

915-BATRT-M

Battery or Loop Powered Ratemeter & Totalizer

Features

- Accepts Inputs From: Magnetic Pickups, Contact Closures, DC Pulses (Optically Isolated) from Pulse Producing Flowmeters
- Displays Rate & Total Simultaneously
 5 Digit Rate Display, 8 Digit Totalizer Display
- 4-20mA Analog Output Option (8 updates/sec)
- Powered From Internal Battery, External DC Supply or 4-20 mA Output Loop
- 20 Point Linearization (optional);
 10 Point Linearization with Data Logger option
- Isolated Scaled Pulse Output
- Nonvolatile Flash Memory of Setup Data
- RS485 Modbus RTU Communications and Data Logger (optional)
- Setup Software Available for Easy Programming and Monitoring Using a PC and Special Serial Cable
- Extended Battery Life



Mounting Style 1



Mounting Style 3



Mounting Style 3SS



Mounting Style 5



Mounting Style 6

Description

Featuring 5 digits of rate and 8 digits of total, the 915-BATRT-M is a battery or loop 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 915-BATRT-M uses the 4-20mA loop to provide power when this output is used.

Specifications

DISPLAY:

Rate Display: (selectable decimal)
 5 Digits (99999), 0.35" High, Display updates once per second with battery power, 8X per second with DC or Loop power
 Rate Descriptors: /SEC, /MIN, /HR
 /MIN, /HR, /DAY with "D" option
 Min. Input Frequency: 0.01 Hz to 10 Hz (selectable delay of 0.1 to 99.9 seconds) Selectable Rate Display Damping
 Totalizer Display: (selectable decimal)
 8 Digits (99999999), 0.2" High
 Totalizer Descriptors: GAL, LIT, FT3, M3, "blank"
 GAL, BBL, MCF, M3, "blank" with "D" option

Warning Displays: Low battery warning

PULSE OUTPUT:

The pulse output advances with the least significant digit of the totalizer or decimal multiples there of (see Pulse scale divider).
 Type: Isolated photomos relay
 Max. voltage (off state): 30 VDC
 Current (on state): 100mA
 Pulse Duration: Selectable 0.5, 0.25, 0.125, 0.0625 seconds
 Pulse Scale divider (Pulscale): User selectable, +1, +10, +100 or OFF
 NOTE: Select OFF for max. battery life.

ACCURACY:

0.01% Reading, ±1 count
 Temperature Drift: 50 ppm/°C Worst Case

SAFETY LISTINGS (Mounting Styles 3, 3SS):

CSA File 091109 (cert. 1120094)
 UL/C-UL File E225832
 CLASS 1, DIV 1, GROUPS B, C, D
 Additional "enclosure only" approvals available for ATEX and IEC

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

MOUNTING STYLES:

- 1- Panel Mount - NEMA 4X Front
- 3- Explosion Proof - Class I, Division I, Groups B, C & D
Class II, Division I, Groups E, F & G
Stainless Steel
- 3SS- Explosion Proof - Class I, Division I, Groups B, C & D
Class II, Division I, Groups E, F & G
NEMA 4X Enclosure
(keypad mounted on cover)
- 5- Wall Mount - NEMA 4X Enclosure
(keypad mounted on cover)
- 6- Double Ended Explosion Proof - Class I, Division I, Groups B, C & D
Class II, Division I, Groups E, F & G
(contact factory for details)

INPUTS:

MAGNETIC PICKUP INPUT

Frequency Range: 0 to 3500 Hz
 Trigger Sensitivity: 10 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

NOTE: Sustained contact closure will shorten battery life.

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

NOTE: Sustained contact closure will shorten battery life.

K-FACTOR

Range: 0.001 to 99999999
 Decimal Point Locations: XXXX.XXXX to XXXXXXXX

20 Point Linearization Option (10 Point with Data Logger option)

This feature allows the user to enter 20 different frequencies with 20 different corresponding K-Factors to linearize non linear signals.

