KROHNE

GR/PRINTO

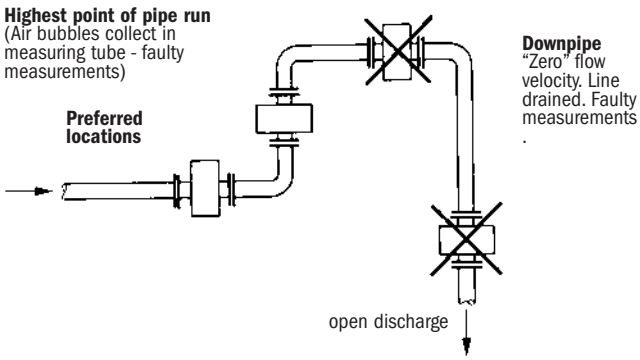
Electromagnetic Flowmeters

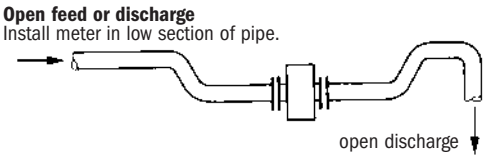
- **Installation notes**
- **Sizing guide**
- **Ordering guide**

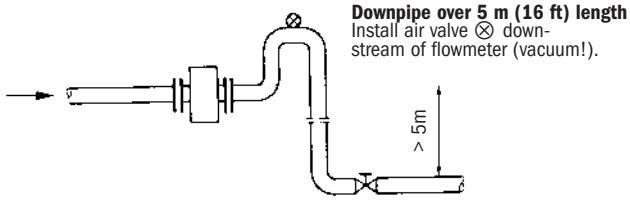
Installation notes 3.1

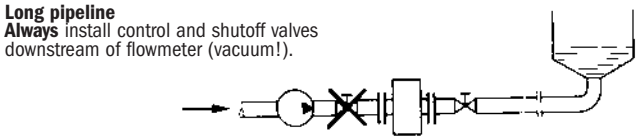
Installation in the pipeline

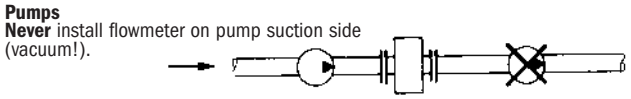
- **Location and position as required,** but electrode axis must be approximately horizontal
- **Stud bolts and nuts,** to install, make sure there is sufficient room next to the pipe flanges
- **Vibration,** support the pipeline on both sides of the flowmeter
- **Large meter sizes (> DN 200 or > 8”),** use adapter pipes to permit axial shifting of counterflanges to facilitate installation.
- **Straight inlet run minimum of 5 x DN and outlet run minimum of 2 x DN (DN = meter size),** measured from electrode axis (undisturbed flow)
- **Vortex or corkscrew flow,** increase inlet and outlet sections or install flow straighteners
- **Strong electromagnetic fields,** avoid in vicinity of flowmeter
- **Thermally insulated pipeline,** do not insulate flowmeter
- **Suggestions for installation**
  To avoid measuring errors due to air inclusion, please observe the following:











Electrical conductivity of the fluid

Measurement is independent of the conductivity of the fluid, provided it is above the limit specified for the various systems.

For most primary heads, the lower limit is 5 µS/cm.

Distance between primary head and signal converter

The maximum distance is limited by

- conductivity of the fluid
- for systems with pulsed d.c. field excitation, by the cross-sectional area of the field power cable
- for systems with hazardous location approval (European Standard or Factory Mutual), by the capacitance of the signal transmission cable

If more than one of these points apply, the shortest distance is binding.

Precise information on the distance between primary head and signal converter, connection diagrams and length of the signal transmission cable is given in the individual signal converter specifications.

Magnetic inductive flowmeters should be installed and wired in accordance with the information and directions given in the installation and operating instructions.

Sizing guide 3.1

Recommendations for installation

Selection of meter size

The size of primary head should if possible be selected to provide a velocity of 2 to 3 m/s or 6 to 9 ft/sec. for the full-scale range. Minimum full-scale range is 0.5 m/s or 1.5 ft/sec., maximum is 10 or 11 m/s or 30 or 33 ft/sec., depending on flowmeter type.

For fluids with a solids content, the velocity should be between 3 and 5 m/s or 9 and 15 ft/s to prevent deposits and minimize abrasion.

Exact determination of flow velocity

For range setting purposes, the exact flow velocity can be determined using the flow table for each nominal pipe width.

Example: v in m/s

Nominal pipe diameter	DN 150
Desired measuring range	200 m³/h

From the table we obtain for the flow velocity of 1 m/s a flow rate of 63.617 m³/h at DN 150; for 200 m³/h the flow velocity v is:

$$v = \frac{200\,m^3/h}{63.617\,m^3/h} \times 1\,m/s$$

$$v = 3.144\,m/s$$

Example: v in ft/s

Nominal pipe diameter	6”
Desired measuring range	1000 US GPM

From the table we obtain for the flow velocity of 1 ft/s a flow rate of 88.128 US GPM at 6” meter size; for 1000 US GPM the flow velocity v is:

$$v = \frac{1000\ US\ GPM}{88.128\ US\ GPM} \times 1\,ft/s$$

$$v = 11.35\,ft/s$$

Flow tables

v = 1m/s

Meter size DN mm	Flow rate m3/h	Meter size DN mm	Flow rate m3/h
2.5	0.017671	**250**	176.71
4	0.045239	**300**	254.47
6	0.10179	**350**	346.36
10	0.28274	**400**	452.39
15	0.63617	**500**	706.86
20	1.1310	**600**	1017.9
25	1.7671	**700**	1385.4
32	2.8953	**800**	1809.6
40	4.5239	**900**	2209.2
50	7.0686	**1000**	2827.4
65	11.946	**1200**	4071.5
80	18.096	**1400**	5541.8
100	28.274	**1600**	7238.2
125	44.179	**1800**	9160.9
150	63.617	**2000**	11310
200	113.10		

v = 1ft/s

Meter size inch	Flow rate US GMP	Meter size inch	Flow rate US GMP
1/10	0.024480	**10**	244.80
1/8	0.038250	**12**	352.51
1/4	0.15300	**14**	479.81
3/8	0.34425	**16**	626.69
1/2	0.61200	**20**	979.21
3/4	1.3770	**24**	1410.1
1	2.4480	**28**	1919.2
1 1/4	3.8250	**32**	2506.8
1 1/2	5.5080	**36**	3172.6
2	9.7921	**40**	3916.8
2 1/2	15.300	**48**	5640.2
3	22.032	**56**	7677.0
4	39.168	**64**	10027
5	61.200	**72**	12691
6	88.128	**80**	15667
8	156.67		

Protection classes

to IEC 529/EN 60529

IP 20, equivalent to **NEMA 1**	Protection against accidental large-area hand contact	Protection against foreign bodies of > 12 mm or 1/2” diameter	No protection against water
IP 65, equivalent to **NEMA 4 and 4X**	Protection against contact with means of any kind	Total protection against ingress of dust (dust-proof enclosure)	Protection against jets of water from any direction (hose-proof)
IP 66, equivalent to **NEMA 4 and 4X**	Protection against contact with means of any kind	Total protection against ingress of dust (dust-proof enclosure)	Protection against jets of water and heavy seas
IP 67	Protection against contact with means of any kind	Total protection against ingress of dust (dust-proof enclosure)	Protection against immersion in water
IP 68 equivalent to **NEMA 6**	Protection against contact with means of any kind	Total protection against ingress of dust (dust-proof enclosure)	Protection against ingress of water under pressure (water-tight)

Sizing Guide 3.1

Pressure Loss Calculation

A primary head with a smaller meter size may prove to be more economical for pipe runs with a low flow velocity. The pressure loss resulting from pipe reduction/expansion and from the greater velocity in the primary head can be calculated as follows:

$\zeta_1 \zeta_3$ nondimensional quantities as a function of the Reynolds number (see diagrams)

ζ_2 nondimensional quantity: 0.02 for KROHNE flowmeters

ρ density in kg/m³

d_1, d_2 pipe I.D. in metres and inches

v_1, v_2 flow velocity in m/s and ft/s

Pressure loss in mbar

(1) Pressure loss, reducing section

$$\Delta p_1 = \frac{\rho}{2} \times \zeta_1 \times v_2^2$$

(2) Pressure loss, primary head

$$\Delta p_2 = \frac{\rho}{2} \times \zeta_2 \times v_2^2$$

(3) Pressure loss, expanding section

$$\Delta p_3 = \frac{\rho}{2} \times \zeta_3 \times v_1^2$$

Total pressure loss is:

$$\Delta p_{tot.} = (\Delta_{p1} + \Delta_{p2} + \Delta_{p3}) \times 0.01 \text{ [mbar]}$$

Pressure loss in inches w.c. (water column)

(1) Pressure loss, reducing section

$$\Delta p_1 = \frac{\rho}{2} \times \zeta_1 \times v_2^2 \times 3.654 \times 10^{-4}$$

(2) Pressure loss, primary head

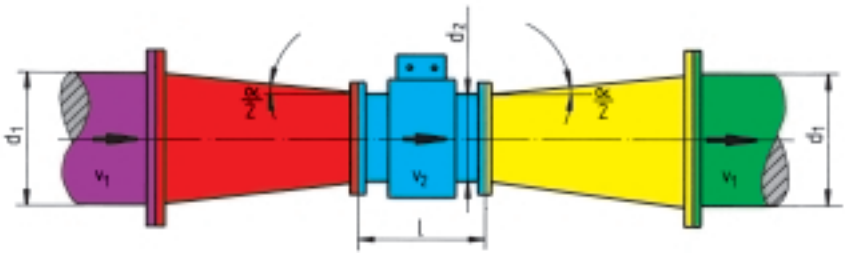
$$\Delta p_2 = \frac{\rho}{2} \times \zeta_2 \times v_2^2 \times 3.654 \times 10^{-4}$$

(3) Pressure loss, expanding section

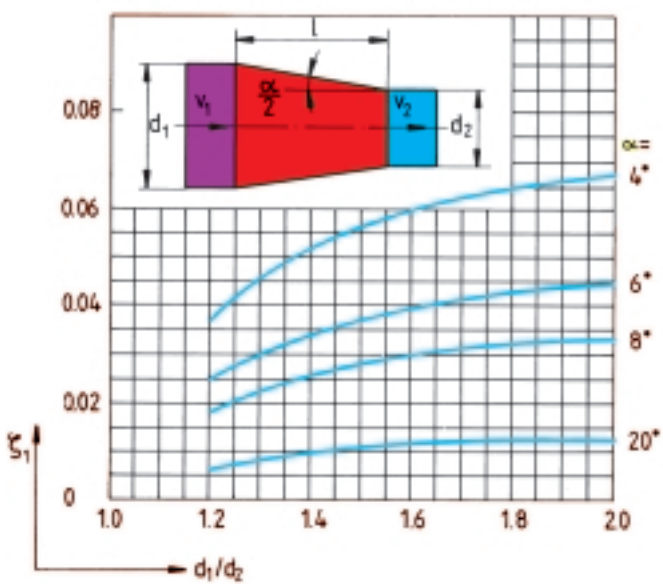
$$\Delta p_3 = \frac{\rho}{2} \times \zeta_3 \times v_1^2 \times 3.654 \times 10^{-4}$$

Total pressure loss is:

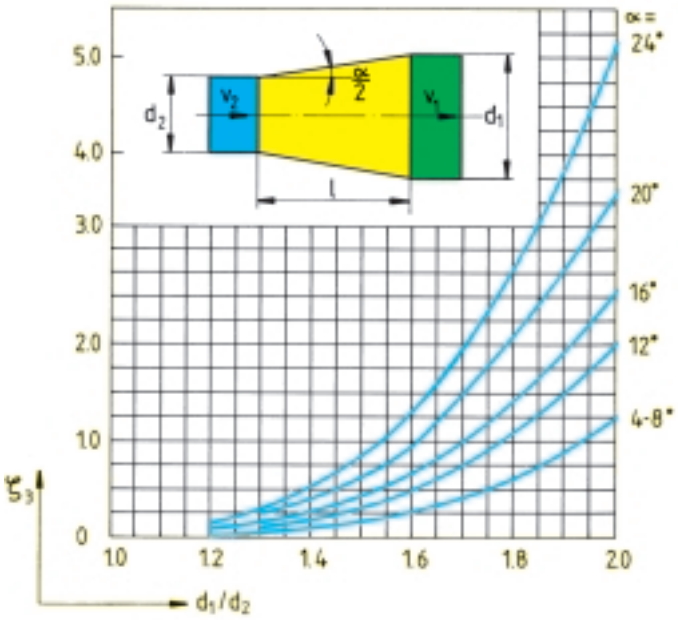
$$\Delta p_{tot.} = (\Delta_{p1} + \Delta_{p2} + \Delta_{p3}) \text{ [inches w.c.]}$$



Reducing section



Expanding section



The reducing angle (α) should not exceed 8° (equivalent to $\alpha/2 = 4°$), otherwise measuring accuracy may be affected. If the reducing angle is greater, a straight inlet section must be fitted between reducing socket and primary head.

