Piston Positive Displacement Flowmeter

Rotary piston flowmeters provide high levels of accuracy & repeatability for flowrate measurement or totalising for dispensing & batching. These meters suit a wide range of liquids including extremely viscous lubricants, chemicals & food bases to non-conductive low viscosity solvents, either pumped or gravity fed.

Features / Benefits

- Flow: 2~ 50 litres/min *(0 .5~13.2 US gal/min)*
- Size: 25mm *(1") female threaded, ANSI or DIN flanged*
  (other sizes & flow ranges available)
- High accuracy & repeatability, direct reading flowmeter
- No requirement for flow conditioning *(straight pipe runs etc.)*
- Simple to install, Easy to service *(low number of parts)*
- Measures high & low viscosity liquids
- Measures conductive & non-conductive clean liquids

Meter selection

Meters are selected based on flow range, pressure, temperature, material compatibility and functionality.

- ***Aluminium*** flow meters are ideal for lubricants including oils and grease, fuels and fuel oils.
- ***Stainless steel*** flow meters are suited for chemicals, water based products and the food, cosmetic and pharmaceutical industries.
- ***Pulse meters*** have two pulse outputs which can be interfaced to most electronic instrumentation. The reed switch is ideal for rate measurement and does not require external power. The open collector hall effect output produces high resolution pulses ideal for precise dispensing and preset batch control.
- ***Meters*** available with integral or remote totalisers, flow rate totalisers and preset batch controllers.

Applications include:

chemicals, additives, resins, acids, alcohols, essences, edible oils, flavourings, food bases, insecticides, adhesives, latex, emulsions, paints, inks, oils, fuels, grease, solvents, lubricants

Specifications

Model prefix	CM01A	CM01S	CM01H
Nominal size (inches)	25mm (1")	25mm (1")	25mm (1")
Flow range	2 ~ 50 litres / min		
	(0.5 ~ 13.2 US gal / min)		
* Maximum flow (fuels)	55 litres / min		
	(14.5 gal / min)		
Accuracy @ 3cp	± 0.5% of rate (± 0.2% with optional RT12)		
Repeatability	typically ± 0.03%		
Temperature range	-10ºC ~ +120ºC (-14ºF ~ +250ºF)		
Maximum pressure	60 bar (870 psi)	100 bar (1450 psi)	150 bar (2175 psi)
Materials			
Body materials	Aluminium	316 stainless steel	316 stainless steel
Piston materials	PEEK	PEEK	PEEK
O-ring materials	viton, nitrile (Buna-N), EPR or teflon encapsulated viton		
Electrical			
Output pulse resolution	pulses / litre (pulses / US gallon) - nominal		
Reed Switch	20 (75)		
Hall Effect	100 (380)		
**Reed switch output	30Vdc x 200mA max. (max. temp. shock 10ºC (50ºF) / min)		
**Hall effect output	3 wire NPN open collector, 5~24Vdc max., 20mA max.		
Electrical connection	M20 x 1.5mm pitch		
Physical			
Process connections	1"BSPP female threaded		
Protection class	IP66/67 (NEMA4X), optional Explosionproof		
Dimensions	refer <www.trimec-europe.com>		
Pressure drop chart	refer <www.trimec-europe.com>		
Chemical resistance chart	refer <www.trimec-europe.com>		
Recommended filtering	150 micron (100 mesh)		

* Maximum flow on fuels may be maintained for intermittent periods of refuelling.

* Maximum flow is to be reduced as viscosity increases, max. pressure drop 100Kpa.

Optional functions *(with FRT instruments):*

Flow rate display : 7 digits, programmable engineering units
Resettable total : 7 digits, programmable eng. units
Accumulated total : 7 digits, programmable eng. units
Preset batching : 7 digits, programmable eng. units

Optional outputs *(with FRT instruments):*

Analog : 4~20mA programmable zero & span
Scaled pulse : programmable (e.g. 1 pulse/litre, /10 gal etc)
Flow rate alarms : programmable high & low flow rate alarms

Ordering information

Meter size

CM01	1" (25mm)

Body material

A	Aluminium
S	316L Stainless Steel
H	High Pressure 316L Stainless Steel

Piston material

2	PEEK
9	Special purpose materials, e.g. for 200°C

Partition material

2	Stainless Steel

O-ring material

1	Viton *(standard - 204ºC max.)*
2	Ethylene Propylene Rubber to 150ºC
3	Teflon encapsulated viton to 150ºC
4	Buna-N *(Nitrile - 100ºC max.)*

Temperature limits

1	60ºC (140ºF)
2	120ºC (250ºF) (see note 1)
3	150ºC max. (Peek piston & NPN Hall Effect output)
5	120ºC *(see note 2)*
6	200ºC max. (S/S meter, aluminum piston, coil output)

