

### Technical specification LL06

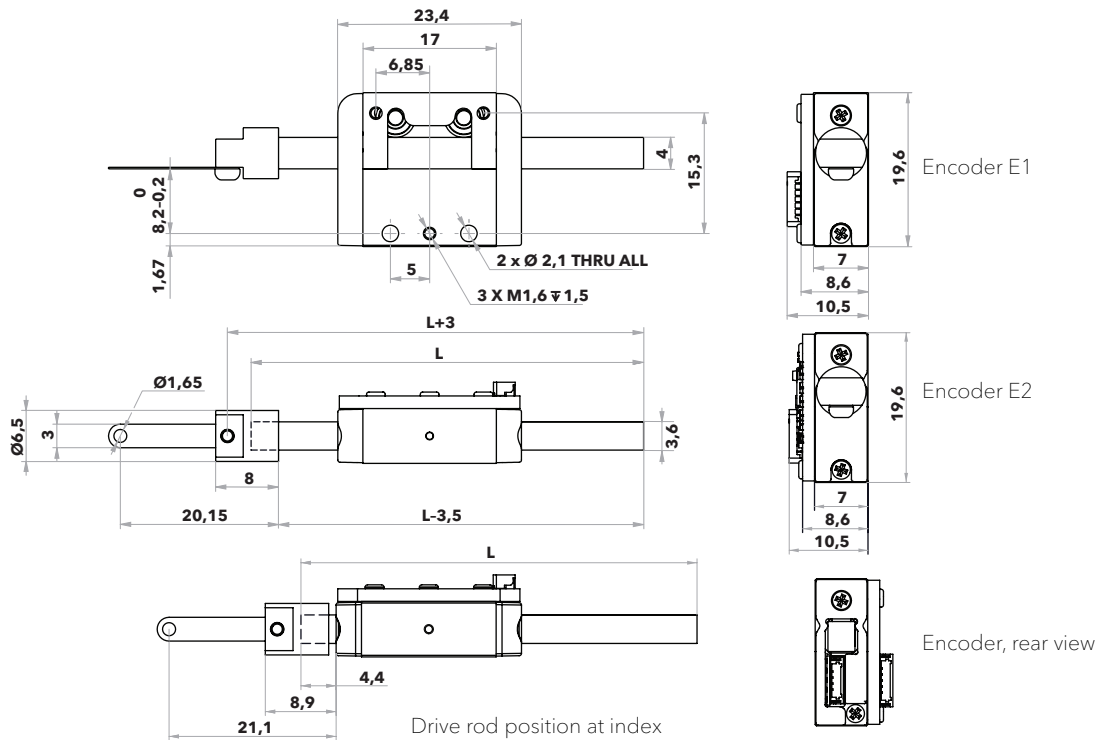
Type	Standard (A)
<b>Stroke (mm)</b> For more information, see table on opposite page.	0-74.1
<b>Speed range (mm/s)</b> @ Rhomb, no load, 20°C	0-24
<b>Step length, full step (µm)</b> @ Delta, no load, 20°C	4.5
<b>Motor resolution, microstep (nm)</b> 14 bits, 8192 microsteps	<1
<b>Built-in encoder</b>	Yes, optical type with quadrature output (ABZ)
<b>Encoder resolution (µm)</b>	1.25 µm (encoder E1, guide G1)
	0.08 µm (encoder E2, guide G1) <sup>a</sup>
<b>Stall force (N)</b>	6.5
<b>Holding force (N)</b>	>6.5
<b>Recommended operating range (N)</b>	0-3
<b>Operating voltage (V)</b>	42-48
<b>Power consumption (mW/Hz)</b>	5
<b>Mechanical size L x H x D (mm)</b> with guides and encoder (1,25 µm encoder)	23.4 x 19.6 x 10.5
<b>Mechanical size L x H x D (mm)</b> with guides and encoder (80 nm encoder)	23.4 x 19.6 x 10.5
<b>Mechanical size L x H x D (mm)</b> without guides and encoder	17 x 19.6 x 7
<b>Weight (g)</b>	16 (50 mm drive rod, with encoder and guide)
<b>Operating temperature (°C)</b>	-20 to +70
<b>Connector</b>	Motor: Hirose DF52-5S-0.8H
	Encoder: Hirose DF52-6S-0.8H
<b>Material in motor housing</b>	Stainless steel

a. Note that the system needs to be guided in order to achieve a system resolution down to 0.08 µm.

**Note:** All specifications are subject to change without notice. For more information, see [www.piezomotor.com](http://www.piezomotor.com).

**Main dimensions**

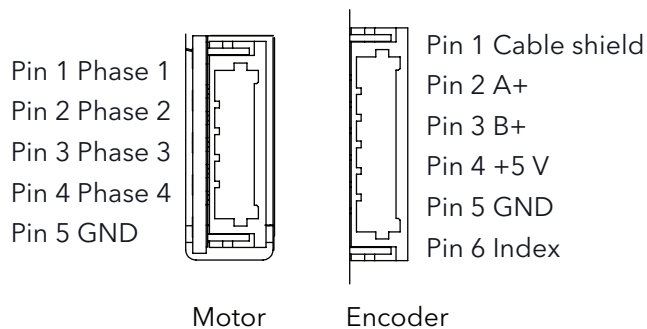
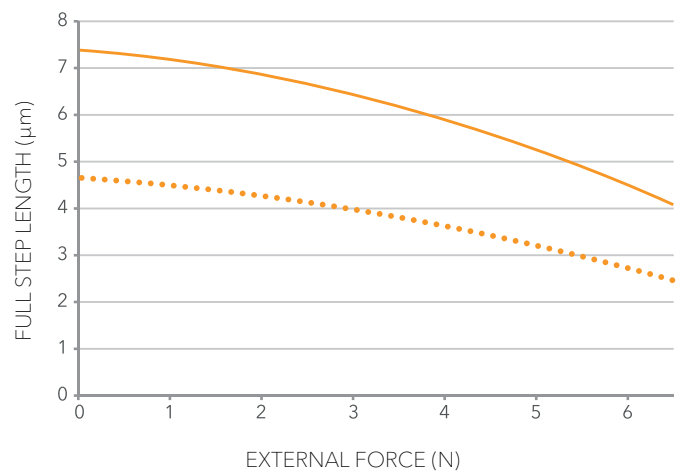
Standard


**Stroke range**

Stroke (mm) with one adapter	Drive rod length (mm)
0-3.1	30 (not available with encoder)
0-13.1	40
0-23.1	50
0-33.1	60
0-74.1	100.8

**Motor speed at 20°C, no load**

Waveform	Max freq. (Hz)	Speed range (mm/s)
Delta	3000	0-15
Rhomb		0-24

**Connection**

**Motor performance**


— RHOMB  
 •••• DELTA

Motor performance with waveform Rhomb (filled) and waveform Delta (dotted). The full step length is the average distance the drive rod moves when the legs take one full step (i.e. for one waveform cycle).

**Note:** A standard deviation  $\sigma$  of 0.5  $\mu\text{m}$  should be taken into account. Typical values are given for 20°C.