

# D5212

## I.S. SIL2 2/4-Wire Transmitter Power Supply

The Repeater Power Supply D5212 module is a high integrity analog input interface suitable for applications requiring SIL 2 level in safety related systems for high risk industries. It provides a fully floating dc supply for energizing conventional 2 wires 0/4-20 mA, active or passive, transmitters located in Hazardous Area, and repeats the current in floating circuit to drive Safe Area loads. The module is fully configurable to achieve input/output multiplexing, scaling, duplication, inversion, and input elaboration (addition, subtraction, low/high selection). An additional alarm contact can be (de-)activated on programmable input trip points, including hysteresis and delays. Configuration and diagnostic parameters are programmable and can also be monitored/set through Modbus.

### FEATURES

- SIL 2 / SC 3
- Input from Zone 0/Div. 1
- Installation in Zone 2/Div. 2
- 0/4-20 mA Active-Passive Input, Source Output
- Duplication/inversion/scaling output
- Input operations (sum, dif, max, min) available
- Input and Output short circuit proof
- Out of range fault detection
- Alarm output with user-settable trip points
- Modbus RTU RS-485 for monitor & configuration
- Fully programmable operating parameters
- High Accuracy,  $\mu$ P controlled A/D converter
- Three port isolation, Input / Output / Supply
- High Density, four channels per unit

### ORDERING INFORMATION

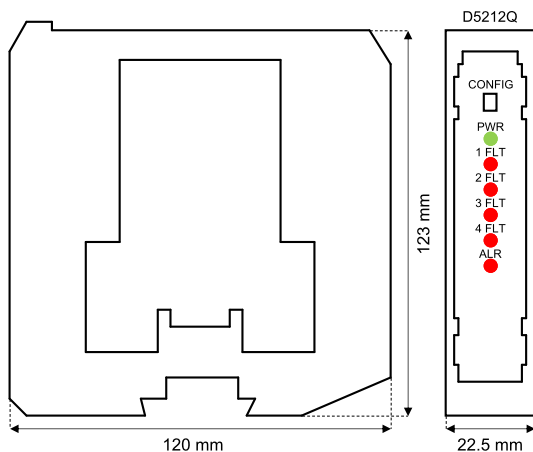
#### Ordering codes

D5212Q: 4 channels

#### Accessories

Bus Connector JDFT050, Bus Mounting Kit OPT5096.  
Programmable USB serial line Kit PPC5092 + SWC5090.

### OVERALL DIMENSIONS



### TECHNICAL DATA

#### Supply

24 Vdc nom (21.5 to 30 Vdc), reverse polarity protected.

**Current consumption:** 200 mA @ 24 Vdc with 20 mA in/out, typical.

**Power dissipation:** 2.75 W @ 24 Vdc with 20 mA in/out, typical.

#### Input

0/4 to 20 mA (2 wire Tx current limited  $\approx$  25 mA) or separately powered inputs (only for channels 1 and 2).

**Transmitter line voltage:** 14.5 V typical, 14.0 V minimum, @ 20 mA.

**Integration time:** 500 ms.

#### Output

0/4 to 20 mA, on max. 300  $\Omega$  load source mode, current limited  $\approx$  25 mA.

**Response time:** 100 ms (10 to 90 % step change).

#### Alarm

**Trip point range:** within rated limits of the input sensor.

**ON-OFF delay time:** 0 to 1000 s, 100 ms step.

**Hysteresis:** within rated limits of input sensor.

**Output:** voltage free SPST photoMOS: 100 mA, 60 Vdc ( $\leq$  1 V voltage drop).

#### Modbus interface

Modbus RTU RS-485 up to 57.6 kbps for monitor/configuration/control.

#### Performance

**Ref. Conditions:** 24 V supply, 250  $\Omega$  loads, 23  $\pm$  1  $^{\circ}$ C ambient temperature.

#### Input:

**Calibration accuracy:**  $\leq \pm 0.05$  % FSR.

**Linearity accuracy:**  $\leq \pm 0.05$  % FSR.

**Temp. influence:**  $\leq \pm 0.01$ % of input FSR for a 1  $^{\circ}$ C change.

#### Analog output:

**Calibration accuracy:**  $\leq \pm 0.05$  % FSR.

**Linearity accuracy:**  $\leq \pm 0.05$  % FSR.

**Temp. influence:**  $\leq \pm 0.005$  % of output FSR for a 1  $^{\circ}$ C change.

#### Isolation

I.S. In/Out 1.5 kV; I.S. In/Supply 1.5 kV; Out/Supply 500 V; I.S. In/Alarm 1.5 kV; Supply/Alarm 500 V; Out/Alarm 500 V.

