

# UDIN-8E

## USB Digital Event Recording Unit

The UDIN-8E is an 8-channel digital input version of the UDIN range optimised for monitoring and recording state changes of contacts or digital inputs. The UDIN-8E automatically sends make/break information to a host PC without the need to poll the unit. Supplied with the “Gator” annunciator and event logger software package. Also supplied with Virtual Com port drivers so that it can be used with most legacy software packages or with a .DLL for direct programming.

### Specifications

- Low cost USB 1.1 or 2.0 interface
- All power derived from USB port
- Input state change notification automatically sent without user intervention
- Virtual COM port drivers - can be used with legacy software packages that can receive ASCII text characters from a serial port.
- HyperTerminal and terminal emulator software compatible
- Data format - 9600 baud, 1 data, 1 stop no parity
- DLL drivers also available for direct programming
- For use with Windows ME, 2000, XP, Linux, MAC OS, Win CE.NET
- Can be used with ProfiLab, DAQFactory, LabVIEW, TestPoint, DASyLab, VEE, and most SCADA Packages.
- Many units can be connected to a PC via USB hubs
- Supplied with the Gator Annunciator and Event Recording application
- Operating Temperature 0 to 70°C
- Desktop, panel or DIN Rail mount
- All I/O via screw terminals
- Moulded in grey UL94-V0 flame retardant PC
- Supplied with USB lead and installation CD



### Description

The UDIN range consists of a USB interface, a micro-controller and relay outputs and/or opto-isolator inputs. The UDIN units are controlled by simple ASCII commands. The USB interface handles the USB protocols and present the ASCII commands to the micro-controller as serial data. The micro-controller then uses the commands to control the relays or report back input status.

The USB interface is based on the FT232RL device from FTDI – [www.ftdichip.com](http://www.ftdichip.com). The FT232 provides a Serial to USB interface. FTDI provide drivers for a wide range of operating systems. There are generally two types of driver – a Virtual Com port driver (VCP) and a Direct-programming driver (D2XX). For Windows systems, these have been combined into a single driver known as the Combined Driver Model (CDM).

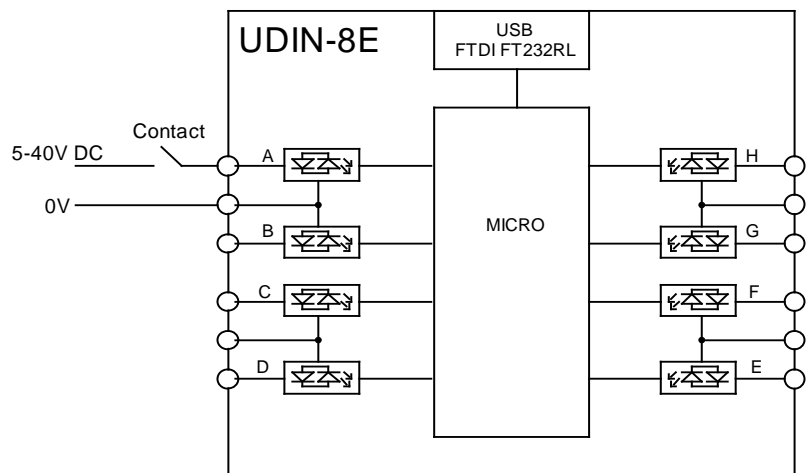
As the name suggests, the Virtual Com Port Driver install a virtual Com port on the computer system. The VCP emulates a standard PC serial port such that the USB device may be communicated with as a standard RS232 device. This is useful as it allows virtually any legacy software package that can send ASCII commands to a serial port communicate with the UDIN range.

The direct drivers bypass this VCP route, and allow direct access to a USB device via a DLL interface. This is more efficient than the VCP route. For more information regarding the FTDI232RL, such as driver support, installation and programming guides please see [www.ftdichip.com](http://www.ftdichip.com)

## Connection

### Isolated Inputs

- Inputs occur in pairs with common centre
- Input range: 5-40VDC polarity independent
- Input current @ 5V: 0.8mA typically
- Input current @ 40V: 10mA typically
- Isolation: 5kV rms



### Commands

A set of simple text commands are used to interrogate the unit. Each command consists of a string of ASCII characters followed by carriage return (Enter ↵). Each character received is echoed back. On completion of each command, good or bad, a carriage return/line feed combination is output. If the command or parameter is invalid, the command is ignored.

