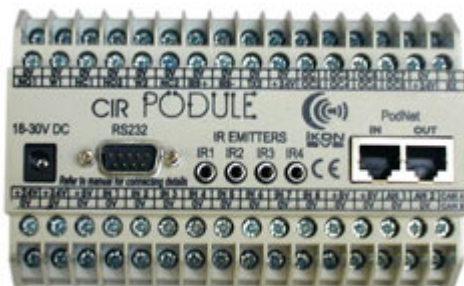


CIR Podule

(Consumer Infra Red)

Description

The Podule system evolved because of the need to control audio/video installations. Many of these installations required simple add on facilities such as switch detector, serial command generators, blind and screen controllers. Each of these required IKON AVS to design and produce a one off interface. To avoid this wasted effort the Podule range of interface units was born. Each Podule contains a collection of inputs and output, which can be configured by a user to implement various control functions.



Din Rail Mounting CIR Podule



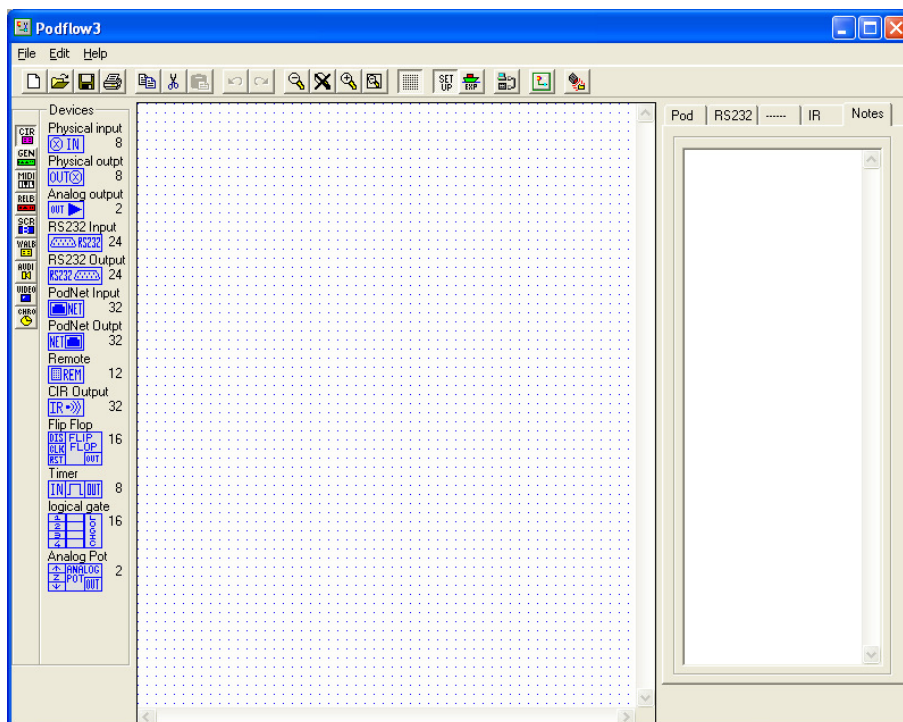
CIR-R Podule

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PodFlow 3 Software

Main PodFlow screen with CIR Podule selected.



Refer to the PodFlow programmer's reference manual for full PodFlow 3 programming information.

Device Reference

Physical Input



Number of devices per POD:-	8
Input Trigger Level:-	Digital or Analog
Output Type:-	Digital 1 or 0
Input connections:-	Screw terminal
Connections per output:-	>1

The maximum input voltage must not go below 0V or exceed +5V DC (See Appendix A).

Input Configuration

Inputs

Inputs 1 to 8 can be digital or Analog. Select the input from the Terminal list and Name as required.

Selecting threshold or window will put the inputs into Analog mode.

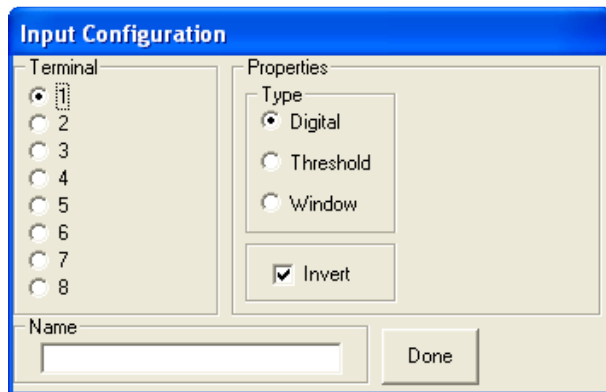
In DIGITAL mode logic thresholds are:-

- Logic 1 > 2.0v
- Logic 0 < 0.7V

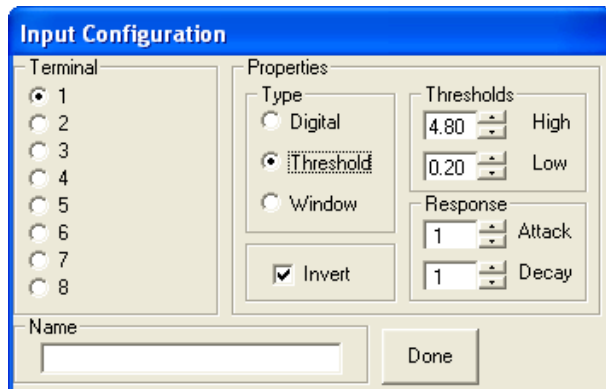
In THRESHOLD mode the output status will change when the DC input level exceeds the high threshold and only return low when it drops below the Low threshold.

In WINDOW mode the output is only high when between the high and low thresholds.

You can set the input to be active High or Low under the POD tab in the main window. Default is pull up.



Digital Input



Analog Input

Name

Each device can be given a “Name”, this is displayed below the device in the diagram.

Invert

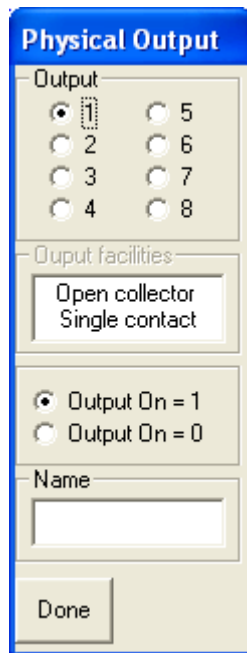
Inverts the state of the output. By default it is ON requiring the input to be grounded for activation.

Physical Output

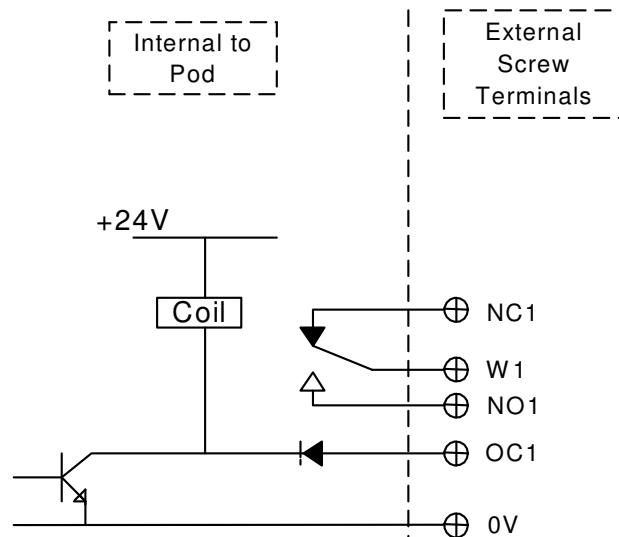


Number of devices per POD:-	2 x Relays SPDT & Open Collector 6 x Open collectors
Input Trigger Level:-	Digital
Output Type:-	Level
Connections per input -	>1
Connections per output:-	>1 (See Appendix C for Current ratings)

These can control external relays, Indicators or opto-isolators. After dragging the device onto your worksheet double click on the device to open a configuration window like the one below.



Outputs 1 & 2 control the internal relays, rated at 30V DC 1A these are labelled on the POD as NO1 W1 and NC1 for output 1 and NO2 etc. for output 2. Both of these outputs are also provided with open collectors, rated at 30V 100ma, these are labelled on the POD OC1 and OC2 respectively. The other outputs are provided with open collectors only again rated at 30@100mA DC and labelled OC3, OC4 etc.



Analog Output



Number of Devices per POD:-	2
Input Trigger Level-	Analog
Output Type:-	Analog output 0 to 10 V (see Multiplier)
Connections per input:-	1
Connections per output:-	1 Screw Terminal (See Appendix C for Current ratings)

Which Output

You can select either of the 2 outputs using the radio buttons, they are marked on the Pod as AN1 & AN2.