For the expanding section, the optimum angle of expansion is $\alpha = 8°$.

ζ at $\alpha = 8h$

d_1/d_2	1.2	1.3	1.4	1.5	1.6	1.7	1.8	1.9	2.0
$\zeta 1$	0.018	0.023	0.0255	0.028	0.03	0.0308	0.0315	0.0323	0.0332
$\zeta 3$	0.01	0.02	0.07	0.15	0.26	0.43	0.64	0.9	1.25

Sizing Guide 3.1

Ordering Guide

Magnetic-inductive primary head IFS 1000 F for connection to signal converter
IFC 010 K/F, IFC 20 K/F/E, IFC 090 K/F, IFC 110 F or IFC 210 E
DC-field operation for liquids > 5 (water > 20) µS / cm

Code Primary head

V313 0

1	IFS 1000	F	DN	10	/	3/8"	(for flanges DN 15 / 1/2")	*
2	IFS 1000	F	DN	15	/	1/2"		*
4	IFS 1000	F	DN	25	/	1"		
6	IFS 1000	F	DN	40	/	1 1/2"		
7	IFS 1000	F	DN	50	/	2"		
A	IFS 1000	F	DN	80	/	3"		
B	IFS 1000	F	DN	100	/	4"		
D	IFS 1000	F	DN	150	/	6"		

Pressure rating

3	PN 16	DIN 2501	(DN 100 - DN 150)	[max. working pressure 16 bar]
5	PN 40	DIN 2501	(DN 10 - DN 80)	[max. working pressure 16 bar]
A	150 lb	ANSI RF	(3/8" - 6")	[max. working pressure 232 psi]
B	300 lb	ANSI RF	(3/8" - 4")	[max. working pressure 232 psi]
M	JIS 20 K		(DN 10 - DN 100)	[max. working pressure 16 bar]
N	JIS 10 K		(DN 150)	[max. working pressure 10 bar]

Mounting material

1	Steel, galv.	/	Rubber sleeves
2	st. Steel A2	/	Rubber sleeves
3	Rubber sleeves		

Version / Signal converter

1	IFS 1000 F	(without converter)					
2	IFS 1000	(modular) separate version without connection box					
4	IFC 1010 K	(for IFC 010 K)					
5	IFC 1010 F	(for IFC 010 F)	G	IFM 1020 E	(for IFC 020 E)		
7	IFM 1080 K	(for IFC 090 K)	R	IFM 1210 E	(for IFC 210 E)		
8	IFM 1080 F	(for IFC 090 F)	U	IFM 1080 K	(for IFC 090 K)	Ex nA	
A	IFM 1110 F	(for IFC 110 F)	V	IFM 1080 F	(for IFC 090 F)	Ex nA	
E	IFM 1020 K	(for IFC 020 K)	W	IFM 1080 K	(for IFC 090 K)	Div 2	
F	IFM 1020 F	(for IFC 020 F)	X	IFM 1080 F	(for IFC 090 F)	Div 2	

Language Operating manual / Cable connection

1	D	2	GB	3	US	4	F	PG 13,5
5	D	6	GB	7	US	8	F	1/2" NPT
A	D	B	GB	C	US	D	F	PF 1/2
E	D	F	GB	G	US	H	F	modular/compact

Calibration

0	standard	(incl. converter)
4		
5	GK + GKL	(for IFC 010, IFC 020, IFC 090, IFC 110, IFC 210)

* incl. earthing rings made out of st. Steel 316 Ti and Viton gaskets

V313 [ ][ ][ ][ ][ ][ ][ ][ ] **Complete ordering code**

Ordering Guide

Magnetic-inductive primary head IFS 2000 F / IFS 2005 F for connection to
signal converter IFC 090 F, IFC 110 F or SC 150
DC-field operation for liquids with conductivity > 5 (water > 20) µS/cm

Code Primary head

V322 **0**

D IFS 2000 F DN 150 / 6"
E IFS 2000 F DN 200 / 8"
F IFS 2000 F DN 250 / 10"

Pressure rating

2 PN 10 DIN 2501 smooth packing strip (DN 200 - DN 250)
3 PN 16 DIN 2501 smooth packing strip (DN 150)
A ANSI 150 lb FF
N JIS 10 K

Material of electrodes

1 1.4571
3 Hastelloy C4
5 Tantalum
6 Titanium
7 Platinum DN 150
7 Platinum ≥ DN 200
G Low-Noise (basic material Hastelloy C4) *others* *see price list 12*

Version / Signal converter

1 IFS 2000 F (***without*** converter)
3 IFS 2005 F (***without*** converter)
A IFM 2110 F (for IFC 110 F)
B IFM 2155 F (for SC 150)
V IFM 2080 F (for IFC 090 F)

Language Operating manual — **Cable connection**

1	D	**2**	GB	**3**	US	**4**	F	PG 13,5
5	D	**6**	GB	**7**	US	**8**	F	1/2" NPT
A	D	**B**	GB	**C**	US	**D**	F	PF 1/2

Gasket of electrodes

1 Viton
2 Kalrez

4

Integrated earthing rings / Gaskets

0 **1** st. Steel 316L mit O-Ring Viton DN 150
0 **1** st. Steel 316L mit O-Ring Viton DN 200
0 **1** st. Steel 316L mit O-Ring Viton DN 250

Calibration

0 **0** standard (incl. converter)
4 **6** GK + GKH (for IFC 090, IFC 110, SC 150)

Mounting of electrodes

0 **1** fixed
4 **2** replaceable in workshop

V322 [ ][ ][ ][ ][ ][ ][ ][ ][ ][ ] **Complete ordering code**

Ordering Guide

Code Primary head

V303 **0**

1 IFS 4000 F DN 10 / 3/8" flanges 1/2" PTFE
2 IFS 4000 F DN 15 / 1/2" PTFE
3 IFS 4000 F DN 20 / 3/4" PTFE

Pressure rating

5 PN 40 DIN 2501
A ANSI 150 lb RF
M JIS 20 K
N JIS 10 K
others on request

Protection category ***(Ex-protection only in connection to IFC 090 Ex, IFC 110 Ex or IFC 210 Ex)***

1 IP 67
2 IP 68 DS, 10 m
3 IP 68 BTS, 10 m
4 IP 67 EEx zone 1
5 IP 67 Ex nA zone 2
6 IP 68 Ex nA zone 2
7 IP 67 SEV EEx (Swiss)
8 IP 68 DS/LIYCY, 10 m
A IP 67 A Ex / Div 1 (USA)
B IP 67 A Ex / Div 2 (USA)
C IP 67 J Ex (Japan)
D IP 67 C/GP (CSA / Canada)
G IP 67 **ISO-length**
H IP 68 DS, 10 m **ISO-length**
K IP 68 BTS, 10 m **ISO-length**
L IP 67 EEx zone 1 **ISO-length**
M IP 67 Ex nA zone 2 **ISO-length**
N IP 68 Ex nA zone 2 **ISO-length**
V IP 67 SEV EEx (Swiss) **ISO-length**
P IP 68 DS/LIYCY, 10 m **ISO-length**
R IP 67 A Ex / Div 1 (USA) **ISO-length**
S IP 67 A Ex / Div 2 (USA) **ISO-length**
T IP 67 J Ex (Japan) **ISO-length**
U IP 67 C/GP (CSA / Canada) **ISO-length**

Version / Signal converter

1 IFS 4000 F (***without*** converter)
4 IFS 4000 (modular) separate version ***without*** connection box
5 IFM 4020 K (for IFC 020 K)
6 IFM 4020 F (for IFC 020 F)
7 IFM 4010 K (for IFC 010 K)
8 IFM 4010 F (for IFC 010 F)
A IFM 4080 K (for IFC 090 K)
B IFM 4080 F (for IFC 090 F)
D IFM 4110 F (for IFC 110 F)
L IFM 4020 E (for IFC 020 E)
M IFM 4080 K/Ex-i (for IFC 090 K/Ex-i)
N IFM 4080 F/Ex-i (for IFC 090 F/Ex-i)
R IFM 4210 E (for IFC 210 E)

Language Operating manual

								Cable connection
1	D	**2**	GB	**3**	US	**4**	F	PG 13,5
5	D	**6**	GB	**7**	US	**8**	F	1/2" NPT
A	D	**B**	GB	**C**	US	**D**	F	PF 1/2
E	D	**F**	GB	**G**	US	**H**	F	modular/compact

Liner (Option)

0 standard
2 provided for protection rings

4

Electrodes

0 **3** Hastelloy C (standard)
4 **4** Hastelloy B2
4 **5** Tantalum
4 **6** Titanium
4 **7** Platinum (wetted parts)
4 *others* *see price list 12*

Mounting of electrodes

0 **1** fixed

Material of flange

0 **1** Steel St 37-C22 / A 105
4 **2** Stainless Steel 1.4306 (304 L)
4 **3** Stainless Steel 1.4404 (316 L)
4 **4** Stainless Steel 1.4571 (316 Ti) DIN only

Primary constant

0 **0** standard (incl. converter)
4 **5** GK + GKL (for IFC 010, IFC 020, IFC 090, IFC 110, IFC 210)

V303									1			**Complete ordering code**

Ordering Guide

Magnetic-inductive primary head IFS 4000 / IFS 4005 F
for connection to signal converter IFC 010 K/F, IFC 020 K/F/E,
IFC 090 K/F, IFC 110 F, IFC 210 E or SC 150 (≥ DN 50)
DC-field operation for liquids with conductivity > 5 (water > 20) µS/cm

Code Primary head

V303 **0**

4	IFS 4000	F	DN	25	/	1"	Teflon PFA
5	IFS 4000	F	DN	32	/		Teflon PFA
6	IFS 4000	F	DN	40	/	1 1/2"	Teflon PFA
7	IFS 4000	F	DN	50	/	2"	Teflon PFA
8	IFS 4000	F	DN	65	/		Teflon PFA
A	IFS 4000	F	DN	80	/	3"	Teflon PFA
B	IFS 4000	F	DN	100	/	4"	Teflon PFA
C	IFS 4000	F	DN	125	/		Teflon PFA
D	IFS 4000	F	DN	150	/	6"	Teflon PFA

Pressure rating

3	PN 16	DIN 2501	(DN 65, 100 - DN 150)
5	PN 40	DIN 2501	(DN 25 - DN 80 *without* DN 65)
A	ANSI 150	lb RF	
M	JIS 20 K		(DN 25 - DN 50)
N	JIS 10 K		(DN 65 - DN 150) *others on request*

Protection category **(Ex-protection only in connection to IFC 090 Ex, IFC 110 Ex or IFC 210 Ex)**

