

Filtering signal conditioner for sensor signal matching to a 4...20mA, 2-wire interface

Features

- low noise and low drift
- 2-wire connection – power supplied by current loop
- loop current limitation
- integrated reverse polarity protection
- highly stable sensor supply voltage
- protection against reverse polarity of sensor connection
- zero position and gain adjustable via potentiometers
- electronic components hermetically sealed
- optionally frequency programmable, active 3rd order low pass filter
- optional high pass filter
- different connector options

Description

The NV6a amplifies, filters and normalizes the output signals of SEIKA sensors. The symmetrical output signal enables unproblematic subsequent signal processing on the basis of 4...20mA current loop technology.

The NV6a does not require a separate supply voltage, as the internal operating voltage feeds off the current loop. The NV6a furthermore provides a highly stable 5V sensor supply voltage 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.

Application

The NV6a has its application anywhere a SEIKA sensor is, without much expenditure and under optimal compatibility, to be connected to measuring equipment operating on 4...20mA, 2-wire current loop basis and subsequent adjustment of amplification and zero position are necessary.

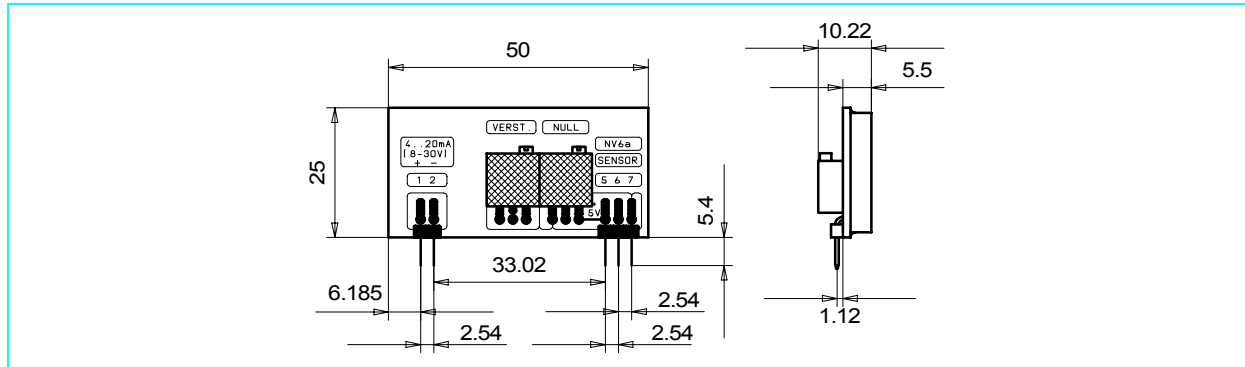
Typical applications are the coupling with memory programmable control systems and the signal transmission over long distances with little transmission line setup.

Technical Specifications

Dimensions excluding connector	see dimension drawing
Terminal voltage	+8...+30 Volt (reverse polarity protected to -70Volt)
Minimum loop current excluding sensor	approx. 2mA
Maximum loop current	approx. 24mA
Operating temperature	-40...+85°C
Internally generated sensor supply voltage	+5,00 Volt
Temperature drift of sensor supply voltage	20 ppm/Kelvin
Maximum allowable sensor current	approx. 1,5mA
Signal loop current range	4...20mA
Zero current	12mA
Compensation range of sensor offset voltage U_{S_offset}	2,3...2,7 Volt (larger ranges, e.g. for B1 in Z direction on request)
Amplification range with respect to a loop cur-	$U_{S_offset} \pm 100mV$, $U_{S_offset} \pm 300mV$ (on request)

rent of $12 \pm 8 \text{mA}$	
Maximum load resistance at 24V supply voltage	500 Ω
Signal-to-noise ratio	$30 \mu\text{V}_{\text{s.s.}}$
Signal-to-noise ratio with standard sensors	>65dB
Frequency range	0...10Hz, 0...200Hz, 0...1kHz, custom ranges on request
Electrical connections	pin connector 2,54mm, length 5,7mm, \varnothing 0,63mm gold-plated soldering pads optional

Dimensions



Connections