Process connections

1	BSP (RP) female threaded
2	NPT female threaded
3	1 1/2" Triclamp Ferrule
4	ANSI150-RF Flanges
5	ANSI300-RF Flanges
6	DIN PN16 Flanges
9	Customer nominated

Cable entries

0	M16x1.5 (exclusive to FRT Rate Totaliser)
1	M20 x 1.5mm
2	1/2" NPT

Model No. Example

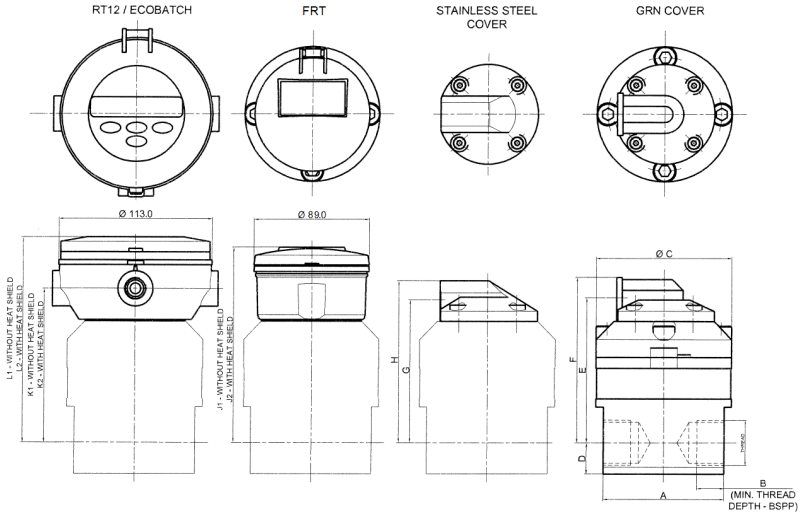
CM01	S	2	2	1	-	5	1	1	R2

Integral options

Glass reinforced nylon	00	GRN terminal cover
	SS	Stainless terminal cover
No output - display only	F1	FRT-00 Flow Rate Totaliser
4-20mA output proportional to flowrate & scaled pulse output	F2	FRT-AP Flow Rate Totaliser
Alarm and/or scaled pulse output	F3	FRT-ALP Flow Rate Totaliser
2 stage batch control	F4	FRT-BC Flow Rate Totaliser
Alarms & 4~20mA	F018	Flowrate Totaliser
	F018i	Intrinsically Safe Rate Totaliser
Barch Controller	F130	F130 batch controller
Consult factory	SB	Specific build requirement

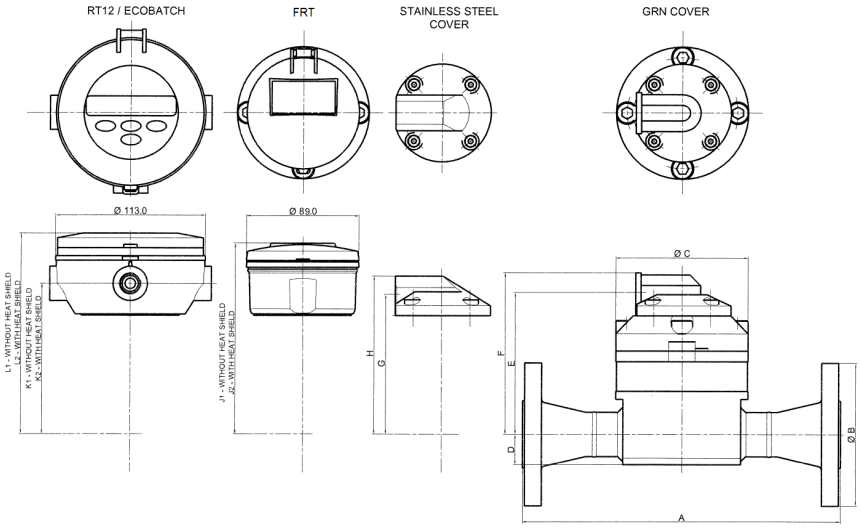
(1) 120ºC (250ºF) rating of the pulse meter, 80ºC (180ºF) rating with RT, FRT & EB integral options.
See temperature code 5 for higher temperature (with RT, FRT & EB).
(2) Cooling fin is fitted with FRT, RT or EB integral options for operation between 80~120ºC (180~250ºF).

Threaded Meter Dimensions



Meter	Thread	A	B	Ø C	D	E	F	G	H	J1	J2	K1	K2	L1	L2
CM01	1" BSPP or NPT	89	20	100	23	107	122	105.5	119.5	144	163	113.5	132.5	151.5	170.5

Flanged Meter Dimensions



Meter	Thread	A	Ø B	Ø C	D	E	F	G	H	J1	J2	K1	K2	L1	L2
CM01	1" CL150	240	108	100	23	107	122	105.5	119.5	144	163	113.5	132.5	151.5	170.5
	1" CL300	250	124												
	DN25 PN16/40	210	115												

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