



TURBINE FLOWMETERS BY
HOFFER

Perfecting Measurement™



HRT1

Rate Indicator/Totalizer with
HART® Communication Protocol
Product Bulletin HRT1-111M

TECHNICAL DATA SHEET

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 mV_{pp} to 30V_{pp}

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)

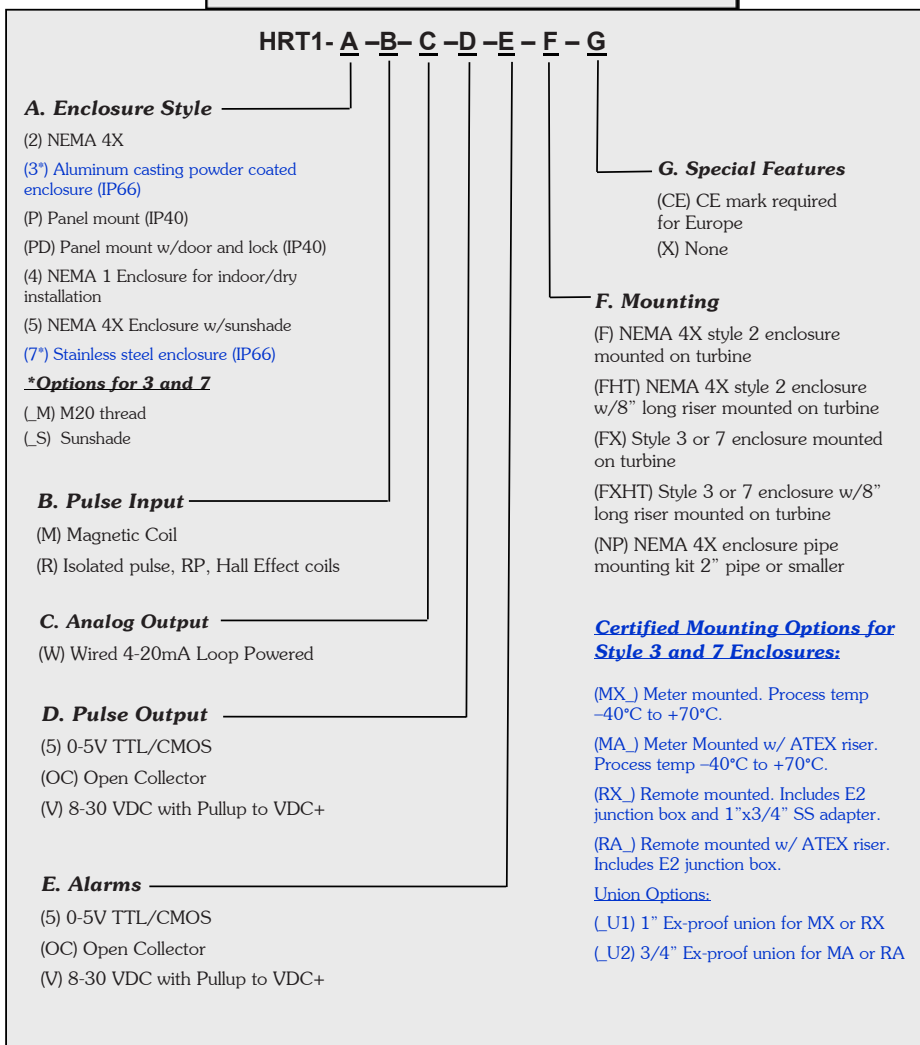
ALARM 1 AND ALARM 2

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

HRT1 ORDERING INFORMATION



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 specifications contained herein are subject to change without notice and any user of said specifications should verify from the manufacturer that the specifications are currently in effect. Otherwise, the manufacturer assumes no responsibility for the use of specifications which may have been changed and are no longer in effect.



Hoffer Flow Controls Quality Management System

