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## Overview

The **Control-it™ 5020, 5030** and **5040** digital modules provide a cost-effective, remotely controlled, distributed I/O solution. Analogue modules are also available.

The modules can be used as part of a total **Control-it™ 5000** solution, as memory mapped I/O using the **Control-it™ 5100** or **5101** high speed computer boards, or with any distributed I/O system which uses OPTO 22 protocols.

The range offers flexibility as these 3 modules can be used in different combinations to provide the appropriate number of connections at a distance of up to 1.2 kms.

The **Control-it™ 5021, 5031** and **5041** Connection Adapters are also available to provide a tidy, space-saving means of connecting all your sensors, loads and supplies in one place.

## Features

- **Control-it™ 5020** – 16 outputs
- **Control-it™ 5030** – 8 inputs, 8 outputs
- **Control-it™ 5040** – 16 inputs
- Selection jumpers can be altered whilst the modules are running.
- Communications section is optically isolated to prevent ground loops. All inputs have optical isolation and outputs have galvanic isolation.
- Every connection to the module is a plug-able screw terminal connector.
- Two supply options 12 or 24Vdc.
- All outputs are rated to 3A at 250Vac
- Well labelled lid with self-explanatory instructions so that no other installation instructions should be necessary.
- Every module is panel or DIN rail mountable and stackable.

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# General Description

## The Control-it™ 5030

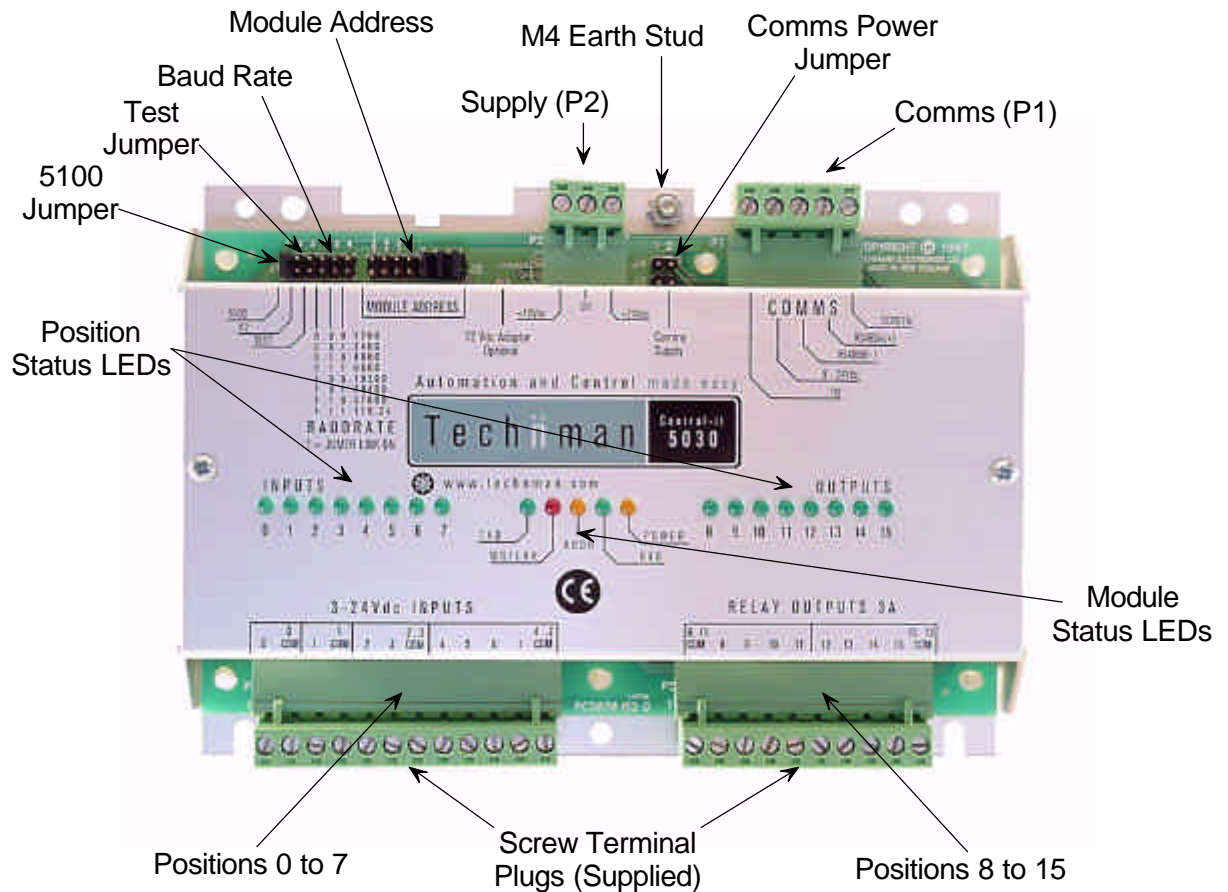


Figure 1 - The **Control-it™5030**

## The Control-it™ 5020 & 5040

The **Control-it™ 5020** and **5040** modules are identical to the **5030** apart from the Inputs and Outputs.

### The box should contain

- The **Control-it™** module
- Disk with demonstration and driver software
- Instruction manual
- Software manual

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## Functional Block Diagram

Figure 2 below shows the relationship between the main functional blocks of the remote modules, high-lighting the fully isolated Comms section and the CPU electrically isolated from the I/O.

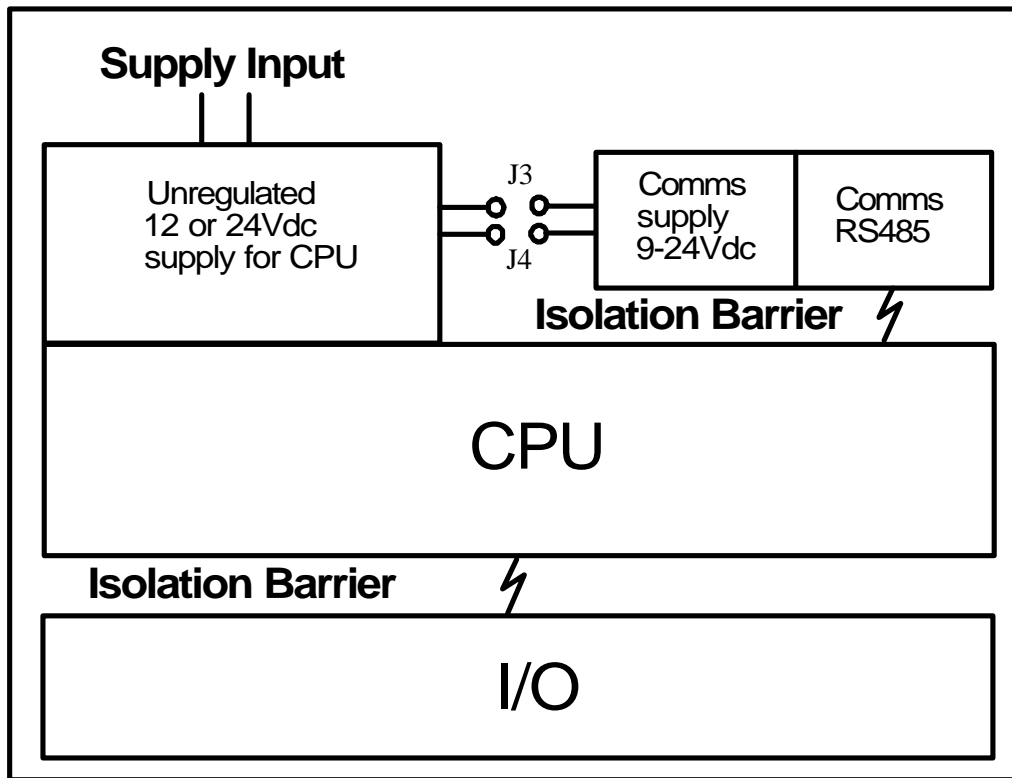


Figure 2 - The Control-it™ 50x0 Functional Block Diagram.

