

Quadruple Repeater Power Supply DIN-Rail Model D1012Q

Characteristics:

General Description:

The quadruple channel DIN Rail Repeater Power Supply D1012Q provides a fully floating dc supply for energizing conventional 2-wire 4-20 mA Transmitter located in Hazardous Area, and repeats while isolating the current in Safe Area to drive a load.

Function:

4 channels I.S. analog input for 2 wire loop powered Transmitters, provides isolation between input versus output and supply, and current (source mode) output signal.

On demand it is possible to supply the following combination of input/output: 2 independent input // 2+2 independent groups of output or 1 input // 4 outputs.

Signalling LED:

Power supply indication (green).

EMC:

Fully compliant with CE marking applicable requirements.

Technical Data:

Supply:

24 V nom (20 to 30 V) reverse polarity protected ripple within voltage limits ≤ 5 Vpp.

Current consumption @ 24 V: 140 mA with 20 mA output typical.

Max. power consumption: 3.5 W for 4 channels with 30 V supply voltage.

Isolation (Test Voltage):

I.S. In/Out 1.5 KV; I.S. In/Supply 1.5 KV.

Input:

4 to 20 mA (2 wire Tx current limited at ≈ 23 mA).

Transmitter line voltage:

14.0 V typical at 20 mA with max. 30 mVrms ripple.

Output:

4 to 20 mA, on max. 300 Ω load source mode, current limited at 22 mA.

Response time: 500 ms (10 to 90 % step change).

Output ripple: ≤ 30 mVrms.

Performance:

Ref. Conditions 24 V supply, 250 Ω load, 23 ± 1 °C ambient temp.

Calibration accuracy: $\leq \pm 0.1$ % of full scale.

Linearity error: $\leq \pm 0.05$ % of full scale.

Supply voltage influence: $\leq \pm 0.05$ % of full scale for a min to max supply voltage change.

Load influence: $\leq \pm 0.05$ % of full scale for a 0 to 100 % load resistance change.

Temperature influence: $\leq \pm 0.01$ % on zero and span for a 1 °C change.

Compatibility:

CE CE mark compliant, conforms to 94/9/EC Atex Directive and to 89/336/CEE EMC Directive.

Environmental conditions:

Operating: Temperature limits -20 to + 60 °C, relative humidity max 90 % non condensing, up to 35 °C.

Storage: Temperature limits - 40 to + 80 °C.

Safety Description:

Ex II (1) G D [EEx ia] IIC or I (M2) [EEx ia] I associated electrical apparatus.

Uo/Voc = 21.5 V, Io/Isc = 93 mA, Po/Po = 496 mW at terminals 13-14, 15-16, 9-10, 11-12.

Um = 250 Vrms, -20 °C \leq Ta \leq 60°C.

Approvals: DMT 01 ATEX E 042 X conforms to EN50014, EN50020.

Mounting:

T35 DIN Rail according to EN50022.

Weight: about 140 g.

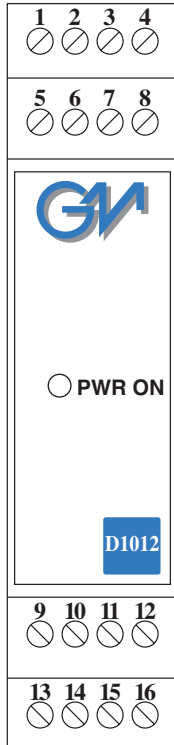
Connection: By polarized plug-in disconnect screw terminal blocks to accommodate terminations up to 2.5 mm².

Location: Safe Area installation.

Protection class: IP 20.

Dimensions: Width 22.5 mm, Depth 99 mm, Height 114.5 mm.

Front Panel and Features:



Quadruple channels for 2 wire Transmitters.

4-20 mA Input, Output Signal.

Input and Output short circuit proof.

High Accuracy.

EMC Compatibility to EN61000-6-2, EN61000-6-4.

ATEX Certification.

High Reliability, SMD components.

High Density, four channels per unit.

Simplified installation using standard DIN Rail plug-in terminal blocks.

250 Vrms (Um) max. voltage applied to the instruments associated with barrier.

Ordering Information:

Model: D1012Q

Parameters Table:

Safety Description	Maximum External Parameters			
	Group Cenelec	Co/Ca (μF)	Lo/La (mH)	Lo/Ro ($\mu\text{H}/\Omega$)
Terminals				
13-14, 15-16, 9-10, 11-12	II C	0.176	4.2	71.70
Uo/Voc = 21.5 V	II B	1.200	16.4	287.0
Io/Isc = 93 mA	II A	4.500	32.8	574.0
Po/Po = 496 mW				



Function Diagram:

HAZARDOUS AREA

SAFE AREA

