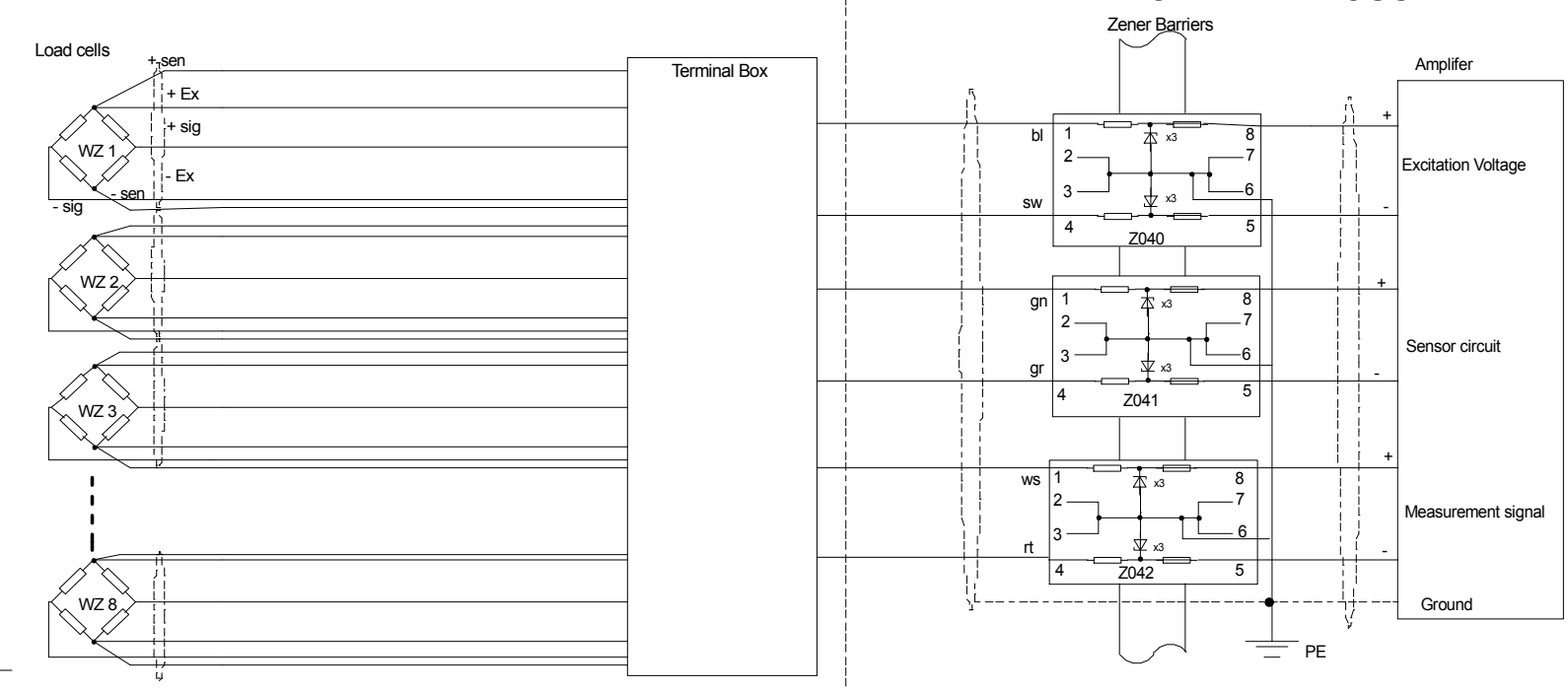


Technical data Zener Barriers:

Type Z040
Pepperl+Fuchs
Ⓔx II (1) GD [Ex ia Ga] IIC
BAS 01 ATEX 7005
-20 °C < Ta < 60 °C
U_{o1} = 5.88 V U_{o2} = 5.88 V
R_{o1} = 42.14 Ohm R_{o2} = 42.14 Ohm
C_{oIIC1} = 43 µF C_{oIIC2} = 43 µF
L_{oIIC1} = 1.81 mH L_{oIIC2} = 1.81 mH
U_{oRs040} = 6.58 V U_{oRp040} = 5.88 V
I_{oRs040} = 78 mA I_{oRp040} = 279 mA

Type Z041
Pepperl+Fuchs
Ⓔx II (1) GD [Ex ia Ga] IIC
BAS 01 ATEX 7005
-20 °C < Ta < 60 °C
U_{o1} = 8.61 V U_{o2} = 8.61 V
R_{o1} = 1980 Ohm R_{o2} = 1980 Ohm
C_{oIIC1} = 5.9 µF C_{oIIC2} = 5.9 µF
L_{oIIC1} = 1836 mH L_{oIIC2} = 1836 mH
U_{oRs041} = 9.31 V U_{oRp041} = 8.61 V
I_{oRs041} = 2.4 mA I_{oRp041} = 9 mA

