



# User's Guide



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FPD1034, FPD1105, FPD1204  
and FPD1205 (includes -R Option)**

**SERIES HIGH FLOW  
Positive Displacement Flowmeters**



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It is the policy of OMEGA Engineering, Inc. to comply with all worldwide safety and EMC/EMI regulations that apply. OMEGA is constantly pursuing certification of its products to the European New Approach Directives. OMEGA will add the CE mark to every appropriate device upon certification.

The information contained in this document is believed to be correct, but OMEGA accepts no liability for any errors it contains, and reserves the right to alter specifications without notice.

**WARNING:** These products are not designed for use in, and should not be used for, human applications.

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### To the owner:

Thank you for purchasing an OMEGA FPD Series Flowmeter. Please take a few minutes to read through the manual before installing and operating your meter. If you have any problems with the meter, refer to the Maintenance and Troubleshooting sections of the manual.

This manual contains connection and operating instructions for the OMEGA FPD Series meters with pulse outputs. This includes the following models:

FPD1004	FPD1005
FPD1204	FPD1205
FPD1034	FPD1006
FPD1105	FPD1007

Part breakdowns for each model are located at the back of this manual. For models with displays and/or 4-20 mA output, an additional instruction manual is provided.

The OMEGA FPD Series flowmeter has incorporated the oval rotor principal into its design. This has proven to be a reliable and highly accurate method of measuring flow. Exceptional repeatability and high accuracy over a wide range of fluid viscosities and flowrates are features of the OMEGA FPD Series flowmeter design. The low pressure drop and high pressure rating, means the OMEGA FPD Series flowmeters are suitable for both gravity and pump (in-line) applications.

## IMPORTANT INFORMATION



**Please read this information carefully before use!**

Before use, confirm the fluid to be used is compatible with the meter or consult with OMEGA for advice.

To prevent damage from dirt or foreign matter, OMEGA recommends a Y or basket type 60 mesh strainer be installed as close as possible to the inlet side of the meter. (If required, contact OMEGA for further information.)

**NOTE:** When a strainer is installed it should be regularly inspected and cleaned. Failure to keep the strainer clean will dramatically effect flowmeter performance.

To prevent damage to the meter, slowly fill the system with fluid. This will prevent damage caused by air purge.

**NOTE:** Failure to do this could damage the meter.

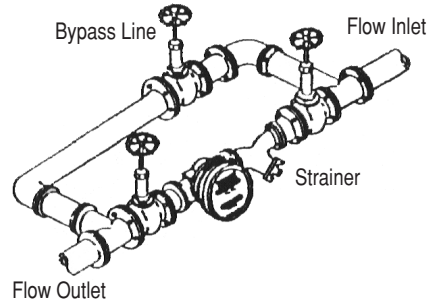
Maintenance can be performed on the liquid crystal display and pulse units without removing or isolating the meter from the line. When maintenance to any other part of the meter is required, the meter must be isolated and the line pressure reduced.

The Reed Switch pulse unit can cause inaccurate rate counts when used with high speed counters. It is advised that a de-bounce circuit be used or alternatively use the Hall Effect sensor option.

## INSTALLATION

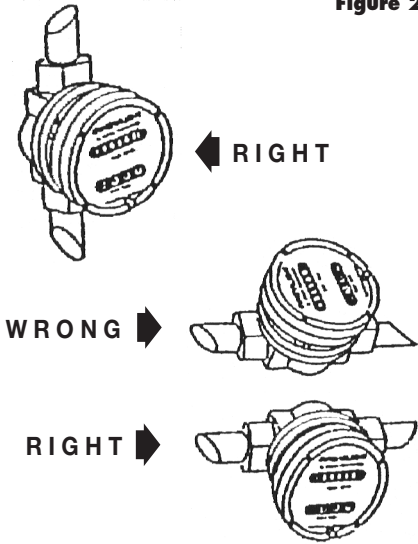
1. OMEGA recommends that when setting up pipework for meter installations, a bypass line be included in the design. This provides the ability for a meter to be removed for maintenance without interrupting production. (See Figure 1)

**Figure 1**



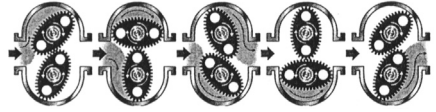
2. Use thread sealant on all pipe threads.
3. For pump applications, ensure pipe work has the appropriate working pressure rating to match the pressure output of the pump.
4. Install a wire mesh strainer (Y or basket type 60 mesh) as close as possible to the inlet side of the meter.
5. Ensure that the meter is installed so that the flow of the liquid is in the direction of the arrows embossed on the meter body.
6. The meter can be installed in any orientation as long as the meter shafts are in a horizontal plane. (See Figure 2) The register assembly may be oriented to suit the individual installation.

**Figure 2**



## OPERATION

When fluid passes through the meter, the rotors turn. The magnets which are located in the rotors will pass across the pulser circuit board (containing either Reed Switch or Hall Effect sensors).



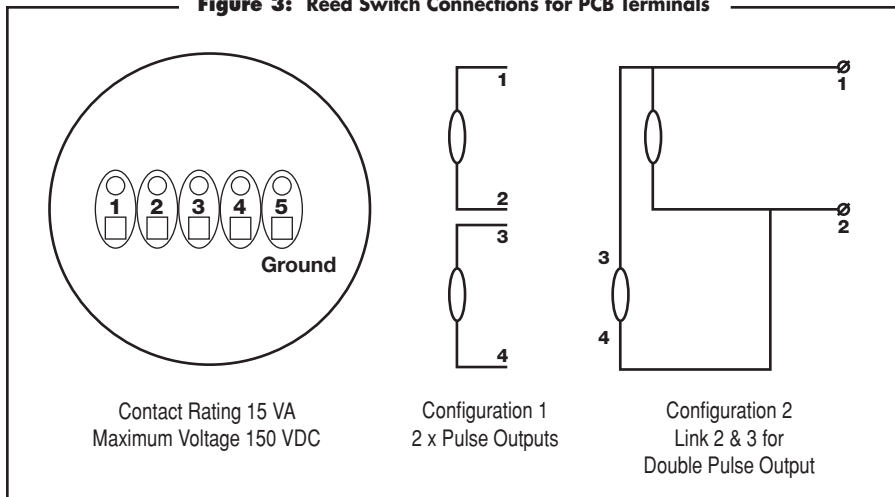
A signal is received which is then sent by the Pulse Circuit Board (PCB) to the relevant LC display or receiving instrument.

