

AMFLO® MAG Pro

Electromagnetic flowmeter

Applications

Electromagnetic flowmeters are designed for measuring the flow of electrically conductive mediums. The main applications can be found in the sectors district cooling, building automation and cooling water measurement. The temperature, pressure, viscosity and density have no influence on the result.



Features

- High accuracy
- No pressure loss
- Nominal sizes DN 25 - DN 1000
- Flanges DIN, ANSI or JIS
- Compact or remote version
- As option with OIML R49 or EN 1434 type approval

Benefits

- Innovative technology from a single source
- Excellent Price to Quality ratio
- Simple and user-friendly technology
- User guidance in several languages
- Robust metal housing, suitable for rugged conditions

Flow sensor

Sizes	DN 25 - 1000
Connections	Flange (DIN, ANSI, JIS)
Connection material	Carbon steel lacquered RAL 9006 (optional: stainless steel)
Casing	Carbon steel lacquered RAL 9006
Electrode assembly	2 signal electrodes and 1 ground electrode
Electrode material	AISI 316L (1.4404), optional: Hast-C, titanium, tantalum, platinum
Potential equalisation	over ground electrode (optional: grounding disc)
Liquids	Water, water-glycol mixtures
Nominal pressure	PN 16, cls 150, 10 k
Liner	PP, Ebonite, PTFE
Liquid temperatures	PP 0 °C to 60 °C, Ebonite -5 °C to 80 °C, PTFE -20 °C to 100 °C / 150 °C
Protection class	IP 68
Ambiant temperature	5° C to 55° C
Min. electrical conductivity	20µS/cm
Accuracy	±0.4 % between 1 and 10 m/s
Cable length	Split version optional: 2 bis 20m
Approvals	Optional: MID, OIML R49, EN 1434, PTB K7.2

Nominal size	DN	mm	25	32	40	50	65	80	100	125	150
	inches		1	1 1/4	1 1/2	2	2 1/2	3	4	5	6
Flow rate at 0.4 m/s	approx.	m³/h	0.7	1.2	1.8	2.8	4.8	7.2	11.3	17.7	25.4
Flow rate at 10 m/s	approx.	m³/h	18	30	45	70	120	180	280	440	640
Lining Polypropylene											
Medium temperature	0 to 60 °C / 32 to 140 °F										
Flange EN 1092-1	PN 16	Art. No.	93275	93276	93277	93278	93279	93280	93281	93282	93283
Flange ANSI B16.5	Class 150	Art. No.	93303	93304	93305	93306	93307	93308	93309	93310	93311
Flange JIS B2238 - 10K	PN 10	Art. No.	93333	93334	93335	93336	93337	93338	93339	93340	93341
Lining PTFE											
Medium temperature											
Compact version	-20 to 100 °C / -4 to 212 °F										
Remote version	-20 to 150 °C / -4 to 302 °F										
Flange EN 1092-1	PN 16	Art. No.	93289	93290	93291	93292	93293	93294	93295	93296	93297
Flange ANSI B16.5	Class 150	Art. No.	93317	93318	93319	93320	93321	93322	93323	93324	93325
Flange JIS B2238 - 10K	PN 10	Art. No.	93384	93385	93386	93387	93388	93389	93390	93391	93392

Nominal size	DN	mm	200	250	300	350	400	450	500	600	650
	inches		8	10	12	14	16	18	20	24	26
Flow rate at 0.4 m/s	approx.	m³/h	45	70	100	140	180	229	284	408	480
Flow rate at 10 m/s	approx.	m³/h	1100	1700	2500	3400	4500	5700	7100	10200	12000
Lining Ebonite											
Medium temperature	-5 to 80 °C / 23 to 176 °F										
Flange EN 1092-1	PN 16	Art. No.	93284	93285	93286	93287	94508	94509	94510	94511	-
Flange ANSI B16.5	Class 150	Art. No.	93312	93313	93314	93315	94516	94517	94518	94519	on request
Flange JIS B2238 - 10K	PN 10	Art. No.	93342	93343	93381	93382	on request	on request	on request	on request	-
Lining PTFE											
Medium temperature											
Compact version	-20 to 100 °C / -4 to 212 °F										
Remote version	-20 to 150 °C / -4 to 302 °F										
Flange EN 1092-1	PN 16	Art. No.	93298	93299	93300	93301	94512	94513	94514	94515	-
Flange ANSI B16.5	Class 150	Art. No.	93326	93327	93328	93329	94520	94521	94522	94523	on request
Flange JIS B2238 - 10K	PN 10	Art. No.	93393	93394	93395	93396	on request	on request	on request	on request	-

