

BAT R/T

Battery Powered Ratometer & Totalizer

Features

- Magnetic Pickup Input, Contact Closure Input, DC Pulse Input (Optically Isolated)
- Displays Rate & Total Simultaneously
- 4 1/2 Digit Rate Display, 8 Digit Totalizer Display
- 4-20mA Analog Output Option
- Powered From Internal Battery, External DC Supply or 4-20 mA Output Loop
- 10 Pt. Linearization
- New & Improved Isolated Scaled Pulse Output



- Intrinsically Safe Option
- New, Attractive NEMA4 Wall Mount Enclosure with User Access to Keypad

Description

Featuring 4^{1/2} digits of rate and 8 digits of total, the BAT R/T is a battery powered indicator capable of accepting magnetic pickup, DC pulse and switch closure inputs from pulse producing flowmeters. The unit can be ordered with an optional 4-20mA output. The BAT R/T uses the 4-20mA loop to provide power when this output is used.

Specifications

Power:

BATTERY POWERED

Supplied with 2 C size Lithium battery pack.

EXTERNAL POWER INPUT

Voltage: 8.5 to 30 VDC

Current: Less than 5 mA

Supplied with 1 C size lithium battery for standby operation

Protection: Reverse Polarity Protection on DC Power Input

LOOP POWERED

Voltage: 8.5 to 30 VDC

Supplied with 1 or 2 C size lithium battery(ies) for standby operation

Protection: Reverse Polarity Protection on Current Loop
Loop Burden: 8.5V maximum

Display:

Rate Display: (selectable decimal)

4.5 Digits (19999), 0.35" High, Display updates once every two seconds

Rate Descriptors: /SEC, /MIN, /HR (/DAY optional)

Min. Input Frequency: .125 Hz to 10 Hz (selectable delay of 0.1 to 8.0 seconds)

Totalizer Display: (selectable decimal)

8 Digits (99999999), 0.2" High

Totalizer Descriptors: GAL, LIT, FT3, M3, "blank" (BBL optional)

Warning Displays: Low battery warning "BAT"

Pulse Output:

The pulse output advances with the least significant digit of the totalizer or decimal multiples thereof (see Pulse output divider).

Type: Isolated photomos relay

Max. voltage (off state): 30 VDC

Current (on state): 100mA

Pulse Duration: Selectable (see below)

Pulse Output Rate: Selectable (see below)

SPEED (HZ)	1	2	4	8
Min. on/off (msec)	500	250	125	62.5

Pulse output divider: User selectable, +1, +10, +100 or OFF

NOTE: Select OFF for max. battery life.

Battery Life Expectancy

RUN TIME

	Idle	2hrs/day	8hrs/day	24hrs/day
BATRT A	5 yrs	4.5 yrs	3.5 yrs	2.1 yrs
BATRT A 4	5 yrs	3.7 yrs	2.7 yrs	1.5 yrs
BATRT B/C Standby Operation	2.5 yrs	2.25 yrs	1.75 yrs	1 yr
BATRT B/C External or Loop Power	10 years			

All of the above values are calculated with the pulse output ON. Turn the pulse output OFF to prolong battery life up to 30%.

Mounting Styles:

- 0- Circuit Board- OEM option (consult factory)
- 1- Panel Mount - NEMA 4X Front
- 2- Wall Mount - NEMA 4X Enclosure with BAT R/T mounted behind clear cover
- 3- Explosion Proof - Class I, Division I, Groups B, C & D
Class II, Division I, Groups E, F & G
- 5- Wall Mount - NEMA 4X with keypad mounted outside opaque cover

Environmental:

OPERATING TEMPERATURE

-4°F (-20°C) to + 158°F (70°C)

Extended Temp: -22°F (-30°C) to + 158°F (70°C)

HUMIDITY

0 - 90% Noncondensing

Accuracy:

0.01% Reading, ±1 count

Temperature Drift:

50 ppm/°C Worst Case

Inputs:

MAGNETIC PICKUP INPUT

Frequency Range: 0 to 3500 Hz

Trigger Sensitivity: 30 mV p-p

Over Voltage Protected: ± 30 VDC

OPTO-ISOLATED DC PULSE INPUT

High (logic 1): 4-30 VDC

Low (logic 0): Less Than 1 VDC

Minimum Current: .5 mA

Hysteresis: 0.4 VDC

Frequency Range: 0 to 5 kHz

Min. Pulse Width: 0.1 msec

CONTACT CLOSURE INPUT (contact closure to common)

Internal Pullup Resistor: 100 KΩ to +3.6 VDC

High (logic 1): Open or 4-30 VDC

Low (logic 0): Less Than .5 VDC

Internal Switch Debounce Filter: 0 to 40 Hz

RESET INPUT (contact closure to common)

Internal Pullup Resistor: 100 KΩ to +3.6 VDC

High (logic 1): Open or 4-30 VDC

Low (logic 0): Less Than .5 VDC

Minimum On : 25 msec

K-FACTOR

Range: 0.001 to 59999 (divider)

Decimal Point Locations: XX.XXX to XXXXX

10 Point Linearization Option

This feature allows the user to enter 10 different frequencies with 10 different corresponding K-Factors to linearize non linear signals.

Analog Output Option:

Type: 4-20 mA follows rate display, Two wire hookup

Accuracy: 0.15% Full Scale at 20° C

Temperature Drift:

50 ppm/°C Typical

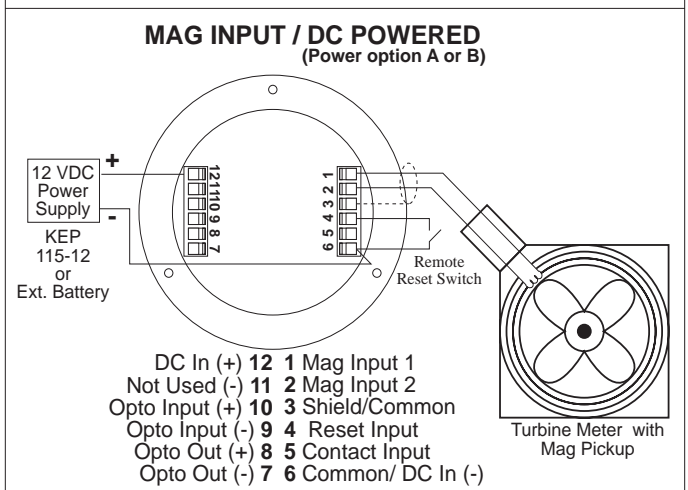
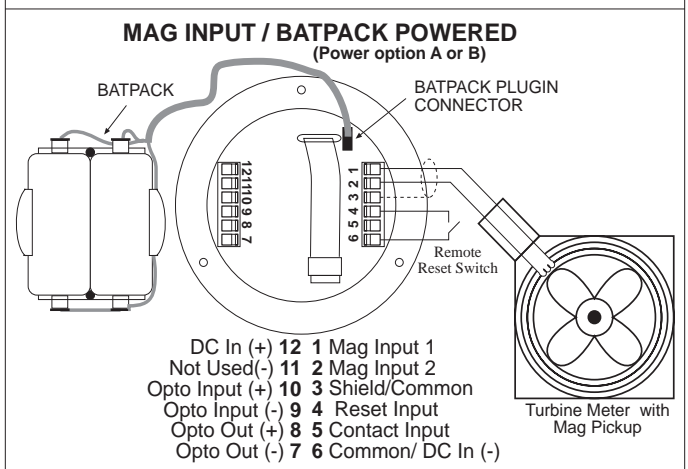
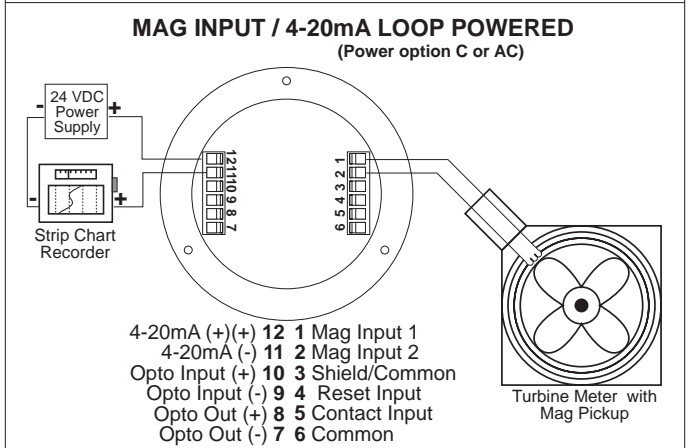
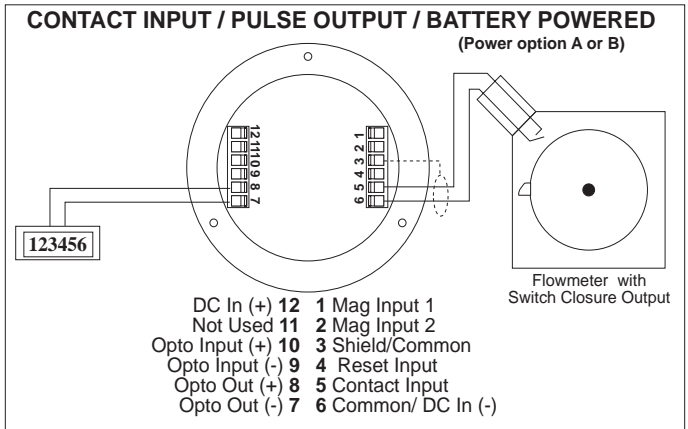
200 ppm/°C Worst Case

