

Flowmeter
Product Catalogue



JSG Industrial Systems
quality industry solutions

Lubrication
Management
Systems

Material
Dispensing
Management
Systems

Hose & Cable
Management
Systems

Diesel & Fluid
Management
Systems

Fire
Suppression
Systems

Onboard
Weighing
Systems

Flow
Measurement
Systems

General
Lubrication
& Exhaust
Extraction

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Front cover image : 3" Meter with Mechanical Register

Design Excellence Leads To Better Performance

Among the many PD flowmeter design principals available today, the oval gear still holds a top place both in simplicity and field proven performance.

The inside story reveals a robust positive displacement oval gear flowmeter range incorporating patented innovations & features that bring many benefits to market.

Overview

JSG provide a range of oval gear flowmeters which provide high levels of accuracy & repeatability for a wide range of most clean liquids irrespective of viscosity & conductivity.

Features

- Modular process connections
- No requirement for flow conditioning
- High accuracy, repeatability & reliability
- Wide turndown (min.~max. flow)
- Ultimate rotor stability (all metal rotors)
- Dual outputs (reed & hall effect) standard
- Pulse high resolution pulse output
- Hazardous area versions
- Bi-directional flow capability
- Quadrature pulse output option

Applications

- | | |
|-------------------|------------------|
| ▪ Acids | ▪ Pesticides |
| ▪ Alcohol | ▪ Solvents |
| ▪ Water | ▪ Chemicals |
| ▪ Fuel Oils | ▪ Foods |
| ▪ Diesel | ▪ Beverages |
| ▪ Liquid Propane | ▪ Vegetable Oils |
| ▪ Bitumen/Asphalt | ▪ Inks |
| ▪ Tallow | ▪ Adhesives |
| ▪ Paint | ▪ Hydraulic Oil |
| ▪ Pharmaceuticals | ▪ Resins |

Principle of Operation

The Oval Gear meters are positive displacement flowmeters where the passage of liquid causes two oval gears to rotate within a precision measuring chamber and with each rotation a fixed volume of liquid passes through the meter. Magnets embedded within the gears initiate a high resolution pulse train output. The pulse output can be wired directly to process control and monitoring equipment or can be used as an input to instruments supplied with or fitted directly onto the meter.



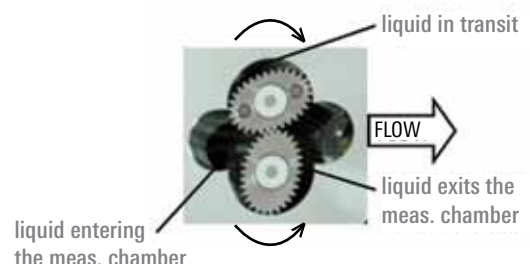
All metal rotors provide ultimate rotor stability



Pulse with high resolution & dual outputs (standard)
Quadrature pulse output option



Modular Process Connections



Small Capacity Flowmeters

Flomec small capacity flowmeters provide precise volumetric measurement of small quantities of liquids or low flows found in a broad range of industrial & commercial industries including automotive, aviation, mining, power, chemical, pharmaceutical, food, paint, medical engineering, petroleum & environmental.

Applications include additives for fuel, consumer products, water treatment, flotation cells & de-foaming plants, corrosion inhibitors, perfumes, catalysts, emulsifiers, oils, grease, glues, ink & insecticides.

General Specifications

Flow range	0.5~550 litres/hr
Nominal sizes	4~8mm (1/8"~3/8")
Linearity	+/-1% of reading
Repeatability	+/-0.03%
Temperature	- 40~+120°C (150°C max using Hall output)
Materials	316 stainless or aluminum
Pulse outputs	reed switch & Hall effect output (standard)

(* for full specifications see page 11)

Standard Options

- LCD totaliser
- LCD flow rate totaliser
- LCD two stage batch controller
- Intrinsically Safe (I.S.) instruments (ATEX/IECEX)
- 4~20mA, scaled pulse & alarm outputs
- Quadrature pulse output
- Explosion proof Exd (ATEX/IECEX)
- Mining Exd (stainless steel meters only) (ATEX/IECEX)

Features

- High resolution for precise measurement
- Simple to install & wire
- Dual outputs to suit most applications
- Precision Carbon-Graphite bearing

(see ancillaries for further details on integral & remote options)



Two oval shaped gears (rotors) are the only moving parts within the measuring chamber



Pulse meter

Medium Capacity Flowmeters

Flomec medium capacity flowmeters find widespread application in industry to monitor & control liquid flow streams & allow for precise dispensing of small to medium batch runs.

They also have extensive application in the distribution of fuels, fuel oils, lubricant, alcohols, solvents & the blending of bio & ethanol fuels.

General Specifications

Flow range	1~580 litres/min
Nominal sizes	15~50mm (1/2"~2")
Linearity	+/-0.5% of reading
Repeatability	+/-0.03%
Temperature	- 40~+120°C (150°C max using Hall output only)
Materials	316 stainless or aluminum
Pulse outputs	Reed switch & Hall effect output (standard)

(* for full specifications see pages 10 & 11)

Standard Options

- Modular process connections
- LCD totaliser
- LCD flow rate totaliser
- LCD two stage batch controller
- Intrinsically Safe (I.S.) instruments (ATEX/IECEX)
- 4~20mA, scaled pulse & alarm outputs
- Integral mechanical totaliser / batch register
- Quadrature pulse output
- Explosion proof Exd (ATEX/IECEX)
- Mining Exd (stainless steel meters only) (ATEX/IECEX)

Features

- High flow rangeability
- Modular construction aids installation
- Precise batching via "Hyperpulse" technology
- Easy to read LCD or mechanical displays
- Choice of output suits most applications

NMI Approved

- Pulse meters, sizes 25mm to 100mm
- Mechanical meters, sizes 40mm to 100mm with V Series Registers
- Limited to bulk metering of AdBlue and petroleum based products with viscosity less than 20cps at 20°C



Medium Capacity Blind Pulse Meter



Medium Capacity Meter with LCD Register



Medium Capacity Meter with Digital meter

Large Capacity Flowmeters

Flomec 3" and 4" large capacity flowmeters are highly competitive meters suited for receipt verification, loading, un-loading & distribution management at petroleum depots, mine sites, marine & aviation facilities. Common transfer applications involve fuels, oils, solvents, alcohols along with the blending of bio & ethanol fuels. The meters are relatively compact & light weight in construction, important benefits when used in mobile installations or within confined spaces.

General Specifications

Flow range	35~2500 litres/min (13~625 USGPM)
Nominal sizes	80 & 100mm (3" & 4")
Linearity	+/-0.5% of reading
Repeatability	+/-0.03%
Temperature	- 40~+120°C (-4~250°F) (150°C max using Hall output only)
Materials	Aluminum or ductile iron
Pulse outputs	Reed switch & Hall effect output (standard)

(* for full specifications see pages 10 & 11)

Standard Options

- Modular process connections
- LCD totaliser
- LCD flow rate totaliser
- LCD two stage batch controller
- Intrinsically Safe (I.S.) instruments (ATEX/IECEX)
- 4~20mA, scaled pulse & alarm outputs
- Integral mechanical totaliser / batch register
- Quadrature pulse output
- Explosion proof Exd (ATEX/IECEX)
- Mining Exd (stainless steel meters only) (ATEX/IECEX)

Features

- Modular process connections
- Compact & light weight
- High flow capacity
- Modular construction aids installation
- Easy to read LCD or mechanical displays
- High resolution or Quadrature pulse outputs

NMI Approved

- Pulse meters, sizes 50mm to 100mm
- Mechanical meters ,sizes 40mm to 100mm with V Series Registers
- Limited to bulk metering of AdBlue and petroleum based products with viscosity less than 20cps at 20°C



Large Capacity Blind Pulse Meter



Large Capacity Meter with LCD Register



Large Capacity Meter with Mechanical Register

Flomec Meter Ancillaries

FBT Battery Powered Totaliser

Simultaneously displays resettable (batch) total & cumulative total in engineering units as programmed by the user. When externally dc powered the instrument will produce an un-scaled or scaleable solid state output pulse which is NPN/PNP selectable.

Available with intrinsically safe (I.S.) certification.

