

# GF series

## Positive displacement flow meters with conditioned output

Up to

- 150 lpm, 40 US gpm
- 210 bar, 3000 psi

The GF series gear type flow meters are ideal for precision measurement on medium to high viscosity hydraulic and lubrication fluids, or in applications where the fluid viscosity can change substantially due to large variations in temperature.

The GF series are positive displacement flow meters with a conditioned output, that are designed for measuring flows on hydraulic and lubrication systems, on test stands, machine tools and other fixed or mobile applications. The GF flow meters offer high accuracy and excellent viscosity stability and can be installed anywhere in the circuit for monitoring, production testing, commissioning, development testing and analysis of control systems. The compact design allows the GF series flow meters to be installed where space is limited.

The GF gear type flow meters have a built-in micro-controller that linearises and conditions the signal from the flow meter to provide an accurate analogue 4-20 mA output. This enables you to connect the flow meter directly into your digital display, PLC or custom DAQ system without having to worry about complex calibration factors or lookup tables.



\* Units are delivered with male to male fitting  
to provide thread form stated over

Hydraulic measurement and control



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### Features

- **FLOW:** 0.1 – 150 lpm,  
0.03 – 40 US gpm
- **PRESSURE:** 210 bar,  
3000 psi
- **OUTPUT OPTIONS:**  
4-20 mA
- **BI-DIRECTIONAL**  
operation
- **CALIBRATION:**  
21 cSt as standard.  
Special calibration  
possible



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(Issue 2)

## Specifications

| Model number | Male Fitting           | Flow range         | Pressure |
|--------------|------------------------|--------------------|----------|
| GF025-mA-B-3 | 1/2" BSPP              | 0.1 to 25 lpm      | 210 bar  |
| GF025-mA-S-3 | 3/4" -16UN JIC Male    | 0.03 to 6.5 US gpm | 3000 psi |
| GF070-mA-B-3 | 1/2" BSPP              | 0.5 to 70 lpm      | 210 bar  |
| GF070-mA-S-3 | 3/4" -16UN JIC Male    | 0.15 to 18 US gpm  | 3000 psi |
| GF150-mA-B-3 | 1" BSPP                | 5 to 150 lpm       | 210 bar  |
| GF150-mA-S-3 | 1-5/16" -12UN JIC Male | 1.5 to 40 US gpm   | 3000 psi |

**Note:** GF series flow meters with CAN output for use with Webtec HPM data loggers are also available, please contact Sales.

### Functional specification

**Ambient temperature:** 5 to 40 °C (41 - 104 °F)  
**Fluid type:** Oils, fuels, water glycol, water oil emulsions  
**Fluid Viscosity:** 5 to 500 cSt  
**Fluid temperature:** -20 to 150 °C (41 - 194 °F) continuous use.  
**Accuracy:** 0.5% of indicated reading  
**Repeatability:** Better than ± 0.1%  
**Degree of protection\*:** IP66 (EN60529) \*With cable connected

### Electrical specification

**Supply voltage (VS):** 12 - 32 VDC  
**Current output:** 3 wire loop, max loop resistance = (VS x 50) - 200 ohms

### Construction material

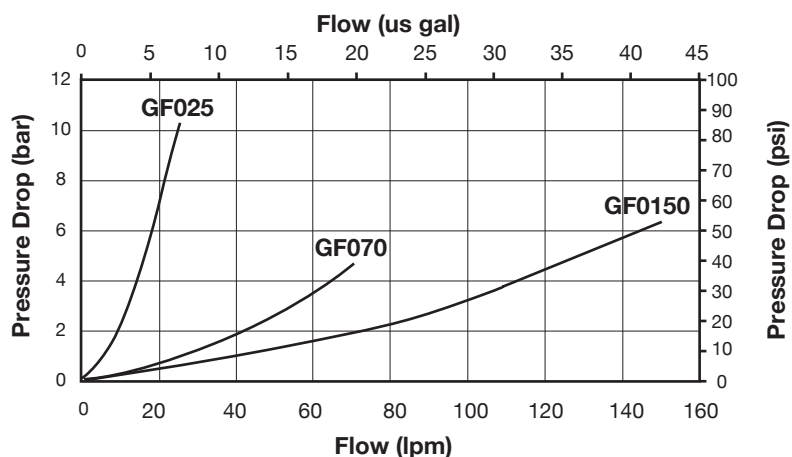
**Flow body:** Aluminium DIN ALZn5.5MgCu-7075-F54  
**Internal parts:** Aluminium, Steel, Stainless Steel.  
**Transducer:** Body and nut -steel 212A42 electroless nickel plated,  
Housing and lid - Aluminium 2011 T3 electroless nickel plated  
**Seals:** Viton as standard others are available - please consult sales office.

### Operation

Gear flow meters are positive displacement meters, similar in design to a gear pump. The measuring medium rotates two gears, which are engaged with minimum play. The medium is forced along through closed measuring chambers between gears and housing. The gears, which run idle, lose no power. The r.p.m. of the gears is proportional to the instantaneous flow rate. The gear flow meters are fitted with pickups which will precisely detect the r.p.m. through the body of the meter without contact with the fluid. The numbers of pulses is counted and this is converted into a 4 to 20mA signal proportional to the flow.

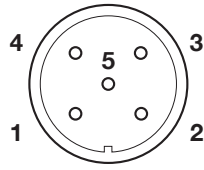
## Pressure Drop Chart

Hydraulic Oil Viscosity 21 Centistokes



## Connection Details

**4 - 20 mA**



**Pins**

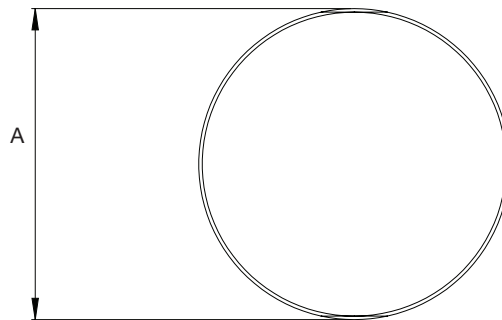
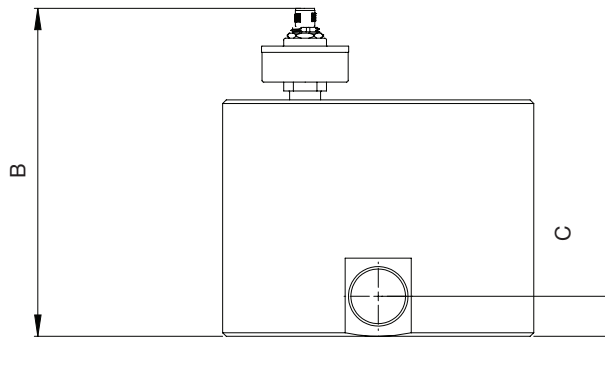
- 1 = +In
- 2 = N/C
- 3 = 4 - 20mA out
- 4 = N/C
- 5 = GND

*NB. N/C - Do not connect*

|                                |            |
|--------------------------------|------------|
| <b>Connecting cable (5m)</b>   | FT10228-05 |
| <b>Extension cable (5m)</b>    | FT10229-05 |
| <b>Connector (M12x1 5 pin)</b> | FT9880     |

Dimensions in mm (inches)

| Model number | A          | B         | C          |
|--------------|------------|-----------|------------|
| GF025        | 84.4 (3.3) | 140 (5.5) | 12 (0.47)  |
| GF070        | 125 (4.9)  | 165 (6.5) | 19 (0.75)  |
| GF150        | 175 (6.9)  | 180 (7)   | 22.5 (0.9) |



**APPROVED**