

# EC400 Installation Manual



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## 1 INTRODUCTION

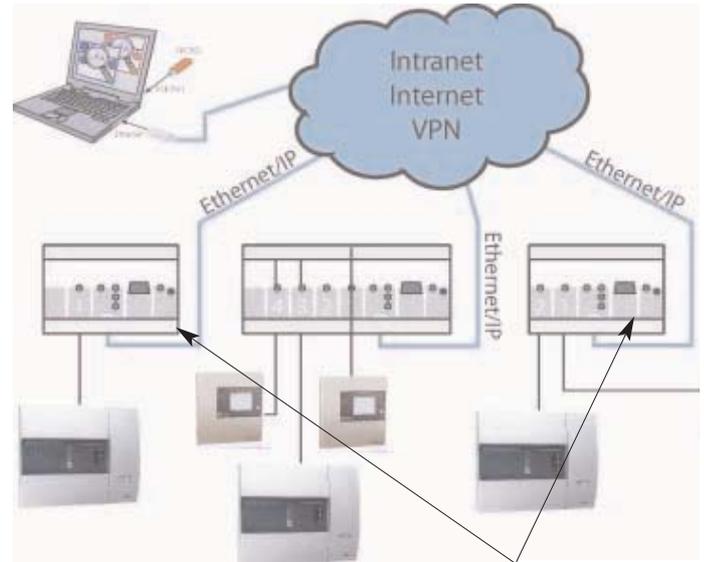
The EC400 is high performance, reliable and secure network infrastructure device for accessing Cooper Lon Network of addressable Fire panels over Intranet or Ethernet.

It's built in configuration server manages up to 256 IP devices on one IP channel without a dedicated management PC. It supports DHCP even with changing IP addresses in an Intranet environment.

Easy to understand , diagnostic LED's allow installers to install and trouble shoot the device without expert knowledge and dedicated troubleshooting tool.

To connect the Cooper Lon network via Intranet will require a minimum of two EC400's. The first EC400 must be configured as a "Configuration Server" and the second as a "Client as shown in Fig1.

EC400 configured as a Server requires the address list of all the EC400's IP addresses in the network.



**fig.1 application example**

EC400 requires only IP address to be configured

## 2 HARDWARE INSTALLATION

Connect power 9-24 Volts supply to EC400 as shown in Fig2 , for safety, it is recommended to use the panel 24 volts supply as this supply is battery back up in case of mains failure. Connect the internet cable as shown in Fig2.

**Fig2 EC400**



Network connection to Panel

Ethernet Connection

9-24 volts supply. Ideally from AUX supply of the panel

### 2.1 Switch Settings

The EC400 has 7 switches to select the operating mode as shown in Fig 3

The EC400 must be configured to operate in a repeater mode, where all messages are forwarded regardless of the address format.

To put the EC400 into repeater mode, the following steps need to be performed.

- 1- DIP- switch 1, 3 must be ON
- 2- DIP- switch 2 must be off
- 3- Press status button for at least 20 seconds.

### 2.2 Wiring

Each network connected to EC400 needs to be terminated with 100 ohms resistor.

Note: Only one side of the shielded cable should either be connected to the EC400 or the panel earth but never at more than one place



### 3 CONFIGURATION OF EC400 VIA CONSOLE

#### 3.1 IP configuration

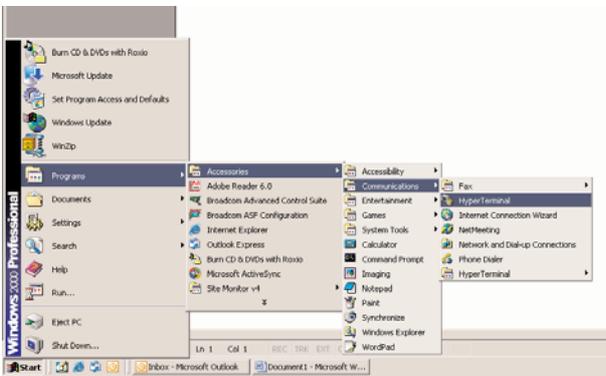
Connect a serial cable between the PC communication port and EC400 as shown in Fig 4,  
Please make sure this cable is Null modem cable similar to the one used on the DF6000.