Nominal size	DN	mm	700	750	800	850	900	1000
	inches		28	30	32	34	36	40
Flow rate at 0.4 m/s	approx.	m ³ /h	560	640	720	810	920	1140
Flow rate at 10 m/s	approx.	m ³ /h	14000	16000	18000	20000	23000	28500
Lining Ebonite								
Medium temperature			-5 to 80 °C / 23 to 176 °F					
Flange EN 1092-1	PN 16	Art. No.	on request	-	on request	-	on request	on request
Flange ANSI B16.5	Class 150	Art. No.	on request	on request	on request	on request	on request	on request
Flange JIS B2238 - 10K	PN 10	Art. No.	on request	-	on request	-	on request	on request
Lining PTFE								
Medium temperature								
Compact version			-20 to 100 °C / -4 to 212 °F					
Remote version			-20 to 150 °C / -4 to 302 °F					
Flange EN 1092-1	PN 16	Art. No.	on request	-	on request	-	on request	on request
Flange ANSI B16.5	Class 150	Art. No.	on request	on request	on request	on request	on request	on request
Flange JIS B2238 - 10K	PN 10	Art. No.	on request	-	on request	-	on request	on request

Options

Type examination certificate as an electromagnetic flowmeter according to Directive 2004/22 EC category MI-001 (OIML R49) - Accuracy class 2 according to OIML R49

Nominal diameter	DN	mm	25	32	40	50	65
		inches	1	1 1/4	1 1/2	2	2 1/2
Article number			see price-list	see price-list	see price-list	see price-list	see price-list
Class		Q3/Q1	R160	R160	R160	R160	R160
Overload flow rate	Q4	m ³ /h	20	31.3	50	78.8	125
Continuous flow rate	Q3	m³/h	16	25	40	63	100
Flow speed	v (Q3)	m/s	9.1	8.6	8.8	8.9	8.4
Transitional flow rate	Q2	m ³ /h	0.16	0.25	0.4	0.63	1
Minimum flow rate	Q1	m ³ /h	0.1	0.156	0.25	0.394	0.625
Pulse value		l/pulse	0.05	0.05	0.1	0.2	0.2
Medium temperature PP/Ebonite/PTFE			0 to 60 °C / 32 to 140 °F				

Nominal diameter	DN	mm	80	100	125	150	200
		inches	3	4	5	6	8
Article number			see price-list	see price-list	see price-list	see price-list	see price-list
Class		Q3/Q1	R160	R160	R160	R160	R160
Overload flow rate	Q4	m ³ /h	200	312.5	500	787.5	1250
Continuous flow rate	Q3	m³/h	160	250	400	630	1000
Flow speed	v (Q3)	m/s	8.8	8.8	9.1	9.9	8.8
Transitional flow rate	Q2	m ³ /h	1.6	2.5	4	6.3	10
Minimum flow rate	Q1	m ³ /h	1	1.563	2.5	3.938	6.25
Pulse value		l/Impuls	0.5	0.5	1	2	2
Medium temperature PP/Ebonite/PTFE			0 to 60 °C / 32 to 140 °F				

