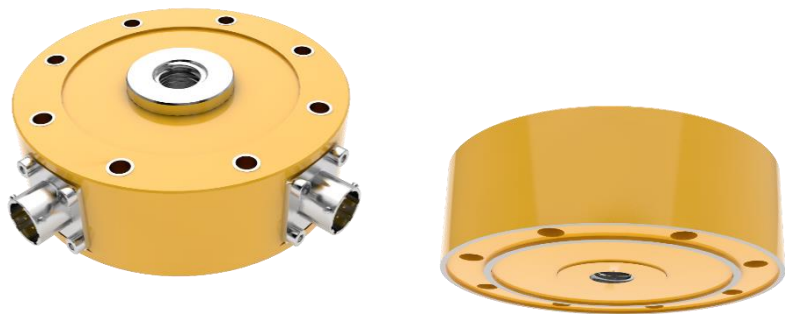


Data sheet

Force Transducer Series DR (1,25 kN – 500 kN)



Benefits/Application

- Accuracy class from 0.03
- Two built-in accelerometers
- For static and dynamic tensile and compressive forces
- Very high-cycle fatigue resistant up to 100 % of nominal load
- 6-wire connection technology
- Popular connection dimensions

Options/Accessories

- Second redundant measuring circuit
- Mounting parts for tension and compression

Technical data

Nominal force compression/tension		$\pm F_{nom}$	kN	1.25	2.5	5	12.5	25	50	125	250	500	
Metrological Data	Accuracy class			0.03			0.04			0.06			
	Linearity error	d_{lin}	%	0.03			0.04			0.06			
	Hysteresis	h	%	0.03			0.04	0.05		0.06			
	Repeatability (f.s.)		%	0.025									
	Zero error	f_0	%	0.01									
	Creep		%	0.025									
	Temperature effect on characteristic value per 10 K	TK_C	%/10 K	0.015									
	Temperature effect on zero signal per 10 K	TK_0	%/10 K	0.015									
	Eccentricity effect		%/mm	< 0.01									
	Bending moment effect		%/N·m	< 0.01									
	Characteristic value difference, tension/compression force	d_{zd}	%	0.1									
	Electrical Data	Rated characteristic value	C_{nom}	mV/V	1			2					
		Characteristic value tolerance	d_c	%	0.25								
Zero signal deviation		$d_{s,0}$	%	1									
Input resistance		R_e	Ω	350									
Output resistance		R_a	Ω	280 - 360									
Insulation resistance		R_{is}	Ω	>2 ⁹									
Operating range of excitation voltage		$B_{U,G}$	V	0.5 - 12									
Protection (DIN EN 60529)				67									

Technical data

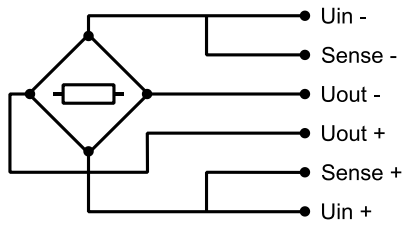
Mechanical Data	Nominal force/compression/tension	$\pm F_{nom}$	kN	1.25	2.5	5	12.5	25	50	125	250	500	
	Rated Displacement	s_{nom}	mm	0.02			0.03			0.04	0.05	0.06	
	Spring rigidity	c_{ax}	kN/mm	62.5	125	250	415	830	1650	3125	5000	8300	
	Mass	m	kg	0.5		1.3			5		11	28	
	Proportionate moving mass	m_{mess}	kg	0.09			0.25		1.1		3.3	6.3	
	Fundamental resonant frequency	f_G	kHz	4.5	5.9	9.3	6.6	9.2	6.5	8.1	6.6	6.1	
	Permissible oscillation stress		%	100									
Limits	Force limit								230				
	Breaking force								> 400				
	Lateral force limit								100				
	Permissible eccentricity	e_G	mm		25						20		
	Bending moment limit	$M_{b\ zul}$	N·m		40	80	140	330	635	1750	4500	9000	20000
	Rated temperature range	$B_{T, nom}$	°C		-10 - +45								
	Operating temperature range	$B_{T, G}$	°C		-30 - +85								