Data sheet FBT



FBT Battery Powered Totaliser

FRT12 Battery Powered Flow-Rate Totaliser

Displays instantaneous flow rate, resettable (batch) total or a cumulative total in engineering units as programmed by the user. When externally powered this instrument will produce an un-scaled or scaleable solid state pulse, 4~20mA & flow alarm outputs & has nonlinearity correction & dual flow input functions.

Available with intrinsically safe (I.S.) certification.

Data sheet FRT12



FRT12 Flow-Rate Totaliser
(in Aluminium housing)



FRT12 Rate Totaliser
(in GRN housing)

FEB Batch Controller

Provides automatic batch control with one or two stage outputs. The display provides batch quantity as well as status at each stage of the batch process. Batch limiting & no-flow detection are safety features & automatic overrun compensation & dual stage outputs provide for precise batch control. Other features include remote stop/start, system interlocks, totalised display & multiple batch controller networking.

Data sheet FEB



Batch controller

Mechanical Registers

As an alternative to electronic totalisers, robust mechanical registers with metal housings offer 3 or 4 large resettable digits & 6 or 8 digit cumulative total clearly visible for loading & un-loading sites at petroleum depots, mining, construction & marine facilities.



M1 Register



M3 Register

NMI* Pulse Metering

Medium & large capacity meters are supplied in the form of custody transfer assemblies incorporating peripheral devices to meet the requirements of industry and relevant approval bodies.

General Specifications

Model prefix :	OM025	OM040	OM050	OM050E	OM080	OM080E	OM100	OM100E
Nominal size (inches)	1"	1.5"	2"	2"	3"	3"	4"	4"
Materials	Aluminium body							
Minimum delivery (liters)	6	15	30	35	35	50	75	150
Maximum flow (L/min)	150	250	500	580	750	1000	1500	2500
Output options	Reed Switch & NPN Hall, Quadrature Halls							



Pulse meter with wafer check valve, air eliminator & strainer

NMI* Mechanical Metering

Meters 1½"~4" fitted with an angle adaptor will take various combinations of large mechanical registers, presets registers, printers & associated check & cut-off valves.

General Specifications

Meter size (inches)	1.5"	2"	3"	4"
Meter Materials	Aluminium body			
Minimum delivery (liters)	15	30	35	75
Maximum flow (L/min)	250	580	1000	2500
Mechanical registers	Reset & preset with optional printer			
Mechanical control	Two stage mechanical cut-off valve			
Maximum pressure	10 Bar (147psig)			



Mechanical meter with wafer check valve, air eliminator, strainer & mechanical pre-set cut off valve

Strainers & Air Eliminators

The modular design of the strainers & optional air eliminator head allow fitment as a stand alone or close coupled strainer only or as a multi function strainer air eliminator check valve assembly. Wafer back pressure check valves are fitted between the eliminator strainer (ES) and the flowmeter to aid in the extraction of air & prevent any possibility of reverse flow.

General Specifications

Model prefix :	ES025	ES040	ES050	ES080	ES100
Nominal size (inches)	1"	1.5"	2"	3"	4"
Materials	Aluminium body, 316SS basket, viton seals				
Strainer mesh sizes	100 mesh (150 micron)				
Maximum pressure	10 bar (147psig)				
Air release head	Dual port double reed valve				
Venting capacity @ 10psig	154 CFM (4.36M ³ /min@ 70kpa)				



Air eliminator strainer

Note: The strainers and air eliminators are available for use with NMI applications.

*National Measurement Institute Australia

V Style Mechanical Registers

Adjustable for accuracy the V style register is an alternative to electronic totalisers, robust mechanical registers with metal housings offer 5 large re settable digits & 8 digit accumulative total displays clearly visible for loading & un-loading sites at petroleum depots, mining, construction & marine facilities. Gear box not included with registers for foreign meters.

V1 / V2 Mechanical Register - Specifications

- 5 Digit Resettable Totaliser and 8 Digit non resettable totaliser
- Repeatability: 0.05% of reading over entire range and beyond
- Linearity: Capable of $\pm 0.125\%$ or better over a 5:1 range from maximum nominal meter capacity
- The mechanical counter registers total volume of liquid
- Finished in corrosion resistant epoxy, the housing protects the register in demanding environments and extremes in weather
- Positive action reset knob

Note: Accuracy obtainable when all variables remain constant. Reading/ measurements must be equal to a minimum of one minute of flow at selected rate(s). All accuracy statements based on metering Stoddard Solvent, approximate viscosity 1 CPS. On higher viscosity products, the average deviation in accuracy will be even less.



V3 / V4 Mechanical Register & Ticket Printer

- Provides an imprinted ticket record of each transaction
- Printer is incorporated with V1 / V2 mechanical register and must be ordered together
- Tamper proof design seals ticket in printer during delivery
- Security is provided by before & after imprinting of consecutive sales (transactions) number
- Magnetic latch and gasketed cover keep out dirt & weather
- Right hand reset feature
- Printer accepts standard 128.8 x 196.9mm carbon packs and receipt tickets
- Reset knob resets both printer & register



V5 / V6 Mechanical Preset Counter

Enables you to select and automatically control Preset Valve closure so that an exact predetermined volume will be delivered. Single stage valve operation is used in low velocity systems and/or high viscosity applications.

Preset Counter includes red emergency stop button to abort preset deliveries.

Preset Counters as indicated above can be supplied to

- (1) mechanically linked directly to the valve and/or
- (2) electrically connected to other system components such as a pump starter circuit or pilot-operated control valve.



V7 / V8 Mechanical Register, Preset & Ticket Printer

Meter register, Printer and Preset combine to control, display and print detailed records of fluid deliveries. Ideal for increased efficiency in all kinds of liquid inventory monitoring and control installations.

- Operating Temperature -40°C to 80°C
- Preset - 5 Digits 13mm High numbers
- Register - 5 Digit Reset 19mm high numbers
- 8 Digit non reset 3mm high numbers



Model Designation - Flomec Oval Mechanical Meters

Meter size

41-OM015	1/2"	(15mm)	1~40 L/min	0.26~10.6 GPM
41-OM025	1"	(25mm)	6~150 L/min	2.6~40 GPM
41-OM040	1 1/2"	(40mm)	15~250 L/min	4~66 GPM
41-OM050	2"	(50mm)	30~500 L/min	8~120 GPM
41-OM050	2" extended flow	(50mm)	35~580 L/min	9~150 GPM
41-OM080	3"	(80mm)	35~750 L/min	10~200 GPM
41-OM080	3" extended flow	(80mm)	50~1000 L/min	13~260 GPM
41-OM100	4"	(100mm)	75~1500 L/min	20~400 GPM
41-OM100	4" extended flow	(100mm)	150~2500 L/min	40~660 GPM

Body material

-	A	Aluminum
-	E	Extended flow aluminum version (OM050E, OM080E & OM100E only)
-	S	316L Stainless Steel
-	D	Ductile iron (consult factory)(Only for OM080 and OM100)

Rotor material

4	Aluminum (aluminum meters only)
5	Stainless steel (stainless steel meters only)
5	Stainless steel rotors & ceramic bearings fitted to aluminum meters (OM015 to OM050 only)
6	Aluminum - keishi cut for high viscosity liquids
7	Stainless steel - keishi cut for high viscosity liquids

Bearing type

1	Carbon-graphite bearing (standard with stainless steel rotors)
4	Hardened steel roller bearings (aluminum rotors only)

O-ring material

1	Viton (standard), -15~+120°C (5~250°F)
2	EPR (Ethylene Propylene Rubber) - for ketones only
3	Teflon encapsulated viton - application specific
4	Buna-N (Nitrile), -65~+120°C (-53~+250°F)

Temperature limits

-	2	80°C max.
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Process connections

1	BSP (RP) female threaded
2	NPT female threaded
3	* Tri-clamp hygienic ferrules
4	ANSI-150 RF flanges
5	ANSI-300 RF flanges
6	PN16 DIN flanges
7	JIS 10kg/cm ² flanges
9	Customer nominated

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

Cable entries

0	no cable entry
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Totaliser capacities

OM015~025	OM040~100	Integral options
999.9 litres	9999 litres	M1 3 digit mechanical totaliser - litres
999.9 gal.	9999 gal.	M2 3 digit mechanical totaliser - U.S. gallons
9999.9 litres	99999 litres	M3 4 digit mechanical totaliser - litres
9999.9 gal.	99999 gal.	M4 4 digit mechanical totaliser - U.S. gallons

