
DINTEC™
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Safety Instructions

Do not expose this device to rain and moisture, or expose it to the risk of dripping or splashing.

Do not use this device near water.

Do not block any ventilation apertures on this device.

Do not install this device near heat sources such as heaters, stoves, monitors, amplifiers, dimmers, luminaries or any other equipment that produces heat.

Do not expose the power adapter or power cables of this device to damage from being, crushed, walked on or being pinched by protective cabinets, enclosures or cases.

Use only attachments, accessories or fixings specified by ENTTEC.

Unplug this device from the mains supply and external data links during electrical storms or when the device will not be used for a long time.

Servicing this device should be undertaken only by suitably qualified service technicians.

Contacting ENTTEC

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Getting Support

If you require support for any DIN-TEC product, please visit the support area of our website at *www.enttec.com*. There you can fill out a support request ticket for prompt assistance with your enquiry.

Alternatively, simply send an email to support@enttec.com and mention that you are having trouble with this product, and what version of firmware or software items you are using, accompanied with any relevant print screens or information.

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DIN-TEC

Thank you for purchasing a DIN-TEC module. At Enttec we are proud of our products and we hope you will enjoy using them as much as we enjoy designing and building them.

DIN-TEC modules are highly flexible products that can be used to interface with a number of 3rd party products and can be programmed to perform simple logic operations.

Each module sits on a standard DIN Rail that can be mounted inside an electrical cabinet or other appropriate location. Each module covered within this guide has a DIN-NET port that provides both power and a communications network.

Although DIN-NET uses RJ45 connectors and is compatible with any standard CAT5, CAT5E or CAT6 patch lead, DIN-NET. It is not to be confused with Ethernet and Ethernet equipment such as Switches or Routers cannot be used.

DIN-NET

DIN-NET is a communications network that interlinks most DIN-TEC modules. It offers reliable communication with inbuilt error checking and retries between nodes.

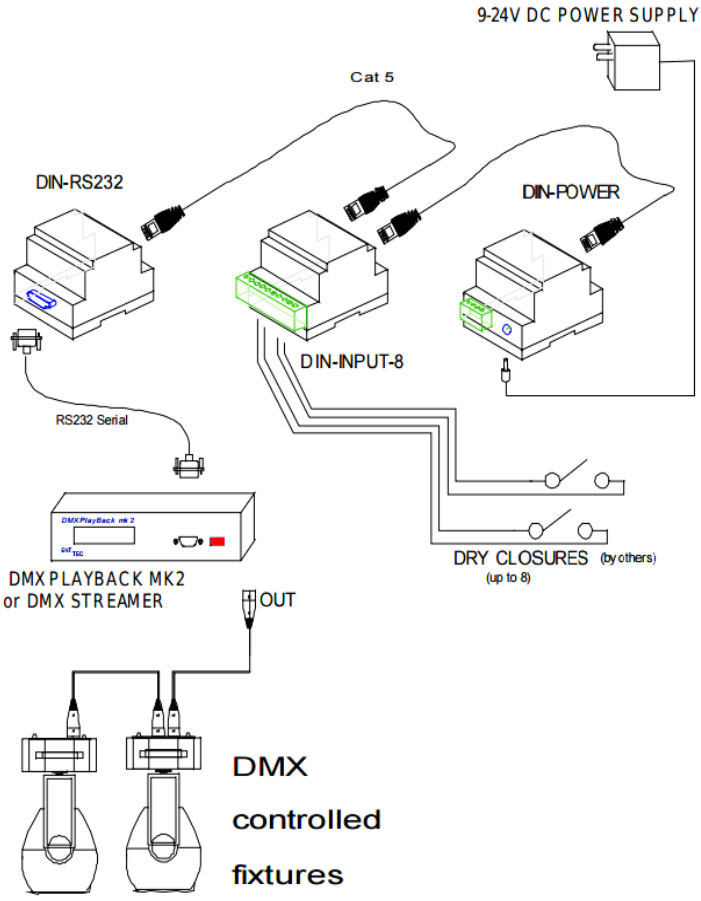
DIN-NET also transmits power over separate pairs of the RS45 cable. This power is used to drive the internal circuitry of the nodes. It cannot be used to power external devices.

DIN-NET does not rely on a single smart node but instead works on the principle of distributed intelligence. This means that there is no single point of failure.

Each DIN-NET network must include at least 1 DIN-POWER module. This module injects DC power onto the DIN-NET and is used to power all other connected modules.

