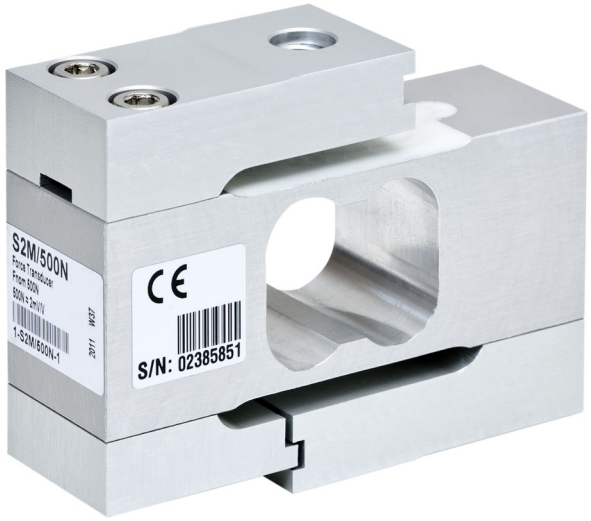
DATA SHEET

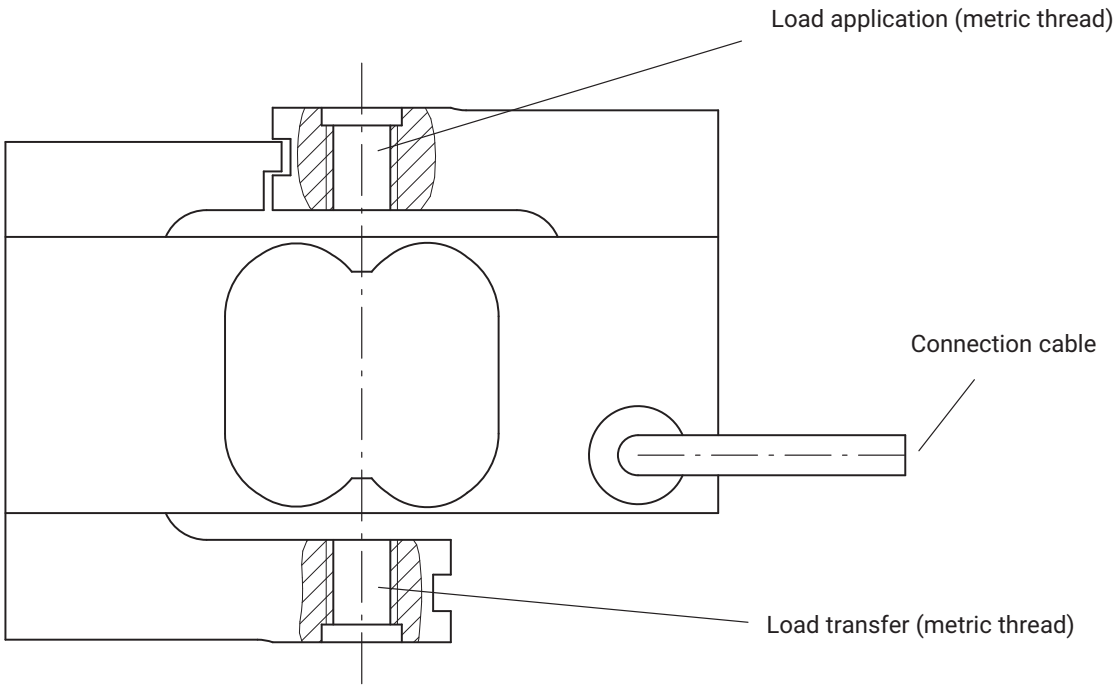
S2M
Force Transducer

SPECIAL FEATURES

- Tensile/compressive force transducer
- Accuracy class 0.02
- Nominal (rated) forces: 10 N … 1000 N
- High protection class (IP67)
- High lateral force stability
- Six-wire circuit

