Chipsmall Limited consists of a professional team with an average of over 10 year of expertise in the distribution of electronic components. Based in Hongkong, we have already established firm and mutual-benefit business relationships with customers from,Europe,America and south Asia,supplying obsolete and hard-to-find components to meet their specific needs.

With the principle of “Quality Parts,Customers Priority,Honest Operation,and Considerate Service”,our business mainly focus on the distribution of electronic components. Line cards we deal with include Microchip,ALPS,ROHM,Xilinx,Pulse,ON,Everlight and Freescale. Main products comprise IC,Modules,Potentiometer,IC Socket,Relay,Connector.Our parts cover such applications as commercial,industrial, and automotives areas.

We are looking forward to setting up business relationship with you and hope to provide you with the best service and solution. Let us make a better world for our industry!


## Contact us

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# 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 = v(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 10Ω

**DC Voltage**

0-1V, 0-10V, 1-5V all into 1MΩ

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 750Ω maximum.

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

## Technical Specifications

| Parameter | Min | Typ | Max | Comments |
|---|---|---|---|---|
| Supply Voltage | 16V | 24V | 36V | |
| Supply Current (mA) | | 95 | 134 | Max with transmitter supply |
| Input Impedance (Volt) | | 1MΩ | | |
| Input impedance (mA) | | 15Ω | | |
| 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/Ω | 0 < RL < 750Ω |
| 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.

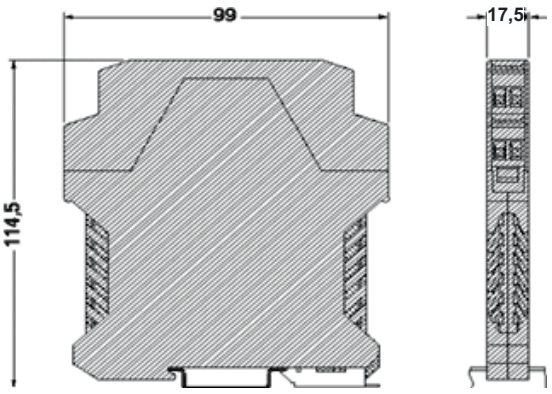
## Installation Data

| | |
|---|---|
| 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 tTerminal 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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ISO9001CERTIFIED

Made in the UK

**www.cynergy3.com**

SC-MATHSCON 2017