

TURBINE FLOWMETERS BY **HOFFER**

The Turbine Flowmeter Company

TRIFLO 9500 LIQUID FLOW LOGGER

The **Hoffer TriFlo 9500 System** provides both system integrators and operators with the most flexible measurement solutions for produced water flow and hydrocarbon condensate flow measurement. The system includes the Hoffer TriFlo 9500 metering system that provides complete interchangeability of components between three different sizes of flow meters (1", 1½" and 2"), all of which can be accessed without having to break piping connections. The TriFlo's are offered both with complete inline meter bodies and in OEM versions which allow the integrator/manufacturer to install the meters into their own piping system. The use of identical internal parts for all three meter sizes reduces the number of spare parts that a service company or operator needs to stock by a factor of 3. The simple design of the meters and the ability to access and replace the internal components further reduces both parts costs as well as field servicing time.

The TriFlo 9500 however, goes one step further and provides the capability to integrate up to three flow meter inputs into a single device rather than three separate displays and at a price competitive with that of a single display from other suppliers. The cost, space and weight savings the TriFlo 9500 provides makes it ideal for offshore installations and it may be used with other turbine flow meter brands as well.

The TriFlo 9500 system flow monitor has been designed for the environmental rigors of the wellhead and for long term operating cost efficiencies. Using its innovative features it will reduce your operating costs by making your data collection more efficient as well as reducing the overall installation price. The simplicity and ease of use for the operator are integral to this flow computer design. The data collected from this unit is critical for production accounting purposes as well as optimization of the well itself.

FEATURES

- Complete interchangeability of components between three different sizes of flow meters (1", 1½" and 2")
- Simple design of the meters reduces both parts costs and field servicing time.
- System accuracy of $\pm 1\%$ or better.
- Displays rate and total simultaneously.
- Easy to read LCD display with operating temperature from -40° to $+60^{\circ}\text{C}$.
- Up to 16 point linearization.
- Optional three turbine pulse inputs offers cost, space and weight savings.
- RS-485 modbus protocol and SD card download for easy data retrieval.
- Interface software available at no charge.
- Class 1 Div. 1 explosion proof or IS certification.



Detailed Database Capacity

10 Second log:	35 days of history
1 Minute log:	200 days of history
5 Minute log:	800 days of history
15 Minute log:	5 years of history
30 Minute log:	15 years of history
1 Hour log:	25 years of history

DATA RETRIEVAL

To minimize this cost and to optimize productivity the TriFlo 9500 provides three different ways of reporting flow rates:

- Read the forty day flow log via the onboard LCD display.
- Download via the onboard SD flash card slot. With our windows software will process the data and automatically email a data file to your production accounting department.
- Access the RS-485 Modbus communication. If your SCADA system has an ENRON compliant driver, all the flow logs can be downloaded automatically.

FLOWMETER SPECIFICATIONS

1" Flowmeter with "C" Bearing and Magnetic Lo-Co Coil

Linear Range:	5 GPM to 75 GPM turn down 15:1
Linearity:	Less than $\pm 1\%$
Repeatable:	4 GPM to 85 GPM turn down 21:1
Repeatability:	Less than $\pm .1\%$

1.5" Flowmeter with "C" Bearing and Magnetic Lo-Co Coil

Linear Range:	13 GPM to 182 GPM turn down 14:1
Linearity:	Less than $\pm 1\%$
Repeatable:	11 GPM to 188 GPM turn down 17:1
Repeatability:	Less than $\pm .1\%$

2" Flowmeter "C" Bearing with Magnetic Lo-Co Coil

Linear Range:	20 GPM to 260 GPM turn down 14:1
Linearity:	Less than $\pm 1\%$
Repeatable:	17 GPM to 280 GPM turn down 17:1
Repeatability:	Less than $\pm .1\%$

Pressure Rating and Suggested Maximum Working Pressure

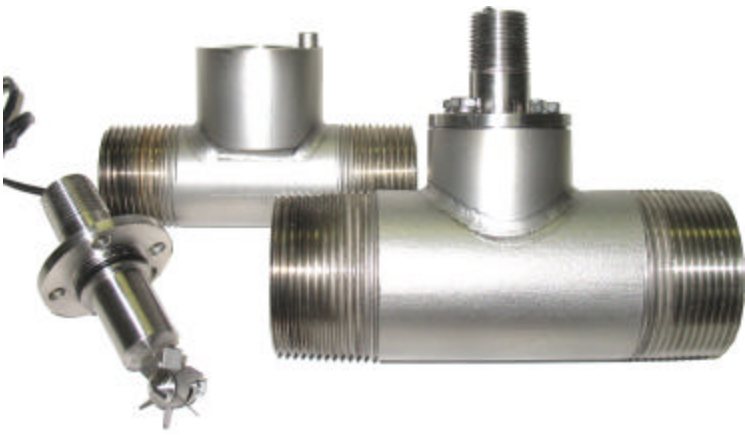
1"	4,000 psi
1.5"	2,800 psi
2"	2,500 psi

Pressure Loss at Maximum Linear Flow

1"	2.3 psid
1.5"	1.1 psid
2"	.55 psid

Temperature

With a Butyl, Buna-n (Nitril) O-ring (-65°F to +250°F)
Lower temperatures can be obtained with proper O-ring material selection.



One size internal kit fits all three meter sizes (1", 1½" and 2").

DISPLAY SPECIFICATIONS

Power Requirements

Power: Two 3.6 VDC Lithium C or A cells
Battery Life: Three to four years

Inputs

Optional three turbine inputs
4 to 20 mA input for BS & W
Pressure and temperature sensors (IS model only)
API 11 Flow Correction

Safety

EX Model: Class 1 Div 1 Explosion Proof
IS Model: Class 1 Div 1 Group A, B, C, D

Environmental

Operating Temperature: -40°C to +80°C
Operating Humidity: 5 to 95%
Non-Condensing

Communication Options

Field Bus
Intrinsically safe Haz Net RS-485
Protocols
ENRON ModBus
Modicon ModBus

Programming and Reporting

Windows 98/2000/XP/Vista
Complete configuration and real time data Month end reporting.

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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.



HAWK-9500A