luci della ribalta

# XPRESS

## USER MANUAL


XPRESS 12 Cod. 20106003

XPRESS 18 Cod. 20106006

XPRESS 25 Cod. 20106007 CE

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**Safety standards** Conforms to council directive 73/23/EEC (Low Voltage Directive) of CE marking 99

**EN60598-1** Luminaries Part 1 : general requirements and tests

**EN60598-2-17** Luminaries - Part 2 : particular requirements section 17: luminaries for stage lighting, television, film and photographic studios (outdoor and indoor)

**Radio interference standard** :
Conforms to council directive89/336/EEC (EMC directive) of CE marking 99

**EN55103-1** Electromagnetic compatibility product family standard for audio, video, audio-visual and entertainment lighting control apparatus for professional use; Part 1: emission

**EN55103-2** Electromagnetic compatibility product family standard for audio, video, audio-visual and entertainment lighting control apparatus for professional use; Part 2: immunity.

**EN61000-3-2** Electromagnetic compatibility (EMC);
Part 3: limits;
Section 2 : limits for harmonic current emissions (equipment input current $\leq$ 16 Ampere per phase)

**EN61000-3-3** Electromagnetic compatibility (EMC);
Part 3: limits;
Section 3 : limitation of voltage fluctuations and flicker in low-voltage supply for equipment with rated current $\leq$ 16 Ampere.

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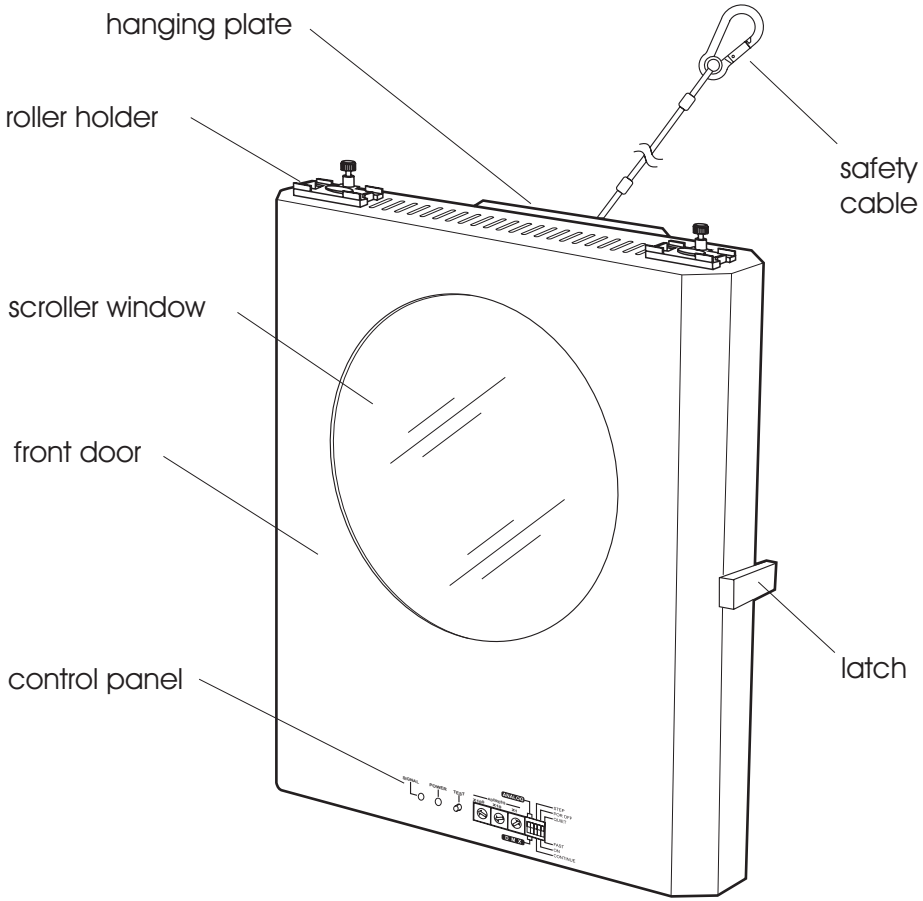
# Contents

