



Electrone 720 Keypad Family

User Guide for 720 PoE
Numeric Keypad
With 2x16 LCD



V 1.2

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Safety and Regulatory Information

For your protection, this product has been tested to various national and international regulations and standards. The scope of this regulatory testing includes electrical/mechanical safety, radio frequency interference, acoustics, and known hazardous materials.

USA Radio Frequency Interference (FCC Notice)

WARNING This device complies with Part 15 of the FCC rules. Operation is subject to the following two conditions:

- (1) This device may not cause harmful interference and
- (2) this device must accept any interference received, including interference that might cause undesired operation.

This equipment has been tested and found to comply with the limits for a Class A digital device, pursuant to Part 15 of the FCC rules. These limits are designed to provide reasonable protection against harmful interference when the equipment is operated in a commercial environment. This equipment generates, uses and can radiate radio frequency energy, and, if not installed and used in accordance with the instruction manual, may cause harmful interference to radio communications.

Canada

Warning: This Class A digital apparatus meets all requirements of the Canadian Interference-Causing Equipment Regulations.

Cet appareil numérique de la classe A respecte toutes les exigences du règlement sur le matériel brouilleur du Canada.

European Union CE Marking

Products intended for sale within the European Union are marked with the Conformité Européene (CE) Marking which indicates compliance with the applicable Directives and European standards and amendments identified below. This equipment also carries the Class 2 identifier. The following information is only applicable to systems labelled with the CE mark .

European Directives

This Information Technology Equipment has been tested and found to comply with the following European directives:

- EMC Directive 2004/108/EC as per EN 55022 Class B
- Low Voltage Directive (Safety) 2006/95/EC as per EN 60950(A1/A2/A3/A4/A11)

WEEE Symbol Information

Correct Disposal of this product

(Waste Electrical & Electronic Equipment)



(Applicable in the European Union and other European countries with separate collection systems)

This marking shown on the product or its literature indicates that it should not be disposed with other household wastes at the end of its working life. To prevent possible harm to the environment or human health from uncontrolled waste disposal please separate this from other types of wastes and recycle it responsibly to promote the sustainable reuse of material resources.

Household users should contact either the retailer where they purchased this product, or their local government office, for details of where and how they can take this item for environmentally safe recycling.

Business users should contact their supplier and check the term and conditions of the purchase contract.

This product should not be mixed with other commercial wastes for disposal.

RoHS

This equipment is compatible with European Union Directive 2002/95/EC, Restriction of the use of Hazardous Substances in electrical and electronic equipment (RoHS), which restricts use of lead, cadmium, mercury, hexavalent chromium, PBB and PBDE. Electrone requires its component suppliers to meet RoHS requirements and verifies its suppliers' commitment to meeting RoHS requirements by conducting component sampling inspections during the product design approval process.

Important safety instructions

Read these instructions carefully. Save these instructions for future reference.

- 1 Follow all warnings and instructions marked on the product.
- 2 Unplug this product from the wall outlet before cleaning. Do not use liquid cleaners or aerosol cleaners. Use a damp cloth for cleaning.
- 3 Do not use this product near water.
- 4 Do not place this product on an unstable cart, stand, or table. The product may fall, causing serious damage to the product.
- 5 Slots and openings on the back or bottom side of the chassis are provided for ventilation; to ensure reliable operation of the product and to protect it from overheating, these openings must not be blocked or covered. The openings should never be blocked by placing the product on a bed, sofa, rug, or other similar surface. This product should never be placed near or over a radiator or heat register, or in a built-in installation unless proper ventilation is provided.
- 6 This product should be operated from the type of power indicated on the marking label. If you are not sure of the type of power available, consult your dealer or local power company.
- 7 Do not allow anything to rest on the power cord. Do not locate this product where persons will walk on the cord.
- 8 If an extension cord is used with this product, make sure that the total ampere rating of the equipment plugged into the extension cord does not exceed the extension cord ampere rating. Also, make sure that the total rating of all products plugged into the wall outlet does not exceed the fuse rating.

