

## Force Sensor KD78

Nominal force range  $\pm 0.5\text{N}$

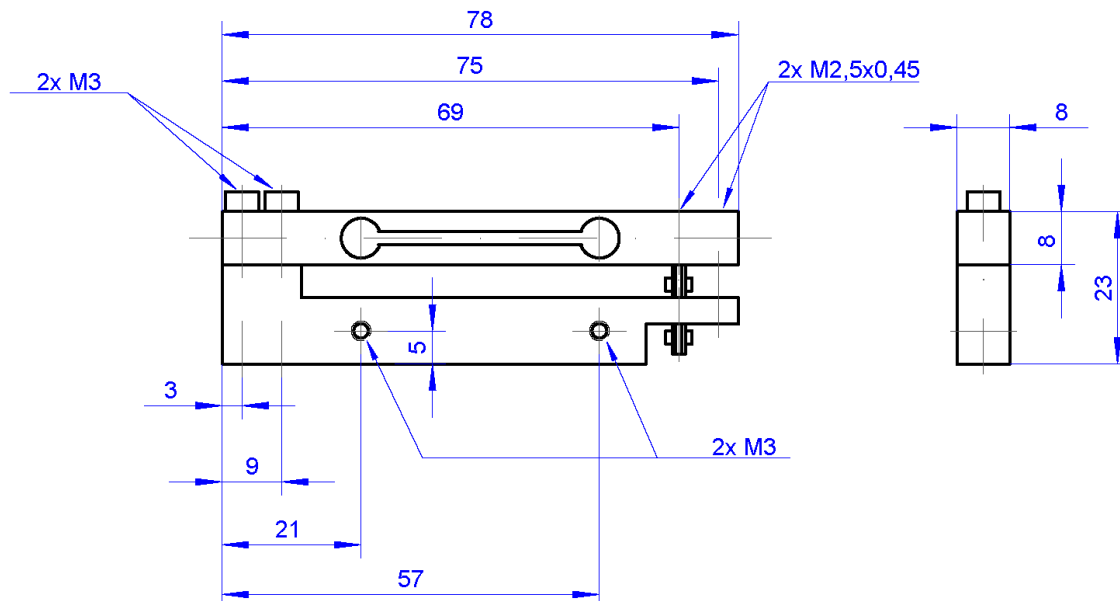
The force sensor KD78 is used for force measurement in the millinewton range or for weighing purposes with a resolution of approx. 10 mg.

Due to the sensor's low weight and its high natural frequency of approx. 400Hz, high measurement rates of up to 50Hz can be realized despite the low measurement range of 0.5 newton. Also filtering in order to refine resolution can be conducted.

The best possible resolution is achieved with the 24bit measuring amplifier GSV-2.



## Dimensions





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### Technical Data

Force sensor	tension / compression	
Construction	double bending beam	
Length $\times$ width $\times$ height	78 $\times$ 8 $\times$ 8	mm $\times$ mm $\times$ mm
Force transmission	M2.5 $\times$ 0.45	mm
Fastening with stopper	M3	mm
Material	aluminum	
Accuracy class	0.5	
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Nominal force ( $F_N$ )	0.5	N
Nominal displacement (approx.)	0.2	mm
Operating force	2	N
Breaking force without stopper	5	N
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Nominal temperature range	+10...+60	$^{\circ}\text{C}$
Operating temperature range	-20...+80	$^{\circ}\text{C}$
Storage temperature range	-40...+80	$^{\circ}\text{C}$
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Nominal output ( $S_N$ )	approx. 0.5 <sup>1)</sup>	mV/ V
Zero signal tolerance	$\pm 10$	% $F_N$
Max. supply voltage	5	V
Input resistance	490 $\pm 10$	Ohm
Output resistance	350 $\pm 1.5$	Ohm
Insulation resistance	$> 5 \cdot 10^9$	Ohm
Connection, 4-conductor	2	m
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Linearity error	$\leq 0.1$	% $S_N$
Reversal error	$\leq 0.1$	% $S_N$
Temperature coeff. of the zero signal	$\leq \pm 0.05$	% $F_N/ \text{K}$
Temperature coeff. of the nominal output	$\leq \pm 0.01$	% $S_N/ \text{K}$
Zero point return error (30 min)	$\leq 0.5$	% $S_N$
Creep error (30 min)	$\leq 0.5$	% $S_N$

1) Nominal output is given in the printout.

### Pin Configuration

+Us	positive bridge supply	red
- Us	negative bridge supply	black
+UD	positive bridge output	green
- UD	negative bridge output	white