



# TURBINE FLOWMETERS BY **HOFFER**

*Perfecting Measurement™*

## **HIT-4U**

Rate Indicator & Dual Totalizer  
with Modbus & Data Logging  
Product Bulletin Hit-4U-100P

## **TECHNICAL DATA SHEET**

The HIT-4U is a battery or loop-powered flow rate and total indicator, with data logger and Modbus Communications Protocol. The HIT-4U is configurable from the instrument front panel keypad or via Modbus communications.

### **OUTSTANDING FEATURES**

- ◆ LCD display for Total and Rate
- ◆ Non-resettable Grand Total
- ◆ Full front panel operation with magnetic pointer through enclosure
- ◆ Up to 20-point Linearization to correct for flowmeter non-linearity
- ◆ 4-20mA analog output proportional to flow rate
- ◆ Optional Scaled Pulse or Raw Pulse Output representing an incremental total volume
- ◆ Alarm Output with dual set point configurable for Rate or Total
- ◆ Magnetically operated switch for Total reset
- ◆ Internal battery backup
- ◆ Configuration and Totals stored in non-volatile memory. Totals saved when pressing ► button.
- ◆ Data Logging: Hourly Total, Daily Total, Event Logs
- ◆ Modbus Communications Protocol via RS485
- ◆ Real Time Clock

### **SPECIFICATIONS**

#### **DISPLAY:**

LCD, updated every 1 second

#### **TOTAL:**

8 digits 3/8" high. Resettable using a magnet, a contact closure, front panel keypad or via Modbus communications.

#### **Total Units:**

GAL, LIT, FT3, ACF, ACFx1000, M3, BBL, KG, LB, NM3, SCF, SCFx1000

#### **GRAND TOTAL:**

8 digits 3/8" high, non-resettable. Grand Total is displayed for 7 seconds after pressing the ▲ button.

#### **RATE:**

6 digits 1/2" high

#### **RATE UNITS:**

/SEC/MIN/HR/DAY

#### **LINEARIZATION:**

2-20 points



Aluminum Casting Powder Coated Enclosure Style

#### **K-FACTOR:**

The pulses per unit of Total (e.g. pulses/gallon) are configurable in the range 0.001 to 9,999,995

#### **DECIMAL POINTS:**

Decimal point positions are configurable for 0, 0.0, 0.00, or 0.000 for rate, total and K-factor.

#### **ACCURACY:**

Total and Rate: +/-0.01% of reading, +/-1 count

#### **MAGNETIC PICKUP INPUT:**

Frequency Range: 0.2 Hz to 5000 Hz

Signal Level: 30mV<sub>p-p</sub> to 30 V<sub>p-p</sub>

#### **MCP PICKUP INPUT**

##### **PULSE INPUT:**

Opto-Isolated

Frequency Range: 0 Hz to 3000 Hz

Internal pull-up 10KΩ to +DC

Signal Level: 0 to +DC

Low (Logic 0): <1 VDC

Min Pulse width: 0.1 msec

##### **CONTACT CLOSURE INPUT:**

Frequency Range: 0 Hz to 5000 Hz

Internal Pull-up: 220 kΩ to +3.3 VDC

##### **RESET:**

Signal Type: Contact closure

Min Time On: 25 msec

Internal Pull-up: 35 kΩ to +3.3 VDC

External Magnet: Activates internal switch

##### **ANALOG OUTPUT:**

Type: 4-20 mA follows rate

Accuracy: 0.02% Full Scale @ 20°C

Temperature Drift: 40 ppm/°C

Update Time: 0.125 seconds

##### **PULSE OUTPUT:**

Type: 0-5V TTL, Open Collector (30 VDC, 100 mA max)

Divider: 0.01, 0.1, 1, 10, 100

Pulse Width: Adjustable 4ms to 300ms

Max Frequency: 100 Hz



Nema 4X Enclosure Style shown with external USB

**ALARM OUT WITH DUAL SET POINT:**

Type: 0-5V TTL, Open Collector (30 VDC, 100 mA)

Function: Rate or Total

**DC POWER/LOOP POWERED:**

Voltage: 8 to 30 VDC

Current: <24 mA

Loop Burden: 8 VDC

Supply Backup: C-size 3.6V Lithium battery or battery pack for Ex d certified system.

