

# FLAMEC<sup>®</sup>

# Flowmeter Catalog

version eight

**PARTNERSHIP  
IN MOTION™**



**GREAT PLAINS INDUSTRIES**





# OM SERIES OVAL GEAR METERS

OM Series Oval Gear Meters are designed for low flow and high accuracy. OM Series Meters are great for viscous fluids. Units are available with pulse output from either a Reed Switch or Hall Effect Sensor. Electronics choices for the OM Series Meters are covered in the Electronic Choices Section.

## 1) Select Your OM Meter

OM Meters come in a variety of sizes and materials.



**Pulse Meter**



**Mechanical Meter**



## 2) Select Your Sensor

**Reed Switch**

**Hall Effect**  
Requires Dedicated Power Source

**Combo**  
**Reed Switch / Hall Effect**  
(Standard)

**Quadrature Pulse**  
Bi-directional Flow



## 3) Select Your Electronics Choice

For further details and selections see the Electronics Section.



**RT12**



**EB10**



**RT40**



**E018 / E110**



**F018**



**GA**

4-20 mA Output Without Display  
(Remote)



**GG**

Display With Pulse Output  
(Remote)



**GX**

Display 4-20 mA Output  
(Remote)



**Pulse Output**



## 4) Need a Strainer?

Oval Gear Meters work best with clean fluid, free of debris.

GPI carries Y Strainers to fit all models of Oval Gear Meters. These strainers range from 1/4 in. to 2 in. models. All sizes are 316 Stainless Steel and come complete with blow-off and plug. See page 79 for strainer specifications.



### SIZE

<b>OM004</b>	= 1/8 in.	( 4mm )	0.13-9.5 GPH	0.5-36 L/hr
<b>OM006</b>	= 1/4 in.	( 6mm )	0.5-27 GPH	2-100 L/hr
<b>OM008</b>	= 3/8 in.	( 8mm )	4-145 GPH	15-550 L/hr
<b>OM008</b>	= 1/4 in. high pressure	( 6 mm )	4-145 GPH	15-550 L/hr
<b>OM015</b>	= 1/2 in.	( 15mm )	0.26-10.6 GPM	1-40 L/min
<b>OM025</b>	= 1 in.	( 25mm )	2.6-40 GPM	10-150 L/min
<b>OM040</b>	= 1-1/2 in.	( 40mm )	4-66 GPM	15-250 L/min
<b>OM050</b>	= 2 in.	( 50mm )	8-120 GPM	30-450 L/min
<b>OM080</b>	= 3 in.	( 80mm )	10-200 GPM	35-750 L/min
<b>OM080E</b>	= 3 in.	( 80mm )	13-260 GPM	50-1000 L/min
<b>OM100</b>	= 4 in.	( 100mm )	20-400 GPM	75-1500 L/min

### BODY MATERIAL

- A** = Aluminum
- E** = Extended flow aluminum version
- P** = PPS ( 73 PSI / 5 Bar)
- M** = Intermediate pressure aluminum meter ( 2000 PSI [138 Bar] max.) (OM025 only)
- S** = 316L Stainless Steel
- N** = Intermediate press. 316L SS meters (OM004N-025N = 1450 PSI [100 bar] , OM040N-050N = 725 PSI [50 bar])
- H** = High Pressure 316SS (OM004H-040H = 5800 PSI [400 bar] max. OM050H = 4350 PSI [300 bar])

### ROTOR MATERIAL

- 0** = PPS - PTFE filled (Polyphenylene Sulfide)
- 1** = Keishi cutting of PPS rotors (for high viscosity liquids)
- 5** = Stainless steel (standard on OM004 & OM006, optional on other sizes)
- 7** = Keishi cutting of stainless steel rotors (for high viscosity liquids)

### BEARING TYPE

- 0** = No Bearing - PPS rotor option only
- 1** = Carbon Ceramic (standard with stainless steel rotors)

