

AX3000 Platine Terminal

Ethernet TCP/IP

Model 60E

Installation Guide

September 2002 - Ref: I60EE0210-1
Model AX3000/M60E

The reproduction of this material, in part or whole, is strictly prohibited. For additional information, please contact:

AXEL

14 Avenue du Québec
Bât. K2 EVOLIC - BP 728
91962 Courtabœuf cedex - FRANCE
Tel.: 33 1.69.28.27.27
Fax: 33 1.69.28.82.04
Email: info@axel.com

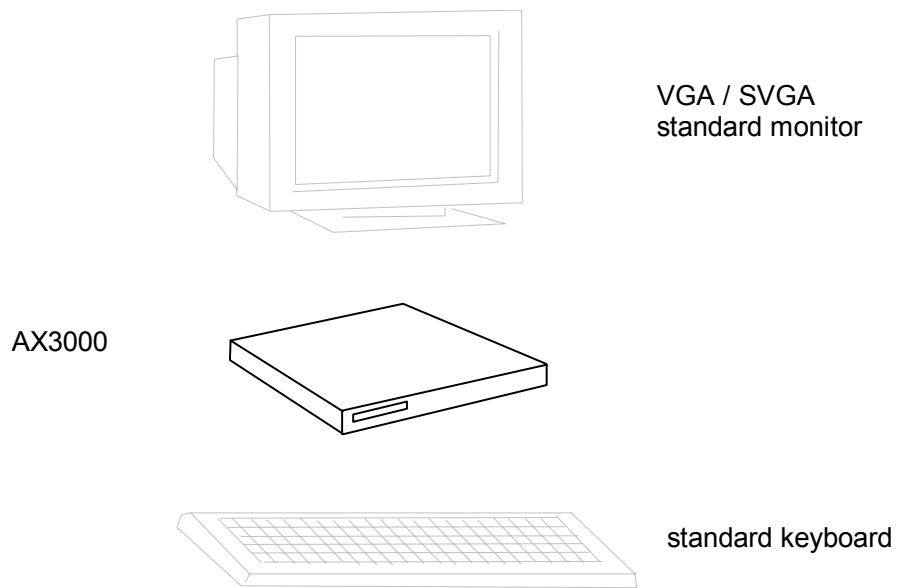
The information in this document is subject to change without notice. AXEL assumes no responsibility for any errors that may appear in this document.

All trademarks and registered trademarks are the property of their respective holders.

© - 2002 - AXEL - All Rights Reserved.

1 - SAFETY NOTICES.....	1
2 - INSTALLATION	2
2.1 - DESCRIPTION.....	2
2.2 - INSTALLATION.....	2
2.2.1 - <i>Monitor and keyboard</i>	3
2.2.2 - <i>Ethernet Connection</i>	4
2.2.3 - <i>Auxiliary Ports</i>	5
2.2.4 - <i>AC Power Connection</i>	5
2.2.5 - <i>Power On</i>	6
3 - SETTING-UP THE AX3000.....	7
3.1 - QUICK SET-UP.....	7
3.2 - INTERACTIVE SET-UP	8
3.3 - SETTING-UP THE RDP SERVER.....	10
4 - CONNECTOR PIN ASSIGNMENTS	11
4.1 - ETHERNET PORT RJ45 (10BT).....	11
4.2 - SERIAL PORTS AUX1 AND AUX2 (RJ45)	12
4.2.1 - <i>RJ45-DB9 and RJ45-DB25 adaptors</i>	13
4.2.2 - <i>Peripheral RJ45 cables</i>	13
4.3 - KEYBOARD INTERFACE.....	14
4.4 - MOUSE INTERFACE.....	14
4.5 - VIDEO INTERFACE.....	15
4.6 - PARALLEL INTERFACE	16
5 - PROBLEM SOLVING.....	17

The AXEL AX3000 Terminal is based on a modular concept.



The AX3000 is totally designed and manufactured by Axel. The terminal's electronics is contained within a slim base unit which provides connections for a VGA or SVGA monitor, keyboard, system printer, serial devices and Ethernet network.

