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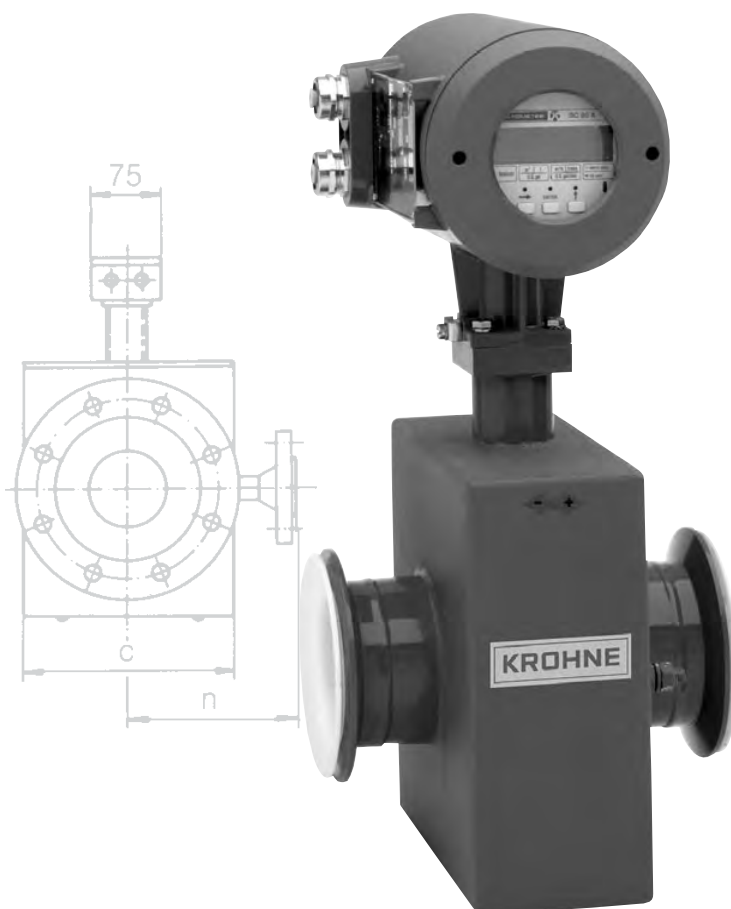
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# РАСХОДОМЕРЫ ЭЛЕКТРОМАГНИТНЫЕ ALTOFLUX M900



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## System description

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ALTOFLUX electromagnetic flowmeters are precision measuring instruments designed for the linear flow measurement of process liquids.

The process liquids must be electrically conductive:  $\geq 20 \mu\text{S}/\text{cm}$

The **full-scale range**  $Q_{100\%}$  can be set as a function of the **meter size**:

ALTOFLUX M900:

DN 10 - 300 /  $\frac{3}{8}$ " - 12"       $Q_{100\%} = 0.1 - 3050 \text{ m}^3/\text{hr} = 0.37 - 13\,440 \text{ US GPM}$

ALTOFLUX 3080 K: DN

10 - 300 /  $\frac{3}{8}$ " - 12"       $Q_{100\%} = 0.1 - 3050 \text{ m}^3/\text{hr} = 0.37 - 13\,440 \text{ US GPM}$

This is equivalent to a flow velocity of 0.3 - 12 m/s, or 1 - 40 ft/s.

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## Product liability and warranty

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ALTOFLUX electromagnetic flowmeters are designed solely for measuring the volumetric flowrate of electrically conductive, liquid process products.

Flowmeters with ALTOFLUX primary heads are not certified for use in hazardous locations. Other flowmeters series are available for such applications.

Responsibility as to suitability and intended use of these electromagnetic flowmeters rests solely with the operator.

Improper installation and operation of the flowmeters (systems) may lead to loss of warranty.

In addition, the "General conditions of sale" forming the basis of the purchase contract are applicable.

If ALTOFLUX flowmeters need to be returned to Krohne, please note the information given on the last-but-one page of this manual. Krohne regret that they cannot repair or check your flowmeter(s) unless accompanied by the completed form sheet.