Using Hyper-terminal set the following setting configuration

Baud Rate : 38,400 bps  
Data : 8 data bits  
Parity : None  
Stop Bit : 1  
Hardware : XON/XOFF

As shown on Fig5 Go to - Start - Programmes - Accessories - Communication - , Hyper Terminal

#### Fig 5 Hyper Terminal



After short period of time the following screen will be displayed.



Enter a name and select an icon from the list The following screen will be displayed

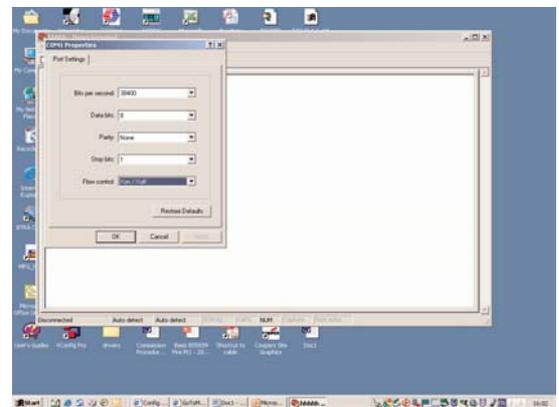


Set Com port and then Click OK

Fig 4 EC400 connected to PC



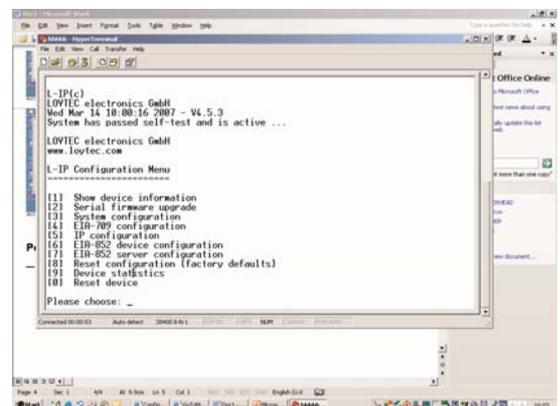
Fig 6: Configuration settings



Set Baud Rate =38,400  
Data Bits = 8  
Parity = None  
Hardware = XON/XOFF

Power down and then Power up the EC400 or Press Start Return if the EC400 is running.The following Menu should appear on the PC terminal

Fig 7 Main EC400 menu



Select 5 from the configuration menu. The following menu will appear.

### Fig 8 IP Configuration Menu

There are two modes of setting the IP address, either DHCP (this will be done automatically) or manually by entering the IP address, net mask and gateway address



### 3.1 Manually Setting IP configuration for Client Device via Console

From the menu above select 5 from the L-IP configuration menu and then enter IP address, net mask and gateway address. These addresses are available from your IT administrator.

Note: You must use different IP addresses if you are using multiple L-IP in your setup.

Press x to save the IP settings and reset the EC400 in order to let the new IP settings take effect.

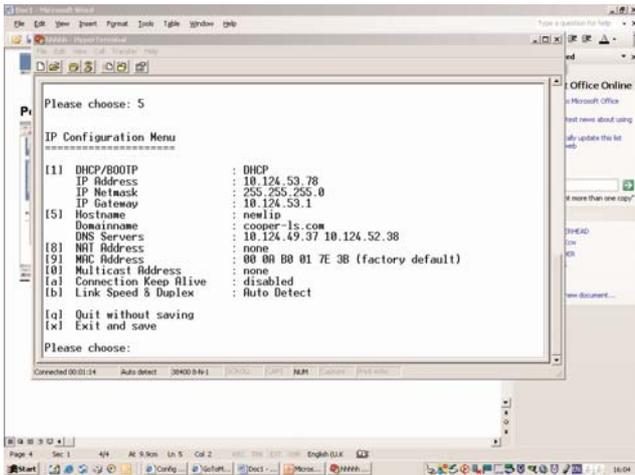
You should now be able to add this EC400 to your channel IP list in the configuration server member list. More detailed instructions can be found in next section.

### 3.2 DHCP

Switches between manual entry of the IP address, net mask and gateways address to automatic configuration from a DHCP server. If DHCP is disabled then select 1 from menu in Fig 8 above and the following prompt will appear

Select 1 auto IP mode (0-disabled, 1 -BOOTP, 2 DHCP). Press 2 for DHCP, following menu will appear.