1 - SAFETY NOTICES

- Check AC voltage from the wall outlet is inside 220-240 Volts range.
- The wall outlet used must be reached easily and as nearest as possible to the AX3000 Terminal to connect or disconnect the power cord.
- Make sure to power off all devices before connecting or disconnecting any one of them (monitor VGA cable, keyboard and serial or parallel cables).
- In order to ensure compliance with European EMC regulations (EN 55022), it is required that shielded cables be used when interfacing with other devices (peripherals or computers).
- To install and connect the keyboard and the monitor, refer to the respective supplier installation manuals.

2 - INSTALLATION

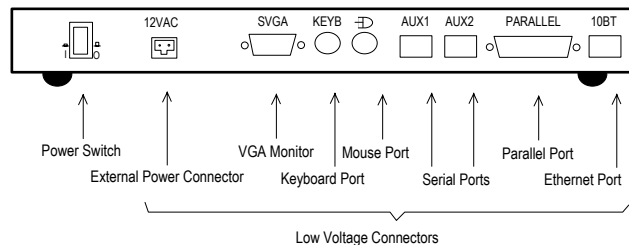
This chapter provides information and instructions to install the AX3000 Model 60E.

2.1 - DESCRIPTION

A green LED, located on the face plate, indicates when the AX3000 is powered on.

The AX3000 has the following connectors and switches on the rear panel:

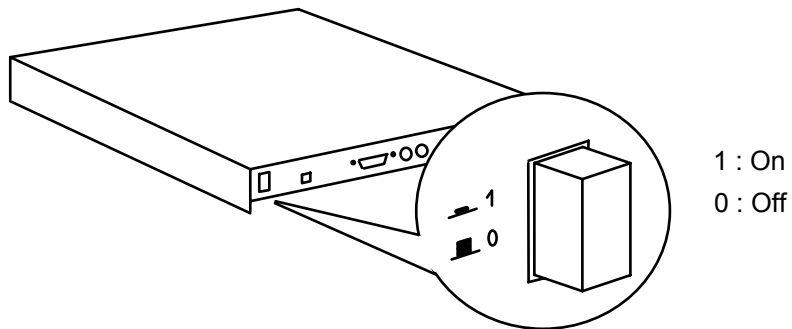
- power switch,
- connector for the external power transformer cord,
- connector for a VGA or SVGA monitor (colour or monochrome),
- PS/2 keyboard connector,
- PS/2 mouse connector,
- auxiliary serial ports: RJ45 (AUX1 and AUX2),
- auxiliary parallel port: female 25-pin (PARALLEL),
- TCP/IP port: RJ45 (10BT).



2.2 - INSTALLATION

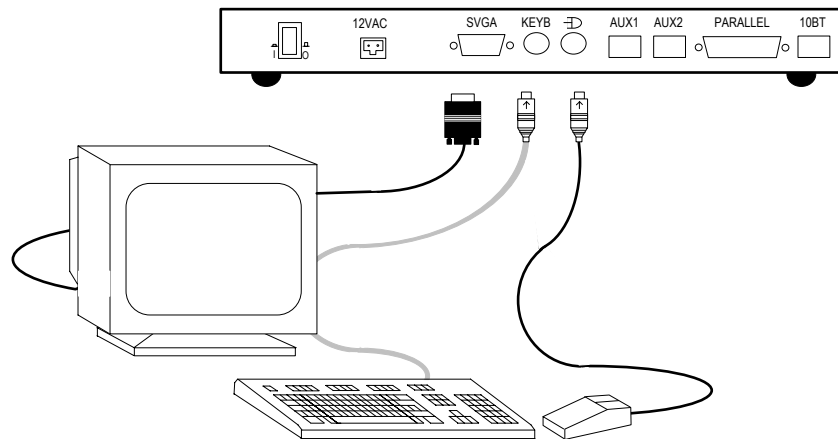
For safety reasons and to prevent component damage, do not apply power to the AX3000 before connecting or disconnecting any cable. Do not plug in the AX3000 power cord until all other connectors have been plugged in.

Make sure the AX3000 and monitor power switches are in the OFF (0) position before connecting cables to the back panel.