NOTE: Incorrect installation can cause premature wear of meter components

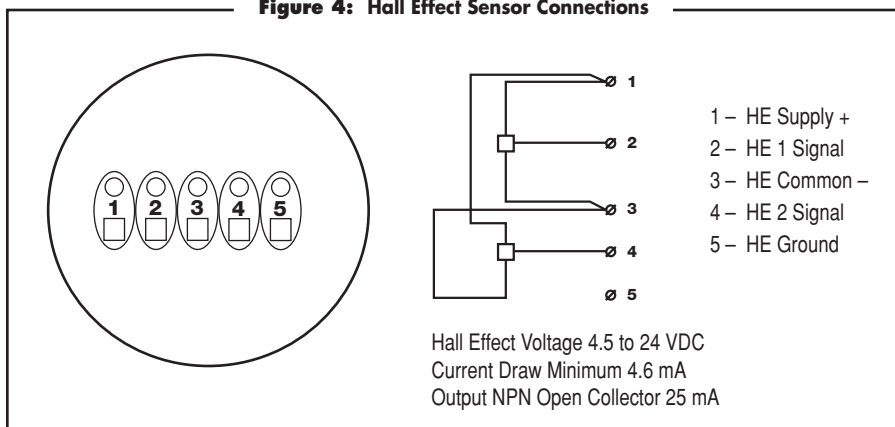
7. Do not overtighten meter connections.
8. It is important that after initial installation you fill the line slowly, high speed air purge could cause damage to the rotors.
9. Test the system for leaks.
10. Check the strainer for swarf or foreign material. After the first 200 liters, check periodically – particularly if the flowrate decreases.

# ELECTRICAL CONNECTIONS

**Figure 3: Reed Switch Connections for PCB Terminals**



**Figure 4: Hall Effect Sensor Connections**



# SERVICE INSTRUCTIONS

## Disassembly:

Ensure that the fluid supply to the meter is disconnected, and the line pressure is released before disassembly. This step is not required if you need to repair or perform maintenance on the display or PCB. In this case, there is no need to isolate the meter from the flow. Refer to the exploded parts diagram for your meter.

1. Units with Pulse Caps – Undo the conduit connector, remove pulse cap and remove the wires from the pulse terminal board.  
Standard LC Display – Unscrew the four large screws on top of the LC Display. Carefully separate the LC Display from the plastic housing and disconnect the wires from the pulse terminal block.
2. Loosen the four cap screws and nuts that hold down the meter cap. Remove the screws and nuts and lift off the cap.
3. Remove the O-ring from the O-ring groove in the meter cap.
4. Remove rotors.

## Reassembly:

1. Before reassembling, check the condition of the rotors. Replace if necessary.
2. Rotors must be replaced in the proper orientation (see list that follows). There is no difference between rotor one or rotor two.

### 1/2 in. Meters:

- FPD1004 – Plugs Down
- FPD1204 – Plugs Down

### 3/4 in. Meters:

- FPD1034 – Plugs Up

### 1 in. Meters:

- FPD1005 – Plugs Up
- FPD1105 – Plugs Down
- FPD1205 – Plugs Up

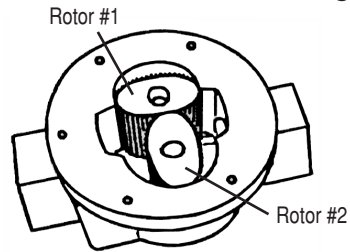
### 1-1/2 in. Meters:

- FPD1006 – Plugs Up

### 2 in. Meters:

- FPD1007 – Plugs Up

**Figure 5**



*Rotors must be at 90° to each other*

3. Replace the rotors onto the shafts at 90 degrees to each other. (See Figure 5) Check their operation by turning either of the rotors. If the rotors are not in mesh correctly or do not move freely, remove one of the rotors and replace correctly at 90 degrees to the other rotor. Re-check the operation of the rotors.
4. Replace the O-ring back into the groove in the meter cap. If the O-ring has grown or is damaged in any way, replace it with a new one.
5. Replace the meter cap. Insert the cap head screws and fix nuts and tighten in the sequence 1, 3, 2 and 4. Torque screws to the appropriate pressure per the chart that follows:

	<b>Body Material</b>	<b>Screw Torque</b>
<u>1/2 in. Meters:</u>		
FPD1004	Aluminum	31 in./lbs.
FPD1204	S.S.	80 in./lbs.
<u>3/4 in. Meters:</u>		
FPD1034	Aluminum	31 in./lbs.
<u>1 in. Meters:</u>		
FPD1005	Aluminum	31 in./lbs.
FPD1105	PPS	80 in./lbs.
FPD1205	S.S.	80 in./lbs.
<u>1-1/2 in. Meters:</u>		
FPD1006	Aluminum	75 in./lbs.
<u>2 in. Meters:</u>		
FPD1007	Aluminum	150 in./lbs.

6. The replacement of cables and connectors are a reversal of the disassembly procedure. Replace conduit fitting if required.

7. Test the meter by turning the rotors with a finger or by applying very low air pressure (a good breath) to one end of the meter, before returning the meter to the line.

