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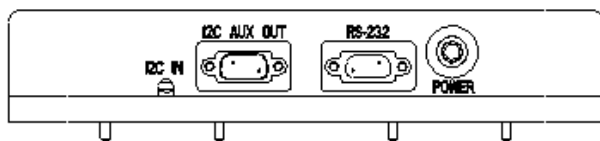
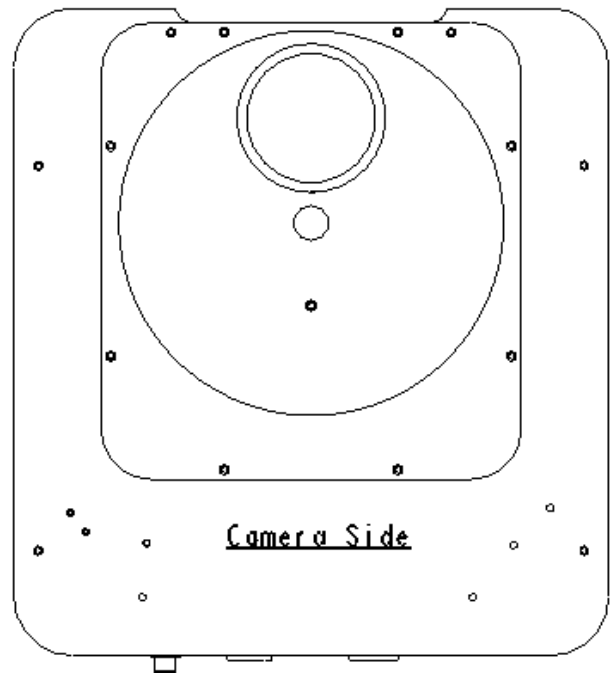
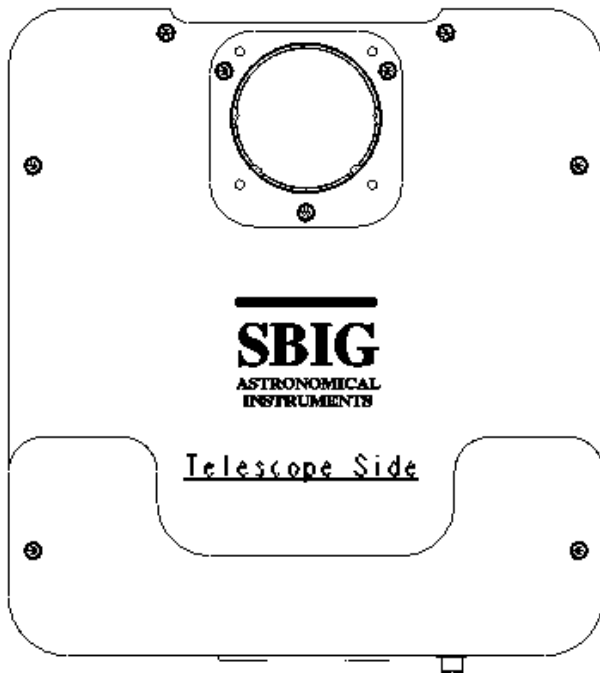
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FW8-STL Operating Manual

April 3rd, 2007

Introduction

The FW8-STL (External Filter Wheel) is an 8-position Color Filter Wheel for use with SBIG and third-party CCD Cameras. It accepts up to eight 50 mm or 2 inch filters. It interfaces to SBIG STL USB Port based cameras through the camera's I2C port, obtaining power and control from the camera. For SBIG Parallel Port based cameras or for cameras from other manufacturers power is obtained from a separate 12V DC power source and control is through a Serial Port (RS-232).

Connectors

Opening the FW8-STL

To open the FW8-STL remove the six 6-32 socket-head cap screws from the Telescope Side. Slightly lift the aperture end of the cover up at about a 10 degree angle to the rest of the housing and then slide it off the connectors. You may have to jiggle the cover slightly to get it off, but under no circumstances do you need to force it – it will come off! At this point you can insert filters into the carousel or attach the FW8-STL to the camera. Note that the filter positions are marked with a number adjacent to each position. To reassemble the FW8-STL reverse the procedure, sliding the cover into place past the connectors (while held at an angle) and replacing the six screws. Note that there are two 6-32 x 1 inch screws, and four 6-32 x 0.75 inch screws. The long screws go on the cable end of the front plate.

Attaching the FW8-STL to an SBIG STL Camera

The FW8-STL attaches to the SBIG ST-L series of cameras as described below.

1. Open the FW8-STL as described above to gain access to the mounting holes.
2. Remove the STL front plate from the camera and set the screws aside. You may have to pry gently with a single edge razor blade on the joint of the connector end to get it off.
3. Attach the FW8-STL to the camera using the **eight** supplied **4-40 x 1/4 inch Socket Head Cap Screws**.
4. Install your filters. You can either screw in a filter with a cell that has M48 x 0.60-6H threads, or use the supplied cleats to hold down 50mm or 2 inch filters. Note: use the cleat that best secures the filter. You may have to turn the cleat upside down for best fit.
5. Make sure the screw in the center of the wheel is properly tightened. It should be tight enough that the wheel does not rock at the edge by more than 1/16th inch (1.5 mm), but not so tight that it gets hard to turn. You can push the stepper motor back from the edge of the wheel with your thumb to gauge how freely the wheel turns.
6. Reassemble the FW8-STL front plate on to the rest of the unit
7. Attach the STL nosepiece mounting plate to the Telescope Side of the FW8-STL using the screws that held it in place on the camera. Make sure any shims (thin washers) that were under the block are put in the same relative position on the FW8-STL. These shims are used to square up the CCD to the telescope optical axis.
8. Connect the pigtail coming out of the FW8-STL to the IIC/AUX port on the STL. This connector provides both power and control to the FW8-STL. For those users with an STL connect up the RS-232 port on the FW8-STL to the RS-232 port on your computer using the optional RS-232 cable, and use the optional 12 VDC power supply to power the FW8-STL. If you provide your own source of 12V the mating connector is the locking model Switchcraft S760K and the connector is wired **Center Positive**.
9. Upon powering, the FW8-STL will rotate to the home position (Filter 1).
10. At this point you can use CCDops to control the FW8-STL by selecting “FW8-STL in the Setup command in the Filter menu. Third-party software such as CCDSoft or MaximDI can be used by selecting the SBIG FW8-STL filter wheel. You should make sure the version of the program you are using is up to date, as well as your drivers from SBIG!

Attaching an AO-L to the FW8-STL

The AO-L can attach to the Telescope Side of the FW8-STL in the same manner that it attaches to an STL. Plug the AO-L pigtail connector into the IIC/AUX OUT connector on the FW8-STL.