

Strain Probe with Integrated Amplifier DSRH x16/x20

Features

- Simple strain measurements in deep holes
- Characteristic curve deviation < 1%
- For cyclical applications only
- Integrated amplifier with voltage or current output



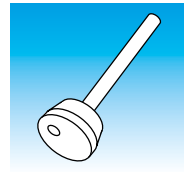
Electrical Data	DSRH U	DSRH I
Measuring range	$\pm 1000 \mu\epsilon$	0 - 1000 $\mu\epsilon$
Strain gage type	Foil gages	
S/G circuit	2 x 1/4 bridge bending compensated	
Output signal	± 10 V calibrated (max. ± 12 V)	4 - 20 mA max. load 500 Ω
Combined error	< 1% FS	
Linearity	< 0,5% FS	
Hysteresis	< 0,5% FS	
Supply voltage range	18 - 36 VDC	
Current draw	< 30 mA	< 45 mA
Output impedance	50 Ω	-
Zero reset active	< ± 10 mV	< $\pm 20 \mu\text{A}$
Reset input galvanically isolated	15 - 45 VDC	
Reset/operate offset	< ± 4 mV	< $\pm 10 \mu\text{A}$
Reset pulse (t1)	> 1 ms	
Reset settle time (t2)	≈ 60 ms	
Frequency range (3 dB)	120 Hz	
Rise time 10 - 90%	< 3 ms	
Signal polarity tensile load	positive	positive (only tensile load possible)

Mechanical Data

Connection	7 pin male (Series 680/SGR 70)
Material	
- Amplifier enclosure	Aluminum anodized
- Tube	Stainless steel
- Support ring (Type 20)	Aluminum anodized
Hexagon socket	6 mm
Installation torque	3 Nm

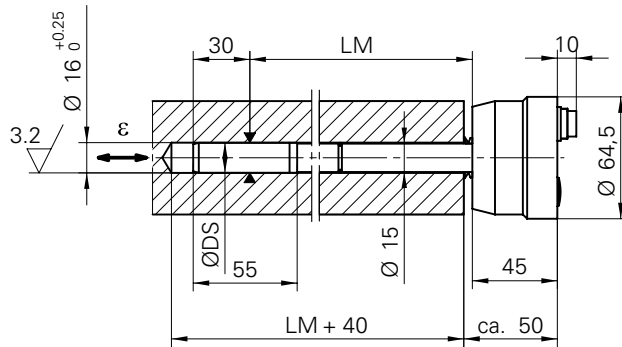
Environmental Conditions

Surface installation spot	Ra 3.2 (N8) or better
Operating temp. range	-5...+60 °C non condensing
Storage temperature	-20...+80 °C
Protection class	IP 54

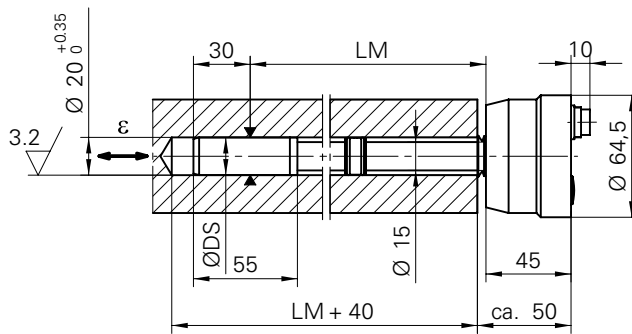


Dimensions (mm)

Type 16



Type 20

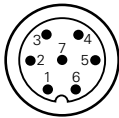


$\varnothing DS$ = Tip diameter
 LM = Measurement depth
 ϵ = Strain
 $\blacktriangle$ = Gage location

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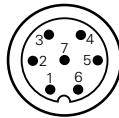
Electrical Connections

Current Output



Pin	Signal	Pin	Signal
1	+Vs (18 - 35 VDC)	1	+Vs (18 - 35 VDC)
2	Test _{OUT}	2	Test _{OUT}
3	Reset (bipolar)	3	Reset (bipolar)
4	Reset (bipolar)	4	Reset (bipolar)
5	+I _{OUT} (4 - 20 mA)	5	+V _{OUT} (±10 V)
6	-I _{OUT}	6	-V _{OUT}
7	GND	7	GND

Voltage Output



Pin	Signal	Pin	Signal
1	+Vs (18 - 35 VDC)	1	+Vs (18 - 35 VDC)
2	Test _{OUT}	2	Test _{OUT}
3	Reset (bipolar)	3	Reset (bipolar)
4	Reset (bipolar)	4	Reset (bipolar)
5	+V _{OUT} (±10 V)	5	+V _{OUT} (±10 V)
6	-V _{OUT}	6	-V _{OUT}
7	GND	7	GND

Order Code

DSRH - M

Tip diameter (Ø DS) - Length (LM)

