

Турбинные расходомеры шлангового соединения серии НО

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TECHNICAL DATA SHEET



Hose Series for Liquids **Barbed Hose and Beaded Hose Flowmeters** (TWELVE SIZES 1/4" THRU 3")



Outstanding Features

- ♦ Ideal for use in liquid applications where flowmeter will be installed and fitted to hose or plastic tubing.
- ♦ Sizes 1/4" through 3" available. (Other sizes available, contact factory)
- ♦ Pressure dependent on the hose pressure rating up to 1000 psig. Contact factory for high pressure hose applications.
- ♦ Barbed and beaded hose end connections for permanent applications and applications where installation may be moved from time to time.
- ♦ Multiple pickup coils available.

General Description

The Hoffer Hose Series "barbed hose and beaded hose" turbine flowmeters provide extremely accurate flow rate measurement and dependable service for use on liquid applications where the meter must be fitted to hose or connected to plastic tubing. Barbed hose end connections should be selected for permanent installation when the flowmeter is intended to stay once installed. Beaded hose end connections are meant for test installations or applications which are expected to be moved around from time to time. The hose on a beaded end can be readily removed and reinstalled.

Performance Specifications

Overrange: 150% of maximum flow (intermittently).

Linearity: $\pm 0.5\%$ of reading ($\pm 0.25\%$ typical) over tabulated linear flow range.

Repeatability: $\pm 0.1\%$ ($\pm 0.05\%$ typical) over tabulated repeatable range.

Pressure Drop Characteristics: 4 to 5 PSI at maximum linear flow rate at one CSTK.

Available Temperature Range: -450°F to +450°F standard.

Available Turn Down Range: 10:1 to 100:1.

End Fittings: Barbed Hose and Beaded Hose.

Materials of Construction: All 316 stainless steel for long life (with exceptions noted below).

Rotor: 17.4 PH or optional Nickel 200, 430 stainless steel, and others available for media compatibility.

Bearing Styles: 440C stainless steel/ceramic hybrid ball bearings, hard carbon composite, tungsten carbide sleeve, and others available for compatibility with flow media.

LIQUID SIZE SELECTOR CHART FOR HOSE SERIES TURBINE FLOWMETERS

Flowmeter Size	MAGNETIC PICKUP COIL				MODULATED PICKUP COIL			
Diameter (inches)	Linear Range (US GPM)	Linear Range (LPM)	Repeatable Range (US GPM)	Repeatable Range (LPM)	Linear Range (US GPM)	Linear Range (LPM)	Repeatable Range (US GPM)	Repeatable Range (LPM)
1/4*	.35-3.5	1.3-13.2	.25-4.5	.95-17	.35-3.5	1.3-13.2	.0625-4.5	.24-17
3/8*	.75-7.5	2.8-28.4	.3-9	1.1-34	.75-7.5	2.8-28.4	.075-9	.28-34
1/2	1.25-9.5	4.7-36	.6-12	2.3-45	1.25-9.5	4.7-36	.12-12	.45-45
5/8	1.75-16	6.6-60.6	.9-20	3.4-75.7	1.75-16	6.6-60.6	.2-20	.75-75.7
3/4	2.5-29	9.5-110	1.5-35	5.7-132.5	2.5-29	9.5-110	.35-35	1.3-132.5
1	4-60	15-227	2-75	7.6-284	4-60	15-227	.75-75	2.8-284
1-1/4	6-93	23-352	3-115	11.4-435	6-93	23-352	1.15-115	4.35-435
1-1/2	8-130	30.3-492	5-175	19-662	8-130	30.3-492	1.75-175	6.6-662
2	15-225	56.8-852	11-275	42-1041	15-225	56.8-852	2.75-275	10.4-1041
2-1/2	25-400	95-1514	15-500	56.8-1893	25-400	95-1514	5-500	19-1893
3	40-650	151-2460	20-800	76-3028	40-650	151-2460	8-800	30.3-3028

NOTE: Performance enhancement techniques are routinely applied to produce larger linear and usable flow ranges. Consult with the applications group at Hoffer with your requirements.

* The linear flow ranges on 1/4" and 3/8" may be derated depending on bearing selection. Consult applications group for additional information.

LIQUID TURBINE HOSE SERIES MODEL NUMBERING SYSTEM

MODEL HO(A) X (B) - (C) - (D) - (E) - (F/G/H) - (I) - (J)

