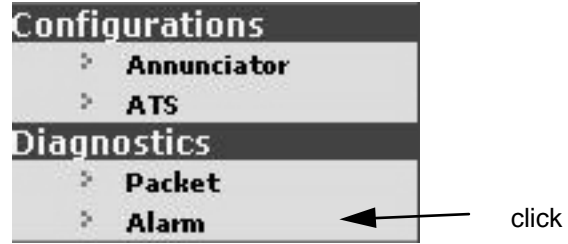


Figure 24: Diagnostics > Packet

The *Diagnostics > Alarm* screen shows these ATS alarms: *Communication Error*, *ATS Locked Out* (7ADTS, 4ADTS), *Failure to Synchronize* (7ACTS, 4ACTS), and *Extended Parallel* (7ACTS, 4ACTS). See Figure 25.

Based upon which alarm has occurred, specific action can be taken. See **Troubleshooting**.

ATS No	ATS Name	IP Address	Controller Type/Protocol	Communication Error	ATS Locked Out	Fail To Synch	Extended Parallel	ATS-PM Alarm
1		155.104.6.207	G1/ASCO2	-	-	-	-	<input type="button" value="ON"/>

Figure 25: Diagnostics > Alarm screen

If a Power Manger (PM) has been configured for Status Input alarms, click the **ON** button to see their status. For each *Digital Input*, the *Alarm Enabled* will show *INAC* for not enabled or *ACTV* for enabled. *ACTV* means the ATS Remote Annunciator is configured to accept a PM input alarm. In the *Status* column, *OFF* means there is no alarm; *ON* means there is an alarm (status input). See Figure 26.

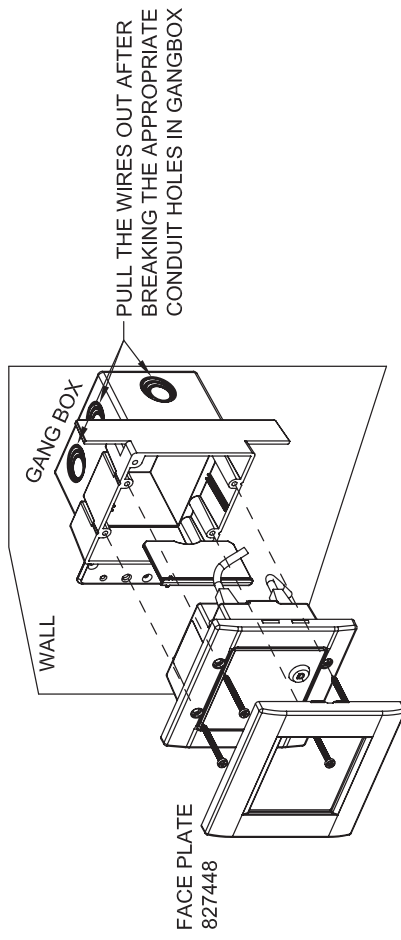
Digital Input	Alarm Enabled	Status
Input1	INAC	OFF
Input2	INAC	OFF
Input3	INAC	OFF
Input4	INAC	OFF
Input5	INAC	OFF
Input6	INAC	OFF
Input7	INAC	OFF
Input8	INAC	OFF

Figure 26: PM Status Input alarm status

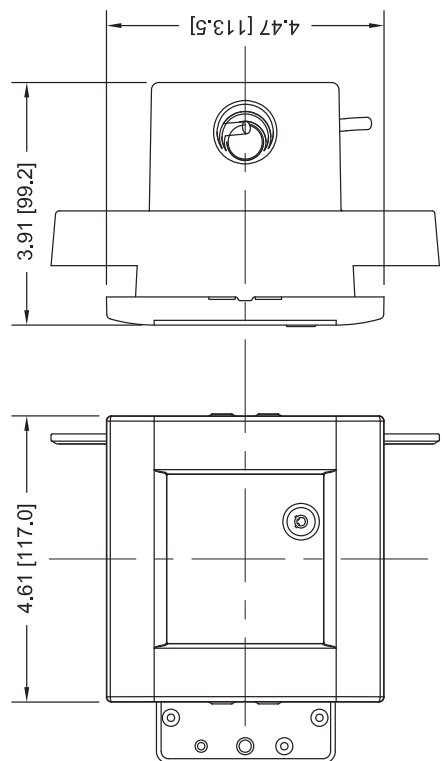
If an audible alarm is sounding at the ATS Remote Annunciator, it can be silenced (see User’s Guide 381333-316). But the alarm will not reset until it is corrected at the source (PM status input).

