

TECHNICAL DATA SHEET

**SANITARY TURBINE FLOWMETER FOR
 PROCESS LIQUID MEASUREMENT**

The Hoffer Sanitary Design Turbine flowmeter is designed and manufactured to be compliant with the ASME Bioprocessing Equipment Standard BPE-2019 for measurement of process liquids where high sanitary standards are required. ASME-BPE-2019 is the leading Standard on how to design and build equipment used in the production of biopharmaceuticals. This series includes 11 sizes, 1/4" to 3" with standard Tri-Clamp™ fittings, covering flow rates for 0.35 to 650 GPM.



Note: Turbine meter should be installed in the vertical direction with flow direction up to ensure proper drainability.

Technical Data

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Flowmeter Size				Linear Flow Range (US GPM)		Nominal Pulses/Gallon 'K' Factor Pulses/Gallon	Nominal Max. Frequency (Hz)	Length (Inches)
Tri-Clamp™ Size (Inches)				Min.	Max.			
Model HO3A	1½	X	1/4A	.35	3.5	15,000	900	3.56
Model HO3A	¾	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	¾	X	3/8A	.75	7.5	8,900	1100	3.56
Model HO3A	1½	X	1/2A	1.25	9.5	6,600	1050	3.56
Model HO3A	¾	X	1/2A	1.25	9.5	6,600	1050	3.56
Model HO3A	1½	X	5/8A	1.75	16	5,200	1400	3.56
Model HO3A	¾	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	3B	40	650	45	500	10.00

™ Ladish Tri-Clover Div.

OPTIONAL ACCESSORIES

Signal Conditioners/Converters

CAT Series (Refer to CAT Technical Data Sheets)

Meter Mounted Totalizer/Rate Indicators

Model HIT-4U Totalizer/Rate Indicator (Refer to Technical Data Sheet HIT-4U-XXX)

Micro Processor Based Flow Computers

Nova-Flow (Refer to Technical Data Sheet Nova Flow Series)

PERFORMANCE SPECIFICATIONS

****Accuracy & Linearity:** ±0.5% of reading on all sizes except 1/4" size. ±1% of reading for the 1/4". All meter sizes are available with linearizing electronics to improve the linearity to ±0.1% of reading over tabulated repeatable flow range.

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

Temperature Range:

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

-40°F to +185°F, process fluid with Redi-Pulse pickup coil.

Signal Output: 10 mV_{RMS} 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 process contact surfaces are as follows:

Mechanically Polished (STD): 30 micro-inch
 Electropolished (upon request): 25 micro-inch
 Finer finishes available as an option. Contact factory for details.

Note: 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.

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

(2MC3PA) Two RF Coils

(1ISM) Intrinsically Safe Mag Coil

(2ISM) Two Intrinsically Safe Mag Coils

-(RP____) Redi-Pulse Coil (See Redi-Pulse Technical Data Sheet RP-XXX)

-(____) Intrinsically 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. Riser and Explosion-Proof Coil Enclosures

(X) 1" MNPT riser, welded to body.

(XATEX) 3/4" MNPT riser, welded to body.

(XE2) 1" MNPT riser with E2 enclosure. Includes a 1"x3/4" adapter. *(see ratings below)

(X-ATEX)E2 3/4" MNPT riser with E2 enclosure. *(see ratings below)

(X8S) 8" long S/S 1" MNPT riser for fluid temps below -40°F(-40°C) or above +140°F(+60°C).

(X8S-ATEX) 8" long S/S 3/4" MNPT riser for fluid temps below -40°F(-40°C) or above +140°F(+60°C).

End Fitting Types

(____TRI) Tri-Clover Sanitary End Fitting. Enter size of the tri-clamp end fitting.

H. Special Features

(CE) CE Mark-Required for Europe

(PED-CE) PED Mark-Required for Europe

(SEP-CE) Sound Engineering Practice

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

(X) No special features

*** E2 EXPLOSION-PROOF/FLAME-PROOF ENCLOSURE WITH 3/4" FNPT MOUNT AND 3/4" CABLE ENTRY RATINGS: ***

FM: CLASS I, DIV.1, GR.ABCD, CLASS II/III, DIV.1,GR.EFG, TYPE 4X

CSA: CLASS I, DIV.1, GR.ABCD, CLASS II, DIV1, GR.EFG, CLASS III, TYPE 4X EX D IIC, CLASS I, ZONE 1, IP 66

ATEX: EX II 2GD Ex d tD IIC, IP66/68

IEC: EX D IIC IP68




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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 specifications 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.



Hoffer Flow Controls Quality Management System



Certified to ISO 9001:2015



Precisely Right.