

MODELS

MC

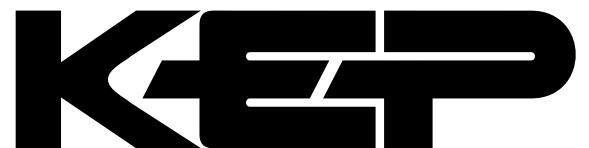
MR

MINICOUNT & MINIRATE

INSTALLATION & OPERATING INSTRUCTIONS



<http://www.kep.com>



KESSLER-ELLIS PRODUCTS

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GENERAL SPECIFICATIONS

This series consists of 2 products:

- 1) MINICOUNT(MC)-A dual input, bidirectional counter.
- 2) MINIRATE (MR)-A single input ratemeter.

SPECIFICATIONS

DISPLAY: 6 digit, 0.55" High LED

INPUT POWER: 110 VAC \pm 15% or 12 to 15 VDC; 220 VAC \pm 15% or 12 to 15 VDC; 24 VAC \pm 15% or 12 to 15 VDC

CURRENT : Maximum 250 mA DC or 6.5 VA at rated AC voltage

OUTPUT POWER: (AC powered units only) +12 VDC @ 50mA unregulated -10+50%

TEMPERATURE:

Operating: +32 F (0 C) to 130 F (+54 C)

Storage: -40 F (-40 C) to +200 F (93 C)

MEMORY: EEPROM stores data for 10 years if power is lost

INPUTS:

3: High Impedance DC pulse input 4-30 VDC (high), Open or 0-1 VDC (low), 10 K Ω imp. 10 kHz max. speed. Accepts simultaneous inputs. May be used with KEP 711 series or 715-1 encoders or PD & D series sensors.

3M: Mag. Input, Input A only, accepts 30mV input (50 V max. P/P) signals 10 K Ω imp. 5 kHz max. (Input B, 4-30V)

3MB: Mag. Input, Inputs A & B, accepts 30mV input (50 V max. P/P) signals 10 K Ω imp. 5 kHz max.

5: 4-30 V Count pulses on Input A, 4-30 V Direction Control input (level) on Input B. May be used with KEP 715-2 Encoder.

5M: 30 mV Count pulses on Input A (50 V max. P/P) 4-30 V Direction Control input (level) on Input B.

9: Quadrature, accepts 4-30 V pulses with 90° phase shift for direction detection. May be used with KEP 716 encoder.

9MB: Quadrature, accepts 30 mV (50 V max. P/P) pulses with 90° phase shift for direction detection.

NOTE: The Mag. inputs have filtering as follows: up to 300hz @30mV, 5KHz @ .25V to 50V max.

STANDARD: High impedance DC pulse input.

QUADRATURE: Accepts pulses 90° out of phase for up/down counting. Internal logic converts quadrature signals to separate counts for input A and input B.

NOTE: Rate is only displayed if input A precedes input B.

UP/DOWN CONTROL: With this option, Input A is the count input and Input B is the direction control input. When Input B is low, the display will count down. When Input B is high, the display will count up.

RESET:

Front Panel: Resets displayed value and control output

Remote: 4-30 VDC (75-240 V AC/DC, Input 8) negative edge resets counter and control output

RATEMETER: Accurate to 5 digits \pm 1 display digit. In the "RPS" mode, the ratemeter displays in units per second, and in the "RPH" mode, units per hour or "RPM" per minute.

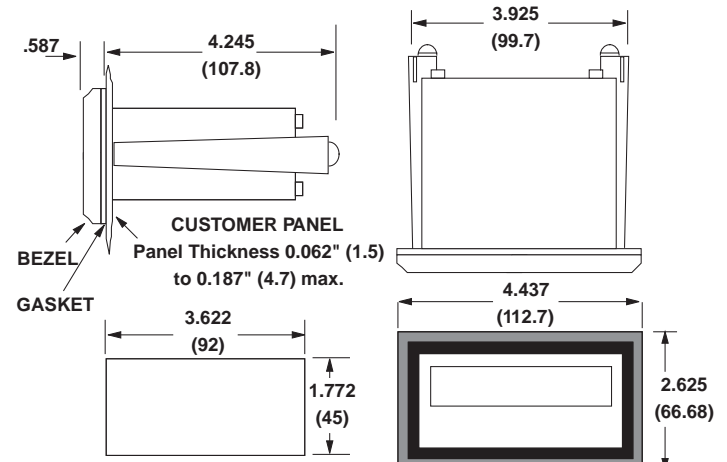
COUNTER: The counter can count at 9.99 KHz speed. The counter advances on the positive edge of each pulse. Count up or down modes are available, as are quadrature inputs from encoders for position or length measurement. The unit will display a negative sign when counting below zero.