2.2.1 - Monitor and keyboard

Plug in the VGA monitor cable, the AT-compatible keyboard cable and the optional mouse cable to the dedicated connectors on the terminal back panel:



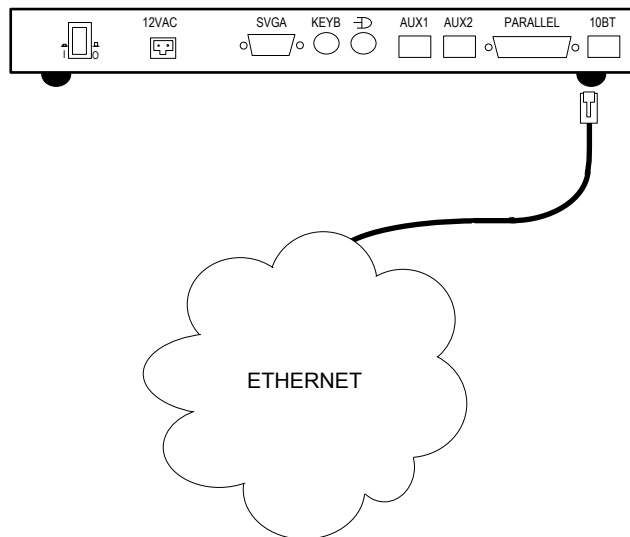
If your keyboard is fitted with a DIN connector, connect it using a DIN-to-Mini-DIN adaptor.

To comply with EMC regulations, the VGA signal cable must be shielded.

Note: when the terminal is installed in a cabinet or rack, it is essential to maintain air circulation around the VGA/SVGA monitor.

2.2.2 - Ethernet Connection

Plug the 10Base-T ethernet cable into the socket labelled 10BT on the back of the AX3000 (see chapter 4.1 for technical specifications and pin assignments).



ETHERNET CONNECTION INDICATOR LIGHT: This indicator is a green LED, located next to the RJ45 connector on the rear of the terminal. It lights to indicate a satisfactory connection to the Ethernet circuit (server or hub).

Note: if the LED does not light, check that the Ethernet connector and cable both comply with the specifications listed in chapter 4.1.

2.2.3 - Auxiliary Ports

AX3000 Models 60E have three auxiliary ports as a standard feature:

- MAIN-AUX1: bi-directional serial port, RJ45 connector,
- AUX2: bi-directional serial port, RJ45 connector,
- PARALLEL: parallel port, female 25-pin connector.

Cable pin assignments are listed in chapter 4.

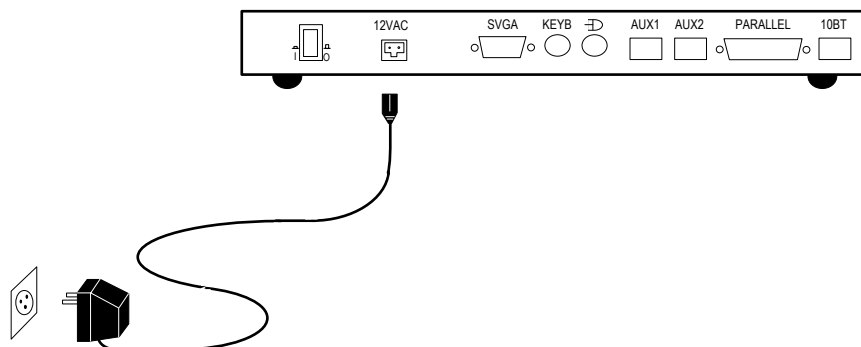
To comply with EMC regulations, the serial cables must be shielded.

2.2.4 - AC Power Connection

An Axel external power transformer must be used, to convert mains voltage at the wall outlet to low voltage for the AX3000 Model 35.

Before connecting, make sure the AX3000 and monitor power switches are both in the OFF (0) position.

Plug the plastic moulded cord connector of the external power transformer (ref. AXP/EC9.8) to the AX3000 power connector. Then plug the transformer into the AC wall outlet.