#### Notes:

- Commands are not processed until the carriage return character is received.
- Commands must be in lower case only.

**i0 – Input status** - “i0” – returns a decimal number representing the input state in the range 0-255

‘?’ - will return with the model number and the software date.

### Response from Input State Change

The unit will respond with a text string every time an input state changes, either when an input signal is applied or removed. The text string consists of a lower-case letter, corresponding to the input channel a through h and either a 0 or 1 depending upon the input state. The string is followed by a carriage return and a line feed.

Eg      a1 <CR><LF>    (voltage applied to input a)  
         g0 <CR><LF>    (voltage removed from input g)

## Installation

The following description refers to Windows XP. Please refer to the installation CD for other operating systems.

- Insert the installation CD into your system
- Connect the UDIN unit to a spare USB port. The “Found new Hardware Wizard will start”. If the Wizard does not start automatically, select; Start -> Control Panel -> Add Hardware



- Select “Install from a list or specific location”. Tick the “Include this location in the search” and click on the “Browse” Button. Select “D:\Drivers\Windows XP”



- Click on the Next button

- If Windows XP is configured to warn when unsigned (non-WHQL certified) drivers are about to be installed, the following screen will be displayed. Click on "Continue Anyway" to continue with the installation.



- If Windows XP is configured to ignore file signature warnings, no message will appear.
- The following screen will be displayed as the driver files are copied from the CD to your system.



- Click the "Finish" button on the final Window. Your drivers are now installed.



## Testing

You can control the UDIN unit using a Virtual Com Port (VCP) or through software and direct .DLL function calls. You can test you UDIN unit through the VCP from a Terminal emulator program such as HyperTerminal. The UDIN drivers created a virtual com port on your PC system which can be used just like a real hardware com port.

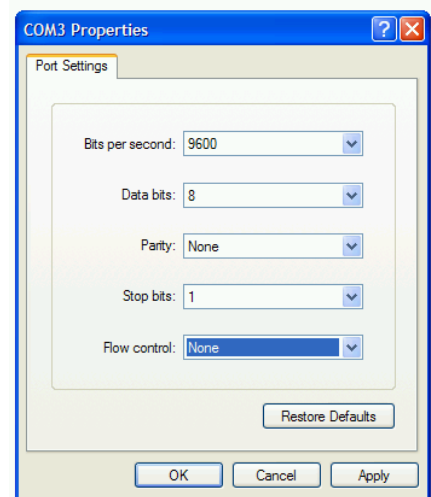
## Using HyperTerminal

To start HyperTerminal select;

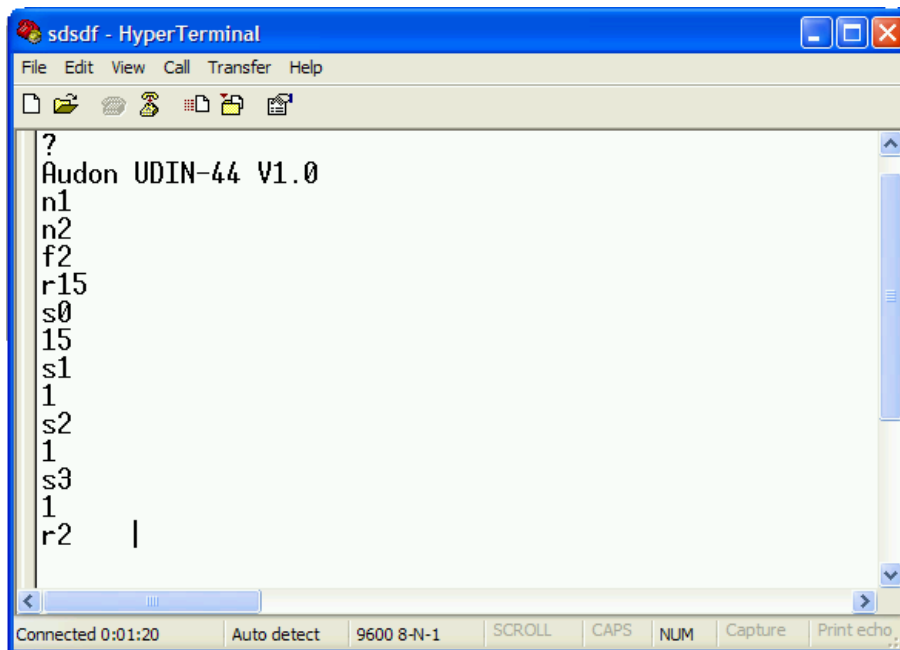
Start -> All Programs -> Accessories -> Communications -> HyperTerminal.

