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**TRIDENT AUSTRALIA**  
FLUID SYSTEMS & COMPONENTS

# FLOW COMPUTERS BY **HOFFER** *Perfecting Measurement™*

## Model 2000 Volumetric Flow Rate Indicator/Totalizer for Liquids and Gases

### OUTSTANDING FEATURES

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.

Provides linearization of flowmeter inputs.

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.

8 mode control function keys.

Includes two optional analog outputs for process control or monitoring.

Sonic alarm located behind front panel.

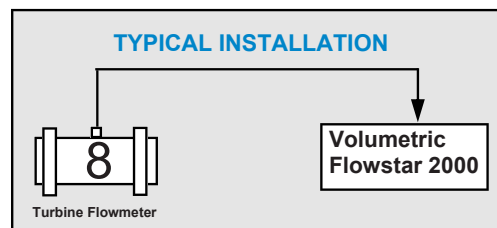
### GENERAL DESCRIPTION

The Model 2000 is a microprocessor based volumetric flow rate indicator/totalizer that provides local display and transmits flow data for control capability. The unit is part of a cost effective family of flow products designed to accept inputs from pulse producing flowmeters.

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™ 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**



## FLOWSTAR™ 2000 DATA SHEET

## SPECIFICATIONS

Display	Two line 16 character alphanumeric. Type LCD with LED backlighting. (Totalizer 7 digit/Rate indicator 7 digit). Character height 0.32" (8.13 mm). Supertwist $\pm 20$ degree viewing angle.	
Analog Outputs (Select any combination of two)	0 - 5 VDC 0 - 10 VDC 4 - 20 mA	Response Time: 1.5 seconds for 10 to 90%  *Compliance Voltage: 7 Volts
Communication Port (Select one)	RS-232 RS-422/RS-485 (Half duplex)	
Digital Outputs (Select four, any combination of pulse or alarms)	Open Collector: type 2N6660 Vmax 60 VDC, absolute maximum Imax 1.2 Amps DC, absolute maximum TTL/CMOS: Logic 1 = 5.0 VDC, Logic 0 = 0 VDC Dry Contact: 100 VDC / 130 VAC @ 0.5 A	Max Count Speed: 33 counts/sec PW = 16 Milliseconds
Pulse Inputs	Magnetic coil RF coil (Radio frequency coil or modulated carrier coil) Redi-Pulse Coil Magnetic or RF Dry Contact (Switch Closure)	
Power Input	115 or 220 VAC, 50-60 Hz., $\pm 10\%$ 10.5 to 24 VDC	
Alarm Limits	Low alarm High alarm Combination high/low alarm Low Dry Contact High Dry Contact Combination 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 Enclosures	NEMA 3, 4X, 12 (Fiberglass case suitable for wall mount or integral mounting on flowmeter).	

## 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 2000

### Volumetric Totalizer / Flow Rate Computer for Liquids and Gases

**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 2000 - A -** ( ) - ( ) - ( ) - ( ) - ( ) - ( ) - ( ) - ( ) - ( ) - ( )

**Total display / 7-digit**

**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-485 Half Duplex

**Scaled Outputs/ Select Four / Includes Alarm Options**

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

**Single Channel Only (For multiple channels see the Nova-Flow Computer)**

- (1) Single Channel

**Flowmeter Input**

- (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

**Power Input**

- (1) 115 VAC 50/60 Hz
- (2) 220 VAC 50/60 Hz
- ( ) 10.5 to 24 VDC (Insert actual voltage)\*

\*For 0 - 10VDC & 4 - 20mA analog outputs, 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) 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

**Accessories/Options**

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

**Special Features**

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

Single channel unit is supplied programmed for (1) flowmeter.  
All options specified are supplied programmed when ordered with a Hoffer Turbine, including linearization.



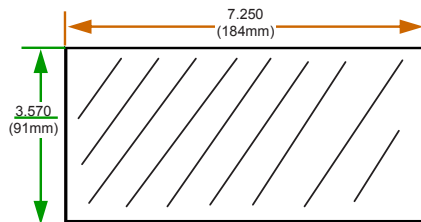
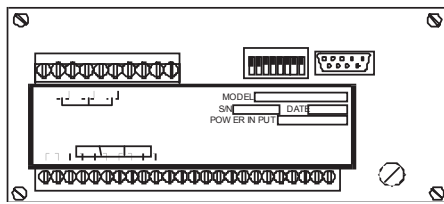
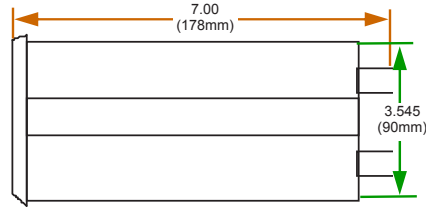
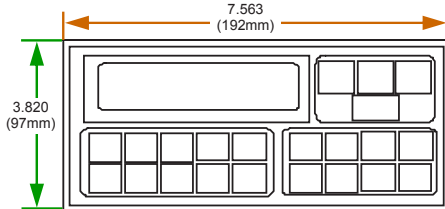
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## FLOWSTAR™ Enclosure Styles

### Panel Mount, Standard

All dimensions are in inches unless otherwise indicated.

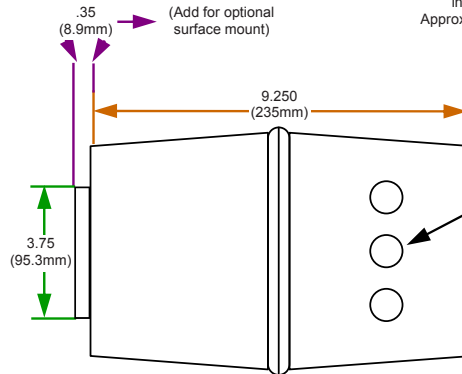
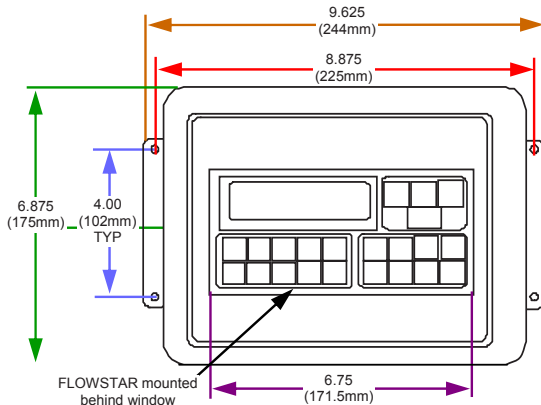


Keypad is sealed to NEMA 4X  
½ DIN Standard, flame retardant, extruded aluminum  
Approximate weight: 4lbs. (All options)

Standard panel mount cutout  
for mounting FLOWSTAR

### 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)



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

**H** **HOFFER FLOW CONTROLS, INC.**  
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The specifications contained herein are subject to change without notice and any user of said specifications should verify from the manufacturer that the specification are currently in effect. Otherwise, the manufacturer assumes no responsibility for the use of specifications which may have been changed and are no longer in effect.

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



FS-2000-110C