Invert

Provides the option of inverting the input signal used – i.e. 5V-input 0V DC output.

Multiplier

This sets the gain of the Analog o/p, i.e. all Analog sources provide a voltage between 0 and 5V. If you require an output between 1 and 10V set the multiplier to 2.

Offset

-10V to +10 V

Min Max

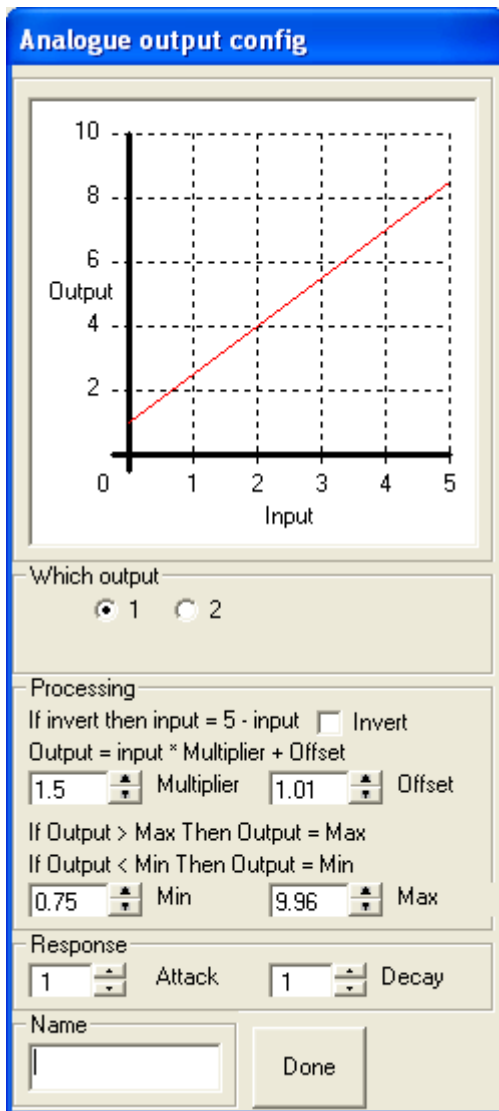
The output voltage is clamped between the Maximum and Minimum voltage.

Attack / Decay – 1 to 8

These provide a slew rate similar to the inputs. Values can be set between 1 and 8, where; 1=200, 2=100, 3=50, 4=25, 5=12.5, 6=6.3, 7=3.1 8=1.6 V/Sec approximately

Name

Each Device can be given a name; this is displayed below the Device in diagram.



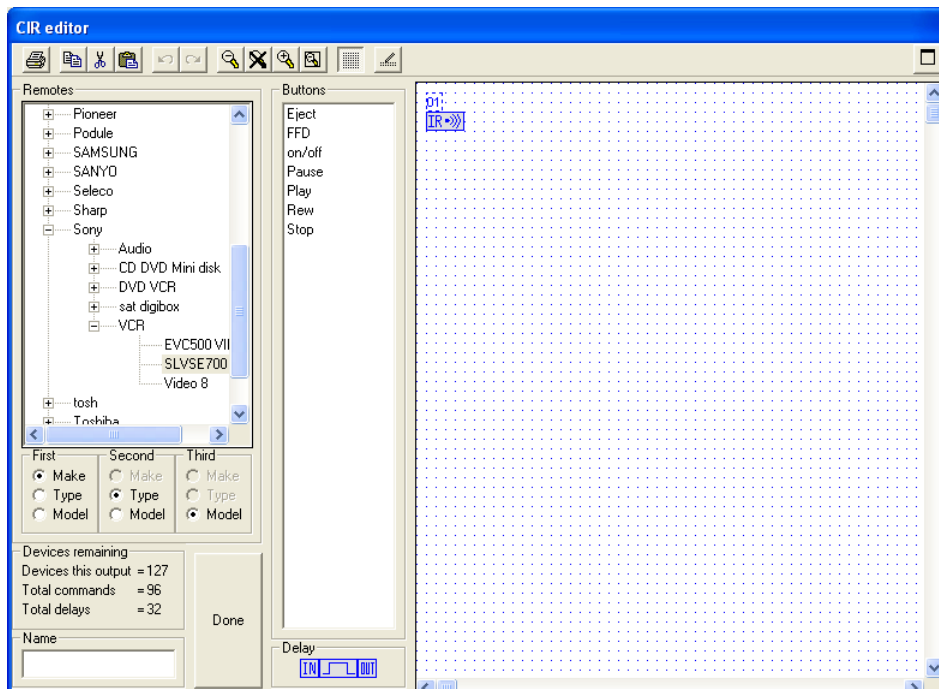
Cir Output

01



Number of devices per POD:-	32
Input Trigger Level:-	Edge triggered 0 to 1
Output Type:-	4 x Infra red via 3.5 mm jack sockets 1 x Blaster on screw terminals
Connections per input:-	1
Infrared lead:-	See Appendix

When you drag an IR output on to the project grid and double click on the device, a window will open. See below.



Select the make of device you want to control, then the type and then the model, (if not on list see capturing infra red codes.) Drag the command onto the grid then connect to the IR as normal, if you need to string more than one code to another just drag them on to the work grid and join them up from outs to ins up to a maximum of 96 codes.

Double clicking on to the IR command lets you select which IR output the signal uses. You can change the number of times that code is transmitted, some systems need to see a number of the same codes to change.

If you need a delay between each IR command drag a delay onto the grid double click delay, delay can be from 0.1 to 12.7 seconds

RS232 Input



Number of devices per POD:- 24 (up to 32 bytes each)
Input Trigger Level:- RS232 Via port1
Output Type:- Edge triggered 0 to 1
Connections per input:- 1 (Port 1)
Connections per output:- >1

A screenshot of the 'RS232 Input config' dialog box. It features a 'Select Message' section with 24 radio buttons arranged in a 4x6 grid, numbered 1 to 24. The 'Display/Edit' section has three radio buttons: 'Hex' (selected), 'ASCII', and 'Decimal'. The 'Size' section has a 'Number bytes' field with a value of 2. The 'Contents' section shows a list of 8 rows, with the first two rows containing 'QA' and 'OD' respectively. There are 'COPY' and 'PASTE' buttons on the right side of the contents area. At the bottom, there are fields for 'Name' and 'Also used by' (set to 'None'), and a 'Done' button.

When the RS232 input Device symbol is double clicked it displays a 'Select Message' window allowing the assignment of the message it is to respond to.

When a message is selected a side window opens, this is a repeat of the RS232 Tab and allows the setting up, or verification of the message length and content. A warning is also given if the message is already assigned within the Podule.

RS232 Output



Number of devices per POD:- 24 (up to 32 bytes each)
Input Trigger Level:- Edge 0 to 1
Output Type:- RS232
Connections per input:- >1
Connections per output:- 1, RS232 port 1
1 x TX out on screw terminal

Accessed from the 'D' connector the RS232 output is configured under the RS232 tab. Each required message output will need a new RS232 Output device and these require configuring as to which message they are to transmit. The device supports multiple inputs.

A screenshot of the 'RS232 Output config' window. The window has a blue title bar and a light beige background. It contains several sections: 'Select Message' with 24 radio buttons (2 is selected), 'Display/Edit' with radio buttons for Hex, ASCII (selected), and Decimal, 'Size' with a 'Number bytes' field set to 5, 'Contents' with a table of 8 rows (1-8) containing characters 's', 't', 'a', 'r', 't' and 'COPY'/'PASTE' buttons, 'On level' with a field set to 1, 'Name' and 'Also used by' text boxes (set to 'None'), and a 'Done' button at the bottom.

Double click on the RS232 Output Device to access the configuration screen.

Configuration is as per the inputs with the message transmitted when active. The On Level window configures transmission on a Low to High transition (1) or Hi to Low transition (0).

Multiple inputs can be connected to the device as it responds only to a level change and not a fixed level.

The above example has been set to transmit message 5 which is an ASCII code s,t,a,r,t, when the RS232 output receives a Logic Level 1 on its input.

PodNet Signals

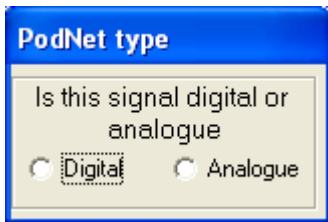
The PodNet currently supports up to 255 simultaneous messages with these a combination of Digital and Analog. You should only have a single Podule originating the message but all Podules can receive it. On any Podule, if the status of a message is changed the Podule transmits this change immediately, or if the network is busy in the next available time slot, this is generally within 5mS.

