

# TURBINE FLOWMETERS BY HOFFER

Perfecting Measurement™

## Sanitary Turbine Flowmeters

Product Bulletin HO-SA-107J

### TECHNICAL DATA SHEET

#### SANITARY TURBINE FLOWMETER WITH 3-A LABEL FOR PROCESS LIQUID MEASUREMENT

The Hoffer Sanitary Design Turbine flowmeter is accepted as meeting 3-A Sanitary Standard No. 28-03 for measurement of process liquids where high sanitary standards are required. Available in 11 sizes, ¼" to 3" with standard Tri-Clamp™ fittings, covering flow rates for 0.35 to 650 GPM.



**Note:** Turbine meter must be installed with pickup coil pointing down to ensure proper cleanability according to the 3A standard.

| Technical Data |                |                |      |   |                |  |                                |                 |                          |  |
|----------------|----------------|----------------|------|---|----------------|--|--------------------------------|-----------------|--------------------------|--|
| Flowmeter Size |                |                |      | Linear Flow Range (US GPM)<br>Refer to Note 1 |                | Nominal Pulses/<br>Gallon 'K'<br>Factor<br>Pulses/<br>Gallon | Nominal Max.<br>Frequency (Hz) | Length (Inches) | Tri-Clamp™ Size (Inches) |  |
| Model          | Tri-Clamp Size | Tri-Clamp Size | Min. | Max.  | Tri-Clamp Size |  |                                |                 | Tri-Clamp Size           |  |
| * Model HO3A   | 1½             | X              | 1/4A | .35   | 3.5            | 15,000   | 900                            | 3.56            |                          |  |
| Model HO3A     | 3/4            | X              | 1/4A | .35   | 3.5            | 15,000   | 900                            | 3.56            |                          |  |
| * Model HO3A   | 1½             | X              | 3/8A | .75   | 7.5            | 8,900  | 1100                           | 3.56            |                          |  |
| Model HO3A     | 3/4            | X              | 3/8A | .75   | 7.5            | 8,900  | 1100                           | 3.56            |                          |  |
| * Model HO3A   | 1½             | X              | 1/2A | 1.25  | 9.5            | 5,800  | 900                            | 3.56            |                          |  |
| Model HO3A     | 3/4            | X              | 1/2A | 1.25  | 9.5            | 5,800  | 900                            | 3.56            |                          |  |
| * Model HO3A   | 1½             | X              | 5/8A | 1.75  | 16             | 5,200  | 1400                           | 3.56            |                          |  |
| Model HO3A     | 3/4            | X              | 5/8A | 1.75  | 16             | 5,200  | 1400                           | 3.56            |                          |  |
| * Model HO3A   | 1½             | X              | 3/4A | 2.5   | 29             | 2,200  | 1065                           | 3.25            |                          |  |
| Model HO3A     | 1½             | X              | 1A   | 4   | 60             | 840  | 840                            | 3.56            |                          |  |
| Model HO3A     | 1½             | X              | 1¼A  | 6   | 93             | 400  | 620                            | 4.59            |                          |  |
| Model HO3A     | 1½             | X              | 1½A  | 8   | 130            | 230  | 500                            | 4.59            |                          |  |
| Model HO3A     | 2              | X              | 2A   | 15  | 225            | 120  | 450                            | 6.06            |                          |  |
| * Model HO3A   | 3              | X              | 2½A  | 25  | 400            | 97   | 650                            | 10.00           |                          |  |
| * Model HO3A   | 4              | X              | 3A   | 40  | 650            | 45   | 500                            | 10.00           |                          |  |

™ Ladish Tri-Clover Div.

(Note 1) Ranges shown are standard ranges; other ranges are available. Contact factory.

\* (Note 2) These sizes require the use of an installation kit to meet "3A" Standard 28-03 specifications. Other sizes are optional.

#### OPTIONAL ACCESSORIES

##### Signal Conditioners/Converters

CAT Series (Refer to CAT Technical Data Sheets).

##### Meter Mounted Totalizer/Rate Indicators

Model HIT-2A Totalizer/Rate Indicator (Refer to Technical Data Sheet HIT-2A-XXX).