OM050~100

Large digit mechanical registers

999999 litres	V1	5 digit mechanical reset register - litres
999999 gal.	V2	5 digit mechanical reset register - U.S. gallons
999999 litres	V3	5 digit register + 7888 ticket printer - litres
999999 gal.	V4	5 digit register + 7888 ticket printer - U.S. gallons
999999 litres	V5	5 digit register + preset batch register - litres
999999 gal.	V6	5 digit register + preset batch register - USG
999999 litres	V7	5 digit register + preset + 7888 printer - litres
999999 gal.	V8	5 digit register + preset + 7888 printer - USG
	SB	Specific build requirement

Close coupled options

1	Back pressure wafer check valve within meter inlet flange
3	Aluminium Air Eliminator/Strainer with option 1 (close coupled to meter)
8	Aluminum strainer close coupled to meter

Control valve options (close coupled)

V	Mechanical control valve + linkages coupled to meter
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Model No. Example

41-OM100	-	S	4	4	1	-	2	1	0	M2	3	V
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Model Designation - Flomec Pulse Meters

Meter size

41- OM004	4mm (1/8")	0.5-36 L/hr	0.13-9.5 GPH
41- OM006	6mm (1/4")	2-100 L/hr	0.5-27 GPH
41- OM008	8mm (3/8")	15-550 L/hr	4-145 GPH
41- OM015	15mm (1/2")	1-40 L/min	0.26-10.6 GPH
41- OM025	25mm (1")	6-150 L/min	2.6-40 GPH
41- OM040	40mm (1 1/2")	15-250 L/min	4-66 GPH
41- OM050	50mm (2")	30-500 L/min	8-120 GPH
41- OM050	50mm (2" extended flow)	35-580 L/min	9-150 GPH
41- OM080	80mm (3")	35-750 L/min	10-200 GPH
41- OM080	80mm (3" extended flow)	50-1000 L/min	13-260 GPH
41- OM100	100mm (4")	75-1500 L/min	20-400 GPH
41- OM100	100mm (4" high flow)	150-2500 L/min	40-660 GPH

Body material

A	Aluminum
E	Extended flow eluminium version (OM050E,OM080E,OM100E only)
M	Intermediate pressure aluminium meter (Only OM025 =138 Bar [2000psi] max.)
S	316 stainless steel
N	Intermediate press. 316L SS meter (OM004N ~ 025N = 100bar, OM040N= 50bar, OM050N = 50bar)
H	High pressure 316 SS (OM004H ~ 040H = 400bar [5580psi] max. OM050H = 300bar max.)
D	Ductile iron(only available for OM080 and OM100)

Rotor material

4	Aluminum (aluminium meters only). Only available in models OM015 and larger.
5	Stainless steel (all standard OM004 ~ OM008 meters and all stainless steel models only)
5	Stainless steel rotors fitted to aluminium meters (Select bearing type). Only available in models OM015 to OM050.
6	Keishi cutting of aluminium rotors (for high viscosity liquids)
7	Keishi cutting of stainless steel rotors (for high viscosity liquids)

Bearing type

1	Carbon-graphite bearing (Standard with Stainless steel rotors)
4	Hardened steel roller bearings (Aluminum rotors only)

O-ring material

1	Viton (standard) -15~+200°C (-5~+400°F)
2	Ethylene Propylene Rubber (EPR) - for ketones only
3	Teflon encapsulated viton - application specific
4	Buna-N (Nitrile) -65~+100°C (-53~+212°F)

Temperature limits

2	120°C (250°F) - see note 1
3	*150 °C (300°F) max. - (Hall Effect output only) (OM004~OM080)
5	*120 °C (250°F) max. (Includes integral cooling fin) see note 2

Process connections

1	BSP female threaded
2	NPT female threaded
3	* Tri-clamp hygienic ferrules
4	ANSI-150 RF flanges
5	ANSI-300 RF flanges
6	PN16 DIN flanges
7	Jis 10kg/cm2 flanges
9	Customer nominated

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

Cable entries

with B2/B3 options	0	3~6mm cable gland
	1	M20 x 1.5mm
	2	1/2" NPT

Integral options

No Options	00	Nil
Not available with high pressure models	QP	Quadrature pulse (2 NPN Phased outputs)
IECEX & ATEX approved	E1	Explosion proof ~ Exd IIB T4/T6 (Aluminium & stainless meters)
IECEX & ATEX mines approved	E2	Explosion proof ~ Exd I/IB T4/T6 (stainless meters only), mines approved
IECEX & ATEX approved	Q1	Exd with Quadrature pulse
OM004: 11200ppL,OM006: 4200ppL	HR	High resolution hall effect output (Hall Effect only) (OM004 & OM006 only)
IECEX & ATEX approved	H1	Exd with HR Hi-res. Hall Option.(OM004 and OM006 only)
for injected combustion engines	PF	Pulsating flow option (hall effect output only)
IECEX & ATEX approved	P1	Exd with PF pulsating flow option.
with scaleable pulse output	B2	BT11 dual totaliser with pulse output
IECEX & ATEX approved	B3	Intrinsically safe BT11 (I.S.)
with scaleable pulse output	R0	RT12 Flow Rate Totaliser with all outputs in Aluminium Enclosure
IECEX & ATEX approved	R1	Intrinsically safe FRT12 (I.S.) in Aluminium Enclosure
with scaleable pulse output	R2	FRT12 Flow Rate Totaliser with all outputs
IECEX & ATEX approved	R3	Intrinsically safe FRT12 (I.S.)
Two stage DC batcher and totaliser	E0	EB10 batch controller
	F1	Loop powered 4 ~ 20mA analog output (80°C max)
	SB	Specific build requirement

Closed couple options

1	Back pressure wafer check valve within meter inlet flange
3	Aluminium Air Eliminator/Strainer with option 1 (close coupled to meter)
8	Aluminium strainer only close coupled to meter

Model No. Example

41- OM025	-	A	4	4	1	-	5	1	1	R2	3
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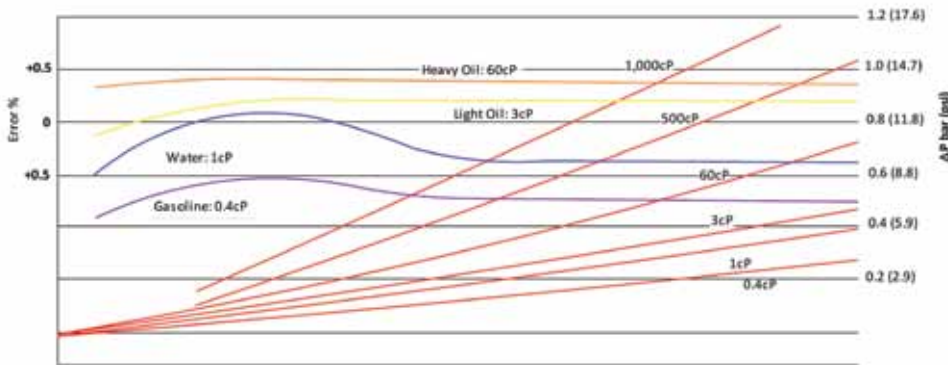
*(1) 120°C (250°F) rating for the pulse meter, 80°C (180°F) rating with BT, RT & EB options.

