

DSCL22



Loop Powered Isolator - 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

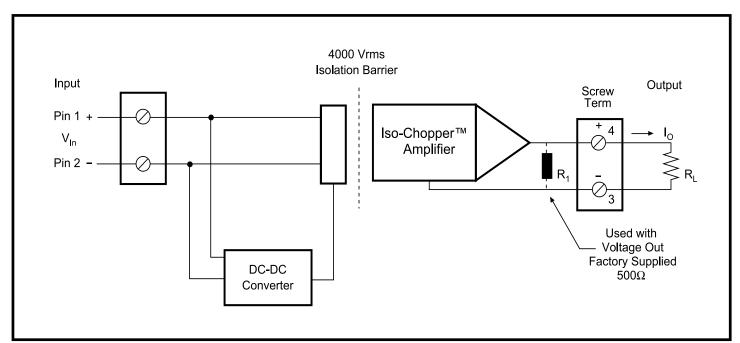


Figure 1: DSCL22 Block Diagram, Single Channel Model



$\textbf{Specifications} \quad \text{Typical at } \textbf{T}_{_{\!A}} = +25^{\circ} \textbf{C}, \textbf{Load } \textbf{R} = 250 \Omega \text{ (current out)}, \textbf{>} 5 \text{M} \Omega \text{ (voltage out)}$

Module	DSCL22-01,-11,-21	DSCL22-02,-12,-22
Input Range Input Current CMV Input to Output Accuracy Non-linearity Stability Input Overshoot Compliance Voltage Voltage Drop ⁽³⁾	0/4-20mA 50mA max at 27V max 4000Vrms (1ch) or 2300Vrms (2 & 3ch), 1 Minute ±0.05% Span Typical ±0.1% Span Max (at 250Ω Load) ⁽¹⁾ Included in Accuracy <50ppm/°C <20μA (Typical 5μA) 27V ±5% (with Zener Diode) <2.6V (for 500Ω Load)	*
Output Range Limit Upper Range Bandwidth, -3dB CMR (50Hz or 60Hz) NMR Response Time Load Resistance Range Output Noise	0/4-20mA 40mA 500Hz 112dB 20dB per Decade Above 500Hz 1ms, to 90% Span 0-1000Ω <20mV (Typical <5mV)	0-10V (2-10V) ⁽⁴⁾ 26V 50Hz * 20dB per Decade Above 50Hz 10ms, to 90% Span >5MΩ *
Environmental Housing Material Shock Test Operating Temp Range Storage Temp Range Relative Humidity Emissions Immunity	Weight Approximately 100g. Lexan 940 (UL 94 V-O) 50g (10 Shocks, 3 Axis) -25°C to +55°C -40°C to +70°C 0 to 75% Noncondensing EN50081-2 (Radiated, Conducted) EN50082-2 (ESD, RF, EFT)	Weight Approx. 200g * * * * * * * * * *

NOTES:

- *Same spec as DSCL22-01
- (1) Additional error <0.05% per 100 Ω above 250 Ω
- (2) Calculate error due to impedance of output instrument = $500 \Omega x 100 / R$ inst.
- (3) $V_{in} = I_{o}R_{L} + <2.6V$ (4) Internal R=500 Ω

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 effecting input or output signals. The DSCL22 may be mounted in any position.

Screw terminals with wire protection clamps sized for $2 \times 0.75 \text{mm}^2 \text{ or } 1 \times 2.5 \text{mm}^2$ wires. The DSCL22 requires no maintenance.

Ordering Information

Model	Channels	Input Range	Output Range	Figure
DSCL22-01	1	0-20mA (4-20mA)	0-20mA (4-20mA)	3
DSCL22-02	1	0-20mA (4-20mA)	0-10V (2-10V)	3
DSCL22-11	2	0-20mA (4-20mA)	0-20mA (4-20mA)	4
DSCL22-12	2	0-20mA (4-20mA)	0-10V (2-10V)	4
DSCL22-21	3	0-20mA (4-20mA)	0-20mA (4-20mA)	4
DSCL22-22	3	0-20mA (4-20mA)	0-10V (2-10V)	4

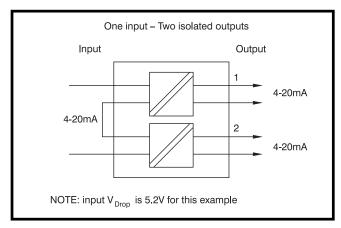


Figure 2: Multi-Channel Versions may be used as a Splitter

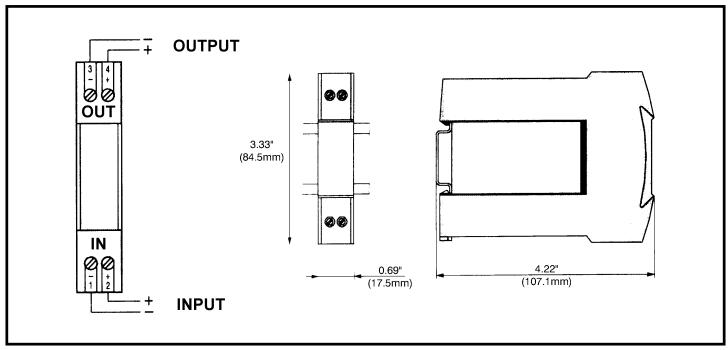


Figure 3: DSCL22-01,-02 Wiring and Dimensions

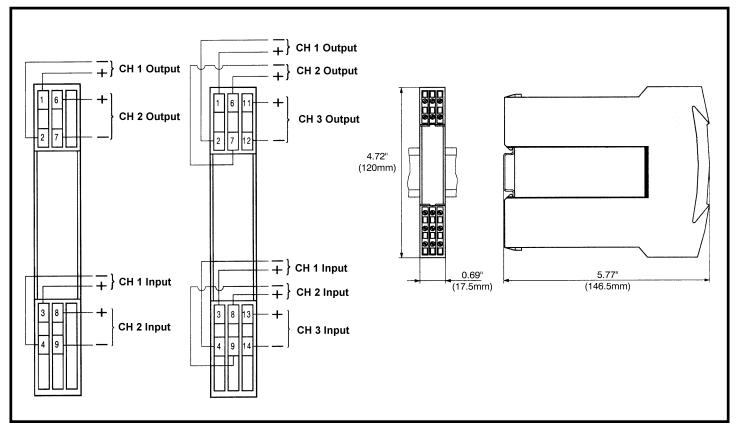


Figure 4: DSCL22-11,-12,-21,-22 Wiring and Dimensions