FLOW COMPUTERS BY
HOFFER
Perfecting Measurement ™

Model 2007
Volumetric or Mass Batch Totalizer/ Rate Indicator for Liquids

OUTSTANDING FEATURES

Intelligent Batching.

0.32" (8.13mm) character height, ± 20 degree viewing angle.

Two line 16 character alphanumeric display indicates function and unit of measure in English or metric units.

LCD display with LED backlighting.

Sonic alarm located behind front panel.

HOFFER FLOW CONTROLS, INC. ELIZABETH CITY, NC

FLOWSTAR

745.0   0.0
GAL   GAL/MIN

FLOW HIGH LOW   TEMP HIGH LOW   PRES HIGH LOW
PREWARN   CONTROL

Provides linearization of flowmeter inputs.

Includes two optional analog outputs for process control or monitoring.

| TOTAL 1 | RATE 2 | TEMP1 3 | TEMP2 4 | PRES 5 | START . |
| HEAT 6 | SETP1 7 | SETP2 8 | AUX1 9 | AUX2 0 | STOP SHIFT |

| MODE | LAST < | NEXT > | SEL |
| CLEAR | MAN | AUTO | REM |

8 mode control function keys.

12 numeric function keys include programmable high and low alarms.

Keypad is membrane type sealed to NEMA 4X rating.

Provides communication capability for either RS-232 or RS-422/RS-485 multi-drop.

Factory programmed when purchased with a Hoffer turbine flowmeter.

GENERAL DESCRIPTION

The Model 2007 is a microprocessor based batch controller that provides local display of flow rate, accumulated total and batch total. This unit also transmits flow data for control capability. Standard outputs include analog, RS-232, RS-422, RS-485 and conditioned pulse outputs. Optional temperature and pressure compensation is available for mass flow batching. This unit is part of a cost effective family of flow products designed to accept inputs from pulse producing flowmeters.

The FLOWSTAR™ series offers software packages to support the following functions:

- Model 2000 Volumetric Flow Rate Indicator/Totalizer for Liquids and Gases
- Model 2005 Temperature/Pressure Compensated Mass Flow Computer for Liquids
- **Model 2007 Temperature/Pressure Compensated Mass/Volumetric Batch Controller for Liquids with Intelligent Batching**

The unit is factory programmed to display in either English or Metric units when purchased with a Hoffer turbine flowmeter. This feature should save the user numerous hours of set up time that is associated with other microprocessor based units
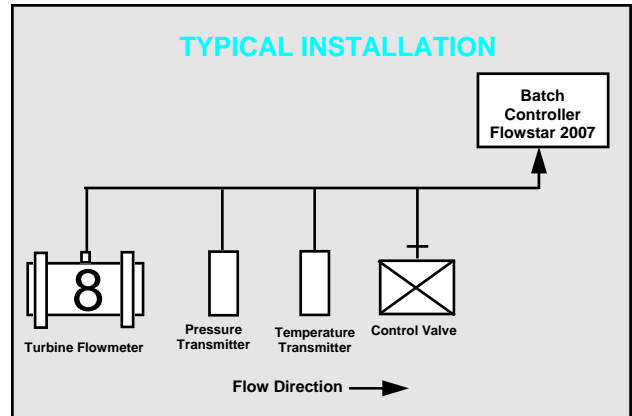
available in the marketplace. Programming is done through the front panel keyboard, as well as through the two way RS-232 or RS-422/RS-485 multi-drop communications port.

The FLOWSTAR™ 2007 provides for a single flowmeter input with two stage intelligent batching. Intelligent batching adjusts the prewarn value automatically to compensate for any overrun created by the valve or pump shut off times.

TYPICAL INSTALLATION

Batch Controller Flowstar 2007

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Turbine Flowmeter   Pressure Transmitter   Temperature Transmitter   Control Valve

Flow Direction →

FLOWSTAR™ 2007 DATA SHEET

SPECIFICATIONS

Display	Two line 16 character alphanumeric. Type LCD with LED backlighting. (Counts per batch and scrolled accumulator 7 digit and 7 digit rate display). Character height 0.32" (8.13 mm). Supertwist ±20 degree viewing angle.
Analog Outputs (Select any combination of two)	0 - 5 VDC Response Time: 1.5 seconds for 10 to 90% 0 - 10 VDC 4 - 20 mA Compliance Voltage: 7 Volts
Communication Port (Select one)	RS-232 RS-422/RS-485 (Half duplex)

Digital Outputs (There can be a **total of (4)** outputs selected from the Digital Outputs, Preset Batch Features, and Alarms sections.)	Open Collector: type 2N6660 Max Count Speed: 125 counts/sec
	   Vmax 60 VDC, absolute maximum PW = 4 Milliseconds
	   Imax 1.2 Amps DC, absolute maximum
	
	TTL/CMOS: Logic 1 = 5.0 VDC, Logic 0 = 0 VDC
	Dry Contact: 100 VDC / 130 VAC @ 0.5A