All Podules automatically retransmit their locally originated PodNet messages at an interval of approximately 35 seconds to ensure complete synchronisation between units.

PodNet input



Number of devices per POD:-	32
Input Trigger Level:-	PodNet Data
Output Type:-	Digital, Analog
Connections per input:-	1 (PodNet data)
Connections per output:-	>1



PodNet type

As soon as you drag a PodNet input onto the working area a box will open requiring you to select if this is to be a Digital or Analog PodNet message. Once you have made your choice this box is closed and a second box opens.



PodNet Message

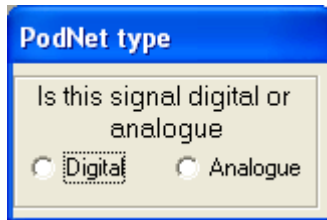
Enter the message number to be used either by typing in the message number or using the buttons.

For convenience you can give the PodNet input a suitable name.

PodNet Output

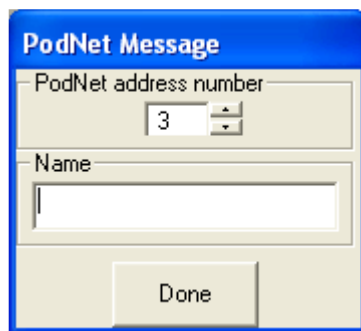


Number of devices per POD -	32
Input Trigger:-	Digital, Analog
Output Type:-	Digital, Analog
Connections per input:-	1
Connections per output:-	1 (PodNet OUT)



PodNet type

As soon as you drag a PodNet output onto the working area a box will open requiring you to select if this is to be a Digital or Analog PodNet message. Once you have made your choice this box is closed and a second box opens.



PodNet Message

Enter the message number to be used either by typing in the message number or using the buttons.

For convenience you can give the PodNet input a suitable name.

Podules will not 'see' on their input a transmitted message that uses the same message number as a PodNet output used on the same Podule. This is to eliminate the possibility of creating an infinite feedback loop.

*Note; PodNet outputs can take up to 30 seconds to settle after switch on.

Flip Flop



Number of devices per POD:-

16

Input Trigger Level:-

DIS = Level

CLK & RST = Edge 0 to 1

Output Type:-

Digital

Connections per input:-

>1

Connections per output:-

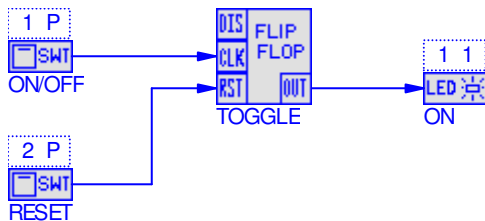
>1

Whilst similar to a normal 'D' type in many respects the Podule version has a number of specialised attributes.

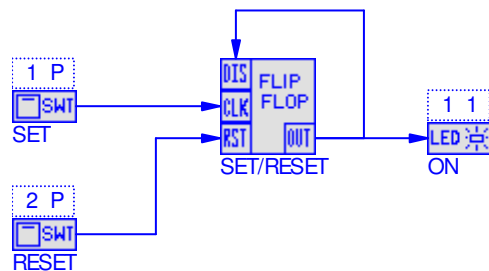
CLK The clock input, it will ignore static states and is only triggered by a Lo to Hi transition allowing multiple sources to be linked to it. On each transition the output will change state. This is unless DIS is tied to a Hi signal – see below.

RST The reset pin triggered by a Lo to Hi transition allowing multiple sources to be linked to it. When triggered it will force the output Lo.

DIS When High this disables the CLK input. This input is both transition and level sensitive and if connected to the Flip-Flop's output will change the operation to a Set and Reset type using CLK as set and RST as reset.



Flip-Flop connected for toggle action with reset.

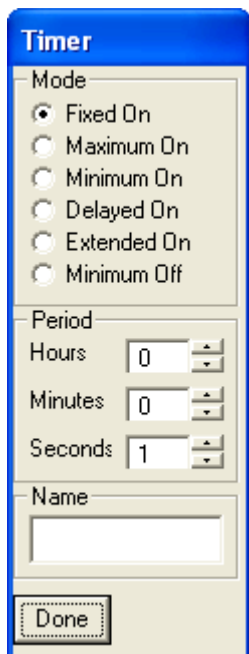


Flip-Flop connected for Set - Reset operation.

Timer Device



Number of devices per POD:-	8
Input Trigger Level:-	Edge 0 to 1 or 1 to 0 (see below)
Output Type:-	Digital
Connections per input:-	1
Connections per output:-	>1



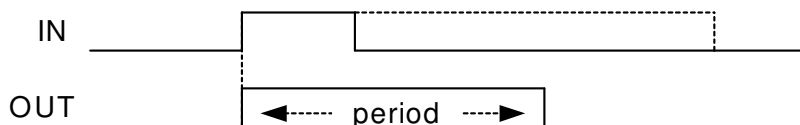
The device will only accept a single input for triggering and can be used in multiple timing modes. The time period can be set from 1 second to 18 hours.

The time period set along with the type of timer selected is displayed above the device.

Any name is shown below the device.

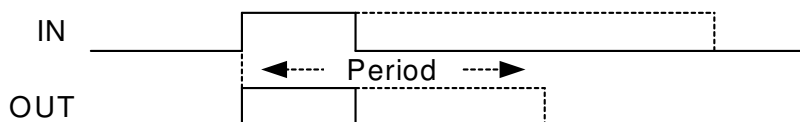
Fixed On

The output will follow the input state. It will remain High for the on timer period, independent of any other input changes.



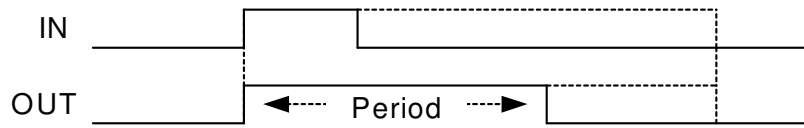
Maximum on

The output will follow the input state up to a maximum time set by the on timer.



Minimum On

On for a set time even if the trigger is removed. The output remains high whilst the input remains high, even if the time period has expired.



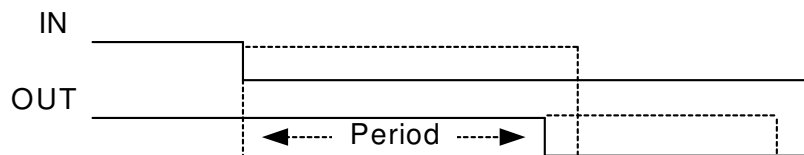
Delayed On

Output remains low for the set period after a Lo to Hi transition and then goes high whilst the input remains Hi.



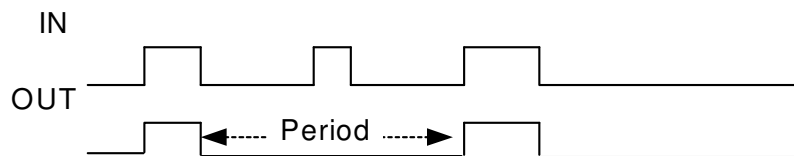
Extended On

Output remains High for the set period after a Hi to low trigger.



Min Off

Output will remain low for the set period, even if the input is re-triggered.



Period

Adjustable time in Seconds, Minutes or Hours

1 to 59 Seconds

1 to 59 Minutes

1 to 17 Hours

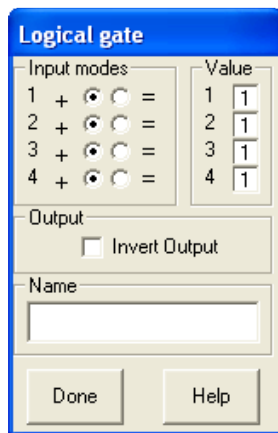
If no time is set it defaults to 1 second.

Logical Gate Device

1	+1	LOGIC
2	+1	
3	+1	
4	+1	

Number of devices per POD:-	16
Input Trigger Level:-	Level
Output Type:-	Digital
Connections per input:-	1
Connections per output:-	>1

Double click on the Logic Gate to configure as:-

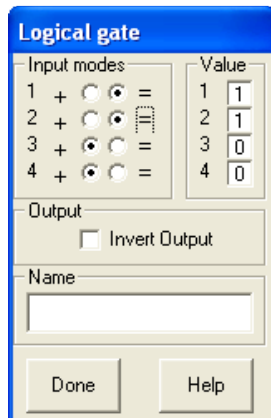


Each input can be set as an AND gate or an OR gate.

