Piezo Actuator for Objective Lens | SFS-OBL (Upright)/SFAI-OBL | RoHS | CE (SFS-OBL-1 only) | Catalog Code W9056

Objective lens actuators for upright inverted microscope employing piezo element actuator and digital sensor for feedback.


- Compact package for smooth integration into existing microscopes.
- Designed for high-speed, high-resolution positioning.
- Open loop travel is 100μm, closed loop travel is 80μm. Compared to the open-loop control, the maximum travel of closed-loop control will be less about 10%.
- Each model can be installed on a variety of upright or inverted microscopes. Thread inserts make it easy to integrate with different manufacturer's standard threads.
- As in the case of the Sigma fine stage series, these actuators can be driven with the controller (FINE-01γ/503(CL)). Recommended controllers are the FINE series controllers.
  WEB Reference Catalog Code W9057

Guide

▶ Threaded inserts compatible with a variety of manufacturers' objective lenses are also available(Reference ▶ OBL-ADP).
▶ The SFS-OBL-2 uses a metal enclosure type piezo actuator for higher duty cycles and longer life in industrial environments.

Outline Drawing

SFS-OBL-1

SFS-OBL-2

SFAI-OBL-1R

2D CAD 3D CAD

[Accessory] Special adapter
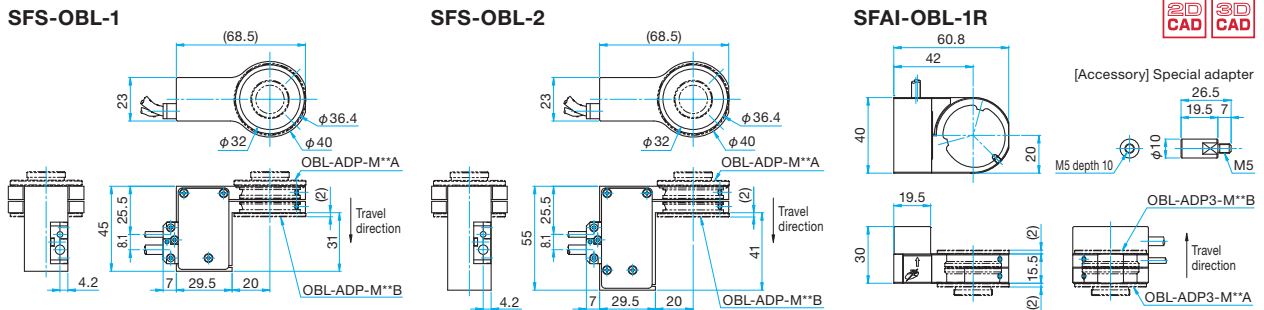
Specifications

Part Number	CE SFS-OBL-1	SFS-OBL-2	SFAI-OBL-1R
Travel (at open-loop control)	100μm±15%	100μm±15%	100μm±15%
Objective Lens Diameter [mm]	Diameter φ39 or less	Diameter φ39 or less	Diameter φ39 or less
Dimensions [mm]	(W)75.5 × (H)45 × (D)40	(W)75.5 × (H)55 × (D)40	(W)60.8 × (H)30 × (D)40
Actuator	Piezo element	Piezo element	Piezo element
Weight [kg]	0.15	0.24	0.15
Theoretical Resolution (open-loop) [nm]	1	1	about 0.8
Resolution (closed-loop) [nm]	10	10	10
Straightness (Xy Xz Yx Yz) [μm]	1 or lower	1 or lower	0.2 or lower
Positional Repeatability [μm]	0.1 or lower	0.1 or lower	0.1 or lower
Load Capacity [N]	—	—	4.9 (0.5kgf)
Micro-displacement Sensor	Digital sensor	Digital sensor	Digital sensor
Compatible Adapter	OBL-ADP-**	OBL-ADP-**	OBL-ADP3-**
Accessories	Cable (2m)	Cable (2m)	Cable (2m), four special lift spacers

Objective Lens Adapters

Adapters to mount the Piezo Actuator for Objective Lens (SFS-OBL, SFAI-OBL) to a variety of microscopes and objectives.

OBL-ADP-M✻✻A

OBL-ADP-M✻✻B

OBL-ADP3-M✻✻A

OBL-ADP3-M✻✻B
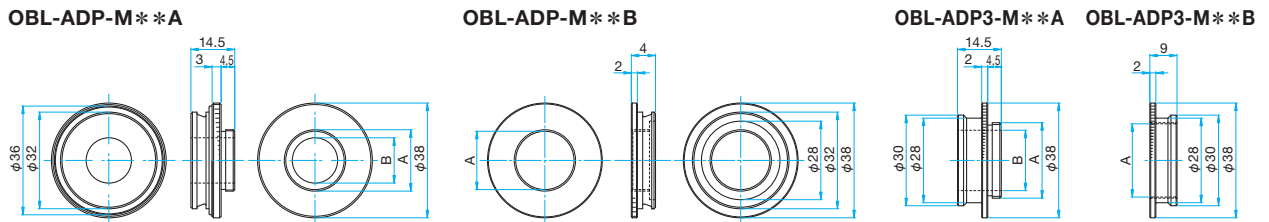
SFS-OBL Compatible Adapters