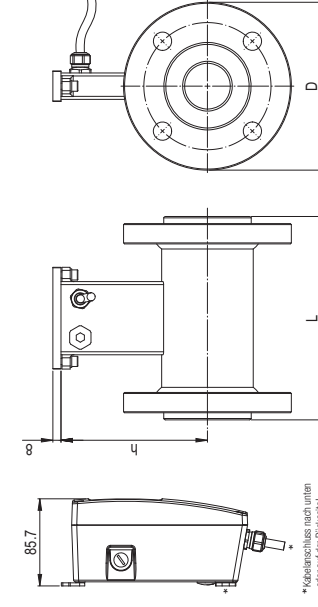
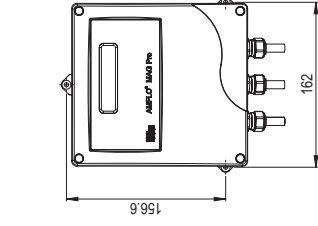
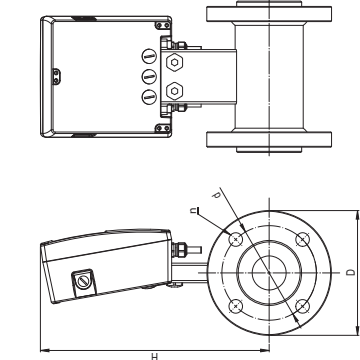
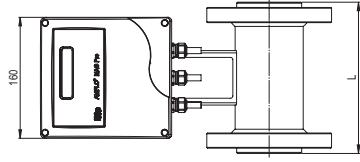
Type examination certificate as an electromagnetic flowmeter as part-device heat meter according to Directive 2004/22 EC, Category MI-004 (EN 1434) - Accuracy class 2 according to EN 1434

Nominal diameter	DN	mm	25	32	40	50	65
		inches	1	1 1/4	1 1/2	2	2 1/2
Article number			see price-list	see price-list	see price-list	see price-list	see price-list
Class		qp/qi	25	25	25	25	25
Maximum flow rate	qs	m ³ /h	20	31.3	50	78.8	125
Permanent flow rate	qp	m³/h	3.5	6	10	15	25
Flow speed	v (qp)	m/s	2.0	2.1	2.2	2.1	2.1
Minimum flow rate	qi	m ³ /h	0.14	0.24	0.4	0.6	1
Pulse value		l/pulse	0.05	0.05	0.1	0.2	0.2
Medium temperature			PTFE 0 to 100 °C / 32 to 212 °F				
			PP 0 to 60 °C / 32 to 140 °F				
			Ebonite 0 to 80 °C / 32 to 176 °F				

Nominal diameter	DN	mm	80	100	125	150	200
		inches	3	4	5	6	8
Article number			see price-list	see price-list	see price-list	see price-list	see price-list
Class		qp/qi	25	25	25	25	25
Maximum flow rate	qs	m ³ /h	200	312.5	500	787.5	1250
Permanent flow rate	qp	m³/h	40	60	100	150	250
Flow speed	v (qp)	m/s	2.2	2.1	2.3	2.4	2.2
Minimum flow rate	qi	m ³ /h	1.6	2.4	4	6	10
Pulse value		l/pulse	0.5	0.5	1	2	2
Lining			PTFE				
Medium temperature			PTFE 0 to 100 °C / 32 to 212 °F				
			PP 0 to 60 °C / 32 to 140 °F				
			Ebonite 0 to 80 °C / 32 to 176 °F				

Transmitter

General	
Configuration interface for programming via PC	yes
Measuring accuracy	0.4 % of reading in range of 1 - 10 m/s
Current output	0/4 - 20 mA, load 800 Ohm
Digital output	- Output: max 1250 Hz, 100 mA, 40 VDC / open collector (programmable) - Status: 100 mA, 40 VDC, open collector (programmable)
Bidirectional	yes
Empty pipe detection	yes
Min. conductivity	20 µS/cm
All outputs electrically isolated from power supply	yes
Ambient temperature	0...50 °C
Protection	IP 67
Compact version with graphical display, 16 characters x 2 lines, local configuration via internal keys	Art. No.
- Power supply 90 to 265 VAC, 45 - 66 Hz, 5 VA	80272
- Power supply 15 - 45 VAC, 45 - 66 Hz, 4 V or 10 - 63 VDC, 3 W	80332
Compact version, blind (without display)	Art. No.
- Power supply 90 - 265 VAC, 45 - 66 Hz, 5 VA	80331
- Power supply 15 - 45 VAC, 45 - 66 Hz, 4 V or 10 - 63 VDC, 3 W	80333
Option	Art. No.
Pressure-equalizing membrane (built-in transmitter)	80334
Programm kit; PC software and USB cable 2 m	94580



* Kabelschleife nach unten
oder auf der Rückseite!