1	IP 67		
2	IP 68	DS, 10 m	
3	IP 68	BTS, 10 m	
4	IP 67	EEx zone 1	
5	IP 67	Ex nA zone 2	
6	IP 68	Ex nA zone 2	
7	IP 67	SEV EEx (Swiss)	
8	IP 68	DS/LIYCY, 10 m	
A	IP 67	A Ex / Div 1 (USA)	
B	IP 67	A Ex / Div 2 (USA)	
C	IP 67	J Ex (Japan)	
D	IP 67	C/GP (CSA / Canada)	
G	IP 67		**ISO-length**
H	IP 68	DS, 10 m	**ISO-length**
K	IP 68	BTS, 10 m	**ISO-length**
L	IP 67	EEx zone 1	**ISO-length**
M	IP 67	Ex nA zone 2	**ISO-length**
N	IP 68	Ex nA zone 2	**ISO-length**
V	IP 67	SEV EEx (Swiss)	**ISO-length**
P	IP 68	DS/LIYCY, 10 m	**ISO-length**
R	IP 67	A Ex / Div 1 (USA)	**ISO-length**
S	IP 67	A Ex / Div 2 (USA)	**ISO-length**
T	IP 67	J Ex (Japan)	**ISO-length**
U	IP 67	C/GP (CSA / Canada)	**ISO-length**

Version / Signal converter

1	IFS 4000 F		(***without*** converter)
2	IFS 4005 F		(***without*** converter > DN 50)
4	IFS 4000		(modular) separate version ***without*** connection box
5	IFM 4020 K		(for IFC 020 K)
6	IFM 4020 F		(for IFC 020 F)
7	IFM 4010 K		(for IFC 010 K)
8	IFM 4010 F		(for IFC 010 F)
A	IFM 4080 K		(for IFC 090 K)
B	IFM 4080 F		(for IFC 090 F)
H	IFM 4115 F		(for SC 150 F/> DN 50)
D	IFM 4110 F		(for IFC 110 F)
L	IFM 4020 E		(for IFC 020 E)
M	IFM 4080 K/Ex-i		(for IFC 090 K/Ex-i)
N	IFM 4080 F/Ex-i		(for IFC 090 F/Ex-i)
R	IFM 4210 E		(for IFC 210 E)

Language Operating manual **Cable connection**

1	D	**2**	GB	**3**	US	**4**	F	PG 13,5
5	D	**6**	GB	**7**	US	**8**	F	1/2" NPT
A	D	**B**	GB	**C**	US	**D**	F	PF 1/2
E	D	**F**	GB	**G**	US	**H**	F	modular/compact

Liner (Option)

0	standard
S	provided for protection rings

Electrodes

3	Hastelloy C (standard)
4	Hastelloy B2
5	Tantalum
6	Titanium
7	Platinum (wetted parts) *others see price list page 12*

Mounting of electrodes

1	fixed (new construction)
2	replaceable (old construction)

Material of flange

1	Steel St 37-C22 / A 105
2	Stainless Steel 1.4306 (304 L)
3	Stainless Steel 1.4404 (316 L)
4	Stainless Steel 1.4571 (316 Ti) DIN only

Primary constant

0	standard	(incl. converter)
5	GK + GKL	(for IFC 010, IFC 020, IFC 090, IFC 110, IFC 210)
6	GK + GKH	(for IFC 020, IFC 090, IFC 110, IFC 210, SC 150)

V303 [ ][ ][ ][ ][ ][ ][ ][ ][ ][ ][ ][ ] **Complete ordering code**

Ordering Guide

Magnetic-inductive primary head IFS 4000 / IFS 4005 F for connection to signal converter Page 05
IFC 010 K/F, IFC 020 K/F/E, IFC 090, IFC 110 F, IFC 210 E or SC 150 (> DN 50) **ALTOFLUX IFS 4000 / 4005**
DC-field operation for liquids with conductivity > 5 (water> 20) µS/cm **DN 200 - DN 400 / 8" - 16"**

Code Primary head

V303	0	E	IFS 4000	F	DN	200	/	8"	PTFE		
		E	IFS 4000	F	DN	200	/	8"	Tefzel	(gasket of electrodes: Kalrez)	
		E	IFS 4000	F	DN	200	/	8"	Hardrubber	**only for Ex !**	
		F	IFS 4000	F	DN	250	/	10"	PTFE		
		F	IFS 4000	F	DN	250	/	10"	Tefzel	(gasket of electrodes: Kalrez)	
		F	IFS 4000	F	DN	250	/	10"	Hardrubber	**only for Ex !**	
		G	IFS 4000	F	DN	300	/	12"	PTFE		
		G	IFS 4000	F	DN	300	/	12"	Tefzel	(gasket of electrodes: Kalrez)	
		G	IFS 4000	F	DN	300	/	12"	Hardrubber	**only for Ex !**	
		H	IFS 4000	F	DN	350	/	14"	PTFE		
		H	IFS 4000	F	DN	350	/	14"	Tefzel	(gasket of electrodes: Kalrez)	
		H	IFS 4000	F	DN	350	/	14"	Hardrubber	**only for Ex !**	
		K	IFS 4000	F	DN	400	/	16"	PTFE		
		K	IFS 4000	F	DN	400	/	16"	Tefzel	(gasket of electrodes: Kalrez)	
		K	IFS 4000	F	DN	400	/	16"	Hardrubber	**only for Ex !**	

Pressure rating **(others on request)**

2	PN 10	DIN 2501	
A	ANSI 150 lb RF	DN ≥ 300 (12"):	max. operating pressure 10 bar (higher on request)
M	JIS 20 K		max. operating pressure 10 bar (higher on request)
N	JIS 10 K		max. operating pressure 10 bar (higher on request)

Protection category ***(Ex-protection only in connection to IFC 090 Ex, IFC 110 Ex or IFC 210 Ex)***

1	IP 67			**G**	IP 67				
2	IP 68	DS, 10 m		**H**	IP 68	DS, 10 m			
3	IP 68	BTS, 10 m		**K**	IP 68	BTS, 10 m			
4	IP 67	EEx zone 1	≤ DN 300	**L**	IP 67	EEx zone 1	≤ DN 300		
4	IP 67	EEx zone 1	≥ DN 350	**L**	IP 67	EEx zone 1	≥ DN 350		
5	IP 67	Ex nA zone 2		**M**	IP 67	Ex nA zone 2			
6	IP 68	Ex nA zone 2		**N**	IP 68	Ex nA zone 2			
7	IP 67	SEV EEx (Swiss)		**V**	IP 67	SEV EEx	≤ DN 300	252 128,85	≥ DN 350
8	IP 68	DS/LIYCY, 10 m		**P**	IP 68	DS/LIYCY, 10 m			
A	IP 67	A Ex / Div 1 (USA)		**R**	IP 67	A Ex / Div 1 (USA)			
B	IP 67	A Ex / Div 2 (USA)		**S**	IP 67	A Ex / Div 2 (USA)			
C	IP 67	J Ex (Japan)		**T**	IP 67	J Ex (Japan)	≤ DN 300	252 128,85	≥ DN 350
D	IP 67	C/GP (CSA / Canada)		**U**	IP 67	C/GP (CSA / Canada)			

Version / Signal converter

1	IFS 4000 F		(***without*** converter)
2	IFS 4005 F		(***without*** converter)
4	IFS 4000		(modular)
5	IFM 4020 K		(for IFC 020 K)
6	IFM 4020 F		(for IFC 020 F)
7	IFM 4010 K		(for IFC 010 K)
8	IFM 4010 F		(for IFC 010 F)
A	IFM 4080 K		(for IFC 090 K)
B	IFM 4080 F		(for IFC 090 F)
H	IFM 4115 F		(for SC 150 F)
D	IFM 4110 F		(for IFC 110 F)
L	IFM 4020 E		(for IFC 020 E)
M	IFM 4080 K/Ex-i		(for IFC 090 K/Ex-i)
N	IFM 4080 F/Ex-i		(for IFC 090 F/Ex-i)
R	IFM 4210 E		(for IFC 210 E)

Language Operating manual **Cable connection**

1	D	**2**	GB	**3**	US	**4**	F	PG 13,5
5	D	**6**	GB	**7**	US	**8**	F	1/2" NPT
A	D	**B**	GB	**C**	US	**D**	F	PF 1/2
E	D	**F**	GB	**G**	US	**H**	F	modular/compact

Liner (Option)

4	**1**	PTFE
4	**2**	provided for protection rings (PTFE)
4	**3**	PFA
4	**5**	Hardrubber
4	**A**	Softrubber
4	**D**	Irathane (PU)
4	**G**	FEP
0	**K**	Tefzel gasket of electrodes Viton (DN 200 - DN 600 / 8" - 24")

Electrodes **others see price list 12**

0	**3**	Hastelloy C (standard)
4	**4**	Hastelloy B
4	**5**	Tantalum
4	**6**	Titanium
4	**7**	Platinum (wetted parts)

Mounting of electrodes

0	**1**	fixed	
4	**6**	WE Stainless Steel 316 Ti	DN > 350 / 14"

Material of flange

0	**1**	Steel St 37-C22 / A 105	
4	**2**	st. Steel 1.4306 (304 L)	**4** st. Steel 1.4571 316 Ti) DIN only
4	**3**	st. Steel 1.4404 (316 L)	

Primary constant

0	**0**	standard	(incl. converter)
4	**5**	GK + GKL	(for IFC 010, IFC 020, IFC 090, IFC 110, IFC 210)
4	**6**	GK + GKH	(for IFC 020, IFC 090, IFC 110, IFC 210, SC 150)

V303													**Complete ordering code**

Ordering Guide

Magnetic-inductive primary head IFS 4000 / IFS 4005 F for connection to signal converter — **Page 06**
IFC 010 K/F, IFC 020 K/F/E, IFC 090 K/F, IFC 110 F, IFC 210 E or SC 150 — **ALTOFLUX IFS 4000 / 4005**
DC-field operation for liquids > 5 (water > 20) µS/cm — **DN 500 - DN 1000 / 20" - 40"**

Code Primary head

V303	0	M	IFS 4000	F	DN	500	/	20"	PTFE		
		M	IFS 4000	F	DN	500	/	20"	Tefzel	(gasket of electrodes: Kalrez)	
		M	IFS 4000	F	DN	500	/	20"	Hardrubber	**only for Ex !**	
		N	IFS 4000	F	DN	600	/	24"	PTFE		
		N	IFS 4000	F	DN	600	/	24"	Tefzel	(gasket of electrodes: Kalrez)	
		N	IFS 4000	F	DN	600	/	24"	Hardrubber	**only for Ex !**	
		P	IFS 4000	F	DN	700	/	28"	FEP, glued		
		P	IFS 4000	F	DN	700	/	28"	Hardrubber	**only for Ex !**	
		R	IFS 4000	F	DN	800	/	32"	FEP, glued		
		R	IFS 4000	F	DN	800	/	32"	Hardrubber	**only for Ex !**	
		S	IFS 4000	F	DN	900	/	36"	FEP, glued		
		S	IFS 4000	F	DN	900	/	36"	Hardrubber	**only for Ex !**	
		T	IFS 4000	F	DN	1000	/	40"	FEP, glued		
		T	IFS 4000	F	DN	1000	/	40"	Hardrubber	**only for Ex !**	

Pressure rating *(others on request)*

2	PN 10	DIN 2501	smooth packing strip	(DN 500 - DN 1000)
A	ANSI 150 lb RF		(20" - 40")	> 12" : up to max. 10 bar (higher on request)
M	JIS 20 K		up to max. 10 bar (higher on request)	
N	JIS 10 K		up to max. 10 bar (higher on request)	

Protection category ***

			DEM	EUR		
###	###		0	0,00	### #####	SEV EEx (Swiss)
###	###	DS, 10 m	719	367,62	### #####	DS/LIYCY, 10 m
###	###	BTS, 10 m	785	401,36	### #####	A Ex / Div 1 (USA)
###	###	EEx zone 1	1.487	760,29	### #####	A Ex / Div 2 (USA)
###	###	Ex nA zone 2	80	40,90	### #####	J Ex (Japan)
###	###	Ex nA zone 2	799	408,52	### #####	C/GP (CSA / Canada)

Version / Signal converter

1	IFS	4000 F	(***without*** converter)
2	IFS	4005 F	(***without*** converter)
4	IFS	4000	(modular)
5	IFM	4020 K	(for IFC 020 K)
6	IFM	4020 F	(for IFC 020 F)
7	IFM	4010 K	(for IFC 010 K)
8	IFM	4010 F	(for IFC 010 F)
A	IFM	4080 K	(for IFC 090 K)
B	IFM	4080 F	(for IFC 090 F)
H	IFM	4115 F	(for SC 150 F)
D	IFM	4110 F	(for IFC 110 F)
L	IFM	4020 E	(for IFC 020 E)
M	IFM	4080 K/Ex-i	(for IFC 090 K/Ex-i)
N	IFM	4080 F/Ex-i	(for IFC 090 F/Ex-i)
R	IFM	4210 E	(for IFC 210 E)

