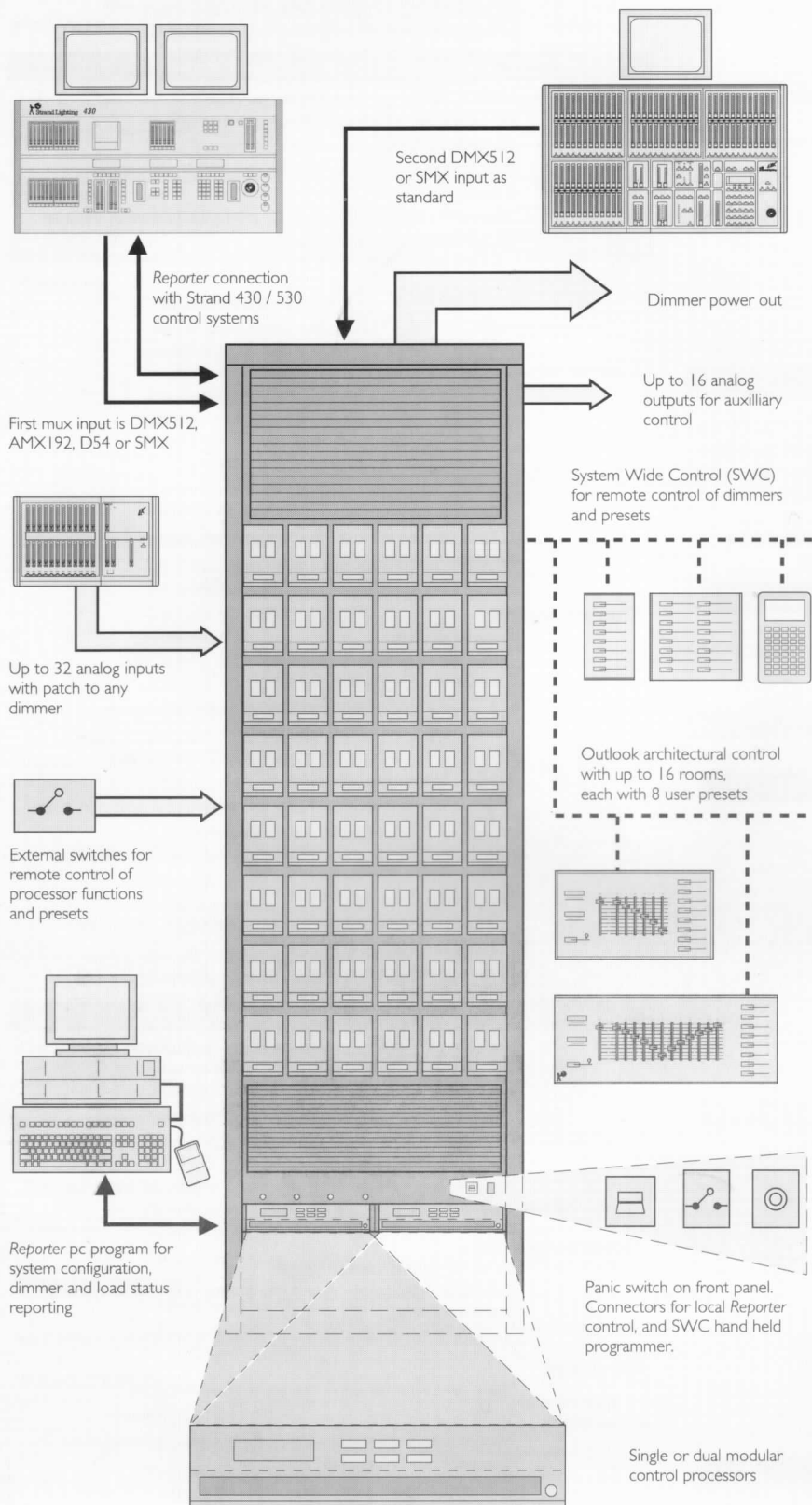


Strand Lighting

PRODUCT DATA

CD80 Supervisor System Configuration



DIMMERS

CD80 Supervisor™

- Plug-in modular digital dimming system for mid to high specification applications
- Up to 96 2.4kW or 48 6kW dimmers per rack
- Standard, high and very high choke filter rise times
- Hard firing thyristor option to run transformer, cold cathode and low wattage loads
- Contactor module options to switch motors, HMI ballasts and other non-dimmable equipment
- System wide configuration and load reporting with Strand 430 or 530 consoles or PC using the Reporter™ Windows™ based software program
- All power modules available in standard format or with Reporter™ load status reporting
- Dual electronics processor option for full redundant tracking backup
- Extensive security features for top grade "live" installations
- "Panic" function, to bring selected dimmers to full if processor fails, and can be actuated manually or automatically (eg. by a fire alarm system)
- Line voltage regulation to minimise light output changes when the input voltage fluctuates
- Extensive input control capabilities, ensuring system design flexibility and ability for future system additions and upgrades
- Optoisolated Mux A and Mux B inputs provided as standard with individual patches
- Up to 32 analog +/- 10V inputs per rack patchable to any dimmer circuit(s)
- 99 System Wide Control (SWC™) memories for additional preset and backup use, using simple "snapshot" recording
- 16 room (zone) by 8 preset Outlook™ architectural lighting presets for auditorium, front of house and other control
- Direct control of channels and presets by hand held remote programmer with specialised riggers functions
- Built-in library of fixed and custom dimmer curves, accessible per dimmer
- Smooth 16 bit digital fade processing

Racks

General

- Two sizes; 48 and 24 modules
- Both sizes either bottom or back bussed
- Any module may be positioned in any slot at manufacture
- Over temperature warning on rack, remote console or PC
