



Badger Meter Europa

Electromagnetic amplifier type Primo® Advanced

for all detectors

Description

The amplifier type Primo® Advanced is time-proven in all flow applications. This series is extremely accurate and very simple to use. Standard models have a RS232 interface, thus allowing an easy programming of the devices. The backlit, four-line display shows all actual flow measuring data, daily and complete information, including alarm messages. Further functions like the entry of upper and lower flow set points and preselection for batch applications make the series flexible for a large variety of applications. Integrated tools make it easy to install and to maintain. The model Primo® Advanced includes HART protocol communication.



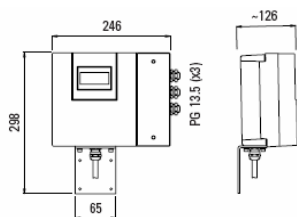
Measuring principle

The operating principle of the electromagnetic flow meter is based on Faraday's law of magnetic induction: The voltage induced across any conductor, as it moves at right angles through a magnetic field, is proportional to the velocity of that conductor. The voltage induced within the fluid is measured by two diametrically opposed internally mounted electrodes. The induced signal voltage is proportional to the product of the magnetic flux density, the distance between the electrodes and the average flow velocity of the fluid.

Technical data

Power supply	85 – 265 VAC, 45 – 65 Hz, <20 VA
Analog output	0/4 - 20 mA, ≤800 ohms, flow direction is displayed upon a separate status output
Pulse output	24 V active, 25 mA, 30 V passive, 250 mA (open collector) max. 10 kHz
Status output	1 min./max. alarm or preselection meter, 1 flow direction, 1 error message
Medium control	separate electrode
Programming	3 keys, RS232, HART
Interface	RS232 for measuring values and programming, optional HART
Flow range	0,03 – 12 m/s
Accuracy	≥0,5 m/s better ±0,25% of actual flow <0,5 m/s ±1,25 mm/s of actual flow
Repeatability	0,1%
Flow direction	bi-directional
Pulse length	Programmable up to 500 ms
Outputs	Short circuit safe and galvanically isolated
Low flow cut off	0-10%
Display	LCD, 4 lines / 16 characters, backlit, actual flow, 2 totalizers, status display
Housing	Powder coated aluminium die cast
Protection class	IP65
Cable insertion	Power and signal cable (outputs) 3 x PG 13.5
Signal cable	From detector PG 11
Ambient temperature	-20 up to +60°C

Dimensions



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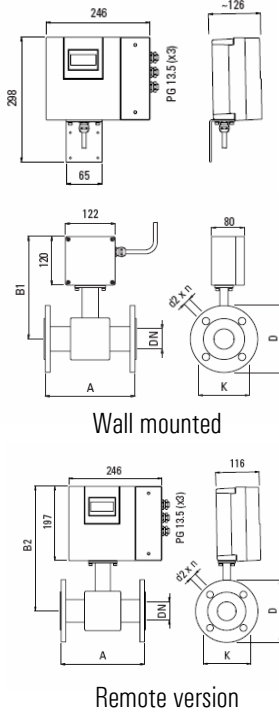
E-mail:badger@badgermeter.de

Detector type II

Flange process connection



The electromagnetic detector type II is not only available in a number of different flange process connections (DIN, ANSI, JIS, AWWA, etc.) but also in a number of liners like hard rubber, soft rubber, PTFE, PFA or Halar. Available in sizes from DN 6 to DN 1400 and nominal pressures up to PN 100, the detector type II is best suited for a variety of applications in the industry and the water/waste water industry.



Technical data

Size	DN 6 – 1400 (1/4" ... 56")		
Process connections	Flange: DIN, ANSI, JIS, AWWA, etc		
Nominal pressure	up to PN 100		
Protection class	IP65, optional IP68		
Min. conductivity	5 μ S/cm		
Liner materials	Hard/soft rubber	from DN 25	0 up to +80°C
	PTFE	DN 6 – 600	-40 up to +150°C
	Halar (ECTFE)	from DN 300	-40 up to +150°C
Electrodes materials	Hastelloy C (standard), Tantal Platinum / Gold plated, Platinum / Rhodium		
Housing	Carbon steel / optional stainless steel		
Lay length	DN 6 – 20	170 mm	
	DN 25 – 50	225 mm	
	DN 65 – 100	280 mm	
	DN 125 – 200	400 mm	
	DN 250 – 350	500 mm	
	DN 400 – 750	600 mm	
	DN 800 – 1000	800 mm	
	DN 1200 – 1400	1000 mm	

