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Устройство защиты от перенапряжения SIL 3 для сигнальной системы D9520S. Технические характеристики

Characteristics:

General Description:

D9520S provides two-stage surge protection for floating I/O three wires signals of measurement and control and safety systems. With width of 6mm, it can be easily fitted into any marshalling cabinets or distribution cabinets. It consist of a protective plug and a base element.
The SPD provides surge protection with 1.65Ω loop impedance, with disconnect knife on both signal paths for easy testing of the loop.

Function:

Surge protection for most I/O signals; AI, AO, DI, DO. Nominal 24V DC, maximum 30V DC. D9520S provides surge protection for all kinds of applications in different industries such as Oil&Gas, Petrochemical, Steel etc. avoiding signal interruption and protecting control room equipment.

Features:

- SIL 3 according to IEC 61508:2010.
- Input from Zone 0 (Zone 20), installation in Zone 1 and 2.
- Disconnection of signal circuit by disconnect knife.
- Signaling without additional auxiliary power, thanks to the mechanical status indicator.
- Signal not interrupted during maintenance work, thanks to impedance-neutral insertion and removal of protective plug.
- High Density, 6.2 mm per channel.
- HART compatible.

Ordering Information:

Model: D9520S

Technical Data:

IEC test classification: C1 / C2 / C3 / D1
Protection of signal types: 0/4-20 mA HART, Digital I/O, World FIP, F&G
Nominal system voltage U_n : 24 V DC
Max continuous operating voltage U_c : 30 V DC
Rated current: 600 mA (40°C)
Nominal discharge current (I_n) (8/20) μs: 5 kA (core-core)
5 kA (core-ground)
5 kA (core-earth)
Impulse discharge current (I_{imp}) (10/350) μs: 0.5 kA (core-core)
0.5 kA (core-ground)
0.5 kA (core-earth)
Total discharge current (I_{total}) (8/20) μs: 10kA
Max. total discharge current (I_{max}) (8/20) μs: 20kA (for one time)
Series resistance: 1.65Ω ± 20%
Voltage protection level (U_p): ≤ 150 V (C1 - 1 kV/500 A) core-core

≤ 275 V (C2 - 10 kV/5 kA) core-core
≤ 55 V (C3 - 100 A) core-core
≤ 750 V (C1 - 1 kV/500 A) core-ground
≤ 750 V (C2 - 10 kV/5 kA) core-ground
≤ 1.2 KV (C3 - 100 A) core-ground
≤ 80 V (C1 - 1 kV/500 A) core-earth
≤ 125 V (C2 - 10 kV/5 kA) core-earth
≤ 55 V (C3 - 100 A) core-earth

Response time t_A : ≤ 1 ns (core-core)
≤ 1 ns (core-ground)
≤ 100 ns (core-earth)

Compatibility:

CE mark compliant, conforms to Directives:
2014/34/EU ATEX

Environmental conditions:

Operating: temperature limits -40 to + 85 °C, relative humidity 5% to 95%.

Safety Description:



ATEX: II 2(1)G Ex ia [ia Ga] IIC T4...T6 Gb, II (1)D [Ex ia Da] IIIC

IECEx: Ex ia [ia Ga] IIC T4...T6 Gb, [Ex ia Da] IIIC

Ex ia IIC intrinsically safe protection type. The output data complies with the input data.

U_i = 30 V, C_i = 0 nF, L_i = 0 μH

T_a = -40 °C...+50 °C (T_4 and l_i = 400 mA and FISCO SPD)

T_a = -40 °C...+70 °C (T_4 and l_i = 250 mA)

T_a = -40 °C...+35 °C (T_6 and l_i = 350 mA)

T_a = -40 °C...+70 °C (T_6 and l_i = 100 mA)

Approvals:

BVS 18 ATEX E 018 X conforms to EN60079-0, EN60079-11.

IECEx BVS 18.0012X conforms to IEC60079-0, IEC60079-11.

EXIDA report no. GM 17/11-006 R008 SIL 3 conforms to IEC61508:2010 Ed.2.

Mounting:

EN/IEC60715 TH 35 DIN-Rail.

Weight: about 43 g.

Connection: screw terminal blocks to accommodate terminations up to 2.5 mm² flexible.

Location: installation in Safe Area or Zone 2 or Zone 1, Group IIC T4...T6.

Protection class: IP20.

Dimensions: Width 6.2 mm, Depth 100 mm, Height 105.8 mm.