Protection: Reverse polarity, overvoltage

**AC POWER INPUT UNIVERSAL:**

Voltage: 100-240VAC @ 0.15A 50/60 Hz

**BATTERY POWERED:**

Two (2) C-size 3.6V Lithium batteries

Battery Life: 2 years typical

Ex system - battery pack (4xAA)

Battery life 1 year typical

**SERIAL PORT RS485:**

Protocol: Modbus RTU

Function: Data Logging, Configuration, Process Monitor

**PHYSICAL:**

Op. Temperature:

-40°F(-40°C) to 176°F (80°C)

Humidity:

0-90% Non-Condensing

Enclosure: NEMA, Aluminum

(Approx. 5"x5"x5", 3 Lbs.)

Data Logging	
Hourly Total Log:	768
Daily Total Log:	378
Event Log:	345
Accessing Logs:	
Via Modbus communication Up to 100 latest flow logs are viewable on the front panel	

**HIT-4U ORDERING INFORMATION**

HIT-4U- A - B - C - D - E - F - G - H - I

**A. Enclosure Style**  
 (2) NEMA 4X  
 (3\*) Aluminum casting powder coated enclosure (IP66)  
 (7\*) Stainless steel enclosure (IP66)  
 (P) Panel mount (IP40)  
 (PD) Panel mount w/clear door and lock (IP40)  
 (PF) Panel mount w/clear flexible PVC cover (IP65 front only)  
**\*Options for 3 and 7**  
 (M) M20 thread  
 (S) Sunshade

**B. Input Power**  
 (B) Battery Powered  
**Note: Mag only, no analog, pulse, or alarm**  
 (L) 4-20 MA Loop Power  
**Note: Mag only, no pulse or alarm**  
 (D) 12 to 30 VDC External Power  
**Note: 4-20mA analog out included**  
 (AC\_) Universal 100-240vac @ 0.15A 50/60 HZ  
**Note: Not available for Ex d certified systems 4-20mA analog out included**

**C. Pulse Input**  
 (M) Magnetic Coil  
 (R) Isolated pulse, RP, Hall  
 (RF) Modulated Carrier Coil

**D. Pulse Output**  
 (5) 0-5V TTL/CMOS  
 (OC) Open Collector  
**Note: Not available with (B) or (L) power inputs**

**E. Alarm**  
 (5) 0-5V TTL/CMOS  
 (OC) Open Collector  
**Note: Not available with (B) or (L) power inputs**

**I. Special Features**  
 (CE) CE mark required for Europe (pending)  
 (X) None

**H. Communication Port**  
 (T) Internal terminal block  
 (U) External USB for Nema 4X  
 (X) None

**G. Mounting**  
 (X) Remote Mounting  
 (FX) Style 3 or 7 enclosure mounted on turbine  
 (FXHT) Style 3 or 7 enclosure w/8" long riser mounted on turbine  
 (F) NEMA 4X Style 2 mounted on turbine  
 (FHT) NEMA 4X w/8" long riser mounted on turbine  
 (NP) NEMA 4X enclosure pipe mounting kit 2" pipe & smaller  
**Certified Mounting Options Available for Style 3 and 7 Enclosures:**  
 (MX\_) Meter mounted. Process temp -40°C to +78°C.  
 (MA\_) Meter Mounted w/ ATEX riser. Process temp -40°C to +78°C.  
 (RX\_) Remote mounted. Includes E2 junction box and 1"x3/4" SS adapter.  
 (RA\_) Remote mounted w/ ATEX riser. Includes E2 junction box.  
**Union Options:**  
 (U1) 1" Ex-proof union for MX or RX  
 (U2) 3/4" Ex-proof union for MA or RA

**F. Compensation Method**  
 (X) No compensation

Enclosure Ex d Ratings: Certified Systems Available for Style 3 & 7
<b>CSA/FM:</b> CLASS I, DIV.1, GR. C,D; CLASS II, DIV.1, GR. E,F,G; CLASS III, T6; Type 4X; CLASS I ZONE 1 AEx db IIB, T6 Gb IP66 ZONE 21 AEx tb IIIC T80°C Db IP66 Ex db IIB T6 Gb; Ex tb IIIC T80°C Db; IP66
<b>ATEX/IECEx:</b> II 2 G Ex db IIB T6 Gb; IP66 II 2 D Ex tb IIIC T80°C Db; IP66

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