Language Operating manual — **Cable connection**

1	D	2	GB	3	US	4	F	PG 13,5
5	D	6	GB	7	US	8	F	1/2" NPT
A	D	B	GB	C	US	D	F	PF 1/2
E	D	F	GB	G	US	H	F	modular/compact

Liner (Option)

4	1	PTFE (≤ DN 600)
4	2	provided for protection rings (PTFE)
4	5	Hardrubber
4	A	Softrubber
4	D	Irathane (PU)
4	G	FEP (≥ DN 700 / > 28")
0	K	Tefzel gasket of electrodes: Viton (DN 500 - DN 600 / 20" - 24")

Electrodes

0	3	Hastelloy C (standard)
4	4	Hastelloy B
4	5	Tantalum
4	6	Titanium
4	7	Platinum (wetted parts)
4	*others*	see price list 12

Mounting of electrodes

0	1	fixed
4	6	WE Stainless Steel 316 Ti

Material of flange

0	1	Steel St 37-C22 / A 105
4	2	st. Steel 1.4306 (304 L)
4	3	st. Steel 1.4404 (316 L)
4	4	st. Steel 1.4571 (316 Ti) DIN only

Primary constant

0	0	standard (incl. converter)
4	5	GK + GKL (for IFC 010, IFC 020, IFC 090, IFC 110, IFC 210)
4	6	GK + GKH (for IFC 020, IFC 090, IFC 110, IFC 210, SC 150)

**** Ex protection only in connection to IFC 090 Ex, IFC 110 Ex or IFC 210 Ex*

V303														**Complete ordering code**

Ordering Guide

Magnetic-inductive primary head IFS 4000 / IFS 4005 F for connection to signal converter IFC 110 F or SC 150
DC-field operation for liquids with conductivity > 5 (water > 20) µS/cm

Code Primary head

V303	0	U	IFS 4000	F	DN	1200	/	48"	FEP, glued
		V	IFS 4000	F	DN	1400	/	56"	FEP, glued
		W	IFS 4000	F	DN	1600	/	64"	FEP, glued
		X	IFS 4000	F	DN	1800	/	72"	FEP, glued
		Y	IFS 4000	F	DN	2000	/	80"	FEP, glued

Pressure rating

1	PN 6	DIN 2501 smooth packing strip	(DN 1200 - DN 2000)
A	ANSI	150 lb RF	(48" - 120")

Protection category *(Ex-protection only in connection to IFC 090 F/Ex or IFC 110 F/Ex*

1	IP 67	
2	IP 68	DS, 10 m
3	IP 68	BTS, 10 m
4	IP 67	EEx zone 1
5	IP 67	Ex nA zone 2
6	IP 68	Ex nA zone 2
7	IP 67	SEV EEx (Swiss)
8	IP 68	DS/LIYCY, 10 m
A	IP 67	A Ex / Div 1 (USA)
B	IP 67	A Ex / Div 2 (USA)
C	IP 67	J Ex (Japan)
D	IP 67	C/GP (CSA / Canada)

Version / Signal converter

1	IFS	4000 F	(***without*** converter)
5	IFM	4020 K	(for IFC 020 F ≤ DN 1600)
6	IFM	4020 F	(for IFC 020 F ≤ DN 1600)
A	IFM	4080 K	(for IFC 090 F ≤ DN 1600)
B	IFM	4080 F	(for IFC 090 F ≤ DN 1600)
D	IFM	4110 F	(for IFC 110 F ≤ DN 1600)
F	IFM	4150 F	(for SC 150 > DN 1600)
L	IFM	4020 E	(for IFC 020 E ≤ DN 1600)
N	IFM	4080 F/Ex-i	(for IFC 090 F ≤ DN 1600)

Language Operating manual							**Cable connection**
1	D	2	GB	3	US	4	F	PG 13,5
5	D	6	GB	7	US	8	F	1/2" NPT
A	D	B	GB	C	US	D	F	PF 1/2

Liner (Option)

4 2	provided for protection rings
4 A	Softrubber
4 D	Irathane (PU)
0 G	FEP

Electrodes

0 3	Hastelloy C (standard)
4 4	Hastelloy B
4 5	Tantalum
4 6	Titanium
4 7	Platinum (wetted parts)

others see price list page 12

Mounting of electrodes

0 1	fixed		
4 6	WE	Stainless Steel 316 Ti	(standard)

Material of flange

0 1	Steel 37-C22 / A 105
4 2	Stainless Steel 1.4306 (304 L)
4 3	Stainless Steel 1.4404 (316 L)
4 4	Stainless Steel 1.4571 (316 ti) DIN only

Primary constant

0 0	standard	(incl. converter)
4 6	GK + GKH	(for IFC 020, 090, 110, 210, SC 150)

V303												**Complete ordering code**

Ordering Guide

Magnetic-inductive primary head AQUAFLUX for connection to signal converter
IFC 010 K/F, IFC 020 K/F/E, IFC 090 K/F, IFC 110 F or IFC 210 E
DC-field operation for liquids with conductivity > 5 (water > 20) µS/cm

Code Primary head

V323	0	1	Aquaflux	F	DN	10	/	3/8"	flanges 1/2"	PTFE
		2	Aquaflux	F	DN	15	/	1/2"		PTFE
		3	Aquaflux	F	DN	20	/	3/4"		PTFE
		4	Aquaflux	F	DN	25	/	1"		Hardrubber
		5	Aquaflux	F	DN	32	/			Hardrubber
		6	Aquaflux	F	DN	40	/	1 1/2"		Hardrubber
		7	Aquaflux	F	DN	50	/	2"		Hardrubber
		8	Aquaflux	F	DN	65	/	2 1/2"		Hardrubber
		A	Aquaflux	F	DN	80	/	3"		Hardrubber
		B	Aquaflux	F	DN	100	/	4"		Hardrubber
		C	Aquaflux	F	DN	125	/	5"		Hardrubber
		D	Aquaflux	F	DN	150	/	6"		Hardrubber

Pressure rating

3	PN 16	DIN 2501	(DN 65, DN 100 - DN 150)
5	PN 40	DIN 2501	(DN 10 - DN 80 *without* DN 65)
A	ANSI 150	lb RF	
M	JIS 20 K		(DN 10 - DN 50)
N	JIS 10 K		(DN 65 - DN 150)

others on request

Protection category

1	IP 67		
2	IP 68	DS, 10 m	
3	IP 68	BTS, 10 m	
5	IP 67	Ex nA zone 2	
6	IP 68	Ex nA zone 2	
8	IP 68	DS/LIYCY, 10 m	
G	IP 67		**ISO-length**
H	IP 68	DS, 10 m	**ISO-length**
K	IP 68	BTS, 10 m	**ISO-length**
M	IP 67	Ex nA zone 2	**ISO-length**
N	IP 68	Ex nA zone 2	**ISO-length**
P	IP 68	DS/LIYCY, 10 m	**ISO-length**

Version / Signal converter

1	Aquaflux	F	(***without*** converter)	
4	Aquaflux		(modular)	separate version ***without*** connection box
5	Aquaflux	020 K	(for IFC 020 K)	
6	Aquaflux	020 F	(for IFC 020 F)	
7	Aquaflux	010 K	(for IFC 010 K)	
8	Aquaflux	010 F	(for IFC 010 F)	
A	Aquaflux	080 K	(for IFC 090 K)	
B	Aquaflux	080 F	(for IFC 090 F)	
D	Aquaflux	110 F	(for IFC 110 F)	
L	Aquaflux	020 E	(for IFC 020 E)	
R	Aquaflux	210 E	(for IFC 210 E)	

Language Operating manual								**Cable connection**
1	D	2	GB	3	US	4	F	PG 13,5
5	D	6	GB	7	US	8	F	1/2" NPT
A	D	B	GB	C	US	D	F	PF 1/2
E	D	F	GB	G	US	H	F	modular/compact

Liner (Option)

0	standard	(DN 10 - DN 20 / 3/8" - 3/4": PTFE / DN 25 - DN 150 / 1" - 6": Hardrubber)
2	provided for protection rings (DN 10 - DN 20 / 3/8" - 3/4": PTFE)	

Electrodes

1	Stainless Steel 316 Ti
3	Hastelloy C (standard)
6	Titanium

Mounting of electrodes

1	fixed

Material of flange

1	Steel St 37-C22 / A 105
2	Stainless Steel 1.4306 (304 L)
3	Stainless Steel 1.4404 (316 L)
4	Stainless Steel 1.4571 (316 Ti) DIN only

Primary constant

0	standard	(incl. converter)
5	GK + GKL	(for IFC 010, IFC 020, IFC 090, IFC 110, IFC 210)

V323									1			**Complete ordering code**
	4	4	0	4	0	0	4	4	4	4	0	4

Ordering Guide

Magnetic-inductive primary head AQUAFLUX for connection to signal converter — Page 08a
IFC 010 K/F, IFC 020 K/F/E, IFC 090 K/F, IFC 110 F or IFC 210 E — AQUAFLUX
DC-field operation for liquids with conductivity > 5 (water > 20) µS/cm — DN 25 - DN 150 / 1" - 6"

Code Primary head

V325	0	4	Aquaflux	F	DN	25	/ 1"		Polypropylene (PP)
		5	Aquaflux	F	DN	32			Polypropylene (PP)
		6	Aquaflux	F	DN	40	/ 1 1/2"		Polypropylene (PP)
		7	Aquaflux	F	DN	50	/ 2"		Polypropylene (PP)
		8	Aquaflux	F	DN	65			Polypropylene (PP)
		A	Aquaflux	F	DN	80	/ 3"		Polypropylene (PP)
		B	Aquaflux	F	DN	100	/ 4"		Polypropylene (PP)
		C	Aquaflux	F	DN	125			Polypropylene (PP)
		D	Aquaflux	F	DN	150	/ 6"		Polypropylene (PP)

Pressure rating

3	PN 16	DIN 2501	(DN 65, DN 100 - DN 150)
5	PN 40	DIN 2501	(DN 25 - DN 80 *without* DN 65)
A	ANSI 150 lb RF		
M	JIS 20 K		(DN 25 - DN 50)
N	JIS 10 K		(DN 65 - DN 150) *others on request*

Protection category

1	IP 67		
2	IP 68	DS, 10 m	
3	IP 68	BTS, 10 m	
5	IP 67	Ex nA zone 2	
6	IP 68	Ex nA zone 2	
8	IP 68	DS/LIYCY, 10 m	
G	IP 67		**ISO-length**
H	IP 68	DS, 10 m	**ISO-length**
K	IP 68	BTS, 10 m	**ISO-length**
M	IP 67	Ex nA zone 2	**ISO-length**
N	IP 68	Ex nA zone 2	**ISO-length**
P	IP 68	DS/LIYCY, 10 m	**ISO-length**

Version / Signal converter

1	Aquaflux F	(***without*** converter)	
4	Aquaflux	(modular)	separate version ***without*** connection box
5	Aquaflux 020 K	(for IFC 020 K)	
6	Aquaflux 020 F	(for IFC 020 F)	
7	Aquaflux 010 K	(for IFC 010 K)	
8	Aquaflux 010 F	(for IFC 010 F)	
A	Aquaflux 080 K	(for IFC 090 K)	
B	Aquaflux 080 F	(for IFC 090 F)	
D	Aquaflux 110 F	(for IFC 110 F)	
L	Aquaflux 020 E	(for IFC 020 E)	
R	Aquaflux 210 E	(for IFC 210 E)	

Language Operating manual								**Cable connection**
1	D	2	GB	3	US	4	F	PG 13,5
5	D	6	GB	7	US	8	F	1/2" NPT
A	D	B	GB	C	US	D	F	PF 1/2
E	D	F	GB	G	US	H	F	modular/compact

Liner (Option)

