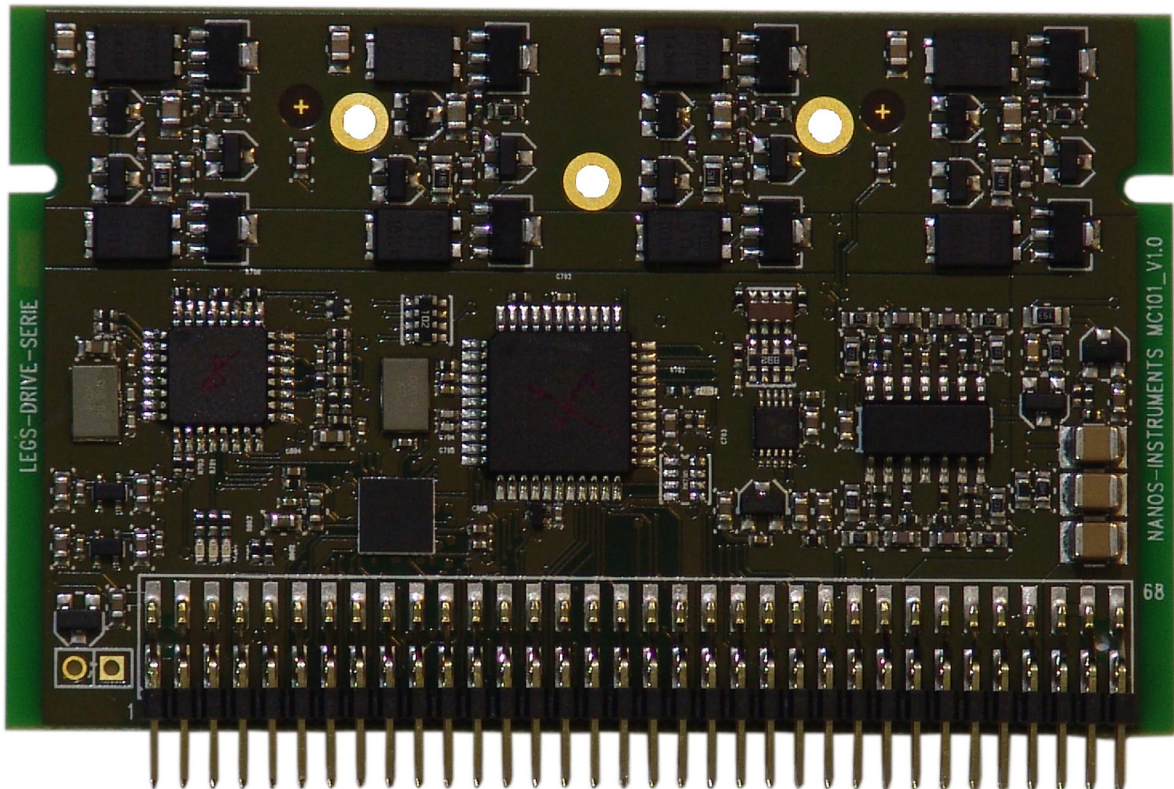**NANOS**
Instruments GmbH

MC-101 closed loop controller
LEGS-Drive® serie
Manual

A PiezoLEGS closed loop controller for positioning control

The MC-101 is a high resolution closed loop controller with a 0,7nm resolution, 3 encoder input, 1 encoder out put, Step/Dir (in) as closed loop, uart interface and many more. It is desingt for OEM solutions and need a mother board. It will be in the near future in a coupple of new single and multi axis products from us and is pin compatible to the next high level servo controller from us.

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Features:

- single axis closed loop controller with 0,7nm step resolution
- automaticly step size adaption to drive with maximum speed 3kHz and with full position resolution.
- fast and stable position controll down to +/- 500mp
- two in differenz or parallel working encoder input with 20Mhz counting frequency for highest accuarcy. (filter function)
- powerfull digital filter for highly resolution, stable positoning, oversampling and noise reduction (specles reduction from the interferometer for example)
- third encoder 20Mhz input for hand wheel or target source but with positioning controll on the encoder. Ideal for non linear or fragile setups and follow an (noise less) interferrometer signal. This combination will give you a fast and stable position on that place that you realy need!
- Step/dir input up to 10Mhz in closed loop operation to drive the piezo like a stepper with an external existing system. (feedback: pin or encoder). The MC101 is working than stand alone. One step and the motor drive to the next encoder count.
- 1 ABZ encoder out filtered and adjustabel in the sending frequency
- Parking funktion for open loop (fast +/- 0 to 300nm) and closed loop (more precise +/- 0 to 50nm)
- Limit input and virtual limits and user I/O
- analog in (coming soon)
- SSI encoder Input (coming soon)
- pin interrupt start to preloaded position or synchronize boards (coming soon)
- low power consumption of 0,5W in the 5V area and 0,5W in the power stage when it is controlling the position. Zero when the motor is parked. 10W at full speed of a single 10N motor
- Ready out pin. Gives a adjustabel targed reached to trigger an external sorce
- one uart with a couple of comandos. 57600 baud
- a couple of reference drive funktions
- option → LCD support over I²C (LCD type MCCOG21605B6W 2x16)
- small size. only 80*50*6mm - design for OEM appications
- boot loader for firmware update over the uart
- Power in 5V and 48V
- optional a fan on board.
- desingt for all typs of piezoLEGS motors
- Works perfectly with our stages or piezomotor with our own encoders

Take a look to our high resolution stages with nearly zero drift and smalest warmig