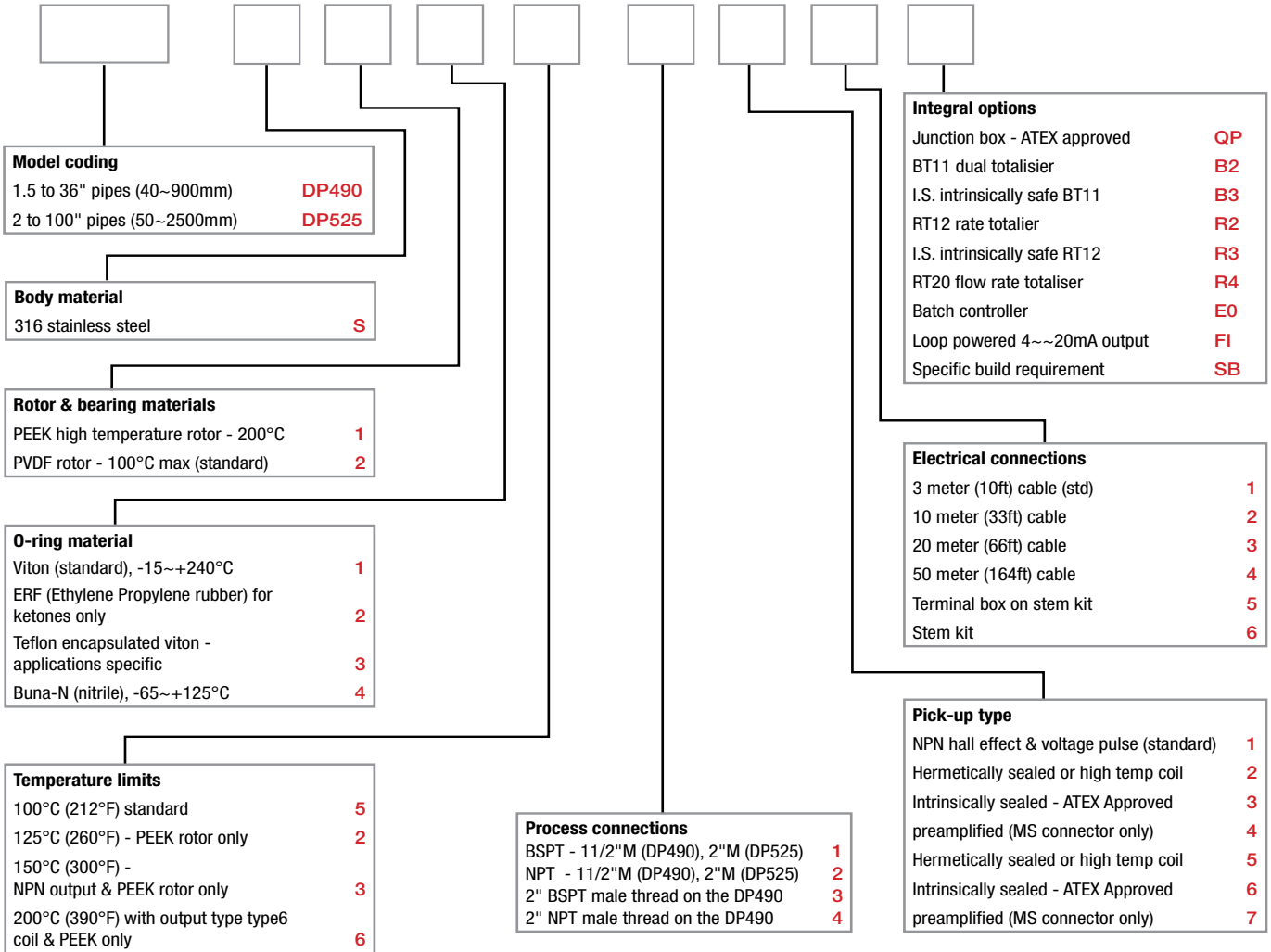


Pelton Wheel Flowmeters

DP series Insertion Pelton wheel flowmeters

Options & Ordering Information



Axial Turbine Flowmeters

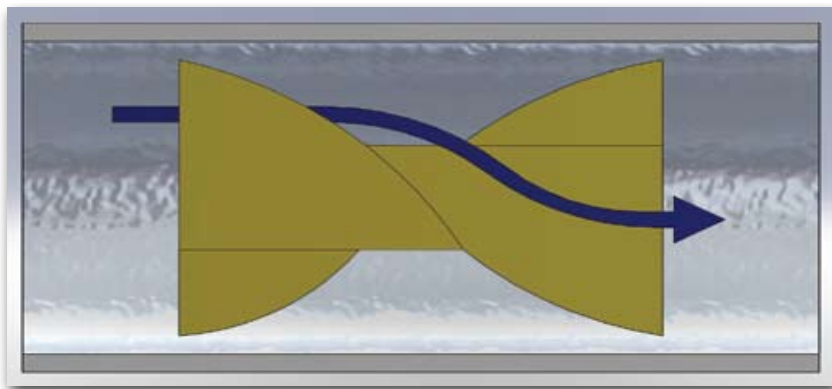
Axial turbine flowmeters - principle of operation

Principle of operation

Axial turbines can be likened and tend to look like marine propellers housed in a tube which is the flowmeters body. Instead of being driven, they rotate freely with the flow of fluid as it passes over them. Helix turbines and fan type blades are also commonly used.

They tend to operate best at relatively high rotational speeds and on low viscosity media, although they demonstrate a degree of viscosity independence when used at the higher end of their flow range. If the turbine is made from a magnetic material then their high rotational speed can be harnessed to generate an output signal via an inductive pick-up without the need for an external power source. Optical and Hall effect pick-ups also used in some designs.

With a non-contacting pick-up and a simple cylindrical body axial turbines can easily be designed to take very high pressures in the thousands of Bar. Their design tends to preclude going down to very low flow rates but theoretically there is no limit to how big they can get.



Principle of Axial Turbine flow movement

Media application guide



Oils ✓



Water ✓



Fuels ✓



Chemicals ✓



Hazardous ✓



Hygienic ✓

Axial Turbine Flowmeters

TM, 01A & 01N series low cost turbine flowmeters

TM series LCD turbine flow meters

