Force Sensor K1A100 10kN

Item number: 14997



Highlights

- Single-axis force sensor for tension/compression
- Based on proven K3A technology
- Secure and rigid flange mounting
- High resistance to bending moments
- Stable under eccentric force introduction
- Robust design for industrial environments
- Precise and reliable measurement results

The **single-axis force sensors of the K1A series** represent precise and robust force measurement technology for tension and compression forces in one axis. Their mechanical design is derived from the proven K3A 3-axis sensor series, using the same high-quality structural concept and established strain gauge technology. Unlike the K3A sensors, however, the K1A sensors are consistently optimized for a single Z-axis – essentially the same stable construction, focused on one measurement direction.

A key feature of the series is the **flange mounting design**, which enables secure, backlash-free, and highly rigid installation within the surrounding structure. This ensures reliable and repeatable force transmission and simplifies integration into test benches, machinery, and automation systems.

Due to their mechanical design, K1A sensors are **significantly more resistant to bending moments** than conventional single-axis force sensors. They also provide high robustness

against **eccentric force introduction** and deliver reliable measurement results within their specified operating point, even under non-ideal loading conditions. Their robust construction makes them particularly suitable for demanding industrial applications requiring stability, repeatability, and long-term reliability.

Optional special version

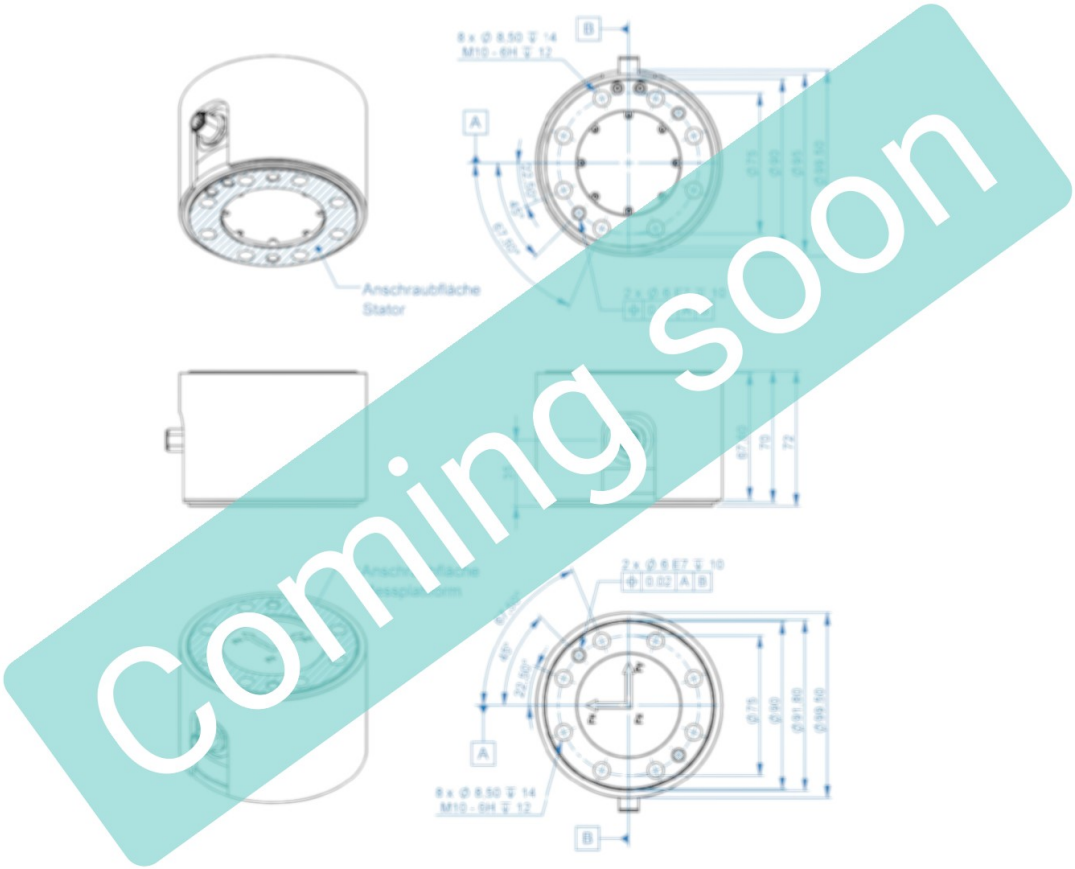
- Protection class IP68: from rated force 200 N
- Temperature range: -40°C to 180°C
- Pressure range up to 8 bar

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Stand: 27.08.2026

Technical Drawing



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Technical Data

Basic Data		Unit
Type	Kraftsensor	
Force direction	Tension/Compression	
Rated force Fz	10	kN
Force introduction	Internal thread	
Dimension 1	8xM10x1.5	
Sensor Fastening	Internal thread	
Dimension 2	8xM10x1.5	
Operating force	300	%FS
Material	alluminum-alloy	
Dimensions	Ø100 x 72	mm
Height	72	mm
Length or Diameter	100	mm
Variants	10kN, 20kN, 30kN, 60kN	

Electrical Data		Unit
Insulation resistance	5	GOhm
Rated range of excitation voltage from	2.5	V
Rated range of excitation voltage to	5	V
Operating range of excitation voltage from	1	V
Operating range of excitation voltage to	10	V
Zero signal	0.05	mV/V
Rated output	0.8	mV/V / FS

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Accuracy Data		Unit
Accuracy class	0,2	
Relative linearity error	0.2	%FS
Temperature effect on zero signal	0.01	%FS/K
Temperature effect on characteristic value	0.01	%RD/K
Relative creep	0.01	%FS
Environmental Data		**Unit**
Rated temperature range from	-10	°C
Rated temperature range to	70	°C
Operating temperature range from	-10	°C
Operating temperature range to	85	°C
Environmental protection	IP65	

Abbreviation: RD: „Reading“; FS: „Full Scale“The exact nominal sensitivity is indicated in the test report

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