- Over temperature warning forces cooling fans on at full
- Over temperature shut down at 5 degrees C above warning level
- UL listed for USA and cUL listed for Canada

Mechanical

- Racks designed for adjacent mounting
- Racks can be bolted to floor
- Racks are supplied with locking door as standard
- Module removal without use of a tool
- Max ambient temperature 40 degrees C
- Convection cooled with fan assist
- Three low noise fans
- Variable or continuous fan speed control for minimum acoustic noise

Electrical

- Rack power input
 - 120V 3 phase, 4-wire+ground
 - 120V 1 phase, 3-wire+ground
 - 220V 3 phase, 4-wire+ground
 - 220V 1 phase, 2-wire+ground
 - 800 A per phase maximum
 - 50Hz / 60Hz
- Bussing allowed across adjacent racks
- Standard load wire terminal size # 6 gauge with optional adaptor up to # 2 gauge
- Fault current protection to 10,000 AIC
- Provision for amp trap devices
- Dimmers do not draw or supply DC supply current

Control logic

All or individual dimmers may be programmed to conform to a selection of control logic rules - please refer to figure.

Rack Dimensions and Weights

| | 48 module rack | 24 module rack |
|----------------|----------------|----------------|
| height | 80" (2,032mm) | 57" (1,448mm) |
| width | 24.5" (622mm) | 24.5" (622mm) |
| depth | 19.5" (495mm) | 19.5" (495mm) |
| weight (full) | 1185lb (538kg) | 700lb (318kg) |
| weight (empty) | 400lb (180kg) | 300lb (136kg) |

120V Power Modules

| Power | Firing Type | Rise Time | Current |
|-------------|-----------------|-----------|----------|
| Dual 2.4 kW | Firm | 350 µs | 2 x 20 A |
| Dual 2.4 kW | Firm | 500 µs | 2 x 20 A |
| Dual 2.4 kW | Firm | 800 µs | 2 x 20 A |
| Dual 2.4 kW | Hard | 350 µs | 2 x 20 A |
| 6 kW | Firm | 350 µs | 50 A |
| 6 kW | Firm | 500 µs | 50 A |
| 6 kW | Firm | 800 µs | 50 A |
| 12 kW | Firm | 350 µs | 100 A |
| Dual 2.4 kW | Firm/Non-Dim | 350 µs | 2 x 20 A |
| Dual 2.4 kW | Non-Dim/Firm | 350 µs | 2 x 20 A |
| Dual 2.4 kW | Non-Dim/Non-Dim | - | 2 x 20 A |

