Reporter PC

User's Manual

Strand Lighting

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Introduction

The Reporter PC is a program designed to work with the Microsoft Windows® 3.1, 3.11 or Windows® 95 operating systems on a 486 or better PC and the CD80sv and EC90sv dimmer systems. This advanced software gives the operator a complete view of the status of his dimmer system, logging rack and dimmer events as they happen, both to a chronological display log and securely to the PC's hard disk. In addition set-up screens allow the dimmers to be configured remotely.

Extensive use is made of colour, so that an operator need only glance at the screen, and instantly recognise the importance of the events shown. Red is used to indicate a serious event, such as a dimmer overload, or overtemperature, yellow to indicate that an event should be attended to, but is not urgent, and green to indicate that the event has cleared.

The Reporter PC can both constantly monitor the entire system, displaying each rack's status as it communicates, or can be used off-line to analyse the system's events. The advanced Windows® relational database technology on which the Reporter PC software is based, gives extensive data analysis and printout capabilities, allowing you to produce status reports to suit electricians, maintenance managers and operators alike. The underlying technology also guarantees that the product will keep pace with future requirements and trends in the PC market.

Regardless of your level of lighting knowledge, this program gives clear visual indications of your dimmer system's performance on a second-by-second basis, without ever having to visit the dimmer room!

Manual Organisation

It is recommended that the *Installation* chapter is read first to ensure that the software and PC are correctly configured.

The next chapters (*Tutorial* and *Printing*) describe the various facilities of the software in detail.

The *Troubleshooting* chapter describes the procedures that should be adopted before contacting Strand Lighting and deals with Reporter PC software problems, Windows®, and general PC configuration issues.

The *Glossary & Abbreviations* chapter describes the terms used in this manual (these terms are generally shown with an initial capital such as Preset). This is followed by the *Colophon* and *Index*.

Note that this manual is written for Reporter PC version 1 software. It is not applicable to later versions.

Conventions

The following conventions are used throughout this manual.

SCREEN TEXT This shows text which is displayed on the screen.

DIMMER A capitalised word indicates a function or mode, for example a configuration mode. These are generally described in the *Glossary & Abbreviations* chapter.

<RETURN> A capitalised word with < > brackets around it indicates a key press on the PC's keyboard.

Event Log Italics are used to indicate a chapter or section of this manual or other manuals.

Technical Assistance

The software should require no attention once the system is configured and operational.

Problems

If the program fails to operate properly, and basic *troubleshooting* procedures are not effective, refer to the Issue Notes supplied as a plain text file with the Reporter PC package. The file is called README.TXT, and is installed in the C:\REPORTER directory and may be viewed with a simple text editor, such as Windows® Notepad. This gives the latest product information.

If the above suggestions don't cure the problem, then please contact your nearest Strand Authorised Service Centre or Strand Lighting Field Service at the office serving your area.

Questions

For technical questions regarding setup or operation of this software, please contact your nearest Strand Authorised Service Centre or the Strand Lighting Field Service office serving your area.

Spare Parts

For purchase of upgrades, accessories, or documentation, please contact your nearest Strand Authorised Service Centre or the Strand Lighting office serving your area.

Comments and Suggestions

For comments regarding software functions and/or possible improvements, or for comments on this manual, please write to the Customer Services Department at the Strand Lighting office serving your area.

Addresses

Addresses for all of the Strand Lighting offices are shown at the front of this manual.

Installation

This chapter gives you an overview of the software and tells you how to connect up the control signals to the PC and install ancillary equipment such as the monitor and printer. The sections are:

- Unpacking
- PC Specification
- Environment
- PC Connections
- Switching On
- Software Installation

Unpacking

Carefully remove all items from the packaging and check the contents as listed, please inform your Strand dealer if any item is missing. Please take time to complete the registration document, as it will allow Strand Lighting to inform you of software updates and further developments.

Software and Accessories

- Set of software installation floppy disks (number of disks may vary, and will be indicated on the disk package
- RS485-RS232 converter (not included with demo version)
- 9 way female - 25 way male D-type converter cable (not included with demo version)
- RJ11 cable for connecting the converter to the wall-box data outlet, which will have been connected to the Reporter PC ports of your dimmer racks (not included with demo version)

Documentation

- Operator’s Manual
- Manual Binder
- Registration document

PC Specification

The performance of the Reporter PC software will be directly related to the speed and quality of the PC used to run it. The following is a set of PC specifications, Recommended and Minimum. You **must not** use a PC with specification below the minimum, as the software will not run properly, and spurious problems will result. To avoid other possible PC-related problems, Strand Lighting recommends only quality branded machines from well known "name" manufacturers.

Function	Minimum PC Specification	Recommended PC Specification
Processor	Intel 486DX2™ 50MHz	Intel Pentium™ 90MHz Processor
Memory	8 Mb RAM	12Mb+ RAM
Hard Disk	20MB spare	20MB + with Enhanced IDE disk drive
Serial Port	COM1 + mouse port	COM1 & COM2 + mouse port
Monitor	VGA 640 x 480 monochrome	SVGA 800 x 600 colour
Operating System	Microsoft Windows® 3.1	Microsoft Windows® 3.11 or Windows® 95

DOS & Windows® Installation

At delivery time, the PC should arrive with the MS-DOS® and Windows® operating systems pre-installed. If this is not the case, refer to the PC manufacturer's instructions for loading this software.

In particular, ensure that a disk caching utility is loaded, such as *Smartdrive* as supplied with MS-DOS®. Windows® 95 has it's own cache system built-in. Reporter PC constantly writes to the disk, so without a cache, performance will be significantly reduced.

Operating Environment

To maximise equipment life, and minimise the chance of failures, the following environmental requirements should be met:

Temperature:	0 to 40°C ambient
Humidity:	5%-95% non-condensing
Storage temperature:	-40°C to 70°C
Dust:	Good office environment

The PC should be located in a position where the fan at the rear will not be obstructed. Without adequate airflow, internal temperatures can exceed the maximum operating temperature and result in damage.

PC Connections

This section details the connections to the PC. The PC should be switched off while connecting or disconnecting cables to it.

Power and Monitor

Refer to the PC manufacturer's instructions and ensure that the power supply line voltage selector switch at the rear of the unit (if fitted) is correctly set before connecting to the supply. Failure to do this could result in damage to your PC. Connect the monitor, observing the manufacturer's instructions and check line voltage selection as above.

Printer

The printer is optional and is connected to the parallel port labelled **PRINTER** or **LPT1** on the rear of the PC (DB25 **female** connector). Refer to the manufacturer's instructions for connection of power.

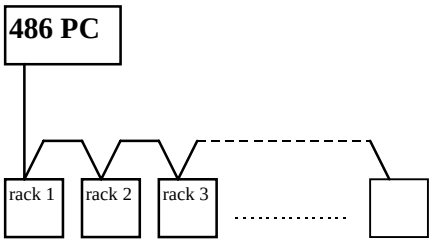
Any printer type may be used, provided that the manufacturer supplies a Windows® compatible printer driver disk.

Install the printer driver according to the manufacturer's instructions, or if the driver is already present with Windows®, configure your installation according to the Windows® manual, once everything is connected up and the PC is working. Using the "Control Panel" program in Windows®, the printer should be configured as the "default printer".

Communications

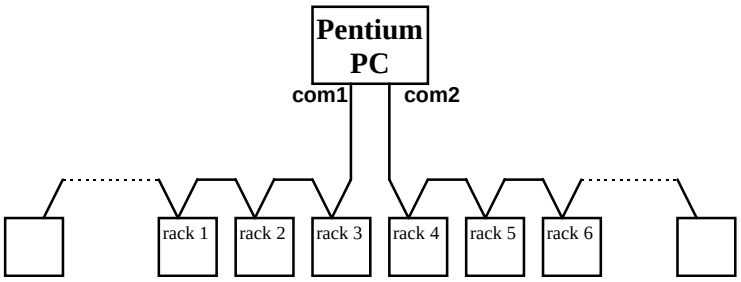
The Reporter PC usually communicates with the dimmer racks in your system using the RS485 electrical standard along a twisted pair cable that is daisy-chained between all racks in the system. The cabling should be installed according to the CD80sv or EC90sv User's Manual as appropriate, Strand Lighting part numbers 85082 & 85081, respectively.

Typical installation:



If a Pentium Processor PC is being used, then a speed advantage may be gained by using two communications ports simultaneously. The Reporter PC may be configured to use one or two ports, and this decision is usually made at the system design stage. An additional RS232/485 converter is available (part number 76430) if two ports are to be used, and the PC will require an additional COM serial port. Many modern PC's from "name" manufacturers have dedicated PS/2 style mouse ports, leaving both COM1 and COM2 spare, and in this case no extra ports are required.

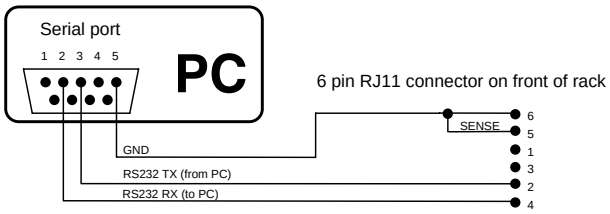
Higher performance installation:



Note: The software may be configured to communicate with any rack on either serial port.

Local rack connection

As well as communicating using the RS485 connections at the dimmer rack, the Reporter PC may be connected directly to the rack's RS232 port at its front panel using an RJ11 cable made as follows:



This allows the program to communicate directly with the **one** rack, and obviates the need for the RS485 converter. This should be regarded as a temporary installation for commissioning etc., as long cable runs cannot be made reliably using the RS232 electrical standard.

NOTE: While the RJ11 plug is connected to the rack's front panel, the SWC/Outlook port is disabled, and therefore SWC/Outlook units will not work.

RS485/232 converter configuration

The RS485/232 converter must be configured correctly before use.

Following the instructions supplied with the unit, ensure that it is configured as a **DCE**, by setting the DTE/DCE switch to the **DCE** position.

Configure SW1 as follows:

SW1-1:	OFF
SW1-2:	OFF
SW1-3:	ON
SW1-4:	OFF

Configure SW2 as 2-wire, i.e. OFF

Note that the positions of SW2 for "on" and "off" are the same as SW1.