If, as shown, the + button is selected it is part of the OR gate.

As part of the OR gate the input will be active if the signal is equal to the number on the right. The example as shown, if any of the four inputs are Hi (1) for the gate output will be high.

The Invert Output box will change the status of the output from Hi to Lo when all inputs are Hi.



Inputs 3 & 4 are still part of the OR gate but looking for a low (0) to be valid - if unconnected effectively not used.

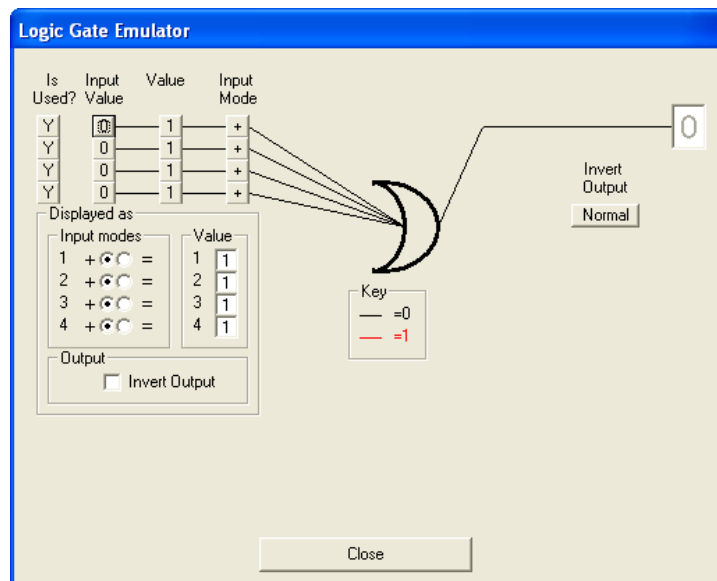
Inputs 1 & 2 have the = button selected and are part of the AND gate.

As part of the AND gate if either input goes high the output will be high.

The Invert Output box will change the status of the output from Hi to Lo when either input 1 or 2 are Hi.

Logical Gate Emulator

Under 'Help' an emulator allows a simulation of operation.



Is Used?

Select if the gate input is to be used or not.

Input Value

Set the logic level at the input, either 1 or 0.

Value

Set the level the input is to respond to.

Input Mode

This toggles between + for an 'OR' input and = for an 'AND' input. Changing these will alter the logic diagram to suit the required logic.

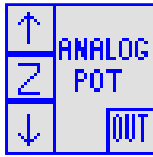
Invert Output

Lets you invert the output if required.

Displayed As

This group of radio buttons change to reflect the emulation settings and directly correlate to how the device itself needs to be set to achieve the emulated logic.

Analog Pot Device



Number of devices per POD:-	2
Input Trigger Level:-	Edge 0 to 1
Output Type:-	Analog 0 to 5V
Connections per input:-	1
Connections per output:-	>1

Connections



Level UP. Each time the input pulses high the Analog output increments by the Step value.

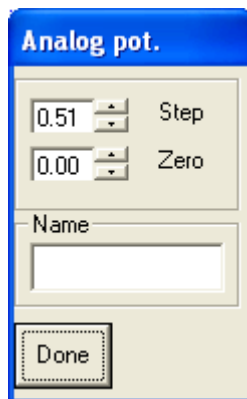


Level DOWN. Each time the input pulses high the Analog output decrements by the Step value.



Set Analog output to default.

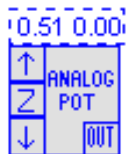
Double click on the Analog Pot symbol to configure as:-



'Step' is used to set the Analog step size for both Level Up and Level Down. The range is from 0.02 to 5.00. With a setting of 0.02 it takes 250 pulses to change the output from 0 to +5V. If set to 5.00 it only takes one pulse.

'Zero' allows the default setting selected by the Z input to be set. The range is from 0.00 to 5.00.

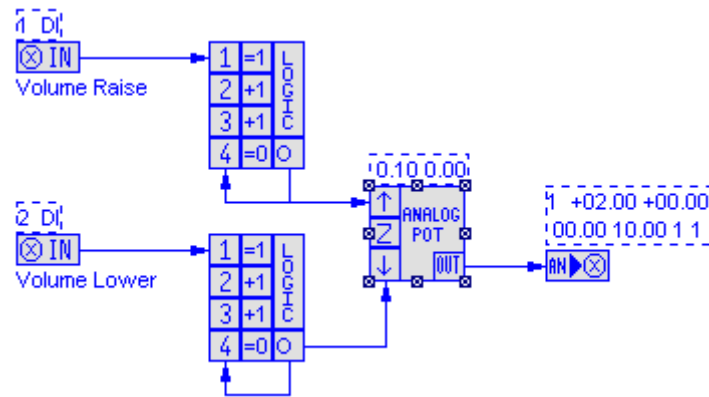
'Name' allows the device to be assigned a name.



The digits above the device show the step size to the left and the Zero value to the right.


Typically the Analog Pot is used to allow digital signals to alter an Analog value for either direct output from the Podule or linking via an analog PodNet message to other Podules.

Typical application using the Analog Pot



In the above simple application Volume Raise and Volume Lower inputs are used to ramp up or ramp down a DC voltage for control over volume on a power amplifier. These inputs can just as easily be for raise and lower of lights via a 0-10V dimmer.

The Volume Raise input is fed into a logic gate configured as a 2 input AND. The second input is inverted (=0) and is fed from the output of the gate using the inherent 100mS delay between processing cycles to create an oscillator that is only operating when 'Volume Raise' is active.

The oscillator's output feeds the  input of the 'Analog Pot' that has its step size set to 0.10. This ramps the device's output from 0V to 5V in 5 seconds. For a 10 second ramp you would set the step size to 0.05.

Similarly 'Volume Lower' ramps the level down.

The output of the Analog Pot is fed to Analog output 1. This has a multiplier value of 2 converting the incoming 0-5V range to 0-10V.

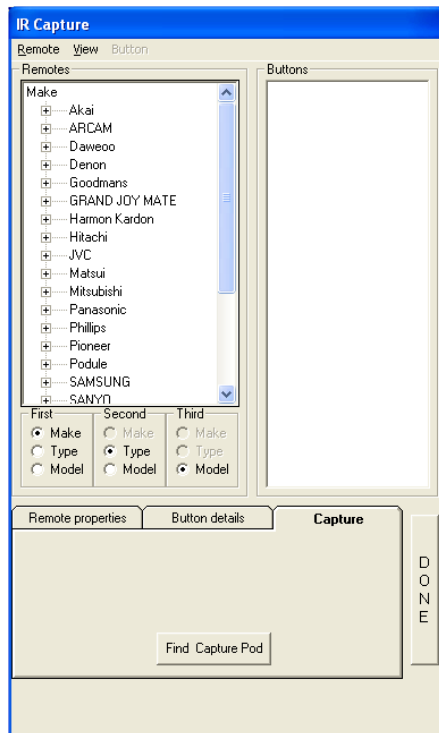
Infra Red Capture



For a complete step-by-step guide to using the IR Capture Podule refer to it's dedicated manual or the separate data sheet 'Connecting & Using the CAPTURE PODULE' contained in the manuals section of the CD or available from our website at www.ikonavs.com .

The following is a brief summary of operation.

Opening screen:-



To capture infrared codes (IR) for a TV, VCR, DVD etc. you will need to connect a capture pod to a serial port. Once connected click on 'Find Capture Pod' and the software will then interrogate the serial ports to find the Capture Podule.

Initially you will then get a message "Please wait searching for pods " once found it will report the Podule type and the firm ware version number.

If no pod is found check the connections and battery.


Capturing IR Code

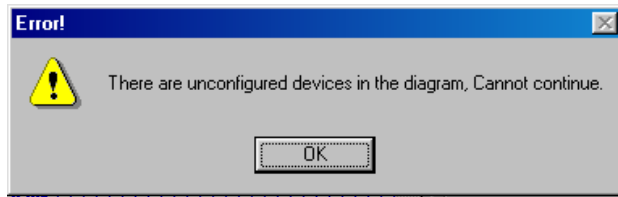
Procedure for capturing codes:-

1. From the 'Remote' menu click on 'New'.
2. Type in manufactures name.
3. Type in model name or number.
4. Click on a radio button to select type of equipment.
5. Click on 'DONE' when the above is complete.
6. From the 'Button' menu click on 'New'. An input box will appear enter button name e.g. 'ON' then click 'OK'.
6. You will then get an instruction to press the button, then release it, you may get other messages follow these.
7. When the code has been capture you will get an "ok" or fail.


