

special systems

MICI 140

- motion up to 140 μm
- high resonant frequency
- parallelogram construction
- compatible with micrometer screw drives series G from of Qioptiq Photonics

applications:

- quality control
- automation
- fine adjustment of optical components
- micro assembly



fig.: MICI 140

Concept

The elements of the series MICI 140 are well equipped for improving the positioning accuracy of linear stages. They exist of a piezo electrical actuator which in combination with a micrometer screw is mounted on a linear stage. A pre-adjustment is done by the measuring screw and the final fine adjustment is made by the MICI element.

The MICI 140 elements are compatible with Qioptiq Photonics (formal LINOS Photonics) micro- meter screw types G 7.5 x 24, G 7.5 x 16.5, G 10, G 15, G 25, and G 50.

Specials

Especially concerning design and resonant frequency the new systems offer outstanding features: The MICI 140 systems have been developed in a small and compact design, they offer a range of motion of 140 μm in open loop at resonant frequencies of >630Hz.

As an option a positioning sensor guarantees an extreme high positioning stability and high reproducibility.

Piezo actuators also function in cryogenic environment, associated with a decreasing extension behavior.

Mounting/Installation:

1. Remove micrometer screw
2. Mount MICI 140 on linear stage using one of the two tapped holes
3. Screw micrometer screw in MICI 140.

Please note that due to the integration of a MICI 140 system 12mm of the micrometer screw's nominal motion are not available.

Important notes for mounting:

- the maximum travel range of the used micrometer screw drive must be \leq the travel range of the used translation stage. Otherwise the MICI can be damaged by spreading up.
- the max. by the translation stage generated spring force must be smaller than the given push forces generated by the MICI system.!

technical data:

series MICI 140		unit	MICI 140	MICI 140 SG
part no.		-	S-705-00	S-705-01
axis		-	x	
motion open loop ($\pm 10\%$)*		μm	140	
motion closed loop ($\pm 0,2\%$)*		μm	-	100
capacitance ($\pm 20\%$)**		μF	1.7	
Integrated measurement system		-	-	strain gage
resolution open loop***		nm	0.3	
resolution closed loop***		nm	-	5
typ. repeatability		nm	-	7
resonant frequency (w/o microm. drive)		Hz	630	
stiffness		N/ μm	0.3	
max. push forces		N	42	
max. pull forces		N	4	
voltage range		V	-20 ... +130	
connector	voltage	-	LEMO 0S.302	
	sensor	-	-	LEMO 0S.304
cable length		m	1.0	1.2
min. bend radius of cable		mm	>15	
material		-	stainless steel	
dimensions (l x w x h)		mm	47 x 14 x 30.4	
weight (w/o microm. drive)		g	120	125

* typical value measured with NV 40/3 controller (closed loop: NV 40/3 CLE)

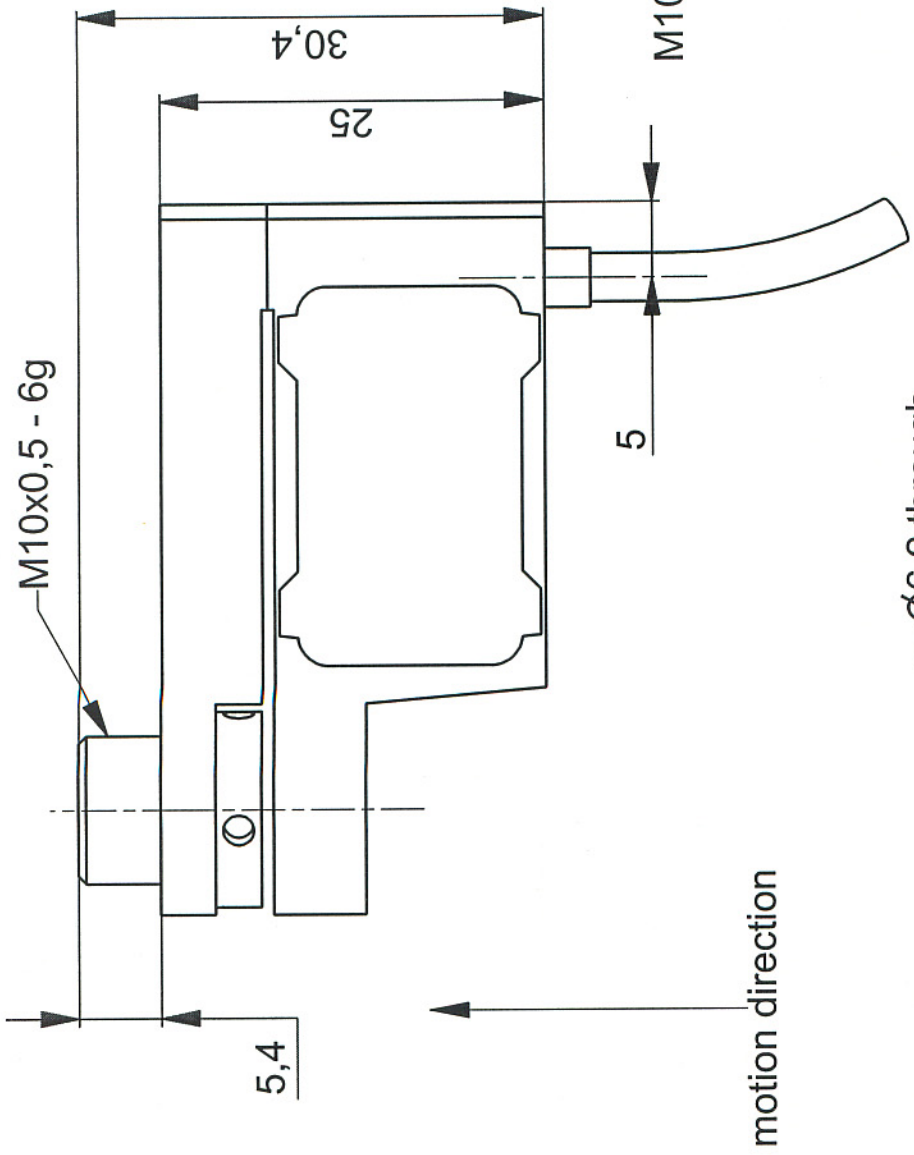
** typical value for small electrical field strength

