



Strand Lighting

P R O D U C T D A T A

A Guide to System Wide Control

System Wide Control is a communications link supported by the latest digital dimming products from Strand Lighting including LD90™, DE90™, Andi DX™ and Supervisor dimmers EC90SV™ and CD80SV™.

System Wide Control (SWC) allows remote 8 and 16 pushbutton SWC Panels, an LCD Display Station, an SWC Audio Visual (A/V) Interface and an SWC Hand-Held Programmer to recall and program up to 99 lighting scenes (also referred to as cues or presets) stored within the dimmer electronics. SWC can therefore be used as a sophisticated lighting control system in its own right, or the SWC presets can be used as back-up scenes, independent of any other remote control system connected to the dimmers.

In addition, the SWC Programmer provides dimmer set-up functions, preset fade time programming and many dimmer control facilities useful during a performance set-up.

8 and 16 Pushbutton SWC Panels enable a range of presets to be selected, each preset fading at its pre-programmed rate. The current dimmer output can be recorded as an SWC preset from the panels.

An LCD Display Station provides custom preset labels complete with menu options for recording, setting fade times and editing the labels. A display scroll facility allows all 99 presets to be accessed from this station.

An SWC A/V Interface provides a means of selecting (and recording) up to 16 SWC presets from remote momentary contact closures. This allows integration with A/V or building management control systems.

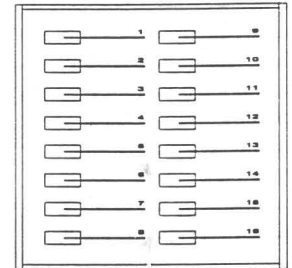
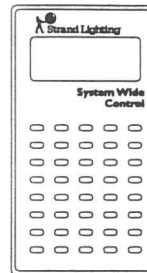
Up to 32 dimmer cabinets can be connected to a single SWC network giving true "system wide" control of presets or individual dimmer circuits.

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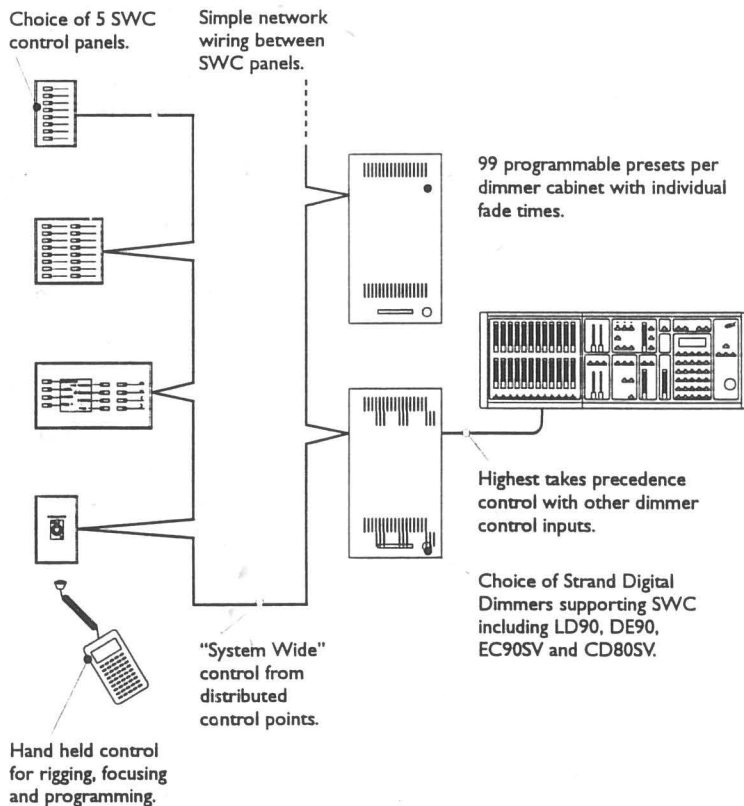
ARCHITECTURAL

SWC™

System Wide Control



SWC Typical Schematic



Typical applications include:

Back-up lighting scenes, house lighting control, basic preset architectural control. Conference and concert lighting in municipal venues or for television and video studios. The SWC Programmer can also be used as an independent "riggers" control.

The SWC AV Interface is ideal for Theme Park, Experience Centres, Museums or Meeting spaces for interfacing with Building Management or Show Control Systems.

