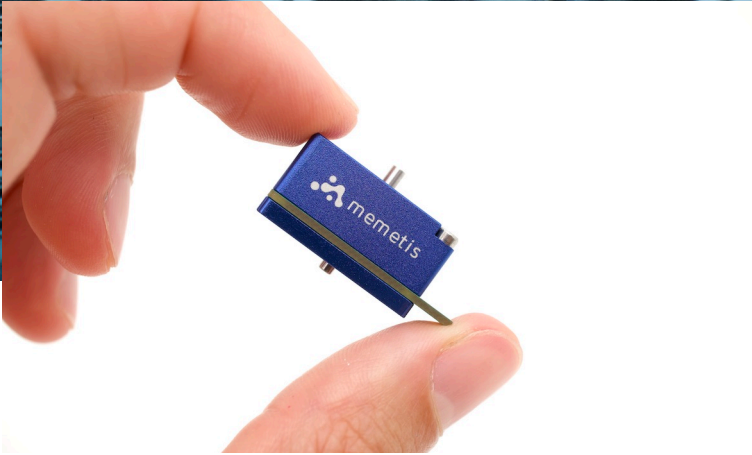
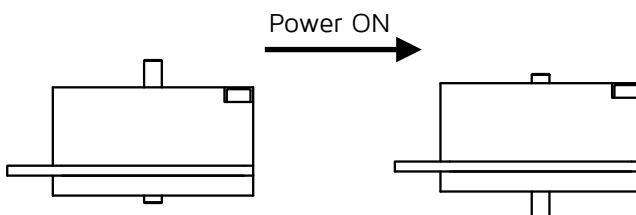
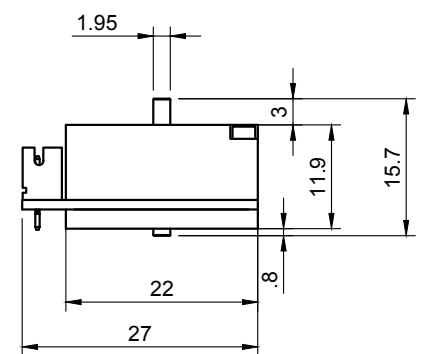
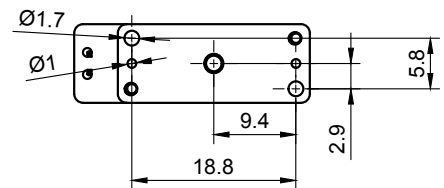
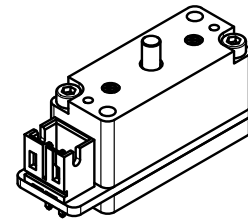


CA2001 Chip-Actuator

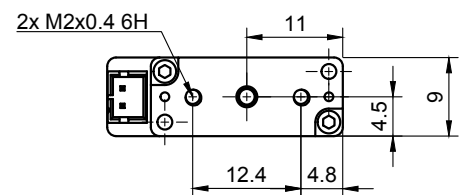


The CA2001 is a compact, multi-functional miniature linear actuator, designed with a broad range of applications in mind, from basic push/pull operations to the actuation of disposable on-chip valves. With its stroke of 2 mm and a peak force of 3.5 N, the CA2001 is highly adaptable and suitable for a variety of applications.

Remarkably compact, the CA2001 has a weight of only 5 g, demonstrating its very good integratability into diverse systems. Furthermore, the actuator maintains an impressively low power consumption, requiring less than 1 W to maintain its position, underlining its energy-efficient design. A distinguishing feature of the CA2001 is its proportional control capability, which allows for enhanced precision and flexibility in a multitude of scenarios.



Stroke: 2 mm



Dimensions in millimeters

General Information

Model number	CA2001
Type	Monostable linear actuator
Functionality	Push or pull (normally open / normally closed), proportional control
Dimensions (WxLxH)	9 mm x 22 mm x 16 mm (without electrical connections)
Weight	5 g
Electric connector	JST B2B-PH-K-S(LF)(SN)
Mounting interface	Flange mount M2 screws (see drawing)
Cycle life time	> 25 000 cycles

Performance Data

Stroke	2.0 mm \pm 0.1 mm
Normally closed force (passive)*	0.8 N at 1 mm stroke (also see table on page 4)
Push/pull force (when powered)	max 3.5 N (also see table on page 4)
Operating temperature	10 °C to 50 °C
Storage temperature	-20 °C to 90 °C
Switching time (on)	1 s with 1.9 A (at ambient temperature of 20 °C)
Switching time (off)	6 s (at ambient temperature of 20 °C)
Maximum switching frequency	0.15 Hz

* For higher NC forces, contact us

Materials of construction / housing material

Housing	Anodized aluminum
Push/Pull Pin	Steel 1.4301

Electrical Specifications

Electronic control	Constant current
Electrical connection	Soldering pads or JST B2B-PH-K-S(LF)(SN)
Actuator resistance*	0.5 Ω ±10%

Control using current profile

Peak electrical current*	1.9 A for 1 s (for full stroke)
Peak electrical power consumption*	1.8 W for 1 s (for full stroke)
Continuous current (for holding after peak)*	1.1 A
Continuous electrical power consumption*	0.6 W

Control using continuous current

Continuous electrical current*	1.2 A
Continuous electrical power consumption*	0.7 W
Opening time*	5 s (for full stroke)

* Data at 20 °C

⚠ Please note:

- The actuators are current-controlled. For easy integration and evaluation we offer electronic control units.
- An electrical overcurrent may reduce cycle life-time.
- We recommend validating the current profiles within your specific application and ambient conditions.
- Do not attempt to operate the actuator at constant voltage!