### Pulse Circuit Board (PCB) Notes:

The PCB board is fastened to the meter cap by two screws and stand off's. All care and caution should be taken when removing or handling the PCB as both the Reed Switch and Hall Effect sensors are fragile.

Individual Reed Switches or Hall Effect sensors are not available as replacement parts and are only available with the PCB.

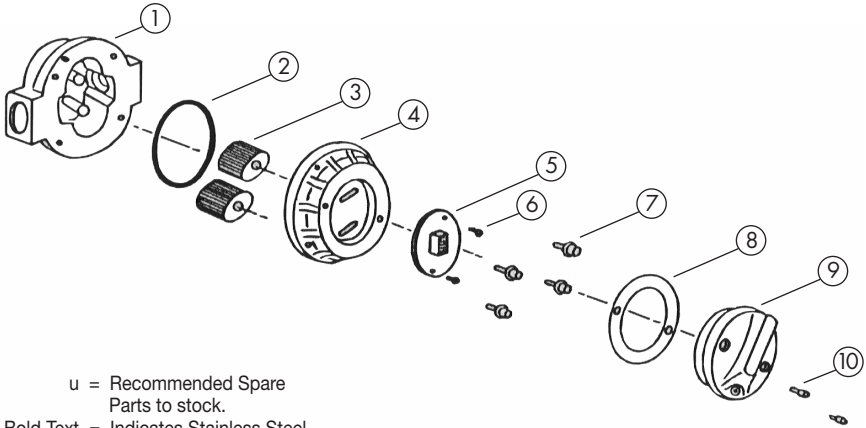
## TROUBLESHOOTING

Symptom	Probable Cause	Corrective Action
FLUID WILL NOT FLOW THROUGH THE METER	<ol style="list-style-type: none"> <li>1. Foreign matter blocking rotors</li> <li>2. Line strainer blocked</li> <li>3. Damaged rotors</li> <li>4. Meter connections over-tightened</li> <li>5. Fluid is too viscous</li> </ol>	<p>Dismantle meter, clean rotors. Strainer must be fitted in-line.</p> <p>Clean strainer.</p> <p>Replace rotors. Strainer must be fitted in-line.</p> <p>Re-adjust connections.</p> <p>See specifications for rated viscosity.</p>
REDUCED FLOW THROUGH THE METER	<ol style="list-style-type: none"> <li>1. Line strainer partially blocked</li> <li>2. Fluid is too viscous</li> </ol>	<p>Clean strainer.</p> <p>See specifications for rated viscosity.</p>
METER READING INACCURATE	<ol style="list-style-type: none"> <li>1. Fluid flowrate is too low or too high</li> <li>2. Fluid is too viscous</li> <li>3. Excess wear caused by incorrect installation</li> </ol>	<p>See specifications for flow range.</p> <p>See specifications for rated viscosity.</p> <p>Check meter body and rotors. Replace as required.</p>
METER NOT GIVING A PULSE SIGNAL	<ol style="list-style-type: none"> <li>1. Faulty Hall Effect sensor</li> <li>2. Faulty Reed Switch</li> <li>3. Magnets failed</li> </ol>	<p>Replace PCB Board.</p> <p>Replace PCB Board.</p> <p>Replace rotors.</p>



# METER PARTS LISTING

**Models: FPD1004 - Aluminum  
FPD1204 - Stainless Steel**



u = Recommended Spare Parts to stock.

**Bold Text** = Indicates Stainless Steel model parts.

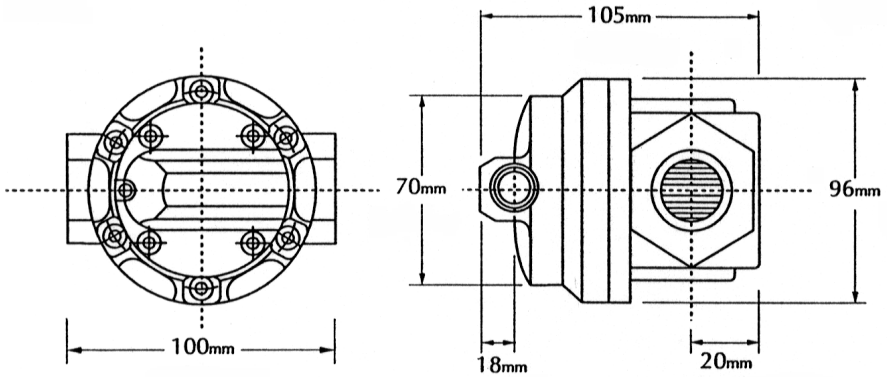
Item No.	Qty.	Rec. Parts	Part or Set (Order from this column only)	Part Description
1	1		MS298N	Meter Body 1/2 in. NPT (Aluminum)
<b>1</b>	<b>1</b>		<b>MS337N</b>	<b>Meter Body 1/2 in. NPT (Stainless Steel)</b>
2	1	u	BS145TE	O-Ring (PTFE)
2	1	u	BS145V	O-Ring (Fluorocarbon)
3	2	u	MS342S	Rotors PPS (Polyphenylene Sulfide Resins)
3	2	u	MS342HS	High Viscosity Rotors (PPS)
4	1		MS297	Meter Cap (Aluminum)
<b>4</b>	<b>1</b>		<b>MS338</b>	<b>Meter Cap (Stainless Steel)</b>
5	1	u	MS344-R	PCB (Standard Reed Switch)
5	1	u	MS344-HE	PCB (Hall Effect Sensor)
6	2		MS284S	PCB Board Screws
7	4	u	MS346S	Meter Cap Screws (Standard)
<b>7</b>	<b>4</b>	<b>u</b>	<b>MS350S</b>	<b>Meter Cap Screws (Stainless Steel)</b>
8	1	u	MS340S	Pulsor Cap Gasket
9	1		MS296	Pulsor Cap (Aluminum) 20mm Conduit Thread
9	1		MS296N	Pulsor Cap (Aluminum) 1/2 in. NPT Thread
<b>9</b>	<b>1</b>		<b>MS339</b>	<b>Pulsor Cap (S/Steel) 20mm Conduit Thread</b>
<b>9</b>	<b>1</b>		<b>MS339N</b>	<b>Pulsor Cap (S/Steel) 1/2 in. NPT Thread</b>
<b>10</b>	<b>2</b>		<b>MS347S</b>	<b>Pulsor Cap Screw (Stainless Steel)</b>

