

## 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.

## 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.

### 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

intrinsically safe apparatus

$U_i/V_{max} = 30$  Vdc,  $I_i/I_{max} = 400$  mA,  $C_i = 0$  nF,  $L_i = 0$  μH at terminals 1-2-3.

$U_o/V_{oc} = 30$  Vdc,  $I_o/I_{sc} = 400$  mA,  $C_i = 0$  nF,  $L_i = 0$  μH at terminals 4-5-6.

-40 °C ≤  $T_a$  ≤ 35 °C (T6), -40 °C ≤  $T_a$  ≤ 50 °C (T4).

### 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 mm<sup>2</sup> 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.

## Ordering Information:

Model: D9520S

Accessories:  
Protective plug SPP520

## 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:

image coming soon

## Function Diagram:

HAZARDOUS AREA ZONE 0 (ZONE 20) GROUP IIC

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