# 1. Product overview

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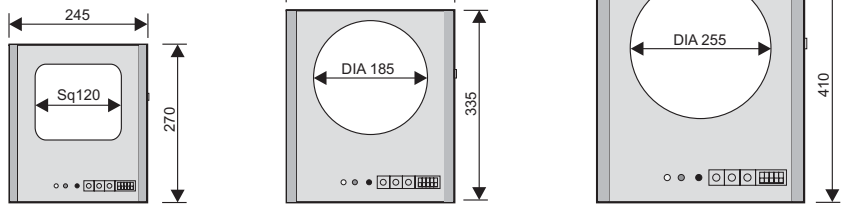
# 6. Specifications

| | |
|---|---|
| **AC power input** | 90-120V or 210-240V, switch selectable (IEC power inlet connector) |
| **Power consumption** | 200W max. |
| **Fuse rating** | 1.6A /230V - 3.15A/115V |
| **Control input from console** (PDU8,PDU1) | DMX digital control input (5 Pin XLR male + female connector) |
| **Control output to XPRESS** | Output to 8 XPRESS colour scrollers (PDU --- 4 Pin XLR female connector - 8pc) (XPRESS— 4 Pin XLR male connector) |
| **Operating environment** | Indoor use only (NOT Waterproof) |
| **Operating environment temp** | 0 - 50 C |

| **Weight** | | **Size (W x H x D) mm** | **Front aperture ø** |
|---|---|---|---|
| PDU8 | 5.3/7.0 Kg | 205 x 290 x 100 | |
| PDU1 | 1.0/2.0 Kg | 45 x 290 x 100 | |
| XPRESS 12 | 1.7/2.0 Kg | 245 x 270 x 68 | 120mm, square |
| XPRESS 18 | 2.3/2.8 Kg | 300 x 335 x 68 | ø185mm |
| XPRESS 25 | 2.8/3.4Kg | 365 x 410 x 68 | ø255mm |

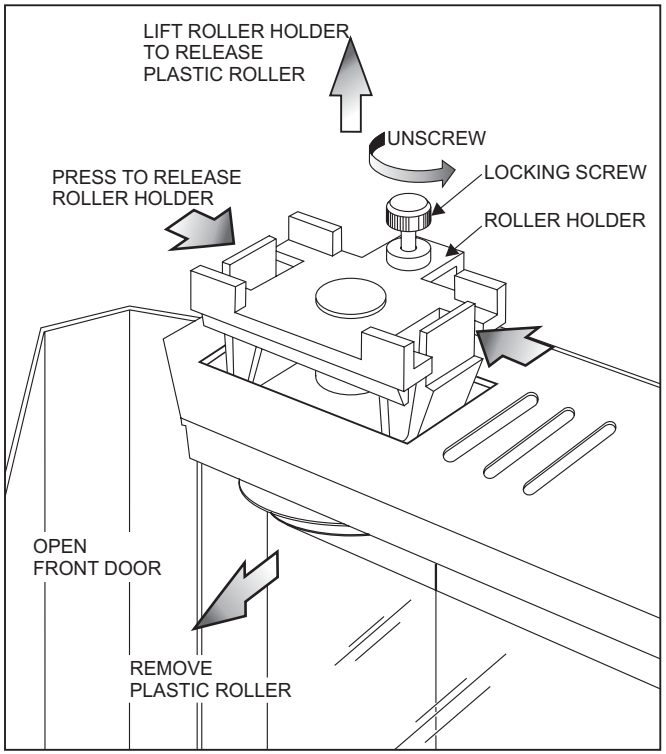


## 5.3 How to replace a gel string

Each gel string is mounted on 2 plastic rollers.

**To replace a gel string (FIG.5) :**

- release the latch to open the front door.
- slacken the locking screw at the top of the roller holder.
- release the roller holders at the top of the 2 plastic rollers.
- remove the existing gel string from the rollers.
- install the new gel string.
- press down the roller holders to engage the 2 plastic rollers.
- fasten the locking screw.
- slightly turn the plastic rollers to ensure that they can freely rotate .
- close the front door.

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# 2. Product description

### 2.1 Construction

The housing of the XPRESS Colour Scroller is made of sturdy aluminum plate to reduce weight. Outer finish is a scratch resistant matt black epoxy powder coating

### .2.2 Motor and Fan

The scrolling of the gel string is controlled by 2 DC Servo Motors which are mounted directly to the plastic rollers. The motors are operated simultaneously to provide torque which enables fast, smooth quiet and accurate positioning of the colour filter. Tension on the filter is also maintained at the optimum level. DC fans provide excellent cooling for gel string extended life.

