

Linear Stage L100/L100H/L200

compact high-resolution X-positioner

Concept:

The linear drive L100 has been developed as unit for exact positioning or scanning stages with a long travel range. The stage is based on a voice coil actuating principal. The fast response time and the maximum speed of 200mm/sec make the system ideally suited for precise positioning of small components over a travel range up to 20mm.

Specials:

The system can be equipped with a high resolution linear encoder if closed loop control is desired. A vacuum design is also available upon request as well as designs made from different materials. The low-friction mounting carriage guarantees excellent guidance. The system is also free from any mechanical play.

Interfaces:

A component can be mounted easily by the mounting holes available, or can be glued directly to the top surface. On the top plate 4pcs tapping holes M3 with 32x32mm² and 50x50mm² patterns for mounting of components are installed. Customized mounts e.g. for Inches, after request. The stage can be loaded with additional components up to 400g without compromising speed and acceleration parameters as given in the specifications. The required signal for control is $\pm 12V$. For controlling the Voice-Coil controller VCC (part number E-603-000) is required.



image: L100

Product highlights:

- Travel range 10-20mm
- Compact dimensions
- Integrated linear encoder
- Blocking force up to 18N
- Flexible use
- max. speed 200mm/sec

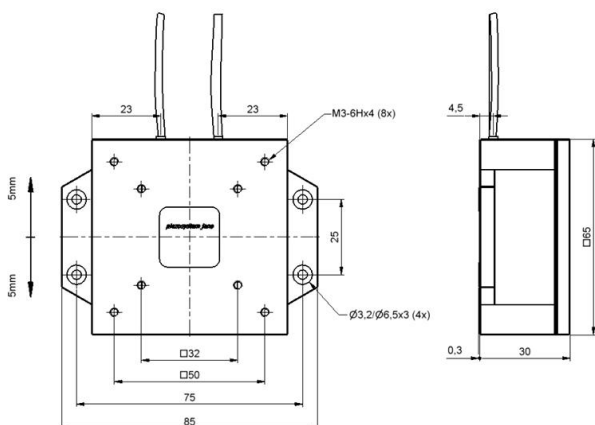
Applications:

- Pick & Place Automation
- Semiconductor
- Photonics

Linear Stage L100/L100H/L200

Technical data

linear positioning stage	unit	L100	L100H	L200
part no.		V-10094-00	V-10184-00	V-20184-00
actuating system	-		Voice Coil	
axes	-		X	
travel range	mm	10	10	20
metrology	-		Linear Encoder	
resolution	µm		0.05	
typ. repeatability	µm		0.1	
typ. non-linearity	%		0.01	
driving force	N	9	18	18
load capacity	N		4	
max. speed	mm/s		200	
acceleration	mm/s ²		5000	
power consumption	W		5	
cable length	m		1	
bending radius of cable	mm		20	
operating temperature	°C		+5°C ... +35°C	
material	-		Aluminum	
dimensions (LxWxH)	mm	65x85x30	80x90x37	95x90x37



drawing: L100

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phone: +49 (3641) 66880 • fax: +49 (3641) 668866
info@piezोजना.com • <http://www.piezोजना.de>

VOLIN_L100_L100H_L200_voice-coil_ds_Rev03_2012_03_01.doc

VCC 3 and VCC 7

Single-channel voice-coil controller

Concept:

The 1-channel controller series VCC is especially made for the control of uni-axial Voice-Coil translation stage series L 100, L 100H and L200.

To make the controller suitable for a variety of applications, a list of special built in.

In addition with the technical highlight of the stage series like speed, accuracy and force generation, the complete system performs very well in applications for Industrial use, Medicine and Science

Specials:

The series VCC offer beside the RS 232 interface, and analoge input (via SMB connector) a built in function generator. The function generator allows to control Voice-Coil stages with rectangular, triangular and sinus wave forms.

The integrated feedback encoder allows controlling of the accuracy in the nanometer range.

Design:

The Voice-Coil stages are made for industrial applications and for laboratory facilities. Therefore the controller casing is offered in two different styles. Casing version marked by "E" comes as a 19"-rack mount module. The casing version "T" comes as an robust aluminum casing with screw lots.



image: VCC 7 T

Product highlights:

- single-channel controller
- wide range power supply
- output current up to 7A (permanent)
- built in function generator
- RS 232 interface
- analoge input
- optional CANopen over EtherCAT
- different casing styles (option for electronics in 19"-housing is available)

VCC 3 and VCC 7

Technical data

Voice Coil Controller	VCC 3	VCC 7
part no.:	E-603-000	E-607-000
number of channels, plug	1, LEMO 0S.302	
output voltage	PWM 16kHz	
output current (continuous / peak)	3A/6A	7A/14A
measuring system input	digital A/B-Encoder, 9pin D-Sub connector	
encoder frequency	max. 5MHz	
encoder counter	max. 20 M counts/s	
control commands	analog, RS232, program, internal function generator	
analog modulation input	-10 ... +10 V, SMB	
input resistance	5 kΩ	
internal function generator	square, sine, triangle	
controller type	position, velocity, acceleration	
sample frequency	4 kHz	
interface	RS-232 to 115200 Baud, 9pin. D-Sub connector	
protection functions	overvoltage protection, over temperature protection	
power supply	24VDC ±10%, max. 5A / 2,5mm Low voltage socket	
workspace	5°C – 35°C (41°F – 95°F)	
weight	1.2kg	
dimensions (L x H x W) [mm]	T-Version: 236 x 86 x 130 - 4x mounting slot for screws E-Version: 19"- rack casing module: 10TE x 3HE x 160mm	

casing styles:

screw slot casing version

extension: VCC X *T*

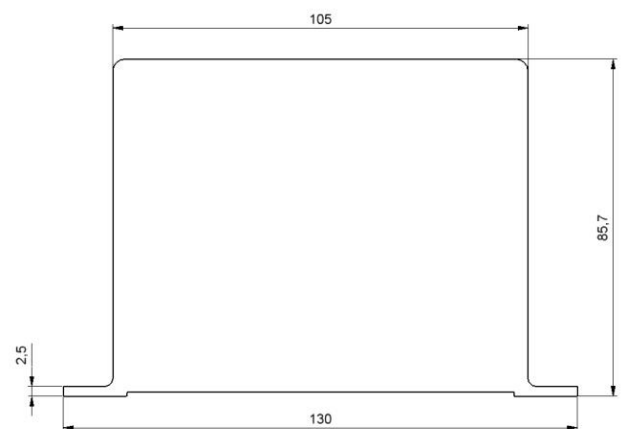
19"- rack casing module version

extension: VCC X *E*

Sample configuration with typical parameters:

Voice-Coil-Stage L200 with VCC 3T controller

motion	20mm
resolution	50nm
nonlinearity	± 1μm
repeatability	≤ 100nm
speed	max. 200mm/s
acceleration	max. 5000mm/s ²
step response to 100% motion at 50g load	< 100ms



casing style with screw slots: 3HE 10TE

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phone: +49 (3641) 66880 • fax: +49 (3641) 668866
info@piezोजना.com • <http://www.piezोजना.com>