# Quick Start

This section will allow you to quickly set up the **Control-it™** remote module (5020, 5030 or 5040), in order to understand its use more readily.

NB: For detailed information on each step refer to the relevant section later in the manual.

## Set up in Opto 22 mode (Control-it™ 5001)

1. Check that all jumpers are placed as per figure 3 below. (For more, refer to page 15.)

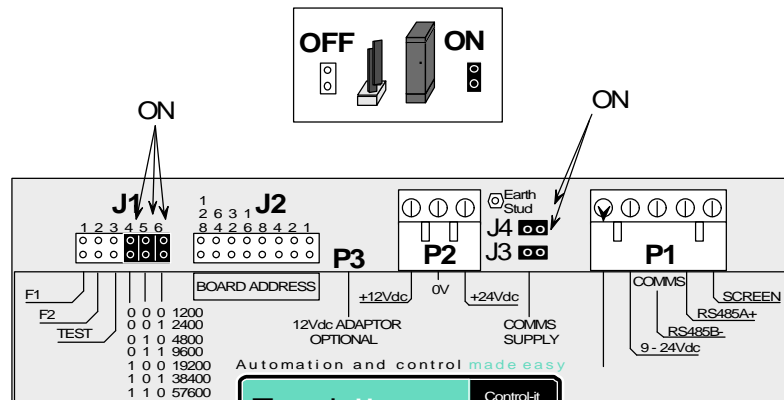


Figure 3 - Jumper settings.

2. Connect the module to an RS485 converter as per figure 4. (For more, refer to page 18.) Ensure the converter is connected to one of your PC's serial COM ports.

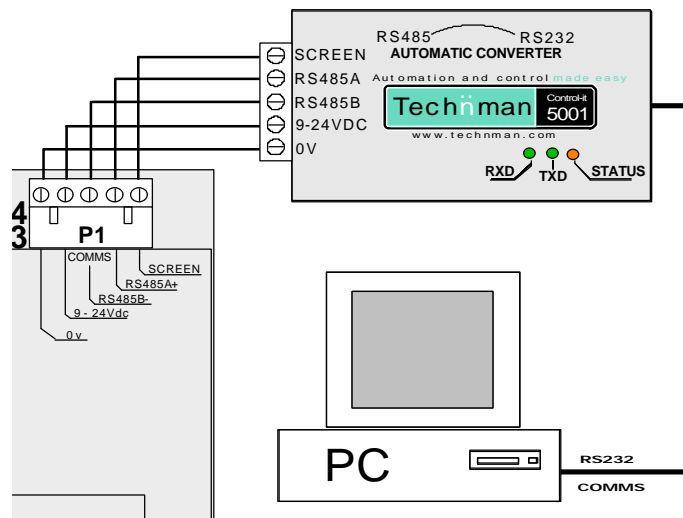


Figure 4 - RS485 connection to the 5001 converter.

- 
3. Connect 12V or 24V power to the remote module as marked on the front panel. (For more, refer to page 20)
    - The red WD/ERR lamp (50x0) should light for 1-2 seconds and then extinguish.
    - Ensure that the orange POWER lamp on the remote module and the orange STATUS lamp on the **Control-it™** RS485 converter are lit.
    - If any other condition exists refer to the **Troubleshooting** section, page 34.
  4. Connect an Input and/or Output. For more detail refer to **Connecting Inputs and Outputs** (page 22).

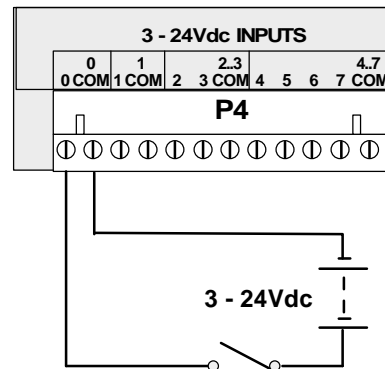
- Input

Connect a 3-24Vdc supply between '0' & '0 COM' of the input connector. The module's power supply is a good source for this test.

When power is applied the position's Input LED will light.

This example includes a switch for toggling the input signal.

Logic Levels across Inputs	
0-0.8Vdc	LOW
3-24Vdc	HIGH

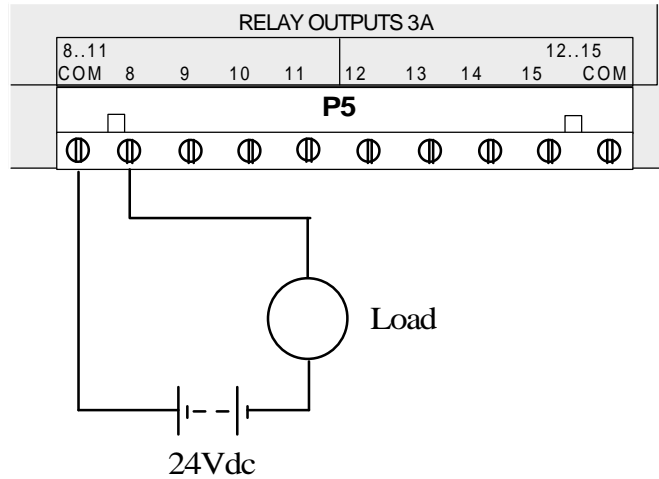


- Output

Connect a load (5A max) between '8' & '8..11 COM' of the output connector.

This example shows a 24Vdc load connected to position 8.

**NB:** An output's LED will not light until turned ON by the computer.



Now use the P5000Demo program (as described on page 10) to control the module.

### Set up in High Speed mode (Control-it™ 5100 & 5101)

1. Check that all jumpers are placed as per figure 5 below. (For more, refer to page 15.)

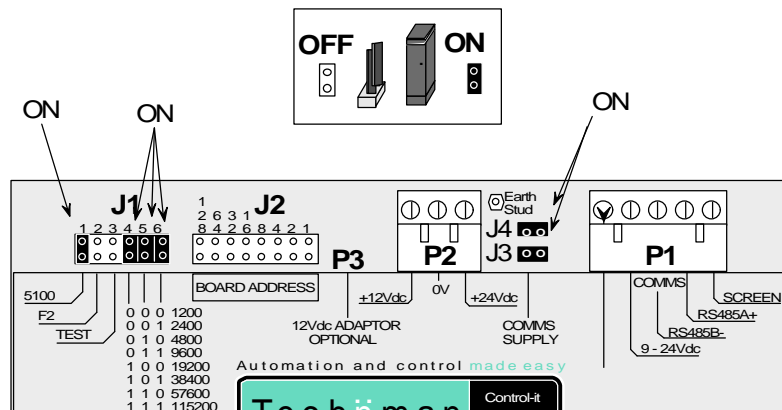


Figure 5 – Jumper settings

2. Connect the module to the RS485 interface board as per figure 6. (For more, refer to page 18.)

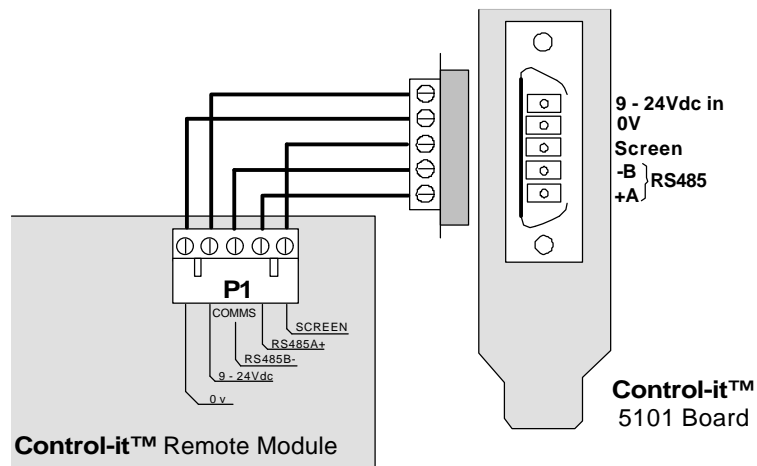


Figure 6 - RS485 connection to the 5101 PCI board.