Acceleration sensors

Typ		I	II
Rated acceleration	g	19	50
Rated sensitivity at 5 V	mV/g	57 ± 10	40 ± 2 (ratiometric)
Static output voltage at 0 g	V _{DC}	1.5 ± 0.25	2.5 ± 0.25
Typical bandwidth	kHz	1.6	11
Excitation voltage	V _{DC}	(5 ± 0.25)	
Linearity error	%	0.3	0.1
Resonant frequency	kHz	5.5	21

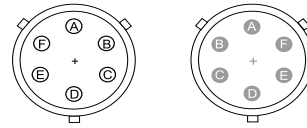
Cable connection

Measurement bridge



Connection
pluggable¹⁾²⁾

6-pin Amphenol
cable connector: - appliance inlet:



Connection		Wire color	Pin
Supply voltage (+)	U _{in+}	blue	A
Supply voltage (-)	U _{in-}	black	D
Measurement signal (+)	U _{out+}	white	B
Measurement signal (-)	U _{out-}	red	C
Sense (+)	Sense+	green	F
Sense (-)	Sense-	grey	E
Shielding			Housing

1) View too weldingside

2) Female Amphenol typ: MIL-C-26482 series 1 ; bayonet catch

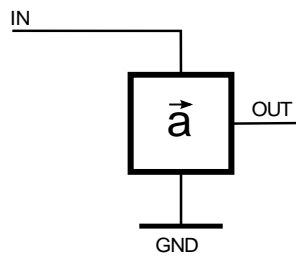


Pluggable connection

- Cable is not standard scope of supply
- Cable length 5 m. Other cable lengths on request

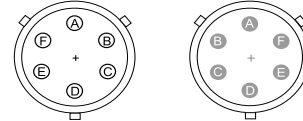
Cable connection

Acceleration sensor



Connection pluggable¹⁾²⁾

6-pin Amphenol cable connector: - appliance inlet:



Connection		wire color	Pin (Typ I)	Pin (Typ II)
Supply voltage 5 V	IN	blue	A	
Output voltage	OUT	white	B	
Ground	GND	grey	E	
Supply voltage 5 V	IN	green		F
Output voltage	OUT	red		C
Ground	GND	black		D
Shielding				Housing

1) View too weldingside

2) Female Amphenol typ: MIL-C-26482 series 1; bayonet catch



Pluggable connection

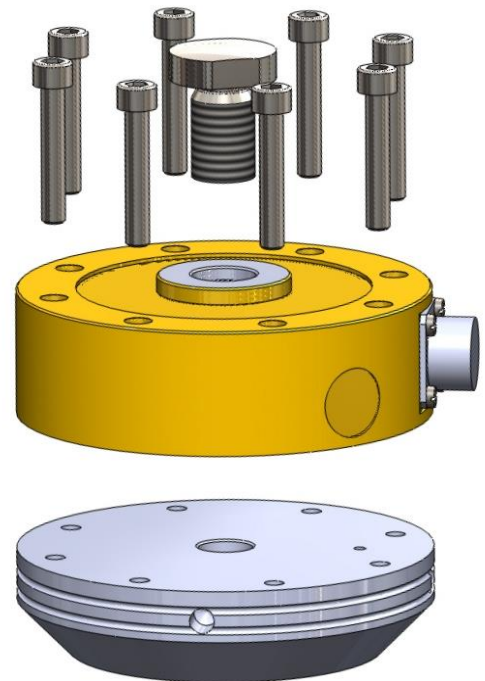
- Cable is not standard scope of supply
- Cable length 5 m. Other cable lengths on request

