

# IEB<sup>®</sup> SYSTEM USERS MANUAL

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4350 McKinley Street • Omaha, Nebraska 68112 USA  
Tel 402/453-4444 • Fax 402/453-7238 • [www.strongint.com](http://www.strongint.com)

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## TEXT CONVENTIONS



Displays safety warnings affecting personal safety

## CAUTION

Displays information regarding the functionality of the equipment that could be affected by a procedure or other action performed by the user

**NOTE:** Displays other options or other useful information for use by the user.

 **TIP:** Provides the user with an alternate way to perform an action.

A key push or button push is indicated by square brackets, as follows, [F1].

Messages produced by the IEB® display are shown as follows:

THIS IS A SYSTEM MESSAGE  
AS IT WOULD BE DISPLAYED

## BALLAST SPECIFICATIONS

### IEB® SPECIFICATIONS

	<u>1kW</u>	<u>2kW</u>	<u>4kW</u>	<u>7kW</u>	<u>7/10kW</u>
INPUT VOLTS	208-240	208-240	208-240	208-240	208-240
INPUT AMPS	10	20	40	50	30   40
INPUT FREQ.	50/60	50/60	50/60	50/60	50/60
PHASE	SINGLE	SINGLE	SINGLE	SINGLE	THREE
OUTPUT VOLTS	18 - 26	22 - 30	25 - 35	40 - 50	40-50   40-70
OUTPUT AMPS	30 - 55	50 - 85	120 - 145	130 - 160	130-160   180-210
REMOTE CHANNELS	2	2	2	2	2
DIMENSIONS W/D/H (in.)	15 x 9.4 x 19.4	15 x 9.4 x 19.4	16.2 x 21 x 27.3 - 40	16.2 x 21 x 27.3 - 40	16.2 x 21 x 27.3 - 40
DIMENSIONS W/D/H (cm)	38.1 x 23.9 x 49.4	38.1 x 23.9 x 49.4	41.1 x 53.3 x 69.2 - 101.6	41.1 x 53.3 x 69.2 - 101.6	41.1 x 53.3 x 69.2 - 101.6
WEIGHT (lb.)	45	45	95	150	86
WEIGHT (kg)	20.4	20.4	43.1	68.0	39.0

*Specifications are subject to change with out notice.*

**NOTE:** It is important not to block any of the intake or exhaust vents on the ballast. Intake vents are located on the sides and front. Exhaust vents are located on the rear. A minimum of 12" (30 cm) of clearance is required all around the ballast for proper cooling.

# SYSTEM SETUP

This section will guide you through the setup of your Strong Entertainment Lighting Britelight system.

## HEAD FEEDER CONNECTION

Start by connecting the head feeder to both the lamp head and the Intelligent Electronic Ballast (IEB). The connection on the lamp head is made at the end of the “tail” provided. The ballast connection is made at the connector marked “OUTPUT.”

## POWER CONNECTION

The power connection is then made to the four pin connector.

The four pin connector has the following pinout:


<b>Pin A:</b> Phase A	<b>Pin C:</b> Phase C (Three phase systems only)
<b>Pin B:</b> Phase B	<b>Pin D:</b> Ground

Please refer to the *Ballast Specifications* section for current requirements.

**NOTE:** The ballast is not sensitive to phase rotation.

Once the head feeder and power connections have been made apply *power* to the system by turning on the main breaker located to the right of the power connection labeled “*MAINS*.” At this point the display should turn on.

The display will begin to loop through a set of status displays referred to as the “Main Loop.” The main loop will show the status and basic configuration of the ballast. The main loop will also display any error conditions that exist.

 **TIP:** To stop the display at a particular point in the main loop, press **Pause** [F2]. Press **Resume** [F2] to continue.

## BASIC BALLAST SETUP

In this section the following items will be discussed:

- Setting the Ignition Mode

Refer to the *Advanced Users Functions* of this manual for information regarding *DMX Remote Control, Addressing, Factory Defaults, and Communications Modes*.

### SETTING THE IGNITION MODE

#### CAUTION

Changing the *Ignition Mode* can have a very dramatic effect on the IEB. It is recommended that changes be made by persons that have been trained or instructed in the operation of the IEB. Please refer to the *Ignition Mode* section for additional information.

To change the *Ignition Mode*, press **Setup** [F1] from the main loop:

```
4000 W  FIRMWARE  VER1.6
SETUP  PAUSE  TEST  HELP
```

Next press **User** [F3] to enter the *User Setup* menu:

```
SELECT TYPE OF SETUP
EXIT REGUL USER FACTORY
```

Press **IGN** (Ignition) [F3] to display the *Ignition Mode* selection:

```
USER SETUP
EXIT DCOM IGN SAVE/REC
```

```
IGNMODE:MANUAL
EXIT PREV NEXT SAVE
```

Use the **Prev** (Previous) [F2] and **Next** [F3] keys to toggle between the following Ignition Modes:

- *Manual*
- *Manual Immediate*
- *Automatic*

Press **Save** [F4] once you have selected the desired *Ignition Mode*.

Press **Exit** [F1] three times to return to the main display loop.

## BALLAST OPERATION

This section will describe the operation of the IEB® in both a Local and *DMX Remote* mode.

### MANUAL MODE

With the IEB® in Local Mode you have control of all the systems basic functions (*Lamp ON*, *Lamp OFF*, and *Focus*) either at the ballast or at the rear of the lamp house. Lamp house *Lamp ON* and *Lamp OFF* functions only function when the *Ignition Mode* is set in *Manual Immediate*.

#### LAMP ON

To turn on the lamp from the ballast press the [LAMP ON] key located to the right of the display. Or you may press the lamp on button located on the rear panel of the lamp house.

#### LAMP OFF

To turn off the lamp from the ballast press the [LAMP OFF] key located to the right of the display. Or you may press the lamp off button located on the rear panel of the lamp housing.

Once the lamp is turned off the fans will continue to run for approximately 30 minutes in an automatic cool down. It is not recommended that the main breaker be turned off or the power be removed during this time. Also, do not disconnect the lamp housing from the ballast until the lamp has completely cooled.

**NOTE:** If the IEB® is in either the *Automatic* or *Manual* ignition modes you will not have the ability to turn on the lamp from the lamp house. **The 571 lamphouse does not have lamp on / off ability on the rear cover.**

#### FOCUS

By pressing the up and down arrows of the Focus key you will be able to move the focus in and out to create the desired beam size. You may also toggle the focus switch on the rear panel of the lamp housing.

**NOTE:** The *Focus* system is comprised of an electric motor with an offset arm that moves the focal point of the lamp in and out of the focal point of the reflector thus creating a spot/flood effect. This type of system is not considered “repeatable” thus one system won’t necessarily operate the same as another.



## DMX REMOTE

By using the IEB® in a DMX Remote configuration you now have the ability of controlling multiple systems from a single point, thus allowing greater flexibility in system design and usage.

Start by selecting the *Address Mode* you wish to use. Please refer to the *Address Modes* section of this manual for additional information.

Next, assign either the *Fixture Address*, *Channel Address*, or the *Individual Channel* assignments. Please refer to the *Channel Assignments* section of this manual for additional information.

Finally connect your DMX cable to the *DMX Remote Input* port located to the left of the output connector on the IEB. If you have other DMX devices to use you may “daisy chain” through the IEB using the *DMX Remote Through* port located below the *DMX Remote Input* port.

The DMX remote system operates in a “latest takes precedence” mode.

### CHANNEL ASSIGNMENTS

First Channel:           Lamp ON / OFF

#### LAMP ON / OFF DMX LEVELS

0 - 255	TARGET		0 - 100%	TARGET	
<u>LEVEL</u>	<u>LEVEL</u>	<u>RESULT</u>	<u>LEVEL</u>	<u>LEVEL</u>	<u>RESULT</u>
0 - 166	0	OFF	0 - 64	0	OFF
167 - 255	255	ON	65 - 100	100	ON
255 - 128	255	ON	100 - 50	100	ON
127 - 0	0	OFF	49 - 0	0	OFF

**NOTE:** Lamp On / Off DMX levels are different when going from an OFF state to an ON state and when going from an ON state to an Off state.

Second Channel:       Focus

#### FOCUS DMX LEVELS

0 - 255	TARGET	FOCUS	0 - 100%	TARGET	FOCUS
<u>LEVEL</u>	<u>LEVEL</u>	<u>STATE</u>	<u>LEVEL</u>	<u>LEVEL</u>	<u>STATE</u>
0 - 27	0	OFF	0 - 10	0	OFF
28 - 101	64	↑RUN	11 - 39	25	↑RUN
102 - 152	128	OFF	40 - 59	50	OFF
153 - 228	192	↓RUN	60 - 89	75	↓RUN
229 - 255	255	OFF	90 - 100	100	OFF

**NOTE:** The *Focus* system uses “dead zones” (0 - 10%, 40 - 59%, and 90 - 100%) as a way to prevent accidental activation. To maintain the most flexibility, it is recommended that the fader assigned to *Focus* be set to 50% as the default. This allows for the easy manipulation of the *Focus* system.

# BALLAST ADJUSTMENTS

This section will describe the adjustment procedures necessary to keep the IEB® adjusted to the proper wattage.

## REGULATED BALLASTS

Regulated ballasts should require no adjustments as they are self-adjusting.

A *Regulated Ballast* may require 1 - 3 **Lamp ON / OFF** cycles to pull into regulation after a new bulb has been installed. It is not necessary to manually adjust the ballast during this time.

**NOTE:** If you are experiencing *Excessive Restrike, Lamp Under Voltage, Lamp Over Voltage, Lamp Under Current, or Lamp Over Current* errors, this is a sign that the lamp may need to be changed. Please refer to *Troubleshooting* section of this manual for further information.

## UNREGULATED BALLASTS

Only early models of the IEB® are unregulated. They can be identified by determining firmware revision level as displayed in the main loop and by determining the revision level of the main printed circuit board within the IEB.

Firmware prior to version 1.5 are not regulated.

Printed circuit boards prior to revision B are not regulated.

**NOTE:** If you have a Revision B printed circuit board and Firmware Revision 1.5 the IEB® may not be regulated.

### CAUTION

Adjusting the current levels on the IEB will affect the light output of the lamp.



**WARNING**



Adjusting the current levels beyond the bulb manufacturer's specifications will immediately void all warranties and may create a potential xenon bulb explosion hazard resulting in equipment damage and/or personal injury.

## UNREGULATED BALLASTS CON'T . . .

The chart below details the acceptable voltage and current levels of xenon lamps.

XENON LAMP MIN / MAX VALUES				
<u>WATT</u>	<u>V min</u>	<u>V max</u>	<u>A min</u>	<u>A max</u>
<b>1kW</b>	20.0	23.5	35.0	55.0
<b>2kW</b>	21.0	26.0	70.0	85.0
<b>4kW</b>	30.0	34.0	130.0	145.0
<b>7kW</b>	40.0	46.0	150.0	175.0
<b>10kW</b>	52.0	58.0	170.0	200.0

Once you have determined that a ballast adjustment is necessary, proceed as follows:

### 1kW and 2kW ADJUSTMENT

With the lamp running:

Remove the hole plug that protects the potentiometer, located on the bottom of the ballast.