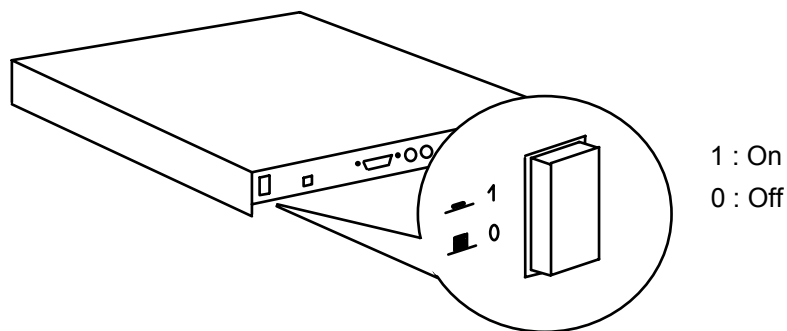


Warning: Only use the Axel external transformer supplied with your AX3000 Model 60E. Use of any other transformer may cause permanent damage to the AX3000.

Plug the monitor power cable into a grounded AC mains power socket. The monitor does **not** require low voltage power.

2.2.5 - Power On

The power switch on the rear panel controls the power supply to the AX3000.



The green LED on the front of the terminal should light, and a single audible beep should be heard, to indicate that the AX3000 terminal is powered up and operating correctly.

To indicate correct keyboard initialisation after power-up, the keyboard indicator lights 'Num lock', 'Caps lock' and 'Scroll lock' should flash twice.

The green LED on the right side of the RJ45 connector on the back panel remains lit, to indicate a satisfactory Ethernet connection.

If the terminal does not function as described above (for example if it emits a continuous tone sound, or two beeps, or if an error message is displayed on the screen) refer to chapter 5. If the terminal still does not operate properly, call your service representative.

3 - SETTING-UP THE AX3000

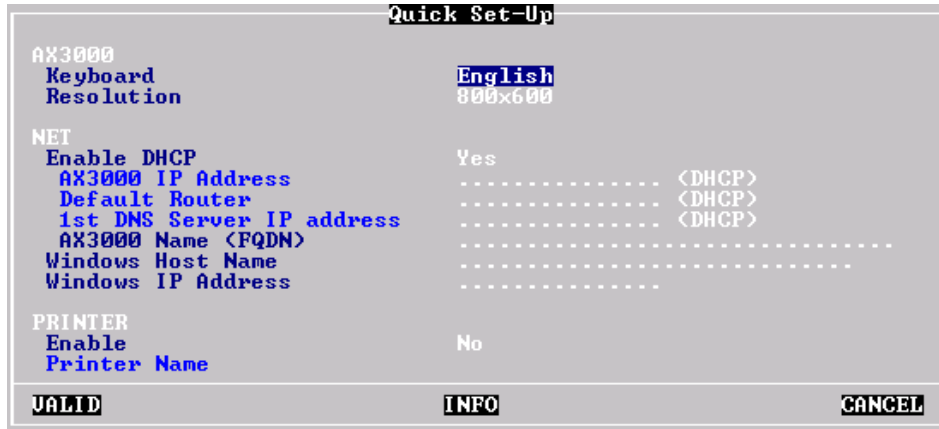
This chapter describes the procedure for the TCP/IP AX3000 terminal.

3.1 - QUICK SET-UP

For a **fast and reliable** installation, the AX3000 provides a quick set-up function. This Quick Set-Up box is automatically called when the AX3000 is powered up for the first time.

Note: the quick set-up can also be accessed from the interactive set-up (select **[Configuration]**→**[Quick Set-up]**).

The quick set-up dialog box is:



Quick set-up parameters:

- **Keyboard:** keyboard nationality.
- **Resolution:** press <Space> to select 800x600 or 1024x768.

- **Enable DHCP:** two possible values:
 - **yes:** the DHCP protocol is run when the set-up is exited. The DHCP function is automatically set to get both the AX3000 IP address and other DHCP options (netmask, default router, etc).
 - **no:** parameters are manually entered (in addition, AX3000 Name (FQDN) is not accessible).
- **AX3000 IP address:** it must be entered if DHCP is disabled.
- **Default router:** optional router IP address.
- **1st DNS Server IP Address:** optional DNS server IP address
- **AX3000 Name (FQDN):** this optional parameter (see appendix A.5) allows an AX3000 to be identified by this name if both a DHCP server and a Dynamic DNS server are available.
- **Windows Host Name:** if the IP address of a host is not given, this name will be resolved by DNS (if a DNS server is given).
- **Windows IP address:** if this field is left blank, DNS will be used to resolve the hostname.
- **Enable:** selecting an LPD printer attached to AX3000.
- **Printer Name** (accessible only if "Enable" is set): this is the LPD printer.