### O-RING MATERIAL

- 1** = FKM (Viton™) (**standard for Alum.**) -5° F minimum (-15° C)
- 2** = EPR (Ethylene Propylene Rubber) - for ketones only
- 3** = PTFE encapsulated FKM (Viton™) - (**standard for SS**)
- 4** = Buna-N (Nitrile), -40° F minimum (-40° C)

### MAXIMUM TEMPERATURE LIMIT

- 2** = 250° F (120° C) max. (reduced to 80° C when fitted with integral instruments)
- 3** = 300° F (150° C) max. (Hall Effect output only, not available with HP meters)
- 5** = 250° F (120° C) max. (includes integral cooling fin)
- 8** = 176° F (80° C) max. (applies to Mech. Reg., OM025P & OM008 with PPS rotors)

*Continued on next page.*

## PROCESS CONNECTIONS

- 1 = BSPP ( G ) female threaded
- 2 = NPT female threaded
- 3 = Sanitary Fittings (Sanitary Fittings are 1/2" larger than the meter size)
- 4 = ANSI-150 RF flanged
- 5 = ANSI-300 RF flanged
- 6 = PN16 DIN flanged

## CABLE ENTRIES

- 0 = 3-6mm cable gland or no cable entry [Exclusive to B2 & B3 options (OM004 to OM008 and mechanical display models only)]
- 1 = M20 x 1.5 mm
- 2 = 1/2" NPT (OM004-OM008) 1/2" NPT Adaptor used for other sizes

## INTEGRAL OPTIONS

- \_\_\_ = Combination Reed Switch and Hall Effect Sensor
- G5 = [GG 500] Rate / Total Display with pulse out and optional Ex. Power [Local Display w/ Pulse (60°C)]
- G6 = [GX 500] Rate / Total Display w/ 4-20mA out [Local Display w/ 4-20mA (60°C)]
- G7 = [GA 500] Loop powered 4-20mA analog output [Local 4-20mA (60°C)]
- RS = Reed Switch only - to suit Intrinsically safe installations
- E1 = Explosionproof Exd IIB T4/T6 (aluminum & stainless meters) [IECEX & ATEX approved] [120° C]
- E2 = Explosionproof Exd I/IIB T4/T6 (stainless meters only) [IECEX & ATEX mines approved] [120° C]
- QP = Quadrature pulse (2 NPN phased outputs) [not available with high press models]
- Q1 = Explosionproof Exd (with quadrature pulse, but not available with high pressure meter) [IECEX & ATEX approved]
- HR = High resolution Hall effect output (Hall Effect only) [OM004:11200ppL], [OM006:4200ppL]
- H1 = Explosionproof - Exd with HR Hi-res. Hall option [IECEX & ATEX approved]
- PF = Pulsating flow option (Hall effect output only) [for injected combustion engines]
- P1 = Explosionproof - Exd with PF pulsating flow option [IECEX & ATEX approved]
- B2 = BT11 totaliser with pulse output [with scaleable pulse output]
- B3 = Intrinsically safe BT11 with pulse output [IECEX & ATEX approved]
- R0 = RT12 rate totaliser with all outputs (Alloy housing) [scaled pulse, alarms, 4-20mA]
- R2 = RT12 rate totaliser with all outputs (GRN housing) [scaled pulse, alarms, 4-20mA]
- R3 = Intrinsically safe RT12 with all outputs (GRN housing) [IECEX & ATEX approved]
- R4 = RT40 rate totaliser with backlit large digit LCD [scaleable pulse output, backlight]
- E0 = EB10 batch controller [2 stage DC batcher & totaliser]
- M3 = 4-digit Mechanical Totalizer - litres [Resolution depends on size]
- M4 = 4-digit Mechanical Totalizer - gallon [Resolution depends on size] [Consult Factory for Availability with High Pressure Meters]

### OM004 (1/8"), OM006 (1/4") and OM008 (3/8") Oval Gear Meters



The OM Small Capacity Oval Gear Meters have an increased flow range and offers the ability to handle a wide range of fluid viscosities with exceptional levels of repeatability.

