

EGM SERIES

Oval Gear Flow Meters



Instruction Sheet

General Information

This manual assists you in installing and operating your EGM Series flowmeter, please follow all recommendations in this manual to ensure trouble free commissioning and use of your new product. All flow-meters are thoroughly inspected prior to shipment, and are sent out in perfect condition. Should damage be present on receipt of the product please inspect the delivery packaging for visible mishandling and contact the parcel service / freight forwarder. Maintain any protective plugs/caps until installation.

Meters which have been factory calibrated will have some residual Castrol Diesel Calibration Fluid 4113 present; please take the appropriate precautions for health and safety. An MSDS is available from the manufacturer or via an internet search.

Electrical Specifications

Electrical Connection	Flying lead 6 core shielded instrument cable
Output Type	NPN Open Collector pulse output
Voltage	5 – 24 VDC (± 5%)
Current Consumption	20mA Maximum
Switching Current	10mA Maximum
RTD* Specification	100 Ohm (PT100) Class B (F0.3) 3850 ppm/K
RTD* Measuring Current	0.1mA ~ 1.0mA
IP Rating	IP65

*RTD is an optional sensor, not included in every product

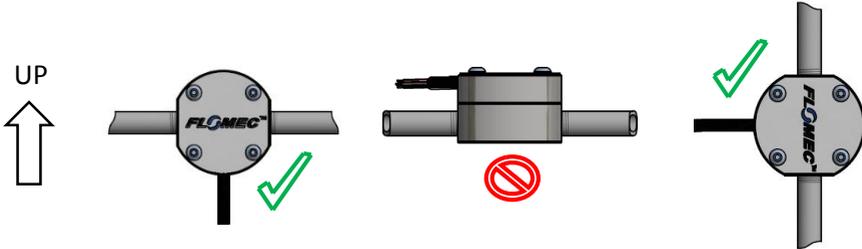
Physical Specifications

Model	EGM004	EGM006	EGM008	EGM015	EGM020
Nominal Flow Range (3cP)	1–36L/Hr 0.26-9.5GPH	2–100L/Hr 0.5-26.4GPH	15-550L/Hr 4-145GPH	1-40L/min 0.3-10.6GPM	3-80L/min 0.8-21.1GPM
Accuracy (O.R.)	± 1% (3cP or higher)			± 0.5% (3cP or higher)	
Repeatability	± 0.03% (3cP or higher)				
Temperature Ratings	-15C ~ +80C (+5F ~ +176F)				
Pressure Rating (AL Meters)	34 Bar (500psi)			20 Bar (290psi)	
Pressure Rating (SS Meters)	55 Bar (800psi)		34 Bar (500psi)	20 Bar (290psi)	
Flow Ranges for Various Viscosity Liquids					
1cP	2-24 L/Hr	5-80 L/Hr	18-440 L/Hr	1.5-32 L/min	5-64 L/min
7cP	0.5-36 L/Hr	1-100 L/Hr	15-550 L/Hr	0.5-40 L/min	2-80 L/min
200cP	0.4-36 L/Hr	0.7-100 L/Hr	6-550 L/Hr	0.4-40 L/min	1.8-80 L/min
500cP	0.25-27 L/Hr	0.5-100 L/Hr	2-550 L/Hr	0.3-40 L/min	1.5-80 L/min
1000cP	0.12-16 L/Hr	0.3-45 L/Hr	1.5-360 L/Hr	0.2-25 L/min	1-50 L/min
Output Pulse Resolutions - pulses/L (pulses/Gal)					
Standard	2800 (10600)	1060 (4012)	720 (2725)	170 (644)	105 (398)
Fuel Consump. Option	2800 (10600)	1060 (4012)	180 (681)	42.5 (161)	26.3 (99.5)

Mechanical Installation

When installing your flow meter please follow the following recommendations:

- 1) Confirm the meter is suitable for the application conditions of flow, temperature, pressure, and chemical compatibility before installation.
- 2) The meter can be installed with flow in any direction, so long as the oval gear shafts are in a horizontal orientation – as per images below. Failure to install the meter in the correct orientation will cause premature wear of the internal components and will void warranty.