Dimensions (mm)

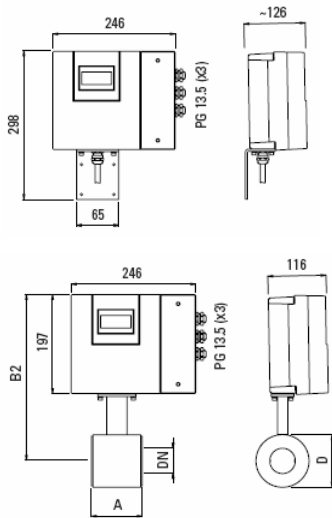
DN		A Std*	A ISO**	B1	B2	with ANSI-flanges			with DIN-flanges		
						Ø D	Ø K	Ø d2xn	Ø D	Ø K	Ø d2xn
6	1/4"	170	---	228	305	88,9	60,3	15,9 x 4	90	60	14 x 4
8	3/10"	170	---	228	305	88,9	60,3	15,9 x 4	90	60	14 x 4
10	3/8"	170	---	228	305	88,9	60,3	15,9 x 4	90	60	14 x 4
15	1/2"	170	200	238	315	88,9	60,3	15,9 x 4	95	65	14 x 4
20	3/4"	170	200	238	315	98,4	69,8	15,9 x 4	105	75	14 x 4
25	1"	225	200	238	315	107,9	79,4	15,9 x 4	115	85	14 x 4
32	1 1/4"	225	200	253	330	117,5	88,9	15,9 x 4	140	100	18 x 4
40	1 1/2"	225	200	253	330	127	98,4	15,9 x 4	150	110	18 x 4
50	2"	225	200	253	330	152,4	120,6	19 x 4	165	125	18 x 4
65	2 1/2"	280	200	271	348	177,8	139,7	19 x 4	185	145	18 x 4
80	3"	280	200	271	348	190,5	152,4	19 x 4	200	160	18 x 8
100	4"	280	250	278	355	228,6	190,5	19 x 8	220	180	18 x 8
125	5"	400	250	298	375	254	215,9	22,2 x 8	250	210	18 x 8
150	6"	400	300	310	387	279,4	241,3	22,2 x 8	285	240	22 x 8
200	8"	400	350	338	415	342,9	298,4	22,2 x 8	340	295	22 x 12
250	10"	500	450	362	439	406,4	361,9	25,4 x 12	395	350	22 x 12
300	12"	500	500	425	502	482,6	431,8	25,4 x 12	445	400	22 x 12
350	14"	500	550	450	527	533,4	476,2	28,6 x 12	505	460	22 x 16
400	16"	600	600	475	552	589,9	539,7	28,6 x 16	565	515	26 x 16
450	18"	600	---	500	577	635,0	577,8	31,7 x 16	---	---	---
500	20"	600	---	525	602	698,5	635,0	31,7 x 20	670	620	26 x 20
550	22"	600	---	550	627	749,3	692,1	34,9 x 20	---	---	---
600	24"	600	---	588	665	812,8	749,3	34,9 x 20	780	725	30 x 20
650	26"	600	---	613	690	869,9	806,4	34,9 x 24	---	---	---
700	28"	600	---	625	702	927,1	863,6	35,1 x 28	895	840	30 x 24
750	30"	800	---	650	727	984,2	914,4	34,9 x 28	---	---	---
800	32"	800	---	683	760	1060,5	977,9	41,3 x 28	1015	950	33 x 24
850	34"	800	---	708	785	1111,2	1028,7	41,3 x 32	---	---	---
900	36"	800	---	725	802	1168,4	1085,8	41,3 x 32	1115	1050	33 x 28
950	38"	900	---	750	827	1238,3	1149,4	41,3 x 32	---	---	---
1000	40"	800	---	790	867	1346,2	1257,3	41,3 x 36	1230	1160	36 x 28
1200	48"	1000	---	900	977	1511,5	1422,4	41,3 x 44	1455	1380	39 x 32
1350	54"	1000	---	975	1052	1682,8	1593,9	47,8 x 44	---	---	---
1400	56"	1000	---	1000	1077	---	---	---	1675	1590	42 x 36
Standard											
with ANSI-flanges			from DN 6 - 1400			Lbs 150					
with DIN flanges			from DN 6 - 200			PN 16					
			from DN 250 - 1400			PN 10					
* Standard **ISO 13359											

Detector type III

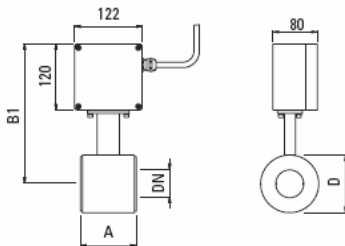
Wafer connection



Thanks to its very short lay length, the detector type III is often the right alternative to a lot of applications. Delivered with a PTFE liner, the detector type III has a standard nominal pressure of PN 40.