### 2.3 Colour Filters

Standard gel string, supplied, has a capacity of 16 frames (15 colours + clear) on Xpress 12 and 18, whereas it features a capacity of 11 frames (10 colours + clear) on Xpress 25.

### 2.4 Scrolling Modes

There are three scrolling modes available: Continuous, Step and Auto Trace

**Continuous Mode** :

The movement of the gel string is divided into 100 steps, and its position is proportional to the intensity level of the signal on the control channel.

**Step Mode** :

The movement of the gel string is divided into 16 steps (Xpress 12 & 18) and 11 steps (Xpress 25), and each step corresponds to a separate colour. For approximately every 6.7% (Xpress 12 & Xpress 18) and 10% (Xpress 25) change of intensity level of the signal on the control channel, the gel string will change one colour.

**Auto Trace Mode** :

The unit continuously steps through each colour from the first to the last one, and then back to the first colour on the string.

## 2.5 Colour changing speed

By employing DC servo motor control technique, fast colour changing speed is achieved. Minimum time required to scroll from end to the end is 1.2 secs for XPRESS 12, 1.5secs for XPRESS 18 and 1.8secs for XPRESS 25. In some applications, noise is of more concern than speed. In this case scrolling speed can be reduced to minimize the noise of mechanical movement. For example, the slowest speed for XPRESS 18CE is 20 secs, and is achieved by setting the Gel string Movement setting to (9XX).

## 2.6 Reset

The colour scroller automatically resets when power is applied. During reset, the gel string rolls to the starting end first, then to the other end, then back to the starting end again to enter the ready state.
The colour scroller can also be reset from a control console. This feature makes life easier when the colour scroller is installed on a truss at the ceiling of the studio.

## 2.7 Power distribution unit (PDU8 and PDU1 )

The Power Distribution Unit distributes DC power and control signal to a maximum of 8 XPRESS Colour Scrollers.
There are two types of Power Distribution Units
PDU8 cod. 20106080 power distribution unit for 1 to 8 scrollers
PDU1 cod. 20106020 power distribution unit for 1 & 2 scrollers
The PDU is delivered with a hook clamp,CEE22 power cord and steel safety bond .

## 2.8 System configuration

### Digital DMX signal configuration

Digital DMX control channel signal is sent to the PDU8/PDU1 from a digital lighting control console through a shielded twist pair cable (e.g. Belden 1420A). The DMX control channel signal can be daisy chained to other PDU8/PDU1 to control more colour scrollers. The number of PDUs in 1 group should not exceed 16 sets. The last PDU in the chain should be terminated with a 110 ohm terminating resistor.
For a correct configuration of the system, please see diagram on following page (fig. 2).



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## 5.2 How to make a gel string

In order to make your own gel string, follow the chart here below for the correct size of each filter. Note that the first and the last filter are different

| *Model* | *Colour filter size (mm)* | |
|---|---|---|
| | *Filter No. 1 & 16* | *Filter No. 2 to 15* |
| XPRESS 12 | 420 (W) x 130 (H) | 240 (W) x 130 (H) |
| XPRESS 18 | 505 (W) x 197 (H) | 315 (W) x 197 (H) |
| | *Filter No. 1 & 11* | *Filter No. 2 to 10* |
| XPRESS 25 | 575 (W) x 262 (H) | 385 (W) x 262 (H) |

**STANDARD GEL STRING FOR XPRESS 12 & 18 - 16 FRAMES, LEE REF. NR.**

| 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | 10 | 11 | 12 | 13 | 14 | 15 | 16 |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| LEE 256 | LEE 130 | LEE 176 | LEE 020 | LEE 101 | LEE 179 | LEE 128 | LEE 048 | LEE 026 | LEE 192 | LEE 126 | LEE 115 | LEE 089 | LEE 119 | LEE 181 | LEE 201 |

**STANDARD GEL STRING FOR XPRESS 25CE - 11 FRAMES, LEE REF. NR.**

| 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | 10 | 11 |
|---|---|---|---|---|---|---|---|---|---|---|
| LEE 130 | LEE 101 | LEE 179 | LEE 192 | LEE 164 | LEE 113 | LEE 122 | LEE 124 | LEE 118 | LEE 068 | LEE 170 |

