ASCO[®] 5100 Series, Catalog 5150

Connectivity Module For use with Automatic Transfer Switches & Power Manager



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Who Should Use this Installation Manual

	 This Installation Manual for the Connectivity Module should be used to assist individuals who will: install the Connectivity Module (mount and wire) configure the Connectivity Module enter in information about your Automatic Transfer Switches
	(7000 & 4000 Series, Series 300, ASCO 940,962,436,434,447,448) • use Ethernet access to monitor Connectivity Module (connected devices)
Prerequisites	A working knowledge of <i>Windows 2000</i> [®] , <i>Windows NT</i> [®] , or <i>Windows XP</i> [®] and <i>Windows Internet Explorer 5.0</i> or higher is necessary to configure the Connectivity Module.
Important informat that you will need	 To properly set up the software, you will need the nameplate data and other information from all your Automatic Transfer Switches (up to 64) including: ATS Name (your designation for the ATS) ATS Location (where the ATS is located in the building) Voltage Rating, Ampere Rating, and number of Poles for each ATS Catalog No. and Serial No. of each ATS Type of ATS (ATS or ATS/BP [ATS with bypass-isolation switch]) Power Manager Address (set in each Power Manager or Data Monitor)
Manuals that you may need	Catalog 5200 & 5200T Power ManagerOperator's Manual381333-192Catalog 5220 & 5220T Power Manager XpOperator's Manual381333-1997000 & 4000 Series ATS Group 5 ControllerUser's Guide381333-1267000 Series ATSappropriate Operator's Manual4000 Series ATSappropriate Operator's ManualSeries 300 ATSappropriate Operator's ManualASCO 940, 962, 436, 434,447, 448 ATSappropriate Operator's ManualCatalog 5110 Serial Module (Acc. 72A)Installation Manual
Тір	Communication Address form is included at the back to help you fill in needed information on your Connectivity Modules, ATSs, & Power Managers.
	The Connectivity Module provides Ethernet-access that allows users to view data from ASCO automatic transfer switches and Power Managers. These precautions must be followed by all users:
	WARNING Be sure that <i>Users</i> to whom you give access are those persons that you want to view information about the electrical system.
	WARNING Fill in the <i>Communication Address Form</i> in the back of this manual. Be sure that you enter <u>correct information</u> about each Connectivity Module, Automatic Transfer Switch, and Power Manager.

Modbus is a registered trademark of Gould Inc.

Overview

The **Connectivity Module** brings together several different serial devices that communicate at different baud rates and with different protocols to a common Ethernet media. It can communicate with up to eight clients, such as Web applications (web pages), Vpi, or third-party *Modbus* [®] devices simultaneously over Ethernet media.

Specifications

Power Requirements: $24 \text{ V} \text{ dc nominal} (8 - 28 \text{ V} \text{ dc})$					
1.5 Watt, UL Class 2 power supply, if needed.					
Mounting: 35 mm DIN rail					
Dimensions: 3.5" H, 2.8" W, 2.9" D (8.9 cm, 7.1 cm, 7.4 cm)					
Field Communication Cable Requirements:					
Ethernet: Belden 7882A or equiv. UTP CAT 5 with					
RJ45 connectors (untwisted pair or higher) Serial: Belden 9842, 9829, 89729, 82729 or Apha 6202C, 6222C, 58902. UL Listed, stranded,					
twisted pairs, over-all foil shield with stranded drain wire					
J1, J2 TTL Port Connectors: Two built-in TTL ports (DB9 pin male) for ATS/PM connectivity					
J3 Ethernet Port Connector : One built-in 10 Base T (RJ45) 10 Mbps Ethernet port					
J4 Serial RS-485 Port: One 5-pin terminal block header with a socket block (J4) designed to be daisy chained for up to 32 devices. Terminal 1 – RX+ Terminal 2 – RX- Terminal 3 – TX+					
Ambient Temperature:					
Operating 32 to 140° F (0 to 60° C)					
Storage - -40 to 185° F (-40 to 85° C)					
Configuration Parameters: The parameters that are required					
IP Address 169 254 1 1					
Subnet Mask 255 255 0 0					
Gateway0 0 0 0					
TCP Port No. 10001					
The TCP port is used for passing the data to the applica-					
tions and is configurable for user specific requirement.					
Baud Rates 19200 (default) or 9600					
Flow Control No Flow Control (default)					
Interface Mode TTL/RS485 – 4 wires (default)					
Reply Timeout 200 milliseconds (default)					
Protocol Support: The following protocols are supported:					
Serial Protocol: ASCO I, II, and Modbus					
Transport Protocol: TCP, UDP					

Application Protocol: HTTP, Telnet, Modbus/TCP

How to View Pages from a Connectivity Module after it is installed

<u>After</u> installation, testing, and configuration is completed (see Section 1) to view pages on a client computer, follow these steps:

- 1. Be sure that your computer is connected to the Internet.
- 2. Start *Microsoft Internet Explorer* browser on the computer.
- 3. In the address bar, type in the address of the Connectivity Module:

http://169.254.1.1

<u>F</u> ile	<u>E</u> dit	⊻iew	F <u>a</u> vorites	<u>T</u> ools	<u>H</u> elp			
_	₽.	.	⇒ .	-	8	¢,	ä	2
В	a.ck	F	orward		Stop	Refresh	Home	
Addre	ss 🧉	http://	169.254.1.1	1		/		
	Type the address of the Connectivity Module							

The Connectivity Module sends HTML files to the client computer. *Internet Explorer* interprets these HTML files, formats them, and displays the pages to the user. Pages 2-3, 3-3, 4-2, 5-2, 5-3 shows typical HTML pages (Detail screens).

