DSCL22

Loop Powered Isolators - DIN or Panel Mount

Description

Each DSCL22 loop powered isolator provides 1, 2, or 3 channels of analog signal protection by electrically isolating its input from output for any DC process signal in the range of 0-20mA (or 4-20mA). The DSCL22 operates passively, obtaining its power from the transmitted signal (see Figure 1).

The input signal is chopped by a proprietary DC chopper circuit, isolation is provided by transformer coupling, a proprietary technique is used to suppress transmission of common mode spikes or surges, and the output signal from the secondary of the transformer is reconstructed to the original input signal.

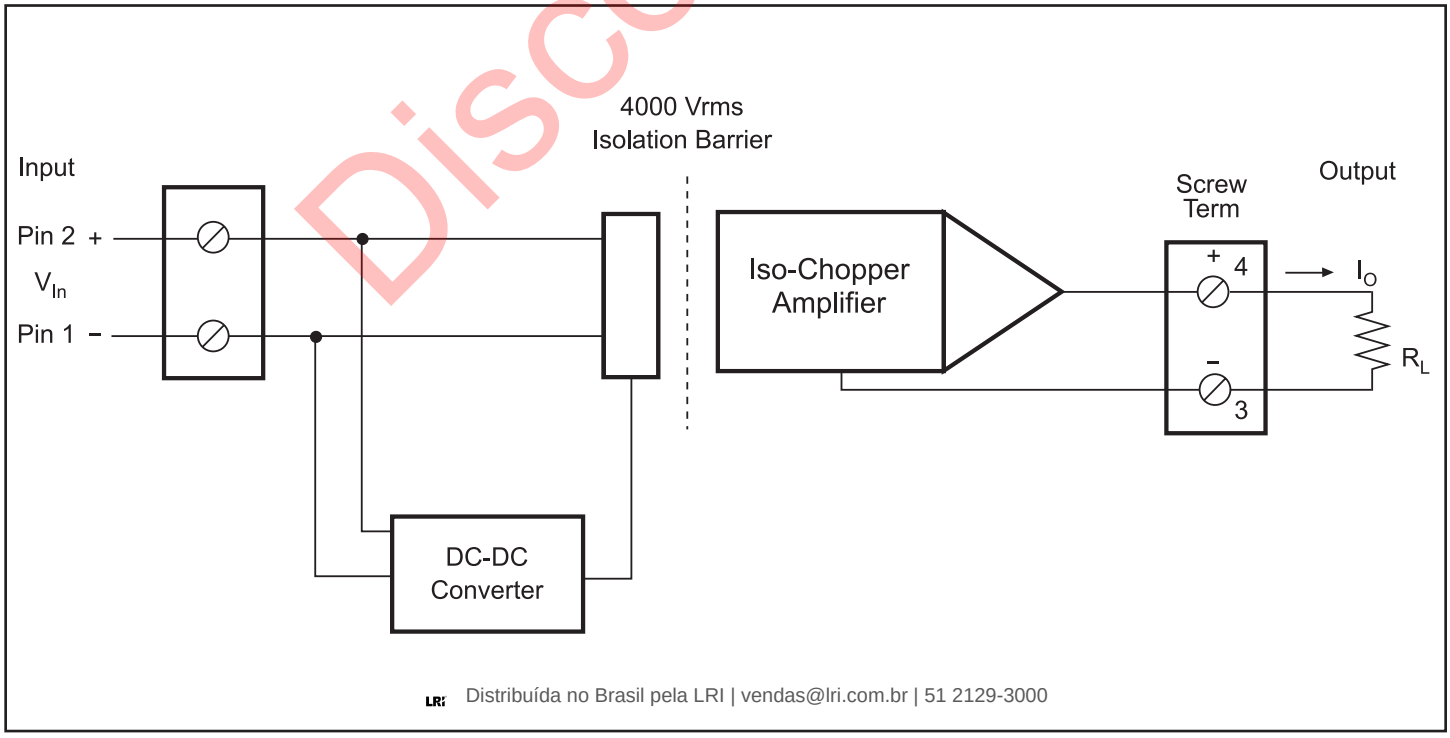
If one input to two isolated outputs is desired, multiple channel units may be configured as a splitter (see Figure 2).