Option: 2.Measuring circuit

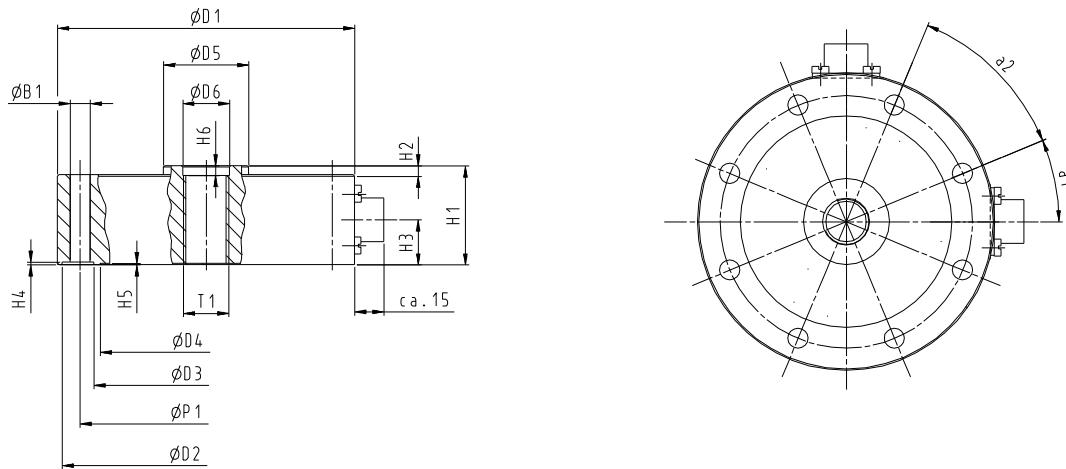
- Second redundant measuring circuit
- In case of two circuits the technical data are similarly valid for both circuits

Option: Force introduction parts

- Customized mounting parts available
- Please contact us!



Mating dimensions



Nominal force compression/tension	$\pm F_{nom}$	kN	1.25	2.5	5	12.5	25	50	125	250	500
Bore	$\varnothing B_1$	mm	7.1					10.4	13.5	16.8	
Thread	$\varnothing T_1$	mm	M16x2-4H					M33x2-4H	M42x2-4H	M72x2-4H	
Diameter	$\varnothing D_1$	mm	104.8 \pm 0.1					153.9 \pm 0.1	203.2 \pm 0.1	279 \pm 0.1	
Diameter	$\varnothing D_2$	mm	101.6 \pm 0.1					149 \pm 0.1	198.1 \pm 0.1	269.2 \pm 0.1	
Diameter	$\varnothing D_3$	mm	79.2 \pm 0.1					115 \pm 0.1	146 \pm 0.1	188 \pm 0.1	
Diameter	$\varnothing D_4$	mm	74.7 \pm 0.1					108 \pm 0.1	138.9 \pm 0.1	172.1 \pm 0.1	
Diameter	$\varnothing D_5$	mm	34 \pm 0.1					61.2 \pm 0.1	67.3 \pm 0.1	95.2 \pm 0.1	122.2 \pm 0.1
Diameter	$\varnothing D_6$	mm	16.5 \pm 0.1					33.5 \pm 0.1	43 \pm 0.1	73 \pm 0.1	
Pitch circle diameter	$\varnothing P_1$	mm	88.9 \pm 0.1					130.3 \pm 0.1	165.1 \pm 0.1	229 \pm 0.1	
Height	H_1	mm	34.9 \pm 0.1					44.5 \pm 0.1	63.5 \pm 0.1	88.9 \pm 0.1	
Height	H_2	mm	3.2					3.1	6.3	12.7	
Height	H_3	mm	15.9					20.7	28.6	38.1	
Height	H_4	mm	0.5							0.8	
Height	H_5	mm	0.5							1	
Height	H_6	mm	3.4					3.5	3		
Angle	α_1		22.5°					15°	11.25°		
Angle	α_2		8x45°					12x30°	16x22.5°		

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

GTM Testing and Metrology GmbH
Philipp-Reis-Straße 4-6, 64404 Bickenbach, Germany
www.gtm-gmbh.com
Phone +49(0)6257-9720-0, Fax +49(0)6257-9720-77
contact@gtm-gmbh.com