

## Турбинные расходомеры нефти серии СТ

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## TECHNICAL DATA SHEET

### OUTSTANDING FEATURES

- **Widest flow turndown ranges** available in a custody transfer grade turbine flowmeter.
- Designed to be compliant with **API Standard Chapter 5.3**.
- **Rim rotor design** offered in sizes 4"-12" provides for high pulse resolution.
- Bearing types include **self-lubricating, ceramic ball bearings and tungsten carbide sleeve**.
- Optionally available with **multiple pickup coils** for **redundancy** or **bi-directional** flow measurement.
- Rotor assembly is **hydrodynamically balanced** and "floats" on fluid cushion to provide extended bearing life.

### Custody Transfer Series Rim Flowmeters

The Hoffer **CT Series** turbine flowmeters provide extremely accurate custody transfer grade flow measurement in a rim rotor design. These flowmeters are typically used in liquid petroleum products. This series is recommended for flow applications where high resolution (pulse count) is critical in order to achieve custody transfer grade accuracy.



**Note:** For bladed design custody transfer flowmeters we offer the API Series.

### SIZE SELECTOR CHART FOR "PREMIUM RIMMED" CT SERIES (±0.15% LINEARITY)

| METER SIZE | NORMAL FLOW RANGE |      |        |       |                |        |         |       | MAXIMUM EXTENDED FLOW RANGE |        |         |       | PULSES/ GALLON<br>(±5%) | PULSES/ BARREL<br>(±5%) |
|------------|-------------------|------|--------|-------|----------------|--------|---------|-------|-----------------------------|--------|---------|-------|-------------------------|-------------------------|
|            | MINIMUM LINEAR    |      |        |       | MAXIMUM LINEAR |        |         |       |                             |        |         |       |                         |                         |
|            | GPM               | BPH  | BPD    | M3/HR | GPM            | BPH    | BPD     | M3/HR | GPM                         | BPH    | BPD     | M3/HR |                         |                         |
| 4"         | 120               | 172  | 4128   | 27    | 1200           | 1720   | 41,280  | 270   | 1500                        | 2142   | 51,408  | 341   | 42.3                    | 1776                    |
| 6"         | 280               | 400  | 9600   | 63.6  | 2800           | 4000   | 96,000  | 636   | 3600                        | 5142   | 123,008 | 818   | 26                      | 1092                    |
| 8"         | 520               | 743  | 17,832 | 118.2 | 5200           | 7430   | 178,320 | 1182  | 6400                        | 9142   | 219,008 | 1454  | 13.6                    | 571                     |
| 10"        | 800               | 1143 | 27,432 | 181.8 | 8000           | 11,430 | 274,320 | 1818  | 9800                        | 14,000 | 336,000 | 2226  | 8.68                    | 364                     |
| 12"        | 1200              | 1714 | 41,136 | 272.4 | 12,000         | 17,140 | 411,360 | 2724  | 15,000                      | 21,428 | 514,272 | 3407  | 5.66                    | 237                     |

Flow ranges and performance specifications are based on a specific gravity of 1.0 and a viscosity of 1.0 centistoke.  
 For performance at other specific gravities and viscosities, consult factory.

### RIMMED ROTORS 4"-12"

**Materials of Construction:** 316 stainless steel (with exceptions noted below).

- Rim Rotor: *Rim* – 316 stainless steel.  
*Rim Buttons* – 430 or 17.4 stainless steel.
- Flanges: 316 stainless steel standard. Optional carbon steel or 304 stainless steel flanges per ASME/ANSI B16.5 are available. Available in ANSI, DIN and ring joint type flanges.
- Bearings: Both tungsten carbide sleeve and ceramic ball bearings types are available.
- Optional NACE compliance per MR0175 available.

### GENERAL PERFORMANCE SPECIFICATIONS

- **Linearity:** ±0.15% linearity standard. Improved linearity over reduced flow turndown is optionally available, please consult factory.
- **Repeatability:** ±0.02% at any point throughout the extended flow range.
- **Temperature Range:** -450°F to +450°F, process fluid with standard magnetic pickup coil.
- **Pressure Drop:** 5 PSI at maximum linear flow rate.
- **Output:** 10mV RMS or greater into a 10K ohm load at a minimum flow rate.

*A complete line of flowmeter signal conditioners (preamplifiers) and flow computers are available.  
 Consult with the applications group at Hoffer for additional information.*

# CT SERIES

## MODEL NUMBER DESIGNATION

**Model CT** (A) X (B) - (C) - (D) - (E) - (F/G/H) - (I) - (J) - (K)

**A. End Fitting Size** (Same as process line)

**B. Flowmeter Size** (Same as process line)

**C. Minimum Operating Flow** (In GPM)

**D. Maximum Operating Flow** (In GPM)

**E. Bearing Type**

(CB) Ceramic Hybrid Ball Bearings, Self-Lubricating.  
(T) Tungsten Carbide Steel.

**F. Pickup Coils**

(1M) One Magnetic Coil.  
(2M) Two Magnetic Coils.  
(1HTM) One High Temperature Mag Coil. (+850°F/454°C)  
(1ISM) One Intrinsically Safe Mag Coil.  
(2ISM) Two Intrinsically Safe Mag Coils.  
(1ISM-ATEX) One ISM ATEX Coil.  
(2ISM-ATEX) Two ISM ATEX Coils.  
\_ (RPM) Redi-Pulse Magnetic Coil (See Redi-Pulse Technical Data Sheet RP-XXX).  
\_ (DMX) Intrinsically Safe Redi-Pulse Magnetic Coil (See I.S. Redi-Pulse Technical Data Sheet IRP-XXX).

**G. Coil Spacing, Mechanical Degrees Apart** (Factory assigned)

**H. Riser and Explosion-Proof Coil Enclosures**

(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

**I. End Fitting Types**

(F\_\_\_\_) Raised Face Flanges per ANSI (See chart)\*\*  
(DN/PN\_-CS/SS) DN=Metric Size, PN=Flange Pressure Rating (in DIN Std.) and Select Material.

**\*\*Pressure Rating/Flange Material**  
Include "F", number indicating pressure rating, and flange material. (i.e., -F1SS-)  
**Select one:**  
(1) 150# Flanges  
(3) 300# Flanges  
(6) 600# Flanges  
(9) 900# Flanges  
(15) 1500# Flanges  
(25) 2500# Flanges  
**Select one:**  
(SS) Stainless Steel  
(CS) Carbon Steel  
Note: 316/316L SS flanges are standard.

**J. Locating Pins**

(LP) Locating pins (required when using with flanged flow straighteners).

**K. Special**

(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.  
(EXP) CSA Explosion-Proof Certification (See chart)\*\*\*  
(X) No Special Features

\*\*\* CLASS I, DIV. 1, GR. ABCD; CLASS I, DIV. 2, GR. ABCD; CLASS II, DIV. 1, GROUPS EFG  
CANADA: CLASS I, ZONE 1 & 2, Ex d II C  
USA: CLASS I, ZONE 1 & 2, AEx d II C

Note: Specify schedule of pipe in which flowmeter will be installed when ordering.



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.

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



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