- 9 Never push objects of any kind into this product through chassis slots as they may touch dangerous voltage points or short out parts that could result in a fire or electric shock. Never spill liquid of any kind on the product.
- 10 Do not attempt to service this product yourself, as opening or removing covers may expose you to dangerous voltage points or other risks. Refer all servicing to qualified service personnel.
- 11 Unplug this product from the wall outlet and refer servicing to qualified service personnel under the following conditions:
 - a When the power cord or plug is damaged or frayed
 - b If liquid has been spilled into the product
 - c If the product has been exposed to rain or water
 - d If the product does not operate normally when the operating instructions are followed. Adjust only those controls that are covered by the operating instructions since improper adjustment of other controls may result in damage and will often require extensive work by a qualified technician to restore the product to normal condition.
 - e If the product has been dropped or the cabinet has been damaged
 - f If the product exhibits a distinct change in performance, indicating a need for service.
- 12 Use only the proper type of cable (provided in your accessories box) for this unit.
- 13 Be aware that protracted or prolonged use of this product may under certain circumstances be injurious. It is recommended that operators take frequent breaks and in the event of any injury or strain becoming evident, immediately cease use of the product.

Introduction

The Electrone 720 TCP PoE is the latest addition to the multi-purpose 720 Numeric Keypad family. It comes equipped with 17 keys and a 2 x16 character LCD. This latest Power-over-Ethernet (PoE) version replaces the 720 TCP V1.0. This unit removes the need for the previous split three connector cable and replaces it with one Female RJ-45 connection at the end of a small but sturdy cable.

The PoE unit can receive its power from any PoE switch provided on the market. The 720 keypad sends and receives its data over the network through the switch, making the 720 TCP PoE even easier to set up in remote locations.

As in the first TCP model the unit offers Client or Server Modes leaving the options open to the user to create the perfect application. Unlike its predecessors the new PoE unit has access to the configuration menu via a Telnet connection over the network, leaving no need to connect through the Serial interface as before. This will increase the ease of use during configuration.

The following document is a guide for configuring your new 720 TCP PoE Numeric Key Pad.

Setting Up the EAL 720PoE Keypad

1. Modes of Operation

Client Mode

The 720 TCP running in client mode will have to be configured to use a specific TCP port and destination IP for the intended TCP Server. Then the 720 TCP will try to connect to that server and will prompt the user if it is not yet connected to the server.

Once connected, a link is open (pipe) that allows data to be sent from the 720 TCP (example: PIN code entered by the keypad) or to receive data from the host to be displayed to the user on the LCD (example: "Incorrect PIN please re-enter").

Server mode

The 720 TCP running in the server mode will be the host; this means it will wait on a specific port for a client to connect to it. A client in this case can be a TCP client application running on another PC or server on the LAN or the Internet looking for the 720 TCP address. Once the client connects to the TCP port, a link (pipe) is connected and the operation from this point is the same as in the client mode.

.