Tip 🕼

You can add the address to your *Favorites* for convenient access to multiple Connectivity Modules; follow these steps:

- 1. Click *Favorites*, then click *Add to Favorites*, click *New Folder*, then type the *Folder name* (ATSs, for example), and click *OK*.
- 2. To rename the address, highlight it, and type the new name, and click *OK*.
- 3. When you are finished viewing pages, close *Internet Explorer*.

Windows and Internet Explorer are registered trademarks of Microsoft Corporation.

How to Install the Connectivity Module on 7000 & 4000 Series and Series 300 ATSs

The Connectivity Module mounts on a DIN rail under the ATS Controller (Group 5 & 1). A short serial cable connects the Connectivity Module to the Controller. If a Power Manager is present, a long serial cable connects the Connectivity Module to the Power Manager. Refer to installation drawings provided and follow the steps below to install the Connectivity Module.

Connectivity K754	y Module Kit 4603	Connectivity Module Kit K754603-001 for		
for 7000 & 4	4000 Series	7000 & 4000 Series		
and Series	s 300 only	and Series 300		
		with Powe	r Manager	
Connectivity Module 5150	629800-001	Connectivity Module 5150	629800-001	
DIN Rail and Hardware	754607	DIN Rail and Hardware	754607	
10-in. Serial Cable for Controller	629798-001	10-in. Serial Cable for Controller	629798-001	
		4-ft Serial Cable for Power Manager *	629798-002	

^{*} A 9-foot serial cable (629798-004) is required for G7ATB, G7ACTB, G7ADTB.

DANGER

To avoid possible shock, burns, or death, deenergize all electrical sources to the ATS before installing the Connectivity Module.

- 1. De-energize both Normal and Emergency sources that feed the ATS. Open enclosure door and check with a non-contact AC voltage detector.
- 2. Mount the DIN rail (supplied in the kit) onto two studs (on the door) below the Controller. Connectivity Module will mount on the right side.
- 3. Install Connectivity Module onto DIN rail by hooking the bottom of module on bottom of DIN rail and rocking it upward unit it snaps in place.
- 4. Install the 10-inch serial cable between the Controller receptacle (J7 on Group 5, J4 on Group 1) and the Connectivity Module J1 receptacle.
- 5. If a Power Manager is present, connect the 4-foot serial cable between the Power Manager J5 receptacle and the Connectivity Module J2 receptacle.*

Now test communications (go to page 1-2).

How to Install the Connectivity Module on ASCO 940/962 ATSs

The Connectivity Module mounts on a DIN rail near the ATS Control Panel. A separate power supply is needed unless it is connected to a Power Manager (PM). Group 6A/7A Control Panel must have a Serial Communication Kit added. A single communication cable (2 twisted pairs and overall shield connects the Connectivity Module to the Control Panel). Refer to installation drawings provided and follow the steps below to install the Connectivity Module.

Connectivity K75	y Module Kit 4608	Connectivity Module Kit K754608-001		
for ASCO 9	40/962 only	for ASCO 940/962 with PM		
Connectivity Module 5150	629800-001	Connectivity Module 5150	629800-001	
DIN Rail and Hardware	754610	DIN Rail and Hardware	754610	
Serial Com. Kit for Group 6A/7A CP *	467508	Serial Com. Kit for Group 6A/7A CP *	467508	
		Serial Cable for PM	629798-002	

* Serial communication & transient protection boards.

Required	Communication Cable
Power Supply **	(4 wires and an overall shield)
not supplied	not supplied
24 Vdc, 80 mA **	Belden 9842, 9829, 89729, 82729 or
use 16 AWG wire	Alpha 6202C, 6222C, 58902 <u>only</u>

** If a Power Manager (PM) is present, a power supply is not needed for the Connectivity Module. The serial cable from the Power Manager provides the power to the Connectivity Module.

DANGER

To avoid possible shock, burns, or death, deenergize all electrical sources to the ATS before installing the Connectivity Module.

- 1. De-energize both Normal and Emergency sources that feed the ATS. Open enclosure door and check with a non-contact AC voltage detector.
- 2. Mount DIN rail (supplied in the kit) onto two studs (on the door) below or adjacent to the Control Panel.
- 3. Install the Connectivity Module onto DIN rail.
- 4. Prepare and connect the specified communication cable between the Control Panel terminals and the Connectivity Module J4 terminals as listed below:
- 5. Prepare and connect the 24 Vdc power supply to the Connectivity Module. Use 16 AWG wiring to J5 terminal plug (1 is + positive, 2 is – negative).

Now test communications (go to page 1-2).

How to Install the Connectivity Module for a stand-alone Power Manager

The Connectivity Module mounts on a DIN rail near the Power Manager. A long serial cable connects the Connectivity Module to the Power Manager. Refer to installation drawings provided and follow the steps below to install the Connectivity Module.

Connectivity Module Kit K754611 for a stand-alone Power Manager					
(not connecte	ed to an ATS)				
Connectivity Module 5150	629800-001				
DIN Rail and Hardware	754610				
4 ft. Serial Cable for Power Manager	629798-002				

DANGER

To avoid possible shock, burns, or death, deenergize all electrical sources to the ATS before installing the Connectivity Module.

- 1. De-energize the power source that feeds the Power Manager. Open enclosure door and check with a non-contact AC voltage detector.
- 2. Mount the DIN rail (supplied in the kit) onto two studs (on the door) below or adjacent to the Power Manager.
- 3. Install Connectivity Module onto DIN rail by hooking the bottom of module on bottom of DIN rail and rocking it upward unit it snaps in place.
- 4. Install the 4-foot serial cable between the Power Manager J5 and the Connectivity Module J2 receptacle.

Now test communications (go to next column).