Troubleshooting

Number	Symptom	Probable Cause	Recommended Action
1	Power ON light is off	The DC or AC power source is inadequate or off.	Restore the DC or AC power supply. Check the terminals, fuse, circuit breaker.
2	The power ON light is blinking.	The unit keeps on resetting due to watchdog-reset possibly due to corruption of software.	Try to reprogram the unit with the latest software.
			Contact ASCO Services for replacement. 800-800-ASCO or customercare@asco.com
3	Transfer button does not work (load transfer does not occur).	Button not held long enough.	Hold the button for at least 5 seconds until you hear a beep..
		ATS Annunciator could have changed to default settings.	Use the configuration details entered on page 2; reconfigure the ATS Annunciator.
4	Buzzer is beeping continuously.	Communication with the Power Manager may have stopped.	Refer to Installation Manual 381333-315. Check the Ethernet connections: ATS Annunciator to the LAN and Power Manager to the LAN.
5	Communication alarm occurs but all configurations are correct.	Communication protocol may not be the same as that of the Power Manager (if present).	Verify that the protocol on both devices is the same.
6	A light does not come on when a corresponding button is pressed.	ATS Annunciator is not functioning properly.	Contact ASCO Services for replacement. 800-800-ASCO or customercare@asco.com



SNAP FIT THE FACE PLATE AFTER MOUNTING THE PRODUCT TO GANG BOX.



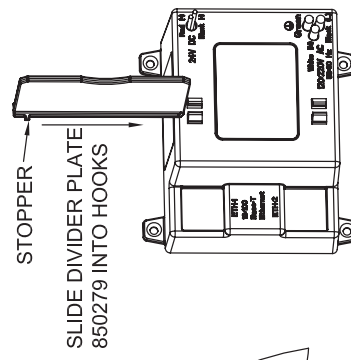
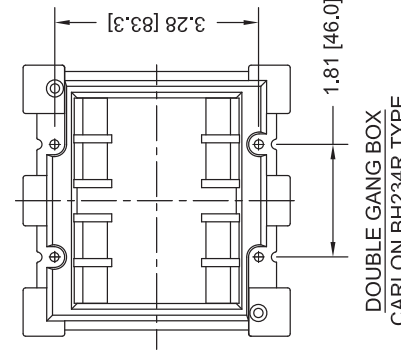
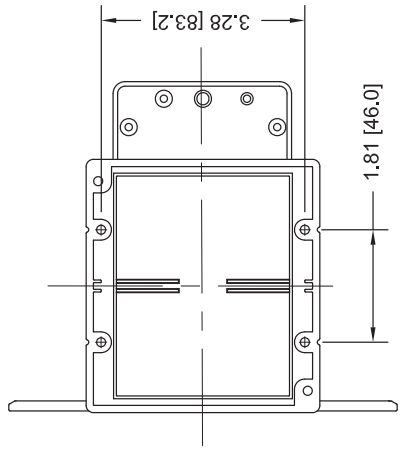
PRODUCT DIMENSIONS

INSTALLATION SEQUENCE:

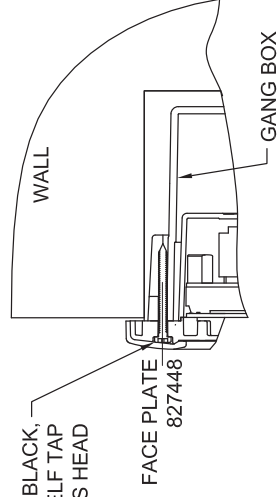
1. REMOVE THE FACEPLATE FROM THE BEZEL BY FLIPPING THE SNAPS CAREFULLY.
2. PULL THE WIRES AND MAKE CONNECTIONS AS PER WIRING DIAGRAM.
3. FIX THE DIVIDER PLATE ONTO THE REAR COVER OF ANNUNCIATOR.
4. INSERT THE ANNUNCIATOR INTO THE GANG BOX OPENING.
5. TIGHTEN THE SCREWS TO FIX THE PRODUCT.
6. FIX THE FACE PLATE SUCH THAT PRODUCT LOGO APPEARS AT TOP SIDE.

NOTES:

1. UNLESS OTHERWISE SPECIFIED DIMENSIONS ARE IN INCH [mm].
2. RECOMMENDED GANG BOXES: A238, BH234R, B232B-UPC, B225R-UPC, BH235, CARLON MAKE OR EQUIVALENT UL RATED GANG BOX.



ENSURE DIVIDER PLATE (850279) IS INSTALLED BEFORE MOUNTING THE ANNUNCIATOR FOR ELECTRICAL SAFETY

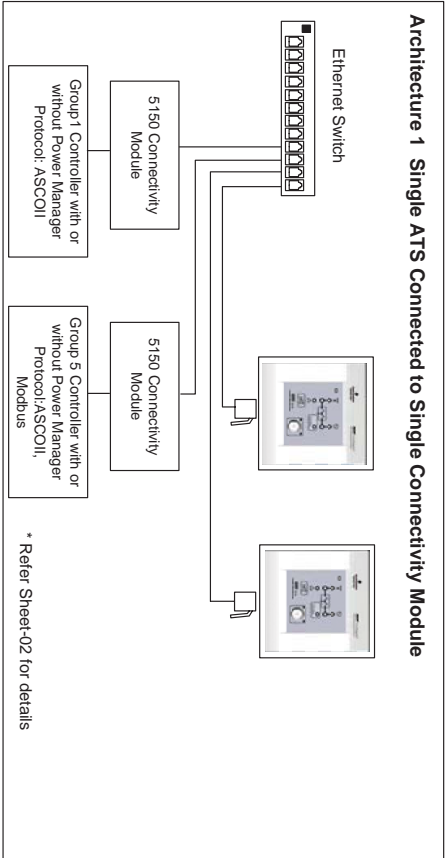


A	223488	JAV	JEH	08/09
	ADD	MANUAL	P/N	
—	221797	SRC	JEH	02/09
	NEW	ISSUE		
REV. TO SHEET	ECN NO.	BY	APP.	DATE

USED ON INSTALLATION MANUAL 381333-317

PROJECT NAME: XD-1047-1CH		COMPUTER GENERATED DRAWING	
INSTALLATION DRAWING		SCALE: 1:1	SIZE: BS
ATS REMOTE ANNUNCIATOR - 1 CH		DWG. NO.	834979
BY: CHL	DATE: 09/07	ASSEM. REF. NO.	—
CHECKED: JAV	DATE: 05/08	MANUFACTURING TOLERANCES TO BE IN ACCORDANCE WITH ASME Y14.5-2003 FOR PLASTIC PARTS SEE MP-1-055	
PROJECT APPROVAL: JEH	DATE: 05/08	PROPERTY OF ASCO POWER TECHNOLOGIES. USE PERMITTED FOR OUR WORK ONLY. ALL RIGHTS OF DESIGN OR INVENTION ARE RESERVED.	
FINAL APPROVAL: JEH	DATE: 05/08	 ASCO ® ASCO POWER TECHNOLOGIES, L.P. FLOHAM PARK, NEW JERSEY 07932 U.S.A.	
		DRAWING A	ECN 223488
			SHEET 1 OF 2

