Data sheet

Force Transducer

Series KTN-D

(10 kN – 5000 kN)

Benefits/Application

- Accuracy class VN
- For static compressive forces
- Hermetically sealed
- For highest precision requirements
- Insensitive against parasitic forces and moments
- Very small force application effect
- Little weight
- Easy adaption

Options/Accessories

- Second redundant measuring circuit
- Bending moment circuits

Classification

Nominal force/kN	10	20	50	100	200	500	1000	2000	3000	5000
Class										
VN[1)]	✓	✓	✓	✓	✓	✓	✓			
00[2)]	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓
0,5[2)]	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓

1) GTM-Classification, better then class 00 according to ISO 376.

2) Class according to ISO 376

Technical data

Class VN

Metrological Data	Nominal force	F_{nom}	kN	10	20	50	100	200	500	1000
	Force measurment range		%	40 - 100						
	Interpolation error	f_c	%	0,002						
	Reversibility error	v	%	0,06						
	Repeatability error in unchanged mounting position	b, b_{rg}	%	0,002						
	Reproducibility error in different mounting positions	b', b_{rv}	%	0,005						
	Zero error	f_0	%	0,008						
	Creep		%	0,008						
	Temperature effect on characteristic value per 10 K	TK_C	%/10 K	0,01						
	Temperature effect on zero signal per 10 K	TK_0	%/10 K	0,01						
Electrical Data	Rated characteristic value	C_{nom}	mV/V	2						
	Input resistance	R_e	Ω	>1200		>1100				>1400
	Output resistance	R_a	Ω	>900						>1100
	Insulation resistance	R_{is}	Ω	$>10^9$						
	Operating range of excitation voltage	$B_{U,G}$	V	5 - 12						
	Protection (DIN EN 60529)			54						
Mechanical Data	Mass transducer	m	kg	1		2,3	2,4	4,5	7,7	15,6
	Mass thrust piece	m	kg	0,2		0,5	0,5	0,9	2,3	5,5
	Force limit		%	110						
	Breaking force		%	200						
	Permissible eccentricity	e_G	mm	5						10
	Rated temperature range	$B_{T,nom}$	°C	17 - 27						
	Operating temperature range	$B_{T,G}$	°C	10 - 35						

Technical data

Class 00

Nominal force	F_{nom}	kN	10	20	50	100	200	500	1000	2000	3000	5000
Force measurment range		%	20 - 100									
Interpolation error	f_c	%	0,02									
Reversibility error	v	%	0,06									
Repeatability error in unchanged mounting position	b, b_{rg}	%	0,023									
Reproducibility error in different mounting positions	b', b_{rv}	%	0,045									
Zero error	f_0	%	0,01									
Creep		%	0,01									
Temperature effect on characteristic value per 10 K	TK_C	%/10 K	0,01									
Temperature effect on zero signal per 10 K	TK_0	%/10 K	0,01									
Rated characteristic value	C_{nom}	mV/V	2									
Input resistance	R_e	Ω	>1200		>1100				>1400	>1100	>900	
Output resistance	R_a	Ω	>900						>1100	>900	>800	
Insulation resistance	R_{is}	Ω	$> 10^9$									
Operating range of excitation voltage	$B_{U,G}$	V	5 - 12									
Protection (DIN EN 60529)			54									
Mass transducer	m	kg	1		2,3	2,4	4,5	7,7	15,6	39,4	124,3	133
Mass thrust piece	m	kg	0,2		0,5	0,5	0,9	2,3	5,5	18,6	36,7	36,7
Force limit		%	110									
Breaking force		%	200									
Permissible eccentricity	e_G	mm	5						10			
Rated temperature range	$B_{T,nom}$	°C	17 - 27									
Operating temperature range	$B_{T,G}$	°C	10 - 35									

Metrological Data

Electrical Data

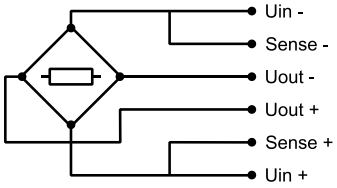
Mechanical Data

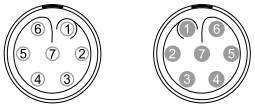
Technical data

Class 0,5

Metrological Data	Nominal force	F_{nom}	kN	10	20	50	100	200	500	1000	2000	3000	5000
	Force measurment range		%	20 - 100									
	Interpolation error	f_c	%	0,04									
	Reversibility error	v	%	0,14									
	Repeatability error in unchanged mounting position	b, b_{rg}	%	0,045									
	Reproducibility error in different mounting positions	b', b_{rv}	%	0,09									
	Zero error	f_0	%	0,02									
	Creep		%	0,02									
	Temperature effect on characteristic value per 10 K	TK_C	%/10 K	0,02									
	Temperature effect on zero signal per 10 K	TK_0	%/10 K	0,02									
Electrical Data	Rated characteristic value	C_{nom}	mV/V	2									
	Input resistance	R_e	Ω	>1200		>1100				>1400	>1100	>900	
	Output resistance	R_a	Ω	>900						>1100	>900	>800	
	Insulation resistance	R_{is}	Ω	$>10^9$									
	Operating range of excitation voltage	$B_{U,G}$	V	5 - 12									
	Protection (DIN EN 60529)			54									
Mechanical Data	Mass transducer	m	kg	1	2,3	2,4	4,5	7,7	15,6	39,4	124,3	133	
	Mass thrust piece	m	kg	0,2	0,5	0,5	0,9	2,3	5,5	18,6	36,7	36,7	
	Force limit		%	110									
	Breaking force		%	200									
	Permissible eccentricity	e_G	mm	5					10				
	Rated temperature range	$B_{T,nom}$	°C	17 - 27									
	Operating temperature range	$B_{T,G}$	°C	10 - 35									