#### OM Electronic Choices:

Options include electronic LCD totalisers, flowrate totalisers and batch controllers (4-20mA, scaled pulse, alarms and batch control)

- G5 LCD 6-digit reset, cumulative totalizer and flow rate, pulse output
- G6 LCD 6-digit reset, cumulative totalizer and flow rate analog (4-20mA) and pulse outputs
- G7 Blind analog (4-20mA) output
- BT11 LCD 5-digit reset, 8-digit cumulative totalizer, pulse output
- RT12 LCD 6-digit reset, cumulative totalizer and flow rate, analog and pulse outputs
- RT40 LCD 6-digit reset, cumulative totalizer and flow rate. Backlit Display, pulse output
- EB LCD 6-digit 2 stage batcher and cumulative totaliser (Available for remote mounting and with I.S. approvals - RT12 and BT11 only)

For complete part number, see "Meter Number Reference" for this section.

**ACCURACY: ±1.0% OF READING**

#### Select Your Body Material:

Aluminum or Stainless Steel

#### Features and Benefits:

- ✓ High accuracy and repeatability, direct volumetric reading.
- ✓ No requirement for flow conditioning (straight pipe runs).
- ✓ Stainless Steel rotors (Optional PPS Rotor for OM008 meter).
- ✓ Measures high and low viscosity liquids
- ✓ Quadrature pulse output option and bi-directional flow
- ✓ Blind 4-20mA output option
- ✓ Optional Exd I/IIB approval (ATEX, IECEx)
- ✓ PF option available for metering pulsating flows
- ✓ Only two moving parts

#### SPECIFICATIONS

Model Prefix:	OM004 (1/8")	OM006 (1/4")	OM008 (3/8")
Nominal size (inches):	1/8" (4mm)	1/4" (6mm)	3/8" (8mm)
*Flow range - (GPH):	(0.13-9.5)	(0.5-27)	(4-145)
- (LPH):	(0.5 - 36)	(2 - 100)	(15 - 550)
**Accuracy @ 3cp:	± 1% of reading (accuracy is ± 0.2% of reading with optional RT12 with non-linearity correction)		
Repeatability:	Typically ± 0.03% of reading		
Temperature range:	-4° F - +250° F (-20° C - +120° C), refer factory for lower temperature		
Maximum pressure:	<b>PSI (bar) Threaded Meter</b>		
Aluminium meters:	220 (15)		
316 stainless steel:	495 (34)		
Intermediate press. SS meter:	1450 (100)		
High pressure models:	5800 (400)		

**Electrical** - for pulse meters (see below for optional outputs)

Output pulse resolution:	<b>Pulses / gallon (Pulses / litre) - nominal</b>		
Reed switch:	10600 (2800)	3975 (1050)	1345 (355)
Hall effect:	10600 (2800)	3975 (1050)	2690 (710)
QP-Quadrature Hall option:	10600 (2800)	3975 (1050)	2690 (710)
PF-Pulsating Flow (Hall Effect):	10600 (2800)	3975 (1050)	675 (178)
HR-High resolution Hall effect:	42400 (11200)	15900 (4200)	N/A
Reed switch output:	30Vdc x 200mA max. [maximum thermal shock 18° F (10° C) / 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 I / IIB T4/T6, integral ancillaries can be supplied I.S. (intrinsically safe)
Overall dimensions:	Refer Below
Recommended filtration:	200 mesh (75 microns)

\* Maximum flow is to be reduced as viscosity increases, see flow de-rating guide. Max. recommended pressure drop is 100Kpa. (14.5 psi)

\*\*QP and PF Options are not available with High Pressure Meters

## OM015 (1/2"), OM025 (1"), OM040 (1-1/2") and OM050 (2")



The OM Medium Capacity Oval Gear Meters are great for medium flow ranges and have the ability to handle a wide range of fluid viscosities.