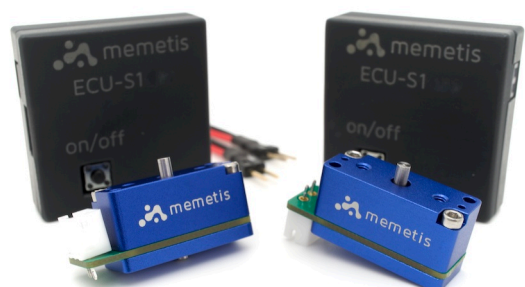
Examples for other peak electrical currents*

Peak current	Full stroke time	Peak power
1.5 A	2.0 s	1.1 W
2.0 A	0.8 s	2.0 W
2.5 A	0.3 s	3.1 W

* Data at 20 °C

Use our ECU-S for easy evaluation of our CA2001. With the ECU-S you can either control the CA2001 manually with pressing a button or by interfacing the IO-Pin. We also offer an electronic control unit for integration on your custom PCB. Please contact us for more information.

JST connector can be installed on top or bottom side, respectively.

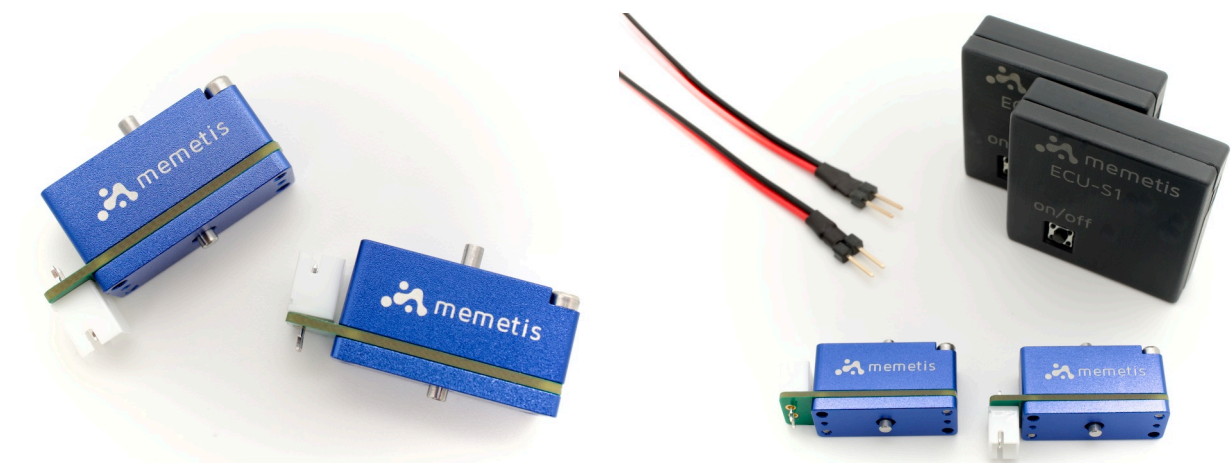
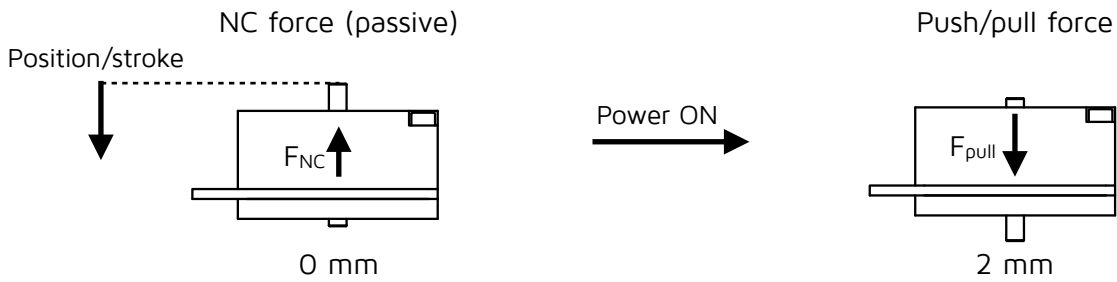


NC force (passive)

Position / stroke	NC force (no power applied)
0.5 mm	0.5 N
1.0 mm	0.8 N
1.5 mm	1.2 N

Push/pull force (power applied)

Position / stroke	Push/pull force (power on)
0.0 mm	3.5 N
1.0 mm	1.7 N
1.5 mm	0.7 N



Check out our chip actuators and bundles in the memetis online shop shop.memetis.com

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