DEFINING PRECISION

Data sheet

Force Transducer

Series DR

1,25 kN – 500 kN

Benefits/Application

- Accuracy class 0,04
- 2 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

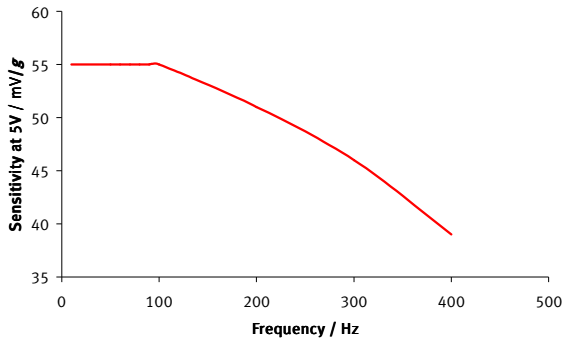
Metrological Data	Nominal force compression/tension	$\pm F_{nom}$	kN	1,25	2,5	5	12,5	25	50	125	250	500
	Accuracy class			0,03			0,04					0,06
	Linearity error	d_{lin}	%	0,03			0,04					0,06
	Hysteresis	h	%	0,03			0,04		0,05			0,06
	Repeatability (f.s.)		%	0,025								
	Zero error	f_0	%	0,01								
	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

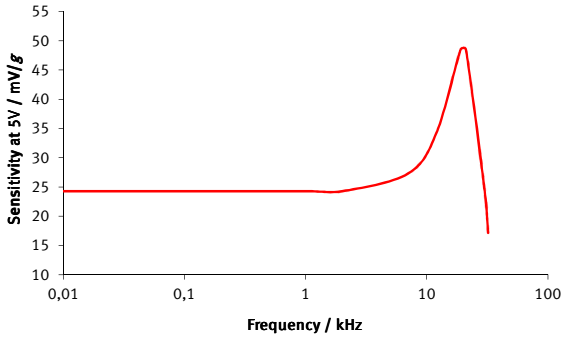
Limits	Nominal force compression/tension	$\pm F_{nom}$	kN	1,25	2,5	5	12,5	25	50	125	250	500
	Force limit		%	230								
	Breaking force		%	› 400								
	Lateral force limit		%	100								
	Permissible eccentricity	e_G	mm	25							20	
	Bending moment limit	$M_{b\,zul}$	N·m	40	80	140	330	635	1750	4500	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	37	70
Rated sensitivity at 5 V (ratiometric)	mV/g	55	24
Static output voltage at 0 g	V_{DC}	2,5 ± 0,2	2,5 ± 0,5
Typical bandwidth	kHz	0,4	12
Excitation voltage	V_{DC}	(5±0,25)	
Linearity error	%	2	
Resonant frequency	kHz	22	



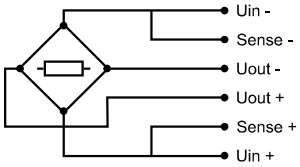
Typ I (37g)



Typ II (70g)

Cable connection

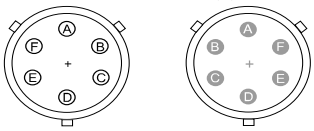
Measurement bridge



Connection pluggable[1)2)]

6-pin Amphenol

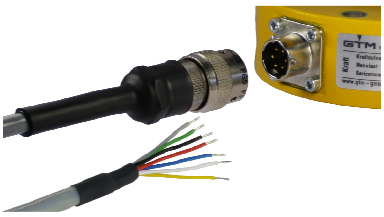
cable connector: - appliance inlet:



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

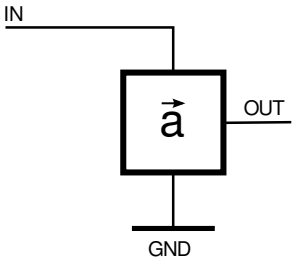


Connection pluggable

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

Cable connection

Acceleration sensor



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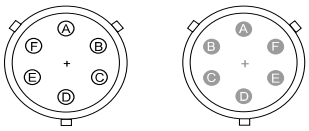
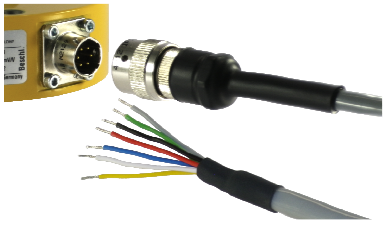