- SWC - Available as standard with LD90™, DE90™, Andi DX™, EC90SV and CD80SV dimmers
- 99 Programmable presets for local or remote selection
- Programmable fade times of 0 to 9 minutes 59 seconds per preset
- 8 & 16 Pushbutton SWC Panels for remote preset selection
- LCD Display Station for customised preset "names"
- "Snapshot" record of dimmer output to create back-up presets
- SWC AV Interface for preset selection from remote contact closures
- SWC Programmer provides "rigging and focusing" control without needing an external control console
- Highest Takes Precedence operation with other dimmer control inputs
- System wide control capability - up to 32 dimmer cabinets connected to the same control network
- Circuit I.D.'s simplifying control access

SWC™ Specification

GENERAL

1 All control functions shall be governed by, and all programmed and stored intensity levels (presets) shall be resident in the dimmer cabinets.

2 A Belden 9773 cable shall provide a communication and low voltage power path from the dimmer cabinet(s) and power supply, to the SWC Panels.

Up to 32 "nodes" shall be supported per SWC link where a "node" is defined as an SWC Panel, Display Station, Programmer, A/V Interface or dimmer cabinet. This limitation is imposed by the SMX protocol used to communicate commands between stations and dimmer cabinets.

The total cable length shall not exceed 1000ft (300m).

3 The SWC Programmer shall access dimmers via the "Circuit I.D.". This is a programmable 5 digit number (4 digits only accessible from the SWC Programmer), allowing geographic numbering schemes, channel numbers, or circuit rather than dimmer numbers to be referred to. The Circuit I.D. shall be set-up at the dimmer cabinet and can be in the range 1 - 9999. Duplicate numbering shall be possible to group dimmers under common SWC control.

4 Preset selection with System Wide Control shall be independent of any other systems that may be controlling the dimmers, operating on a highest level takes precedence basis. When using the SWC Programmer for direct circuit control, dimmers are forced to the level set by the Programmer regardless of any other control input. Control can only be released using the @Input or Return buttons on the Programmer.

DISPLAY STATION, 8 & 16 PUSHBUTTON SWC PANELS

1 The control station face plates shall be free of visible fasteners and shall be of aesthetic appearance.

2 Station faceplates shall be fabricated from 0.025" (0.64mm) aluminum with a die cast trim frame.

3 Control panels shall be supplied in an off-white finish. Control Station legends shall be printed in grey.

4 Control panels shall require US flush mounted masonry back boxes. Raco Series 690/960 (or approved equal) are recommended and can be supplied to order.

Note: Back boxes must be grounded/earthed in accordance with local wiring practice to provide a discharge path to ground for static electricity.

5 Control station pushbuttons shall have grey button caps with integral red LED indicators. It shall not be necessary to remove button caps or to disassemble the control station for installation.

6 Control Panels shall be supplied complete with a sub-plate which is screwed to the flush mounting back box with the screws provided. The sub-plate allows the control station to be hinged into position and secured with hexagonal set screws on the bottom edge of the trim ring. A 1/16" (1.6mm) Allen key shall be provided with each station.

7 All control cable terminations shall be via screw terminal plug and socket to facilitate removal of the station while maintaining continuity panels require a 24 volt dc supply (nominally 100mA per station) from a remote power supply.

Specific features of the SWC Panels shall be as follows:-

1 A 16 position rotary switch shall be provided on the back of each station for preset range and record selection as follows:

Switch Setting	8 Preset Panel Preset Range	16 Preset Panel Preset Range
0	1 - 8 With record	1 - 16 With record
1	9 - 16 With record	17 - 32 With record
2	17 - 24 With record	33 - 48 With record
3	25 - 32 With record	49 - 64 With record
4	33 - 40 With record	65 - 80 With record
5	41 - 48 With record	81 - 96 With record
6	49 - 56 With record	97 - 99 With record
7	57 - 64 With record	No Function
8	1 - 8 No record	1 - 16 No record
9	9 - 16 No record	17 - 32 No record
A	17 - 24 No record	33 - 48 No record
B	25 - 32 No record	49 - 64 No record
C	33 - 40 No record	65 - 80 No record
D	41 - 48 No record	81 - 96 No record
E	49 - 56 No record	97 - 99 No record
F	57 - 64 No record	No Function

Note the 8 preset SWC Panel shall have access to presets 1 - 64 only.

2 SWC Panels shall mimic preset selection from other SWC controls when their rotary switch settings are the same.

3 Panels shall have 8 or 16 pushbuttons for recall of pre-programmed SWC lighting presets in pages (determined by the setting of the rotary address switch during installation).

4 Re-selecting a currently active preset shall select Preset 0 or "blackout" which fades all dimmers out in a programmable fade time.