See temperature code 5 for higher temperature with BT, RT, & EB

*(2) Cooling fin is fitted with LCD instruments for operation between 80~120°C (180~250°F)

Performance Specifications

Accuracy and Pressure Drop



Specifications

Model prefix:	41-OM004	41-OM006	41-OM008	41-OM015	41-OM025	41-OM040	41-OM050	41-OM050E	41-OM080	41-OM080E	41-OM100	41-OM100E
Capacity group	small capacity			medium capacity					large capacity			
Nominal size (inches)	4mm (1/8")	6mm (1/4")	10mm (3/8")	13mm (1/2")	25mm (1")	40mm (1.5")	50mm (2")	50mm (2")	80mm (3")	80mm (3")	100mm (4")	100mm (4")
*Flow Range—(LPH) litres/min	(0.5 ~ 36)	(2 ~ 100)	(15 ~ 550)	1 ~ 40	6 ~ 150	15 ~ 250	30 ~ 500	35 ~ 580	35 ~ 750	50 ~ 1000	75 ~ 1500	150 ~ 2500
**Accuracy @ 3cp	± 1% of reading			± 0.5% of reading					± 0.25% of reading (15:1 turndown)			
Repeatability	Typically ±0.03% of reading (accuracy is ±0.02% of reading with optional RT12 with non-linearity correction)											
Temperature range	-40° ~ +120°C (-4°F ~ +250°F) refer JSG for lower temperature (150°C max. using Hall effect) Max 80°C Mechanical Meter											
Maximum Pressure (threaded meters)	Bar (psi)											
Aluminium Bar meters (PSI)	15 (220)			70 (1000)	70 (1000)	30 (440)	20 (300)	20 (300)	12 (180)	12 (180)	10 (150)	10 (150)
Intermediate press. AL meter	-			138 (2000)								
316 S/S Bar Meters (PSI)	34 (500)			70 (1000)	70 (1000)	30 (440)	38 (560)		20 (300)	-	-	-
Intermediate press. SS meter	100 (1500)	100 (1500)	100 (1500)	100 (1500)	100 (1500)	50 (725)	50 (725)	-	-			
Ductile iron	-								12 (180)	-	10 (150)	-
High pressure models	400 (5880)	400 (5880)	400 (5880)	400 (5880)	400 (5880)	400 (5880)	300 (4200)					
Electrical – for pulse meters (see below optional outputs)												
Output pulse resolution	Pulses / litre (pulses / US gallon) - nominal											
Reed switch	2800 (10600)	1050 (3975)	354 (1340)	84 (318)	27 (102)	14 (53)	6.5 (24.7)	4.7 (18)	2.65 (10)	1.55 (5.87)	1.1 (4.15)	0.56 (2.1)
Hall effect	2800 (10600)	1050 (3975)	708 (2680)	168 (636)	107 (405)	56 (212)	26 (99)	19 (72)	10.65 (40.5)	6.2 (23.5)	4.4 (16.6)	2.24 (8.5)
Quadrature Hall option	2800 (10600)	1050 (3975)	708 (2680)	168 (636)	54 (204)	28 (106)	13 (49)	9.5 (36)	5.33 (20)	3.1 (11.8)	2.2 (8.3)	1.12 (4.24)
High resolution Hall effect	11200 (42392)	4200 (15897)										
Reed switch output	30Vdc x 200mA max. (maximum thermal shock 10°C (50°F) / minute)											
Hall effect output (NPN)	3 wire open collector, 5-24Vdc max., 20mA max.											
Optional outputs	4~20mA, scaled pulse, quadrature pulse, flow alarms or two stage batch control											
Physical												
Protection class	IP66/67 (NEMA4X), optional Exd 1 / IIB T4/T6, integral ancillaries can be supplied I.S. (intrinsically safe)											
Overall dimensions	Refer pages 16~19											
Recommended filtration	75 microns (200 mesh)			150 microns (100 mesh)					350 microns (40 mesh)			
* Maximum flow rate is to be reduced as viscosity increases, see flow de-rating guide. Max. Allowable pressure drop is 100Kpa. (15psi)												
* Maximum flow may be increased by 10% for intermittent refuelling periods												
** Accuracy ±1% of reading with M series and V series 0.5% of reading on mechanical register												

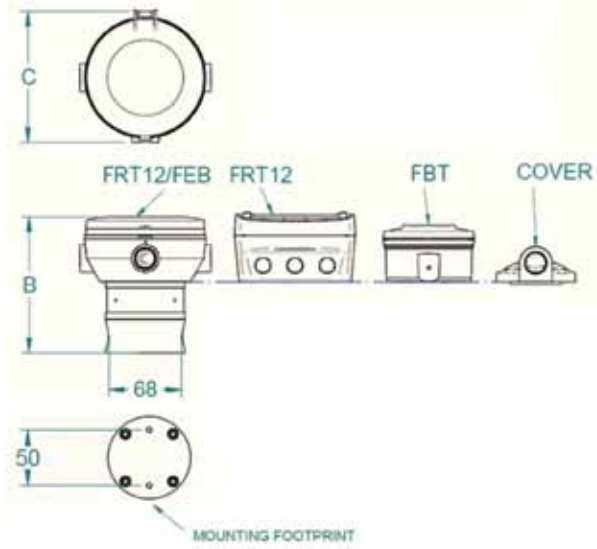
Flange mount : Optional

For specific flowmeters and part numbers refer to your JSG representative

Dimensions and Weights

OM004~OM008 (All dimensions in millimeters ± 2mm)

	B	B	B	C
OPTION	OM004	OM006	OM008	All
FR12/EB	122	122	129	124
FRT12	125	125	132	96
FBT	113	113	120	94
Cover	92	92	99	72
Aluminium Pulse (Kg)	0.8	0.8	0.8	-
Stainless Steel Pulse (Kg)	1.5	1.5	1.5	-

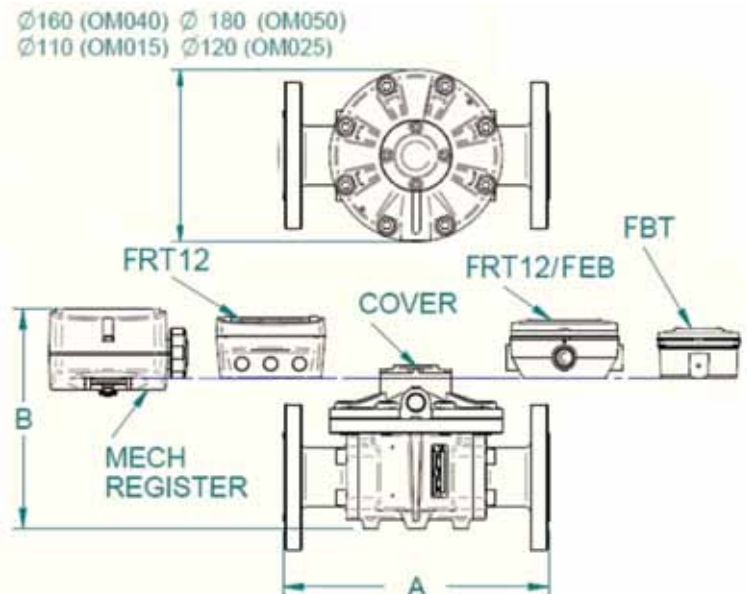


OM015~OM050E (All dimensions in millimeters ± 2mm)

	A	A	A	A	A	A	A	A	A
Modular Fitting	OM015-A	OM015-S	OM025-A	OM025-S	OM040-A	OM040-S	OM050-A	OM050-S	OM050-E
A.N.S.I. 150	-	-	198	237	252	252	277	277	277
DIN 16	-	-	198	237	252	252	277	277	277
JIS 10K	-	-	198	237	252	252	277	277	277
B.S.P.	110	110	137	176	188	188	212	212	212
N.P.T.	110	110	137	176	188	188	212	212	212

