

SCIM5B39

Current Output Modules

Description

SCIM5B39 Current input 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 standard level current output (Figure 1).

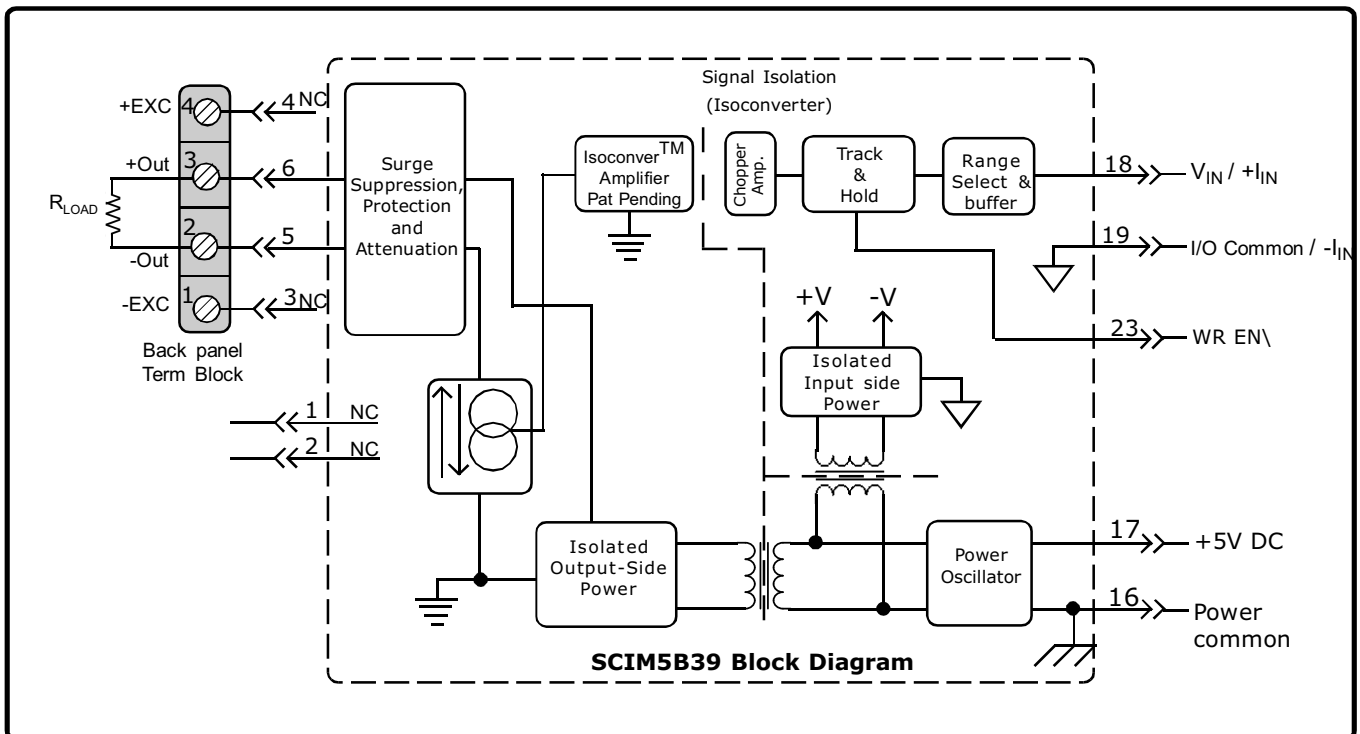
Setting of the track or hold mode controlled by the logic stage of WREN\, module pin. 23. When pin 23 is low, the track mode is enabled and when it is high, the hold mode is enabled. The module is designed with a completely isolated output side circuit which can be floated to $\pm 50V$ from Power Common, pin 16. No connection is required between I/O Common and Power Common for proper operation of the track and hold circuit. For a low stage, simply short pins 23,19.

The SCIMPB02 and SCIMPB06 backpanels allow host computer control of the WR EN\ control line, which allows multiplexing of one host DAC to up to 64 SCIM5B39 output modules. During power-up, the output remains at 0mA for all round 100ms on all modules except the SCIM5B39-07, which allows the track-and hold circuit to be initialized.

A special circuitry for both input and output protection on the SCIM5B39 modules protects against accidental high-line voltages upto 250VAC.