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## Items included with supply

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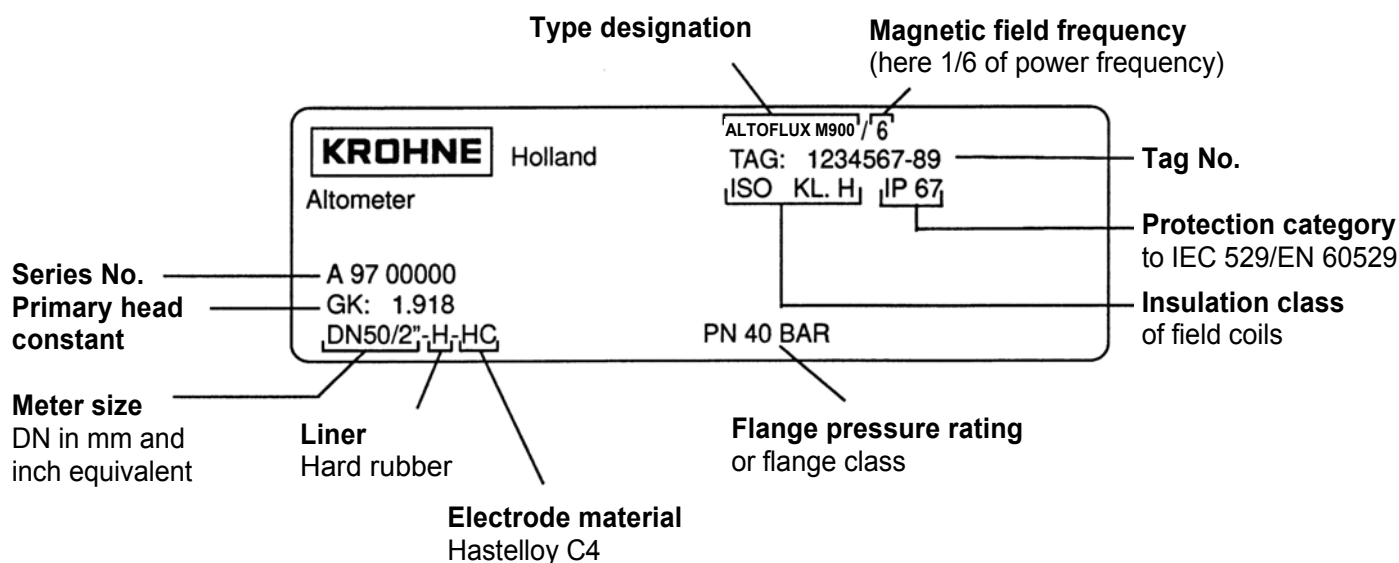
### ALTOFLUX M900 primary heads

- Primary head in the size as ordered
  - Connecting wires for grounding, refer to Section 7 "Grounding"
  - Certificate of calibration data
  - Grounding rings (optional), if ordered
  - Installation instructions
-

## Instrument nameplate

### ALTOFLUX M900

separate primary head



#### Liner materials

H	Hard rubber
NE	N prene
PUI	Iraith
T	T flon <sup>®</sup> -PTFE
W	Soft rubber

#### Electrode materials

HB	Hastelloy B2
HC	Hastelloy C4
PT	Platinum
TA	Tantalum
TI	Titanium
V4A	Stainless steel 1.4571 / SS 316-Ti

Teflon<sup>®</sup> is a registered trademark of Du Pont

#### Instrument nameplate for compact flowmeters

see installation and operating instructions for the signal converter.

## 4 Flowmeter versions

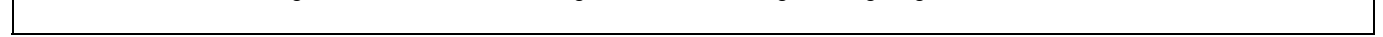
### ALTOFLUX M900

**Separate primary head (F)** electrically connected to the signal converter by signal and field current cables.

## 7 Grounding

**ALTOFLUX M900** separate primary head with terminal box

- All flowmeters must be properly grounded to avoid personnel shock hazard.
- The ground conductor should not transmit any interference voltages, therefore do not ground any other electrical devices together with this conductor.
- An **FE functional ground** must always be connected.
- **Signal converter with field power supply > 125 mA / 60 V** a **PE protective conductor** must be connected to the primary head, because of the higher field current from the signal converter. See grounding diagrams below.



