

TURBINE FLOWMETERS BY HOFFER

The Turbine Flowmeter Company

HIT-2

Rate Indicator & Totalizer

Product Bulletin Hit-2-106B

TECHNICAL DATA SHEET

OUTSTANDING FEATURES

- ◆ Displays Rate & Total Simultaneously.
- ◆ 4½ Digit Rate Display, 8 Digit Totalizer Display.
- ◆ 4-20mA Analog Output.
- ◆ Powered From Internal Battery, External DC Supply or 4-20mA Output Loop.
- ◆ 10 Pt. Linearization Available.
- ◆ Isolated Scaled Pulse Output.

GENERAL DESCRIPTION

Featuring 4½ digits of rate and 8 digits of total, the HIT-2 is a battery powered indicator capable of accepting magnetic pickup, DC pulse, and switch closure inputs. The unit can be ordered with an optional 4-20mA output. The HIT-2 uses the 4-20mA loop to provide power when this output is used.

SPECIFICATIONS

Power:

BATTERY POWERED

Supplied with 2 C-size Lithium battery pack.

EXTERNAL POWER INPUT

Voltage: 8.5 to 30 VDC.
 Current: Less than 5mA.
 Supplied with 1 C-size lithium battery.
 Protection: Reverse Polarity Protection on Current Loop.
 Loop Burden: 8.5V maximum.

Display:

RATE DISPLAY: (SELECTABLE DECIMAL)

4.5 Digits (19999), 0.35" High, Display updates once every two seconds.

Rate Descriptors: /SEC, /MIN, /HR.

Min. Input Frequency: 0.125Hz to 10Hz (selectable delay of 0.1 to 8.0 seconds).

TOTALIZER DISPLAY: (SELECTABLE DECIMAL)

8 Digits (99999999), 0.2" High.

Totalizer Descriptors: GAL, LIT, FT3, M3, "blank."

WARNING DISPLAYS: LOW BATTERY WARNING

(Displays with approx. 10% of the power remaining)



Pulse Output:

The pulse output advances with the least significant digit of the totalizer.

Type: Opto-isolated open collector transistor

Max. voltage (off state): 30 VDC.

Current (on state): 5mA @ 0.9 V drop, 0.1mA @ 0.7 V drop.

Pulse Duration: Selectable (see below).

Pulse Output Rate: Selectable (see below).

Pulse output divider: User selectable,) 1,) 10,) 100 or OFF.

NOTE: Select OFF for max. battery life.

SPEED (HZ)	1	2	4	8
Min. on/off (msec)	500	250	125	62.5

Battery Life Expectancy

PART NUMBER	Power Supply Option	RUN TIME			
		Idle	2hrs/day	8hrs/day	24hrs/day
A		5 yrs	4.5 yrs	3.5 yrs	2.1 yrs
A4		5 yrs	3.7 yrs	2.7 yrs	1.5 yrs
B/C	Standby Operation	2.5 yrs	2.25 yrs	1.75 yrs	1 yr
	B/C External or Loop Power	10 yrs			

All of the above values are calculated with the pulse output ON. Turn the pulse output OFF to prolong battery life up to 30%.

Enclosure Styles:

- 2- Wall Mount - NEMA 4X Enclosure. HIT-2 mounted behind clear cover.
- 3- Explosion-Proof - Class I, Division I, Groups B, C & D. Class II, Division I, Groups E, F & G.
- 5- Wall Mount - NEMA 4X with HIT-2 mounted on cover with access to controls.

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% Non-condensing

Accuracy:

0.01% Reading, ±I count

Temperature Drift: 50 ppm/°C Worst Case

Inputs:

MAGNETIC PICKUP INPUT

Frequency Range: 0 to 3500 Hz

Trigger Sensitivity: 30 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

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

K-FACTOR

Range: 0.001 to 59999000

Decimal Point Locations: XX.XXX to XXXXX

10 POINT LINEARIZATION OPTION

This feature allows the user to enter 10 different frequencies with 10 different corresponding K-Factors to linearize non-linear signals.

Analog Output Option:

Type: 4-20 mA follows rate display, Two wire hookup

Accuracy: 0.15% Full Scale at 20°C

Temperature Drift: 50 ppm/°C Typical
200 ppm/°C Worst Case

Reverse Polarity Protected

NOTE: The Hit-2 uses the 4-20 mA loop power as its power source when this option is used.

Approvals: CE Approval (optional), UL (optional).

ORDERING INFORMATION

Basic Model Number

Hit-2 - A - B - C - D - E - F

Series:

1. Enclosure Style:

- 2 NEMA 4X Enclosure (Hit-2 behind clear cover)
- 3 Explosion-Proof Enclosure
- 5 NEMA 4X Enclosure (Hit-2 mounted on cover)

2. Input Power:

- A Internal Batteries, two supplied. (Option A not available for use w/ Redi-Pulse coil)
- B External Power Supply (8 to 30 VDC)
- 6AC 115 VAC 50/60 Hz external power. This option requires the use of a dual headed explosion-proof enclosure. The display is mounted on one side and the power supply on the other.

3. Loop Powered Analog Output:

- C Loop powered 4 to 20 ma output (8 to 30 VDC).
- D Loop powered 4 to 20 ma output with internal batteries.

4. Options: (Multiple Options Available)

- L 10 Point Linearization
 - ET Extended Temperature Range: -22°F to 158°F (-30°C to 70°C)
 - AL Low Alarm* Opto Isolated open collector.
 - AH High Alarm* Opto Isolated open collector.
- Note: Either low or high alarm is available but not both. The opto isolated pulse output is not available if either low or high alarm is selected.

5. Mounting:

- F NEMA 4X style 2 or 5 enclosure mounted on turbine. Must be used with "X" riser turbine option.
- FHT 8" long temperature riser for NEMA 2 & 5 enclosures mounted on turbine Includes 8" S.S. riser and is required when fluid temperature exceeds 140°F. Used with "X" riser turbine option.
- FX Explosion-proof style 3 enclosure mounted on turbine. Must be used with "X" riser turbine option.
- FXHT 8" long temperature riser for explosion-proof Style 3 enclosures mounted on turbine. Required when temperature exceeds 140°F. Used with "X" riser turbine option.

6. Special Features:

- CE CE Mark required for Europe.
- UL Class I, Groups A,B,C, and D. UL 913, CSA C22.2.
- SP Any special features that are not covered in the model number use a written description of the -SP.

Notes:

1. Opto-isolated open collector transistor is standard with all units.
2. A local reset magnet is standard with all units.

Accessories:

Spare Batteries: Tadiran P/N TL2200/S. 3.6 V 5500mAh or equal. (Two batteries are required for battery powered units)