

BAT RAT

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 (optional)
- Powered From Internal Battery, External DC Supply or 4-20 mA Output Loop
- 10 Pt. Linearization (optional)
- Isolated High/Low Flow Rate Alarm Output

Description

Featuring 4^{1/2} digits of rate and 8 digits of total, the BAT RAT is a battery powered indicator with flow rate alarm output. It is 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 RAT 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 C size lithium battery 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, 2 sec. display update rate

Rate Descriptors: /MIN, /HR, /DAY

Min. Input Frequency: .125 Hz to 10 Hz

Totalizer Display: (selectable decimal)

8 Digits (99999999), 0.2" High

Totalizer Descriptors: GAL, BBL, MCF, M3, "blank"

Warning Displays: Low battery warning "BAT"

Alarm Output:

Combination High-Low flow rate alarm output activates when flow rate is less than low set point or greater than high set point.

Type: Opto-isolated photomos relay

Max. voltage (off state): 100 VDC

Current (on state): 100 mA

Mounting Styles:

- 0- Circuit Board- OEM option (consult factory)
- 1- Panel Mount - NEMA 4X Front
- 2- Wall Mount - NEMA 4X Enclosure with BAT RAT 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

Battery Powered Ratemeter & Totalizer with Alarm Output



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

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

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

Multiplier: 1, 10, 100, 1000

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:

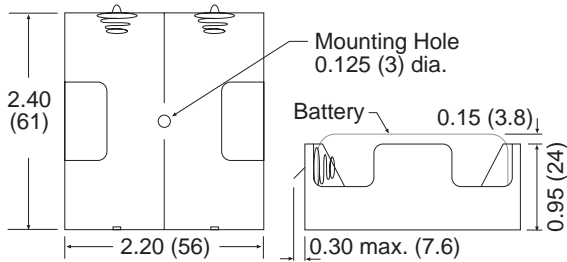
50 ppm/°C Typical (200 ppm/°C Worst Case)

Reverse Polarity Protected

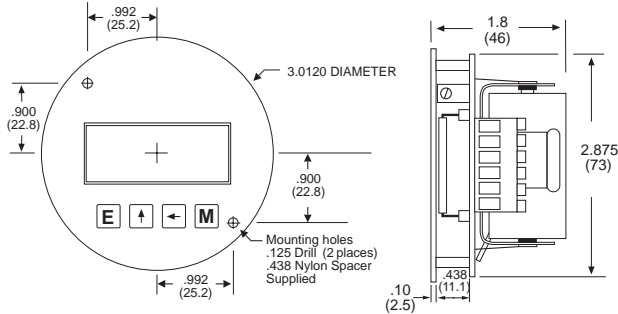
NOTE: The BAT RAT uses the 4-20 mA loop power as its power source when this option is used.

