

Strain Ring with Radial Connector DSRC ST

Features

- Standard strain ring
- Simple strain measurements on shafts, axles and cylinders
- Installation without surface preparation
- For tension, compression or torque measurements
- For cyclical applications only, i.e. clamping force on presses



Strain Gage Data

Strain gage type	Foil gages
Bridge resistance at 24 °C	350 Ω 2 x quarter bridge
Sensitivity at 24 °C	Gage factor K= 2.00 ±0,5% (compensated with resistors)
Temp. compensation	Steel
Transverse sensitivity nominal	+0,7%
Bridge circuit	2 x 1/4 bridge (see electrical connections)

Mechanical Data

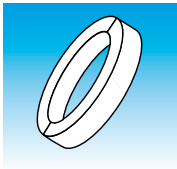
Connection	6 pin female (Series 680/KFR 60)
Material	
- Ring	Aluminum anodized
- Protective foil	Stainless steel
- Hinge	Nitril
- Screws	M8 (torque 3 Nm)

Environmental Conditions

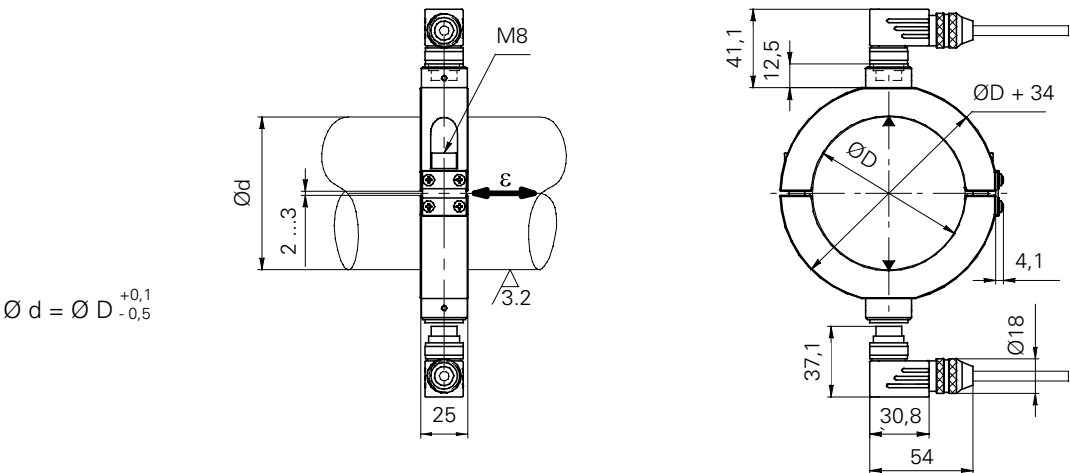
Surface quality	Ra 3.2 (N8) or better
Operating temp. range	-10...+60 °C
Storage temperature	-40...+100 °C
Protection class	IP 54

Electrical Data

Measuring range	±1000 µε (1 µε = 0,001 mm/m resp. 1 µε equals 0,001 mm strain per meter of shaft)
Output signal per 1000 µε	1 mV/V (with completed full bridge)
Combined error	< 1% FS
Linearity	< 0,5% FS
Hysteresis	< 0,5% FS
Non-repeatability	< 0,2% FS
Zero, bridge balance	< ±200% FS (depending on installation). Since the gages are pressed-on, the bridge can have any arbitrary zero offset after the ring is mounted. Baumer amplifiers and display boxes are equipped with a reset function to tare this offset. The bridge should be reset before each measuring cycle.
Excitation max. Recommended	9 VDC 5 VDC
Signal polarity	The signal polarity depends on the bridge circuit. In combination with Baumer amplifiers, the polarity is positive under tensile load.
Rise time (10 - 90%)	< 1 ms (on steel)



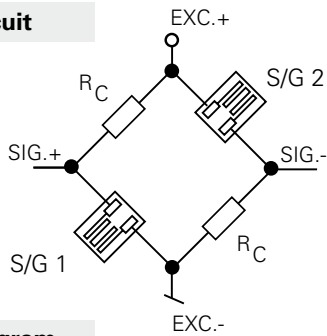
Dimensions (mm)



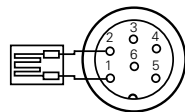
Ø D = Nominal diameter
Ø d = Shaft diameter
ε = Strain
▲ = Gage location