## 9 Technical data

### Meter sizes / Available versions

... with flanged connections

... with heating jacket (remote systems only)

DN 10-300 and 3/8" - 12"

Meter sizes DN 10 - 100 and 3/8" - 4"

Heating jacket connections: DN 15/ PN 40

or 1/2" / Class 150 lb/ RF

... for food & beverage industry

Sanitary connection to DIN 11851

Tri clamp connection

SMS connection

Meter sizes DN 10- 125, pressure rating PN 10

Measuring tube nominal dia. 1" - 4"

on request

### Connection flanges

... to DIN 2501 (= BS 4504)

DN 10-50 and DN 80/ PN 40

DN 65 and DN 100-150/ PN 16

DN 200-300/ PN 10

3/8" - 12" / Class 150 lb/ RF

higher pressure ratings and other standards - on request

... to ANSI B 16.5

Special versions

### Electrical conductivity

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

### Ambient temperature

... for < 60°C or < 140°F product temperature

- 25 to + 60°C or - 13 to + 140°F

... for > 60°C or > 140°F product temperature

Separate systems

- 25 to + 60°C or - 13 to + 140°F

Compact systems

- 25 to + 40°C or - 13 to + 104°F

... for hazardous-duty versions

- 20 to + 40°C or - 4 to + 104°F

### Product temperature

... for remote systems

- 60 to + 180°C or - 76 to + 356°F

... for integral systems

- 60 to + 140°C or - 76 to + 274°F

... for hazardous-duty versions

- 20 to + 180°C or - 4 to + 356°F

} see Tables at chapter 11

### Max. permissible operating data

Product temperature and operating pressure

see Tables 1 + 2 at chapter 11

Vacuum load factor of liner

see Table 3 at chapter 11

### Insulation class of field coils / product temperature

Standard

E / ≤ 120°C or ≤ 248°F

Special version

H / ≤ 180°C or ≤ 356°F

(always required for hazardous-duty version)

### Electrode design

Standard DN 10 - 300 and 3/8" - 12"

flat-elliptical electrodes, solidly fitted, surface-polished

Special version DN 50 - 300 and 4" - 12"

field replaceable electrodes WE

### Field coil power supply

< 60 V from signal converter

### Grounding rings

available as option

### Protection category (IEC 529 / EN 60 529)

Compact systems

IP 67, equivalent to NEMA 6

Separate systems

Standard

IP 65, equivalent to NEMA 4 and 4X

Special versions

IP 67 or IP 68, equivalent to NEMA 6

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**Materials****Measuring tube**Stainless steel 1.4301 (or higher material number)  
equivalent to SS 304**Liner**

Standard

Hard rubber, PTFE (Teflon)

Special versions

Irrathane, neoprene and soft rubber,  
others on request

Food version

PTFE (Teflon)

**Electrodes**

Standard

Hastelloy C4

Special versions

Stainless steel 1.4571 or SS 316 Ti, Hastelloy B2, titanium,  
tantalum, platinum, others on request

Food version

and field replaceable electrodes WE

Stainless steel 1.4571 or SS 316 Ti

**Connection flanges\***to DIN: DN 10 - 50, DN 80 ( $\frac{3}{8}$ " - 2" and 3")  
DN 65, DN 100 - 300 ( $1\frac{1}{2}$ ", 4" - 12")