ANALOG OUTPUT OPTION:

Type: 4-20 mA follows rate display, Two wire hookup
 Accuracy: 0.025% Full Scale at 20° C
 Temperature Drift:
 50 ppm/°C Typical
 Reverse Polarity Protected
 Update Rate: 8 times/second

NOTE: The 915-BATRT-M uses the 4-20 mA loop power as its primary power source when this option is used. The battery is still required for standby battery operation.

Power:

BATTERY POWERED

Supplied with 1 or 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
 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)
 Protection: Reverse Polarity Protection on Current Loop
 Loop Burden: 8.5V maximum

BATTERY LIFE EXPECTANCY:

Expected Years of Operation for 915-BATRT-M of various powering options at equipment duty cycles

MODEL

RUN TIME

MODEL	Idle	2hrs/day	8hrs/day	24hrs/day
915-BATRT-M-A	10 yrs	10 yrs	10 yrs	9.1 yrs
915-BATRT-M-A-4	10 yrs	10 yrs	10 yrs	8.4 yrs
915-BATRT-M -B/C	Indefinite operation when externally powered External or loop power			

NOTE: Battery shelf life is rated at 10 years by manufacturer
 Life expectancy based on rated battery capacity at 20°C
 The above table is shown with pulse output inactive. Use of pulse output shortens battery life.

Example: A pulse output of 0.06 sec. duration, once per second, would derate the battery life by 20%.

IDATA STORAGE:

Setup Information: Stored in flash memory
 Totalizer: Stored in battery backed RAM but can be saved to flash memory by operator for recall after battery change out.

COMMUNICATIONS OPTION (S1):

RS232 SERIAL SETUP SOFTWARE OPTION:

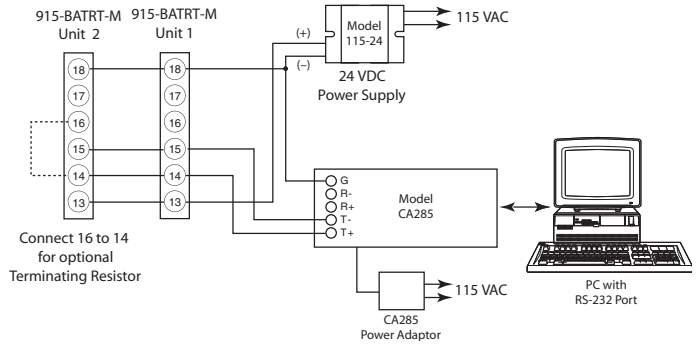
This option enables you to access a variety of process parameters through serial communications. PC compatible communications software is included with this option. With this software and a BAT R/T-M Serial Adapter Cable (BSAC1) you will be able to setup the BAT R/T-M through your PC.

RS-485 MODBUS and DATA LOGGER OPTION (S2):

