



# TURBINE FLOWMETERS BY **HOFFER**

Perfecting Measurement™

## HIT-4G

Digital Gas Flow Computer with  
Modbus & Data Logging  
Product Bulletin Hit-4G-Gas-110G

### TECHNICAL DATA SHEET

The HIT-4G is a compact digital gas flow computer with temperature, pressure and compressibility compensation. The HIT-4G is configurable from the instrument front panel keypad or via Modbus communications.

#### OUTSTANDING FEATURES

- ◆ LCD display for Total, Rate, Temperature and Pressure
- ◆ 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
- ◆ AGA-8 compliant
- ◆ Temperature, Pressure, and Compressibility Compensation

#### 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, TEMPERATURE, PRESSURE:

8 digits 3/8" high  
Display by pressing the ▲ button.

##### RATE:

6 digits 1/2" high

##### RATE UNITS:

/SEC/MIN/HR/DAY



##### K-FACTOR:

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

##### LINEARIZATION:

2-20 points

##### 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/RF PICKUP INPUT

##### PULSE INPUT:

Opto-Isolated  
Frequency Range: 2 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

##### TEMPERATURE INPUT:

Type: \*4-20 mA, 100Ω RTD DIN385



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**PRESSURE INPUT:**

Type: \*4-20 mA  
\*4-20 inputs not available with battery or loop power.

**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

**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

**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.)

**HIT-4G ORDERING INFORMATION**

HIT-4G-	A	B	C	D	E	F	G	H	I	
<b>A. Enclosure Style</b>	(2) NEMA 4X (3*) Aluminum Casting Powder Coated Enclosure (IP66) (7*) Stainless steel enclosure (IP66) (P) Panel mount ** (PD) Panel mount w/door and lock (IP40) ** (PF) Panel mount w/clear flexible PVC cover (IP65 front only) **	<b>B. Input Power</b>	(M) M20 thread (S) Sunshade **Panel mount options not available with AC power option	<b>C. Pulse Input</b>	(M) Magnetic Coil (R) Isolated pulse, RP, Hall (RF) Modulated Carrier Coil	<b>D. Pulse Output</b>	(5) 0-5V TTL/CMOS (OC) Open Collector <b>Note: Not available with (B) or (L) power inputs</b>	<b>E. Alarm</b>	(5) 0-5V TTL/CMOS (OC) Open Collector <b>Note: Not available with (B) or (L) power inputs</b>	<b>I. Special Features</b> (CE) CE mark required for Europe (pending) (X) None
		<b>Note: Mag only, no analog, pulse, or alarm</b> (L) 4-20 mA Loop Power <b>Note: Mag only, no pulse or alarm</b> (D) 12 to 30 VDC External Power <b>Note: 4-20mA analog out included</b> (AC_) Universal 100-240vac @ 0.15A 50/60 HZ <b>Note: Not available for Ex d certified systems 4-20mA analog out included</b> ** AC power not available with Panel options							<b>H. Communication Port</b> (T) Internal terminal block (U) External USB for Nema 4X (X) None	
									<b>G. Mounting</b> (X) Remote Mounting (FX) Style 3 or 7 enclosure mounted on turbine (FXHT) Style 3 or 7 enclosure w/8" riser mounted on turbine (F) NEMA 4X mounted on turbine (FHT) NEMA 4X w/8" riser mounted on turbine (NP) NEMA 4X enclosure pipe mounting kit 2" pipe & smaller	
									<b>Certified Mounting Options for Style 3 and 7 Enclosures:</b> (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. <b>Union Options:</b> (U1) 1" Ex-proof union for MX or RX (U2) 3/4" Ex-proof union for MA or RA	
									<b>F. Compensation Method</b> (X) No Compensation (TP1_) Temperature and pressure transmitter inputs (4-20mA) (TP2_) 100 OHM RTD/Pressure transmitter (4-20mA) (Z) Compressibility option for gas <b>Note: Compensation (TP, TP2) not available with (B) or (L) power inputs</b>	

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

**Enclosure Ex d Ratings: Certified Systems for Style 3 & 7**

**CSA/FM:** 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

**ATEX/IECEX:**  
II 2 G Ex db IIB T6 Gb; IP66  
II 2 D Ex tb IIIC T80°C Db; IP66

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