How to Test Communication to the Connectivity Module

You need the following settings from your network administrator or system administrator (sysop) for <u>each</u> Connectivity Module connected to an Automatic Transfer Switch (ATS) or Power Manager PM). Fill in the form provided in the Appendix:

IP Address:	(unique for each module)
Subnet mask	(usually same for all modules)
Gateway:	(usually <i>blank</i>)

Required items:

- Portable laptop computer with network card, running *Windows Xp*, *Windows 2000*, or *Windows NT*, and *Windows Internet Explorer 5.0* + installed.
- Ethernet crossover network cable (part no. 629590-006).
- Connectivity Module connected to the ATS or PM.
- 1. Directly connect the specified Ethernet crossover cable between your laptop's Ethernet jack and the deenergized Connectivity Module jack J3.
- 2. For safety, close the ATS or PM enclosure door as far as possible (with the crossover cable running to the laptop computer <u>outside</u> the enclosure). Then energize ATS or PM and the Connectivity Module.
- 3. Refer to the **Appendix** and select the appropriate *TCP/IP Installation & Configuration* instructions for your laptop computer's operating system. This procedure sets up your laptop computer (if necessary) for network connections and tests communications to the Connectivity Module.
- 4. After you have confirmed communication with the Connectivity Module, continue to the next page to view and change the configuration of the Connectivity Module and ATS or PM.

Now view and change the configuration (go to page 1-3)

How to View & Change Configuration Pages from a Connectivity Module

To view and change configuration pages on a client computer, follow these steps:

- 1. Be sure that your computer is connected to the Internet.
- 2. Start *Microsoft Internet Explorer* browser on computer.
- 3. In the address bar, type in the address of the Connectivity Module, add /config.htm, press *Enter* :

http://169.254.1.1/config.htm

File Edit Yiew Favorites Lools Help Address Help Help Help Help Help Help Help Address Help Help Help Help Help Help Help Help Address Help Help</

On the Login screen there is no password until you enter one. If you click Login without entering a password, there is no protection. If you want protection. click Change Password; the Change Password screen appears. Then enter a password (15 char. max.) in New Password, enter it again in Confirm New

Login
Password
Login Change Password
Change Password
New Password*
Confirm New Password
Ok Cancel
*Maximum 15 characters (no space)

Password, and click OK. You can set only one password.

The Connectivity Module sends HTML files to the client computer. *Internet Explorer* interprets these HTML files, formats them, and displays the pages to the user.

Pages 2-1, 2-2, 3-1, 3-2, 4-1, 5-1 show Device Configurator screens for ATSs and PMs (go to the appropriate section for the specific ATS or PM).

Tip 🖙

You can add the address to your *Favorites* for convenient access to multiple Connectivity Modules; follow these steps:

- 1. Click *Favorites*, then click *Add to Favorites*, click *New Folder*, then type the *Folder name* (ATS Configuration, for example), and click *OK*.
- 2. To rename the address, highlight it, and type the new name, and click *OK*.

When you are finished viewing pages, close Internet Explorer.

How to View Pages from a Connectivity Module after it is installed

<u>After</u> installation, testing, and configuration is completed, to view pages on a client computer, follow these steps:

- 1. Be sure that your computer is connected to the Internet.
- 2. Start *Microsoft Internet Explorer* browser on the computer.
- 3. In the address bar, type in the address of the Connectivity Module:

http://169.254.1.1

<u>F</u> ile	<u>E</u> dit	⊻iew	F <u>a</u> vorites	<u>T</u> ools	<u>H</u> elp			
B	(ack	F	⇒ Forward	- (S	🔊 Stop	🕼 Refresh	Home	
Addre	ss 🙆	http://	169.254.1.1	1		/		
T C	⁻ype Conn	the a ectivi	ddress o ty Modu	of the le	/	/		

The Connectivity Module sends HTML files to the client computer. *Internet Explorer* interprets these HTML files, formats them, and displays the pages to the user.

Pages 2-3, 3-3, 4-2, 5-2, 5-3 show typical HTML pages (Detail screens) for ATSs and PMs (go to the appropriate section for the specific ATS or PM).

Tip 🖙

You can add the address to your *Favorites* for convenient access to multiple Connectivity Modules; follow these steps:

- 1. Click *Favorites*, then click *Add to Favorites*, click *New Folder*, then type the *Folder name* (ATSs, for example), and click *OK*.
- 2. To rename the address, highlight it, and type the new name, and click *OK*.
- 3. When you are finished viewing pages, close *Internet Explorer*.

Device Configurator Screen for 7000 & 4000 Series ATSs

The **Device Configurator Screen** for 7000 & 4000 Series ATSs shows the Group 5 controller configuration settings (right side) and Connectivity Module (server) configuration settings (left side) for the selected ATS.

Group 5 Controller Configuration (right side)

Enter or change the ATS Name (8 char. max.) and the ATS Location (20 char. max.). Press the *Update* button when finished to save the controller configuration changes.

Connectivity Module (server) Configuration (left side)

Several configuration settings must be set appropriately as described below. Press the *Update Server* button when finished to save configuration changes.



Device Configurator Screen with Power Manager

Device Configurator Screen for 7000 & 4000 Series ATSs with a Power Manager

If a Power Manager is used with a 7000 & 4000 Series ATS, a button appears on the lower left corner of the **Connectivity Module Device Configurator** screen. Press the **Config PM** button to display the **Power Manager Configuration** screen (right side).

Power Manager Configuration

Enter or change the Power Manager **Name** (8 char. max.) and **Location** (20 char. max.). Several configuration settings must be set appropriately as described below. Press the *Update* button when finished to save the PM configuration changes.

Input Name & Output Names

Press the *Config I/O Name* button to display the **Input Name and Output Name** screen. Enter or change the names (16 char. max.) of the inputs and outputs. Press the *Update* button when finished to save theses names.



