

FW103H - September 12, 2024

Item FW103H was discontinued on September 12, 2024. For informational purposes, this is a copy of the website content at that time and is valid only for the stated product.

MOTORIZED FAST-CHANGE FILTER WHEEL

- 55 ms Filter Change Time with Included Controller
- Light-tight Design
- Cage and Lens Tube Compatible

Application Idea
Compatible with Our Ø1/2" Posts,
30 mm Cage System, and
SM1 Lens Tube Components



OVERVIEW

Features

- Change Time of 55 - 60 ms When Used with Included BSC201 Controller
- Holds up to Six Ø1" (Ø25 mm) Filters
- Accepts Filters up to 0.25" (6.35 mm) Thick
- Light-Tight Design
- Filters Easily Added or Removed
- Compatible with All APT™ Stepper Motor Controllers

This motorized fast-change filter wheel has been designed for applications that require sequential observations with different filters inserted in the optical path, such as multi-wavelength fluorescence imaging. The optical port is internally SM1 (1.035"-40) threaded on both sides for compatibility with our Ø1" lens tubes, and each side contains four 4-40 taps for compatibility with our 30 mm cage systems. The perimeter of the housing contains four 8-32 (M4) tapped holes at 90° spacings to allow the wheel to be mounted on Ø1/2" posts. Up to six Ø1" (Ø25.4 mm) filters mounted in the standard housing (e.g., Thorlabs' FELH series) can be fitted onto the wheel. A removable cover allows filters to be installed without needing to unmount the filter wheel from the optomechanical setup within which it sits.

The FW103H(M) includes the filter wheel and our BSC201 Single-Channel APT™ Controller, which provides a switching time between 55 - 60 ms for adjacent filters. The BSC201 comes with a power supply for 110 to 240 V and with a US, UK, or European power cord determined by your ordering location. The filter wheel can also be used with the KST201 K-Cube™ controller, but the switching time will increase to 250 ms. If you are interested in this option, please contact Technical Support to inquire about purchasing a filter wheel without the BSC201 controller.

The filter wheel uses a Hall effect sensor to determine the filter wheel's position, which is ideal for light-sensitive applications.

Motorized Filter Wheel Selection Guide				
Item #	# of Slots	Filter Size	Preloaded ND Filters	Features
FW212C	12	Ø1/2"	No	BNC, RS-232 and USB Interfaces Integrated Controller
FW212CNEB	12	Ø1/2"	Yes	
FW102C	6	Ø1"	No	
FW102CNEB	6	Ø1"	Yes	55 ms Switching Time
FW103H	6	Ø1"	No	

FILTER INSTALLATION

The Motorized Fast-Change Filter Wheel can hold up to six Ø1" filters, which can be easily inserted into the wheel in three steps.

Step 1



Click to Enlarge
Remove the housing cover to gain access to the six filter slots (individual filters can be changed by using the filter access cover located on the housing cover, shown to the bottom left)

Step 2



Click to Enlarge
Insert the filter into the desired port of the filter wheel

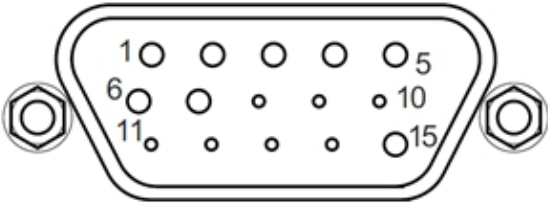
Step 3



Click to Enlarge
Secure the filter's position using one of the provided retaining rings and three screws as shown above. Use M2 x 8 for filters 6.0 - 6.3 mm thick and correspondingly shorter screws for thinner filters.

PIN DIAGRAMS

Motor Connector
D-type Male



Pin	Description	Pin	Description	Pin	Description
1	Limit Switch Ground	6	Phase A -ve	11	Not Connected
2	Not Connected	7	Phase A +ve	12	Not Connected
3	C/W Limit Switch	8	Not Connected	13	+ 5 V DC
4	Phase B -ve	9	Not Connected	14	Not Connected
5	Phase B +ve	10	+ 5 V DC	15	Ground/Earth

Motorized Fast-Change Filter Wheel

Part Number	Description	Price	Availability
FW103H/M	Motorized Filter Wheel with High-Current BSC201 Controller, M4 Taps	\$2,138.27	Today
FW103H	Motorized Filter Wheel with High-Current BSC201 Controller, 8-32 Taps	\$2,138.27	Today