Converter Installation

The RS232/485 converter is installed onto either the COM1 or COM2 ports on the PC, and is powered directly by the PC. Some machines may require the 9 way to 25 way converter supplied with the Reporter PC package. The software may be configured to communicate with any rack on either serial port.

Cabling and pinout

The converter may be supplied with either a 6 way RJ11 type socket, or with screw terminals. The connections to the RS485 output of the converter are wired as shown in the following table. Refer to the rack's User Manual for a description of usual wire colours and signal names.

Signal name	RJ11 socket	Screw terminal
Ground (data cable screen)	Pin 1	GND
Data -	Pin 3	XMIT +
Data +	Pin 4	XMIT -

Data Communication Protocol

The communication protocol that carries the messages backwards and forwards to the racks is an 8-bit SMX protocol, running at 9600 baud. It may be possible to carry the data over 3rd party networks if they are completely “transparent”. The software in the PC uses the RTS modem control line to control the direction of data to and from the PC’s RS232 port.

Switching On

Switch the PC on. Start Windows, if it isn’t configured to start automatically, by typing WIN <RETURN> at the command prompt. The screen will display Windows® start-up screen, and then display the Program Manager with a number of icons. Check that this occurs satisfactorily, and that no warning messages appear. If messages appear, then check the troubleshooting section of your Windows® manual, and the *Troubleshooting* section of this manual before proceeding.

Software Installation

Note that you may bypass this section if your dealer has already installed your Reporter PC software.

The software is provided on 3½" floppy disks. They should be stored and handled with care and kept away from all liquids, heat and magnetic fields. Observe the handling instructions given on the disk packaging.

Loading Reporter PC Software

- Ensure that Windows® is running.
- Insert the first of the set of disks into the floppy drive and using the **FILE** menu at the top left of the screen choose the **RUN** option and type:

  A:SETUP followed by <RETURN>

The installation procedure will then begin, and will ask you several questions, in common with most Windows® applications. Perform a **FULL** installation, and install the software into the default directory **C:\REPORTER** (these are the defaults in any case).

The software will create the Reporter PC program group containing the following icons:

The program is run by double-clicking on the Reporter PC icon.

The other two icons are used for fixing problems in the database that may occur as a result of power failures during program operation, or after the system has been is use for a long time. Refer to the *troubleshooting* section for details on these.

NOTE: To ensure that the clocks in all dimmer racks are set to the same time Reporter resets them each time connection is established. It is therefore important to ensure that the PC clock is set correctly.

For version 1 and version 2 software, it is necessary to edit the Windows® SYSTEM.INI file, usually found in the C:\WINDOWS directory.

Using the DOS text editor EDIT or Windows® Notepad, find the entry **device=*vcd** under the **[386enh]** section, and comment it out, as shown below with semi-colons. Add the two **device=** lines as shown, and save the file. It will be necessary to restart Windows® to make the changes take effect.

```
;Replaced for Reporter
;device=*vcd
;Added for Reporter
device=c:\reporter\vgfd.386
device=c:\reporter\vgfcd.386
```

Software issue notes

The latest information on the Reporter PC software is contained in a plain text file named README.TXT, which is loaded into the C:\REPORTER directory by the setup program. You can read this by pressing F1 to see the Reporter PC help file, then clicking on *Software issue notes*, or directly by using an editor such as Windows® Notepad. Refer to this file before proceeding further as it contains important information.

Automation Features

The Reporter PC program provides the following automation features as standard:

- It will automatically save the various window positions between sessions. This lets you arrange the windows in the way that you prefer, and they will stay that way.
- It will automatically warn you if more than 10,000 events are stored in the event log when the software starts. Although the log is not limited to 10,000 events, you should regularly clean up the log by deleting entries to maintain performance. A feature has been added to move subsided events out to an archive file should the number of logged events become large.
- It will automatically re-start communications to the racks if they were connected when you quit the program the last time. A dialog box lets you cancel the "auto-connect" when you start Reporter PC.
- You can add the Reporter PC program to the startup group, so that Reporter starts automatically when Windows® starts.

  Windows® 3.1 or 3.11: Copy the Reporter PC icon from the Reporter PC group to the Startup group

  Windows® 95: Refer to the help subject on "startup folder - adding programs to", and add a program with the command line:

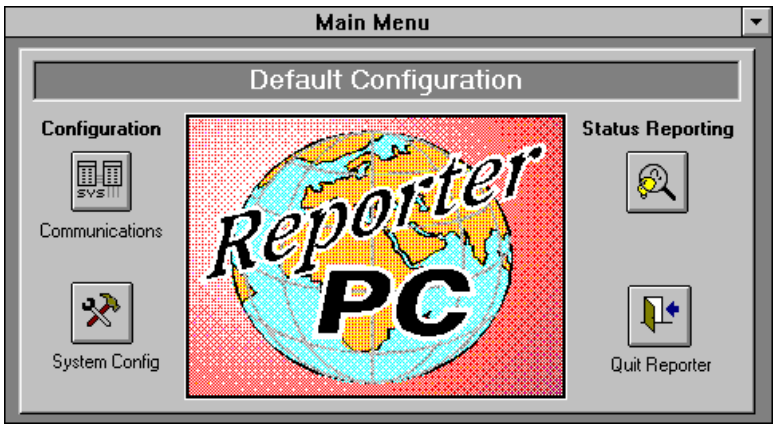
```
c:\reporter\msarn200.exe c:\reporter\reporter.mdb /ini c:\win95\reporter.ini
```

  (If Windows® 95 is installed in another directory, then use that directory name, rather than **`win95`**).

  You must make sure that the command line is exactly correct!

Tutorial

This section describes the how to use the software for the first time. The following main menu will appear when the program is launched by double-clicking on the Reporter PC icon.



Program options

There are four buttons, giving access to the four main areas of the program; and some pull-down menus. The program is designed to use push-buttons for most functions.

Follow the tutorial section below in the *order in which the buttons are described* to configure your system and initiate status reporting. You must follow the order shown so that the various settings are made correctly before the software attempts to communicate with the racks.

In addition to these buttons, the normal Windows® pull-down menus are available. You may then use the **`Window`** menu to select or arrange the various Reporter PC windows to your preference. The **`File`** menu can be used to exit the program, though the recommended way is by using the **`QUIT REPORTER`** button on the main menu.

The Help menu gives access to a fully context-sensitive help facility, which contains most of the information in this manual.

Window positions

The software automatically saves all window positions, and starts up with them arranged in suitable default locations. It also saves the previous state, so, for example, if the event log was open at the time you quit the program, then it will re-start with the event log open.

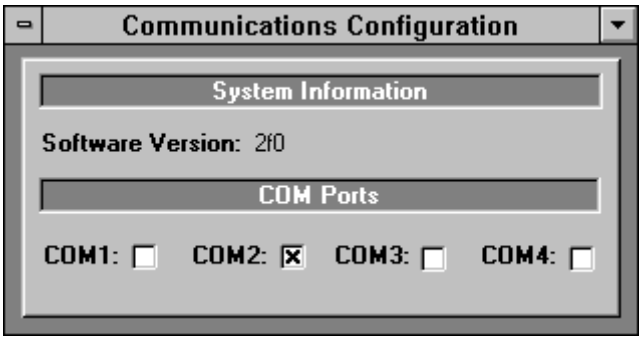
Communications Configuration

This button opens the Communications Configuration window, where the PC serial communications ports to be used for Reporter are set. The window also displays the version of Reporter PC software which is running.

Configure COM ports

Click on the COM port(s) required - this will depend on the *Installation* as described above.

Warning! Do not configure a port that does not exist, or is connected to a mouse or modem or other device. If a non-existent or shared port is accessed, Windows® may crash when you attempt to connect to the racks to initiate monitoring. You **must** then quit Reporter PC, **and** Windows®, before re-starting.

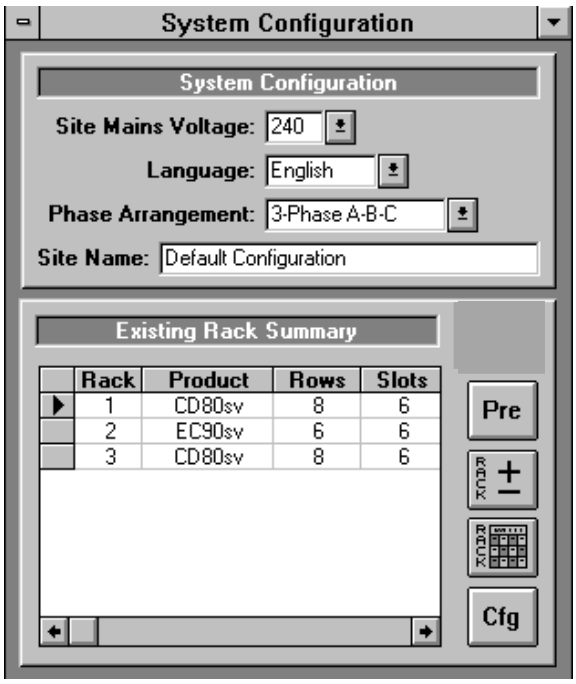


System Config.

Most of the configuration functions of Reporter PC modify a database file running on the PC. Their effect is therefore not communicated to the dimmers until the configuration process is complete, at which time the new configuration is down-loaded to the racks. It is possible for numerous configuration data-base files to be held on the PC's hard disk and these can be reloaded into Reporter for subsequent transmission to the dimmers. Conversely some configuration information stored within the dimmers may be uploaded to Reporter for editing or back-up file storage.

The  button opens the System Configuration window, which allows basic information about the dimmer installation to be entered and subsequently displayed. This includes information such as the site name, the nominal mains voltage and the power supply phasing arrangement.

The lower half of the window displays a list of dimmer racks (with basic information) which have previously been set up in Reporter and which the software will therefore recognize. Four further buttons allow various aspects of the dimmer configuration to be set.



Opens a further window by which dimmer racks may be added to or removed from the Reporter PC list.

Opens a window to allow the parameters of a particular dimmer rack and its dimmers to be set.

