

DSCL20



Loop Powered Isolators - "Component Module"


Description

Each DSCL20 loop powered isolator provides a single channel 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 DSCL20 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.

Features

- No Power Supply Required, Signal Powered from 0-20mA (or 4-20mA) Input
- Simplified Wiring, Easy to Install Plug-In Accessories
- Small OEM Modular Package Ideal for PCB Mounting
- I/O Packaging for Vertical or Horizontal Mounting
- 500Vrms Transformer Isolation
- Prevents Ground-Loop Problems
- Prevents the Transfer of Interference Voltages and Currents
- High Accuracy Over Full Span
- CE Compliant

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

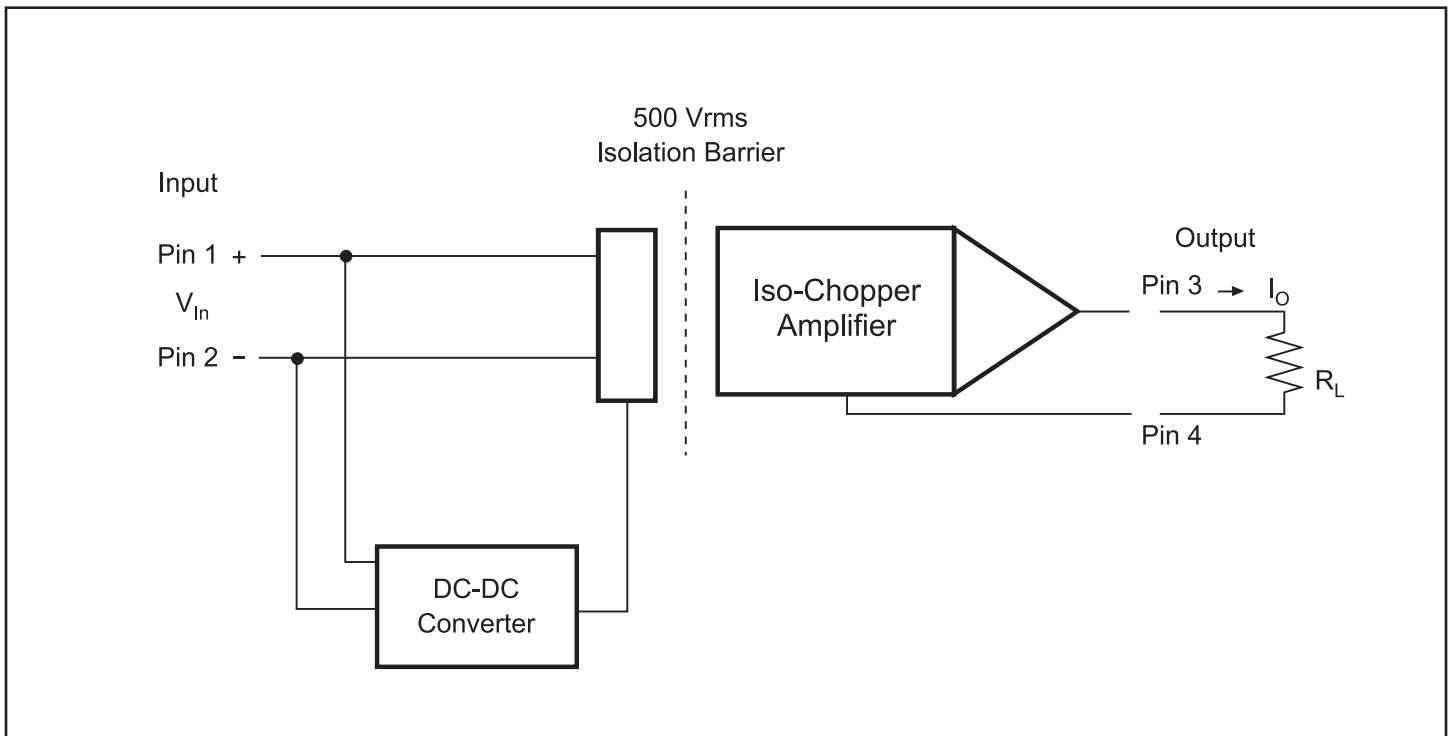


Figure 1: DSCL20 Block Diagram

Specifications Typical* at $T_A = +25^\circ\text{C}$

Module	DSCL20
Input Range	0/4-20mA
Input Current	50mA max at 18V max
CMV Input to Output	500Vrms, 1 Minute
Accuracy (at 100Ω Load) ⁽¹⁾	±0.05% Span Typical ±0.1% Span Max
Linearity	Included in Accuracy
Stability	<50ppm/°C
Overshoot	<20μA (Typical 5μA)
Compliance Voltage ⁽²⁾ (V_{in})	17V max
Voltage drop	<2V (for 500Ω Load)
Output Range	0/4-20mA
Limit Upper Range	30mA
Bandwidth, -3dB	750Hz
CMR (50Hz or 60Hz)	90dB
NMR	20dB per Decade above 750Hz
Response Time	1ms, to 90% Span
Load Resistance Range	0-600Ω
Output Noise	± 0mV Peak-to-Peak (Typical 5 mV)
Environmental	Weight Approximately 1.5g
Housing Material	Lexan 940 (UL 94 V-O)
Shock Test	50g (10 Shocks, 3 Axis)
Operating Temp. Range	-20°C to +65°C
Storage Temp. Range	-40°C to +85°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 <0.2% at 500Ω load

