

User Manual

MODEL 889x

Motorized Flipper Optical Mounts



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Original instructions.

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Warranty

MKS Instruments, Inc. warrants that this product will be free from defects in material and workmanship and will comply with MKS published specifications at the time of sale for a period of one year from date of shipment. If found to be defective during the warranty period, the product will either be repaired or replaced at MKS option.

To exercise this warranty, write or call your local MKS office or representative. You will be given prompt assistance and return instructions. Send the product, freight prepaid, to the indicated service facility. Repairs will be made, and the instrument returned freight prepaid. Repaired products are warranted for the remainder of the original warranty period or 90 days, whichever occurs last.

Limitation of Warranty

The above warranties do not apply to products which have been repaired or modified without MKS written approval, or products subjected to unusual physical, thermal or electrical stress, improper installation, misuse, abuse, accident or negligence in use, storage, transportation or handling.

THIS WARRANTY IS IN LIEU OF ALL OTHER WARRANTIES, EXPRESSED OR IMPLIED, INCLUDING ANY IMPLIED WARRANTY OF MERCHANTABILITY OR FITNESS FOR A PARTICULAR USE. MKS INSTRUMENTS, Inc. SHALL NOT BE LIABLE FOR ANY INDIRECT, SPECIAL, OR CONSEQUENTIAL DAMAGES RESULTING FROM THE PURCHASE OR USE OF ITS PRODUCTS.

Preface

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Reservation of Title

The MKS Instruments, Inc. Programs and all materials furnished or produced in connection with them ("Related Materials") contain trade secrets of MKS and are for use only in the manner expressly permitted. MKS claims and reserves all rights and benefits afforded under law in the Programs provided by MKS.

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SERVICE INFORMATION

The user should not attempt any maintenance or service of the present product and its accessories beyond the procedures outlined in this manual. Any problem that cannot be resolved should be referred to MKS I Newport. When calling MKS I Newport regarding a problem, please provide the Tech Support representative with the following information:

- Your contact information.
- System serial number or original order number.
- Description of problem.
- Environment in which the system is used.
- State of the system before the problem.
- Frequency and repeatability of problem.
- Can the product continue to operate with this problem?
- Can you identify anything that may have caused the problem?

MKS | NEWPORT RMA PROCEDURES

Any product being returned to MKS I Newport must have been assigned an RMA number by Newport. Assignment of the RMA requires the item serial number.

PACKAGING

Materials being returned under an RMA must be securely packaged for shipment. If possible, reuse the original factory packaging.

1 Safety Information

1.1 Safety Procedures and Precautions

The following general safety precautions must be observed during all phases of operation of this instrument. Failure to comply with these precautions or with specific warnings elsewhere in this manual violates safety standards of design, manufacture and intended use of the instrument and may impair the protection provided by the equipment. MKS Instruments, Inc. assumes no liability for the customer's failure to comply with these requirements.

DO NOT SUBSTITUTE PARTS OR MODIFY INSTRUMENT

Do not install substitute parts or perform any unauthorized modification to the instrument. Return the instrument to an MKS I Newport Service Center for service and repair to ensure that all safety features are maintained.

SERVICE BY QUALIFIED PERSONNEL ONLY

Operating personnel must not remove instrument covers. Component replacement and internal adjustments must be made by qualified service personnel only.

1.2 Symbols Used in This Instruction Manual

Definitions of, NOTE, CAUTION, WARNING and DANGER messages used throughout the manual.

NOTE

The NOTE sign denotes important information. It calls attention to a procedure, practice, condition, or the like, which is essential to highlight.

CAUTION

The CAUTION sign denotes a hazard. It calls attention to an operating procedure, practice, or the like, which, if not correctly performed or adhered to, could result in damage to or destruction of all or part of the product.

WARNING

The WARNING sign denotes a hazard. It calls attention to a procedure, practice, condition, on the like, which, if not correctly performed or adhered to, could result in injury to personnel.

DANGER

The DANGER sign Indicates an imminently hazardous situation that, if not avoided, will result in death or serious injury.

1.3 Symbols Found on the Unit

The following are symbols that may be found on the unit.