While viewing the following main loop display:

LAMP ON:    A    V
SETUP PAUSE TEST HELP

 **TIP:** To stop the main loop press **Pause** [F2]. Press **Resume** [F2] to continue.

Adjust the potentiometer to the desired current. Rotate the potentiometer clockwise to increase current, or counterclockwise to reduce current.

Once the desired current level has been set, tighten the locking nuts on the potentiometers and replace the hole plug.

**NOTE:** Consult the factory regarding adjustment procedures for units without hole plug access.

### 4kW ADJUSTMENT

With the lamp OFF and power disconnected:

Remove and retain the exterior cover of the IEB<sup>®</sup> by removing the sixteen perimeter screws.

Remove and retain the interior air duct by removing the four retaining screws. This cover is marked with a caution statement.

## 4kW ADJUSTMENT CON'T . . .

With the lamp running:

While viewing the following main loop display:

LAMP ON:	A	V
SETUP	PAUSE	TEST HELP

 **TIP:** To stop the display press **Pause** [F2]. Press **Resume** [F2] to continue.

Locate the current adjustment potentiometer, it is the panel mounted potentiometer located just above the DB25 connector. The one below it and above the DB25 connector is the voltage adjust and should not be adjusted. Rotate the potentiometer clockwise to increase current, or counterclockwise to reduce current.

Once the desired current level has been set, replace the air duct and the exterior cover.

## 7 kW and 10 kW ADJUSTMENT

With the lamp running:

Remove the hole plugs that protect the fine (top) and coarse (bottom) potentiometers, located to the left of the output connector.

Loosen the outer locking nuts on the potentiometers.

While viewing the following main loop display:

LAMP ON:	A	V
SETUP	PAUSE	TEST HELP

 **TIP:** To stop the display press **Pause** [F2]. Press **Resume** [F2] to continue.

Adjust the fine potentiometer to the desired current. Rotate the potentiometer clockwise to increase current, or counterclockwise to reduce current. If the lamp current is too low at the highest setting of the fine potentiometer, rotate the coarse potentiometer slightly clockwise. If the lamp current is too high at the lowest setting of the fine potentiometer, rotate the coarse potentiometer slightly counterclockwise.

Once the desired current level has been set, tighten the locking nuts on the potentiometers and replace the hole plugs.

## ADVANCED USER FUNCTIONS

In this section you will learn how to select and set:

- Factory Defaults
- Adjusting Ballast Parameters
- User Defined Setups
- Communications Modes and Parameters
- Regulation
- Ignition Modes
- Test Incoming DMX
- Functional Focus Test
- Ballast Status

### FACTORY DEFAULTS

This section describes the Factory Setups of the IEB. Each of these setups establish a set of parameters that are specific to a lamp wattage. Otherwise each of the *Factory Default* setups are the same. See table below.

#### *FACTORY DEFAULT SETUP Firmware Ver. 1.6*

<b>PARAMETER</b>	<b>1kW</b>	<b>2kW</b>	<b>4kW</b>	<b>7kW</b>	<b>10kW</b>
BOOST THRESHOLD (V)	150	150	150	150	150
BOOST TIME (S)	10.0	10.0	30.0	30.0	30.0
IGNITION TIME (S)	0.01	0.01	0.01	0.01	0.02
RESTRICKES	03	03	03	03	03
STRIKE SEQ. TIME (S)	10.0	10.0	10.0	10.0	10.0
LAMP I MAX. (A)	55	89	153	184	210
LAMP I MIN. (A)	30	66	121	142	161
V MAX (V)	26	27	36	48	61
V MIN (V)	18	20	23	35	42
IGNORE SENSE	NO	YES	YES	NO	NO
POWER SET POINT (W)	1000	2000	4000	7000	10000
UNREGULATED POWER	0W	0W	0W	0W	0W
IGNITION MODE	MANUAL	MANUAL	MANUAL	MANUAL	MANUAL
REGULATION	ON	ON	ON	ON	ON
DATA TYPE	DMX RX	DMX RX	DMX RX	DMX RX	DMX RX
ADDRESS MODE	SOFT CH.	SOFT CH.	SOFT CH.	SOFT CH.	HARD CH.
CONTROL ADDRESS	001	001	001	001	001
FOCUS ADDRESS	002	002	002	002	002
LOST DATA TIME (S)	2.0	2.0	2.0	2.0	2.0
LOST DATA HOLD	YES	YES	YES	YES	YES

(V) Voltage, (A) Amps, (S) Seconds, (W) Watts

NOTE: Each of the above parameters are editable. Once a parameter(s) is edited they may be saved as a unique *User Setup* (one of 5).

## LOADING A DEFAULT FACTORY SETUP

To reload a *Default Factory* setup press **Setup** [F1] from the main loop:

```
4000 W FIRMWARE VER1.6
SETUP PAUSE TEST HELP
```

Next press **Factory** [F4] to enter the *Factory Setup* menu:

```
ENTER MAGIC SEQUENCE
OR F4 TO ABORT
```

At this point you must enter the *Magic Sequence* to proceed.

Press **Next** [F4] twice to display:

```
SAVE/RECAL SETUPS
EXIT USER FACTORY NEXT
```

Press **Factory** [F3] for the following display:

```
1K FACTORY SETUP
EXIT LOAD NEXT
```

Use the **Next** [F4] key to scroll through the various setup choices.

### CAUTION

Make sure the *Factory Setup* that you load is correct. Loading an improper setup will affect the light output of the lamp, cause irregular operation, and render the IEB inoperable.

Once the correct *Factory Setup* is displayed, press **Load** [F2] to load the parameters into memory. Now press **Exit** [F1] three times to return to the main loop.

## ADJUSTING BALLAST PARAMETERS

In this section you will learn the process to edit a ballast parameter.

### CAUTION

Adjusting the current levels on the IEB will affect the light output of the lamp.



Adjusting the current levels beyond the bulb manufacturer's specifications will immediately void all warranties and may create a potential xenon bulb explosion hazard resulting in equipment damage and/or personal injury.

### CAUTION

Any adjustments made in this section will have some effect on the operation of the IEB. Please make sure you are confident that the adjustments that you make will result in the desired effect.

To adjust a *Ballast Parameter* setup press **Setup** [F1] from the main loop:

```
4000 W FIRMWARE VER1.6
SETUP PAUSE TEST HELP
```

Next press **Factory** [F4] to enter the *Factory Setup* menu:

```
ENTER MAGIC SEQUENCE
OR F4 TO ABORT
```

At this point you must enter the *Magic Sequence* to proceed.

Press **Next** [F4] once to display:

```
IGNITION BALLAST
EXIT SETUP SETUP NEXT
```

Press **Ballast Setup** [F3] for the following display:

## ADJUSTING BALLAST PARAMETERS CON'T . . .

BOOST THR. 150V	EDIT?
EXIT PREVFUNC	NXTFUNC YES

**EXIT** [F1] will exit you out of the *Ballast Setup* menu.

**PREVFUNC** [F2] (Previous Function) will display the *Previous Function*.

**NXTFUNC** [F3] (Next Function) will display the *Next Function*.

**YES** [F4] will allow you to edit or select different options.

The following is a list of parameters that can be edited in this section:

**Boost Thr** (Boost Threshold) sets the minimum open circuit voltage that is required before the IEB® will attempt to strike the lamp.

**Boost Time** is the time that the IEB® will wait for the boost voltage (open circuit voltage).

**Ign. Time** (Ignition Time) is the initial dwell time that the ignitor relay will close during an attempt to strike the lamp. This time will increase with each subsequent strike attempt.

**Restrikes** is the number of strike attempts the IEB® will make after failing to strike the lamp.

**StrSeqTime** (Strike Sequence Time) sets the maximum amount of time that the IEB® will attempt to strike the lamp.

**Lamp IMax** (Lamp Current Maximum) is the maximum allowable lamp current trip point.

**Lamp IMin** (Lamp Current Minimum) is the minimum lamp current trip point.

**Lamp VMax** (Lamp Voltage Maximum) is the maximum allowable lamp voltage trip point.

**Lamp VMin** (Lamp Voltage Minimum) is the minimum lamp voltage trip point.

**Ignore Sense** will toggle the *Ballast Over Temperature* and *VCC Low* sense lines on and off. This parameter is normally set to YES for all ballasts except for the 7K and 7/10K models.

**Power Setpt** (Power Set Point) the wattage that the IEB® will try to maintain while running in a regulated mode.

**Unreg Pwr** (Unregulated Power) the actual output power the IEB® is operating at while running in an unregulated mode. This parameter is adjustable only when the *Regulation* is turned off and while the IEB® is running a lamp.



## LOADING A USER DEFINED SETUP

To load a *User Setup* press **Setup** [F1] from the main loop:

```
4000 W FIRMWARE VER1.6
SETUP PAUSE TEST HELP
```

Next press **Setup** [F1] to enter the *Setup* menu:

```
SELECT TYPE OF SETUP
EXIT REGUL USER FACTORY
```

Now press **User** [F3] to enter the *User Setup* menu:

```
USER SETUP
EXIT DCOM IGN SAVE/REC
```

**EXIT** [F1] will exit you out of the *User Setup* menu.

**DCOM** [F2] (Digital Communication) allows you to edit the communications parameters for the DMX Remote. See Communications Modes and Parameters for additional information.

**IGN** [F3] (Ignition) allows you to select between the three *Ignition Modes*. See *Ignition Modes* for additional information.

**SAVE/REC** [F4] (Save / Recall) will either save all the edited parameters into a user selected memory location or recall a previously saved *User Setup*.

Press **SAVE/REC** [F4] for the following display:

```
USER SETUP 1
EXIT LOAD SAVE NEXT
```

**EXIT** [F1] will exit you out of the *User Setup* menu.

**LOAD** [F2] will load the *User Setup* currently displayed.

**SAVE** [F3] will save the *User Setup* currently displayed.

**NEXT** [F4] will toggle through all five *User Setups*.

## LOADING A USER DEFINED SETUP CON'T . . .

Using **Next** [F4] toggle through the *User Setups* to the display the setup you desire. Once the desired *User Setup* is displayed press **Load** [F2] to load the parameters into memory. Now press **Exit** [F1] three times to return to the main loop.

**NOTE:** If you happen to press **Save** [F2] at this point all user edited parameters will be saved in the *User Setup* displayed.

## SAVING A USER DEFINED SETUP

To save a *User Setup* press **Setup** [F1] from the main loop:

```
4000 W FIRMWARE VER1.6
SETUP PAUSE TEST HELP
```

Next press **Setup** [F1] to enter the *Setup* menu:

```
SELECT TYPE OF SETUP
EXIT REGUL USER FACTORY
```

Now press **User** [F3] to enter the *User Setup* menu:

```
USER SETUP
EXIT DCOM IGN SAVE/REC
```

**EXIT** [F1] will exit you out of the *User Setup* menu.

**DCOM** [F2] (Digital Communication) allows you to edit the communications parameters for the DMX Remote. See Communications Modes and Parameters for additional information.

