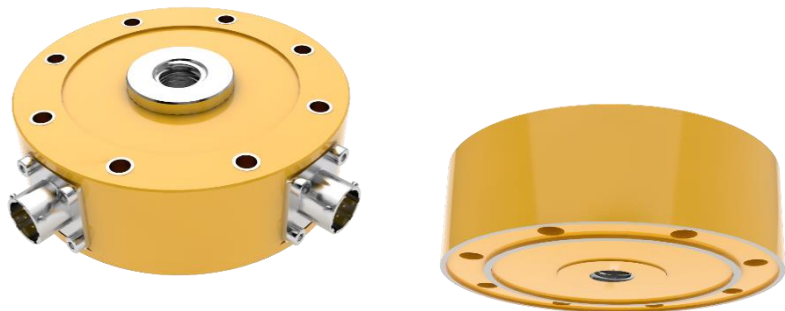


Data sheet

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



Benefits/Application

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

Technical data

			1,25	2,5	5	12,5	25	50	125	250	500	
Grenzwerte	Nennkraft Druck/Zug	$\pm F_{nom}$	kN									
	Grenzkraft		%									
	Bruchkraft		%									
	Grenzquerkraft		%									
	Zulässige Exzentrizität	e_G	mm									
	Grenzbiegemoment	$M_{b,zul}$	40	80	140	330	635	1750	4500	9000	20000	
	Nenntemperaturbereich	$B_{T,nom}$	°C									
	Gebrauchstemperaturbereich	$B_{T,G}$	°C									

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

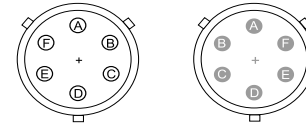
Cable connection

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

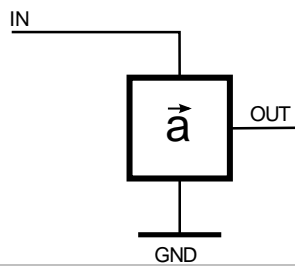


Pluggable connection

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

Cable connection

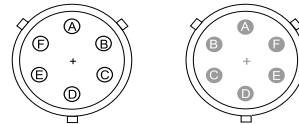
Acceleration sensor



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

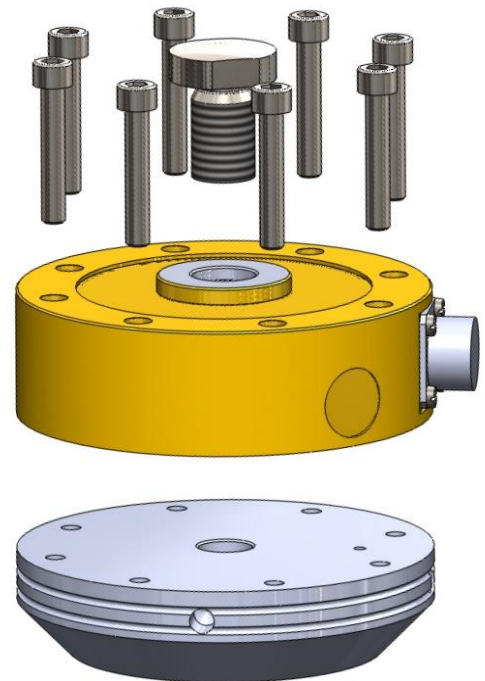
- Cable is not standard scope of supply
- Cable length 5 m. Other cable lengths on request

Option: 2.Measuring circuit

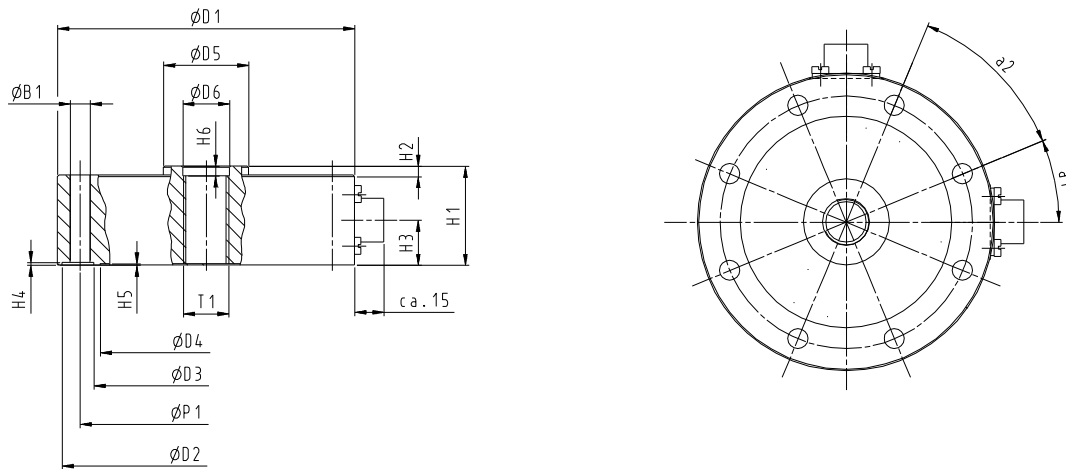
- Second redundant measuring circuit
- In case of two circuits the technical data are similarly valid for both circuits

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	a_1		22,5°				15°		11,25°		
Angle	a_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

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