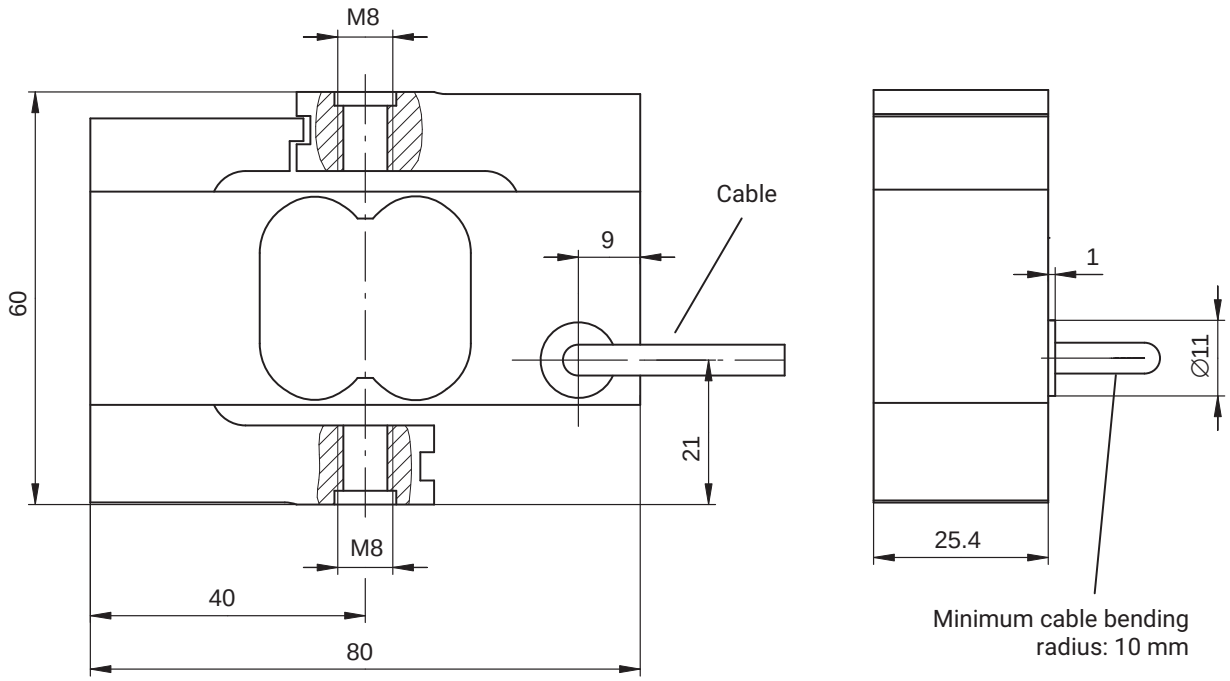


PRINCIPLE OF THE S2M FORCE TRANSDUCER



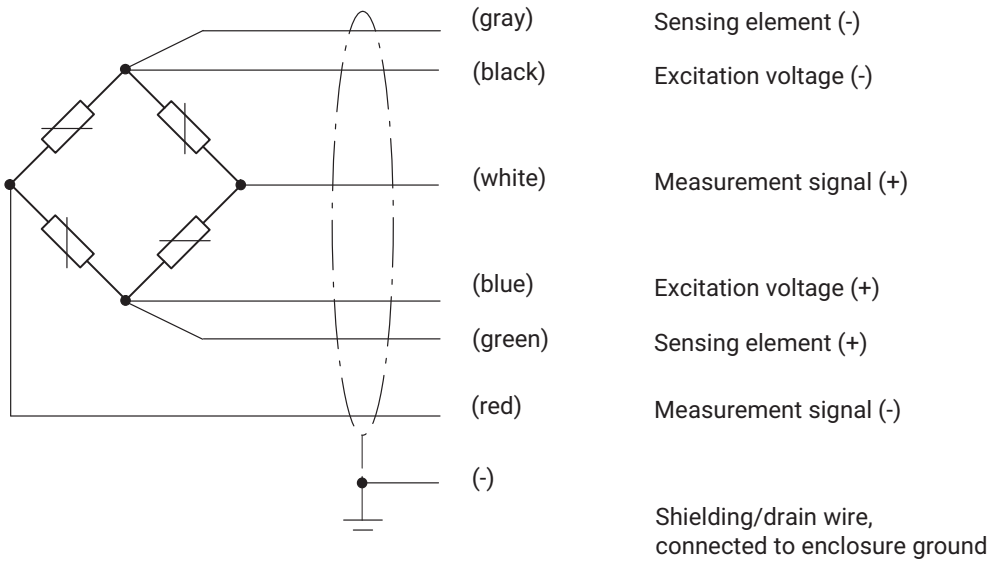
DIMENSIONS

Dimensions in mm (1 mm = 0.03937 inches)



CABLE ASSIGNMENT (SIX-WIRE CONFIGURATION)

With this cable assignment, the output voltage at the measuring amplifier is positive in the pressure direction when the transducer is loaded.



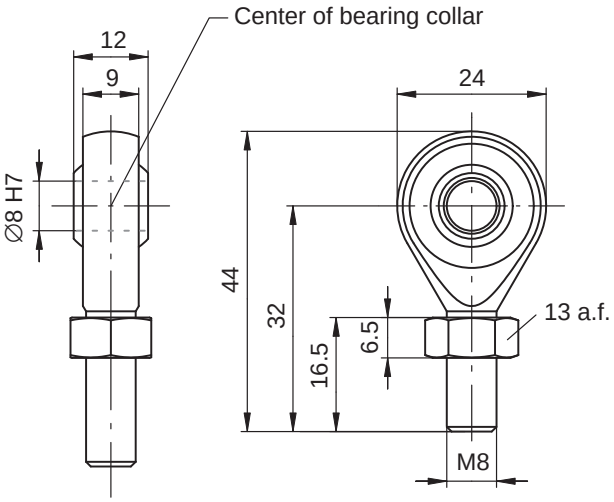
SPECIFICATIONS (DATA PER VDI/VDE/DKD 2638 STANDARDS)

Type			S2M						
Nominal (rated) force	F_{nom}	N	10	20	50	100	200	500	1000
Accuracy									
Accuracy class			0.02						
Relative reproducibility and repeatability errors without rotation	b_{rg}	%	0.02						
Relative reversibility error	v		0.02						
Non-linearity	d_{lin}		0.02						
Relative creep over 30 min.	$d_{cr,\ F+E}$		0.02						
Effect of the bending moment at 10% F_{nom} * 10 mm	d_{Mb}		0.02						
Effect of lateral forces (lateral force = 10% F_{nom})	d_Q		0.02						
Effect of temperature on sensitivity	TK_C	% / 10 K	0.02						
Effect of temperature on zero signal	TK_0		0.02						
Electrical characteristic values									
Nominal (rated) sensitivity	C_{nom}	mV/V	2						
Relative zero signal error	$d_{S,\ 0}$	%	5						
Relative sensitivity error	d_c		0.25						
