SCIM5B32

Analog Current Input Modules

Description

SCIM5B32 current input module provides a single analog input signal which is filtered, isolated and converted to a standard level voltage output (Figure 1). This signal output is controlled by a logic-switch which enables these modules to share a common analog bus.No external multiplexers are required.

The SCIM5B modules are designed with a completely isolated output side circuitry which can be floated to more than ±50V from Power Common, pin 16. No connection is required between I/O Common and Power Common for proper operation of the output switch. the output switch can be turned on continuously by simply shorting pins 22,19.
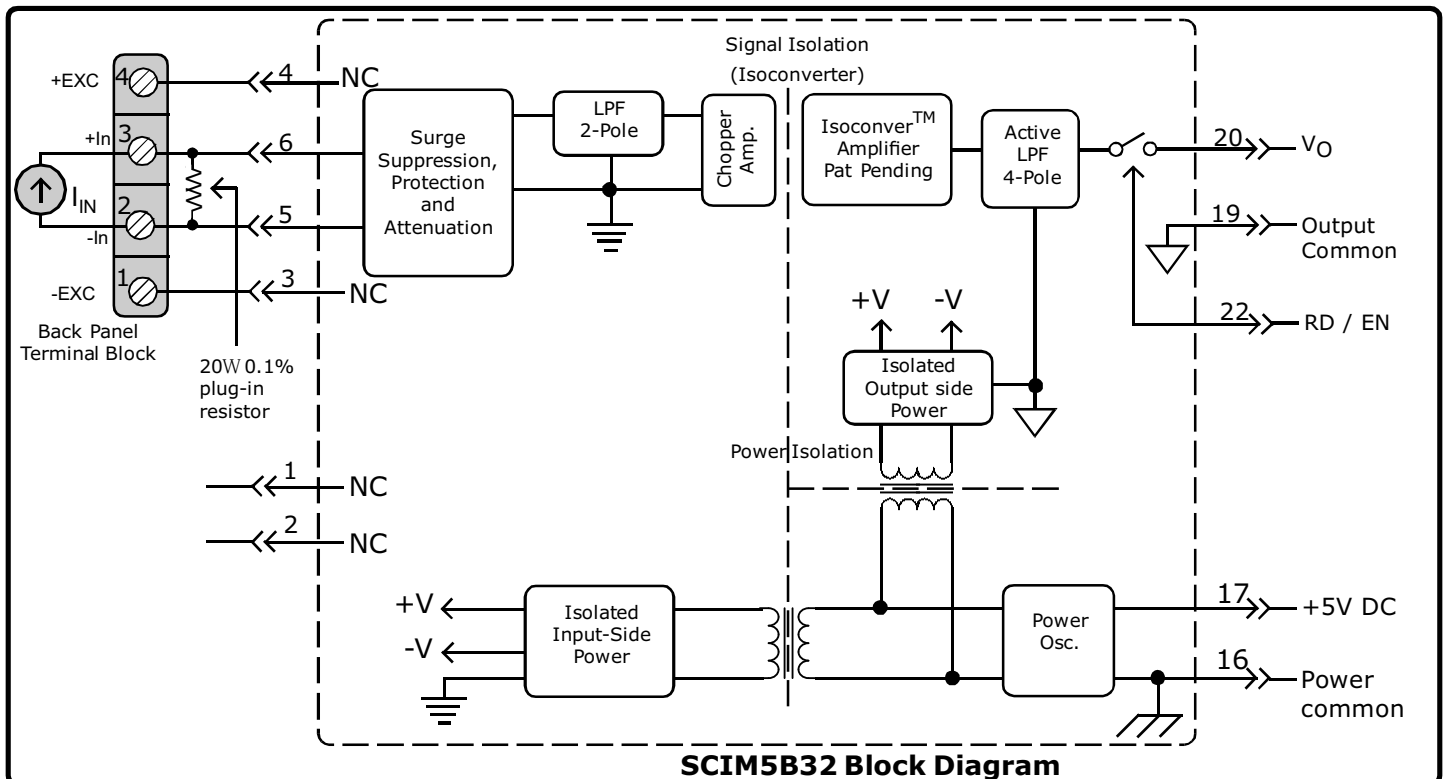
A Precision 20W current conversion Resistor is supplied with SCIM5B32 module. Suitable sockets are provided on SCIMPB01/02/03/04/05/06/07, back panels. This simplifies the fixing of the precision current conversion resistor. Extra Resistor can be ordered under part No. SCIMXR1.