5 It shall be possible to record an SWC preset (simultaneously in all inter-connected dimmer cabinets) by pressing the required preset button for 5 seconds. The ability to record presets is dependent on the setting of the rotary address switch on the rear of the station.

Specific features of the Display Station shall be as follows:-

1 The Display Station shall have a 16 line, 16 character backlit LCD display with menu options for preset recall, preset and fade time recording and preset label editing.

2 The LCD display shall label the current function assignments of 8 adjacent pushbuttons used typically for selecting presets in pages of 8 with scrolling access to all 99 presets.

3 A menu option enables the first 16 presets to be given 11 character custom labels, programmed directly from the station. A "Clone" facility copies the labels to other Display Stations connected to the same SWC link to minimise programming.

A menu option shall enable the custom labels to be reset to factory defaults when required.

4 The 16 programmed labels shall be locally held in the stations non volatile memory allowing the presets to be given alternative labels at each station.

5 A PC based software utility enables the custom labels to be created and downloaded into the station via an RS485 link. It is expected that this function be carried out by a Commissioning Engineer.

6 It shall be possible to record the current dimmer rack output as an SWC preset from a Record menu. When not required, the record function can be inhibited from the stations Configuration menu.

7 Each SWC preset shall have a programmable fade time in the range 0 to 9 minutes 59 seconds. A Fade Time menu enables fade times to be entered and recorded for each preset with a 0.1 second resolution.

(Note: Current dimmer software provides 1 second fade resolution only for SWC).

8 An Off button shall be provided for selecting Preset 0 or "blackout".

Note: When using the "Back-up over Mux" control hierarchy available on some digital dimmer racks, toggling the active preset restores multiplex control by turning off the preset. The Off button recalls Preset 0 and so must also be toggled to restore control to the multiplex input.

9 Display Stations shall "auto-page" to display the page containing the active preset when the preset has been selected from another Display Station, 8 or 16 Pushbutton Panel, A/V Interface or Hand Held Programmer.

SWC HAND-HELD PROGRAMMER

1 The SWC Programmer shall be a lightweight, hand held remote control unit offering extensive dimmer control functionality. Power is provided by conductors within the cabling network.

2 The Programmer shall comprise 40 tactile pushbuttons for data/command entry and a backlit 4 line x 16 character LCD display for status reporting.

3 The syntax and functions offered by the programmer shall be stored inside the Programmer itself, not the dimmer cabinet.

Specific operational features of the Programmer include:

Dimmer selection syntax including +, -, Thru, Next and Last.

Percent (00%) or point (0.0) levels.

Direct action or command mode (requires an Enter (*)).

Preset playback, level and fade time recording.

Channel(s) fade up/down facility.

Direct action level keys: @Full, On (=70) and @0.

Check +, Check - functions for cycling lamp check.

Rem Dim function for forcing non-selected channels to off.

Command line editing functions including Clear and All Clear.

Preset "Go"

@ Input and Return for releasing dimmer control from SWC back to other dimmer control signals.

SWC A/V INTERFACE

1 The Interface shall have 16 inputs that accept external momentary contact closures to select 16 SWC presets.

2 The A/V Interface shall have a 16 position rotary switch to select the range of SWC presets to be accessed from the inputs (as for SWC Panels).

3 Each input shall have an associated mimic output which can be used to drive an LED indicator.

4 The A/V Interface shall be supplied as a printed circuit board for use in equipment enclosures or custom control panels.

5 An external 18-24 volt dc power supply shall be required for the A/V Interface.

6 An A/V Interface shall mimic commands from other SWC controls when their rotary switch settings are the same.

SWC™ Specification**Specific features of the A/V Interface shall be:**

- 1 16 Inputs wired to remote contact closures. The inputs shall recall pre-programmed SWC lighting presets (determined by the setting of the rotary address switch during installation).
- 2 Re-selecting a currently active preset shall select Preset 0 or "blackout" which fades dimmer out in a programmable fade time.
- 3 It shall be possible to record an SWC preset (simultaneously in all inter-connected dimmer cabinets) by selecting the appropriate input for 5 seconds. The record facility is dependent on the setting of the rotary switch on the rear of the printed circuit board.

