NV6A

General Specifications Brochure

RIEKER® INCORPORATED

Signal Amplifier/ Conditioner Provides Analog 4…20mA, 2-wire Current Loop Output

Description

The NV6A signal amplifier is used to excite, filter, normalize, and convert the output signals of select sensors to a 4-20mA output. This symmetrical output signal enables trouble free subsequent signal processing based on current loop technology.

A separate supply voltage is not required, as the internal operating voltage feeds off the current loop. The NV6A also provides a highly stable 5V supply voltage to the sensor with short circuit current limitation. 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.

Even with large fluctuations at the unit's power supply, the NV6A will act very stable for offsetting the sensor's zero point and supplying a stable 4-20mA output, which is linear to the sensor's working range.

Applications

Well suited when a 4-20mA, 2-wire current loop output and/or special filtering of the sensor's signal is needed. Also useful when a non-regulated 8 to 30VDC supply is available or when signal transmission is required over long distances.

Features

- Low noise, low drift
- Works directly on +8 to 30VDC non-regulated input power supply
- 2-wire connection - power supplied by current loop
- loop current limitation
- 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 3rd order low pass filter
- Optional high pass filter
- Optional electrical connections

Alternative Output Amplifiers

- *NV6A for 4…20mA output*
- *NV8A for 0…5VDC output*

MECHANICAL CHARACTERISTICS	
OPERATING TEMPERATURE	-40°F to +185°F (-40° to +85°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)

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610-500-2000 | fax: 610-500-2002 | info@riekerinc.com | www.riekerinc.com

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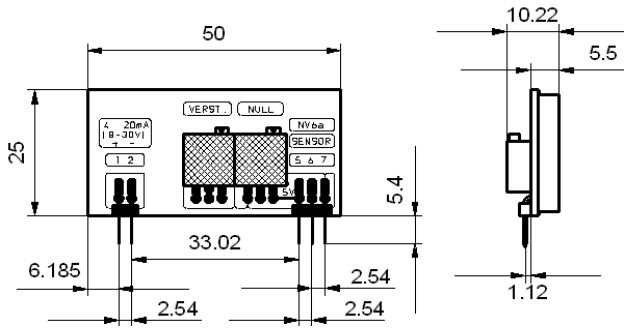
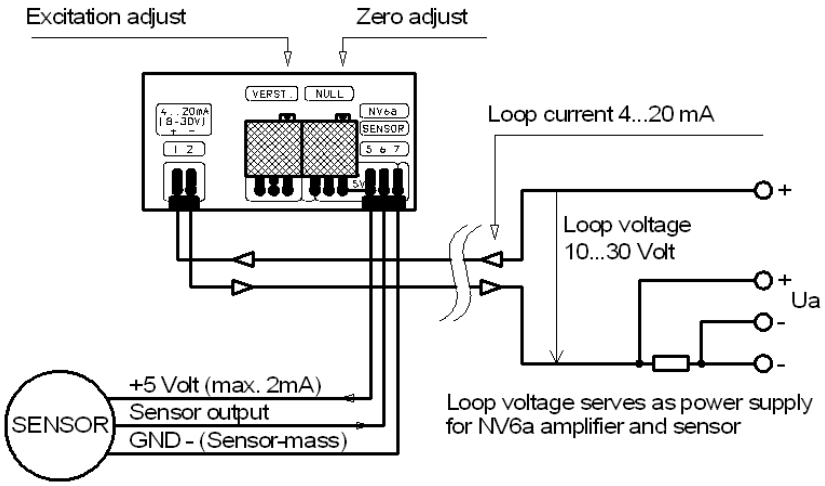
OUTPUT SPECIFICATIONS	
SENSOR SUPPLY	+5.0 Volt
SENSOR SUPPLY - TEMP. DRIFT	20ppm /°C
MAX. LOOP CURRENT	Approx. 24mA
SIGNAL LOOP CURRENT RANGE	4…20mA (equal to sensor range)
SIGNAL ZERO POINT	12mA
COMPENSATION RANGE OF SENSOR OFFSET VOLTAGE	2.3…2.7 Volt (larger ranges available)
POWER SUPPLY NOISE	30µV_{pp}
SIGNAL TO NOISE RATIO	Approx. 65dB (with standard sensor)
FREQUENCY RANGE	0...10Hz; 0...200Hz; 0...1kHz (custom ranges available)
CURRENT CONSUMPTION	Approx. 2mA (without sensor)
MAX LOAD IMPEDANCE	Approx. 500Ω (at nominal 24VDc supply)

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

CAUTION! Sensor-GND and NV6A-GND (both have same potential) must be isolated from the current-loop! In case of multiple axes (e.g. inside SW3 mounting cube) all sensor grounds/housings must be isolated from each other. The sensor unit must be internally isolated when combined with an NV6A – this must be considered when ordering! Does not apply to VOLTAGE OUTPUT amplifiers (NV4A, NV8A). Since the supply voltages for the NV6A/sensor combination are obtained from the current loop and together require maximum 3mA, an input voltage of 8V minimum must be supplied to the NV6A. **THIS IS REQUIRED IN ORDER TO GUARANTEE CORRECT OPERATION WHEN THE HIGHEST LOOP CURRENT (APPROX. 24MA) IS USED.**





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