TURBINE FLOWMETERS BY HOFFER

Perfecting Measurement ™

HIT-4L

Temperature & Pressure Flow Computer for LIQUIDS

Product Bulletin Hit-4L-120D

TECHNICAL DATA SHEET

The ***HIT-4L*** is a ***compact Digital Flow Computer for Liquids*** with temperature, pressure, and viscosity compensation. The HIT-4L is configurable from the instrument front panel keypad or via Modbus communications.

OUTSTANDING FEATURES

- ***Temperature, Pressure, and Viscosity Compensation***
- ***LCD display for Total, Rate, Temperature and Pressure***
- ***Up to 20-point Linearization***
- ***CSA/ATEX/IECEx hazardous location certifications available***
- Internal battery backup
- Data Logging: Hourly Total, Daily Total, Event Logs
- Non-resettable Grand Total
- Full front panel operation with magnetic pointer through enclosure
- 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
- Configuration and Totals stored in non-volatile memory. Totals saved when pressing ► button.
- Modbus Communications Protocol via RS485
- Real Time Clock

Turbine flow meter sold separately

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, M3, BBL, KG, LB

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/GAL) 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$_{p\text{-}p}$ to 30 V$_{p\text{-}p}$

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

DENSITY/VISCOSITY COMPENSATION:
2-20 points table

Temperature Input:

Type: *4-20 mA, 100Ω RTD DIN385

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-4L ORDERING INFORMATION

HIT-4L– 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 **

(PD) Panel mount w/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

**Panel mount options not available with AC power option

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: 4-20 mA analog out included

(AC_) Universal 100-240vac @ 0.15A 50/60 HZ

Note: Not Available for Ex d certified systems 4-20 mA analog out included

** AC power not available with Panel options

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

F. Compensation Method

(X) No Compensation

(TP1_) Temperature and pressure transmitter inputs (4-20mA)

(TP2_) 100 OHM RTD/Pressure transmitter (4-20mA)

(-UVC) Universal Viscosity Curve Correction (add to TP1 or TP2 options)

Note: Compensation (TP) not available with (B) or (L) power inputs

G. Mounting

(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

Certified Mounting Options 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

H. Communication Port

(T) Internal terminal block

(U) External USB for Nema 4X

I. Special Features

(CE) CE mark required for Europe (pending)

(X) None

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

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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Hoffer Flow Controls Quality Management System

ANAB ACCREDITED ISO/IEC 17021 MANAGEMENT SYSTEMS CERTIFICATION BODY — Certified to ISO 9001:2015 — TÜVRheinland Precisely Right.