DI-8B40/41 Analog Voltage Input Modules, 1kHz Bandwidth

FEATURES

- Accepts Millivolt and Voltage Level Signals
- High Level Voltage Output
- 1500Vrms Transformer Isolation
- ANSI/IEEE C37.90.1 Transient Protection
- Input Protected to 240VAC Continuous
- 100dB CMR
- 1kHz Signal Bandwidth
- ±0.05% Accuracy
- ±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 8B40 or 8B41 module isolates, filters, and amplifies a voltage input signal and provides an analog voltage output.

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 8B40 and 8B41 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 optical coupling to suppress transmission of common mode spikes or surges. The module is powered from +5VDC, ±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 = +25ºC and +5V Power

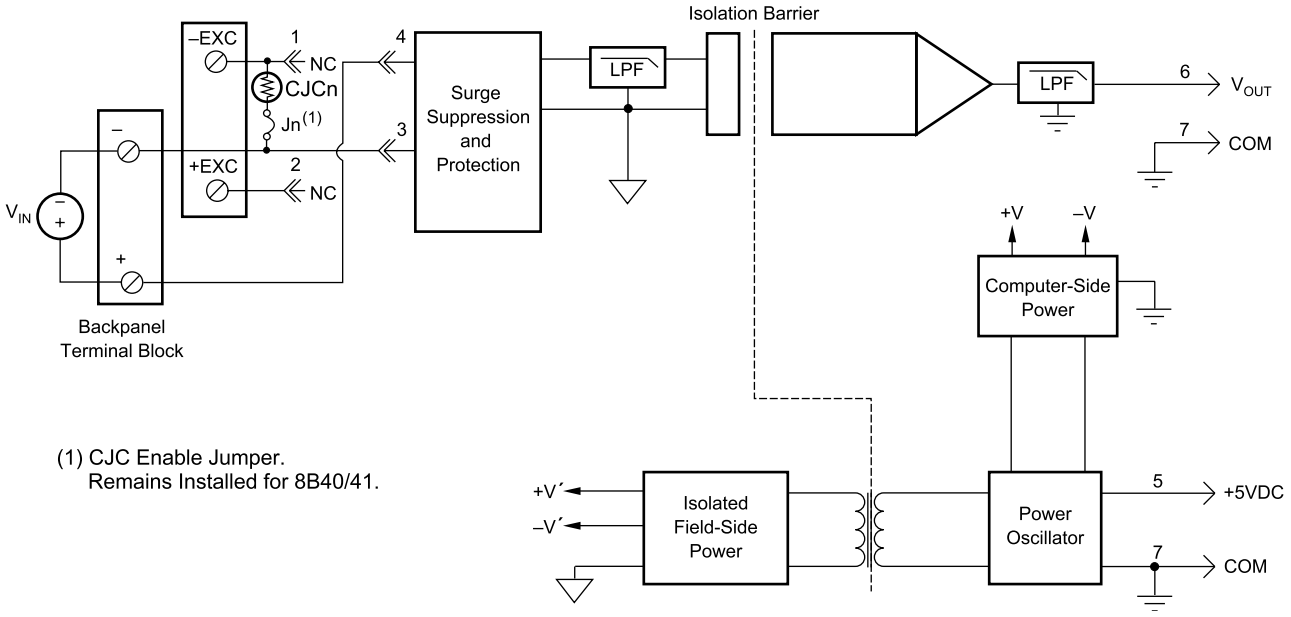
	DI-8B40	DI-8B41
Input Range	±10mV to ±100mV	±1V to ±60V
Input Bias Current	±0.5nA	±0.05nA
Input Resistance		
Normal	50MΩ	500kΩ (minimum)
Power Off	100kΩ	500kΩ (minimum)
Overload	100kΩ	500kΩ (minimum)
Input Protection		
Continuous[1]	240VAC	
Transient	ANSI/IEEE C37.90.1	
CMV, Input to Output	1500Vrms max	
Transient, Input to Output	ANSI/IEEE C37.90.1	
CMR (50Hz or 60Hz)	100dB	
NMR	100dB per decade above 1kHz	
Accuracy[2]	±0.05% Span	
Nonlinearity	±0.02% Span	
Stability		
Offset	±10ppm/ºC	±10ppm/ºC
Gain	±50ppm/ºC	±75ppm/ºC
Noise		
Output, 100kHz	500µVrms	
Bandwidth, -3dB	1kHz	
Response Time, 90% Span	550µs	
Output Range	-5V to +5V	
Output Protection	Continuous Short to Ground	
Transient	ANSI/IEEE C37.90.1	
Power Supply Voltage	+5VDC ±5%	
Power Supply Current	25mA	
Power Supply Sensitivity	±75ppm/%	
Mechanical Dimensions	1.11" × 1.65" × 0.40" (28.1mm × 41.9mm × 10.2mm)	
Environmental		
Operating Temperature	-40ºC to +85ºC	
Storage Temperature	-40ºC to +85ºC	
Relative Humidity	0 to 95% Noncondensing	

[1]240VAC between + and -/+EXC/-EXC terminals. 120VAC between - and +EXC/-EXC terminals and between +EXC and -EXC terminals.

[2]Includes nonlinearity, hysteresis, and repeatability.

DI-8B40/41 Analog Voltage Input Modules, Wide Bandwidth

Block Diagram



(1) CJC Enable Jumper.
Remains Installed for 8B40/41.

Ordering Information

Model Number	Input Range
DI-8B40-01	-10mV to +10mV
DI-8B40-02	-50mV to +50mV
DI-8B40-03	-100mV to +100mV
DI-8B41-01	-1V to +1V
DI-8B41-02	-5V to +5V
DI-8B41-03	-10V to +10V
DI-8B41-07	-20V to +20V
DI-8B41-09	-40V to +40V
DI-8B41-12	-60V to +60V

DATAQ® INSTRUMENTS

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