

## Data sheet

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Force transducer

Series KL

(5 N – 100 N)



### Benefits/Application

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- Insensitive against parasitic forces and moments
- Easy mounting from one side, many adaption options
- Very small force application effect
- Protector against overload

### Options/Accessories

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- Mounting parts for tension and compression

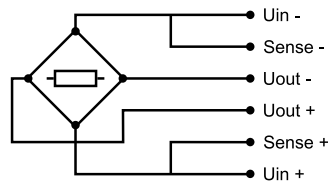
# Technical data

	Nominal force compression/tension	$\pm F_{nom}$	N	5	10	20	50	100
Metrological Data	Accuracy class					0,03		
	Linearity error	$d_{lin}$	%			0,03		
	Hysteresis	$h$	%			0,02		
	Reproducibility		%			0,005		
	Creep		%			0,025		
	Temperature effect on characteristic value per 10 K	$TK_C$	%/10 K			0,04		
	Temperature effect on zero signal per 10 K	$TK_0$	%/10 K			0,025		
	Eccentricity effect		%/mm			0,015		
	Bending moment effect		%/(0,1·N·m)	0,2	0,1	0,05	0,02	0,01
	Lateral force effect		%/(0,1·F <sub>nom</sub> )			0,02		
	Characteristic value difference, tension/compression force	$d_{ZD}$	%			0,1		
Electrical Data	Rated characteristic value	$C_{nom}$	mV/V			2		
	Characteristic value tolerance	$d_c$	%			0,2		
	Zero signal deviation	$d_{S,0}$	%			0,5		
	Input resistance	$R_e$	$\Omega$			820		
	Output resistance	$R_a$	$\Omega$			600 - 700		
	Insulation resistance	$R_{is}$	$\Omega$			$> 10^9$		
	Operating range of excitation voltage	$B_{U,G}$	V			5 - 12		
	Protection (DIN EN 60529)					50		

# Technical data

Mechanical Data	Nominal force compression/tension	$\pm F_{nom}$	N	5	10	20	50	100
	Rated Displacement	$s_{nom}$	mm	0,54	0,45	0,31	0,22	0,18
	Spring rigidity	$c_{ax}$	N/mm	9	22	63	231	549
	Mass	$m$	kg	0,3				
	Proportionate moving mass	$m_{mess}$	kg	0,04				
	Fundamental resonant frequency	$f_G$	Hz	80	120	200	380	600
	Force limit		%	150				
Limits	Breaking force		300	275			250	
	Lateral force limit		1900	1200	800	500	300	
	Permissible eccentricity	$e_G$	mm	100	70	50	40	30
	Bending moment limit	$M_{b\,zul}$	N·m	0,5	0,7	1,1	1,9	2,8
	Rated temperature range	$B_{T, nom}$	°C	10 – 40				
Operating temperature range	$B_{T, G}$	°C	- 10 – +50					

# Cable connection



Permanent connection  
end not connected

Grey cable  
Ø 6,5 mm  
6 x 0,25 mm<sup>2</sup>  
Temperature range: -35 °C bis +90 °C

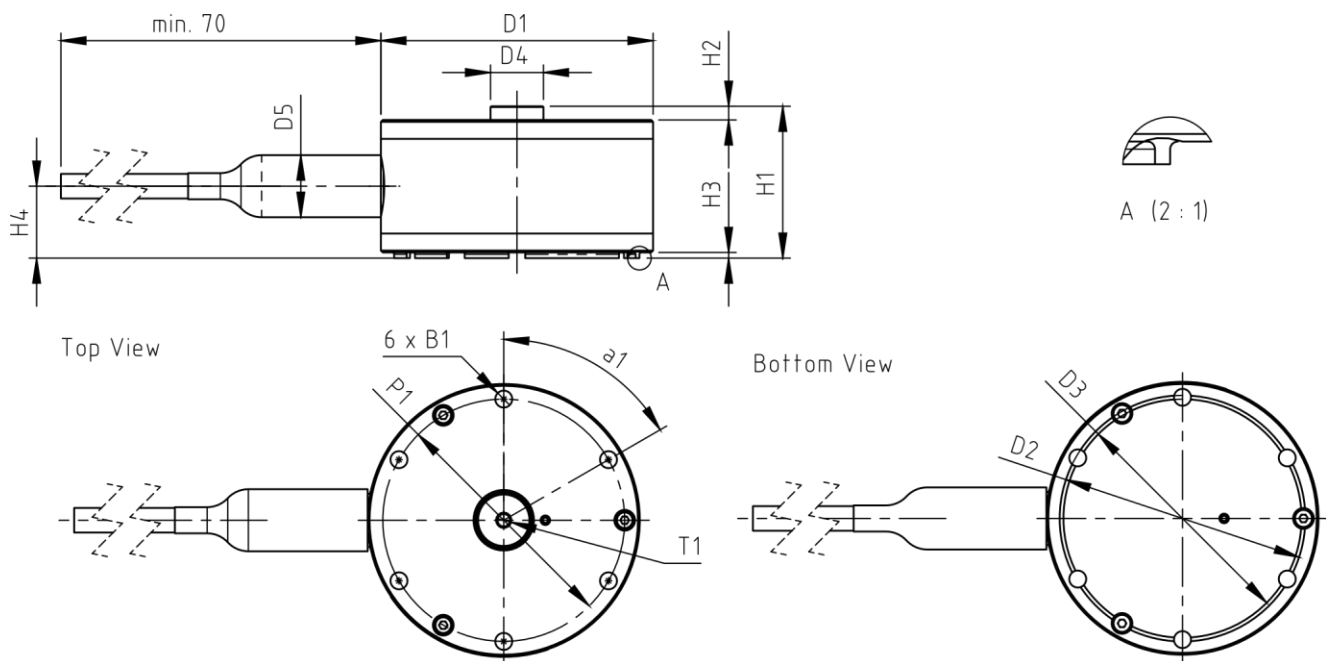
Connection		Wire colour
Supply voltage (+)	U <sub>in+</sub>	blue
Supply voltage (-)	U <sub>in-</sub>	black
Measurement signal (+)	U <sub>out+</sub>	white
Measurement signal (-)	U <sub>out-</sub>	red
Sense (+)	Sense+	green
Sense (-)	Sense-	grey
Shielding		yellow



