

8B32

Current Input Modules



DESCRIPTION

The 8B32 module family is an optimal solution for monitoring real-world process signals and providing high-level signals to a data acquisition system. Each 8B32 module isolates, filters, and amplifies a process current input signal and provides an analog voltage output (Figure below).

Current-to-voltage conversion is accomplished internal to the module to ensure high accuracy.

Signal filtering is accomplished with a 3-pole filter optimized for time and frequency response which provides 70dB of normal-mode rejection at 60Hz. One pole of this filter is on the field side of the isolation barrier for anti-aliasing, and the other two are on the system side.

A special input circuit on the 8B32 module provides protection against accidental connection of power-line voltages up to 40VAC. 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, ±5%.

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

FEATURES

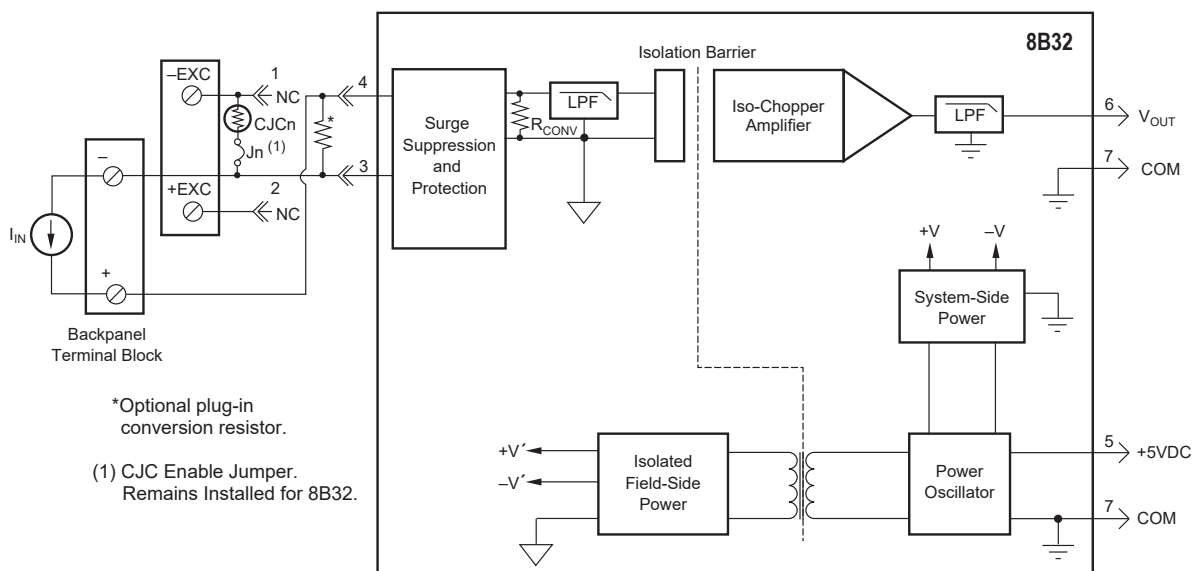
- Accepts Milliamp Level Signals
- High-level Voltage Outputs
- 1500Vrms Isolation
- ANSI/IEEE C37.90.1 Transient Protection
- Input Protection to 40VAC Continuous
- 120dB CMR
- 70dB NMR at 60Hz
- ±0.05% Accuracy
- ±0.02% Linearity
- Low Drift with Ambient Temperature
- UL/cUL Listed
- CE Compliant
- ATEX Compliance Pending
- Manufactured per RoHS III Directive 2015/863
- Mix and Match Module Types on Backpanel

BENEFITS

- Protects User Equipment from Lightning and Industrial Equipment Power-line Voltage
- Reduces Electrical Noise in Measured Signals
- Convenient System Expansion and Repair

APPLICATIONS

- Designed for Embedded Applications
 - PC/104 Embedded Solutions
 - Compact PCI Systems
 - VMEbus Systems
 - PXI Systems
- Designed for Industrial Plant Environments
- High-vibration Environments



8B32 Block Diagram - [For Module Dimensions and Pinouts. See Page 3-40](#)

Specifications Typical* at T_A = +25°C and +5VDC power

| Module | 8B32 |
|--------------------------------------|---|
| Input Range | 0-20mA or 4-20mA |
| Input Resistance | |
| Normal | <50Ω |
| Power Off | <50Ω |
| Input Protection | |
| Continuous | 40VAC |
| 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) | 120dB |
| NMR | 70dB at 60Hz |
| Accuracy ⁽¹⁾ | ±0.05% Span |
| Linearity | ±0.02% Span |
| Stability | |
| Offset | ±25ppm/°C |
| Gain | ±50ppm/°C |
| Noise | |
| Output, 100kHz | 250μVrms |
| Bandwidth, -3dB | 3Hz |
| Response Time, 90% Span | 150ms |
| Output Range | 0V to +5V |
| Output Protection | Continuous Short-to-Ground |
| Transient | ANSI/IEEE C37.90.1 |
| Power Supply Voltage | +5VDC ±5% |
| Power Supply Current | 30mA |
| Power Supply Sensitivity | ±75ppm/% |
| Mechanical Dimensions (h)x(w)x(d) | 1.11" x 1.65" x 0.40" (28.1mm x 41.9mm x 10.2mm) |
| Environmental | |
| Operating Temperature Range | -40°C to +85°C |
| Storage Temperature Range | -40°C to +85°C |
| Relative Humidity | 0 to 95% Noncondensing |
| Emissions EN61000-6-4 | ISM, Group 1 |
| Radiated, Conducted | Class A |
| Immunity EN61000-6-2 | ISM, Group 1 |
| RF | Performance A ±0.5% Span Error |
| ESD, EFT | Performance B |

NOTES:

*Contact factory or your local Dataforth sales office for maximum values.

(1) Includes linearity, hysteresis, and repeatability.

Ordering Information

| Model | Input Range | Output Range |
|---------|-------------|--------------|
| 8B32-01 | 4-20mA | 0V to +5V |
| 8B32-02 | 0-20mA | 0V to +5V |

Installation Notes

- 1) This Equipment is Suitable for Use in Class I, Division 2, Groups A, B,C, D, or Non-hazardous Locations Only.
- 2) WARNING - Explosion Hazard - Substitution of Any Components May Impair Suitability for Class I, Division 2.
- 3) WARNING - Explosion Hazard - Do Not Disconnect Equipment Unless Power Has Been Switched Off or the Area is Known to be Non-hazardous.