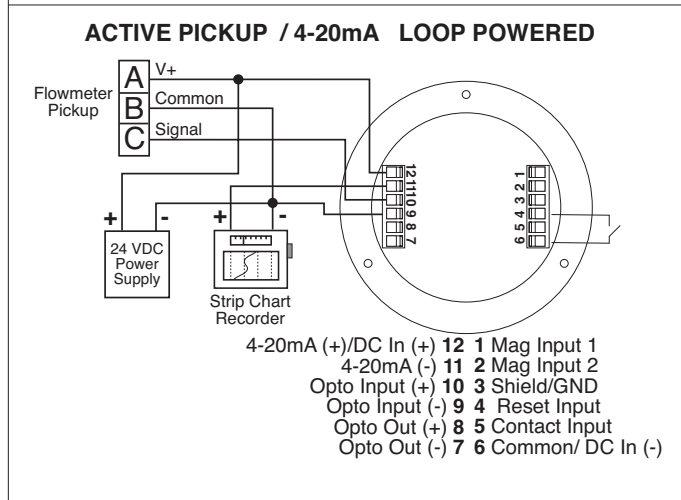
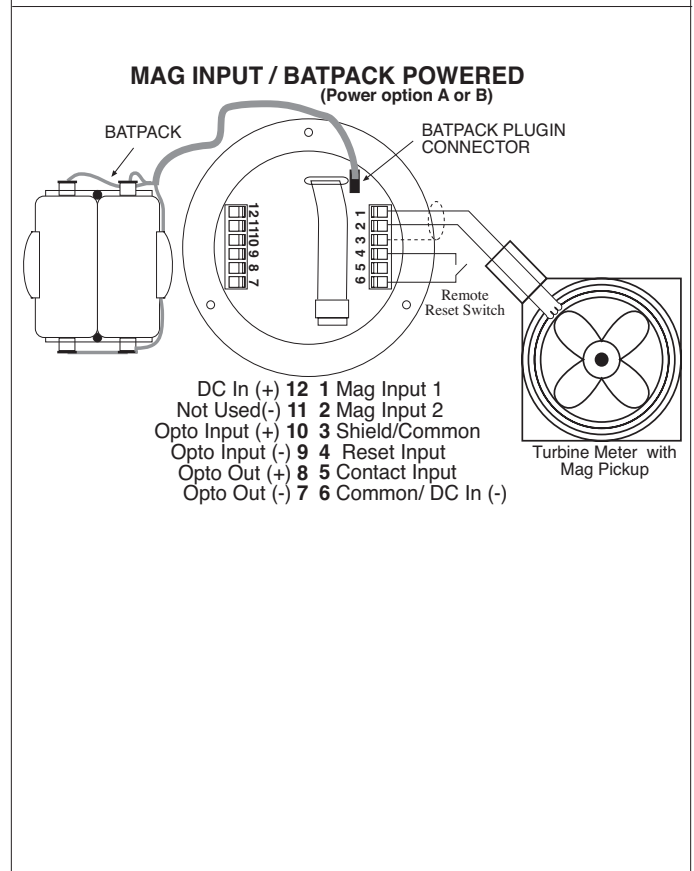
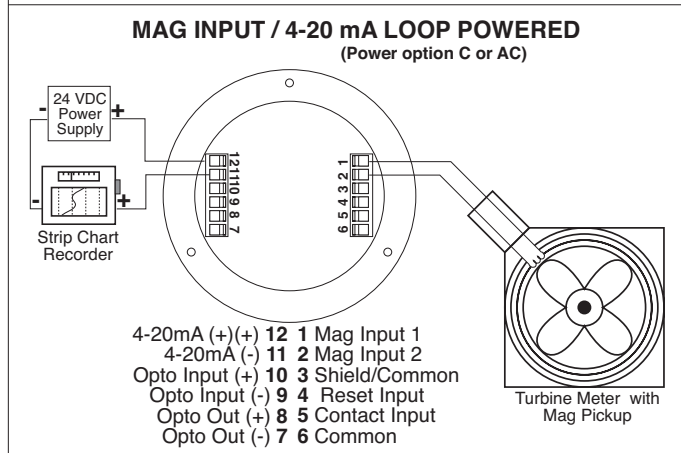
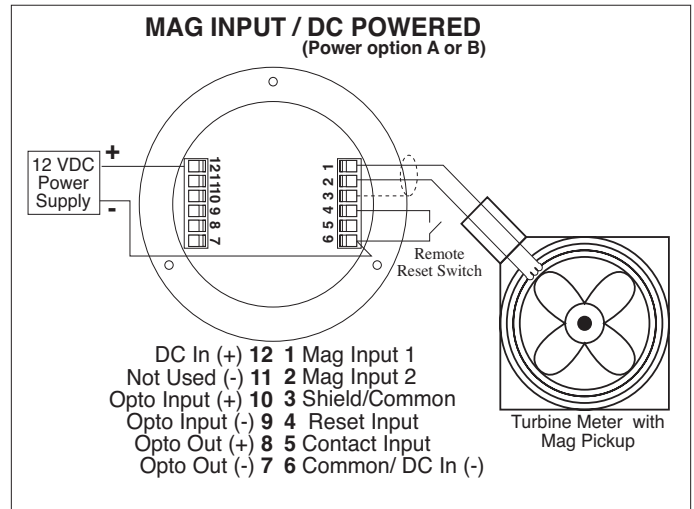
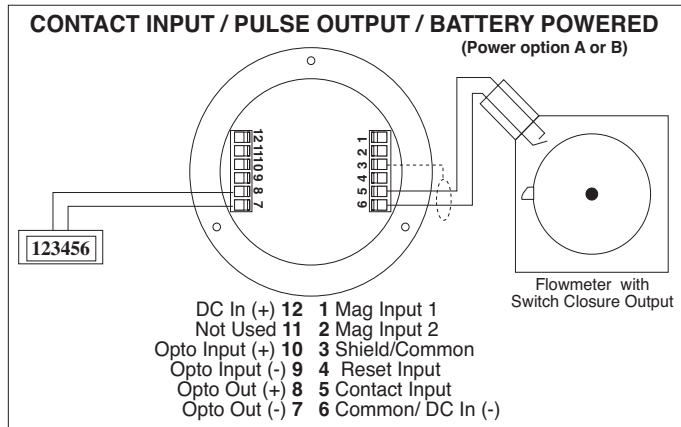
The optional RS-485 card utilizes Modbus RTU protocol to access a variety of process parameters. The Data Logger stores the totalizer to flash memory once every 24 hours at the time you set. The data logger can hold 27 days of totals, on the 28th day the oldest total in the logger is dropped. Requires external DC power: 6-28VDC (input is reverse polarity protected)