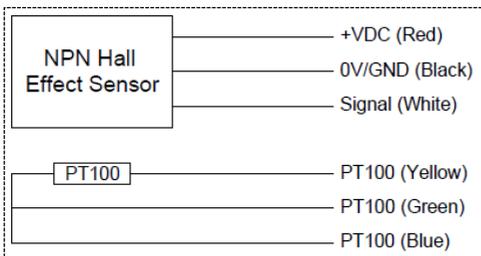
- 3) Ensure the flow of liquid is clean during all commissioning steps and during operation by fitting a filter or strainer upstream of the flowmeter. **Strainer mesh should be 75 micron (200 mesh) or better.**
- 4) Do not make pipe-joints upstream of the flowmeter with PTFE tape as loose pieces can damage the flowmeter internals. Use a paste sealant wherever possible.
- 5) Ensure fluid entering the meter remains liquid at all times; avoid solidification or gassing of the process liquid.
- 6) Do not expose the meter to any hydraulic shock; if pressure spikes are possible fit the system with a surge suppressor or pressure relief valve.
- 7) The meter must **NOT** be run until the pipework is **flushed of foreign matter** (from welding, grinding, or joining pipes). **The system must also be slowly purged of all air before running the meter**, large slugs of air passing through the meter at commissioning WILL DAMAGE THE METER AND VOID WARRANTY.

Electrical Installation

EGM Series flowmeters are equipped with quality shielded instrument cable which can be terminated at any receiving instrument using the terminal conventions shown in the diagram below.

In order to avoid inductive interference, terminate the cable shield at the receiving instrument on a specific ground or shield terminal.

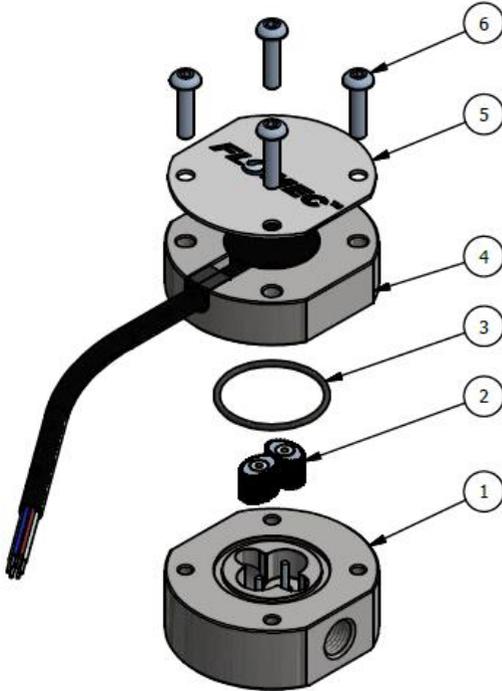
When connecting the Hall Effect pulse signal to a receiving instrument or PLC **a pull-up resistor MUST be used**. The pull up resistor is connected between the signal wire (white) and the +VDC wire (red). Recommended pull-up resistor value is 10kOhm, 2.4kOhms is the minimum value.



*For meters not ordered with a PT100 output, the yellow/green/blue wires are not used.

*For installations using 2-wire PT100 connections, use only the yellow + green wires.

Parts Identification



Item	Description
1	Meter Body
2	Rotor Kit
3	Body O-Ring
4	Meter Cap Assembly
5	Cover Plate
6	Cap Screws

For replacement part numbers please see the detailed Operation Manual available online (www.flomec.com.au)

Or contact your nearest Flomec representative

Meter Disassembly / Reassembly

- 1) Before carrying out repair/service work on the flow meter ensure that the flow through the meter is stopped and the system is depressurised. Also ensure the voltage supply is isolated.
- 2) Unscrew the 4 cap screws using the correct size allen key (hex key), remove the 4 screws from the meter cap.
- 3) Remove the cover plate and meter cap taking care to not drop or damage the ORing or the oval gear rotors.
- 4) Inspect the ORing and the rotors for damage. Check the measuring chamber for scoring, also check the shafts show no sign of damage or wear. If any internal components are damaged it is advisable to refer to the manufacturer for guidance due to the potential effect of the damage on the accuracy of the flowmeter.
- 5) Re-install rotors at exactly 90 degrees to each other, with all magnets must facing towards the meter cap. Magnets are inserted into blind holes from the underside of the rotors – installing rotors with the holes upwards is incorrect. Idler rotors (no magnets) must be installed with the radiused gear teeth facing downwards, **if you are unsure please refer to the detailed manual available online.**
- 6) Refit the ORing, taking care that it is seated correctly in its groove. It is recommended that new ORings are used whenever a meter is disassembled.
- 7) Refit the meter cap screws and torque to 4NM for 004/006/008 meters, or 6NM for 015/020 meters.

Notes:

Wichita / Sydney / Mexico City



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