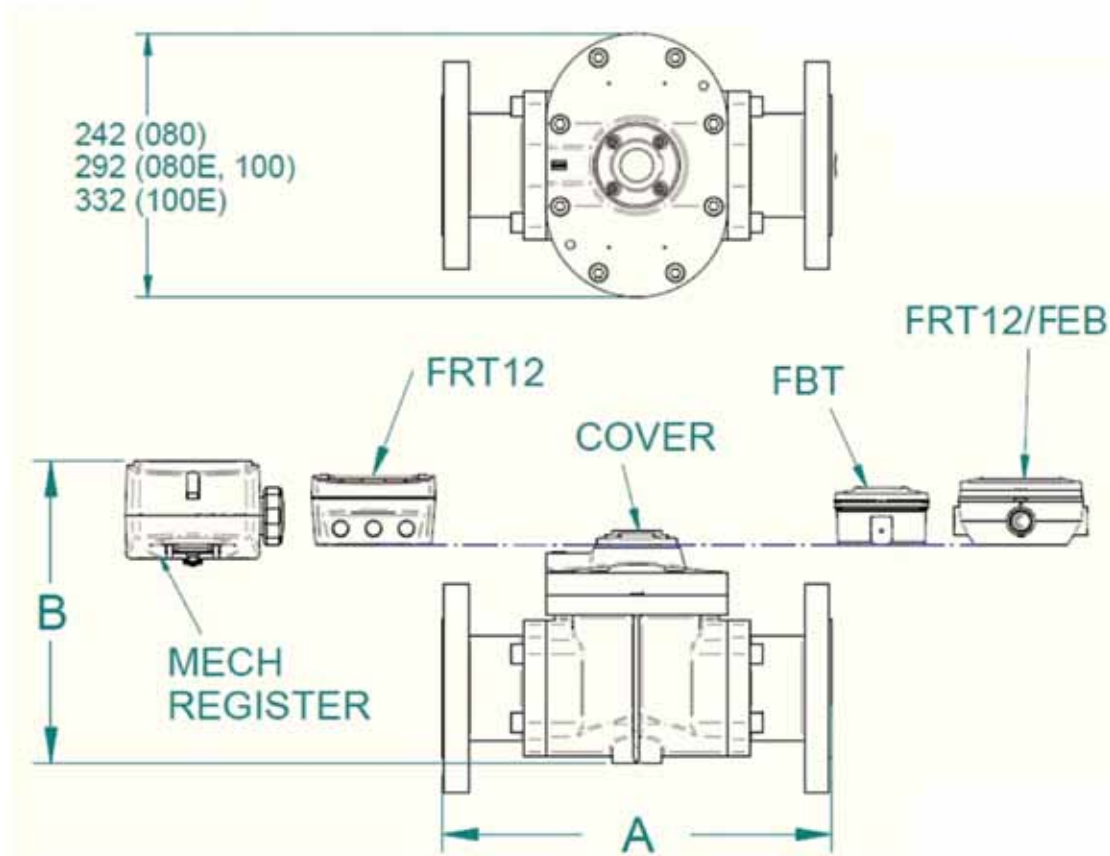
	B	B	B	B	B	B	B	B	B
Configuration	OM015-A	OM015-S	OM025-A	OM025-S	OM040-A	OM040-S	OM050-A	OM050-S	OM050-E
FRT12/FEB Register	154	148	168	165	203	194	218	218	268
FBT Register	145	139	160	157	195	186	210	210	260
FRT12 Register	157	151	171	168	206	197	221	221	271
Cover	106	100	120	117	155	146	170	170	220
Mechanical Register	178	178	188	214	227	222	237	237	286

WEIGHT KG	OM015	OM025	OM040	OM050	OM050-E
Aluminium Mechanical	2.6	3.8	7.6	9.6	11
Aluminium Pulse	1.7	3	5	8.6	10
S/Steel Mechanical	4	7	15	16.3	-
S/Steel Pulse	2.95	5.4	12	15	-



Dimensions and Weights

OM080~OM100E (All dimensions in millimeters ± 2 mm)



	A	A	A	A	A		B	B	B	B	B
Modular Fitting	OM080-A	OM080-S	OM080-E	OM100-A	OM100-E	Configuration	OM080-A	OM080-S	OM080-E	OM100-A	OM100-E
A.N.S.I 150	354	354	382	388	414	FRT12/EB Register	260	257	277	322	399
DIN 16	354	354	382	388	414	FBT Register	252	249	269	314	391
JIS 10K	354	354	382	388	414	FRT12 Register	264	260	281	326	403
B.S.P	266	266	294	294	320	Cover	213	206	229	274	352
N.PT	266	266	294	294	320	Mech. Register	270	N/A	288	333	416

Weight (kg)	OM080	OM080-E	OM100-A	OM100-E
Aluminium Mechanical	15	22	24	28
Aluminium Pulse	14	20	23	26
S/Steel Mechanical	32	-	-	-
S/Steel Pulse	30	-	-	-

"Y" Type Strainers

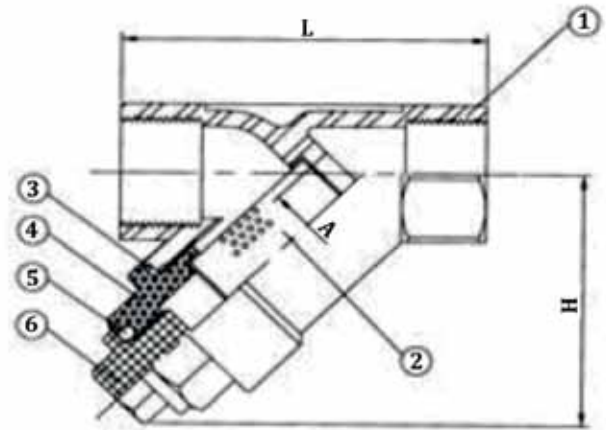
"Y" - Strainer Specifications

Body	ASTM A-A-351 Grade CF8M
Screen	DN8 DN15 - 80
Packing	PTFE
Working Pressure	800PSI
End Connections	Threaded Male



Materials List

No.	Part Name	Material
1	Body	CF8M
2	Screen	SS316
3	Gasket	PTFE
4	Bonnet	CF8M
5	O-Ring	Viton
6	Plug	CF8M



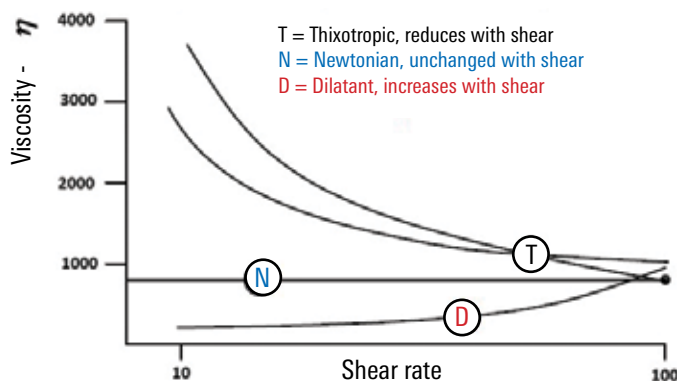
Model	Size	A	L	H	Mesh Size	Size (mm)
41-ST008	DN8	10.0	65.0	51.0	200 mesh	1/4" (6mm)
41-ST010	DN10	12.0	65.0	51.0	200 mesh	3/8" (10mm)
41-ST015	DN15	15.0	65.0	51.0	100 mesh	1/2" (13mm)
41-ST025	DN25	25.0	90.0	72.0	100 mesh	1" (25mm)
41-ST040	DN40	40.0	120.0	87.0	100 mesh	1 1/2" (38mm)
41-ST050	DN50	50.0	140.0	103.0	100 mesh	2" (50mm)
41-ST080	DN080	80.0	200	143	40 mesh	3" (80mm)

Viscous Liquid Behavior

The viscosity of a liquid is proportional to its resistance to shear. Of the three categories of viscosity (see opposite) Newtonians are most typical and include petroleum fluids, water & similar chemicals.

Most empirical test data for flowmeters and pumps has been developed using Newtonian liquids. When working with Non-Newtonian liquids we use the expression "effective viscosity" in terms of the liquid after it has been pre-sheared by the pump and subsequent movement through the pipe, in these instances it is not unusual for the effective viscosity to be many times less than the theoretical viscosity thereby lessening the pressure drop across the meter.

Key to viscosity under increasing shear



Liquid	SG	cp	Key
ADHESIVES			
Box Adhesives	1	3000	T
PVA	1.3	100	T
BAKERY			
Butter melted	0.98	10 @ 60°C	N
Egg, whole	0.5	60 @ 10°C	N
Frosting	1	10000	T
Lecithin		3250 @ 50°C	T
Condensed Milk	1.3	10000 @ 25°C	N
Yeast Slurry 15%	1	180	T
BEER			
Beer	1	1.1 @ 5°C	N
Yeast 80% solids		16000 @ 5°C	T
CONFECTIONARY			
Caramel	1.2	400 @ 60°C	
Chocolate	1.1	17000 @ 50°C	T
Fudge, Hot	1.1	36000	T
Toffee	1.2	87000	T
COSMETICS, SOAPS			
Face Cream		10000	T
Hair Gel	1.4	5000	T
Shampoo		5000	T
Toothpaste		20000	T
Hand Cleanser		20000	T
DETERGENTS			
Concentrate		10	N
DYES & INKS			
Ink, Printers	1.38	10000	T
Dye	1.1	10	N
Solvents	0.8~0.9	0.5~10	N

Liquid	SG	cp	Key
PHARMACEUTICALS			
Caster Oil	0.96	350	N
Cough Syrup	1.00	190	N
PLASTICS & RESINS			
Polyester Resin	1.40	3000	
PVA Resin	1.30	65000	T
FOODS			
Black Bean Paste		10000	T
Cream Style Corn		130 @ 90°C	T
Tomato Sauce	1.11	560 @ 60°C	T
Tomato Paste 33%	1.14	7000	T
Pablum		4500	T
Pear Pulp		4000 @ 70°C	T
Potato Mashed	1	20000	T
Prune Juice	1	60 @ 50°C	T
Orange Juice Conc.	1.1	5000 @ 3°C	T
Mayonnaise	1	5000 @ 24°C	T
Honey	1.5	15000 @ 40°C	T
PAINT			
Auto Paint		20000	
Solvents	0.8~0.98	0.5~10	N
Varnish	1.06	140 @ 40°C	T
Turpentine	0.86	2 @ 15°C	N
PAPER & TEXTILES			
Black Liquor Tar		2000 @ 150°C	
Paper Coating 35%		400	
Sulphide 6%		1600	
Black Liquor	1.3	1100 @ 50°C	
Black Liquor Soap		7000 @ 50°C	

Viscous Liquid Behavior (contd.)