*Permanent Connection  
end not connected*

- Cable length 5 m. More cable types and lengths on request
- Connector types on cable end: D-Sub 9; D-Sub 15; M-S 7pol

# Mating dimensions



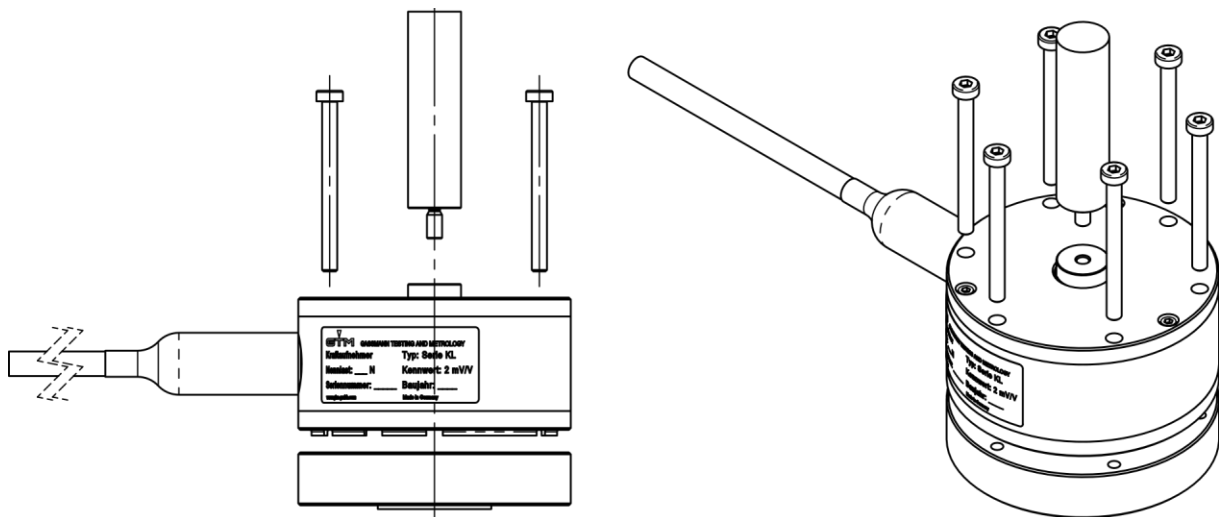
Nominal force compression/tension	$\pm F_{nom}$	kN	
Bore	$\varnothing B_1$	mm	6 x 4,5
Diameter	$\varnothing D_1$	mm	72
Diameter	$\varnothing D_2$	mm	65
Diameter	$\varnothing D_3$	mm	63
Diameter	$\varnothing D_4$	mm	14
Diameter	$\varnothing D_5$	mm	17
Pitch circle diameter	$\varnothing P_1$	mm	64
Thread	$T_1$		M4, 8 mm
Height	$H_1$	mm	40,1
Height	$H_2$	mm	3,6
Height	$H_3$	mm	1,5
Height	$H_4$	mm	19
Angle	$a_1$		6 x 60°

## Screw mounting

Connection	Nominal force	Screw size	Screw quality	Fastening torque	Surface pressure <sup>1)</sup>
-	N	-	-	N·m	N/mm <sup>2</sup>
Thread	5 - 100	M4	A2-70	3	20
Flange	5 - 100	M4	A2-70	3	100

1) Surface pressure on the contact area as a result of the max. Fastening torque

## Unidirectional mounting



Änderungen vorbehalten. Alle Angaben beschreiben unsere Produkte in allgemeiner Form. Sie stellen keine vereinbarte Beschaffenheit im Sinne des § 434 Abs. 1 BGB dar.



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