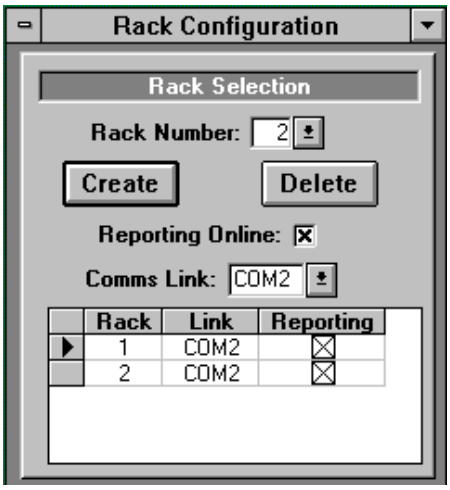
Opens a window in which SWC and Outlook presets can be viewed and edited and Outlook patch can be set.

Opens a window which allows the current Reporter configuration to be stored as a file on the PC hard disk or loads a previously stored configuration file into Reporter.

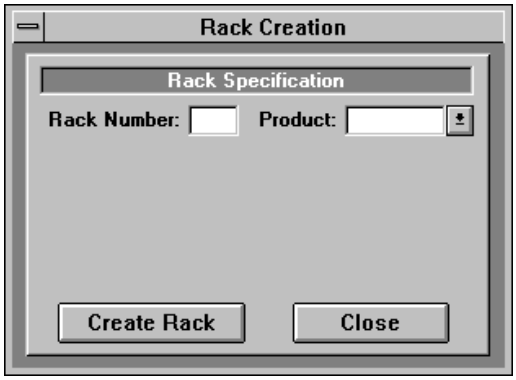
Add racks to Reporter

Normally, dimmer racks are sequentially numbered in your dimmer system. Ensure that each rack has a unique rack number, otherwise the software will fail to communicate with any of the racks. Refer the rack's user manual to find out how to set rack numbers.

To add a dimmer rack to the Reporter database press the **RACK + /-** button to open the window below:-



To add a rack select the **Create** button which will open a further window:-



Type in the new rack number, click on the button adjacent to **Product** to display a list of supported dimmer types and select the appropriate model. The available rack sizes and processor options for the product chosen appear and the features of the particular rack should be selected by clicking the mouse on the adjacent "dots". Finally press the **Create Rack** button, causing Reporter to set the default parameters for this rack into its database. Pressing the **Close** button prior to creating the rack will close this window and abort the addition of the rack.

Once a rack has been successfully created it is listed in the tables of the Rack Configuration and System Configuration windows. Default parameters for the communications port to which the rack is connected are assigned and it is assumed that reporting will be enabled. These parameters may be changed by entering the relevant rack number and selecting the appropriate field in the Rack Configuration window.

The process should be repeated for each installed dimmer rack.

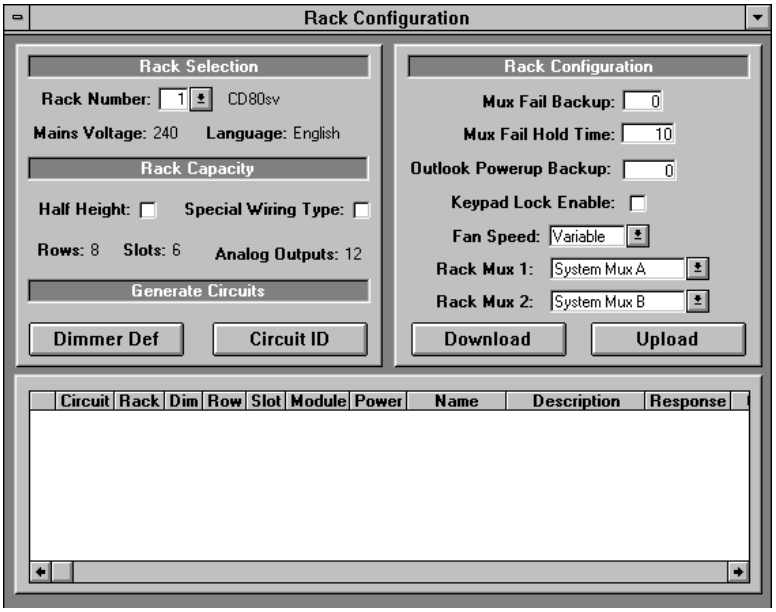
A rack may be deleted at any time by pressing the **Delete** button, however it should be noted that this will clear all data associated with the rack from the configuration database. It is therefore unlikely that this function would be used in a permanent dimmer installation.

TIP

The software will try to communicate with all racks configured as reporting, and if a rack is switched off, or disconnected, this will slow down the reporting process for the **whole system**. Click the **`REPORTING ON-LINE`** option to disable a rack (no cross visible) if it is taken out of service for any significant length of time.

Configure Rack

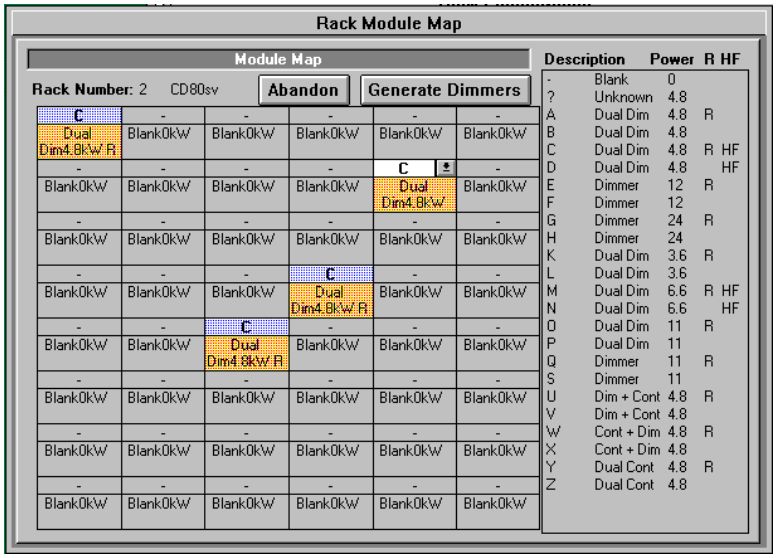
Before the parameters of any dimmer may be set it is necessary to first define the types of dimmer module in each position or “slot” in each dimmer rack. This is performed through the Rack Configuration window, selected by the  button.



This window displays a summary of the configuration information for each rack in turn as well as a table listing the set parameters for each dimmer in the rack. The Rack Selection panel allows any of the racks previously created to be selected and shows the rack type, rack LCD display language and nominal mains voltage that have previously been set for the rack. The Rack Capacity panel similarly reflects details of the rack set previously and this information cannot be changed via this window.

Module Map

When initially configuring a dimmer rack it is necessary to build a “Module Map” which is a table defining the dimmer module types in each physical slot of the rack. Pressing the **Dimmer Def.** button displays the window below:-



A list of available module types is shown on the right of the window, and each position is selected in turn and its module type letter entered.

It is common for all dimmers in a row, or even an entire rack to be the same and therefore a “short-cut” procedure has been included:-

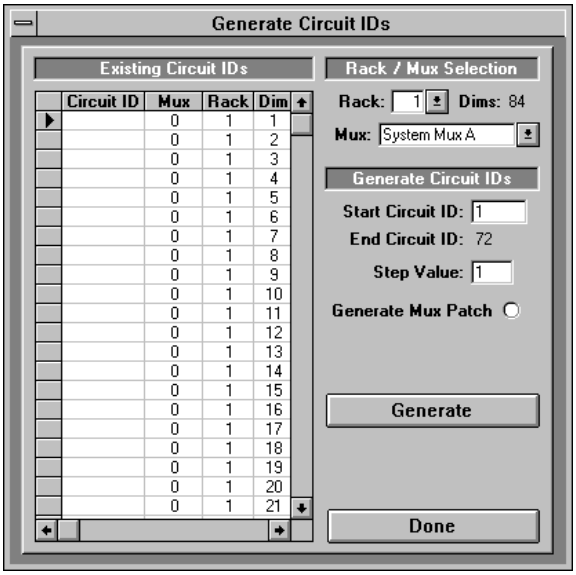
Select the dimmer type for one module, then double click on the selected letter. The following pop-up menu gives the choice of copying the selection to all that row, to the entire rack or exiting the copy feature:

If the different module types are scattered around the rack, a feature is included to allow several slots to be selected at the same time and the module type then set just once. To achieve this hold down the **Shift** key (on the PC keyboard) and use to mouse to select each slot in turn. Once selection of the group is complete the module type can be chosen and all slots in the group will be set to that type.

After module types have been assigned to all filled slots in the rack and the information has been checked, it is necessary for Reporter to generate the dimmers in its database. To start this process, which can take several minutes, press the **Generate Dimmers** button. Reporter sets default parameters for each dimmer in the database, including Preset levels, and a progress bar at the bottom of the screen indicates the stage of the build process which has been reached. On completion a new window allowing the assignment of **Circuit ID** and MUX patch is opened automatically.

Circuit ID and MUX Patch

Each dimmer may be assigned a Circuit ID (Identification) which can be up to five alpha-numeric characters, although normally these are the numbers of the socket outlets in the theater or studio. The Circuit ID is the number which is used for direct dimmer call up using the System Wide Control and which is shown in the status report log. It is also the **CIRCUIT** number shown in the table of the Rack Configuration panel.



Circuit IDs are set by the above window which is selected with the **Circuit ID** button of the Rack configuration screen.

If the rack has been configured previously the existing circuit IDs will be shown in the table and may be altered. New racks show no data and this can be typed in manually or generated automatically.

The controls on the right-hand side of the window allow the circuit ID number of the first dimmer in each rack to be defined (numbers start top left and increase across then down the rack). The **Step Value** is the increment between each ID number (normally 1) and for reference the window displays the end Circuit ID number which will be assigned.