TM meters are an excellent low cost turbine in PVC for water applications. Sizes up to 4" and flow rates up to 760L/min. LCD readout with flow rate, accumulated total and batch totals. Permanent field calibration feature. Accuracy is $\pm 3\%$.



TM series with NPT thread adaptors

TM 3 or 4" series with ANSI 150lb flange

TM series with SOC80 pipe fitting

- Economically priced
- Easy to install
- Lithium Battery life of 5 years
- Display of flow rate & 2 totals

Options & Ordering Information

Part number	NPT threaded	ANSI 150lb flanged	Size	Flow rate l/min	Pressure bar (at 23°C)
TM050	-N		1/2"	3.8 - 38	10.2
TM075	-N		3/4"	7.6 - 76	10.2
TM100	-N		1"	19 -190	10.2
TM150	-N		1.1/2"	38 -380	10.2
TM200	-N		2"	76 -760	10.2
TM300	-N	-F	3"	151-1514	10.2
TM400	-N	-F	4"	227-2271	10.2

Further dimensional information on request

01A & 01N series LCD turbine flowmeters

01A and 01N meters are super low cost turbines in aluminium and nylon for fuel and water applications. Flow rates up to 100L/min. LCD readout with accumulated total and batch totals make these meters excellent value. Accuracy is $\pm 5\%$.



01A series

01N series

- Economically priced
- Aluminium and Nylon designs
- Easy to replace AAA batteries (x2)
- Accumulative and Batch totals

Options & Ordering Information

Part number	Size	Flow rate l/min	Pressure bar	Length mm	Height mm	Width mm
01A31GM	1" NPT	3 - 30 GPM	21	102	51	63
01A31LM	1" NPT	10 - 100 LPM	21	102	51	63
01A12LM	1" BSPT	10 - 100 LPM	21	102	51	63
01A52LM	1" BSPP	10 - 100 LPM	21	102	51	63
01N31GM	1" NPT	3 - 30 GPM	10.2	102	51	63
01N31LM	1" NPT	10 - 100 LPM	10.2	102	51	63
01N12LM	1" BSPT	10 - 100 LPM	10.2	102	51	63

Dimensions are for reference only and may vary by model.