PROCESS CONNECTION / END FITTING SIZE AND TURBINE FLOWMETER SIZE

TURBINE FLOWMETER SIZE

MINIMUM FLOW RATE IN GPM

MAXIMUM FLOW RATE IN GPM

BEARING TYPE

PICKUP COILS

COIL SPACING, MECHANICAL DEGREES

RISER AND EXPLOSION PROOF COIL ENCLOSURES

PROCESS CONNECTION/END FITTING HOSE I.D. SIZE AND TYPE

SPECIAL FEATURES

CALIBRATION

- HO LIQUID TURBINE HOSE SERIES ARE CALIBRATED WITH A 12-POINT ONE CENTISTOKE CALIBRATION WITH THE TOP AND BOTTOM POINTS REPEATED WHICH ARE N.I.S.T. CERTIFIED. VISCOSITY CALIBRATIONS ARE AVAILABLE.
- THE DESIGN PRESSURE WILL HOLD PRESSURE UP TO THE HOSE PRESSURE RATING BEING USED UP TO 1000 PSIG, GREATER PRESSURES ARE AVAILABLE FOR HIGH PRESSURE HOSE APPLICATIONS, PLEASE CONTACT THE FACTORY.
- BARBED HOSE END CONNECTIONS SHOULD BE SELECTED FOR PERMANENT INSTALLATIONS WHEN THE FLOWMETER IS INTENDED TO STAY ONCE INSTALLED.
- BEADED HOSE END CONNECTIONS ARE MEANT FOR TEST INSTALLATIONS OR APPLICATIONS WHICH ARE EXPECTED TO BE MOVED AROUND FROM TIME TO TIME. THE HOSE ON A BEADED END CAN BE READILY REMOVED AND REINSTALLED.

PROCESS CONNECTION/END FITTING SIZE (A) & TURBINE FLOWMETER SIZE (B)

MODEL HO(A)X(B)-()-()-()-()-()-()

(A)X(B)	(A)X(B)	(A)X(B)	(A)X(B)	(A)X(B)	(A)X(B)
HO 1/2X1/4	HO 1/2X1/2	HO 3/4X3/4 (Bead Only)	HO 11/4X11/4	HO 2X2	HO 3X3
HO 5/8X1/4	HO 5/8X1/2	HO 1X3/4	HO 11/2X11/4	HO 21/2X2	HO 4X3
HO 1/2X3/8	HO 5/8X5/8	HO 1X1	HO 11/2X11/2	HO 21/2X21/2	
HO 5/8X3/8	HO 3/4X5/8	HO 11/4X1	HO 2X11/2	HO 3X21/2	

MINIMUM FLOW AND MAXIMUM FLOW RATE IN GPM

MODEL HO()X()-(C)-(D)-(/)-()-()

NOTE: FOR EXTENDED RANGES REFER TO SIZE SELECTOR CHARTS.

	(C)		(D)
TURBINE SIZE	MINIMUM FLOW	TO	MAXIMUM FLOW
1/4"	35 GPM		3.5 GPM
3/8"	.75 GPM		7.5 GPM
1/2"	1.25 GPM		9.5 GPM
5/8"	1.75 GPM		16 GPM
3/4"	2.5 GPM		29 GPM
1"	4 GPM		60 GPM
1 1/4"	6 GPM		93 GPM
1 1/2"	8 GPM		130 GPM
2"	15 GPM		225 GPM
2 1/2"	25 GPM		400 GPM
3"	40 GPM		650 GPM

BEARING TYPE

MODEL HO()X()-()-()-(E)-(/)-()-()

OPTION (E)**1" OR LESS TURBINE SIZES**

- (BP) CERAMIC HYBRID BALL BEARING, SELF LUBRICATING
 (C) HARD CARBON COMPOSITE SLEEVE BEARING
 (T) TUNGSTEN CARBIDE SLEEVE BEARING

1 1/4" THRU 3" TURBINE SIZES

- (CB) CERAMIC HYBRID BALL BEARING, SELF LUBRICATING
 (C) HARD CARBON COMPOSITE SLEEVE BEARING
 (T) TUNGSTEN CARBIDE SLEEVE BEARING

OPTIONAL ACCESSORIES

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



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

PICKUP COILS

MODEL HO()X()-()-()-(F /)-()-()

OPTION (F)

(1M)	ONE MAG COIL	(1RPMXXX)	ONE REDI-PULSE MAG COIL (SEE REDI-PULSE AND I.S. REDI-PULSE DATA SHEETS TO COMPLETE REDI-PULSE PART NUMBERS)
(2M)	TWO MAG COILS		
(1MC3PA)	ONE RF COIL	(2RPMXXX)	TWO REDI-PULSE MAG COILS
(2MC3PA)	TWO RF COILS	(1RPRXXX)	ONE REDI-PULSE RF COIL
(1MC2PAHT)	ONE HIGH TEMP 6" PIGTAIL RF COIL	(2RPRXXX)	TWO REDI-PULSE RF COILS
(2MC2PAHT)	TWO HIGH TEMP 6" PIGTAIL RF COILS	(1DMXXXX)	ONE REDI-PULSE INTRINSICALLY SAFE MAG COIL
(1HTM)	HIGH TEMP MAG COIL	(2DMXXXX)	TWO REDI-PULSE INTRINSICALLY SAFE MAG COILS
(2HTM)	TWO HIGH TEMP MAG COILS	(1DRXXXX)	ONE REDI-PULSE INTRINSICALLY SAFE RF COIL
(1ISM)	ONE INTRINSICALLY SAFE MAG COIL	(2DRXXXX)	TWO REDI-PULSE INTRINSICALLY SAFE RF COIL
(2ISM)	TWO INTRINSICALLY SAFE MAG COILS	(-P*)	PIGTAIL OR FLYING LEADS, ADD -P AND THE *LENGTH OF LEADS AFTER ANY COIL EXCEPT THE HIGH TEMPERATURE COILS
(1ISM-ATEX)	ONE ISM ATEX COIL		
(2ISM-ATEX)	TWO ISM ATEX COILS		