### Fig 9 DHCP



Press "X" to exit and save and power down and up the EC400 and log the IP address as this will be required further on.

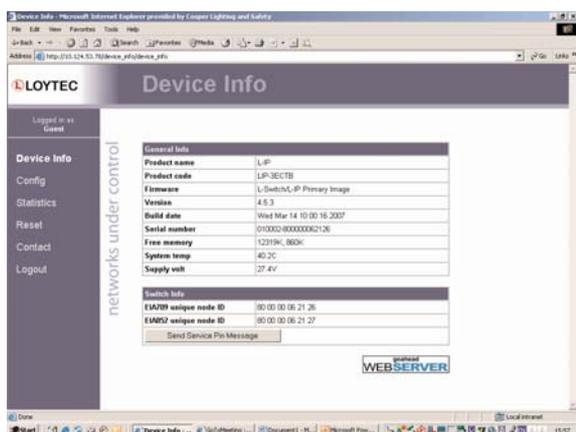
## 4. CONFIGURATION SERVER SETTINGS VIA WEB-INTERFACE

The EC400 has a built in web server and web interface to configure EC400, extract statistics information, save configuration to a file on your hard disc and to restore a previously saved configuration.

The Web interface allows configuring the IP settings, EIA852 device settings and it allows adding and removing Channel IP devices to the configuration server device list. Optionally to using the console interface, one can also use the web interface to configure the client device.

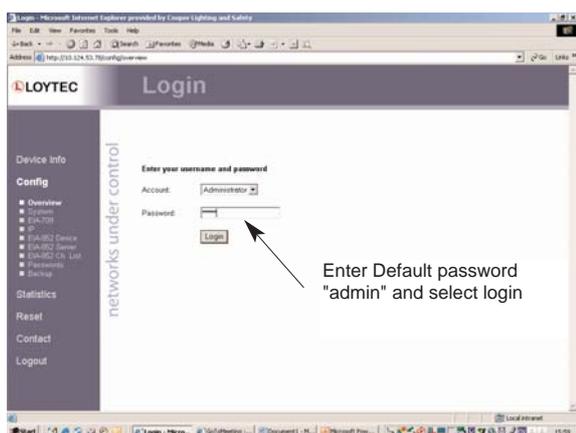
In your favourite web browser you can either use the Default IP address is the IP address if not know (192.168.1..254) or enter the system IP address of the server in the previous section. The following menu will be shown.

**Fig 10 Device Info**



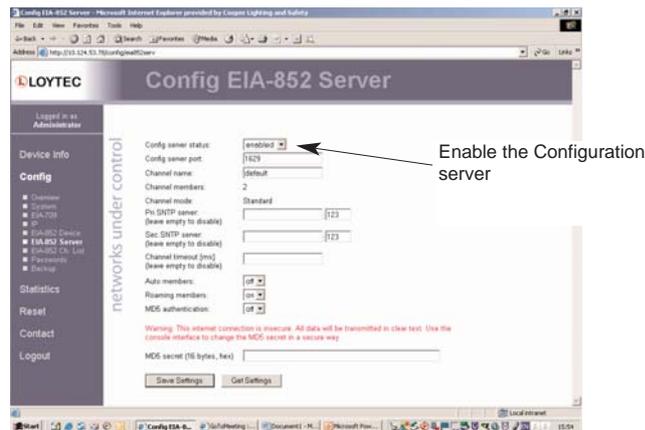
Click on "Config" in the left menu, and enter the administrator password in order to make changes to the settings (i.e. changing the IP address or configure one of the EC400's on the network as a main server).

