gmi technology for safety

D9410

SIL 3 Surge Protective Device for Signal System Model D9410S

Characteristics:

General Description:

D9410S provides two-stage surge protection for floating I/0 two 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.
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. D9410S 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.
- High Density, 6.2 mm per channel.
- HART compatible.

Ordering Information:

Model:	D9410S

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)
Impulse discharge current (I_{imp}) (10/350) µs: 0.5 kA (core-core)
0.5 kA (core-ground)
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): ≤ 55 V (C1 - 1 kV/500 A) core-core
≤ 65 V (C2 - 10 kV/5 kA) core-core
≤ 55 V (C3 - 100 A) core-core
≤ 900 V (C1 - 1 kV/500 A) core-ground
≤ 1.05 KV (C2 - 10 kV/5 kA) core-ground
≤ 1.4 KV (C3 - 100 A) core-ground
Response time tA: ≤ 1 ns (core-core)
≤ 100 ns (core-ground)
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.
Ui = 30 V, Ci = 0 nF, Li = 0 µH
Ta = -40 °C...+50 °C (T4 and Ii = 400 mA)
Ta = -40 °C...+70 °C (T4 and Ii = 250 mA)
Ta = -40 °C...+35 °C (T6 and Ii = 350 mA)
Ta = -40 °C...+70 °C (T6 and Ii = 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 R007 SIL 3 conforms to IEC61508:2010 Ed.2.
Mounting:
EN/IEC60715 TH 35 DIN-Rail.
Weight: about 37 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 83.5 mm, Height 105.8 mm.

Parameters Table:

Safety Description

Terminals 1-2-3
Ui = 30 Vdc
Ii = 400 mA (T4), 350 mA (T6)
Ci = 0 nF
Li = 0 µH

Terminals 4-5-6
Uo = 30 Vdc
Io = 400 mA (T4), 350 mA (T6)
Ci = 0 nF
Li = 0 µH

Image:

Function Diagram:

HAZARDOUS AREA ZONE 0 (ZONE 20) GROUP IIC

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