TECHNICAL PRODUCT
DATA SHEET

titan

Oval Gear Meters Overview

These compact rugged oval gear flowmeters are designed to give high performance with a low cost of ownership. These meters are happy measuring simple water like products as well as lubricating fluids. There are several versions; some can have totally non-metallic wetted components, PEEK, ceramic and a choice of elastomer which makes these the ideal choice for the metering of aggressive chemicals. The standard inlet and outlet are BSP or NPT female threads, flanges are also available. For OEM use alternatives, including manifold mountings, are available. The standard models are 316 St St, aluminium, Hastelloy C and PEEK. For hazardous areas either the Namur sensor or the reed switch (simple apparatus) may be used.

FEATURES

- Excellent chemical resistance
- Rugged construction
- Individual calibration
- High viscosity capability
- Low pressure loss
- No flow conditioning required
- Compact meter assembly
- Hall, reed switch or Namur sensor
- Good accuracy
- 0.1% repeatability
- IP67/NEMA 4 protection
- Non-metallic option
- HP 700 Bar option

IDEAL FOR

- Engine test
- Oil flow
- High viscosity fluids
- OEM equipment
- Hazardous areas

Oval Gear Meters Overview

Ordering codes

Model
The order code is preceded by the flow meter size eg OG4
Body material
S = 316 St St
A = Aluminium body
P = PEEK
H = Hastelloy C
Temp rating
S = 80°C / 158°F
T = 100°C / 212°F
U = 150°C / 300°F
Pressure rating
5 = 50 Bar 750 PSI (St St)
1 = 10 Bar 150 PSI (PEEK)
4 = 400 Bar 5880 PSI (St St)
7 = 700 Bar 10150 PSI (St St)
Seal Material
V = Viton®
N = Nitrile
E = EPDM
K = Kalrez®
P = PTFE (50 bar max)
Detector Type
H = Hall Effect
R = Reed Switch & Resistor
N = Namur
R = Reed Switch
Pipe Thread
Q = 1/4"
H = 1/2"
T = 3/4"
U = 1"
P = 1 1/2"
D = 2"
Connections
B = BSP F
N = NPT F
F = Flanged (specify)

e.g. **OG4-SS5-VHT-B** is a standard flowmeter with an oil flow range of 0.25 to 50 L/min, 316 St St body, 50 Bar pressure rating, Viton® seal, Hall effect detector and ¾"BSP female fittings with a standard 6 point traceable water calibration.

All of the options from the order code selection chart are not possible. *eg OG7 & PEEK, please contact your sales office for details.*

TECHNICAL SPECIFICATIONS

	Oil flow LPM			Water flow LPM			'K' factor
Model	**Min**	**Max**	**Accuracy**	**Min**	**Max**	**Accuracy**	**Pulses/L**
OG1	0.01	1	0.75% FSD	0.1	1	1.00% FSD	2050
OG2	0.03	4	0.75% FSD	0.15	4	1.00% FSD	1100
OG3	0.05	10	1%	0.5	10	0.50% FSD	440
OG4	0.25	50	0.50%	2.5	50	1.00%	115
OG5	0.50	100	0.50%	4	100	0.75%	78
OG6	2	200	0.50%	10	200	1.00%	21
OG7	5	500	0.50%	20	500	1.00%	15

At the heart of the meter are a pair of toothed oval gears one of which contains chemically resistant magnets.

Rotation is detected through the chamber wall by a Hall Effect detector, Namur sensor or a reed switch giving a number pulses per litre passed. The output is an NPN pulse or a voltage free contact closure either of which is readily interfaced with most electronic display or recording devices.

This combination of materials and technology ensures a long life product with reliable, accurate operation throughout. PEEK is a superb material for gear and bearing manufacture, it has excellent pressure and velocity characteristics coupled with very good thermal properties and chemical resistance.

For fluids with viscosities above 1000 cSt specially cut gears are required and the flow range is reduced for a given meter size.

Standard Materials of Construction

Body and cap	- 316 St St
	- PEEK
	- Aluminium
	- Hastelloy C
'O' Ring seal	- Viton®
Gears	- PEEK
Magnets	- Ceramic

TECHNICAL PRODUCT
DATA SHEET

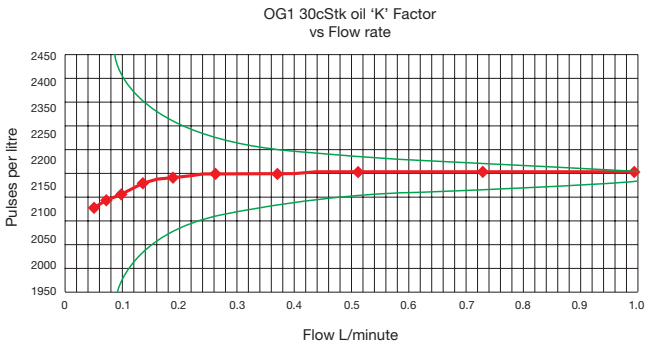
OG1 1L/Min Oval Gear Meter

This compact rugged oval gear flowmeter is designed to give high performance with a low cost of ownership. The meters cover flow ranges from 0.01 to 1.0 L/min on 30 cSt oil and 0.1 to 1.0 L/min on water like liquids. It can have totally non-metallic wetted components, PEEK, ceramic and an elastomer which makes this the ideal choice for the metering of aggressive chemicals. For OEM use alternatives, including manifold mountings, are available. The standard models have 316 St St or PEEK bodies with Viton® 'O' ring seals.

At the heart of the meter are a pair of toothed oval gears one of which contains chemically resistant magnets. Rotation is detected through the chamber wall by a Hall effect detector, Namur sensor or a reed switch giving approximately 2050 pulses per litre passed. The output is an NPN pulse or a voltage free contact closure either of which is readily interfaced with most electronic display or recording devices. This combination of materials and technology ensures a long life product with reliable, accurate operation throughout.

IDEAL FOR

- Engine test
- Oil flow
- High viscosity fluids
- OEM equipment
- Hazardous areas



FEATURES

- Excellent chemical resistance
- Rugged construction
- Individual calibration
- High viscosity capability
- Low pressure loss
- No flow conditioning required
- Compact meter assembly
- Hall, reed switch or Namur sensor
- Accuracy 1.0% FSD water
  0.75% FSD oil (30 cSt)
- ±0.5% reading *
- 0.1% repeatability
- IP67/NEMA 4 protection
- Models to 700 Bar
- Non-metallic option

** When used with our metra-smart instrument*

OG1 1L/Min Oval Gear Meter

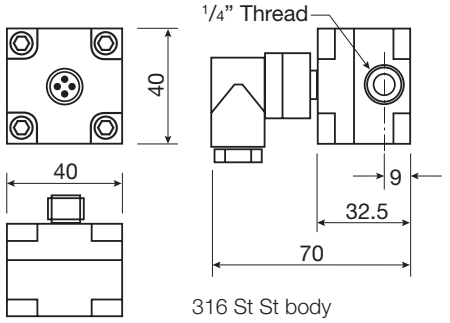
Ordering codes

Model
OG1
Body material
S = 316 St St 50 bar std
P = PEEK 10 Bar max
H = Hastelloy C
Temp rating
S = 80°C / 158°F
T = 100°C / 212°F
U = 150°C / 300°F
Pressure rating
5 = 50 Bar 750 PSI (St St)
1 = 10 Bar 150 PSI (Al / PEEK)
4 = 400 Bar 5880 PSI (St St)
7 = 700 Bar 10150 PSI (St St)
Seal Material
V = Viton®
N = Nitrile
E = EPDM
P = PTFE (50 Bar max)
K = Kalrez®
Detector Type
H = Hall effect
R = Reed switch & Resistor
N = Namur
X = Reed switch (Hazardous area)
Pipe Thread
Q = 1/4" (OG1 std)
Connections
B = BSP F
N = NPT F
F = Flanged (specify)

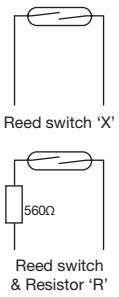
e.g. **OG1-SS5-VHQ-B** is a stainless steel meter rated at 80°C, 50 Bar, Viton® seal, Hall effect detector and a 1/4" BSP thread.