1.3.1 Waste Electrical and Electronic Equipment (WEEE) Mark



This symbol on the product or on its packaging indicates that this product must not be disposed with regular waste. Instead, it is the user responsibility to dispose of waste equipment according to the local laws. The separate collection and recycling of the waste equipment at the time of disposal will help to conserve natural resources and ensure that it is recycled in a manner that protects human health and the environment. For information about where the user can drop off the waste equipment for recycling, please contact your local MKS | Newport representative.

1.4 Warnings

WARNING

Do not attempt to operate this equipment if there is evidence of shipping damage or you suspect the unit is damaged. Damaged equipment may present additional hazards to you. Contact MKS | Newport technical support for advice before attempting to plug in and operate damaged equipment.

WARNING

The Flipper mount is intended for use **ONLY** with Newport® provided handpad. Connection of other devices to the motor may cause damage to the unit or the connected device, fire, and/or personal injury.

1.5 Cautions

CAUTION

Do not leave this stage in places subject to extremely high temperatures or low temperatures.

- Operating temperature: +10 to +40 °C, 50% RH max.
- Storage temperature: -40 to +85 °C, 50% RH max. (in its original packaging)
- Storage/Operating altitude: 1000 m

CAUTION

There are no user serviceable parts inside the device. Work performed by persons not authorized by MKS | Newport will void the warranty.

CAUTION

Be careful that the stage is not bumped when it is being carried. This may cause it to malfunction.

2 Introduction

This manual provides operating instructions for the Motorized Flipper Optical Mounts that you have purchased in the Model 889x Series:

Model
Standard
8892-K, 8892-K-M
8893-K, 8893-K-M



8892-K



8893-K

Some Model 889x Motorized Flipper Optical Mounts.

3 Description

The 889x Motorized Flipper Mounts allow you to remotely flip a 1.0 inch (25.4 mm) or 2.0 inch (50.8 mm) diameter optic in and out of your beam path with a transit time of less than half a second. Originally designed for demanding commercial applications, the Model 889x motorized Flipper mounts offer excellent stability and repeatability. Optic tilt is adjusted with our precision 80 pitch Allen-key screws, and locking nuts preserve your settings during flips. The Flipper mount's included hand pad lets you control it from a distance with your thumb, or you can control it even more remotely via its TTL interface.

4 Specifications

Model	8892-K	8892-K-M	8893-K	8893-K-M
Type	Flipper Mount			
Optic diameter	25.4 mm		50.8 mm	
Drive Type	Motorized			
Thread type	8-32	M4	8-32	M4
Angular range	± 2°			
Repeatability	Better than 25 μrad			
Remote	TTL or Handpad control			

POWER SUPPLY

Standard:

9 V Battery (included with Flipper). The low power indicator light blinks when the battery is low.

Number of Flips per Battery: 1000 over a 6 month period, or 2000 over a 3 month period.

Optional:

DC IN external power supply: 9 VDC, 300–500 mA, 2.1 mm plug 

TTL SIGNAL

Positive edge = up 

Negative edge = down 

Push button overrides TTL signal. 2.5 mm plug 

5 Installation

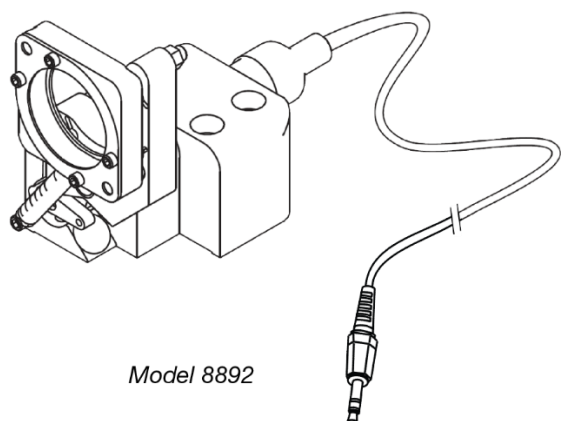
5.1 Unpacking

The Motorized flipper mounts are delivered in packaging designed for safe transport. Carefully remove the product from packaging.