#### Environmental conditions

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

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

#### Safety description

Associated apparatus and non-sparking electrical equipment.

$U_o = 24.1$  V,  $i_o = 86$  mA,  $P_o = 516$  mW at terminals 13-14, 15-16, 17-18, 19-20.

$U_o = 1.1$  V,  $i_o = 56$  mA,  $P_o = 16$  mW at terminals 21-22, 23-24.

$U_i = 30$  V,  $i_i = 128$  mA,  $C_i = 2.1$  nF,  $L_i = 0$  nH at terminals 21-22, 23-24.

$U_m = 250$  Vrms or Vdc,  $-40$   $^{\circ}$ C  $\leq T_a \leq 70$   $^{\circ}$ C.

#### Mounting

DIN-Rail 35 mm, with or without Power Bus or on custom Term. Board.

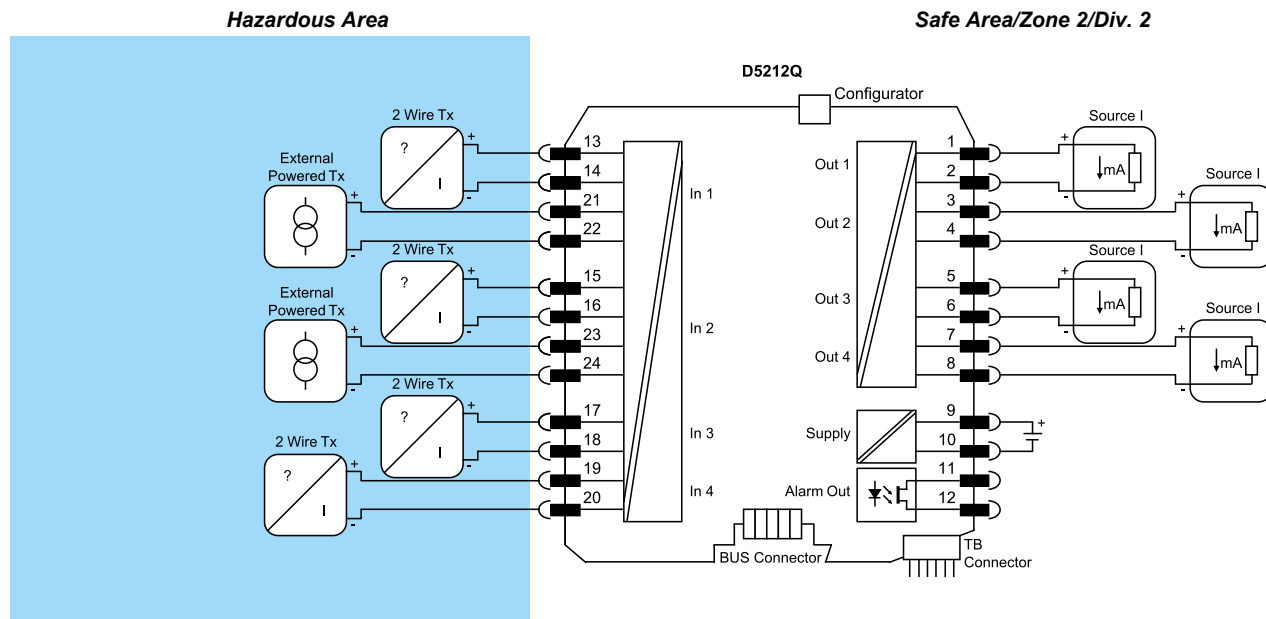
**Weight:** about 120 g.

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

**Dimensions:** Width 22.5 mm, Depth 123 mm, Height 120 mm.

# FUNCTION DIAGRAM

Additional installation diagrams may be found in Instruction Manual.



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.

Data specified in this document are merely descriptive of the products and should be integrated with relevant technical specifications. Our products are in constant development and the information presented herein refers to the time of document issue. No statements concerning a certain condition or suitability for a certain application can be derived from our information. The information given does not release the user from the obligation of own judgment and verification. Terms & Conditions can be found at our website. For more information refer to instruction manual.