Turbopulse Industrial Series Turbine Flowmeters

Features

- 15 sizes from 15 to 500mm (1/2 to 20")
- Wide variety of process connections - BSP / NPT male to 50mm (2")
  - ANSI or DIN flanges
- Pressure to 250 bar (3675 psi) Standard range of -50 to 120°C
- (-58 to 250° F)
- Long life tungsten carbide bearings
- +/- 0.5% linearity (10:1 turdown)

Options

- +/- 0.15% linearity (10:1 turndown) for sizes 100mm (4") and larger
- Explosionproof or intrinsically safe pickoffs
- Integral preamplifier, frequency to current convertor (4-20 mA output) or flowrate / totaliser with various outputs.
- Integral or remote self powered flow rate-totaliser with scaled pulse, analog and flow alarm outputs (see separate data sheet)
- Integral or remote high speed preset batch controller (see separate data sheet)

Overview

Turbopulse turbine flowmeters are precise, reliable and robust units for the volumetric flow measurement of clean low viscosity liquids.

Stainless steel construction with tungsten carbide bearings provides long life with a wide range of aggressive and non-lubricating liquids in petrochemical and general industrial applications.

Fifteen sizes cover flows from 0.11 to 7000 m^3/hr (0.5 to 30000 USGPM) with +/- 0.5% linearity. Enhanced linearity is available in larger sizes where custody transfer performance is required.

The standard pick-off coil is supplied with either a military style plug or a junction box with terminal strip.

Integral preamplifiers are available for harsh environments, to extend transmission distance or to interface with secondary instruments that require a conditioned signal input.

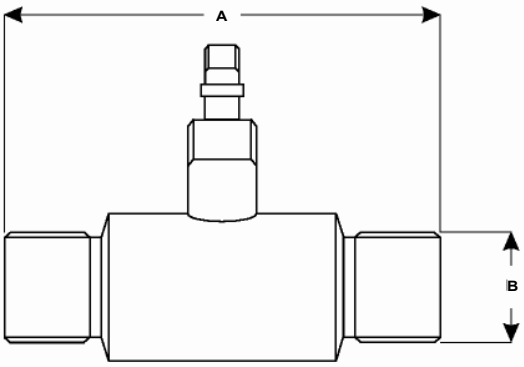
An integral RT1 00 series flowrate totaliser is optionally available to provide local indication with 4-20mA and Hi/Lo flow alarm outputs and/or scaleable pulse output.

Calibration

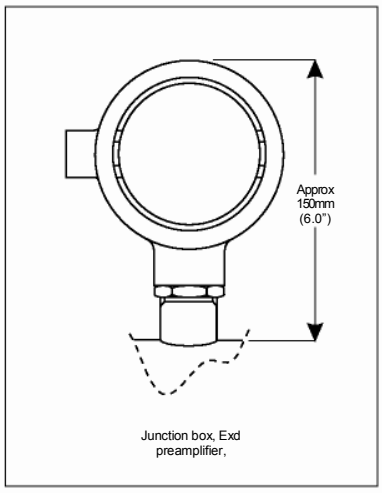
Sizes 25mm (1") and larger are calibrated on positive displacement prover loops in accordance with current API standards.

For each meter size calibration is performed at five points across the nominal flow range to ensure optimum performance in every application.

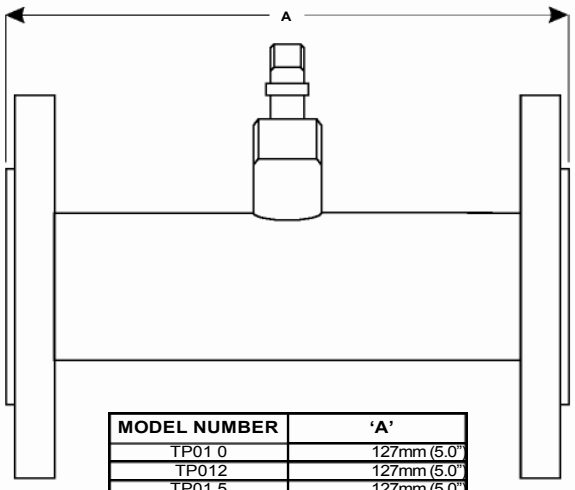
DIMENSIONS



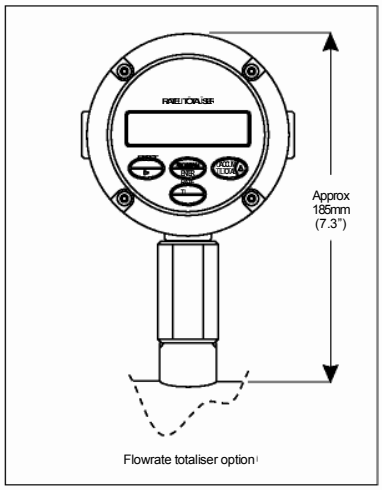
MODEL NUMBER	'A'	'B'
TP010	64mm (2.5")	1/2" (15mm) BSP or NPT
TP012	64mm (2.5")	3/4" (20mm) BSP or NPT
TP015	64mm (2.5")	3/4" (20mm) BSP or NPT
TP020	83mm (3.3")	3/4" (20mm) BSP or NPT
TP025	89mm (3.5")1"	(25mm) BSP or NPT
TP040	115mm (4.5")11/2"	(40mm) BSP or NPT
TP050	133mm (5.2")	2" (50mm) BSP or NPT