Wall mounted



Remote version

Technical data

Size	DN 25 - 100 (1" ... 4")	
Process connection	Wafer connection (in-between flange mounting)	
Nominal pressure	PN 40	
Protection class	IP65, optional IP68	
Min. conductivity	5 μ S/cm	
Liner materials	PTFE	-40 up to +150°C
Electrodes materials	Hastelloy C (Standard) Tantal Platinum / Gold plated Platinum / Rhodium	
Housing	Carbon steel / optional stainless steel	
Lay length	DN 25 - 50	100 mm
	DN 65 - 100	150 mm

Dimensions (mm)

DN		A	B1	B2	D
25	1"	100	238	315	74
32	1 ¼"	100	243	320	84
40	1 ½"	100	248	325	94
50	2"	100	253	330	104
65	2 ½"	150	266	343	129
80	3"	150	271	348	140
100	4"	150	279	356	156
PN 40					

Sanitary detector for Food

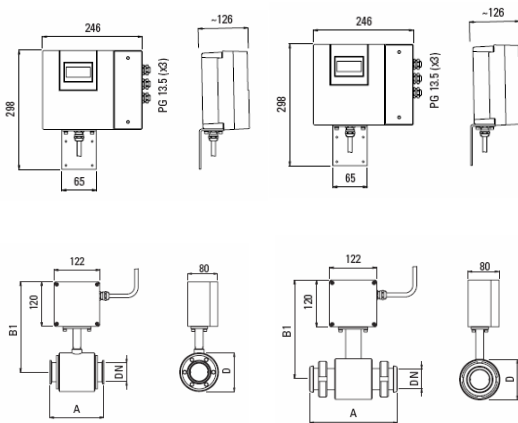
Process connections Tri-Clamp®, DIN 11851, ISO 2852, etc.



The sanitary detector was developed for the flow measurement of liquid food. This model is available with Tri-Clamp®, DIN 11851, ISO 2852 process connections and also with any special connections (customer specifications). The sanitary detector is delivered in a stainless steel housing and with PTFE lining.

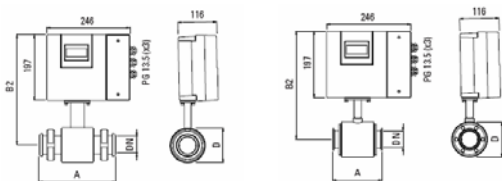
Technical data

Size	DN 10 - 100 (3/8" ... 4")		
Process connections	Tri-Clamp®, DIN 11851, ISO 2852, etc.		
Nominal pressure	PN 10		
Protection class	IP65, optional IP68		
Min. conductivity	5 µS/cm		
Liner materials	PTFE	-40 up to +150°C	
Electrodes materials	Hastelloy C (Standard) Tantal Platinum / Gold plated Platinum / Rhodium		
Housing	Carbon steel / optional stainless steel		
Lay length	Tri-Clamp® connection	DN 10 - 50	145 mm
		DN 65 - 100	200 mm
	DIN 11851 connection	DN 10 - 20	170 mm
		DN 25 - 50	225 mm
	DN 65 - 100	280 mm	



TriClamp®, wall mounted

DIN11851, wall mounted



TriClamp®, remote version

DIN 11851, remote version

Dimensions (mm) type Food Tri-Clamp®

DN		A	B1	B2	D
10	3/8"	145	228	305	74
15	1/2"	145	228	305	74
20	3/4"	145	228	305	74
25	1"	145	228	305	74
40	1 1/2"	145	238	315	94
50	2"	145	243	320	104
65	2 1/2"	200	256	333	129
80	3"	200	261	338	140
100	4"	200	269	346	156
PN 10					

Dimensions (mm) type Food DIN 11851

DN		A	B1	B2	D
10	3/8"	170	238	315	74
15	1/2"	170	238	315	74
20	3/4"	170	238	315	74
25	1"	225	238	315	74
32	1 1/4"	225	243	320	84
40	1 1/2"	225	248	325	94
50	2"	225	253	330	104
65	2 1/2"	280	2266	343	129
80	3"	280	271	348	140
100	4"	280	279	356	156
PN 10					