Connection		wire color	Pin (Typ I)	Pin (Typ II)
Supply voltage 5 V	IN	blue	A	
Output voltage	OUT	white	B	
Ground	GND	grey	E	
Supply voltage 5 V	IN	green		F
Output voltage	OUT	red		C
Ground	GND	black		D

1) View too weldingside

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



Connection pluggable

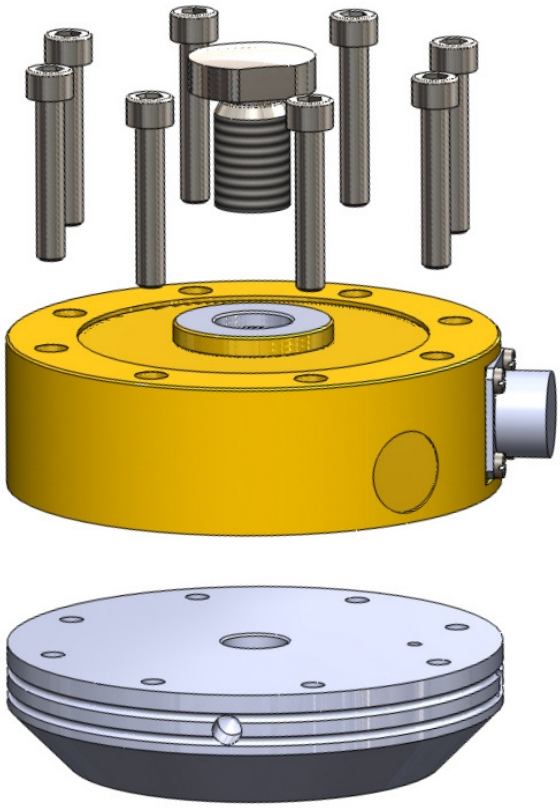
- Cable is not standard scope of supply
- Cable lenght 5 m. Other cable lengths on request

Option: 2.Measuring circuit

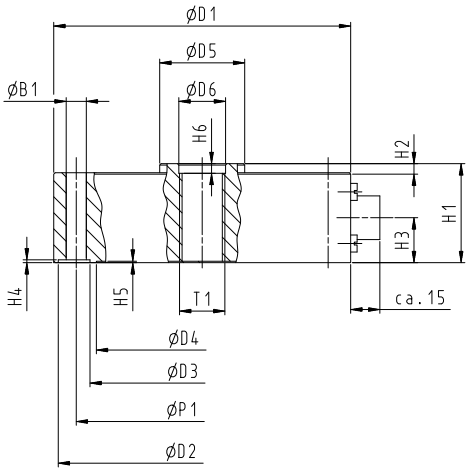
- Second redundant measuring circuit
- In case of two circuits the technical data are similarly valid for both circuits

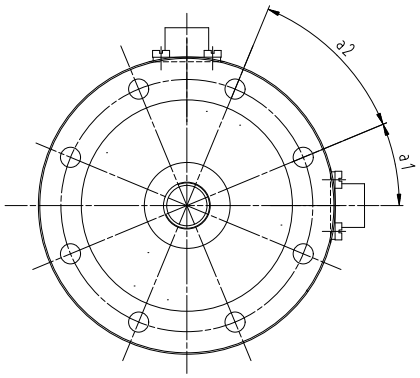
Option: Force introduction parts

- Mounting parts for tension and compression
- Customized mounting parts available



Mating dimensions





Nominal force compression/tension	$\pm F_{nom}$	kN	1,25	2,5	5	12,5	25	50	125	250	500
Bore	$ØB_1$	mm	7,1					10,4		13,5	16,8
Thread	$ØT_1$	mm	M16x2-4H					M33x2-4H		M42x2-4H	M72x2-4H
Diameter	$ØD_1$	mm	104,8-0,1					153,9-0,1		203,2-0,1	279-0,1
Diameter	$ØD_2$	mm	101,6+0,1					149+0,1		198,1+0,1	269,2+0,1
Diameter	$ØD_3$	mm	79,2-0,1					115-0,1		146-0,1	188-0,1
Diameter	$ØD_4$	mm	74,7+0,1					108+0,1		138,9+0,1	172,1+0,1
Diameter	$ØD_5$	mm	34+0,1					61,2-0,1	67,3-0,1	95,2-0,1	122,2-0,1
Diameter	$ØD_6$	mm	16,5H8					33,5H8		43H8	73H8
Pitch circle diameter	$ØP_1$	mm	88,9±0,1					130,3±0,1		165,1±0,1	229±0,1
Height	H_1	mm	34,9-0,1					44,5-0,1		63,5-0,1	88,9-0,1
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°	

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