## SPECIFICATIONS

	<b>FPD1004 &amp; FPD1204</b>
<b>Flow Ranges (LPM or GPM)</b>	1 to 30 / 0.26 to 8
Above 5 centipoise	3 to 25 / 0.8 to 6.60
Below 5 centipoise	± 0.5%
<b>Accuracy of Reading</b>	1000 Centipoise
<b>Maximum Viscosity*</b>	5500 kPa / 800 PSI / 55 Bar
<b>Maximum Operating Pressure</b>	80°C / 176°F (Stainless Steel 120°C / 248°F)
<b>Maximum Operating Temperature</b>	Reed Switch Sensor or Hall Effect Sensor
<b>Pulse Type</b>	112 PPL / 424 PPG
<b>Pulses per Liter/Gallon</b>	
Single Sensor (K-factor)	

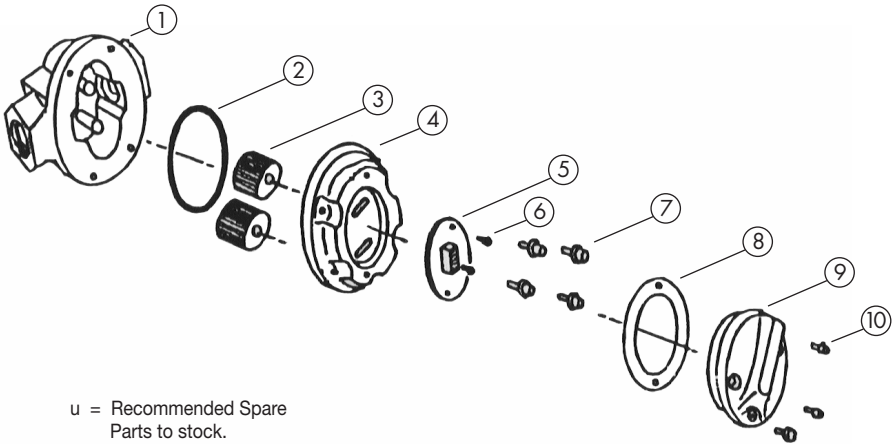
\* Unless High Viscosity Rotors are fitted.

## DIMENSIONS



# METER PARTS LISTING

## Model: FPD1034 - Aluminum



u = Recommended Spare  
Parts to stock.

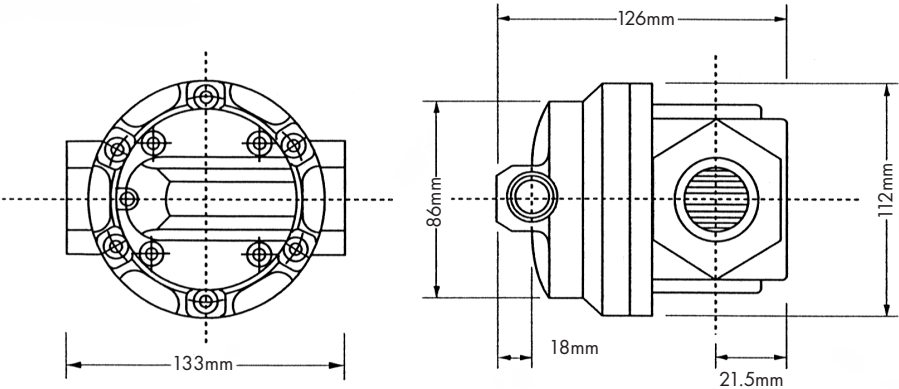
**Bold Text** = Indicates Stainless Steel  
model parts.

Item No.	Qty.	Rec. Parts	Part or Set (Order from this column only)	Part Description
1	1		MS779NS	Meter Body 3/4 in. NPT (Aluminum)
2	1	u	BS235TE	O-Ring (PTFE)
2	1	u	BS235V	O-Ring (Fluorocarbon)
3	2	u	MS370S	Rotors (PPS) (Polyphenylene Sulfide Resins)
4	1		MS150	Meter Cap (Aluminum)
5	1	u	MS28-R	PCB (Standard Reed Switch)
5	1	u	MS28-HE	PCB (Hall Effect Sensor)
6	4		MS111S	PCB Board Screws
7	6	u	MS114S	Meter Cap Screws (Standard)
8	1	u	MS300	Pulser Cap Gasket
9	1		MS160	Pulser Cap (Aluminum) 20mm Conduit Thread
9	1		MS160N	Pulser Cap (Aluminum) 1/2 in. NPT Thread
<b>10</b>	<b>4</b>		<b>MS115S</b>	<b>Pulser Cap Screw (Stainless Steel)</b>