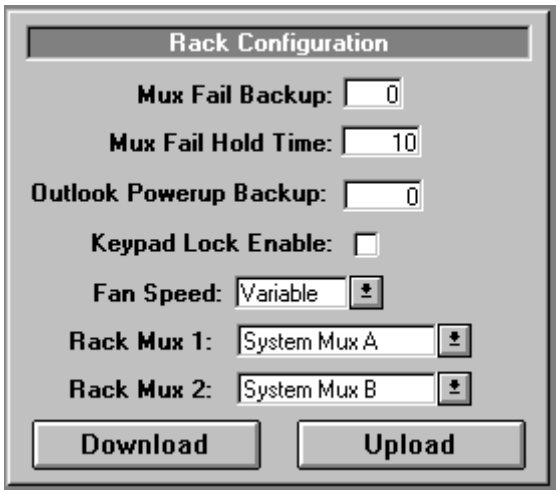
An option is given to generate the Mux patch automatically and, if selected, the user may enter the start mux number for the first dimmer.

Once the parameters to be set have been decided, pressing the **Generate** button causes the numbers to be assigned to all the dimmers in the rack. The process takes some time as default information has to be set up in the Reporter PC database. A blue progress bar at the bottom of the screen indicates activity.

On completion further racks may have their circuit IDs set in the same way or the session may be closed by pressing the **Done** button.

Setting Rack Parameters

Once the dimmers in a rack have been defined there are a number of rack specific fields which may be configured. The **Rack Configuration** panel allows the following to be set or modified:-



Mux Fail Backup: The SWC preset to which the channels in a rack will fade should all Multiplex control inputs to the rack cease. Preset 0 is off.

Mux Fail Hold Time: Should all Multiplex inputs fail the rack may be programmed to hold the current lighting for a defined period before fading to the preset state.

Outlook Power-up Preset: For architectural dimming applications it is often desirable for lighting to turn on to a defined state when power is applied to the dimmers. This function allows any recorded Outlook preset to be defined as the Power-up lighting state.

Key Lock Enable: When selected (**X**) the LCD and Keypad on the rack processor are locked to prevent unauthorized tampering. It is necessary to press the keys in the order defined in the dimmer users manual to enable functionality.

Fan Speed: Determines whether the rack fans run constantly at full speed (**Fixed**) or whether the speed varies with dimmer activity.

Rack Mux: Allows the protocols to be set for the racks two multiplex control inputs. Mux A supports DMX512, SMX, D54 and AMX192; Mux B supports DMX512 and SMX only.

Transferring Data to and from the Dimmer Racks

The **Rack Configuration** panel also includes buttons to instigate the transfer of configuration data to and from the dimmer racks.

As Reporter PCs configuration functions operate on a local database in the PC, it is necessary to download this information to the dimmer racks once the configuration process is complete. The download process takes several seconds and a blue progress indicator at the bottom of the screen shows the percentage of each data type transferred.

It is also useful to be able to upload information stored in the dimmer racks to the Reporter PC database. This may be to ensure that changes entered on the local keypad are accurately reflected in the PC configuration. It also ensures that a secure backup copy of the configuration can be stored on disk. The most common use of the **Upload** feature is to copy Outlook and SWC presets which have been recorded directly in the racks to Reporter, allowing them to be viewed and edited before being stored to a disk file or downloaded to the dimmers. As with **Download** a progress bar tracks the data transfer.

Setting and Modifying Dimmer Data

Supervisor dimmers include many variable features per dimmer, and although defaults are set for most of these parameters (either by factory “birthing” or by Reporter’s automatic numbering facilities), it is possible for the user to change these parameters using Reporter PC’s dimmer edit facility.

Circuit	Rack	Dim	Row	Slot	Module	Power	Name	Description	Response
1	1	1	1	1.1	A	4.8	Row1 Slot1.1	Dimmer R	Medium
2	1	2	1	1.2	A	4.8	Row1 Slot1.2	Dimmer R	Medium
3	1	3	1	2.1	A	4.8	Row1 Slot2.1	Dimmer R	Medium
4	1	4	1	2.2	A	4.8	Row1 Slot2.2	Dimmer R	Medium
5	1	5	1	3.1	A	4.8	Row1 Slot3.1	Dimmer R	Medium
6	1	6	1	3.2	A	4.8	Row1 Slot3.2	Dimmer R	Medium
7	1	7	1	4.1	A	4.8	Row1 Slot4.1	Dimmer R	Medium
8	1	8	1	4.2	A	4.8	Row1 Slot4.2	Dimmer R	Medium

Description	Response	Curve	SR	An i/p	Enable	Man Lvl	Enable	Mux M
Dimmer R	Medium	Square	☒	0	☐	0	☐	Mux A ht
Dimmer R	Medium	Square	☒	0	☐	0	☐	Mux A ht
Dimmer R	Medium	Square	☒	0	☐	0	☐	Mux A ht
Dimmer R	Medium	Square	☒	0	☐	0	☐	Mux A ht
Dimmer R	Medium	Square	☒	0	☐	0	☐	Mux A ht
Dimmer R	Medium	Square	☒	0	☐	0	☐	Mux A ht
Dimmer R	Medium	Square	☒	0	☐	0	☐	Mux A ht
Dimmer R	Medium	Square	☒	0	☐	0	☐	Mux A ht

An i/p	Enable	Man Lvl	Enable	Mux Mode	Min Lvl	Max V	Topset	Cutoff	NonDim
0	☐	0	☐	Mux A htp Mux B	0	120	120	40	5
0	☐	0	☐	Mux A htp Mux B	0	120	120	40	5
0	☐	0	☐	Mux A htp Mux B	0	120	120	40	5
0	☐	0	☐	Mux A htp Mux B	0	120	120	40	5
0	☐	0	☐	Mux A htp Mux B	0	120	120	40	5
0	☐	0	☐	Mux A htp Mux B	0	120	120	40	5
0	☐	0	☐	Mux A htp Mux B	0	120	120	40	5
0	☐	0	☐	Mux A htp Mux B	0	120	120	40	5

The lower section of the Rack configuration screen tabulates every dimmer known to the Reporter PC against the settings of its variable parameters held in the database, one dimmer per line.

Dimmers are displayed in ascending order of Rack & Dimmer number and it should be noted that the analogue outputs in from each dimmer processor have a line entry in the table although, as they are infrequently used, they are not included in the automatic generation of Circuit IDs or Mux numbers.

To scroll through the dimmer list select the up or down arrows on the right-hand scroll bar or drag the square box to the position required.

Use the horizontal scroll bar to move across the columns showing the various parameters.

The data displayed for each dimmer is:-

- **Circuit** The dimmers Circuit ID number
- **Rack** The rack number in which the dimmer is located
- **Dim** The number of the dimmer in that rack (Note: numbers in each rack start from 1 and increase left to right; top to bottom)
- **Row** The horizontal row in the rack holding the dimmer
- **Slot** The physical position of the dimmer in the row (1 to 6). Note that dual modules have their slot number followed by a decimal suffix. *.1 is the left dimmer *.2 is the right.
- **Module** The dimmer module type (Letter as shown in the list on the module map window).
- **Power** The maximum load which may be connected to each dimmer.
- **Name** A text field which may be used to use to add notes.
- **Description** A text description of the module type.
- **Response** The turn on time set for the dimmer. Slow speed reduces the inrush current surge into large lamps; Fast give a "crisper" look to fast effects run on small wattage lamps.
- **Curve:** The profile of control input to dimmer output voltage. Standard curves for square, linear, s-law, fluorescent or non-dim may be selected. Alternatively a dimmer may be assigned to one of four custom "User Curves".
- **SR:** Status reporting may be disabled for each dimmer. If, for example, a dimmer has a very small load which would normally be reported as no load, error reporting could be disabled.
- **An I/P:** Analogue Input assigns the analogue input number to each dimmer if required.
- **EN(**able): Allows a dimmer to be disabled. This does not constitute an electrically safe method for isolating a circuit but will prevent the dimmer form being controlled.
- **Man Lvl:** Allows the level of any dimmer to be set directly. This feature overrides all other control settings.

* **Mux Mode:** Determines which Mux input will control each dimmer or, if more than one control source is required the way in which the control signals combine can be selected.
* **Min Lvl:** Sets the lowest level to which a dimmer can be faded. e.g. to prevent safety lights on stairs from fading to zero.
* **Max V:** Sets the maximum voltage which the dimmer will output. The dimmer curve is scaled to ensure that it operates over the reduced voltage range.
* **Topset:** Similar to Max V but this field sets the maximum voltage to be applied to a fluorescent load.
* **Cut off:** Sets the low voltage for fluorescent loads at which point the dimmer will switch off, preventing shimmer or flicker at low levels.
* **Non-Dim:** Sets the control level at which a module set to the non-dim curve will switch

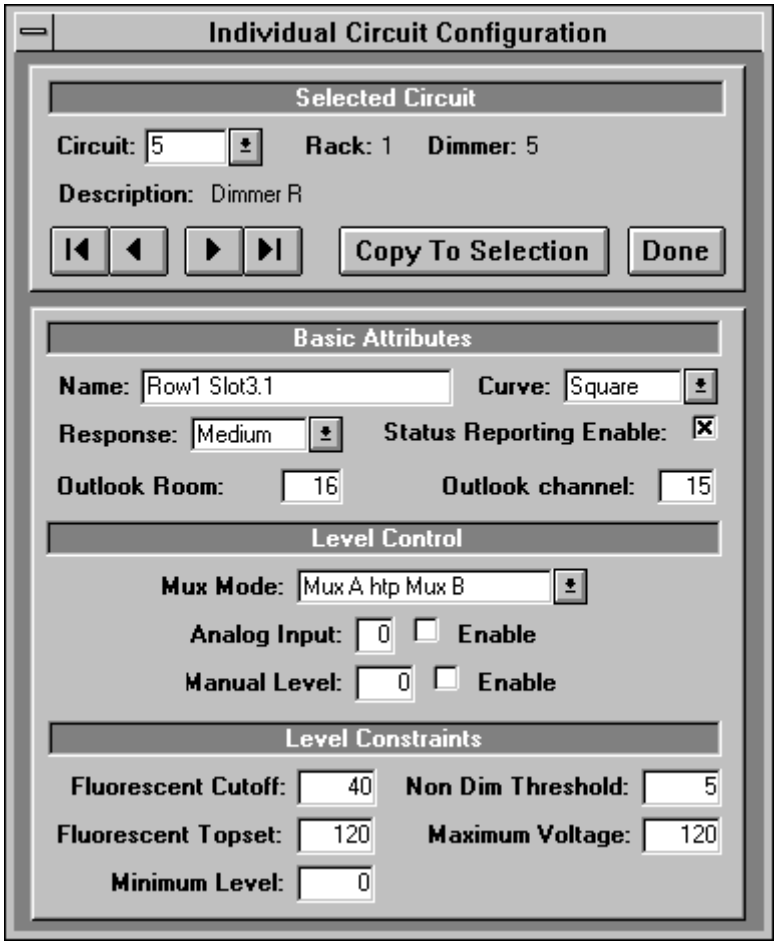
Note: Items marked * can be changed in this window.