Features

- Accepts High Level Voltage or Process Current input
- Unipolar or Bipolar Current Output
- 1.5KV Isolation
- ANSI/IEEE C37.90.1 Transient Protection
- 250V AC Continuous Protected on input & output
- 110dB CMR
- 400Hz Signal Bandwidth
- $\pm 0.03\%$ Accuracy
- $\pm 0.005\%$ Linearity
- CSA , FM , CE and ATEX Compliant
- Mixes and matches with all SCIM5B types on Backpanel



Specifications Typical at T_A=+25°C and +5V Power supply

Module	Unipolar Output Current SCIM5B39-01,-02,-03,-04,-05	Bipolar Output Current SCIM5B39-07
Input		
Voltage Range	±5V or 0V to +5V	±10V
Current Range (-05)	0 to 20mA	N/A
Voltage Maximum	±36V (no damage)	*
Current Maximum (-05)	75mA (no damage)	N/A
Resistance	50MΩ	2MΩ
Resistance (-05)	250Ω	N/A
Output		
Current Range	0 to 20mA or 4 to 20mA	±20mA
Over Range Capability	10%	*
Output Compliance Voltage (Open Circuit)	22V DC	±15V DC
Load Resistance Range	0 to 650Ω (0 to 750Ω for Power Supply voltage greater than 4.95V DC)	0 to 450Ω for Power Supply Voltage greater than 4.95V DC)
Output I Under Fault, max Output Protection	26mA	*
Continuous	250V rms max	*
Transient	ANSI/EEE C37.90.1	*
CMV, Output to Input Continuous	1500V rms max	*
Transient	ANSI/IEEE C37.90.1	*
CMR (50 or 60Hz)	110dB	*
NMR (-3dB)	80dB per Decade above 400Hz	80dB per Decade above 275Hz
Accuracy	±0.03% Span	±0.05% Span
Nonlinearity	±0.005% Span	±0.03% Span
Stability		
Zero	±0.5μA/°C	*
Span	±20ppm/°C	±40ppm/°C
Noise		
Output Ripple, 100KHz Bandwidth	10μA p-p	*
Bandwidth, - 3dB	400Hz	275Hz
Rise Time, 10 to 90% Span	1.0ms	1.2ms
Sample and Hold		
Output Droop Rate	40μA/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	+5V DC ±5%	*
Power supply Current	170mA	130mA
Power supply Sensitivity	±0.5μA/% typ	*
Mechanical Dimensions (H) (W) (D)	2.28" x 2.26" x 0.60" (58mm x 57mm x 15mm)	*
Environmental		
Operating Temp.Range	-40°C to +85°C	*
ATEX Group II, Cat, 3	-20°C to +40°C	*
Storage Temp. Range	-40°C to +85°C	*
Relative Humidity	0 to 95% Noncondensing	*
Emissions EN61000-6-4 Radiated, Conducted	ISM, Group 1 Class A	*
Immunity EN61000-6-2 RF	ISM, Group 1	*
ESD,EFT,Surge,Voltage Dips	Performance A ±0.5% Span Error Performance B	*

Ordering Information

Model	Input Range	Output Range	Bandwidth
SCIM5B39-01	0V to +5V	4mA to 20mA	400Hz
SCIM5B39-02	-5V to +5V	4mA to 20mA	400Hz
SCIM5B39-03	0V to +5V	0mA to 20mA	400Hz
SCIM5B39-04	-5V to +5V	0mA to 20mA	400Hz
SCIM5B39-05	0mA to 20mA	0mA to 20mA	400Hz
SCIM5B39-07	-10V to +10V	-20mA to +20mA	275Hz
SCIM5B39-08	1V to +5V	4mA to 20mA	400Hz
SCIM5B39-09	4mA to 20mA	4mA to 20mA	400Hz
SCIM5B3910	0 to +10V	4mA to 20mA	400Hz
SCIM5B3911	1V to +5V	0mA to 20mA	400Hz
SCIM5B3912	4mA to 20mA	0mA to 20mA	400Hz
SCIM5B3913	0 to +10V	0mA to 20mA	400Hz

Refer to SCIM5B392 specifications, p.27, for additional current output modules.

Notes:

*. Same as -01, -02, -03, -04, -05 modules.