Current Draw:

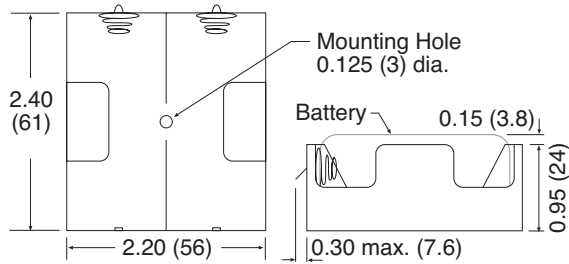
Receiving: 2 mA
 Transmitting: 125 mA (instantaneous peak)



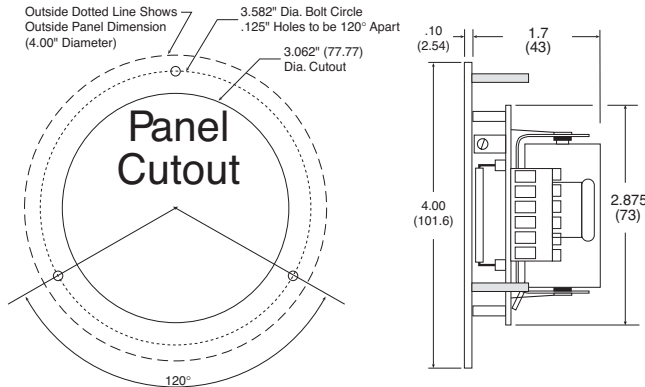
Typical Wiring:



BATPACK

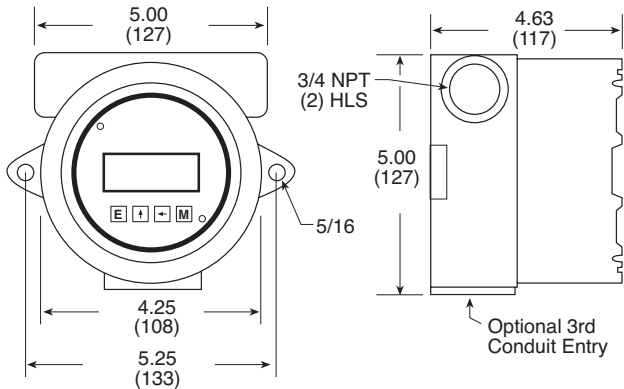


915-BATRT-M-1

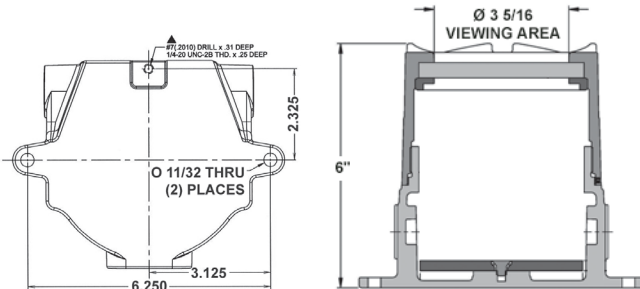


915-BATRT-M-3

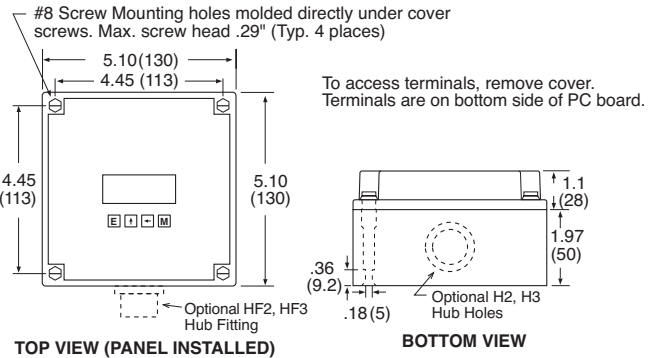
To access terminals, unscrew cover and loosen 2 panel screws. Terminals are on bottom side of PC board.



915-BATRT-M-3SS

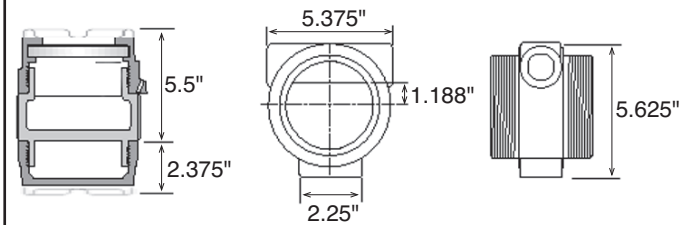


915-BATRT-M-5



NOTE: Additional entry holes may be provided on style 5.

915-BATRT-M-6



Ordering Information

EXAMPLE: 915-BATRT-M 3 A 4 ET

Series: _____

Mounting:

- * 1 = Panel Mount
- 3 = Explosion Proof Housing
- 3SS = Stainless Steel Ex-Proof Housing
- 5 = NEMA 4X Box (915-BATRT-M 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)

- S1 = Serial Setup Software for use with BSAC1
- S2 = RS485/Modbus/Data Logger - Isolated (power options B, C only)
- 4 = 20 Point Linearization (10 point with S2 option)
- 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 (planned)
- ATEXCASE** = European Flame Proof ATEX Case
- TRX = NEMA7 Explosion Proof Reset Switch (mounting style 3 and 6)
- RN = External Magnetic Reset
- T = Third Conduit Entry in Ex-Proof Housing (mounting style 3 and 6)
- H2 = 0.875" Hole for mounting style 5
- HF2 = 0.5" Female NPT Hub fitting for mounting style 5
- H3 = 1.125" Hole for mounting style 5
- HF3 = 0.75" Female NPT Hub fitting for mounting style 5

Accessories:

- BATPACK = External Batt. Pack with 2 C Size Batteries & 12" leads
- BATC = Single Battery: Tadiran P/N TL2200/S 3.6V 7200mAh or equal
- 115-24 = 115 VAC to 24 VDC power supply
- BSAC1 = RS232 Serial Adapter Cable with setup software

- * External battery pack supplied with model 915-BATRT-M1A
- ** Contact factory for latest information