DECODING PART NUMBER

MINItrol (MR, MC)

Example:	MC	H	A	3	M (MR ONLY)	1
Series:	MC=	H=	A=	3=	M=	1=
	5 digits, rate display only no presets, no scaling				6 digits, dual input, bi-directional counter only, no presets, no scaling	
Input Speed:						
						L = Low speed input debounce filter 40 Hz max. H = High speed input (0 to 9.99 kHz)
Operating Voltage:						
						A= 110 VAC \pm 15% or 12 to 15 VDC B= 220 VAC \pm 15% or 12 to 15 VDC C= 24 VAC \pm 15% or 12 to 15 VDC
Count Input:						
						3 = Standard, 4-30 VDC simultaneous inputs. 3M = Mag. Input, Input A only, 30mV input (Input B, 4-30V) 3MB = Mag. Input, Inputs A & B, 30mV input 5 = 4-30 V pulses on Input A, 4-30 V Direction Control input on Input B. 5M = 30 mV pulses on Input A, 4-30 V Direction Control input on Input B 9 = Quadrature, accepts 4-30 V pulses 9MB = Quadrature, accepts 30 mV pulses (A & B)
Rate Time Base: MR ONLY						
						S= RPS (rate per second) M= RPM (rate per minute) H= RPH (rate per hour)
Options:						
						1= RS232 Communications 2= RS422 Communications

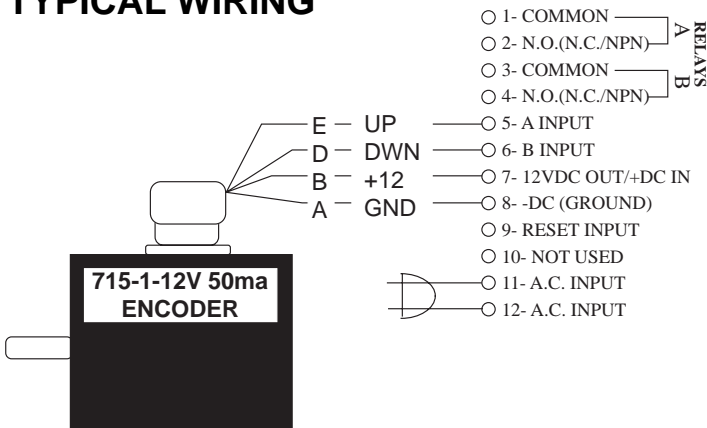
DIMENSIONS



MINICOUNT (MC SERIES)

This unit is a dual input, bi-directional totalizer only. This unit does not have presets, outputs or scaling available. Each pulse received on input A or input B equals one count. The Minicount has separate up and down inputs. Pulses on pin 5 (input A) will count up (add); pulses on pin 6 (input B) will count down (subtract), even if the pulses occur simultaneously. Low and high count speed debounce filtering is factory set, output relays are not supplied with this unit. The MC series is perfect for applications where a low cost, bi-directional totalizer is needed.

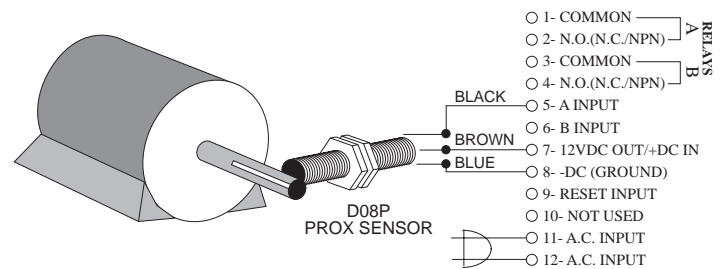
TYPICAL WIRING



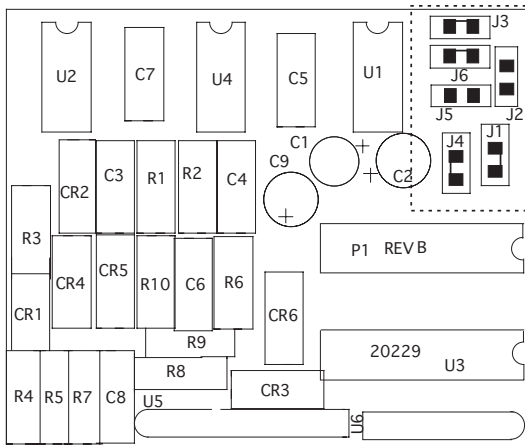
MINIRATE (MR SERIES)

This unit is a rate per minute (RPM), rate per second (RPS) or rate per hour (RPH) ratemeter only. This unit does not have presets, outputs or scaling available. Each pulse received on input A equals one unit of measure. Input B is not used on the Minirate. The minimum rate input must be at least one pulse every 15 seconds. The display updates every second and displays five (5) significant figures with a floating decimal. The Minirate comes standard with a 24-second window. This means that the unit will "look" for valid input pulses for 24 seconds before the display defaults to 0. Low or high count speed debounce filtering is factory set, relay outputs are not supplied with this unit. The MR series is perfect for applications where a low cost, simple ratemeter is needed.

TYPICAL WIRING



MILLIVOLT INPUT OPTION JUMPER SELECTIONS



If the unit has the millivolt input bd.# 20229, A & B inputs can be separately solder jumper programmed to accept either a low millivolt or 4-30 V input. Each unit shipped is programmed according to part number. If solder jumpers are made, the part number should be modified to reflect the changes made

C=CLOSE, O=OPEN

	4-30V INPUT	Millivolt INPUT
Input A	J1-O, J2-C, J3-O	J1-C, J2-O, J3-C
Input B	J4-O, J5-C, J6-O	J4-C, J5-O, J6-C

WARRANTY

This product is warranted against defects in materials and workmanship for a period of two (2) years from the date of shipment to Buyer.

The Warranty is limited to repair or replacement of the defective unit at the option of the manufacturer. This warranty is void if the product has been altered, misused, dismantled, or otherwise abused.

ALL OTHER WARRANTIES, EXPRESSED OR IMPLIED, ARE EXCLUDED, INCLUDING BUT NOT LIMITED TO THE IMPLIED WARRANTIES OF MERCHANTABILITY AND FITNESS FOR A PARTICULAR PURPOSE.