To alter any dimmer data point the cursor on the box to be changed and double click the mouse. The **Individual Circuit Configuration** window will appear, allowing the appropriate data to be selected or typed in.

The window is divided into four sections: Selected Circuit, Basic Attributes, Level Control and Level Constraints.

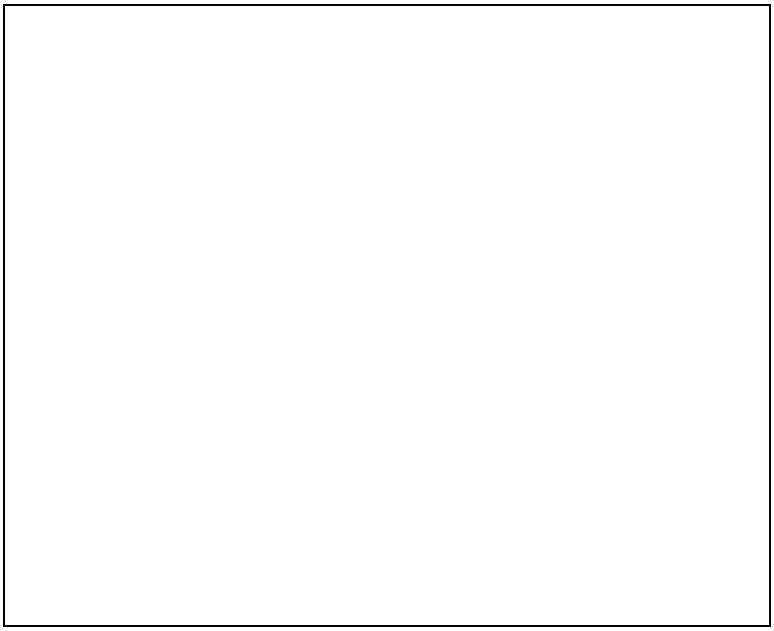
The dimmer whose data is being changed may be altered by clicking on the **Circuit** box and typing in a new Circuit ID. The rack number in which that dimmer is located, the dimmer number within the rack and the module type description are shown for reference but cannot be changed in this window. Left and right arrow buttons select the next or previous Circuit ID, while the outer two buttons select the first or last dimmer in the rack.

The three other panels allow the data for each dimmer to be changed. Numeric boxes are changed by moving the cursor to the box and clicking the mouse. The required value is then typed in and terminated by clicking on **DONE** or selecting another field. If a value is entered which is outside permitted limits an error window is displayed. Fields such as **Mux Mode,** which allow a choice of options, are changed by clicking on the adjacent arrow box to display a menu of options then clicking on the required choice.



Status Reporting

This button takes you into the main Status Reporting control screen where the *Phase current monitor*, and the *Event log* are controlled. This control panel allows you to define exactly what events you want to see, and to clear and delete selected events.



The control panel consists of 4 “Tab controls” to view particular aspects of the Event Log. In all aspects, the “Connection” section is visible, allowing you to connect or disconnect the racks. Also, the buttons named **EVENT LOG, PHASE MONITOR** and **PRINT SELECTED** are always present. These allow you to open or close the Event Log, print its contents, and open and close the Phase Monitor, as required. The buttons have a toggle on/toggle off action, and their state is saved, so that the program will restart in the same configuration as you left it.

Config Tab

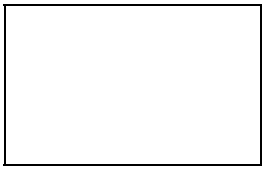
The 4 parameters shown above determine how fast the event log is updated, because they control the communications rate. The **POLL INTERVAL** is the minimum time between successive polls to the connected racks. Slow computers may require a longer poll interval, as otherwise there could be insufficient time for Windows® to do other tasks.

The **MIN POLL INTERVALS PER CYCLE** value should not need to be changed. It is provided to stop the software polling installations with few racks too often.

ERROR RACK HOLDOFF CYCLES defines the number of times the software cycles round the complete system before re-trying a failed rack. This is there to prevent the system slowing down too much if one or more racks are “off-line”. It should not need to be changed.

Communications to the racks

Press the **CONNECT TO RACKS** button to start communications with the racks. The button ID changes to **DISCONNECT**, and a **SUSPEND** button appears, allowing temporary off-line operation, if required. The Rack status monitor will now appear, indicating “On-line” racks in green, and “Off-line” racks in red. Communications activity is also shown by a white highlight on the border of the rack being polled.



The connect button state is saved, so that if you exit Reporter PC when the racks are connected, the software will auto-reconnect the next time you run the program.

TIP

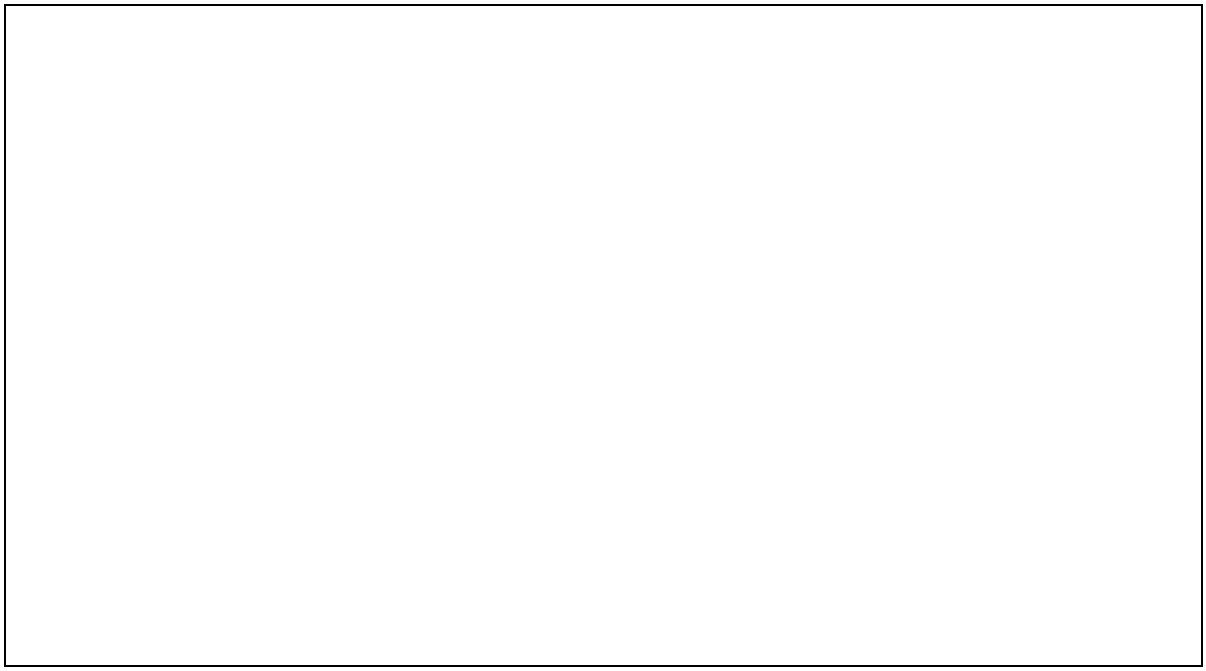
If you put the Reporter PC icon in the Windows® “start-up group”, and put the command WIN at the end of your AUTOEXEC.BAT file, then Windows and Reporter PC will automatically start monitoring your system as soon as the PC powers up. If you are using Windows® 95, then Windows® automatically starts when you power up the PC.

Font control

The font size used in the Event Log may be set to allow more or less events to be fitted on the screen. The recommended screen resolution is 800 x 600 pixels (SUPERVGA), and 9 or 10pt are typical sizes at this resolution.

Event Log

The Chronological Event Log displays all changes to the operating state of the rack and dimmers. When the Reporter PC is started, it synchronises with the racks, checks and sets the time and loads all current dimmer events stored in the racks. Note that when the program is Off-line, the racks will still monitor dimmer operation, and will hold one event per dimmer until the program is On-line again.



For each *dimmer event*, the log will show both the Circuit ID (as programmed in the rack), and the rack number/sequential dimmer number in the rack. For each *rack event*, just the rack number is shown. System events (such as *Current warning*) are shown as **System**. The various types of system, rack and dimmer events are described later.

With both Circuit ID and rack location, it is possible to give both the user and an electrician the necessary information on which to act.

Event Log colours

The following colours are used:

RED is used to indicate a serious event that requires immediate attention - e.g. *Overload.*

YELLOW is used to indicate an event that should be attended to, but is not urgent - e.g. *No Load.*

BLUE is used to indicate an internal dimmer event - *SRP fault.*

MAUVE is used to indicate an event that subsides immediately - e.g. *Enabled.*

GREEN is used to indicate that an event has *Subsided*.

NO COLOUR is used to indicate that an event has been *Cleared.*

Event Log Management

The event log may be controlled by the various buttons illustrated above and described below. The filter buttons have a "toggle on / toggle off" action (shown below with **T**). Buttons with a click once action (e.g. delete) are shown with **C**.

It is possible to apply these filters to the log when the racks are "Off-line", allowing data analysis at leisure. **Note** that combinations of "filters" may be in force at any time.

Filter Out Subsided (T)

A "subsided" event is one that has gone green in the event log, and has therefore been corrected, either by turning the dimmer off, or by some other user action. Press this button to hide the subsided events. Hidden events are not *deleted* as such, they may be "unfiltered" by pressing the button again.

Clear Displayed (C)

This button clears all the displayed events, and by doing so removes their coloured background. The user may choose this option to indicate that he has seen the events in question, and no longer considers them relevant. Again, they are are **not** permanently removed from the log.