Steel 1.0402 (C22) or AISI: C1020

Steel 1.0501 (RST 37.2) or AISI: C 1035 } others

to ANSI

Steel ASTM A 105 N } on request

**Housing\***Standard: DN 10 - 40 and  $\frac{3}{8}$ " -  $1\frac{1}{2}$ "  
DN 100 - 300 and 4" - 12"

Sheet steel

Sheet steel

Food version

optional stainless steel 1.4571 or SS 316 Ti

**Terminal box\*** (remote system only)

Standard

Diecast zinc

Food version

as option stainless steel 1.4301 or SS 304, without paint finish

**Grounding rings** (option)

Stainless steel 1.4571 or SS 316 Ti, others on request

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\* with polyurethane finish

## M900 primary head and 3080 K integral flowmeter (standard)

### Flanged connections

... DIN 2501 (= BS 4504) / DN 10-300 / PN 40, 16 or 10: see Table  
 ... ANSI B 16.5 / 3/8"-12" / Class 150 lb / RF: see Table  
 ... ANSI B 16.5 / 3/8"-12" / Class ≥ 300 lb / RF: dimensions on request

### Dimensions in mm and (inches)

**Dimension a without flange gaskets:** Not supplied with flowmeter, to be provided by customer.

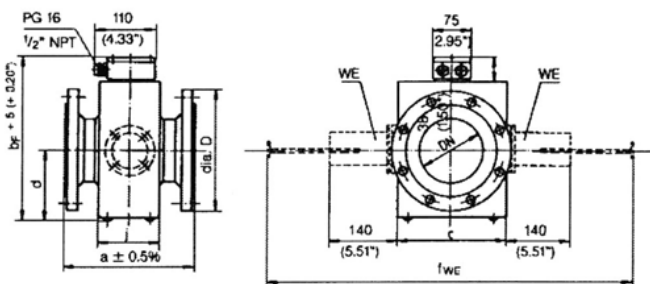
**\* For integral flowmeters:** Weight as specified in Table plus approx. 2.2 kg or 4.9 lb

**\*\* Meter size 3/8":** Flanged connection 1/2"

Meter size to ...			Dimensions in mm (inches)								Approx.* weight	
DIN		ANSI	a	b <sub>f</sub>	b <sub>k</sub>	c	d	j	dia. D <sub>DIN</sub>	dia. D <sub>ANSI</sub>	in kg (lb)	
DN mm	PN	inches										
10	40	3/8**	200 (7.87)	169 (6.65)	358 (14.09)	92 (3.62)	66 (2.60)	70 (2.76)	90 (3.54)	88.9 (3.50)	10 (22)	
15	40	1/2	200 (7.87)	169 (6.65)	358 (14.09)	92 (3.62)	66 (2.60)	70 (2.76)	95 (3.74)	88.9 (3.50)	10 (22)	
20	40	3/4	200 (7.87)	169 (6.65)	358 (14.09)	92 (3.62)	66 (2.60)	70 (2.76)	105 (4.13)	98.6 (3.89)	10 (22)	
25	40	1	200 (7.87)	191 (7.52)	380 (14.96)	96 (3.78)	77 (3.03)	94 (3.70)	115 (4.53)	108.0 (4.25)	11 (24)	
32	40	1 1/4	200 (7.87)	191 (7.52)	380 (14.96)	96 (3.78)	77 (3.03)	94 (3.70)	140 (5.51)	117.3 (4.62)	11 (24)	
40	40	1 1/2	200 (7.87)	236 (9.29)	425 (16.73)	184 (7.24)	99 (3.90)	94 (3.70)	150 (5.91)	127.0 (5.00)	13 (29)	
50	40	2	200 (7.87)	236 (9.29)	425 (16.73)	184 (7.24)	99 (3.90)	94 (3.70)	165 (6.50)	152.4 (6.00)	14 (31)	
65	16	2 1/2	200 (7.87)	256 (10.08)	445 (17.25)	184 (7.24)	109 (4.29)	94 (3.70)	185 (7.28)	177.8 (7.00)	15 (33)	
80	40	3	200 (7.87)	256 (10.08)	445 (17.25)	184 (7.24)	109 (4.29)	94 (3.70)	200 (7.87)	190.5 (7.50)	17 (37)	
100	16	4	250 (9.84)	316 (12.44)	505 (19.88)	234 (9.21)	139 (5.47)	125 (4.92)	220 (8.66)	228.6 (9.00)	28 (62)	
125	16	5	250 (9.84)	316 (12.44)	505 (19.88)	234 (9.21)	139 (5.47)	125 (4.92)	250 (9.84)	254.0 (10.00)	35 (77)	
150	16	6	300 (11.81)	336 (13.23)	525 (20.67)	266 (10.47)	149 (5.87)	172 (6.77)	285 (11.22)	279.4 (11.00)	45 (99)	
200	10	8	350 (13.78)	396 (15.59)	585 (23.03)	354 (13.94)	179 (7.05)	210 (8.27)	340 (13.39)	342.9 (13.50)	56 (123)	
250	10	10	400 (15.75)	456 (17.95)	645 (25.39)	434 (17.09)	209 (8.23)	244 (9.61)	395 (15.55)	406.4 (16.00)	75 (165)	
300	10	12	500 (19.69)	532 (20.94)	721 (28.39)	490 (19.29)	247 (9.72)	280 (11.02)	455 (17.52)	482.6 (19.00)	110 (243)	