3. Connect 12V or 24V power to the remote module as marked on the front panel. (For more, refer to page 20)
  - The red WD/ERR lamp (50x0) should light for 1-2 seconds and then extinguish.
  - Ensure that the orange POWER lamp on the remote module is lit.
  - If any other condition exists refer to the **Troubleshooting** section, page 34.
4. Refer to step 4 in **Set up in Opto 22 mode**, page 7, to connect an Input and/or Output.

Now use the P5000Demo program (as described on page 10) to control the module.

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## Using the P5000 Demonstration Program

This program provides a quick means of controlling and monitoring the remote modules.

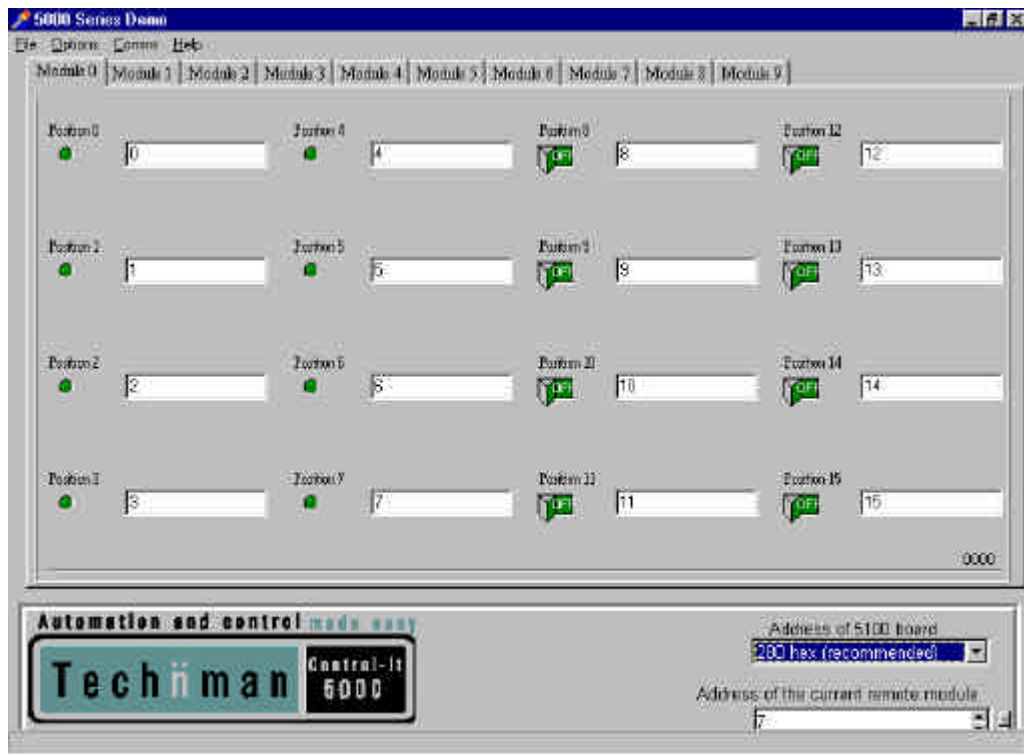


Figure 7 - P5000 Demo program

### Installation

To install the demonstration software and drivers to your hard drive:

- Insert the Techniman Electronics CD-ROM in your CD-Rom drive. If the CD does not auto-run, refer to **Troubleshooting** (page 34).
- Click on “Install P5000 Demonstration Software and Drivers for 5101 cards” and follow the instructions.

**NB:** Opto22 & 5100 users may choose to run the demonstration program directly from the CD-ROM, without installing it to the hard drive, by clicking on “Opto22/5100 users, run the demo from the disk”.

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## Starting

Run the demonstration program by selecting the desktop icon.

The icon can also be found under START|PROGRAMS|TECHN-MAN ELECTRONICS or from where you chose to install it.

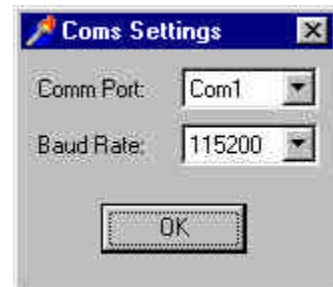
## Set Up

### Opto22 Users

1. Select Configure from the Comms menu.

- Choose the Comm Port you that have the serial cable plugged into, and then set the required Baud Rate.

If you have followed the Quick Start set up, this is 115200 baud.



- Click the OK button.

2. Select Opto22 from the Comms menu and 'Yes' when prompted to open the comm port.

3. Set the 'Address of current remote module', in the bottom right hand corner, to match the module address set with the jumpers.

If you have followed the Quick Start set up, this is '0'.

4. 'Opto22 Mode Selected' is displayed in the bottom left corner.

### Control-it™ 5100 (ISA or PC104) HS board Users

1. Select 5100 from the Comms menu.

2. Set 'Address of 5100 Board', in the lower right corner, as selected on the board. 280hex recommended (refer 5100 Installation Manual).

3. Set the 'Address of current remote module', in the bottom right hand corner, to match the module address set with the jumpers.

- 
4. 'ISA High Speed Mode Selected' is displayed in the bottom left corner.

### **Control-it™ 5101 PCI HS board Users**

1. Select 5101 from the Comms menu.
2. Set the 'Address of current remote module', in the bottom right hand corner, to match the module address set with the jumpers.

If you have followed the Quick Start set up, this is '0'

3. 'PCI High Speed Mode Selected' is displayed in the bottom left corner.

## **Usage**

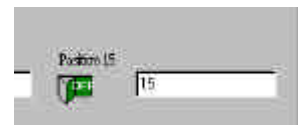
### **Main Display**

The main display will now reflect the type of remote module you have connected, with each Position becoming an input or output as appropriate.

As an example, figure 7 (page 10) shows a **Control-it™ 5030** (8 inputs and 8 outputs) at address 7, connected to a **Control-it™ 5100** at address 280hex.

- A switch indicates an Output.

Clicking on the switch will cause the output relay to toggle.



- A light indicates an Input.

The brightness of the light reflects the input state i.e. Dull is Off, Bright is On.

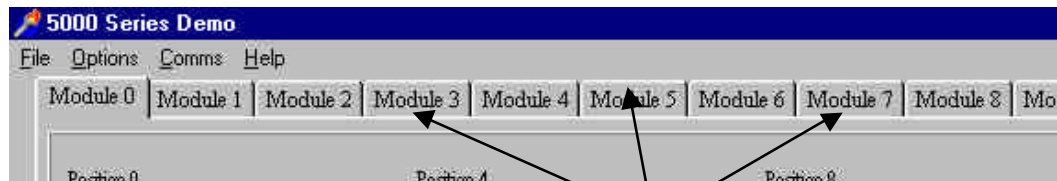


A description of the position's use can be entered in the white box next to each indicator.

---

## Multiple Modules

Up to 9 separate modules can be controlled and monitored simultaneously by selecting another module tab and entering the module's address in the address box.



Module Tabs

## Monitoring

The P5000 demo can be used to monitor the state of the module positions without interfering with your application.

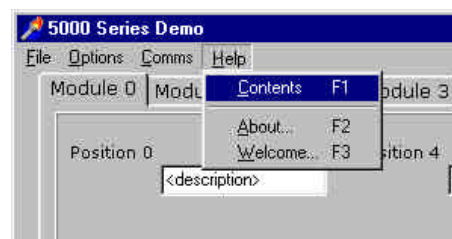
By selecting 'Monitor Mode' under the Options menu, the program releases control of the modules and simply indicates the positions states.

Output position switches change to yellow lights, indicating 'monitor' status, which act the same as the Input position lights.

## Help

The Help file offers a more detailed description of the program's features and functions.

Help can be accessed from the TECHNMAN ELECTRONICS icon group in the Windows START menu or through the Help menu in the program itself.