Detail Screen for 7000 & 4000 Series ATSs

The **Detail Screen** for 7000 & 4000 Series ATSs shows the switch location, ratings, timer settings, actual timer values, pickup and dropout settings, event logging, and other status indications.

ATS one-line icon shows position & source status (green or red circle means source is acceptable, grey circle means source is not acceptable)



Detail Screen for 7000 & 4000 Series ATSs with a Power Manager

The **Detail Screen** for 7000 & 4000 Series ATSs shows the switch location, ratings, timer settings, actual timer values, pickup and dropout settings, event logging, and other status indications.



Load connected to Normal or Emergency Source

Device Configurator Screen for Series 300 ATSs

The **Device Configurator Screen** for *Series 300* ATSs shows the Group 1 controller configuration settings (right side) and the Connectivity Module (server) configuration settings (left side) for the selected ATS.

Group 1 Controller Configuration (right side)

Enter or change the ATS **Name** (8 char. max.) and the ATS **Location** (20 char. max.). Press the *Update* button when finished to save the Group 1 controller configuration changes.

Connectivity Module (server) Configuration (left side)

Several configuration settings must be set appropriately as described below. Press the *Update Server* button when finished to save configuration changes.

Consult with your network administrator for these 4 settings:	ASCO [®] Server Configuration	Connectivity M Device Config n Firmware 62982	Aodule urator 25 - 001	Group1 Controller Configuration ATS Version 473674-011
IP Address Subnet Mask Gateway Address — TCP Port Number (Range of ports allowed is: 1024-65535, but do <u>not</u> use	Hardware Address IP address Subnet Mask Gateway Address TCP Port Number	00 20 4a 62 48 57 169.254.1.1 255.255.0.0 0.0.0.0 10001		Name ATS#5 Location Lab2 Nominal Voltage 208 Volts Nominal Current 150 Amps Update
ports 14000-14009 or 30718) Serial Port Speed 9600	Reply Timeout Serial Port Speed Flow Control Interface Mode	300 9600 💌 No flow control TTL/RS485-4wire(de	MSecs fault)	Press Update button when finished to save the configuration changes. Do this <u>before</u> you press Update Server button.
Flow Control No flow control	Serial Data Pas	ss Through Mode	ate Server	After Controller or PM has been updated, press Update Server button to save the configuration changes.

Device Configurator Screen without Power Manager

Consult with your network	ASCO °	Connectivity Mo Device Configura	dule ator	Group1 Controller Configuration
administrator for these 4 settings:	Server Configuration	n Firmware 629825	- 001	Version 473674-011
IP Address	Hardware Address	00 20 4a 62 48 57		Name ATS#5
Subnet Mask	IP address	155.104.006.237		
Gateway Address —	Subnet Mask	255.255.252.000		Nominal Voltage 208 Volts T
ICP Port Number	Gateway Address	155.104.004.001		Nominal Current 150 Amps S Location
(Range of ports allowed is:	TCP Port Number	10001		Update
ports 14000-14009 or 30718)	Reply Timeout	300 M	Secs	
Serial Port Speed 9600	Serial Port Speed	9600 🔽		Press Update button when finished to
	Flow Control	No flow control	-	save the configuration changes. Do this
Flow Control No flow control	Interface Mode	TTL/RS485-4wire(defa	ult) 🔽	before you press Update Server button.
	/ Serial Data Pas	s Through Mode		
Interface Mode PS/22//85 /Wire]			After Controller or PM has been
	Config PM	Config CP1 Update	e Server	updated, press <i>Update Server</i> button
				to save the configuration changes.
Press to configure Power Manager.	_	\mathbf{X}	Press to	configure Group 1 Controller.
				0 1 - - - -

Device Configurator Screen with Power Manager

Device Configurator Screen for Series 300 ATSs with a Power Manager

If a Power Manager is used with a *Series 300* ATS, a button appears on the lower left corner of the **Connectivity Module Device Configurator** screen. Press the **Config PM** button to display the **Power Manager Configuration** screen (right side).

Power Manager Configuration

Enter or change the Power Manager **Name** (8 char. max.) and **Location** (20 char. max.) Several configuration settings must be set appropriately as described below. Press the *Update* button when finished to save the PM configuration changes.

Input Name & Output Names

Press the *Config I/O Name* button to display the **Input Name and Output Name** screen. Enter or change the names (16 char. max.) of the inputs and outputs. Press the *Update* button when finished to save theses names.



Detail Screen for Series 300 ATSs

The **Detail Screen** for *Series 300* ATSs shows the switch location, ratings, timer settings, actual timer values, pickup and dropout settings, and other status indications.

ATS one-line icon shows position & source status (green or red circle means source is acceptable, grey circle means source is not acceptable)



Detail Screen for Series 300 ATSs with a Power Manager

The **Detail Screen** for *Series 300* ATSs shows the switch location, ratings, timer settings, actual timer values, pickup and dropout settings, and other status indications.

ATS one-line icon shows position & source status (green or red circle means source is acceptable, grey circle means source is not acceptable)

Device Configurator Screen for ASCO 940/962 ATSs

The **Device Configurator Screen** for *ASCO 940/962* ATSs shows the Group 7A controller configuration settings (right side) and the Connectivity Module (server) configuration settings (left) for the selected ATS.

Group 7A Controller Configuration (right side)

Enter or change the ATS **Name** (18 char. max.) and ATS **Nominal Voltage** (must be entered to get correct reading). Press the *Update* button when finished to save the Group 7A controller configuration changes.