Rel. tensile/compression sensitivity variation	d_{ZD}		0.1						
Input resistance	R_i	Ω	> 345						
Output resistance	R_o		350 ± 50						
Insulation resistance	R_{is}	GΩ	> 2						
Operating range of the excitation voltage	$B_{U,\ G}$	V	0.5 … 12						
Reference excitation voltage	U_{ref}		5						
Connection			Six-wire circuit						
Temperature									
Nominal (rated) temperature range	$B_{T,\ nom}$	°C	-10 … +45						
Operating temperature range	$B_{T,\ G}$		-10 … +70						
Storage temperature range	$B_{T,\ S}$		-10 … +85						
Mechanical characteristic quantities									
Max. operating force	F_G	%	150						
Limit force	F_L		1000						
Breaking force	F_B		1000						
Limit torque	M_L	Nm	4	8	25	28			
Limit bending moment	$M_{b\ perm}$		6	25	34	50	71	95	125
Static lateral limit force	F_Q	% of F_{nom}	100						
Nominal (rated) displacement	s_{nom}	mm	0.27	0.21	0.18	0.15	0.14	0.16	0.21
Fundamental resonance frequency	f_G	Hz	113	187	321	426	545	649	665
Relative permissible oscillatory stress	F_{rb}	% of F_{nom}	140						
General data									
Degree of protection per EN 60529			IP 67						
Measuring body material			Aluminum						
Potting material			Silicone						
Cable			Six-wire circuit, PUR insulation, drag chain compliant						
Cable length		m	6						
Mass (with cable)	m	kg	0.5						

