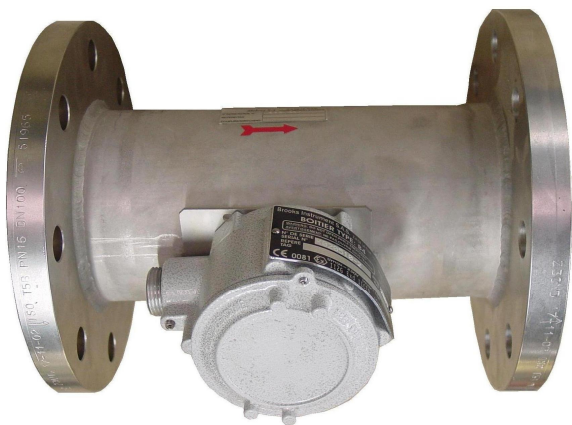




Flow controller Type CCB 311



Flow measurement

Features

- Suitable for liquids (gases on request)
- Low flow switch
- Low pressure drop

Use

The float switch CCB 311 is particularly designed to detect low flows in horizontal or vertical pipes (with an ascending flow direction). The type CCB 311 flow controller is robustly and simply designed.

Principle

An articulated flap placed perpendicular to the flow, moves in function with the flow. An external magnetic contact is activated by the magnet placed on the flap. (The magnet is protected of corrosive medium by a stainless steel jacket.)

Description

This appliance consists of:

- A stainless steel 316L body
- A stainless steel 316L flap
- A stainless steel 316L diaphragm
- The connection is made by stainless steel fixed flanges (Standard ISO PN NF EN1092 or ANSI B16-5)
- Contact of alarm according to use
 - 1 or 2 reed switch in aluminium housing IP65 equipped with a packing gland
 - 1 or 2 reed switch in explosion proof housing Ex dIIC T6 Gb equipped with a packing gland
 - 1 or 2 reed switch in housing Ex ia IIC T6 equipped with a packing gland

Other constructions are available on request:

- Screwed connection (G1" or G1" ½ or G2")
- Other standard flanges
- Other material
- High pressure

Technical characteristics

ND	Max. flow ⁽¹⁾⁽³⁾ m ³ /h Liquid SG=1	Switching flow ⁽¹⁾⁽³⁾ m ³ /h Liquid SG=1		Possible range of switching flow on request ⁽²⁾⁽³⁾ m ³ /h Liquid SG=1	
		HORIZONTAL	VERTICAL	HORIZONTAL	VERTICAL
40 (1"1/2)	20	0.4	0.8	0.2 à 1.7	0.3 à 2
50 (2")*	20	0.4	0.8	0.2 à 1.7	0.3 à 2
65 (2"1/2)	35	0.6	1	0.3 à 2.4	0.35 à 3
80 (3")*	55	0.7	1.4	0.4 à 2.7	0.5 à 4
100 (4")*	85	1	2	0.5 à 3.8	0.6 à 6.5
125 (5")	132	1.5	3	0.8 à 4.8	1 à 8
150 (6")*	190	1.8	3.7	1.2 à 5.5	1.5 à 11.5
200 (8")	340	3.7	7.5	2.7 à 10	2.5 à 21

*recommended ND

- (1) Standard versions are delivered with a contact adjusted on the indicated values.
- (2) On request, the device can be delivered with a contact adjusted on a value included in these limits.
- (3) The values are communicated for decreasing flows; in the case of increasing flows, to consult the Engineering department.

