OUTSTANDING FEATURES

- **HART® Field Communication Protocol**
- 5 Digit Rate, 8 Digit Totalizer LCD display with configurable decimal point location
- 8 Digit, Non-resettable Grand Total display
- Pulse Input supports turbine as well as many other pulse generating flowmeters
- 4-20mA Analog Output
- Up to 20 Point Linearization
- Optional Scaled Pulse Output representing an increment of volume for each pulse
- Two Optional Alarm Outputs configurable for Rate and Total
- Magnetically operated switch for Total reset
- Internal battery backup
- Configuration and Grand Total stored in non-volatile memory; Grand Total saved once per minute

GENERAL DESCRIPTION

Featuring 5 digits of rate and 8 digits of total, the HRT1 is a loop powered indicator capable of accepting magnetic pickup, DC pulse or switch closure inputs. The HRT1 uses the 4-20mA loop to provide power when this output is used and to provide the HART® communication link.

SPECIFICATIONS

GENERAL

TOTAL DISPLAY:
8 Digits 0.26” high. Resettable

Total Units: GAL, LIT, FT3, M3, BBL & “blank”

GRAND TOTAL:
8 Digits 0.26” high, Non-resettable. Value stored once per minute in non-volatile memory. Grand Total is displayed for 15 seconds after pressing the button.

RATE DISPLAY:
5 Digits 0.5” High, Display updates once every two seconds

Rate Units: /SEC /MIN /HR /DAY

K-factor: The pulses per unit of Total (e.g. pulses/gallon) are configurable in the range 0.001 to 99,999,999

Linearization: Up to 20 points

Decimal Points: Configurable for 0, .0, .00 or .000 for rate and total

Accuracy: Total: ±1 count, Rate: ±0.01%

INPUTS

Magnetic Pickup:
Frequency Range: 0.2 Hz to 5000 Hz
Signal Level: 30 mVpp to 30Vpp

Opto-Isolated DC Pulse:
Frequency Range: 0 Hz to 3000 Hz
Signal Type: DC Pulse

High (Logic 1): 4 to 30 VDC
Low (Logic 0): <1 VDC
Min Pulse Width: 0.1 msec

Contact Closure:
Frequency Range: 0 to 5000 Hz
Signal Type: Contact closure, Sig+ Terminal to DC common

Internal Pull-up: 220 KΩ to +3.3 VDC

Reset:
Signal Type: Contact closure, Reset Terminal to DC common

Min On: 25 msec
Internal Pull-Up: 100KΩ to +3.3 VDC
External Magnet: Activates internal magnetic switch
DC POWER/LOOP POWERED
Voltage: 8 to 30 VDC
Current: <24 mA
Loop Burden: 8 VDC maximum
Supply Backup: C-size Lithium battery or battery pack for Ex d certified system
Battery Life: 8 months w/no DC power
Protection: Reverse polarity protected

ANALOG OUTPUT
Scale: 4-20mA follows rate
Accuracy: 0.02% of Full Scale @ 20°C
Temperature drift: 40 ppm/°C
Update Time: 2.0 seconds
Connection: Two wire

PULSE OUTPUT
Type: 0-5 TTL, 0-Supply Voltage, open collector (30 VDC, 100mA)

ALARM 1 AND ALARM 2
Type: 0-5V TTL, 0-Supply voltage, open collector (30 VDC, 100 mA)
Function: Rate or Total

PHYSICAL
Operating Temperature:
-40°F (-40°C) to + 158°F (70°C)
Humidity: 0 - 90% Non-condensing
Packaging: NEMA 4X, Panel mount or Aluminum casting
Dimensions for NEMA 4X enclosure:
4.33” (110 mm) wide x 4.33” (110 mm) long x 4.33” (110 mm) tall

Ex d Ratings Certified Systems Style 3 & 7:

CSA/US Zones
Ex db IIb+H2 T6: Gb; Ex tb IIIC T72°C Db; IP66
CLASS I, Zone 1, AEx db IIb+H2 T6: Gb; Zone 21, AEx tb IIIC T72°C Db; IP66.

ATEX/IECEx:
II 2 G Ex db IIb+H2 T6 Gb
II 2 D Ex tb IIIC to T72°C Db Ip66
T1-T6= -40°C to +70°C

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The quality system covering the design, manufacture and testing of our products is certified to International Standard ISO 9001.