**IGN** [F3] (Ignition) allows you to select between the three *Ignition Modes*. See *Ignition Modes* for additional information.

**SAVE/REC** [F4] (Save / Recall) will either save all the edited parameters into a user selected memory location or recall a previously saved *User Setup*.

Press **SAVE/REC** [F4] for the following display:

```
USER SETUP 1
EXIT LOAD SAVE NEXT
```

## SAVING A USER DEFINED SETUP CON'T . . .

**EXIT** [F1] will exit you out of the *User Setup* menu.

**LOAD** [F2] will load the *User Setup* currently displayed.

**SAVE** [F3] will save the *User Setup* currently displayed.

**NEXT** [F4] will toggle through all five *User Setups*.

Using **Next** [F4] toggle through the *User Setups* to the display the setup you desire. Once the desired *User Setup* is displayed press **Save** [F3] to load the parameters into memory. Now press **Exit** [F1] three times to return to the main loop.

**NOTE:** If you happen to press **Load** [F2] at this point all user edited parameters will be replaced with the parameters previously stored in the *User Setup* displayed.

## COMMUNICATIONS MODES and PARAMETERS

The IEB® has a variety of communications modes available. Each one has their own unique set of features that will allow you maximum configurability in your system design.

- Data Type:           DMX Rx (DMX Receive)  
                          Disable
  
- Address Mode:       Ind. Chan (Individual Channel)  
                          Soft Fixt (Soft Fixture)  
                          Soft Chan (Soft Channel)  
                          Hard Fixt (Hard Fixture)  
                          Hard Chan (Hard Channel)
  
- Control Address
- Focus Address
- Lost Dat Tm (Lost Data Timeout)
- Lost Data Hold

## DATA TYPE

### DMX RECEIVE

DMX Rx (DMX Receive) is the standard communications protocol for use with the IEB. It allows the IEB® to receive DMX control signals as would any other DMX controlled device.

### DISABLE

Disables all external communications for the IEB. It will only be possible to operate the IEB® from the ballast or the head. All incoming DMX signals will be ignored.

## CHANGING THE DATA TYPE

To save a *User Setup* press **Setup** [F1] from the main loop:

```
4000 W FIRMWARE VER1.6
SETUP PAUSE TEST HELP
```

Next press **Setup** [F1] to enter the *Setup* menu:

```
SELECT TYPE OF SETUP
EXIT REGUL USER FACTORY
```

Now press **User** [F3] to enter the *User Setup* menu:

```
USER SETUP
EXIT DCOM IGN SAVE/REC
```

**EXIT** [F1] will exit you out of the *User Setup* menu.

**DCOM** [F2] (Digital Communication) allows you to edit the communications parameters for the DMX Remote. See Communications Modes and Parameters for additional information.

**IGN** [F3] (Ignition) allows you to select between the three *Ignition Modes*. See *Ignition Modes* for additional information.

**SAVE/REC** [F4] (Save / Recall) will either save all the edited parameters into a user selected memory location or recall a previously saved *User Setup*.

## CHANGING THE DATA TYPE CON'T . . .

Press **DCOM** [F2] for the following display:

```
DATA TYPE:DMX  RX  EDIT?  
EXIT PREVFUNC NXTFUNC YES
```

**EXIT** [F1] will exit you out of the *Digital Communication* menu.

**PREVFUNC** [F2] (Previous Function) will display the *Previous Function*.

**NXTFUNC** [F3] (Next Function) will display the *Next Function*.

**YES** [F4] will allow you to edit or select different options.

If you pressed **YES** [F4] you will see the following display:

```
DATA TYPE:DMX  RX  DONE?  
SLOW DOWN UP YES
```

**SLOW** [F1] **FAST** [F1] increase the rate of speed the up and down keys work.

**DOWN** [F2] **UP** [F3] toggle between the various selections.

**YES** [F4] saves the selection and exits to the previous menu.

Use the **Down** [F2] and **Up** [F3] keys to select the desired *Data Type*.

Press **Yes** [F4] when you are done selecting the *Data Type*.

Now press **Exit** [F1] three times to return to the main loop.

## ADDRESS MODE

Selective use of the *Address Modes* can result in a very flexible tool to integrate the IEB® into new or existing DMX systems.

## CAUTION

Changing any of the Address Mode options can have a very dramatic effect on the IEB. It is recommended that changes be made only by persons that have been trained or instructed in the operation of the IEB.

## ADDRESS MODE CON'T . . .

### INDIVIDUAL CHANNEL

Ind. Chan (Individual Channel) allows both the Control channel and the Focus channel to be independently addressed.

### SOFT FIXTURE

Soft Fixt (Soft Fixture) allows IEB® to be addressed by a fixture number via the control display. As an example if you have 6 IEB's in your system you could address them as 1 - 6. The first IEB would use channels 1 and 2, the second would use channels 3 and 4, etc.

### SOFT CHANNEL

Soft Chan (Soft Chan) allows IEB® to be addressed by its DMX start address via the control display.

### HARD FIXTURE

Hard Fixt (Hard Fixture) allows IEB® to be assigned a fixture number via an optional external BCD switch. As an example, if you have 6 IEB's in your system you could address them as 1 - 6. The first IEB would use channels 1 and 2, the second would use channels 3 and 4, etc.

### HARD CHANNEL

Hard Chan (Hard Chan) allows IEB® to be assigned a DMX start address via an optional external BCD switch.

## CHANGING THE ADDRESS MODE

To change the *Address Mode* press **Setup** [F1] from the main loop:

4000 W FIRMWARE VER1.6 SETUP PAUSE TEST HELP
---

Next press **Setup** [F1] to enter the *Setup* menu:

SELECT TYPE OF SETUP EXIT REGULUSER FACTORY
--

## CHANGING THE ADDRESS MODE CON'T . . .

Now press **User** [F3] to enter the *User Setup* menu:

```
USER SETUP
EXIT DCOM IGN SAVE/REC
```

**EXIT** [F1] will exit you out of the *User Setup* menu.

**DCOM** [F2] (Digital Communication) allows you to edit the communications parameters for the DMX Remote.

**IGN** [F3] (Ignition) allows you to select between the three *Ignition Modes*. See *Ignition Modes* for additional information.

**SAVE/REC** [F4] (Save / Recall) will either save all the edited parameters into a user selected memory location or recall a previously saved *User Setup*.

Press **DCOM** [F2] for the following display:

```
DATA TYPE:DMX  RX  EDIT?
EXIT PREVFUNC NXTFUNC YES
```

**EXIT** [F1] will exit you out of the *Dcom Setup* menu.

**PREVFUNC** [F2] (Previous Function) will display the *Previous Function*.

**NXTFUNC** [F3] (Next Function) will display the *Next Function*.

**YES** [F4] will allow you to edit or select different options.

Press *NxtFunc* [F3] to show the following display.

```
ADDR MODE:SOFT CHAN EDIT
EXIT PREVFUNC NXTFUNC YES
```

Press **Yes** [F4] to select a different *Address Mode*.

```
ADDR MODE:SOFT CHAN DONE
FAST DOWN UP YES
```

## CHANGING THE ADDRESS MODE CON'T . . .

**SLOW** [F1] **FAST** [F1] increase the rate of speed at which the up and down keys work.

**DOWN** [F2] **UP** [F3] toggle between the various selections.

**YES** [F4] saves the selection and exits to the previous menu.

Use the **Down** [F2] and **Up** [F3] keys to select the desired *Address Mode*.

Press **Yes** [F4] when you are done selecting the *Address Mode*.

Now press **Exit** [F1] three times to return to the main loop.

## CONTROL AND FOCUS CHANNEL ADDRESSING

The Control and Focus channel address can be set when either *Individual Channel* or *Soft Channel* address modes are selected. Please refer to the *Address Mode* section of this manual for additional information.

To change either the *Control* or *Focus Address* press **Setup** [F1] from the main loop:

```
4000 W FIRMWARE VER1.6
SETUP PAUSE TEST HELP
```

Next press **Setup** [F1] to enter the *Setup* menu:

```
SELECT TYPE OF SETUP
EXIT REGULUSER FACTORY
```

Now press **User** [F3] to enter the *User Setup* menu:

```
USER SETUP
EXIT DCOM IGN SAVE/REC
```

**EXIT** [F1] will exit you out of the *User Setup* menu.

**DCOM** [F2] (Digital Communication) allows you to edit the communications parameters for the DMX Remote.

**IGN** [F3] (Ignition) allows you to select between the three *Ignition Modes*. See *Ignition Modes* for additional information.

**SAVE/REC** [F4] (Save / Recall) will either save all the edited parameters into a user selected memory location or recall a previously saved *User Setup*.



## CONTROL AND FOCUS CHANNEL ADDRESSING CON'T . . .

Press **DCOM** [F2] for the following display:

```
DATA TYPE:DMX  RX  EDIT?  
EXIT PREVFUNC NXTFUNC YES
```

**EXIT** [F1] will exit you out of the *Dcom Setup* menu.

**PREVFUNC** [F2] (Previous Function) will display the *Previous Function*.

**NXTFUNC** [F3] (Next Function) will display the *Next Function*.

**YES** [F4] will allow you to edit or select different options.

Press **NxtFunc** [F3] twice to edit the **Control Address** (shown) or three times to edit the **Focus Address**:

```
CONTROL ADDR:001 EDIT?  
EXIT PREVFUNC NXTFUNC YES
```

Press **Yes** [F4] to change the

```
CONTROL ADDR:001 EDIT?  
EXIT DOWN UP YES
```

**SLOW** [F1] **FAST** [F1] increase the rate of speed at which the up and down keys work.

**DOWN** [F2] **UP** [F3] toggle between the various selections.

**YES** [F4] saves the selection and exits to the previous menu.

Now press **Exit** [F1] three times to return to the main loop.

## LOST DATA TIMEOUT AND HOLD PARAMETERS

Upon loss of a DMX remote signal (unplugged cable, loss of power to DMX source, etc.) the IEB® can be configured to respond in one of two ways. After verifying the loss of DMX (*Lost Dat Tm*) the IEB® will either remain in the state prior to losing the signal or shut down.

### LOST DATA TIMEOUT

The amount of time in seconds that the IEB® waits for DMX to return before acting on a loss of signal.

## LOST DATA TIMEOUT AND HOLD PARAMETERS CON'T . . .

### LOST DATA HOLD

A **YES** or **NO** parameter that sets whether or not the IEB will hold its last known DMX state upon loss of DMX control.

To change either the *Lost Data Timeout* or *Lost Data Hold* parameters press **Setup** [F1] from the main loop:

```
4000 W  FIRMWARE  VER1.6
SETUP PAUSE TEST HELP
```

Next press **Setup** [F1] to enter the *Setup* menu:

```
SELECT TYPE OF SETUP
EXIT REGUL USER FACTORY
```

Now press **User** [F3] to enter the *User Setup* menu:

```
USER SETUP
EXIT DCOM IGN SAVE/REC
```

**EXIT** [F1] will exit you out of the *User Setup* menu.

**DCOM** [F2] (Digital Communication) allows you to edit the communications parameters for the DMX Remote.

**IGN** [F3] (Ignition) allows you to select between the three *Ignition Modes*. See *Ignition Modes* for additional information.