MOUNTING ACCESSORIES (TO BE ORDERED SEPARATELY)

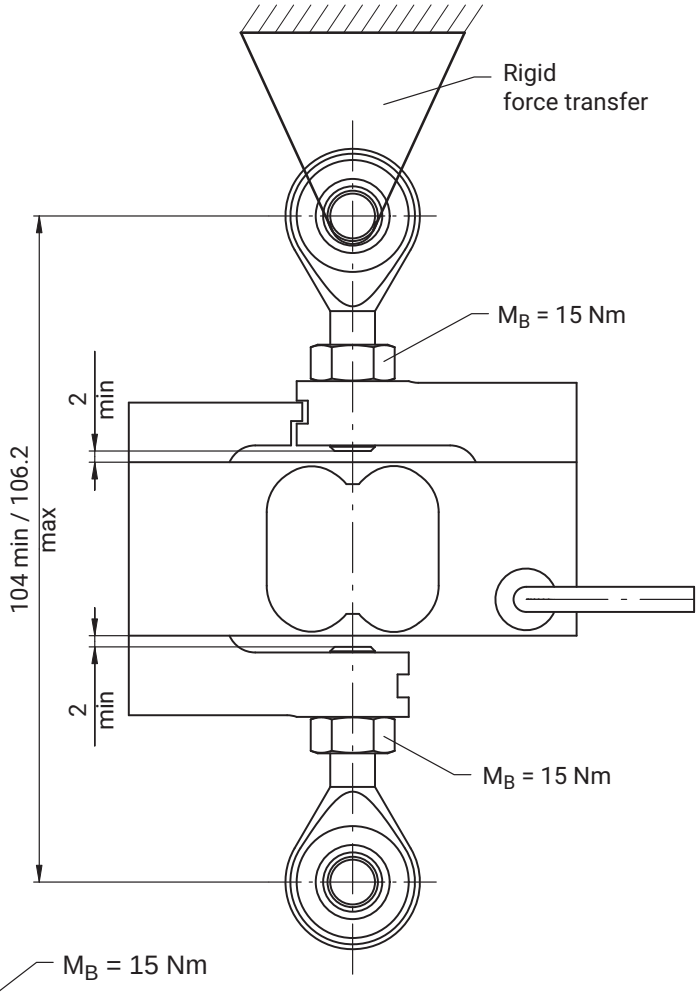
Force application parts for tensile loading