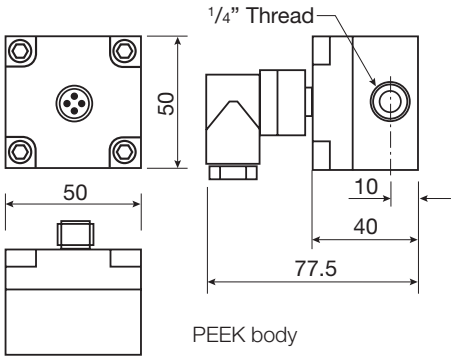
TECHNICAL SPECIFICATIONS

Sample product codes ➡		Stainless standard OG1-SS5-VHQ-B	PEEK OG1-PS1-VHQ-B
Flow range	– Water – 30 cSt Oil	0.1 - 1.0 L/min 0.01 - 1.0 L/min	0.1 - 1.0 L/min 0.01 - 1.0 L/min
Wetted matls	– Body – Gears – Seal – Magnet	316 St St Carbon filled PEEK Viton™ Ceramic	PEEK Carbon filled PEEK Viton™ Ceramic
Accuracy	– Water – 30 cSt oil	± 1.0% FSD ± 0.75% FSD	± 1.0% FSD ± 0.75% FSD
Repeatability		± 0.1%	± 0.1%
Detector Type		Hall effect	Hall effect
Terminations		M12 instrument socket	M12 instrument socket
Approx 'K' factor – Pulses/Litre		2050	2050

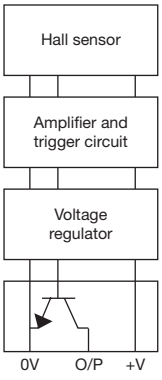


316 St St body





PEEK body



Sensor block diagram

Weight (kg)		
St St	50 Bar	0.360
PEEK	10 Bar	0.184
St St	400 Bar	3.000

TITAN ENTERPRISES LTD.

For reference only; for latest information contact your local distributor.

TECHNICAL PRODUCT
DATA SHEET

titan

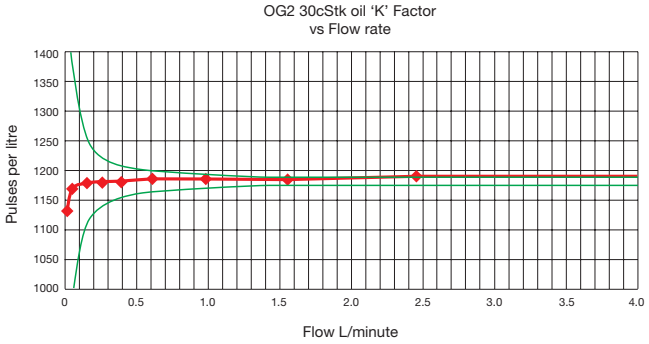
Compact 700 Bar Gear Flowmeter

These compact rugged gear flowmeters are designed to give high performance with a low cost of ownership. There are two flow ranges to choose from, 1 and 4 L/min full scale. The standard inlet and outlet are ⅛" or ¼" female threads. The output is frequency pulse that is proportionate to flow. The body is 316 St St with Viton® 'O' ring seals internally.

At the heart of the meter are a pair of toothed oval gears one of which contains chemically resistant magnets. Rotation is detected through the chamber wall by a Reed switch giving approximately 1100 or 2050 pulses per litre passed. The output is a voltage free contact closure. This combination of materials and technology ensures a long life product with reliable, accurate operation throughout.

IDEAL FOR

- Oil flow
- High viscosity fluids
- OEM equipment
- Hazardous areas



FEATURES

- Excellent chemical resistance
- Rugged construction
- Individual calibration
- High viscosity capability
- Low pressure loss
- No flow conditioning required
- Compact meter assembly
- Reed switch sensor
- Accuracy 1.0% FSD water
  0.5% FSD oil (30cSt)
- 0.1% repeatability
- IP67/NEMA 4 protection
- 700 Bar

Compact 700 Bar Gear Flowmeter

Ordering codes

Model
OG1
OG2
Body material
S = 316 St St
Temp rating
S = 80°C / 158°F
Pressure rating
7 = 700 Bar 10150 PSI
Seal Material
V = Viton®
Detector Type
X = Reed switch
Pipe Thread
E = 1/8"
Q = 1/4"
Connections
B = BSP F

e.g. **OG2-SS7-VXE-B** is a stainless steel meter rated at 80°C, 700 Bar, Viton® seal, Reed switch detector and a 1/8" BSP thread.

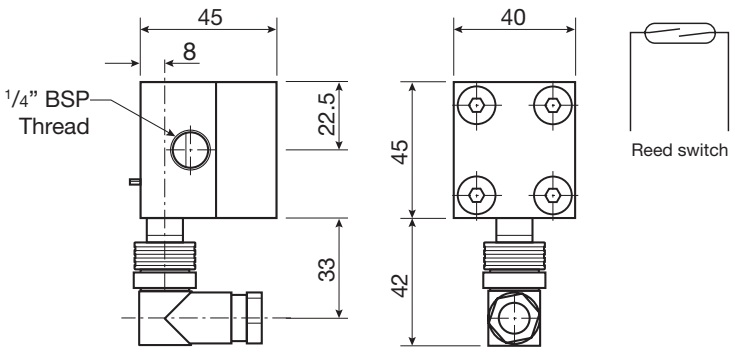
TECHNICAL SPECIFICATIONS

Sample product codes ➡	Stainless standard OG2-SS7-VRE-B
Flow range – OG1 – Water	0.10 - 1.0 L/min
– 30 cSt Oil	0.01 - 1.0 L/min
Flow range – OG2 – Water	0.15 - 4.0 L/min
– 30 cSt Oil	0.03 - 4.0 L/min
Wetted mats – Body	316 St St
– Gears	Carbon filled PEEK
– Seal	Viton®
– Magnet	Ceramic
Accuracy – Water	± 1.0% FSD
– 30 cSt oil	± 0.5% FSD
Repeatability	± 0.1%
Detector Type	Reed switch
Terminations	M12 instrument socket
Approx 'K' factor – Pulses/Litre	1100
Weight 700 Bar	0.60kg

Meter output

Magnets in the gears are detected using a Reed switch sensor. These sensors are very reliable. The reed switches are capable of over 1000 million operations. Being a simple contact closure they are classed as simple apparatus. And are easily interfaced with most existing electronic circuits.

NOTE: High tensile bolts are used on these meters and therefore they should not be used outdoors or in a corosive environment.



316 St St body

TITAN ENTERPRISES LTD.

For reference only; for latest information contact your local distributor.

TECHNICAL PRODUCT
DATA SHEET

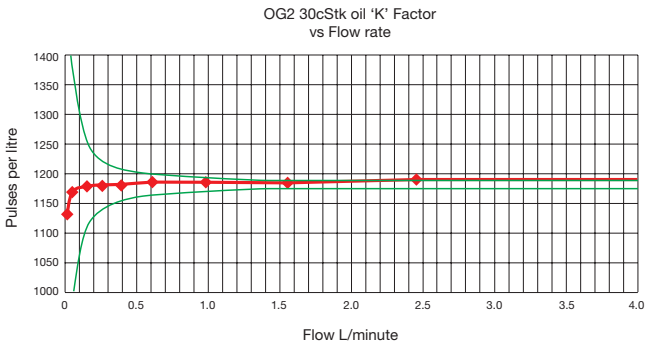
OG2 4L/Min Oval Gear Meter

The compact rugged OG2 oval gear flowmeter is designed to give high performance with a low cost of ownership. It has a standard flow range from 0.03 to 4 L/min on 30 cSt oil and 0.15 to 4 L/min on water like liquids. It can have totally non-metallic wetted components, PEEK™, ceramic and an elastomer which makes this the ideal choice for the metering of aggressive chemicals. The standard inlet and outlet are ¼" female threads. For OEM use alternatives, including manifold mountings, are available. The standard model is 316 St St with Viton™ 'O' ring seal.