## SPECIFICATIONS

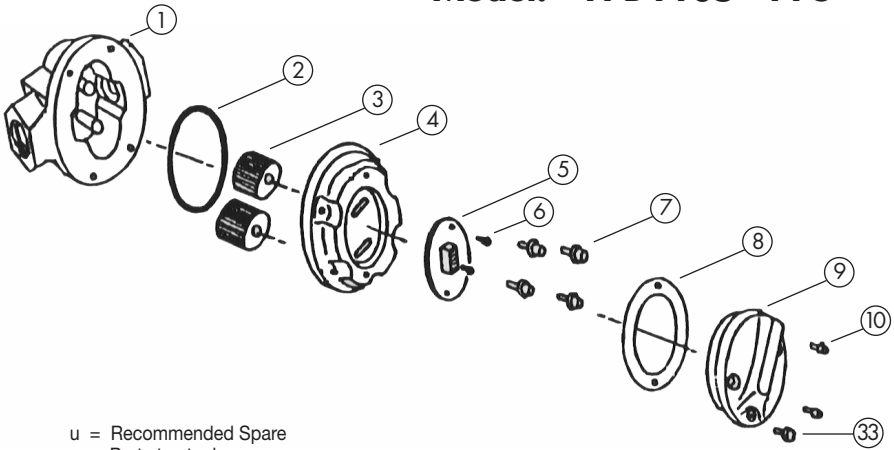
	<b>FPD1034</b>
<b>Flow Ranges (LPM or GPM)</b>	3 to 60 / 0.8 to 15.85
Above 5 centipoise	8 to 53 / 2.1 to 14
Below 5 centipoise	± 0.5%
<b>Accuracy of Reading</b>	1000 Centipoise
<b>Maximum Viscosity</b>	5500 kPa / 800 PSI / 55 Bar
<b>Maximum Operating Pressure</b>	-10°C (+14°F)
<b>Minimum Operating Temperature</b>	+80°C (+176°F)
<b>Maximum Operating Temperature</b>	Reed Switch Sensor or Hall Effect Sensor
<b>Pulse Type</b>	52 PPL / 197 PPG
<b>Pulses per Liter/Gallon</b>	
Single Sensor (K-factor)	

## DIMENSIONS



# METER PARTS LISTING

**Model: FPD1105 - PPS**



u = Recommended Spare Parts to stock.

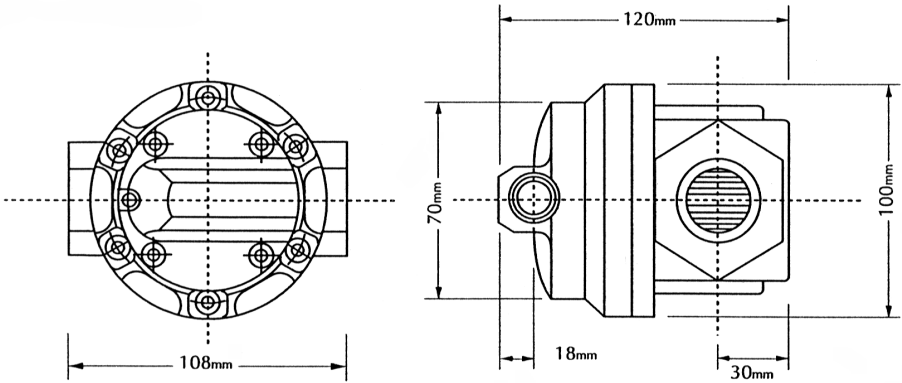
**Bold Text** = Indicates Stainless Steel model parts.

Item No.	Qty.	Rec. Parts	Part or Set (Order from this column only)	Part Description
1	1		MS352N	Meter Body 1 in. NPT (PPS) & Hastalloy C Shafts
2	1	u	BS235TE	O-Ring (PTFE)
2	1	u	BS235V	O-Ring (Fluorocarbon)
3	2	u	MS370S	Rotors (PPS)
4	1		MS405R	Meter Cap (PPS)
5	1	u	MS368-R	PCB (Standard Reed Switch)
5	1	u	MS344-HE	PCB (Hall Effect Sensor)
6	2		MS284S	PCB Board Screws
7	4	<b>u</b>	<b>MS350S</b>	<b>Meter Cap Screws (Stainless Steel)</b>
8	1	u	MS340S	Pulser Cap Gasket
9	1		MS406R	Pulser Cap (PPS) 16mm Conduit Thread
9	1		MS406R-N	Pulser Cap (PPS) 1/2 in. NPT Thread
10	2		<b>MS347S</b>	<b>Pulser Cap Screw (Stainless Steel)</b>
33	1		MS111S	Earthing Screw
34	4		<b>MS497S</b>	<b>Nut (S/Steel) - not shown, recessed in body</b>

## SPECIFICATIONS

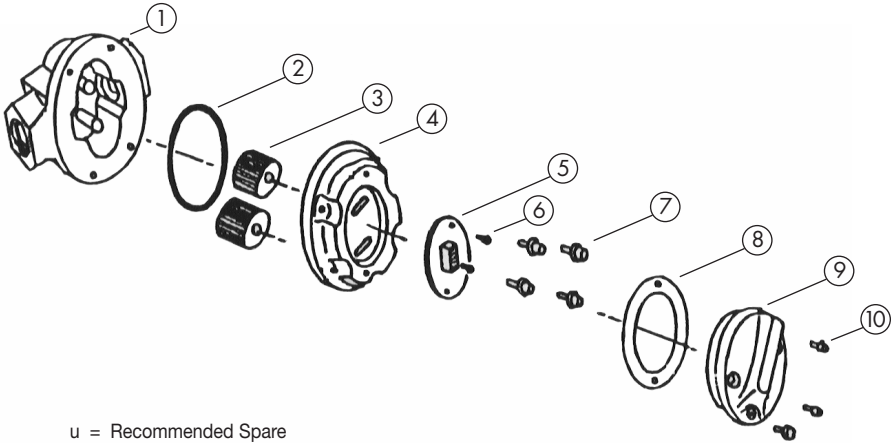
	FPD1105
<b>Flow Ranges (LPM or GPM)</b>	
Above 5 centipoise	3 to 80 / 0.8 to 21
Below 5 centipoise	8 to 70 / 2 to 18.5
<b>Accuracy of Reading</b>	± 0.5%
<b>Maximum Viscosity</b>	1000 Centipoise
<b>Maximum Operating Pressure</b>	1000 kPa / 150 PSI / 10 Bar
<b>Maximum Operating Temperature</b>	80°C / 176°F
<b>Pulse Type</b>	Reed Switch Sensor or Hall Effect Sensor
<b>Pulses per Liter/Gallon</b>	
Single Sensor (K-factor)	52 PPL / 197 PPG

## DIMENSIONS



# METER PARTS LISTING

**Models: FPD1005 - Aluminum**  
**FPD1205 - Stainless Steel**



u = Recommended Spare  
 Parts to stock.

