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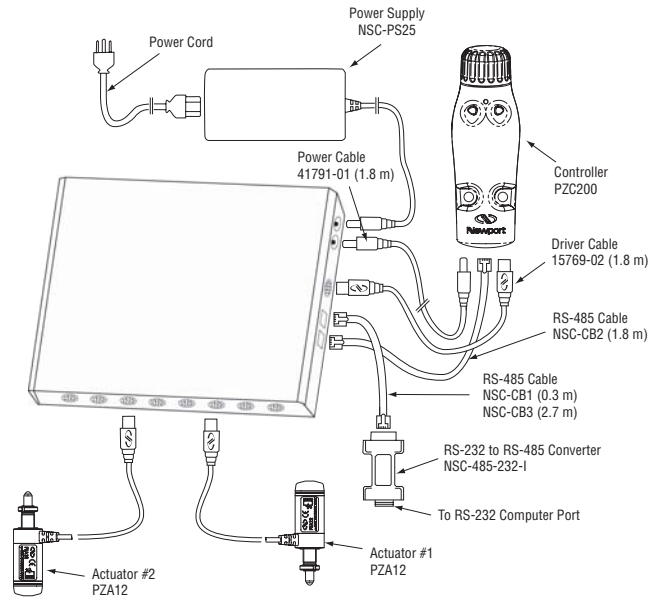
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Connection diagram for several actuators and one controller with switchbox and with computer interface.

LTA Series Precision Motorized Actuators



- Up to 50 mm travel in a space saving design
- Non-rotating tip improves motion smoothness and has no wear
- Exceptional position sensitivity
- Adjustable limit switch prevents damage from over-travel
- Convenient manual positioning knob

LTA's are designed to fit into your existing manual stages and other opto-mechanical components as a direct replacement for manual micrometers.

The LTA series features a space-saving design with the motor and lead screw side-by-side. This reduces the actuator length by 50% and minimizes the negative effects of long cantilever loads on micro-positioning equipment. The non-rotating tip prevents wear and avoids periodic motion variations which can be caused by variable contact made between a rotating tip and the mating surface.

Precision motion is accomplished by a miniature DC servo motor with an optimized output torque. This allows for faster motion with higher load capacity. The LTA-HL is recommended

for heavy load applications. It features a strong, 8 mm diameter rod and a M12-0.5 mounting bezel that is compatible with our UMR8 and MVN80 linear stages (see page 865 and 869, respectively). The LTA-HS is optimized for high-speed applications and provides the longer travel range. The mounting interface of the LTA-HS is compatible with a large number of Newport and others manual components.

A movable limit switch prevents equipment from over-travel. The switches position can be changed in minutes to adjust the maximum travel position. A manual adjustment knob permits quick positioning of the actuator while the motor is off. Convenient laser marked scales indicate coarse actuator position in both millimeters and inches.

TECHNICAL REFERENCE

MANUAL LINEAR STAGES

MANUAL ROTATION STAGES

MANUAL ACTUATORS

MOTORIZED LINEAR STAGES

MOTORIZED ROTATION STAGES

MOTORIZED ACTUATORS

CONTROLLERS AND AMPLIFIERS

SYSTEMS

Design Details

Base Material	Stainless steel body with aluminum cover
Drive Mechanism	Non-rotating lead screw (rotating nut)
Drive Screw Pitch (mm)	1.0
Reduction Gear	HL Version 1:66
	HS Version 1:14
Feedback	Motor mounted rotary encoder, 2048 cts/rev.
Limit Switches	Mechanical switches, both ends, max. travel limit is adjustable
Origin	Uses minimum travel limit for homing, typically <4 μm repeatability
Motor	UE1724SR
Cable Length (m)	3
Vacuum Compatibility	Vacuum compatible versions are available up to 10 ⁻⁶ hPa. Maximum axial load, speed and acceleration are divided by two. Cable length is 1.5m
MTBF	h at 25N load and a 10% duty cycle 10,000
Weight [lb (kg)]	LTA-HL 0.90 (0.41)
	LTA-HS 0.84 (0.38)

Specifications

	LTA-HS	LTA-HL
Travel (mm)	50	25
Resolution (μm)	0.035	0.0074
Minimum Incremental Motion (μm)	0.1	0.05
Uni-directional Repeatability (μm)	0.15 typical, 0.5 guaranteed	0.15 typical, 0.5 guaranteed
Bi-directional Repeatability (μm)*	0.6 typical, 2 guaranteed	0.6 typical, 2 guaranteed
On-Axis Accuracy (μm)	5 typical, 15 guaranteed	2 typical, 8 guaranteed
Maximum Speed (mm/s)	5	1
Axial Load Capacity (N)**	50	120
Side Load Capacity**	5	20

* After backlash compensation. Backlash compensation value provided with each actuator.

** Avoid side loads during motion

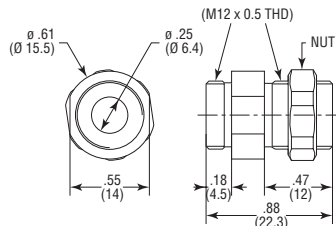
See the Metrology Tutorial Section (see page 845) for more information on typical and guaranteed specifications

Ordering Information

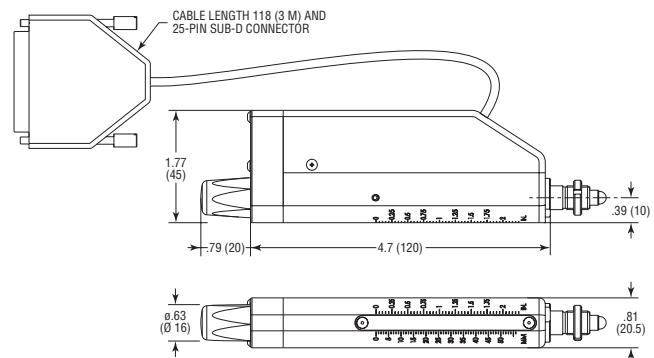
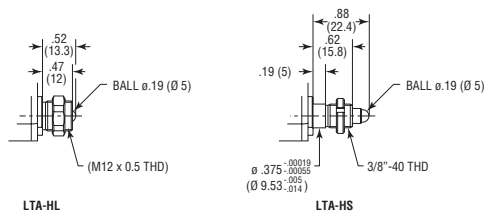
Description	Model
Motorized actuator, high speed version, 0-50 mm travel	LTA-HS
Motorized actuator, high load version, 0-25 mm travel	LTA-HL
LTA-HS Actuator, vacuum compatible to 10 ⁻⁶ hPa	LTA-HSV6
LTA-HL actuator, vacuum compatible to 10 ⁻⁶ hPa	LTA-HLV6
M12-0.5 mounting adapter for LTA-HS to URM8, MVN80 and SL products	LTA-M12

Dimensions

Model LTA-M12



Model LTA-HS



The LTA Series actuator is compatible with most standard Newport manual stages and opto-mechanical components like the 426 Series translation stage.

Motion Controller Options

For optimum performance and seamless compatibility, we recommend using one of the following Motion Controllers/Drivers:

Model
XPS (page 1009)
ESP300 (page 1018)
SMC100CC (page 1020)



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