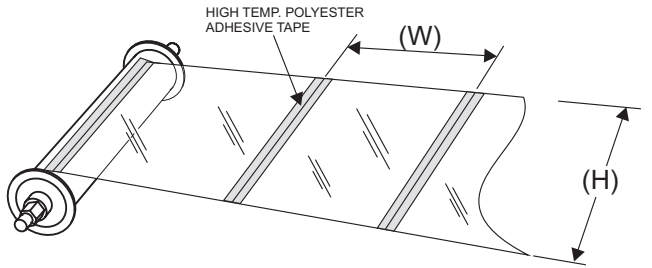


FIG. 6

Use High Temperature Transparent Polyester adhesive tape (e.g. 3M #853) to join the colour filters side by side (FIG.6). Make sure that there is a good adhesion by pressing firmly on the tape against the filters. Join the first and the last color filter to the rollers. You can use the reference line marked on the roller for alignment. Please note that the tape should be taped on the side facing you on the rollers.

**STANDARD GEL STRINGS (LEE FILTER) AND SPECIAL GEL STRINGS ARE AVAILABLE TO SEPARATE ORDER FROM LDR**

8. **Remember to press the "TEST" button when changing a setting**

9. **Terminate the last PDU in the DMX daisy-chain with a 110 ohm resistor.**

10. **The maximum number of PDUs in 1 daisy/chain group is 16.**

11. **The unit stops automatically when the gel string breaks or when the motor is jammed. In this case the "SIGNAL" LED blinks.**

# 5. Maintenance

## 5.1 Cleaning

The colour scroller uses optical encoding to calculate the position of the colour filter. If dust accumulates on the optical devices, the accuracy in the positioning of the colour filter will be degraded.

Refer to the following steps to clean the optical encoding units, (FIG.4) if needed:

- Open the front door of the scroller.
- Slacken the 3 screws holding the cover of the motor on the left
- Remove the cover.
- Remove dust in this area. Be very careful not to disrupt the alignment of the optical sensors.
- Re-install the cover.
- Close the front door.

