

Force Sensor KM10

Nominal force ranges: 25N, 50N, 100N, 500N, 1000N

The KM10 is a membrane force sensor in ultra miniature design.

The force is transmitted via the universal ball joint (diameter 2.4mm, R4) in the centre of the sensor.

The force sensor is assembled on a flat surface. The force sensor is centered on the outer circumference, for example with 3 pins or within a 0.5 mm deep sink. The 9.8mm – 7.4mm ring forms the sensor's contact area. In the centre, a potting compound is visible up to a 7.4mm diameter. The inner ring is not used for centring.

To protect against lift-off, the contact area can be fixed on a flat surface with PUR lacquer. Due to its small dimensions, a Teflon cable with an outer diameter of just 1.4mm is used. Processing the AWG36 stranded wires requires a special tool (scalpel, Hoffmann stripper-AWG36-26). The Teflon coating is intended exclusively for fixed installation, not for mobile use.

A version with a central cable outlet is available as an alternative to a lateral cable outlet. Cable type in this version is STC-31v-4RWBG, PVC, Diameter 2,2mm;

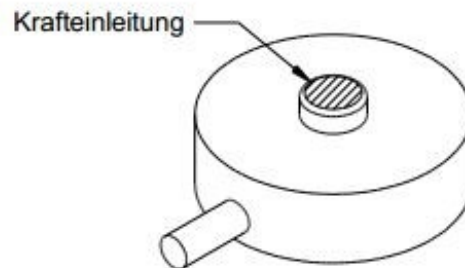
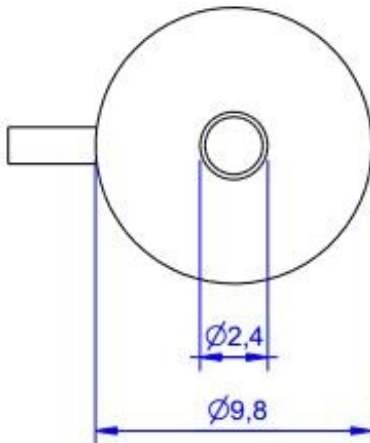
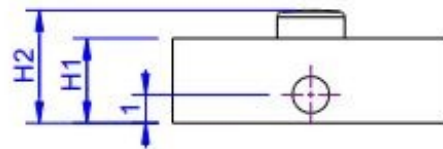
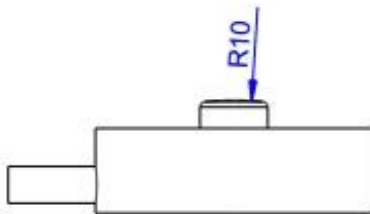
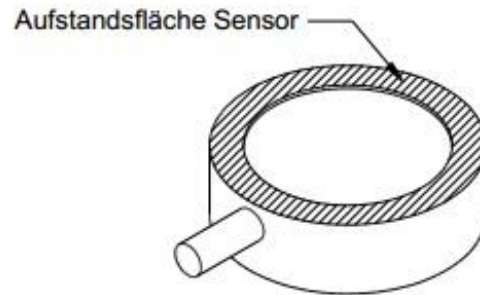
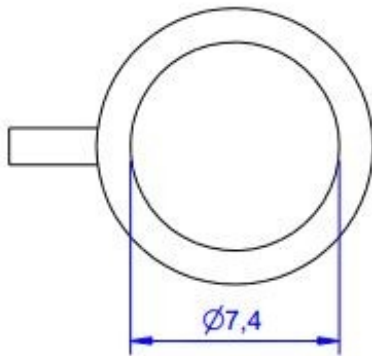


collateral cabel outlet



central cabel outlet

Dimensions



Nennlast	Höhe (H1) in mm	Höhe (H2) in mm
25N	3	4
50N	3	4
100N	3	4
200N	3	4
500N	3	4
1000N	3,5	4,5

Technical Data

Measurement / Material		
Design		Membrane – compression
Material		stainless steel
Dimensions	mm x mm	Ø 9,8 x 4 KM10 1kN Ø 9,8 x 4 ,5
Force transmission / Thread	mm	Kalotte Ø2,4, Radius 4
Mechanical Dat		
Nominal Force (FS)	N	25, 50, 100, 500, 1000
Operation force	%FS	150
Break load	%FS	300
Deflection by FS	mm	0,08
Electrical Data		
Nominal output 1)	mV/V @ FS	0,5...1,1
Zero balance	mV/V	0,1
max. supply voltage	V	5
Input resistance	Ohm	350 ±40
Output resistance	Ohm	350
Insulation resistance	Ohm	>2 10 ⁹
Cable: STC-36T-4 or STC-31V-4 (axial version)	m	3
Accuracy		
Accuracy Class	%	1
rel. linearity deviation	%FS	0,1
rel. reversal error	%FS	0,05
Temperature coefficient of the zero signal	%FS/K	0,02
Temperature coefficient of the parameter	%RD/K	0,02
Creep Error (30 min)	%FS	0,1
Temperature		
Nominal temperature range	°C	-10 ... +70
Working temperature range	°C	-10 ... +85
Storage temperature range	°C	-10 ... +85
Environmental protection		IP64

Abbreviation : RD: „Reading“; FS: „Full Scale“;

- 1) The exact nominal sensitivity is indicated in the test report;



Pin Configuration

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

Pressure load : positive output signal