Overall Communication Architecture



Ethernet Cable Pinout

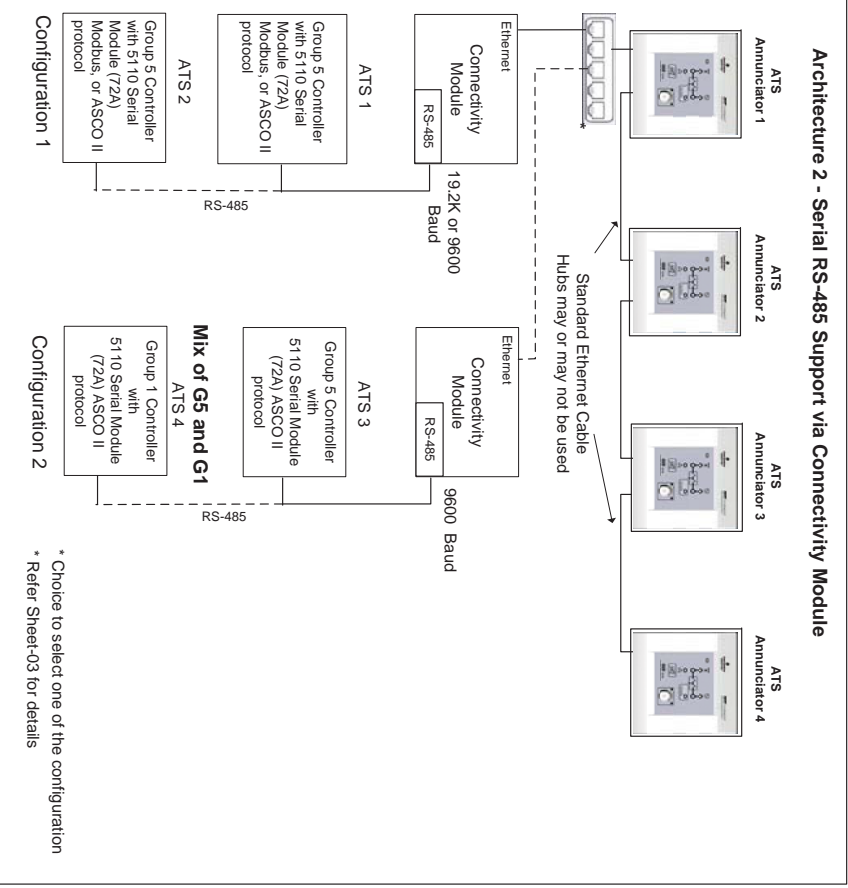
Pin	Pair	Wire	Color	Note	Description
1	2	1	White /Orange	1	Each Ethernet device must be configured with its own unique IP address on the network.
2	2	2	Orange		
3	3	1	White /Green		
4	1	2	Blue		
5	1	1	White /Blue		
6	3	2	Green		
7	4	1	White /Brown		
8	4	2	Brown		

Description of Wiring Diagram

1	Overall Communication architecture
2	Architecture 1 Reference Wiring Diagram
3	Architecture 2 Reference Wiring Diagram
4	Power supply and other wiring diagram