Axial Turbine Flowmeters

A1 commercial grade LCD turbine flowmeters

A1 commercial grade meters are low cost turbines in aluminium and nylon for fuel and water applications. Flow rates up to 1135L/min. LCD readout with flow rate, accumulated total and batch totals and permanent field calibration feature make these meters excellent value. Accuracy is $\pm 1.5\%$.



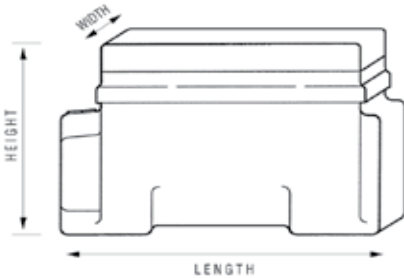
A1 series Aluminium



A1 series Nylon

- Economically priced
- Aluminium and Nylon designs
- Battery powered
- Display of flow rate & 2x totalizers

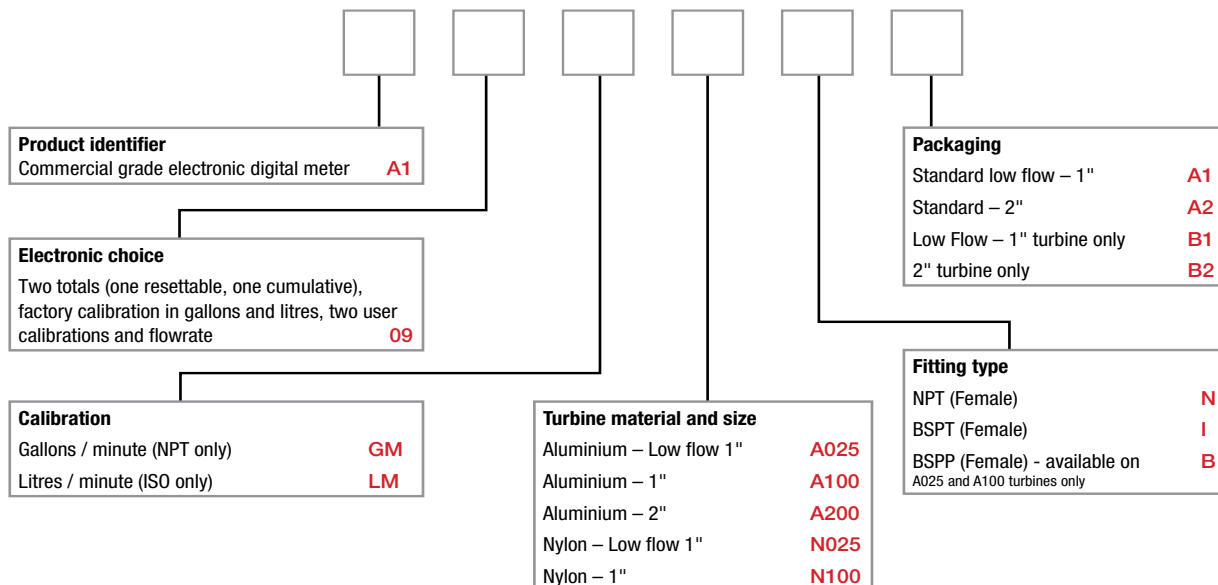
Dimensional Information



Model	Flow rate l/min	Pressure bar	Length mm	Height mm	Width mm
A025	11	21	102	63	51
A100	11 - 190	21	102	63	51
A200	114 - 1135	21	152	114	76
N025	11	10.2	102	63	51
N100	11 - 190	10.2	102	63	51

Dimensions are for reference only and may vary by model.

Options & Ordering Information



Axial Turbine Flowmeters

G2 series industrial LCD turbine flowmeters

G2 series industrial turbines are a cost effective range of turbines available in a wide range of materials and connection types. Flows from 4 to 760 l/min and a wide fluid compatibility offering make these the perfect choice for any industrial flow metering requirement. Accuracies range from +/-0.75% on larger models to +/-1.5% on smaller models.