When it is run, it will first ask for a Connection Name. Enter a suitable name. The program will then present a Connection Window. Under “Connect Using” select the Virtual Com Port created when you installed the VCP drivers, and click on OK. Next you will be asked to enter Port Settings. Select;

Bits Per Second:	9600
Data Bits:	8
Parity:	None
Stop Bits:	1
Flow Control:	None



You can then start typing input and output commands as detailed above.

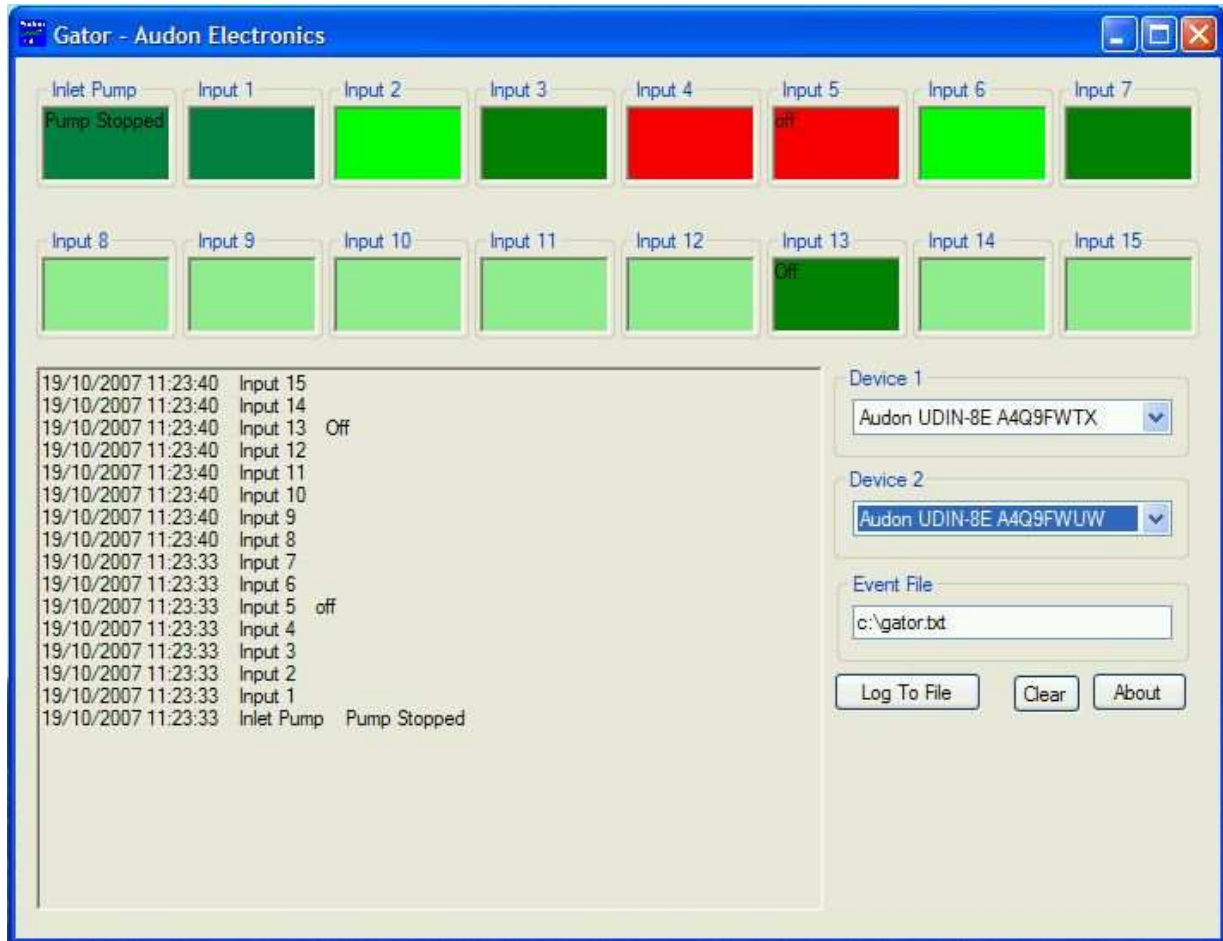


## Gator Annunciator and Event Logger Software

The UDIN-8E is supplied with a copy of the Gator annunciator and event logger application.