*** The resolution is only limited by the noise of the power amplifier and metrology.

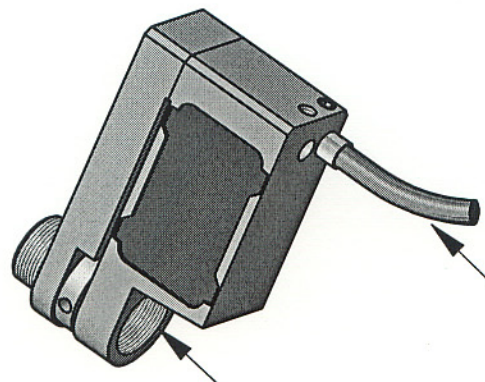
recommended configuration:

actuator	MICI 140 SG	S-705-01
amplifier/controller	NV 40/1 CLE	E-101-73

Please pay attention to our “notes for mounting”, which are available as download on our homepage.



(1:1)

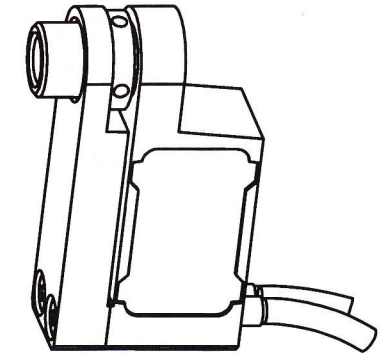
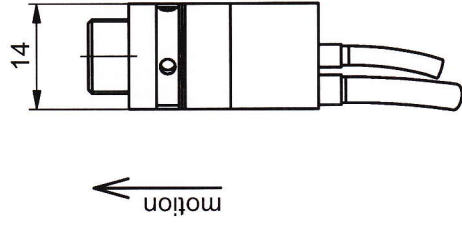
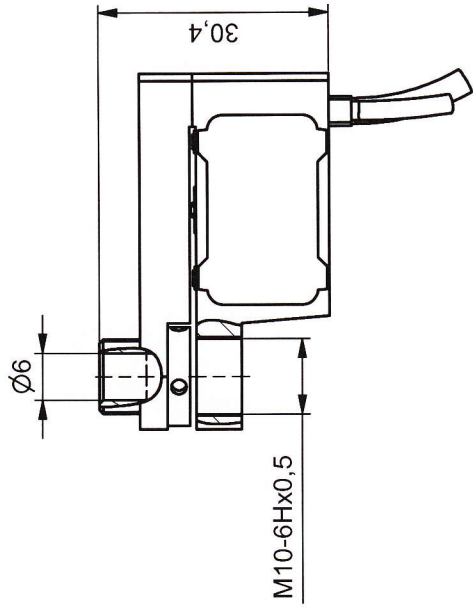
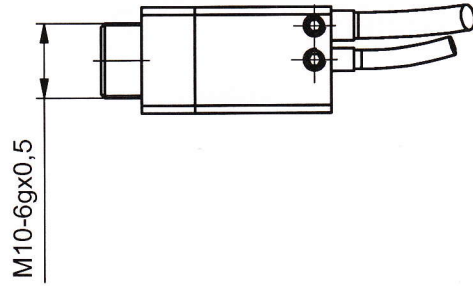
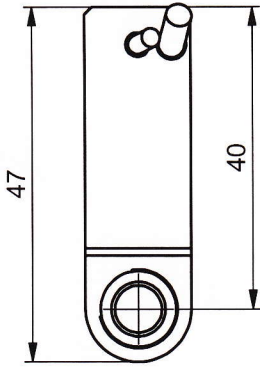


Piezocable 1,0m



motion: 140/100 µm (open/closed loop)
 stiffness: 0,4 N/µm
 material: stainless steel X20CrNi 17.2

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			piezosystem jena

ORIGINAL



ORIGINAL

part.-no.	S-705-01	part.-name	MICI 140 SG
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