At the heart of the meter are a pair of toothed oval gears one of which contains chemically resistant magnets. Rotation is detected through the chamber wall by a Hall effect detector or a reed switch giving approximately 1100 pulses per litre passed. The output is an NPN pulse or a voltage free contact closure either of which is readily interfaced with most electronic display or recording devices. This combination of materials and technology ensures a long life product with reliable, accurate operation throughout.

IDEAL FOR

- Engine test
- Oil flow
- High viscosity fluids
- OEM equipment
- Hazardous areas



FEATURES

- Excellent chemical resistance
- Rugged construction
- Individual calibration
- High viscosity capability
- Low pressure loss
- No flow conditioning required
- Compact meter assembly
- Hall, reed switch or Namur sensor
- Accuracy 1.0% FSD water
  0.75% FSD oil
- ±0.5% reading *
- 0.1% repeatability
- IP67/NEMA 4 protection
- Models to 700 Bar
- Non-metallic option

** When used with our metra-smart instrument*

OG2 4L/Min Oval Gear Meter

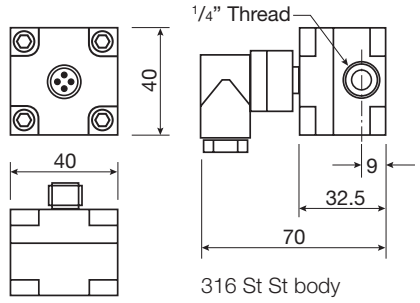
Ordering codes

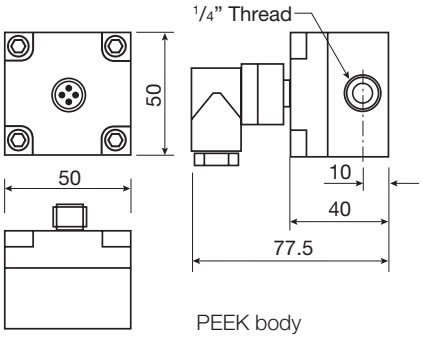
Model
OG2
Body material
S = 316 St St 50 bar std
P = PEEK 10 Bar max
H = Hastelloy C
Temp rating
S = 80°C / 158°F
T = 100°C / 212°F
U = 150°C / 300°F
Pressure rating
5 = 50 Bar 750 PSI (St St)
1 = 10 Bar 150 PSI (Al / PEEK)
4 = 400 Bar 5880 PSI (St St)
7 = 700 Bar 10150 PSI (St St)
Seal Material
V = Viton®
N = Nitrile
E = EPDM
P = PTFE (50 Bar max)
K = Kalrez®
Detector Type
H = Hall effect
R = Reed switch & Resistor
N = Namur
X = Reed switch (Hazardous area)
Pipe Thread
Q = 1/4" (OG2 std)
Connections
B = BSP F
N = NPT F
F = Flanged (specify)

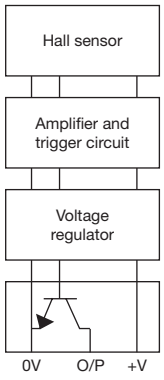
e.g. **OG2-SS5-VHQ-B** is a stainless steel meter rated at 80°C, 50 Bar, Viton® seal, Hall effect detector and a 1/4" BSP thread.

TECHNICAL SPECIFICATIONS

Sample product codes ➡		Stainless standard OG2-SS5-VHQ-B	PEEK standard OG2-PS1-VHQ-B
Flow range	– Water – 30 cSt Oil	0.15 - 4.0 L/min 0.03 - 4.0 L/min	0.15 - 4.0 L/min 0.03 - 4.0 L/min
Wetted matls	– Body – Gears – Seal – Magnet	316 St St Carbon filled PEEK Viton® Ceramic	PEEK Carbon filled PEEK Viton® Ceramic
Accuracy	– Water – 30 cSt oil	± 1.0% FSD ± 0.75% FSD	± 1.0% FSD ± 0.75% FSD
Repeatability		± 0.1%	± 0.1%
Detector Type		Hall effect	Hall effect
Terminations		M12 instrument socket	M12 instrument socket
Approx 'K' factor – Pulses/Litre		1100	1100







Sensor block diagram

Weight (kg)		
St St	50 Bar	0.360
PEEK™	10 Bar	0.184
St St	400 Bar	3.000

TITAN ENTERPRISES LTD.

For reference only; for latest information contact your local distributor.

TECHNICAL PRODUCT
DATA SHEET

titan

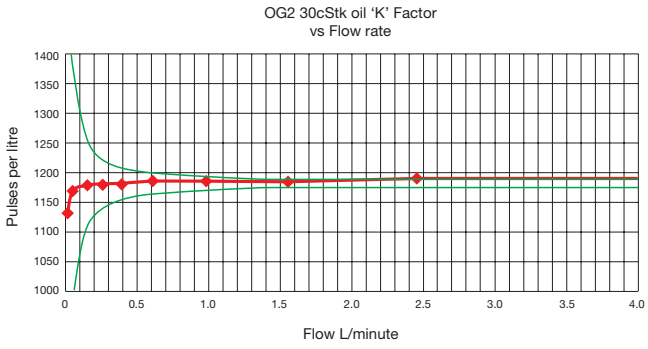
OG2 4L/Min Totaliser

The OG2 oval gear totaliser is designed to give high performance with a low cost of ownership. It has a standard flow range from 0.1 to 4 L/min on 30 cSt oil or post mix syrup and 0.2 to 4 L/min on water like liquids. It can have totally non-metallic wetted components, PEEK, ceramic and an elastomer which makes this the ideal choice for the metering of aggressive chemicals. The standard inlet and outlet are 1/2" John Guest push in sockets. For OEM use alternatives are available. The standard model has a PPS body, 316 St St spindles, PTFE coated magnets and silicon/Nitrile 'O' ring seals.

At the heart of the meter is a pair of toothed oval gears one of which contains chemically resistant PTFE coated magnets, the gears rotate freely on robust 316 stainless steel spindles. Rotation is detected through the chamber wall by a reed switch or Hall effect sensor, giving approximately 1100 pulses per litre passed. The display is a 6 digit totaliser with a litre symbol as standard, other units are available for OEM customers e.g. Kgs, gals, etc. The electronic housing cover is moulded in tough polycarbonate. This combination of materials and technology ensures a long life product with reliable, accurate operation throughout its estimated four year battery life.

IDEAL FOR

- Post mix syrup
- Oil flow
- High viscosity fluids
- OEM equipment



FEATURES

- Excellent chemical resistance
- Low cost
- Individual calibration
- High viscosity capability
- Low pressure loss
- 1/2" John Guest fittings
- 4 year battery life
- 6 digit display with units
- Accuracy 2.0% FSD water
  1.0% FSD oil (30 cSt)
- 0.2% repeatability
- IP67/NEMA 4 protection
- 10 Bar
- 316 St St spindles
- PEEK gears
- PPS body

OG2 4L/Min Totaliser

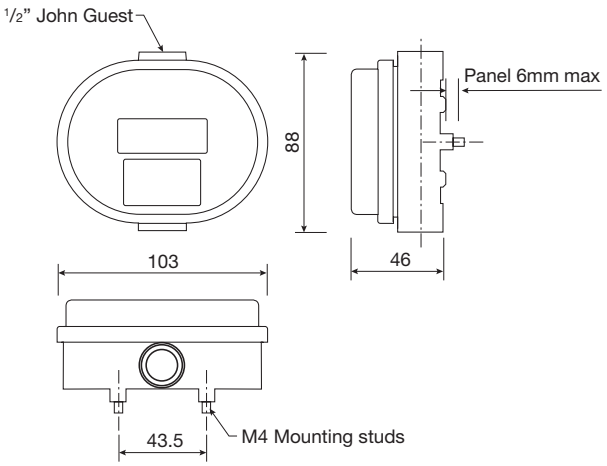
Ordering codes

Model
OG2
Body material
R = PPS
Temp rating
S = 50°C / 122°F
Pressure rating
1 = 10 Bar 150 PSI
Seal Material
S = Silicon/Nitrile
Detector Type
H = Hall Effect
R = Reed Switch
Pipe Thread
J = 1/2" John Guest
Electronics
T = Display
B = Output only

e.g. **OG2-RS1-SRJ-T** is a PPS meter rated at 50°C, 10 Bar, with silicon seal, reed switch detector and John Guest fittngs with total display.