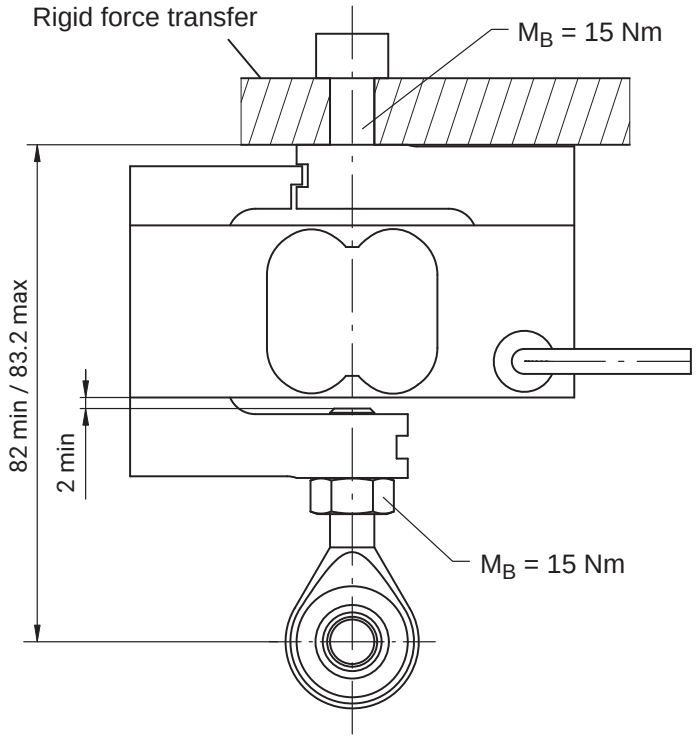
Dimensions in mm (1 mm = 0.03937 inches)



ZGW knuckle eye
Order no. 1−U1R/200KG/ZGW

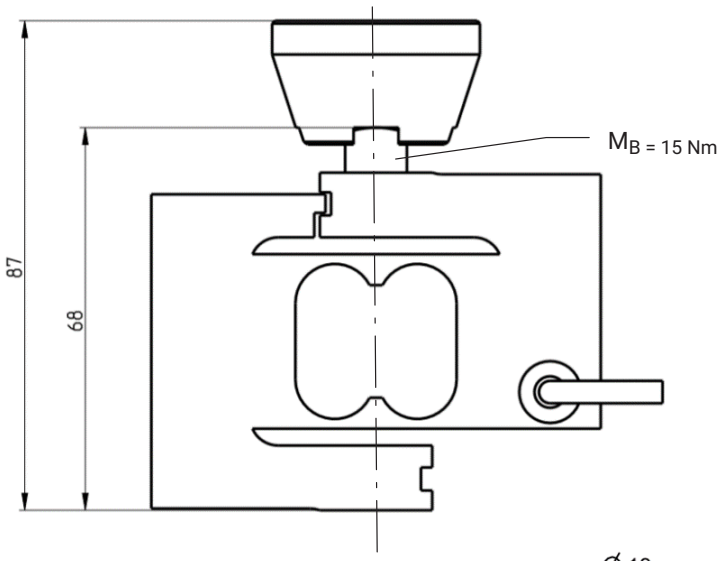
Material: Tempered steel, galvanized
roller bearing steel
PTFE/bronze corrugated foil



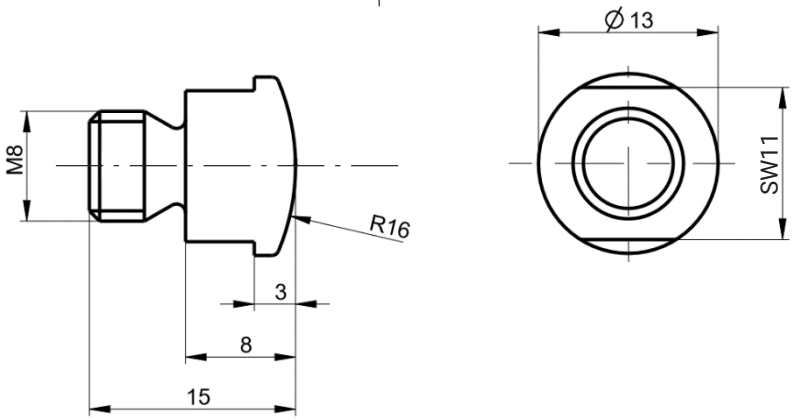


Force application parts for compressive loading

Dimensions in mm
(1 mm = 0.03937 inches)