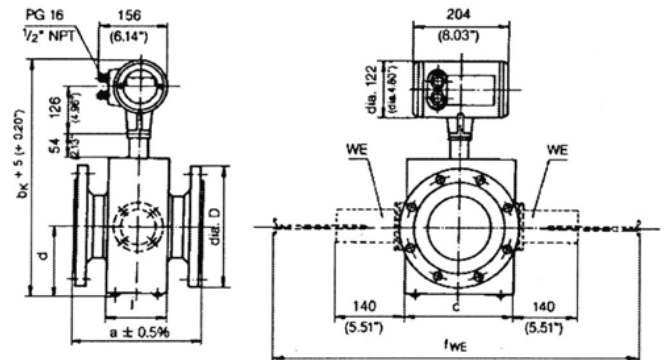
### M900 Primary head

DN 10 - 300  
 3/8" - 12"



### 3080 K Compact flowmeter

DN 10 - 300  
 3/8" - 12"



**WE** = Field replaceable electrodes, optional for meter sizes DN50-300 and 2" - 12"

**f<sub>WE</sub>** = Dimension c+900 mm or c+35,50" (minimum dimension)

## M900 and 3080 K with sanitary connection to DIN 11851

Dimensions in mm and (inches)

\* For integral flowmeters: Dimension b + 127 mm or + 5.00"

\*\* For stainless steel housing: Dimension c + 14 mm or + 0.55"

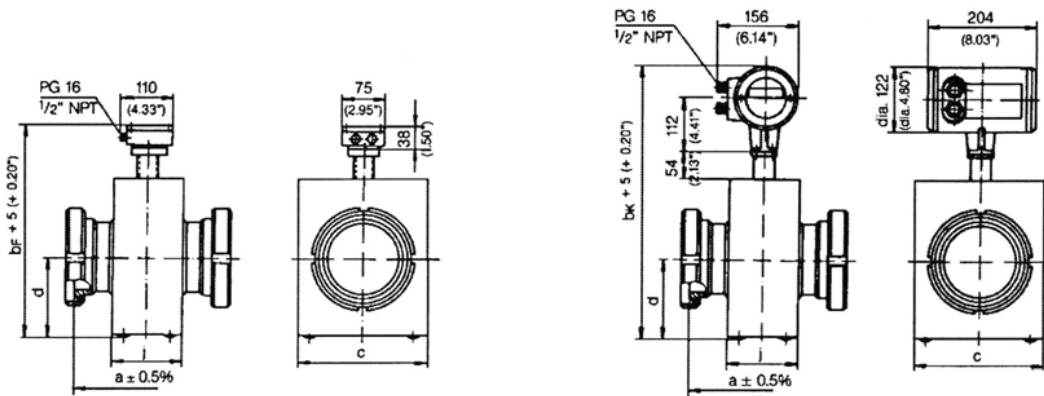
Meter size DN mm	Dimensions in mm (inches)					Weight in kg (lb)
	a	b*	c**	d	j	
10 and 20	200 (7.87)	223 (8.78)	92 (3.62)	66 (2.60)	70 (2.76)	10 (22)
25 and 32	200 (7.87)	245 (9.65)	96 (3.78)	77 (3.03)	94 (3.70)	10 (22)
40 and 50	200 (7.87)	290 (11.42)	184 (7.24)	99 (3.90)	94 (3.70)	13 (29)
65 and 80	200 (7.87)	310 (12.20)	184 (7.24)	109 (4.29)	94 (3.70)	16 (36)
100 and 125	250 (9.84)	370 (14.57)	234 (9.21)	139 (5.47)	125 (4.92)	30 (66)

