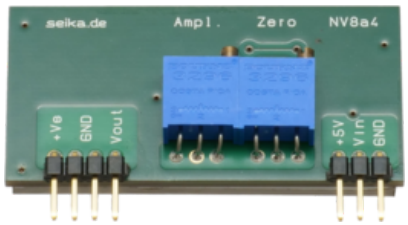


Filtering signal conditioner for sensor signal matching with an asymmetric 0.5 ... 4.5 Volt output voltage

Features

- **low noise and low drift**
- **no stabilized supply voltage necessary**
- **integrated reverse polarity protection**
- **outputs are short circuit proof**
- **highly stable supply voltage for sensor operation**
- **zero position and gain adjustable via potentiometers**
- **electronic components hermetically sealed**
- **optionally frequency programmable, active 4th order low pass filter**
- **optional high pass filter**
- **different connector options**

Description

The NV8a amplifies, filters and normalizes the output signals of SEIKA sensors. The asymmetric output signal enables unproblematic, subsequent signal processing with standard measuring equipment, such as oscilloscopes, transient recorders, A/D converters, multimeters, etc., operating with this asymmetric signal level. The NV8a requires a non-stabilized supply voltage in the range of 9...30 Volt. The NV8a provides a highly stable 5V voltage with short circuit current limitation as a sensor supply voltage. Multiple internal switching variants allow for optimal adaptation of signal processing parameters, such as settling time, filter cut-off frequencies and amplification and zero point adjustment, to the measuring task.

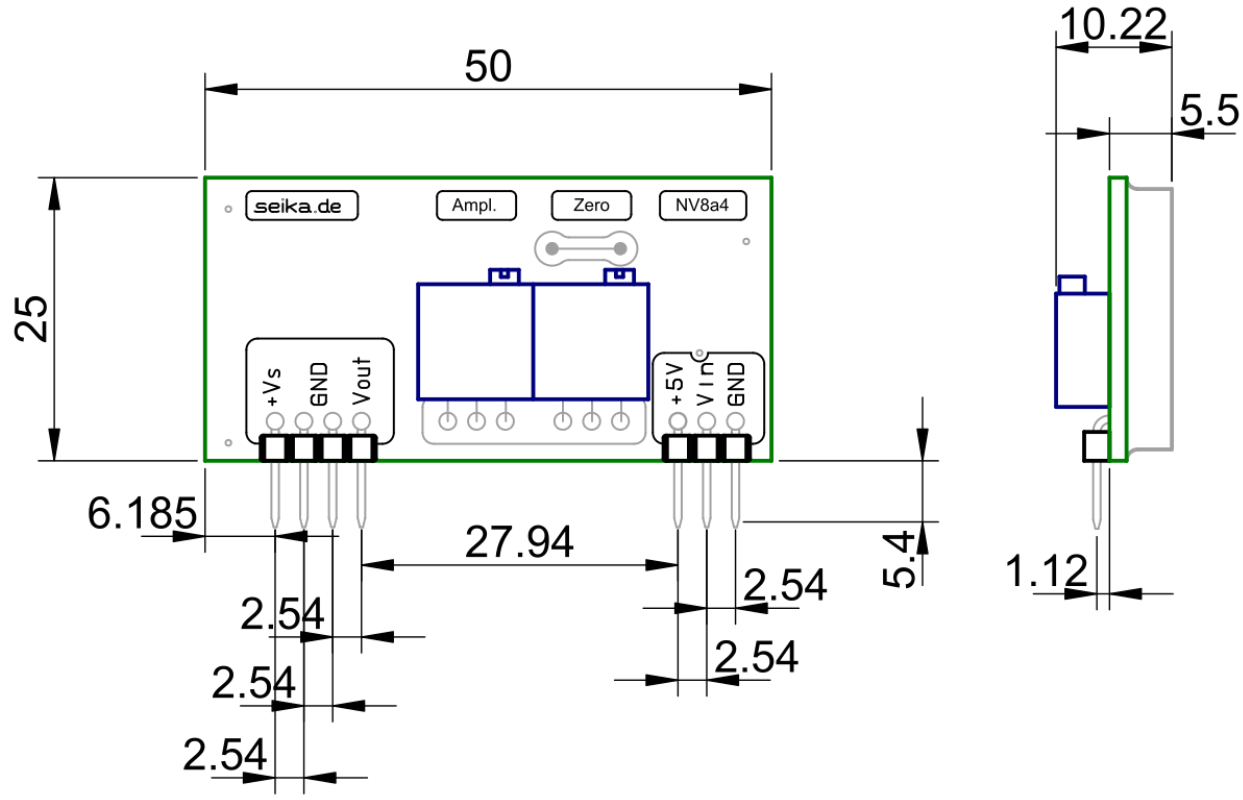
Application

The NV8a has its application anywhere a SEIKA sensor is, without great expenditures and under optimal compatibility, to be connected to application specific measuring equipment and subsequent adjustment of amplification and zero position are necessary. The use of an asymmetric output voltage requires minimal electronics for further signal processing.