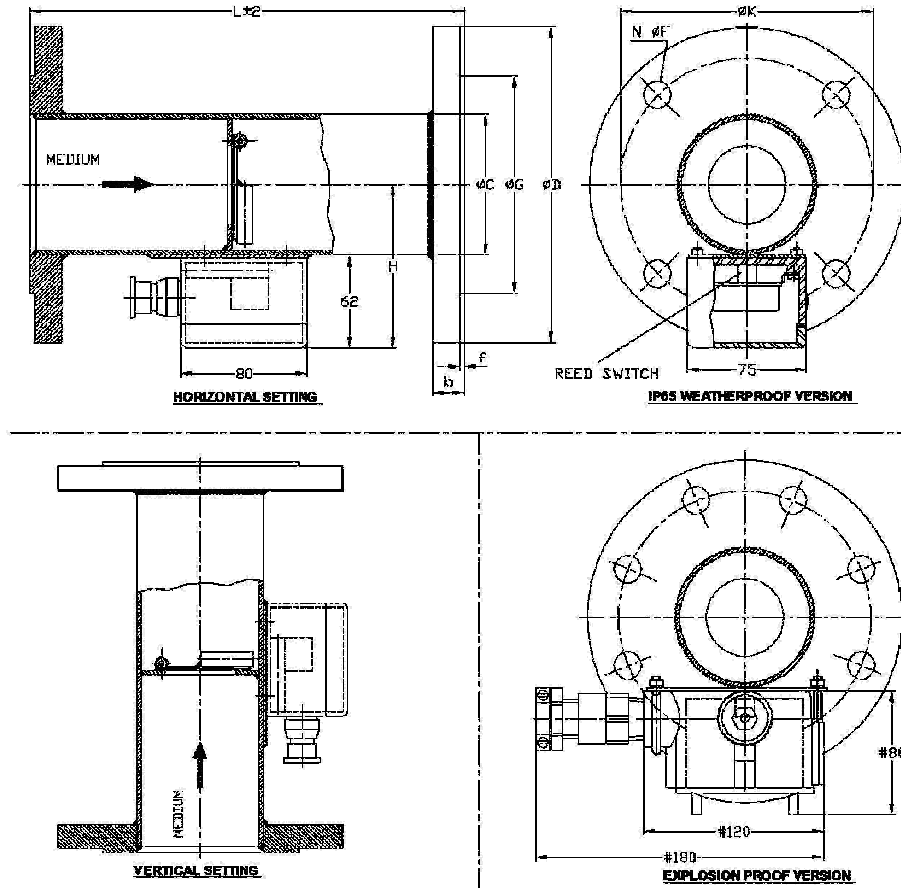
Standard operating conditions

Pressure: 16 bar
Temperature: -30 °C to +125 °C

Contact

Bistable changeover reed contact
Max. power 60VA/60W (resistive load)
Max. current: 1A
Max. voltage: 250Vac/Vdc
(Double switch on request)

Dimensions



Standard dimensions with flange NP16 according to NF EN1092-1 : ex 29203(2007) (Code C1)

ND	ØD	ØK	ØG	N	ØF	f	b	ØC	L	H
40	150	110	88	4	18	3	18	60.3	250	95
50	165	125	102	4	18	3	20	60.3	250	95
65*	185	145	122	4	18	3	18	88.9	250	105
65*	185	145	122	8	18	3	18	88.9	250	105
80	200	160	138	8	18	3	20	88.9	275	110
100	220	180	158	8	18	3	22	114.3	275	125
125	250	210	188	8	18	3	22	141.3	300	135
150	285	240	212	8	22	3	22	159	300	150
200	340	295	268	12	22	3	24	219.1	325	175

* For ND65, the standards flanges have 8 holes but if need be they exist with 4 holes (to be specified on the order)

Standard dimensions with flange Class 150 according to NF EN1759-1 / ANSI B16-5 (Code C2)

ND	ØD	ØK	ØG	N	ØF	f	b	ØC	L	H
1"1/2	127	98.4	73.2	4	15.9	1.6	17.5	60.3	250	95
2"	152	120.6	91.9	4	19	1.6	21	60.3	250	95
2"1/2	178	139.7	104.6	4	19	1.6	22.2	88.9	250	105
3"	190	152.4	127.0	4	19	1.6	23.8	88.9	275	110
4"	229	190.5	157.2	8	19	1.6	27	114.3	275	125
5"	254	215.9	185.7	8	22.2	1.6	28	141.3	300	135
6"	279	241.3	215.9	8	22.2	1.6	25.4	159	300	150
8"	343	298.4	269.7	8	22.2	1.6	28.6	219.1	325	175

Installation and maintenance

This device can be mounted on a horizontal or vertical pipe; the direction of the flow must be ascending with vertical pipe mounting. In case of horizontal mounting, the contact must be fitted on the lower part. No particular maintenance is required although it should be kept in clean condition.

