

Signal Converter

zsu-uf

General Function

Signal converters zsu-uf serve to convert scaled signals (0-10V, 0/4-20mA) into a adjustable square-wave frequency. The output frequency is freely selectable by hook switches and trimmers from 88Hz to 22kHz (0.7Hz and 170Hz optional). The output signal can be DC decoupled from the power supply by an extra option.

Signal converters zsu-uf are accommodated in a housing for standard snap-on rail mounting.

Features

- plug-in terminal connections
- extra slim version (22,5mm)
- DIN-standard case for rail mounting
- output signal DC decoupled of input signal
- output signal DC decoupled of power supply optional
- output short circuit proof
- range of frequency freely selectable

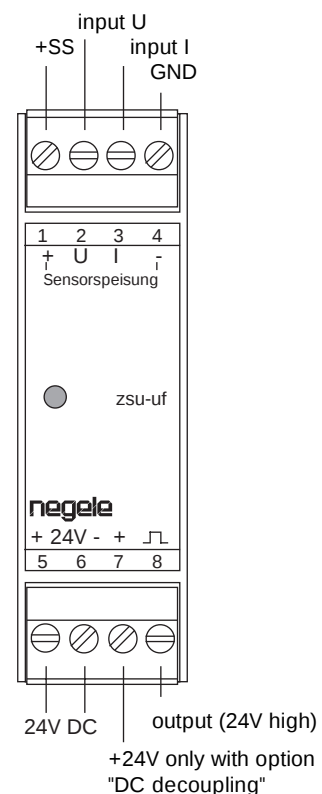
Specification

Style	DIN standard case of ABS 22,5x75x105mm (for in-line mounting) for mounting on rails as per EN 50022
Enclosure Code	IP 20, terminals guarded
Ambient	operating temp. -10...+55°C shelf temperature -20...+70°C humidity 0...95%
Input	0-10V (terminal 2/4) 0-20mA (terminal 3/4) 4-20mA (terminal 3/4) and hook switch "4mA" closed
Sensor supply	approx. 20V DC / max. 25mA
Output	square-wave frequency approx. 24V, frequency adjustable (see table) output signal DC decoupled of input signal Output signal DC decoupled of supply voltage
Option	
Burden resistance	1k Ω ...1M Ω , with option "DC decoupling" 1k Ω ...10k Ω
Burden current	max. 50mA
Accuracy	typ. $\pm 0,2\%$ of full-scale linearity 0,1% typ. temp. drift max. 0,01% of full-scale/K
supply voltage	24V DC max. 80mA, tolerance $\pm 10\%$



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Pin Assignments



01.98 Lh/PM6.0

Trimmers
NP zero
V gain

Range Settings

The output frequencies of the signal converters can be set according to the following table:

hook switch	switch V closed	switch V open
2	11... 17 kHz	17... 22 kHz
4	5,6... 8,5 kHz	8,5... 11 kHz
8	2,8... 4,25 kHz	4,25... 5,6 kHz
16	1,4... 2,1 kHz	2,1... 2,8 kHz
32	700... 1,05 kHz	1,05... 1,4 kHz
64	350... 500 Hz	500... 700 Hz
128	170... 265 Hz	265... 350 Hz
256	88... 132 Hz	132... 170 Hz

Option:

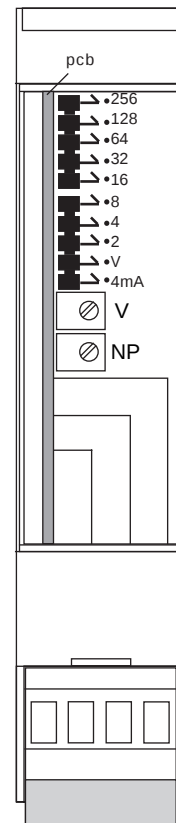
With additional frequency division of factor 256 a frequency range from 0,4Hz to 88Hz is possible.

Calibration Procedure

Subsequent calibration of converter can be done as follows:

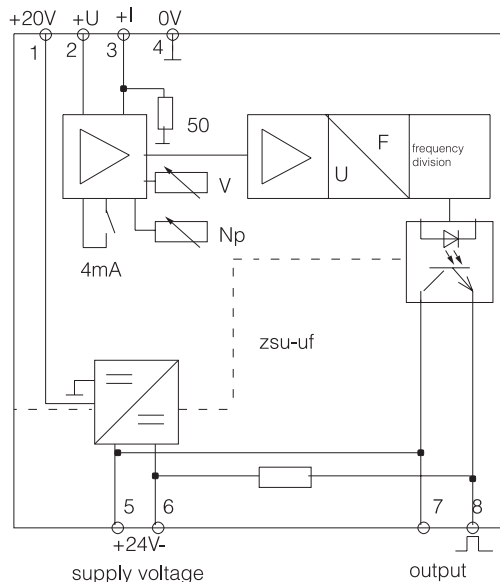
1. Set converter to desired output range as per table.
2. Connect setpoint transmitter (e.g. hsg-2-pt) to input (pins 2/3-4, see pin assignment overleaf).
3. Connect frequency counter or oscilloscope to output (pin 8-6). If you have ordered devices with DC decoupling pay attention to correct ground.
4. Apply supply voltage (pin5-6).
5. Apply 10% of input signal (1V, 2mA or 5,6mA) to input and using trimmer NP adjust 10% of output frequency you need.
6. Apply max. input signal (10V bzw. 20mA) and adjust with trimmer V max output frequency.
7. Check intermediate values.
8. If necessary repeat steps 5 and 6.

view zsu-uf



Block Diagram zsu-uf (power supply not DC decoupled)

sensor supply



Block Diagram zsu-uf (power supply DC decoupled)

sensor supply

