

PIFOC Objective Scanning System 2000 μm

Nanometer Resolution and Fast Step-and-Settle



ND72Z2LAQ

- Complete system with digital controller, software, and M32 QuickLock thread adapter
- USB, RS-232
- Sensor resolution 0.5 nm
- Highly dynamic step-and-settle for Z stacks
- Further thread adapters as optional accessory
- Compatible with μ Manager, MetaMorph, and MATLAB
- Parameter changing during operation

Fields of application

- Two-photon microscopy
- Confocal microscopy
- 3-D imaging
- Laser technology
- Interferometry
- Biotechnology
- Micromanipulation
- Autofocus for long travel ranges

Nanometer precision and high feed force with PiezoWalk® walking drives

Several piezo actuators perform a walking motion in the PiezoWalk® walking drive that leads to forward feed of a runner. Control of the actuators allows the smallest step and forward feed motion at a resolution of well under one nanometer.

Highly accurate position measuring with incremental encoder

Noncontact optical encoders measure the position directly at the platform with the greatest accuracy. Nonlinearity, mechanical play or elastic deformation have no influence on the measurement.

Extensive software for rapid start of productive operation

Thanks to support of MATLAB and NI LabVIEW as well as all common operating systems (Windows, Linux, and macOS), integration succeeds in virtually every environment – quickly and efficiently. Sophisticated programming examples and software tools such as PIMikroMove shorten the time to productive operation considerably.

Specifications

	ND72Z2LAQ	Unit	Tolerance
	PIFOC objective scanning system 2000 μm		
Active axes	Z		
Motion and positioning			
Integrated sensor	Optical linear encoder		
Travel range, closed loop	2000	μm	
Min. incremental motion, closed-loop	5	nm	typ.
Mechanical properties			
Step-and-settle time for a 3 μm step at 200 g payload, 100 nm settling band	<20	ms	
Recommended load*	700	g	max.
Drive properties			
Piezo ceramic	NEXACT®		
Miscellaneous			
Operating temperature range	15 to 40	$^{\circ}\text{C}$	
Material	Aluminum		
Mass	290	g	$\pm 5\%$
Cable length	1.5	m	$\pm 10\text{ mm}$
Piezo controller			
	E-861 digital servo (in the scope of delivery)		
Interface / communication	USB, RS-232		
Connector (motor)	HD Sub-D 15		
Connector (sensor)	HD Sub-D 15		
I/O connector	4x digital input (TTL, programmable) 4x digital output (TTL, programmable)		
Command set	PI General Command Set (GCS)		
User software	PIMikroMove		
Software drivers	NI LabVIEW driver, dynamic libraries for Windows and Linux. Supports MATLAB, MetaMorph, $\mu\text{Manager}$		
Supported functions	Wave generator, data recorder, macro programming		
Controller dimensions	160 mm \times 96 mm \times 33 mm		