CABLE SPECIFICATION

Interconnection between all SWC controls and LD90, DE90, Andi DX, EC90SV and CD80SV dimmer cabinets shall be:-

Belden 9773	3 Twisted pairs each individually shielded.
Conductors:	#18 AWG
Nominal conductor resistance:	21.0 Ω/Km
Nominal shield resistance:	27.2 Ω/Km
Capacitance between conductors:	98 pF per metre
Maximum cable run:	1000ft (300 m) in total

POWER SUPPLY

SWC controls require a 24 volt dc power supply which can either be a self contained unit for mounting in a dimmer/distribution room, or depending on the type of dimmer used, this supply may be derived from the dimmers.

Note: LD90, Andi DX, EC90SV and CD80SV will support a single SWC Programmer as standard (not an SWC Panel).

DE90 is supplied complete with an internal power supply for up to 20 SWC Panels or Programmers.

The DIN Rail Power Supply which is specifically designed for use with LD90 dimmers, supports up to 8 SWC Panels or Programmers.

The supplementary Power Supply listed under "Ordering Information" can support up to 20 SWC Panels or Programmers, and is supplied complete in an enclosure for wall mounting in the dimmer/distribution room. It is suitable for 90 - 240 volts ac 60 or 50 Hz supplies.

Power supplies 76462 and 76421 are required when using CD80SV and EC90SV respectively, and support up to 20 panels or Programmers.

Refer to Data Sheets on dimming products for further information.

DOCUMENTATION

An Installation and Operation Manual shall be supplied with each SWC Panel, A/V Interface and Hand Held Programmer.

Document Part #: 85061

SAFETY

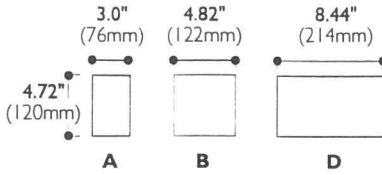
SWC operates at 24 volts on safe extra low voltage circuits (SELV) and contains no hazardous voltages.

ENVIRONMENTAL SPECIFICATION

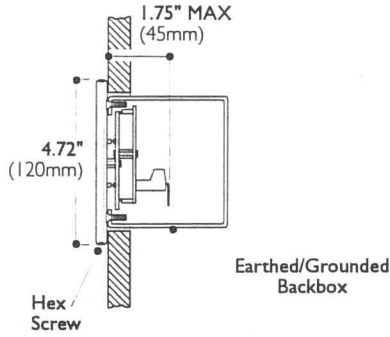
For all SWC Panels and associated equipment, including dimmers and power supply units, the following recommendations shall apply:

Ambient temperature extremes:	0° - 40° C (32° - 104° F)
Relative humidity:	10% - 90% non-condensing
General conditions:	Office level cleanliness - Interior use only

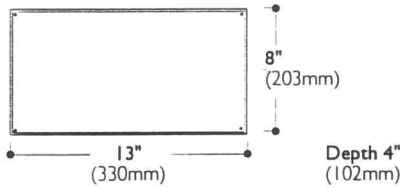
Faceplate Sizes



Faceplate Side Detail

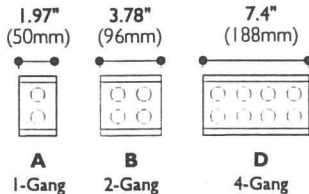


Supplementary Power Supply Unit (Cat. No. 66100)



Back Box Sizes

All masonry back boxes are 3.5" (89mm) deep and all are 3.75" (95.3mm) high.



Note: Back boxes are subject to regional supply variations. Dimensions given are for guidance only and refer to Racco 690/960 series. Refer to your local Strand Representative for further details.

- Panels supplied with back box to order only.
- Bronze tinted Plexiglass locking covers are available to order for all Outlook Stations.

Ordering Information

Cat. No.	Faceplate/Back Box	Description
62951	A	SWC 8 Preset Panel
62952	B	SWC 16 Preset Panel
63030	D	SWC Display Station
62953	-	SWC AV Interface (excludes back box or custom enclosure)
76102	-	SWC Hand Held Programmer
62520	A	SWC Style Receptacle Station
66074	-	SWC Remote Socket box (supplied with B/B)
66071	-	Remote Cable Extension (XLR6 10 metres)
66072	-	Remote Cable Extension (XLR6 25 metres)
66100	-	Power Supply with Enclosure for SWC and Outlook
66101	-	LD90 DIN Rail Power Supply for SWC and Outlook
76462	-	CD80SV Power Supply for SWC and Outlook
76421	-	EC90SV Power Supply for SWC and Outlook
66800	-	1-Gang Masonry Back Box (A-size)
66802	-	2-Gang Masonry Back Box (B-Size)
66804	-	4-Gang Masonry Back Box (D-size)



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