



BATCHFLUX 5015 C

Technical Datasheet

Electromagnetic flowmeter for volumetric filling and batching

- High-stability ceramics measuring tube, therefore extreme long-term stable
- Excellent reliability and accuracy
- Optimum hygienic design
- Only 50 mm / 2" overall width (DN < 25 / < 1")



KROHNE

Electromagnetic flowmeter for use on volumetric filling machines

BATCHFLUX 5015 C is the industry standard for volumetric filling machines. It's high-tech ceramic liner guarantees extreme long-term stability and therefore no change in repeatability of filling volumes over a long time.



Highlights

- Controlling and monitoring filling process
- Extreme long-term stability due to ceramic liner
- Excellent reliability and accuracy
- Hygienic design of process connections
- Excellent reproducibility
- Completely stainless steel
- CIP- and SIP-proof ceramic measuring tube, surface roughness <math>< 0.8 \mu\text{m}</math>
- Fused-in-place cermet electrodes
- Sealed electronics

Industries

- Food & Beverages
- Chemicals
- Pharmaceuticals

Applications

- Filling machines

- 1 Only 50 mm / 2" overall width for DN <math>< 25</math> / <math>< 1''</math>]
- 2 Housing of flow sensor and flow converter housing welded, absolutely tight
- 3 Self-draining, free flow cross-section
- 4 Hygienic design of process connection, metal stop, no gaps or crevices, flat sealing face

Electromagnetic product range

OPTIFLUX converters: All converters fit to all sensors



- ❶ IFC 300 High-performance solution
- ❷ IFC 010 Economical solution

OPTIFLUX sensors



- ❶ OPTIFLUX 1000 Economical solution
- ❷ OPTIFLUX 2000 Solution for the water and wastewater industry
- ❸ OPTIFLUX 4000 Standard solution for the process industry
- ❹ OPTIFLUX 5000 Solution with high-tech ceramics
- ❺ OPTIFLUX 6000 Sanitary and hygienic solution

Special-purpose flowmeters



- ❶ WATERFLUX 2070 Battery powered watermeter solution
- ❷ OPTIFLUX 4040 C 2-wire solution
- ❸ TIDALFLUX 4110 PF Solution for partially filled pipelines
- ❹ BATCHFLUX 5015 C Solution for volumetric filling
- ❺ OPTIFLUX 7300 C Electrode-free solution

Technical Data

Nominal diameters

With venturi measuring tube	DN 2.5, 4, 6, 10, 15, 25, 40 (1/10", 1/8", 1/4", 3/8", 1/2", 1", 1 1/2")
With straight measuring tube (option)	DN 15 (1/2") and DN 32 (1 1/4")

Connection

Connection of sandwich design with precisely defined sealing faces centering system and metal stop	Standard
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Electrical conductivity

≥5 µS/cm (≥20 µS/cm for demineralized cold water)	Standard
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Process temperature

Ambient temperature: -25...+40°C / -13...+104°F	Process temperature: -60...+140°C / -76...+284°F
-25...+60°C / -13...+140°F	-60...+60°C / -76...+140°F (higher on request)
	Steam cleaning up to 150°C / 302°F (max. 1 hour)

Temperature shock resistance

Max. ΔT (3 K/s)	120°C / 216°F
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Max. operating pressure

40 bar (10 bar for DN 15, DN 32 and 1/2", 1 1/4" with straight measuring tube)	Standard
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Electrode design

Fused-in-place electrodes, no gaps or crevices	Standard
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Type of protection

complete device, incl. signal converter	IP67 / NEMA 6
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Materials

Housing	Stainless steel 1.4408 or 1.4404
Measuring tube	Ceramic, CIP- and SIP- proof
Electrodes	Cermet
Cover seal	EPDM

Low flow cut-off

Cut-off 'on' value	1...19%
Cut-off 'off' value	2...20%

Power supply

Voltage	24 VDC ± 25%
Power consumption	≤3 W

Electrical connection

M12 connector	Standard
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Operator control

All operating data factory-set to your specifications	Standard
HHT 010, hand held terminal or	Option
KROHNE software for operator control and data output via PC, connected to the IMoCom interface	Option

Outputs

Pulse output (standard)	Passive circuit
Function	All operating data factory-set to your specifications, connection of electronic totalizers, digital pulse division, interpulse period non-uniform, therefore if frequency meters counters connected, allow for minimum counting Interval: gate time, counter $\geq 1000/P_{100\%}$ [Hz]
Pulse rate for Q = 100%	Max. 10 kHz, fixed or optionally in pulse per m ³ , litres, US gallons or in user-defined unit
Pulse width	≤ 10 Hz: 50,100,200 or 500 ms > 10 Hz: automatic, pulse width = $1 / (2 \times f_{100\%})$ or symmetrical, 1:1
Passive mode	Connection of electronic or electromechanical totalizers external voltage: $U_{ext} \leq 30$ VDC / ≤ 24 VAC Load rating: $I_{max} \leq 20$ mA

Maximum error

DN 2,5...6 (1/10...1/4"):	
$v \leq 1$ m/s	$\leq \pm 0.5\%$ of MV
$v > 1$ m/s	$\leq \pm 0.4\%$ of MV + 1 mm/s
DN 10...40 (3/8...1 1/2"):	
$v \leq 1$ m/s	$\leq \pm 0.3\%$ of MV
$v > 1$ m/s	$\leq \pm 0.2\%$ of MV + 1 mm/s

