MINITROL-S

Totalizer/Ratemeter with Separate Scaling of Rate/Total

Features

- Separate Scaling Factors For Rate & Total
- Display Rate & Total
- 30mV Magnetic Pickup Inputs (optional)
- Count Inhibit Input for Meter Proving
- Security Lockout
- RS422/RS232 Serial Communication (optional)
- NEMA 4X / IP65 Front Panel
- 4-20mA or 0-20mA Analog Output (optional)

DESCRIPTION:
The totalizer and ratemeter display each have their own 5 digit dividing scale factor. The two 5 AMP preset relay outputs can be programmed by the user to apply to the "A" total counter or the "A" ratemeter. The user can view the rate, total and grand total. The B relay can be used to create a scaled pulse output. Magnetic pickup input, analog output and RS232 communication options are available.

SPECIFICATIONS:
DISPLAY: 6 digit, 0.55" High LED
INPUT POWER:
110 VAC ± 15% or 12 to 15 VDC
220 VAC ± 15% or 12 to 15 VDC
24 VAC ± 15% or 12 to 15 VDC
CURRENT: 250 mA DC max. or 6.5 VA (6.5W) AC
OUTPUT POWER (AC powered units only)
+12 VDC @ 50 mA, 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 KΩ imp. 10 kHz max. speed.
3M: Mag. Input, Rate/total input only, accepts 30mV input (50 V max. P/P) signals 10 KΩ imp. 5 kHz max. (Inhibit input, 4-30V)
NOTE: The Mag. input has filtering as follows: 30mV trigger level up to 300Hz , 0.25 V trigger level at 5KHz
RESET:
Front Panel: Resets displayed total value and control output.
Remote: 4-30 VDC negative edge resets the A total and relay control output.
NOTE: The remote reset does not reset the grand total.
LISTING: CE Compliant ,
NRTL/C pending
K FACTOR/SCALING:
The K-Factors are used to convert the input pulses to engineering units. The 5 digit K-Factor dividers, with decimal keyed into any position, allow easy direct entry of any K-Factor from 0.0001 to 99999. Separate factors may be entered for rate and total permitting rate display to be in a different unit of measure than the total.

CONTROL OUTPUTS:
Relays:
2 each N.O. Relay; 5 Amps, 120/240 VAC or 28 VDC. (N.C. relay contacts and NPN transistor output available via solder jumpers.
Analog Output:
An optional 4-20mA (0-20mA) output is available for the Minitrol series. The output can be programmed to track rate or total. This feature is available by adding suffix A to the part number. Connections are via a 2 terminal pluggable screw connector. Programming is accomplished by using the front panel in conjunction with rear dip switches.
Accuracy: ± 0.25% FS
Compliance Voltage: 3 to 30 VDC non inductive.
RS232/RS422
If the serial interface option is supplied, multiple units can be linked together. (The terminal addressing the unit must be capable of driving all loads in the loop.) Unit status and new set points can be communicated by serial communication. Mode changes, however, must always be made on the front panel. Data is received and transmitted over standard EIA RS232 or RS422 levels. Unit number, baud rate and parity are entered in the "Program Setting" set up mode and remain in memory even if power is off.
RS232/RS422/RS485 with Modbus RTU Protocol:
The serial port can be used for serial printing or also for data acquisition. The unit can assign addresses up to 247 units (The terminal addressing the unit must be capable of driving all loads in the loop.) The unit can communicate with a master device through a Modbus-RTU protocol. The data given for each parameter is in IEEE float format comprising of 2 words. The unit can be connected in a network.
Device ID: 01-247
Baud Rates: 300, 600, 1200, 2400, 4800, 9600
Parity: None, Odd, Even
Protocol: Modbus RTU (Half Duplex)
PRESETS:
Two control outputs are provided. To set relay A or B's functionality, press "menu" button until "Relay" appears on the display, the A and B outputs can be assigned to the rate alarm (high/low), or for total/grand total. A 5 digit value can be entered for both presets A and B. The decimal point location is the same as the counter. The outputs can be set to energize from 0.1 to 99.9 seconds or latch (0.0). If a value other than 0.0 is entered, the corresponding totalizer will auto reset at the preset. This may be used to create a relay scaled pulse output.

REV: 06/23/25

LOCKOUT:

Unauthorized front panel changes can be prevented by entering a user selected 5 digit code, in the “LOC” mode. The front panel can be completely locked out or the presets can remain accessible.

RATEMETER

Accurate to 4 1/2 digits (±1 display digit). The rate meter can be programmed to:

- accept almost any number of pulses per unit of measurement
- determine rate for slow pulsing signals (up to 24 sec).
- auto-range up to 5 digits of significant information.

