

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: 0.2 ~ 140 litres/min
(0.05 ~ 37 US gal/min)
- Size: 15mm (1/2"), 25mm (1"), 40mm
(1 1/2") female threaded, ANSI or DIN
flanged
- 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

Applications include:

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

Meter selection

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

- **Aluminium** flowmeters are ideal for
lubricants including oils and grease, fuels and
fuel oils.
- **Stainless steel** flowmeters 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.

Specification

Model prefix	CM84A	CM84S	CM01A	CM01S	CM46A	CM46S
Nominal size (inches)	15mm (1/2")		25mm (1")		40mm (1 1/2")	
Flow range	0.2 ~ 10 litres / min		2 ~ 50 litres / min		4 ~ 140 litres / min	
	(0.05 ~ 2.7 US gal / min)		(0.5 ~ 13.2 US gal / min)		(1.1 ~ 37.0 US gal / min)	
* Maximum flow (fuels)	-		55 litres / min		-	
	-		(14.5 gal / min)		-	
Accuracy @ 3cp	± 1.0% of rate (± 0.2% with optional RT12)		± 0.5% of rate (± 0.2% with optional RT12)			
Repeatability	typically ± 0.03%					
Temperature range	-10°C ~ +120°C (-14°F ~ +250°F)					
Maximum pressure	30 bar (435 psi)	100 bar (1450 psi)	60 bar (870 psi)	100 bar (1450 psi)	30 bar (435 psi)	100 bar (1450 psi)
Materials						
Body materials	Aluminium	316 stainless steel	Aluminium	316 stainless steel	Aluminium	316 stainless steel
Piston materials	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	200 (760)		20 (75)		7.3 (28)	
Hall Effect	400 (1520)		100 (380)		44 (167)	
**Reed Switch output	30Vdc x 200mA max. (max. temp. shock 10°C (50°F) / min)					
**Hall Effect output	3 wire NPN open collector, 5~24Vdc max., 20mA max.					
Electrical connection	M20 x 1.5mm pitch					
Physical						
Process connections	1/2"BSPP female threaded		1"BSPP female threaded		1 1/2"BSPP female threaded	
Protection class	IP66/67 (NEMA4X), optional Explosionproof				IP66/67 (NEMA4X)	
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

CM84	1/2"	(15mm)
CM01	1"	(25mm)
CM46	1 1/2"	(40mm)

Body material

A	Aluminium
S	316L Stainless Steel

Piston material

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

Partition material

2	Stainless Steel
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O-ring material

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

Temperature limits

1	60°C (140°F)
2	120°C (250°F) (see note 1)
3	150°C max. (Peek piston & NPN Hall Effect output)
5	120°C (see note 2)
6	200°C 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	M 16x15 (exclusive to FRT Rate Totaliser)
1	M 20 x 15mm
2	1/2" NPT

Model No. Example

CM01	S	2	2	1	5	1	1	R2
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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	R2	RT 12 flowrate totaliser
	R3	Intrinsically Safe RT 12
Scaled pulse output	R4	RT40 large LCD flowrate totaliser
Ecobatch	E0	EB 10 batch controller
Consult factory	SB	Specific build requirement

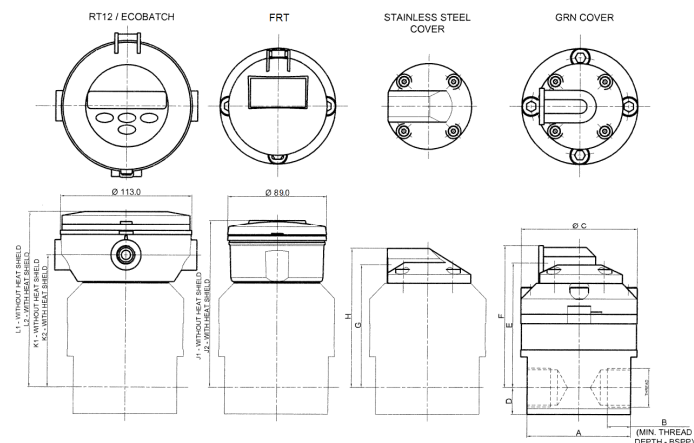
(1) 120°C (250°F) rating of the pulse meter, 80°C (180°F) rating with RT, FRT & EB integral options.

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 80~120°C (180~250°F).

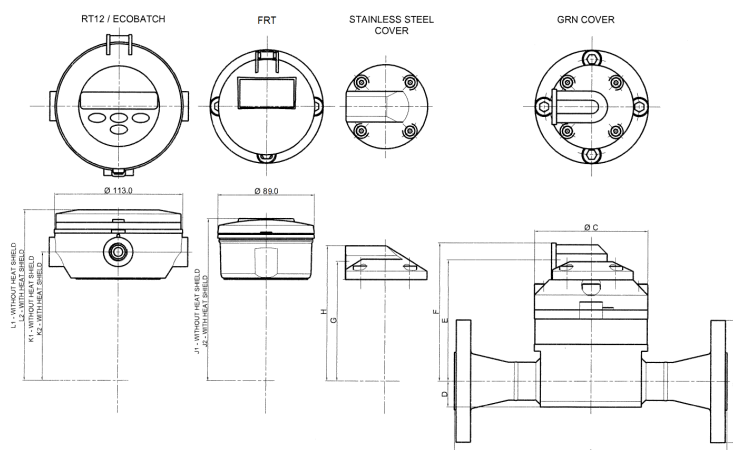


Threaded Meter Dimensions



Meter	Thread	A	B	Ø C	D	E	F	G	H	J1	J2	K1	K2	L1	L2
CM84	1/2" BSPP or NPT	68	16	80	15	82.9	97.9	81.4	95.4	119.9	138.9	89.4	108.4	127.4	146.4
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
CM46	1 1/2" BSPP or NPT	114	25	130	34	131.1	146.1	129.6	143.6	168.1	187.1	137.6	156.6	175.6	194.6

Flanged Meter Dimensions



Meter	Thread	A	Ø B	Ø C	D	E	F	G	H	J1	J2	K1	K2	L1	L2
CM84	1/2" CL150	200	89	80	15	82.9	97.9	81.4	95.4	119.9	138.9	89.4	108.4	127.4	146.4
	1/2" CL300	210	95												
	DN15 PN16/40	180	95												
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												
CM46	1 1/2" CL150	300	127	130	34	131.1	146.1	129.6	143.6	168.1	187.1	137.6	156.6	175.6	194.6
	1 1/2" CL300	310	156												
	DN40 PN16/40	265	150												