



TURBOPULSE – small & large capacity meters

TM Turbopulse mini & the larger TP Turbopulse turbine series measure flows of low viscosity liquids from 3 to 7,000,000 litres/hr in a range of sizes from 1/4" to 20" (6mm~500mm).

The TM mini series have a tangential rotor with integral flow conditioning ports whilst the TP series have an axial rotor and flow guides, the TP series needs to be installed in straight sections of pipe either horizontal or vertical so that the flow is conditioned. The TP series have Exd & Intrinsically Safe (I.S.) approvals.

Both meter series are robust, compact & take little space in the piping system. Applications include fuels, alcohols, solvents, insecticides, milk, chemicals, water & light hydraulic oils.

FEATURES :

- High accuracy & repeatability.
- Low cost of ownership, wide flow range.
- Rugged & compact design.
- Certified Exd & I.S. hazardous area versions.
- Quadrature pulse output option.
- Integral or remote pre-amplifiers & flow instruments.
- ±0.15% custody transfer models available.

STANDARD OPTIONS :

Flanged process connections, Explosionproof, integral and remote preamplifier, LCD totaliser-batch totaliser, flow rate totalisers, scaled pulse, 4~20mA & flow alarm outputs, electronic batch controllers and pulse processing modules.

GENERAL SPECIFICATIONS

Model prefix :	TM-Turbopulse mini	TP-Turbopulse
Nominal sizes	6mm (1/4" BSPF)	12~500mm (1/2"~20")
Accuracy @ 1cp	±1~2% FSD or ±0.75% o.r.	± 0.5% o.r. (10:1 turndown)
Temperature range	5~125°C (40~250°F)	-40~+240°C (-40~+460°F)
Maximum pressure		
316 stainless steel	10 bar (147 psi)	250 bar (3680 psi) 10cst max.
high pressure SS	N/A	400 bar (5580 psi), 68cst max.
Peek	10 bar (147 psi)	N/A
Protection class	IP66/67 (NEMA4X), optional Exd IIB T6 or I.S.	
Electrical (see also optional outputs - Turbopulse pick-off types)		
standard output	Hall effect sensor	Pick-off Coil

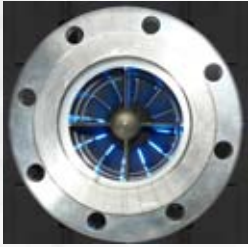
FLOW RANGES - TM Turbopulse Mini

size	model	litres/min (GPM)	Jet Ø
1/4"	TM001	0.05~0.5 (0.01~0.13)	1mm
1/4"	TM002	0.12~1.5 (0.03~0.4)	2mm
1/4"	TM003	0.2~4.5 (0.04~1.12)	3mm
1/4"	TM004	0.25~6.5 (0.05~1.7)	4mm
1/4"	TM005	0.3~10 (0.08~2.64)	no jet
1/4"	TM006	0.5~15 (0.13~4)	6mm

FLOW RANGES - TP Turbopulse

size	model	litres/hr (GPH)
1/2"	TP010	100~1100 (0.44~4.4)
3/4"	TP012	220~2200 (0.97~9.7)
3/4"	TP015	400~4000 (1.77~17.7)
3/4"	TP020	800~8000 (3.5~35.2)
m3/hr (GPM)		
1"	TP025	1.6~16 (7~70)
1 1/2"	TP040	3.4~34 (15~150)
2"	TP050	6.8~68 (30~300)
3"	TP080	13~135 (60~600)
4"	TP100	27~270 (120~1200)
6"	TP150	55~550 (240~2400)
8"	TP200	110~1100 (480~4800)
10"	TP250	190~1900 (840~8400)
12"	TP300	270~2700 (1200~12000)
16"	TP400	400~4000 (1800~18000)
20"	TP500	700~7000 (3000~30000)

