

# AXEL Office Server AX4020

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Communication Server  
8 serial ports

## *Installation Guide*

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## 1 - SAFETY NOTICES

- Check that the AC voltage supplied at the wall outlet is within the voltage range of the AX4020 external transformer.
- Use a wall outlet as near as possible to the AX4020. This makes it easy to connect or disconnect the power cord.
- Power off all devices before you connect or disconnect any one of them.
- To ensure compliance with European EMC regulations (EN 55022), shielded cables should be used when connecting to other serial devices.

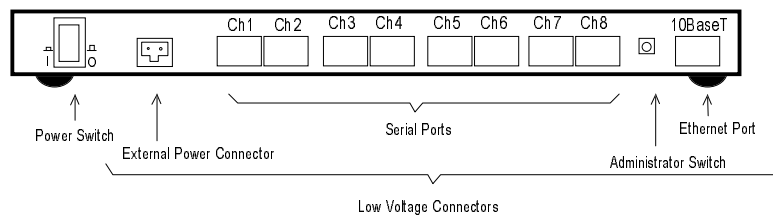
## 2 - INSTALLATION

This chapter provides information and instructions to install the AX4020.

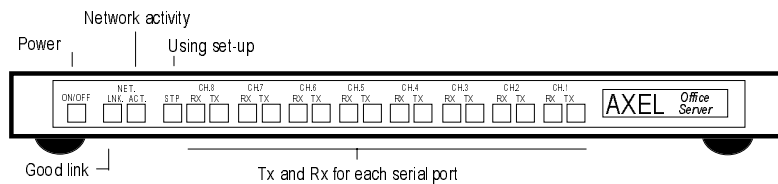
### 2.1 - DESCRIPTION

The AX4020 has the following connectors and switches on the rear panel:

- 1 power switch,
- 1 connector for the external power transformer cord,
- 8 serial ports; RJ-45 (RS-232),
- 1 administrator switch to access the interactive set-up,
- 1 TCP/IP port; RJ-45 (10BaseT).



20 leds (light emitting diodes) are located on the front panel:

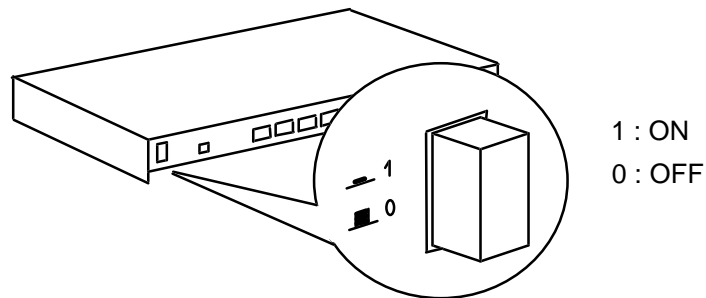


These leds are also used to signal any special processing (firmware downloading, for example) or to provide error codes.

## 2.2 - INSTALLATION

For safety reasons, and to prevent component damage, do not connect any cable to the AX4020 once it has been powered up. Do not plug in the AX4020 power cord until all other connections have been made.

Make sure the AX4020 power switch is in the OFF (0) position before connecting cables to the back panel.

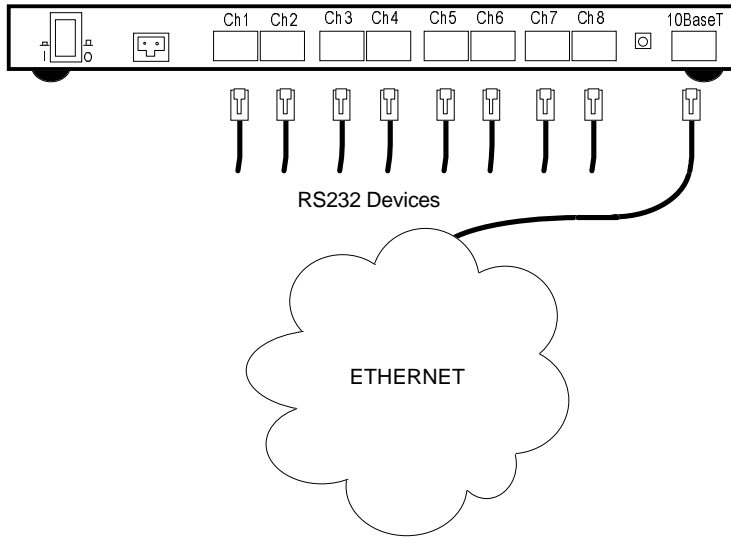


### 2.2.1 - Ethernet and Serial Connections

Plug the serial cable connector into the sockets labelled Ch1 to Ch8. Cable pin assignments are listed in chapter 4.2.

Note: to comply with EMC regulations, serial cables must be shielded.