**SAVE/REC** [F4] (Save / Recall) will either save all the edited parameters into a user selected memory location or recall a previously saved *User Setup*.

Press **DCOM** [F2] for the following display:

```
DATA TYPE:DMX  RX  EDIT?
EXIT PREVFUNC NXTFUNC YES
```

**EXIT** [F1] will exit you out of the *Dcom Setup* menu.

**PREVFUNC** [F2] (Previous Function) will display the *Previous Function*.

**NXTFUNC** [F3] (Next Function) will display the *Next Function*.

**YES** [F4] will allow you to edit or select different options.

## LOST DATA TIMEOUT AND HOLD PARAMETERS CON'T . . .

Press *NxtFunc* [F3] four times to edit the **Lost Data Timeout** parameter (shown) or five times to edit the **Lost Data Hold** state:

```
LOST DAT TM:2.0S  EDIT?  
EXIT PREVFUNC NXTFUNC YES
```

Press **Yes** [F4] to change the *Lost Data Timeout* value:

```
LOST DAT TM:2.0S  EDIT?  
EXIT DOWN  UP YES
```

**SLOW** [F1] **FAST** [F1] increase the rate of speed at which the up and down keys work.

**DOWN** [F2] **UP** [F3] toggle between the various selections.

**YES** [F4] saves the selection and exits to the previous menu.

Now press **Exit** [F1] three times to return to the main loop.

## REGULATION

While the IEB is self regulating, it is possible to turn off the regulation and manually set a running wattage.

To turn on or off the *Regulation* from the main loop:

```
4000 W  FIRMWARE  VER1.6  
SETUP PAUSE TEST HELP
```

Press **Setup** [F1] to enter the *Setup* menu:

```
SELECT TYPE OF SETUP  
EXIT REGUL USER FACTORY
```

Now press **Regul** [F2] (regulation).

```
POWER REGULATION ON  
EXIT PREV NEXT SAVE
```

## REGULATION CON'T . . .

**EXIT** [F1] will exit you out of the *Power Regulation* menu.

**PREV** [F2] (Previous) toggles between ON and OFF.

**NEXT** [F3] toggles between ON and OFF.

**SAVE** [F4] will save the parameter.

Press **EXIT** [F1] twice to return to the main display loop.

## IGNITION MODE

### CAUTION

Changing the Ignition Mode can have a very dramatic effect on the IEB. It is recommended that changes be made only by persons that have been trained or instructed in the operation of the IEB.

The IEB® can be set to one of three *Ignition Modes* as described below:

### MANUAL

Manual ignition waits to start the fans in the head until the [LAMP ON] key is pressed on the ballast or a DMX remote strike command is received, thus causing a delay in closing the safety circuit, charging the boost circuit and igniting the lamp. This mode may be useful in a sound stage application when it is desirable not to have fans constantly running when the lamps are not in use.

**NOTE:** This mode requires that the lamp be ignited from the ballast or by DMX remote.

### MANUAL IMMEDIATE

The most common mode of operation is manual immediate. It is similar to manual except that the system is always in a “stand by” mode. The fans are always running and the boost is always charged thus allowing for “instant on” applications. You have your option of controlling the Lamp ON , Lamp OFF, and Focus with either the front panel controls, lam head, or by DMX remote.

### AUTOMATIC

Automatic ignition allows the lamp head to ignite as soon as power is applied and the safety circuit is closed.

**NOTE:** This mode will not allow you to control the Lamp ON or Lamp OFF functions at either the ballast or at the lamhead.

## IGNITION MODE CON'T . . .

To change the *Ignition Mode* press **Setup** [F1] from the main loop:

```
4000 W FIRMWARE VER1.6
SETUP PAUSE TEST HELP
```

Next press **User** [F3] to enter the *User Setup* menu:

```
USER SETUP
EXIT DCOM IGN SAVE/REC
```

Press **IGN** (Ignition) [F3] to display the *Ignition Mode* selection display:

```
IGNMODE:MANUAL
EXIT PREV NEXT SAVE
```

Use the **Prev** (Previous) [F2] and **Next** [F3] keys to toggle between the following *Ignition Modes*:

- *Manual*
- *Manual Immediate*
- *Automatic*

Press **Save** [F4] once you have selected the desired *Ignition Mode*.

Press **Exit** [F1] three times to return to the main display loop.

## TESTING INCOMING DMX

The IEB has the unique ability to display the incoming DMX levels as well as the frames per second rate. This feature will allow you to diagnose DMX related problems in the field without the need for additional equipment.

To access the *DMX Test* function press **Test** [F3] from the main display loop:

```
4000 W FIRMWARE VER1.6
SETUP PAUSE TEST HELP
```

## TESTING INCOMING DMX CON'T . . .

Next press **DMX Test** [F2] to enter the *DMX Test* display:

```
DMX FOCUS BALLAST
EXIT TEST TEST STATUS

000 000 000 000 000 000
<001 EXIT F/S:00 006>
```

Use the < [F1] and > [F4] keys to scroll through all 512 DMX channels. **F/S** (Frames per Second) displays the number of DMX frames (updates) per second that is being received. **Exit** [F2] will return you to the test menu. [F3] will increment the display by 10.

**NOTE:** The display will indicate a value between 000 and 255. To get an approximate 0 - 100% value, divide the value shown by 2.55.

## FUNCTIONAL FOCUS TEST

The IEB® also has the ability to test the focus system by running the *Focus* in and out to allow you to diagnose any problems that you may encounter.

To access the **Focus Test** function press **Test** [F3] from the main display loop:

```
4000 W FIRMWARE VER1.6
SETUP PAUSE TEST HELP
```

Next press **Focus Test** [F3] to enter the *Focus* test display:

```
DMX FOCUS BALLAST
EXIT TEST TEST STATUS

FOCUS TEST STOPPED
EXIT STOP EXERCISE
```

**Exit** [F1] will return you to the **Test** menu. If the Focus system is being exercised then the test will be stopped.

**Stop** [F2] will stop the test. [F3], although unlabeled, will also stop the test.

**Excercise** [F4] will begin the test. If the Focus system is being exercised then the test will be stopped.

**NOTE:** The **Focus Test** will run in one direction for approximately 11 seconds and then reverse.

## BALLAST STATUS

The IEB has the ability to show the current status of:

Voltage  
Current  
Head Fault (Safety Circuit)  
Ballast OT (Over Temperature or Phase Loss); 7 and 10kW only  
VCC Low (7 and 10kW only)

To access the **Ballast Status** function press **Test** [F3] from the main display loop:

```
4000 W  FIRMWARE  VER1.6
SETUP PAUSE TEST HELP
```

Next press **Ballast Status** [F3] to enter the *Ballast Status* display:

```
DMX FOCUS BALLAST
EXIT TEST TEST STATUS
```

```
-I- -V- HEADF OT VCCLOW
000 000 YES NO NO
```

[F1], [F2], [F3], and [F4] all function as exit keys.

**NOTE: OT** (Over Temp) and **VCCLOW** (see error messages for additional information) only are displayed on 7kW and 7/10kW models.

## TROUBLESHOOTING GUIDE

### PROBLEM

No display.

### CAUSE

Power not present.

### SOLUTION

Connect power.

Main breaker not in the ON position. Tripped.

Set the main breaker in the ON position. Reset breaker.

AUX circuit breaker is tripped.

Reset breaker.

24VDC supply is inoperative.

Check 24VDC supply. Check onboard fuse. Check connections.

## TROUBLESHOOTING CON'T . . .

<b><u>PROBLEM</u></b>	<b><u>CAUSE</u></b>	<b><u>SOLUTION</u></b>
Display back light is present but there is no information.	LCD contrast is not adjusted.	Adjust R2 on the main board to the desired viewing angle.
Only solid black bars are present on the display.	LCD contrast is not adjusted.	Adjust R2 on the main board to the desired viewing angle.
	EPROM is corrupted.	Replace EPROM U2.
Vertical black bars appear in the Main Loop.	EEPROM is corrupt, damaged, or missing.	Reload a <b><i>Factory Default</i></b> . Replace EEPROM (U8).
Unknown “Klingon” type characters appear on the display.	EEPROM is corrupt.	If possible, reload a <b><i>Factory Default</i></b> . Replace EEPROM (U8).
	LCD display is broken.	Repair or replace LCD display.
All of the keys don’t work.	Pin one (COM) on the membrane switch is broken.	Repair or replace the membrane switch.
	Membrane switch is not plugged in to the “keypad” connection.	Plug the membrane switch into the “keypad” connection.
One or more of the keys don’t work.	The membrane switch is broken or torn.	Repair or replace the membrane switch.
	Membrane cable is misaligned, broken, or torn.	Check cable, realign, repair or replace.
The display says “Boost Off Head Fault.”	Air pressure switch is open.	Readjust air pressure switch.
	Lamphead cooling is inoperative.	Correct fan problem.
	Thermal switch is open.	Test thermal switch for continuity. Check and adjust the lamp’s running current. Verify lamp X-Y adjustment.



## TROUBLESHOOTING CON'T . . .

<b><u>PROBLEM</u></b>	<b><u>CAUSE</u></b>	<b><u>SOLUTION</u></b>
The display says “Boost Off Head Fault.” (con’t.)	Broken wire on connection pin.	Check lamp head connections, cable condition, internal connections.
	Pin or socket is pushed into connector on either the head extension, tail or ballast.	Repair pin.
The display says “Lamp Off Head Fault.”	Air pressure switch is open.	Readjust air pressure switch.
	Lamphead cooling inoperative.	Correct fan problem.
	Thermal switch is open.	Check and adjust lamp’s running current. Test the thermal switch.
	Intermittent connection in the safety circuit.	Repair connection.
The display says “IGN FAILED: BOOST UV:NNNV.”	Low line voltage.	Correct the line voltage problem.
	“Boost Time” set too low.	Reset the parameter “Boost Time.”
	“Boost Threshold” voltage set too high.	Reset the parameter “Boost Voltage.”
	Voltage sense fuses blown on Boost board.	Test and replace F1 and F2. 1-4kW models only.
The display says “LAMPFAIL:UNDER VOLT:NNNV”	The lamp’s voltage fell below the “VMIN” set point.	Check the lamps voltage and current. Replace the lamp. Readjust the “VMIN” set point.
The display says “LAMPFAIL:OVER VOLT:NNNV”	The lamp’s voltage went above the “VMAX” set point.	Check the lamp’s voltage and current. Replace the lamp. Readjust the “VMAX” set point.
The display says “LAMPFAIL:UNDER CURR:NNNA”	The lamp’s current fell below the “IMIN” set point.	Check the lamps voltage and current. Replace the lamp. Readjust the “IMIN” set point.