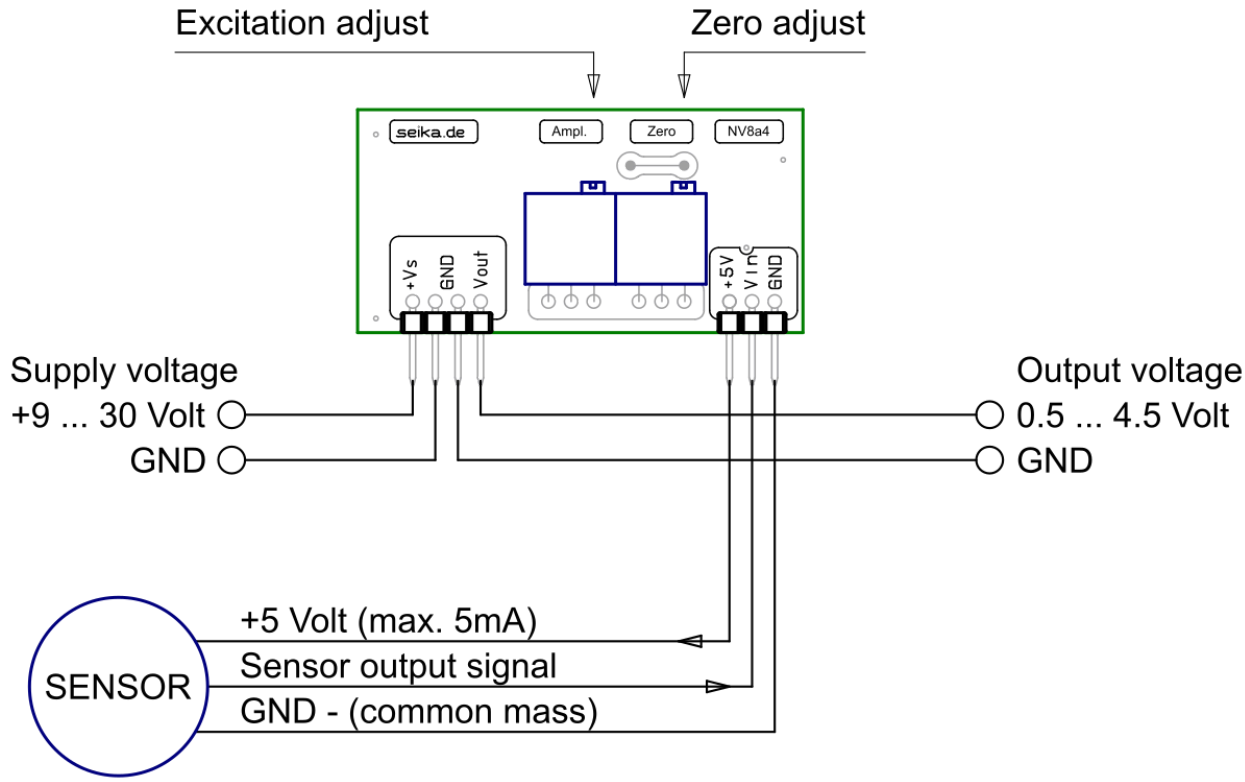
Specifications

Dimensions	see dimension drawing
Supply voltage	+9 ... +30 Volt (reverse polarity protected to -70 Volt)
Current drawn excluding sensor	approx. 5mA
Operating temperature	-40°C ... +85°C
internally generated sensor supply voltage	5.00 Volt
Temperature drift of sensor supply voltage	5 ppm/K
maximum output voltage range	0.05 ... 4.95 Volt
Output signal range	2.5 ± 2 Volt
Zero offset range	2.4 ... 2.6 Volt (larger ranges, e.g. for B1 in Z-direction, on request)
Output impedance	approx. 100 Ohm
Thermal noise	$30\mu V_{s.s.}$
Signal-to-noise ratio with standard sensors	approx. 80dB
Frequency range	0...10Hz, 0...200Hz, 0...2kHz, custom ranges on request
Electrical connections	pin connector 2.54mm, lenght 5.7mm, Ø 0.63mm gold-plated soldering pads optional
Weight	approx. 11g

Dimensions (in mm)



Connections



Attention! Do not short circuit the supply voltage with the output. No problem with GND - all at same potential, even in mulitaxial systems.

Owing to its high accuracy the sensor supply voltage of +5V (max. 5mA) can be used as reference voltage for subsequent electronics, e.g. OPV or ADC.