OPERATING INSTRUCTIONS AND INSTALLATION NOTES FOR LIGHT SYSTEM ONE AND TWO

All the major function of Light System One & Two are controlled by clearly labeled switches on the front panel. There are a number of sub-functions, mainly on Light System Two which will be described later.

FRONT PANEL CONTROLS

SEQUENCE DRIVE

CLOCK The sequence speed is governed by the Light System's own speed control.

SOUND The sequence speed is governed by the bass beat of the audio input. The adjacent L.E.D will flash either at the clock speed or in time to the bass beat, depending on the position of the switch.

FREEZE This control will stop the sequence at any desired point. It will not affect the sound to light or the strobe functions.

SEQUENCE CONTROL SWITCH

This gives forward, reverse and auto reverse control over the selected sequence plus an auto programme position. Auto programme consists of over 6000 steps, primarily made up from the sequences available on the 16 position switch. There is a fifth position available on this switch which is an 'all on' state. It is possible to select or de-select this position by moving the end stop on the switch. As this is an optional feature we have not labeled the switch, thus preventing accidental damage by an operator attempting to access when the stop is in position. Auto speed is available in auto programme mode and may be selected out if desired (see sub-function).

SEQUENCE SELECTION SWITCH

This is a 16 position switch for selecting the desired sequence from one lamp sequences, such as: 1-4 chase up to 4 lamp sequences, eg binary or letterwrite. There is no stop on this switch, it will rotate continuously through 360 deg.

MONITOR L.E.D'S

These LED's monitor the sequence only and do not mimic the sound to light; therefore when sound to light is selected, they act as a preview indication of the next selected sequence.

OUTPUT (ZONE 1)

SEQUENCE The sequence shown on the monitor LED's is available at the output when it is turned on.

SOUND TO LIGHT Sound to light is available at the output provided there is an audio input connected.

ON/OFF This turns on the output, making either the sequence or sound to light appear at the low voltage outputs and at the internal power pack if fitted (see optional power pack).

ZONE 2 + ON/OFF

As 'output (Zone 1)' only available on Light System Two. Note zone 2 outputs only low voltage as the built-in power pack is only available on zone 1.

STROBE

CLOCK The strobe output pulse is governed by the Light System's own speed control. (see sub-function)

SOUND The strobe output is governed by the bass beat of the audio input. The adjacent LED will flash at either the clock speed or in time with the bass beat.

ON/OFF SPEED

This is the speed control for the internal clock, with integral on/off switch and adjacent 'power on' LED. The speed range is normally 1 every 2 sec. to 10Hz but may be changed internally. (see sub-function)

SWITCHED OUTPUTS (LIGHT SYSTEM TWO ONLY)
These are eight switched outputs, two of which may be selected to auto toggle. (see sub-functions) which are available on two DIN sockets on the rear of the unit. They may be used to control matrix control inputs on the XP405, inhibit inputs on other power packs or with power packs to control mains loads, such as motors.

REAR PANEL

STROBE (1/4" MONO JACK)
+10V pulse is available on this socket for firing strobes, or as an external pulse for controlling another Light System, via it's E.P.I. input. Tip +V Shank 0V

INHIBIT
This inhibit has two modes of operation. It may be used to turn on or off the outputs of the Light System using a low voltage switch panel or touch panel. The operation mode will depoend on the position of the internal jumper plug (see sub-function). A mono jack socket is fitted on Light System One, and a stereo jack socket is fitted on Light System Two, enabling two zones to be controlled independently.

Tip	Output (zone 1)
Ring	Zone 2
Shank	0V

+10V to turn on/take to 0V to turn off

EXTERNAL PULSE INPUT (E.P.I) (1/4" MONO JACK)
This input will override the Light System's own internal clock and allow the sequence to be driven from another clock source; such as the strobe output from another Light System. This will enable two or more Light Systems to be synchronized. There is an internal jumper plug which has a certain amount of control over this feature. (see sub-functions) Tip + Shank 0V

SWITCH OUPUTS 1-4, 5-8 (5 PIN DIN)
These two sockets are fitted on Light System Two only and they have an output capable of driving up to 3 switch packs each.

SEQUENCE OUTPUTS (5 PIN DIN)
These two sockets are connected in parallel on Light System One and as individual sockets for zones 1 and 2 on Light System Two. Screw terminals may be fitted to order instead of DIN sockets, for the channel outputs and switch outputs.

MAINS CABLE PORT
The mains cable entry port is above the two sequence output sockets. It will have a blank bush fitted on low voltage output units and a cable clamp on units with a built in pack.

SOCKET PANEL
Carries the mains cable on the low voltage output versions of the Light Systems, but can be supplied with a number of different socket options for the Light Systems which have a built-in power pack. (see optional power pack for details)

AUDIO INPUT (1/4" STEREO JACK)
The audio input will accept input levels from 100mV to 100V. The best results will be obtained from the sound to light circuitry if a stereo signal is used.

Tip	Right channel
Ring	Left channel
Shank	0V

SUB FUNCTIONS

There are a number of sub-functions selected be internal jumper plugs. These will probably be selected by the installer or end user before the unit is powered up, but if this is not the case, please ensure that the unit is isolated from the mains before removing the lid.

STROBE

Two jumper plugs are used in conjunction with the on/off switch.

