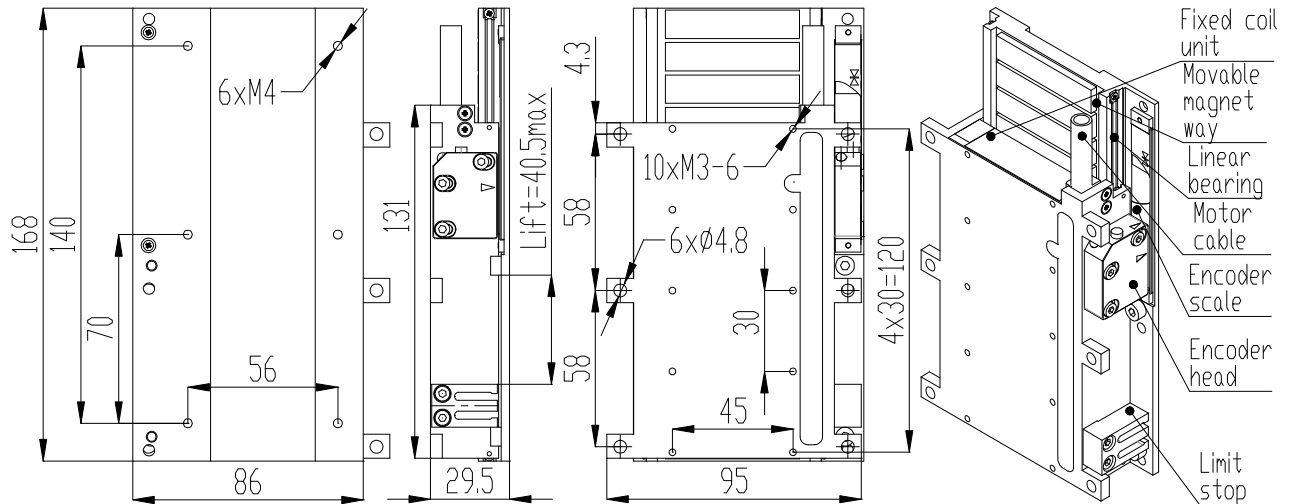


LIFT STAGE

LT24-125-50-GS1-KF-RA-40-N-N0-Z



FEATURES:

- Iron-core three-phase linear synchronous motor with rare-earth magnets for high force density.
- Direct drive (no gear, no backlash), compact dimensions LxBxH (168x86x30) mm
- Optimal solution for short vertical strokes, fixed coils and head, movable magnets, no power chain.
- Preloaded linear ball guide, sine magnetic encoder, thermistors for overheating protection.
- High precision, repeatability and resolution, low cogging, smooth movement.
- High motor stiffness and large bandwidth by position regulator with encoder feedback.

APPLICATIONS:

Z-Axis for pick and place machines, laser cutting machines, factory automation.

CONSTRUCTION:

Motor consist of a fixed lamination stack with epoxy encapsulated windings (forcer) and movable steel plate with glued permanent magnets. The smoothness of movement is achieved by sinusoidal commutation of motor phases currents.

SPECIFICATION OF LT24-125-50-GS1-KF-RA-40-N-N0-Z	Unit	*125-30*	*125-50*
Pole pair length 2P	mm	24	24
Peak / Rated force Fp / Fa (duty cycle 10% / 100%)	N	130 / 48	216 / 90
Bearing friction Fb / Cogging force Fc	N	2 / 2	2 / 2
Peak / Rated current at Fp / Fa	Arms	9,3 / 3,8	9,3 / 3,8
Inductance L	mH	1,1	2,6
Resistance R	Ohm	1,2	1,9
Maximum velocity Vp / Va at 310 VDC and Fp / Fa	m/s	1,0 / 1,0	1,0 / 1,0
Complete stage / movable carriage weight	kg	1,1 / 0,3	1,5 / 0,4
Maximal user payload	kg	5,0	5,0
Straightness	mm	0,04	0,04
Sine encoder pitch	mm	2	2
Position accuracy / Repeatability / Resolution	um	50/5/1	50/5/1
Load force to/ away coil unit	N	300/500	300/500
Load tilting torque along / across movement	Nm	7 / 4	7 / 6
Stage width (LT24-125-50-GS1-KF-RA-40-N-N0-Z shown on dwg.)	mm	66	86

Available strokes: S =40 mm (other on request); cables length is 3 m.

Stage can work in any position (vertical, horizontal, inclined, upside down).

Rated current is given for mounting the stage on metal machine stand working as heatsink.

Use 10xM3-6 thread holes (or 6 holes Ø4,8) for stage mounting to machine stand, 6xM4-6H thread holes for load mounting on top of carriage.

Maintenance: grease linear bearings each 100 km of movement with lithium grease.

Pin assignment for Encoder LM10 D-Sub-9M plug

P2 9 pin D-Sub Encoder Male Connector, Front view

Reference –	grey	RM	6	⊙	1	SI		Inner shield
Cosinus +	red	BM	7	⊙	2	RP	Pink	Reference +
Sinus –	yellow	AM	8	⊙	3	BP	blue	Cosinus +
Ground	white	OV	9	⊙	4	AP	green	Sinus +
				⊙	5	5V	brown	Supply voltage +5V

Outer shield is connected to metal plug housing.

All sin, cos, ref voltages are differential 1V_{ptp} (point to point) voltages of encoder with return GND. Voltage range of sin, cos, ref differential inputs is 2.5V +/- 0.25V (from 2.25 to 2.75). Use twisted pair screened cable, outer shield connection to connector's case.

Wire assignment for Motor Cable OILFLEX FD 810 CY 4G0,5 , Ø 7,9 mm

Wire color	Cross Section	Description	Connection
Black 1	0.5 qmm	U	Motor phase U
Black 2	0.5 qmm	V	Motor phase V
Black 3	0.5 qmm	W	Motor phase W
Green/Yellow	0.5 qmm	GND	Motor frame, ground

Cable is high flexible and suitable for drag chains application.

PTC is optional non-linear positive temperature coefficient thermistor correspondent to DIN-44081 norm. Three serial connected PTC are mounted in motor windings and changes resistance from approx. 150 Ohm at 115 C° to more that 12 KOhm at 125 C°. PTC can be used in servo-amplifier for motor overheating protection.

KTY is optional linear positive temperature coefficient thermistor with resistance approx 1 KOhm at 20 C° and temperature coefficient 0.61%/K. It is mounted in motor case. KTY can be used in servo-amplifier for motor temperature measurement and overheating warning.

ORDER EXAMPLE: **LT24-125-50-GS1-KF-RA-40-N-N0-Z**, where **L** –Linear motor stage; **T**-table (i.e. motor+bearing+encoder); **24**-linear pole pitch, mm; **125**-forcer length, mm; **50 (or 30)** -magnet width, mm; **G**-code of internal wiring; **S**-internal star connection; **1**-number of parallel coils; **KF**-bearing code; **RA**-magnetic encoder with sinus output 1V_{pp}, 2 mm pitch; **40**-stroke, mm; **N**- protection IP20; **N0**-Motor cable 3 m long without connector, flying leads; **Z**-Revision number (Standard).