SC-MATHSCON

Programmable Mathematics Unit

- ***User Configurable Maths Function***
- ***Two Isolated Inputs and One Isolated Output***
- ***3-Port Isolation to 1000Vdc***
- ***High Accuracy, Low Cost***
- ***Ultra Compact, only 17.5mm Wide***
- ***1 Universal & 1 Voltage/Current Input***

The SC-MATHSCON Isolating Signal Converter can be user-configured to carry out a wide range of mathematical functions on two isolated input channels. One input is a universal current, voltage, thermocouple or RTD input, and the other can be either voltage or current.
Each channel can be multiplied by a factor or linearised and then any of the following functions can be performed on those input channels.

Addition	Output = A + B
Subtraction	Output = A - B
Multiplication	Output = A x B
Division	Output = A / B
Square Root	Output = (A-B)
High Signal Select	
Low Signal Select	
Average of the two signals	

The unit provides an isolated, scaleable current or voltage output corresponding to the result of the required function.
The power supply requirement is 16 to 32V dc.

General Specifications

The inputs types and ranges included below are our standard ones. Please contact our sales department for details on any application not specified below.

DC Current

0-20mA, 4-20mA, 0-10mA all into 10ᴎ

DC Voltage

0-1V, 0-10V, 1-5V all into 1Mᴎ

RTD, Thermocouple and Potentiometer Inputs available on Input 1 only

Outputs

DC Current (Source or Sink) and Voltage

0-20mA, 4-20mA, 0-10mA into 750ᴎ maximum.

0-1V, 0-10V, 1-5V into a minimum 100kᴎ

Technical Specifications

Parameter	Min	Typ	Max	Comments
Supply Voltage	16V	24V	36V	
Supply Current (mA)		95	134	Max with transmitter supply
Input Impedance (Volt)		1Mᴎ		
Input impedance (mA)		15ᴎ		
Volt Drop (mA Input)		0.3V		At 20mA input
Overall Accuracy		±0.01%	±0.05%	
Input Accuracy		±0.01%		
Temp Coefficient			±50ppm/ºC	
Load Resistance Error			±5ppm/ᴎ	0 < RL < 750ᴎ
Time Constant (10-90%)		100mS	180mS	See note
Operating Ambient	0ºC		55ºC	
Relative Humidity	0%		90%	
Isolation Voltage	1kV			
Surge Voltage	2.5kV for 50µS		Transient of 10kV/µS	

Notes

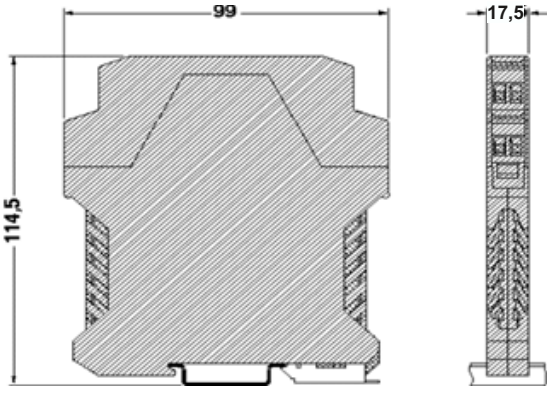
Absolute maximum ratings indicate sustained limits beyond which damage to the device may occur.
Device is protected against reverse polarity connection.
Accuracy figures based on an ambient temperature of 20ºC.
The Time Constant is dependent on which processing options are been selected.

Installation Data

Mounting	DIN Rail TS35
Orientation	Any
Connections	Screw Clamp with pressure plate
Conductor Size	0.5-4.0mm
Insulation Stripping	12mm
Weight	Approx 95g
Max Terminal Torque	0.4Nm

Ordering Information

Part No.: SC-MATHSCON



Connection Details

1. Power Input -ve
2. Power Input +ve
12. Input 2 (mA, V)+ve
10. Input 2 -ve
3. Tx supply +ve RTD 4th wire
6. RTD 3rd wire
5. Input 1 (ma, V, T?C, RTD) +ve
4. Input 1 -ve
7. Output -ve
9. Output (mA, V) +ve

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