## TROUBLESHOOTING CON'T . . .

<b><u>PROBLEM</u></b>	<b><u>CAUSE</u></b>	<b><u>SOLUTION</u></b>
The display says “LAMPFAIL:OVER CURR:NNNA”	The lamp’s current went above the “IMAX” set point.	Check the lamps voltage and current. Replace the lamp. Readjust the “IMAX” set point.
The display says “BALLAST FAILED:VCC LOW”	A problem exists with the ballast’s onboard DC supply.	Consult factory. (7kW and 7/10kW models only.)
The display says “BALLAST FAILED:O.T./PHASE”	Vents are blocked.	Unblock vents. (7kW and 7/10kW models only.)
	Lamp current is too high.	Adjust the current. Replace the lamp. (7kW and 7/10kW models only.)
	Loss of a phase.	Correct the phase problem. (7KW and 7/10KW models only.)
The display says “EXCESS RESTR”	“RESTRIKES” parameter set to “1.”	Increase “RESTRIKES” parameter.
	Defective bulb	Replace bulb.
	Igniter failure.	Test igniter.
	Low output	Loose or bad high current connection.
	Low line voltage.	Increase line voltage.
The display says “LOST DMX CTL:NNN FOC:NNN”	Broken DMX cable.	Repair or replace DMX cable.
	DMX cable pulled out.	Plug DMX cable back in.
	DMX source turned off.	Turn DMX source back on.
	DMX receive chip is bad.	Replace U18 and or U19.
The display says “BAD DMX CTL:NNN FOC:NNN”	DMX control signal is corrupt.	Replace DMX cable. Replace DMX source.
	DMX receive chip is bad.	Replace U18 and or U19.

## TROUBLESHOOTING CON'T . . .

<b><u>PROBLEM</u></b>	<b><u>CAUSE</u></b>	<b><u>SOLUTION</u></b>
The focus system doesn't work.	Membrane switch damaged.	Repair or replace membrane switch.
	Verify focus system.	Use Focus test function.
	Mechanical failure.	Loose screw. Gear slipping on motor shaft.
	Wiring or connection failure.	Repair or replace wiring or connection.
	Frozen motor.	Repair or replace motor.
Focus only operates in one direction.	Membrane switch damaged.	Repair or replace membrane switch.
	Bad or missing motor cap.	Repair or replace motor cap.
	Bad relay.	Replace relay.
Focus won't operate with the DMX remote.	Wrong address set.	Change the address mode or address.
	DMX level being sent is 0 - 10%, 40 - 59%, or 90 - 100%.	The values shown to the left are "dead" zones. Try sending a DMX level of 11 - 39% or 60 - 89%.
Every time I turn off the lamp from the head, it restrikes.	The ignition mode is set to "Automatic" or "Manual."	Change the ignition mode to "Manual Immediate."
	You turned off the lamp while the IEB was "verifying" the voltage and current readings.	Wait a minimum of 15 seconds before turning off the lamp.
I can't turn on the lamp from the head.	The ignition mode is set to "Manual."	Change the ignition mode to "Manual Immediate."
No matter what I try, the lamp keeps going out.	Wrong factory default loaded.	Reload the correct factory default.
	Other.	Check the main loop for error message.

## ERROR MESSAGES

Below is a listing of the Error Messages generated by the IEB.

BOOST OFF HEAD FAULT SETUP PAUSE TEST HELP
---

This error is generated when the lamp was told to turn on but the lamp's safety loop never closed.

LAMP OFF LAMP HEAD FAULT SETUP PAUSE TEST HELP
---

This error is generated when the lamp was running for a period of time but the lamp's safety loop has opened during operation.

IGN FAILED BOOST UV NNNV SETUP PAUSE TEST HELP
---

This error is generated when the lamp was told to turn on but the boost voltage never reached the trip point set for the ballast parameter "BOOST THRESHOLD" or the system timed out as set by the "BOOST TIME" parameter.

LAMPFAIL UNDER VOLT NNNV SETUP PAUSE TEST HELP
---

This error is generated when the lamp was running for a period of time but turned off because the lamps running voltage fell below the ballast parameter "LAMP VOLTAGE MINIMUM."

LAMPFAIL OVER VOLT NNNV SETUP PAUSE TEST HELP
--

This error is generated when the lamp was running for a period of time but turned off because the lamp's running voltage exceeded the ballast parameter "LAMP VOLTAGE MAXIMUM."

LAMPFAIL UNDER CURR NNNV SETUP PAUSE TEST HELP
---

This error is generated when the lamp was running for a period of time but turned off because the lamp's running current fell below the ballast parameter "LAMP CURRENT MAXIMUM."

## ERROR MESSAGES CON'T . . .

LAMPFAIL OVER CURR NNNV  
SETUP PAUSE TEST HELP

This error is generated when the lamp was running for a period of time but turned off because the lamp's running current exceeded the ballast parameter "LAMP CURRENT MAXIMUM."

BALLAST FAILED VCC LOW  
SETUP PAUSE TEST HELP

This error is generated when the lamp was told to turn on but ballast detected a voltage problem with its onboard DC supply.

BALL FAILED OT/PHASE  
SETUP PAUSE TEST HELP

This error is generated when the lamp was either told to turn on or was running but ballast detected either an internal over temp or a phase fault.

LAMP FAILED EXCESS RESTR  
SETUP PAUSE TEST HELP

This error is generated when the lamp was told to turn on but the number of strike attempts exceeded the ballast parameter "RESTRIKES."

VALIDATING BOOST UV FAIL  
SETUP PAUSE TEST HELP

This display is generated when an Boost Under Voltage error is detected and is being verified by the IEB. If the error is found to be true the "BOOST UNDER VOLTAGE" error message will be displayed.

VALIDATING LAMP UV FAIL  
SETUP PAUSE TEST HELP

This display is generated when a Lamp Under Voltage error is detected and is being verified by the IEB. If the error is found to be true the "LAMP UNDER VOLTAGE" error message will be displayed.

## ERROR MESSAGES CON'T . . .

PROG ERR SETUP PAUSE TEST HELP
-----------------------------------

This error message is only displayed if an unanticipated error occurs.

LOST DMX CTL:NNN FOC:NNN SETUP PAUSE TEST HELP
---

Upon the loss of a DMX control signal this message is displayed. The IEB will either maintain its present state or turn off depending on the parameter "LOST DMX HOLD."

BAD DMX CTL:NNN FOC:NNN SETUP PAUSE TEST HELP
--

This error message indicates that the DMX control signal is poor enough to be considered bad or invalid.

Please refer to the *Troubleshooting* Section of this manual for additional information.

**NOTE:** Error messages that contain NNN will be replaced with numeric values.

## MAINTENANCE SUGGESTIONS

- Keep all vents clear of debris.
- Periodically inspect all high current electrical connections.
- Periodically inspect all set screws and locking hardware.
- Verify all cabling is in good condition.
- Keep the system as clean as possible.
- If your IEB® is part of a rental fleet it would be advisable to reload a *Factory Setup* upon return to clear out any unique features the previous customer may have set.

# 1 kW REPLACEMENT PARTS LIST

## 1 kW IEB Replacement Parts List

<u>QUAN.</u>	<u>PART NO.</u>	<u>DESCRIPTION</u>
1	470-0019	HANDLE
1	530-0002	PWR SPLY DC 40W 24V UNIV INPUT
1	530-0006	PWR SPLY HC 3 KW HC3011-C1096
1	560-0053	CB 5 A 1P 115V
1	560-0209	CB 20 A 2P HEINEMAN
1	654-0001	DIO PWR 100A 400V 1N3291A
1	680-7692	FAB PANEL LEFT SIDE
1	680-7693	FAB PANEL RT SIDE
1	680-7695	FAB SWITCH MEMBRANE CTRL 2K BL
1	680-8323	FAB SHELL 1K IEB
1	771-0008	CURRENT SENSOR 100A LA205-S
1	900-0036	ASSY PCB BLST/FOC CONT 2K
1	900-0038	ASSY PCB BOOST 2K
1	923-0018	ASSY FILTER PWR MOD
1	992-0043	ASSY DIODE BLOCKING
1	992-0045	ASSY XLR DMX IN
1	992-0045	ASSY XLR DMX OUT
1	992-0049	ASSY HARNESS 24VDC INPUT
1	992-0051	ASSY HARNESS VOLTAGE SENSE
1	992-0052	ASSY HARNESS CURRENT SENSE
1	992-0054	ASSY FAN 24VDC
1	992-0055	ASSY CABLE LCD RIBBON
1	992-0058	ASSY HARNESS 24VDC PS INPUT
1	992-0062	ASSY HARNESS BOOST
1	992-0801	ASSY HARNESS OUTPUT CONN
1	992-0804	ASSY TRANSFORMER BOOST
1	992-0805	ASSY FAN 115V
1	992-0811	ASSY HARNESS INPUT CONN
1	992-0815	ASSY HARNESS BLST CTRL

## 2 kW REPLACEMENT PARTS LIST

### 2 kW IEB Replacement Parts List

<u>QUAN.</u>	<u>PART NO.</u>	<u>DESCRIPTION</u>
1	470-0019	HANDLE 1.06 X 11.81 BLK/BLK
1	530-0002	PWR SPLY DC 40W 24V UNIV INPUT
1	530-0006	PWR SPLY HC 3KW HC3011-C1096
1	560-0050	CB 5 A 2P 250V
1	560-0207	CB 20A 2P HEINEMANN
1	680-7690	FAB ENCLOSURE BALLAST
1	680-7692	FAB PANEL LEFT SIDE
1	680-7693	FAB PANEL RT SIDE
1	680-7695	FAB SWITCH MEMBRANE CTRL 2K BL
1	771-0008	CURRENT SENSOR 200A LA205-S
1	900-0036	ASSY PCB BLST/FOC CONT 2K
1	900-0038	ASSY PCB BOOST 2K
1	923-0018	ASSY FLTR PWR MOD
1	992-0042	ASSY HARNESS INPUT CONN
1	992-0043	ASSY DIODE BLOCKING
1	992-0044	ASSY XLR DMX IN
1	992-0045	ASSY XLR DMX OUT
1	992-0046	ASSY HARNESS OUTPUT CONN
1	992-0049	ASSY HARNESS 24VDC INPUT
1	992-0051	ASSY HARNESS VOLTAGE SENSE
1	992-0052	ASSY HARNESS CURRENT SENSE
1	992-0054	ASSY FAN 24VDC
1	992-0055	ASSY CABLE LCD RIBBON
1	992-0056	ASSY HARNESS BLST CTRL
1	992-0057	ASSY TRANSFORMER BOOST
1	992-0058	ASSY HARNESS 24VDC PS INPUT
1	992-0059	ASSY HARNESS 240VAC INPUT
1	992-0062	ASSY HARNESS BOOST
1	992-0063	ASSY LEAD POWER
1	992-0066	ASSY FAN 230VAC