Delete Displayed (C)

This button **permanently** removes all displayed events from the log. They cannot be recovered.

Filter Out cleared (T)

Temporarily hides events that have been cleared from the log.

Clear Subsided (C)

This button clears all the subsided events, and by doing so removes their coloured background. The user may choose this option to indicate that he has seen the events in question, and no longer considers them relevant. They are are **not** permanently removed from the log.

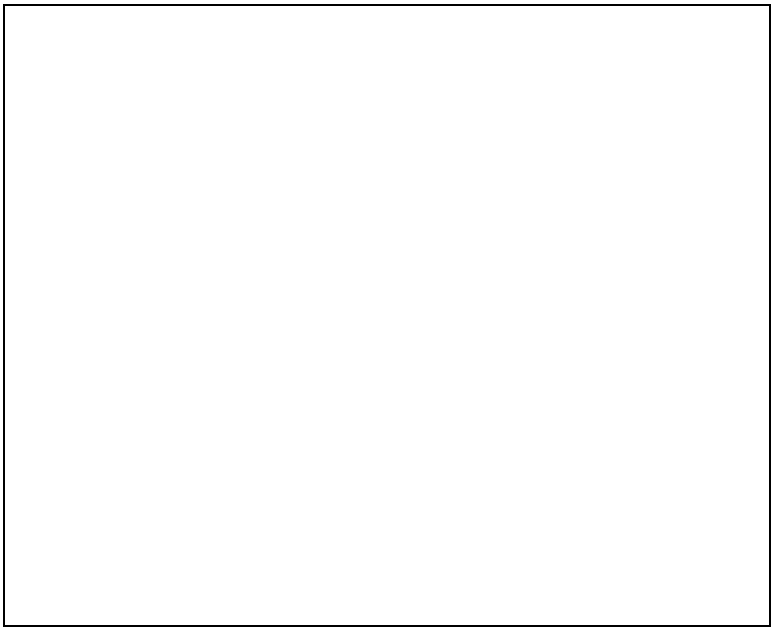
Delete Subsided (C)

This button **permanently** removes all subsided events from the log. They cannot be recovered.

Show All Events (C) This button resets all “filters” and forces the software to show all the events it has in the log. Of course deleted events won’t be shown!

Delete Cleared (C) This button **permanently** removes all cleared events from the log. They cannot be recovered.

Specific Event Filters



In addition to the general filter buttons described above, it is possible to filter out events of certain types. Once the **EVENTS** tab has been selected, the set of filters appears, offering the ability to show or hide the selected types of events in the log.

To Hide a type of event, move the mouse over the event required (CB trip is illustrated above), and “Double-click”. The event type will then move to the **HIDDEN** list on the left. To move an event to the **DISPLAYED** side, double-click on the event in the **HIDDEN** list.

To move **all** events from **HIDDEN** to **DISPLAYED** or vice versa, use the >> or << buttons.

Note that two types of events are classed together as far as filtering is concerned:

Load Error	=	No load and Load Error
Open Cct	=	Open circuit OR Short circuit

Full Description of Dimmer Events

This section describes the various types of dimmer event. For each event, the Circuit ID, arise/subside times, rack and dimmer numbers are entered in the log.

No Load	The dimmer's load is less than the No Load threshold as programmed in the Calibration menu of the rack. ***Diagnostic:*** The No Load threshold programmed for that dimmer.
Load Error	The dimmer's load doesn't match that recorded during the *Learn* process. Learning may be performed from the rack's keypad. The rack may learn all its loads simultaneously or an individual dimmer may be specified. The *No load* event is produced in preference to Load error.. ***Diagnostic:*** The measured and expected (learnt) RMS currents in Amps.
Overload	The dimmer`s load current exceeds that programmed in the *overload threshold* menu of the rack. 110% of the breaker rating is the default setting. ***Diagnostic:***The measured and Overload Threshold RMS currents in Amps.
CB Trip	This event is produced when the dimmer does not respond to the rack processor. This is usually because the breaker has tripped, but may also be because the dimmer has been unplugged, has some internal (SRP) fault, or the slot type has been incorrectly set. ***Diagnostic:*** None.
Overheat	The dimmer has reached a temperature in excess of 65°C. This is usually due to overloading the dimmer or restricting its ventilation. The dimmer may be damaged if this situation is allowed to continue, so the problem should be fixed immediately. The rack drives the fans to full speed if any dimmer produces an overheat warning. ***Diagnostic:*** The measured temperature measured in °C.
Open Circuit	The dimmer or contactor is producing a voltage lower than expected at its output. The voltage tolerance (i.e. the amount that the voltage is allowed to drift) is programmed in the *Calibration menu* of the rack. ***Diagnostic:*** Measured and Expected RMS Voltages. Note this event will be produced as "Short Circuit" if the voltage higher than expected, "Open Circuit" if the voltage is lower.
Short Circuit	See *Open Circuit.*
High DC	The dimmer's DC output is higher than the DC threshold as programmed in the *Calibration menu* of the rack.

Diagnostic: The DC level in Volts, and the action being taken by the rack software to fix the problem. If the dimmer is set to have "DC protection" enabled then should excess DC be detected, firstly the rack tries to set the dimmer output to zero, if that fails to remove the DC, then it sets it to full. If that is successful it locks the dimmer on full, till rack power cycle, or the module is removed.

Module Swap

The rack has detected that somebody has inserted a different type of module, for example a contactor. The rack sets the dimmer curve to the default for the new module and clears the *Load profile* if appropriate.
Diagnostic: The new module type and Circuit ID of the first dimmer.

SRP Fault

The Status Reporting Processor has an internal problem.
Diagnostic: The fault codes are as follows:

Error code	Error Condition
1	ROM checksum failure
2	Dimmer/SRP type mismatch
4	Invalid `SRP type` A/D value
8	Invalid `dimmer type` A/D value
16	Unassigned
32	Firing PSU failed (HF modules only)
64	General Error

Fault codes are additive, as several faults can be active at one time. E.g. 3 = ROM checksum error *and* Dimmer/SRP type mismatch.

System and Rack Event Descriptions

This section describes the various types of rack and system events. For rack events, the Rack number and arise/subside times are entered in the log. For System events, the log shows **`SYSTEM`**.

Rack Alarms and Warnings

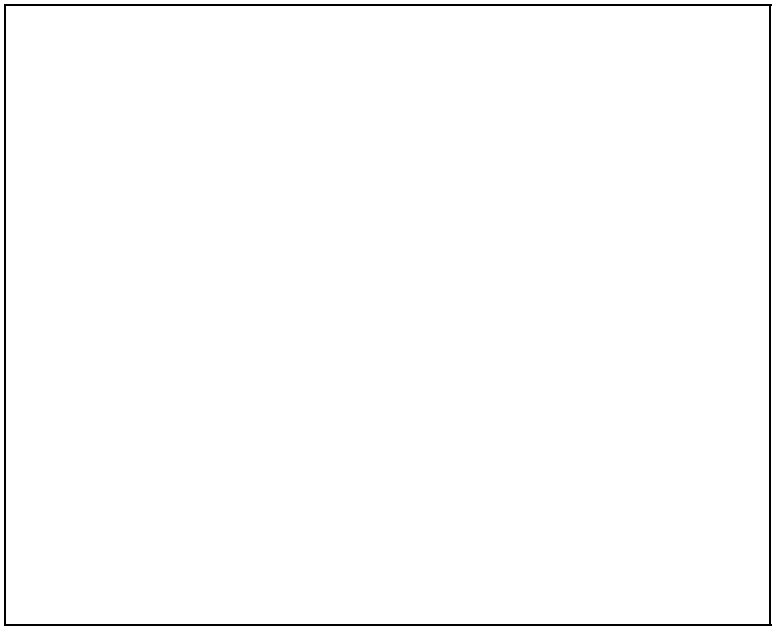
The rack alarms and warnings indicate different events, depending on the rack type (CD80sv or EC90sv). The diagnostic data describes each event:

CD80sv: Rack Alarm = Overtemp Cutoff
Rack Warning = Overtemp Warning

	EC90sv: Rack Alarm = Fan fail (both fans failed) Rack Warning = Fan fail (one fan failed)
Overtemp Warn (CD80sv)	This warning is produced by the rack when the switch at the top of the rack detects an excessively high air temperature. It is usually caused by ventilation obstruction, insufficient air conditioning, or dimmer overloading and should be attended to immediately. Dimmer cut-off occurs 5°C above this, but the fans are driven to full immediately, to try to prevent cut-off. ***Diagnostic:***None
Overtemp Cut-off (CD80sv)	This event is produced when the switch at the top of the detects an air temperature 5°C above the Overtemp warning level. **The switch disables all dimmers until the temperature falls to an acceptable level.** ***Diagnostic:***None
Fan Fail (EC90sv)	A fan fail warning is produced when one or other of the vane switches in the rack detect airflow failure. In addition to fan failure, this may be due to blockage of the air intakes or exits from the rack and should be attended to immediately. The remaining fan is driven to full, to try to prevent individual dimmer cut-off. ***Diagnostic:***None
Current or Power Warning	A Warning is produced either when a rack or the whole system current or power exceeds the warning levels programmed in the *Phase monitor*. ***Diagnostic:***The phase and current or power level that caused the warning.
Current or Power Alarm	An Alarm is produced either when a rack or the whole system current or power exceeds the alarm levels programmed in the *Phase monitor*. ***Diagnostic:*** The phase and current or power level that caused the alarm.
Mux fail A or B	Mux failure is the event that occurs when the mux. control signal is lost for some reason, e.g. the control desk has been turned off. The dimmer system will indicate this event 10s after Mux was last received. The 10s delay allows the system to keep working (even if not optimally) in the event of poor connections. ***Diagnostic:***Mux A or B
Phase fail A, B or C	Phase failure indicates that the power has been lost on the specified phase. Dimmers on that phase will not work until power is restored.