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## Module Configuration

The **Control-it™ 5020, 5030 & 5040** modules have different Input and Output configurations in order to maximise the usage of available positions.

Each module has 16 positions, divided between 2 plugs P4 & P5. The I/O configuration is shown in Table 1.

Table 1 - Module Configuration			
	Plug	P4	P5
	Positions	0 to 7	8 to 15
5020		Outputs	Outputs
5030		Inputs	Outputs
5040		Inputs	Inputs

As well as this, two different communication protocols can be used:

- A subset of OPTOMUX via the serial port of the computer.
- Connection to the **Control-it™ 5100** or **5101** High Speed boards. This board looks after all the handling of the RS485 and makes the board appear in memory space in your computer via TECHBUS.

The protocol being used is set on the remote module via the '5100' jumper. Refer to **Jumper Configuration** (page 15) for more details.

---

## Jumper Configuration

Various jumpers are positioned across the top of the **Control-it™** remote modules allowing you to configure it to your specific needs.

### 5100

[1 of J1] Located in the upper left corner, this jumper is inserted when the **Control-it™ 50x0** is used in conjunction with the **Control-it™ 5100** or **5101** High Speed RS485 Interface board

On – communicate with Control-it 5100 (High Speed)

Off – communicate with Control-it 5001 (Optomux)

- The default setting is On.

### F2

[2 of J1] Located in the upper left corner (adjacent to 5100 jumper), this jumper is spare.

- The default setting is Off.

### Test

[3 of J1] Located in the upper left corner (adjacent to F2 jumper), this jumper is used for testing the module and allows OPTO22 commands to be sent in short form.

- The command structure is >[command][position][data]<CR>
- For example: >04JFF009A becomes >JFF00



*Warning – since no module address or checksum is used only one module may have this jumper inserted at one time.*

On – Module in Test Mode

Off – Module in Normal Mode

- The default setting is Off.

---

## Baud Rate

[4-6 of J1] Located in the upper left corner (adjacent to Test jumper), these jumpers are used in combination to set the module baud rate.



*Warning - All modules in the network must be set to the same baud rate.*

- To set the baud rate insert a jumper where a 1 is shown in Table 2.

Jumper (4-6 of J1)			Baud Rate
4	5	6	
0	0	0	1200
0	0	1	2400
0	1	0	4800
0	1	1	9600
1	0	0	19200
1	0	1	38400
1	1	0	57600
1	1	1	115.2k

- The default setting is 115.2k (all jumpers ON).

## Module Address

[J2] Located in upper left (adjacent to Power Supply Plug P2), this jumper allows each module in a network to have a unique address.

Link the **J2** MODULE ADDRESS jumpers that add up to the address you require. For instance to set address 30 insert jumper links into positions labelled **16, 8, 4** and **2**.

The example in figure 8 shows an address of 7 (4+2+1 = 7).

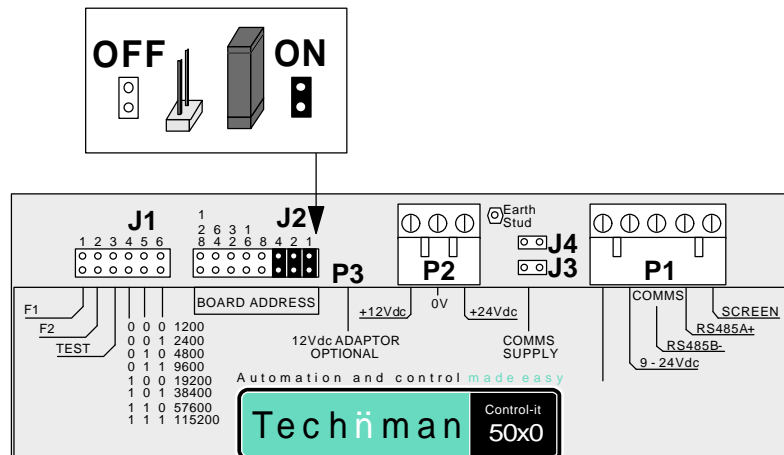


Figure 8 - showing module address set to 7

- The default setting is 7 (4, 2 & 1 on).

## Comms Supply

[J3 and J4] Located in upper centre (adjacent to Power Supply Plug P2), these are used to provide power to the communication section of the module.



*Warning - If multiple modules are used, place jumpers on one module only (refer to **Communication Section Supply** page 25).*

J3 & J4 On – Communication section powered by module

J3 & J4 Off – Communication section isolated from module

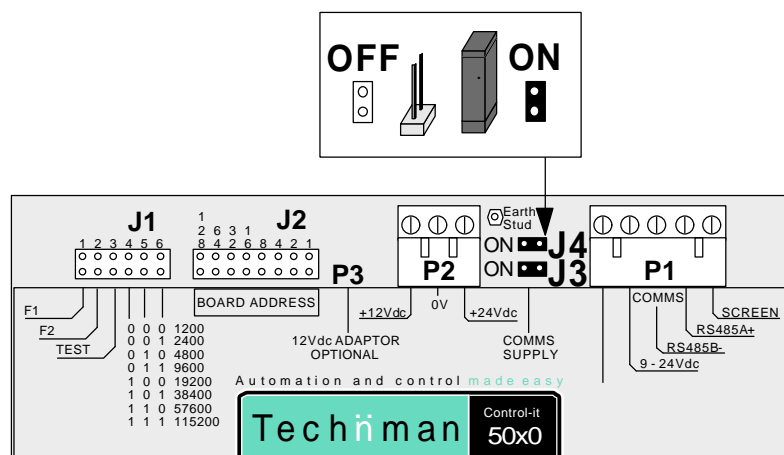


Figure 9 Supplying power to the RS232 to RS485 converter.

- The default settings are On (J3 & J4).

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## RS485 Communications Connection

Data communication between **Control-it™ 50x0** modules and the RS485 Interface can be made via 4 conductors and a screen connected as per fig 10 or 11.

- The comms section of each Control-it™ 50X0 module is optically isolated from the processor section, to prevent ground loop problems. Therefore, the Comms Supply jumpers J3 & J4 must be set correctly (refer page 17).
- The recommended cable is shielded 4-core twisted pair, 22-24 AWG.
- A **120Ω** terminating resistor must be used across **RS485 A+** and **RS485 B-** in the last module, if the communications cable exceeds 300m.

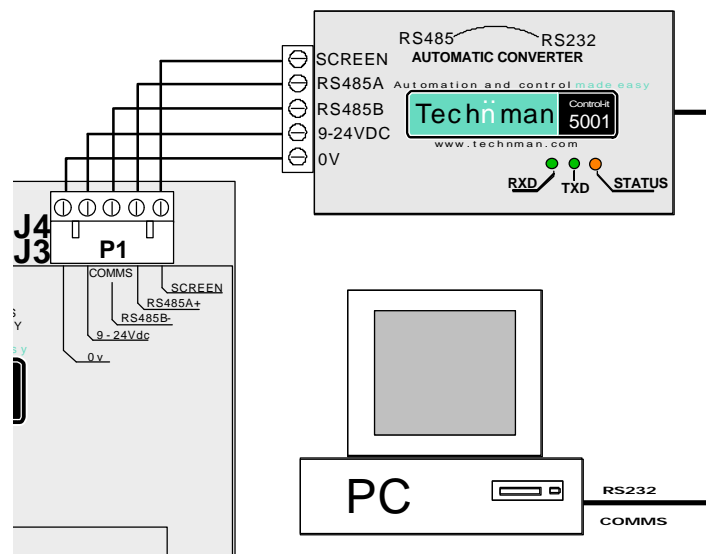


Figure 10 - RS485 connection to the 5001 converter.

