

# ***Talon Optical Controller***

**Operations Manual**

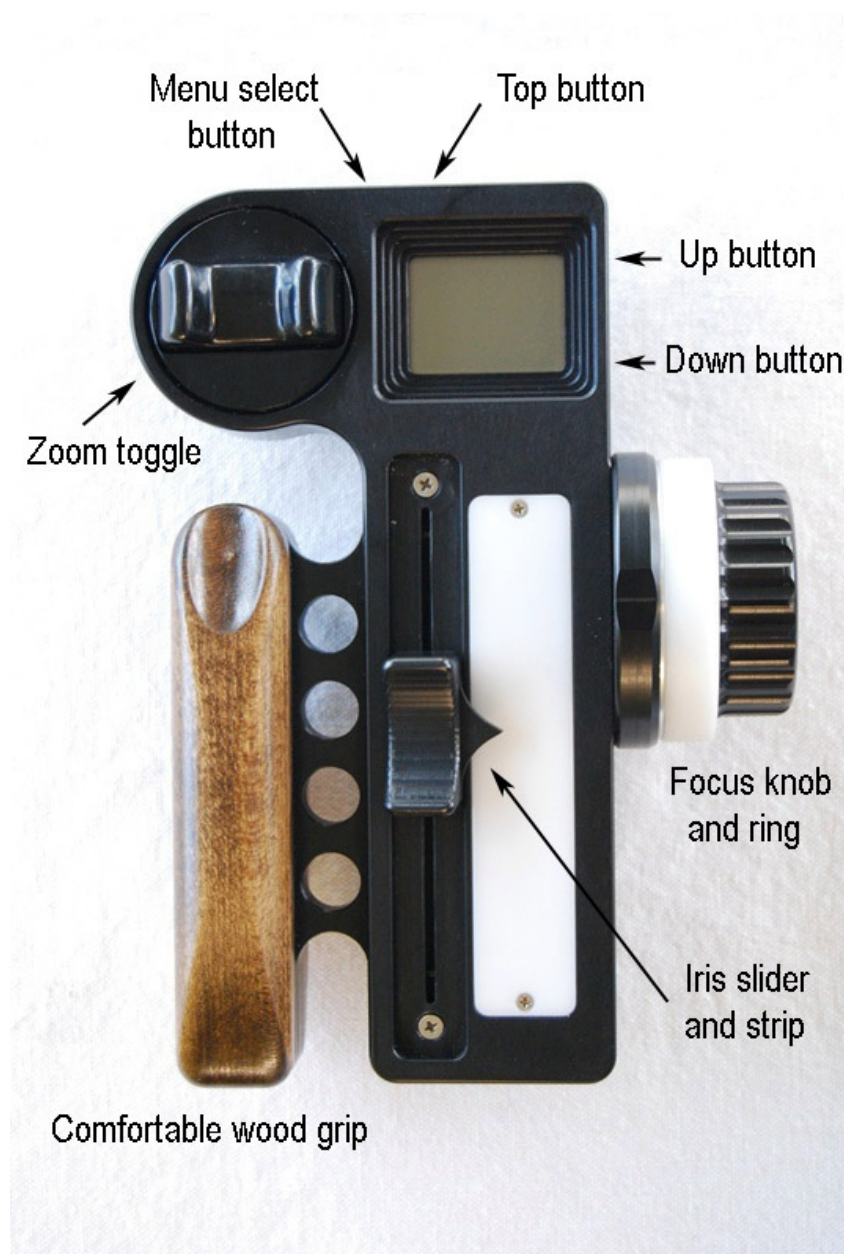
and

**Connector Information**

## General Description

The Talon Optical Controller (TOC) is a hand held lens controller with all the basic functions needed to control zoom, focus and iris when wired to the Ravensclaw Talon remote console.

The following is an in-depth description of the TOC operation, a more complete description of each of its features, followed by an appendix with a description of all connector pinouts.



## Startup

### 1) Powering up the TOC -

Connect the main cable between the TOC and the “serial” input connector on the Talon remote console. Power up the Talon console and go to the “Inputs” screen, found on the setup page. Activate the TOC controls by selecting “Z” and “F” on the third row of inputs. The iris control is only available when using the TOC, so it is always active.