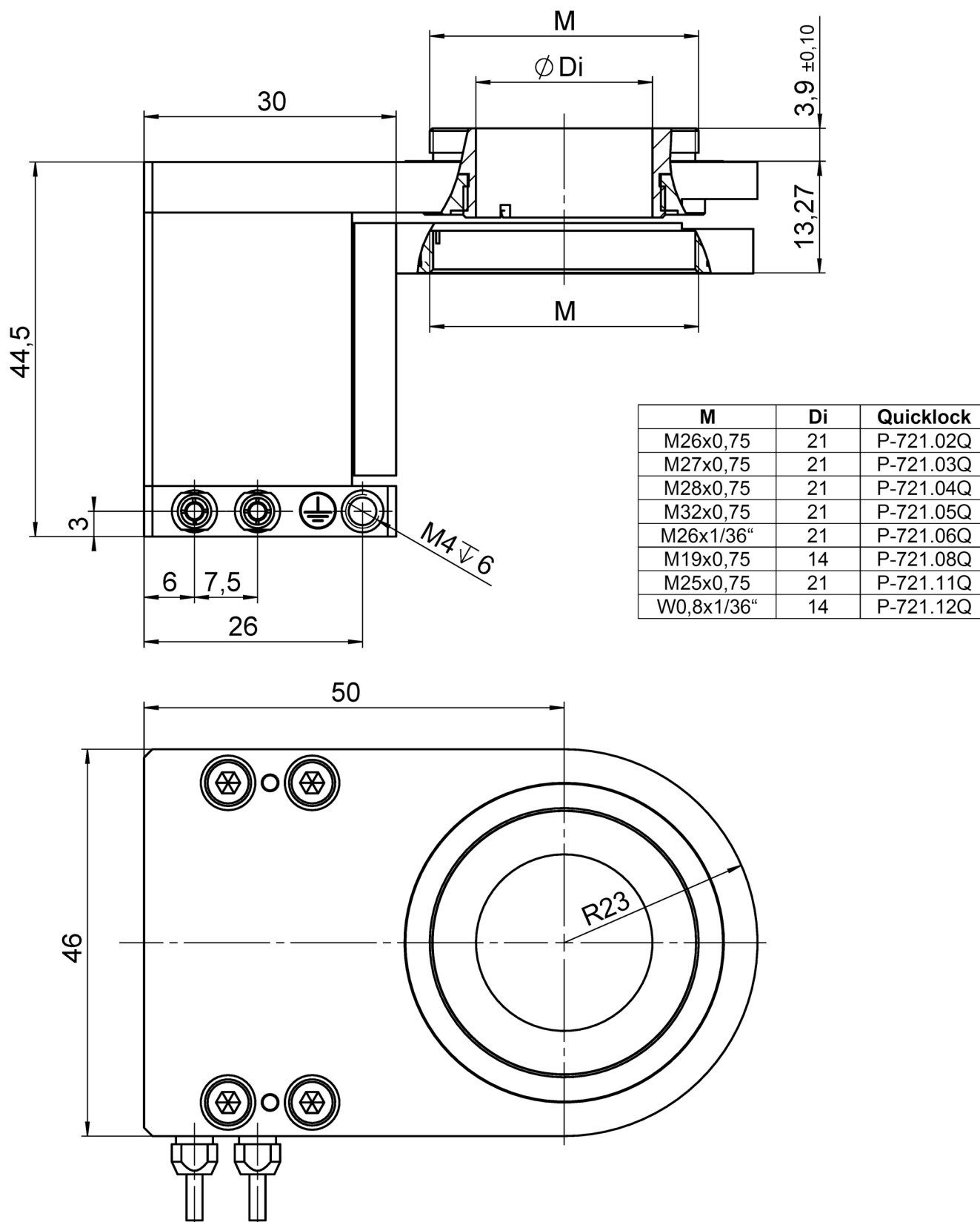
* For dynamic operation. Higher dynamics are possible with a reduced load.

The resolution of the system is limited only by the noise of the amplifier and the measuring technology because PI piezo nanositioning systems are free of friction.

All specifications based on room temperature (22 $^{\circ}\text{C}$ ± 3 $^{\circ}\text{C}$).

Ask about customized versions.

Drawings / Images



N-725.2A with M32 thread adapter, dimensions in mm

Ordering Information

Order as system, including controller

ND72Z2LAQ

PIFOC piezo nanofocusing system with NEXACT® linear drive for long travel ranges, 2 mm, linear encoder, 0.5 nm resolution, M32 QuickLock adapter, with controller

Accessories in the scope of delivery

P-721.05Q

QuickLock thread adapter M32 × 0.75

More accessories

P-721.02Q

QuickLock thread adapter M26 × 0.75

P-721.03Q

QuickLock thread adapter M27 × 0.75

P-721.04Q

QuickLock thread adapter M28 × 0.75

P-721.06Q

QuickLock thread adapter M26 × 1/36"

P-721.08Q

QuickLock thread adapter M19 × 0.75

P-721.11Q

QuickLock thread adapter M25 × 0.75

P-721.12Q

QuickLock thread adapter W0.8 × 1/36"