After confirmation, all the AX3000 set-up parameters are updated.

3.2 - INTERACTIVE SET-UP

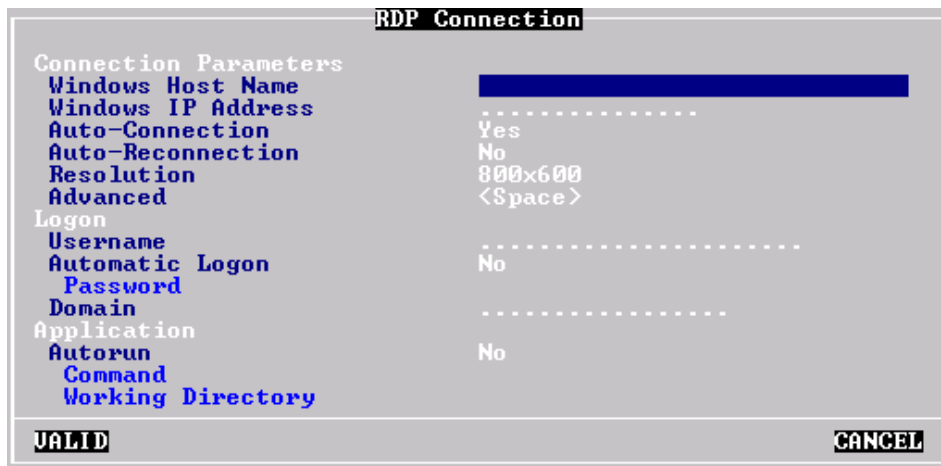
All the AX3000 set-up parameters (network environment, session settings and auxiliary port settings) can be adjusted through this interactive set-up.

Use the following keystroke combination to enter the interactive set-up:



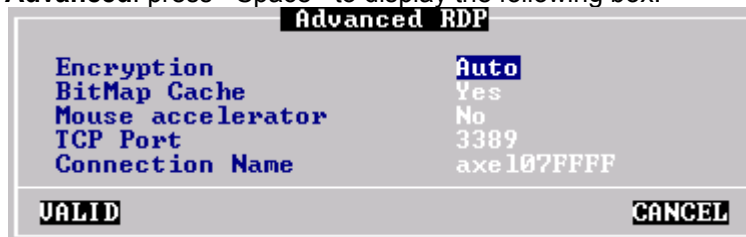
Note: this chapter deals only with the RDP configuration procedure. For more information (DNS, router, auxiliary ports, etc.), please read the *AX3000 TCP/IP - User's Manual*.

To set the RDP session, enter the AX3000 Set-Up and select the [Configuration]→[Terminal]→[RDP Connection] menu. The following box is displayed:



RDP connection parameters:

- **Windows Host Name**
- **Windows IP Address:** if this field is left blank, DNS will be used to resolved the hostname.
- **Auto-Connection:** yes by default.
- **Auto-Reconnection:** no by default.
- **Resolution:** press <Space> to select 800x600 or 1024x768.
- **Advanced:** press <Space> to display the following box:



- **Encryption:** encryption type. Three values are possible:
 - Auto (default value): the AX3000 accepts any connection type requested by the server (encrypted or not).
 - Yes: the AX3000 requests an encrypted connection.