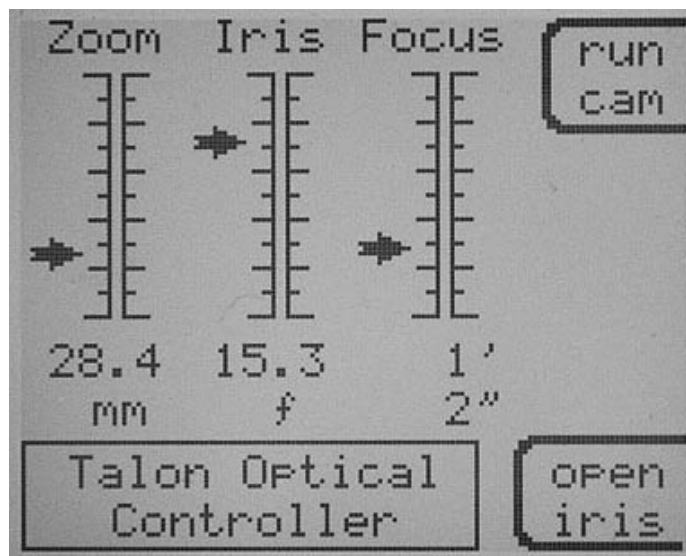
### 2) The controls -

The zoom toggle can be rotated from a horizontal to a vertical position, whichever is more comfortable for the user. The zoom, iris and focus controls always move the lens rings, even when different menu screens are selected.

### 3) The buttons -

There are four buttons used to control the TOC setup operations. The top left button (Menu Select) is always used for the same purpose; to display the main screen menu and to select a new screen. The other three buttons change their function depending on need. Their function will always be shown on the screen, with one exception. The top (right) button’s function is hidden on the main screen, and will be explained below.

## The Main Screen



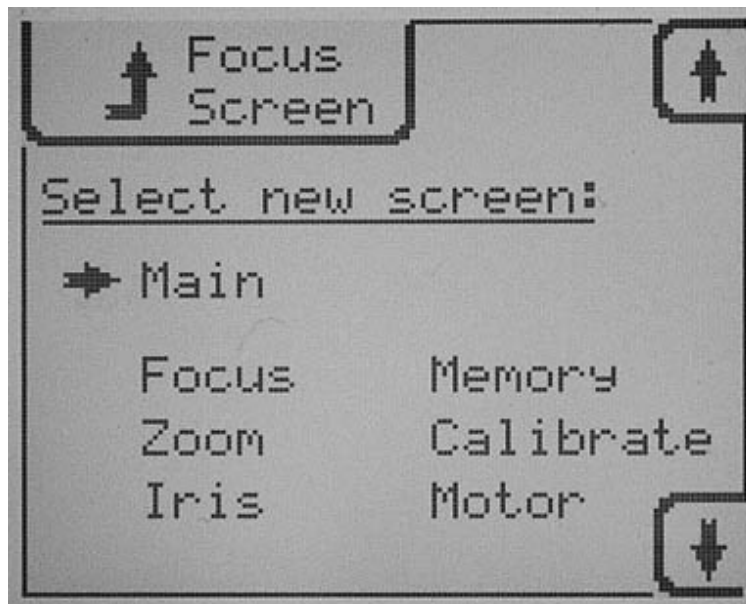
The main screen shows the current position of all three lens rings. The vertical bargraph show the basic relative position of zoom, iris or focus, and the actual position is shown at the bottom of the bargraph. Different lenses can be precisely calibrated to show actual lens positions on the screen, and lens calibrations can be named and saved in memory inside the unit and easily recalled at any time.

The “Up” button is used to start and stop a camera connected to the Talon. The “Down” button is used to momentarily override the iris slider and open the iris all the way when needed.

The “Top” button will bring you directly to the last screen visited, so you can quickly move between the main screen and any other screen for setup or a quick function check.

Press the Menu Select button (upper left) to enter the main menu.

#### Main Menu:



This screen allows you to select any of the system setup pages. The Top button has the same function as on the main page; it quickly takes you to the last screen visited. The name of the last screen is shown under the top button.

Press the up or down buttons to move the arrow until it is pointing to the screen that you want, then press the Menu Select button to enter that screen.

