

# SCM5B49

## Voltage Output Modules



### Description

Each SCM5B49 voltage output module provides a single channel of analog output. The track-and-hold circuit in the input stage can be operated in a hold mode where one DAC can supply many output modules, or a track mode where one DAC is dedicated to each module. In addition to the track-and-hold circuit, each module provides signal buffering, isolation, filtering, and conversion to a high level voltage output.

Setting of the track or hold mode is controlled by the logic state of WR EN $\bar{}$ , module pin 23. When pin 23 is low, the track mode is enabled. If pin 23 is open or high, the hold mode is enabled. The module is designed with a completely isolated computer side circuit which can be floated to  $\pm 50V$  from Power Common, pin 16. This complete isolation means that no connection is required between I/O Common and Power Common for proper operation of the track and hold circuit. For a low state, simply connect pin 23, the Write-Enable pin, to I/O Common, pin 19.

The SCMPB02 and SCMPB06 backpanels allow host computer control of the WR EN $\bar{}$  control line, which allows multiplexing of one host DAC to up to 64 SCM5B49 output modules.

### ► Features

- Accepts High Level Voltage Inputs to  $\pm 10V$
- Provides High Level Voltage Outputs to  $\pm 10V$
- 1500 Vrms Transformer Isolation
- ANSI/IEEE C37.90.1-1989 Transient Protection
- 5 Poles of Filtering
- 110dB CMR
- 400Hz Signal Bandwidth
- $\pm 0.05\%$  Accuracy
- $\pm 0.02\%$  Linearity
- CSA Certified, FM Approved, CE Compliant
- Mix and Match SCM5B Types on Backpanel