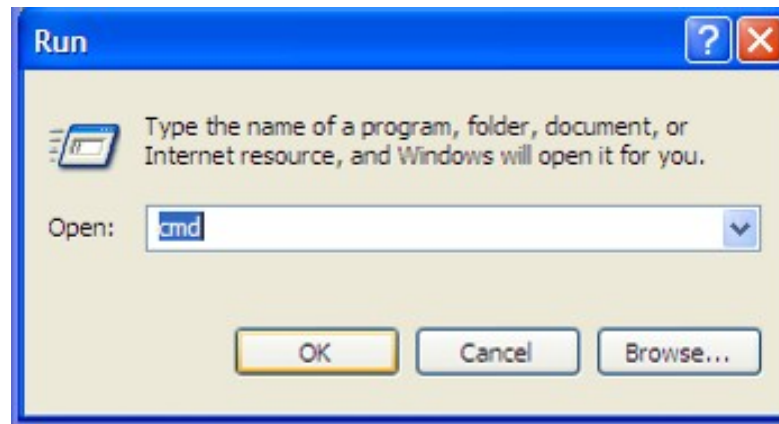
Connecting your 720 TCP/PoE

1. Have your PoE Network Switch with available ports ready and connected to your network.
2. Connect a Network cable of your desired length to the Switch
3. Connect the other end of Network cable into your 720 TCP PoE RJ-45 connector located at the rear of the unit.
4. Connection is now made, please move along to Configuration

Configuring your 720 TCP/PoE

Electrone has updated the use of the configuration menu from a serial interface to a Telnet connection via the Ethernet line.

1. To start the Telnet first open a CMD (Windows Command Prompt) window.



In Vista™ 'Command Prompt' can be found in the 'Accessories' folder.

2. When the Command Prompt window appears you can use the Telnet command to talk to the unit. There are two ways to invoke the unit using Telnet.

2.1 The first is by telnet to the name of the unit (Default Host Name is UNIT + “the Serial Number of the unit”).

i.e. Enter on the command line: “telnet UNIT010134” For unit S/N:010134

```
C:\Documents and Settings\Erich>telnet UNIT010134
```

Please note 2.1 will only work if the unit is DCHP enabled on your Local Network.

2.2 The second procedure (used more often when remotely configuring device or when the Static IP Address of unit is known) is to telnet directly to the Address of the unit.

e.g. Enter in command line: telnet 192.168.20.116. .

```
C:\Documents and Settings\Erich>telnet 192.168.20.116_
```

(The address shown is an example. Refer to your product label for each unit’s particular address.)

3. Logging into the Telnet Menu

To enter the configuration menu you must enter the login and password.

```
C:\ Telnet 216.199.85.148
EAL720TCP TELNET SERVER 1.0
Login: admin
Password: _
```

Login: admin <ENTER>
Password: admin <ENTER>

4. Configuration Menu/Options

```
1: Change host name:UNIT010219
2: Change static IP address:192.168.0.5
3: Change static gateway address:192.168.0.1
4: Change static subnet mask:255.255.255.0
5: Change static primary DNS server:195.72.171.39
6: Change static secondary DNS server:195.72.164.155
7: DHCP Client:enabled
8: Change destination IP address:192.168.0.13
9: Change destination TCP PORT:41
0: Change Unit Mode:Client
Q: Quit.
Select:
```

(Default Client Configuration Menu)

4.1 Change host name: The host name is the name of the unit as it is recognized by the network. The unit can be found on the network by entering the host name (default: 'UNIT' followed by serial number) For instance: if you ping UNIT010219 you will get a response from the keypad.

4.2 Change static IP address: The Static IP address is the address of the unit itself. This can either be set by the user (if DHCP is disabled) or set by the users network (in which case Option 7 must be enabled). Note: if the Static IP is changed the unit will disconnect.

4.3 Change gateway address: An application in which the 720 TCP operates outside a simple LAN, for example, on the Internet; a gateway address would need to be configured so the 720 TCP can access the Internet or be accessed from the Internet through that gateway. In most cases that gateway is your router. If using the DHCP option, this field is assigned automatically by the DHCP server.

4.4 Change subnet mask: Use this option to setup a subnet mask that is allowed by your network.

4.5/6 Change static primary/secondary DNS Server: With an application in which the 720 TCP operates outside a simple LAN, the DNS server address needs to be configured inside the 720 TCP in order for it to be able to communicate with the outside world. Again, if the DHCP client mode is enabled on the 720 TCP, then those fields are being assigned automatically.

4.7 DCHP Client: Use to enable or Disable the DCHP connection. Enabled for automatic setup and disabled for more manual configuration.