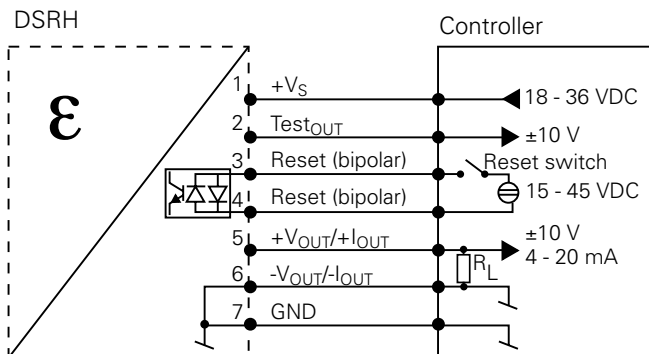
16-0200	20-0200
16-0240	20-0240
16-0320	20-0320
16-0400	20-0400
16-0500	20-0500
16-0600	20-0600
16-0760	20-0760
16-0800	20-0800
16-0900	20-0900
16-1050	20-1050
16-1300	20-1300
16-1400	20-1400

Output signal

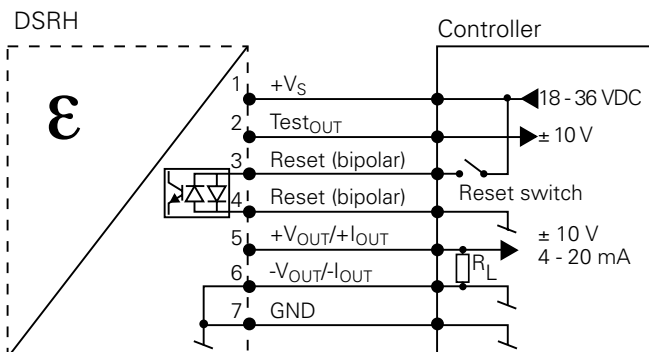
- U** Voltage output ±10 V
±1000 µε = ±10 V
- I** Current output 4 - 20 mA
±1000 µε = 20 mA

Control

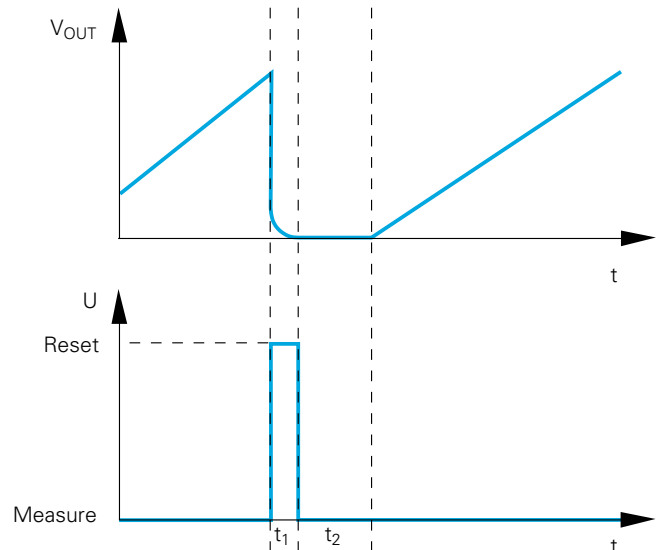
Reset galvanically isolated



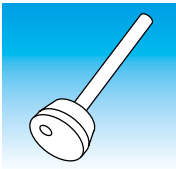
Reset not galvanically isolated



Reset Function

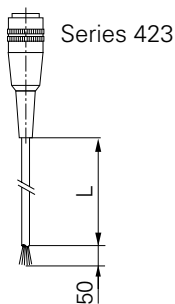


V/I _{OUT}	Output signal
Reset	Reset input (active high)
t ₁	Reset pulse (> 1 ms)
t ₂	Reset settle time after reset pulse (≈ 60 ms)

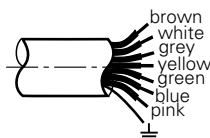


Accessories and Control Elements

Connecting Cable with Flying Leads

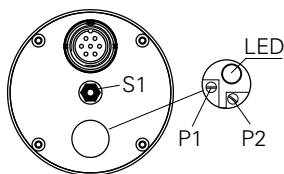


Length	Order Code
5 m	DZCS 05/404155
10 m	DZCS 10/404155



Color	Signal
white	+Vs (18 - 35 VDC)
brown	Testout
green	Reset (bipolar)
yellow	Reset (bipolar)
grey	+IOUT / +VOUT
blue	-IOUT / -VOUT
pink	GND

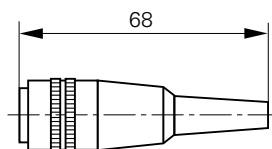
Control Elements



P1	Adjustment Testout
P2	Adjustment Gain (factory set)
LED	Control-LED for Testout
S1	Mounting screw with 6 mm hex

Straight Connector

Series 423



Part No. 10146423

Torque Wrench



Order code: DZMT TW-A1-6
adjustable from 1 - 6 Nm
Part No. 11034496

Order code: DZMT TW-F3
preset fix to 3 Nm
Part No. 11034494