0	standard	(DN 25 - DN 150: Polypropylene)
S	provided for protection rings	

Electrodes

1	Stainless Steel 316 Ti	
3	Hastelloy C	(standard)
6	Titanium	

Mounting of electrodes

1	fixed

Material of flange

1	Steel St 37-C22 / A 105
2	Stainless Steel 1.4306 (304 L)
3	Stainless Steel 1.4404 (316 L)
4	Stainless Steel 1.4571 (316 Ti) DIN only

Primary constant

0	standard	(incl. converter)
5	GK + GKL	(for IFC 010, IFC 020, IFC 090, IFC 110, IFC 210)

V325									1			**Complete ordering code**

Ordering Guide

Magnetic-inductive primary head AQUAFLUX for connection to signal converter — Page 09
IFC 010 K/F, IFC 020 K/F/E, IFC 090 K/F, IFC 110 F or IFC 210 E — **AQUAFLUX**
DC-field operation for liquids with conductivity > 5 (water > 20) µS/cm — **DN 200 - DN 400 / 8" - 16"**

Code Primary head

V323	0	E	Aquaflux	F	DN	200	/	8"	Hardrubber
		F	Aquaflux	F	DN	250	/	10"	Hardrubber
		G	Aquaflux	F	DN	300	/	12"	Hardrubber
		H	Aquaflux	F	DN	350	/	14"	Hardrubber
		K	Aquaflux	F	DN	400	/	16"	Hardrubber

Pressure rating — **Price adder**

2	PN 10	DIN 2501	
A	ANSI 150	lb RF	DN > 300 (12"): max. operating pressure 10 bar (higher on request)
M	JIS 20 K		max. operating pressure 10 bar (higher on request)
N	JIS 10 K		max. operating pressure 10 bar (higher on request) *others on request*

Protection category

1	IP 67		
2	IP 68	DS, 10 m	
3	IP 68	BTS, 10 m	
5	IP 67	Ex nA zone 2	
6	IP 68	Ex nA zone 2	
8	IP 68	DS/LIYCY, 10 m	
G	IP 67		**ISO-length**
H	IP 68	DS, 10 m	**ISO-length**
K	IP 68	BTS, 10 m	**ISO-length**
M	IP 67	Ex nA zone 2	**ISO-length**
N	IP 68	Ex nA zone 2	**ISO-length**
P	IP 68	DS/LIYCY, 10 m	**ISO-length**

Version / Signal converter

1	Aquaflux	F	(***without*** converter)
4	Aquaflux		(modular) separate version ***without*** connection box
5	Aquaflux	020 K	(for IFC 020 K)
6	Aquaflux	020 F	(for IFC 020 F)
7	Aquaflux	010 K	(for IFC 010 K)
8	Aquaflux	010 F	(for IFC 010 F)
A	Aquaflux	080 K	(for IFC 090 K)
B	Aquaflux	080 F	(for IFC 090 F)
D	Aquaflux	110 F	(for IFC 110 F)
L	Aquaflux	020 E	(for IFC 020 E)
R	Aquaflux	210 E	(for IFC 210 E)

Language Operating manual — **Cable connection**

1	D	2	GB	3	US	4	F	PG 13,5
5	D	6	GB	7	US	8	F	1/2" NPT
A	D	B	GB	C	US	D	F	PF 1/2
E	D	F	GB	G	US	H	F	modular/compact

Liner (Option)

0	Hardrubber	(standard)

Electrodes

1	Stainless Steel 316 ti
3	Hastelloy C (standard)
6	Titanium

Mounting of electrodes

1	fixed	
6	WE	Stainless Steel 316 Ti (≥ DN 350)

Material of flange

1	Steel St 37-C22 / A 105
2	Stainless Steel 1.4306 (304 L)
3	Stainless Steel 1.4404 (316 L)
4	Stainless Steel 1.4571 (316 Ti) DIN only

Primary constant

0	standard	(incl. converter)
5	GK + GKL	(for IFC 010, IFC 020, IFC 090, IFC 110, IFC 210)

V323	4	0	4	0	4	0	4	4	0	4	0	**Complete ordering code**

Total price

Ordering Guide

Magnetic-inductive primary head AQUAFLUX for connection to signal converter — Page 10
IFC 010 K/F, IFC 020 K/F/E, IFC 090K/F, IFC 110 F or IFC 210 E — **AQUAFLUX**
DC-field operation for liquids with conductivity > 5 (water > 20) µS/cm — **DN 500 - DN 1000 / 20" - 40"**

Code Primary head

V323 0

M	Aquaflux	F	DN	500	/	20"	Hardrubber
N	Aquaflux	F	DN	600	/	24"	Hardrubber
P	Aquaflux	F	DN	700	/	28"	Hardrubber
R	Aquaflux	F	DN	800	/	32"	Hardrubber
S	Aquaflux	F	DN	900	/	36"	Hardrubber
T	Aquaflux	F	DN	1000	/	40"	Hardrubber

Pressure rating

2	PN 10	DIN 2501	smooth packing strip	(DN 500 - DN 1000)
A	ANSI 150 lb RF			(20" - 40" max. operating pressure (higher on request)
M	JIS 20 K			max. operating pressure (higher on request)
N	JIS 10 K			max. operating pressure (higher on request)

others on request

Protection category

1	IP 67		
2	IP 68	DS, 10 m	
3	IP 68	BTS, 10 m	
5	IP 67	Ex nA zone 2	
6	IP 68	Ex nA zone 2	
8	IP 68	DS/LIYCY, 10 m	

Version / Signal converter

1	Aquaflux	F	(***without*** converter)
4	Aquaflux		(modular) separate version ***without*** connection box
5	Aquaflux	020 K	(for IFC 020 K)
6	Aquaflux	020 F	(for IFC 020 F)
7	Aquaflux	010 K	(for IFC 010 K)
8	Aquaflux	010 F	(for IFC 010 F)
A	Aquaflux	080 K	(for IFC 090 K)
B	Aquaflux	080 F	(for IFC 090 F)
D	Aquaflux	110 F	(for IFC 110 F)
L	Aquaflux	020 E	(for IFC 020 E)
R	Aquaflux	210 E	(for IFC 210 E)

Language Operating manual / Cable connection

1	D	2	GB	3	US	4	F	PG 13,5
5	D	6	GB	7	US	8	F	1/2" NPT
A	D	B	GB	C	US	D	F	PF 1/2
E	D	F	GB	G	US	H	F	modular/compact

Liner (Option)

0 standard (Hardrubber)

Electrodes

4 0 4 | 0 4 | 0 4 4 4 | 0 4

1	st. Steel 316 ti
3	Hastelloy C (standard)
6	Titan

Mounting of electrodes

1	fixed
6	WE st. Steel 316 ti

Material of flange

1	Steel St 37-C22 / A 105
2	st. Steel 1.4306 (304 L)
3	st. Steel 1.4404 (316 L)
4	st. Steel 1.4571 (316 ti) DIN only

Primary constant

0	standard	(incl. converter)
5	GK + GKL	(for IFC 010, IFC 020, IFC 090, IFC 110, IFC 210)

V323							0					**Complete ordering code**

Ordering Guide

Magnetic-inductive primary head AQUAFLUX for connection to signal converter — Page 11
IFC 110 F, IFC 020 K/F/E, IFC 090 K/F or SC 150 (IFC 020, IFC 090 and IFC 110 ≤ DN 1600) — **AQUAFLUX**
DC-field operation for liquids with conductivity > 5 (water > 20) µS/cm — **DN 1200 - DN 3000 / 48" - 120"**

Code Primary head

V323	0	U	Aquaflux	F	DN	1200	/	48"	Hardrubber	
		V	Aquaflux	F	DN	1400	/	56"	Hardrubber	
		W	Aquaflux	F	DN	1600	/	64"	Hardrubber	
		X	Aquaflux	F	DN	1800	/	72"	Hardrubber	
		Y	Aquaflux	F	DN	2000	/	80"	Hardrubber	
		Z	Aquaflux	F	DN	2200	/	88"	Hardrubber	
		Z	Aquaflux	F	DN	2400	/	96"	Hardrubber	
	9	Z	Aquaflux	F	DN	2600	/	104"	Hardrubber	
	9	Z	Aquaflux	F	DN	2800	/	112"	Hardrubber	
	9	Z	Aquaflux	F	DN	3000	/	120"	Hardrubber	

Pressure rating

1	PN 6	DIN 2501 smooth packing strip	(DN 1200 - DN 2000)
A	ANSI	150 lb RF	(48" ... 120")
G	PN 2,5	DIN 2501 smooth packing strip	(DN 2200 - DN 3000)

Protection category

1	IP 67	
2	IP 68	DS, 10 m
3	IP 68	BTS, 10 m
5	IP 67	Ex nA zone 2
6	IP 68	Ex nA zone 2
8	IP 68	DS/LIYCY, 10 m

Version / Signal converter

1	Aquaflux	**(without converter)**	
4	Aquaflux modular		
5	Aquaflux 020 K	(for IFC 020 K)	≤ DN 1600
6	Aquaflux 020 F	(for IFC 020 F)	≤ DN 1600
A	Aquaflux 080 K	(for IFC 090 K)	≤ DN 1600
B	Aquaflux 080 F	(for IFC 090 F)	≤ DN 1600
D	Aquaflux 010 F	(for IFC 110 F)	≤ DN 1600
F	Aquaflux 150 F	(for IFC 150 F)	> DN 1600
L	Aquaflux 020 E	(for IFC 020 E)	≤ DN 1600
R	Aquaflux 210 E	(für IFC 210 E)	≤ DN 1600

Language Operating manual								**Cable connection**
1	D	2	GB	3	US	4	F	PG 13,5
5	D	6	GB	7	US	8	F	1/2" NPT
A	D	B	GB	C	US	D	F	PF 1/2

Liner (Option)

0	Hardrubber (standard)

Electrodes

1	st. Steel 316 ti
3	Hastelloy C (standard)
6	Titanium

Mounting of electrodes

1	fixed	
6	WE	st. Steel 316 ti

Material of flange

1	Steel 37-C22 / A 105
2	Stainless Steel 1.4306 (304 L)
3	Stainless Steel 1.4404 (316 L)
4	Stainless Steel 1.4571 (316 ti) DIN only

Primary constant

0	standard	(≤ DN 1600: IFC 110, 210, 090, 020 / > DN 1600: SC 150)
6	GK + GKH	(for IFC 110, 210, 020, 090, SC 150)

V323							0					**Complete ordering code**

Ordering Guide

Additional price list material and construction of electrodes
for IFS 4000 / 4005 / 2000 / 2005

Material of electrodes	(for standard pressure rating)				
1	Stainless Steel 1.4571 (316 Ti)				
2	Stainless Steel 1.4401 (316)				
A	Nickel				
F	Plastics, conductive	basis	HC	(only with PFA DN 25 - DN 150)	
G	Low Noise (Aluminiumoxide)	basis	HC		
H	Rubber, conductive	(Softrubber lining)			
L	Plastics, conductive	basis	Platinum	(only with PFA DN 25 - DN 150)	
M	Low Noise (Aluminiumoxide)	basis	Platinum		
P	Plastics, conductive	basis	Tantalum		
R	Low Noise (Aluminiumoxide)	basis	Tantalum		
T	Plastics, conductive	basis	SS 316 Ti	(only with PFA DN 25 - DN150)	
U	Low Noise (Aluminiumoxide)	basis	Stainless Steel 316 Ti		
V	Wolframcarbide	basis	Stainless Steel 316 Ti		

Mounting of electrodes				
1	fixed			
2	replaceable (old construction) (IFS 4000 / 4005 PFA (DN 25 - 150 / 1" - 6"))			
	replaceable in workshop (IFS 4000 / 4005)		(≥ DN 200 / 8")	
4	fixed with USC-electrodes	(≥ DN 350)	without US-generator	**(not for Ex)**
6	WE 1.4571	(≥ DN 350)		
7	WE Hastelloy C4	(≥ DN 350)		
8	WE 1.4571 and USC	(≥ DN 350)	without US-generator	**(not for Ex)**
A	electrode caps IFS 4000 > DN 300 and M 900 > DN 50			
	US-generator 110 / 230 V AC			