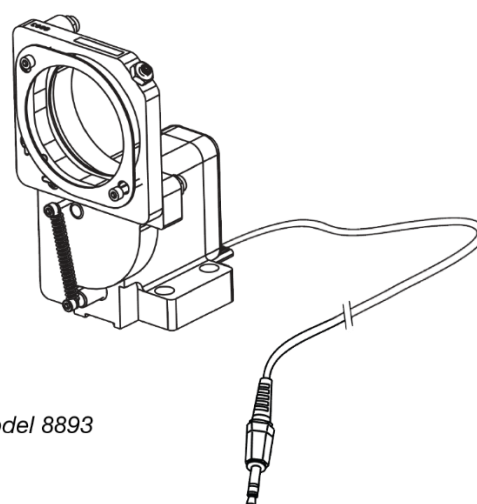
CAUTION

Pay attention the stage does not fall and is not bumped during handling.

5.2 Content

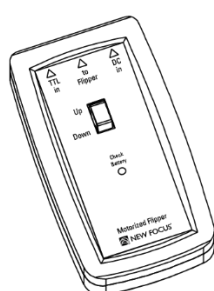


Model 8892



Model 8893

Motorized Flipper



Flipper Handpad



9-Volt Battery



2.1 mm Plug For
DC Power Input



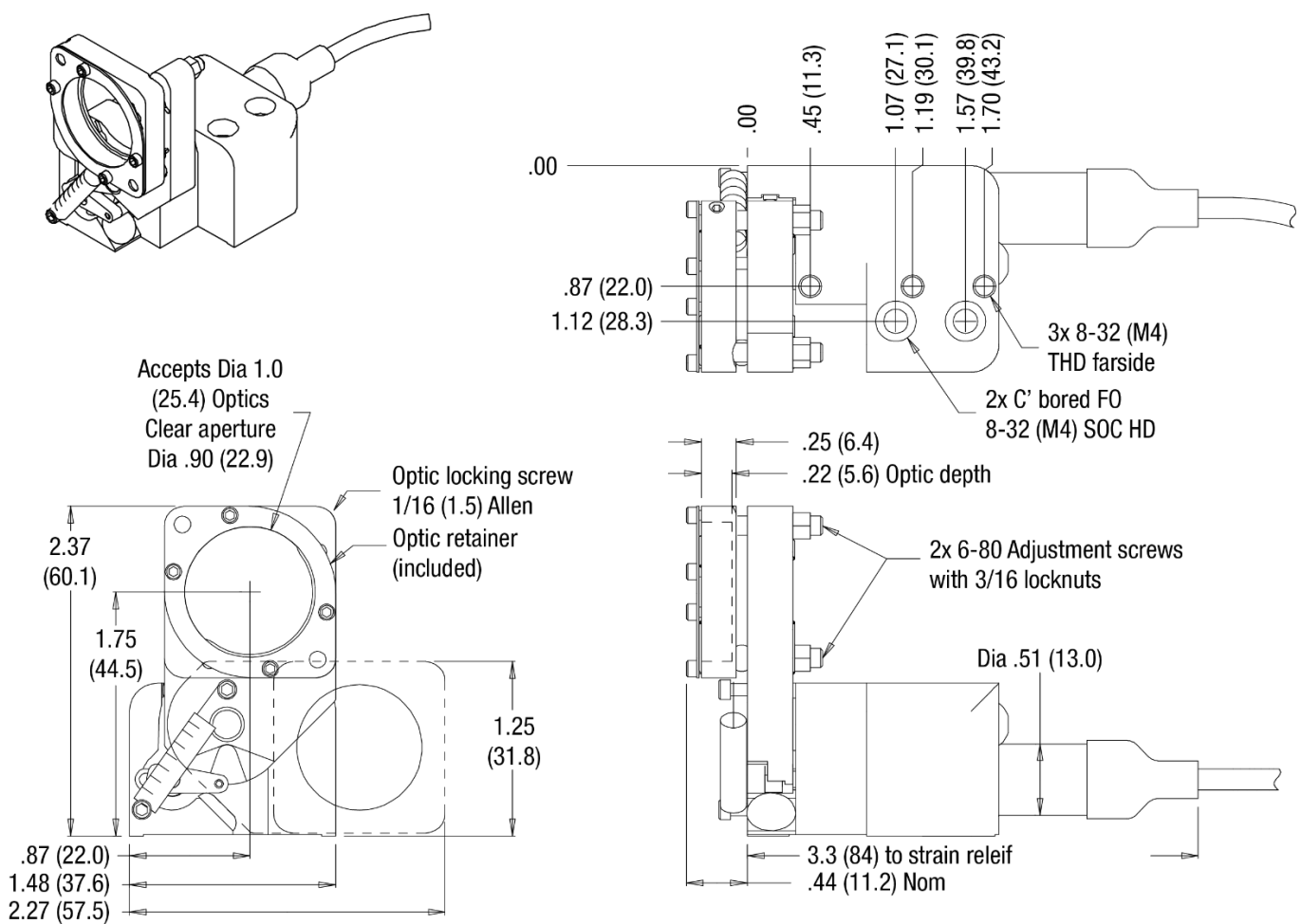
2.5 mm Plug For
DC TTL Input

5.3 Mounting the stage

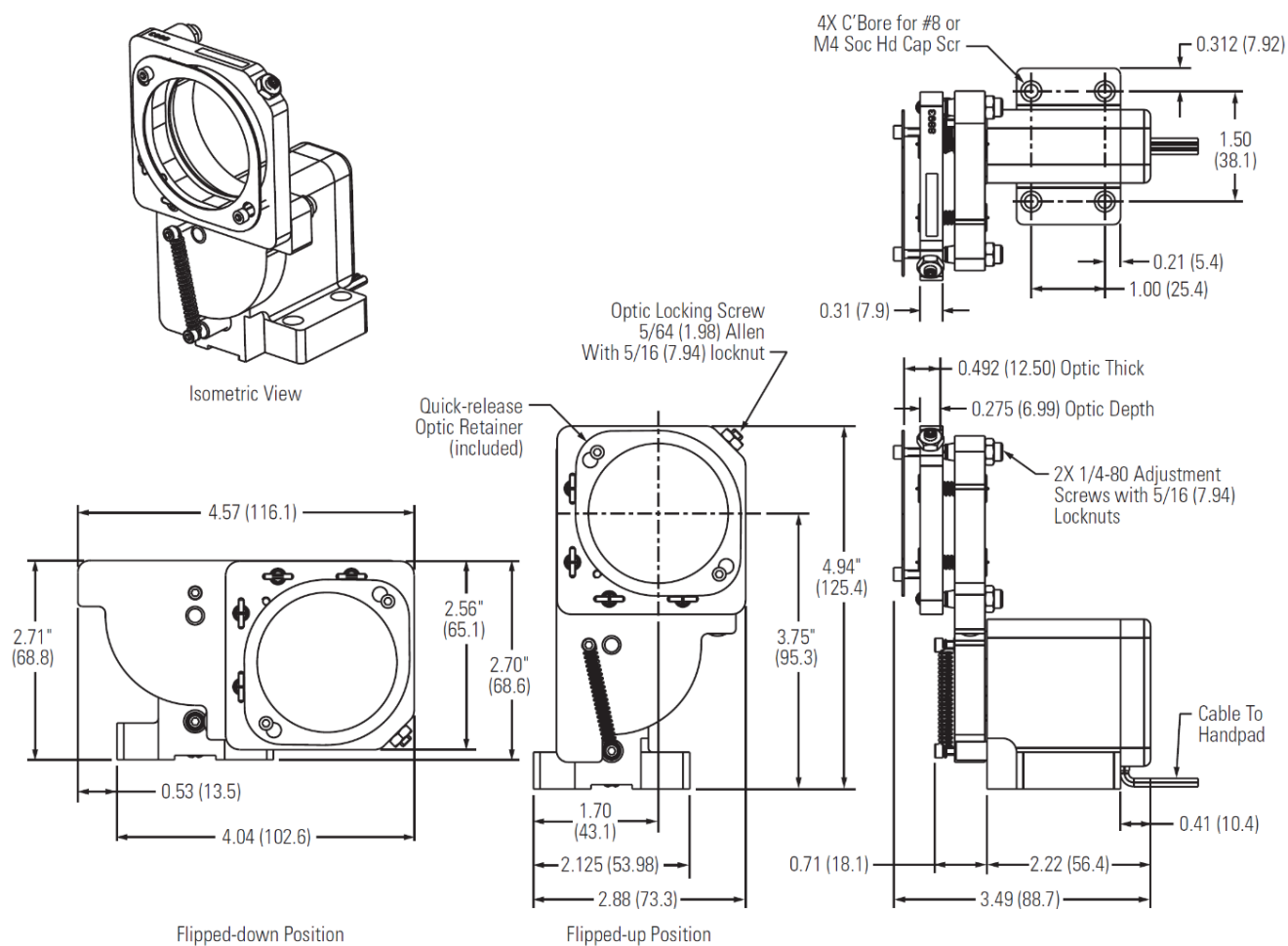
Refer to mechanical drawings for interface descriptions.