220V Power Modules

| Power | Firing Type | Rise Time | Current |
|-------------|-----------------|-----------|----------|
| Dual 3.3kW | Firm | 190 µs | 2 x 15 A |
| Dual 3.3 kW | Firm | 435 µs | 2 x 15 A |
| Dual 3.3 kW | Hard | 190 µs | 2 x 15 A |
| Dual 5.5 kW | Firm | 190 µs | 2 x 25 A |
| 5.5 kW | Firm | 435 µs | 25 A |
| 11 kW | Firm | 190 µs | 50 A |
| Dual 4.4 kW | Firm/Non-Dim | 190 µs | 2 x 20 A |
| Dual 4.4 kW | Non-Dim/Firm | 190 µs | 2 x 20 A |
| Dual 4.4 kW | Non-Dim/Non-Dim | - | 2 x 20 A |

Note: 220V modules can be used as high as 240 VAC without modification, however the listed power rating will be increased by a factor of 1.09. A 3.3kW dimmer will therefore be capable of driving a 3.6kW load. Dimmer risetimes will be reduced by a factor of approximately 0.93 when used at the higher voltage.

Miscellaneous Power Modules

| Type | Current |
|----------|----------|
| Blank | - |
| Constant | 2 x 20 A |

Note: Blank modules must be used wherever dimmer modules are not installed to maintain adequate air flow.

Power Modules - General

- Dimmer and Non-Dim modules may be of Standard or Reporter types
- Capable of "hot patching" cold incandescent loads up to full rated capacity at full ON
- Dimmer power efficiency at least 97% at full load
- No-load loss of 3V RMS for standard 2.4kW dimmers
- Modules keyed so that modules of wrong capacity cannot be inserted
- Circuit breakers fully magnetic with 10,000 AIC surge rating
- Circuit breakers rated for 100% switching duty applications
- Circuit breakers are UL and cUL recognised devices
- SSR encapsulated in epoxy filled high impact plastic case
- SSR optically isolated between AC and control lines to 2,500 V RMS

Control Electronics Specification

General

- All control electronics on one plug-in module
- Completely digital with no analog ramp
- Real time date and time clock for status log reporting
- 6 button keypad to program all rack functions on processor module
- 2 line by 8 character back lit LCD display on processor module
- 6 status LEDs on processor module
 - Mux input A ok
 - Mux input B ok
 - Electronics power ok
 - Processor self test ok
 - Dimmer module error
 - Active processor (dual processor systems)

Languages

- English
- Spanish
- French
- German

Connector on rack front for configuration, control and Operating Software upgrades

Local switch for single rack PANIC function

Control inputs

Dimmer control

- Mux A: DMX512 or AMX192 or D54 or SMX
- Mux B: DMX512 or SMX
- Analog: 32 inputs, +/-10V (96 dimmer processor and dual electronics processor)
16 inputs, +/-10V (48 dimmer processor)

Remote control (system wide)

- SWC™ for remote preset panels and hand held programmer unit
- Outlook™ for integrated architectural control
- Reporter™ for remote configuration and status reporting from Strand 430/530 console or PC

Local control (per rack)

- Rack processor keypad and LCD display for full functionality
- Switch for rack PANIC control
- RS232 port for local PC control
 - Rack configuration using the Reporter PC program
 - Rack preset recording and playback
 - Library and backup rack set-up storage on PC
 - Operating software upgrades

External switch contacts

- Select main or backup processor (dual processor systems)
- Select Mux A or Mux B (with appropriate control logic mode)
- Enable or disable PANIC
- SWC preset I GO
- Next SWC preset GO

Control outputs

- 96 or 48 dimmer control signals
- 12 analog +10V output signals (96 dimmer and dual electronics processors only)
- Variable or continuous fan speed control to minimise acoustic noise

Electrical

- Signal wire termination at one easily accessible point
- Signal wire termination on two-part plug-in connectors
- Loop-out connectors for daisy chaining signals between racks
- Status LEDs
 - 5V opto isolation power ok
 - Auxiliary power supply ok
 - PANIC active
 - Rack overheat