Liquid	SG	cp	Key
DAIRY			
Cottage Cheese	1.08	225	N
Creme	1.02	100	D
Milk	1	20 @ 5°C	T
Cheese Process		1.2 @ 15°C	N
Yogurt		30000 @ 70°C	T
FATS & OILS			
Corn Oil	0.92	30	N
Lard	0.92	60 @ 40°C	N
Linseed Oil	0.93	30 @ 40°C	N
Peanut Oil	0.92	42 @ 40°C	N
Soybean Oil	0.95	36 @ 40°C	N
Vegetable Oil	0.92	3 @ 40°C	N

Liquid	SG	cp	Key
PETROLEUM			
Bitumen		60 @ 180°C	N
Gasoline	0.7	0.8 @ 15°C	N
Kerosene	0.8	3 @ 18°C	N
Fuel Oil #6	0.9	660 @ 50°C	N
SAE 40 lube oil	0.9	200 @ 40°C	N
SAE 90 lube oil	0.9	320 @ 40°C	N
Propane	0.46	0.2 @ 40°C	N
Bunker-C fuel oil	0.93	1500 @ 15°C	N
SUGAR SYRUPS			
Glucose	1.42	10000 @ 40°C	
Molasses - A	1.44	280-5k @ 40°C	
Molasses - B	1.46	1k-13k @ 40°C	
Molasses - C	1.47	3-6k @ 40°C	
60 Brix	1.29	75 @ 15°C	N
68 Brix	1.34	360 @ 15°C	N
76 Brix	1.39	4000 @ 15°C	N
Corn Syrup	1.39	15000 @ 15°C	

Flowmeter Calibration

Every Flowmeter undergoes a check before leaving the factory for correct operation & function of pulse outputs & ancillary electronics if fitted. Meters are then compared against a master meter which is traceable to the Australian National Standards & issued with a calibration report.

Installation Points

- PD Meters do not work well with silty or dirty fluids (Use Strainers before meter)
- Straight Pipe not necessary before meter
- Teflon Tape can cause rotor stoppages, do not use
- High Velocity flows can cause rotor destruction (Slowly ramp up flow on start up)
- Avoid Water Hammer caused by closing valves quickly in batch applications
- Flush Pipe Lines prior to meter installation

14989

FLOWMETER CALIBRATION CERTIFICATE

Customer
 Purchase order No. 31 Date 06 February 2007
 Works order No. 14195 Report No. 14989

FLOWMETER PRIMARY DATA
 Flowmeter type Positive Displacement
 Model No. OM 008 - A511-21100 Serial No. 14989
 Temperature (max.) 80°C (176°F) Tag No.

SECONDARY INSTRUMENT DATA
 Instrument type BT11 totaliser
 Model No. BT11000MM Serial No.
 Program Data Read switch in factor programmed, all other program levels set to factory default values

PROVER METHOD
 * Prover vessel Not used Category of standard Volumetric reference standard
 Vessel identification SM27384 Vessel certification * Dept Trade Measurements
 Vessel constant 200.027 litres Measurement uncertainty +/- 0.020 litres

** Master meter Used Model No. OM 008 - A511-21100
 Test Media *** Mineral oil Oil temp. at test 20 °C 68 °F

Test No.	Flowrate		Volume (litres)	Pulses received		Flowmeter "N" factors	
	litres / min	L/SQ / min		Hull Effect (pulses /)	Read Sw (pulses /)	Hull Effect (pulses per litre)	Read Sw (pulses per L/SQ)
0	4.5	1.189	4.588	3243	811	708.939	177.488
1		0.000			0		
2		0.000			0		
3		0.000			0		
4		0.000			0		

Controller **B Doyle**

** Prover vessels are certified by the Department of Weights and Measures under Regulation 80(4) of the National Measurement Act 1988.
 *** Master meter has been calibrated to standards D2000 on certificate 110497 traceable to the National Association of Testing Authorities, Australia (NATA)
 **** (Leave these calibration full printer code 00000)

CONVERSION FACTORS
 1 US gallon = 0.4732 litres
 1 US quart = 0.9464 litres
 1 US gallon = 3.785 litres
 1 British Imperial gallon = 4.5460 litres
 1000 litres = 1 cubic metre

Pressure Drop Limitations On PD Flowmeters

Positive displacement flowmeters are an inexpensive means to accurately meter high viscosity clean liquids as high as 1 million centipoise however, the appropriate meter must be sized so that the pressure drop across the primary measuring elements (oscillating piston or oval rotor), does not exceed the maximum capability of either. The oscillating piston meter can withstand 4 bar differential making it more suitable to high viscosity liquids, the oval meter is limited to 1 bar differential due to the pressure imposed on the rotor shafts.

Example: For 41-OM025 with a product viscosity of 8000cps
 Maximum flowrate L/Min x Multiplier 150L/min x 0.5 = 75 L/Min

Flow Rate De-Rating Guide for PD Meters

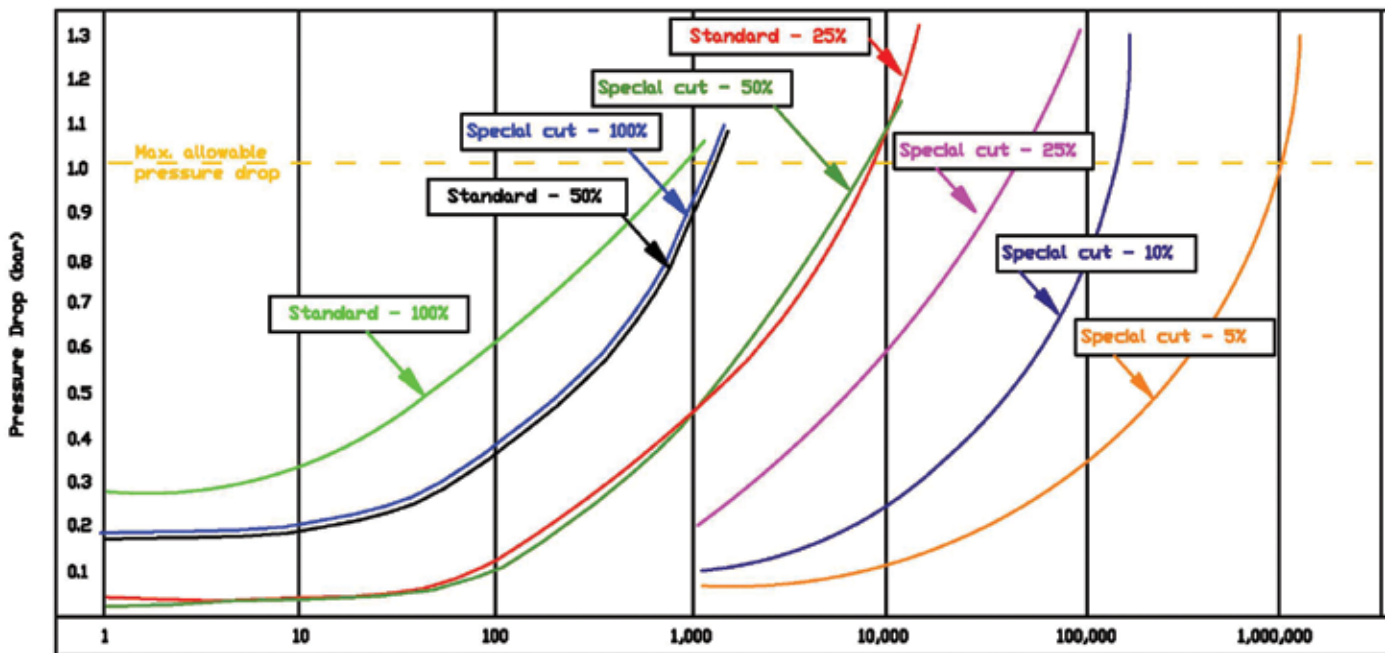
Viscosities Less than	Maximum flow multiplier for PD meters		
	Standard oval gear	Special cut oval gear	Oscillating piston
1,000 cp	1	1	1
2,000 cp	0.5	1	1
4,000 cp	0.42	0.84	0.9
6,000 cp	0.33	0.66	0.8
8,000 cp	0.25	0.5	0.7
30,000 cp	0.15	0.3	0.6
60,000 cp	0.12	0.25	0.5
150,000 cp	0.1	0.2	0.4
250,000 cp	0.05	0.1	0.15
1,000,000 cp	0.025	0.05	0.08

Pressure Drop Limit verses Flow Rate

The curves below represent the pressure drop for standard and special cut high viscosity oval rotors at various viscosities. Special cut rotors have alternate tooth relieve which effectively reduces the pressure drop by 50%.