Connectivity Module (server) Configuration (left side)

Several configuration settings must be set appropriately as described below. Press the *Update Server* button when finished to save configuration changes. ATS Name _____ Nom. Voltage

Consult with your network					\setminus /		go
administrator for these 4 settings: IP Address	ASCO [®]	Connectivity Module Device Configurator		Group7 Controller	and I/O Module Confi	guration	
Subnet Mask Gateway Address TCP Port Number	Server Configuration Hardware Address IP address	Firmware 629825 - 001 00 20 4a 63 0a b6 155.104.006.232		ATS Name Nominal Voltage 1/0 PT Ratio	ATS12 208 208	Volts 120	
(Range of ports allowed is: 10024-65535, but do <u>not</u> use ports 1400-14009 or 30718)	Subnet Mask Gateway Address TCP Port Number Reply Timeout	255.255.252.000 105.104.004.001 10001 300 MSecs		I/O CT Ratio	400 :	5	
Serial Port Speed 9600	Serial Port Speed Flow Control Interface Mode	9600 Vo flow control TTL/RS485-4wire(default)	- -		Press Upd when finish the configu	ate button led to save ration	
Interface Mode RS422/485-4Wire	Serial Data Pas	s Through Mode <mark>Update Serv</mark>	ver	Press Update S when finished to configuration ch	e rver buttor save the anges.	י 	

Device Configurator Screen with Power Manager

Detail Screen for ASCO 940/962 ATSs

The **Detail Screen** for *ASCO 940/962* ATSs shows the switch location, ratings, timer settings, actual timer values, pickup and dropout settings, and other status indications.

Detail Screen for ASCO 940/962 ATSs with a Power Manager

The **Detail Screen** for *ASCO 940/962* ATSs shows the switch location, ratings, timer settings, actual timer values, pickup and dropout settings, and other status indications.

Device Configurator Screen for Power Manager

If a stand-alone Power Manager is used, a button appears on the lower left corner of the **Connectivity Module Device Configurator** screen. Press the **Config PM** button to display the **Power Manager Configuration** screen (right side).

Power Manager Configuration

Enter or change the Power Manager **Name** and **Location**. Several configuration settings must be set appropriately as described below. Press the *Update* button when finished to save the PM configuration changes.

Input Name & Output Names

Press the *Config I/O Name* button to display the **Input Name and Output Name** screen. Enter or change the names of the inputs and outputs. Press the *Update* button when finished to save theses names.

Detail Screen for Power Managers connected to a Load

The **Detail Screen** for *Power Managers* shows energy levels, power measurements, settings, discrete I/O status, and other status information.

Detail Screen for *Power Managers* connected to a Generator

The Detail Screen for Power Managers shows energy levels, power

Detail Screen for Power Managers connected to a Circuit Breaker

CB icon appears if **Power Manager** address is set to 52. The **Detail Screen** for *Power Managers* shows energy levels, power measurements, settings, discrete I/O status, and other status information.

			-				
Row No.	IP Address	Subnet mask	Gateway	ATS Serial No.	ATS Catalog No.	Address set in ATS Controller*	Address set in PM**
-							
2							
3							
4							
5							
9							
7							
8							
6							
10							
11							
12							
13							
14							
15							
16							
Instruc	tions: Fill in the informatic	on for each Connec	tivity Module (C	M) with an Automat	ic Transfer Switch (A	TS) and/or Power Mana	ger (PM).

For Group 5 Controller (7000 & 4000 Series) refer to User's Guide 381333-126

* For Group 1 Controller (Series 300) refer to Communication Interface Module Instructions 381339-189

* For Group 7A Control Panel (ASCO 940, 962, 436, 434, 447, 448) refer to Accessory 72A Instructions 381339-172

** For Power Manager refer to Operator's Manual 381333-199 or -192 (see page ii) or for Data Monitor refer to Operator's Manual 381333-143. For Serial Module Catalog 5110 (Accessory 72A) refer to Installation Manual 381333-240.

Communication Address Form for Connectivity Module (CM)

Row No.	IP Address	Subnet mask	Gateway	ATS Serial No.	ATS Catalog No.	Address set in ATS Controller*	Address set in PM**
17							
18							
19							
20							
21							
22							
23							
24							
25							
26							
27							
28							
29							
30							
31							
32							
Instruc	tions: Fill in the informatio	in for each Connec	tivity Module (C)	M) with an Automat	ic Transfer Switch (A	TS) and/or Power Mana	ger (PM).

Communication Address Form for Connectivity Module (CM)

* For Group 5 Controller (7000 & 4000 Series) refer to User's Guide 381333-126 * For Group 1 Controller (Series 300) refer to Communication Interface Module Instructions 381339-189

* For Group 7A Control Panel (ASCO 940, 962, 436, 434, 447, 448) refer to Accessory 72A Instructions 381339-172

** For Power Manager refer to Operator's Manual 381333-199 or -192 (see page ii) or for Data Monitor refer to Operator's Manual 381333-143.

For Serial Module Catalog 5110 (Accessory 72A) refer to Installation Manual 381333-240.