Presets

99 user programmable SWC presets, plus preset 0 (blackout)
 Snapshot recording of SWC presets from any remote preset station, hand held programmer or Reporter Program
 Individual SWC preset crossfade time recording
 One user assignable SWC backup preset on loss of both Mux inputs
 16 rooms (independent zones), each with 8 Outlook presets, plus on/off, per room

Control Electronics - Performance

Fast dimmer update rate, 16 ms (60 Hz) or 20 ms (50 Hz)
 Response time to signal changes, 16 ms (60 Hz) or 20 ms (50 Hz)
 Line regulation maintains dimmer output levels to within +/- 1V of set output within the range of the control electronics (100V to 240V nominal), providing that the set level is not higher than the power input voltage less the dimmer voltage loss.
 Automatically compensates for frequency variations 45 Hz to 62 Hz.
 Up to 8 point interpolation between DMX values to smooth console fade steps
 Line regulation acts on each individual dimmer and maintains dimmer curve parameters (set curve, max level and min level)

Control Electronics - Programmable Features**Patching**

User programmable patches for Mux A and B inputs
 User programmable rack start address with following dimmers automatically sequenced
 Free format patching - any dimmer to any Mux input and address for total flexibility
 User programmable 5-digit ID for sequential numbering of systems larger than 512 circuits
 Patch any analog 10V input to any circuit(s)
 "Room" to channel to dimmer patch for Outlook architectural control

Dimmer characteristics

Set max output voltage, 50V to 250V in 1V steps
 Set min output level, 0 to 99%
 Override dimmer level, 0 to full
 Library curves
 Square
 S-curve
 Linear power output
 User programmable curves
 Non Dim - trigger level 0 to 99%
 Fluorescent - electronic ballast
 Fluorescent - magnetic ballast
 5 user defined curves via Reporter
 Response time
 Fast (30 ms)
 Normal (100 ms)
 Slow (300 ms)
 Dimmer status reporting enabled or disabled (Reporter modules only)

Security Features**Dual electronics**

Redundant tracking backup using an optional second plug-in processor
 Backup processor activated by remote switching
 Set-up data can be transferred between main and backup processors in case of replacement of either processor

Set-up data storage

Non-volatile storage of set-up data on removable memory pcb
 Memory pcb can be moved on exchange of processors
 Set-up data can be saved and stored using the Reporter program

Mux fail options

Hold forever (status quo)
 User programmable "hold" period before fade to user assigned SWC backup preset

PANIC function

Any of the 96 or 48 dimmer and 12 analog outputs (96 dimmer processor) may be user selected to go fully ON on activation of the rack PANIC switch or an external switch
 Activation is by hardware only
 Optional PANIC power supply for automatic PANIC ON upon removal of processor module

Thermal control

All power components convection cooled with fan assist
 High capacity heat sink in each module
 3 fans for redundancy in case of one fan failure
 Over temperature warning on rack, remote console or PC
 Over temperature warning forces cooling fans on at full
 Over temperature shut down at 5 degrees C above warning level
 PANIC operation forces cooling fans on at full

Opto-isolation

All digital inputs are opto-isolated to 2,500V RMS
 Mux A and Mux B - DMX512, SMX
 SWC input
 Outlook input
 Reporter input
 External switch inputs

Reporter

The Reporter program is available to run on the Strand 430 and 530 controls systems with Lightpalette and Genius+ operating software. It will also run on an IBM compatible desktop or laptop PCs.

| Function | Minimum PC Specification | Preferred PC Specification |
|------------------|--------------------------|---|
| Processor | Intel486DX™ | Intel486DX2™ 66 or Intel Pentium™ Processor |
| Memory | 8 Mb RAM | > 8 Mb RAM |
| Monitor | VGA 640 x 480 monochrome | SVGA 800 x 600 color |
| Operating System | Windows™ 3.1 | Windows™ 3.1 |