Pulse Inputs	Magnetic coil RF coil (Radio frequency coil or modulated carrier coil) Redi-Pulse Coil Magnetic or RF Dry Contact (Switch Closure)
Preset Batch	Dual Stage Preset (Open Collector or Solid State Relay)
Temperature and Pressure Compensation (Analog Input)	4 to 20 mA Input
Power Input	115 or 220 VAC, 50-60 Hz., ±10% 10.5 to 24 VDC
Alarm Limits	Low alarm High alarm Combination high/low alarm Low Dry Contact High Dry Contact Combination High/Low Dry Contact
Linearization	20 points (For pulse input channel only).
24 Hour Real Time Clock	
Auxiliary Voltage Output	20 VDC @ 200 mA (max) unregulated on AC powered units. On DC powered units the voltage applied (10.5 to 24 VDC) will be the auxiliary voltage output supplied.
Password Protection	
Environmental	Operating 0 to +70 degrees C Storage -20 to +80 degrees C Humidity 10 to 90% non-condensing
Enclosure (panel mount)	1/2 DIN Standard, flame retardant, extruded aluminum Anodized with a black powder coating Approximate weight 4 lbs. (1.8 kg)
Optional Enclosure	NEMA 3, 4X, 12 (Fiberglass case suitable for wall mount or integral mounting on flow-meter).

Capabilities and Related Products

In addition to the FLOWSTAR™ Series of microprocessor based flow products, Hoffer manufactures a complete line of turbine flowmeters for cryogenic, liquid and gas service.

We also design and manufacture a full line of electronic packages ranging from signal conditioners/converters to comprehensive flow computers. Please request a copy of our "Engineering Guide" for a complete overview of our flowmeters. Our "Product Catalog CD-Rom" provides information on all products available including both our flowmeters and electronics.

Whether your requirement is for a portable, self-contained system, mobile mounted and powered system, or conventional instrumentation, Hoffer is the source.

FLOWSTAR™ MODEL 2007
Volumetric or Mass Batch Totalizer / Flow Rate Indicator for Liquids

HOW TO ORDER: This unit is provided with a 7-digit LCD totalizer and 7-digit LCD rate indicator. Review the model number breakdown below and select one option in each category. **Insert an (X) in any option not selected.**

MODEL 2007- A - (___) - (___) - (___) - (___) - (___) - (___) - (___) - (___) - (___) - (___) - (___) - (___) - (___)

Analog Output/Select Up to Two

(3)	0-5 VDC (Standard)
(D3)	DUAL 0-5 VDC
(4)	0-10 VDC
(D4)	DUAL 0-10 VDC
(7)	4-20 mA
(D7)	DUAL 4-20 mA
(D3/4)	ONE 0-5 VDC AND ONE 0-10 VDC
(D3/7)	ONE 0-5 VDC AND ONE 4-20 MA
(D4/7)	ONE 0-10 VDC AND ONE 4-20 MA

Communication Port/Select One

(R2)	RS-232
(R4)	RS-422/RS-485 Half Duplex

*Scaled Digital Outputs/ Select Two / Includes Alarm Options

(1)	Open Collector (Standard)
(2)	TTL/CMOS
(3)	Dry Contact

Single Channel Only (See Nova-Flow for multiple channels)

(1)	Single Channel

Flowmeter Inputs

(M)	Magnetic Coil (Standard pulse)
(MC3PA)	RF Coil
(RPM)	Magnetic Redi-Pulse Coil
(RPR)	RF Redi-Pulse Coil
(DMX)	Magnetic Redi-Pulse I.S. Coil
(DRX)	RF Redi-Pulse I.S. Coil
(DC)	Dry Contact

Analog Input & Temperature / Pressure Compen-

(7)	4-20mA
(2/7)	Dual 4-20mA- Required if both T & P required.

Temperature Compensation/Pressure Compensation/One Fluid

(T)	Temperature-Requires RTD with Transmitter
(TP)	Temperature and Pressure-Requires RTD
(UVC)	Viscosity Compensated (Table)

*Preset Batch Features (Requires 2 of 4 digital pulse outputs)

(DSC)	Dual Stage Preset Shutdown, Open Collector
(DSR)	Dual Stage Preset Shutdown, Solid State 24-240 VAC @ 3 amps SPST N/O

Power Input

(1)	115 VAC 50/60 Hz
(2)	220 VAC 50/60 Hz
( )	10.5 to 24 VDC (Insert actual voltage)
	For analog output 4 - 20mA & 0 - 10VDC, the DC voltage required is 18 - 24VDC.

*Alarms

(HI/LO)	High/Low	Open Collector **(Requires 2 of 4 digital pulse outputs)**
(L)	Low	Solid State 24-240 VAC @ 3 amps SPST N/O
(H)	High	Solid State 24-240 VAC @ 3 amps SPST N/O
(H/L)	High/Low	Solid State 24-240 VAC @ 3 amps SPST N/O **(Requires 2 of 4 digital pulse outputs)**
(L3)	Low Dry Contact	
(H3)	High Dry Contact	
(H/L3)	Combination High/Low Dry Contact	

Enclosure Style

(P)	Panel Mount - Compliances: Keypad is sealed to NEMA 4X
(ND)	Flowstar mounted on door (sealed with keypad accessible) - Compliances: NEMA 3, 4X, 12 Fiberglass. Supplied standard with three entrance holes. If more or less are required, user must specify.