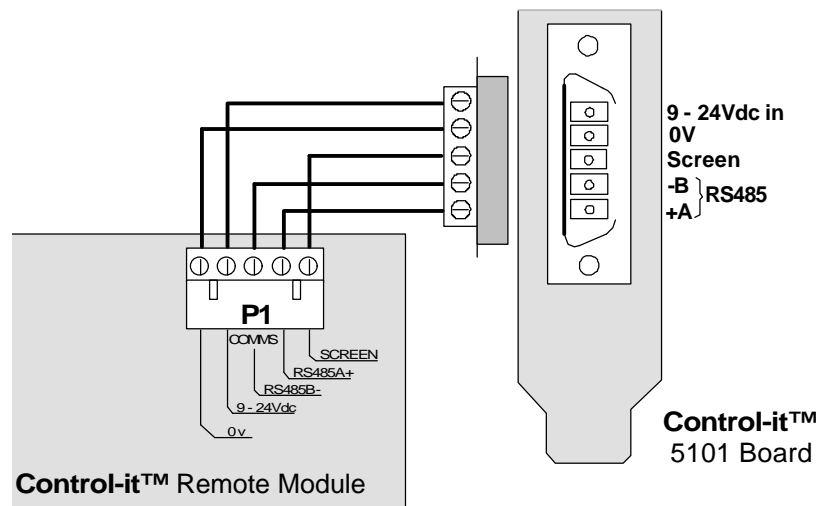


Figure 11 - RS485 connection to the 5101 PCI board.

## Conductor Descriptions

- Screen

The cable shield/screen protects the communication lines from RF interference. It should be connected to the termination plugs at both ends and connected via a jumper lead to an electrical ground at one end only

- RS485A & B

These provide differential data transmission between modules. For best performance and to reduce RF interference these lines should always be a twisted pair.



*Warning - ensure that these conductors are correctly terminated (A to A & B to B) as reversal will prevent operation.*

- 9-24Vdc

Supplies power to the **Control-it™** RS485 converter and subsequent **Control-it™ 50x0** communication sections.

- 0V

Provides return for communication section supply power.

# Supplying Power

The **Control-it™** remote modules can be powered from either a 12V or 24VDC power supply.

- Figure 12 shows the 12V connections and Figure 13 shows the 24V connections.
- Figure 14 shows the alternative 12Vdc connection using a power adapter.
- You only need to wire up one of these options.

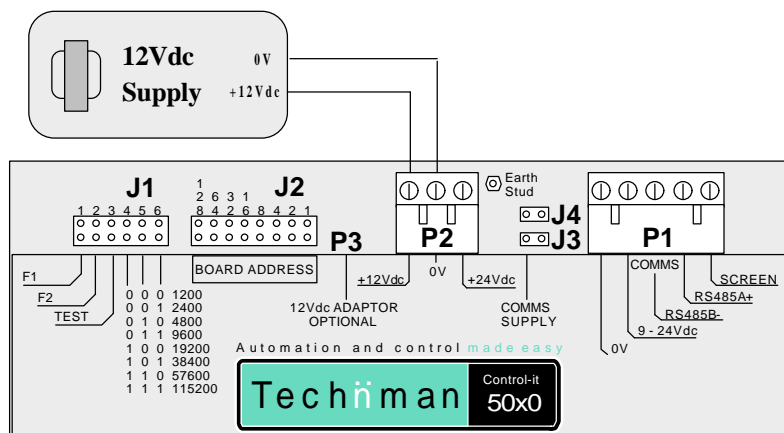


Figure 12 - 12Vdc power supply to **Control-it™ 5050**

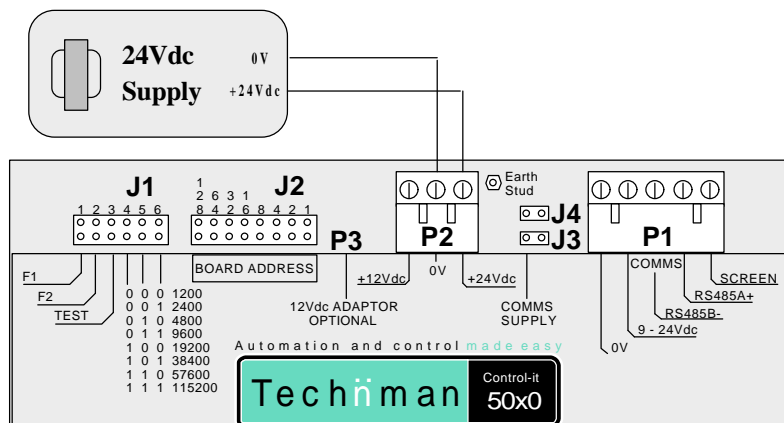


Figure 13 - 24Vdc power supply to **Control-it™ 5050**

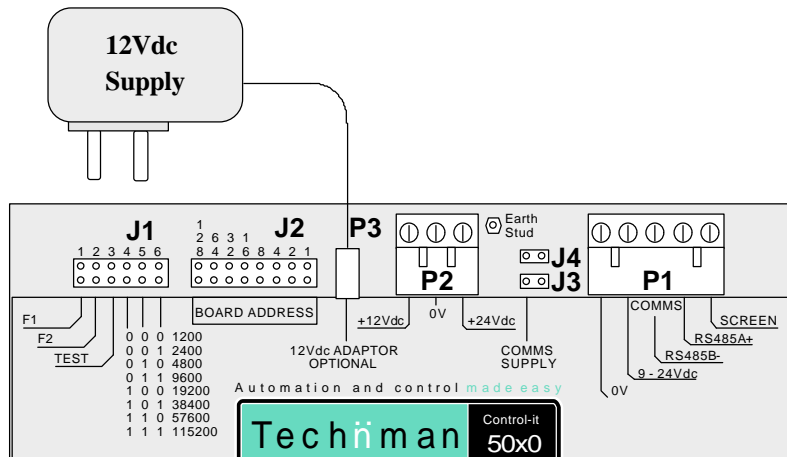


Figure 14 - 12Vdc power supply using the alternative power adapter.

- For big installations we recommend the use of two separate power supplies: one for the modules, communication sections and inputs, the other for heavy and inductive loads. This eliminates spikes to the module supply, minimising data corruption and data errors.
- For reasons such as distance, number of modules and supply power etc. it is possible for the comms supply voltage to drop below 9Vdc at either end of the line. If this occurs we suggest you add another floating supply (not earthed) to the RS485 comms plug at the affected module.

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## Connecting Inputs & Outputs

Inputs and outputs are connected to the **Control-it™** remote modules via the Termination Blocks along the lower edge of the module.

### Outputs

Outputs are available at P4 & P5 on the **Control-it™ 5020** and P5 on the **Control-it™ 5030**. All output plugs are configured the same way.

- Each position uses an internal relay to switch your attached load.
- The maximum load current and voltage is 3A and 30Vdc or 230Vac.
- The 8 positions on each plug are split into 2 groups of 4, with each group having 4 output terminals and 1 common. This allows 2 different supply voltages to be used per plug.



*Warning - Although the output contacts are bi-directional it is safe practice to always switch the positive or live supply, especially when using 230Vac.*

Figure 15 shows the configuration of the output plugs using P5 as the example.

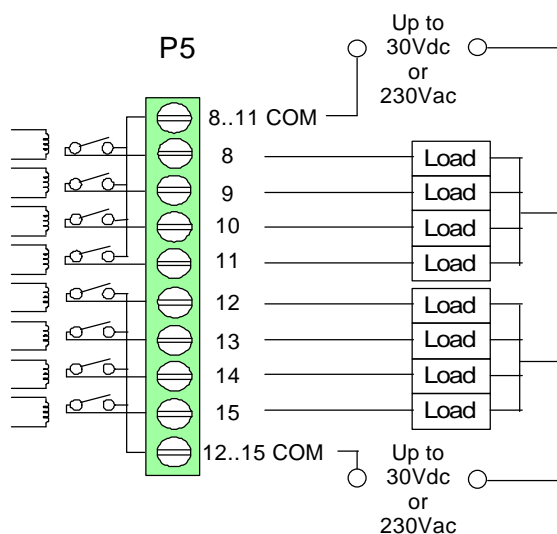


Figure 15 - Configuration of the Output Connectors

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## Inputs

Inputs are available at P4 & P5 on the **Control-it™ 5040** and P4 on the **Control-it™ 5030**. All input plugs are configured the same way.