When setting up or "commissioning" a module with a DIN-NET port, you will require the **DIN-USB** widget to connect a computer running the **free Enttec DIN-TOOL Software**. This combination of both hardware and software allows for the discovery and configuration of all nodes on your network.

Once the system is commissioned, DIN-USB and DIN-TOOL software are not needed and can be disconnected.



DIN-NET Actions

All DIN-NET modules can either act on or give out DIN-NET "**Actions**" - some modules can even do both.

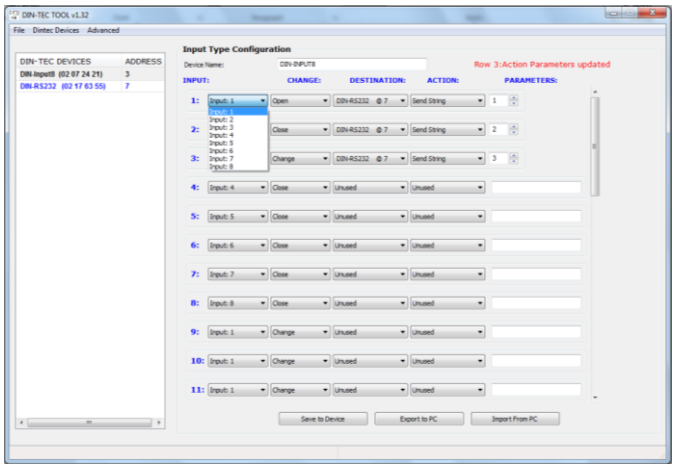
An Action describes what that particular module can do. For example a DIN-RELAY4 module can only CLOSE its relay; that is the only action it understands. Some more complex modules can perform multiple actions.

Other modules are not intended to perform actions but rather to trigger them on a different module or modules. For example the DIN-INPUT8 module can only trigger an action since it takes input but has no output (aside from the DIN-NET which it uses to transmit that trigger to some other module. In other words; It gives out Actions to modules that can act on them.

If you were to link up the DIN-Input8 module to the DIN-Relay4 module, activating one of the inputs would close one of the the relays on the DIN-Relay4 module.

DIN-TOOL & DIN-USB

What is it?



DIN-TOOL is the PC-based application that is used to commission and manage DIN-NET modules.

Please make sure your version of DIN-TOOL is the most recent, new modules may have been released since your copy of DIN-TOOL was produced. DIN-TOOL needs to be aware of all modules in the din net chain in order to configure them.

When to use it?

DIN-TOOL is used initially when you first connect all your DIN-NET modules together. You will use it to link up actions between 2 nodes or change parameters specific to those nodes.

How to connect it up?

DIN-TOOL requires the DIN-USB interface to talk to the DIN-NET. Make sure the interface is connected to your computer before starting the DIN-TOOL software.

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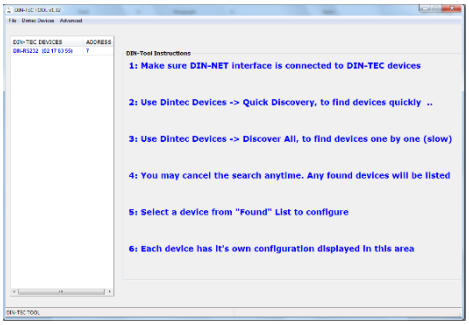
The ‘ENTTEC Din Tool’ configuration utility opens to display several prompts as to how to connect your Din System and discover all devices on your DinNet Network.

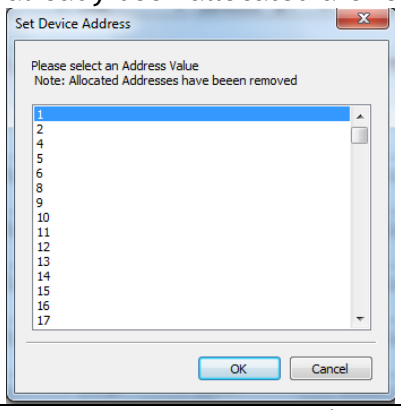
Once each unit has been configured, it’s setup can be exported onto your PC where it can be imported into other DIN-Net units in order to save time during the installation process.



DinTec Devices

Discover All Devices...(Slow)	Sends a request to each address independently to ensure all addresses respond – this more thorough process should only be used for troubleshooting and takes longer to process.
Quick Discovery...(Fast)	Sends out a poll in which each module replies, this method is fast to process.
Update Firmware on Selected	This option allows you to update the modules firmware

Advanced settings

Set Address...	Set the address of the selected module (address’ that have already been allocated are removed from this list) 
Device Boot Mode	Enters selected module into the ‘Device Boot Mode’ to enable the unit it to be remotely re-set.
Device Config Mode	Removes the device from Boot Mode and enters Configuration mode
Broadcast Discovery	A faster way to discover modules on the network (all modules reply simultaneously) – This method of discovery is best used for small installations.
Emergency Firmware Update	In the rare occasion a module requires a full reset back to factory settings, the firmware can be re-written to the unit using this function.