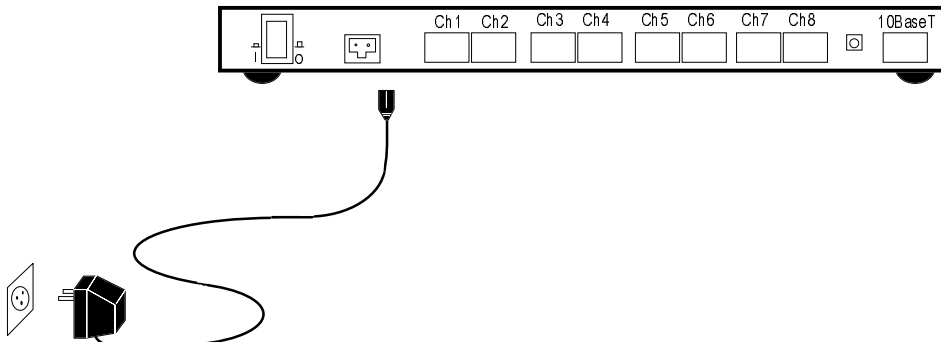
Plug the RJ45 connector on the end of the 10BaseT cable into the socket labelled 10BaseT on the back of the AX4020. See chapter 4.1 for technical specifications and pin assignments.



**2.2.2 - AC Power Connection**

An Axel external power transformer must be used, to convert mains voltage at the wall outlet to low voltage for the AX4020.

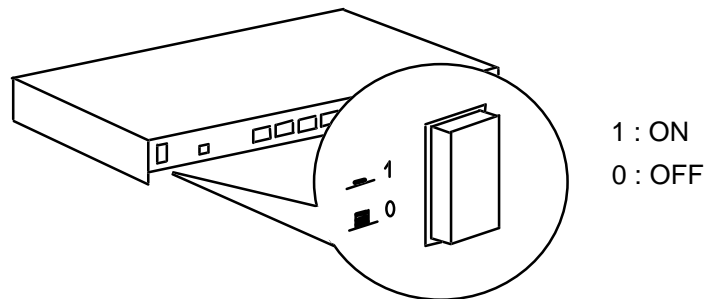
First insert the plastic moulded connector, on the external power transformer cord (ref. AXP/EC9.8), into the AX4020 power socket. Then plug the transformer into the AC wall outlet.



**Warning: only use the Axel external transformer supplied with your AX4020. Use of any other transformer may cause permanent damage to the AX4020.**

### **2.2.3 - Power On**

The power switch on the rear panel controls the power supply to the AX4020.



The green LED (ON/OFF), on the front of the AX4020, should light to indicate that it is powered up and operating correctly.

The 'LNK' LED indicates a satisfactory connection to the Ethernet circuit (server or hub).

At boot time, if no IP address is currently set, three RARP requests are automatically broadcast (the Ch4 and Ch3 leds flash). Three BOOTP requests are then automatically broadcast (the Ch2 and Ch1 leds flash). If no RARP server or BOOTP server answers, the serial port leds (Ch1 to Ch8) remain lit until an IP address is set.



## 3 - SETTING-UP THE AX4020

*This chapter describes the set-up procedure for the AX4020.*

**Note:** for more information, refer to the guide: *AX4000 - User's Manual*.

The AX4020 provides an embedded interactive set-up. This interactive set-up allows the network environment (IP address, host table, etc.), the serial line parameters (data transfer rate, handshake, etc.), and the network services associated with the serial lines (telnet, lpd, etc.), to be set.

The AX4020 set-up can be entered from:

- a serial character terminal connected to the AX4020 Ch8 port,
- a telnet session launched from any network point.

### 3.1 - FROM A SERIAL CHARACTER TERMINAL

Plug a character terminal into the AX4020 Ch8 port and set up this terminal in the following way:

- data transfer rate: 9600 bps
- data: 8 bits
- stop bit: 1
- parity: none
- handshake: none
- keyboard: ASCII mode

**Note:** any emulation or personality can be used.

An administrator switch is located on the AX4020 rear panel. Press this switch to enable set-up mode.

The set-up main menu is displayed on the character terminal.

When the set-up session has been completed, the Ch8 port can be used for other network services.

**Notes:**

- The set-up session can also be exited by pressing the administrator switch (in this case, modifications are discarded).
- During set-up mode, the two leds of the Ch8 port remain lit.

**3.2 - FROM A TELNET SESSION**

To run set-up within a telnet session, the IP address of the AX4020 must already be set.

Run the telnet session from any network host. **Use 4096 as the telnet port.**

The set-up main menu will then display on the console.

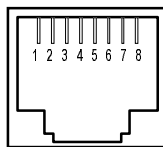
When the set-up session has been completed, the AX4020 automatically terminates the telnet session.

## 4 - CONNECTOR PIN ASSIGNMENTS

This chapter describes the connector pin assignments for the different ports of the AX4020.