- All inputs are bi-directional with an input voltage range of 3 to 30Vdc and an input impedance of 2.2kΩ.
- Inputs 0 and 1 of modules **Control-it™ 5030** and **5040** are high speed inputs that are able to count 350 pulses per second.
- The 8 positions on each plug are split into 4 groups of 1, 1, 2 & 4 positions along with a common each. All sensors in one group must be of the same type e.g. NPN or PNP.

Figure 16 shows the configuration of the input plugs using P4 as the example.

## Input connections

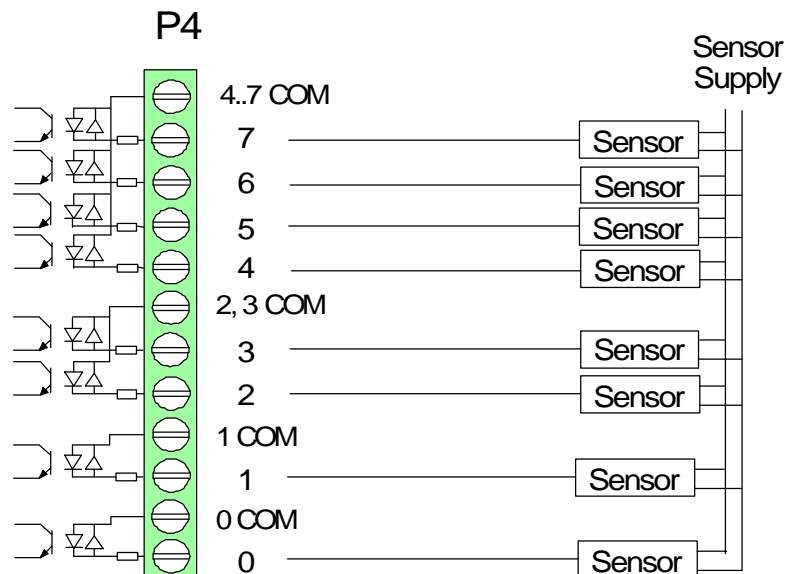


Figure 16 - Configuration of the Input Connectors

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## ***Connecting Multiple Modules***

The **Control-it™ 5000 Series** allows multiple remote modules to be controlled by one computer.

- Up to 32 modules can be connected to a single serial port on your computer via the **Control-it™** RS485 converters and up to 31 modules via the **Control-it™ 5100** or **5101** high speed boards.
- The comms section of each module is connected in parallel (daisy chain) as in figure 17.
- Each module must be supplied with 12 or 24Vdc. This can be either via a common supply to all modules as in figure 17, if the modules are close together, or via separate supplies where the installation dictates.
- Only one module is used to supply power to the comms cable as described in ***Communication Section Supply*** (page 25).
- If power is lost on any of the modules (apart from the one that supplies the comms power) none of the other modules are affected.
- A module can also be unplugged or changed while the network is running, without affecting the operation of the other modules.
- Each module must have a different address and if the Opto22 protocol is used, all baud rate settings must match.
- A **120Ω** terminating resistor must be used across **RS485 A+** and **RS485 B-** in the last module, if the communications cable exceeds 300m. Refer figure 17.

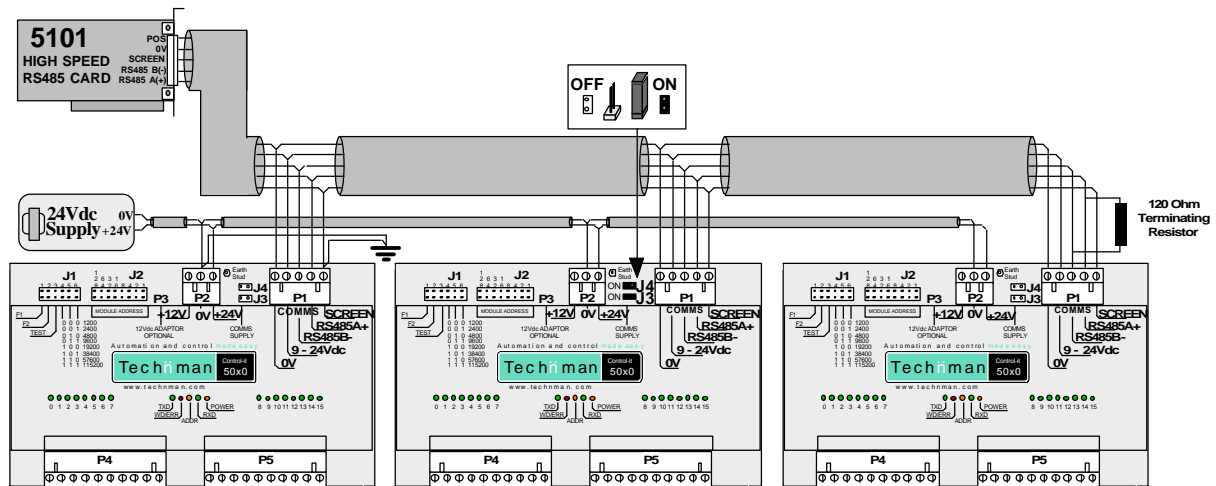


Figure 17 - Connection of multiple remote modules to a single 5101 board.

## Communication Section Supply

To prevent differences in power between modules affecting data communication only one module is used to supply power to all the communication sections.

- Place jumpers J3 & J4 on the module closest to the centre of the RS485 network (by distance).

Link 0V to Screen and Earth on this module

- Remove jumpers J3 & J4 from all other modules in the network.

---

## Installation

The modules can be installed in any of three ways:

- Screw mounted individually,
- DIN rail mounted with optional DIN rail base elements (Phoenix UM-BEFE 35),
- Stacked with optional stand-offs.

### Suggested cabinet installation

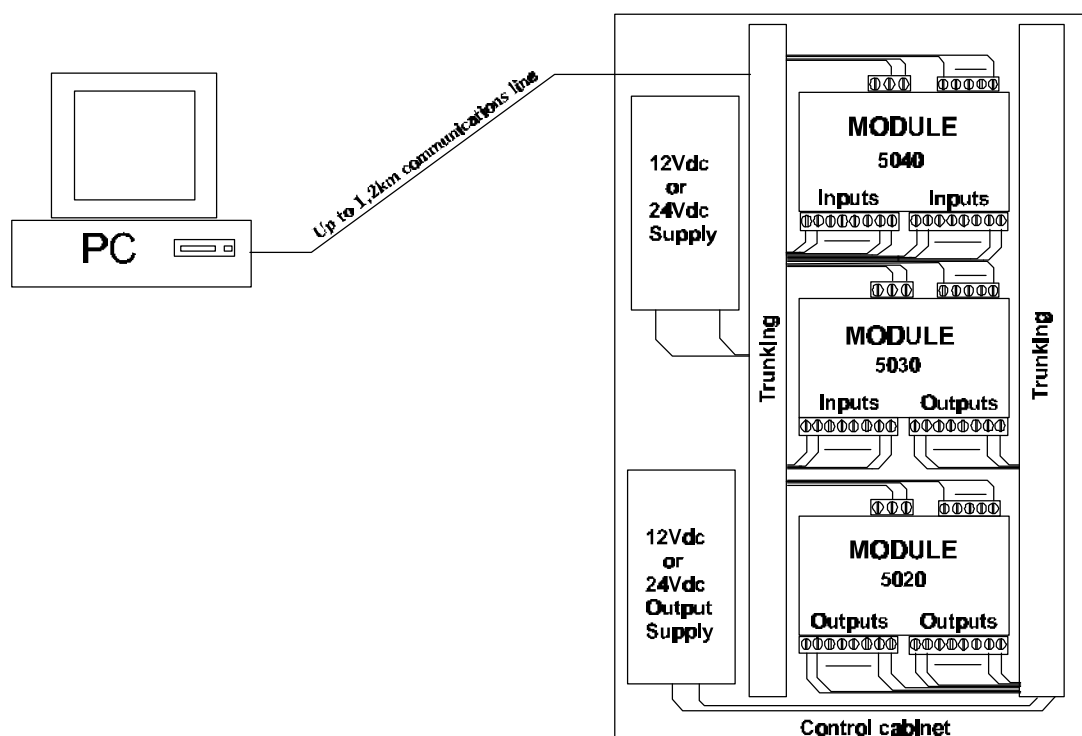


Figure 18 - Suggested cabinet installation

To eliminate any possible problems such as noise and spikes interfering with the working of the installation make sure the following suggestions are implemented:

- Wire all input, module and communication wiring to one side of the cabinet to eliminate spikes and noise from switched loads, being picked up by inputs, or possibly corrupting data.
- Wire all outputs switching inductive and heavy loads to the other side of the cabinet with a separate supply.