Load button
Order no.: 1-U1R-200kg/ZL
Material: stainless steel

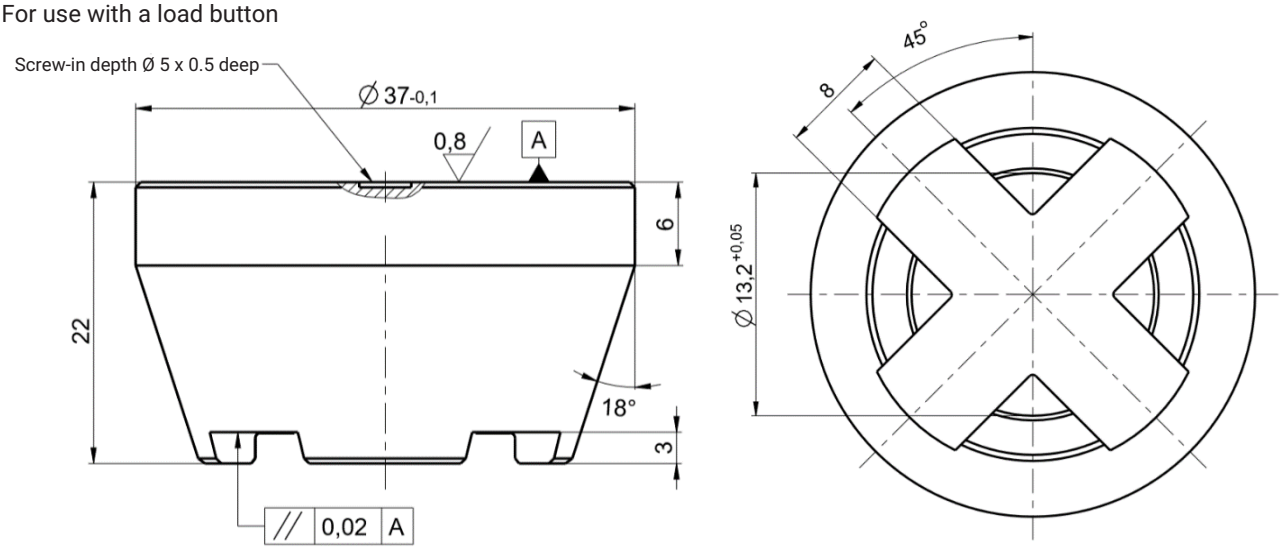


Side view

View from below

Thrust piece EDO3
Order no.: 1-EDO3/1kN
Material: quenched and tempered steel

For use with a load button



VERSIONS AND ORDERING NUMBERS

Code	Measuring range	Stock item ordering number
010N	10 N	1-S2M/10N-1
020N	20 N	1-S2M/20N-1
050N	50 N	1-S2M/50N-1
100N	100 N	1-S2M/100N-1
200N	200 N	1-S2M/200N-1
500N	500 N	1-S2M/500N-1
001K	1000 N	1-S2M/1000N-1

The ordering numbers shown in gray are preferred types, they can be delivered rapidly.

All force transducers with 6 m cable, open ends and without TEDS.

The ordering number for the preferred types is 1-S2M..

The ordering number for customer-specific designs is K-S2M-MONT...

Cable length	Plug version	Transducer identification
01M5 1.5 m	**Y** Free ends	**S** without TEDS
03M0 3 m	**F** D-Sub	**T** With TEDS
06M0 6 m	**Q** D-Sub HD	
	N ME3106PEMV	
	P CON P1016	

Example

K-S2M-MONT	**010N**	**03M0**	**Q**	**T**

The example shows an S2M with 10 N capacity, 3 m cable, a fitted plug for the Quantum system, and TEDS.

TEDS is only possible when a plug is fitted, TEDS and open ends cannot be combined.

B03594 02 E00 00 14.12.2022

托驰（上海）工业传感器有限公司
上海市嘉定区华江路348号1号楼707室
Tel. 021-51069888 Fax. 021-51069009
www.yanatoo.ccom zhang@yanatoo.com