1) To disable zone outputs when strobe output on, factory set to 'in'
2) To override speed control to give full speed, factory set to 'on'

SPEED RANGE

A three position jumper plug marked 'fast', 'medium' and 'slow' which will give the following approximate speed ranges: Will be factory set on 'fast'

FAST	1 every 2 sec. to 10Hz
MEDIUM	1 every 4 sec. to 7Hz
SLOW	1 every 8 sec. to 4Hz

AUTO SPEED

Only available as part of the auto programme sequence and enables certain parts of the auto programme to run at different speeds to that selected by the speed control. They will however, always be slower by a factor of 2 or 3 than the selected speed. This will be factory set to 'in'.

E.P.I. LINK

If the external pulse input is used, for instance, when connected to the strobe output of another Light System, it will override the clock pulse governing the sequence only. It will not effect the clock pulse controlling the strobe output of the second Light System. If the E.P.I is left in the 'out' position, it leaves the speed control of the second Light System free to control a strobe independently. If it is desire to have a third Light System synchronized to the first two, it will be necessary to move this plug to the 'in' position, as this will common the clock driving the sequence and the strobe output. This plug will be factory set in the 'out' position.

INHIBIT

Selects whether the output is being turned on by giving 10V to the input, or turned off by grounding the input. With jumper plug in position 'off' the output will be turned off when a jack plug is inserted into the inhibit socket and will only come on when 10V is supplied to the input. With jumper plug in position 'on', the output will remain on until the input is taken to 0V. This will be factory set in the 'off' position. This function is duplicated for zone 2. The above sub-functions are on both Light Systems 1 & 2. The following functions are only available on Light System Two and concern the control over channels 7 and 8 of the switched outputs.

AUTO TOGGLE CONTROL

The auto toggle facility was incorporated into Light System Two primarily to enable automatic direction change of a matrix display; when the Light System is used in conjunction with either the XP405 a 4 x 4, 5A per channel dedicated matrix pack, with 2 x 410AP or 610AP power packs or with 2 x DP405, DP805 or DP410 dimming packs. Either channels 7 and/or 8 of the switched outputs may be selected to be switched automatically by a pulse derived from the number of times channel 1 of the sequence is fired. The signal from channel 1 may be divided between one to nine times. This is selectable by a jumper plug, a further division of two again selected by a jumper plug, can take place to give a one to eighteen times range for the control of channels 7 and 8. Another jumper plug is used to decide whether channels 7 and 8 switch simultaneously or alternately.

EG Jumper plug 1 set at position 4
Jumper plug 2 set at position X2
Jumper plug 3 set at alternate, this configuration would result in channel 7 going out and channel 8 coming on, and the reverse happening every 8 times channel 1 fires.

If this feature is not required and the switches are to be used purely as manual switches, then one or both channels may be reverted back to straight switches. There are two jumper plugs marked 7 and 8 'toggle' or 'on'. In the toggle position they are connected to the automatic system. If the plugs are moved to the 'on' position it will connect them back to manual switches.

When using the XP405 dedicated matrix pack with this facility, only one of the auto outputs need be used, because just one 10V signal is all that is required to change direction from X to Y in this pack. However, if the auto facility is being used to operate a matrix which is connected to 2 x 410AP/610AP switch packs or 2 x DP410 / DP805 / D405 dimming packs, then both 7 and 8 must be used. When using the above packs, one of each pair is used to switch 'lives' the other pack is used to switch 'neutrals'. These packs may be given a 10V signal to turn all channels on, therefore the alternate switching of channels 7 and 8 must be used. When one pack is turned all on, the other pack is switching as per the sequence selected and vice versa, when the auto toggle occurs. This will give the same results as when using the XP405 but the higher current handling capacity of 10A per channel may be utilized.

OPTIONAL POWER PACK

In addition to the low voltage outputs on the DIN sockets on the rear of the unit, a built-in power pack can be fitted to both Light Systems. This is a 4 x 5A per channel pack similar to the PP405 and in the case of Light System Two, may only be fitted to zone 1. When the Light System is supplied fitted with the pack, a cable clamp will be fitted above the output DIN sockets. It is up to the installer or end user to fit a suitable cable to handle the current requirements of the unit. This cable should be connected to the points marked 'L1', 'N', 'Supply' on the power pack PCB, and to the earth bar fitted inside the case adjacent to the cable clamp. The connections to the PCB will be via screw terminals. Conductors of at least 2.5mm should be used if the pack is to be used to it's maximum 20A capability. Conductors of 1.5mm may be used if the unit is going to be limited to a maximum current of 13A.
If this pack is fitted then a number of socket options are available, these are as follows:

4 x 20mm ports with grommets fitted (hardwired version)
2 x Bulgin PX0551 8 pin connector
4 x IEC sockets
4 x Schuko/Euro sockets
4 x 3 pin American sockets (only available of 110V models)

As with the other power packs in the Anytronics range, it is possible to switch low voltage AC for instance 12 or 24V, from a suitable transformer, for running tube light directly.
The 'supply' terminals on the power pack board feed the triacs and via Links L1 and L2 the electronics, as in most circumstances the triacs will be switching mains loads. If the pack is required to switch voltage other than mains then the two links L1 and L2 **MUST** be removed.
The low voltage from a suitable transformer should be connected to the 'supply' points and a separate mains supply must be fed to the points marked 'electronics only' L and N.