## 4 kW REPLACEMENT PARTS LIST

### 4 kW IEB Replacement Parts List

<u>QUAN.</u>	<u>PART NO.</u>	<u>DESCRIPTION</u>
1	530-0024	PWR SPLY HC 4KW HC4011-C1130
2	680-3723	FAB BAR BASH 4/7/10K BLST
1	680-7659	FAB SWITCH MEMBRANE BALLAST
1	680-7662	FAB CHASSIS 4-10K BLST
1	680-7663	FAB PNL FRONT 4-10K BLST
1	680-7668	FAB COVER 4/7/10K BLST
1	680-7669	FAB HANDLE CART 4/7/10K BLST
1	680-7673	FAB BRKT PWR SPLY MTG 4K BLST
1	680-7675	FAB BAFFLE AIR INNER 4K BLST
1	800-0039	XFMR 230/140 500VA ISOL
1	900-0010	ASSY PCB DOUSER 24V P/S
1	900-0037	ASSY PCB BLST/FOC CONT 4K
1	900-0039	ASSY PCB BOOST 4K
1	923-0018	ASSY FILTER PWR MOD
1	992-0000	ASSY XLR 5M PNL
1	992-0001	ASSY XLR 5F PNL
1	992-0002	ASSY CONN VEAM 4 POS PNL
1	992-0003	ASSY CONN VEAM 22S PNL 4K
1	992-0006	ASSY DIODE MODULE 4K BALLAST
1	992-0008	ASSY FAN 550 CFM 230VAC 10DIA
1	992-0012	ASSY WIRE HARN 24VDC SUPPLY
1	992-0013	ASSY WIRE HARN VOLTAGE SENSE
1	992-0014	ASSY CABLE CURRENT SENSE
1	992-0015	ASSY WIRE HARN BLST CONT HC
1	992-0016	ASSY WIRE HARN 24VDC SPLY INP
1	992-0017	ASSY WIRE HARN 240VAC INPUT
1	992-0027	ASSY WIRE HARN EXHAUST FAN
1	992-0028	ASSY WIRE HARN 24VDC DUAL FANS
1	992-0029	ASSY WIRE HARN POWER HC INPUT
1	992-0038	ASSY CURRENT SENSOR
1	992-0060	ASSY HARNESS AC/AUX BREAK

## 7 kW SINGLE PHASE REPLACEMENT PARTS LIST

### 7 kW SINGLE PHASE IEB Replacement Parts List

<u>QUAN.</u>	<u>PART NO.</u>	<u>DESCRIPTION</u>
1	530-0031	PWR SPLY STRONG 7-10K OEM MOD
1	560-0050	CB 5 A 2P 250V
1	560-0501	CB 50 A 2P
1	561-4002	FUSE 40A 440V 421CPGLB14X51/40
1	562-0011	FUSE HOLDER ST 14-1
1	680-7659	FAB SWITCH MEMBRANE BALLAST
1	680-7662	FAB CHASSIS 4-10K BLST
1	680-7663	FAB PNL FRONT 4-10K BLST
1	680-7665	FAB BKT HTSK SPRT 4/7/10K BLST
1	680-7668	FAB COVER 4/7/10K BLST
1	680-7669	FAB HANDLE CART 4/7/10K BLST
1	680-7670	FAB FRAME CART 4/7/10K BLST
2	680-7671	FAB BAR BASH 4/7/10K BLST
1	680-7854	FAB BRKT STRONG SING PHASE
1	680-7893	FAB BRKT FUSE AND CAP 7K 1PH
1	771-0008	CURRENT SENSOR 200A LA205-S
1	802-0007	FILTER AC INPUT BOARD ASSY
1	900-0010	ASSY PCB DOUSER 24V P/S
1	900-0044	ASSY PCB BLST/FOC CONT 7/10K
1	992-0000	ASSY XLR 5M PNL
1	992-0001	ASSY XLR 5F PNL
1	992-0002	ASSY CONN VEAM 4 POS PNL
1	992-0008	ASSY FAN 550 CFM 230 VAC 10DIA
1	992-0012	ASSY WIRE HARN 24VDC SUPPLY
1	992-0014	ASSY CABLE CURRENT SENSE
1	992-0016	ASSY WIRE HARN 24VDC SPLY INP
1	992-0017	ASSY WIRE HARN 240VAC INPUT
1	992-0025	ASSY WIRE HARN VOLTAGE SENSE
1	992-0026	ASSY CONN VEAM 22S PNL 7/10K
1	992-0027	ASSY WIRE HARN EXHAUST FAN

## 7 kW SINGLE PHASE IEB Replacement Parts List Con't.

<u>QUAN.</u>	<u>PART NO.</u>	<u>DESCRIPTION</u>
1	992-0030	ASSY CABLE GATE DRIVE
1	992-0031	ASSY SURGE LIMIT
1	992-0034	ASSY NEG SUPPLY
1	992-0037	ASSY CABLE BALLAST SENSE
1	992-0060	ASSY HARNESS AC/AUX BREAKER
1	992-0151	ASSY CHOKE 7K SGL PHASE
1	992-0155	ASSY WIRE HARN CAP JUMPER
1	992-0157	ASSY BLEED DOWN
1	992-0158	ASSY WIRE HARN POWER SGL PHASE

## 7/10 kW REPLACEMENT PARTS LIST

### 7/10 kW IEB Replacement Parts List

<u>QUAN.</u>	<u>PART NO.</u>	<u>DESCRIPTION</u>
1	530-0031	PWR SPLY STRONG 7-10K OEM MOD
1	561-4002	FUSE 40A 440V 421CPGLB14X51/40
1	562-0011	FUSE HOLDER ST 14-I
1	680-7659	FAB SWITCH MEMBRANE BALLAST
1	680-7662	FAB CHASSIS 4-10K BLST
1	680-7663	FAB PNL FRONT 4-10K BLST
1	680-7664	FAB BRKT STRONG 7/10K BLST
1	680-7665	FAB BKT HTSK SPRT 4/7/10K BLST
1	680-7667	FAB BRKT XFMR & CAP 7/10K BLST
1	680-7668	FAB COVER 4/7/10K BLST
1	680-7669	FAB HANDLE CART 4/7/10K BLST
1	680-7670	FAB FRAME CART 4/7/10K BLST
2	680-7671	FAB BAR BASH 4/7/10K BLST
2	680-7815	FAB STRAP 4-10K BALLAST
1	771-0008	CURRENT SENSOR 200A LA205-S
1	802-0007	FILTER AC INPUT BOARD ASSY
1	900-0010	ASSY PCB DOUSER 24V P/S
1	900-0044	ASSY PCB BLST/FOC CONT 7/10K
1	992-0000	ASSY XLR 5M PNL
1	992-0001	ASSY XLR 5F PNL
1	992-0002	ASSY CONN VEAM 4POS PNL
1	992-0008	ASSY FAN 550 CFM 230 VAC 10DIA
1	992-0012	ASSY WIRE HARN 24VDC SUPPLY
1	992-0014	ASSY CABLE CURRENT SENSE
1	992-0016	ASSY WIRE HARN 24VDC SPLY INP
1	992-0017	ASSY WIRE HARN 240VAC INPUT
1	992-0025	ASSY WIRE HARN VOLTAGE SENSE
1	992-0026	ASSY CONN VEAM 22S PNL 7/10K
1	992-0027	ASSY WIRE HARN EXHAUST FAN
1	992-0030	ASSY CABLE GATE DRIVE
1	992-0031	ASSY SURGE LIMIT

## 7/10 kW IEB Replacement Parts List Con't.

<u>QUAN.</u>	<u>PART NO.</u>	<u>DESCRIPTION</u>
1	992-0032	ASSY BLEED DOWN
1	992-0034	ASSY NEG SUPPLY
1	992-0035	ASSY WIRE HARN CAP JUMPER
1	992-0036	ASSY INDUCTOR
1	992-0037	ASSY CABLE BALLAST SENSE
1	992-0060	ASSY HARNESS AC/AUX BREAKER

## WARRANTY STATEMENT

Strong Entertainment Lighting agrees that its products shall be free from defects in materials and workmanship over a period of one year from the date of shipment from its factory. This warranty is nontransferable and applies to the original purchaser only. Said warranty will not apply if equipment is used in condition of service for which it is not specifically intended. The manufacturer is not responsible for damage to its apparatus through improper installation, physical damage or poor operating practice.

If any device is found to be defective under the warranty, the buyer should notify the manufacturer in writing. Such equipment will be repaired or replaced, at manufacturer's option, free of all charges except transportation, F.O.B. its factory, such repair or replacement by the manufacturer shall constitute fulfillment of all obligations to the purchaser. This warranty does not include troubleshooting expense, labor charges associated with service calls, disassembly or reassembly of the lamp system. Should such repair or replacement require an on-site service call, the Purchaser shall bear the responsibility for all costs and associated expenses. Manufacturer does not assume responsibility for unauthorized repairs to its products, even though defective, and any unauthorized parts or repairs shall void this warranty.

This warranty is the only warranty given with respect to manufacturer's products, and there are no warranties of merchantability of fitness for a particular purpose or other warranties or representations of any kind, express or implied, which are made with respect to these products.

The remedies of the Owner set forth in this warranty are exclusive. In no event shall the buyer be entitled to recover for incidental, special or consequential damages, arising from the sale or use of these products, including but not limited to loss of profits or revenue, other commercial losses, inconvenience, delay, labor, repairs or other cost of rental or replacement equipment.

This warranty excludes any and all incidental damage that may be caused by lamp explosions. The lamps used in manufacturer's products are not included in this warranty, however are covered in lamp manufacturer's warranty.

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## MAGIC SEQUENCE

The Magic Sequence is a sequence of key presses that allows the user to access the *Factory Setup* menu of the IEB.