TECHNICAL SPECIFICATIONS

Sample product codes ➡		OG2-RS1-SRJ-T
Flow range	– Water – 30 cSt Oil	0.2 - 4.0 L/min 0.1 - 4.0 L/min
Wetted matls	– Body – Gears – Seal – Magnet	PPS Carbon filled PEEK Silicon/Nitrite PTFE coated
Accuracy	– Water – 30 cSt oil	± 2.0% FSD ± 1.0% FSD
Repeatability		± 0.2%
Detector Type		Reed switch
Terminations		1/2" John Guest socket
Approx 'K' factor	– Pulses/Litre	1100
Weight		0.285kg



TECHNICAL PRODUCT
DATA SHEET

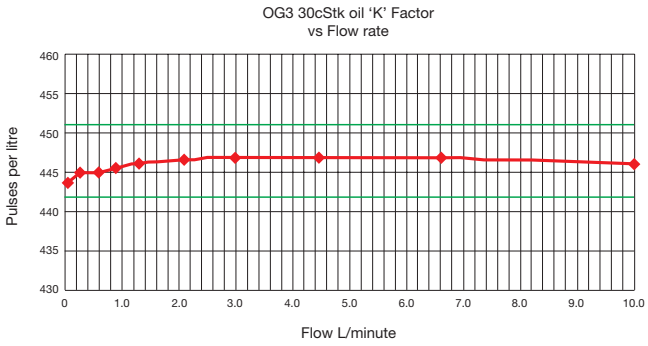
OG3 10L/Min Oval Gear Meter

The compact rugged OG3 oval gear flowmeter is designed to give high performance with a low cost of ownership. It has a standard flow range from 0.05 to 10 L/Min on 30 cSt oil and 0.5 to 10 L/min on water like liquids. It can have totally non-metallic wetted components, PEEK, ceramic and an elastomer which makes this the ideal choice for the metering of aggressive chemicals. The standard inlet and outlet are ½" female threads. For OEM use alternatives, including manifold mountings, are available. The standard model is 316 St St with Viton® 'O' ring seal.

At the heart of the meter are a pair of toothed oval gears one of which contains chemically resistant magnets. Rotation is detected through the chamber wall by a Hall effect detector or a reed switch giving approximately 440 pulses per litre passed. The output is an NPN pulse or a voltage free contact closure either of which is readily interfaced with most electronic display or recording devices. This combination of materials and technology ensures a long life product with reliable, accurate operation throughout.

IDEAL FOR

- Engine test
- Critical oil flow
- High viscosity fluids
- OEM equipment
- Hazardous areas



FEATURES

- Excellent chemical resistance
- Rugged construction
- Individual calibration
- High viscosity capability
- Low pressure loss
- No flow conditioning required
- Compact meter assembly
- Hall, reed switch or Namur sensor
- Accuracy 0.5% FSD water
  1.0% reading oil (30 cSt)
- ±0.50% reading *
- 0.1% repeatability
- IP67/NEMA 4 protection
- Models to 700Bar
- Non-metallic option

* *When used with our Metra-Smart instrument*

OG3 10L/Min Oval Gear Meter

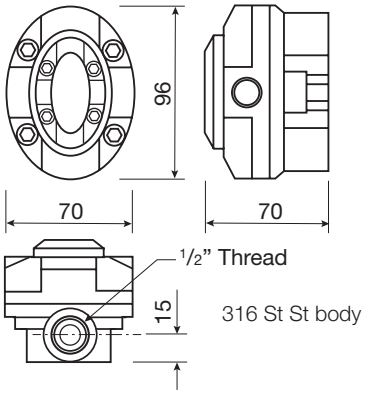
Ordering codes

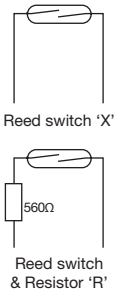
Model
OG3
Body material
S = 316 St St 50 bar std
A = Aluminium 10 Bar max
P = PEEK 10 Bar max
H = Hastelloy C
Temp rating
S = 80°C / 158°F
T = 100°C / 212°F
U = 150°C / 300°F
Pressure rating
5 = 50 Bar 750 PSI (St St)
1 = 10 Bar 150 PSI (Al / PEEK)
4 = 400 Bar 5880 PSI (St St)
7 = 700 Bar 10150 PSI (St St)
Seal Material
V = Viton®
N = Nitrile
E = EPDM
P = PTFE (Max 50Bar)
K = Kalrez®
Detector Type
H = Hall effect
R = Reed Switch & Resistor
N = Namur
X = Reed Switch (Hazardous area)
Pipe Thread
H = 1/2" (OG3 std)
Connections
B = BSP F
N = NPT F
F = Flanged (specify)

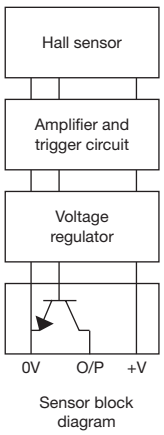
e.g. **OG3-SS5-VHH-B** is a stainless steel meter rated at 80°C, 50 Bar, Viton® seal, Hall effect detector and a 1/2" BSP thread.

TECHNICAL SPECIFICATIONS

Sample product codes ➡	Stainless standard OG3-SS5-VHH-B	Aluminium standard OG3-AS1-VHH-B	PEEK standard OG3-PS1-VHH-B
Flow range – Water – 30 cSt Oil	0.5 - 10 L/min 0.05 - 10 L/min	0.5 - 10 L/min 0.05 - 10 L/min	0.5 - 10 L/min 0.05 - 10 L/min
Wetted matls– Body – Gears – Seal – Magnet	316 St St Carbon filled PEEK Viton® Ceramic	Aluminium Carbon filled PEEK Viton® Ceramic	PEEK Carbon filled PEEK Viton® Ceramic
Accuracy – Water – 30 cSt oil	± 0.5% FSD ± 1.0% Reading	± 0.5% FSD ± 1.0% Reading	± 0.5% FSD ± 0.5% FSD
Repeatability	± 0.1%	± 0.1%	± 0.1%
Detector Type	Hall effect	Hall effect	Hall effect
Terminations	Via M20 cable gland	MIL style instrument socket	4 Pin M12
Approx 'K' factor – Pulses/Litre	440	440	440







Sensor block diagram

Weight (kg)		
St St	50 Bar	1.350
PEEK	10 Bar	0.230
Aluminium	10 Bar	0.422
St St	400 Bar	3.000
St St	700 Bar	9.000

TITAN ENTERPRISES LTD.

For reference only; for latest information contact your local distributor.

TECHNICAL PRODUCT
DATA SHEET

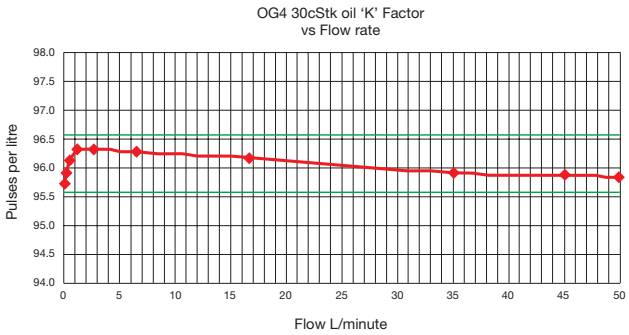
OG4 50L/Min Oval Gear Meter

The compact rugged OG4 oval gear flowmeter is designed to give high performance with a low cost of ownership. It has a standard flow range from 0.25 to 50 L/min on 30 cSt oil and 2.5 to 50 L/min on water like liquids. It can have totally non-metallic wetted components, PEEK, ceramic and an elastomer which makes this the ideal choice for the metering of aggressive chemicals. The standard inlet and outlet are ¾" female threads. For OEM use alternatives, including manifold mountings, are available. The standard model is 316 St St with Viton® 'O' ring seal.

