

DI-8B43 DC LVDT Input Modules

FEATURES

- Interfaces to DC Linear Voltage Displacement Transducers
- High-Level Voltage Outputs
- 1500Vrms Isolation
- ANSI/IEEE C37.90.1 Transient Protection
- Input Protection to 240VAC Continuous
- 100dB CMR
- 1kHz Signal Bandwidth
- $\pm 0.05\%$ Accuracy
- $\pm 0.02\%$ Linearity
- Low Drift with Ambient Temperature
- CE Compliant
- UL/CUL Listing and ATEX Compliance Pending
- Mix and Match Module Types

DESCRIPTION

8B modules are an optimal solution for monitoring real-world process signals and providing high-level signals to a data acquisition system. Each 8B43 module isolates, filters, and amplifies a voltage input signal and provides an analog voltage output.

The 8B43 can interface to transducers that will operate on a 10V excitation voltage and up to 30mA of excitation current.

Signal filtering is accomplished with a 5-pole filter optimized for time and frequency response which provides 100dB per decade of normal-mode rejection above 1kHz. One pole of this filter is on the field side of the isolation barrier for anti-aliasing, and the other four are on the system side.

A special input circuit on the 8B43 modules provides protection against accidental connection of power-line voltages up to 240VAC. Clamp circuits on the I/O and power terminals protect against harmful transients.

Isolation is provided by transformer coupling to suppress transmission of common mode spikes or surges. The module is powered from +5VDC, $\pm 5\%$.

The modules are designed for installation in Class I, Division 2 hazardous locations and have a high level of immunity to environmental noise.

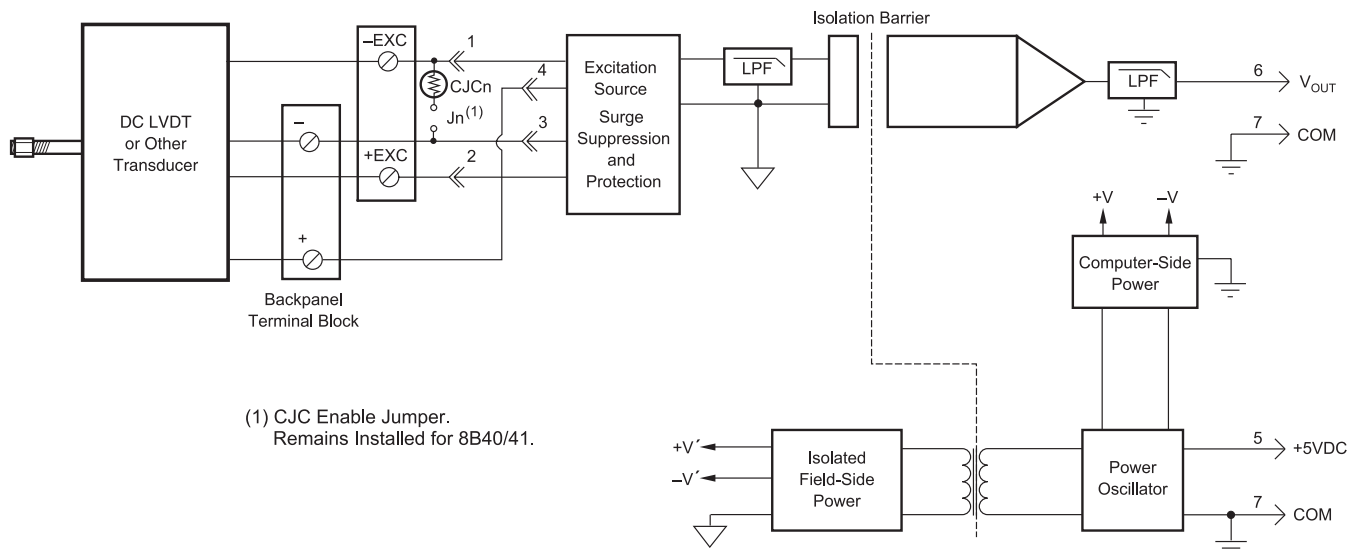
SPECIFICATIONS

Typical at $T_A = +25^\circ\text{C}$ and +5V Power

		DI-8B43
Input Range		$\pm 1\text{V}$ to $\pm 5\text{V}$
Input Bias Current		$\pm 0.05\text{nA}$
Input Resistance	Normal Power Off Overload	2M Ω (minimum) 2M Ω (minimum) 2M Ω (minimum)
Input Protection	Continuous ¹ Transient	240VAC ANSI/IEEE C37.90.1
Excitation	Voltage Current Load Regulation Stability Protection	+10V $\pm 5\text{mV}$ 5mA min, 30mA max 15ppm/mA 50ppm/ $^\circ\text{C}$ 120VAC
CMV, Input to Output		1500Vrms max
Transient, Input to Output		ANSI/IEEE C37.90.1
CMR (50Hz or 60Hz)		100dB
NMR (-3dB at 1kHz)		100dB per decade above 1kHz
Accuracy ²		$\pm 0.05\%$ Span
Linearity		$\pm 0.02\%$ Span
Stability	Offset Gain	$\pm 25\text{ppm}/^\circ\text{C}$ $\pm 100\text{ppm}/^\circ\text{C}$
Noise	Output, 100kHz	500 μVrms
Bandwidth, -3dB		1kHz
Response Time, 90% Span		550 μs
Output Protection	Transient	Continuous Short to Ground ANSI/IEEE C37.90.1
Power Supply Voltage		+5VDC $\pm 5\%$
Power Supply Current		150mA Full Exc. Load
Power Supply Sensitivity		$\pm 100\text{ppm}/\%$
Mechanical Dimensions (h)(w)(d)		1.11" \times 1.65" \times 0.40" (28.1mm \times 41.9mm \times 10.2mm)
Environmental	Operating Temp. Range Storage Temp. Range Relative Humidity	-40 $^\circ\text{C}$ to +85 $^\circ\text{C}$ -40 $^\circ\text{C}$ to +85 $^\circ\text{C}$ 0 to 95% Noncondensing
Emissions EN61000-6-4	Radiated, Conducted	ISM, Group 1 Class A
Immunity EN61000-6-2	RF ESD,EFT	ISM, Group 1 Performance A $\pm 0.5\%$ Span Error Performance B
¹ 240VAC between +Input terminal and -Input, +EXC, or -EXC terminals; 120VAC between -Input and +EXC or -EXC terminals; 120VAC between +EXC and -EXC terminals.		
² Includes nonlinearity, hysteresis, and repeatability.		

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Block Diagram



Ordering Information

Model Number	Input Range	Output Range
DI-8B43-01	-1V to +1V	-5 to +5 V
DI-8B43-02	-2V to +2V	-5 to +5 V
DI-8B43-03	-3V to +3V	-5 to +5 V
DI-8B43-04	-4V to +4V	-5 to +5 V
DI-8B43-05	-5V to +5V	-5 to +5 V



241 Springside Drive
Akron, Ohio 44333
330-668-1444

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