You have the choice when you have captured the codes to play back the code to check it (max distance 1.5M), recapture the code or delete it. Just click on the IR command and select the option, (Playback, Delete or Re-capture).

Programming the Pod

Use a serial lead as described in Appendix D to program any of the Podules. When you click on this icon  you may get a message



This is because some of the devices have not been set up properly. You may have an input device on you project that has no terminal selected.

Once all the devices have been corrected and you then press  A window will appear as it searches for pods, Fig 1, if none are found you will get a window like Fig 2, check cable connection and power to the Pod. Once communications has been established a window like Fig 3 will appear. This shows that there is a CIR Pod connected to com port 1. Click the radio button next to the Pod you wish to program.

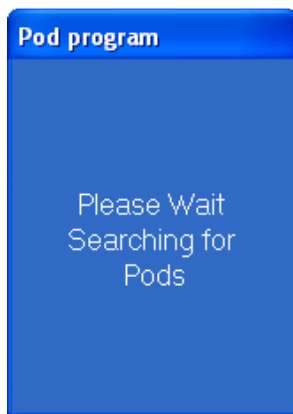


Fig 1

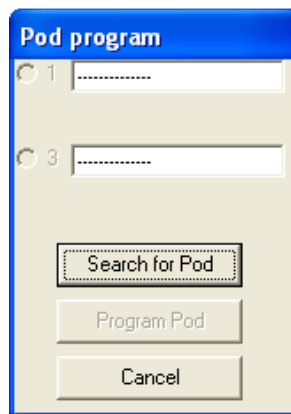


Fig 2

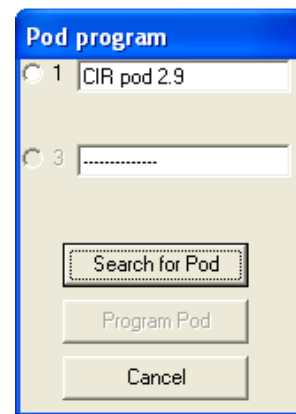


Fig 3

Note:- Fig 3, also shows the revision of the firmware within the POD, New versions, along with PodBootstrap to load them are available on our web site at www.ikonavs.com .

Data is sent to the CIR Podule as two programs, one for the main PodFlow program and a second containing the IR data. Whilst the main PodFlow data is being sent the progress display as per Fig 4 is displayed with this changing to Fig 5 when the IR data is being sent. When programming is complete Fig 6 appears allowing programming of a second Podule or exit.

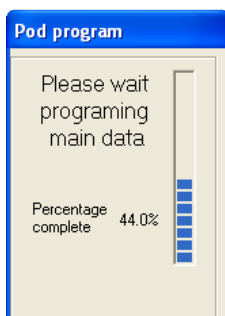


Fig 4

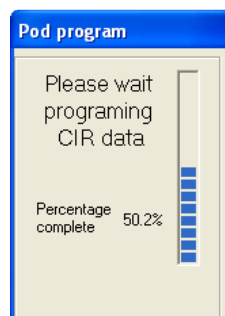


Fig 5

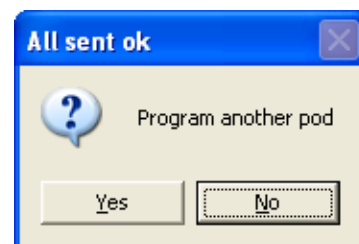



Fig 6

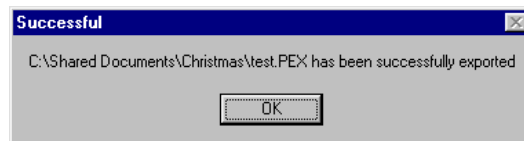
Pod Export

Pod Export allows a configured file to be exported for download to a Podule without having to install PodFlow on the PC being used. This is intended for system designers to allow customers to update configurations without access to the main PodFlow diagram.



To create an export file select . A 'Save As' box will open allowing the user to specify where the file is to be saved and also to specify a name. The suffix .PEX will be added.

Click on 'Save' to export. When exported the following conformation will be given. Click on 'OK' to continue.



Pod Download

To utilise a .PEX file it is necessary to install 'Pod Download' on the PC to be used. This is available on the Ikon CD and also from the website at www.ikonavs.com. Once installed it is only necessary to double click on the .PEX file to be downloaded to automatically start the configuration.

Once started the program searches for a compatible Podule on the serial ports in an identical manner to the normal programming method.

A window will appear as it searches for pods, Fig 1, if none are found you will get a window like Fig 2, check cable connection and power to the Pod. Once communications has been established a window like Fig 3 will appear. This shows that there is a CIR Pod connected to com port 1. Click the radio button next to the Pod you wish to program.

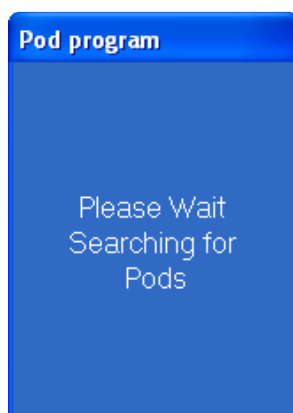


Fig 1

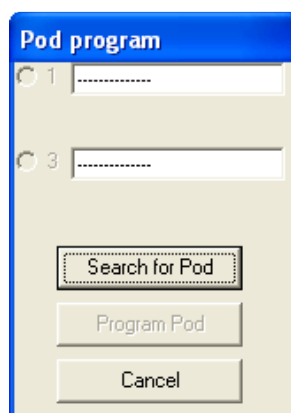


Fig 2

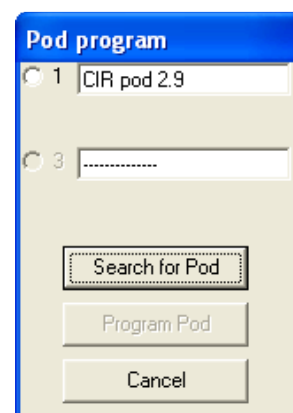


Fig 3

Note:- Fig 3, also shows the revision of the firmware within the POD, New versions, along with PodBootstrap to load them are available on our web site at www.ikonavs.com.

Data is sent to the CIR Podule as two programs, one for the main PodFlow program and a second containing the IR data. Whilst the main PodFlow data is being sent the progress display as per Fig 4 is displayed with this changing to Fig 5 when the IR data is being sent. When programming is complete Fig 6 appears allowing programming of a second Podule or exit.