How to Create an Ethernet TCP/IP Network Connection in Windows 2000

1. Start *Windows*, then click the **Start** button. Select **Settings** and **Control Panel**.

2. Click the Network and Dial-up Connections icon.

							
Control Pa	anel						<u>-0×</u>
<u>Eile E</u> dit	View Favori	tes <u>T</u> ools (<u>H</u> elp				10
Back -	Forward U	Jp Search	Folders H	Iistory Move T	Copy To De	X LC) elete Undo	Views
Address 🐼	Control Panel						▼ @Go
<u>é</u> .	\$		'n	B		ø	4
Accessibility Options	Add/Remove Hardware	Add/Remove Programs	Administrativ Tools	e Date/Time	Display	Fax	Find Fast
C AT	A ^A a	P.	E		۲	Õ	P
Folder Options	Fonts	Game Controllers	Internet Options	Keyboard	Mail	Mouse	Network and Dial-up Connections
2	ų	Ì	Ø,			0	
Phone and Modem	Power Options	Printers	QuickTime	Regional Options	Scanners and Cameras	Scheduled Tasks	Sounds and Multimedia
	E.o						
System	Users and Passwords						
Connects to oth	her computers, r	networks, and t	ne Internet				

3. Double-click the Local Area Connection icon.

4. Click the **Configure** button to verify installation of the Ethernet card.

Local Area Connection Properties	? ×
General Sharing	
Connect using:	
FE575C-3COM 10/100 LAN CardBus-Fast Ether	net
	<u>C</u> onfigure
Components checked are used by this connection:	
✓	
Install Uninstall Pr	operties
Allows your computer to access resources on a Micr network.	osoft
ОК	Cancel

5. If the device status indicates "This device is working properly" then proceed to the next step and close this window.

E575C-30	OM 10/100 LAN	CardBus-Fast El	thernet Proper	ties ? X		
General Advanced Driver Resources						
FE575C-3COM 10/100 LAN CardBus-Fast Ethernet						
	Device type:	Network adapte	rs			
	Manufacturer:	3Com				
	Location:	PCI bus 4, devic	e 0, function 0			
Device status						
This device is working properly. If you are having problems with this device, click Troubleshooter to start the troubleshooter.						
[Iroubleshooter]						
Device usage:						
Use thi	is device (enable)			•		

Otherwise click the **Troubleshooter** button and follow the help instructions as indicated to fix the problem.

continued on next page

6. Install Internet Protocol by clicking the **Install** button. If the *Internet Protocol (TCP/IP)* is already installed, select it, click the **Properties** button, and proceed to step 9.

Local Area Connection Properties
General Sharing
Connect using:
FE575C-3COM 10/100 LAN CardBus-Fast Ethernet
Components checked are used by this connection:
Clerk for Microsoft Networks Pie and Printer Sharing for Microsoft Networks Pie and Printer Sharing for Microsoft Networks Pie Internet Protocol (TCP/IP)
Install Uninstall Properties
Description Allows your computer to access resources on a Microsoft network.
Sho <u>w</u> icon in taskbar when connected
OK Cancel

7. Select **Protocol** and then click the **Add** button.

Select Network Component Type
Click the type of network component you want to install:
 Client Service Frotocol
Description A protocol is a language your computer uses to communicate with other computers.
Add Cancel

8. Select **Internet Protocol (TCP/IP)** and then click the **OK** button.

Select Network Protocol	x
Click the Network Protocol that you want to install, then click OK. If you hav an installation disk for this component, click Have Disk.	/e
Network Protocol:	
AppleTalk Protocol DLC Protocol Internet Protocol (TCP/IP) NetBEUI Protocol Network Monitor Driver NW/Link IPX/SPX/NetBIOS Compatible Transport Protocol	
Have Disk	
OK Cancel	

 If the computer is on the company network contact the facilities IT personnel for appropriate settings.
 If it is a stand-alone computer, enter the IP # for this computer that is listed on the Interface Diagram. For example:

IP address:	169.254.1.2 (last digit must
	be different than the CM)
Subnet Mask:	255.255.0.0 (same as CM)
Gateway:	0.0.0.0 (same as CM)

Internet Protocol (TCP/IP) Properti	es <u>?</u> ×								
General									
You can get IP settings assigned auto this capability. Otherwise, you need to the appropriate IP settings.	You can get IP settings assigned automatically if your network supports this capability. Otherwise, you need to ask your network administrator for the appropriate IP settings.								
C Obtain an IP address automatica	ally								
 Use the following IP address: 									
<u>I</u> P address:	200.200.200.60								
S <u>u</u> bnet mask:	255.255.255.0								
Default gateway:									
C Obtain DNS server address automatically									
• Use the following DNS server ac	ddresses:								
Preferred DNS server:	· · ·								
<u>A</u> lternate DNS server:									
	Ad <u>v</u> anced								
	OK Cancel								

- 10. Once the TCP/IP setup is complete at the computer, restart the computer (click the **Start** button, then click **Shut Down**).
- 11. Restart *Windows*, then click the **Start** button. Select **Run**, type **cmd**, and click the **OK** button.
- 12. In the command prompt window type **ipconfig** and press **ENTER**. The settings are displayed.
- 13. In the command prompt window type **ping 169.254.1.1** and press **ENTER**. You should see: *Reply from 169.254.1.1*

This reply confirms communication between the computer and the CM. Close the command prompt window. Proceed to the appropriate section How to View & Change Configuration Pages from a Connectivity Module.

How to Create an Ethernet TCP/IP Network Connection in Windows NT

1. Start *Windows*, then click the **Start** button. Select **Settings** and **Control Panel**.

2. Double-click the Network icon.

3. Click the Adapters tab.

4. Click the **Properties** button to verify installation of the Ethernet card.

etwork			1 1	Ŷ
Identification	Services Proto	cols Adapters	Bindings	
Network Ada	apters:			
IP (1) 3Cor	n EtherLink 10/10	10 PCI NIC (3C90	5C-TX]	
<u>A</u> dd Item Notes:	<u>R</u> emove	Properties.	<u>U</u> pdat	e
3Com Ether (3C905C-T>	Link 10/100 PCI F ()	or Complete PC	Management N	IC

5. If the device status indicates "This device is working properly" then proceed to the next step and close this window.

Otherwise click the **Troubleshooter** button and follow the help instructions as indicated to fix the problem.

continued on next page

Connectivity Module

6. Install Internet Protocol by clicking the **Protocols** tab. If the *Internet Protocol (TCP/IP)* is already installed, select it, click the **Properties** button, and proceed to step 9.