- No: the AX3000 requests a non-encrypted connection.
- **Bitmap Cache**: enabling the bitmap cache function allows the AX3000 to store images (icon, buttons, etc) locally. This can both improve the AX3000 performance and decrease network traffic.
- **Mouse Accelerator**: if 'yes', the AX3000 speeds up the mouse cursor.
- **Port TCP**: Windows connection port (default 3389).
- **Connection Name**: this character string identifies the AX3000 within the Windows Operating System. By default this name is 'axelxyyzz' (where xyyzz are the last 3 bytes of the AX3000 Ethernet MAC address).
- **Username**: this is the default value for the username field of the Login screen.
- **Automatic Logon**: set this parameter to 'Yes' to get an automatic logon.
- **Password** (available only if 'Automatic Logon' is set to 'Yes'): press <Space> to enter the password.
- **Domain**: this is the default value for the Windows domain field of the Login screen.
- **Auto-Run**: by default the Terminal Services connection offers a Windows desktop. To automatically launch a program set this parameter to 'Yes' and complete the following fields.
- **Command** (available only if 'Auto-Run' is set to 'yes'): the program path and file name of the program to be launched.
Example: %SystemRoot%\system32\cmd.exe
- **Working Directory** (available only if 'Auto-Run' is set to 'yes'): program working directory.
Example: D:\

3.3 - SETTING-UP THE RDP SERVER

The only requirement is setting the RDP Windows encryption level to 'Low'. By default this level is set to 'Medium'. Run the "Terminal Services Configuration" utility (on the 'Administrative Tools' folder) and set the 'Encryption Level' to 'Low'.

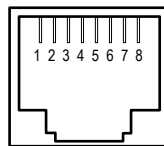
For more information about the RDP server setting, please read the *AX3000 TCP/IP - User's Manual*.

4 - CONNECTOR PIN ASSIGNMENTS

This chapter describes the connector pin assignments for the different ports of the AX3000 Model 60E.

4.1 - ETHERNET PORT RJ45 (10BT)

Recommended wiring is a **non-shielded** twisted-pair cable (UTP), category 3 or 5



RJ45 connector (Model 60E rear panel)

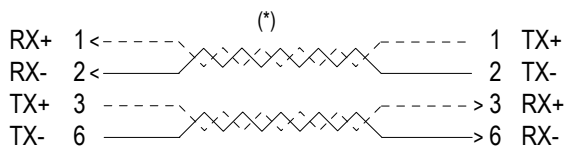
Note: the maximum length of a 10Base-T cable is 100 meters (330 feet).

Pin	Signal Name	Direction
1	TX+ (Transmitted Data)	Input
2	TX- (Transmitted Data)	Input
3	RX+ (Received Data)	Output
4	---	---
5	---	---
6	RX- (Received Data)	Output
7	---	---
8	---	---

a - AX3000 Connected to a HUB

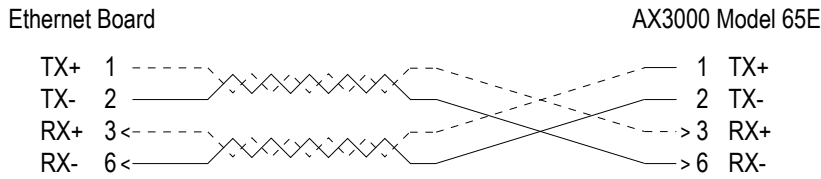
HUB

AX 3000 Model 65E



(*) see the note on next page

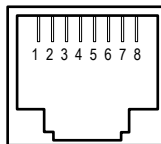
b - AX3000 Connected to an Ethernet Controller



IMPORTANT: the cable is composed of two twisted pairs. The two wires TX+ / TX- must belong to one pair and the two wires RX+ / RX- must belong to the other pair.

4.2 - SERIAL PORTS AUX1 AND AUX2 (RJ45)

These serial ports are bi-directional ports (for printers, bar-code readers, touch screens, etc):

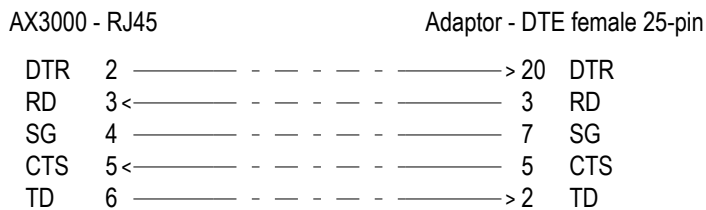
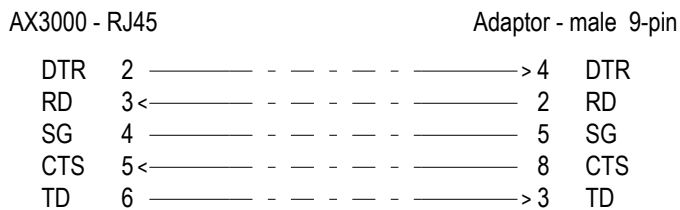