Repeatability

Filling time TF:	Standard deviation:
$1.5 \text{ s} < TF \leq 3 \text{ s}$	$\leq 0.4\%$
$3.0 \text{ s} < TF \leq 5 \text{ s}$	$\leq 0.2\%$
$5.0 \text{ s} < TF$	$\leq 0.1\%$

Reference conditions

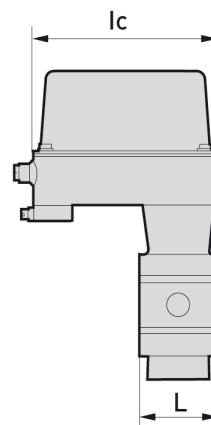
Liquid product	Water at 20°C
Inlet/ outlet runs	10 x DN / 5 x DN (DN = meter size)
Valve closing time-variation	< 1 ms
Flow velocity	1 m/s Flow conditions similar to EN 29 104 Wet calibrated on EN 17025 accredited calibration rigs by direct comparison of volumes

Dimensions and Weights

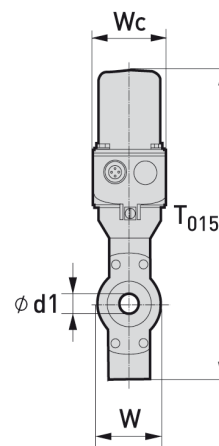
Nominal size	Ød1	L	W	T ₀₁₅	lc	Wc	Weight
							[kg]
[mm]							
DN 2.5	6	54	44	206	126	50	1.6
DN 4	7	54	44	206	126	50	1.6
DN 6	9	54	44	206	126	50	1.6
DN 10	12	54	44	206	126	50	1.6
DN 15	14.3	54	44	206	126	50	1.6

Nominal size	L	W	T ₀₁₅	lc	Wc	Weight
						[kg]
[mm]						
DN 25	58	68	200	126	50	1.6
DN 32	83	84	215	126	50	2.3
DN 40	83	84	215	126	50	2.3

DN2.5...15:
Front view



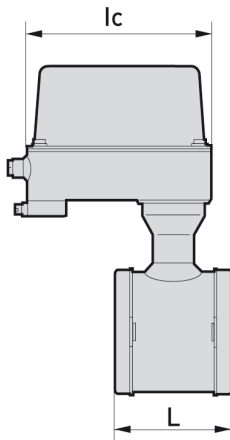
Side view



Selection table

Nominal size	Optimum flow rate for filling	Fill times > 1.5 s, fill quantity
	[ml/s]	[ml]
DN 2.5	3...10	≥ 10
DN 4	10...30	≥ 20
DN 6	20...60	≥ 40
DN 10	60...200	≥ 100
DN 15	150...500	≥ 200
DN 25	400...1200	≥ 600
DN 32	650...2250	≥ 975
DN 40	1000...3000	≥ 1500

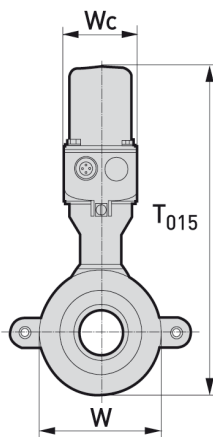
DN25...40:
Front view



Nominal size	Ød1	L	W	T ₀₁₅	lc	Wc	Weight
	[inch]						[lbs]
1/10"	0.24	2.13	1.73	8.11	4.96	1.97	3.4
1/6"	0.28	2.13	1.73	8.11	4.96	1.97	3.6
1/4"	0.35	2.13	1.73	8.11	4.96	1.97	3.6
3/8"	0.47	2.13	1.73	8.11	4.96	1.97	3.6
1/2"	0.56	2.13	1.73	8.11	4.96	1.97	3.6

Nominal size	L	W	T ₀₁₅	lc	Wc	Weight
	[inch]					[lbs]
1"	2.28	2.68	7.87	4.96	1.97	3.6
1 1/4"	3.27	3.30	8.46	4.96	1.97	5.1
1 1/2"	3.27	3.30	8.46	4.96	1.97	5.1

Side view



Selection table

Nominal size	Optimum flow rate for filling	Fill times > 1.5 s, fill quantity
	[US Gal/min]	[US Gal]
1/10"	0.048...0.159	≥ 0.003
1/8"	0.159...0.476	≥ 0.005
1/4"	0.317...0.951	≥ 0.011
3/8"	0.951...3.170	≥ 0.026
1/2"	2.378...7.925	≥ 0.053
1"	6.340...19.020	≥ 0.159
1 1/4"	10.303...35.663	≥ 0.258
1 1/2"	15.850...47.551	≥ 0.396

KROHNE Overview

- Electromagnetic flowmeters
- Variable area flowmeters
- Mass flowmeters
- Ultrasonic flowmeters
- Vortex flowmeters
- Flow controllers
- Level measuring instruments
- Pressure gauges
- Temperature measuring instruments
- Water solutions & analysis
- Oil and gas turnkey solutions

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