At the heart of the meter are a pair of toothed oval gears one of which contains chemically resistant magnets, the gears rotate freely on robust bearings. Rotation is detected through the chamber wall by a Hall effect detector or a reed switch giving approximately 115 pulses per litre passed. The output is an NPN pulse or a voltage free contact closure either of which is readily interfaced with most electronic display or recording devices. This combination of materials and technology ensures a long life product with reliable, accurate operation throughout.

IDEAL FOR

- Engine test
- Oil flow
- High viscosity fluids
- OEM equipment
- Hazardous areas



FEATURES

- Excellent chemical resistance
- Rugged construction
- Individual calibration
- High viscosity capability
- Low pressure loss
- No flow conditioning required
- Compact meter assembly
- Hall, reed switch or Namur sensor
- Accuracy 1.0% reading water
  0.5% reading oil (30 cSt)
- ±0.50% reading *
- 0.1% repeatability
- IP67/NEMA 4 protection
- Models to 700 Bar
- Non-metallic option

** When used with our metra-smart instrument*

OG4 50L/Min Oval Gear Meter

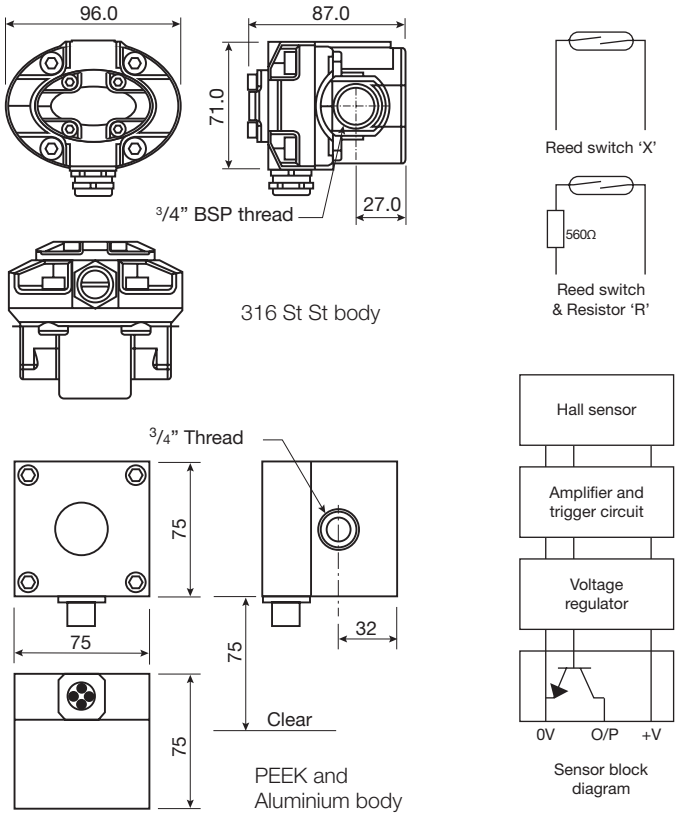
Ordering codes

Model
OG4
Body material
S = 316 St St 50 Bar std
A = Aluminium 10 Bar max
P = PEEK 10 Bar max
H = Hastelloy C
Temp rating
S = 80°C / 158°F
T = 100°C / 212°F
U = 150°C / 300°F
Pressure rating
5 = 50 Bar 750 PSI (St St)
1 = 10 Bar 150 PSI (Al / PEEK)
4 = 400 Bar 5880 PSI (St St)
7 = 700 Bar 10150 PSI (St St)
Seal Material
V = Viton®
N = Nitrile
E = EPDM
P = PTFE (50 Bar max)
K = Kalrez®
Detector Type
H = Hall effect
R = Reed switch & Resistor
N = Namur
X = Reed switch (Hazardous area)
Pipe Thread
T = 3/4" (OG4 std)
Connections
B = BSP F
N = NPT F
F = Flanged (specify)

e.g. **OG4-SS5-VHT-B** is a stainless steel meter rated at 80°C, 50 Bar, Viton® seal, Hall effect detector and a 3/4" BSP thread.

TECHNICAL SPECIFICATIONS

Sample product codes ➡	Stainless standard OG4-SS5-VHT-B	Aluminium standard OG4-AS1-VHT-B	PEEK standard OG4-PS1-VHT-B
Flow range – Water – 30 cSt Oil	2.5 - 50 L/min 0.25 - 50 L/min	2.5 - 50 L/min 0.25 - 50 L/min	2.5 - 50 L/min 0.25 - 50 L/min
Wetted matls– Body – Gears – Seal – Magnet	316 St St Carbon filled PEEK Viton® Ceramic	Aluminium Carbon filled PEEK Viton® Ceramic	PEEK Carbon filled PEEK Viton® Ceramic
Accuracy – Water – 30 cSt oil	± 1.0% Reading ± 0.5% Reading	± 1.0% Reading ± 0.5% Reading	± 0.5% FSD ± 0.5% FSD
Repeatability	± 0.1%	± 0.1%	± 0.1%
Detector Type	Hall effect	Hall effect	Hall effect
Terminations	Via M20 cable gland	MIL style instrument socket	4 PIN M12 connector
Approx 'K' factor – Pulses/Litre	115	115	115



Weight (kg)		
St St	50 Bar	1.600
PEEK	10 Bar	0.550
Aluminium	10 Bar	1.000
St St	400 Bar	7.550

TITAN ENTERPRISES LTD.

For reference only; for latest information contact your local distributor.

TECHNICAL PRODUCT
DATA SHEET

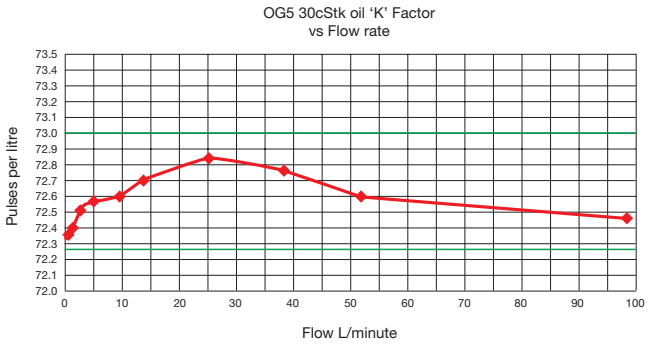
OG5 100L/Min Oval Gear Meter

The compact rugged OG5 oval gear flowmeter is designed to give high performance with a low cost of ownership.It has a standard flow range from 0.5 to 100 L/min on 30 cSt oil and 4 to 100 L/min on water like liquids. It can have totally non-metallic wetted components, PEEK, ceramic and an elastomer which makes this the ideal choice for the metering of aggressive chemicals. The standard inlet and outlet are 1" female threads. For OEM use alternatives, including manifold mountings, are available. The standard model is 316 St St with Viton® 'O' ring seal.

At the heart of the meter are a pair of toothed oval gears one of which contains chemically resistant magnets. Rotation is detected through the chamber wall by a Hall Effect detector or a reed switch giving approximately 78 pulses per litre passed. The output is an NPN pulse or a voltage free contact closure either of which is readily interfaced with most electronic display or recording devices. This combination of materials and technology ensures a long life product with reliable, accurate operation throughout.