AUX1 and AUX2 connectors
(Model 60E rear panel)

Pin	Signal Name	Direction
1	RTS (Request To Send)	Output
2	DTR (Data Terminal Ready)	Output
3	RD (Received Data)	Input
4	SG (Signal Ground)	---
5	CTS (Clear to Send)	Input
6	TD (Transmitted Data)	Output
7	---	---
8	DCD (Data Carrier Detected)	Input

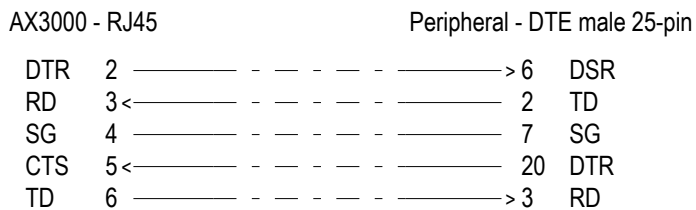
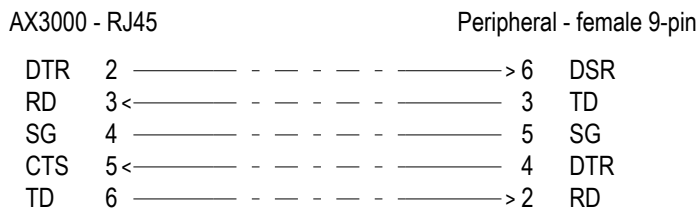
4.2.1 - RJ45-DB9 and RJ45-DB25 adaptors

Pin assignment for an adaptor between the peripheral cable and the AX3000 RJ45 connector:



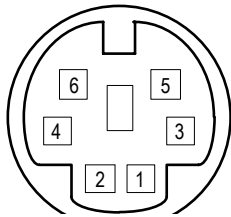
4.2.2 - Peripheral RJ45 cables

Pin assignment for a **direct** connection of a peripheral to the AX3000 RJ45 connector:



4.3 - KEYBOARD INTERFACE

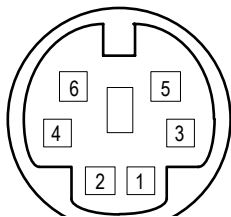
The AX3000 keyboard interface is a Mini-DIN connector. To connect a keyboard which has a DIN connector, use a DIN-to-Mini-DIN adaptor:



Pin	Signal name
1	Data
2	---
3	Ground
4	+ 5 V DC
5	Clock
6	---

4.4 - MOUSE INTERFACE

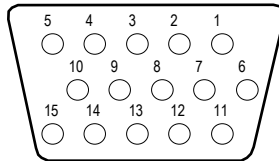
The AX3000 mouse interface is a Mini-DIN connector:



Pin	Signal name
1	Data
2	---
3	Ground
4	+ 5 V DC
5	Clock
6	---

4.5 - VIDEO INTERFACE

The AX3000 video interface is VGA and SVGA compatible:

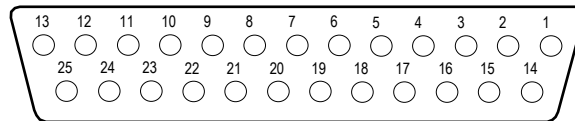


VGA/SVGA connector
(Model 60E, rear panel)

Pin	Signal name
1	Red
2	Green
3	Blue
4	---
5	Ground
6	Ground
7	Ground
8	Ground
9	Ground
10	Ground
11	---
12	---
13	Horizontal sync.
14	Vertical sync.
15	---

4.6 - PARALLEL INTERFACE

The AX3000 terminal Model 60E is equipped with a parallel port.



