

Strain Ring with Radial Cable DSRC BT

Features

- OEM execution
- Installation without surface preparation
- Ideal for permanent installation
- 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

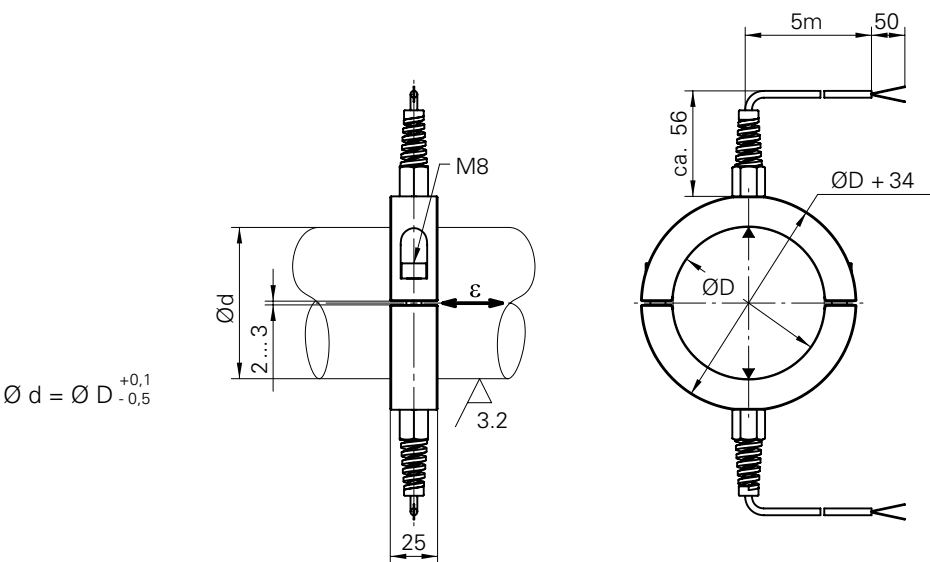
Surface installation spot	Ra 3.2 (N8) or better
Operating temp. range	-10...+60 °C
Storage temperature	-40...+100 °C
Protection class	IP 54

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
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)



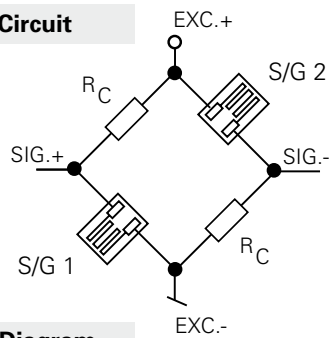
Dimensions (mm)



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

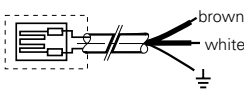
Electrical Connections

Bridge Circuit



Wire Color

(per ring half)

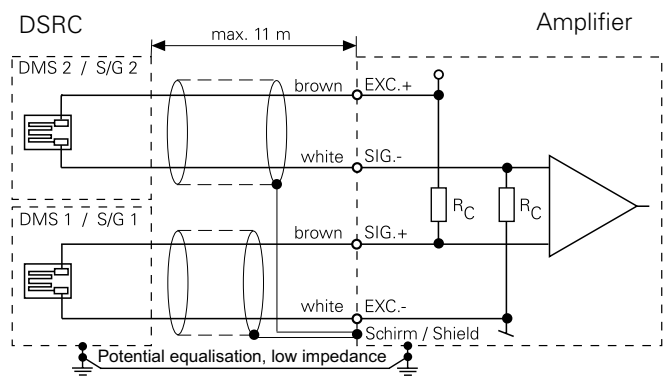


Color Signal

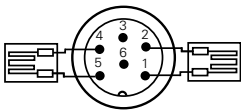
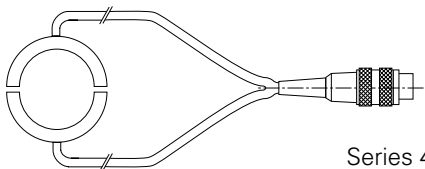
brown S/G

white S/G

Wiring Diagram



Option /CN



Pin Signal

1 S/G 1

2 S/G 1

3 n.c.

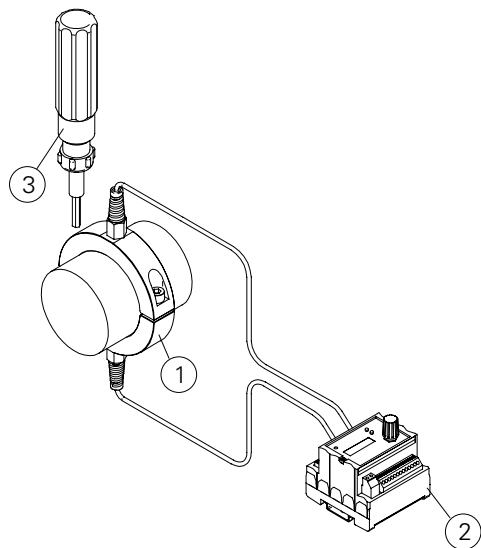
4 S/G 2

5 S/G 2

6 n.c.

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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

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Option

/CM

Connector 4 pin male installed (Connecting display box)

/CN

Connector 6 pin male installed (Connecting Amplifier)

/CL10

Cable length 10 m

/CL10CM

Cable length 10 m with connector 4 pin

/CL10CN

Cable length 10 m with connector 6 pin

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