**Bold Text** = Indicates Stainless Steel  
 model parts.

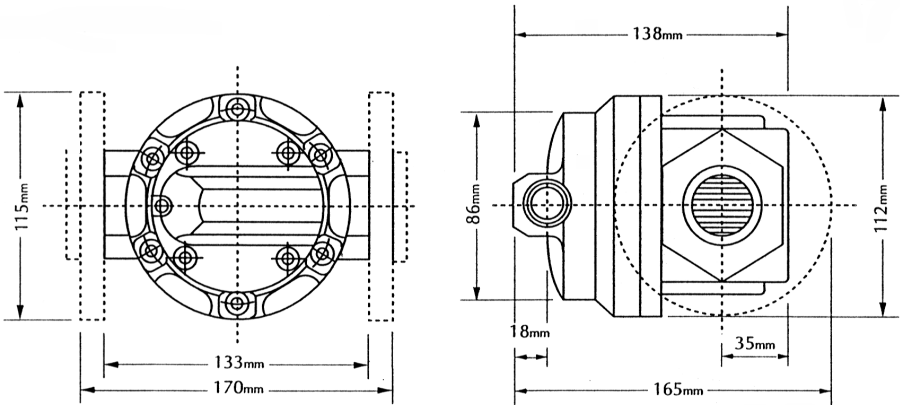
Item No.	Qty.	Rec. Parts	Part or Set (Order from this column only)	Part Description
1	1		MS187N	Meter Body 1 in. NPT (Aluminum)
<b>1</b>	<b>1</b>		<b>MS185N</b>	<b>Meter Body 1 in. NPT (Stainless Steel)</b>
1	1		MS187F	Meter Body 1 in. ANSI 150 lb. Flange (Aluminum)
<b>1</b>	<b>1</b>		<b>MS185F</b>	<b>Meter Body 1 in. ANSI 150 lb. Flange (S/Steel)</b>
<b>1</b>	<b>1</b>		<b>MS185T</b>	<b>Meter Body 1 in. Tri-Clover® Flange (S/Steel)</b>
2	1	u	BS235TE	O-Ring (PTFE)
2	1	u	BS235V	O-Ring (Fluorocarbon)
<b>3</b>	<b>2</b>	<b>u</b>	<b>MS50-1S</b>	<b>Rotors (Stainless Steel)</b>
<b>3</b>	<b>2</b>	<b>u</b>	<b>MS50-1HS</b>	<b>High Viscosity Rotors (Stainless Steel)</b>
4	1		MS150	Meter Cap (Aluminum)
<b>4</b>	<b>1</b>		<b>MS250</b>	<b>Meter Cap (Stainless Steel)</b>
5	1	u	MS28-R	PCB (Standard Reed Switch)
5	1	u	MS28-HE	PCB (Hall Effect Sensor)
6	4		MS111S	PCB Board Screws
7	6	u	MS114S	Meter Cap Screws (Standard)
<b>7</b>	<b>6</b>	<b>u</b>	<b>MS200S</b>	<b>Meter Cap Screws (Stainless Steel)</b>
8	1	u	MS300	Pulser Cap Gasket
9	1		MS160	Pulser Cap (Aluminum) 20mm Conduit Thread
9	1		MS160N	Pulser Cap (Aluminum) 1/2 in. NPT Thread
<b>9</b>	<b>1</b>		<b>MS170</b>	<b>Pulser Cap (S/Steel) 20mm Conduit Thread</b>
<b>10</b>	<b>4</b>		<b>MS115S</b>	<b>Pulser Cap Screw (Stainless Steel)</b>

## SPECIFICATIONS

	FPD1005 & FDP1205
<b>Flow Ranges (LPM or GPM)</b>	
Above 5 centipoise	6 to 120 / 1.6 to 32
Below 5 centipoise	10 to 100 / 2.6 to 26
<b>Accuracy of Reading</b>	± 0.5%
<b>Maximum Viscosity*</b>	1000 Centipoise
<b>Maximum Operating Pressure</b>	NPT – 5500 kPa / 800 PSI / 55 Bar or Flange Rule
<b>Maximum Operating Temperature</b>	80°C / 176°F (Stainless Steel 120°C / 248°F)
<b>Pulse Type</b>	Reed Switch Sensor or Hall Effect Sensor
<b>Pulses per Liter/Gallon</b>	
Single Sensor (K-factor)	36 PPL / 136.3 PPG
Double Sensor (K-factor)	72 PPL / 272.6 PPG

\* Unless High Viscosity Rotors are fitted.

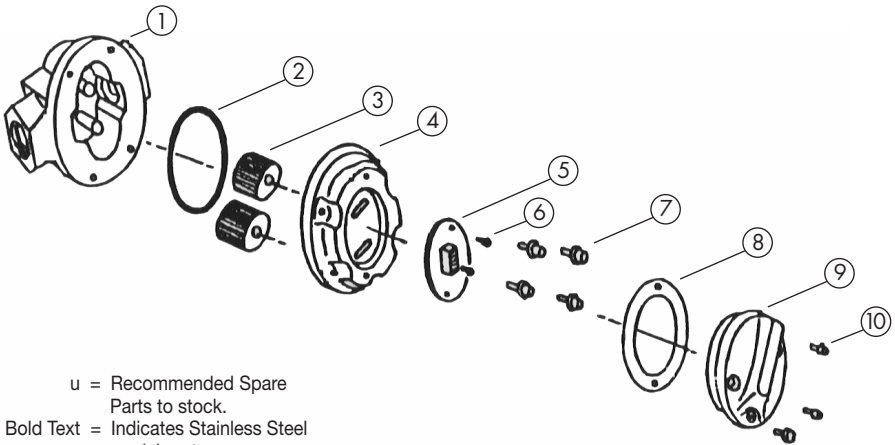
## DIMENSIONS





# METER PARTS LISTING

## Model: FPD1006 - Aluminum



u = Recommended Spare  
Parts to stock.

