

8B39

Current Output Modules

Description

8B modules are 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.

Signal filtering is accomplished with a three pole filter optimized for time and frequency response. One pole of this filter is on the system side and the other two are on the isolated field side. Clamp circuits on the I/O and power terminals protect against harmful transients.

A special output circuit in the 8B39 module provides protection against accidental connection of power-line voltages up to 30VAC continuous.

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 Transformer Isolation
- ANSI/IEEE C37.90.1 Transient Protection
- Output Protected to 30VAC Continuous
- 110dB CMR
- 100Hz Signal Bandwidth
- $\pm 0.05\%$ Accuracy
- $\pm 0.02\%$ Linearity
- Low Drift with Ambient Temperature
- CSA, FM and CE Certifications Pending
- Mix and Match Module Types on Backpanel

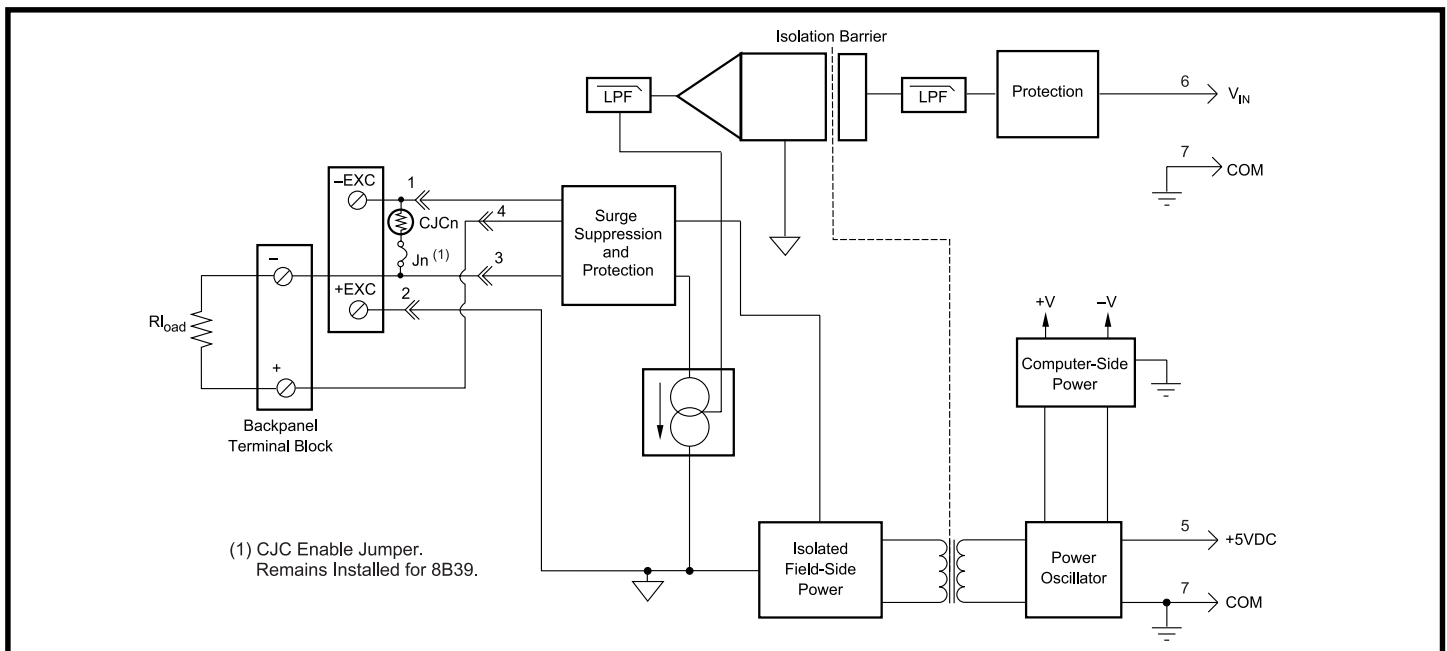


Figure 1: 8B39 Block Diagram

Specifications

Typical at T_A=+25°C and +5V power

Module	8B39
Input Voltage Range	±5V or 0V to +5V
Input Voltage Maximum	±20V (no damage)
Input Resistance	50MΩ
Output Current Range	0 to 20mA or 4 to 20mA
Over Range Capability	10%
Output Compliance Voltage (Open Circuit)	15VDC
Load Resistance Range	0 to 500Ω
Output I Under Fault, max	26mA
Output Protection	
Continuous	30VAC
Transient	ANSI/IEEE C37.90.1
CMV, Output to Input	1500Vrms max
Transient, Output to Input	ANSI/IEEE C37.90.1
CMR (50Hz or 60Hz)	110dB
NMR (-3dB at 100Hz)	60dB per Decade above 100Hz
Accuracy	±0.05% Span
Nonlinearity	±0.02% Span
Stability	
Zero	±10ppm/°C
Span	±50ppm/°C
Noise	
Output, 100kHz	2μArms
Bandwidth, -3dB	100Hz
Rise Time, 10 to 90% Span	5ms
Power Supply Voltage	+5VDC ±5%
Power Supply Current	100mA
Power Supply Sensitivity	±25ppm/%
Mechanical Dimensions (h)(w)(d)	1.11" x 1.65" x 0.40" (28.1mm x 41.9mm x 10.2mm)
Environmental	
Operating Temp. Range	-40°C to +85°C
Storage Temp. 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, Surge, Voltage Dips	Performance B

Ordering Information

Model	Input Range	Output Range
8B39-01	0V to +5V	4mA to 20mA
8B39-02	-5V to +5V	4mA to 20mA
8B39-03	0V to +5V	0mA to 20mA
8B39-04	-5V to +5V	0mA to 20mA