- 
- In wiring ducts keep sensor and communication wiring away from high current and inductive load wiring looms, which could cause false readings and communication errors.

## Connectors

Connections to the modules are made using Phoenix screw terminal plugs as supplied.

- All plugs used are of the **PHOENIX MSTB** range as per Table 3 and have UL, CSA, IEC and DIN VDE approval.
- The plugs are rated for:

Conductor size	24 – 12 AWG (0.2 – 2.5mm <sup>2</sup> )
Maximum Current	12A
Maximum Voltage	250V

Table 3 - Phoenix Plugs	
Use	Connector Type
RS485 (P1)	3 way MSTB 2,5/3ST
Power (P2)	5 way MSTB 2,5/5ST
Output (P4/P5)	10 way MSTB 2,5/10ST
Input (P4/P5)	12 way MSTB 2,5/12ST

---

## Status LEDs and Error Codes

21 LEDs across the centre of the module provide a quick indication of the modules' status.

Table 4 describes each LEDs' function.

Table 4 - Module LED Functions	
LED	Function
INPUTS (5030 & 5040)	Green LED indicating which input is activated.
OUTPUTS (5020 & 5030)	Green LED indicating which output is activated.
TXD	Green LED illuminates when module sends data to computer.
RXD	Green LED illuminates when data is received from computer.
ADDR	Orange LED flashes every time the module is addressed
POWER	Orange LED indicating if power is present
WD/ERROR	Red LED illuminates for 2 seconds every time the module resets on power up.  The WD/ERROR LED also indicates communication errors, flashing the number of the error as per Table 5 - <b>Error Codes</b> (next page).  In the case of a processor failure the light will flash steadily.

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The communication error codes, as indicated by the WD/ERROR LED, are listed in Table 5.

The error code is dependant on the communication protocol being used.

<b>Table 5 - Error Codes</b>	
<b>Number of Flashes</b>	<b>Error</b>
<b>Opto22 mode</b>	
1	Undefined command.
2	Checksum error.
3	Buffer overrun. (Checked by interrupt routine)
4	Non-Printable ASCII character received.
5	Data Field Error.
6	Comm. Link Watchdog Timeout Error
7	Specified Limits Invalid
<b>High Speed mode</b>	
1	Undefined command.
2	Checksum error.
4	Timed out before 2 <sup>nd</sup> character received.

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## **Control-it™ 5021, 5031 & 5041 Connection Adapters**

These optional plug-able adapter boards are designed to simplify the installation of inputs and outputs by providing a centralised termination point for sensors, loads and their supplies.

They also provide a 5A fuse for each output position and a sensor type (NPN or PNP) selection for each input position.

### **Features**

- Easy, tidy, time-, cost- and space-saving wiring
- Adapters plug directly into **Control-it™** remote modules
- Two screw terminal connectors for each load
- Separate supply screw terminals for sensors and pickups
- All outputs have a replaceable fuse rated at 5A 125Vac
- Output adapters carry spare fuses
- Jumper selectable connection for NPN (Sinking) or PNP (Sourcing) sensors and pickups



A shock hazard exists if either of the output adapters, i.e. 5021 or 5031, is to be used with voltages over 50Vdc or 32Vac, due to the exposed fuse leads. Where this situation exists, they must be housed inside a protective enclosure, preferably lockable.

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## The 5031 Connection Adapter

Figure 19 shows the layout of the 5031 adapter and describes the various terminations.

Connections are provided for:

- A single Input Supply for all inputs, sensors, transducers etc.,
- Two Output Supplies for 30Vdc or 125Vac loads,
- 3 terminals per input sensor,
- 2 terminals per load,

as well as jumpers to set the input type (NPN or PNP).

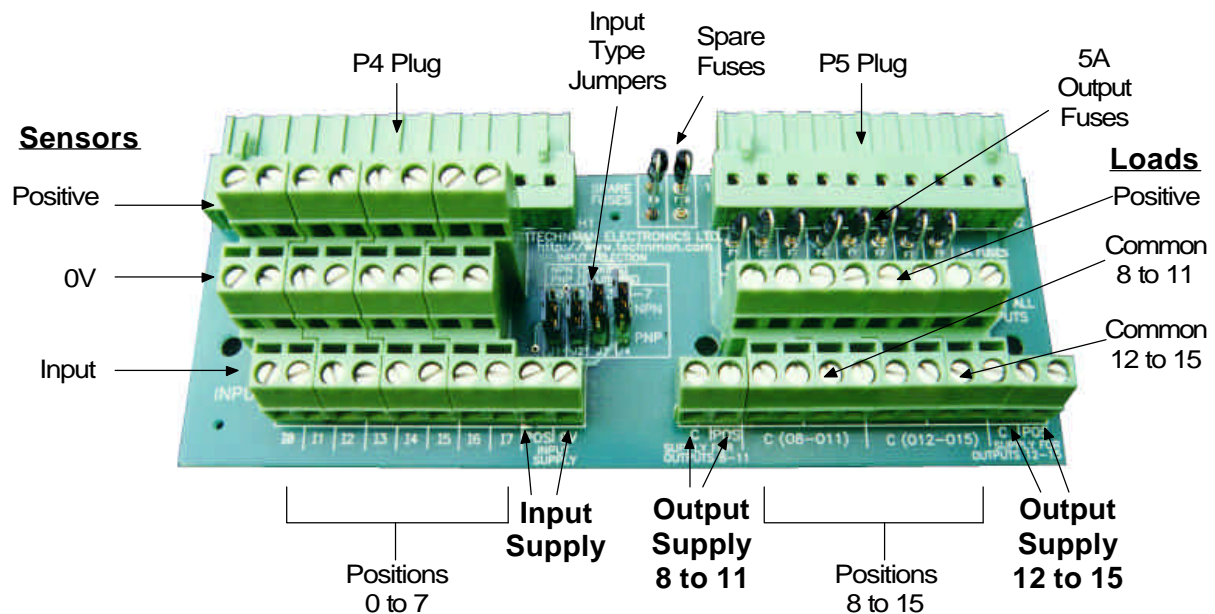


Figure 19 - Layout of the **Control-it™ 5031** Connection Adapter

## The 5021 & 5041 Connection Adapters

These adapters are essentially the same as the 5031, but provide;

- 2 sets of output terminals and fuses on the 5021, and
- 2 sets of input terminals and jumpers on the 5041.

---

## Electrical Connections

Figure 20 and 21 show how to connect your input and output devices respectively.

### Inputs

- Connect power supply to 'INPUT SUPPLY' POS & 0V.
- Connect sensors & switches etc. between POS, 0V & 'INPUT' of the appropriate position (I0 to I7).
- Set 'Input Selection' Jumper to desired state (NPN – Sinking, PNP – Sourcing).