(2) $V_{in} \neq I_o R_L + \pm V$

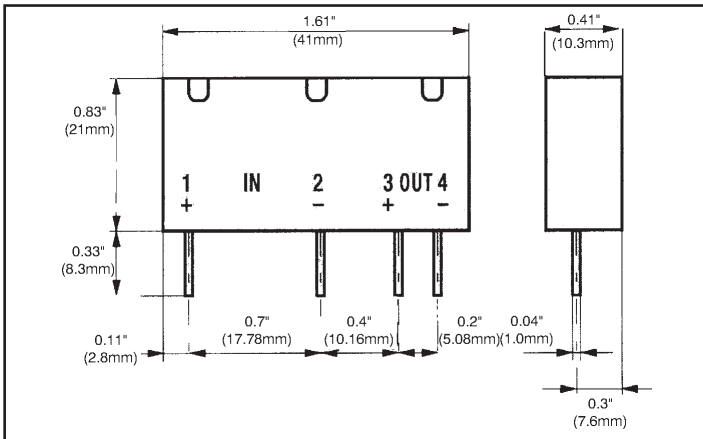


Figure 3: DSCL20-02 (Straight Pin)

Ordering Information

Model	Input Range	Output Range	Package
DSCL20-01	0-20mA (4-20mA)	0-20mA (4-20mA)	Bent Pins
DSCL20-02	0-20mA (4-20mA)	0-20mA (4-20mA)	Straight Pins

Accessory

Model	Description
DSCX-01	Socket for DSCL20-02

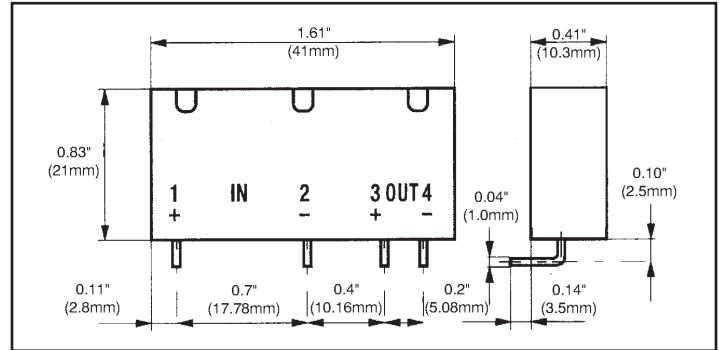


Figure 2: DSCL20-01 (Bent Pin)

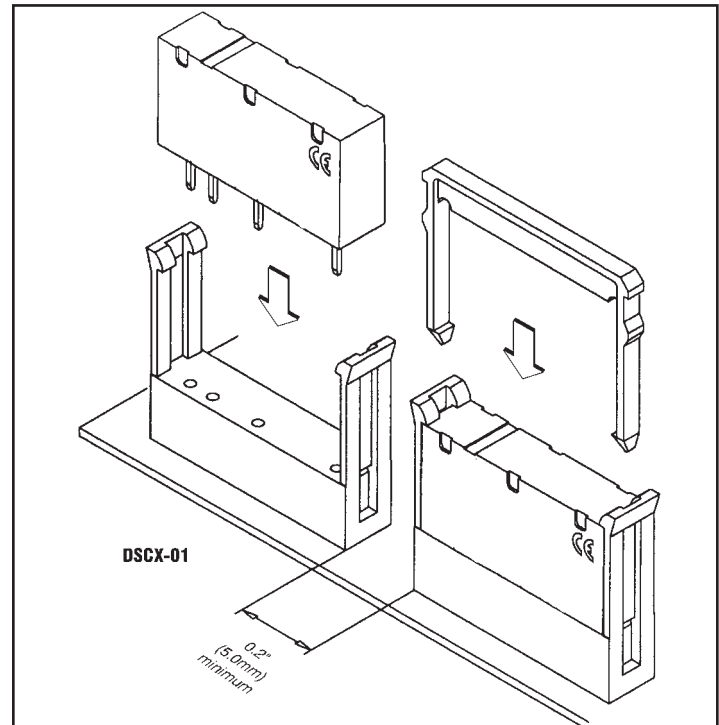


Figure 4: DSCX-01 Socket and Hold-down Assembly for DSCL20-02 (Straight Pin Module)

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