### OM Electronic Choices:

Options include electronic LCD totalisers, flowrate totalisers and batch controllers (4-20mA, scaled pulse, alarms and batch control)

- G5 LCD 6-digit reset, cumulative totalizer and flow rate, pulse output
- G6 LCD 6-digit reset, cumulative totalizer and flow rate analog (4-20mA) and pulse outputs
- G7 Blind analog (4-20mA) output
- BT11 LCD 5-digit reset, 8-digit cumulative totalizer, pulse outputs
- RT12 LCD 6-digit reset, cumulative totalizer and flow rate, analog and pulse outputs
- RT40 LCD 6-digit reset, cumulative totalizer and flow rate. Backlit Display, pulse outputs
- EB LCD 6-digit 2 stage batcher and cumulative totaliser (Available for remote mounting and with I.S. approvals - RT12 and BT11 only)

**ACCURACY: ±0.5% OF READING**

### Select Your Body Material:

Aluminum or Stainless Steel

### Features and Benefits:

- ✓ High accuracy and repeatability, direct volumetric reading.
- ✓ No requirement for flow conditioning (straight pipe runs).
- ✓ Measures high and low viscosity liquids.
- ✓ Quadrature pulse output option and bi-directional flow
- ✓ Blind 4-20mA output option
- ✓ Optional Exd I/IIB approval (ATEX, IECEx)
- ✓ Only two moving parts

### SPECIFICATIONS

Model Prefix	OM015 (1/2")	OM025 (1")	OM040 (1.5")	OM050 (2")
Nominal size (inches):	1/2" (15mm)	1" (25mm)	1.5" (40mm)	2" (50mm)
*Flow range - (GPM):	0.26 - 10.6	2.6 - 40	4.0 - 66	8 - 120
- (LPM):	1 - 40	10 - 150	15 - 250	30 - 450
**Accuracy @ 3cp:	± 0.5% of reading (accuracy is ± 0.2% of reading with optional RT12 with non-linearity correction)			
Repeatability:	Typically ± 0.03% of reading			
Temperature range:	-4°F - +250°F (-20°C - +120°C), refer factory for lower temperature			
Maximum pressure:	<b>PSI (bar) Threaded Meters</b>			
Aluminium meters:	990 (68)	990 (68)	435 (30)	285 (20)
Intermediate press. AL	-	2000 (138)	-	-
316 stainless steel:	990 (68)	990 (68)	435 (30)	550 (38)
Intermediate press. SS meter:	1450 (100)	1450 (100)	725 (50)	725 (50)
*** High pressure models:	5800 (400)	5800 (400)	5800 (400)	4350 (300)
<b>Max. pressure Mech. Meter</b>	<b>PSI (Threaded meters) bar</b>			
<b>Aluminium meters</b>	<b>580 (40)</b>	<b>580 (40)</b>	<b>435 (30)</b>	<b>285 (20)</b>
<b>316 stainless steel</b>	<b>580 (40)</b>	<b>580 (40)</b>	<b>435 (30)</b>	<b>285 (20)</b>

**Electrical** - for pulse meters (see below for optional outputs)

Output pulse resolution:	Pulses / gallon (Pulses / litre) - nominal			
Reed switch:	318 (84)	102 (27)	53 (14)	25 (6.5)
Hall effect:	636 (168)	405 (107)	212 (56)	99 (26)
QP-Quadrature Hall option:	636 (168)	204 (54)	106 (28)	49 (13)
Reed switch output:	30Vdc x 200mA max. [maximum thermal shock 18° F (10° C) / 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 I / IIB T4/T6, integral ancillaries can be supplied I.S. (intrinsically safe)			
Overall dimensions:	Refer Below			
Recommended filtration:	100 mesh (150 microns)			

\* Maximum flow is to be reduced as viscosity increases, see flow de-rating guide. Max. recommended pressure drop is 100Kpa. (15 psi)

\*\* Accuracy ± 1% of reading with M - Series mechanical registers and accuracy ± 0.5% of reading with V-series mechanical register.