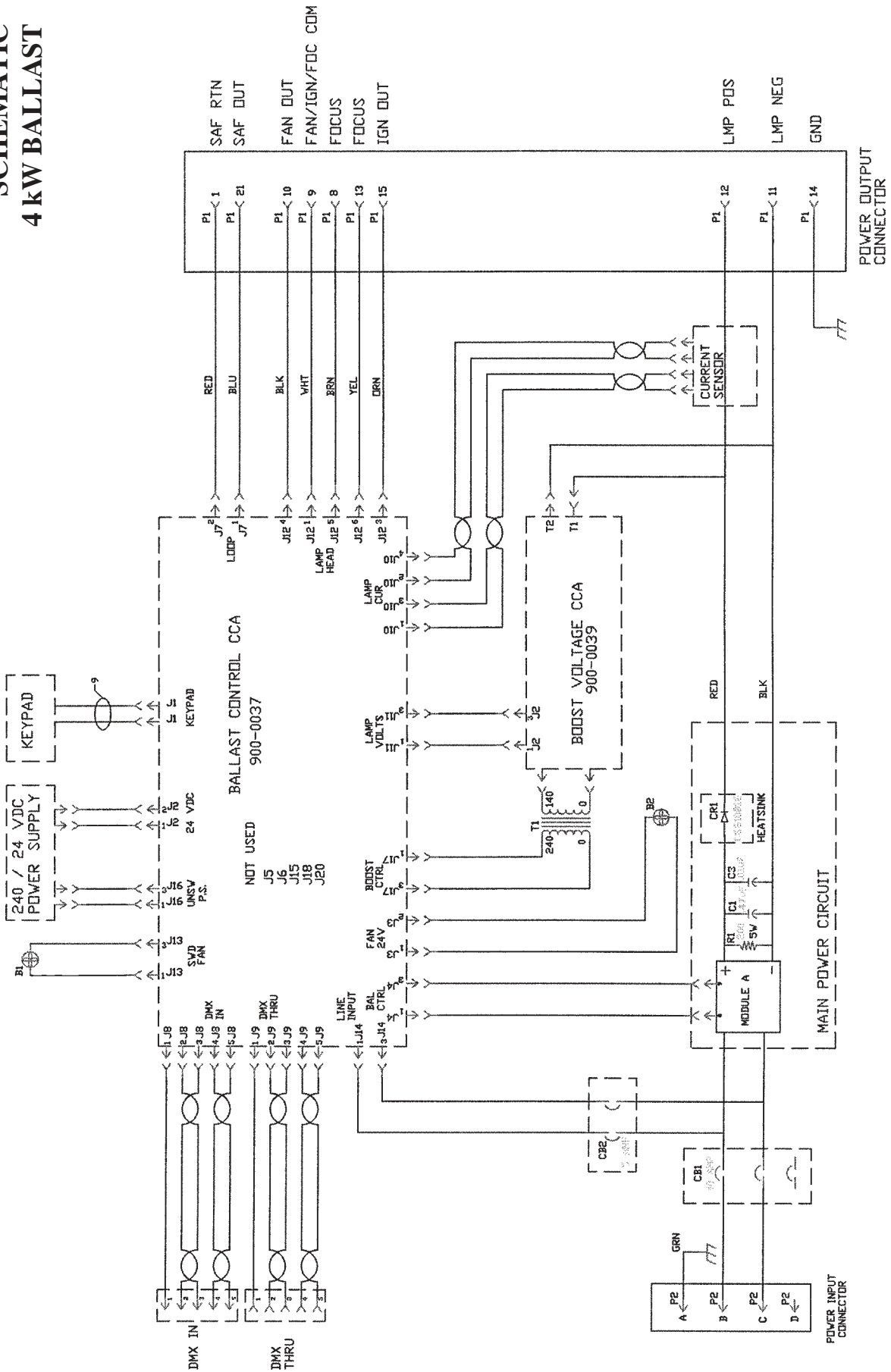
### CAUTION

This page should be removed if the manual is supplied to untrained users. Failure to observe this precaution may result in erratic operation if parameters are adjusted by an untrained person.

The Magic Sequence is: [F2] [F3] [F2] [F1] [F4]