Complete ordering code

Ordering Guide

Magnetic-inductive primary head IFS 5000 for connection to signal converter — Page 13

IFC 010 K/F, IFC 020 K/F/E, IFC 090 K/F, IFC 110 F, IFC 210 E — **PROFIFLUX IFS 5000**

DC-field operation for liquids > 5 (water > 20) µS / cm, sandwich design — **CAPAFLUX IFM 5080 K / CAP**

IFM 5080 K / CAP for liquids > 0,05 (Water > 1) µS/cm, sandwich design

Code Primary head

V304

0	1	IFS 5000	F	DN	2,5	PN 40	/	1/10"	for flanges DN 15 / 1/2"
	2	IFS 5000	F	DN	4	PN 40	/	1/8"	for flanges DN 15 / 1/2"
	3	IFS 5000	F	DN	6	PN 40	/	1/4"	for flanges DN 15 / 1/2"
	4	IFS 5000	F	DN	10	PN 40	/	3/8"	for flanges DN 15 / 1/2"
	5	IFS 5000	F	DN	15	PN 40	/	1/2"	
	6	IFS 5000	F	DN	25	PN 40	/	1"	
	7	IFS 5000	F	DN	40	PN 40	/	1 1/2"	
	8	IFS 5000	F	DN	50	PN 40	/	2"	
	A	IFS 5000	F	DN	80	PN 40	/	3"	
	B	IFS 5000	F	DN	100	PN 16	/	4"	150 lb / JIS 10 K
	B	IFS 5000	F	DN	100	PN 25	/	4"	300 lb / JIS 20 K

Pressure rating

3	PN 16	DIN 2501	(DN 100)
4	PN 25	DIN 2501	(DN 100)
5	PN 40	DIN 2501	(DN 2,5 - DN 80)
A	150 lb	ANSI RF	(1/10" - 4")
B	300 lb	ANSI RF	(1/10" - 4")
M	JIS 20 K		
N	JIS 10 K		

Protection category

2	IP 67		
4	IP 67	EEx zone 1	
4	IP 67	EEx zone 1 Capaflux	
5	IP 67	Ex nA zone 2	
7	IP 67	SEV EEx (Swiss)	
A	IP 67	A Ex / DIV1 (USA)	
B	IP 67	A Ex / DIV2 (USA)	
C	IP 67	J Ex (Japan)	
D	IP 67	C / GP (CSA / Canada)	

Version / Signal converter

1	IFS 5000 F	(***without*** converter)
2	IFS 5000	(modular) separate version ***without*** connection box
4	IFM 5010 K	(for IFC 010 K)
5	IFM 5010 F	(for IFC 010 F)
6	IFM 5080 K/CAP	(for IFC 090 K/CAP)
7	IFM 5080 K	(for IFC 090 K)
8	IFM 5080 F	(for IFC 090 F)
A	IFM 5110 F	(for IFC 110 F)
E	IFM 5020 K	(for IFC 020 K)
F	IFM 5020 F	(for IFC 020 F)
L	IFM 5020 E	(for IFC 020 E)
M	IFM 5080 K/Ex-i	(for IFC 090 K/Ex-i)
N	IFM 5080 FEx-i	(for IFC 090 F/Ex-i)
R	IFM 5210 E	(for IFC 210 E)
U	IFM 5080 K/CAP/Ex-i	(for IFC 090 K/CAP/Ex-i)

Language operating manual — **Cable connection**

1	D	2	GB	3	US	4	F	PG 13,5
5	D	6	GB	7	US	8	F	1/2" NPT
A	D	B	GB	C	US	D	F	PF 1/2
E	D	F	GB	G	US	H	F	modular/compact

Mounting material

0	
1	Steel, galvanized
4	stainless Steel A2 acc. DIN 267
4	Rubber sleeves

Integrated earthing rings / Gaskets

1	St. Steel 316 ti	incl. O-ring Viton	(DN 2,5 - DN 15 / 1/10" - 1/2")	/ without (≥ DN 25)
2	Hastelloy C	incl. O-ring Viton	(DN 2,5 - DN 15 / 1/10" - 1/2")	
4	St. Steel 316 ti	incl. O-ring EPDEM	(DN 2,5 - DN 15 / 1/10" - 1/2")	
5	Hastelloy C	incl. O-ring EPDEM	(DN 2,5 - DN 15 / 1/10" - 1/2")	
6	Titanium	incl. O-ring EPDEM	(DN 2,5 - DN 15 / 1/10" - 1/2")	
A	Hastelloy C	incl. O-ring Kalrez	(DN 2,5 - DN 15 / 1/10" - 1/2")	
B	Titanium	incl. O-ring Kalrez	(DN 2,5 - DN 15 / 1/10" - 1/2")	
C	Tantalum	PTFE / PF 29	(DN 2,5 - DN 15 / 1/10" - 1/2")	

Connection box

0	standard
1	stainless Steel 1.4301 (304)

Calibration

0	standard	(incl. converter)
5	GK + GKL	(for IFC 010, IFC 020, IFC 090, IFC 110, IFC 210)

V304 [ ][ ][ ][ ][ ][ ][ ][ ][ ][ ] **Complete ordering code**

Ordering Guide

Magnetic-inductive primary head IFS 5000 BATCHFLUX — Page 13 a
for connection to signal converter IFC 012 K for filling machines with filling times > 1,5 s — IFS 5000 BATCHFLUX
DC-field operation for liquids > 20 µS / cm, sandwich design with integrated converter

Code Primary head

VN39	0	1	IFS 5000	BATCH	DN	2,5	PN 40*	/	1/10"	optimized flowprofile tube
		2	IFS 5000	BATCH	DN	4	PN 40*	/	1/8"	optimized flowprofile tube
		3	IFS 5000	BATCH	DN	6	PN 40*	/	1/4"	optimized flowprofile tube
		4	IFS 5000	BATCH	DN	10	PN 40*	/	3/8"	optimized flowprofile tube
		5	IFS 5000	BATCH	DN	15	PN 40*	/	1/2"	optimized flowprofile tube
		6	IFS 5000	BATCH	DN	25	PN 40*	/	1"	optimized flowprofile tube
		7	IFS 5000	BATCH	DN	40	PN 40*	/	1 1/2"	optimized flowprofile tube
		E	IFS 5000	BATCH	DN	15	PN 10*	/	1/2"	straight tube
		G	IFS 5000	BATCH	DN	32	PN 10*	/	1 1/4"	straight tube

Pressure rating

1	without (only sandwich)		
5	PN 40	DIN 2501	(DN 2,5 - DN 40)
A	150 lb	ANSI RF	(1/10" - 1 1/2")
B	300 lb	ANSI RF	(1/10" - 1 1/2")
M	JIS 20 K		
N	JIS 10 K		

Protection category

2	IP 67		
3	IP 67	3A approval	in preparation

Version / Signal converter

C	IFM 5012 K with IFC 012	(1 connector M12 x 1)	
F	IFM 5014 K with IFC 014	(2 connectors M12 x 1)	in preparation

Language operating manual

0	without
1	german
2	english GB

Mounting material

0	without
1	Steel
2	st. Steel A2
3	Rubber sleeves

Integrated earthing rings / Gaskets

0	without		
1	st.Steel 316 Ti	with O-Ring Viton	(DN 2,5 - DN 15 / 1/10" - 1/2")
2	Hastelloy C4	with O-Ring Viton	(DN 2,5 - DN 15 / 1/10" - 1/2")
4	st.Steel 316 Ti	with O-Ring EPDM	(DN 2,5 - DN 15 / 1/10" - 1/2")
5	Hastelloy C4	with O-Ring EPDM	(DN 2,5 - DN 15 / 1/10" - 1/2")
6	Titanium	with O-Ring EPDM	(DN 2,5 - DN 15 / 1/10" - 1/2")
A	Hastelloy C4	with O-Ring KALREZ	(DN 2,5 - DN 15 / 1/10" - 1/2")
B	Titanium	with O-Ring KALREZ	(DN 2,5 - DN 15 / 1/10" - 1/2")
C	Tantalum	PTFE / PF 29	(DN 2,5 - DN 15 / 1/10" - 1/2")

Option for ventilation

0	standard
1	threaded connection G 1/8

Threaded holes

0	without		
1	2x2 M4	on both sides	(DN 2,5 - DN 15 / 1/10" - 1/2")
3	2x4 M6	on both sides	(DN 2,5 - DN 15 / 1/10" - 1/2")

*) dependend on construction of sealing

VN39 [ ][ ][ ][ ][ ][ ][ ][ ][ ][ ] **Complete ordering code**

Signal converter IFC 012 for BATCHFLUX IFM 5012 K — Page 13 b
Integrated converter within stainless steel precision casting welded with primary head — IFC 012 K
for filling machines with filling times > 1,5 s. DC-field operation for liquids > 20 µS / cm

Code Signal converter

VN 37	0	1	IFC 012	K B/ pulse programmable to 10 kHz	1 electr. connector
		B	IFC 012	K B/ pulse/ status/ active - GND	1 electr. connector
		C	IFC 012	K B/ pulse/ status/ active - + 24 V	1 electr. connector

Power supply

4	24	V	DC

Electrical connector M12 x 1

1	standard

Option

0	Standard
5	reverse flow compensation

Operation manual / Operating language

1	German	/ German
2	English GB	/ English GB
3	English US	/ English US
4	French	/ French

VN37 0 [ ][ ][ ][ ][ ] **Complete ordering code**

Ordering Guide

PROFIFLUX IFS 5000 / IFM 5080 K
CAPAFLUX IFM 5080 K / CAP

Earthing rings / Gaskets
will be supplied as standard version with integrated earthing rings and O-rings (between earthing ring and primary head). Material choice acc. price list IFS 5000

Earthing rings / Gaskets DN 25 - 100
will be supplied as standard version with gaskets (gasket between primary head and pipe flanges). Optionally earthing rings available (prices see below)

One earthing ring consists of a further flat gasket. Material choice acc. Following list. For each primary head 2 earthing rings are necesary.

	Earth Earthing ring / Gasket	**Stock-No.** for meter sizes ...					
	Material	**DN 25**	**DN 40**	**DN 50**	**DN 80**	**DN 100**	Dimensions resp. mounting length
	1.4571 (ss 316 Ti) / Gylon	1306615800	1306615400	1306615500	1306615600	1306615700	please refer to data sheet IFS 5000
	Hastelloy C4 / Gylon	1306615900	1306616000	1306615100	1306615200	1306615300	
	1.4571 (ss 316 Ti) / Chemotherm	1306617900	1306618500	1306616900	1306617000	1306617100	*** Please pay attention to a different**
	Hastelloy C4 / Chemotherm	1306616100	1306616200	1306616300	1306616400	1306616500	**mounting length when using earthing**
*	Tantalum / PTFE Form PF29	1306617800	1306618400	1306618200	1306618600	1306619300	**rings made of Tantalum 0,5 mm**

Ordering Guide

Magnetic-inductive primary head IFS 6000 for connection to signal converter
IFC 010 K/F, IFC 020 K/F/E, IFC 090 K/F, IFC 110 F or IFC 210 E
DC-field operation for liquids with conductivity > 5 (water > 20) µS/cm

Code Primary head

V321 **0**

1	IFS 6000	F	DN	2,5	/	1/10"	for flanges DN 10 / 1/2"	(***not*** in connection to IFC 010)
2	IFS 6000	F	DN	4	/	1/8"	for flanges DN 10 / 1/2"	(***not*** in connection to IFC 010)
3	IFS 6000	F	DN	6	/	1/4"	for flanges DN 10 / 1/2"	(***not*** in connection to IFC 010)
5	IFS 6000	F	DN	10	/	3/8"	for flanges DN 10 / 1/2"	
6	IFS 6000	F	DN	15	/	1/2"	for flanges DN 15 / 1/2"	
8	IFS 6000	F	DN	25	/	1"		
B	IFS 6000	F	DN	40	/	1 1/2"		
C	IFS 6000	F	DN	50	/	2"		
D	IFS 6000	F	DN	65	/	2 1/2"		
E	IFS 6000	F	DN	80	/	3"		