For client mode configurations

4.8 Change destination IP address: This is the address of the server/application that the 720 unit communicates with. It must be configured into the keypad.

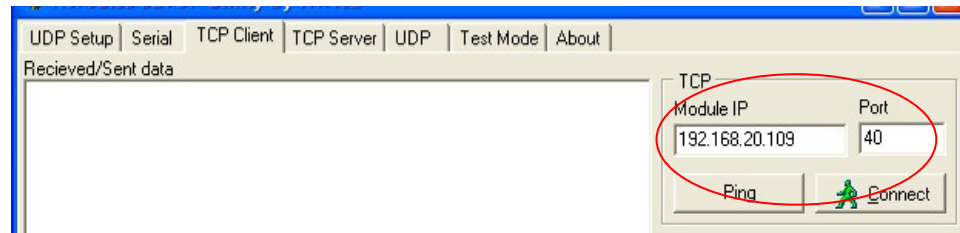
4.9 Change destination TCP port: This is the port in which the server/application listens on for communication with the 720TCP devices. In server mode this is the port on which the 720TCP listens. (Default port 41)

(A) Change Unit Mode: This allows the administrator to toggle between 'client' and 'server' modes.

(Q) Quit: Exits the telnet configuration session.

† In Server Mode: menu options 8 and 9 are not used. Instead the client application will need to look for the unit's host name or Static IP address and push information on port 40. There is a sample shown below by using client TCP software*.

(Note that values entered on the key pad will not be echoed on the LCD, if this is required it must be programmed in your application.)



After completing the above configuration specifications to your network, you can begin communication to the 720 unit via your server/client application.

For additional support please contact Electrone Americas.

(* This particular software is Hercules available from www.hw-group.com)

How to write an application for the 720 TCP

The easiest way to write an application for the 720 TCP is to use “sockets”.

“Sockets / Winsock”

The “Socket” interface is the most common tool a programmer uses to access a network or network device. Sockets work by creating a “file handler” that when writes to; sends data over the network. Sockets originally came from UNIX but also ported to other platforms such as Winsock of Windows ®. Winsock also includes both UNIX and Window ® style functions.

An example

If you are using VS 6, you can use Winsock functions

If you are using VS 2003 or later, then Winsock is implemented in classes in the system.net.sockets name space.

Socket name space

system.net.sockets.socket

For example in C#, in the .Net platform, to create a socket connection:

720 TCP runs in the server mode and the programmer needs to write an application to connect to it as a client, so the following will create that socket:

`socket S = connect socket (server, port);`

- server here is the 720 TCP host name
- port here is the TCP port that the 720 TCP listens to in the server mode

To send bytes to the 720 TCP (LCD) or internal command, an example follows:

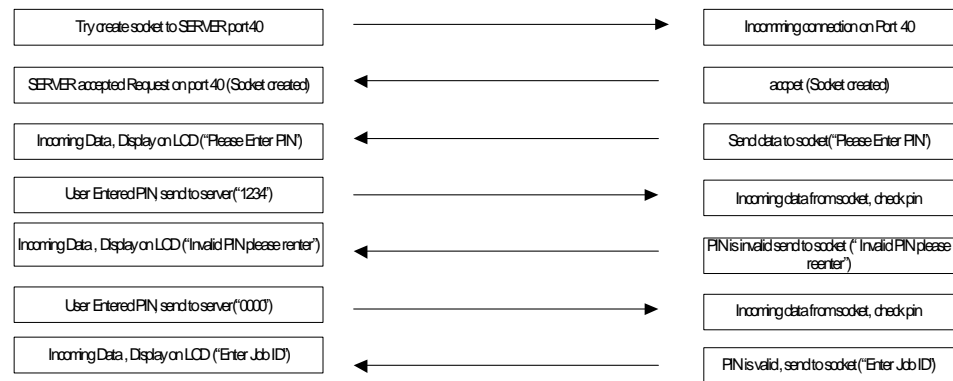
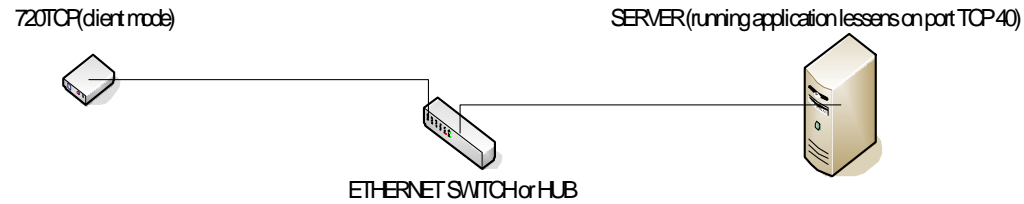
`s.send (bytes sent, bytes sent.length.0)`