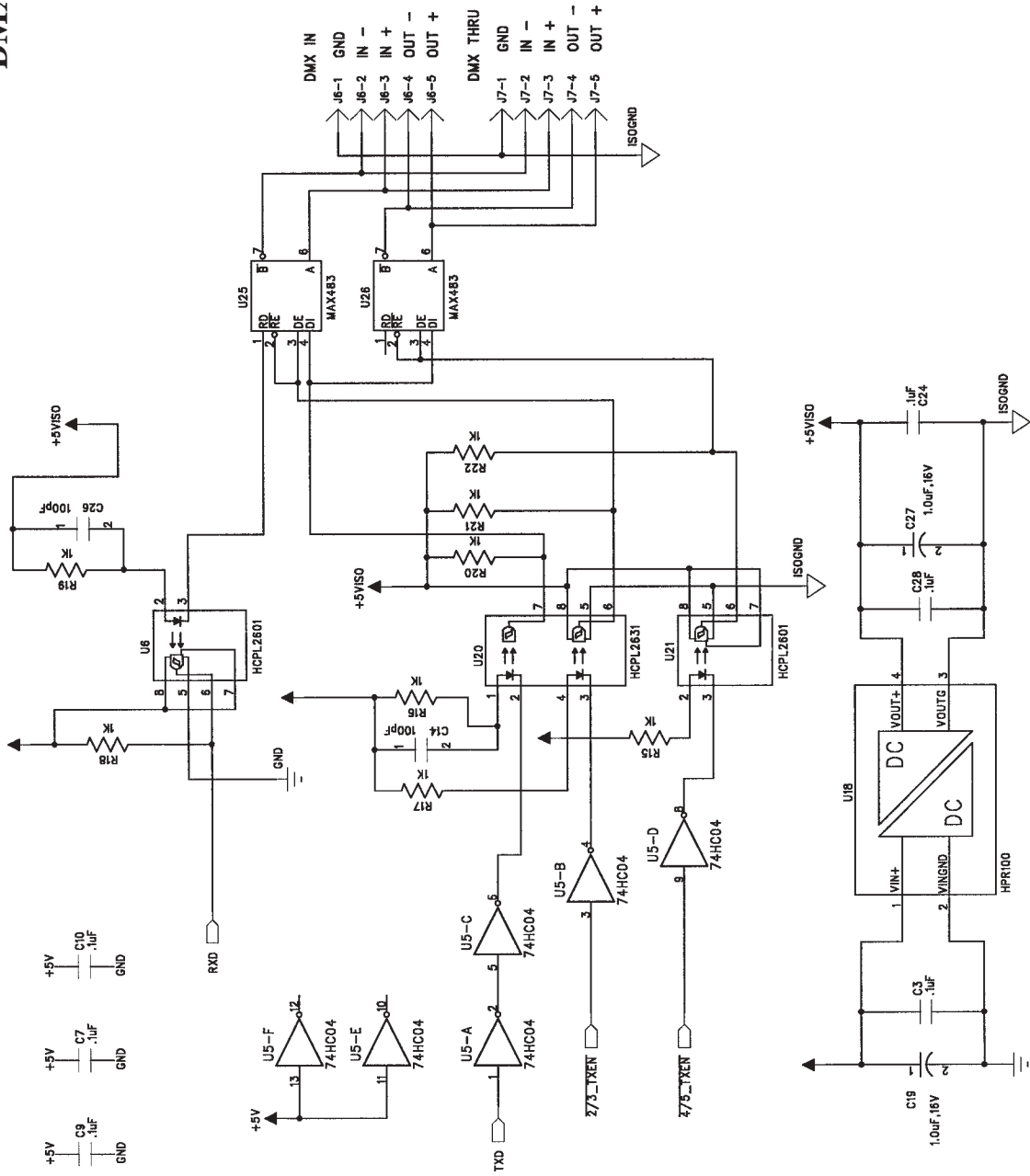


# SCHEMATIC 4 kW BALLAST

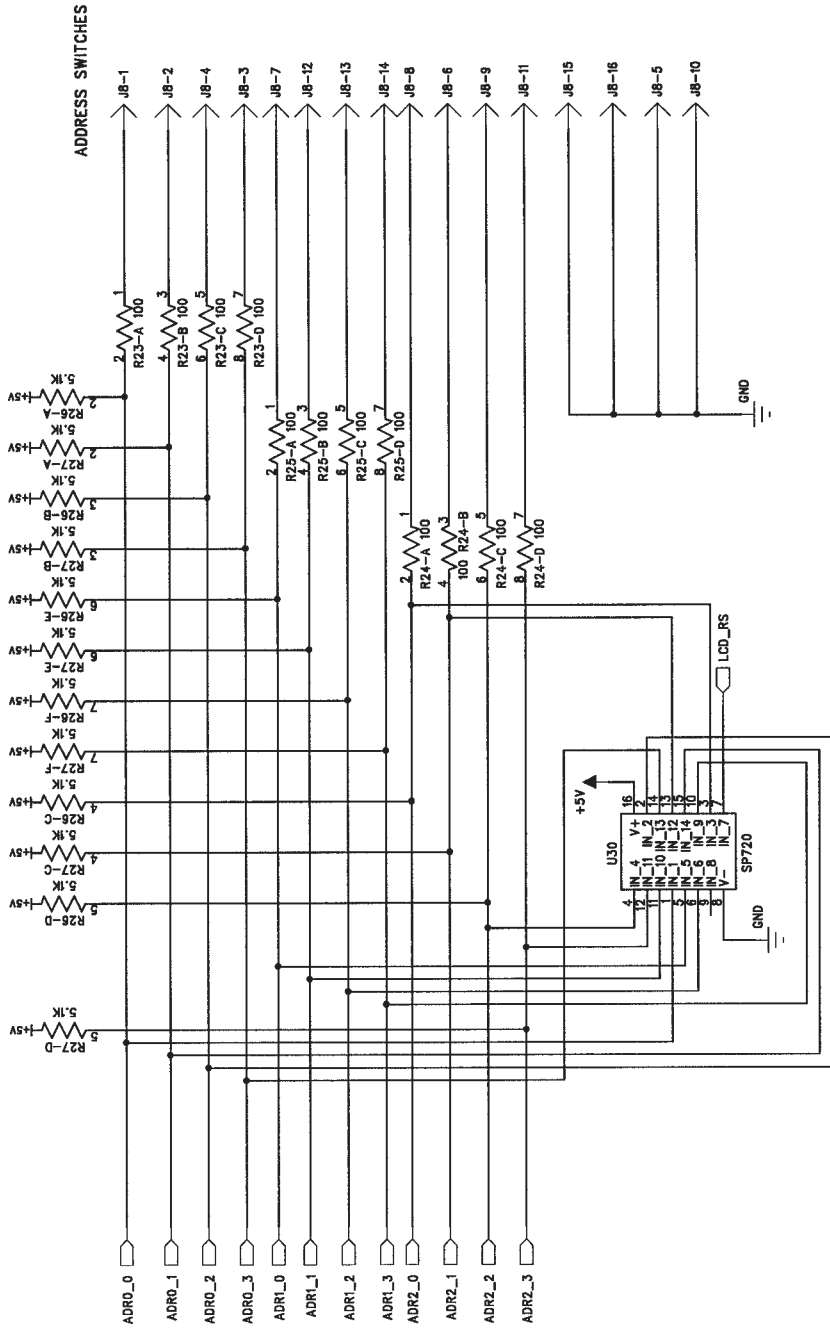




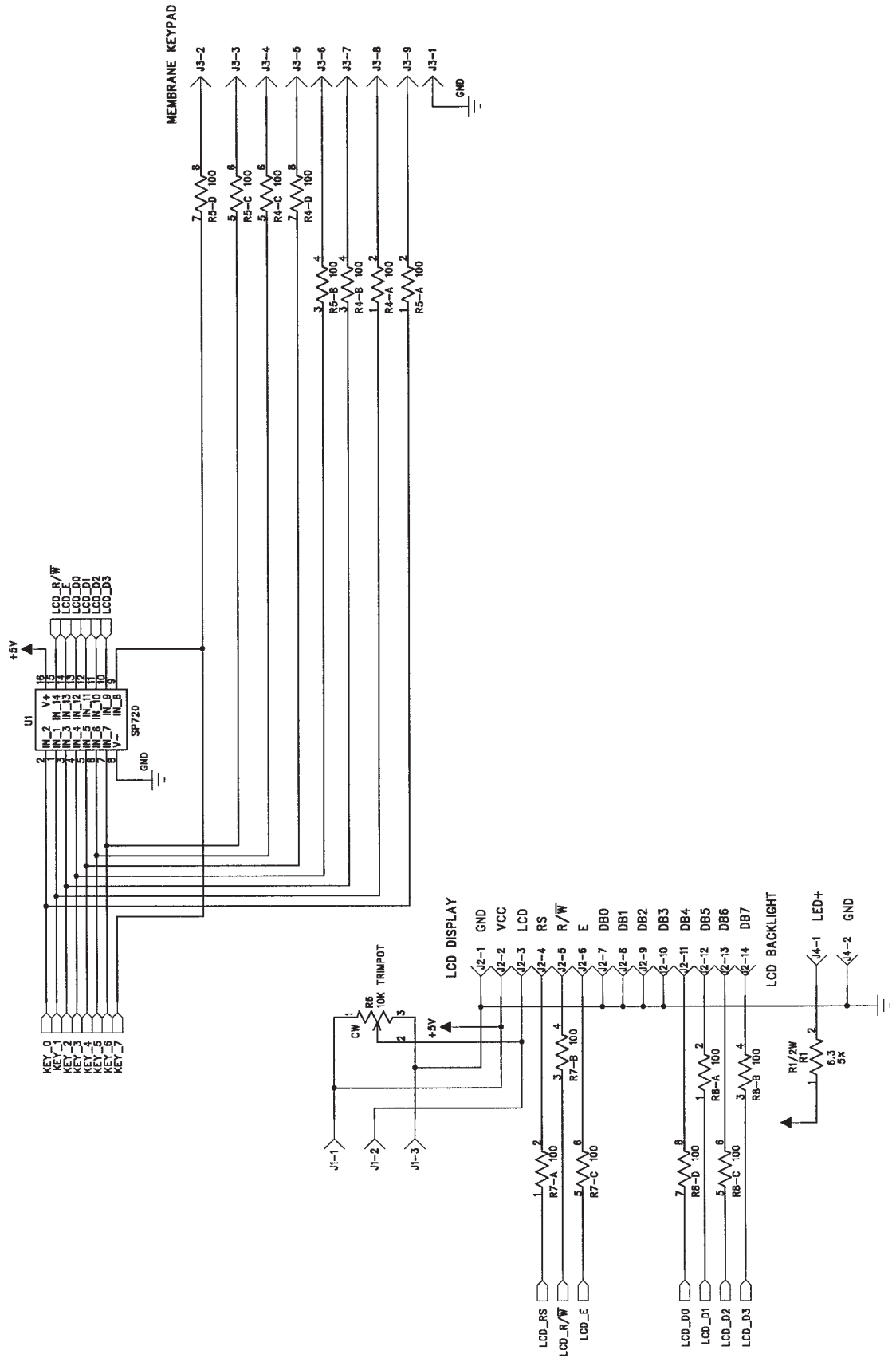
# BALLAST/FOCUS CONTROL DMX INTERFACE



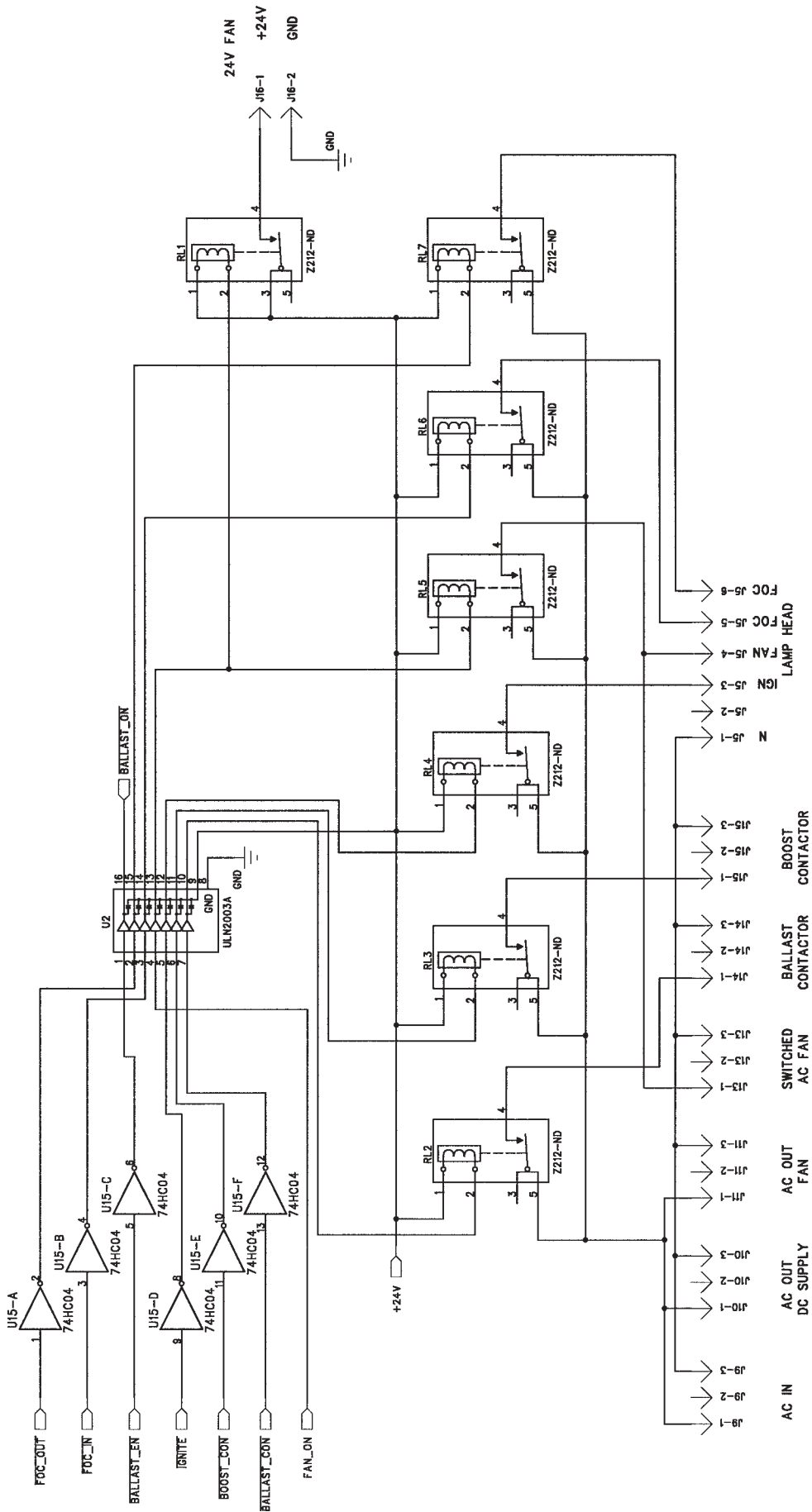
# BALLAST/FOCUS CONTROL ADDRESS SWITCH INTERFACE



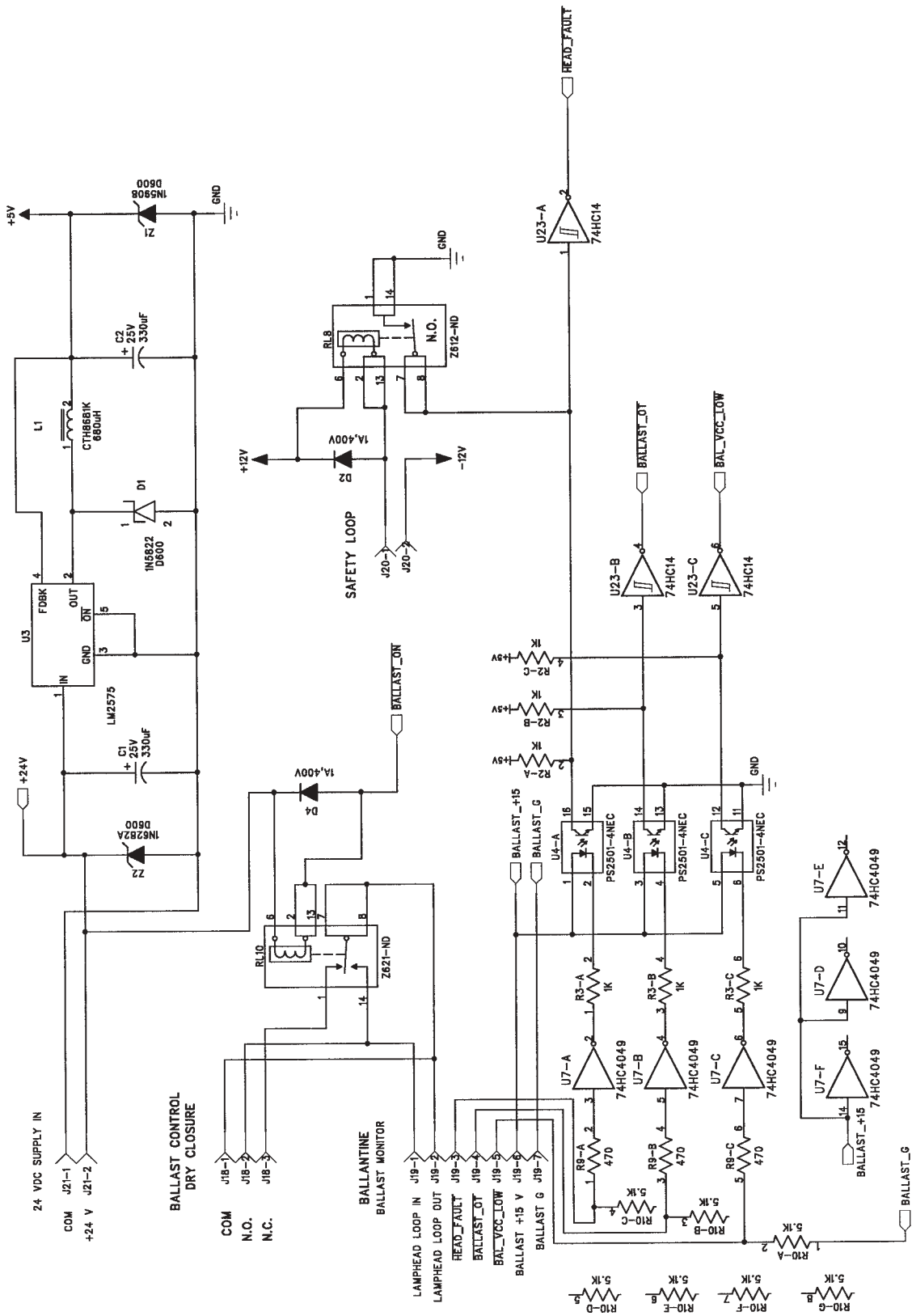
# BALLAST/FOCUS CONTROL KEYPAD & DISPLAY INTERFACE



# BALLAST/FOCUS CONTROL POWER RELAYS & DRIVERS







# BALLAST/FOCUS CONTROL POWER BALLAST MONITOR

# BALLAST/FOCUS CONTROL ANALOG DATA ACQUISITION

