

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^{E+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

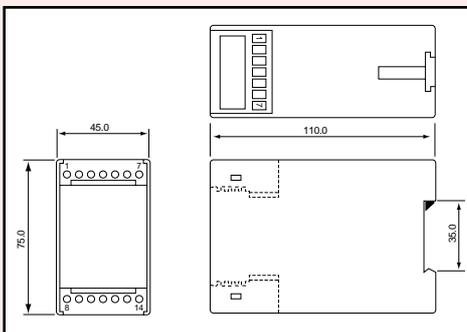
0 to 95% RH non-condensing

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



LEE-DICKENS LTD
Desborough, Kettering, Northants NN14 2QW U.K.
Tel: (01536) 760156 Fax (01536) 762552