

## Data sheet

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Force Transfer Standard  
**Series KTN-D**  
(10 kN – 10000 kN)



### Benefits/Application

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- 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

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- Second redundant measuring circuit
- Bending moment circuits

# Classification

Nominal force/kN	10	20	50	100	200	500	1000	2000	3000	5000	10000
Class											
VN <sup>1)</sup>	✓	✓	✓	✓	✓	✓	✓				
00 <sup>2)</sup>	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	
0,5 <sup>2)</sup>	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓

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

2) Class according to ISO 376

# Technical data

# Class VN

		$F_{nom}$	kN	10	20	50	100	200	500	1000
Metrological Data	Nominal force	$F_{nom}$	kN	10	20	50	100	200	500	1000
	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	$R_e$	$\Omega$	>1200			>1100			>1400
	Output resistance	$R_a$	$\Omega$			>900				>1100
	Insulation resistance	$R_{is}$	$\Omega$			>10 <sup>9</sup>				
	Operating range of excitation voltage	$B_{U,G}$	V	5 - 12						
	Protection (DIN EN 60529)			54						
Mechanical Data	Mass <sup>1)</sup>	$m$	kg	2,2	3,2	3,4	6,4	10,9	28,4	
	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						

1) Incl. force transmission

# Technical data

# Class 00

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											
	Electrical Data	Rated characteristic value	$C_{nom}$	mV/V	2										
Input resistance		$R_e$	$\Omega$	>1200	>1100				>1400	>1100	>900				
Output resistance		$R_a$	$\Omega$	>900				>1100	>900	>800					
Insulation resistance		$R_{is}$	$\Omega$	>10 <sup>9</sup>											
Operating range of excitation voltage		$B_{U,G}$	V	5 - 12											
Protection (DIN EN 60529)				54											
Mechanical Data	Mass <sup>1)</sup>	$m$	kg	2,2	3,2	3,4	6,4	10,9	28,4	71,3	175	178			
	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											

1) Incl. force transmission

# Technical data

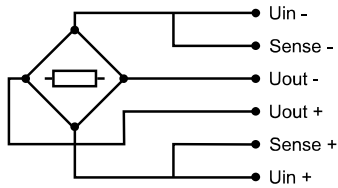
# Class 0,5

Nominal force		$F_{nom}$	kN	10	20	50	100	200	500	1000	2000	3000	5000	10000
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										
	Rated characteristic value	$C_{nom}$	mV/V	2										
Electrical Data	Input resistance	$R_e$	$\Omega$	>1200	>1100				>1400	>1100	>900	2)		
	Output resistance	$R_a$	$\Omega$	>900				>1100	>900	>800	2)			
	Insulation resistance	$R_{is}$	$\Omega$	>10 <sup>9</sup>										
	Operating range of excitation voltage	$B_{U,G}$	V	5 - 12										
	Protection (DIN EN 60529)			54										
Mechanical Data	Mass <sup>1)</sup>	$m$	kg	2,2	3,2	3,4	6,4	10,9	28,4	71,3	175	178	2)	
	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										

1) Incl. force transmission

2) Data on request

# Cable connection



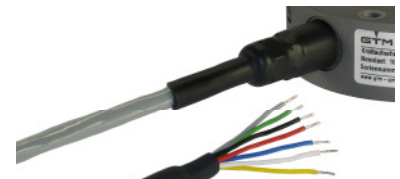
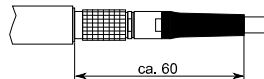
Connection		Connection pluggable <sup>1)2)</sup>	End not connected
		7-pin LEMO Series 0 Female: - Male:	Grey cable Ø 6,5 mm 6 x 0,25 mm <sup>2</sup> Temperature range: -35 °C bis +90 °C
Connection		Pin	Wire colour
Supply voltage (+)	U <sub>in+</sub>	3	blue
Supply voltage (-)	U <sub>in-</sub>	2	black
Measurement signal (+)	U <sub>out+</sub>	1	white
Measurement signal (-)	U <sub>out-</sub>	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 cable 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

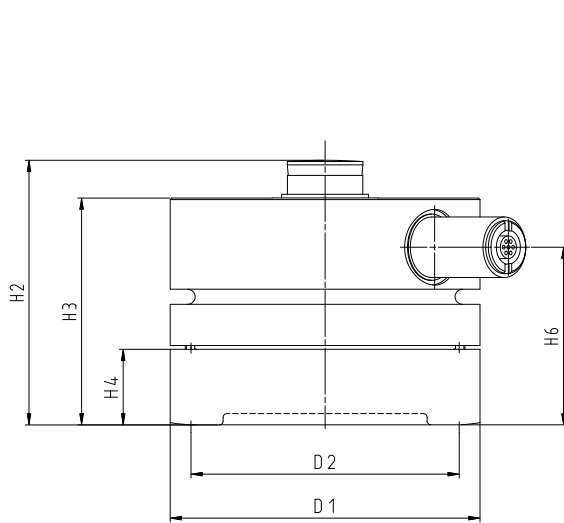
- In case of two circuits the technical data are similarly valid for both circuits

## Option: Bending moment

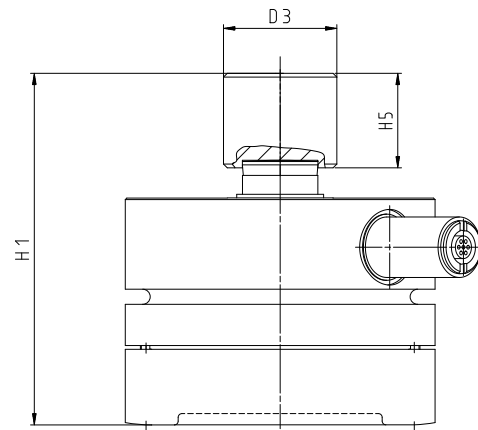
Nominal force	$F_{nom}$	kN	10 - 10000 (2mV/V)
Temperature effect on characteristic value per 10 K	$TK_C$	%/10 K	0,2
Temperature effect on zero signal per 10 K	$TK_0$	%/10 K	0,2
Input resistance	$R_e$	$\Omega$	400
Operating range of excitation voltage	$B_{U,G}$	V	5 - 12

- The bending moment circuits may be advantageously used for the adjustment of the force introduction

# Mating dimensions



*standard scope of supply*



*component part: load button*

Nominal force	$F_{nom}$	kN	10	20	50	100	200	500	1000	2000	3000	5000	10000
Diameter	$\varnothing D_1$	mm	82		92		120	140	200	270	375		346
Diameter	$\varnothing D_2$	mm	71		82		104	126	184	240	351		250
Diameter	$\varnothing D_3$	mm	30		42		54	80	110	160	200		250
Height	$H_1$	mm	93		107		124	149	195	267	360		460
Height	$H_2$	mm		70			77	93	125	153	203		280
Height	$H_3$	mm		60			46,75	82,35	103	140	187		270
Height	$H_4$	mm			20				25		27		110
Height	$H_5$	mm	25		39		49	58	75	119	163		186
Height	$H_6$	mm	47			46		54,5	73,5	126	157		192

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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