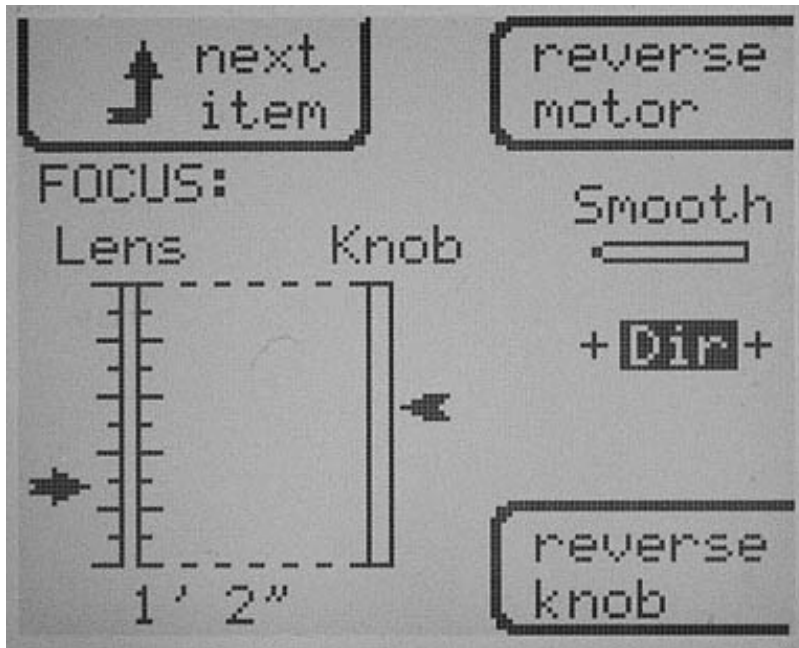
The Focus, Zoom and Iris screens provide knob limit and scaling setup, as well as smoothing control and motor and knob directions.

The Memory screen displays saved lenses, and allows selection and loading of up to 2000 lenses.

The Calibrate screen allows calibration of Zoom, Focus and Iris knobs so that the actual lens position is read out on the main screen. You can save and delete new lenses here. Also there is a method for calibrating the end limits for the Focus knob and Iris slider.

The “Motor” screen allows setting the current limits for each motor so that motors of different sizes, and lens rings with different resistances are all available to be used.

#### Focus, Zoom and Iris screens:



These screens show the positions of the knob control and the lens ring. You can tell the active control on the page because it is shown with a black background and white letters. Press the top button (“next item”) to move to the next control item.

- 1) **Lens** - This control shows the actual position of the lens motor. You can set limits on either or both ends of motor motion so that the lens motor will not move beyond these limits. Move the lens motor to the maximum position that you want it to move, then press the up button (“set lens limit 1”). A dashed line is shown on the screen to show where the motion limits are. You can perform the same operation using the down button to set a limit at the lower end of motion if you want.

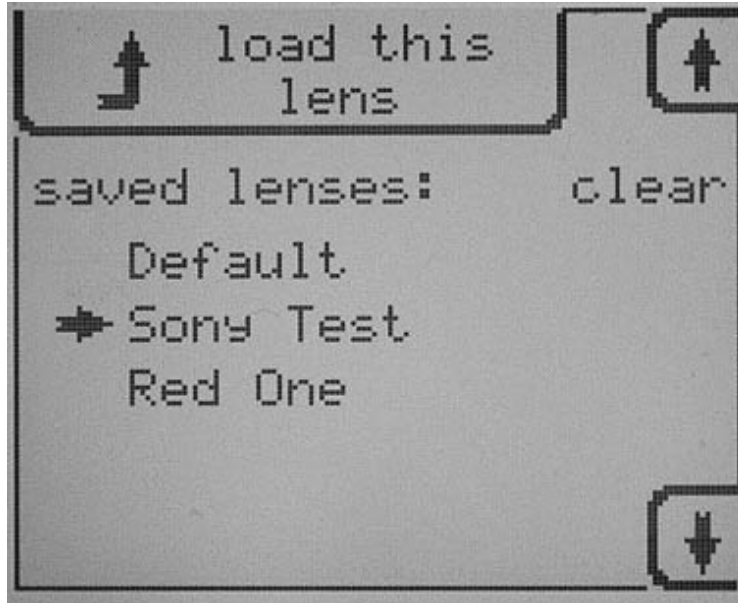
You will notice that after you press the up or down button here, the label next to the button changes names to say “set new range”. If you press the up button now ( it doesn’t matter where the lens is), the top lens limit that you have set will remain in the same place, but it will be re-mapped to the knob so that that lens will be at that maximum limit position when the controller knob or slider is at it’s top limit. In this way you can scale the full lens motion to a small portion of the controller knob, or scale a small motion of the lens to the full range of the controller knob.

Press the up button again to clear the lens limit.

