DSCM1500

High Voltage Analog Input Module, Wide Bandwidth

DESCRIPTION

The DSCM1500 high voltage analog input module provides a single channel of analog input which is filtered, isolated, amplified, and converted to a high-level analog voltage output (Figure below).

The DSCM1500 high voltage analog input module is designed to interface with a wide range of sensors and equipment used in industrial, test, railroad, and measurement applications that output high voltage signals.

Input-to-Output and Input-to-Power is rated at a robust 2000VDC. This advanced protection, combined with proven analog filtering, safeguards measurement and control equipment from noise, transient power surges, ground loops, and other industrial hazards.

Special input circuits provide protection against accidental connection of voltages up to ±2000VDC and against transient events as defined by ANSI/IEEE C37.90.1. Protection circuits are also present on the signal output and power input terminals to guard against transient events and power reversal.

The DSCM1500 is housed in a robust DIN rail mountable package and is fully specified over the –40°C to +85°C temperature range.

FEATURES

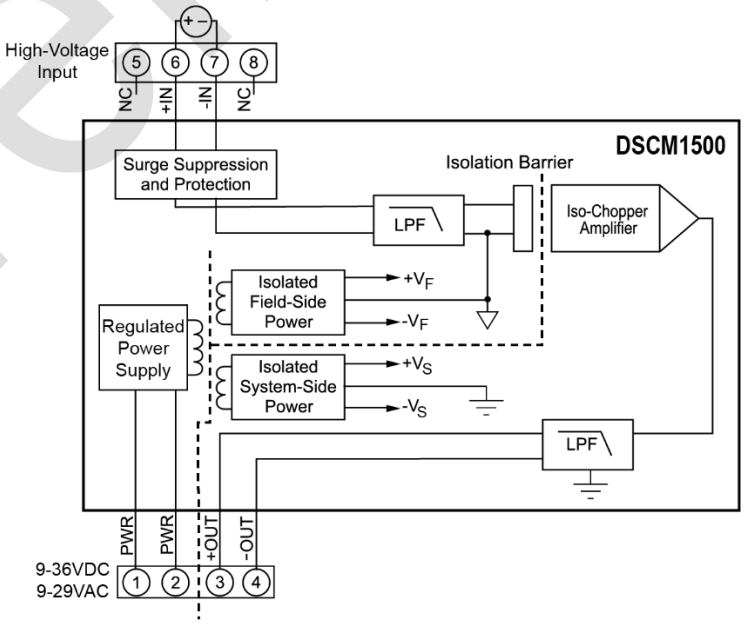
- Accepts High Voltage Signals up to ±1500VDC
- High-level Voltage Outputs of ±10VDC
- ±0.1% Accuracy & ±0.25mVrms Noise
- 2000VDC Transformer Isolation
- ANSI/IEEE C37.90.1 Transient Protection
- Input Protected to 2000VDC, Continuous
- 120dB CMR
- CE compliant & Manufactured per RoHS III Directive 2015/863
- DIN rail mounted case (99mm x 22.6mm x 113.7mm)
- Operating temperature: –40°C to +85°C

BENEFITS

- Safe Measurement of High-Voltage Signals
- Easy DIN Rail Installation
- Simplifies sensor interface and signal conditioning design
- Provides isolation of external devices
- Protects sensitive system components
- Breaks ground loops
- Reduces EMC concerns

APPLICATIONS

- High Voltage Measurements
- Signal Conditioning
- Signal Isolation
- Signal Filtering
- Industrial Process Control
- Automation & Monitoring
- Test & Measurement
- System & Signal Monitoring



DSCM1500 Block Diagram

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Preliminary

Specifications

Typical* at T_A = +25°C ±3°C

Module	DSCM1500
Input Range	±1500VDC
Input Bias Current	±1nA at 0VDC input
Input Resistance	
Normal	40MΩ
Power Off	40MΩ
Overload	40MΩ
Input Protection	
Continuous	2000VDC (max)
Transient	ANSI/IEEE C37.90.1
CMV, Input to Output	
Continuous Transient	±1500VDC (max) ANSI/IEEE C37.90.1
CMR (DC)	>120dB
Accuracy	±0.1% of FS(1)
Linearity	±0.1% of FS(1)
Offset	±0.1% of FS(1)
Stability	
-40°C to +85°C	±0.008%/°C
-30°C to +50°C	±0.005%/°C
Noise	±0.25mVrms
	4mV peak to peak (DC to 1MHz)
Bandwidth, –3dB	5kHz
Response Time, 10% to 90%	80µs
Output Range	-10V to +10V
Output Resistance	33Ω
Output Protection	Continuous Short-to-Ground
Output Load	≥10kΩ
Power Supply	9-36VDC, <0.30W
	9-28VAC, <0.5W, 50Hz – 400Hz
Power Supply Sensitivity	<2µV/% (referred to output)
Dielectric Test Voltages	
Input to Output / Power	4,000VDC
Power input to Output	500VDC
Mechanical Dimensions	3.90" x 0.89" x 4.48"
(h)x(w)x(d)	(99mm x 22.6mm x 113.7mm)
Weight	125 gram (4.41 ounce)
Wire Sizes	30-12 AWG
Environmental	
Operating Temp. Range	–40°C to +85°C
Storage Temp. Range	–40°C to +85°C
Relative Humidity	0 to 95% Noncondensing
IP Rating	IP20
Emissions EN61000-6-4	ISM, Group 1
Radiated, Conducted	Class A
Immunity EN61000-6-2	ISM, Group 1
RF	Performance A ±5% Span Error
ESD, EFT	Performance B

NOTES:
*Contact factory or your local Dataforth sales office for maximum values.
(1) Full Scale Range, 20VDC

Ordering Information

Model	Input Range	Output
DSCM1500	–1500V to +1500V	–10V to +10V

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