### Installation

Simply copy all files to a directory you create on your system. Run gator.exe. The screen as follows will be displayed



### Operation

- Device 1 – The first found UDIN-8E
- Device 2 – The second found UDIN-8E
- Event File – The Name of the CSV Event log file.
- Log To File Button – Button which starts/stops logging to the Event log file. Data is appended to the data file if logged data already present.
- Clear Button – Clears the event list window

Clicking on the input alarm window will bring up a box where the following can be set;

- Input Channel Name
- Input High Colour – the colour of the alarm display when the input is high
- Input High Text – The text displayed in the alarm window, the event list and event log file when the input goes from low to high
- Input Low Colour - the colour of the alarm display when the input is low
- Input Low Text – The text displayed in the alarm window, the event list and event log file when the input goes from high to low



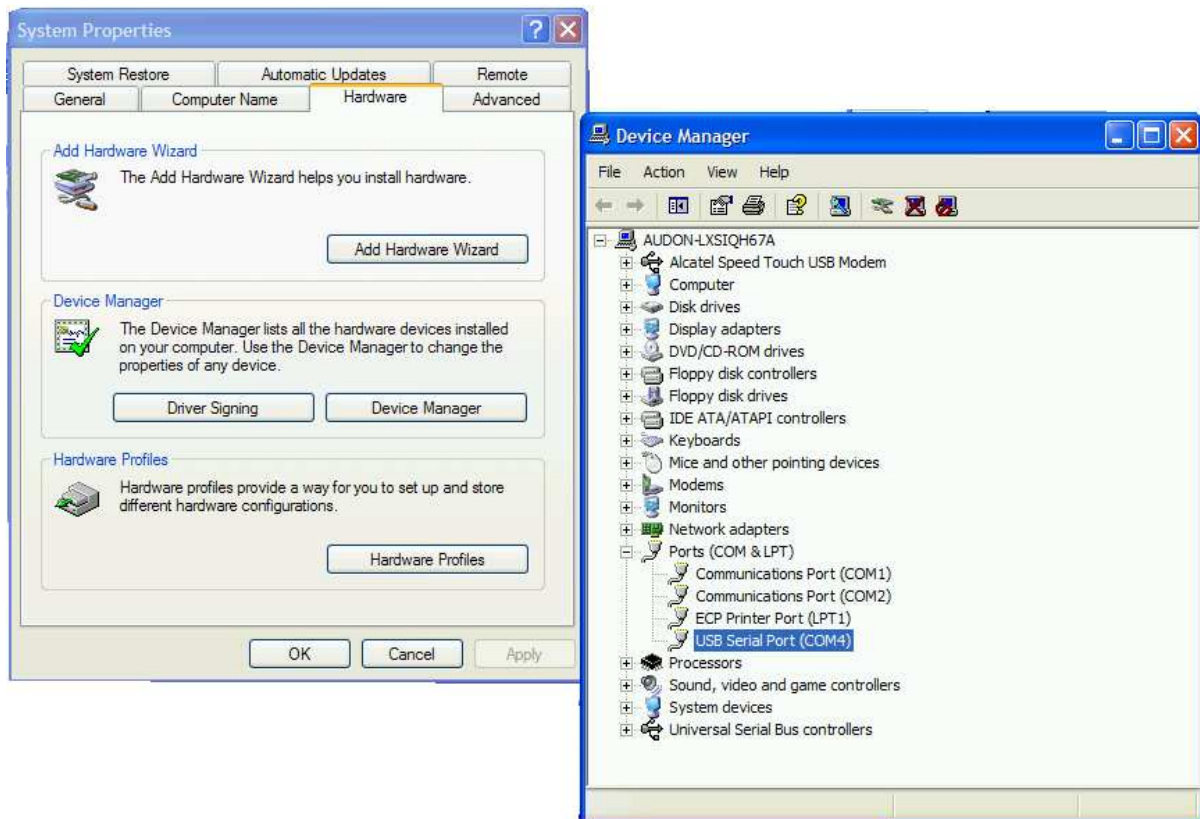
### 3<sup>rd</sup> Party Software

The UDIN range should be compatible with any 3<sup>rd</sup> party software package that can output and receive ASCII characters.