DIN-NET Modules

DIN-Power

What is it?

DIN-Power is a module that injects power onto the DIN-NET network. Each network must have at least one. This module does not include a power supply; you must connect your own power supply with a voltage between 9 and 24V DC.

When to use it?

At least one DIN-Power module must be used on every DIN-NET network. If you have a large network with many modules you can connect more than one.

*Note: if a link is to be made between din rail cabinets of 10m or mode, an additional DIN-Power module is required in order to counteract the effect of voltage drop the DC power source for this must be shared between each transformer (one per DIN Rail cabinet).

When connecting more than one DIN-Power onto a network, make sure you are using the same power supply for each module.

How to connect it up?

DIN-Power offers 2 different power input methods, centre positive 2.1mm DC Jack or Screw Terminal. You can use either one of these depending on the type of power supply you use.

DIN-Power has 2 DIN-NET ports, simply chain your network through them and to inject power onto your DIN-NET network.

How much power do I need?

Each module on the DIN-NET uses a small amount of power for its own use. Here is a table of power requirements for each module.

Module Name	*Power Usage (Watts)*
DIN-Input8	2 W
DIN-RS232	1 W
DIN-Relay4	2W

Calculating the required power ratings:

Add up the power consumptions of each module, for example if you have 3 inputs and 1 RS232 module: **(3 * 2W) + (1 * 1W) = 7Watts**

Add a safety margin of 20% to account for power loss through cabling: **(1.20 * 7W) = 8.4W**

This would suggest you would require a 9W power supply: 9V 1A would be sufficient.

A larger example system could involve 6 inputs and 4 RS232 modules: **(6 * 2W) + (4 * 1W) = 16Watts**

Add a safety margin of 20%: **(1.20 * 16W) = 19.2W**

Here, a 20W power supply is required, this can be in the form of either a 12v 2A source, or a 24V 1A one can be selected. Other ENTTEC DIN modules not powered by DIN-NET have individual power ratings on their label.

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DIN-INPUT8

What is it?

DIN-Input8 is an eight dry contact switch input module to DIN-NET. Each input is isolated from the others. The DIN-INPUT8 can store up to forty (40) actions. Each of these actions can be linked to one or more of the eight inputs. For example, you could have one input triggering forty actions, or eight inputs each controlling five actions.

Each input can be set to trigger on close, open or change of state.

When to use it?

Employ the INPUT8 if you need to interface a switch, such as a wall plate, a sensor or pressure-pad with a relay output, or have it trigger any action which is meaningful to any other DIN-NET module.

How to connect it up?

There are ten contacts on the input connector. The first and last are power sources. To “close” or “energize” one if the inputs, make a contact between the power source and that input.

Other Information

There is an LED that will blink slowly (every second) when the device is configured and operating normally. If the LED flashed quickly, it means the device is operating normally but is not configured.

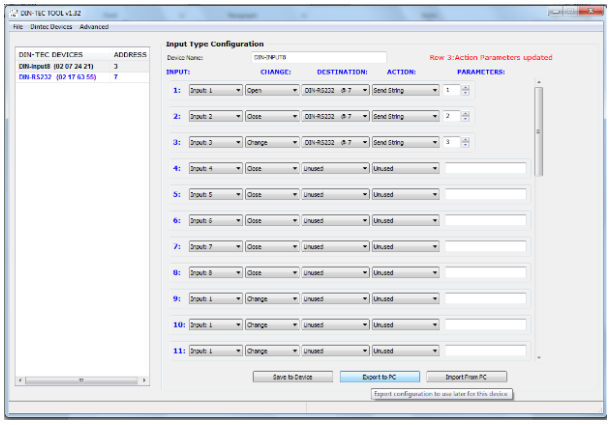
If the LED Flashes in a “flash on”, “long off” sequence, it is in BOOT mode and is waiting for a firmware update.

-The input and it’s function can be assigned to each inputs using dropdown menu’s.

-Actions can be set to trigger when the contact is made, broken or the state is changed by selecting functionality from the dropdown menu.

-To commence testing your triggers, click ‘save to device’ to ensure the configuration is saved onto the unit and ready to be triggered.