Connection / Pressure rating

5	flange	PN 40	(DN 2,5 - DN 15 / 1/10" - 1/2")
A	flange	150 lb RF	(DN 2,5 - DN 15 / 1/10" - 1/2")
B	flange	300 lb RF	(DN 2,5 - DN 15 / 1/10" - 1/2")
M	flange	JIS 20 K	(DN 2,5 - DN 15 / 1/10" - 1/2")
H / K / L / S / T / X	aseptical connections see price list 16		(gasket EPDM)

Connection box

0	without	(modular)	
2	IP 67	connection box Alu	
3	IP 67	connection box st. Steel 1.4301 (304)	(PG 13,5)

Version / Signal converter

1	IFS 6000 F	(***without*** converter)	
2	IFS 6000	(modular)	separate version ***without*** connection box
3	IFM 6010 K	(for IFC 010 K)	
4	IFM 6010 F	(for IFC 010 F)	
6	IFM 6080 K	(for IFC 090 K)	
7	IFM 6080 F	(for IFC 090 F)	
A	IFM 6110 F	(for IFC 110 F)	
B	IFM 6210 E	(for IFC 210 E)	
E	IFM 6020 K	(for IFC 020 K)	
F	IFM 6020 F	(for IFC 020 F)	
G	IFM 6020 E	(for IFC 020 E)	
M	IFM 6080 K/Ex-i	(for IFC 090 K/Ex-i)	
N	IFM 6080 F/Ex-i	(for IFC 090 F/Ex-i)	

Language / Operating manual

								Cable connection
1	D	**2**	GB	**3**	US	**4**	F	PG 13,5
5	D	**6**	GB	**7**	US	**8**	F	1/2" NPT
A	D	**B**	GB	**C**	US	**D**	F	PF 1/2
E	D	**F**	GB	**G**	US	**H**	F	modular/compact

Approval (Ex-protection only in connection to IFC 090 Ex, IFC 110 Ex or IFC 210 Ex)

0	without	
4	EEx	zone 1
6	Ex nA	zone 2

Integrated eathing rings / Gaskets

1	St. Steel 316 Ti	incl. O-ring Viton	(DN 2,5 - DN 15 / 1/10" - 1/2")	/ without (≥ DN 25)
3	Hastelloy C	incl. O-ring Viton	(DN 2,5 - DN 15 / 1/10" - 1/2")	
5	St. Steel 316 Ti	incl. O-ring EPDM	(DN 2,5 - DN 15 / 1/10" - 1/2")	
6	Hastelloy C	incl. O-ring EPDM	(DN 2,5 - DN 15 / 1/10" - 1/2")	
7	St. Steel 316 Ti	incl. O-ring Kalrez	(DN 2,5 - DN 15 / 1/10" - 1/2")	
8	Hastelloy C	incl. O-ring Kalrez	(DN 2,5 - DN 15 / 1/10" - 1/2")	
A	Titanium	incl. O-ring EPDM	(DN 2,5 - DN 15 / 1/10" - 1/2")	
B	Titanium	incl. O-ring Kalrez	(DN 2,5 - DN 15 / 1/10" - 1/2")	

Material of electrodes

1	Stainless Steel 316 Ti	
3	Hastelloy C	
4	Hastelloy B2	
5	Tantalum	
6	Titanium	
7	Platinum (wetted parts)	(DN 2,5 - DN 80 / 1/10" - 3")

Primary constant

0	standard	(incl. converter)
5	GK + GKL	(for IFC 010, IFC 020, IFC 090, IFC 110, IFC 210)

V321 [ ][ ][ ][ ][ ][ ][ ][ ][ ][ ] **Complete ordering code**

Primary head IFS 6000 VARIFLUX

Code	Connection	DN 2,5 - 15 1/10-1/2"	DN 25 1"	DN 40 1 1/2"	DN 50 2"	DN 65 2 1/2"	DN 80 3"
H	sanitary connection DIN 11851						
K	SMS 1145 (from DN 25 / 1")						
L	CLAMP ISO 2852						
X	screw connection ISO 2853						
S	aseptical thread with butt weld ends acc. DIN 11 850						
T	aseptical thread with butt weld ends acc. ISO 2037						

Ordering Guide

Signal converter IFC 010 for connection to primary head
IFS 1000 / 4000 (≤ DN 1000) / 5000 / 6000 (≥ DN 10) (DC-field operation)

Code Signal converter

V311 0

1 IFC 010 K B
2 IFC 010 K B HART RS 485 !
4 IFC 010 K D
6 modular IFC 010 B
7 modular IFC 010 B HART RS 485 !
8 modular IFC 010 D
A IFC 010 F B
B IFC 010 F B HART RS 485 !
D IFC 010 F D

Power supply

2 100 V AC (Japan)
4 24 V DC
5 24 V AC
7 100 V AC
8 115 / 120 V AC
B 200 V AC
C 230 / 240 V AC
D 48 V AC

Cable connection

2 PG 13,5 (2x)
3 1/2" NPT
4 PF 1/2
A PG 13,5 (3x) Swiss

Option

0 standard (none)
1 LA S2/S
2 LA S3/S
3 LA S4/S
A frequency output 10 kHz

Operation manual / Operating language

1 german / german
2 english GB / english GB
3 english US / english US
4 french / french

! no parallel operation of HART and RS 485 !

V311	0						Complete ordering code

Ordering Guide

Signal converter IFC 020 for connection to primary head
IFS 1000 / Aquaflux 4000 (≤ DN 1600) / 5000 / 6000 (DC-field operation)

Code Signal converter

V312	0	3	IFC 020	K D	D HART RS 485	
		7	modular	IFC 020	D HART RS 485	
		C	IFC 020	F D	D HART RS 485	
		E	IFC 020	E D	D HART RS 485	

Power supply

2	110	V	AC	(Japan)
4	24	V	DC	(only IFC 020 E)
5	24	V	AC	
7	100	V	AC	
8	115 / 120	V	AC	
B	200	V	AC	
C	230 / 240	V	AC	
D	48	V	AC	
E	12	V	DC	(only IFC 020 E)

Cable connection

2	PG 13,5 (2x)	
3	1/2" NPT	
4	PF 1/2	
A	PG 13,5 (3x) Swiss	
B	strip: tag	(only IFC 020 E)
C	strip: screw terminal	(only IFC 020 E)
D	strip: wire - wrap	(only IFC 020 E)
E	strip: termi - point	(only IFC 020 E)

Special version

0	standard	(none)
1	LA S2/S	

Operating manual / Operating language

1	german	/	german
2	english GB	/	english GB
3	english US	/	english US
4	french	/	french

Mounting

1	version 1 compact / separate / 19 "
2	version 2 compact
3	version 3 compact
4	version 4 compact

! no parallel operation of HART and RS 485 !

V312								complete ordering code
	4							
	4							
	4							

Ordering Guide

Signal converter IFC 090 for connection to primary head
IFS 1000 / 2000 / Aquaflux 4000 (≤ DN 1600) / 5000 / 6000 (DC-field operation)

Code Signal converter

V317 **0**

1	IFC 090	K B	
2	IFC 090	K B HART	
4	IFC 090	K D	
5	IFC 090	K D HART	
7	IFC 090	modular	B
8	IFC 090	modular	B HART
B	IFC 090	modular	D
C	IFC 090	modular	D HART
E	IFC 090	F B	
F	IFC 090	F B HART	
H	IFC 090	F D	
K	IFC 090	F D HART	
M	IFC 090	K CAP B	
N	IFC 090	K CAP B HART	
P	IFC 090	K CAP D	
R	IFC 090	K CAP D HART	

Power supply

2	100	V	AC	(Japan)
4	24	V	DC / AC	
7	100	V	AC	
8	115 / 120	V	AC	
B	200	V	AC	
C	230 / 240	V	AC	

Ex-version

0	without		
1	EEx	terminal compartment "e"	5080 K
2	EEx	terminal compartment "d"	5080 K
4	EEx	terminal compartment "e"	4080 K
5	EEx	terminal compartment "d"	4080 K
7	EEx	terminal compartment "e"	6080 K
8	EEx	terminal compartment "d"	6080 K
M	IFC 090 F- EEx		

Cable connection

2	2 x	PG 13,5
3	2 x	1/2" NPT
4	2 x	PF 1/2"

Operating manual / Operating language

1	german	/	german
2	english GB	/	english GB
3	english US	/	english US
4	french	/	french

Mounting position

1	version	A	standard / separate
2	version	B	
3	version	C	
4	version	D	(***not*** IFM 5080 K)
5	version	E	(***not*** IFM 5080 K)

Special version

1	standard
2	LA S2/S
3	LA S3/S
4	LA S4/S

V317									**Complete ordering code**

Ordering Guide

Signal converter *IFC 090 i-EEx* for connection to primary head — Page 20
IFS 4000 Ex / 5000 Ex / 6000 Ex (DC-field operation) — **IFC 090 i-EEx**
Intrinsically safe outputs!

Code Signal converter

V324 **0** **4** IFC 090 i-Ex K D (**plus** output modules, pls. see below)
H IFC 090 i-Ex F D (**plus** output modules, pls. see below)
P IFC 090 i-Ex K CAP D (**plus** output modules, pls. see below)

Power supply
4 24 V AC / DC
D 100 - 230 V AC

Ex-version
0 without (Non EEx)
1 EEx terminal compartment "e" 5080 K/i-EEx
2 EEx terminal compartment "d" 5080 K/i-EEx
4 EEx terminal compartment "e" 4080 K/i-EEx
5 EEx terminal compartment "d" 4080 K/i-EEx
7 EEx terminal compartment "e" 6080 K/i-EEx
8 EEx terminal compartment "d" 6080 K/i-EEx
G IFC 090 F/i - EEx (terminal compartment "e") Only IFC 090 i-EEx **F** / D

Ex-i output
1 Ex-i 1 mA (passive) + HART + binary intput/output (passive)
2 Ex-i 2 mA (passive) + HART / Profibus PA (HART and Profibus only alternatively)
3 Ex-i 3 mA (active) + HART **Not for 100 - 230 V AC !**
4 Ex-i 4 binary intput/output (passive) + Profibus PA
5 Ex-i 5 binary intput/output (active) **Not for 100 - 230 V AC !**
6 Ex-i 6 binary intput/output (passive) + binary input/output (passive)

Operating manual								**Cable connection**
1	G	**2**	GB	**3**	US	**4**	F	PG 13,5
5	G	**6**	GB	**7**	US	**8**	F	1/2" NPT
A	G	**B**	GB	**C**	US	**D**	F	PF 1/2

Mounting position

1	version	A	standard / separate
2	version	B	
3	version	C	
4	version	D	(***not*** IFM 5080 K)
5	version	E	(***not*** IFM 5080 K)

Special version

0	standard	(none)
1	LA S2/S	
2	LA S3/S	
3	LA S4/S	

V324 [ ][ ][ ][ ][ ][ ][ ][ ] **Complete ordering code**

Signal converter *IFC 090 Profibus* for connection to primary head — Page 20
AQUAFLUX / IFS 1000 / 2000 / 4000 / 5000 / 6000 (DC-field operation) — **IFC 090 i - non EEx**
Version only for non-EEx

Code Signal converter

V324 **0** **4** IFC 090 K D (**plus** output modules, pls. see below)
B IFC 090 Modular (**plus** output modules, pls. see below)
H IFC 090 F D (**plus** output modules, pls. see below)
P IFC 090 K CAP D (**plus** output modules, pls. see below)

Power supply
4 24 V AC / DC
D 100 - 230 V AC

Ex-version
0 without (Non EEx)

Ex-i output
B i 2 mA (passive) + HART / Profibus PA (HART and Profibus only alternatively)
D i 4 binary intput/output (passive) + Profibus PA

Operating manual								**Cable connection**
1	G	**2**	GB	**3**	US	**4**	F	PG 13,5
5	G	**6**	GB	**7**	US	**8**	F	1/2" NPT
A	G	**B**	GB	**C**	US	**D**	F	PF 1/2

Mounting position

1	version	A	standard / separate
2	version	B	
3	version	C	
4	version	D	(***not*** IFM 5080 K)
5	version	E	(***not*** IFM 5080 K)