Cable connection



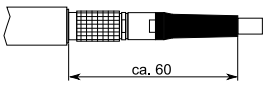
	Connection pluggable[1)2)]	End not connected
	7-pin LEMO Series 0 Female: - Male: 	Grey cable Ø 6,5 mm 6 x 0,25 mm² Temperature range: -35 °C bis +90 °C

Connection		Pin	Wire colour
Supply voltage (+)	U_{in+}	3	blue
Supply voltage (-)	U_{in-}	2	black
Measurement signal (+)	U_{out+}	1	white
Measurement signal (-)	U_{out-}	4	red
Sense (+)	Sense+	5	green
Sense (-)	Sense-	6	grey
Shielding		Housing	yellow

1) View to o weldingside

2) Female LEM O S.A. Typ: EGG.1B.307.CLL; M ale: FGG.1B.307.CLA.D72

Plugable connection



End not connected (optional)

- Cable is not standard scope of supply
- Cable lenght 5 m. Other cable lengths on request
- Other connector types on cable end: D-Sub 9; D-Sub 15; M-S 7pol
- Configuration with customer defined connection is possible
- Optional fixed cable connection to transducers possible

Option: 2.Measuring circuit

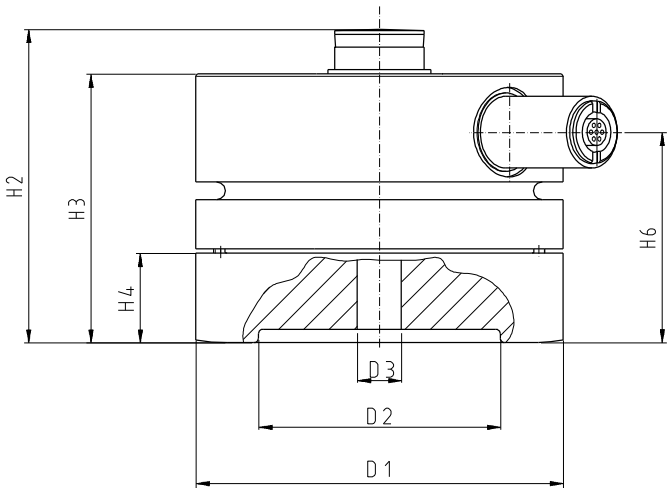
- In case of two circuits the technical data are similarly valid for both circuits

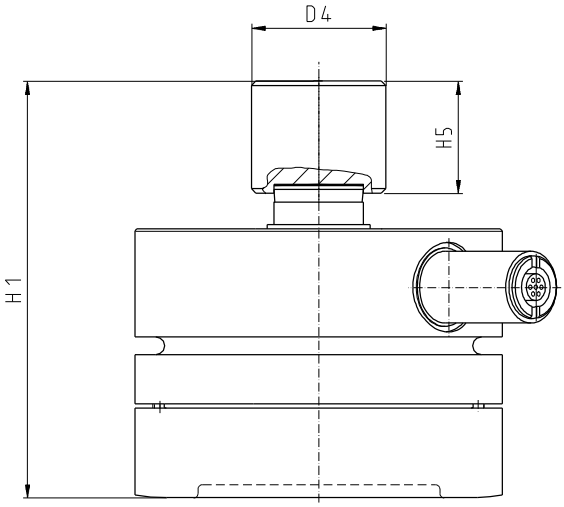
Option: Bending moment

Nominal force	F_{nom}	kN	10 - 5000 (2mV/V)
Temperature effect on characteristic value per 10 K	TK_C	%/10 K	0,2
Temperature effect on zero signal per 10 K	TK_0	%/10 K	0,2
Input resistance	R_e	Ω	400
Operating range of excitation voltage	$B_{U,G}$	V	5 - 12

- In case of two circuits the technical data are similarly valid for both circuits

Mating dimensions





Standard scope of supply

Option: Load button

Nominal force	F_{nom}	kN	10	20	50	100	200	500	1000	2000	3000	5000
Diameter	$ØD_1$	mm	82		92		120	140	200	270	375	
Diameter	$ØD_2$	mm	54		64		85	100	177	228	312,6	
Diameter	$ØD_3$	mm	10^{H7}						150	215	25^{H8}	
Diameter	$ØD_4$	mm	30		42		54	80	110	160	200	
Height	H_1	mm	93		107		124	149	195	267	360	
Height	H_2	mm	70				77	93	125	153	213	
Height	H_3	mm	60				66,75	82,35	103	140	197	
Height	H_4	mm	20						25		37	
Height	H_5	mm	25		39		49	58	75	119	153	
Height	H_6	mm	47		46			54,5	73,5	126	167	

GTM
DEFINING PRECISION

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