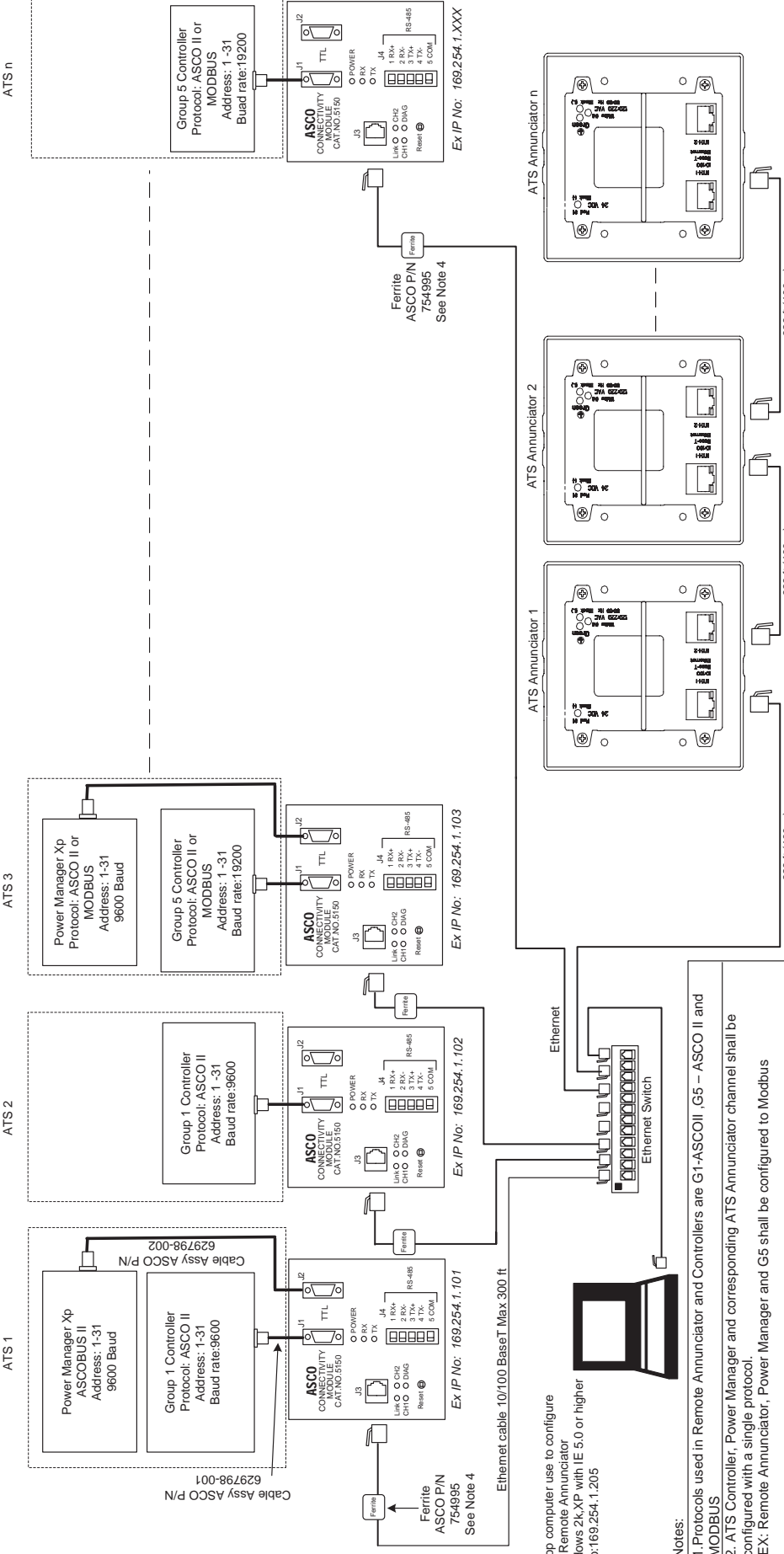
LED Label

LED Label	LED Description	LED Function
POWER	Power on indication Green	Solid ON indicates application software is running
	LED 1 Green	Solid Green ON indicates network operating at 100Mbps Speed, Full duplex with no collision
	LED 1 Orange	Blinking Green indicates network operating at 100Mbps Speed, Full duplex with collision
ETH1 & ETH2	LED 1 Orange	Blinking Orange indicates network operating at half duplex with collision
	LED 1	LED1 is OFF indicates speed and Full duplex/Col signals are not active
	LED 2 Green	Green Blink when Link and Act signals present and indicates TX/RX signals activities
	LED 2 Orange	Solid Orange ON indicates Link is present but no Act signal
	LED 2	LED2 is OFF indicates Link and Act signals are not active



