

Stepping motor type objective lens actuator provides much longer travel than Piezo type actuators.



- The 5-phase stepping motor can be connected to any of our standard stepping motor controllers.
- With a compact and high resolution design this is best suited for incorporation into a microscope lens tube or an auto focus system.
- Can be used for upright type and inverted type microscopes.

#### 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.

#### Attention

- ▶ A set of adapters (not included) is required for mounting the actuator on a microscopes and to attach an objective lens to the actuator.

Specifications			
Part Number		SGSP-OBL-3	
Mechanical Specifications	Travel [mm]	3	
	Stage Size [mm]	(Mounted adapter)	
	Feed Screw	Precision ground screw $\phi$ 6mm, 0.5mm lead	
	Positioning Slide	Crossed roller guide	
	Stage Material	Aluminum	
	Finish	White anodized	
	Weight [kg]	0.4	
Accuracy Specifications	Resolution	(Full) [ $\mu$ m/pulse]	1
		(Half) [ $\mu$ m/pulse]	0.5
	MAX Speed [mm/sec]	1	
	Positioning Accuracy [ $\mu$ m]	5	
	Positional Repeatability [ $\mu$ m]	2	
	Load Capacity [N]	4.9 (0.5kgf)	
	Moment Stiffness [ $^{\circ}$ /N·cm]	—	
	Lost Motion [ $\mu$ m]	2	
	Backlash [ $\mu$ m]	1	
	Parallelism [ $\mu$ m]	—	
	Running Parallelism [ $\mu$ m]	2	
Pitch [ $^{\circ}$ ] / Yaw [ $^{\circ}$ ]	15/15		
Sensor	Sensor Part Number	Micro photo sensor: GP1S092HCPI (Sharp Corporation)	
	Limit Sensor	Equipped (NORMAL CLOSE)	
	Origin Sensor	None	
	Proximity Origin Sensor	None	

Motor / Sensor Specifications		
Motor	Type	5-phase stepping motor 0.35A/phase (Oriental Motor Co., Ltd.)
	Motor Part Number	PK513PA-C21 (□20mm)
	Step Angle	0.72 $^{\circ}$
Sensor	Power Voltage	DC+5V - +24V $\pm$ 10%
	Current Consumption	40mA or lower (20mA or lower per sensor)
	Control Output	NPN open collector output DC 30V or lower, 50mA or lower
	Output Logic	In the case of light shielded ,output transistor OFF (No conduction): Limit sensor

Compatible Driver / Controller		
Control System	Compatible Driver	SG-5MA, MC-S0514ZU, SG-514MSC
	Compatible Controller	GSC-01, GSC-02, SHOT-702, GIP-101, SHOT-302GS, SHOT-304GS, HIT-M-HIT-S, PGC-04-U

Application Systems

Optics &amp; Optical Coatings

Opto-Mechanics

Bases

Manual Stages

Actuators &amp; Adjusters

Motorized Stages

Light Sources &amp; Laser Safety

Index

Guide

Controllers/Drivers

Softwares

Stepping Motor

AC Servo Motor

Cables

Piezo

X Translation

Theta Rotation

Goniometer

Vacuum

Options

40 x 40 mm

60 x 60 mm

80 x 80 mm

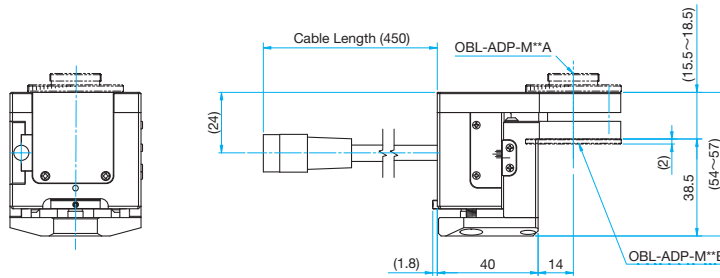
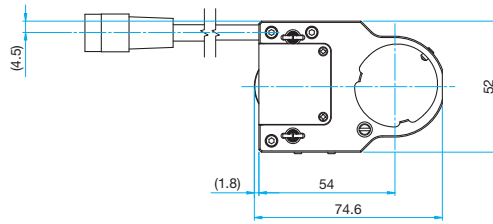
85 x 85 mm

100 x 100 mm

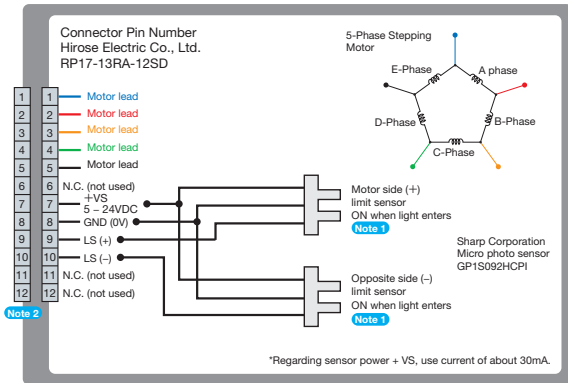
120 x 120 mm

Others

Outline Drawing



Connection Diagram



Note 1 The motor side limit sensor is the + direction limit sensor. Motorized stages are not fitted with proximity origin sensors. Limit sensors are used as origin detection sensors.

Note 2 Compatible cable connector: Hiros Electric Co., Ltd. RP17-13PA-12PC/RP17-PC-122

Compatible Controllers / Drivers and Cables

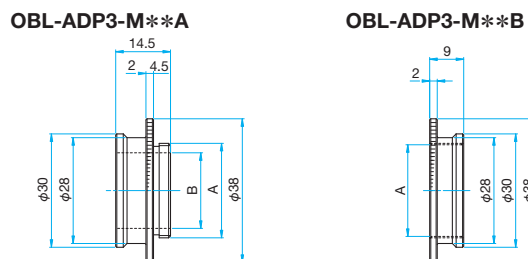
Controller	Cable	Stage
<ul style="list-style-type: none"> <li>GSC-01 [1 axis]</li> <li>GSC-02 [2 axes]</li> <li>SHOT-702 [2 axes]</li> <li>HSC-101 [1 axes]</li> <li>SHOT-302GS [2 axes]</li> <li>SHOT-304GS [4 axes]</li> <li>HIT-M-HIT-S [8 axes]</li> <li>PGC-04-U [4 axes]</li> </ul> <p>Reference G108 - G117</p>	<p>D15RP-CA Reference G120</p>	<p>SGSP-OBL</p>
<p>Drivers</p> <p>Reference G020 - G021</p>	<p>MINI-CA-SG Reference G120</p>	

Objective Lens Adapters

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



Outline Drawing



Specifications

Part Number	Mounting Screw Size [mm]	A [mm]	B [mm]
OBL-ADP3-M20.32A	Microscope side M20.32	M20.32 P=0.706 (W0.8x1/36)	15
OBL-ADP3-M20.32B	Objective lens side M20.32	M20.32 P=0.706 (W0.8x1/36)	—
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 (W26.0x1/36)	21
OBL-ADP3-M26.0B	Objective lens side M26.0	M26.0 P=0.706 (W26.0x1/36)	—

Application Systems

Optics & Optical Coatings

Opto-Mechanics

Bases

Manual Stages

Actuators & Adjusters

MotORIZED Stages

Light Sources & Laser Safety

Index

Guide

Controllers/Drivers

Softwares

Stepping Motor

AC Servo Motor

Cables

Piezo

X Translation

Theta Rotation

Goniometer

Vacuum

Options

40 x 40 mm

60 x 60 mm

80 x 80 mm

85 x 85 mm

100 x 100 mm

120 x 120 mm

Others