Type Z042
Pepperl+Fuchs
Ⓔx II (1) GD [Ex ia Ga] IIC
-20 °C < Ta < 60 °C
BAS 01 ATEX 7005
U_{o1} = 5.88 V U_{o2} = 5.88 V
R_{o1} = 198 Ohm R_{o2} = 198 Ohm
C_{oIIC1} = 43 µF C_{oIIC2} = 43 µF
L_{oIIC1} = 39.5 mH L_{oIIC2} = 39.5 mH
U_{oRs042} = 6.58 V U_{oRp042} = 5.88 V
I_{oRs042} = 16.6 mA I_{oRp042} = 60 mA

Load cells:
e.g. HLC I-S-H-S-V3030-OV1-C-E
HBM

Ⓔx II 1 G Ex ia IIC T6/T4 Ga
Ⓔx II 1 D Ex ia IIIC T125°C Da
-30 °C < Ta < 70 °C
BVS 13 ATEX E 108 X

U_i = 30 V
I_i = 500 mA
P_i = 4 W
C_i, L_i = negligible

Load cell cable:
6 x 0.14 mm²
HBM 200.00-7277 EA

C_{LC} = 162 nF/km
L_{LC} = 0.85 mH/km
l_{LC} = 6 m
C_{6LC} = 8 x 0.972 nF =
7.776 nF x 6 = 46.66 nF
L_{6LC} = 2 x 5.1 µH = 10.2 µH

System with Lapp cable:
Capacitance total of 6-wire Cable:
C_{6S} = 92 nF with Earth connection
(77 nF without Earth connection)

Inductance total of 6-wire Cable:
C_{6S} = 90.2 µH

System with HBM cable:
Capacitance total of 6-wire Cable:
C_{6H} = 125 nF with Earth connection
(104 nF without Earth connection)

Inductance total of 6-wire Cable:
C_{6H} = 210.2 µH

Terminal box
VKK2R-8Ex
HBM

Ⓔx II 2G Ex ia IIC T4 Gb
Ⓔx II 2D Ex ia IIIC T125 °C Db
-20 °C < Ta < 70 °C
PTB 05 ATEX 2014

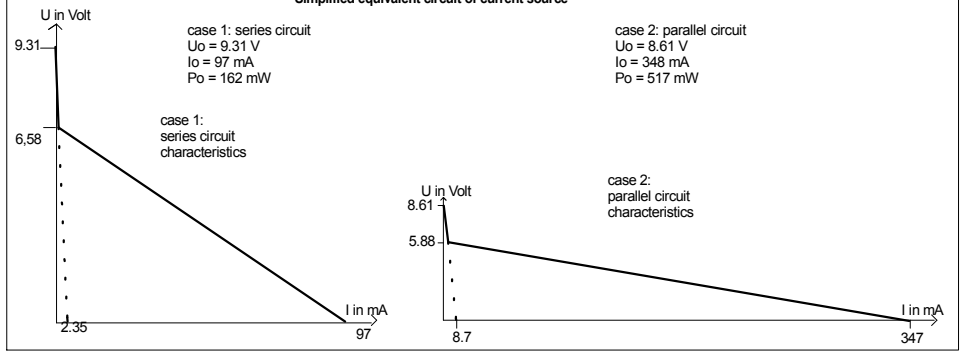
U_i = 22 V
I_i = 469 mA
P_i = 4 W
L_i, C_i = negligible

Measurement cable:
Li2YCY PiMF 3 x 2 x 0,5 mm²
Cable type B
Lapp

C_{STS} = 75 nF/km
L_{STS} = 0.4 mH/km
l_{STS} = 100 m
C_{6SLC} = 6 x 7.5 nF = 45 nF
L_{6SLC} = 2 x 40 µH = 80 µH

Alternative measurement cable:
LF-2YAECVY 3 x 2 x 0.14 mm²
Cable type B
HBM
C_{STS} = 130 nF/km
L_{STS} = 1 mH/km
l_{STS} = 100 m
C_{6SLC} = 6 x 13 nF = 78 nF
L_{6SLC} = 2 x 100 µH = 200 µH

Simplified equivalent circuit of current source



In accordance with ISpark - Calculation:
These values are uncritical

Created by	Checked by	Approved by - Date	File name	Date	Scale
M. Rottmann				2017-04-24	

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Control-Drawing ATEX Load cell SB02A-8LC

Draw. No.:	Version	Page
1718034023_1a	1.0	1/1