Local Area Connection Properties
General Sharing
Connect using:
FE575C-3COM 10/100 LAN CardBus-Fast Ethernet
Configure
Components checked are used by this connection:
 ✓ ■ Ulient for Microsoft Networks ✓ ■ File and Printer Sharing for Microsoft Networks ✓ 〒 Internet Protocol (TCP/IP)
Install Uninstall Properties
Allows your computer to access resources on a Microsoft network.
Sho <u>w</u> icon in taskbar when connected
OK Cancel

7. If TCP/IP is not installed, click the **Add** button and scroll down to **TCP/IP Protocol**..

Select Network Protocol
Click the Network Protocol that you want to install, then click OK. If you have an installation disk for this component, click Have Disk.
Network Protocol:
VetBEUI Protocol
🕉 NWLink IPX/SPX Compatible Transport
🗿 Point To Point Tunneling Protocol
🕉 Streams Environment
TCP/IP Protocol
<u>H</u> ave Disk
OK Cancel

8. Select **TCP/IP Protocol** and then click the **OK** button.

9. If the computer is on the company network contact the facilities IT personnel for appropriate settings.If it is a stand-alone computer, enter the IP # for this computer that is listed on the Interface Diagram. For example:

IP address:	169.254.1.2 (last digit must
	be different than the CM)
Subnet Mask:	255.255.0.0 (same as CM)
Gateway:	0.0.0.0 (same as CM)

Microsoft TCP/IP Properties
IP Address DNS WINS Address Routing
An IP address can be automatically assigned to this network card by a DHCP server. If your network does not have a DHCP server, ask your network administrator for an address, and then type it in the space below.
Adagter:
[1] 3Com EtherLink 10/100 PCI NIC (3C905C-TX)
O Dbtain an IP address from a DHCP server
Specify an IP address
IP Address: 200 . 200 . 200 . 43
Subnet Mask: 255 . 255 . 0 . 0
Default <u>G</u> ateway:
Advanced
OK Cancel Apply

- 10. Once the TCP/IP setup is complete at the computer, restart the computer (click the **Start** button, then click **Shut Down**).
- 11. Restart *Windows*, then click the **Start** button. Select **Run**, type **cmd**, and click the **OK** button.
- 12. In the command prompt window type **ipconfig** and press **ENTER**. The settings are displayed.
- 13. In the command prompt window type **ping 169.254.1.1** and press **ENTER**. You should see: *Reply from 169.254.1.1*

This reply confirms communication between the computer and the CM. Close the command prompt window. Proceed to the appropriate section How to View & Change Configuration Pages from a Connectivity Module.

How to Create an Ethernet TCP/IP Network Connection in Windows XP

1. Start *Windows*, then click the **Start** button. Select **Settings** and **Control Panel**.

2. Click the Network and Internet Connections icon.

3. Click the Network Connections icon.

4. <u>Right click the Local Area Connection icon</u>.

5. Click the **Configure...** button to verify installation of the Ethernet card.

🗕 Local Area Connection Properties 🛛 🔹 💽
General Authentication Advanced
Connect using:
3Com 3C920 Integrated Fast Ethernet Controller (3C905C-
<u>Configure</u>
 ✓ Elient for Microsoft Networks ✓ ■ File and Printer Sharing for Microsoft Networks ✓ ■ QoS Packet Scheduler ✓ Thtemet Protocol (TCP/IP)
Install Uninstall Properties
Description Allows your computer to access resources on a Microsoft network.
Show icon in notification area when connected
OK Cancel

continued on next page

6. If the device status indicates "This device is working properly" then proceed to the next step and close this window.

Com 30	920 Integrated	l Fast Ethernet Controller (3C ? 🗙
General	Advanced Drive	er Resources Power Management
日日日	3Com 3C920 Inte (3C905C-TX Com	egrated Fast Ethernet Controller npatible)
	Device type:	Network adapters
	Manufacturer:	3Com
	Location:	PCI bus 2, device 0, function 0
Devic	ce status	
lf yo start	u are having problet the troubleshooter.	ms with this device, click Troubleshoot to
		Troubleshoot
<u>D</u> evice	usage:	
Use th	is device (enable)	×
		OK Cancel

Otherwise click the **Troubleshoot...** button and follow the help instructions as indicated to fix the problem.

 Install Internet Protocol by clicking the Install... button. If the Internet Protocol (TCP/IP) is already installed, select it, click the Properties button.

🕹 Local Area Connection Properties 🛛 🕐 🗙
General Authentication Advanced
Connect using:
SCom 3C920 Integrated Fast Ethernet Controller (3C905C-
<u>C</u> onfigure
This connection uses the following items:
 Client for Microsoft Networks Client for Microsoft Networks QoS Packet Scheduler Thternet Protocol (TCP/IP)
Install Uninstall Properties
Transmission Control Protocol/Internet Protocol. The default wide area network protocol that provides communication across diverse interconnected networks.
Show icon in notification area when connected
Close Cancel

 8. If the computer is on the company network contact the facilities IT personnel for appropriate settings. If it is a stand-alone computer, enter the IP # for this computer that is listed on the Interface Diagram. For example:

IP address:	169.254.1.2 (last digit must
	be different than the CM)
Subnet Mask:	255.255.0.0 (same as CM)
Gateway:	0.0.0.0 (same as CM)

Internet Protocol (TCP/IP) Prope	rties ?X
General	
You can get IP settings assigned autor this capability. Otherwise, you need to a the appropriate IP settings.	natically if your network supports ask your network administrator for
O Obtain an IP address automatical	y
Use the following IP address:	
<u>I</u> P address:	
S <u>u</u> bnet mask:	
<u>D</u> efault gateway:	· · ·
Obtain DNS server address autom	natically
• Use the following DNS server add	resses:
Preferred DNS server:	
<u>A</u> lternate DNS server:	· · ·
	Advanced
	OK Cancel

- 9. Once the TCP/IP setup is complete at the computer, restart the computer (click the **Start** button, then click **Shut Down**).
- 10. Restart *Windows*, then click the **Start** button. Select **All Programs > Accessories > Command Prompt**.
- 11. In the command prompt window type **ipconfig** and press **ENTER**. The settings are displayed.
- 12. In the command prompt window type **ping 169.254.1.1** and press **ENTER**. You should see: *Reply from 169.254.1.1*

This reply confirms communication between the computer and the CM. Close the command prompt window. Proceed to the appropriate section How to View & Change Configuration Pages from a Connectivity Module.