	Note: This can occur momentarily as a side-effect of the hardware reconfiguration when setting dimmer slot types, and can sometimes be detected as power fails on a rack, just before the processor is reset. This is not a fault. ***Diagnostic:*** Phase A, B or C (L1, L2 or L3 in Europe)
Panic mode activated	This event warns the operator that the local Panic switch has been used. Panic forces selected dimmers to full, and **disables all dimmer status reporting** ***Diagnostic****:* None
Enabled	If the disabled processor becomes enabled (dual electronics systems: either because it has been switched manually, or it has automatically switched because of failure or removal of the enabled one), then this message is logged to indicate which processor is now enabled. ***Diagnostic:*** Master or Backup
Tracking	The Tracking event is produced when the inactive (normally backup) processor fails to correctly track the active processor`s actions in dual electronics systems. It usually means that the active processor has lost communications with the inactive processor, or the inactive processor has been removed. The event may be produced momentarily when dual electronics systems are switched on, before the two processors achieve communications. ***Diagnostic****:* Master or Backup
Earth Leakage (EC90sv)	This event is produced when an earth leakage current is detected greater than the “Earth leakage threshold” programmed in the calibration menu. *This feature is only applicable to specially built EC90sv systems.* ***Diagnostic****:* Phase A, B, or C (L1, L2 or L3 in Europe), with the leakage current measured at the time it exceeded the programmed threshold. In addition, if the leakage detection hardware fails to communicate with the rack, then the diagnostic *SRP* fault will be generated.

Time filtering Options

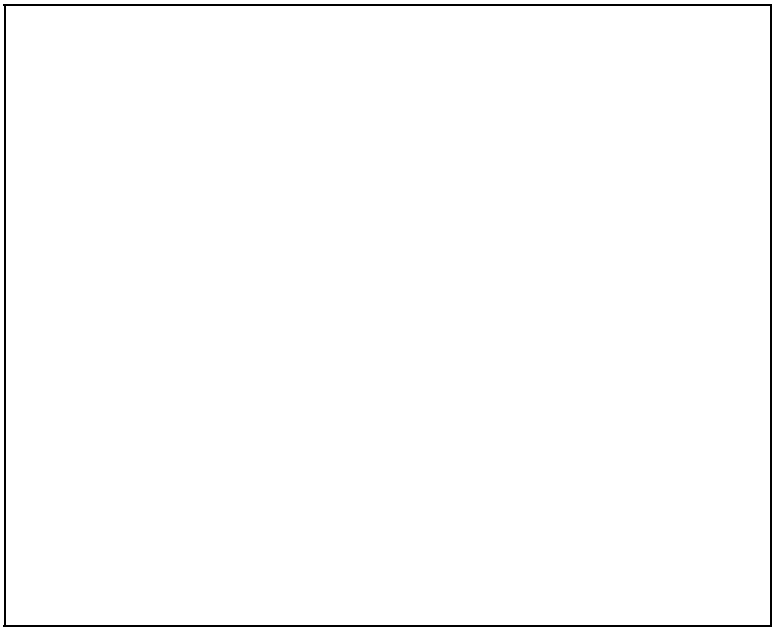


By entering suitable dates and times in the above fields, it is possible to only show events from a certain segment of time. This may be useful for examining events that happened, for example, during a particular show.

When the mouse is used to select a field, the status bar at the bottom of the screen prompts the user for the information required.

The **FILTER DISABLED** button allows the user to turn the filter on or off as required, without clearing the dates and times in the selection boxes.

Circuit filtering Options



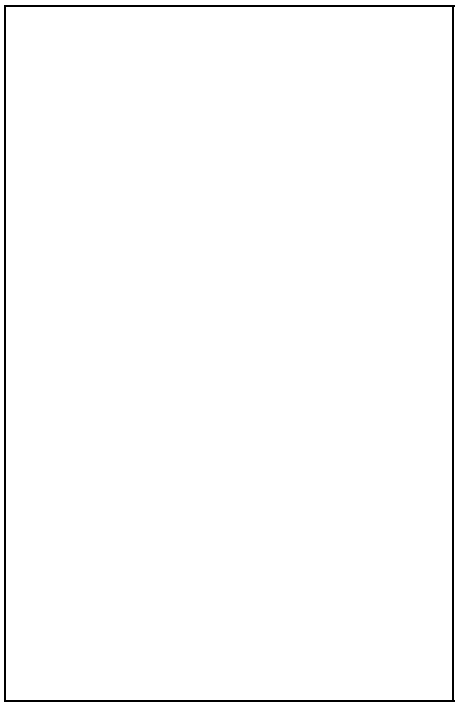
In addition to the above options, by selecting the **CIRCUITS** tab, it is possible to show either a rack, group of circuits or individual circuits. As above, it is possible to disable and enable this filter by pressing the **FILTER DISABLED** button.

As above, when the mouse is used to select a field, the status bar at the bottom of the screen prompts the user for the information required.

TIP To “clear” or “delete” only certain specific events, you can apply one or more filters until the event log shows only those events that you want to remove. Then use the **CLEAR DISPLAYED** or **DELETE DISPLAYED** button to remove those events, then press the **SHOW ALL EVENTS** button to restore all the events that you want to keep.

Phase Monitor

This window graphically displays the system phase currents in Amps, the total system power in kVA, and optionally, each rack's phase current and power output. It calculates the power in kVA based on the vector sum of the RMS currents from the dimmers and the RMS line voltages for each phase of each rack. When showing an individual rack, it will also show the actual line voltage for each phase of the rack.



Step 1: Choose View

Press the **MONITOR SYSTEM** button to see the complete system's load current, on a per phase basis, and in the right hand column, the total system power. Alternatively, the software may be set to show an individual rack's phase and power output, by selecting the required rack in the **RACK** combo box.

Step 2:Set threshold current and power

The software provides warning and alarm levels for each phase (figures in left hand margin) and for the total power (kVA, right hand margin).

You can set Alarm and warning levels for the complete system, when the **MONITOR SYSTEM** button has been pressed; or by selecting an individual rack, you may enter alarm and warning levels for that particular rack. Each rack may have different levels, allowing customization to suit the installation.

As the figures are changed, the software scales the axes of the bar-chart to suit, and positions the thresholds to indicate their relative values. Click on the threshold to be changed, enter the current in Amps or power in kVA, and press <RETURN>.

The allowable range is 10A to 9999A per phase, and 5kVA to 9999kVA. The alarm level must always be above the warning level.

About Warning and Alarm Levels

At the **WARNING** level, shown above with a dotted line, the colour of the bar will turn yellow, at the **ALARM** level, the bar will turn red. The PC will emit a beep approximately every second, the beep is generated by Windows®, and so may be intercepted by a sound card such as Creative Labs® SoundBlaster™. With a sound card fitted to the PC, suitable .WAV files may be selected for the Asterisk (alarm) and Exclamation (warning) functions to create warning sounds or messages for each event type. To set the chosen .WAV file, use the Windows® Control panel utility and its sound option.

Single phase operation - All rack types

The dimmer racks are usually configured to report their load currents on all 3 phases. If the racks happen to have been wired on single phase by strapping the three busbars together, then they will need to be configured to report total current on the phase to which they have been connected: phase A (L1), B(L2), or C(L3). This lets the Reporter PC software correctly add currents across the whole system.

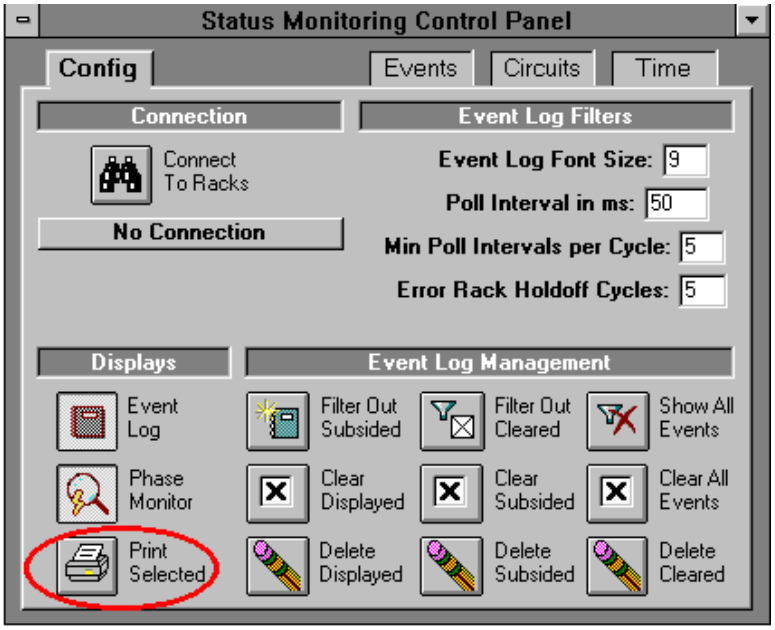
In each rack's **RACK CONFIG** menu, select the required **CURRENT REPORT** mode. The mode may be different for each rack to suit the installation. You can swap the phases on which the currents are reported to any of the 6 possible variations for 3-phase and 3 variations for single phase.

Single phase operation - CD80sv racks only

CD80sv racks may wired for what is termed “single phase 3 wire” in North America, where the supply consists of 2 phases (180° out of phase with each other) and neutral. In this circumstance, the racks will have been constructed differently, and will only have phase busbars A & C, and will are configured to operate correctly by the addition of a link on the CIC card in the rack (refer to rack’s User Manual). When the Current Reporting is configured to “123”, the rack will report on phases A (L1) & C (L3). It may also be forced to report on any individual phase, covering the circumstance when the busbars have been strapped.