Viscosities are in centipoise and the pressure drop is in Bar (1 Bar = 14.7psig). When sizing an oval meter for viscous liquids be sure your selection falls on or below the 1 bar maximum allowable pressure drop line on the graph.

Pressure Drop Curves for Standard & Special Cut Oval Rotors



Dualpulse - Paddle Wheel Flowmeters

DP940 & DP525 are cost effective stainless steel flowmeters for measuring the flow of water, fuels & other low viscosity liquids in pipes sizes 1.5"~100" (40~2500mm).

Insertion flowmeters are installed with the metering head inserted into the pipe resulting in very little pressure drop. They do not require external power when used with the Flomec rate totalisers however some options such as high temperature & non-magnetic models require external power.

Applications include HVAC, hot & chilled water, fire systems, water distribution (management & treatment), boiler feed water & hydrant flow testing.

Features

- IP68 (NEMA6) submersible 316SS construction
- Low cost of ownership, wide flow range
- Rugged and compact design
- Intrinsically safe hazardous area versions
- Integral or remote pre-amplifiers & flow instruments
- DP525 version suitable for "hot tap" installation
- BI-Directional Flow Measurement

General Specifications

Model Prefix	41-DP490	41-DP525
Suit pipe sizes	40~900mm (1.5"~36")	50~2500mm (2"~100")
Pipe connection	1.5" BSP or NPT	2" BSP or NPT
Flow range	0.25~6300 litres/sec (4 ~ 99600 USGM)	-0.4~49000 litres/sec (6~780000 USGM)
Flow velocity range	0.3~10 metres/sec (1~33 feet/sec)	
Linearity	typically $\pm 1.5\%$ with well established flow profile	
Temperature range	-40°C~+100°C (-40°F~+212°F) 200°C max	
Maximum pressure	80 bar (1200 psig)	
Materials	316SS body & rotor shaft, PVDF rotor	
<i>Pulse outputs</i>		
*Reed switch	30Vdc x 200mA max. Nom. 0~80hz	
Hall effect	3 wire NPN, 5~24Vdc, 20mA max. Nom. 0~240hz	
Voltage Pulse	self generated voltage. Nom. 0~240hz	
Intrinsically safe coil	self powered, generates 15~3000mV	
High temperature coil	self powered, 200°C (390°F) max	
Non magnetic sensor	3 wire NPN, 5~24Vdc, 20mA max. Nom. 0~240hz	
Analog	loop powered 4~20mA	

*Maximum thermal shock 10°C (50°F) /min. applies to the reed switch



Dualpulse Paddle Wheel Flowmeters

Technical information Dualpulse Flowmeters

Meter size	
41 - DP490	1.5 to 36" pipes (40-900mm)
41 - DP525	2 to 100" pipes (50-2500mm) suitable for "hot tap" installations

Body material	
S	316 Stainless steel

Rotor & Bearing materials	
1	PEEK high temperature rotor - 200°C (390°C)
2	PVDF rotor - 100°C (212°F) max (standard)

O-ring materials	
1	Viton (standard), -15--+204°C (5-400°F)
2	EPR (Ethylene Propylene Rubber) for ketones only
3	Teflon encapsulated viton - application specific
4	Buna-N (Nitrile), -65--+125°C (-53--+250°F)

Temperature limits	
5	100°C (212°F) standard
2	125°C (260°F) - PEEK rotor only
3	150°C (300°F) - NPN output & PEEK rotor only
6	200°C (390°F) with output type 6 coil & PEEK rotor

Process connections	
1	BSPT - 1 1/2" M (DP490), 2" M (DP525)
2	NPT - 1 1/2" M (DP490), 2" M (DP525)
3	2" BSPT male thread on the DP490
4	2"NPT male thread on the DP490

Pick up type	
1	NPN hall effect & voltage pulse (standard)
2	NPN open collector(s)
3	Reed switch only (I.S applications)
4	Non magnetic rotor with NPN output
5	Non magnetic rotor with I.S coil output
6	High temp. 200°C (390°F) coil output
7	Non magnetic rotor for 125°C (255°F)

Electrical connections	
1	3 metre (10ft) cable (std)
2	10 metre (33ft) cable
3	20 metre (66ft) cable
4	50 metre cable (164ft)
5	Terminal box on stem kit
6	Stem kit

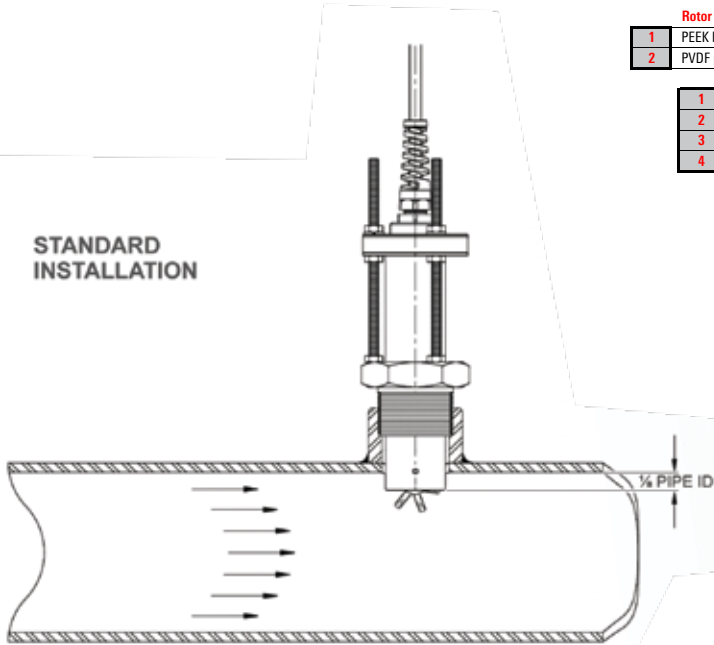
Integral options	
00	Nil
0P	Quadrature pulse output
B2	BT11 dual totaliser
B3	I.S intrinsically safe BT11
R2	RT 12 rate totaliser
R3	I.S intrinsically safe RT12
RO	FRT12 LCD Flow rate totaliser in Aluminium Enclosure
E0	Batch controller
F1	Loop powered 4-20mA output
SB	Specific build requirement

with scalable pulse output	B2
IECEx & ATEX mines approved	B3
scaled pulse, alarms & 4-20mA	R2
IECEx & ATEX mines approved	R3
scaled pulse, alarms & 4-20mA	RO
dc powered 2 stage batch controller	E0
Requires electrical connection	F1
	SB

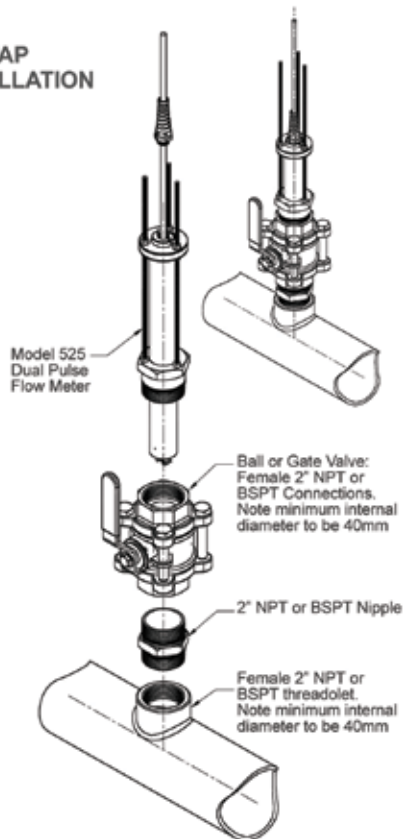
Model No. Example

41 - DP490 - S - 2 - 1 - 5 - 1 - 1 - 6 - R2

STANDARD
INSTALLATION



HOT TAP
INSTALLATION



Turbopulse - Small & Large Capacity meters

TM Turbopulse mini and 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.