Reverse Polarity Protected

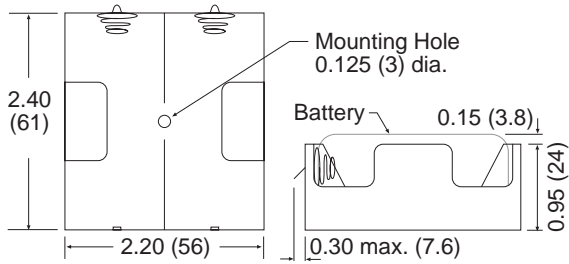
NOTE: The BAT R/T uses the 4-20 mA loop power as its power source when this option is used.

Listing: CE Compliant,
CSA(NRTL/C)(File No. LR91109) (x-proof only)
UL IS Listed

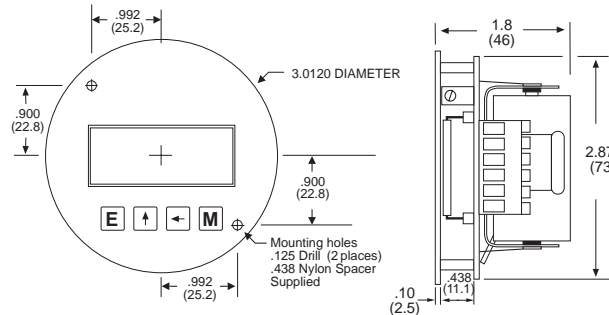
Typical Wiring:



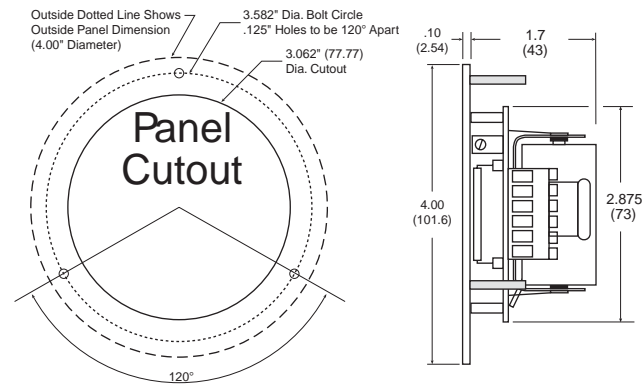
BATPACK



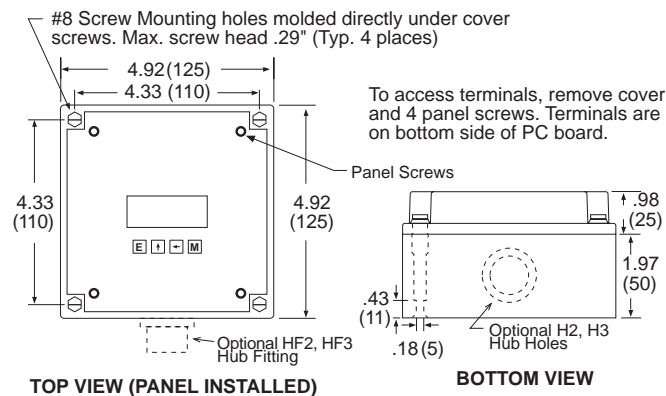
BATRT-0



BATRT-1

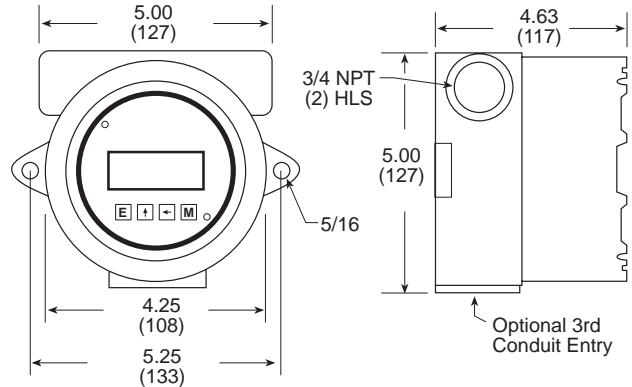


BATRT-2

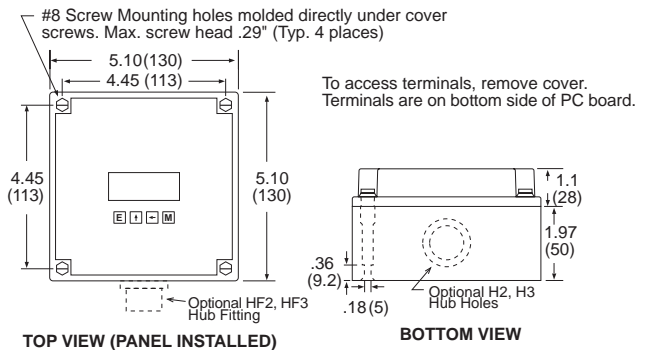


BATRT-3

To access terminals, unscrew cover and loosen 2 panel screws. Terminals are on bottom side of PC board.



BATRT-5



Ordering Information

EXAMPLE: **BATRT** **3** **A** **4 ET**

- Series:** _____
- Mounting:** _____
- * 0 = OEM
 - * 1 = Panel Mount
 - 2 = NEMA 4X Box (Bat R/T behind clear cover)
 - 3 = Explosion Proof Housing
 - 5 = NEMA 4X Box (Bat R/T outside opaque cover)
 - 6 = Double Ended Explosion Proof Housing (consult factory)
- Power Supply:** _____
- * A = Battery (2 supplied)
 - B = External Power Supply (8.5 to 30 VDC)
 - C = Loop Powered with 4-20 mA Output
 - AC = Loop Powered with 4-20 mA Output and 2 Batteries
- Options** (Multiple Options Available) _____
- 4 = 10 Point Linearization
 - D = Rate per Day, Hour or Minute
 - ET = Extended Temp.: -22°F to 158°F (-30°C to 70°C)
 - CE = CE Compliant
 - CSA = CSA Listed Explosion Proof
 - IS = UL listed IS
 - TRX = NEMA7 Explosion Proof Reset Switch (mount style 3 only)
 - RN = External Magnetic Reset
 - T = Third Conduit Entry in Ex-Proof Housing (mount style 3 only)
 - H2 = 0.875" Hole for mounting styles 2 and 5
 - HF2 = 0.5" Female NPT Hub fitting for mounting styles 2 and 5
 - H3 = 1.125" Hole for mounting styles 2 and 5
 - HF3 = 0.75" Female NPT Hub fitting for mounting styles 2 and 5

- Accessories:**
- BATPACK= External Battery Pack with Two C Size Batteries & 12" leads
 - BATC = Single Battery; Tadiran P/N TL2200/S 3.6V 5500mAh or equal
 - 115-24 = 115 VAC to 24 VDC power supply

* External battery pack supplied with models BATRT0A & BATRT1A