IDEAL FOR

- Engine test
- Oil flow
- High viscosity fluids
- OEM equipment
- Hazardous areas



FEATURES

- Excellent chemical resistance
- Rugged construction
- Individual calibration
- High viscosity capability
- Low pressure loss
- No flow conditioning required
- Compact meter assembly
- Hall, reed switch or Namur sensor
- Accuracy 0.75% reading water
  0.5% reading oil (30 cSt)
- ±0.25% reading *
- 0.1% repeatability
- IP67/NEMA 4 protection
- Models to 400 Bar

** When used with our metra-smart instrument*

OG5 100L/Min Oval Gear Meter

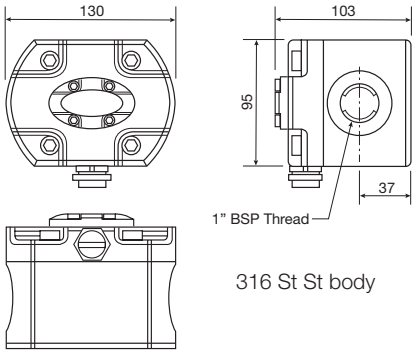
Ordering codes

Model
OG5
Body material
S = 316 St St 50 Bar std
A = Aluminium 10 Bar max
P = PEEK
H = Hastelloy C
Temp rating
S = 80°C / 158°F
T = 100°C / 212°F
U = 150°C / 300°F
Pressure rating
5 = 50 Bar 750 PSI (St St)
1 = 10 Bar 150 PSI (Al / PEEK)
4 = 400 Bar 5880 PSI (St St)
Seal Material
V = Viton®
N = Nitrile
E = EPDM
P = PTFE (50Bar max)
K = Kalrez®
Detector Type
H = Hall effect
R = Reed Switch & Resistor
N = Namur
X = Reed Switch (Hazardous area)
Pipe Thread
U = 1" (OG5 std)
Connections
B = BSP F
N = NPT F
F = Flanged (specify)

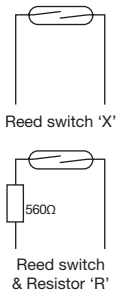
e.g. **OG5-SS5-VHU-B** is a stainless steel meter rated at 80°C, 50 Bar, Viton® seal, Hall effect detector and a 1" BSP thread.

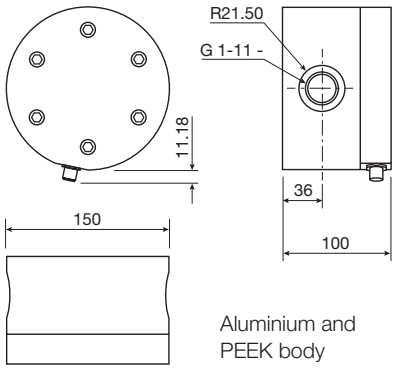
TECHNICAL SPECIFICATIONS

Sample product codes ➡	Stainless standard OG5-SS5-VHU-B	Aluminium standard OG5-AS1-VHU-B	PEEK standard OG5-PS1-VHU-B
Flow range – Water – 30 cSt Oil	4.0 - 100 L/min 0.5 - 100 L/min	4.0 - 100 L/min 0.5 - 100 L/min	4.0 - 100 L/min 0.5 - 100 L/min
Wetted matls– Body – Gears – Seal – Magnet	316 St St Carbon filled PEEK Viton® Ceramic	Aluminium Carbon filled PEEK Viton® Ceramic	PEEK Carbon filled PEEK Viton® Ceramic
Accuracy – Water – 30 cSt oil	± 0.75% Reading ± 0.5% Reading	± 0.75% Reading ± 0.5% Reading	± 0.75% Reading ± 0.5% Reading
Repeatability	± 0.1%	± 0.1%	± 0.1%
Detector Type	Hall effect	Hall effect	Hall effect
Terminations	M20	MIL connector	M12
Approx 'K' factor – Pulses/Litre	78	78	78

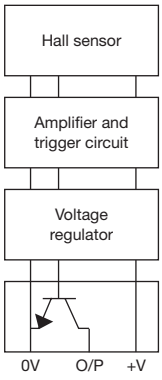


316 St St body





Aluminium and PEEK body



Sensor block diagram

Weight (kg)		
St St	50 Bar	5.000
PEEK	10 Bar	2.250
Aluminium	10 Bar	2.250
St St	400 Bar	9.400

TITAN ENTERPRISES LTD.

For reference only; for latest information contact your local distributor.

TECHNICAL PRODUCT
DATA SHEET

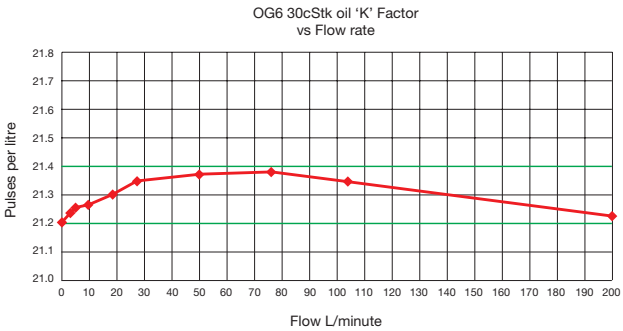
OG6 200L/Min Oval Gear Meter

The rugged OG6 oval gear flowmeter is designed to give high performance with a low cost of ownership. It has a standard flow range from 2.0 to 200 L/min on 30 cSt oil and 10 to 200 L/min on water like liquids. The standard inlet and outlet are 1½" female threads. For OEM use alternatives, including manifold mountings, are available. The standard models are 316 St St or Aluminium with Viton® 'O' ring seals.

At the heart of the meter are a pair of toothed oval gears one of which contains chemically resistant magnets. Rotation is detected through the chamber wall by a Hall effect detector or a reed switch giving approximately 21 pulses per litre passed. The output is an NPN pulse or a voltage free contact closure either of which is readily interfaced with most electronic display or recording devices. This combination of materials and technology ensures a long life product with reliable, accurate operation throughout.

IDEAL FOR

- Engine test
- Oil flow
- High viscosity fluids
- OEM equipment
- Hazardous areas



FEATURES

- Excellent chemical resistance
- Rugged construction
- Individual calibration
- High viscosity capability
- Low pressure loss
- No flow conditioning required
- Hall, reed switch or Namur sensor
- Accuracy 1.0% reading water
  0.5% reading oil (30 cSt)
- ±0.5% reading *
- 0.1% repeatability
- IP67/NEMA 4 protection
- Models to 400 Bar

** When used with our metra-smart instrument*

OG6 200L/Min Oval Gear Meter

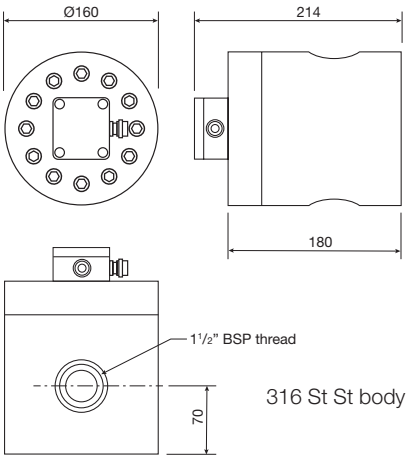
Ordering codes

Model
OG6
Body material
S = 316 St St 50 bar std
A = Aluminium 10 Bar max
H = Hastelloy C
Temp rating
S = 80°C / 158°F
T = 100°C / 212°F
U = 150°C / 300°F
Pressure rating
5 = 50 Bar 750 PSI (St St)
1 = 10 Bar 150 PSI (Al)
4 = 400 Bar 5880 PSA (St St)
Seal Material
V = Viton®
N = Nitrile
E = EPDM
P = PTFE (50 Bar max)
K = Kalrez®
Detector Type
H = Hall effect
R = Reed switch & Resistor
N = Namur
X = Reed switch (Hazardous area)
Pipe Thread
P = 1½" (OG6 std)
Connections
B = BSP F
N = NPT F
F = Flanged (specify)

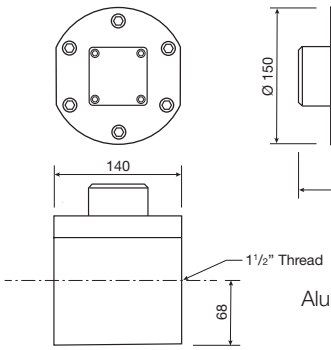
e.g. **OG6-SS5-VHP-B** is a stainless steel meter rated at 80°C, 50 Bar, Viton® seal, Hall effect detector and a 1½" BSP thread.