Junction box, Exd preamplifier,



MODEL NUMBER	'A'
TP01 0	127mm (5.0")
TP012	127mm (5.0")
TP01 5	127mm (5.0")
TP020	140mm (5.5")
TP025	152mm (6.0")
TP040	178mm (7.0")
TP050	197mm (7.8")
TP080	254mm (10.0")
TP100	356mm (14.0")
TP150	368mm (14.5")
TP200	457mm (18.0")
TP250	457mm (18.0")
TP300	457mm (18.0")
TP400	610mm (24.0")
TP500	610mm (24.0")



Flowrate totaliser option

Note: All dimensions are nominal

SPECIFICATIONS

Connection Size	15 models from 15 to 500mm (1/2 to 20", DN15 to DN500) (see ordering information for available sizes)
Process Connections	BSP or NPT male threads to 50mm (2", DN50) All sizes flanged to ANSI or DIN specifications in carbon steel, 304 or 316 stainless steel, other flange types on request
Nominal Flow Range*	0.11 - 1.1 m³/hr to 700 - 7000 m³/hr (0.5 - 5 USGPM to 3000 - 30000 USGPM) (see ordering information for flow range of each model) * *For non lubricating liquids, the maximum flow should be reduced by 25%*
Viscosity Range	10 cSt recommended maximum to maintain linear range
Linearity	+/- 0.5% over 10:1 range as standard, +/- 0.15% over 10:1 range optional for sizes 100mm (4", DN100) and larger
Repeatability	+/- 0.02 to 0.05% under steady flow conditions
Temperature Range	-50 to 120°C (-58 to 250° F) as standard, optionally to 240 C (465 F)
Maximum Pressure	Threaded versions to 250 bar (3675 psi), flanged meters according to flange specification
Pressure Drop	Approximately 0.28 bar (4 psi) at maximum flow (SG=1, viscosity =1 cSt)
Body Material	304 stainless steel (1.4301) standard, 316 stainless steel (1.4401) optional
Rotor Material	ANSI 431 or SS 430/410 where cast
Bearing Support Material	304 stainless steel (1.4301) standard, 316 stainless steel (1.4401) optional
Bearings	Tungsten carbide sleeve
Output	Reluctance type pick-off coil (20 mV P/P minimum), max. 50m transmission.
Preamplifier Output	Two wire 4-20mA current pulse (12-28 VDC), max. 3000m transmission

Remote Mounting Options for 100 Series Electronics

METER ORDERING INFORMATION

	CONNECTION SIZE Inches		DN (mm)	m3/hr	USGal/min	P/litreP/USG
FTP	1/2"	(DN15)	0.11 - 1.1	0.5 ~ 5	4000	15140
010	3/4"	(DN20)	0.22 - 2.2	0.9 ~ 9	1700	6435
012	3/4"	(DN20)	0.4 - 4	1.8 ~ 18	1100	4160
015	3/4"	(DN20)	0.8 - 8	3.6 ~ 36	400	1500
020	1 "	(D N 2 5)	1.6 - 16	7 ~ 70	180	680
025	1 1/2"	(DN40)	3.4 - 34	15 ~ 150	60	230
040	2 "	(D N 5 0)	6.8 - 68	30 ~ 300	24	90
050	3 "	(D N 8 0)	13.5 - 135	60 ~ 600	15	57
080	4 "	(D N 1 0 0)	27 - 270	120 ~ 1200	6.6	25
100	6"	(DN150)	55 - 550	240 ~ 2400	2.3	8.7
150	8~20"	(DN200 to DN500) - consult factory				
200+						

Body Material

316 stainless steel - 250 bar (3500 psi) max.
high pressure stainless, 400 bar (5580psi) - *maximum viscosity for hydraulic fluids is 68cst*

Process Connections

1	BSPP male threaded
2	NPT male threaded
3	* Tri-clamp ferrules (316SS)
4	ANSI-150 RF flanges
5	ANSI-300 RF flanges
6	PN10 DIN flanges
7	PN16 DIN flanges
8	PN25 DIN flanges
9	Customer nominated connections *(covered under SB option below)*

** triclamp ferrules are 1/2" larger than the meter size*

Process Connection Material

threaded stainless steel as per body material
carbon steel flanges *(available with TP080 and above only)*
316 stainless steel process connections

No. of Pick-offs

one
two x 90 degree electrically offset *(with TP100 & above only)*

Pick-off Style

1 MS (m style) connector
2 FL (flying leads) *(required for Integral options)*

Pick-off Type *(both MS or FL unless noted)*

(120°C [250°F] max.)
y sealed or high temp (240°C [464°F] max.)
ved intrinsically safe (120°C [250°F] max.)
65°C [150°F] max.) MS only

Linearity

1 +/-0.5% *(standard)*
2 +/-0.1 5% *(custody transfer available for TP100 & over)*

Integral Options

	JB	Junction box ATEX approved
	PA	Exd preamplifier ATEX approved
	FI	Exd F/I convertor ATEX approved
with scaleable pulse output	B2	BT1 1 dual totaliser with output - 120°C (250°F) max.
IECEX & ATEX approved	B3	I.S. intrinsically safe BT1 1 including output [2]
scaled pulse,alarms & 4~20mA	R2	RT1 2 rate totaliser with all outputs [2]
IECEX & ATEX approved	R3	I.S. intrinsically safe RT1 2 with all outputs [2]
scaled pulse + backlighting	R4	RT20 large LCD flow rate totaliser - 120°C (250°F) max.
	E0	EB1 0 Ecobatch dc batch controller - 120°C (250°F) max.
	SB	Specific build requirement (see price list cover sheet)

Example

TP025	S	1	T	1	-	2	1	1	R2	S

= Add "**S**" for Universal Swivel Stem

Model No.

FLOMEC

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