G2 in Stainless Steel - model S

G2 in High pressure Stainless Steel - model H

G2 in Aluminium - model A

G2 in Brass - model B



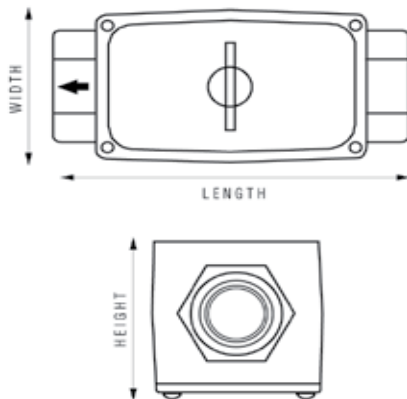
G2 in PVC - model C

G2 in PVDF - model P



G2 in Stainless Steel ANSI flanged - model ST

G2 in Stainless Steel with hygienic Tri-Clover connections - model ST



Dimensional Information

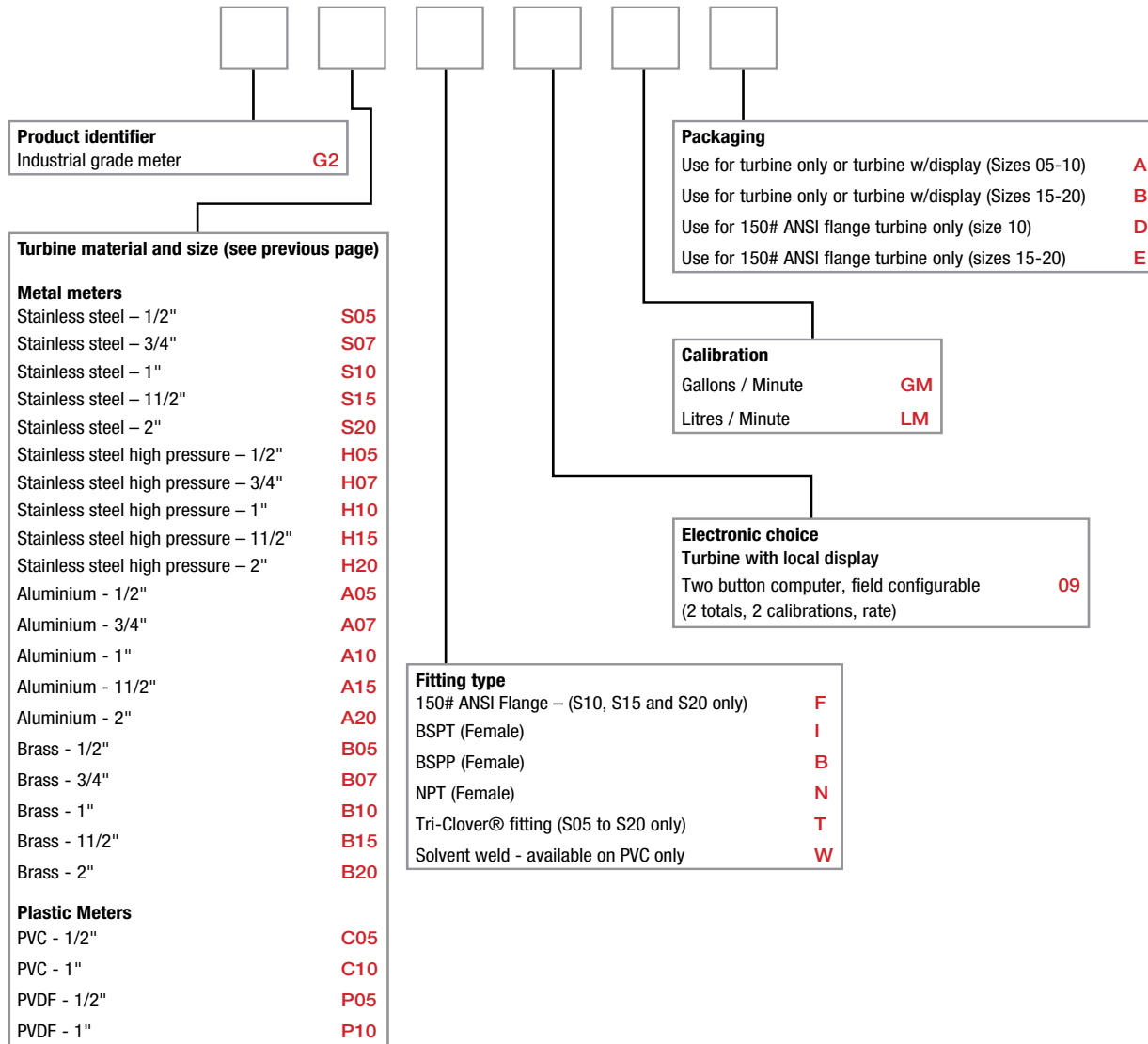
Model	Size	Flow rate l/min	Max pressure bar	Length mm	Height mm	Width mm	Model	Size	Flow rate l/min	Max pressure bar	Length mm	Height mm	Width mm
A05	1/2"	3.8 - 38	21	107	46	51	H20	2"	76 - 760	207	160	81	84
A07	3/4"	7.6 - 76	21	109	51	51	P05	1/2"	3.8 - 38	10.2	185	81	53
A10	1"	19 - 190	21	114	56	51	P10	1"	19 - 190	10.2	206	84	71
A15	1.1/2"	38 - 380	21	135	71	68	S05	1/2"	3.8 - 38	102	107	46	51