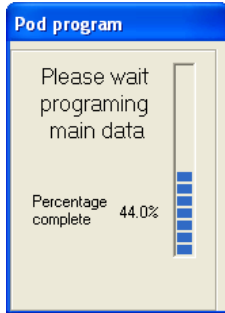


Fig 4

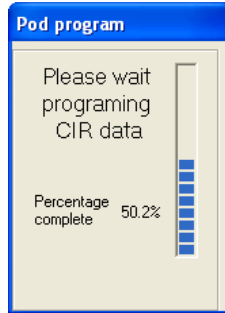


Fig 5

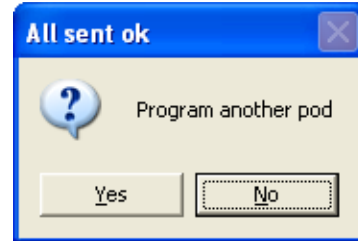


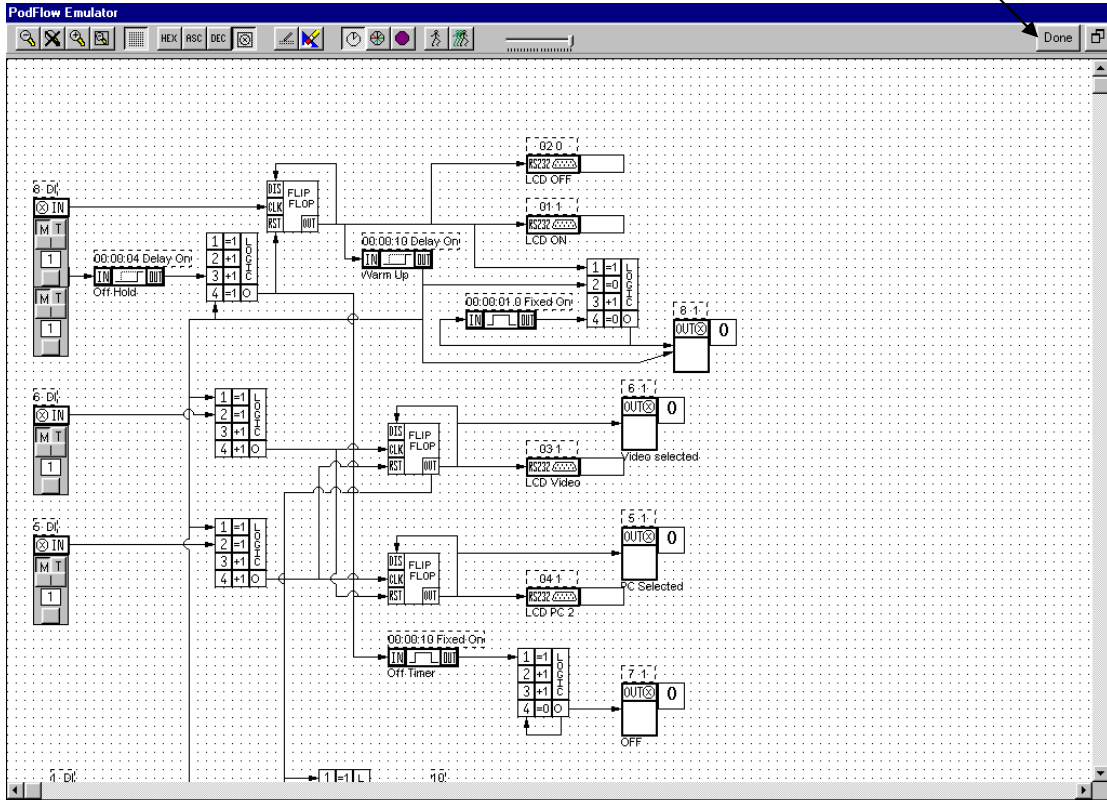
Fig 6

Emulation

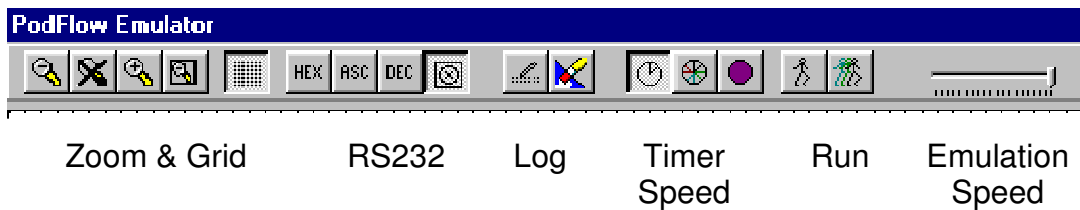


The Emulation mode allows you to test your PodFlow configuration prior to loading into a Podule. Click on the Emulate icon on the toolbar to open the emulation.

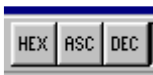

EXIT Emulation











Emulation Toolbar



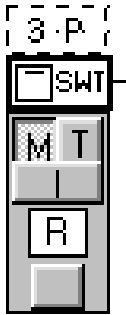
These operate as per the main PodFlow program.

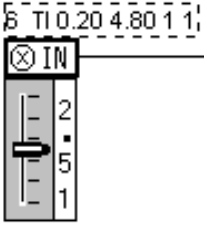
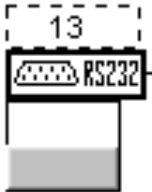
<p>RS232</p>  	<p>Select the format for RS232 messages.</p> <p>Shows devices as device image.</p>
--	---

<p>LOG</p>  	<p>RS 232 output events are logged during the emulation.</p> <p>Use to view and hide the log.</p> <p>Clear the log.</p>
<p>Timer Speed</p>   	<p>Use to speed up timer operation during emulation.</p> <p>Run timers in real time, (default setting).</p> <p>Run timers at x10.</p> <p>Run timers at x60, i.e. 1 min in 1 second.</p>
<p>RUN</p>  	<p>Start the emulation.</p> <p>Start the emulation running.</p> <p>Step through each operation manually.</p>
<p>Emulation Speed</p> 	<p>Allows the emulation to be slowed down.</p> <p>As shown emulation is at 100% speed. Slide to left to slow to 5% minimum.</p>

Input Emulation

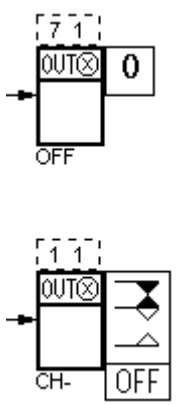
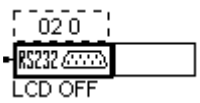
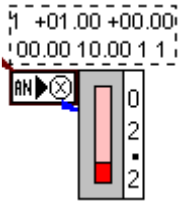
Each input has a set of controls to set the input state. These change between different types of inputs.


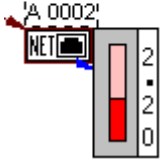
<p>Digital Input & Digital PodNet Input</p> 	<p>When set for Momentary operation the Invert button is available. The devices output is only high when the lower button is operated. If Invert has been changed then the output is high until the lower button is operated.</p> <p>When set for Toddle the Invert button is hidden and each operation of the lower button toddles the output status.</p>
--	---

<p>Analog Input & Analog Input</p> 	<p>If the Podule input is set for Analog, the push buttons are changed for a slider to emulate an input voltage between 0V and +5V. The numbers to the right of the slider show the current voltage, in this case 2.51V.</p>
<p>RS232 Input</p> 	<p>RS232 inputs are emulated by operation of the button below the symbol. When operated PULSE is displayed in the window above the button and the devices output pulses high.</p>


Emulation Outputs

Each type of output device has it's own method of displaying the current status.

<p>OC and Relay Outputs</p> 	<p>OC (Open Collector) outputs display their current status as a flag showing 0 for off and 1 for on.</p> <p>Outputs 1 also 2 also operate relays. For these outputs the status of the relay contacts is shown.</p>
<p>RS232 Outputs</p> 	<p>When an RS232 output is activated the message will be displayed to the right of the symbol. It is also logged.</p>
<p>Analog Outputs</p> 	<p>The Analog output emulation is displayed as a bargraph. The Red graph depicts the relative Analog level whilst the numbers reflect the actual level having accounted for any offsets and multipliers.</p>

PodNet Outputs	
	<p>Digital PodNet messages are shown with a '0' or '1' flag dependent upon their status.</p>
	<p>Analog PodNet messages are displayed as a bargraph and numeric value between 0V and 5.00V</p>

Running the Emulation

- 1 Zoom, maximise, turn on/off the grid etc. as per personal preference.
- 2 Set all inputs to the start condition, by default this is Momentary & Inverted.
- 3 Select RUN .
- 4 Manipulate inputs as appropriate.
- 5 Change the emulation speed, timer speed etc if required.

Applications

Due to the highly configurable nature of Podules their possible applications are virtually infinite. Some possible applications are

1. Control window blind/shutter either with interlocks or on time
2. Pushbutton control of voltage controlled amplifiers
3. Sequenced power up/down of units
4. Push button control of Mains/DC loads
5. Operate RS232 controlled units from pushbuttons
6. Home Automation
7. Pan and tilt controls for Cameras
8. TV, VCR, DVD Control etc.
9. Home Cinema control consumer goods and dimmer control

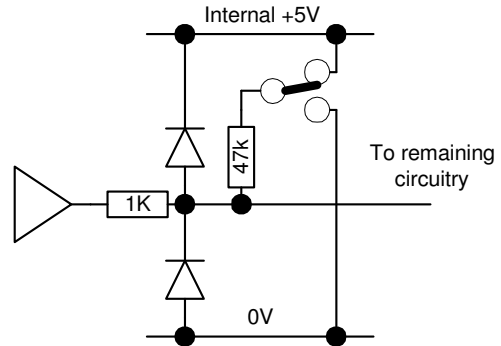
Appendix A

Input Configuration

Inputs

To protect the inputs from excessive voltages each input has 1k ohm input resistor and diode clamps to 0V and +5V. This clamp allows input levels to be between a max +/-10V. For digital inputs

1. Logic high is any voltage greater than +2.0V
2. Logic low is any voltage less than +0.7V



Analog inputs of between 0V and +5V, voltages outside this are effectively clamped to either 0 or +5V.