PROJECT NAME: XD-1047 - 1CH		DRAWING NO. 827420	
WIRING DIAGRAM		DIAGRAM	
ATS REMOTE ANNUNCIATOR - 1CH		THIRD ANGLE PROJECTION	
CAT. 5310		ASSEMBLY REF. NO.	
BY	DATE	PROPERTY OF ASCO POWER TECHNOLOGIES, L.P. USE PERMITTED FOR OUR WORK ONLY. ALL RIGHTS OF DESIGN OR INVENTION ARE RESERVED.	
JAV	02/09	SCALE NONE	
SRC	02/09	SIZE DWG NO. 850281	
JEH	02/09	FILE _01	
FINAL APPROVAL		CHANGE LETTER A	
ASCOT Technologies, L.P. - FLORHAM PARK, NJ USA 07932		ECON NO. XXXXXX	
		SHEET 1 of 4	

Architecture 1 Reference Wiring Diagram
Single ATS connected to single Connectivity Module



Controller & Power Manager must have unique address when running Modbus protocol

Notes:

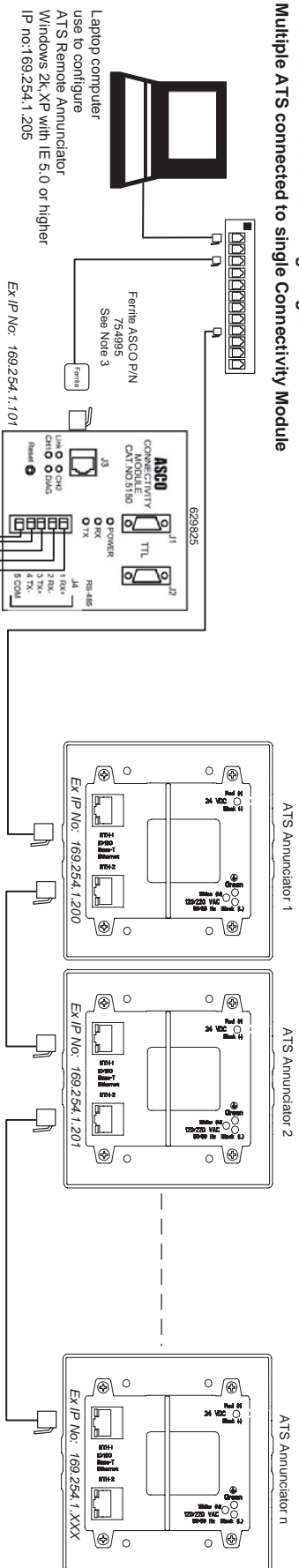
1. Protocols used in Remote Annunciator and Controllers are G1-ASCOII, G5 – ASCO II and MODBUS
2. ATS Controller, Power Manager and corresponding ATS Annunciator channel shall be configured with a single protocol.
 EX: Remote Annunciator, Power Manager and G5 shall be configured to Modbus
3. Refer to Connectivity Module wiring diagram for point to point wiring details
4. Ferrite ASKO P/N 754995 must be installed on cable within 1" of device being connected.

Type	Known as	Max. Length of Segment	Max. Stations per Segment	Connectors	Cable Type	Belden P/N (reference)
10 BaseT	Twisted Pair	328ft (100 meters)	1024	RJ-45	UTP CAT3, 4, 5	7882A

Ethernet Communication Cable						
Type	Known as	Max. Length of Segment	Max. Stations per Segment	Connectors	Cable Type	Belden P/N (reference)
10 BaseT	Twisted Pair	328ft (100 meters)	1024	RJ-45	UTP CAT3, 4, 5	7882A

PROJECT NAME: XD-1047 - 1CH	DATE	BY	DATE	ECN NO.	BY	DATE
WIRING DIAGRAM	02/09	JAV	02/09			
INSTALLATION	02/09	JAV	02/09			
ATS Remote Annunciator - 1CH	02/09	JAV	02/09			
CAT. 5310	02/09	JAV	02/09			
MANUFACTURING TOLERANCES TO BE IN ACCORDANCE WITH ASSEMBLY DRAWING FOR PLASTIC PARTS SEE MP-1003						
PROPERTY OF ASCO POWER TECHNOLOGIES, L.P. USE PERMITTED FOR OUR WORK ONLY. ALL RIGHTS OF DESIGN OR INVENTION ARE RESERVED.						
SCALE: None						
COMPUTER GENERATED DRAWING						
SIZE: V860						
FILE: .01						
DRAWN BY: JAV						
CHECKED BY: JAV						
DRAFTING: SRC						
APPROVAL: JEH						
FINAL APPROVAL: JEH						
ASCO Power Technologies, L.P. - FLORHAM PARK, NJ USA 07932						
DRAWING NO: 850281						
ECN NO: 221797						
SHEET 2 of 4						