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

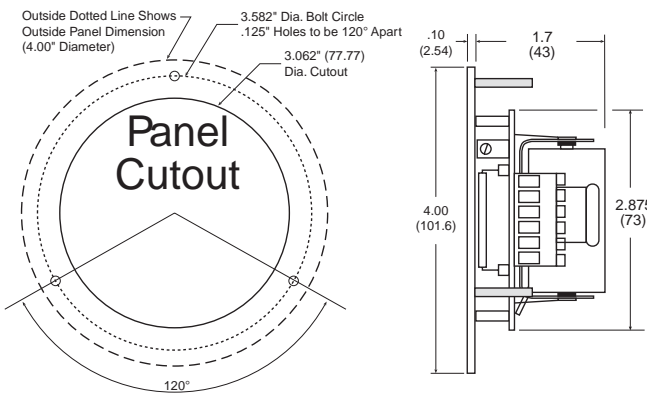
BATPACK



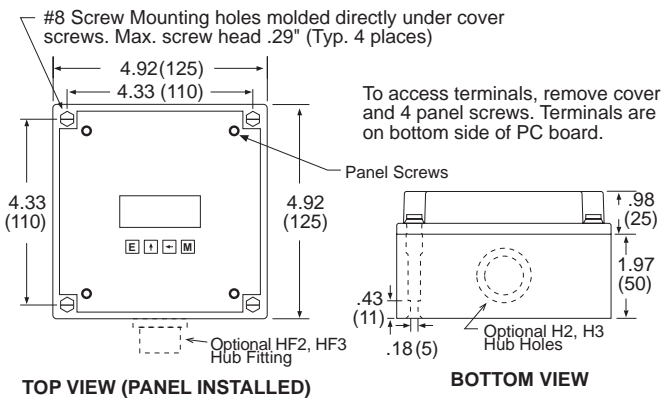
BATRAT-0



BATRAT-1

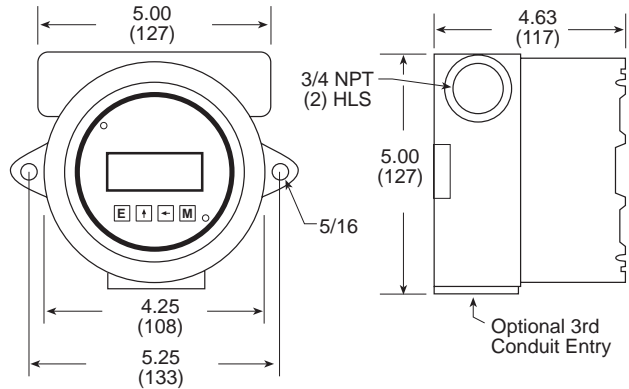


BATRAT-2

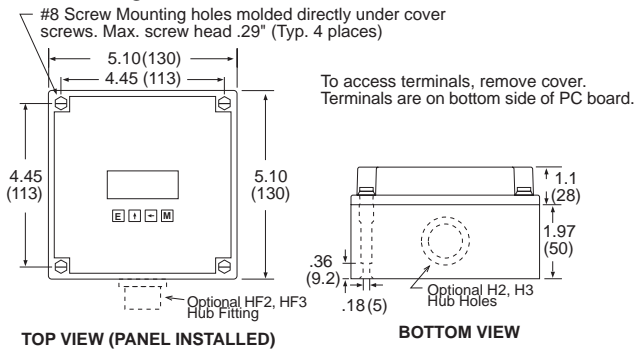


BATRAT-3

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



BATRAT-5



Ordering Information

EXAMPLE: **BATRAT 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

ET = Extended Temp.: -22°F to 158°F (-30°C to 70°C)

CE = CE Compliant

CSA = CSA Listed Explosion Proof (mount style 3 only)

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 BATRAT0A & BATRAT1A

BAT D/T

Features

- Magnetic Pickup Input, Contact Closure Input, DC Pulse Input (Optically Isolated)
- Displays 5 Digit Resettable Total
8 Digit Grand Total
- 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

Description

Featuring 5 digits of resettable total and 8 digits of grand total, the BAT D/T is a battery powered indicator capable of accepting magnetic pickup, DC pulse and switch closure inputs from pulse producing flowmeters.

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

Battery Life Expectancy

RUN TIME

	Idle	2hrs/day	8hrs/day	24hrs/day
BATDT A or AC	5 yrs	4.5 yrs	3.5 yrs	2.1 yrs
BATDT A 4	5 yrs	3.7 yrs	2.7 yrs	1.5 yrs
BATDT B or C Standby Operation	2.5 yrs	2.25 yrs	1.75 yrs	1 yr
BATDT B or 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%.

DISPLAY:

Resettable Total Display

5 Digits (99999), 0.35" High, Display updates once every two seconds

Grand Totalizer Display: (selectable decimal)

8 Digits (99999999), 0.2" High

Totalizer Descriptors: GAL, LIT, FT3, M3, "blank"

Warning Displays: Low battery warning "BAT"

ACCURACY:

±1 count

Listing:

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

LCD Dual Totalizer (Resettable & Non-Resettable)



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

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: 62.5 mSec (max. output speed: 8 Hz)

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

NOTE: Select OFF for max. battery life.

MOUNTING STYLES:

- 0- Circuit Board - OEM option (consult factory)
- 1- Panel Mount - NEMA 4X Front
- 2- Wall Mount - NEMA 4X Enclosure with BAT D/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

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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