A20	2"	76 - 760	21	160	81	84	S07	3/4"	7.6 - 76	102	109	51	51
B05	1/2"	3.8 - 38	21	107	46	51	S10	1"	19 - 190	102	114	56	51
B07	3/4"	7.6 - 76	21	109	51	51	S15	1.1/2"	38 - 380	102	135	71	68
B10	1"	19 - 190	21	114	56	51	S20	2"	76 - 760	102	160	81	84
B15	1.1/2"	38 - 380	21	135	71	68	S10F	1"	19 - 190	Flange	171	108	108
B20	2"	76 - 760	21	160	81	84	S15F	1.1/2"	38 - 380	Flange	203	127	127
C05	1/2"	3.8 - 38	10.2	185	81	53	S20F	2"	76 - 760	Flange	241	152	152
C10	1"	19 - 190	10.2	206	84	71	S05T	1/2"	3.8 - 38	Flange	127	51	46
H05	1/2"	3.8 - 38	10.2	107	46	51	S07T	3/4"	7.6 - 76	Flange	127	51	51
H07	3/4"	7.6 - 76	10.2	109	51	51	S10T	1"	19 - 190	Flange	140	51	56
H10	1"	19 - 190	10.2	114	56	51	S15T	1.1/2"	38 - 380	Flange	165	68	71
H15	1.1/2"	38 - 380	10.2	135	71	68	S20T	2"	76 - 760	Flange	178	84	81