Also, `s.receive` can be used to receive bytes from the 720 TCP keypad or internal command.

* For more information please refer to the sockets name space on MSDN.

Application Scenario

In this scenario the 720 TCP is to be used to verify a PIN from a local user and then allow that user to process and order or access a remote print job.



Appendix A: Telnet setup for Vista™ Users

1. Open the Programs and Features Control Panel applet
Click: Start - Control Panel - Programs and Features
2. Select “Turn Windows features on or off.”
3. Select the Telnet Client option and click “OK”
4. A dialog box appears, confirming the installation of new features. After installation is complete, close the main Programs and Features Control Panel applet. The telnet command should now be available.

Appendix B: Telnet for Linux Users

Two recommended methods for accessing the Electrone 720 menu from a Linux system via a telnet connection are to use either PuTTY or Netcat.

Note: PuTTY requires a GUI. If you are trying to connect to 720 POE from a Linux server without a GUI, Netcat is the recommended option (see page 18).

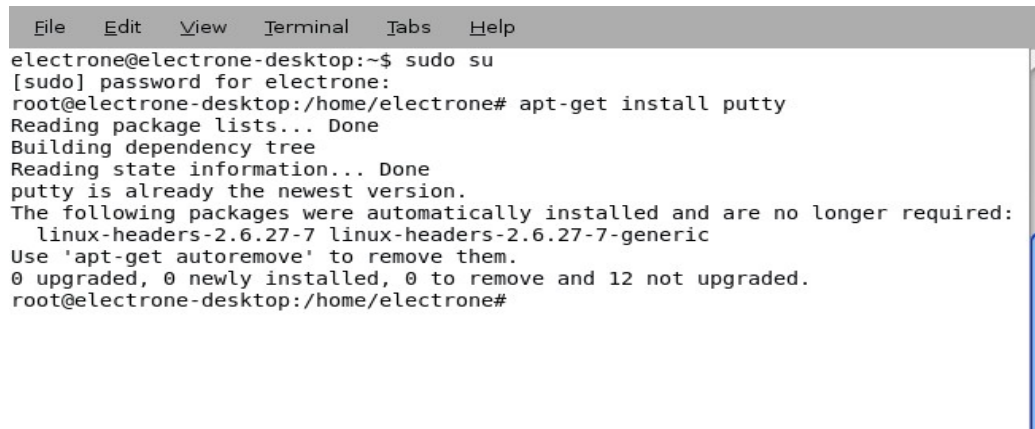
Either of these can be downloaded for free; typing ‘putty’ or ‘netcat’ into your search engine will normally bring up a number of available download sites.

Telnet using PuTTY

1. The first thing we need to do is to check to see if PuTTY is installed. In this case we are using the Ubuntu distribution so all we have to do is type putty in the terminal.

2. If putty is not already installed you will have to install it. The following example is again using Ubuntu:

Note: You must have the correct permission to install a program in Linux.



