

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 (Figure below).

Setting of the track or hold mode is controlled by the logic state of WR EN₁, 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 ±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 EN₁ control line, which allows multiplexing of one host DAC to up to 64 SCM5B49 output modules.

FEATURES

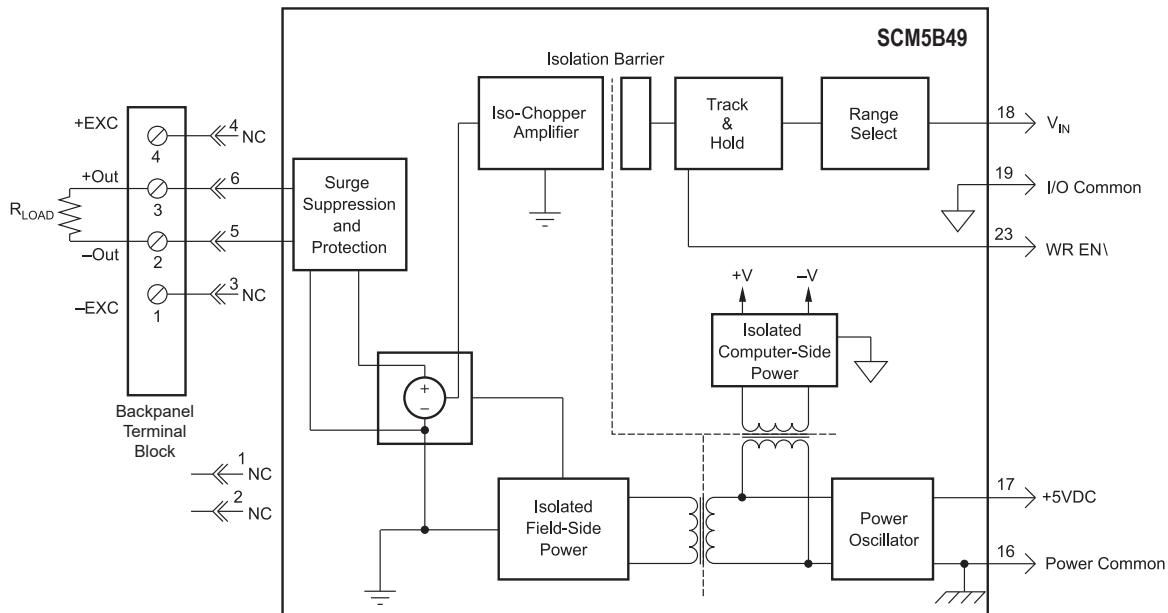
- Accepts High-level Voltage Inputs to ±10V
- Provides High-level Voltage Outputs to ±10V
- 1500Vrms Transformer Isolation
- ANSI/IEEE C37.90.1 Transient Protection
- 5 Poles of Filtering
- 110dB CMR
- 400Hz Signal Bandwidth
- ±0.03% Accuracy
- ±0.015% Linearity
- CSA C/US Certified
- CE and ATEX Compliant
- Manufactured per RoHS III Directive 2015/863
- Mix and Match SCM5B Types on Backpanel

BENEFITS

- Protects User Equipment from Lightning and Heavy Equipment Power-line Voltage
- Reduces EMC Concerns and Electrical Noise in Measured Signals
- Convenient System Expansion and Repair
- Signal Filtering in Noisy Environments
- Simplifies Sensor Interface and Signal Conditioning Design
- Provides Isolation of External Sensors
- Breaks Ground Loops

APPLICATIONS

- Analog Signal Conditioning
- Analog Signal Isolation
- Analog Signal Filtering
- Industrial Process Control
- Test and Measurement
- System and Signal Monitoring



SCM5B49 Block Diagram - [For Module Dimensions and Pinouts. See Page 1-44](#)

Specifications Typical* at T_A = +25°C and +5VDC Power

Module	SCM5B49
Input Voltage Range	±5V, 0 to +5V, ±10V, 0 to +10V
Input Voltage (max)	±36V (no damage)
Input Resistance	50MΩ
Output Voltage Range	±5V, 0 to +5V, ±10V, 0 to +10V
Over Range Capability	5% at 10V Output
Output Drive	50mA (max)
Output Resistance	0.5Ω
Output I Under Fault, (max)	75mA
Output Protection	
Continuous	240Vrms (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 400Hz)	80dB per Decade Above 400Hz
Accuracy ⁽¹⁾	±0.03% Span (0-5mA Load)
Linearity	±0.015% Span
Stability	
Zero	±25ppm/°C
Span	±20ppm/°C
Noise	
Output Ripple, 100kHz bandwidth	2mVp-p
Bandwidth, -3dB	400Hz
Response Time, 90% Span	1.25ms
Sample and Hold	
Output Droop Rate	0.2% Span/s
Acquisition Time	50μs
Track-and-Hold Enable Control	
Max Logic "0"	+0.8V
Min Logic "1"	+2.4V
Max Logic "1"	+36V
Input Current "0"	0.5μA
Power Supply Voltage	+5VDC ±5%
Power Supply Current	280mA Full Load, 135mA No Load
Power Supply Sensitivity	±12.5ppm/%
Mechanical Dimensions (h)x(w)x(d)	2.28" x 2.26" x 0.60" (58mm x 57mm x 15mm)
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 for maximum values.
 (1) Includes linearity, 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