Input Signal filtering is accomplished with a six-pole active filter which provides more than 95dB of normal-mode-rejection at 60Hz and 90dB at 50Hz. Two poles of this filter are on the input side of the isolation barrier, and the other four are on the output side.

After the filtering, he input signal is chopped by a proprietary converter circuit. isolation is provided by transoformer coupling which eliminates common mode spikes or surges. The module is powered from +5VDC, ±5%. A special input protection circuitry on the SCIM5B32 modules protect against accidental high-line voltages up to 250VAC.

Features

- Wide range of milliAmps input Signals
- Standard Output of either 0 to 10V/±10V, 0 to 5V, 1 to 5V.
- 1.5KV Isolation
- ANSI/IEEE C37.90.1 Transient Protection
- 250V AC Continuous Protected on Input
- 160dB CMR
- 95dB NMR at 60Hz, 90dB at 50Hz
- ±0.03% Accuracy
- ±0.005% Linearity
- ±1uV/°C Drift
- CSA , FM , CE and ATEX Compliant
- Mixes and Matches with all SCIM5B Types on Backpanel

SCIM5B32 Block Diagram

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

Module	SCIM5B32
Input	
Range	0mA to 20mA or 4mA to 20mA
Resistor	
Value	20.00Ω
Accuracy	$\pm$0.1%
Stability	$\pm$10ppm max
Protection	
Continous	250V rms max.
Transient	ANSI/IEEE C37.90.1
Isolation	
CMV, Input to Output Continuous	1500Vrms max
Transient	ANSI/IEEE C37.90.1
CMR (50Hz or 60Hz)	160dB
NMR	95dB at 60Hz, 90dB at 50Hz.
Noise	
Input, 0.1 to 10Hz.	10nA rms
Output, 100KHz.	200uV rms
Bandwidth, -3dB	4Hz.
Response Time, 90% Span	0.2s
Accuracy [1]	$\pm$0.03% Span
Nonlinearity	$\pm$0.005% Span
Stability	
Input Offset	$\pm$50nA / ^{O}C
Output Offset	$\pm$20uV / ^{O}C
Gain	$\pm$25ppm / ^{O}C
Output	
Range	See Ordering Information
Resistance	50Ω
Protection	Continuous Short to Ground
Selection Time	6uS at C_{load} =0 to 2000pF
(to $\pm$1mV of V_{out})	
Current Limit	$\pm$8mA
Output Enable Control	
Max Logic "0"	+0.8V
Min Logic "1"	+2.4V
Max Logic "1"	+36V
Input Current "0,1"	0.5uA
Power supply voltage	+5V DC $\pm$5%
Power supply Current	30mA
Power supply Sensitivity	$\pm$2uV/% RTI[2]
Mechanical Dimensions	2.28" x 2.26" x 0.60"
(H) (W) (D)	(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	ISM, Group 1
Radiated, Conducted	Class A
Immunity EN61000-6-2	ISM, Group 1
RF	Performance A $\pm$0.5% Span error
ESD,EFT,Surge, Voltage	Performence B

Ordering Information

Model	Input Range	Output Range
SCIM5B32-01	4mA to 20mA	1,2,8
SCIM5B32-02	0mA to 20mA	1,2,8
SCIM5B32-03	4mA to 20mA	3,4,8
SCIM5B32-04	0mA to 20mA	3,4,8

Output Ranges Available

Output Range	Part No. Suffix	Example
1. -5V to +5V	Z	SCIM5B32-01Z
2. -10V to +10V	X	SCIM5B32-01X
3. 0V to +5V	NONE	SCIM5B32-04
4. 0V to +10V	D	SCIM5B32-04D
8. 1V to +5V	Y	SCIM5B32-04E

Notes:
(1). Includes nonlinearity, hysteresis and repeatability.
(2). RTI = Referenced to input.