##### Micro Processor Based Flow Computers

Flowstar™ and Nova-Flow Series

(Refer Flowstar Series and Nova-Flow Series Technical Data Sheets).

#### PERFORMANCE SPECIFICATIONS

\*\*Accuracy & Linearity: ±0.5% of reading or better.

\*\*Repeatability: ±0.1% of reading or better.

##### Temperature Range:

-450°F to +450°F, process fluid with Std. Magnetic pickup coil.

**Signal Output:** 10 MVRMS or greater into a 10K ohm load at minimum flow rate.

##### Materials of Construction:

316/316L Dual Rated Stainless Steel

(with exceptions noted below):

**Rotor:** 17.4 PH SS.

**Retaining Ring:** 15.7 MO PH SS.

**Bearings:** Hard Carbon Composite.

**Surface Finish:** All meter surfaces meet 3A standards with 32 micro inch finish. Finer finishes for internally wetted surfaces available as an option. Contact factory for details.

\*\*Based on 12 point water calibration at 70°F.

#### INSTALLATION KITS FOR HOFFER SANITARY TURBINE FLOWMETER



To achieve optimum performance of the Sanitary Turbine Flowmeter, a minimum of 10 pipe diameters upstream and 5 pipe diameters downstream of meter size pipe must be used.

In addition, certain combinations of nominal meter sizes and tri-clamp sizes, as indicated on the sizing chart, require the use of adaptor piping to meet the latest "3A" 28-03 specifications. To meet these requirements, Hoffer offers optional sanitary installation kits to provide appropriate straight runs before and after the meter to produce optional results. Certain sizes indicated in these kits to meet the latest 3A standards. Contact factory for additional details.

## SANITARY TURBINE FLOWMETER MODEL NUMBERING SYSTEM

MODEL HO3A      ( A )   X   ( B )   -   ( C )   -   ( D )   -   ( E )   -   ( F / G )   -   ( TRI )   -   ( H )

**A. Tri-Clamp Size**

**B. Flowmeter Size**

**C. Minimum Operating Flow**

**D. Maximum Operating Flow**

**E. Bearing Type**

(C9)      Hard Carbon Composite Sleeve Bearing. M-199 Grade. For use in fluids with a pH of 6 and above.

(C1)      Hard Carbon Composite Sleeve Bearing. M-100 Grade. Acceptable for use in fluids with a pH less than 6 such as wine, vinegar or fruit juice (acidic).

**Note: Both bearings are approved by the Food and Drug Administration.**

**F. Pickup Coils**

- (1M)      One Magnetic Coil
- (2M)      Two Magnetic Coils
- (1MC3PA)      One RF Coil (Not recommended in 4" and larger)
- (1MC2PAHT)      One High Temp 6" Pigtail RF coil
- (1ISM)      Intrinsicly Safe Mag Coil
- (2ISM)      Two Intrinsicly Safe Mag Coils
- \_(RP\_\_\_\_)      Redi-Pulse Coil (See Redi-Pulse Technical Data Sheet RP-XXX)
- \_(\_\_\_\_\_)      Intrinsicly Safe Redi-Pulse Coil (See I.S. Redi-Pulse Technical Data Sheet IRP-XXX)
- (P)      Pigtail or Flying Leads, Add-P and the Length of leads after any coil except the high temperature coils.
- (-ATEX)      Add after coil part no. when using ATEX enclosure mounted on meter.

**G. Explosion-Proof Coil Enclosure (Rated Class I, Groups C & D)**


- (X)      1" MNPT riser, welded to body. Required for all types of enclosures.
- (X3/0)      1" riser with enclosure and without signal conditioner.
- (3B/0)      1" riser with dome cover for Style 1 signal conditioners to meet Group B.
- (X8S)      Add 8S after X riser for a 8" long S/S riser for hot and cold media applications.
- (3B/0-ATEX)      3/4" riser and enclosure to comply with ATEX Ex d.

**End Fitting Types**

(TRI)      Tri-Clover Sanitary End Fitting

**H. Special Features**

- (CE)      CE Mark - Required for Europe
- (PED-CE)      PED Mark -Required for Europe
- (SP)      Any special features that are not covered in the model number, use -SP and a written description.



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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.



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