

# D5093

## SIL3 24/220Vdc/Vac Transistor-Out Detector

The 24/220Vdc/Vac Transistor-Out Detector D5093 module is a unit suitable for applications requiring SIL 3 level in safety related systems for high risk industries. Each channel is able to reflect the presence of a 24 to 220 Vac/Vdc input signal to the output by closing an optically coupled NO open-drain transistor (solid-state relay, MOSFET output). The presence of the 24 to 220 Vac/Vdc input signal is also indicated by a yellow LED on the front panel. The input switching voltage levels are selected, according to the applied input signal, by means of an internal dip-switch (overload protected).

### FEATURES

- SIL 3 / SC 3
- Installation in Zone 2/Div. 2
- 2 fully independent channels
- Two port isolation, Input/Output
- High Density, two channels per unit

### ORDERING INFORMATION

#### Ordering codes

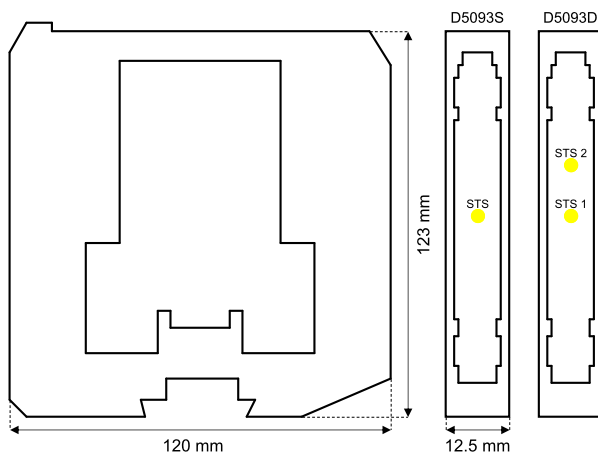
D5093S: 1 channel

D5093D: 2 channels

#### Accessories

DIN-Rail stopper MCHP196.

### OVERALL DIMENSIONS



### TECHNICAL DATA

#### Input

Loop powered control signal.

#### Input switching voltage levels:

ON  $\geq 21$  Vac/Vdc, OFF  $\leq 15$  Vac/Vdc for 24 Vac/Vdc, typical

ON  $\geq 40$  Vac/Vdc, OFF  $\leq 30$  Vac/Vdc for 48 Vac/Vdc, typical

ON  $\geq 50$  Vac/Vdc, OFF  $\leq 35$  Vac/Vdc for 60 Vac/Vdc, typical

ON  $\geq 100$  Vac/Vdc, OFF  $\leq 75$  Vac/Vdc for 120 Vac/Vdc, typical

ON  $\geq 200$  Vac/Vdc, OFF  $\leq 160$  Vac/Vdc for 220 Vac/Vdc, typical  
Threshold level selection by means of internal dip-switch (overload protected).

**Voltage range:** 24 to 220 Vac/Vdc nominal (15 to 250 Vac/Vdc).

**Input current protection:** 100 mA fuse internally protected.

**Current consumption:** 4.5 mA/channel @ 250 Vac/Vdc nominal input, typical.

**Power dissipation:** 1.13 VA or W/channel with 250 Vac or Vdc, typical.

#### Output

Voltage free SPST optocoupled open-drain transistor (solid-state relay, MOSFET output).

**Open-collector/drain rating:** 50 mA @ 35 Vdc ( $\leq 0.5$  Vdc voltage drop).

**Leakage current:**  $\leq 10$   $\mu$ A @ 35 Vdc.

**Response time:**  $\leq 120$  ms.

#### Isolation

In/Out 2.5 kV; In/In 1.5 kV; Out /Out 500 V.

#### Environmental conditions

**Operating temperature:** temperature limits  $-40$  to  $+70$   $^{\circ}$ C.

**Storage temperature:** temperature limits  $-45$  to  $+80$   $^{\circ}$ C.

#### Mounting

DIN-Rail 35 mm, or on custom Term. Board.

**Weight:** about 115 g (D5093D), 105 g (D5093S).

**Connection:** by polarized plug-in disconnect screw terminal blocks to accommodate terminations up to 2.5 mm<sup>2</sup> (13 AWG).