### 4.1 - ETHERNET PORT 10BASET (RJ45)

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



RJ-45 connector  
(AX4020 rear panel)

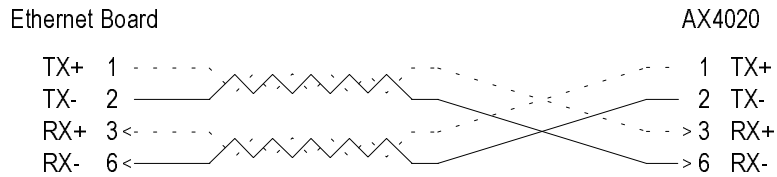
**Note:** the maximum length of a 10BaseT cable is 100 meters (330 feet).

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	---	---

#### 4.1.1 - AX4020 Connected to a HUB



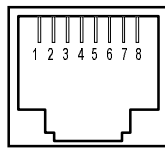
**4.1.2 - AX4020 Connected to an Ethernet Controller**



**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 (CH1 TO CH8)**

The 4 serial ports are bi-directional ports (for printers, bar-code readers, touch screens, etc.):

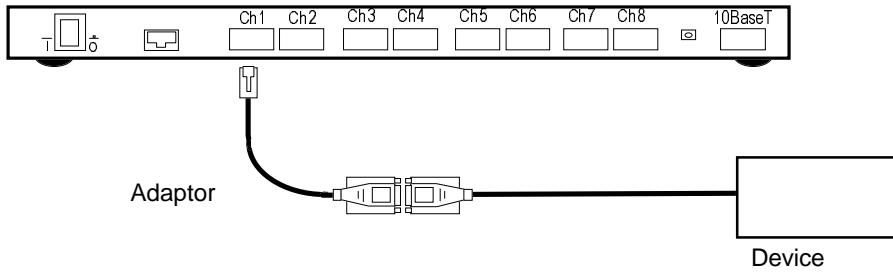


Chx connector (AX4020 rear panel)

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	DSR (Data Set Ready)	Input
8	DCD (Data Carrier Detect)	Input

**4.2.1 - Adaptors**

Using an adaptor to connect a peripheral to the AX4020:



**RJ45-DB9 Adaptor (these adaptors are shipped with the AX4020)**

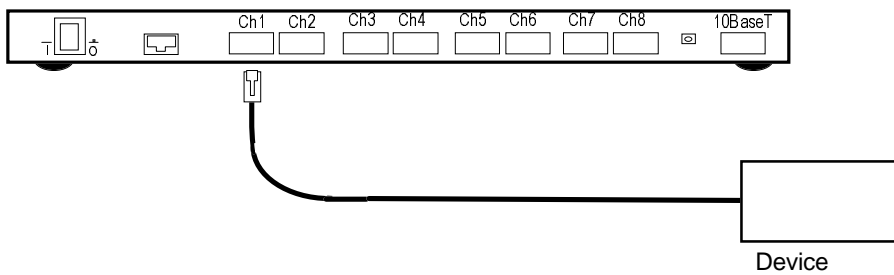
Office Server - RJ-45		Adaptor -DB9 male	
RTS	1	—————>	7 RTS
DTR	2	—————>	4 DTR
RD	3	<—————	2 RD
SG	4	—————	5 SG
CTS	5	<—————	8 CTS
TD	6	—————>	3 TD
DSR	7	<—————	6 DSR
DCD	8	<—————	1 DCD

**RJ45-DB25 Adaptor**

Office Server - RJ-45		Adaptor - DTE - DB25 female	
RTS	1	—————>	4 RTS
DTR	2	—————>	20 DTR
RD	3	<—————	3 RD
SG	4	—————	7 SG
CTS	5	<—————	5 CTS
TD	6	—————>	2 TD
DSR	7	<—————	6 DSR
DCD	8	<—————	1 8

**4.2.2 - Direct Connection**

The peripheral is directly connected to the AX4020:



**Printers, character terminals or modems (DB9)**

Office Server - RJ-45		Peripheral -DB9	
RTS	1	—————>	8 CTS
DTR	2	—————>	6 DSR
RD	3	<—————	3 TD
SG	4	—————	5 SG
CTS	5	<—————	7 RTS
TD	6	—————>	2 RD
DSR	7	<—————	4 DTR
DCD	8	<—————	1 DCD

**Printers or character terminals (DB25)**

Office Server - RJ-45		Peripheral DTE - DB25 male	
RTS	1	—————>	5 CTS
DTR	2	—————>	6 DSR
RD	3	<—————	2 TD
SG	4	—————	7 SG
CTS	5	<—————	4 RTS
TD	6	—————>	3 RD
DSR	7	<—————	20 DTR
DCD	8	<—————	8 DCD

**Modems (DB25)**

Office Server - RJ-45		Modem - DB25 male		
RTS	1	→	4	CTS
DTR	2	→	20	DSR
RD	3	←	3	TD
SG	4	→	7	SG
CTS	5	←	5	RTS
TD	6	→	2	RD
DSR	7	←	6	DTR
DCD	8	←	8	DCD

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