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% or (10:1 turndown)
Temperature range	5~125°C (40~250°F)	-40~+250°C (-40~+460°F)
<i>Maximum pressure</i>		
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	
<i>Electrical (see also optional outputs - Turbopulse pick-off types)</i>		
Standard output	Hall effect sensor	Pick off Coil

Standard Options

- Flanged Process connections
- Explosion proof
- 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

Features

- High accuracy & repeatability
- Low cost of ownership, wide flow range
- Rugged and 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

Flow Ranges - TM Turbopulse Mini

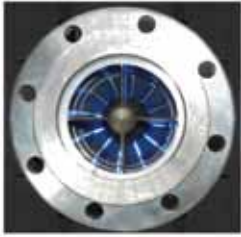
size	model	litres/min	(GPM)	Jet Ø
1/4"	TM001	0.05~0.5	(0.01~0.13)	1mm
1/4"	TM002	0.12~1.5	(0.03~0.4)	2mm
1/4"	TM003	0.2~4.5	(0.04~1.12)	3mm
1/4"	TM004	0.15~6.5	(0.05~1.7)	4mm
1/4"	TM005	0.3~10	(0.08~2.64)	5mm
1/4"	TM006	0.5~15	(0.13~4)	6mm

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)



Turbopulse - Small & Large Capacity meters



Turbopulse Model Coding

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

Body material

S	316 stainless steel - 250 bar (3500 psi) max.
H	High pressure SS, 400 bar (5580 psi) - 68cst max. (available up to TP040)

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

*Tri-clamp 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 flanged process connections

No. of Pick-offs

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

Pick-off Style

1	MS (military style) connector
2	FL (flying leads for integral mounting)

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)

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

00	Nil
JB	Junction box - ATEX Approved
PA	Exd preamplifier - ATEX Approved
B2	BT11 dual totaliser
B3	I.S. intrinsically safe BT11
R2	RT12 rate totaliser
R3	I.S. intrinsically safe RT12
R0	FRT12 Flow rate totaliser in Aluminium Enclosure
E0	EB10 dc batch controller
SB	Specific build requirement

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

Model No. Example

41 - TP025 - S 1 T 1 - 2 1 1 R2

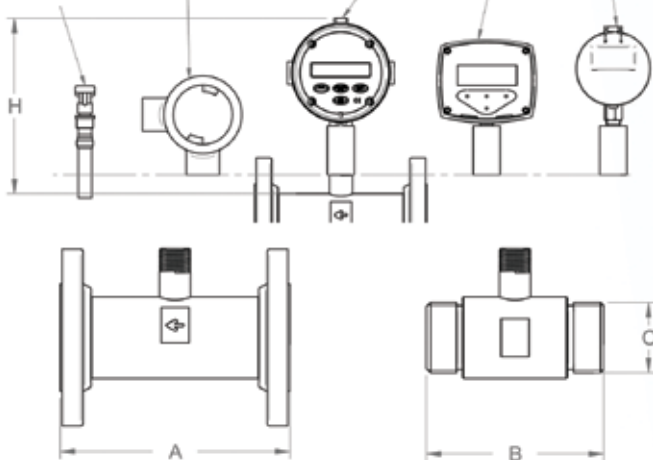
Junction Box, EXD Preamplifier
EXD F/I Converter Option

FRT12 Register in
Aluminium Enclosure

MS Connector

FRT12/EB Register

BT Register



FLANGED METERS AVAILABLE
WITH ANSI OR DIN FLANGES.
SEE APPLICABLE STANDARD
FOR FLANGE DIMENSIONS

Flanged Meters

Model No.	A
41 - TP010	127mm (5.0")
41 - TP012	127mm (5.0")
41 - TP015	127mm (5.0")
41 - TP020	140mm (5.0")
41 - TP025	152mm (6.0")
41 - TP040	178mm (7.0")
41 - TP050	197mm (7.8")
41 - TP080	254mm (10.0")
41 - TP100	356mm (14.0")
41 - TP150	368mm (14.5")
41 - TP200	457mm (18.0")
41 - TP250	457mm (18.0")
41 - TP300	457mm (18.0")
41 - TP400	610mm (24.0")
41 - TP500	610mm (24.0")

Option fitted	H
FRT12/EB Register (R2)	210mm
FRT12 Register (R0)	185mm
BT Register	190mm
EX Junction Box	150mm
MS Connector	118mm
MS Connector with Pre-Amo	138mm

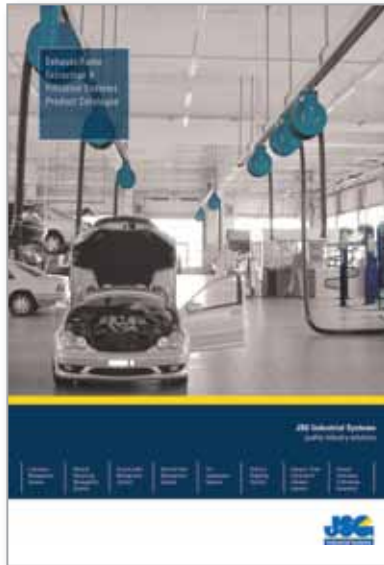
Threaded Meters

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

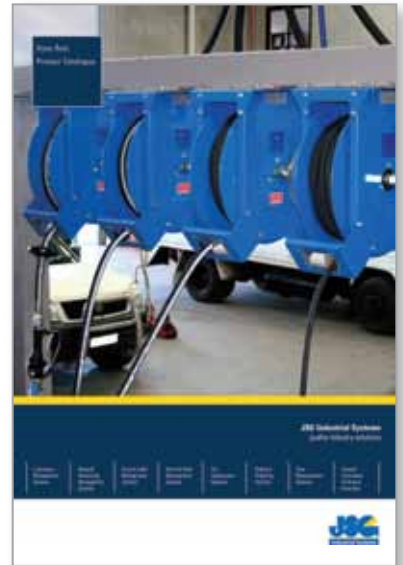
JSG Industrial Product Range



Fast Fill Systems



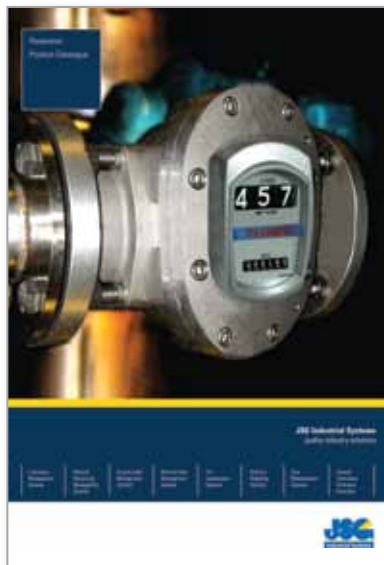
Exhaust/Fume & Extraction Systems



Hose Reel Products



Fire Suppression Products



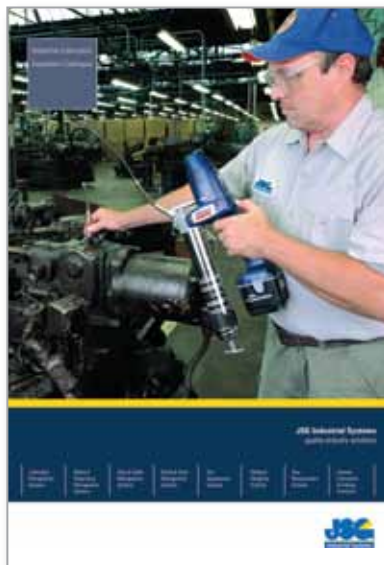
Flowmeter Products



Diaphragm Pump Products



On-Board Weighing Systems



Industrial Lubrication Equipment



Quickclub Commercial Vehicle Lubrication Systems

To find out more information on all of our product ranges please go to www.jsgindustrial.com or contact your local sales representative

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