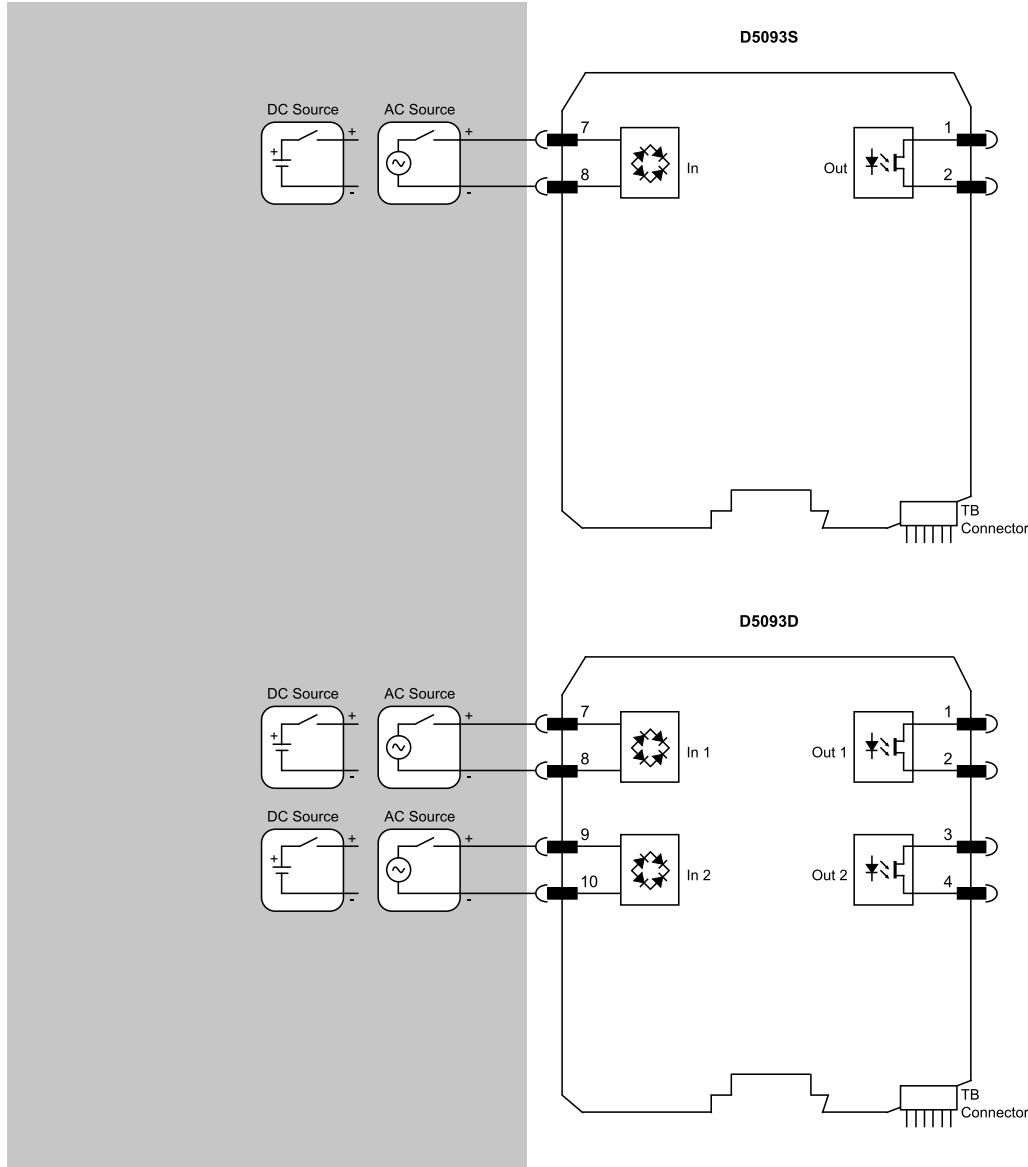
**Dimensions:** Width 12.5 mm, Depth 123 mm, Height 120 mm.

## FUNCTION DIAGRAM

Additional installation diagrams may be found in Instruction Manual.

**Field**

**Safe Area/Zone 2/Div. 2**



Functional Safety Management Certification:  
GM International is certified to conform to IEC61508:2010 part 1 clauses 5-6 for safety related systems up to and included SIL3. In addition, GM International products have been granted I.S. certificates from the most credited Notified Bodies in the world.

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