Reporter - Configuration

System, rack and dimmer configuration
 Systemdefine or upload
 Dimmer type / slot assignment
 Mux and analog control input patching
 Outlook room/channel/dimmer assignments
 Dimmer ID configuration
 User definable dimmer alphanumeric description
 Max voltage and min level per dimmer
 Dimmer response time
 Dimmer curve
 SWC preset recording
 Outlook preset recording

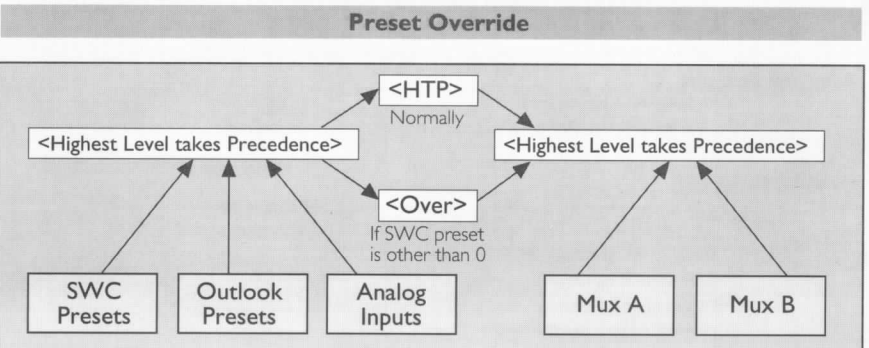
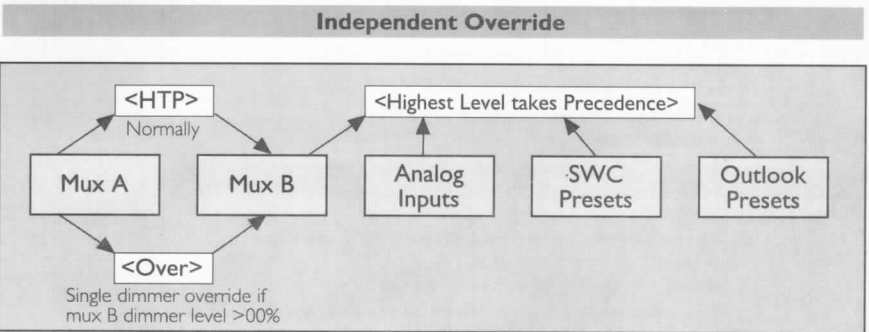
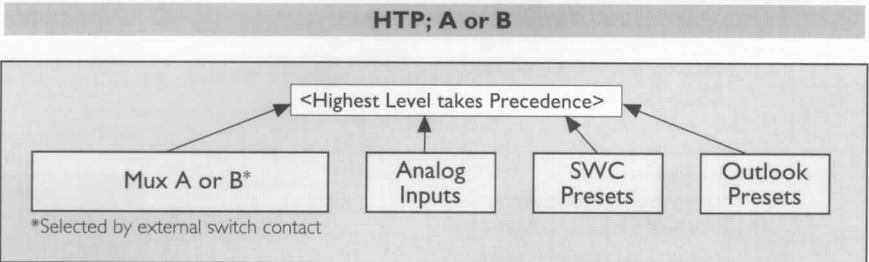
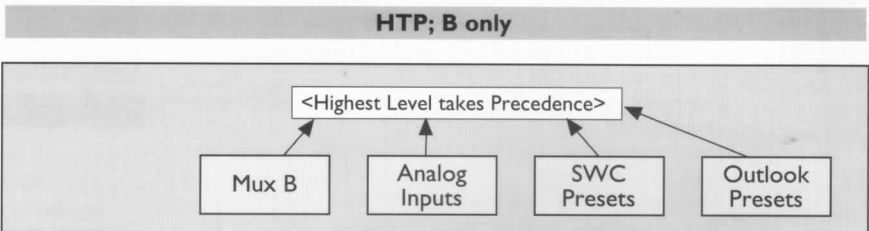
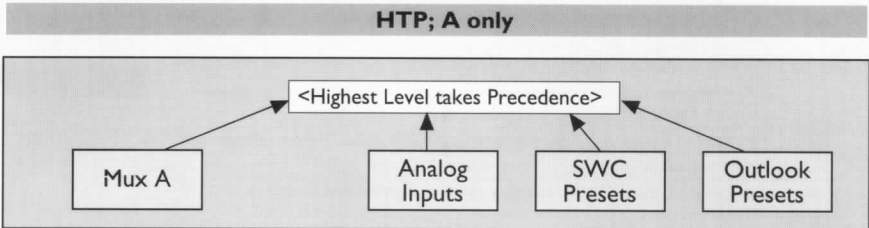
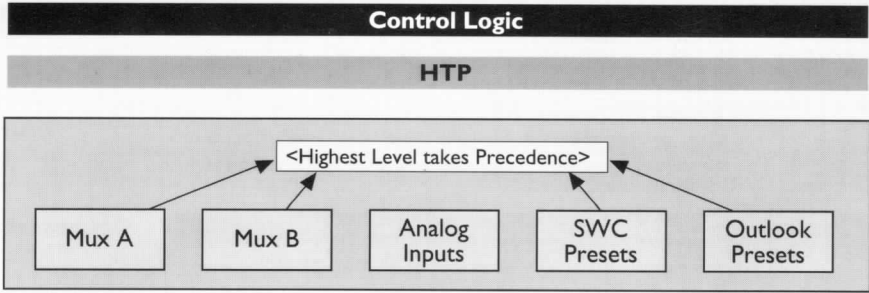
Reporter - Standard Reporting