Architecture 2 Reference Wiring Diagram Multiple ATS connected to single Connectivity Module



Controller's / Power Manager's Possible Protocol Configurations

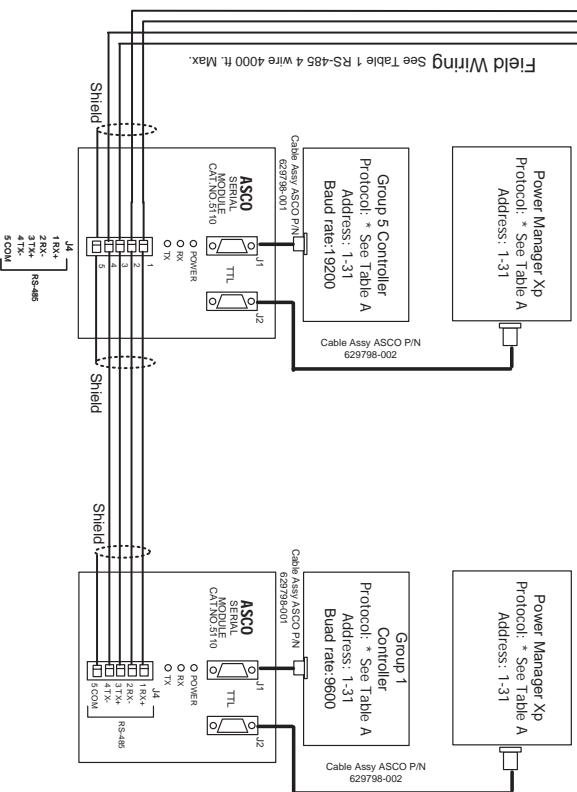
Controller/Power Manager	Protocol	Baud Rate
Group 1	ASCO II	9600
	Modbus	19200
Group 5	ASCO II	9600
	Modbus	19200
Power Manager	ASCO II	9600
	Modbus	19200

Table-A

TABLE 1 Acceptable Communication Cable
Standard 80°C
Belden 9942
Belden 9829
Alpha 6202C
Alpha 6222C
Plenum Rated Belden 89729
Belden 82729
Alpha 58902

