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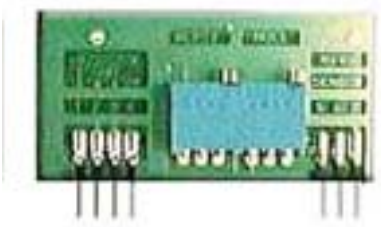
Signal Amplifier/ Conditioner Provides 0…5V DC Analog Voltage Output



Description

The NV8A signal amplifier is used to excite, filter, normalize, and convert the different output signals of select sensors to a 0-5VDC output. This asymmetrical output signal allows for a problem-free signal transfer to measurement equipment such as oscilloscopes, AD-cards in PC's, or to other OEM equipment. Requiring a non-regulated supply voltage, the NV8A provides a highly stable 5V 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.

Even with large fluctuations at the unit's power supply, the NV8A will act very stable for both offsetting the sensor's zero point and supplying a stable 0-5V DC output, which is linear to the sensor's working range.

Applications

Well suited for use where the demand for high voltage output and/or special filtering of the sensor's signal is needed. The use of an asymmetric output voltage requires minimal electronics for further signal processing.

Features

- Low noise, low drift
- Works directly on +8 to 30VDC non-regulated input power supply
- Internal generation of negative operating voltage
- Reverse polarity protection
- Short-circuit protection for output
- Internal voltage regulation to sensor
- Zero and gain adjustable potentiometers
- Electronic components hermetically sealed
- Optional frequency programmable active 4th order low pass filter
- Optional high pass filter
- Optional connector options

Alternative Output Amplifiers

- *NV4A for ±4VDC output*
- *NV6A for 4-20mA output*

MECHANICAL CHARACTERISTICS	
OPERATING TEMPERATURE	32ºF TO 158ºF (0°C to +70°C)
DIMENSIONS	1.97" (50mm) l x 0.984"(25mm) w x 0.402" (10.22mm) d
ELECTRICAL CONNECTIONS	Pin connector: 0.10" (2.54mm) w x 0.224" (5.7mm) l
	Optional 0.025" (0.63mm) gold plated soldering pads
SUPPLY VOLTAGE	+8 to +30 VDC Non-Regulated (reverse polarity protected to -70V)

OUTPUT SPECIFICATIONS	
SENSOR SUPPLY	+5.0 Volt
SENSOR SUPPLY - TEMP. DRIFT	20ppm /°C
MAX. OUTPUT VOLTAGE	+0.05V…+4.95V

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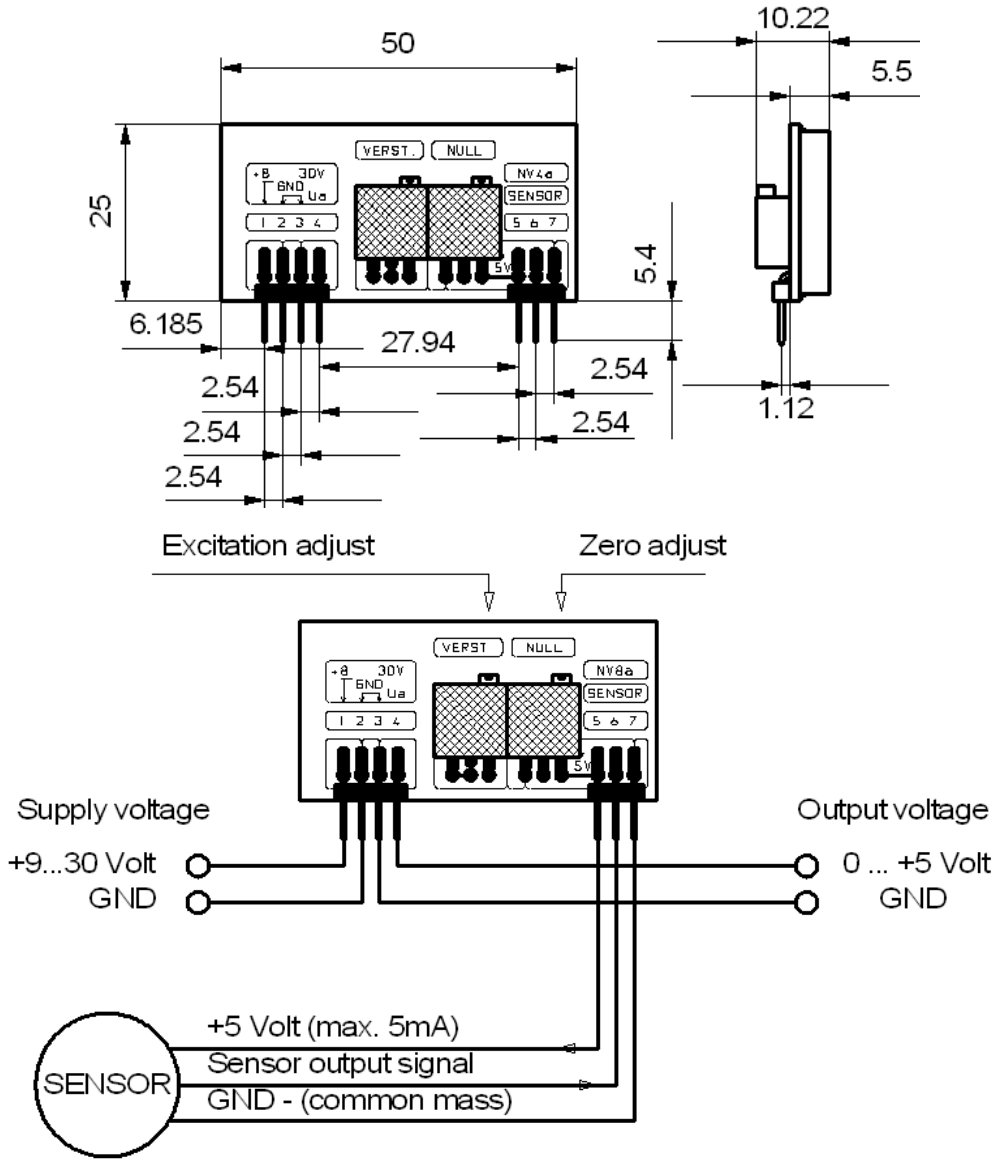
SIGNAL ZERO POINT	2.5 ±2VDC
OFFSET RANGE	2.4...2.6 Volt (larger ranges available upon request)
POWER SUPPLY NOISE	30µV_{pp}
SIGNAL TO NOISE RATIO	Approx. 80dB (with standard sensor)
FREQUENCY RANGE	0...10Hz; 0...200Hz; 0...2kHz (custom ranges available)
CURRENT CONSUMPTION	Approx. 5mA (excluding sensor)
OUTPUT IMPEDANCE	100 OHMS

Figure 1: **Dimensions (mm) and Connections**

Caution! Do not short circuit the operating voltage (8...30V) with the outputs. No problems with GND – all on the same potential, also in case of multiple axis systems! The sensor's operating voltage of +5V/maximum 5mA may also be used as a voltage reference for connected electronics (e.g. OPV or ADC) because of its very high accuracy.



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