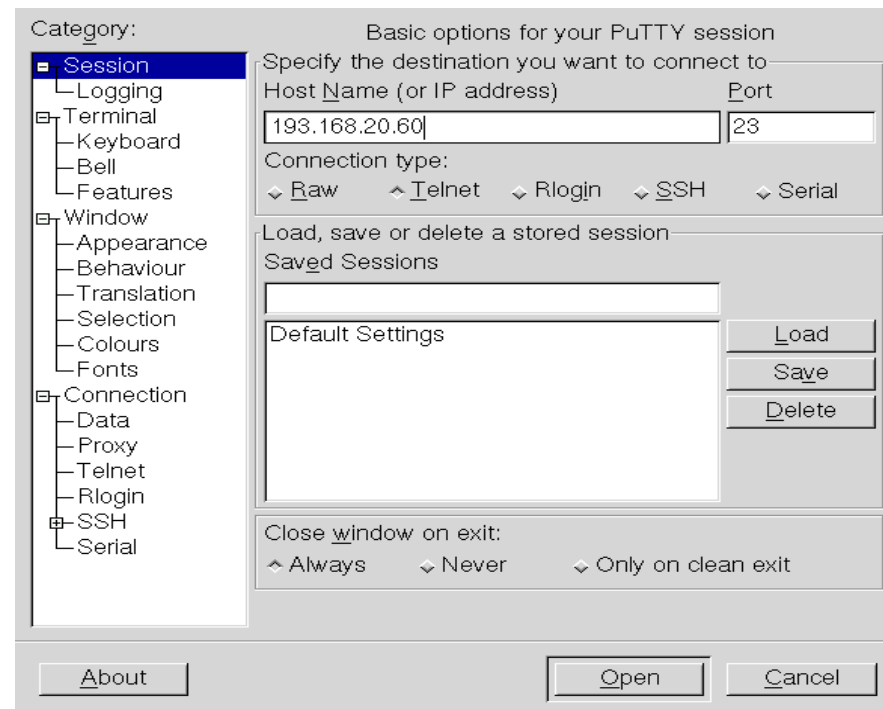
```
File Edit View Terminal Tabs Help
electrone@electrone-desktop:~$ sudo su
[sudo] password for electrone:
root@electrone-desktop:/home/electrone# apt-get install putty
Reading package lists... Done
Building dependency tree
Reading state information... Done
putty is already the newest version.
The following packages were automatically installed and are no longer required:
  linux-headers-2.6.27-7 linux-headers-2.6.27-7-generic
Use 'apt-get autoremove' to remove them.
0 upgraded, 0 newly installed, 0 to remove and 12 not upgraded.
root@electrone-desktop:/home/electrone#
```

3. To run putty, type putty in the terminal as we did in step one.

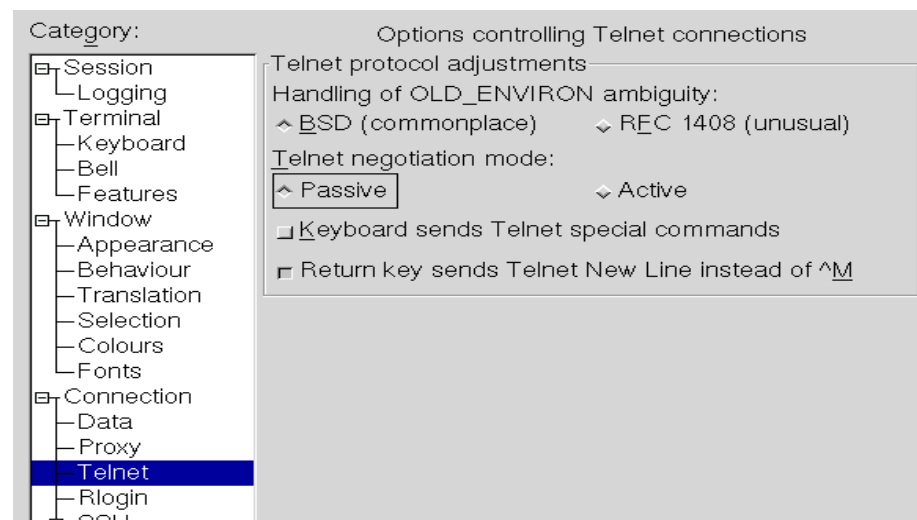


```
File Edit View Terminal Tabs Help
electrone@electrone-desktop:~$ putty
```

4. You will then have opened a PuTTY GUI window. Enter the 720 POE IP address or host name and the port number, and select telnet as your connection type.



