

# 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\, module pin 23. When pin 23 is low, the track mode is enabled. If pin 23 is 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\ 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 Transient Protection
- 5 Poles of Filtering
- 110dB CMR
- 400Hz Signal Bandwidth
- $\pm 0.03\%$  Accuracy
- $\pm 0.015\%$  Linearity
- CSA Certified, FM Approved, CE and ATEX Compliant
- Mix and Match SCM5B Types on Backpanel

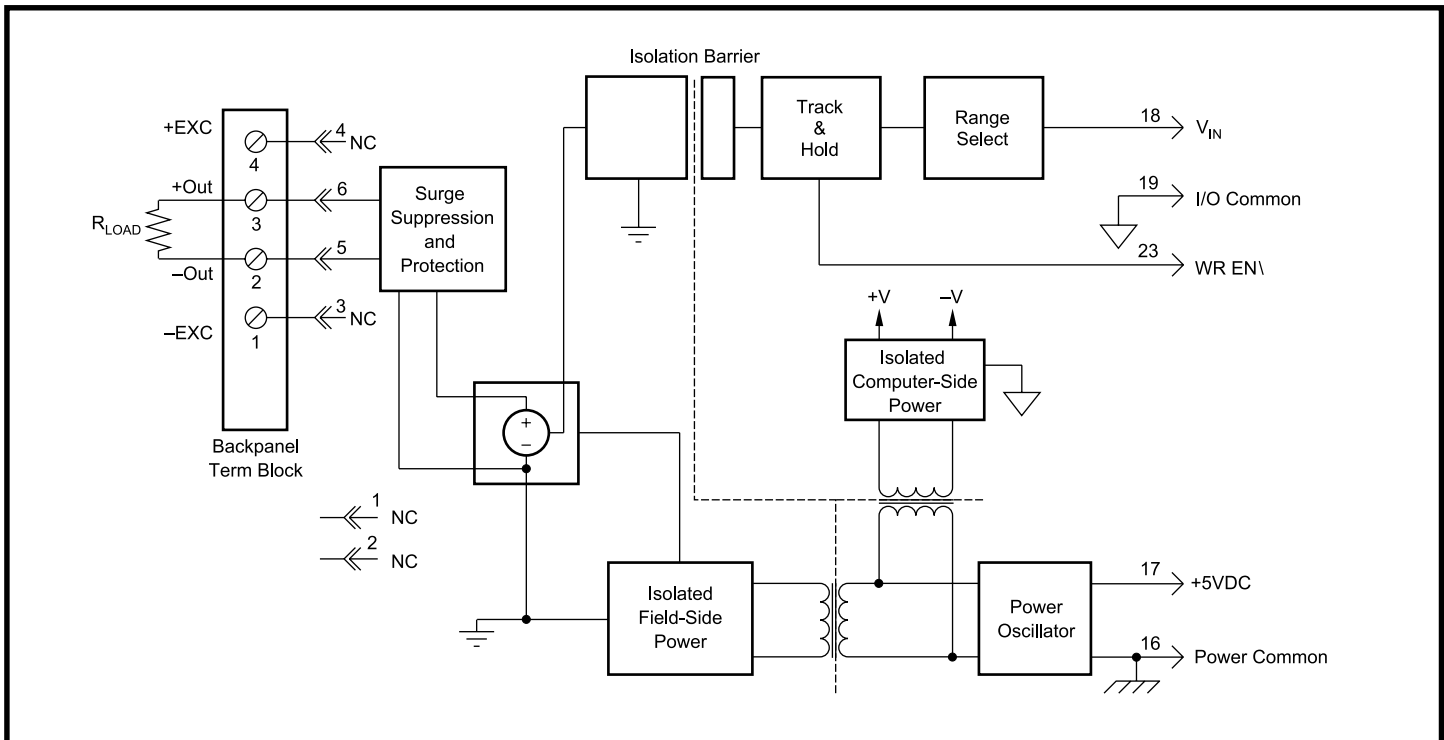


Figure 1: SCM5B49 Block Diagram

**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	$\pm 5\text{V}$ , 0 to +5V, $\pm 10\text{V}$ , 0 to +10V 5% at 10V output 50mA max 0.5 $\Omega$ 75mA
Continuous Transient	240Vrms max ANSI/IEEE C37.90.1
CMV, Output to Input Continuous Transient CMR (50 or 60Hz) NMR (-3dB at 400Hz)	1500Vrms max ANSI/IEEE C37.90.1 110dB 80dB per Decade Above 400Hz
Accuracy <sup>(1)</sup> Nonlinearity Stability	$\pm 0.03\%$ Span (0-5mA Load) $\pm 0.015\%$ Span
Zero Span Noise	$\pm 25\text{ppm}/^\circ\text{C}$ $\pm 20\text{ppm}/^\circ\text{C}$
Output Ripple, 1kHz bandwidth Bandwidth, -3dB Response Time, 90% Span	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 ATEX Group II, Category 3 Storage Temp. Range Relative Humidity RFI Susceptibility Emissions EN61000-6-4 Radiated, Conducted Immunity EN61000-6-2 RF ESD, EFT, Surge, Voltage Dips	-40 $^\circ\text{C}$ to +85 $^\circ\text{C}$ -20 $^\circ\text{C}$ to +40 $^\circ\text{C}$ -40 $^\circ\text{C}$ to +85 $^\circ\text{C}$ 0 to 95% Noncondensing $\pm 0.5\%$ Span Error at 400MHz, 5W, 3ft ISM, Group 1 Class A ISM, Group 1 Performance A $\pm 0.5\%$ Span Error Performance B

## 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