The drivers automatically assign a Com port number to the UDIN unit. It is possible to change this to a user selectable Com port. (Only Com ports that don't already exist can be chosen)

To change the Com port to a one of your choice;

- Open the Control Panel – Start -> Control Panel
- Double-click on the System icon
- Click on the Hardware tab
- Press the Device Manager button. A list of all your system devices will be displayed. Under Ports (COM and LPT) you will see USB Serial Port (COMx) where x is the Virtual Com Port number.



- Double-click the USB Serial Port and a Properties Window will appear.
- Click on the Port Setting Tab, and click the Advanced Button. You can then choose any available Com port Number.

### Software Support

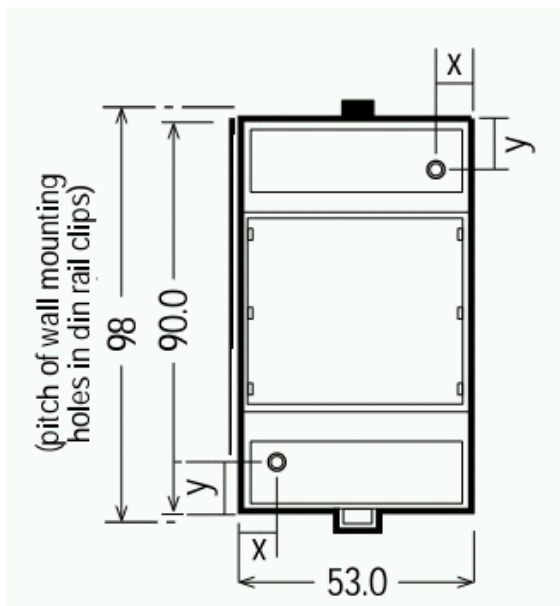
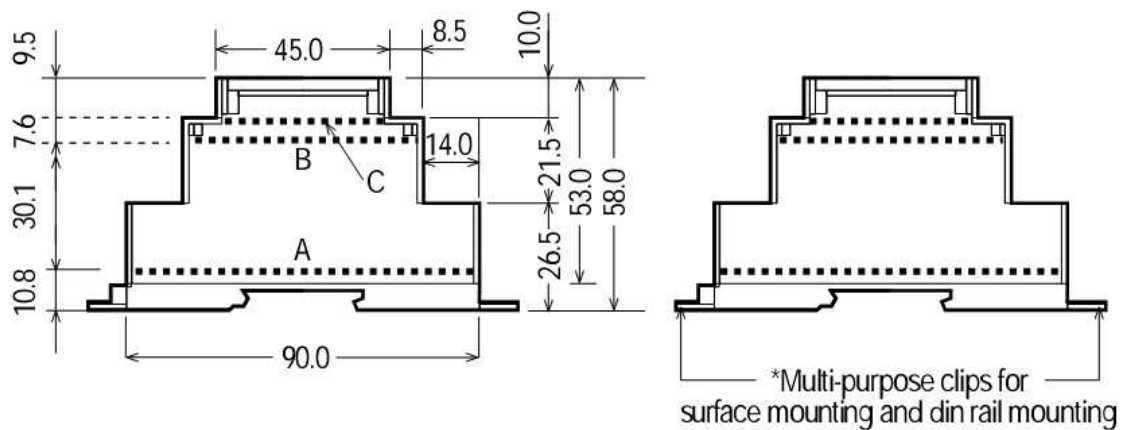
Presently drivers exist for the following operating systems;

- Windows 98, ME, XP, Windows Server 2003, Windows XP 64
- Linux
- MAC OS8, OS9 and OSX
- WinCE.Net Version 4.2 and above

Please see [www.ftdichip.com](http://www.ftdichip.com) for the latest driver support, installation and programming guides.

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## Dimensions



## Mounting

The UDIN range can be desktop, panel or DIN rail mount. The units will clip on to standard 35mm DIN rail. The DIN rail mounting clips may be extended to reveal 4mm screw holes for fixing to a panel or wall.

## WEEE Directive (Waste Electrical and Electronic Equipment)

Notice to all European Union Citizens – Important Environmental information about this product



The crossed out wheeled bin symbol on this product, package or documentation indicates that disposal of this product after its lifecycle could harm the environment. Do not dispose of this product as unsorted municipal waste. It should be disposed of by a specialized recycling company or by your local authority WEEE waste disposal facility.

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