Each input is provided with a 47k ohm resistor; this can be configured as either a pull up (to +5V) or as a pull down (0V). (Default pull up)

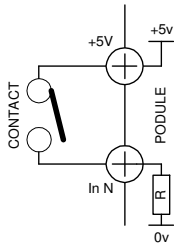
Debounce

Each input has a built in debounce of min 50ms to a max of 150ms depending on how complex the Podule project.

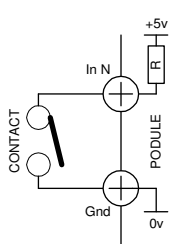
Input connection details

Typical connection details for digital inputs are

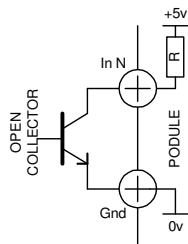
Active High



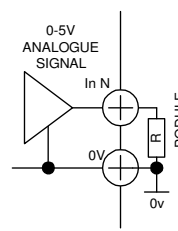
Active Low



Open Collector



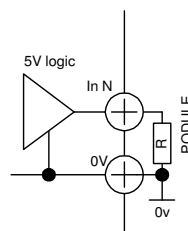
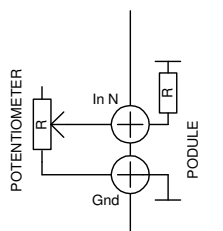
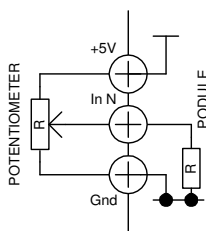
Analog Signal



Pull up active

Pull up active

Typical connection details for threshold/Analog inputs are



Pull up Active

Appendix B

Installing Podules

Mechanical installation and connecting of the Podule should be carried out before any power is applied. Podules should not be used in areas of extreme heat or moisture.

Din Rail Mounted Models

Podules are designed for mounting onto standard 35mm 'top hat section' din rails. The rail can be within a rack or control cubical or fitted to any suitable surface.

Refer to appendix D & E for connecting details. The use of bootlace ferrules on cables and finger trunking or similar for cable management is highly recommended.

R Series Podules

The R series Podules can be used free standing, wall mounted or rack mounted.

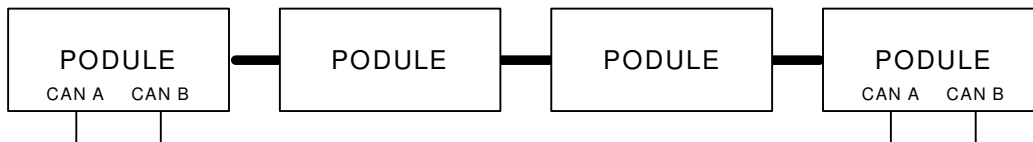
- Free Standing:- Fit the rubber feed supplied to the underside of the Podule to prevent scratching the supporting structure.
- Wall Mounting:- Use the optional brackets part No. WB-1. Follow the instructions supplied with the brackets for fitting and wall mounting.
- Rack Mounting:- Use rack kit part No. Rack-1 for mounting one or two 'R' series Podules in a 1U rack space. Use rack kit part No. Rack-6 for up to 9 'R' series Podules in 6U of rack space.

Refer to appendix D & E for connecting details. The use of bootlace ferrules on cables and finger trunking or similar for cable management is highly recommended.

Powering Multiple Pods

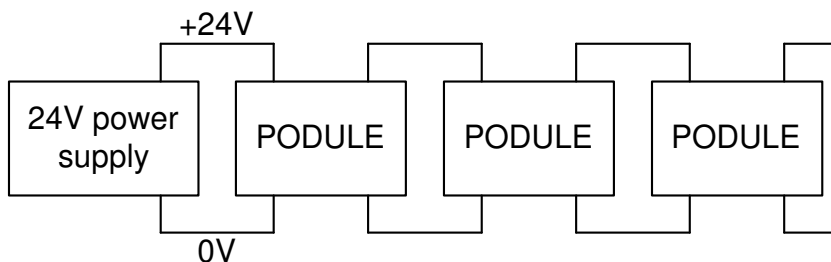
PodNet Bus

The PodNet bus uses RJ45 connectors and cat 5 cables. Each Podule is provided with two RJ45 connectors so that a simple daisy chain up to the maximum of 32 Podules can be created. The Podules at the extreme ends of the network must have their CAN A and CAN B terminals linked as shown below. On the 'R' series Podules this link is a push button.

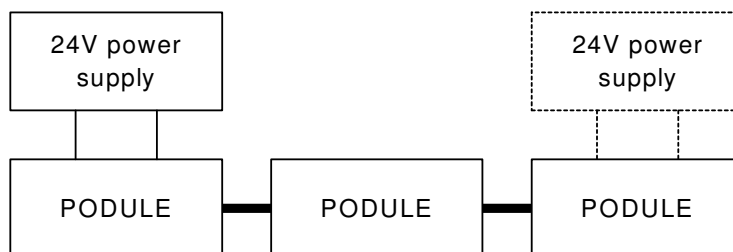


Power supply

All Podules operate from a 24V D.C. supply. Screw terminals, and / or a DC connector are provided on each Podule to allow easy daisy chaining, as shown below up to a maximum of 6, then another power supply needs to be added.



The 24V supply is also feed through the cat 5 PodNet network so only one Podule on the network needs to be connected to a power supply (See appendix C for current Consumptions.)



Appendix C

CIR Podule Specification

8 I/P 8 x Digital or Analog
8 O/P 2 x Relays + Open Collector outputs (Relays SPDT 30V DC 1A),
 6 x Open Collectors, 30V 100ma max.
5 IR 4 x 3.5mm jack sockets infrared outputs.
 1 x Infrared Blaster screw terminals.

1 Serial Port
 Up to 24 Different O/P Strings (up to 32 Bytes Long)
 Up to 24 Different I/P Strings (up to 32 Bytes Long)

2 PodNet Ports
 Up to 32 messages in and out

Internal Devices
 16 x Flip/Flops
 8 x Timers
 16 x Logical Gates
 2 x Analog Pots

Power Requirements

Voltage 24V DC, 18V Min, 30V max.

Current Requirements

 Quiescent current 80mA (inrush current 220mA).
 Relay coil current 20mA each.
 Open Collect current max 100ma each.
 RS232 Tx, 12mA per port .

Mechanical Data

CIR Podule 140mm (W) x 90mm (H) x 60mm (D) excluding
 connectors.

 Nett weight = 426g.

CIR-R Podule 213mm (W) x 44mm (H) x 145mm (D) excluding
 connectors.

 Nett weight = 1,100g.

Appendix D

Pin out of DC Plug, RS232 & PodNet

Programming Lead, PC to POD
Connection Details of “D” Type connectors

PC End

Female 9 way D

Pin 2
Pin 3
Pin 5
Pin 7

POD End

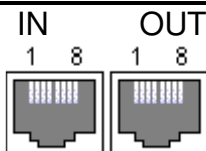
Female 9 way D

Pin 2
Pin 3
Pin 5
Pin 7

Podule RS 232 Pin OUT

Pin 2 Tx, Data O/P
Pin 3 Rx, Data I/P
Pin 5 Ground (0V)

PodNet Connector



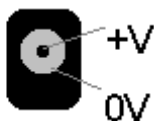
IN		OUT		RJ 45 Patch
Pin 1	24V In	Pin 1	24VOut	Orange/White
Pin 2	24V in	Pin 2	24V Out	Orange
Pin 3	N/C	Pin 3	N/C	Green/White
Pin 4	CAN H	Pin 4	CAN H	Blue
Pin 5	CAN L	Pin 5	CAN L	Blue/White
Pin 6	N/C	Pin 6	N/C	Green
Pin 7	0V	Pin 7	0V	Brown/White
Pin 8	0V	Pin 8	0V	Brown