- 2) **Knob** - This control shows the actual position of the lens controller, either the Focus knob or the Iris slider or the Zoom rocker switch. The top and bottom knob limits can be set or cleared here using the up and down buttons the same as above. The “set new range” option is only available in the Lens control, not here. Dashed lines are drawn between the knob control and the lens control to show actual relative motion of the knob and lens.
- 3) **Smooth** - This control adjusts how closely the knob is tied to the lens motion. The purpose is to average possible variations in knob motion to produce smooth lens motion. The actual smoothing value is shown at the top middle of the screen as a number from 1 to 100. Press the up or down buttons to change the value. A value of 1 means no smoothing, and a value of 100 means maximum smoothing.
- 4) **Dir** - This control lets you change the direction of the controller knob or slider based on your preference. Press the down button to reverse knob direction. You can also change the motor direction here using the up button to account for different motor mountings or lens rings.
- 5) **Speed** - This control is only available on the Zoom screen. You can adjust the sensitivity of the Zoom rocker switch here, similar to the Smooth control. When the speed is set at minimum, the Zoom lens will

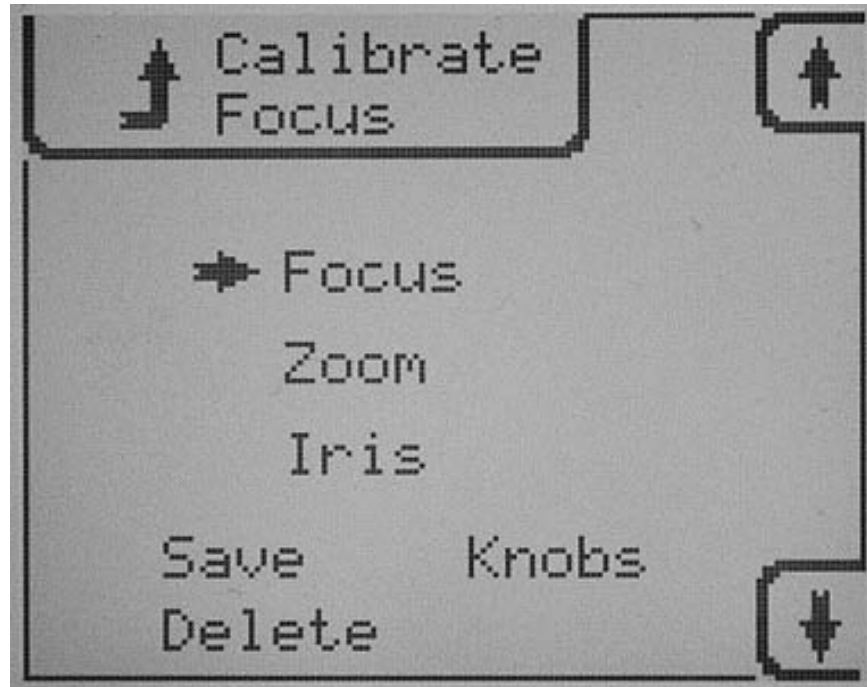
move very slowly even when you press the Zoom rocker all the way. When the speed is set at maximum, the Zoom motor will move very quickly in response to the Zoom rocker switch.

**Memory screen:**



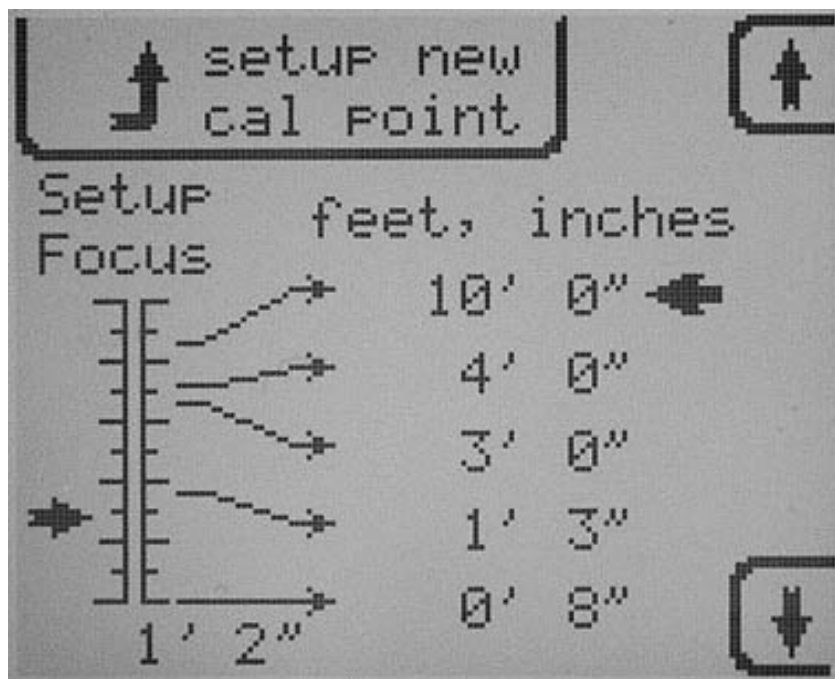
This screen shows saved lenses, and allows selection and loading of up to 2000 lenses. The screen shows a list of all saved lenses. Use the up and down buttons to select a lens, then press the top button to load that lens into main memory. You can also delete all lenses in memory here ( be careful!) by selecting the “clear” item at the top right of the screen.