TECHNICAL INFORMATION TURBINE FLOWMETERS

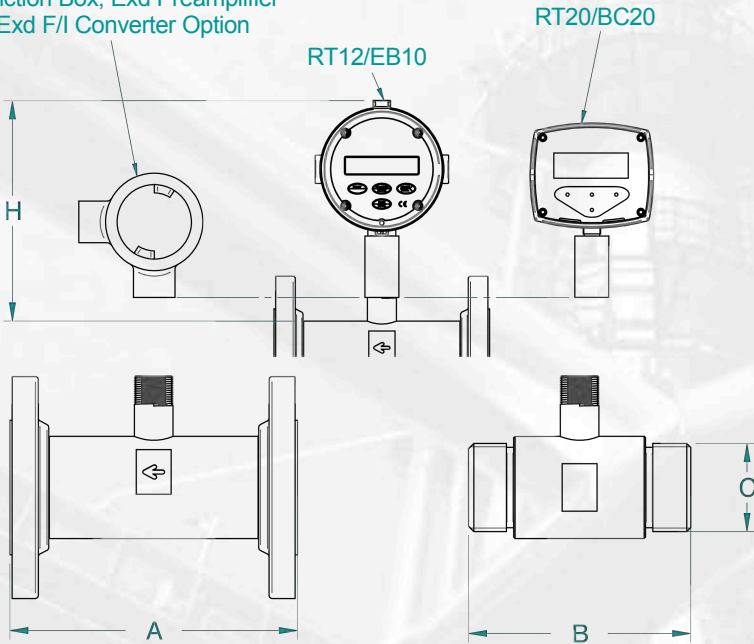


TURBOPULSE MODEL CODING

	Pulse output (nominal) :	P/litre	P/USG	frequency (Hz)
TP010	1/2" (DN15)	4000	15140	120-1200
TP012	3/4" (DN20)	1700	6435	104-1040
TP015	3/4" (DN20)	1100	4160	120-1200
TP020	3/4" (DN20)	400	1500	90-900
TP025	1" (DN25)	180	680	80-800
TP040	1 1/2" (DN40)	60	230	57-570
TP050	2" (DN50)	24	90	45-450
TP080	3" (DN80)	15	57	56-560
TP100	4" (DN100)	6.6	25	50-500
TP150	6" (DN150)	2.3	8.7	35-350
TP200+	8-20" (DN200 to DN500) - consult factory for more details			

DIMENSIONS

Junction Box, Exd Preampifier
Exd F/I Converter Option



Flanged meters available with
A.N.S.I or din flanges. See applicable
standard for flange dimensions.

Option Fitted	H
RT12/EB10	210mm (8.3")
RT20/BC20	185mm (7.3")
EX Junction Box	150mm (6.0")

FLANGED METERS

Model No.	A
TP010	127mm (5.0")
TP012	127mm (5.0")
TP015	127mm (5.0")
TP020	140mm (5.0")
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")

THREADED METERS

Model No.	B	C
TP010	64mm (2.5")	1/2" BSP or NPT
TP012	64mm (2.5")	3/4" BSP or NPT
TP015	64mm (2.5")	3/4" BSP or NPT
TP020	83mm (3.3")	3/4" BSP or NPT
TP025	89mm (3.5")	1" BSP or NPT
TP040	115mm (4.5")	1 1/2" BSP or NPT
TP050	133mm (5.5")	2" BSP or NPT

Body Material

S 316 stainless steel - 250 bar (3500 psi) max.

H high pressure SS, 400 bar (5580psi) - 68cst max.

Process Connections

1	BSP 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

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

Process Connection Material

T	threaded stainless steel
C	carbon steel flanges (TP080+)
S	316 stainless steel process connections

No. of Pick-offs

1	one
2	two x 90 degree electrically offset (TP100+)

Pick-off Style

1	MS (military style) connector
2	FL (flying leads)

Pick-off Type

1	standard coil (120°C [250°F] max.)
2	hermetically sealed or high temp coil
3	intrinsically safe coil - ATEX Approved
4	preamplified (MS connector only)

Linearity

1	+/-0.5% (standard)
2	+/-0.15% (custody transfer TP100+)

Integral Options

JB	Junction box - ATEX Approved
PA	Exd preamplifier - ATEX Approved
FI	Exd F/I converter - ATEX Approved
B2	BT11 dual totaliser
B3	I.S. intrinsically safe BT11
R2	RT12 rate totaliser
R3	I.S. intrinsically safe RT12
R4	RT20 flow rate totaliser
E0	EB10 dc batch controller
SB	Specific build requirement

with scaleable pulse output
IECEX & ATEX approved
scaled pulse, alarms & 4-20mA
IECEX & ATEX approved
scaled pulse + backlighting
dc powered 2 stage batch controller

Model No. Example

TP025	S	1	T	1	-	2	1	1	R2
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