TECHNICAL SPECIFICATIONS

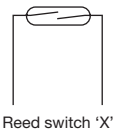
Sample product codes ➡		Stainless standard OG6-SS5-VHP-B	Aluminium standard OG6-AS1-VHP-B
Flow range	– Water – 30 cSt Oil	10 - 200 L/min 2.0 - 200 L/min	10 - 200 L/min 2.0 - 200 L/min
Wetted matls	– Body – Gears – Seal – Magnet	316 St St Carbon filled PEEK Viton® Ceramic	Aluminium Carbon filled PEEK Viton® Ceramic
Accuracy	– Water – 30 cSt oil	± 1.0% Reading ± 0.5% Reading	± 1.0% Reading ± 0.5% Reading
Repeatability		± 0.1%	± 0.1%
Detector Type		Hall effect	Hall effect
Terminations		Terminal block P67 cable gland	Terminal block P67 cable gland
Approx 'K' factor – Pulses/Litre		21	21

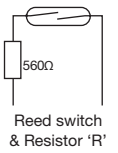


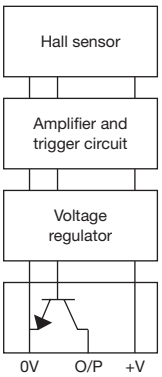
316 St St body



Aluminium body







Sensor block diagram

Weight (kg)		
St St	50 Bar	8.000
PEEK	10 Bar	6.000
St St	400 Bar	12.000

TITAN ENTERPRISES LTD.

For reference only; for latest information contact your local distributor.

TECHNICAL PRODUCT
DATA SHEET

OG7 500L/Min Oval Gear Meter

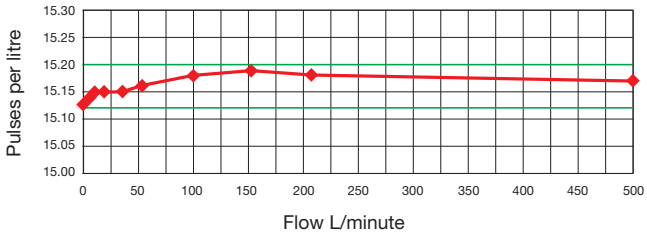
The rugged OG7 oval gear flowmeter is designed to give high performance with a low cost of ownership. It has a standard flow range from 5 to 500 L/min on 30 cSt oil and 20 to 500 L/min on water like liquids. The standard inlet and outlet are 2" female threads. For OEM use other alternatives, including manifold mountings, are available. The standard model is 316 St St with Viton® 'O' ring seal.

At the heart of the meter are a pair of toothed oval gears one of which contains chemically resistant magnets. Rotation is detected through the chamber wall by a Hall effect detector or a reed switch giving approximately 15 pulses per litre passed. The output is an NPN pulse or a voltage free contact closure either of which is readily interfaced with most electronic display or recording devices. This combination of materials and technology ensures a long life product with reliable, accurate operation throughout.

IDEAL FOR

- Engine test
- Oil flow
- High viscosity fluids
- OEM equipment
- Hazardous areas

OG7 30cStk oil 'K' Factor
vs Flow rate



FEATURES

- Excellent chemical resistance
- Rugged construction
- Individual calibration
- High viscosity capability
- Low pressure loss
- No flow conditioning required
- Hall, reed switch or Namur sensor
- Accuracy 1.0% reading water
  0.5% reading oil (30 cSt)
- ±0.5% reading *
- 0.1% repeatability
- IP67/NEMA 4 protection

** When used with our metra-smart instrument*

OG7 500L/Min Oval Gear Meter

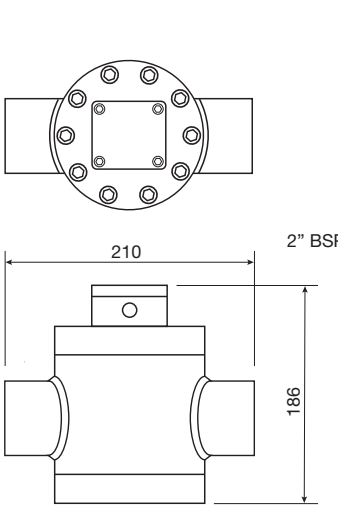
Ordering codes

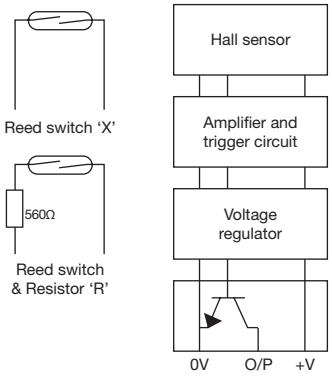
Model
OG7
Body material
S = 316 St St 50 bar std
Temp rating
S = 80°C / 158°F
T = 100°C / 212°F
U = 150°C / 300°F
Pressure rating
5 = 50 Bar 750 PSI
Seal Material
V = Viton®
N = Nitrile
E = EPDM
K = Kalrez®
Detector Type
H = Hall effect
R = Reed Switch & Resistor
N = Namur
X = Reed Switch (Hazardous area)
Pipe Thread
D = 2" (OG7 std)
Connections
B = BSP F
N = NPT F
F = Flanged (specify)

e.g. **OG7-SS5-VHD-B** is a stainless steel meter rated at 80°C, 50 Bar, Viton™ seal, Hall effect detector and a 2" BSP thread.

TECHNICAL SPECIFICATIONS

Sample product codes ➡		Stainless standard OG7-SS5-VHD-B
Flow range	– Water – 30 cSt Oil	20 - 500 L/min 5.0 - 500 L/min
Wetted mats	– Body – Gears – Seal – Magnet	316 St St Carbon filled PEEK Viton® Ceramic
Accuracy	– Water – 30 cSt oil	± 1.0% Reading ± 0.5% Reading
Repeatability		± 0.1%
Detector Type		Hall effect
Terminations		P67
Approx 'K' factor	– Pulses/Litre	15
Weight	50 Bar	12.0kg





Sensor block diagram

TITAN ENTERPRISES LTD.

For reference only; for latest information contact your local distributor.

TECHNICAL PRODUCT
DATA SHEET

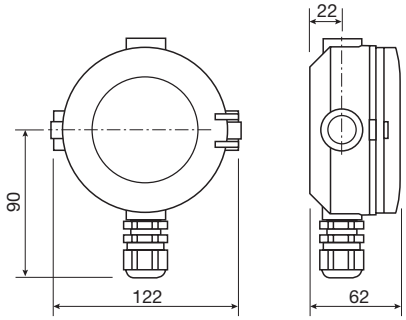
Metra-Smart Totaliser & Rate Meter

Ordering codes

Metra-Smart
380-101
Metra-Smart IS option
380-101-IS – Exia IIB T4
Wall bracket
380-103

IDEAL FOR

- Flow rate and total
- Production lines
- Fuel consumption
- Process indicators



The Metra-Smart was specifically designed for computing and displaying rates and totals as well as giving an analogue output proportional to flow. It can also give two pre-set flow switch points and calculate differential rates from two input sensors. The instrument will display Re-settable Total, Accumulated Total and Flow Rate in engineering units as programmed by the user. Simple PIN protected flow chart programming with English prompts guide you through the entire programming routine greatly reducing the need to refer to the instruction manual.

The pulse output can be selected to act as an input pulse repeater serving as a signal conditioner module or may be programmed as a scaled pulse output for remote metering. There is a ten point linearisation for non-linear sensors. The analogue output and flow switch function requires an external 8-24Vdc power supply. The robust housing is purpose designed to suit harsh indoor & outdoor industrial and marine environments. It is weatherproof to IP66/IP67 (Nema 4X) standards, UV resistant and uses glass reinforced nylon mouldings with stainless steel screws and Viton® O-Ring seals.

FEATURES

- 5 Digit rate indication
- 8 Digit total
- 8 digit accumulated total
- Analogue output
- 2 programmable flow alarms
- Dual input A+B, A-B, A/B
- Simple programming with English prompts
- 10 point linearisation
- Scaleable pulse output
- IP66/IP67 (NRMA 4X)
- Clear 9mm LCD display
- Remote/local reset
- Long battery life (up to 10 years)
- -20 to 80°C (-4 to 176°F) Operation
- Non-volatile memory
- IS Option (-20 to 60°C) – Exia IIB T4/IECE
- Low battery indicator

Metra-Smart Totaliser & Rate Meter

The drawing below shows all of the segments on the LCD display illuminated. This occurs for five seconds whenever the program mode is entered.