**Fig 11 Administrator password**



If the EC400 should act as the configuration server for all the EC400' on the network then select the EIA 852 configuration server menu

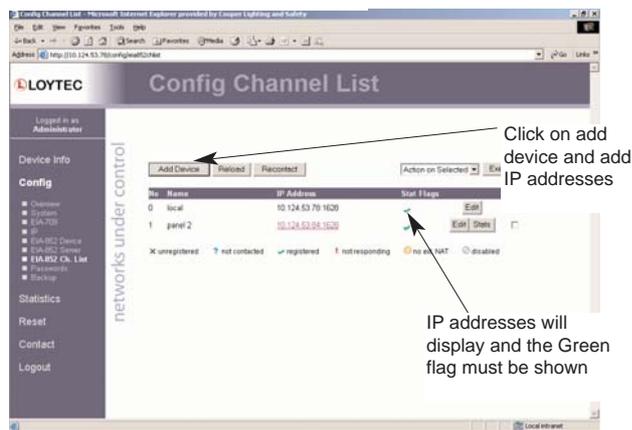
**Fig12 Enable the Config Server**



Enable the configuration server and then press save settings.

All the IP addresses of the EC400's on the Cooper network must be entered into the Configuration server channel list. Please click on the EIA852 Ch.list on the left menu.

**Fig13 Config Channel List**



Please check that all the CNIP-led's on all the EC400's are green. You should now be able to communicate via Ethernet channel.

## 5 MULTICAST CONFIGURATION

To reduce the traffic of information if more than 5 EC400's are on the network, it is recommended to use multicast addressing mode. IP-multicast is a technique to send data efficiently to many recipients at the same time in one IP network. All devices get the same multicast address in one multicast group.

Valid address range from 224.0.0.0 to 239.255.255.255

Enter the multicast address in the IP menu above (section 3)

## 6 TECHNICAL SPECIFICATION

Operating Voltage	.9-35VDC
Power Consumption	.3W (typical)
In rush Current	Up to 950 mA @ 24 VAC
Operating Temperature	0°C to 50°C
Storage Temperature	-10°C to 85°C
Humidity(non condensing) operating	.10 to 90%RH @ 50°C
Humidity(non condensing) storage	.90%RH @ 50°C
Enclosure	.DIN43 880
Environmental Protection	.IP40(enclosure); IP20(screw terminals)
Installation	.Dill Rail mounting or wall mounting

## 7 NETWORK DIAGNOSTICS

The EC400 is equipped with LED's as shown in Fig2 , these can be used as diagnostic tool without the need of specialist equipment.

### 7.1 Power LED (Green)

The EC400 power LED lights up green when power is supplied to terminal 16, 17 (Fig 2)

### 7.2 Status LED (Red)

During boot up, the status LED is used to signal error condition .After boot-up the status LED is used to signal write accesses to flash memory( on for the duration of every write access) If the fall back-image is executed the status LED flashes red once every second.

### 7.3 Link LED (Ethernet Link LED)

The Ethernet Link LED lights up green whenever an Ethernet cable is plugged and physical connection with a switch Hub or PC is established.

### 7.4 Activity LED (Ethernet Activity LED)

The Ethernet activity LED lights up Green for 6ms whenever a packet of data is transmitted or received or when a collision is detected on the network cable.

### 7.5 CNIP LED (EIA-852 Status LED)

The CNIP led is a tri-colour LED that indicates different operating states of the EC400 device

**Green:** Device is fully functional and all CNIP configuration data (channel routing information, send list) are up to date.

**Green Flashing:** If a valid data packet is received or transmitted over the IP channel, the CNIP LED turns off for 50ms.Only valid EC400 packets sent to the IP address of the EC400 can be seen. Stale packets or packets not addressed to the EC400 are not seen.

**Yellow:** Device is functional but some configuration data is not up to date (device can not address configuration server but has configuration data saved in Flash memory)

**Red:** Device is not functional because it was rejected from the Channel List or shut down itself due to an internal error condition.

**OFF:** Device is not functional because the CNIP has not started. This can be the case if EC499 uses DHCP and it has not received a valid IP configuration (address) from the DHCP server.

**RED Flashing:** Device is not functional because the CNIP module is started but has not been configured. Please add the device Channel IP channel (register in the configuration server (section 4 above).

### 7.6 Server LED (configuration server)

The Configuration Server LED illuminates green whenever the configuration server is activated on the EC400 device.

### 7.7 Status Button

The EC400 is equipped with a status button (See Fig2).When pressing, the status button for few seconds during normal operation, it sends "Service Pin Message" on both network ports. The EC400 has a unique ID.

When pressing the status button during normal normal operation for more than 20 seconds, the EC400 will load the factory default settings.