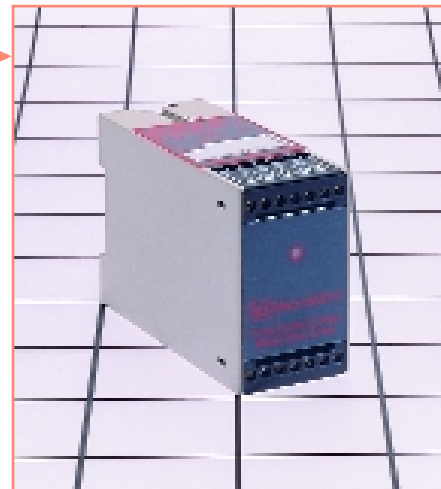


# Programmable Analogue Mathematical Module MicroMATH

**Function:** An analogue computation/mathematical module which can handle up to six analogue (mA) inputs and carry out a number of mathematical functions before outputting a standard transmission voltage or current signal. The MicroMATH is microprocessor based and offers a comprehensive range of mathematical operands. The MicroMATH is programmable with the programming function resident in non-volatile memory. Connect the MicroMATH to a PC/terminal via a Lee-Dickens MicroLEAD and set up the algorithm required. This can be a simple addition of several inputs to a more complicated algorithm containing Constants, Conditional Transfer Commands, Straight Line Approximations, etc. For example, MicroMATH can easily handle Mass Flow Calculations in the one instrument or more complex algorithms using cascaded units.



AlphaDIN  
CONVERTERS

## SPECIFICATIONS

### INPUTS:

#### DC Current

6 x Single Ended inputs  
(-ves commoned)

Between -100mA and +100mA  
Minimum input span 1mA  
Maximum input span 200mA  
Input can be offset from 0mA  
Input impedance 10 ohms

### OUTPUTS:

#### DC Current

Between 0 to 20mA  
Minimum span 1mA  
20mA into 10 to 1000 ohms  
10mA into 10 to 2000 ohms

#### DC Voltage

Between 0 to 10 Volts into  
1K ohms minimum  
Minimum span 1 Volt

### OPERANDS:

Input  
Output  
Store  
Recall  
Constant  
Equals  
Plus / Minus  
Times / Divide  
Square / Square Root  
Log / Anti-Log  
Log (Natural)  
Anti-Log (Natural)  
Sine / Cosine  
Tangent  
Arc-Tangent  
Absolute  
Integer  
Straight Line Approximation  
End of Data String  
Conditional Transfer  
Greater Than  
Less Than  
Equal / Not Equal  
Greater Than or Equal  
Less Than or Equal  
Execute every Tenth Time  
Execute every Hundredth Time

### SUPPLY:

#### Power Supply Voltage

User selectable  
115 Volt AC  $\pm 15\%$  50/60Hz  
230 Volt AC  $\pm 15\%$  50/60Hz  
or 18 to 30 Volt DC with converter  
to maintain signal to power supply  
isolation

#### Power Required

3VA Maximum

#### Pilot Light

Red LED shows Power ON

### GENERAL:

#### Floating Point

**Mathematical Package**  
Handles numbers in the range  
 $10^{-18}$  to  $10^{+18}$

#### Resolution

16 bit (1 in 65536)

#### Linearity Error

Proportional to inputs  $\pm 0.1\%$   
of span

#### Temperature Coefficient

$\pm 0.1\%$  of span /  $\Delta 10^\circ\text{C}$

#### Operating Temperature Range

0 to  $+50^\circ\text{C}$

#### Storage Temperature Range

$-20$  to  $+60^\circ\text{C}$

#### Operating Humidity Range

0 to 95% RH non-condensing

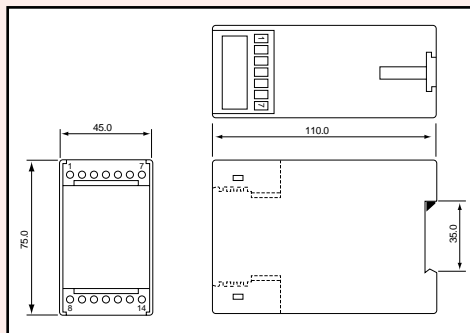
#### Storage Humidity Range

0 to 95% RH non-condensing

#### Weight

MicroMATH 310 gms  
MicroLEAD 65 gms

## MECHANICAL DETAILS



## TERMINATION DETAILS

### Terminal

- 1 Input 1 +ve
- 2 Input 2 +ve
- 3 Input 3 +ve
- 4 Input 4 +ve
- 5 Input 5 +ve
- 6 Input 6 +ve
- 7 Input Common -ve

### Terminal

- 8 Output -ve
- 9 Output +ve
- 10 Unused
- 11 Unused
- 12 230 Volt  $\pm 15\%$  50/60Hz or 24 Volt DC +ve
- 13 115 Volt  $\pm 15\%$  50/60Hz Unused
- 14 Neutral 24 Volt DC -ve

## ORDERING DETAILS

- (a) Give identification code, i.e. MicroMATH
- (b) Give power supply voltage, i.e. 240 Volt 60 Hz
- (c) Give details of all input signals, i.e. 3 x 4 to 20mA signals
- (d) Give details of output required, both type and range, i.e. 4 to 20mA
- (e) Give details of algorithm/functions required
- (f) If programming yourself then please just specify items (a) and (b), and, if programming for the first time, please specify a MicroLEAD



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