



BATCHCONTROL 5014 C

Technical Datasheet

Electromagnetic flowmeter for volumetric filling and batching

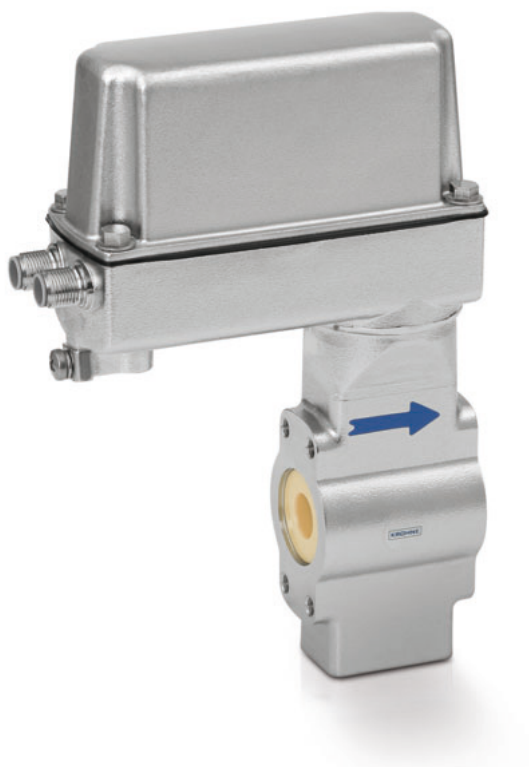
- CANopen communication
- Optimum hygienic design
- Vacuum stable ceramic measuring tube
- Excellent reliability and long-term stability
- Integrated temperature sensor



KROHNE

The volumetric batching specialist

BATCHCONTROL 5014 C is especially designed for use in filling machines with CANopen communication interface to reduce cabling and to improve automation of filling machines.



Highlights

- Controlling and monitoring filling process
- Self learning device
- Extreme long-term stability due to ceramic liner
- Excellent reproducibility
- 3A certified, FDA conform ceramic
- Hygienic design of process connections
- CIP- and SIP-proof ceramic measuring tube, surface roughness <math>< 0.8 \mu\text{m}</math>
- Low power consumption
- 6 binary contacts
- Fused-in-place cermet electrodes
- Sealed electronics

Industries

- Food & Beverages
- Chemicals
- Pharmaceuticals

Applications

- Rotary and linear filling machines

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 meas. 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:	Process temperature:
-25°C...40°C / -13°F...104°F	-60°C...140°C / -76°F...284°F
-25°C...60°C / -13°F...140°F	-60°C...60°C / -76°F...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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Maximal 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 cutoff

cutoff 'on' value	1...19%
cutoff 'off' value	2...20%

Power supply

Voltage	24 V DC ± 25%
Power consumption	≤3 W

Electrical connection

M12 connector	5-pole / 8-pole
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Operator control

Setting and parametrization of signal converter, binary contacts and analog input via the CANopen bus.	Standard
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Outputs

6 binary contact	Optionally adjustable as contact inputs or contact outputs via software, 24 VDC / 200 mA programmable as highside or lowside driver output, short-circuit-proof (2A), short circuit and cable break detection signalled via the CAN bus
Function of inputs	Binary input with message via the bus
	Start filling
	Emergency off
Function of outputs	User - defined
	Output controlled from bus
	ON by time, volume or flow velocity
	OFF by time, volume or flow velocity
	User-defined

Analog inputs

2 contacts changeable to 2 analog inputs	Standard
0...11 V (8 bits)	Standard

Bus interface

CAN bus interface with CAN open protocol	Standard
20 kbd to 1 Mbd	Standard

Internal temp. measurement

Temperature of measuring tube	Temperature sensor on the outside of flowtube, temperature range -20...+140°C
Temperature of electronic equipment	Temperature sensor on main PCB, temperatur range -20...+100°C
Accuracy	+/- 3 Kelvin

Dimensions & Weights

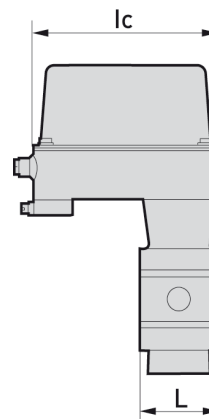
Nominal size		Ød1	L	W	T ₀₁₄	lc	Wc	Weight
DN	inch	[mm]						[kg]
2.5	1/10	6	54	44	206	126	50	1.9
4	1/6	7	54	44	206	126	50	1.9
6	1/4	9	54	44	206	126	50	1.9
10	3/8	12	54	44	206	126	50	1.9
15	1/2	14.3	54	44	206	126	50	1.9

Nominal size		L	W	T ₀₁₄	lc	Wc	Weight
DN	inch	[mm]					[kg]
25	1	58	68	200	126	50	1.9
32	1.25	83	84	215	126	50	2.6
40	1.5	83	84	215	126	50	2.6

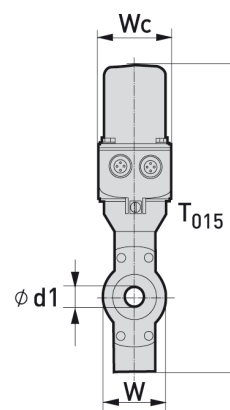
Selection table

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

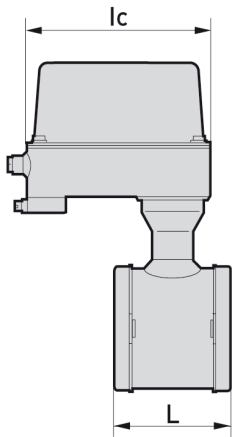
DN2.5...15: Front view



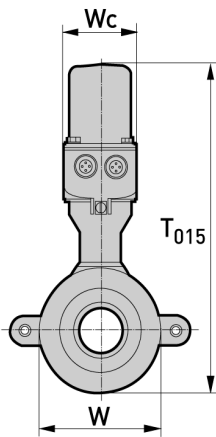
Side view



DN25...40: Front view



Side view



Nominal size		$\varnothing d1$	L	W	T ₀₁₄	lc	Wc	Weight
DN	inch	[inch]						[lbs]
2.5	1/10	0.24	2.13	1.73	8.11	4.96	1.97	3.4
4	1/6	0.28	2.13	1.73	8.11	4.96	1.97	3.6
6	1/4	0.35	2.13	1.73	8.11	4.96	1.97	3.6
10	3/8	0.47	2.13	1.73	8.11	4.96	1.97	3.6
15	1/2	0.56	2.13	1.73	8.11	4.96	1.97	3.6

Nominal size		L	W	T ₀₁₄	lc	Wc	Weight
DN	inch	[inch]					[lbs]
25	1	2.28	2.68	7.87	4.96	1.97	3.6
32	1.25	3.27	3.3	8.46	4.96	1.97	5.1
40	1.5	3.27	3.3	8.46	4.96	1.97	5.1

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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