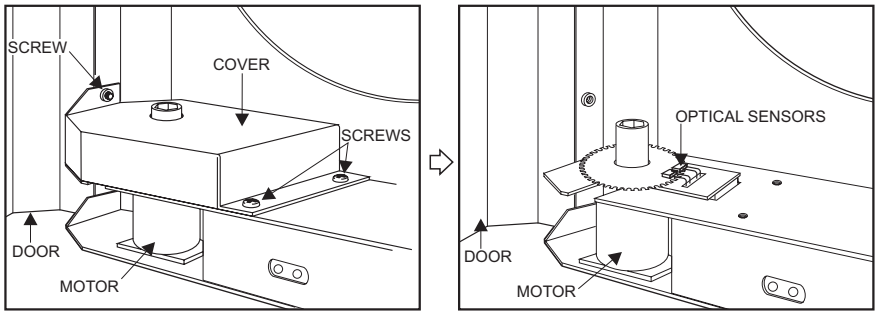


FIG.4



# System configuration

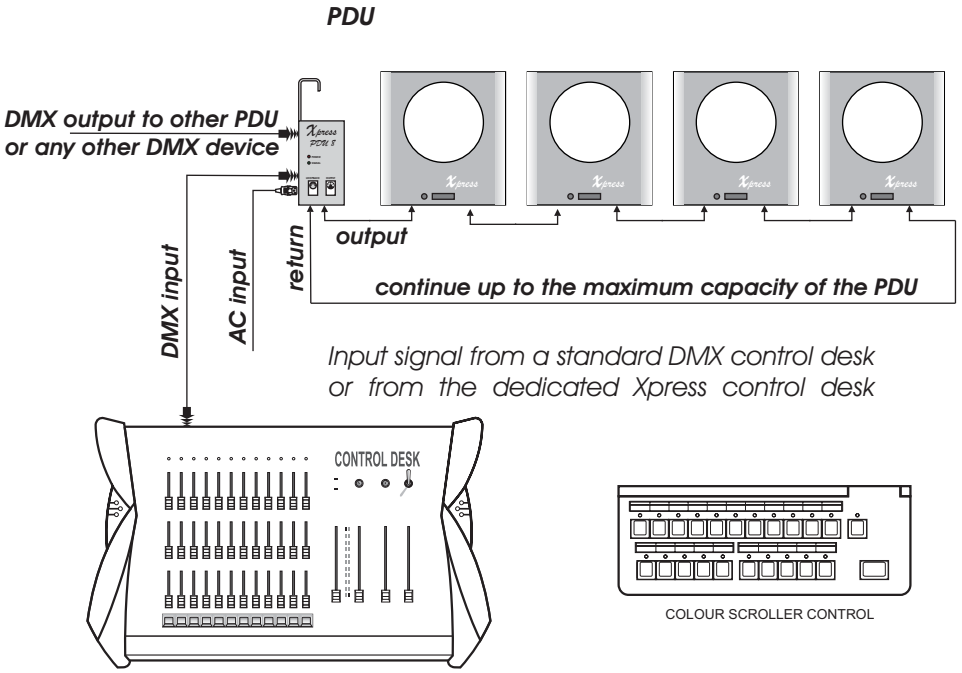


FIG. 2

# PDU compatibility chart.

the following 24V DC PDUs are compatible with the Xpress scrollers

| | |
|---|---|
| **Spectra-Q ®** | **Apollo roto-Q ®** |
| **Chroma-Q ®** | **Rainbow ®** |
| **Color-Q ®** | **Wybron Forerunner ®** |

Please check with the PDU manufacturers for the max number of scrollers you can use on one PDU



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## 2.9 Power and signal cable

The following cables are required for the system to be properly connected.

### Power cable

Power cable is supplied with the PDU. The power cable is fitted with a CEE22 socket at one end and with a Schuko plug at the other end.

### DMX control cable (Digital control console to PDU8/PDU1)

Control cable (not supplied) should be a standard signal cable as per international DMX512 standards.

| | **INPUT CONNECTOR (5 Pin Male XLR)** | **LOOP-THROUGH CONNECTOR (5 Pin Female XLR)** |
|---|---|---|
| Pin number | Signal Name | Signal Name |
| 1 | COM | COM |
| 2 | DMX **-ve** | DMX **-ve** |
| 3 | DMX **+ve** | DMX **+ve** |
| 4 | NC | NC |
| 5 | NC | NC |
| CASE | SHIELD GROUND | SHIELD GROUND |



## 4.4 Gel string movement speed setting (9XX)

16 different levels of speed of the gel string are available on Xpress scrollers. Set the address to 9XX and press the "TEST" button to set the speed. The value XX (00-15) adjusts the speed of the gel string movement, the smaller the value, the faster the speed. For example on Express 18 the speed of the gel string ranges from 1.5 ses to 20 secs.

**Remember to set the address switches back to the normal operation address, and then switch the unit off and on again, or the unit will not operate properly .**

## 4.5 Restore to factory default setting (600)

Set the address to 600 and press the TEST button to restore the factory default settings. Factory default settings are :

Remote Reset Function ---------- Disable
Gel string Movement Speed -------- Maximum

## 4.6 How to get the best performance

1. **Maximum ambient temperature is 50C.**
2. **This unit is suitable for indoor operation only**
3. **Use with lighting fixtures of max 2000W. Failure to do so might cause the life of the colour filters to reduce dramatically. Furthermore colour filters may deform or even melt or stick together.**
4. **Always dim the light to the colour scroller when not in use**
5. **Make sure you set the Normal Operation Address and Remote RESET Address before operation.**
6. **Make sure you restore the Normal Operation Address after setting different modes of operation.**
7. **Do not use an address for "Remote RESET Address" that will be shared by other DMX devices in the group.**

# 4. Special operation mode

## 4.1 Remote reset address

If during normal operation the positioning of the gel string is incorrect, it is possible to bring it back to the correct position by sending a RESET signal from a control console. This function is especially useful if the unit is installed in a difficult to reach position
In order to be reset from a console, the unit must receive a signal of FULL intensity level, maintained for a period of more than 1 second at the Remote Reset Address.

(Note: The factory-set default RESET address is 000. This effectively disables the Remote RESET function because DMX does not support address 000).

## 4.2 Remote reset address - setup (999)

Set the address switches to "999", and press the "TEST" button to enter this mode. The "signal" LED will then flash at 10 times per second. Set the desired RESET address and press the "TEST" button again to confirm this address. The unit will then reset.

**Remember to set the address switches back to the normal operation address, and then switch the unit off and on again, or the unit will not operate properly .**

## 4.3 Auto trace mode (8XY)

The unit steps through each colour continuously from the first to the last colour and then back to the first one

Set the address switches to 8XY and press the "TEST" button to enter this mode. The value XY adjusts the speed of each stepping, the smaller the value, the faster the stepping. "X" represents the speed of movement from starting end to the final end while "Y" represents the speed of movement from the final end to starting end. When the value XY is changed, it is necessary to press the "TEST" button or turn POWER OFF and then ON to make the change effective.