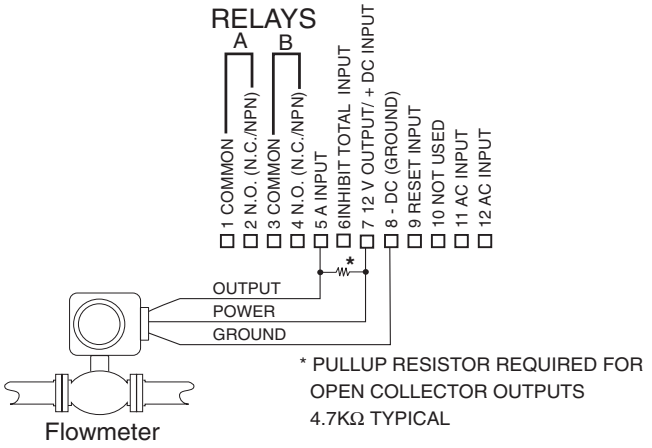
The display can be programmed to read in units per Second (SEC), Minute (n min), Hour (Hour), or Day (dAY).

TOTALIZER:

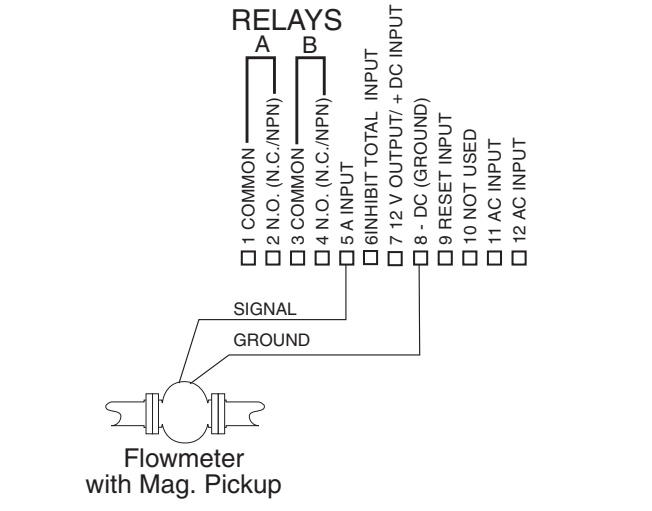
The two 6-digit totalizers can count at 10kHz speed. They share a 5-digit dividing scale factor. The totalizer advances on the positive edge of each pulse.

TYPICAL SENSOR HOOKUP:

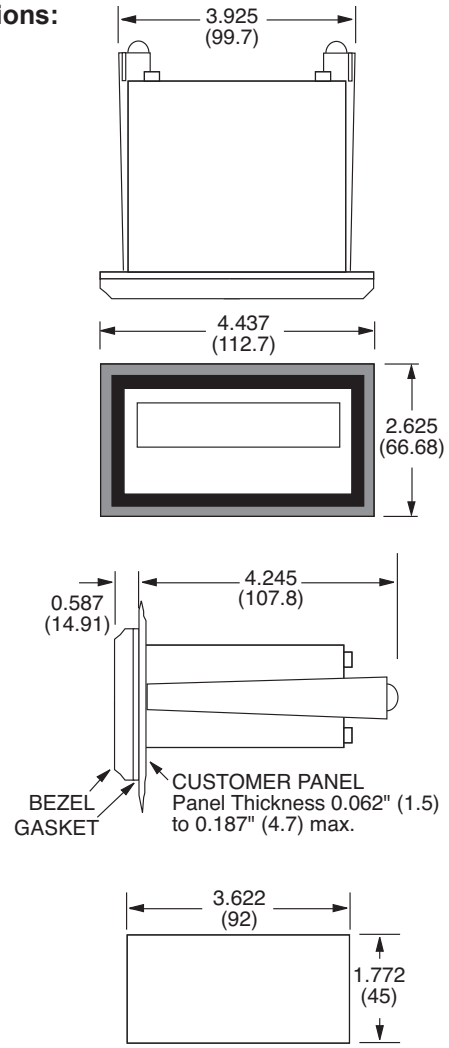
High Level Pulse



Low Level Pulse (Mag Pickup)



Dimensions:



Ordering Information

Example: MRTS A 3 1

Series:

MRTS= 6 digit counter / 5 digit ratemeter with presets and scaling.

Operating Voltage:

A= 110 VAC ± 15% or 12 to 15 VDC
B= 220 VAC ± 15% or 12 to 15 VDC
C= 24 VAC ± 15% or 12 to 15 VDC

Count Inputs:

3 = Standard, 4-30 VDC simultaneous inputs.
3M = Mag. Input, rate/total input only, 30mV input (Inhibit input, 4-30V)

Options

1= RS232 Communications
2= RS422 Communications
3= Modbus RTU RS232
4= Modbus RTU RS422/RS485
A= Analog Output (4-20/0-20 mA)

NOTE: RS232/RS422/RS485 & Analog Output options can not be combined

Accessories

Separate non keyboard panel order #34235
Separate keyboard panel - order #34234
NEMA4 wall mount enclosure available see LCN4X & MS821
Explosion proof enclosure available, see XHV
Serial printer available, see P1000, P295
Ethernet Port Server available, see IEPS
RS-422/485 to RS-232 Communication Adaptor available, see CA285
Modbus DDE/OPC Server available, see KEPserver