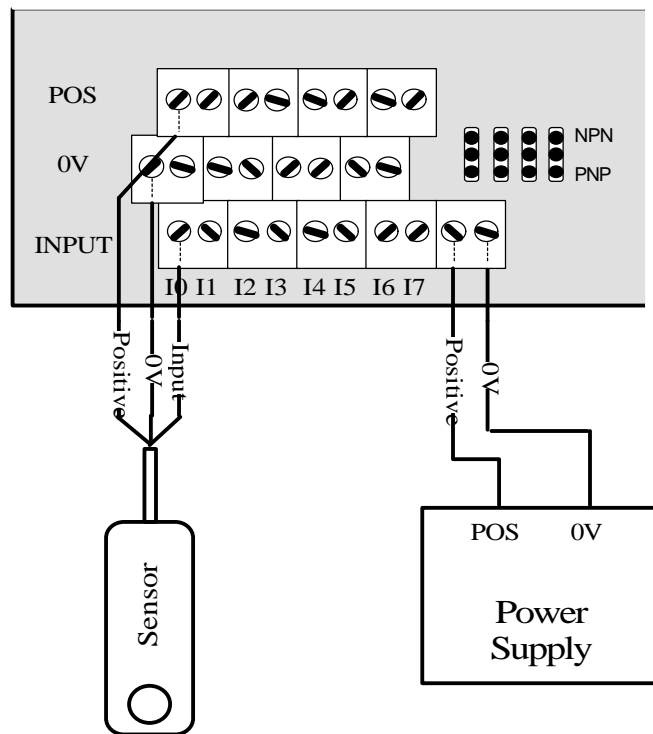


Figure 20 – Connecting Input Sensors to the 5031 and 5041

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## Outputs



A shock hazard exists if either of the output adapters, i.e. 5021 or 5031, is to be used with voltages over 50Vdc or 32Vac, due to the exposed fuse leads. Where this situation exists, they must be housed inside a protective enclosure, preferably lockable.

- Connect power supply to POS & C of SUPPLY FOR OUTPUTS 12 – 15 as shown in figure 21.
- Connect loads between 'POS' & C (12 – 15) as shown in figure 21.

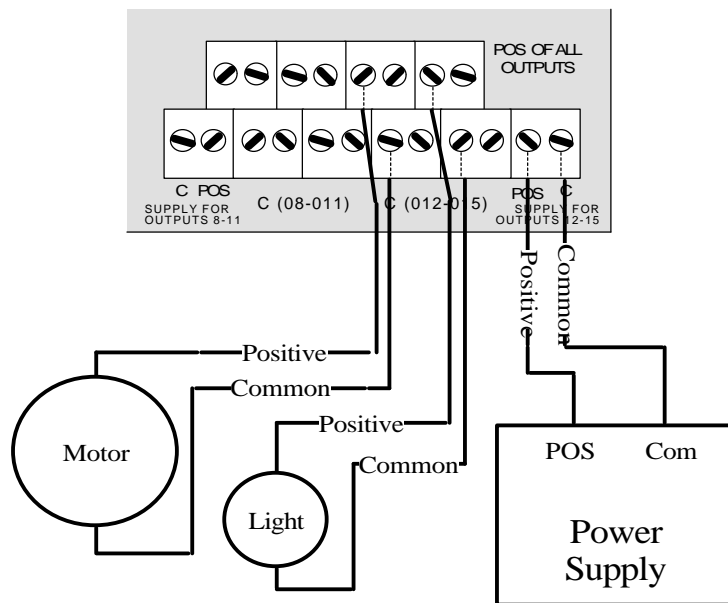


Figure 21 – Connecting Output Loads to the 5021 and 5031.

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## ***Troubleshooting***

### **Power light does not illuminate.**

- Check that the power supply to the module is present and not reversed.

### **Status light on Control-it™ RS485 converter does not come on**

- If the **Control-it™ 50x0** POWER LED is off see above.
- If **Control-it™ 50x0** POWER LED is on then check that the Comms Supply jumpers J3 and J4 are in place on one **Control-it™ 50x0** module.
- Check wiring from 5 way Comms connector to the **Control-it™** RS485 converter.

### **RXD light stays on**

- The RS485 A+ and B- lines are not connected.
- The RS485 A+ and B- wires are reversed.

### **CD-ROM will not auto-start**

- Auto-run may be disabled on your computer. Follow these steps:
  1. Double-click on My Computer.
  2. Right-click on your CD-ROM drive and choose 'Explore' from the drop-down menu.
  3. Double-click on 'Menu.exe'.

# Specifications

## Physical Specifications

Dimensions		172mm (w.) x 120mm (h.) x 30mm (d.) DIN rail adapter: add 32mm to depth (d.) <b>Control-it™ 50xx</b> Connection Adapter: add 42mm (h.) x 17mm (d.)
Weight	5020	381g
	5030	357g
	5040	320g
Operating temperature		32° to 122°F (0° to 50°C)
Storage temperature		-4° to 158°F (-20° to 70°C)
Humidity		15% to 90% relative non-condensing
Transmission Distance		1.2kms

## Electrical Specifications

Power supply	12V or 24Vdc. Voltage <u>must</u> not fall below 11.5V	
Maximum current draw excluding comms section	<b>12V</b>	<b>24V</b>
<b>Control-it™ 5020</b>	375mA	390mA
<b>Control-it™ 5030</b>	172mA	204mA
<b>Control-it™ 5040</b>	94mA	94mA
Communication section current draw (all modules)	22mA	

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### ***Input Specifications***

Input isolation voltage		1kVrms
Comms port isolation		1kVac
Input voltage range		3V to 30Vdc
Logic level voltage	0	1V max
	1	3V to 30Vdc
Input resistance		2.2k $\Omega$
Maximum count frequency	High-speed inputs 0 & 1	350Hz
	Inputs 2 - 15	180Hz
Guaranteed minimum pulse width	High-speed inputs 0 & 1	1.6mSec
	Inputs 2 - 15	8mSec

### ***Output Specifications***

Maximum N/O contact rating		5A at 30Vdc and 250Vac
Maximum rating with 5021 or 5031 adapter.		5A at 30Vdc and 125Vac
Isolation distance		9.5mm
Relay isolation		10Kv at 1.2x50us standard surge wave
Dielectric/ Surge strength	between coil and contact	5kV for 1 min
	between open contact	750Vac for 1 min
Maximum switching voltage		250Vac or 30Vdc

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# Declaration of Conformity 2001

**Manufacturer's Name:** Technman Electronics Ltd  
**Manufacturer's Address:** PO Box 56-238  
Dominion Road, Auckland 1003, New Zealand

**declares that the product**

**Product name:** Control-it 5000 Series Distributed Input/ Output System  
**Model numbers:** 5001, 5005, 5006, 5007, 5020, 5030, 5040, 5050, 5100, 5101, 5251, 5258  
**Product options:** All

**conforms to the following product specifications:**

**Safety Regulations:** Low Voltage Directive 73/23/EEC 22 July 1993 and the UK Electrical Equipment Safety Regulations 1994.  
EN 60950:1992+A1+A2+A3- Primary Circuit/ Double insulation  
Model 5020- Primary circuit/ Reinforced insulation  
Except when these modules are incorporated into a larger mechanical device, in which case a responsible person must ensure that all appropriate safety regulations are met.

**EMC Regulations:** EMC Directive 89/336/EEC 3 May 1989 and 92/31/EEC 28 April 1992, article 10.1.  
EN 55022:1998 Class A Device  
EN 55024:1999 I.T. Equipment  
EN 50082-2:1995 Generic Industrial Device

**The product herewith complies with the requirements of the following Directives and carries the CE marking accordingly:**

Low Voltage Directive 73/23/EEC  
EMC Directive 89/336/EEC

**The product was tested in a typical configuration with a personal computer system.**

**For compliance information contact:**

**Director**  
Technman Electronics Ltd.  
PO Box 56-238  
Dominion Road  
Auckland 1003  
New Zealand.

or

**Quality Assurance Director**  
Amplicon Liveline Ltd  
Centery Industrial Estate  
Hollingdean Road  
Brighton  
UK BN2 4AW

**WARNING**

This is a class A product. In a domestic environment this product may cause radio interference in which case the user may be required to take adequate measures.