SCIM7B35

Isolated 2-Wire Transmitter Interface Modules With Loop Power

Description

SCIM7B35 current input modules is a single channel analog input which if filtered, isolated, amplified, and converted to standard-level voltage output.A five pole filter is provided with signal filtering, this module accepts input signal in the range of 4-20μA

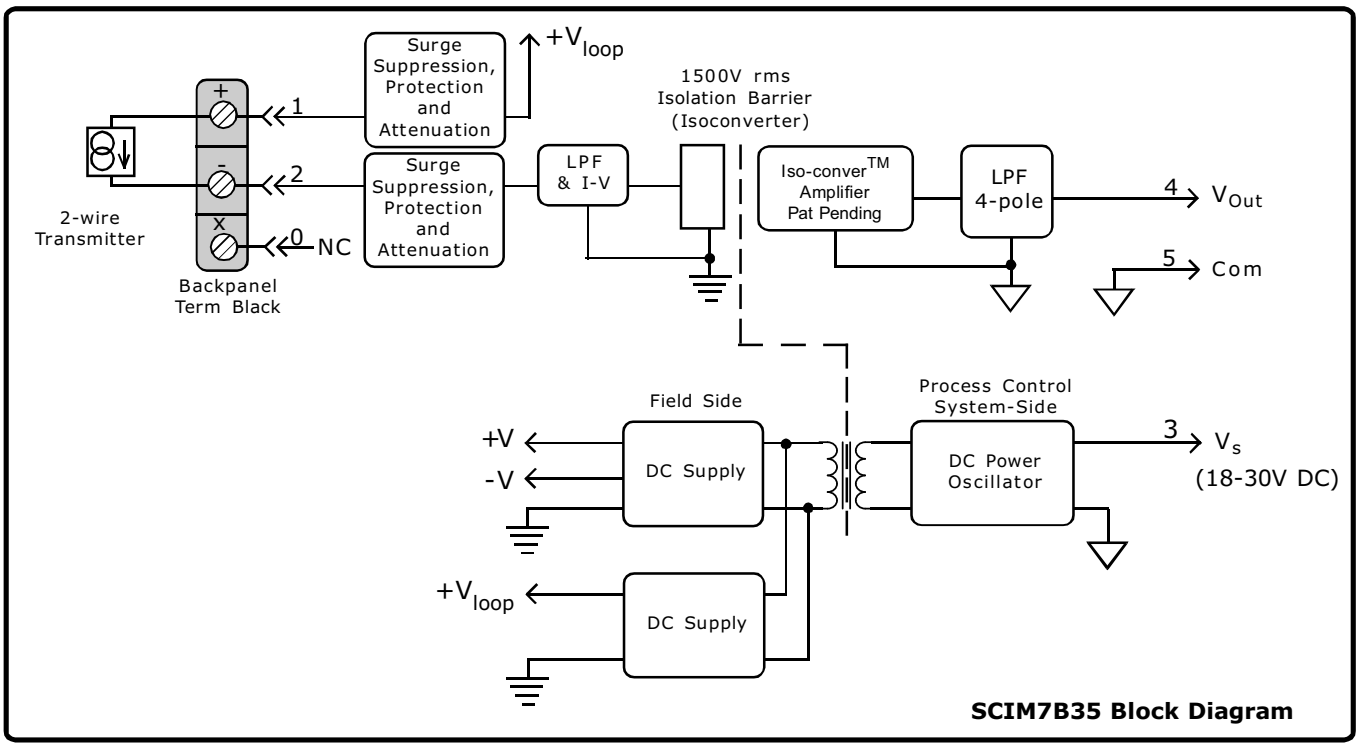
Loop power is provided by the module, enabling a 2-wire transmitter to be directly connected without the need for a separate dc power supply for the 2-wire transmitter.

The input signal is chopped by a proprietary converter circuit after initial filter stage,isolation is provided by transformer coupling which eliminates common mode spikes and surges.The signal is then reconstructed and filtered for process control system output.

These modules accepts a wide 18 - 35VDC power supply range (+24VDC nominal).The mechanical size (2.13''x1.705''x0.605'' max.) save space and are ideal for high channel density applications. They are designed for easy DIN Rail mounting using nay of the "DIN" backpanels.

Features

- 2-Wire Transmitter Interface.
- Accepts 4-20μA Signals
- Provides an Isolated +24V DC Supply to power the Loop.
- Provides high level voltage outputs
- 1.5KV Isolation
- Accuracy ±0.03% of span typical, ±0.1% max
- ANSI/IEEE C37.90.1 Transient Protection
- 120V rms Continuous Protected on Input
- 105dB CMR
- 80dB per Decade of Attenuation above 100Hz
- Easy DIN Rail Mounting
- CSA , FM , CE and ATEX Compliant



SCIM7B35 Block Diagram

Specifications

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

Module	SCIM7B35
Input	
Signal Range	4–20µA
Protection	
Continuous	120V rms max
Transient	ANSI/IEEE C37.90.1
Loop voltage (1)	+24V DC
Output	
Signal Range(2)	See Ordering information
Effective available power(2)	40µΩ
Resistance	<1Ω
Protection	Continuous short-to-ground
Voltage/Current Limit	±16V, ±14mA
CMV (Input to Output)	
Continous	1500V rms
Transient	ANSI/IEEE C37.90.1
CMRR (50 or 60Hz)	105dB
Accuracy(3)	±0.03% Span typical, ±0.1% Span max
Nonlinearity(4)	±0.01% Span typical, ±0.02% Span max
Stability (-40°C to +85°C)	
Gain	±40ppm/°C
Input Offset	N/A(5)
Output Offset	±0.003% Span/°C
Noise	
Peak at 5MHz B/W	5mV
RMS at 10Hz to 100KHz B/W	500µV
Peak at 0.1Hz to 10Hz B/W	3µV RTI
Frequency and Time Response	
Bandwidth, -3dB	100Hz
NMR (-3dB @100Hz)	80dB/Decade above 100Hz
Step Response, 90% span	5ms
Power supply voltage	18 to 30V DC
Power supply Current(2)	56mA
Power supply Sensitivity	±0.0002%/%V_S
Mechanical Dimensions (H) (W) (D)	2.13"x1.705"x0.605"max (54.1 x 43.3 x 15.4mm) max
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,Voltage Dips	Performance B

Ordering Information

Model	Input Range	Output Range
SCIM7B35-01	4-20mA	+1V to +5V
SCIM7B35-01A	4-20mA	0 to +5V
SCIM7B35-01D	4-20mA	0 to +10V
SCIM7B35-02	4-20mA	+2 to +10V

Note:

(1). +24V will be supplied to the loop for an open loop condition. Approximately +22V to +16V will be supplied for a corresponding 4mA to 20mA input loop voltage is independent of supply voltage.

(2). Output range and supply current specifications are based on minimum output load resistances. Minimum output load resistance is calculated by $V_{out}{}^2/P_E$ where P_E is the output effective available power that guarantees output range, accuracy, and linearity specifications.

(3). Accuracy includes the effects of repeatability, hysteresis, and linearity.

(4). Non-linearity is calculated using the best-fit straight line method.

(5). Input offset term include in output offset specification.