COIL SPACING, MECHANICAL DEGREES

MODEL HO()X()-()-()-()-(/ G)-()-()

NOTE (G): 90 DEGREE ELECTRICAL COIL SPACING FOR TWO COILS REQUIRE THE FOLLOWING MECHANICAL SPACING:

TURBINE SIZE	FORWARD MECH. DEGREES	REVERSE DEGREES MECH. DEGREES	COIL SPARE DEGREES
1/4"	ZERO	135	250
3/8"	ZERO	135	250
1/2"	ZERO	135	250
5/8"	ZERO	135	180
3/4"	ZERO	135	250
1"	ZERO	135	250
1 1/4"	ZERO	135	250
1 1/2"	ZERO	135	250
2"	ZERO	101.25	250
2 1/2"	ZERO	97.50	180
3"	ZERO	97.50	180

RISER AND EXPLOSION PROOF COIL ENCLOSURES

MODEL HO()X()-()-()-()-(/ / H)-()-()

OPTION (H)

- (X) 1" MNPT RISER, WELDED TO BODY, REQUIRED FOR ALL TYPE OF ENCLOSURES.
- (X-ATEX) 3/4" MALE NPT COIL RISER-ATEX EXD COMPLIANT.
- (XE2) 1" MNPT RISER WITH E2 ENCLOSURE. (SEE CHART)*
- (X-ATEX)E2 3/4" MNPT RISER WITH E2 ENCLOSURE. (SEE CHART)*
- (X8S) 8" LONG S/S 1" MNPT RISER. (FOR FLUID TEMPERATURES BELOW -40°F (-40°C) OR ABOVE +140°F +60°C).
- (X8S-ATEX) 8" LONG S/S 3/4" MNPT RISER. (FOR FLUID TEMPERATURES BELOW -40°F (-40°C) OR ABOVE +140°F +60°C).

***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, DIV. 1, 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

PROCESS CONNECTION/END FITTING HOSE I.D. AND TYPE

MODEL HO()X()-()-()-()-(/ /)-(I)-()

OPTION (I)

End Fitting Size and Type		
Reference Turbine Size	Hose I.D.	(I) Select Type
1/4	for 1/2" I.D. hose	1/2bead or 1/2barb
1/4	for 5/8" I.D. hose	5/8bead or 5/8barb
3/8	for 1/2" I.D. hose	1/2bead or 1/2barb
3/8	for 5/8" I.D. hose	5/8bead or 5/8barb
1/2	for 1/2" I.D. hose	1/2bead or 1/2barb
1/2	for 5/8" I.D. hose	5/8bead or 5/8barb
5/8	for 5/8" I.D. hose	5/8bead or 5/8barb
5/8	for 3/4" I.D. hose	3/4bead ONLY
3/4	for 3/4" I.D. hose	3/4bead or 3/4barb
3/4	for 1" I.D. hose	1bead or 1barb
1	for 1" I.D. hose	1bead or 1barb
1	for 11/4" I.D. hose	11/4bead or 11/4barb
11/4	for 11/4" I.D. hose	11/4bead or 11/4barb
11/4	for 11/2" I.D. hose	11/2bead or 11/2barb
11/2	for 11/2" I.D. hose	11/2bead or 11/2barb
11/2	for 2" I.D. hose	2bead or 2barb
2	for 2" I.D. hose	2bead or 2barb
2	for 21/2" I.D. hose	21/2bead or 21/2barb
21/2	for 21/2" I.D. hose	21/2bead or 21/2barb
21/2	for 3" I.D. hose	3bead or 3barb
3	for 3" I.D. hose	3bead or 3barb
3	for 4" I.D. hose	4bead or 4barb

Note: Pressure is rated to 1000 PSIG or to the rating of the hose. Higher pressures for high pressure hose and other size hose I.D.'s are available upon request.

SPECIAL FEATURES

MODEL HO()X()-()-()-()-(/ /)-()-(J)

OPTION (J)

SPECIAL FEATURES

- (CE) CE MARK REQUIRED FOR EUROPE
- (PED-CE) PED-CE MARK REQUIRED FOR EUROPE
- (SEP-CE) SOUND ENGINEERING PRACTICE
- (SP) ANY SPECIAL FEATURES THAT ARE NOT COVERED IN THE MODEL NUMBER, USE A WRITTEN DESCRIPTION OF THE -SP.
- (X) NO SPECIAL FEATURES



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



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HOFFER FLOW CONTROLS, INC.

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