5. Click on telnet in the Connection category and select passive as the telnet negotiation mode then click open.



Telnet using Netcat

Once netcat is installed, at the command prompt type netcat -t hostname (or IP address) and port thus:

```
File Edit View Terminal Tabs Help
electrone@electrone-desktop:~$ netcat -t 192.168.20.60 23
```

You will then get a login screen as per Windows:

```
File Edit View Terminal Tabs Help

EAL720TCP TELNET SERVER 1.0
Login: admin
Password: admin
```

Logging in as 'admin' with the password also 'admin' will take you to the menu, again as per Windows.

```
File Edit View Terminal Tabs Help

1: Change host name:UNIT1
2: Change static IP address:192.168.20.60
3: Change static gateway address:192.168.20.1
4: Change static subnet mask:255.255.255.0
5: Change static primary DNS server:216.199.54.9
6: Change static secondary DNS server:192.168.20.2
7: DHCP Client:enabled
8: Change destination IP address:192.168.20.64
9: Change destination TCP PORT:41
A: Change Unit Mode:Server
Q: Quit.
Select: █
```

.Appendix C: Layouts and Commands

Signal Layouts:

STANDARD

			Backspace
7	8	9	
4	5	6	
1	2	3	Enter
0			

CASA (Default Supplied)

A	/	*	-
7	8	9	+
4	5	6	
1	2	3	Enter
0	.		

Billancourt (Text) Layout: to be available mid-April 2009.

For Key Layouts and customs signals contact Electrone Americas.

Command Sets:

(dec)	Command	(hex)	Effect
01-03		01-03 HEX	3 different € symbols
04		04 HEX	Chi (lowercase)
05		05 HEX	Phi (lowercase)
09		09 HEX	Sigma (lower, end of word)
11		0B HEX	Xi (lowercase)
12		0C HEX	Zeta (lowercase)
20		14_HEX	LCD Cursor OFF
19		13_HEX	LCD Cursor ON
10		0A_HEX	LCD Linefeed
11		0B_HEX	LCD Cursor Home
13		0D_HEX	Carriage Return
6		06_HEX	ACK (resend 6)
8		08_HEX	LCD Backspace
31		1F_HEX	LCD Clear



About Electrone:

Electrone has been solving our customers' IT problems since 1984. From our beginnings as suppliers of IT peripherals and keyboards that solved specialist data input problems we have expanded our products and services to

include a wide range of solutions to meet our customers' and partners' current and future demands.

The provision of IT peripherals is still at the heart of our business but we now offer a much wider range of custom-built and customized products. Our design concepts and products are carefully developed to meet the exacting standards of the markets and customers we serve.

Today our customers come from a wide range of industry sectors and public service organizations, from Aerospace to Education, from Banks and ATM deployers to Retailers, Manufacturers and System Integrators.

All Electrone products are:

- Covered by a 12-month Limited Warranty
- Supported by the people who sell them
- Manufactured from the highest quality materials
- Easy to install - usually requiring no specialist knowledge

Electrone Americas Ltd., Co.
2920 N.W. Boca Raton Blvd Suite12
Boca Raton, FL 33431, USA
Voice: 561-395-3398
Fax: 561-395-1678

Electrone Europe
T Wing, Crowthorne Business Estate
Crowthorne, Berkshire RG45 6AW UK
Voice: +44-1344-751-797
Fax: +44-1344-206-860