Special version

0	standard	(none)
1	LA S2/S	
2	LA S3/S	
3	LA S4/S	

V324 [ ][ ][ ][ ][ ][ ][ ][ ] **Complete ordering code**

Ordering Guide

Signal converter IFC 110 F for connection to primary head — **Page 21**

IFS 1000 / 2000 / 4000 / 5000 / 6000 (DC-field operation) — **IFC 110 F / IFC 110 PF**

Signal converter IFC 110 PF
for connection to primary head TIDALFLUX IFS 4000 PF

Code Signal converter

V302 **0**

A	IFC 110 F	D			
B	IFC 110 F	D	HART RS 485		
H	IFC 110 F	D MP			
K	IFC 110 F	D MP	HART RS 485		
M	IFC 110 F	PF	(RS 485 to primary head)	**TIDALFLUX**	
N	IFC 110 F	PF MP	(RS 485 to primary head)	**TIDALFLUX**	

Power supply

4	24	V	DC / AC	**(TIDALFLUX only 24 V AC !)**
D	100 - 230	V	AC	**(TIDALFLUX see price list 23 !)**

Ex-version

0	none		
1	EEx	zone 1	**(not for DALFLUX !)**

Cable connection

1	5 x	PG 16	(3 x PG 16	+	1x	PG 9	**TIDALFLUX)**
2	5 x	1/2" NPT	(3 x 1/2" NPT+		1x	PG 9	**TIDALFLUX)**
3	5 x	PF 1/2"	(3 x PF 1/2"	+	1x	PG 9	**TIDALFLUX)**

Operating manual / Operating language

1	german	/	german
2	english GB	/	english GB
3	english US	/	english US
4	french	/	french

Special version

4

0	none
1	LA S2/S
3	LA S4/S

V302 [ ][ ][ ][ ][ ][ ][ ] **Complete ordering code**

Ordering Guide

Signal converter SC 150 for connection to primary head
IFS 2005 or IFS 4005 (heavy-duty DC-field)

Code Signal converter

V309 **0** **1** SC 150
2 SC 150 MP

Power supply
D 100 - 240 V AC

Ex-version
1 without

Cable connection
1 5 x PG 13,5
2 5 x 1/2" NPT
3 5 x PF 1/2"

Operating manual / Operating language
1 german / german
2 english GB / english GB
3 english US / english GB
4 french / french

V309	0		D	1			Complete ordering code

Ordering Guide

Magnetic-inductive primary head Tidalflux IFS 4000 PF
for measuring flow in partially filled pipes
To be used with signal converters IFC 110 PF only! DC-field operation for liquids with conductivity > 50 µS / cm

Primary head

V315	0	E	IFS 4000	PF	DN 200	/	8"	Irathane	
		F	IFS 4000	PF	DN 250	/	10"	Irathane	
		G	IFS 4000	PF	DN 300	/	12"	Irathane	
		H	IFS 4000	PF	DN 350	/	14"	Irathane	
		K	IFS 4000	PF	DN 400	/	16"	Irathane	
		M	IFS 4000	PF	DN 500	/	20"	Irathane	
		N	IFS 4000	PF	DN 600	/	24"	Irathane	
		P	IFS 4000	PF	DN 700	/	28"	Irathane	
		R	IFS 4000	PF	DN 800	/	32"	Irathane	
		S	IFS 4000	PF	DN 900	/	36"	Irathane	
		T	IFS 4000	PF	DN 1000	/	40"	Irathane	
		U	IFS 4000	PF	DN 1200	/	48"	Irathane	

Pressure rate

1	PN 6	DIN 2501	smooth packing strip	(DN 1200)
2	PN 10	DIN 2501	smooth packing strip	
A	ANSI 150 lb RF			

Protection category / Approval

1	IP 67	
3	IP 67	Ex nA zone 2

Power supply

5	24	V AC
8	115 / 120	V AC
C	230 / 240	V AC

Language Operating manual

								Cable connection
1	D	2	GB	3	US	4	F	PG 13,5
5	D	6	GB	7	US	8	F	1/2" NPT
A	D	B	GB	C	US	D	F	PF 1/2

Version / Signal converter

1	IFM 4110 PF	(with IFC 110 PF)
2	IFS 4000 PF	incl. connection box

Electrodes

1	st. Steel 1.4571
3	Hastelloy C

V315									**Complete ordering code**

Ordering Guide

Earthing rings DN 10 - 1000 for standard pressure rating / DIN **Page 24 + 25**
ALTOFLUX IFS 4000 / AQUAFLUX

Earthing rings st. Steel 316 ti, 3 mm

			Stock-no.
DN 10	protection ring	no. 2	2305200100
DN 15	protection ring	no. 2	2305070100
DN 20	protection ring	no. 2	2305070300
DN 25	earthing ring	no. 1	2305050700
	protection ring	no. 2	2305070700
	earthing ring	no. 3	2306793000
DN 32	earthing ring	no. 1	2305050900
	protection ring	no. 2	2305070900
	earthing ring	no. 3	2306793100
DN 40	earthing ring	no. 1	2305051000
	protection ring	no. 2	2305071000
	earthing ring	no. 3	2309092100
DN 50	earthing ring	no. 1	2305051000
	protection ring	no. 2	2305071000
	earthing ring	no. 3	2309092100
DN 65	earthing ring	no. 1	2305051200
	protection ring	no. 2	2305071200
	earthing ring	no. 3	2306796500
DN 80	earthing ring	no. 1	2305051500
	protection ring	no. 2	2305071500
	earthing ring	no. 3	2309093600
DN 100	earthing ring	no. 1	2305051700
	protection ring	no. 2	2305071700
	earthing ring	no. 3	2309092800
DN 125	earthing ring	no. 1	2305051900
	protection ring	no. 2	2305071900
	earthing ring	no. 3	2309099800
DN 150	earthing ring	no. 1	2305052000
	protection ring	no. 2	2305072000
	earthing ring	no. 3	2305400700

			Stock-no.
DN 200	earthing ring	no. 1	2305052800
	protection ring	no. 2	2305200300
	earthing ring	no. 3	2306790900
DN 250	earthing ring	no. 1	2305052400
	protection ring	no. 2	2305072400
	earthing ring	no. 3	2309093300
DN 300	earthing ring	no. 1	2305052600
	protection ring	no. 2	2305070500
	earthing ring	no. 3	2306791800
DN 350	earthing ring	no. 1	2307211000
	protection ring	no. 2	2308540800
	earthing ring	no. 3	2306793200
DN 400	earthing ring	no. 1	2307211100
	protection ring	no. 2	2308542600
	earthing ring	no. 3	2307941000
DN 500	earthing ring	no. 1	2307211200
	protection ring	no. 2	2309201900
	earthing ring	no. 3	2307942300
DN 600	earthing ring	no. 1	2307211300
	protection ring	no. 2	2305235700
	earthing ring	no. 3	2307941500
DN 700	earthing ring	no. 1	2307882000
	protection ring	no. 2	2309200800
	earthing ring	no. 3	2307941600
DN 800	earthing ring	no. 1	2307881400
	protection ring	no. 2	2305239100
	earthing ring	no. 3	2307942900
DN 900	earthing ring	no. 1	2308870800
	earthing ring	no. 3	2309099100
DN 1000	earthing ring	no. 1	2308512100
	earthing ring	no. 3	2306795200

Ordering Guide

Earthing rings 3/8" - 40" / ANSI 150 lb

Earthing rings st. Steel 316 ti, 3 mm

			Stock-no.
3/8"	protection ring	no. 2	2305200200
1/2"	protection ring	no. 2	2305070200
3/4"	protection ring	no. 2	2305070400
1"	earthing ring	no. 1	2305050800
	protection ring	no. 2	2305070800
	earthing ring	no. 3	2305400500
1 1/4"	earthing ring	no. 1	2305078300
	protection ring	no. 2	2305200800
	earthing ring	no. 3	
1 1/2"	earthing ring	no. 1	2305051100
	protection ring	no. 2	2305071100
	earthing ring	no. 3	2306793400
2"	earthing ring	no. 1	2305051300
	protection ring	no. 2	2305071300
	earthing ring	no. 3	2306793700
2 1/2"	earthing ring	no. 1	2308876400
	protection ring	no. 2	2306481200
	earthing ring	no. 3	
3"	earthing ring	no. 1	2305051600
	protection ring	no. 2	2305071600
	earthing ring	no. 3	2309090600
4"	earthing ring	no. 1	2305051800
	protection ring	no. 2	2305071800
	earthing ring	no. 3	2305401900
5"	earthing ring	no. 1	2305075400
	protection ring	no. 2	2305237800
	earthing ring	no. 3	2306798500
6"	earthing ring	no. 1	2305052100
	protection ring	no. 2	2305072100
	earthing ring	no. 3	2307940900
8"	earthing ring	no. 1	2305052900
	protection ring	no. 2	2305072900
	earthing ring	no. 3	2305400400
10"	earthing ring	no. 1	2305052500
	protection ring	no. 2	2305072500
	earthing ring	no. 3	2309099400
12"	earthing ring	no. 1	2305052700
	protection ring	no. 2	2305070600
	earthing ring	no. 3	2306791400
14"	earthing ring	no. 1	2308873000
	protection ring	no. 2	2306482800
	earthing ring	no. 3	2309093700
16"	earthing ring	no. 1	2307881500
	protection ring	no. 2	2308540300
	earthing ring	no. 3	2307943200
20"	earthing ring	no. 1	2307211800
	protection ring	no. 2	2309203300
	earthing ring	no. 3	2309091900
24"	earthing ring	no. 1	2307213100
	protection ring	no. 2	2309200300
	earthing ring	no. 3	2309098000
28"	earthing ring	no. 1	2305175000
	protection ring	no. 2	
	earthing ring	no. 3	
32"	earthing ring	no. 1	2308876300
	protection ring	no. 2	
	earthing ring	no. 3	
36"	earthing ring	no. 1	2307213300
	earthing ring	no. 3	2306797500
40"	earthing ring	no. 1	
	earthing ring	no. 3	

Ordering Guide

Signal cable MID — **Page 28**

Cable type	recommended for converter type	Stock-no.
DS grey	SC 100 AS, IFC 080 F, IFC 200, IFC 020 F/E, IFC 010 F, IFC 110 F, IFC 090 F, SC 150, IFC 210 E	5076480000
DS blue	SC 100 AS-Ex, SC 80 AS/F-Ex, IFC 210 E/Ex, IFC 200 Ex, IFC 090 F/Ex, IFC 110 F/Ex	5076480600
	SC 100 AS, IFC 080 F, IFC 200, IFC 020 F, IFC 110 F, SC 150,	5076470000
BTS blue	SC 100 AS-Ex, SC 80 AS/F-Ex, IFC 210 E/Ex, IFC 200 Ex	5076470600
Vulto 3 x 1,5 mm²	(when IP 68)	5302890100
LIYCY	signal cable, grey, 3 x 1,5 mm²	5062100800
LIYCY	5 x 0,75 mm² (data cable Tidalflux SC 100 PF)	5315290200
LICYC	3 x 1.5 mm² (data cable Tidalflux IFC 110 PF)	5315290300
LICYC	4 x 2,5 mm² (DIV II cable)	5302890500
A & G USC (ultrasonic cleaning)		5302640100
Cable Silicone coated for high temperature operation of IFS 5000 F, IFS 5000 F and F Ex (only DN 2,5 - 15) > 150 °C		
BIHFC redbrown, screened, signal cable		5071910000
BIHTC blue, screened, signal cable (Ex)		5071920000
SIHSI redbrown (unscreened)		5071930000
For cable length > 5 m we recommend an installation of an external connection Continuing cable DS or BTS as described before		
external connection box standard		2059930100
external connection box Ex		2059930000
Recommended mounting kit for IFS 5000 F:		
1 x 5 m Silicone cable BIHFC, screened		
1 x 5 m Silicone cable SIHSI, unscreened		
1 x external connection box, standard		1312910500
Recommended mounting kit for IFS 5000 F / Ex:		
1 x 5 m Silicone cable BIHFC, screened		
1 x 5 m Silicone cable SIHSI, unscreened		
1 x external connection box Ex		1312910600