

40 Inch Filter Wheel

The 40 inch filter wheel is 6 slotted filter wheel, controlled over the network through NG protocol. It uses a stepper motor for motion and a hall effect sensor and encoder for homing and positioning respectively. It is controlled by an Arduino Ethernet and a LIN Engineering stepper driver.

Network Control

The wheel uses [NG Protocol](#) developed by Steward Observatory. Its observatory ID is CSS40 and its SYSid is FW40. Each command or request requires a trailing newline.

Request List

NAME	# of ARGS	DESCRIPTION
FNUM	0	Returns the current filter wheel number
MOT	0	Returns the motion status

Command List

Name	# of Args	Description
GOTO	1 (fnumber)	Sends the filter wheel to the given number
DISABLE	0	Disables the stepper motor
ENABLE	0	Enables the stepper motor
SETHOME	1 (Home Pos)	Sets the home position in offset counts first detecting the home sensor.
SAVEHOME	1 (Home Pos)	Saves the given home position to the eeprom so it will use this value on start up. This will permanently change the home position!!! Use at your own peril!!!
HOME	0	Moves to the home position.
STOP	0	Stops all motion

Source Code

You can find the arduino source code and an example python program for the network communication [here](#) .

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