Part Number	Mounting Screw Size [mm]	A [mm]	B [mm]
OBL-ADP-M20.32A	Microscope side M20.32	M20.32 P=0.706 (W0.8×1/36)	15
OBL-ADP-M20.32B	Objective lens side M20.32	M20.32 P=0.706 (W0.8×1/36)	—
OBL-ADP-M25.0A	Microscope side M25.0	M25.0 P=0.75	20
OBL-ADP-M25.0B	Objective lens side M25.0	M25.0 P=0.75	—
OBL-ADP-M26.0A	Microscope side M26.0	M26.0 P=0.706 (W26.0×1/36)	21
OBL-ADP-M26.0B	Objective lens side M26.0	M26.0 P=0.706 (W26.0×1/36)	—

SFAI-OBL Compatible Adapters

Part Number	Mounting Screw Size [mm]	A [mm]	B [mm]
OBL-ADP3-M20.32A	Microscope side M20.32	M20.32 P=0.706 (W0.8×1/36)	15
OBL-ADP3-M20.32B	Objective lens side M20.32	M20.32 P=0.706 (W0.8×1/36)	—
OBL-ADP3-M25.0A	Microscope side M25.0	M25.0 P=0.75	20
OBL-ADP3-M25.0B	Objective lens side M25.0	M25.0 P=0.75	—
OBL-ADP3-M26.0A	Microscope side M26.0	M26.0 P=0.706 (W26.0×1/36)	21
OBL-ADP3-M26.0B	Objective lens side M26.0	M26.0 P=0.706 (W26.0×1/36)	—

HOURS
www.hours-web.com

SFS Controllers │ FINE

RoHS
(FINE-01γ only)

Catalog Code W9057

Single axis and three axis controllers for SFS series Piezo actuators.

FINE-01γ

FINE-503(CL)

- Closed loop control with built in error compensation to correct hysteresis curve unique to each piezo.
- External control using a PC and manual operation with dedicated controller (CJ-200A).
- In addition to PC control and manual operation, the FINE-01γ includes an analog signal input for high-speed analog control.

Part Name	Part Number
1 axis SFS Controller with Analog Input Function	**FINE-01γ(✻✻)**
3 axes SFS Controller	**FINE-503(✻✻)**
Control Pad	**CJ-200A**
FINE Cable	**FINE-CA-3**
DS Cable	**DS1-CA-3**
BNC-BNC Cable	**SKBNC-BNC-3.0**

■Primary Functions

Part Number	FINE-01γ(✻✻)	FINE-503(✻✻)
Controller Function	○	
Number of Control Axes	1	3
Stored Program Control	○	
Feedback Control	Digital sensor	

■General Specifications

Power Voltage	(CL) AC100V ±10% (UL) AC120V ±10% (CE) AC230V ±10% 50/60Hz
Power Consumption	50VA
Operating Temperature	10 – 30°C
Storage Temperature	–20 – 60°C
Ambient Humidity	20 – 80%RH (without condensation)
External Dimensions (W×H×Dmm)	225×118×250 / 270×118×297
Weight (kg)	3.5 / 5.3

■Interface

GP-IB	—	○
RS232C	○	
USB	○	
Analog input	○	—

■Optional

CJ-200A		○
SKBNC-BNC-3.0	○	—

■Performance Specifications

Coordinate Indication Range	±999,999nm
Max. Travel to Set	±999,999nm

■Control Command

Machine Origin Return	○
Theoretical Origin Setting	○
Relative Position Drive	○
Absolute Position Drive	○
Jog Operation	○
Position Appointment	—
Circular Interpolation Control	—
Linear Interpolation Control	—
Drive	○
Deceleration Stop	—
Emergency Stop	—
Speed Setting	○
Motor Free/Hold	—
Port Input	—
Port Output	—

SFS Software

Free Software │ SG Sample (for RS232C) Windows® Version

Free software is available to operate your controller easily from a PC. Each axis of a connected motorized stage can be moved using buttons on the screen. The software can be downloaded from our website.
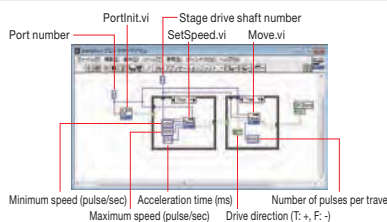
(1) Speed specification (2) Homing control (3) Travel control
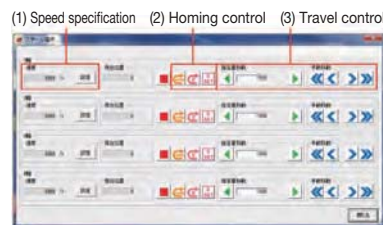
Simple operations are possible such as travel by specifying an axis, homing or jog operation.

Controllers such as SHOT-30*/702 and FINE-**, which have a built-in program function, allow editing of programs from a PC. Since data can be downloaded/uploaded from/to Excel sheets, it is easy to edit programs. In addition, upload of memory switch or download mode is available.

Free Application
LabVIEW (for v.5.1/v.6i/v.7.1/v.8.6/v.2010/v.2012/v.2013/v.2014/v.2015) RS232C/GP-IB

LabVIEW application is available for LabVIEW users.

Port number
PortInit.vi — Stage drive shaft number
SetSpeed.vi Move.vi

Minimum speed (pulse/sec) Acceleration time (ms) Number of pulses per travel
Maximum speed (pulse/sec) Drive direction (T: +, F: -)

Other: 30 Day Trial Version (SGADVANCEE)

Trial Version

Using SGADVANCEE makes it is possible to easily build measurement and control systems for a wide variety of measurement environments.
Installing the trial version will require entering a serial number. The serial number for the trial version is shown on the download page.
▶WEB Reference http://www.global-optosigma.com/en_jp/software/product-download_en.html

SG ADVANCE for Windows
SIGMAKOKI

HOURS
www.hours-web.com