### M900 primary head with sanitary connection to DIN 11851

DN 10-125 / PN 10

### 3080 K integral flowmeter with sanitary connection to DIN 11851

DN 10-125 / PN 10



## M900 and 3080 K with clamp connection

Dimensions in mm and (inches)

\* For integral flowmeters: Dimension b + 127 mm or + 5.00"

\*\* For stainless steel housing: Dimension c + 14 mm or + 0.55"

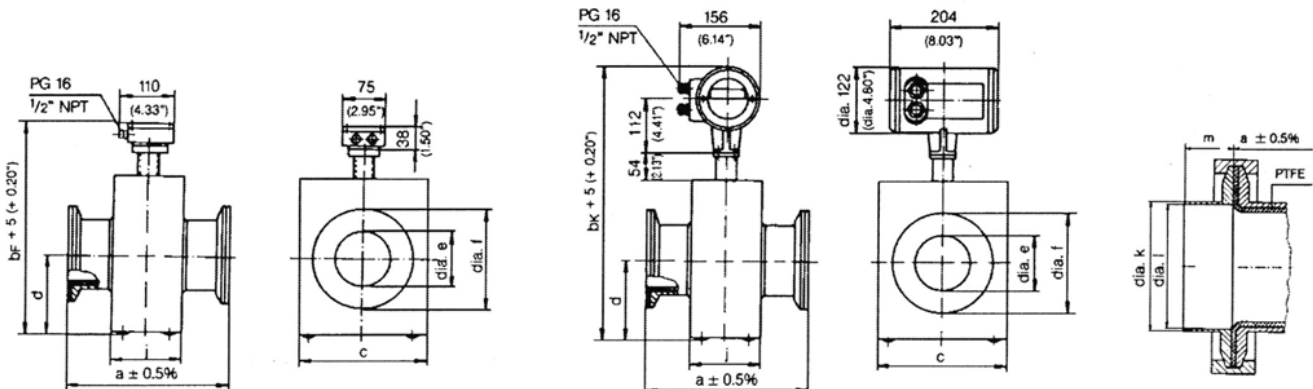
Meter size inches	Dimension in mm (inches)										Weight in kg (lb)
	a	b*	c**	d	dia. e	dia. f	j	dia k	dia l	m	
1	200 (7.87)	245 (9.65)	96 (3.78)	77 (3.03)	18 (0.71)	49.6 (1.95)	94 (3.70)	25.5 (1.00)	22.1 (0.87)	25.4 (1.00)	10 (22)
1 1/2	200 (7.87)	245 (9.65)	96 (3.78)	77 (3.03)	28.5 (1.12)	49.6 (1.95)	94 (3.70)	38.2 (1.50)	34.8 (1.37)	25.4 (1.00)	11 (25)
2	200 (7.87)	290 (11.42)	184 (7.24)	99 (3.90)	44 (1.73)	76.6 (3.02)	94 (3.70)	51.0 (2.01)	47.5 (1.87)	25.0 (0.98)	13 (29)
3	200 (7.87)	310 (12.20)	184 (7.24)	109 (4.29)	64 (2.52)	117.7 (4.63)	94 (3.70)	76.3 (3.00)	72.9 (2.87)	25.4 (1.00)	16 (36)
4	250 (9.84)	370 (14.57)	234 (9.21)	139 (5.47)	93 (3.66)	117.7 (4.63)	125 (4.92)	108 (4.25)	97.6 (3.84)	24.3 (0.96)	30 (66)

### M 900 primary head with clamp connection

1" - 4"

### IFM 3080 K integral flowmeter with clamp connection

1" - 4"



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