**Bold Text** = Indicates Stainless Steel  
model parts.

Item No.	Qty.	Rec. Parts	Part or Set (Order from this column only)	Part Description
1	1		MS191N	Meter Body 1-1/2 in. NPT (Aluminum)
1	1		MS191F	Meter Body 1-1/2 in. ANSI 150 lb. Flange (Alum.)
2	1	u	BS243TE	O-Ring (PTFE)
2	1	u	BS243V	O-Ring (Fluorocarbon)
3	2	u	MS58S	Rotors (PPS)
3	2	u	MS58HS	High Viscosity Rotors (PPS)
4	1		MS220	Meter Cap (Aluminum)
5	1	u	MS201-R	PCB (Standard Reed Switch)
5	1	u	MS201-HE	PCB (Hall Effect Sensor)
6	4		MS284S	PCB Board Screws
7	6	u	MS116S	Meter Cap Screws (Standard)
8	1	u	MS300	Pulser Cap Gasket
9	1		MS160	Pulser Cap (Aluminum) 20mm Conduit Thread
9	1		MS160N	Pulser Cap (Aluminum) 1/2 in. NPT Thread
<b>10</b>	<b>4</b>		<b>MS115S</b>	<b>Pulser Cap Screw (Stainless Steel)</b>

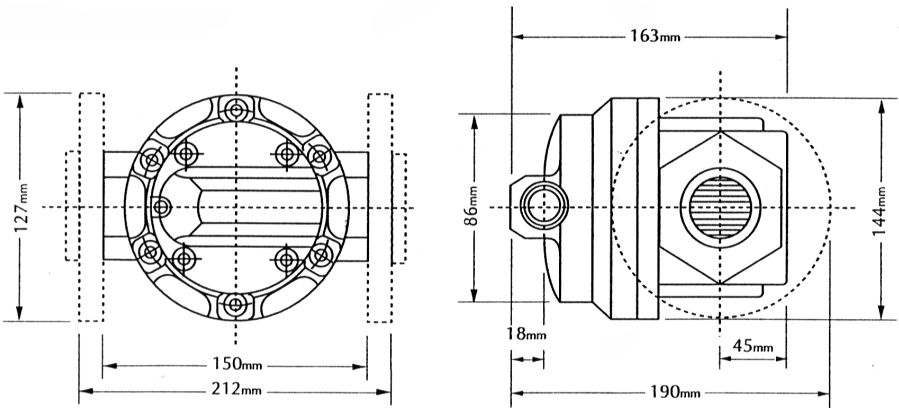
## SPECIFICATIONS

	FPD1006
<b>Flow Ranges (LPM or GPM)</b> Above 5 centipoise Below 5 centipoise <b>Accuracy of Reading</b> <b>Maximum Viscosity*</b> <b>Maximum Operating Pressure**</b> <b>Maximum Operating Temperature</b>  <b>Pulse Type</b> <b>Pulses per Liter/Gallon</b> Single Sensor (K-factor) Double Sensor (K-factor)	10 to 250 / 2.6 to 66 15 to 235 / 4 to 62 ± 0.5% 1000 Centipoise NPT – 5500 kPa / 800 PSI / 55 Bar -10°C to 80°C (14°F to 176°F) (Aluminum) -10°C to 120°C (14°F to 248°F) (Stainless Steel) Reed Switch Sensor or Hall Effect Sensor  14.5 PPL / 54.9 PPG 29 PPL / 109.8 PPG

\* Unless High Viscosity Rotors are fitted.

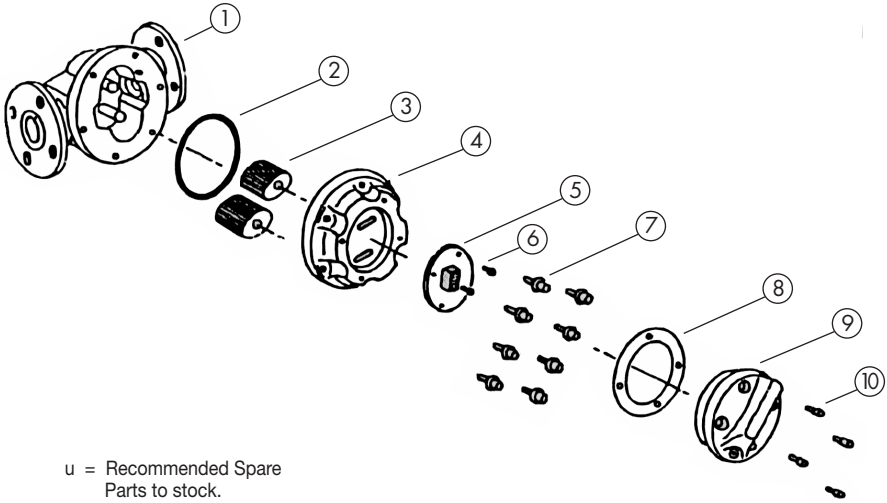
\*\* Meter conforms to PED 97/23/EC CAT 1.

## DIMENSIONS



# METER PARTS LISTING

**Model: FPD1007 - Aluminum**



u = Recommended Spare  
Parts to stock.

