8B39

Current Output Modules

DESCRIPTION

The 8B39 module family is an optimal solution for monitoring real-world process signals and providing high-level signals to a data acquisition system. Each 8B39 module accepts an input signal from a non-isolated source, then isolates, filters, and converts the signal to an analog process current output (Figure below).

Signal filtering is accomplished with a 3-pole filter optimized for time and frequency response which provides 60dB per decade of normal-mode rejection above 100Hz. One pole of this filter is on the system side and the other two are on the isolated field side.

A special output circuit in the 8B39 module provides protection against accidental connection of power-line voltages up to 40VAC continuous. Clamp circuits on the I/O and power terminals protect against harmful transients.

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

FEATURES

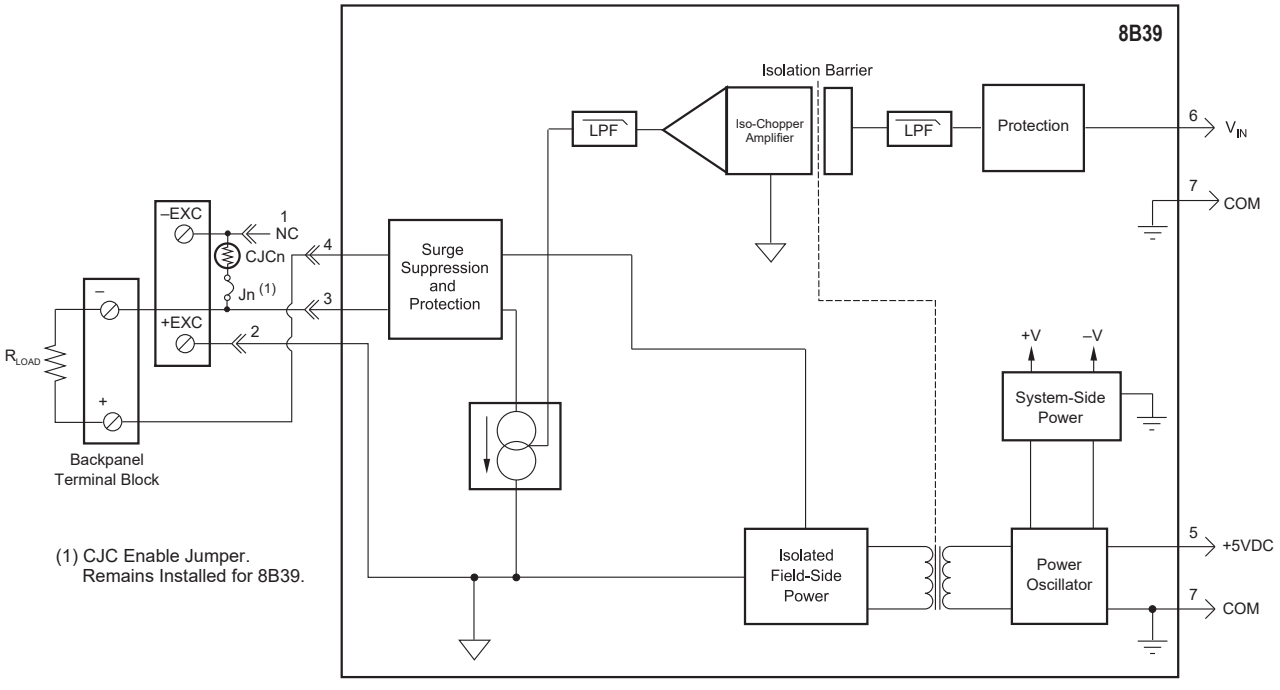
- Accepts High-level Voltage or Process Current Input
- Process Current Output
- 1500Vrms Isolation
- ANSI/IEEE C37.90.1 Transient Protection
- Output Protection to 40VAC Continuous
- 110dB CMR
- 100Hz Signal Bandwidth
- ±0.05% Accuracy
- ±0.02% Linearity
- Low Drift with Ambient Temperature
- UL/cUL 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



8B39 Block Diagram - For Module Dimensions and Pinouts, See Page 3-40

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Specifications

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

Module	8B39-01,-02,-03,-04	8B39-07
Input Voltage Range	±5V or 0V to +5V	±5V
Input Voltage Maximum	±20V (no damage)	±20V (no damage)
Input Resistance	50MΩ	50MΩ
Output Current Range	0-20mA or 4-20mA	±20mA
Over Range Capability	10%	10%
Output Compliance Voltage		
(Open Circuit)	15VDC	±12VDC
Load Resistance Range	0 to 500Ω	0 to 400Ω
Output I Under Fault, max	26mA	±26mA
Output Protection		
Continuous	40VAC	40VAC
Transient	ANSI/IEEE C37.90.1	ANSI/IEEE C37.90.1
CMV, Output to Input	1500Vrms (max)	1500Vrms (max)
Transient, Output to Input	ANSI/IEEE C37.90.1	ANSI/IEEE C37.90.1
CMR (50Hz or 60Hz)	110dB	110dB
NMR (–3dB at 100Hz)	60dB per Decade Above 100Hz	60dB per Decade Above 100Hz
Accuracy(1)	±0.05% Span	±0.05% Span
Linearity	±0.02% Span	±0.02% Span
Stability		
Offset	±10ppm/°C	±10ppm/°C
Gain	±50ppm/°C	±100ppm/°C
Noise		
Output, 100kHz	2µArms	2µArms
Bandwidth, –3dB	100Hz	100Hz
Rise Time, 10 to 90% Span	5ms	5ms
Power Supply Voltage	+5VDC ±5%	+5VDC ±5%
Power Supply Current	100mA	100mA
Power Supply Sensitivity	±100ppm/%	±100ppm/%
Mechanical Dimensions	1.11" x 1.65" x 0.40"	1.11" x 1.65" x 0.40"
(h)x(w)x(d)	(28.1mm x 41.9mm x 10.2mm)	(28.1mm x 41.9mm x 10.2mm)
Environmental		
Operating Temperature Range	–40°C to +85°C	–40°C to +85°C
Storage Temperature Range	–40°C to +85°C	–40°C to +85°C
Relative Humidity	0 to 95% Noncondensing	0 to 95% Noncondensing
Emissions EN61000-6-4	ISM, Group 1	ISM, Group 1
Radiated, Conducted	Class A	Class A
Immunity EN61000-6-2	ISM, Group 1	ISM, Group 1
RF	Performance A ±0.5% Span Error	Performance A ±0.5% Span Error
ESD, EFT	Performance B	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
8B39-01	0V to +5V	4-20mA
8B39-02	–5V to +5V	4-20mA
8B39-03	0V to +5V	0-20mA
8B39-04	–5V to +5V	0-20mA
8B39-07	–5V to +5V	±20mA

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.

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