Calibrate screen:



The main calibrate screen lets you calibrate lens positions and knob response, and save and delete lenses in memory.

- 1) **Focus, Zoom and Iris Calibration** - These screens let you calibrate each motor so that the main screen will display the proper focus distance, f-stop and zoom focal length.



The first selection allows you to select the units used to display the lens position. You can choose between feet and inches, milli-meters, meters, and f-stop.

The five rows of numbers represent five points on the lens ring and their corresponding numerical values.

Here is the procedure to calibrate one point:

Move the left arrow using the up/down buttons to point to one of the five numerical rows.

Press the top button to enter the calibration mode. The numerical value will show as white text on a black background when it is in calibration mode, and the top button will show "confirm new mark".

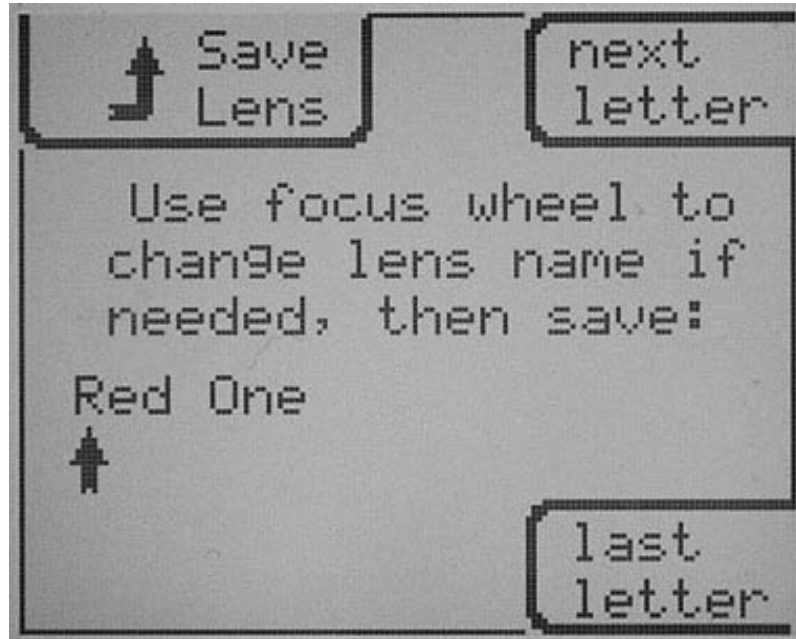
Move the lens motor to a known position.

Use the up/down buttons to change the displayed number so that it reads where the lens position.

Press the top button to confirm the new mark.

Repeat this procedure for all five points. That is all that is necessary to calibrate each motor.