Printing

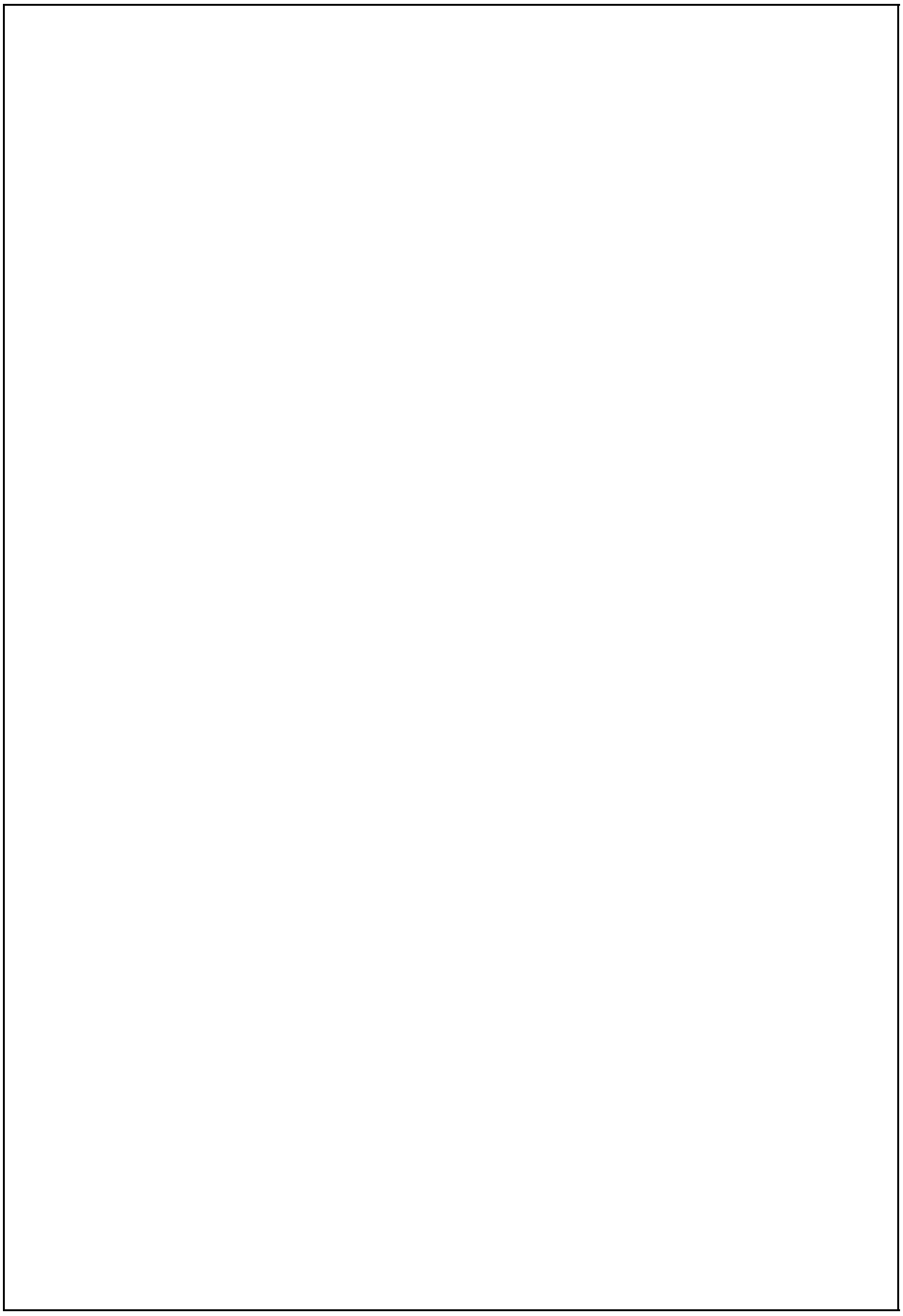
The Reporter PC provides the facility to print out the *event log* and the *rack configuration*. The printing facility uses the Windows® standard printer setup facilities, for information on how to setup and configure your printer, refer your Windows and printer documentation, and the *Installation* chapter.



Event Log Printing

The *event log* may be printed when it is visible on the screen. Press the **EVENT LOG** button to make the log visible, then **PRINT SELECTED** button. During the print preview preparation process, the communications to the racks will be *suspended* for a time, though events won't be lost because they will be cached in the racks themselves.

The program will display a print preview of the log, and you may then print the log, using the PRINT pull-down menu.



Troubleshooting

If the Reporter PC is left running continuously, it should create a minimum of problems. However, if you frequently stop and re-start the program, especially by power-cycling the PC, the problems can occur.

Warning! Power-cycling the PC without exiting the Reporter PC *and* Windows® may leave the system in an unknown state, and cause corruption of the database.

If the PC is used for running other programs, the likelihood of system crashes and consequent database problems increases. While the software *will* co-operate with many popular programs, we do not recommend its use in this manner because of the risks outlined.

Repair

The **REPAIR** facility will be required when a warning message has been produced by the program. Double-click on the icon, and the repair process will automatically proceed. You will need to exit Windows and re-boot the PC if you have had to repair the database.

Compact

The **COMPACT** facility should be run once per week, if Reporter PC is used daily. This ensures that the database is organised in the most efficient manner and maintains operating speed.

Specific Problems

The following procedures should be used to trace problems with the software. In general, Windows® will become unstable if a serious warning is produced, or the database may be corrupted. You **must** then quit Reporter PC, **and** Windows®, before re-starting.

Problems with Communications or attempts to connect to racks

If the program produces warnings when attempting to connect to the racks, then aside from the obvious electrical problems, such as wiring, and connection of the RS485 converter, the problem probably lies in sharing of COM ports, or corruption of the database, or system DLL files.

Firstly, check that a mouse or other device is not connected to any port that is being used for rack communications. If it is, either configure Reporter PC to use a different port, or reconfigure the mouse.

Refer to *Installation* chapter to reconfigure Reporter PC, and to the mouse documentation to reconfigure the mouse.

Secondly, use the *Repair* facility attempt to fix the database. Remember to quit Windows and re-start afterwards.

Thirdly, if the *Repair* process fails, check that another program hasn't been installed and replaced some of the system DLL files. If in doubt, re-install the Reporter PC application from the original distribution disks.

Program Locks up occasionally

This may be due to interference from other programs, especially communications programs, such as fax/modem software. If in doubt, disable these other programs, and test the system again.

In extreme circumstances, unreliability may be due to hardware problems in the PC. Windows® and Reporter PC place heavy demands on hard disks, memory and Video cards. It has been known for machines to be unreliable when running Windows®, because of an incompatibility between video drivers and certain video cards, or even as a result of having lost clusters on the hard disk. Check that the disk is OK with a DOS tool such as CHKDSK, or SCANDISK. Refer to DOS manuals for information on how to use these.

If none of the above suggestions appear to fix the problem, try loading the program on another PC, to see if it's related the particular machine or hardware configuration.

Glossary and Abbreviations

The following terms and abbreviations are used in this manual:

channel Device controlling a dimmer or group of dimmers. Historically, there is a physical controller (such as a slider) for each channel. On most current control systems, channels are numbers accessed by a numeric keypad. Each channel can control multiple dimmers.

CB Abbreviation for Circuit Breaker. MCB stands for Miniature Circuit Breaker.

CIC (control interconnection board) The printed circuit board on which all contractor control wiring connections are made. It is located on the top of the electronics chassis.

circuit Connection device and wiring for powering a lighting fixture from a dimmer.

Circuit ID (CID) A unique identification 4 digit number which you can assign to each dimmer. The circuit ID may be the same as the dimmer number, or may be a number used to indicate circuit location, phase, channel number, etc.

curve The relationship between a control level and the actual dimmer output. Also known as “dimmer law.”

dimmer law See “curve.”

dimmer Device controlling power to a lighting fixture. Two lights on the same dimmer cannot be separately controlled.

DC Direct Current. Dimmers always work with AC (Alternating Current) supplies, and the presence of DC on a dimmer output can damage certain loads, such as transformers. The CD80sv and EC90sv *reporting* dimmers detect high DC and special software routines try to eliminate it, if at all possible.

default The original factory settings.

earth leakage Earth (ground) leakage is measured as the difference between the current flowing out of a dimmer's "live" output, and that returning to it's "neutral". Any difference is assumed to be leaking the earth (ground). Specially built EC90sv systems have current transformers to detect this type of fault.

level A numerical value used to express the "brightness" of a dimmer. Usually shown as %.

Mux Abbreviation of the word "Multiplex." Multiplex systems transmit data (usually dimmer information) from a lighting controller to a dimmer rack via a single cable rather than via a pair of wires for each dimmer. DMX512 is the most common format, which uses the RS485 electrical standard.

panic Panic circuitry in the dimmer rack allows any selected dimmer to be set to full (e.g in an emergency), regardless of whether a processor is present or working.

patch Historically, the process of physically connecting circuits to dimmers. Now usually refers to electronic assignment of dimmers to channels.

phase The three phases of the mains supply to which the dimmers are connected are identified as phase 1, phase 2, and phase 3 in Europe and phase A, Phase B, and Phase C in the US.

power module A chassis containing one or two dimmers or contactors. This is sometimes referred to as a "dimmer." However, each CD80sv power module can have one or two dimmers or contactors in it, so this manual distinguishes between dimmers (individual power control circuits) and power modules (a collection of one or more power control circuits).

rack number A number used to uniquely identify each dimmer rack in a multiple rack system. Rack numbers are set from the front panel of the processor module, and are usually set by the installation engineer.

room An area separately defined for purposes of architectural lighting control (e.g., Outlook control stations). This is usually either a

room in the traditional sense (an indoor enclosed area) or a portion of a room which can be partitioned off. Each room may be separately and simultaneously controlled by the system.

RS232 Also known as RS232-C, EIA-232, EIA-232-C, EIA232-D or EIA-232-E. This is an electrical standard that the PC communications (COM) port works with. The cable length is generally limited to 50 feet.

RS485 This is a more robust electrical standard than RS232, requiring a twisted pair cable, but allowing a cable length of 1000m.

SRP (Status Reporting Processor) The intelligent PCB in each reporting dimmer that measures dimmer output voltage, current, DC output voltage, and temperature.

SWC (System Wide Control) A method of programming and controlling more than one dimmer rack simultaneously. A hand held controller lets you program and recall all 99 presets, and control individual dimmers. 8 and 16 channel pushbutton stations, and an A/V interface, let you recall any 8 or 16 of the 99 presets at each station. Please contact Strand Lighting or see the *System Wide Control Data Sheet* or *System Wide Control User's Manual* for details on how SWC works.

SYSTEM.INI This is a plain text file that controls some of the main aspects of the Windows® operating system. If edited, Windows® must be re-started for changes to take effect.

Colophon

This manual was prepared using:

Microsoft® Word for Windows 6
Shoot! (Screen capture program)
Microsoft® Flash (Screen capture program)
Microsoft® Paintbrush
CorelDraw 5

The style was developed by Don Lammers / Roger Rushbrooke.

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