Dimensions are for reference only and may vary by model

Axial Turbine Flowmeters

G2 series industrial LCD turbine flowmeters

Options & Ordering Information



Axial Turbine Flowmeters

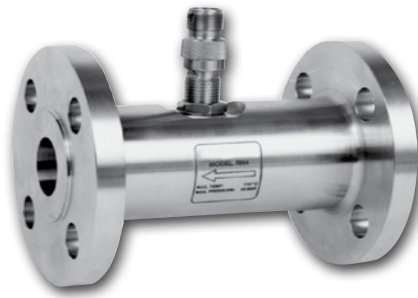
RN3, 4 & 7 Stainless Steel turbine flowmeters

These high quality turbines may be used on liquids such as water, light oils, solvents and low viscosity chemicals. Suitable for batching, flowrate monitoring and process controlling they are designed to work with a variety of LCD displays or programmable controllers. Specialised versions such as ATEX approved and sub sea spec available.

The turbines are made entirely of 316 stainless and the rotors are machined from solid, making them almost indestructible. Sleeve bearings provide reliable performance with longevity.



RN3 - threaded connections



RN4 - flanged connections



RN7 - hygienic connections

Technical Information



Linearity:	Better than +/- 0.5% of reading
Repeatability:	+/-0.1% of reading
Pressure drop:	0.5 bar at maximum flow
Maximum over range:	Up to 120% of the maximum flow rate for short durations
Maximum working:	35 bar (special connections available up to 670 bar)
Temperature range:	Standard pickoff -30°C to 110°C, IS pick-off -30°C to 110°C, High temp. -30°C to 232°C
Threaded connections:	BSP, NPT
Hygienic connections:	RJT, TRI-CLAMP, IDF, & ISS
Flanged connections:	ANSI 150, ANSI 300, DIN PN16, PN25, BS10 Table D ,Table E. For further connections consult factory
Body:	316 stainless steel
Sleeve bearings:	Standard - carbon graphite filled PTFE (max temp. 180°C) Optional tungsten carbide (max temp. 300°C)
Thrust balls/plate:	Tungsten carbide or ceramic
Rotor:	431stainless steel or ferralium
Rotor shaft:	Tungsten carbide
Hangers:	316 stainless steel
Circlips:	316 stainless steel