Features

- No Power Supply Required, Signal Powered from 0-20mA (or 4-20mA) Input
- Simplified Wiring for Fast Installation
- DIN Rail or Panel Mountable
- Narrow DIN Package, Mounts up to 27 Devices into a 19" Rack Space
- No Recalibration or Maintenance Required
- Up to 4000Vrms Transformer Isolation
- Prevents Ground-Loop Problems
- Prevents the Transfer of Interference Voltages and Currents
- High Accuracy Over Full Span
- CE Compliant

Discontinued

The compliance voltage or loop voltage must not exceed 17V, as this may damage the module.



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Figure 1: DSCL22 Block Diagram, Single Channel Model

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Specifications

Typical* at T_A = +25°C; Load R = 250Ω (current out)

Module	DSCL22-01,-11,-21
Input Range	0/4-20mA
Input Current	50mA max at 27V max
CMV Input to Output	4000Vrms (1ch) or 2300Vrms (2 & 3ch), 1 Minute
Accuracy (at 250Ω Load)(1)	±0.05% Span Typical ±0.1% Span Max
Linearity	Included in Accuracy
Stability	<50ppm/°C
Input Overshoot	<20µA (Typical 5µA)
Compliance Voltage(2) (V_{in})	25.65V max
Voltage Drop	<2.6V (for 500Ω Load)
Output Range	0/4-20mA
Limit Upper Range	40mA
Bandwidth, –3dB	500Hz
CMR (50Hz or 60Hz)	112dB
NMR	20dB per Decade above 500Hz
Response Time	1ms, to 90% Span
Load Resistance Range	0-1000Ω
Output Noise	≤ 10mV (Typical ≤ 5 mV)
Environmental	Weight Approximately 100g
Housing Material	Lexan 940 (UL 94 V-O)
Shock Test	50g (10 Shocks, 3 Axis)
Operating Temp. Range	–25°C to +55°C
Storage Temp. Range	–40°C to +70°C
Relative Humidity	0 to 75% Noncondensing
Emissions	EN50081-2 (Radiated, Conducted)
Immunity	EN50082-2 (ESD, RF, EFT)

NOTES:
*Contact factory or your local Dataforth sales office for maximum values.
(1) Additional error <0.05% per 100Ω above 250Ω
(2) $V_{in} = I_O R_L$ + 2.6V

Ordering Information

Model	Channels	Input Range	Output Range	Figure
DSCL22-01	1	0-20mA (4-20mA)	0-20mA (4-20mA)	3
DSCL22-11	2	0-20mA (4-20mA)	0-20mA (4-20mA)	4
DSCL22-21	3	0-20mA (4-20mA)	0-20mA (4-20mA)	4

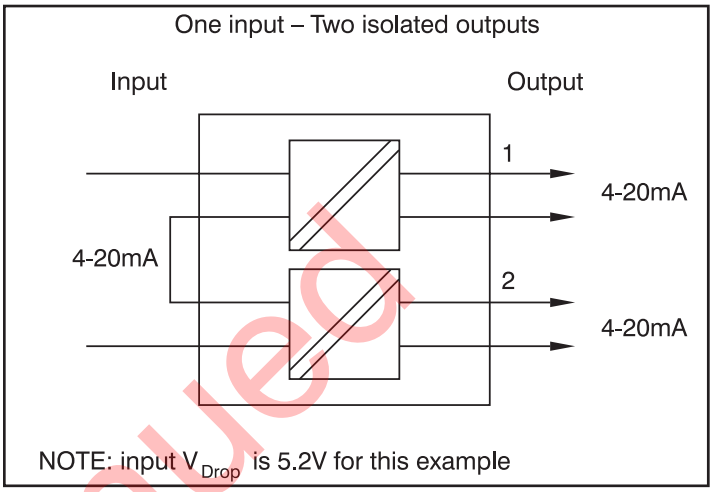


Figure 2: Multi-Channel Versions may be used as a Splitter

Dimensional and Wiring Information

The DSCL22 DIN mount package accepts EN50022 (35 x 7.5) type rails; Dataforth PN SCMXRAIL1-xx. Multiple DSCL22 modules may be mounted next to each other without affecting input or output signals. The DSCL22 may be mounted in any position.

Screw terminals with wire protection clamps sized for 2 x 0.75mm² or 1 x 2.5mm² wires. The DSCL22 requires no maintenance.

Discontinued

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