

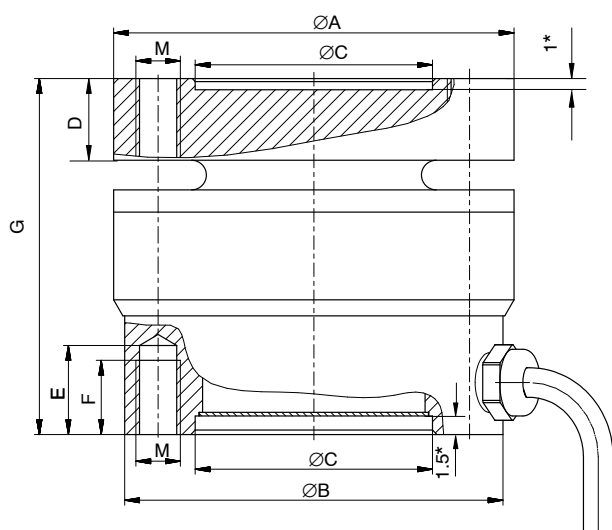
U93

Force Transducer

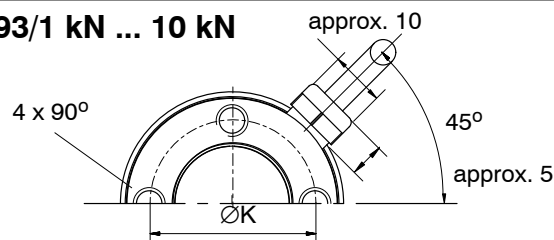


Special features

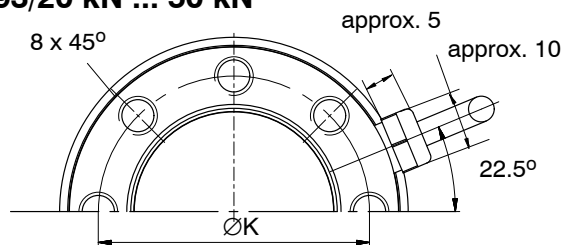
- Tensile/compressive force transducer
- Simple installation thanks to flange connection on both sides
- Integrated TEDS electronic data sheet
- Compact
- Robust
- Stainless steel transducer
- Suitable for cable drag chains



U93/1 kN ... 10 kN



U93/20 kN ... 50 kN



All dimensions in mm

Nominal (rated) force	ØA	ØB	ØCH ⁸	D	E	F	G	ØK ^{±0.1}	M
U93/1 kN ...10 kN	35	33	18	6.2	9	7	30.5	26	M5
U93/20 kN ...50 kN	54	51	32	11	12	10	48	42	M6

* admissible centering depth

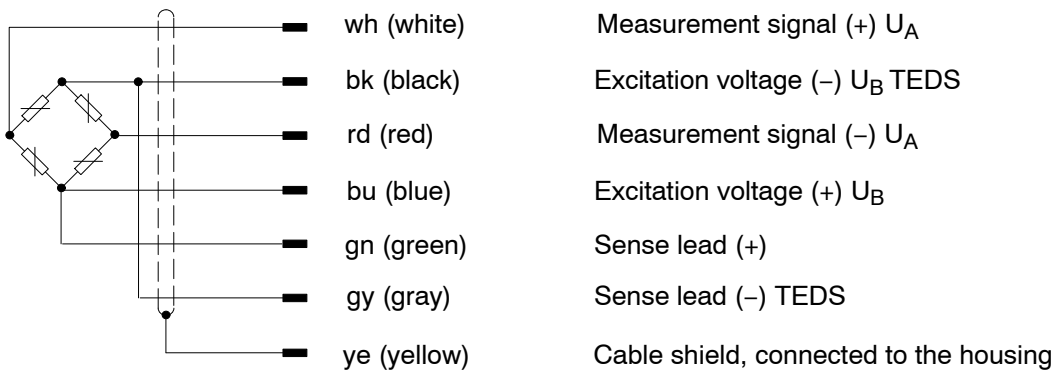
Specifications (data per VDI/VDE 2638 standards)

Type	U93								
Data as per VDI 2638									
Nominal (rated) force	F_{nom}	kN	1	2	5	10	20	50	
Nominal (rated) sensitivity	C_{nom}	mV/V	0.5	1	0.5	1	0.5	1	
Relative sensitivity error (compression)	d_c	%	< ± 0.5						
Relative zero signal error	$d_{s,0}$	mV/V	< ± 0.075						
Rel. reversibility error (0.5 F_{nom})	$v_{0,5}$	%	< ± 0.5						
Relative linearity error	d_{lin}	%	< ± 0.5						
Effect of temperature on sensitivity/ 10 K, related to nominal (rated) sensitivity	TK_C	%	< ± 0.5						
Effect of temperature on zero signal/ 10 K, related to nominal (rated) sensitivity	TK_0	%	< ± 0.8	< ± 0.5	< ± 0.8	< ± 0.5	< ± 0.8	< ± 0.5	
Relative creep over 30 min	d_{crF+E}	%	< ± 0.2						
Effect of lateral forces (lateral force 10% F_{nom})¹⁾	d_Q	%	< 0,2		< 0,5		< 0,4		
Effect of eccentricity per mm	d_E	%	< 0.07		< 0.03		< 0.12		
Input resistance	R_i	Ω	> 345						
Output resistance	R_o	Ω	230–350						
Isolation resistance	R_{is}	Ω	> 1·10 ⁹						
Reference excitation voltage	U_{ref}	V	5						
Operating range of the excitation voltage	$B_{U,G}$	V	0.5...12						
Nominal temperature range	$B_{t,nom}$	°C	-10...+70						
Operating temperature range	$B_{t,G}$	°C	-30...+85						
Storage temperature range	$B_{t,S}$	°C	-50...+85						
Reference temperature	t_{ref}	°C	+23						
Max. operating force	(F_G)	%	180						
Breaking force	(F_B)	%	> 400		> 300		> 300		
Lateral force limit ¹⁾	(F_Q)	%	100		80		40		
Permissible force application eccentricity	e_G	mm	1.5		3		6		
Nominal (rated) displacement (± 15%)	S_{nom}	mm	0.01	0.02	0.02	0.04	0.01	0.03	
Fundamental resonance frequency	f_G	kHz	7.9		11.7		10.3		
Weight with cable, approx.		g	200						600
Relative permissible oscillatory stress	F_{rb}	%	15.0						
Cable connection, six-wire connection	3 m cable length; outside diameter 4 mm; 6 x 0.08 mm ² ; polyurethane sheath; min. bending radius R10								
Degree of protection per DIN 60529	IP67								
Transducer identification	TEDS, as per IEEE 1451.4								

¹⁾ relative to a point of contact on the force application surface

Pin assignment

Six wire circuit




Order Nos.: Force Transducer

Order Code	Nominal (rated) force						Unit
	1	2	5	10	20	50	
1-U93 ...							kN

Options:

U93 force transducer, version options

Code	Nominal (rated) force
1K00	1 kN
2K00	2 kN
5K00	5 kN
10K0	10 kN
20K0	20 kN
50K0	50 kN

 Preferred version available soon

Code	Cable length
03	3 m
06	6 m
12	12 m

Code	Cable version
Y	free ends
F	15-pin D-Sub plug
N	MS3106PEMV plug

K-U93 - 2K00 - 03 - Y

Modifications reserved.

All details describe our products in general form only. They are not to be understood as a guarantee of quality or durability and do not constitute any liability whatsoever.

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