Dimmer type in slot (user configured)
 Dimmer level (%)
 Input line voltage per phase
 Mux A or B input failure
 Rack overheat warning
 Rack overheat shut-down

Reporter - Load Status Reporting (Reporter modules only)

Load per dimmer (W)
 Memorised load per dimmer
 Warning if load deviates from memorised value
 No load
 Dimmer fault
 No response from dimmer
 No control of dimmer
 Excess DC voltage output
 Overheat per dimmer
 Overload current per dimmer

Intel486DX, Intel486DX2 and Pentium are trademarks of Intel Corporation. Windows is a trademark of Microsoft Corporation



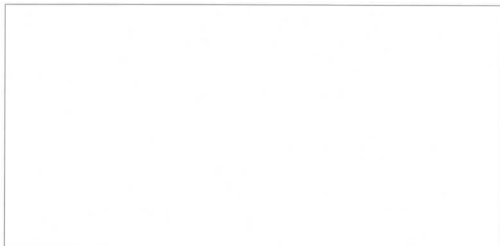
Los Angeles: Strand Lighting Inc., 18111 South Santa Fe Avenue, P.O. Box 9004, Rancho Dominguez, CA 90221 USA. Telephone : 310-637 7500 Fax : 310-632 5519 Toll Free Telephone : 800-487 0175 Toll Free Fax : 800-775 LEKO

Toronto: Strand Lighting Canada, 2430 Lucknow Drive #15, Mississauga, Ontario, Canada. L5S 1V3 Telephone : 905-677 7130 Fax : 905-677 6859

Hong Kong: Strand Lighting Asia Limited, 7/F Corporation Square, 8 Lam Lok Street, Kowloon Bay, Kowloon, Hong Kong. Telephone : 852-757 3033 Fax : 852-757 1767

London: Strand Lighting Limited, Grant Way, Isleworth, Middlesex TW7 5QD, United Kingdom Telephone : 0181-560 3171 Fax : 0181-568 2103 Telex : 27976

ALSO FACILITIES IN:
NEW YORK • ROME • WOLFENBÜTTEL • STOCKHOLM • BRUSSELS



Strand Lighting reserves the right to supply any variation to the specification. All users are required to register with Strand Lighting Ltd before using Genius, Kaleidoscope and Communiqué. Genius, Kaleidoscope, Communiqué, GSX, LBX and Reporter are trademarks of Strand Lighting Ltd. Strand and Strand Lighting are registered trademarks of Strand Lighting Ltd. Strand Lighting is a company within the Film and Television Division of the Rank Organisation Plc.