

SCM7B22



Isolated Bipolar Voltage Output Modules

Description

SCM7B22 voltage output modules accept input signals in the ±10V range from the process control system. The signal is isolated, buffered, and filtered to provide a unity gain field voltage output (Figure 1).

These modules incorporate a five-pole filtering approach to maximize both time and frequency response by taking advantage of both Thomson (Bessel) and Butterworth characteristics. One pole of the filter is on the process control system side of the isolation barrier; four are on the field side.

After the initial process control system-side filtering, the input signal is chopped by a proprietary chopper circuit and transferred across the transformer isolation barrier, suppressing transmission of common mode spikes and surges. The signal is then reconstructed and filtered for field-side output.

Modules accept a wide 19 - 29VDC power supply range (+24VDC nominal). Their compact packages (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 any of the -DIN backpanels.

Features

- Accepts High-Level Input to ±10V
- Provides High-Level Output to ±10V
- 1500Vrms Transformer Isolation
- Accuracy, ±0.03% of Span Typical, ±0.1% Max
- ANSI/IEEE C37.90.1 Transient Protection
- Output Protected to 120Vrms Continuous
- Input Protected to ±35VDC
- Noise, 2mVp-p (5MHz), 1mVrms (100kHz)
- 100dB CMRR
- Easy DIN Rail Mounting
- CSA C/US Certified
- CE and ATEX Compliant

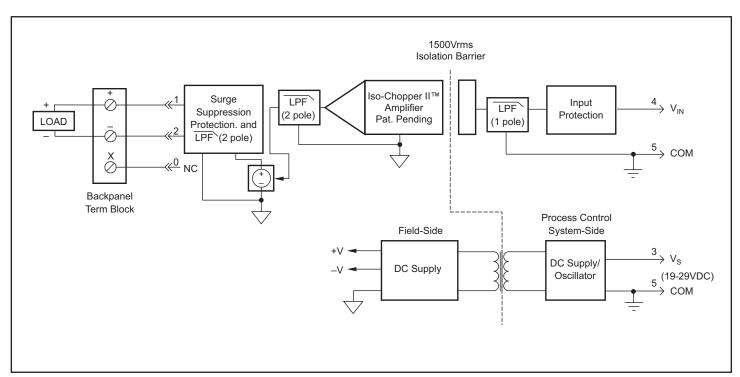


Figure 1: SCM7B22 Blok Diagram



Specifications Typical* at 25°C and +24VDC

Module	SCM7B22
Output	Oomi DLL
Signal Range Drive Capability Resistance Protection	±10V ±20mA <1Ω
Continuous Transient Voltage/Current Limit	120Vrms ANSI/IEEE C37.90.1 ±12.5V, ±40mA
Input Signal Range Bias Current Resistance Protection	±10V ±0.5nA 2MΩ min ±35VDC (no damage)
CMV (Input-to-Output) Continuous Transient CMRR (50 or 60Hz)	1500Vrms ANSI/IEEE C37.90.1 100dB
Accuracy ⁽¹⁾ Linearity ⁽²⁾	±0.03% Span typical, ±0.1% Span max ±0.01% Span typical, ±0.02% Span max
Stability (-40°C to +85°C) Gain Output Offset Noise	±35ppm/°C ±0.001% Span/°C
Peak at 5MHz B/W RMS at 10Hz to 100kHz B/W Peak at 0.1Hz to 10Hz B/W	2mV 1mV 10µV RTI ⁽³⁾
Frequency and Time Response Bandwidth, –3dB NMR (–3dB at 400Hz) Step Response, 90% Span	400Hz 100dB per Decade above 400Hz 1ms
Supply Voltage Current Sensitivity	19 to 29VDC 16mA ±0.0001% % _s
Mechanical Dimensions (h)(w)(d)	2.13" x 1.705" x 0.605" max (54.1mm x 43.3mm x 15.4mm max)
Environmental Operating Temperature Range Storage Temperature Range Relative Humidity Emissions EN61000-6-4 Radiated, Conducted Immunity EN61000-6-2 RF ESD, EFT NOTES:	-40°C to +85°C -40°C to +85°C 0 to 95% Noncondensing ISM, Group 1 Class A ISM, Group 1 Performance A ±0.5% Span Error Performance B

NOTES:

Ordering Information

Model	Input Range	Output Range
SCM7B22	±10V	±10V

^{*}Contact factory or your local Dataforth sales office for maximum values.

⁽¹⁾ Accuracy includes the effects of repeatability, hysteresis, and linearity.

⁽²⁾ Linearity is calculated using the best-fit straight line method.

⁽³⁾ RTI = Referenced to Input.