Parameters Table:

Safety Description

Terminals 1-2-3

$U_i = 30 \text{ Vdc}$

$I_i = 400 \text{ mA (T4), 350 mA (T6)}$

$C_i = 0 \text{ nF}$

$L_i = 0 \text{ }\mu\text{H}$

Terminals 4-5-6

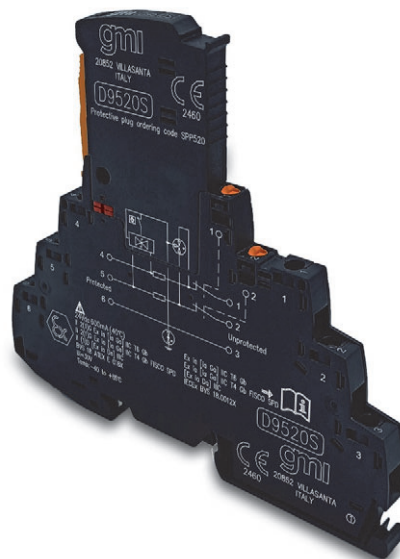
$U_o = 30 \text{ Vdc}$

$I_o = 400 \text{ mA (T4), 350 mA (T6)}$

$C_i = 0 \text{ nF}$

$L_i = 0 \text{ }\mu\text{H}$

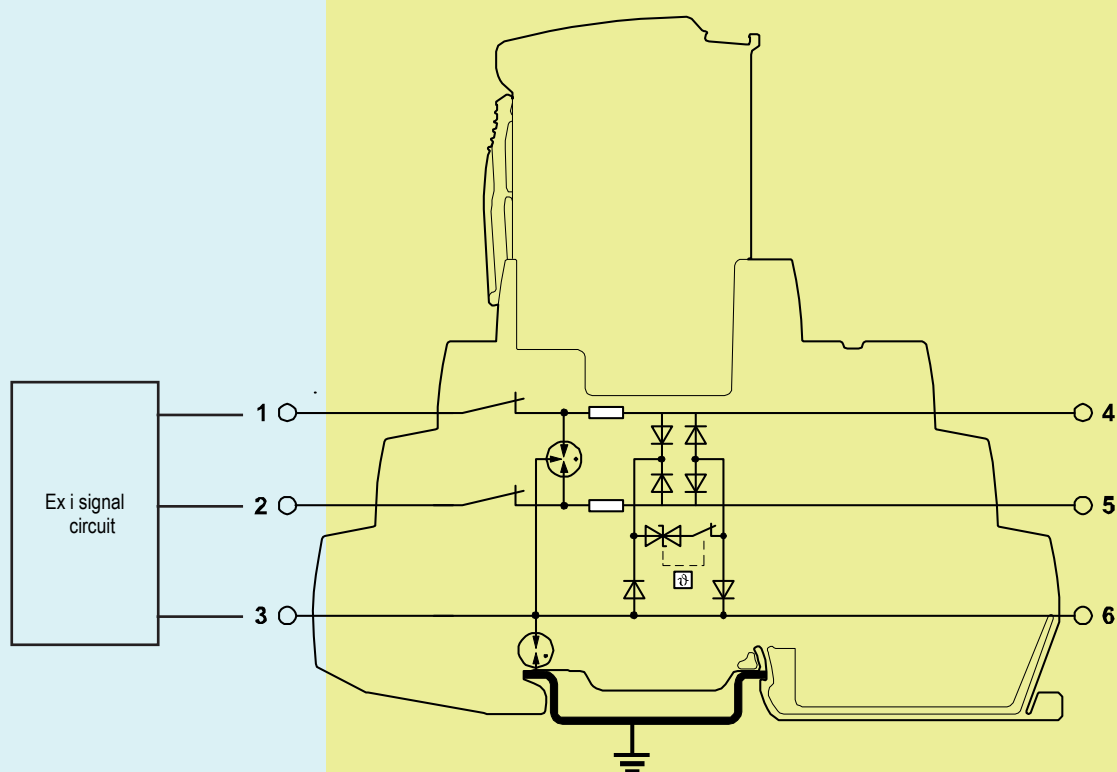
Image:



Function Diagram:

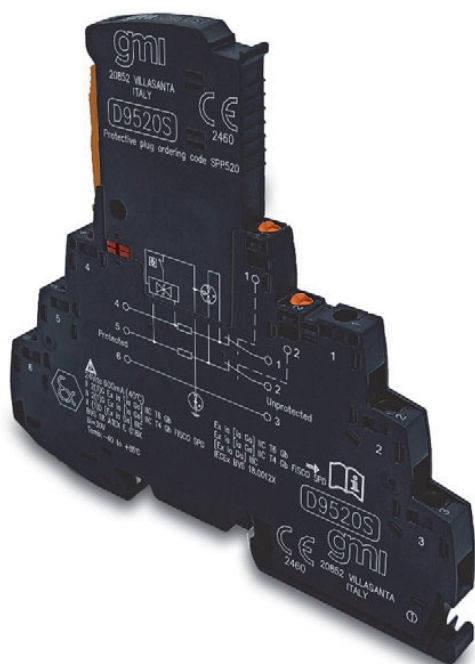
HAZARDOUS AREA ZONE 0 (ZONE 20) GROUP IIC

SAFE AREA, ZONE 2 GROUP IIC T4, ZONE 1 GROUP IIC T4



D9520

SIL 3 Surge Protective Device for Signal System Model D9520S



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