\*\*\* QP and PF Options are not available with High Pressure Meters.

### OM080 (3"), OM080E (3") and OM100 (4") Oval Gear Meters



The OM Large Capacity Oval Gear Meters have fitting sizes of 3 inches and 4 inches and handle volumetric flow measurement of clean liquids used in a wide range of applications.

#### OM Electronic Choices:

Options include electronic LCD totalisers, flowrate totalisers and batch controllers (4-20mA, scaled pulse, alarms and batch control)

- G5 LCD 6-digit reset, cumulative totalizer and flow rate, pulse output
- G6 LCD 6-digit reset, cumulative totalizer and flow rate analog (4-20mA) and pulse outputs
- G7 Blind analog (4-20mA) output
- BT11 LCD 5-digit reset, 8-digit cumulative totalizer, pulse outputs
- RT12 LCD 6-digit reset, cumulative totalizer and flow rate, analog and pulse outputs
- RT40 LCD 6-digit reset, cumulative totalizer and flow rate. Backlit Display, pulse outputs
- EB LCD 6-digit 2 stage batcher and cumulative totaliser (Available for remote mounting and with I.S. approvals - RT12 and BT11 only)

**ACCURACY: ±0.5% OF READING**

#### Select Your Body Material:

Aluminum or Stainless Steel

#### Features and Benefits:

- ✓ High accuracy and repeatability, direct volumetric reading
- ✓ No requirement for flow conditioning (straight pipe runs)
- ✓ Various rotor material options
- ✓ Measures high and low viscosity liquids
- ✓ Quadrature pulse output option and bi-directional flow
- ✓ Blind 4-20mA output option
- ✓ Optional Exd I/IIB approval (ATEX, IECEx)
- ✓ Only two moving parts

#### SPECIFICATIONS

Model Prefix:	OM080	OM080E	OM100
Nominal size (inches):	3" (80mm)	3" (80mm) E	4" (100mm)
*Flow range - (GPM):	10 - 200	13 - 260	20 - 400
- (LPM):	35 - 750	50 - 1000	75 - 1500
**Accuracy @ 3cp:	± 0.5% of reading (accuracy is ± 0.2% of reading with optional RT12 with non-linearity correction)		
Repeatability:	Typically ± 0.03% of reading		
Temperature range:	-4° F - +250° F (-20° C - +120° C), refer factory for lower temperature		
Maximum pressure:	<b>PSI (bar) Threaded Meters</b>		
Aluminium meters	175 (12)	175 (12)	145 (10)
316 stainless steel	175 (12)	-	-

**Electrical** - for pulse meters (see below for optional outputs)

Output pulse resolution:	Pulses / gallon (Pulses / litre) - nominal		
Reed switch:	10.0 (2.65)	5.68 (1.55)	4.15 (1.10)
Hall effect:	40.5 (10.70)	22.7 (6.00)	8.30 (4.40)
Quadrature Hall option:	20.0 (5.33)	11.4 (3.00)	8.30 (2.20)
Reed switch output:	30Vdc x 200mA max. [maximum thermal shock 18° F (10° C) / 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 I / IIB T4/T6, integral ancillaries can be supplied I.S. (intrinsically safe)
Overall dimensions:	Refer Below
Recommended filtration:	40 mesh (350 microns)

\* Maximum flow is to be reduced as viscosity increases, see flow de-rating guide. Max. recommended pressure drop is 100Kpa. (15 psi)

\*\*Accuracy ± 1% of reading with M - Series mechanical registers and accuracy ± 0.5% of reading with V-series mechanical register.