Thicker optics (up to 5 mm for 8892 and >6 mm for 8893) can be held with a nylon-tipped setscrew or with the included retaining ring. Thin optics must be adhered into place.

MODEL 8892



MODEL 8893



6 Connection to Newport™ handpad

NOTE

Model 889x Motorized Optical Mounts are intended to be used with Newport™ provided handpad.

6.1 Getting started

Take the handpad and remove the battery cover on the back. Insert the included 9 V battery (carefully noting polarity) into the battery compartment and replace the cover. Plug the control cable into the “to Flipper” connector on the handpad. Use the switch on the handpad to flip the Flipper up and down.

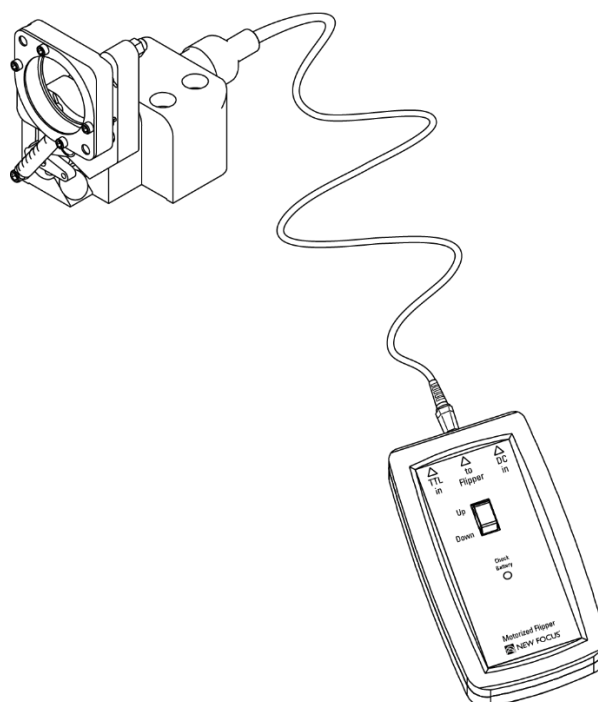
6.2 TTL input

The Flipper can be controlled using a TTL-compatible signal (5 V high and 0 V low) applied to the edge-sensitive “TTL-in” port on the handpad. A rising edge (low-to-high transition) raises the Flipper while a falling edge (high-to-low transition) lowers the Flipper. A 2.5 mm plug is included that allows you to make your own cable for TTL control.

Since the handpad switch overrides the TTL input, we recommend that you send a rising edge signal before you start your experiment to verify that the Flipper is in the up position.

6.3 Power source

The Flipper comes with a 9 V battery. When the 9 V battery runs low, the check battery indicator on the handpad will flash. You can also power the Flipper with any DC power supply that meets the specifications stated previously. The included 2.1 mm plug lets you make your own power cable.



7 Maintenance

NOTE

Please contact Technical Sales Support team for recommendations on application specific maintenance.

7.1 Maintenance

The motorized flipper mounts requires no particular maintenance. Nevertheless, this is a precision mechanical device that must be kept and operated with caution.

CAUTION

The motorized flipper mounts must be used or stocked in a clean environment, without dust, humidity, solvents or other substances.

CAUTION

Do not clean with solvent. If you need to clean the stage, wipe it with a clean, dry, lint-free cloth.

CAUTION

Do not apply lubricant to the stage.

7.2 Repair

CAUTION

Never attempt to disassemble a component of the stage that has not been covered in this manual.

To disassemble a non-specified component can cause a malfunction of the stage.

If you observe a malfunction in your stage, please contact us immediately to arrange for a repair.

CAUTION

Any attempt to disassemble or repair a stage without prior authorization will void your warranty.

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