Parallel connector
(Model 60E, rear panel)

Pin	Signal Name
1	Strobe
2	Data 0
3	Data 1
4	Data 2
5	Data 3
6	Data 4
7	Data 5
8	Data 6
9	Data 7
10	ACK (Acknowledge)
11	Busy
12	PE (Paper End)
13	SLCT (Select)
14	Auto Feed XT
15	Error
16	Init
17	SLCT IN
18	Ground
19	Ground
20	Ground
21	Ground
22	Ground
23	Ground
24	Ground
25	Ground

5 - PROBLEM SOLVING

This chapter describes some of the problems, that may occur during installation of the AX3000 Model 60E, and offers possible solutions.

✓ - THE VGA MONITOR VERTICAL SYNC IS LOST

Care must be taken with the VGA monitor. The default VGA frequency used by the AX3000 is 72 Hertz. If the VGA monitor does not support this frequency, the vertical sync will be lost. To fix this problem, either use a more modern monitor or perform following operation:

Enter the AX3000 Set-Up (<Ctrl><Alt><Esc>) and press <F12>. The VGA frequency is set to 56 Hertz and the display becomes visible (this emergency procedure modifies the VGA frequency only during the set-up stage). Then select the **[Configuration]**→**[Advanced]**→**[Tunings]** menu. Within the dialog box, select the 'Scan frequency' parameter and press <spacebar> to enter the associated dialog box. A frequency value can be selected among the 2 available (60 and 72 Hertz).

✓ - GREEN FRONT INDICATOR DOESN'T LIGHT, OR NO BEEP WHEN YOU PRESS POWER SWITCH

Check there is power at the wall outlet and power cord connections.

✓ - CONTINUOUS TONE SOUNDS AFTER THE TERMINAL HAS BEEN SWITCHED ON

This alarm indicates a hardware failure. Report the problem to your service representative.

✓ - RDP CONNECTION REFUSED

When the RDP connection is established, the following message can be displayed:

```
ERROR: The server encryption level is not correct
```

This message indicates the Windows encryption level is not set to 'Low'. Run the "Terminal Services Configuration" utility (on the 'Administrative Tools' folder) and set the 'Encryption Level' to 'Low'.

✓ - AFTER THE TERMINAL HAS BEEN SWITCHED ON, THE MESSAGES 'NO ETHERNET BOARD PRESENT' AND 'CANNOT ATTACH ETHERNET BOARD' APPEAR

This message indicates a hardware failure. Report the problem to your service representative.

✓ - A DOUBLE-BEEP SOUNDS

After switching on the terminal, a double beep may sound, a few seconds after the normal first beep.

This signal indicates that keyboard initialisation has failed. Check the keyboard connection to the terminal back panel.

It is possible for the keyboard to function correctly, despite this double-beep signal. As a quick test of keyboard operation, enter set-up mode by pressing the <Ctrl><Alt><Esc> keys simultaneously. If set-up mode is working, you can ignore the double beep signal and use the terminal normally.

✓ - ETHERNET CONNECTION INDICATOR DOES NOT LIGHT

This indicator is the green LED located next to the network connector on the Model 60E terminal back panel.

Failure to light when the terminal is switched on may be due to any of the following:

- the Ethernet cable is disconnected at the far end,
- the device (host or hub), to which the network cable is connected, is not switched on,
- there is a fault on the Ethernet cable or the cable is wired with incorrect pin assignments.

✓ - **NO LOGIN WHEN THE 'CONNECTING...' MESSAGE IS DISPLAYED**

Check the Ethernet cables are correctly connected and networked devices (hubs or servers) are switched on.

No connection (and no login) can also be due to a wrong terminal setting during the TCP/IP set-up (for example a wrong IP address).

✓ - **THE CONNECTED PRINTER DOES NOT WORK**

Check that the cable pin assignment is correct and that the port being used (AUX1, AUX2 or PARALLEL) has been correctly selected in AX3000 Set-Up.

Test the printer in local mode by selecting the **[TEST]** button within the auxiliary port dialog box.

AXEL

14 Avenue du Québec
Bât. K2 EVOLIC - BP 728
91962 Courtabœuf cedex - FRANCE
Tel.: 33 1.69.28.27.27
Fax: 33 1.69.28.82.04
Email: info@axel.com