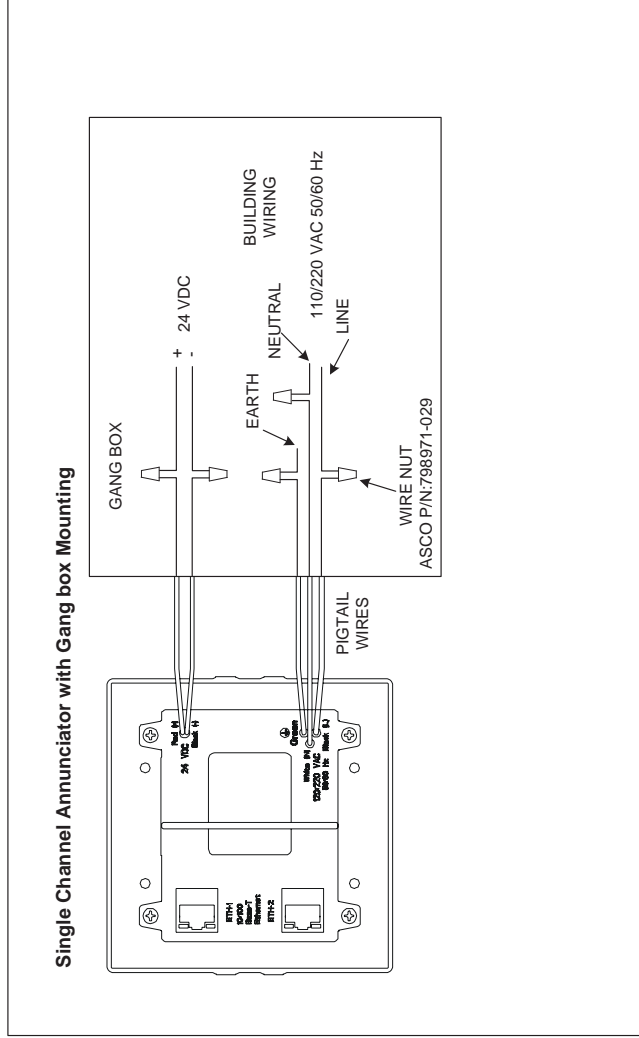
Notes

- The possible configuration that can be supported are shown in the Table -A 'Yes' indicates support and 'No' indicates not supported.
- Refer the wiring diagram of connectivity Module for detailed point to point wiring.
- Ferrite ASCO P/N 754995 must be installed on cable within 1" of device being connected.
- Enable Termination Resistor at farthest two end devices.
- In multiple ATS connected to a single Connectivity Module configuration, all ATS and Power Manager baud rates and protocols must match.



PROJECT NAME: XD-1047 - 1CH		INSTALLATION	
WIRING DIAGRAM		THIRD ANGLE PROJECTION	
ATS REMOTE ANNUCIATOR -1CH CAT. 5310		827420 ASSEM. REF. NO.	
BY	DATE	PROPERTY OF ASCO POWER TECHNOLOGIES, L.P. USE PERMITTED FOR OUR WORK ONLY. ALL RIGHTS OF DESIGN OR INVENTION ARE RESERVED.	
JAV	02/09	SCALE: NONE	
CHECKED BY	DATE	SIZE	DWG. NO.
JAV	02/09	BS	850281
DRAFTING SRC	02/09	CHANGE LETTER	FILE
JAV	02/09	A	.01
FINAL APPROVAL	02/09	ECON. NO.	SHEET 3 of 4
JAV	02/09	XXXXXX	
ASCO Power Technologies, L.P. FLORENCE PARK, NJ USA 07932			

Power supply diagram



Wire Description	Color	Connection
Stranded wire #18AWG(16/30)	White	Neutral
	Black	Line
	Green	Earth
Insulated Solid Conductor wire #20AWG	Red	24 VDC +
	Black	GND -

Table B

Notes

1. **Warning:** Before making the connections ensure the mains power is disconnected from the accessible wiring.
2. Power and communication cables shall be routed in the gang box to maintain a minimum of 1/4" (6mm) separation as per NFPA 800.133 Exception 2.
3. Install the Voltage divider plate provided to ensure the separation of power and communication cables.
4. Refer Table B for wire color, for proper connections.
5. The pig tail wires has pre-installed sleeve, open it only if that connection needs to be made.
6. The insulation of wires intended to connect shall only be opened for others wires the insulation shall be intact.

PROJECT NAME: XD-1047 - TCH		WIRING DIAGRAM		INSTALLATION	
DRAWN BY: JAV		CHECKED: JAV		DATE: 02/09	
BY: SRC		DRAFTING APPROVAL: JEH		DATE: 02/09	
CAT. 5310		ASSEMBLY REF. NO. 827420		ASSEMBLY REF. NO. 827420	
THIRD ANGLE PROJECTION		MANUFACTURING TOLERANCES TO BE IN ACCORDANCE WITH ASCO PROCEDURE MP-H003 FOR PLASTIC PARTS SEE MP-H005		PROPERTY OF ASCO POWER TECHNOLOGIES, L.P. USE PERMITTED FOR OUR WORK ONLY. ALL RIGHTS OF DESIGN OR INVENTION ARE RESERVED.	
SCALE: None		DWG. NO. 850281		FILE: _01	
CHANGE LETTER: BS		ECN NO. A		ECN NO. XXXXXX	
COMPUTER GENERATED DRAWING		SUBSIDIARY DISTRIBUTION		SHEET 4 of 4	

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