- Destination of each trigger can be selected using a dropdown menu which will contain all compatible DIN Net Modules on your Din-Net network.



DIN-RS232

What is it?

The DIN-RS232 is a bi-directional RS232 interface for DIN-NET. It can be configured to send a pre-programmed RS232 string when it receives a specific DIN-NET action, or send a DIN-NET action when it receives and matches a pre-programmed RS232 string.

The DIN-RS232 can store up to 100 preprogramed strings, or 4000bytes (whichever is greater)

The communication speed can be set between 1200 baud and 115200 baud.

When to use it?

The DIN-RS232 is designed to interface a device that has an RS232 port. Examples of products with RS232 ports are:

- Enttec DMX show recorders
  - DMXPlayback Mk2
  - DMXStreamer
  - E-Streamer
- a computer
- Video Projectors
- Lighting Control Systems
- Professional CD players

How to connect it up?

There is a female DB9 connector which can be configured as either DCE **(Device)** or DTE (**Terminal** [Controller]) by removing the lid and moving the jumper connections to the mode you require the DIN-RS232 to operate in.

Other Information

There is an LED that will blink slowly (every second) when the device is configured and operating normally. If the LED flashed quickly, it means the device is operating normally but is not configured.

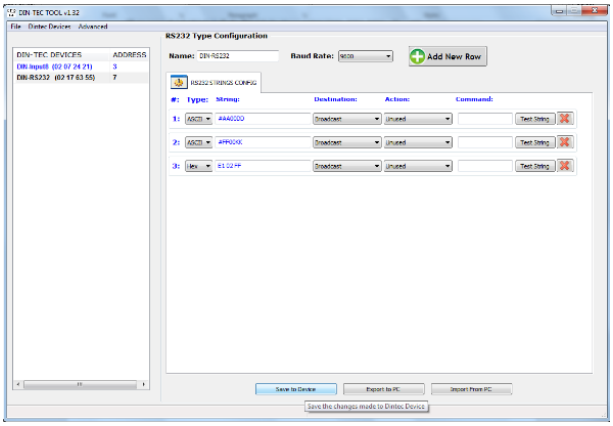
If the LED Flashes in a “flash on”, “long off” sequence, it is in BOOT mode and is waiting for a firmware update.

-The RS232 baud rate can be adjusted using the dropdown menu located at the top of the window.

-Either ASCII or HEX strings can be created and configured to be triggered.

-To commence testing your strings, click ‘save to device’ to ensure the string is saved onto the unit and ready to be triggered.

- Clicking on the ‘+ Add New Row’ button at the top of the window will allow you to create another RS232 string (This is limited at 100 preprogramed strings, or 4000bytes (whichever is greater).



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DIN-Relay4

What is it?

The DIN-RELAY4 is a DIN-RAIL mount four output relay module.

The DIN-Relay4 can act as a switch to toggle loads with an external power supply. Equally, the unit can be connected to third party control systems like PLCs to advice about any supported event within your lighting control system. All this triggered by any 'action' in the DIN-TEC network.

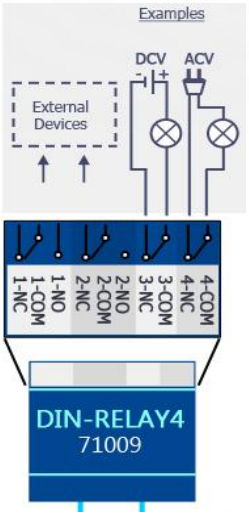
Each Channel has "Common", "Normally Open" and "Normally Closed" terminals and supports up to 0.5 Amps, 250 Volts for AC and 1 Amp, 220 Volts DC for DC loads.

When to use it?

Employ the DIN-RELAY4 if you need a relay output to act when a trigger action is meaningful to any other DIN-NET module, such us a switch, wall plate or sensor connected to a DIN-INPUT, or a serial action coming from an DIN-RS232.

How to connect it up?

There are twelve contacts on the output connector. Three contacts per output being NC (Normally Closed), COM (Common) and NO (Normally Open) as the output pin distribution for each inbuilt relay.



Other Information

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If the LED Flashes in a "flash on", "long off" sequence, it is in BOOT mode and is waiting for a firmware update.

Glossary of Terms

DIN-NET: The name of the network interlinking DIN-TEC modules, please note that not all DIN-TEC modules have DIN-NET ports.

DIN-RAIL: Standard metal rail as defined in (EN 50022, BS 5584, DIN 46277-3), used to physically support all DIN-TEC module.

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