

Data sheet

Force Transducer Series KTN-D (10 kN – 5000 kN)



Benefits/Application

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

		Nominal force	F_{nom}	kN	10	20	50	100	200	500	1000	
Metrological Data	Force measurement 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		$B_{T,nom}$	$^{\circ}\text{C}$	17 - 27							
	Operating temperature range		$B_{T,G}$	$^{\circ}\text{C}$	10 - 35							

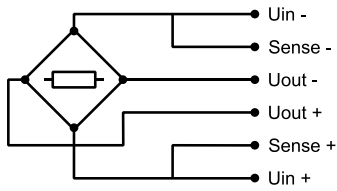
Nominal force		F_{nom}	kN	10	20	50	100	200	500	1000	2000	3000	5000		
Metrological Data	Force measurement range		%	20 - 100											
	Interpolation error	f_c	%	0,02											
	Reversibility error	v	%	0,06											
	Repeatability error in unchanged mounting position	b, b_{rg}	%	0,023											
	Reproducibility 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											
Electrical Data	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											

Technical data

Class 0,5

		Nominal force	F_{nom}	kN	10	20	50	100	200	500	1000	2000	3000	5000	
Metrological Data	Force measurement 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



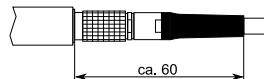
Connection pluggable ¹⁾²⁾		End not connected	
7-pin LEMO Series 0		Grey cable	
Female: - Male:		Ø 6,5 mm	
		6 x 0,25 mm ²	
		Temperature range: -35 °C bis +90 °C	
Connection		Pin	Wire colour
Supply voltage (+)	U _{in+}	3	blue
Supply voltage (-)	U _{in-}	2	black
Measurement signal (+)	U _{out+}	1	white
Measurement signal (-)	U _{out-}	4	red
Sense (+)	Sense+	5	green
Sense (-)	Sense-	6	grey
Shielding		Housing	yellow

1) View too weldingside

2) Female LEMO S.A. Typ: EGG.1B.307.CLL; Male: FGG.1B.307.CLA.D72



Pluggable connection



End not connected (optional)

- Cable is not standard scope of supply
- Cable length 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

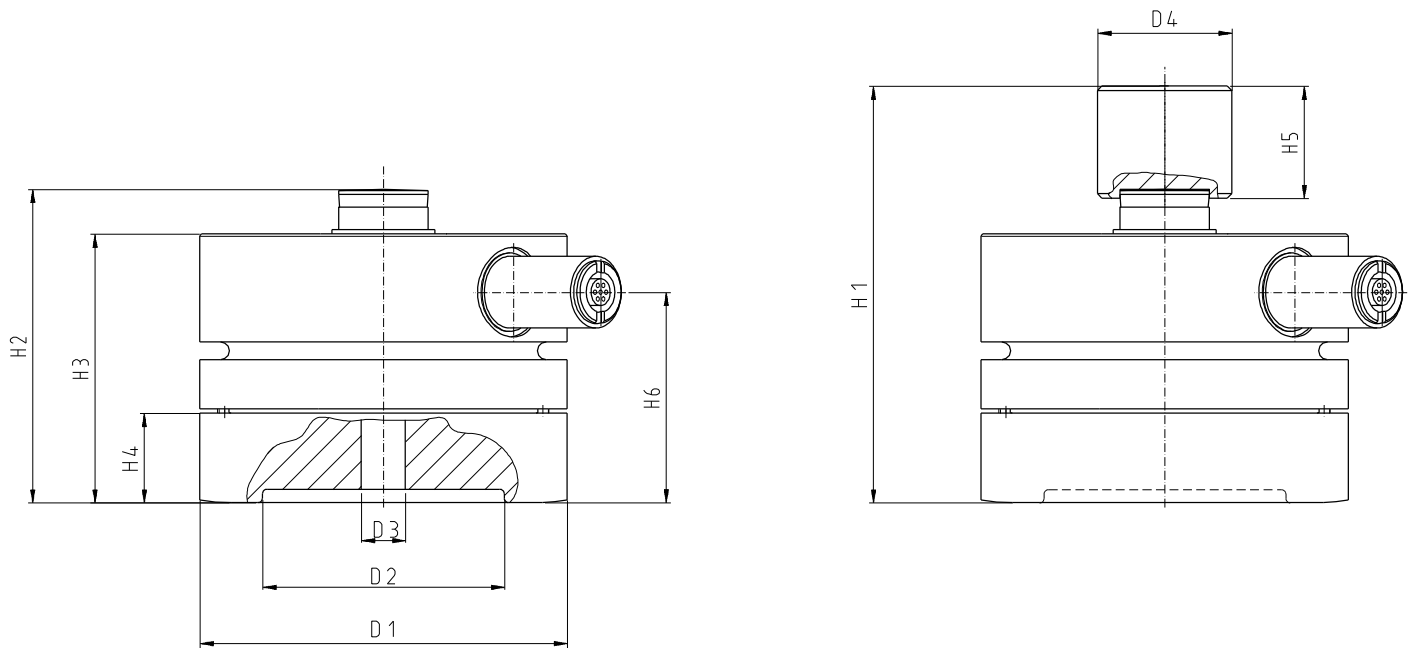
- In case of two circuits the technical data are similarly valid for both circuits

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_o	%/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	$\varnothing D_1$	mm	82		92		120	140	200	270		375
Diameter	$\varnothing D_2$	mm	54		64		85	100	177	228		312,6
Diameter	$\varnothing D_3$	mm			10^{H7}				150	215		25^{H8}
Diameter	$\varnothing D_4$	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

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

GTM
DEFINING PRECISION

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