RN3 Dimensions

Model Number	Thread BSP	L mm	Dia mm	Weight kg
RN3/10	3/8"	82.6	38.0	0.3
RN3/15	1/2"	82.6	50.0	0.5
RN3/20/5	3/4"	82.6	50.0	0.5
RN3/20/8	3/4"	82.6	50.0	0.5
RN3/25/15	1"	90.5	63.5	1.0
RN3/25	1"	90.5	63.5	0.8
RN3/32	1 1/4"	110.0	75.0	1.6
RN3/40	1 1/2"	116.7	76.2	1.7
RN3/50	2"	154.0	89.0	3.1
RN3/65	3"	170.0	95.0	3.5

RN4 Dimensions

Model Number	Flange Size mm	L mm	Weight kg
RN4/20/5	20	139.7	2.0
RN4/20/8	20	139.7	2.0
RN4/25/15	25	139.7	2.2
RN4/25	25	139.7	2.7
RN4/32	32	145.0	3.9
RN4/40	40	152.4	6.5
RN4/50	50	165.1	8.4
RN4/80	80	250.0	14.5
RN4/100	100	300.0	16.5
RN4/150	150	360.0	16.5

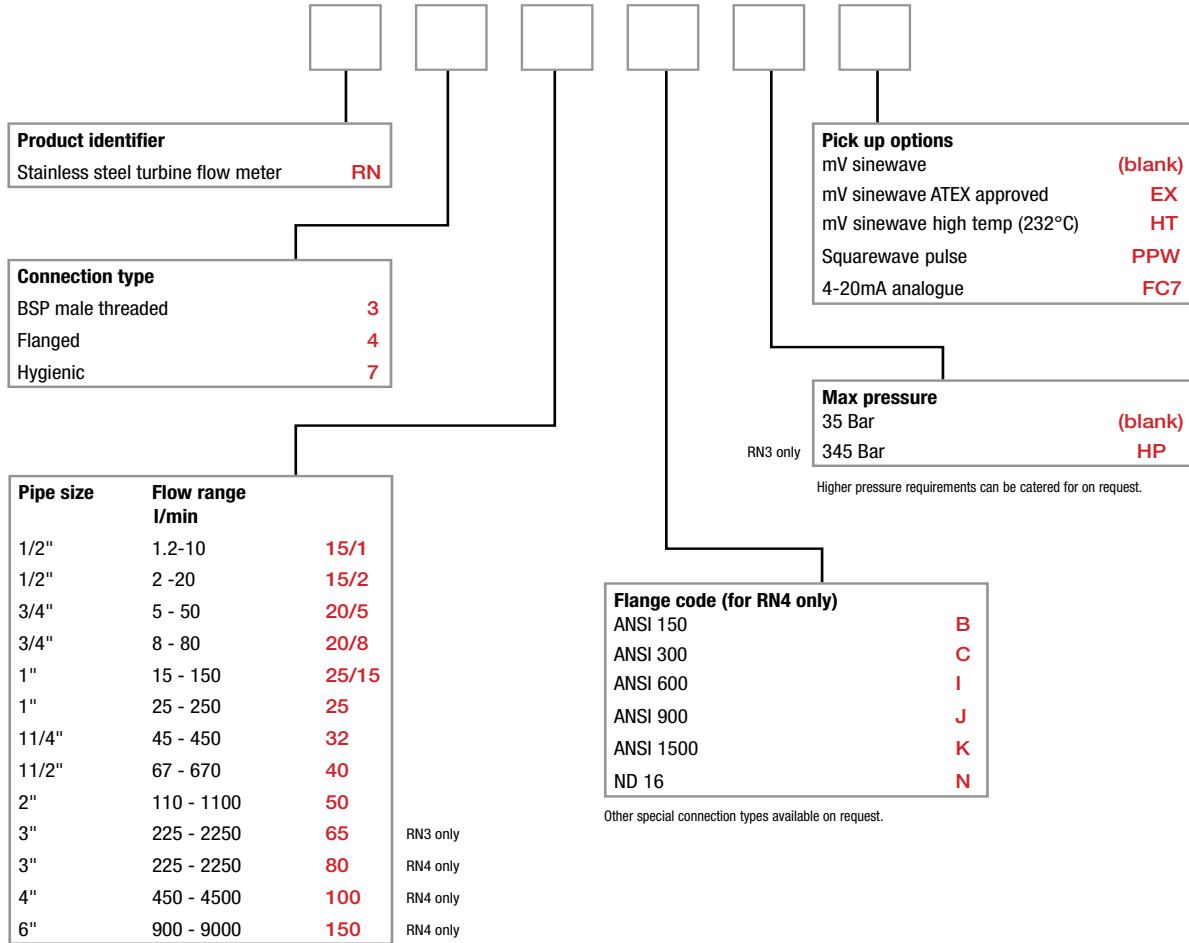
RN7 Dimensions

Model Number	Triclamp Size	L mm	Weight kg
RN7/15/2	1"	127	1.1
RN7/20/5	1"	127	1.1
RN7/20/8	1"	127	1.0
RN7/25/15	1 1/2"	127	0.9
RN7/25	1 1/2"	127	2.3
RN7/40	2"	155	3.2
RN7/50	2 1/2"	216	5.0
RN7/80	3"	300	8.0

Axial Turbine Flowmeters

RN3, 4 & 7 Stainless Steel turbine flowmeters

Options & Ordering Information



Special design for high pressure (500 bar) and fitted with pressure & temperature test points. Contact us for non standard requirements.

Recommended Instruments: FBT11, FRT12, FEB10

Axial Turbine Flowmeters

RN3 & 4 Stainless Steel turbine flowmeters for Subsea applications

We supply & design a wide range of standard and custom produced subsea flowmeters. They are suitable for use on low to medium viscosity fluids with a wide range of threaded or flanged connections. Constructed from 316 stainless or other materials as designated by the customer such as duplex or incolloy, these flow meters have been fitted extensively into the market place for many years. Depths of up to 4000 metres are possible, with 4-20 mA or pulse output options. Our latest 4-20 mA pick up offering — this can be calibrated or scaled in house without the need of removing any parts of the pick up.



- Submersible up to 4000m
- 316 Stainless Steel construction
- Duplex or Incolloy material on request
- Pulse or analogue outputs

