macnaught flow measurement

The **CR** range from **Macnaught** are a family of positive displacement oval gear flowmeters that are **optimised for corrosive chemical measurement** applications.

Macnaught Corrosive Chemical meters are constructed utilising a **PTFE/PPS blend** suitable for use in aggressive chemical environments. We will also soon add a **PVDF version** to provide chemical compatibility in applications where PPS is not suitable.

Our Unique **bearing-less Rotor design** provides **exceptionally low pressure drop** and can even be used in gravity fed applications. This unique rotor design utilises PTFE/PPS blended advanced material, ensuring minimal wear and resulting in many years of reliable service. This approach has proven over time to provide consistently accurate flow measurement that is not affected by variations in temperature, viscosity, or pressure.

Another benefit of our unique rotor design is simplicity of repair. With only **2 moving parts,** our meters are simple to repair, require minimal repair parts stock, and can even be repaired inline, resulting in less downtime.

The positive displacement meter technology provides **excellent batch accuracy** (0.03% repeatability) and is **not affected by pulsating flow**, high viscosity, or low conductivity. This technology is also ideal for **dispensing and dosing** at extremely **low flow rates and small batch sizes.**

Oval Gear flowmeters do not require any flow conditioning or straight piping runs before or after the meter, so they **can be installed in tight spaces** without any sacrifice in performance.

With **9 digital display options** to choose from, Macnaught flowmeters are the perfect choice with outputs and displays to suit virtually any application requirement.

Omni Instruments
Measurement > Control > Data Acquisition

For pricing, or any further, information please contact Omni Instruments Ltd
Tel: +44 (0)845 9000 601 or visit our website at www.omniinstruments.co.uk

Technical Specifications

Materials of construction

- Meter Body
  - PPS/PTFE Blend (Type CR)
- Rotor Materials
  - PPS/PTFE Blend (Type CR)
- Seal Material
  - Perfluoro Elastomer

Total Flow Range

- 0.008 – 80 L/min
- 0.002 – 21 USG/min

Temperature Range

- -40 – 80ºC / -40 - 176 ºF

Display Options

- 12mm LCD digital display
- 17mm LCD digital display

Outputs options

- 4-20mA
- Transistor
- Relay
- Pulse Output
- Alarm

Compliance (as applicable)

- Meters
  - CE (Certificate of Conformity)
- Displays
  - ATEX
  - IECEx

Applications

- Laundry Chemicals
- Additive Injection
- Water Treatment
- Corrosive Chemical Dispensing
- Chemical Batching
- Chemical Packaging and Blending

Meter Selection

Step 1 Verify Fluid Compatibility & Application Conditions

Determine if your fluid is compatible with the wetted parts of the meter. All Wetted parts are made from: FFKM, PPS, and Hastelloy C. Also determine if the Pressure and Temperature are within the stated limits.

Tips: If you need a mechanical register or have a high pressure application, you may be able to use our 316SS industrial meters, which come in high pressure models and are available with mechanical registers.

Step 2 Choose the model based on your flow rate *(see Flow Range Chart)*

Tips: If possible, choose a meter model where your expected flow rates fall between 20-80% of the maximum flow range for optimum performance. If you are measuring a high viscosity fluid (over 1000cp), the maximum flow range will be lower. You should consult the factory if you are unsure which model you need.

Step 3 Choose your connection thread type

Tips: For flanged meters, we offer 316SS Industrial meters, which are available with a variety of optional flange adaptors.

Step 4 Choose Pulse Output options

Tips: Choose a pulse output if you want to use a digital display. The Digital displays are listed in the next step and can either be mounted on the meter or remotely.Our standard pulse output comes with both hall effect sensor and reed switch outputs. If you are installing the meter in a hazardous environment, you can choose option "2" which will give you only one reed switch, which classifies the output of the meter as a "simple device".

Step 5 Choose Accessories *(See Chart 1,2,&3)*

Tips: All of our digital displays can be mounted either locally on the meter itself, remotely on a wall, on a panel, or nearby on the piping. Just choose the functions you need and the housing type you require.

Part Number Selection

CR	Chemical Flow Meters (PPS)			
	Model	**Nominal Size**	**Flow Range**	**Max Pressure**
	006	1/4"	0.5-100 lph/ 0.13-26.4 gph	5 Bar/75PSI
	009	1/4"	15-500 lph/ 4-132 gph	5 Bar/75PSI
	025	1"	3-80 lpm/ 0.8-21 gpm	10 Bar/150PSI
		Port Type		
		2	NPT	
		4	BSP (Rc)	
			Rotor Type	
			S	Standard
				Display Type
				1 Electronic Pulse Meter (Reed & Hall Effect)
				2 Reed Switch Only- for Hazardous Location Service
CR	009-	4	S	1 (example part number CR009-4S1)

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Chart 1

	Digital Displays								
Meter Mounted Displays	DR	DRA	ER	ERA	ERB	ERS	ERX	ERAX	ERBX
Total	■	■	■	■	■	■	■	■	■
Resettable Total	■	■	■	■		■	■	■	
Flow Rate Display	■	■	■	■		■	■	■	
Pulse Output		■		■		■		■	
4-20 ma Output (Passive)		■		■		■		■	
Alarm Outputs		■							
Batch Control (Transistor Out)					■				■
Net Use Function						■			
Intrinsic Safety							■	■	■
Aluminium Housing IP67	■	■	■	■	■	■	■	■	■
Plastic Housing									
Digit Size (mm/ in.)	12mm	12mm	17mm	17mm	17mm	17mm	17mm	17mm	17mm

Flow Range Chart

flow rate liters per minute