

HOFFER

Perfecting Measurement™



Счетчик-индикатор контроля HRT1

Технические характеристики

По вопросам продаж и поддержки обращайтесь:

Архангельск +7 (8182) 45-71-35	Калининград +7 (4012) 72-21-36	Новороссийск +7 (8617) 30-82-64	Сочи +7 (862) 279-22-65
Астана +7 (7172) 69-68-15	Калуга +7 (4842) 33-35-03	Новосибирск +7 (383) 235-95-48	Ставрополь +7 (8652) 57-76-63
Астрахань +7 (8512) 99-46-80	Кемерово +7 (3842) 21-56-70	Омск +7 (381) 299-16-70	Сургут +7 (3462) 77-96-35
Барнаул +7 (3852) 37-96-76	Киров +7 (8332) 20-58-70	Орел +7 (4862) 22-23-86	Сызрань +7 (8464) 33-50-64
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Владимир +7 (4922) 49-51-33	Липецк +7 (4742) 20-01-75	Пермь +7 (342) 233-81-65	Тула +7 (4872) 44-05-30
Волгоград +7 (8442) 45-94-42	Магнитогорск +7 (3519) 51-02-81	Ростов-на-Дону +7 (863) 309-14-65	Тюмень +7 (3452) 56-94-75
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TURBINE FLOWMETERS BY **HOFFER**

Perfecting Measurement™



HRT1

Rate Indicator/Totalizer with
HART® Communication Protocol

Product Bulletin HRT1-111G

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 reed switch for Total reset**
- ◆ **Internal battery backup**
- ◆ **Configuration and Grand Total stored in non-volatile memory; Grand Total saved once per minute**



Explosion-proof Enclosure Option

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_{p-p} to 30V_{p-p}

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 reed switch

HRT1 ORDERING INFORMATION

DC POWER/LOOP POWERED

Voltage: 8 to 30 VDC
 Current: <24 mA
 Loop Burden: 8 VDC maximum
 Supply Backup: (1) C-size Lithium battery
 Battery Life: 4 years typical
 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 Explosion-proof
 Dimensions for NEMA 4X enclosure:
 4.33" (110 mm) wide x 4.33" (110 mm) long x 4.33" (110 mm) tall

Enclosure Exd Ratings:

STYLE 3
CSA/FM: CLASS I, DIV.1, GR. ABCD, CLASS II, DIV.1, GR. EFG, CLASS III, TYPE 4X;
 CLASS 1 ZONE1 AEx d IIC, IP66

STYLE 3A
Same as above plus ATEX/IECEX: II 2 G Ex d IIC Gb; IP66

STYLE 7
CSA: CLASS I, DIV.1, GR. BCD, CLASS II, DIV.1, GR. EFG, CLASS III, TYPE 4X, IP66;
 CLASS I ZONE 1 Ex d IIB+H2, IP66
ATEX/IECEX: II 2 G Ex d IIC Gb; IP66

Basic Model Number	HRT1 - (A) - (B) - (C) - (D) - (E) - (F) - (G)						
Series:							
A. Enclosure Style:							
2	NEMA 4X Enclosure (HRT1 mounted behind clear cover)						
3*	Explosion-Proof Enclosure						
3A*	ATEX Exd Enclosure						
P	Panel Mount Enclosure						
PD	Panel Mount Enclosure with Door and Lock						
4	NEMA 1 enclosure (HRT1 mounted to the outside of clear cover for indoor/dry installation only)						
5	NEMA 4X enclosure (HRT1 behind clear cover) with Sunshade						
7*	ATEX Stainless Steel Explosion-Proof Enclosure						
*Options for Enclosure Style 3, 3A and 7							
(M)	Insert "M" for M20 Thread. M20 Thread not available for use in Canada						
(S)	Sunshade						
B. Pulse Input:							
M	Magnetic coil, Pulse, Dry contact						
R	Isolated Pulse, RPM, RPR, Hall Effect coils						
C. Analog Output:							
W	Wired 4-20mA Loop Powered						
T	Wireless 4-20mA Output. TBA (Coming in near future)						
D. Pulse Output:							
5	0-5 TTL/CMOS						
OC	Open Collector						
V	8-30 VDC with Pullup to V+						
E. Alarms: (Two opto-isolated alarms with user-defined levels for rate and/or total)							
5	0-5 TTL/CMOS						
OC	Open Collector						
V	8-30 VDC with Pullup to V+						
F. Mounting:							
F	Nema 4X Style 2 enclosure mounted on turbine. Must be used with "X" riser turbine option.						
FHT	8" long temperature riser for Nema 4X Style 2 enclosure mounted on turbine. Required when fluid temperature exceeds 140 deg. F. Must be used with "X" riser turbine option.						
FX	Explosion-proof Style 3 enclosure mounted on turbine. Must be used with "X" riser option on turbine.						
FXHT	8" long temperature riser for Explosion-Proof Style 3 enclosure mounted on turbine. Required when temperatures exceed 140 deg. F. Must be used with "X" riser turbine option.						
NP	Nema 4X enclosure pipe mounting kit 2" pipe or smaller. Specify if pipe is vertical or horizontal.						
G. Special Features:							
CE	CE Mark required for Europe						
SP	Any special features that are not covered in the model number use a written description of the -SP						



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



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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.

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