Spare parts

- Switch Housing
- Switch

Flow measurement

Ordering

TYPE	Flow controller		
CCB311	Code	ND Choice	
	40	NF EN1092-1 (2007)	
	50	NF EN1092-1 (2007)	
	65	NF EN1092-1 (2007) – standards flanges with 8 holes	
	65	NF EN1092-1 (2007) – flanges with 4 holes (to specify)	
	80	NF EN1092-1 (2007)	
	100	NF EN1092-1 (2007)	
	125	NF EN1092-1 (2007)	
	150	NF EN1092-1 (2007)	
	200	NF EN1092-1 (2007)	
	1"1/2	NF EN1759-1 / ANSI B16-5	
	2"	NF EN1759-1 / ANSI B16-5	
	2"1/2	NF EN1759-1 / ANSI B16-5	
	3"	NF EN1759-1 / ANSI B16-5	
	4"	NF EN1759-1 / ANSI B16-5	
	5"	NF EN1759-1 / ANSI B16-5	
	6"	NF EN1759-1 / ANSI B16-5	
	8"	NF EN1759-1 / ANSI B16-5	
	Code	Construction	
		Flange material	Body + flap material
	C1	PN16 NF EN1092-1 (2007) / St. St. 316L	St. St. 316L
	C2	Class 150 NF EN1759-1 / St. St. 316L	St. St. 316L
	Code	Measurement element	
	M1	Horizontal mounting – Standard cut off flow in m3/h SG=1	
	M2	Vertical mounting – Standard cut off flow in m3/h SG=1	
	M3	Horizontal mounting – Limit cut off flow in m3/h SG=1	
	M4	Vertical mounting – Limit cut off flow in m3/h SG=1	
	MX	Mounting and setting on request	
	Code	Alarm + housing	
	S1	1 Reed switch in Aluminium Housing IP65 + packing gland PG9 (cable d=5to9)	
	S3	2 Reed switches in Aluminium Housing IP65 + packing gland PG9 (cable d=5to9)	
	S2	1 Reed switch in Explosion proof Housing Ex dIIC T6 Gb+ Aluminium packing gland (cable 3to12)	
	S4	2 Reed switches in Explosion proof Housing Ex dIIC T6 Gb + Aluminium packing gland (cable 3to12)	
	S5	1 Reed switch in Housing Ex ia IIC T6-T5-T4 Ga + packing gland (cable 5to8)	
	S6	2 Reed switches in Housing Ex ia IIC T6-T5-T4 Ga + packing gland (cable 5to8)	
	Code	Options / Documentation	
	Z2	Packing gland for S2/S4 ADE 4F in nickel plated brass (cable 8.5 to16)	
	Z6	Epoxy paint	
		Conformity certificate, test, pressure test, material	
		Maintenance manual	
	D0	3-1-B material certificate	
	D1	Conformity to Nace MR01-75	
	D2	Welding file	
	D3	Calculation notes according CODAP	
	D6	Dye Penetrant Test (Houdec)	
	D7	Dye Penetrant Test (External laboratory)	
	DX	To specify	
	D11	Documentation on CD Rom	

CCB311 - 50 - C1 - M1 - S1 - Z... Ordering example

Complementary example of designation to add with ordering:

Water	S.G. = 1	1 cPo	20 °C	2 bar	Normal m ³ /h	Switching flow 0,4 m ³ /h	Flow increase	Vertical
Fluid	Specific gravity	Viscosity	Operating temperature	Operating pressure	Nominal flowrate	Flow alarm	Sense of alarm	Direction of mounting

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