

Strain Ring with Radial Cable DSRC BT

Features

- Fast and easy strain measurement on cylindrical geometries
- Strain measurement on machine pillars and tiebars
- For calibration and qualification measurement
- For tension and compression 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 (without cable)
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

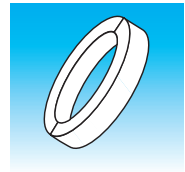
Connection	Open leads
Material	
- Ring	Aluminum anodized
- Protective foil	Stainless steel
- Screws	M8 (torque 3 Nm)
Cable	5 m 2 core, shielded, PVC

Environmental Conditions

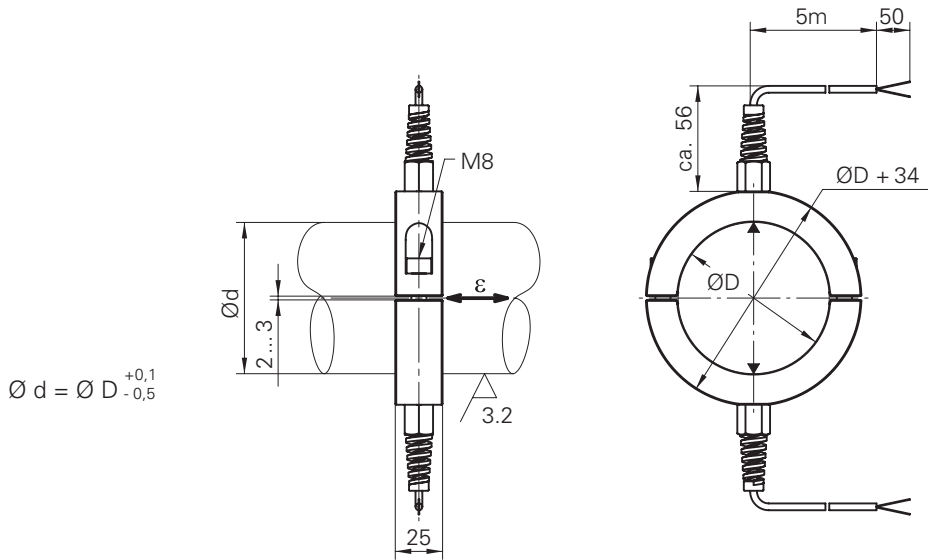
Surface installation spot	Ra 3.2 (N8) or better
Operating temp. range	-10...+60 °C
Storage temperature	-40...+100 °C
Protection class	IP 54

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
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)

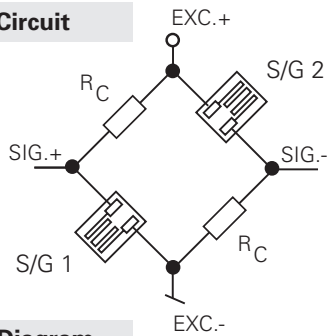


$\varnothing d = \varnothing D^{+0,1}_{-0,5}$

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

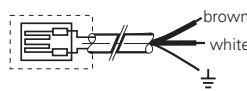
Electrical Connections

Bridge Circuit



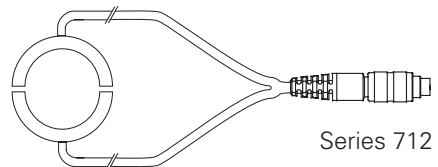
Wire Color

(per ring half)

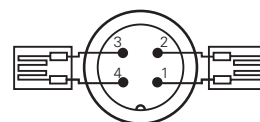
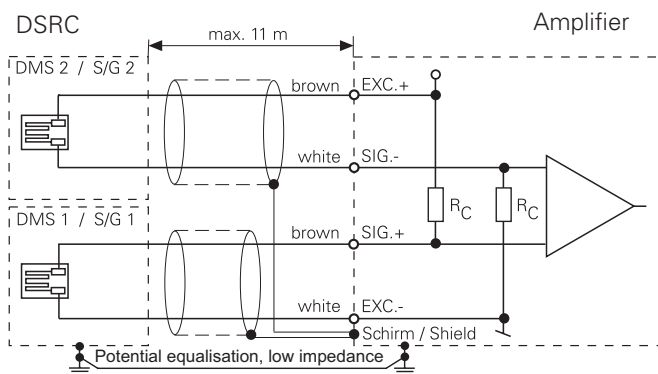


Color	Signal
brown	S/G
white	S/G

Option /CM



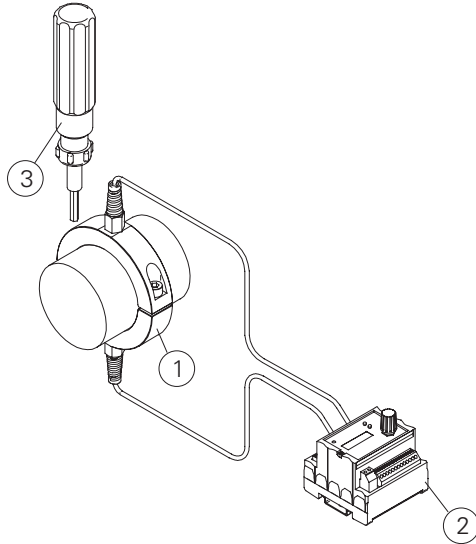
Wiring Diagram



Pin	Signal
1	S/G 1
2	S/G 1
3	S/G 2
4	S/G 2

Strain Ring with Radial Cable DSRC BT

Typical Measuring Chain



Pos.	Qty	Type	Description
1	1	DSRC Type BT	Strain ring with radial cable
2	1	DABU MP4M	Bridge amplifier
3	1	DZMT TW-A1-6	Torque wrench

Order Code

DSRC BT M /

Option

/CM Connector 4 pin male installed (Connecting display box)

/CL10 Cable length 10 m

/CL10CM Cable length 10 m with connector 4 pin

Unit

M Metric 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	

* Other diameters available upon request

Accessories

Torque wrench, variable adjustable range 1 - 6 Nm Order code: DZMT TW-A1-6

Torque wrench fix factory setting 3 Nm Order code: DZMT TW-F3