



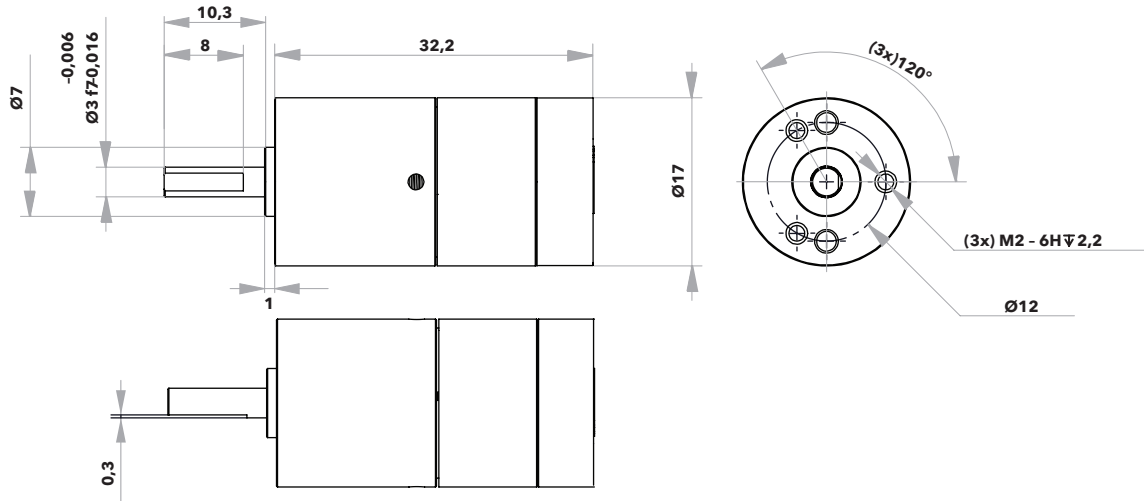
Technical specification LR17

Type	Standard (A)
Diameter (mm)	17
Angular range (°)	360
Speed range (°/s) @ Rhomb, no load, 20°C	0–265 (0–44 rpm)
Step angle, full step (μrad) @ Delta, no load, 20°C	1000
Motor resolution, microstep (μrad) 14 bits, 8192 microsteps	<0.1
Built-in encoder	Yes
Encoder type	Magnetic, absolute
Encoder accuracy (mrad)	2.0
Encoder resolution (mrad)	0.2
Stall torque (mNm)	30
Holding Torque (mNm)	>30
Recommended operating range (mNm)	0–15
Operating voltage (V)	42–48
Power consumption (mW/Hz)	3.5
Shaft load, max. (N) radial, 6.5 mm from mounting face	1
Shaft load, max. (N) axial	2
Shaft press fit force, max. (N)	5
Weight (g)	30
Operating temperature (°C)	-20 to +70
Connector	CviLux CI1116M-2VD0
Material in motor housing	Aluminium, stainless steel

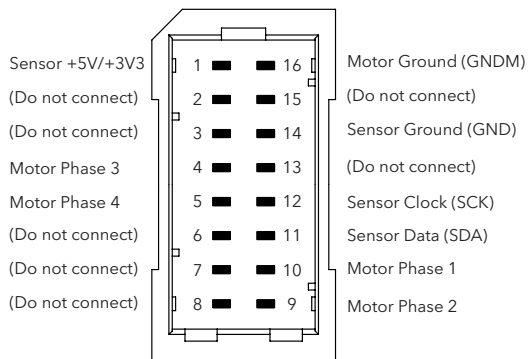
Note: All specifications are subject to change without notice. For more information, see www.piezomotor.com.

Main dimensions

LR17 - Standard



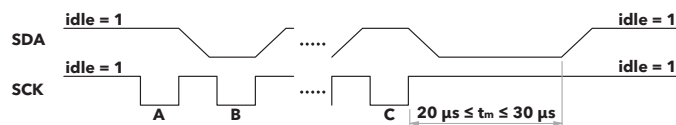
Connection



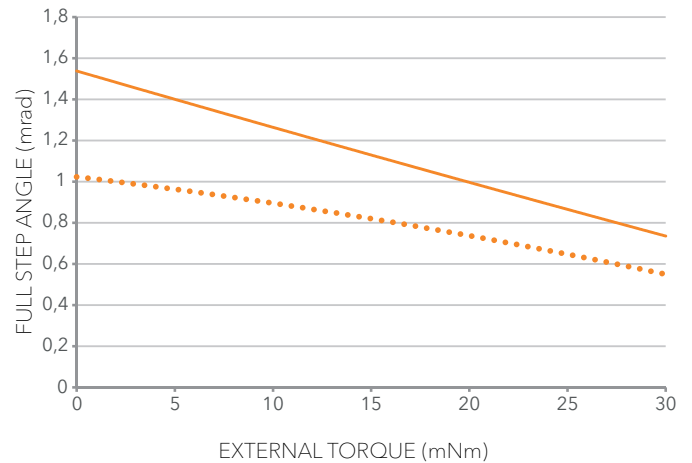
Encoder information

The LR17 has an integrated magnetic absolute encoder. It gives 15-bit SSI data. SCK (Sensor Clock) and SDA (Sensor Data) are normally at high level (idle). When receiving a clock pulse from the controller, the LR17 will respond with position data. The SCK frequency should be 70-180 kHz. Data should be read shortly before the positive flank. The time-out between positive flanks is 20-30 μ s. The output data is 15 bits (msb first), followed by a stop bit. If SCK continues beyond the stop bit, there will be a second stop bit followed by repeated 15-bit data and a stop bit. A minimum of 120 μ s is needed after position readout to make sure that position data is refreshed. Reading position every 0.5 ms is the maximum recommended rate for continuous operation.

- 1st clock pulse, SDA stays idle until positive flank.
- 2nd clock pulse, SDA output is bit1 (msb).
- 16th clock pulse, SDA output is bit15 (lsb).



Motor performance



- RHOMB
- DELTA

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

Note: A standard deviation σ of 0.1 mrad should be taken into account. Typical values are given for 20°C.

Motor speed at 20°C, no load

Waveform	Max freq. (Hz)	Speed range
Delta	3000	0-28 rpm (0-170°/s)
Rhomb		0-44 rpm (0-265°/s)