

# 8B49

## Voltage 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 8B49 module accepts an input signal from a non-isolated source, then isolates, filters and converts the signal to a high-level process voltage output (Figure 1).

Signal filtering is accomplished with a 4-pole filter optimized for time and frequency response which provides 80dB per decade of normal-mode rejection above 100Hz. One pole of this filter is on the system side and the other three are on the isolated field side.

A special output circuit in the 8B49 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
- Isolated Process Voltage Output
- 1500Vrms Isolation
- ANSI/IEEE C37.90.1 Transient Protection
- Output Protection to 40VAC Continuous
- 110dB CMR
- 100Hz Signal Bandwidth
- $\pm 0.05\%$  Accuracy
- $\pm 0.02\%$  Linearity
- Low Drift with Ambient Temperature
- C-UL-US Listed
- CE Compliant
- ATEX Compliance Pending
- Mix and Match Module Types on Backpanel

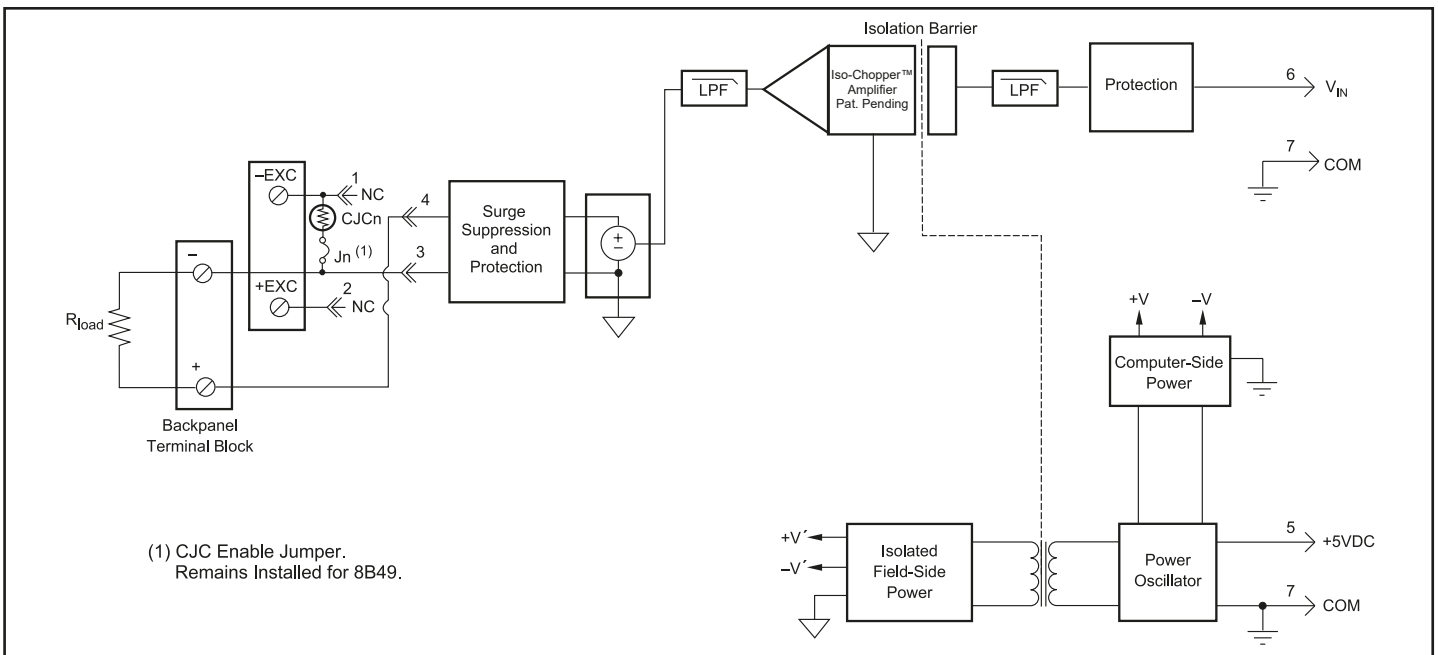


Figure 1: 8B49 Block Diagram

## Specifications

Typical\* at T<sub>A</sub> = +25°C and +5VDC power

Module	8B49
Input Voltage Range	±5V, 0 to +5V, ±10V, 0 to +10V
Input Voltage Maximum	±20V (no damage)
Input Resistance	≥1MΩ
Output Voltage Range	±5V, 0 to +5V, ±10V, 0 to +10V
Over Range Capability	5% at 10V output
Output Drive	±20mA max
Output I Under Fault, max	30mA
Output Protection	
Continuous	40VAC max
Transient	ANSI/IEEE C37.90.1
CMV, Output to Input	
Continuous	1500Vrms max
Transient	ANSI/IEEE C37.90.1
CMR (50 or 60Hz)	110dB
NMR (–3dB at 100Hz)	80dB per Decade above 100Hz
Accuracy <sup>(1)</sup>	±0.05% Span (0 to 10mA Load) ±0.075% Span (10 to 20mA Load)
Linearity	±0.02% Span
Stability	
Offset	±10ppm/°C
Gain	±50ppm/°C
Noise	
Output, 100kHz	800μVrms
Bandwidth, –3dB	100Hz
Response Time, 90% Span	5ms
Power Supply Voltage	+5VDC ±5%
Power Supply Current	100mA Full Load, 30mA No Load
Power Supply Sensitivity	±100ppm/%
Mechanical Dimensions	1.11" x 1.65" x 0.40"
(h)(w)(d)	(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
8B49-01	0V to +5V	–5V to +5V
8B49-02	–5V to +5V	–5V to +5V
8B49-03	–5V to +5V	0V to +5V
8B49-04	0V to +10V	–10V to +10V
8B49-05	–10V to +10V	–10V to +10V
8B49-06	–10V to +10V	0V to +10V
8B49-07	–5V to +5V	–10V to +10V

### 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.