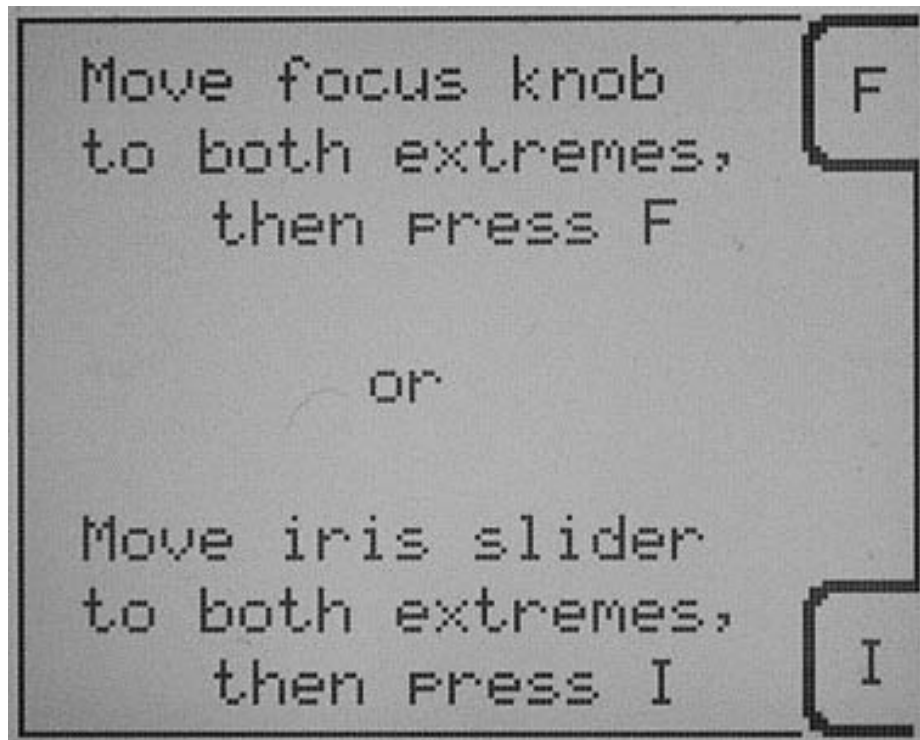
- 2) **Save and Delete** - The Save screen lets you save and name a different calibration setup for up to 2000 lenses.



When you enter the Save screen, you can name the lens using the focus knob to select letters, and the up/down buttons to move between letters. The space character is at the very bottom of the focus wheel's travel. When you have named the setup, press the top button to save the lens to memory.

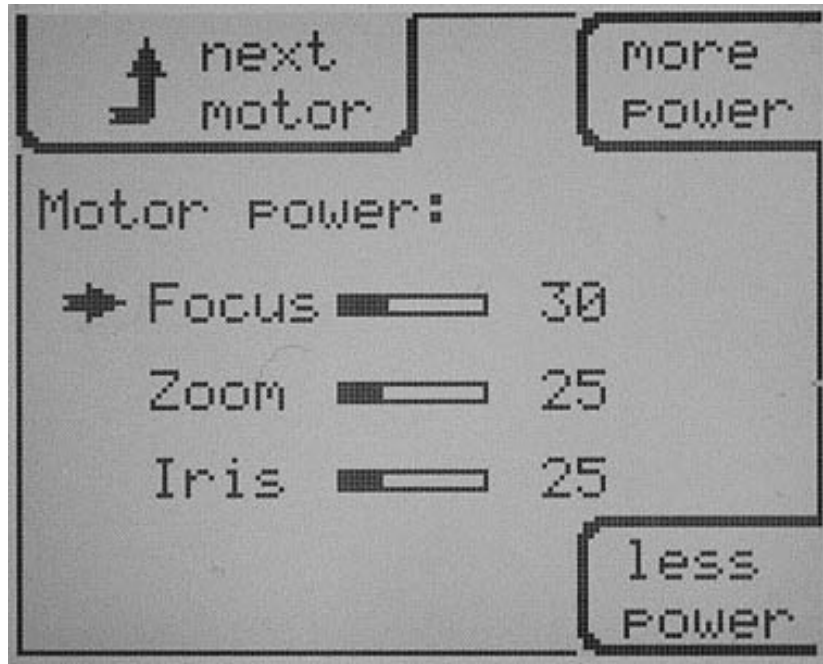
The Delete screen displays all saved lenses. Select one of them and press the top button to delete that lens. If you select the "clear" option, ALL lenses will be erased from memory, be careful!

- 3) **Knobs** - This screen sets up the top and bottom limits for the focus and iris controls.



**Motor screen:**

This screen allows you to control the motor resistance required for each motor before it reverses direction during calibration. Set a value between 1 and 100, 100 means the motor will require maximum resistance before it changes direction during calibration.



# Appendix

## Additional information

If both the up and down buttons are held when power is turned on, all system parameters (except lens memory) will be reset to their default values.

## Connectors

### 1) Main Connector - EGG1B308CLL

Pin	Function
1	Common
2	#1 RS-232 RXD
3	#1 RS-232 TXD
4	+5 VDC
5	24 VDC -
6	#2 RS-232 RXD
7	#2 RS-232 TXD
8	24 VDC +