

# 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.

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
- ±0.05% Accuracy
- ±0.02% Linearity
- Low Drift with Ambient Temperature
- CE Compliant
- UL Listing Pending
- Mix and Match Module Types on Backpanel

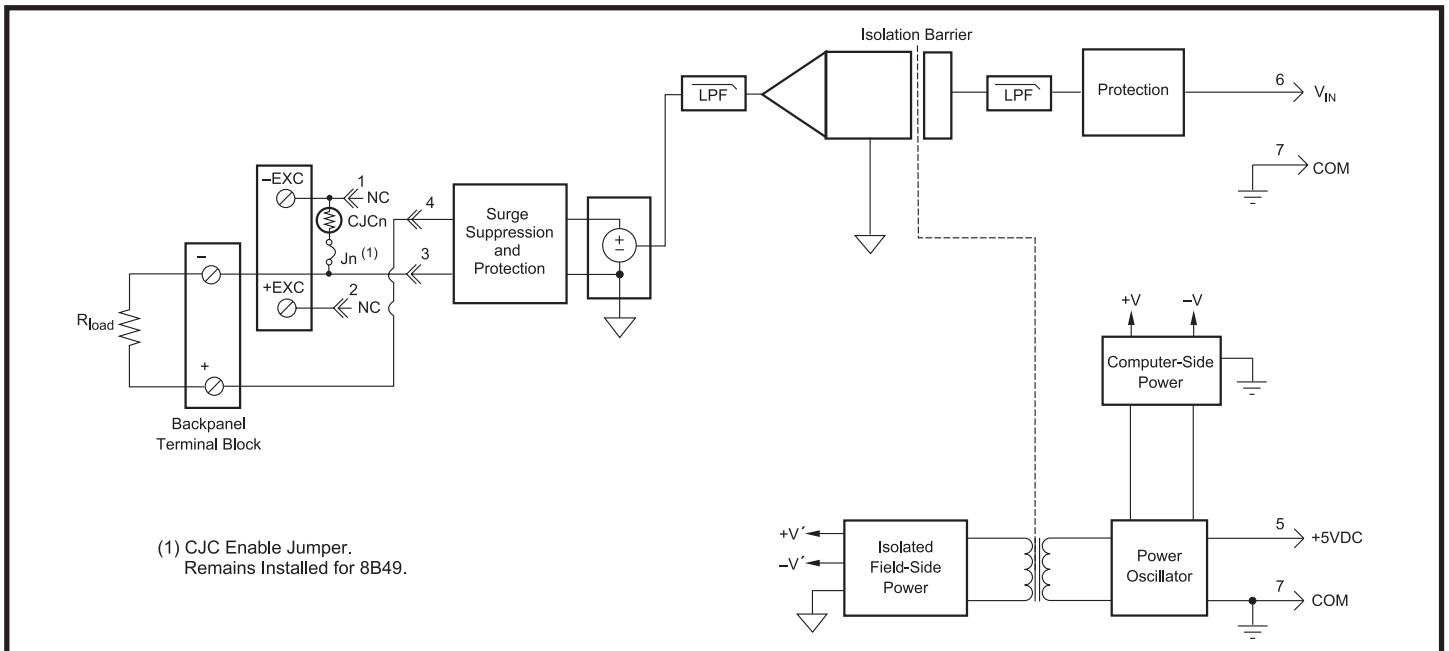


Figure 1: 8B49 Block Diagram

**Specifications** Typical at  $T_A = +25^\circ\text{C}$  and +5V power

Module	8B49
Input Voltage Range Input Voltage Maximum Input Resistance	$\pm 5\text{V}$ , 0 to +5V, $\pm 10\text{V}$ , 0 to +10V $\pm 20\text{V}$ (no damage) $\geq 1\text{M}\Omega$
Output Voltage Range Over Range Capability Output Drive Output I Under Fault, max Output Protection Continuous Transient	$\pm 5\text{V}$ , 0 to +5V, $\pm 10\text{V}$ , 0 to +10V 5% at 10V output $\pm 20\text{mA}$ max 30mA 40VAC max ANSI/IEEE C37.90.1
CMV, Output to Input Continuous Transient CMR (50 or 60Hz) NMR (-3dB at 100Hz)	1500Vrms max ANSI/IEEE C37.90.1 110dB 80dB per decade above 100Hz
Accuracy <sup>(1)</sup> Linearity Stability Offset Gain Noise Output, 100kHz Bandwidth, -3dB Response Time, 90% Span	$\pm 0.05\%$ Span (0 to 10mA Load) $\pm 0.075\%$ Span (10 to 20mA Load) $\pm 0.02\%$ Span $\pm 10\text{ppm}/^\circ\text{C}$ $\pm 50\text{ppm}/^\circ\text{C}$ 1.5mVrms 100Hz 5ms
Power Supply Voltage Power Supply Current Power Supply Sensitivity	+5VDC $\pm 5\%$ 120mA Full Load, 55mA No Load $\pm 100\text{ppm}/\%$
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 Storage Temp. Range Relative Humidity Emissions EN61000-6-4 Radiated, Conducted Immunity EN61000-6-2 RF ESD, EFT	$-40^\circ\text{C}$ to $+85^\circ\text{C}$ $-40^\circ\text{C}$ to $+85^\circ\text{C}$ 0 to 95% Noncondensing ISM, Group 1 Class A ISM, Group 1 Performance A $\pm 0.5\%$ Span Error Performance B

## NOTES:

(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