Electrical Connections

Bridge Circuit

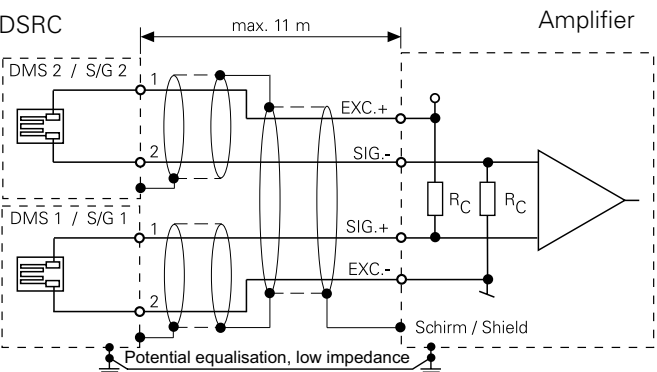


Pin Assignment
(per ring half)



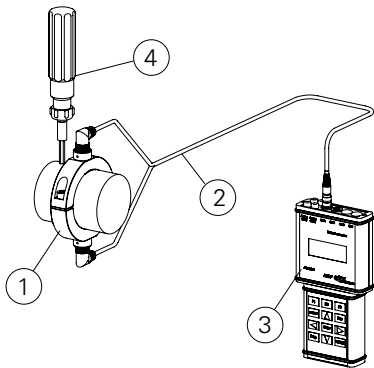
Pin	Signal
1	S/G
2	S/G
3	n.c.
4	n.c.
5	n.c.
6	n.c.

Wiring Diagram

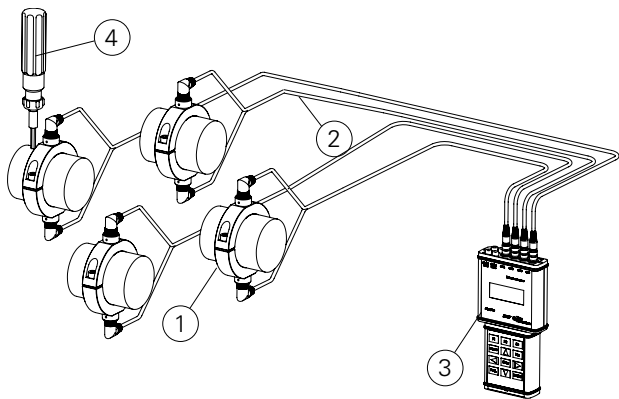


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Typical Measuring Chains



Pos.	Qty	Type	Description
1	1	DSRC Type ST	Standard strain ring
2	1	DZCY 05-ST-WM-C	Connecting cable for strain ring, 5m
3	1	DDBF 2-SC	2-channel display box incl. power adapter
4	1	DZMT TW-A1-6	Torque wrench



Pos.	Qty	Type	Description
1	4	DSRC Typ ST	Standard strain ring
2	4	DZCY 05-ST-WM-C	Connecting cable for strain ring, 5 m
3	1	DDBF 4-SC	4-channel display box incl. power cord and Analysis Software
4	1	DZMT TW-A1-6	Torque wrench

Order Code

DSRC ST

Option									
/TO Execution for torsion measurement 2 x 1/4 S/G bridge 350 Ω, k = 2,00									
Unit									
M Metric sizes									
Z Inch sizes									
Nominal diameter*									
Metric (M)									
020	050	090	135	185	250				
025	053	095	140	190	260				
028	055	100	145	195	270				
030	060	105	150	200	300				
035	065	110	155	205	335				
038	070	115	160	220	350				
040	075	120	165	225	360				
045	080	125	170	230					
048	085	130	180	240					
Nominal diameter*									
Inch (Z)									
1"	025	5"	127	9"	229				
1,5"	038	5,5"	140	9,5"	241				
2"	051	6"	152	10"	254				
2,5"	064	6,5"	165	10,5"	267				
3"	076	7"	178	11"	279				
3,5"	089	7,5"	191	11,5"	292				
4"	102	8"	203	12"	305				
4,5"	114	8,5"	216	12,5"	318				

* Other diameters available upon request

Accessories

Torque wrench, range adjustable 1 - 6 Nm	Order code: DZMT TW-A1-6
Torque wrench fix factory setting 3 Nm	Order code: DZMT TW-F3

