# MR1000 Series MB1000 Series <br> Mini Rate/Totalizer Mini Batch Controller 

## Description

The MR1000 Miniature Rate/Totalizer provides two-level preset control of flow rate and total. Two pulse input channels enable the MR1000 to handle add/subtract and quadrature inputs, in addition to a standard single channel input. Five-digit floating decimal scale factors allow the MR1000 to display total count in engineering units and rate in units per second, minute, or hour. Two separate 10 A relay contacts can be used to operate secondary control devices.

The MB1000 Miniature Batch Controller provides two-level preset control of batch total. One output is dedicated to the batch amount (preset A) and the other may be activated for Prewarn or Batch Grand Total. Start, Stop and Reset functions can be activated from the front panel or remote inputs. An analog output, assignable for Rate or Batch Total, is available for datalogging.

RS232 or RS422 serial communication is available with either unit above for data exchange with a host computer.

## Features

- Display rate and total flow
- Two presets outputs

MR1000: rate and total
MB1000: batch amount and prewarn or batch total

- 5-digit floating decimal scaling factor
- Two-stage lockout
- Add/subtract and quadrature input (MR1000 only)
- 12 VDC sensor excitation
- RS232/RS422 serial communication
- NEMA 4/IP 65 front panel
- 30 mV magnetic pickup inputs
- 4-20 mA or 0-20 mA analog output


## MR1000 Series/MB1000 Series

Mini Rate/Totalizer/Mini Batch Controller

## Specifications

| Display | 6 digit, 0.55 " high LED |
| :---: | :---: |
| Input Power | 110 VAC $\pm 15 \%$ or $12-15$ VDC 220 VAC $\pm 15 \%$ or $12-15$ VDC 24 VAC $\pm 15 \%$ or $12-15$ VDC |
| Output Power | +12 VDC at 50 mA , unregulated <br> $-10+50 \%$ (AC powered units only) |
| Maximum Current 250 mA DC or 6.5 VA at rated AC voltage |  |
| Count Inputs |  |
| MR1000/MB1000 |  |
| 3: | High impedance DC open, or 0-1 VDC (low), <br> 4-30 VDC (high), $10 \mathrm{~K} \Omega \mathrm{imp} .10 \mathrm{kHz}$ max. |
| 3M: | Magnetic pick-up, A only, 30 mV ( 50 V max. $\mathrm{P} / \mathrm{P}$ ) signals $10 \mathrm{~K} \Omega \mathrm{imp}$., 5 KHz max. (input B, 4-30V) |
| MR1000 only |  |
| 3 MB : | Magnetic pick-up, inputs A \& B, 30 mV ( 50 V max. $\mathrm{P} / \mathrm{P}$ ), signals $10 \mathrm{~K} \Omega$ imp., 5 kHz max. |
| 9 9 | Quadrature, 4-30 VDC pulse, 10 kHz max. |
| 9MB: | Quadrature, 30 mV ( 50 V max. P/P) pulses, 9.99 kHz max. (MR1000 only) |
| Control Outputs |  |
| Relay | Two N.O. relays; 10 amps at 120/240 VAC or 28 VDC (N.C. relay contacts and NPN transistor output available with solder jumpers. Transistor output is internally pulled up to 10 VDC through relay coil, sinks from 10 VDC to 0.5 V at 100 mA ) |

## Specifications (cont'd)

Analog
Accuracy: Compliance Voltage:
Temperature
Operating Storage
Reset
Front Button MR1000:

MB1000:

Remote

Memory
CE

An optional $4-20 \mathrm{~mA}(0-20 \mathrm{~mA})$ output is available to track rate or total $\pm .25 \%$ F.S. - worst case

3-30 VDC non-inductive
$+32^{\circ} \mathrm{F}$ to $+130^{\circ} \mathrm{F}\left(0^{\circ} \mathrm{C}\right.$ to $\left.+54^{\circ} \mathrm{C}\right)$ $-40^{\circ} \mathrm{F}$ to $+200^{\circ} \mathrm{F}\left(-40^{\circ} \mathrm{C}\right.$ to $\left.+93^{\circ} \mathrm{C}\right)$

Funtions as a reset/enter and displayed in numbers for control outputs
Also functions as a stop/enter, reset and prewarn mode
4-30 VDC negative edge resets Counter A and control output

EEPROM stores data if power is lost
Marked compliant w/ EMC directive 89/336/EEC (1989) Light Industrial Class 1

## Model Numbering System



Controller Type
MR10 $=$ Rateltotalizer *
MB10 $=$ Batch controller *
Operating Voltage
$\mathrm{A}=110 \mathrm{VAC} \pm 15 \%$ or $11-15 \mathrm{VDC} *$
$\mathrm{B}=220 \mathrm{VAC} \pm 15 \%$ or $11-15 \mathrm{VDC}$
$\mathrm{C}=24 \mathrm{VAC} \pm 15 \%$ or $11-15 \mathrm{VDC}$
Control Inputs
3 = High impedance DC pulse 4-30 VDC *
3M = Magnetic pick-up input 30 mV on input A only, 4-30 VDC on input B

## MR1000only.

3MB = Magnetic pick-up input 30 mV on inputs A \& B
9 = Quadrature pulse, 4-30 VDC
9MB = Quadrature pulse, 30 mV
Options (Choose One)
0 = None *
$1=$ RS232 serial communication
$2=$ RS422 serial communication
A = Analog output ( $4-20 / 0-20 \mathrm{~mA}$ )
*Standard Configuration
Specifications are for reference only and are subject to change without notice.

## Local Representative:



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