Accessories / Options

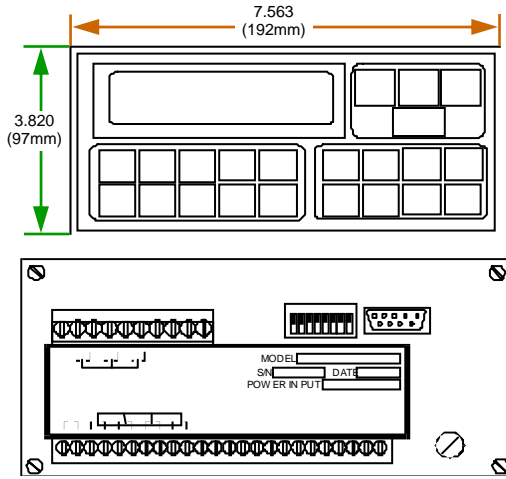|	
(F)	Mounted on flowmeter option (ND) only.
(H)	Heaters for (ND) Enclosure only
(MS)	Connectors for (ND) Enclosure, includes mating connectors

Special Features

(SP)	Any special features that are not covered in the model number, use a written description of the –SP.

* There can only be a **total of (4)** outputs selected from the Scaled Digital Outputs, Preset Batch Features, and Alarms sections.
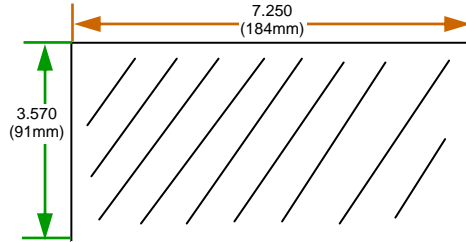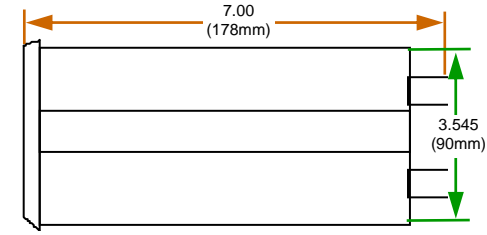
FLOWSTAR™ Enclosure Styles

(P) Panel Mount, Standard

All dimensions are in inches unless otherwise indicated.

7.563 (192mm)

3.820 (97mm)

7.00 (178mm)

3.545 (90mm)

MODEL
S/N   DATE
POWER INPUT
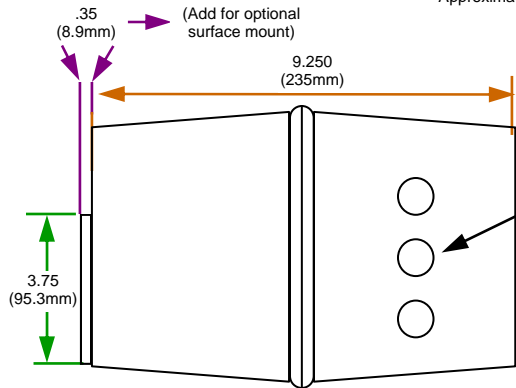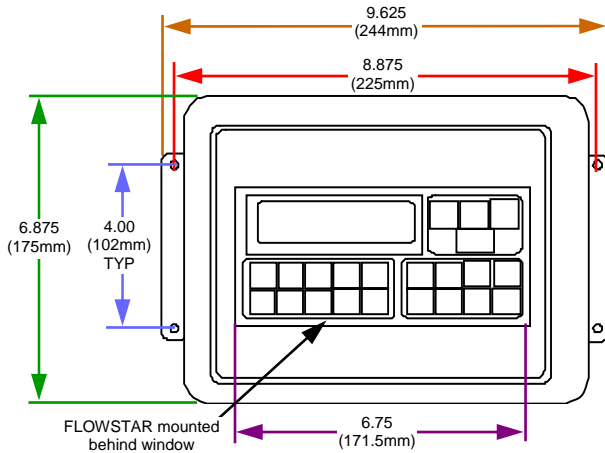
7.250 (184mm)

3.570 (91mm)

Keypad is sealed to NEMA 4X
½ DIN Standard, flame retardant, extruded aluminum
Approximate weight: 4lbs. (All options)

Standard panel mount cutout
for mounting FLOWSTAR

(N) NEMA Enclosure, Optional

Meets NEMA 3, 4X and 12 fiberglass
Suitable for wall mount or
integral mounting on flowmeter
Approximate weight: 8.5 lbs. (all options)

9.625 (244mm)

8.875 (225mm)

6.875 (175mm)

4.00 (102mm) TYP

.35 (8.9mm)   (Add for optional surface mount)

9.250 (235mm)

3.75 (95.3mm)

½" Conduit holes.
Optionally supplied on
top, bottom or sides.
Number of holes
dependent on options.

FLOWSTAR mounted
behind window

6.75 (171.5mm)

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

TÜVRheinland®