

SCM5B392

Matched-Pair Servo/Motor Controller Modules

Description

The SCM5B392 servo/motor controller module set is designed to solve the problem of extending a servo or motor controller signal a long distance with the possibility for noise pickup and/or contacting hazardous voltages. Each SCM5B392 module set is made up of two modules: a voltage input/current output module and a current input/voltage output module (Figure 1).

The voltage input module connects to the servo or motor controller voltage output and provides an isolated 4 to 20mA output which connects to the input of the current input module. The current input module isolates and provides an output voltage identical to that of the servo or motor controller. Thus the original control signal has been isolated (twice) and extended via a 4 to 20mA current loop.

Several mounting options are available for the SCM5B392 module set. If a large number of channels are required, the SCMPB01 16 channel backpanel and SCMPB05 8 channel backpanel are available. Smaller channel numbers can be accommodated with the SCMPB03 single channel mounting panel and SCMPB04 dual channel mounting panel. These can be mounted on a DIN rail.

Features

- Extends the Distance and Isolates Servo/Motor Controller Signals
- Provides Isolated Current Loop Interface Between Controller and Motor or Actuator
- Accepts High-Level Voltage Inputs up to ±10V
- Provides High-Level Voltage Outputs up to ±10V
- 1500VrmsTransformer Isolation (3000Vrms Total Loop)
- ANSI/IEEE C37.90.1 Transient Protection
- Current Loop is Protected to 240VAC Continuous
- 1kHz Signal Bandwidth
- 100dB CMR
- ±0.06% Total Loop Accuracy
- ±0.01% Total Loop Linearity
- CSA C/US Certified
- CE and ATEX Compliant
- Mix and Match SCM5B Types on Backpanel

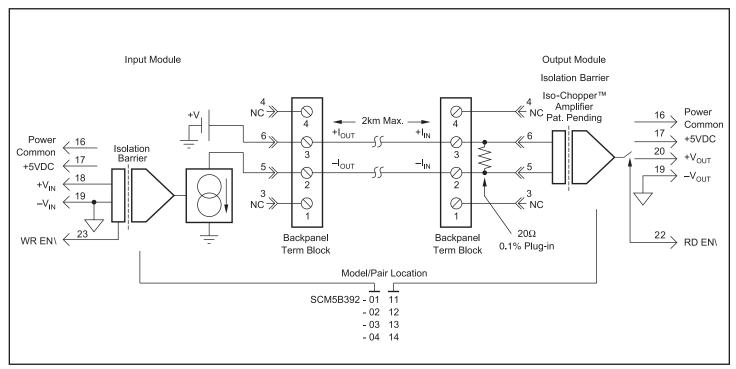


Figure 1: SCM5B392 Blok Diagram



Specifications Typical* at T_A = +25°C and +5VDC power

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Module	SCM5B392-01,-02,-03,-04 (Input)	SCM5B392-11,-12,-13,-14 (Output)
Input Range Input Resistance Accuracy Stability Input Protection	See Ordering Information 50M Ω (-01,-02) 2M Ω (-03,-04) N/A N/A	4mA to 20mA 20Ω ±0.1% ±10ppm/°C
Continuous Transient	±36V (no damage) N/A	240Vrms max ANSI/IEEE C37.90.1
Output Range Over Range Capability Output Compliance Voltage (Open Circuit) Loop Resistance Range	4mA to 20mA 10% 22VDC 0 to 600Ω	See Ordering Information N/A N/A N/A
Output Resistance Output Selection Time (to ±1mV of V _{OUT})	(0 to 700Ω for Power Supply Voltage greater than 4.95VDC) N/A N/A	50Ω 6µs at $C_{load} = 0$ to 2000pF
Output Current Limit	26mA	+8mA
Output Protection Continuous Transient	240Vrms max ANSI/IEEE C37.90.1	Short to Ground N/A
CMV Continuous Transient CMR (50Hz or 60Hz) NMR (–3dB at 1KHz)	1500Vrms max, output to input ANSI/IEEE C37.90.1 100dB 80dB per Decade	* * * 120dB per Decade
(552 55	above 1kHz	above 1kHz
Accuracy Linearity Stability	±0.03% Span ±0.005% Span	*
Offset Gain Noise	±0.5µA/°C ±20ppm/°C	±50μV/°C ±25ppm/°C
Output, 100kHz Bandwidth, –3dB Rise Time, 10 to 90% Span	10μΑp-p 1kHz 340μs	200μVrms 1kHz 750μs
Sample and Hold Output Droop Rate Acquisition Time	40μΑ/s 50μs	N/A N/A
Enable Control Max Logic "0" Min Logic "1" Max Logic "1" Input Current "0"	+0.8V +2.4V +36V 0.5µA	* * *
Power Supply Voltage Power Supply Current Power Supply Sensitivity	+5VDC ±5% 170mA ±0.5μA/% typ	* 30mA ±1μΑ/% RTI ⁽¹⁾
Mechanical Dimensions (h)(w)(d)	2.28" x 2.26" x 0.6" (58mm x 57mm x 15mm)	*
Environmental Operating Temp. Range Storage Temp. Range Relative Humidity Emissions EN61000-6-4 Radiated, Conducted Immunity EN61000-6-2 RF	-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	* * * * * *
ESD, EFT	Performance B	*
OTLO.		

Ordering Information (for module pairs)

Model	Input Range	Interface	Output Range
SCM5B392-0111	0V to +5V	4mA to 20mA	0V to +5V
SCM5B392-0212	-5V to +5V	4mA to 20mA	-5V to +5V
SCM5B392-0313	0V to +10V	4mA to 20mA	0V to +10V
SCM5B392-0414	-10V to +10V	4mA to 20mA	-10V to +10V

Ordering Information (for single modules)

Model	Input Range	Output Range	Bandwidth
SCM5B392-01	0V to +5V	4mA to 20mA	1kHz
SCM5B392-02	-5V to +5V	4mA to 20mA	1kHz
SCM5B392-03	0V to +10V	4mA to 20mA	1kHz
SCM5B392-04	-10V to +10V	4mA to 20mA	1kHz
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SCM5B392-11	4mA to 20mA	0V to +5V	1kHz
SCM5B392-12	4mA to 20mA	-5V to +5V	1kHz
SCM5B392-13	4mA to 20mA	0V to +10V	1kHz
SCM5B392-14	4mA to 20mA	-10V to +10V	1kHz

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

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

(1) RTI = Referenced to input.