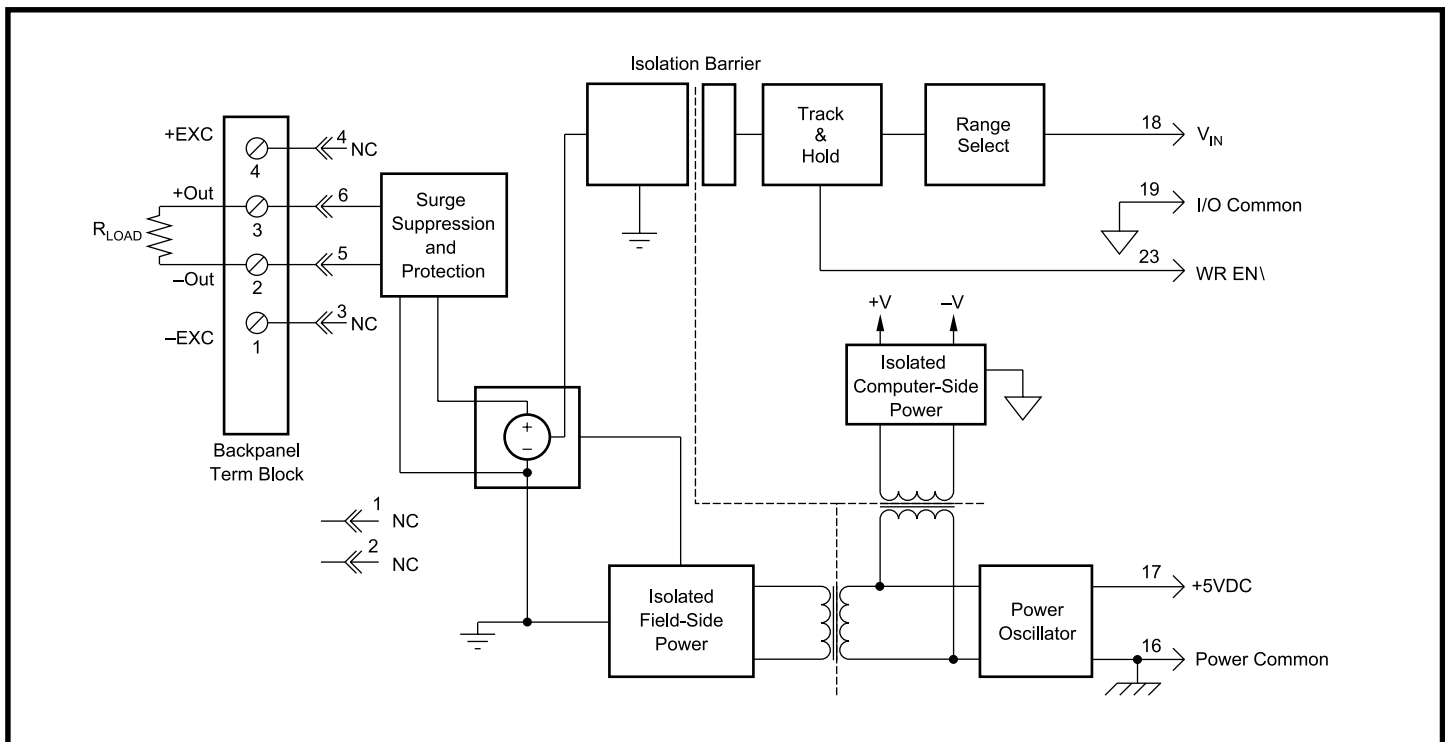


Figure 1: SCM5B49 Block Diagram

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

Module	SCM5B49
Input Voltage Range Input Voltage Maximum Input Resistance	$\pm 5\text{V}$ , 0 to +5V, $\pm 10\text{V}$ , 0 to +10V $\pm 36\text{V}$ (no damage) 50M $\Omega$
Output Voltage Range Over Range Capability Output Drive Output Resistance Output I Under Fault, Max Output Protection Transient	$\pm 5\text{V}$ , 0 to +5V, $\pm 10\text{V}$ , 0 to +10V 5% at 10V output 50mA max 0.5 $\Omega$ 75mA ANSI/IEEE C37.90.1-1989
CMV, Output to Input Continuous Transient CMR (50 or 60Hz) NMR (-3dB at 400Hz)	1500Vrms max ANSI/IEEE C37.90.1-1989 110dB 100dB per Decade Above 400Hz
Accuracy <sup>(1)</sup> Nonlinearity Stability Zero Span Noise Output Ripple, 1kHz bandwidth Bandwidth, -3dB Response Time, 90% Span	$\pm 0.05\%$ Span (0-5mA Load) $\pm 0.02\%$ Span  $\pm 25\text{ppm}/^\circ\text{C}$ $\pm 20\text{ppm}/^\circ\text{C}$  2mVp-p 400Hz 1.25ms
Sample and Hold Output Droop Rate Acquisition Time	0.2% Span/s 50 $\mu\text{s}$
Track-and-Hold Enable Control Max Logic "0" Min Logic "1" Max Logic "1" Input Current, "0"	+0.8V +2.4V +36V 0.5 $\mu\text{A}$
Power Supply Voltage Power Supply Current Power Supply Sensitivity	+5VDC $\pm 5\%$ 350mA Full Load, 135mA no load $\pm 12.5\text{ppm}/\%$
Mechanical Dimensions (h)(w)(d)	2.28" x 2.26" x 0.60" (58mm x 57mm x 15mm)
Environmental Operating Temp. Range Storage Temp. Range Relative Humidity RFI Susceptibility Emissions  Immunity	-40 $^\circ\text{C}$ to +85 $^\circ\text{C}$ -40 $^\circ\text{C}$ to +85 $^\circ\text{C}$ 0 to 95% Noncondensing $\pm 0.5\%$ Span Error at 400MHz, 5W, 3ft EN50081-1, ISM Group 1, Class A (Radiated, Conducted) EN50082-1, ISM Group 1, Class A (ESD, RF, EFT)

## NOTES:

(1) Includes nonlinearity, hysteresis and repeatability.

**Ordering Information**

Model	Input Range	Output Range
SCM5B49-01	0V to +5V	-5V to +5V
SCM5B49-02	-5V to +5V	-5V to +5V
SCM5B49-03	-5V to +5V	0V to +5V
SCM5B49-04	0V to +10V	-10V to +10V
SCM5B49-05	-10V to +10V	-10V to +10V
SCM5B49-06	-10V to +10V	0V to +10V
SCM5B49-07	-5V to +5V	-10V to +10V