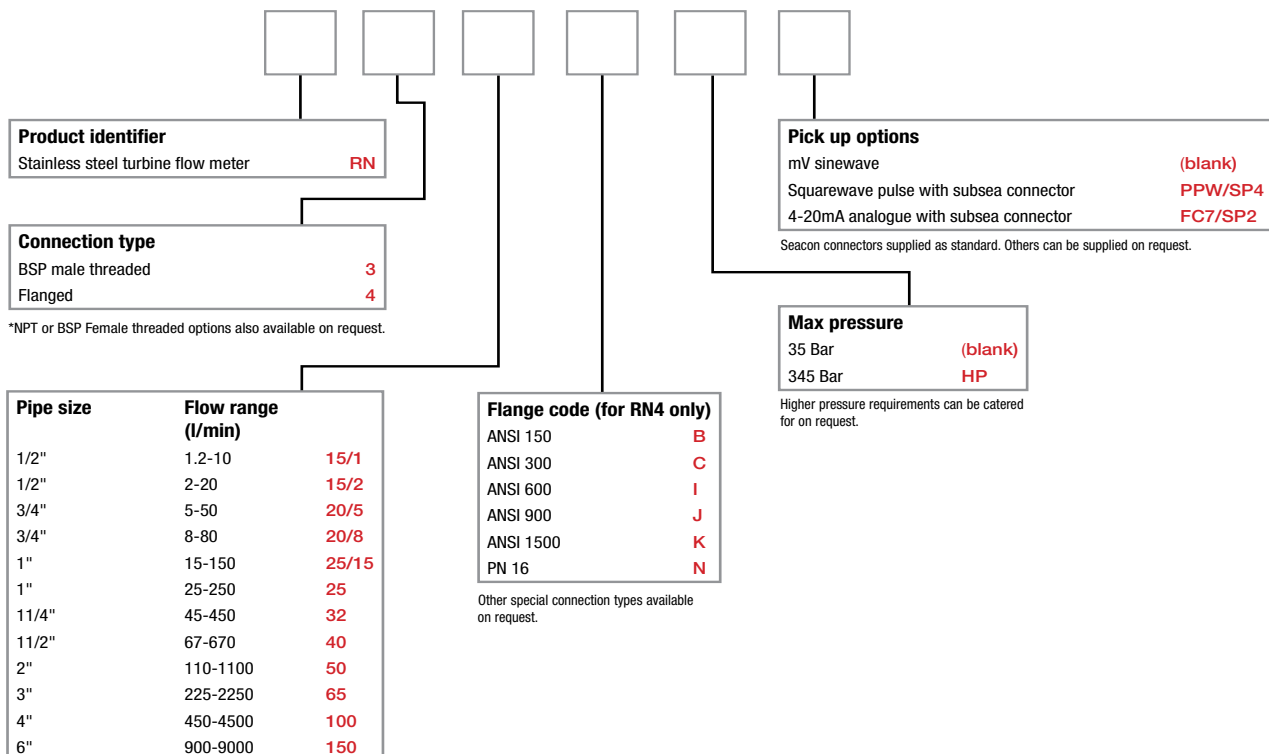
Typical applications

In the oil and gas industry, including Hydraulic system monitoring, fluid control diagnostic work, subsea network, risers, blow out preventers, water/chemical injection, ROV's and pipe laying systems.

Our subsea range of turbines provide an accuracy level of $\pm 0.5\%$ (of reading) and a repeatability figure of $\pm 0.1\%$ and can be supplied with Seacon, Burton or any other customer specific connector as required. They are exceptionally reliable and have a proven track record in the field.

RN3 subsea version with amplified pulse pick up and Seacon connector

Options & Ordering Information



Axial Turbine Flowmeters

TP Turbopulse series Turbine flowmeters

The TP turbopulse turbine series measures flow of low viscosity liquids from 100 to 7,000,000 litres/hr in a range of sizes from 1/2" to 20" (12mm-500mm).

The TP series have an axial rotor and flow guides, 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.



- Massive flow capacity up to 20" pipe size
- ATEX EEx ia & EEx d designs
- Options for custody transfer
- Directly mounted display & batch controller options

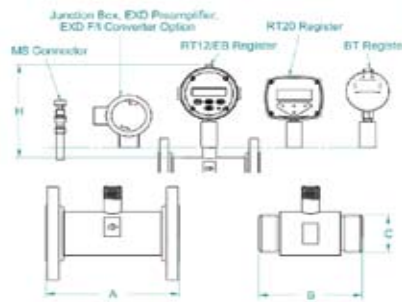
Technical Information

Nominal sizes	12-500mm (1/2"-20")
Accuracy @ 1cp	± 0.5% or (10.1 turndown)
Temperature range	-40~+240°C (-40~+460°F)
Maximum pressure	
316 stainless steel	250 bar (3680 psi) 10cst max.
high pressure SS	400 bar (5580 psi) 68cst max.
Protection class	IP66/67 (NEMA4X), optional Exd IIB T6 or I.S
Electrical	
standard output	Pick-off Coil

Flow ranges

Size	Model	litre/hr
1/2"	TP010	100-1100
3/4"	TP012	220-2200
3/4"	TP015	400-4000
3/4"	TP020	800-8000
		m3/hr
1"	TP025	1.6-16
1 1/2"	TP040	3.4-34
2"	TP050	6.8-68
3"	TP080	13-135
4"	TP100	27-270
6"	TP150	55-550
8"	TP200	110-1100
10"	TP250	190-1900
12"	TP300	270-2700
16"	TP400	400-4000
20"	TP500	700-7000

Dimensional Information



Threaded meters

Model	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

Option fitted	H
RT12/EB Register	210mm
RT20 Register	189mm
BT Register	190mm
EX junction Box	150mm
MS connector	118mm
MS connector	138mm

Flanged meters

Model	A
TP010	127mm (5.0")
TP012	127mm (5.0")
TP015	127mm (5.0")
TP020	127mm (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")