SCIM5B40-41

Analog Voltage Input Modules, Wide Bandwidth

Description

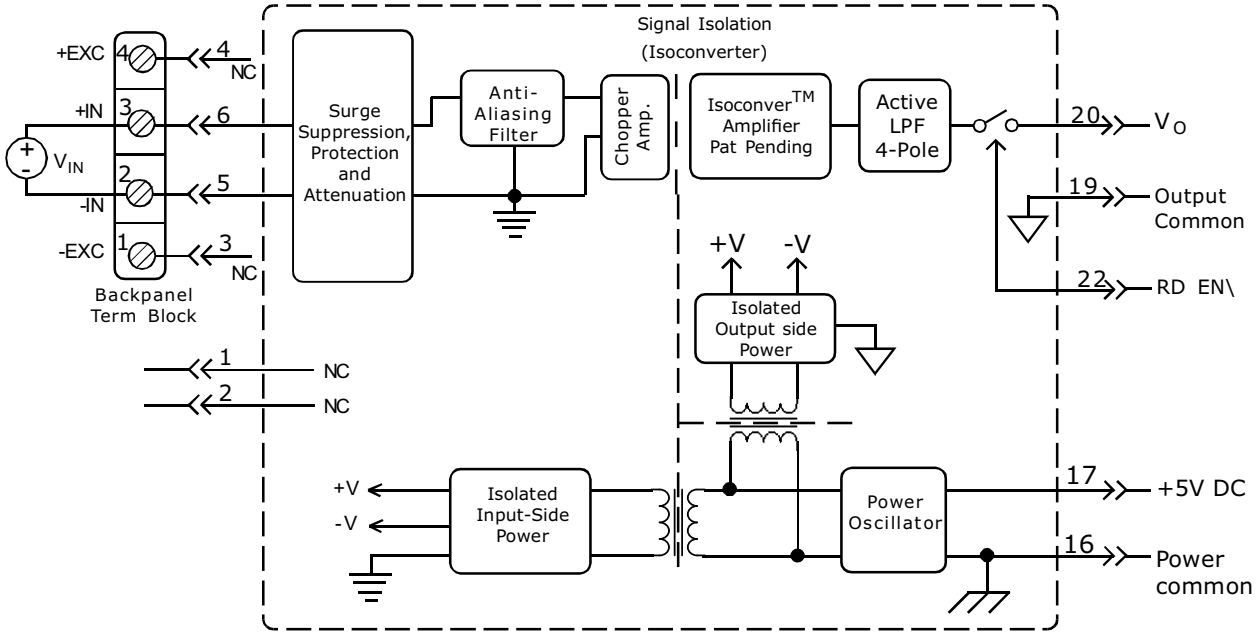
SCIM5B40 and SCIM5B41 wide bandwidth voltage input modules provides a single channel of analog input which is amplified, isolated, and converted to a standard level analog voltage output (Figure 1). This signal output is controlled by a logic-switch which enables these modules to share a common analog 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.

The input signal is processed through a pre-amplifier on the input side of the isolation barrier. This pre-amplifier has a gain-bandwidth product of 5MHz and is bandwidth limited to 10KHz. After amplification, the input signal is chopped by a proprietary converter circuit. Isolation is provided by transformer coupling which eliminates common mode spikes or surges. The module is powered from +5V DC, ±5%.A special input protection circuitry on the SCIM5B40 and SCIM5B41 modules protect against accidental high-line voltages upto 250VAC

Features

- Wide range of millivolt and Voltage inputs 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
- 100dB CMR
- 10KHz Signal Bandwidth
- ±0.03% Accuracy
- ±0.01% Linearity
- ±1uV/°C Drift
- CSA , FM , CE and ATEX Compliant
- Mixes and Matches with all SCIM5B Types on Backpanel



SCIM5B40/41 Block Diagram

Specifications

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

Module	SCIM5B40	SCIM5B41
Input		
Range	±10mV to ±100mV	±1V to ±40V
Bias Current	±0.5nA	±0.05nA
Resistance		
Normal	200MΩ	650KΩ (minimum)
Power off	40KΩ	650KΩ (minimum)
Overload	40KΩ	650KΩ (minimum)
Protection		
Continuous	250V rms max	*
Transient	ANSI/IEEE C37.90.1	*
CMV, Input to Output		
Continuous	1500V rms max	*
Transient	ANSI/IEEE C37.90.1	*
CMR (50 or 60Hz)	100dB	*
NMR (-3dB at 10KHz)	120dB per Decade above 10KHz	*
Accuracy(1)	±0.03% Span	*
Nonlinearity	±0.01% Span	*
Stability		
Input Offset	±1µV/°C	±20µV/°C
Output Offset	±40µV/°C	*
Gain	±25ppm/°C	±50ppm/°C
Noise		
Input, 0.1 to 10KHz	0.4µV rms	2µV rms
Ouput, 100KHz	10mV p-p	*
Bandwidth, - 3dB	10KHz	*
Rise Time, 10 to 90% Span	35µs	*
Setting Time, to 0.1%	250µs	*
Output		
Range	See Ordering Information	*
Output Resistance	50Ω	*
Protection	Continuous Short to Ground	*
Selection Time (to ±1mV of V_{OUT})	6ms at C_{LOAD} =0 to 2000pf	*
Current Limit	±8mA	*
Output Enable Control		
Max Logic "0"	+0.8V	*
Min Logic "1"	+2.4V	*
Max Logic "1"	+36V	*
Input Current "0.1"	0.5µA	*
Power supply voltage	+5V DC ±5%	*
Power supply Current	30mA	*
Power supply Sensitivity	±2µV/% RTI(2)	±200µV/% RTI(2)
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	*
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 ±0.5% Span Error	*
ESD,EFT,Surge,VoltageDips	Performance B	*

NOTES:
* Same specifications as SCIM5B40.
(1) Includes nonlinearity, hysteresis and repeatability.
(2) RTI=Referenced to input.
(3) Same as SCIM5B41-01 with 50MΩ input resistance.

Ordering Information

Model	Input Range	Output Range
SCIM5B40-01	-10mV to +10mV	1,2,8
SCIM5B40-02	-50mV to +50mV	1,2,8
SCIM5B40-03	-100mV to +100mV	1,2,8
SCIM5B40-04	-10mV to +10mV	3,4,8
SCIM5B40-05	-50mV to +50mV	3,4,8
SCIM5B40-06	-100mV to +100mV	3,4,8
SCIM5B40-07(3)	-1V to +1V	1,2,8
SCIM5B41-01	-1V to +1V	1,2,8
SCIM5B41-02	-5V to +5V	1,2,8
SCIM5B41-03	-10V to +10V	1,2,8
SCIM5B41-04	-1V to +1V	3,4,8
SCIM5B41-05	-5V to +5V	3,4,8
SCIM5B41-06	-10V to +10V	3,4,8
SCIM5B41-07	-20V to +20V	1,2,8
SCIM5B41-08	-20V to +20V	3,4,8
SCIM5B41-09	-40V to +40V	1,2,8
SCIM5B41-10	-40V to +40V	3,4,8

Output Ranges Available

Model	Part No. Suffix	Example
1. -5V to +5V	Z	SCIM5B40-01Z
2. -10V to +10V	X	SCIM5B40-01X
3. 0V to +5V	NONE	SCIM5B40-04
4. 0V to +10V	D	SCIM5B40-04D
8. 1V to +5V	Y	SCIM5B40-04Y