5 digit rate display has flashing time base enunciation on the first 3 characters and is programmable for up to three “floating” decimal places.

The 8 digit Total display is front panel re-settable and can be programmed for up to three decimal places.

Advanced power handling techniques with three display settings, “power save”, “Standby” & “continuous”.

Engineering units selected during the initial programming routine.

Accumulative total. Up to 3 decimal places. Reset through a PIN protected security code.

Battery condition indicator shows only when the battery is low. Battery life can be up to 10 years.

Low and high flow switch indicators show when output transistor is activated. Rate set in program mode.

TECHNICAL SPECIFICATIONS

Display	Custom multifunction LCD	LCD 8 digit alpha-numeric 9mm high Engineering units and mode indicators Low battery indicator. 3 programmable decimal points for totals English programming prompts
Signal inputs	Universal pulse-frequency input	Compatible with reed switch, Hall effect detector, magnetic coil (15mV P-P), Voltage pulse & Namur proximity detectors. Maximum input frequency 500 to 10Khz depending on sensor type, minimum 2Hz, (0.2Hz) when used on external power).
Signal output	4-20mA	Loop powered 4 to 20mA can be spanned anywhere within the flow range. 12~24Vdc into 750Ω loop load. Accuracy is ±0.1% FSD. A test output is activated during programming.
Flow set points	High and low flow switches	Two NPN/PNP selectable FET transistors programmable as high and low set points with dead bands. Maximum power is 100mA at 24Vdc.
Power	Battery and/or external 8-24Vdc	Internal 3.6V ultra lithium battery.
Pulse output	Scalable	Selectable NPN or PNP it has a maximum frequency of 50Khz (5000Hz unscaleable). @ 1A maximum.
Enclosure	IP66/IP67 (NEMA 4X)	High impact glass reinforced nylon. Self drill cable gland in the base or rear. Operating temperature range –20°C to +80°C
K Factor range	0.001 to 9,999,999.999	With floating decimal points during entry.
Rate time base	Seconds, minutes, hours or day	Flashes when rate/total button pressed.
Weight	0.400kg	

TECHNICAL PRODUCT
DATA SHEET

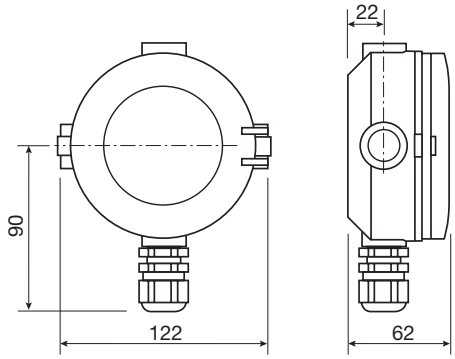
Metra-Batch Batch Controller

Ordering codes

Metra-Batch
380-102
Metra-Smart panel mount
380-102-PM (96mm x 96mm DIN Case)
Wall bracket
380-103

IDEAL FOR

- Bottle filling
- Recipe blending
- Any batch process



The Metra-Batch was specifically designed for flowmeters or machinery with pulse or frequency outputs. It has a two stage batching facility with selectable automatic over-run compensation as well as safety features to prevent erroneous dispense with a faulty system. Batching can be set to either count up from zero or down from the batch quantity as well as programmed for local, remote, automatic or manual start. Simple PIN protected flow chart programming with English prompts guide you through the entire set up routine greatly reducing the need to refer to the instruction manual.

Several Metra-Batches may be used in conjunction with each other with lock out and networking enunciation giving the user full operating data. The robust housing is purpose designed to suit harsh indoor and outdoor industrial environments. It is weatherproof to IP66/IP67 (Nema 4X) standards, UV resistant and uses glass reinforced nylon mouldings with stainless steel screws and Viton® O-Ring seals.

FEATURES

- High speed count
- Two stage control
- Automatic overrun compensation
- Simple programming with English prompts
- IP66/IP67 (Nema 4X)
- Remote start/stop facility
- Non-volatile memory
- 8 Digit rate display
- 12-24Vdc operation
  and mains operation with 380-102PM
- Batch total
- Accumulated total
- Number of batches total
- Networking facility
- Clear 9mm “starburst” LCD display
- Maximum dispense setting
- Received pulse time out

Metra-Batch Batch Controller

The drawing below shows all of the segments on the LCD display illuminated. This occurs for five seconds whenever the program mode is entered.

A five digit total number of batches (TNB) dispensed since the last reset. This is only re-settable through the PIN code.

The 8 digit batch display can be programmed for up to three decimal places.

The enunciators clearly show the operation of the instrument at all times.

Engineering units selected during the initial programming routine.

Accumulative total shows only when the "accum total" key is pressed. Up to 3 decimal places. Reset through a PIN protected security code.

When networked the dormant units will scroll "ENGAGED" across the screen. The working unit will operate as normal.

TECHNICAL SPECIFICATIONS

Display	LCD 8 digit alpha-numeric 9mm high Engineering units and mode indicators 3 programmable decimal points for both totalisers. English programming prompts.
Signal inputs	Universal pulse-frequency input compatible with reed switch, Hall Effect detector, magnetic coil (15mV P-P), Voltage pulse & Namur proximity detectors. Maximum input frequency 500 to 10Khz depending on sensor type, minimum 0.2Hz.
Power	12-24Vdc, 50mA 95-260Vac (pm)
Control output	Two selectable NPN or PNP field effect transistors 1A maximum.
Enclosure	IP66/IP67 (NEMA 4X) High impact glass reinforced nylon. Self drill cable gland in the base or rear. Operating temperature range -20°C to +80°C.
K Factor range	0.001 to 9,999,999.999.
Weight Batch Controller Panel Mount	0.400kg 0.800kg

Simple progamming

Display	Action
Program mode entered	Display self-tests
Enter PIN number	XXXX
Change PIN number Y/N	Incorrect PIN number permits viewing of the program data only
Reset ACCUM total	Y/N
Set engineering units	Ltr, gal, M3, lbs, kgs or none
Enter pulses per unit volume	E.g. 20.465 Pulses per litre etc
Set decimal point Dpt TOTAL	0 0.0 0.00 0.000
Dpt ACCUM TOTAL	0 0.0 0.00 0.000
Set count direction	Count DN/up
Start delay relay 2	000 - 999 seconds
Pre stop valve relay 2	000 - 999 seconds
Automatic overrun compensation	Y/n
Set missing pulse time out	00 - 99 seconds
Set batch limit	xxxxxxxx

Simple batch operating procedure

Press BATCH SET
Enter batch quantity xxxxxxxx
Press BATCH SET
Press RUN..... to pause press STOP
to abort press RESET
to resume press RUN
End of batch

TITAN ENTERPRISES LTD.

For reference only; for latest information contact your local distributor.

PULSITE solo

5 year
typical battery life

Titan's flexible, battery powered Pulsite Solo digital rate and total indicator with dc power capability

General Information

These panel or surface mounting digital instruments that require no external power, are designed to be as versatile as possible permitting customisation to suit the application. Programming is simple the front panel keys are used with easy to follow screen prompts.

- Clear 6 digit LCD display with enunciators
- 8mm high main digits with 2.5mm enunciators
- Simple setting procedure
- Password protected
- Programmable scaling for rate and total
- Programmable time base for rate
- 96 x 48mm 1/8 DIN case
- Environmentally protected tough polymer housing
- Panel or surface mount
- Replaceable battery
- Front panel programmable
- 5 to 24 V dc power with the battery as backup
- Coil and switch inputs
- Logic\transistor inputs (external power recommended)

Technical Specification

Display		IP64 Enclosure
Enclosure		Tough polymer housing
Display		Trans-reflective LCD display with 6 x 8mm high numerals with 2.5mm enunciators
Power		
	Solo	Battery 5 years typical life
		External 5 – 24V dc
Input		
	Pulse	2kHz max
	Coil	3mV – 24V sine wave, 2 KHz max
	Switch:	Limited to 100Hz
Unit Display		9.99999 to 999999
Enunciators		
	Total	No units displayed, Gall, cc, kg, gms or Ltr
	Rate	Total time units – Sec, min & Hr

titan **TITAN ENTERPRISES LTD.**