Troubleshooting the Connectivity Module

DIAG

Listed below are possible problems, their causes, and possible solutions.

DANGER

To avoid possible shock, burns, or death, deenergize all electrical sources to the Automatic Transfer Switch, Power Manager, and Connectivity Module before working on it.

Problem	Cause	Solution
DIAG red light blinks rapidly then stays on when the Connectivity Module is first powered up.	Duplicate IP address. The IP address of one or more Connectivity Modules on the same network is set as same.	Unplug the Ethernet cable from all Connectivity Modules. Follow the instructions from the appropriate Configuration section to change to a proper IP address. Reconnect this Connectivity Module to the network. The red DIAG light should blink then go off. Repeat this procedure for all other Connectivity Modules one by one.
DIAG red light blinks slowly or stays on after the Connectivity Module is properly configured.	Major software or communication failure.	Press Reset button on Connectivity Module. If condition still exists, call your local ASI representative.
Message: Page not found.	Wrong or improper IP address and subnet. Problem with connections between Connectivity Module and ATS Controller or Power Manager. Wrong configuration.	Try to refresh the page again. If you get the same results, verify the IP address and wiring by pinging the device.
Message: No controller or power manager has been found.	Problem with connections between Connectivity Module and ATS Controller or Power Manager.	Check wiring then press Reset button on Connectivity Module.
Message: 72E baud rate and at least another device baud rate are mismatched (or similar message).	Baud rates of connectivity module and ATS Controller or Power Manager are different.	If 7000 or 4000 Series ATS, set baud rate of all the devices to 19200. If Series 300 or ASCO 940/962, set baud rate of all the devices to 9600.
Message: <i>Communication error</i> stays on. (<i>RX</i> light is blinking & <i>TX</i> light is off).	Lost connections.	Check connections
Message: Communication error comes on then goes off by itself.	Busy network or lost connections	Increase reply time out.
LINK light is off	Invalid network	Check if it is a proper IP address. Check the Ethernet cable and connections.
Forgotten IP configuration password.		Call your local ASI representative.

How to create a *Favorites* folder for ASCO device pages and copy it to another computer

To create a *favorites* folder and copy it to another user's computer, the administrator should follow these steps:

1. Open the first page and then pull down the *Favorites* manual and select *Add to Favorites* ... This window will appear:

- 2. Click the *New Folder* button, type the new folder name as **asco**, then click the *OK* button.
- 3. Click folder **asco** and click *OK*.
- 4. Open the other pages one by one and click *Add to Favorite*, click folder **asco**, then click OK.
- 5. Once the administrator is done with saving all the pages, the following steps describe how to copy the **asco** folder from the administrator's computer to another user's computer.
- a. For *Windows NT/2000*, find the **asco** folder from directory 'c:\winnt\profiles\'user name'\favorites'.
- b. For *Windows XP*, find the **asco** folder from directory 'c:documentd and settings\'user name'\favorites'.
- c. Copy the **asco** folder into the corresponding path above.
- d. Open browser and select address or name from favorite **asco** folder to view the device pages.

Third Party Modbus Device Configuration

The Connectivity Module supports the Modbus devices with Modbus/TCP portocol. The transmit and receiving data format are as follows:

Read:

Requests:

Bytes 0, 1 Transaction ID.

Usually zero when making a request, the server will copy them into the response.

Bytes 2, 3 Protocol number. It must be zero.

Byte 4 length (high byte) its always zero.

Byte 5 length (low byte) of the following total bytes

Byte 6 device address

Byte 7 function code

Bytes 8, 9 Modbus address of the starting transfer.

Bytes 10, 11 number of word to transfer

Response:

Bytes 0, 1 Transaction ID. Its faithfully copied from the request

Bytes 2, 3 Protocol number. It always is zero.

Byte 4 length (high byte) its always zero

Byte 5 length (low byte) of the following total bytes

Byte 6 device address

Byte 7 function code

Bytes 8 byte count of Modbus data.

Bytes rest data values

Configure the Connectivity Module to properly communicate with the other devices. The following items should be ready before you start to configure it:

- 1. Ethernet crossover cable.
- 2. Laptop with proper Ethernet connect ability.
- 3. Start Internet browser and type 'IP
- address\config.htm' on the browser address field.
- 4. This page should appear:

From this page, configure all the parameters except reply timeout which needs to configured from client device.

ASCO"	Connectivity Module Device Configurator	
Server Configuratio	n Firmware 629	825 - 001
Hardware Address	00 20 4a 63 0a b6	
IP address	155.104.006.232	
Subnet Mask	255.255.252.000	
Gateway Address	155.104.004.001	
TCP Port Number	10001	
Reply Timeout		MSecs
Serial Port Speed	9600 -	I
Flow Control	No flow control	
Interface Mode	TTL/RS485-4wire(default) -	
🗐 Serial Data Pa	ss Through Mode	
	Up	date Server

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