## XPRESS control cable (PDU to colour scroller)

The control cable (not supplied) should be of high quality shielded twist pair type. A good example is Belden 1420A, shielded 3 pair twist cable. The signal pair should occupy one pair. Use the other 2 twist pairs for "V+" and "COM" line. Since there is a large power supply current flowing through "V+" and "COM" line between the PDU and the Colour Scroller,we strongly recommend the voltage drop in the cable is reduced to the minimum. For cable length greater than 10 meters, please consult your supplier.

The pin out definition of the 4 Pin XPRESS in- and output connector is as follows:

| | **INPUT CONNECTOR** (4 Pin Male XLR) | **OUTPUT CONNECTOR** (4 Pin Female XLR) |
|---|---|---|
| Pin number | Signal Name | Signal Name |
| 1 | COM | COM |
| 2 | DMX **-ve** | DMX **-ve** |
| 3 | DMX **+ve** | DMX **+ve** |
| 4 | V+ | V+ |
| CASE | SHIELD GROUND | SHIELD GROUND |

**Ready-to-use control cables in standard lengths are available from LDR as separate accessories.**

# 3. Operation

For normal operation, set the DIP switches to the desired configuration and set the rotary address switch to the desired DMX address. Set power and the unit is now ready to work

Please refer to picture 3 (FIG.3) on page 9 for the setting of the switches

## 3.1 LED Indicators

**"POWER"** LED : this red LED lights up when DC power is applied to the unit.

**"SIGNAL"** LED: this green LED lights up when the unit receives proper DMX signal.
It flashes at short "ON", long "OFF" interval when the gel string breaks.
It flashes at short "OFF", long "ON" interval when the motor is jammed.

## 3.2 "TEST" Button :

This switch button is used to test the unit. When used together with the DIP switches and address switches, it sets the different operation modes available. After replacing the colour filter (gel string) roller or adjusting a wrongly positioned gel string, press this button to RESET the unit. The gel string will then scroll to the starting end, then to the other end, and finally back to the starting end again, stopping at the control signal position.

## 3.3 Rotary address switch (Address/operation mode ), (X100, X10 & X1)

For DMX operation, it is necessary to set the address of each colour scroller to match the dimmer number set on the control console. The address can be set between 1 to 512, by means of the 3 rotary switches (X100, X10 & X1).


FIG. 3

## 3.4 FAN SPEED

Switch 1 allows to select the fan speed.
**LOW** fan speed is set by positioning DIP switch 1 to OFF - down -
**HIGH** fan speed is set by positioning DIP switch 1 to ON - up -



## 3.5 CONTINUOUS /STEP mode (Switch 2)

**"CONTINUOUS"** mode (DIP Switch 2 = "**ON**")
The movement of the gel string is divided into 100 steps, and its position is proportional to the intensity of the signal on the control channel.

**"STEP"** Mode ( DIP Switch 2 = "**OFF**")
The movement of the gel string is divided into 16 steps (Xpress 12 & 18) and 11 steps (Xpress 25), and each step corresponds to a separate colour. For approximately every 6.7% (Xpress 12 & Xpress 18) and 10% (Xpress 25) change of intensity level of the signal on the control channel, the gel string will change one colour.

## 3.6 POWER ON RESET (POR) (Switch 3)

Power on reset enable (DIP Switch 3 = "**ON**")
The gel string scrolls to the starting end then to the other end, then back to the starting end again. If there is a control signal from the console, it will go to the desired position.

Power on reset disable (DIP Switch 3 = "**OFF**")
The gel string scrolls to the starting end to enter the ready state. If there is a control signal from the console, it will go to the desired position.

## 3.7 FAST / QUIET mode (Switch 4)

This mode will only operate if gel string movement speed setting is "900". This switch optimizes the gel string scrolling speed with quietness of operation.

**"FAST"** Mode (DIP Switch 4 = "ON")
The colour scroller is set to scroll the gel string at high speed, 1.5 sec. (for XPRESS 18CE). Noise from moving gel string might be generated.

**"QUIET"** Mode (DIP Switch 4 = "OFF")
The colour scroller is set to scroll the gel string at low speed, 2.5 sec. (for XPRESS 18CE). Noise from moving gel string is reduced to the minimum

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