

TURBINE FLOWMETERS BY **HOFFER**

Perfecting Measurement™

HIT-4G

Digital Gas Flow Computer with
Modbus & Data Logging

Product Bulletin Hit-4G-Gas-110E

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



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

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

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

HIT-4G ORDERING INFORMATION

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- A - B - C - D - E - F - G - H - I	
<p>A. Enclosure Style</p> <p>(2) NEMA 4X</p> <p>(3*) Aluminum Casting Powder Coated Enclosure (IP66)</p> <p>(7*) Stainless steel enclosure (IP66)</p> <p>(P) Panel mount</p> <p>(PD) Panel mount w/door and lock (IP40)</p> <p>(PF) Panel mount w/clear flexible PVC cover (IP65 front only)</p> <p>*Options for 3 and 7</p> <p>(_M) M20 thread</p> <p>(_S) Sunshade</p> <p>B. Input Power</p> <p>(B) Battery Powered</p> <p>Note: Mag only, no analog, pulse, or alarm</p> <p>(L) 4-20 mA Loop Power</p> <p>Note: Mag only, no pulse or alarm</p> <p>(D) 12 to 30 VDC External Power</p> <p>Note: 4-20mA analog out included</p> <p>(AC_) Universal 100-240vac @ 0.15A 50/60 HZ</p> <p>Note: Not available for Ex d certified systems 4-20mA analog out included</p> <p>C. Pulse Input</p> <p>(M) Magnetic Coil</p> <p>(R) Isolated pulse, RP, Hall</p> <p>(RF) Modulated Carrier Coil</p> <p>D. Pulse Output</p> <p>(5) 0-5V TTL/CMOS</p> <p>(OC) Open Collector</p> <p>Note: Not available with (B) or (L) power inputs</p> <p>E. Alarm</p> <p>(5) 0-5V TTL/CMOS</p> <p>(OC) Open Collector</p> <p>Note: Not available with (B) or (L) power inputs</p>	<p>I. Special Features</p> <p>(CE) CE mark required for Europe (pending)</p> <p>(X) None</p> <p>H. Communication Port</p> <p>(T) Internal terminal block</p> <p>(U) External USB for Nema 4X</p> <p>(X) None</p> <p>G. Mounting</p> <p>(X) Remote Mounting</p> <p>(FX) Style 3 or 7 enclosure mounted on turbine</p> <p>(FXHT) Style 3 or 7 enclosure w/8" riser mounted on turbine</p> <p>(F) NEMA 4X mounted on turbine</p> <p>(FHT) NEMA 4X w/8" riser mounted on turbine</p> <p>(NP) NEMA 4X enclosure pipe mounting kit 2" pipe & smaller</p> <p>Certified Mounting Options for Style 3 and 7 Enclosures:</p> <p>(MX_) Meter mounted. Process temp -40°C to +78°C.</p> <p>(MA_) Meter Mounted w/ ATEX riser. Process temp -40°C to +78°C.</p> <p>(RX_) Remote mounted. Includes E2 junction box and 1"x3/4" SS adapter.</p> <p>(RA_) Remote mounted w/ ATEX riser. Includes E2 junction box.</p> <p>Union Options:</p> <p>(_U1) 1" Ex-proof union for MX or RX</p> <p>(_U2) 3/4" Ex-proof union for MA or RA</p> <p>F. Compensation Method</p> <p>(X) No Compensation</p> <p>(TP1_) Temperature and pressure transmitter inputs (4-20mA)</p> <p>(TP2_) 100 OHM RTD/Pressure transmitter (4-20mA)</p> <p>(_Z) Compressibility option for gas</p> <p>Note: Compensation (TP, TP2) not available with (B) or (L) power inputs</p>

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	

Enclosure Ex d Ratings: Certified Systems for Style 3 & 7
<p>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</p> <p>ZONE 21 AEx tb IIIC T80°C Db IP66</p> <p>Ex db IIB T6 Gb; Ex tb IIIC T80°C Db; IP66</p> <p>ATEX/IECEx:</p> <p>II 2 G Ex db IIB T6 Gb; IP66</p> <p>II 2 D Ex tb IIIC T80°C Db; IP66</p>

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