**CAUTION DO NOT INTERCONNECT TO ETHERNET OR PERMANENT
DAMAGE MAY OCCUR TO THE ETHERNET DEVICES.**

DC Connector

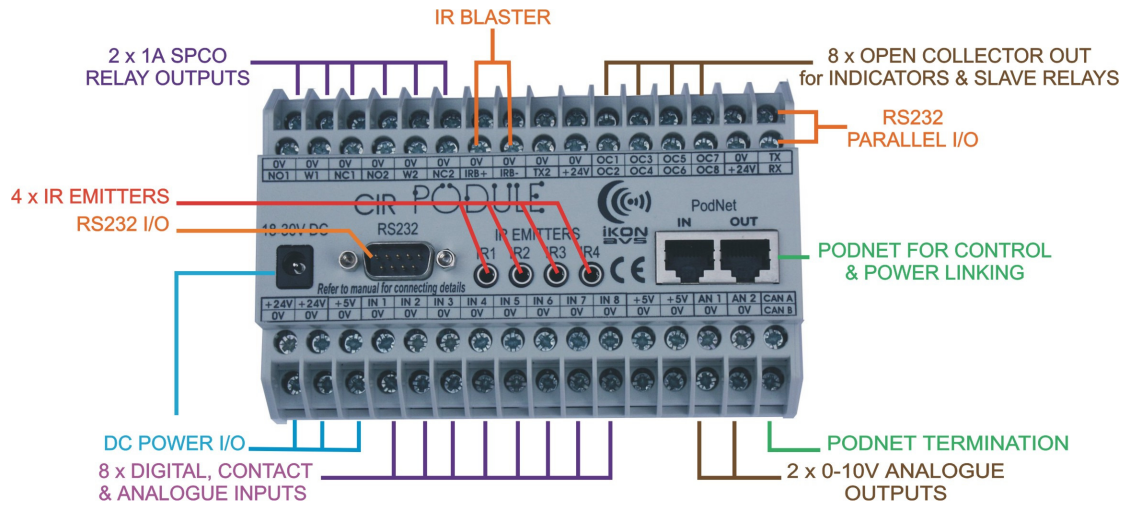
2.1mm Centre pin +V

18-30V DC



Appendix E

CIR Podule - Screw Terminals



DC INPUT END of CIR PODULE

	Lower	Upper				Upper	Lower	
	0V	+24V	IN		Relay 1	NO1	0V	
	0V	+24V	OUT		Relay 1	W1	0V	
	0V	+5V	OUT		Relay 1	NC1	0V	
	0V	IN 1	IN		Relay 2	NO2	0V	
	0V	IN 2	IN		Relay 2	W2	0V	
	0V	IN 3	IN		Relay 2	NC2	0V	
	0V	IN 4	IN		OUT	IRB+	0V	
	0V	IN 5	IN		OUT	IRN-	0V	
	0V	IN 6	IN		OUT	TX2	0V	
	0V	IN 7	IN		OUT	+24V	0V	
	0V	IN 8	IN		OUT	OC2	OC1	OUT
	0V	+5V	OUT		OUT	OC4	OC3	OUT
	0V	+5V	OUT		OUT	OC6	OC5	OUT
	0V	AN1	OUT		OUT	OC8	OC7	OUT
	0V	AN2	OUT		OUT	+24V	0V	
	CAN B	CAN A			IN	RX	TX	OUT

Notes

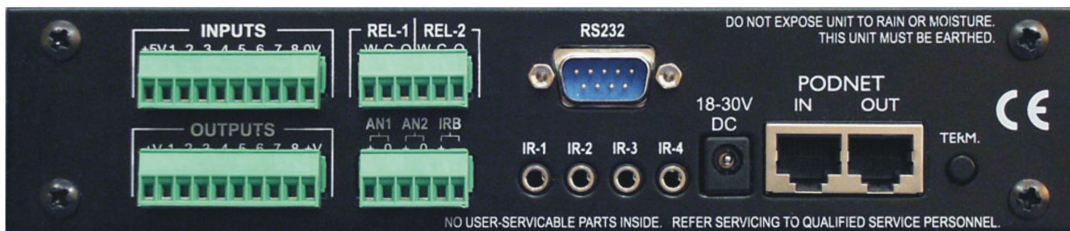
RX and TX are parallel with the 'D' socket, use only one.

TX2 is a separate buffered output; signals are the same as TX.

Link CAN A and CAN B on the end Podule of a network.

The +5V outputs are intended for external potentiometers feeding into the inputs.

CIR-R Podule – Rear Connectors



Left, 10 way Connectors

Upper - Inputs	
+5V	Output
1	Digital / Analog In 1
2	Digital / Analog In 2
3	Digital / Analog In 3
4	Digital / Analog In 4
5	Digital / Analog In 5
6	Digital / Analog In 6
7	Digital / Analog In 7
8	Digital / Analog In 8
0V	Common for Inputs

Lower - Outputs	
+V	+24V to load
1	Open Collector Out 1
2	Open Collector Out 2
3	Open Collector Out 3
4	Open Collector Out 4
5	Open Collector Out 5
6	Open Collector Out 6
7	Open Collector Out 7
8	Open Collector Out 8
+V	+24V to load

Notes

The +5V outputs are intended for external potentiometers feeding into the inputs.

Right, 6 way Connectors

Upper - Relays	
W1	Relay 1, Common wiper
C1	Relay 1, Normally closed
O1	Relay 1, Normally Open
W2	Relay 2, Common wiper
C1	Relay 2, Normally closed
O2	Relay 2, Normally Open

Lower - Outputs	
AN1+	Analog out 1 +V
0V	Analog out 1 0V
AN2+	Analog out 2 +V
0V	Analog out 2 0V
IRB+	IR Blaster +
IRB-	IR Blaster -

Appendix F

CIR Emitter 282

Description

The 282 Emitter contains a tiny infrared LED housed in a miniature, black finished injection moulded plastic shell. It emits IR (infrared) control signals sent to it by CIR Podule. The 282 can be installed directly on to the IR sensor window of the controlled device or other suitable location near the device to be controlled.

Installation

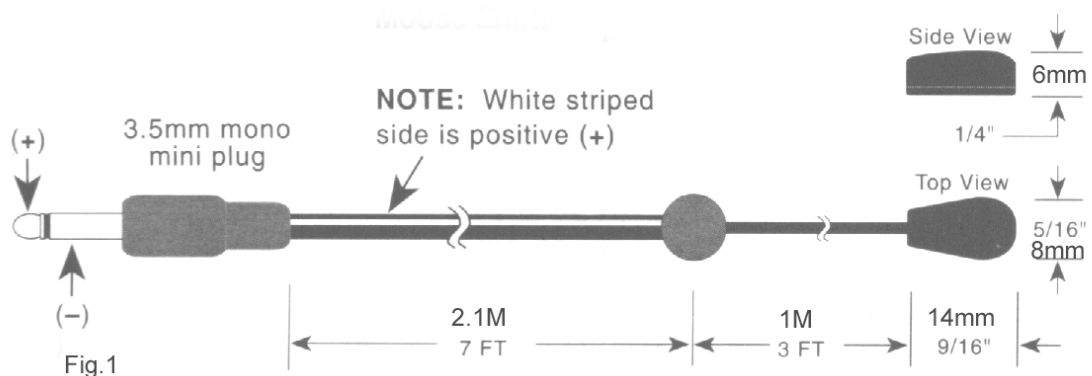
Attaching the Emitter to the IR Sensor Window.

- Each emitter has a clear adhesive layer on the bottom flat surface of the shell (fig 7).
- Peel off the adhesive protective cover and stick the emitter on the centre of the IR sensor window on the front panel of the unit to be controlled. If you remove the emitter for any reason, it may be necessary to replace the adhesive with a fresh piece of the 2-sided tape (supplied) to restore adhesion.
- In some cases it may be difficult to find the location of the IR sensor on the unit. Consult the owner's manual or the manufacturer, for the exact IR window location.
- Since the Emitter Shell is transparent to infrared, it allows you to still control the unit from a hand-held remote as well as with the 282.

Attaching the Emitters to Other Locations

- The high output from the curved top side of the emitter (fig 7) permits control from as much as 3 feet away when on the axis of the IR sensor window of the component.
- This allows placement on surfaces just below, above or in front of the controlled equipment for a more pleasing aesthetic appearance.
- Choose a location on a cabinet shelf, door, etc. Be sure the edge of the unit does not block the IR signal .

Caution: Cabinet door locations will usually result in interruption of the IR control signals to the unit when the door is open.



Electromagnetic Compatibility

This equipment has been designed, manufactured and tested to conform to the European EMC directives EN55103-1 & EN55103-2 for classifications E2 and E4.

Limitations as to use: The specified equipment is not to be mounted adjacent to RF transmitting or receiving equipment.

Manufacturers Information

The iKON AVS CIR PODULE is manufactured in England by Nebula Audio Ltd.

For service or warranty advice please initially contact your supplier. Alternatively contact the manufactures at:-

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WR5 2AJ

Telephone: +44 (0) 1299 250991

Fax: +44 (0) 1299 250983

Website www.ikonavs.com

Technical support e-mail

support@ikonavs.com

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