**Bold Text** = Indicates Stainless Steel  
model parts.

Item No.	Qty.	Rec. Parts	Part or Set (Order from this column only)	Part Description
1	1		MS283F	Meter Body 2 in. ANSI 150 lb. Flange (Alum.)
1	1		MS283N	Meter Body 2 in. NPT (Aluminum)
2	1	u	BS252TE	O-Ring (PTFE)
2	1	u	BS252V	O-Ring (Fluorocarbon)
3	2	u	MS147S	Rotors (PPS)
3	2	u	MS147HS	High Viscosity Rotors (PPS)
4	1		MS230	Meter Cap (Aluminum)
5	1	u	MS201-R	PCB (Standard Reed Switch)
5	1	u	MS201-HE	PCB (Hall Effect Sensor)
6	4		MS284S	PCB Board Screws
7	6	u	MS243S	Meter Cap Screws (Standard)
8	1	u	MS300	Pulser Cap Gasket
9	1		MS160	Pulser Cap (Aluminum) 20mm Conduit Thread
9	1		MS160N	Pulser Cap (Aluminum) 1/2 in. NPT Thread
<b>10</b>	<b>4</b>		<b>MS115S</b>	<b>Pulser Cap Screw (Stainless Steel)</b>

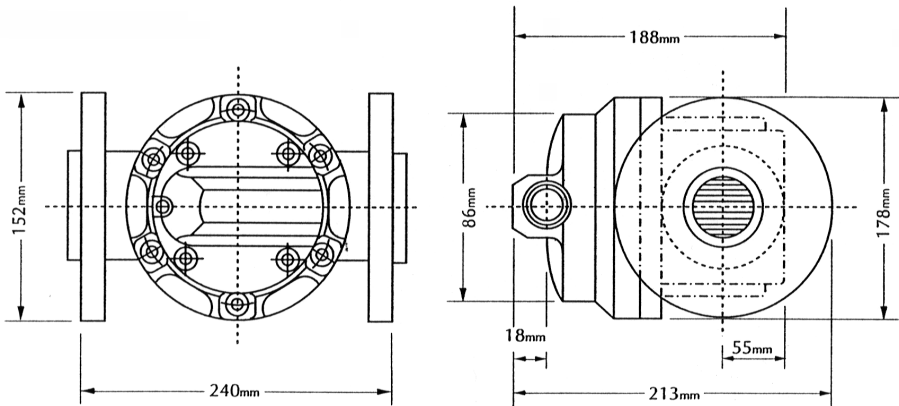
## SPECIFICATIONS

	<b>FPD1007</b>
<b>Flow Ranges (LPM or GPM)</b>	15 to 350 / 4 to 92
Above 5 centipoise	33 to 300 / 9 to 79
Below 5 centipoise	$\pm 0.5\%$
<b>Accuracy of Reading</b>	1000 Centipoise
<b>Maximum Viscosity*</b>	NPT – 5500 kPa / 800 PSI / 55 Bar or Flange Rule
<b>Maximum Operating Pressure**</b>	-10°C to 80°C (14°F to 176°F) (Aluminum)
<b>Maximum Operating Temperature</b>	-10°C to 120°C (14°F to 248°F) (Stainless Steel)
<b>Pulse Type</b>	Reed Switch Sensor or Hall Effect Sensor
<b>Pulses per Liter/Gallon</b>	
Single Sensor (K-factor)	6.68 PPL / 25.3 PPG
Double Sensor (K-factor)	13.4 PPL / 50.6 PPG

\* Unless High Viscosity Rotors are fitted.

\*\* Meter conforms to PED 97/23/EC CAT 1.

## DIMENSIONS







## WARRANTY/DISCLAIMER

OMEGA ENGINEERING, INC. warrants this unit to be free of defects in materials and workmanship for a period of **13 months** from date of purchase. OMEGA's WARRANTY adds an additional one (1) month grace period to the normal **one (1) year product warranty** to cover handling and shipping time. This ensures that OMEGA's customers receive maximum coverage on each product.

If the unit malfunctions, it must be returned to the factory for evaluation. OMEGA's Customer Service Department will issue an Authorized Return (AR) number immediately upon phone or written request. Upon examination by OMEGA, if the unit is found to be defective, it will be repaired or replaced at no charge. OMEGA's WARRANTY does not apply to defects resulting from any action of the purchaser, including but not limited to mishandling, improper interfacing, operation outside of design limits, improper repair, or unauthorized modification. This WARRANTY is VOID if the unit shows evidence of having been tampered with or shows evidence of having been damaged as a result of excessive corrosion; or current, heat, moisture or vibration; improper specification; misapplication; misuse or other operating conditions outside of OMEGA's control. Components in which wear is not warranted, include but are not limited to contact points, fuses, and triacs.

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## RETURN REQUESTS/INQUIRIES

Direct all warranty and repair requests/inquiries to the OMEGA Customer Service Department. BEFORE RETURNING ANY PRODUCT(S) TO OMEGA, PURCHASER MUST OBTAIN AN AUTHORIZED RETURN (AR) NUMBER FROM OMEGA'S CUSTOMER SERVICE DEPARTMENT (IN ORDER TO AVOID PROCESSING DELAYS). The assigned AR number should then be marked on the outside of the return package and on any correspondence.

The purchaser is responsible for shipping charges, freight, insurance and proper packaging to prevent breakage in transit.

FOR **WARRANTY** RETURNS, please have the following information available BEFORE contacting OMEGA:

1. Purchase Order number under which the product was PURCHASED,
2. Model and serial number of the product under warranty, and
3. Repair instructions and/or specific problems relative to the product.

FOR **NON-WARRANTY** REPAIRS, consult OMEGA for current repair charges. Have the following information available BEFORE contacting OMEGA:

1. Purchase Order number to cover the COST of the repair,
2. Model and serial number of the product, and
3. Repair instructions and/or specific problems relative to the product.

OMEGA's policy is to make running changes, not model changes, whenever an improvement is possible. This affords our customers the latest in technology and engineering.

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