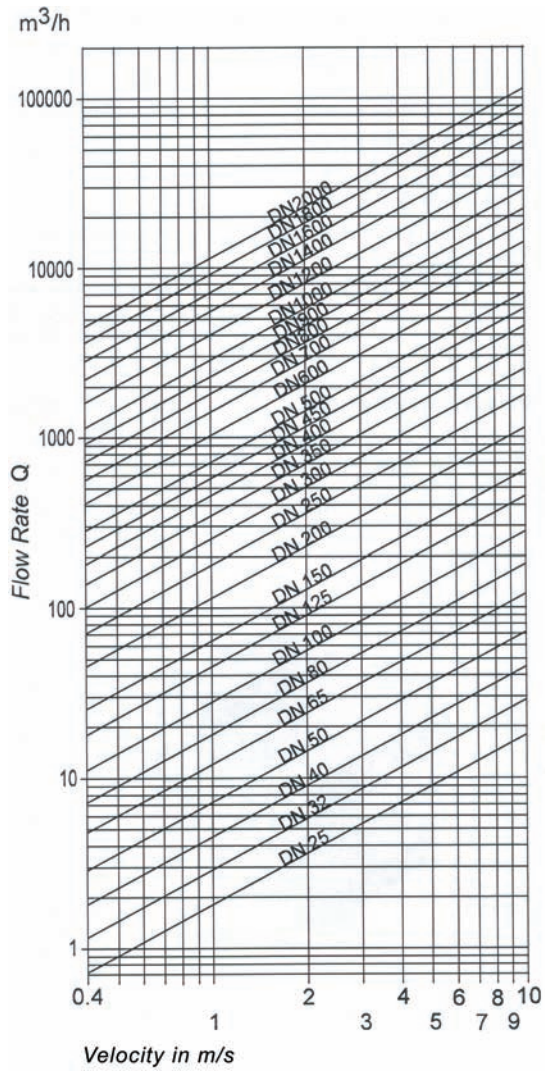
Dimensions EN 1092-1, PN 16

ANSI B 16.5, class 150

JIS B 2238, 10 k, PN 10

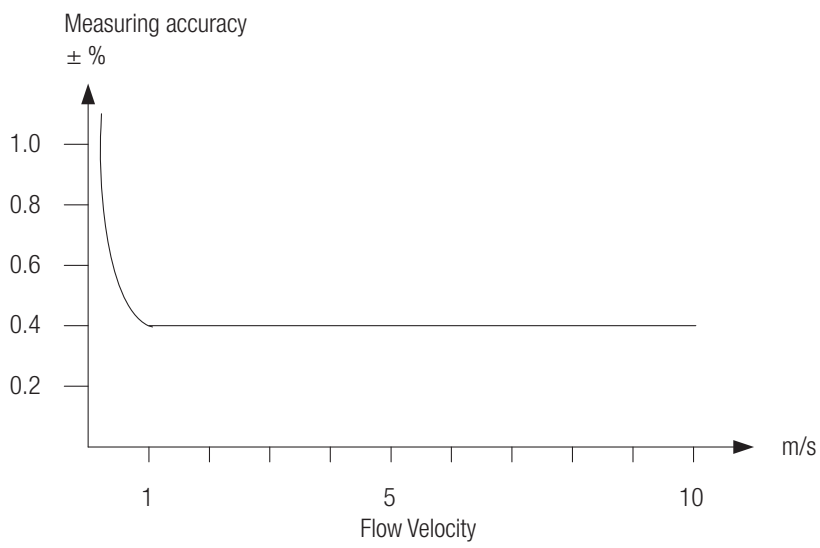
DN	L* [mm]	H [mm]	L [mm]	H [mm]	D [mm]	n [mm]	m [kg]	H [mm]	D [mm]	n [mm]	m [kg]	H [mm]	D [mm]	n [mm]	m [kg]					
25	1	200	288	127	115	85	4x14	5	288	127	108	79.4	4x15.9	5	288	127	125	90	4x19	5
32	1 1/4	200	293	133	140	100	4x18	5.5	293	133	118	88.9	4x15.9	5.5	293	133	135	100	4x19	5.5
40	1 1/2	200	298	138	150	110	4x18	6	305	144	127	98.4	4x15.9	8.5	298	138	140	105	4x19	6
50	2	200	305	146	165	125	4x18	8.5	305	146	152	120.6	4x19	9.5	305	146	155	120	4x19	8.5
65	2 1/2	200	315	156	185	145	8x18	11	315	156	178	139.7	4x19	11	315	156	175	140	4x19	11
80	3	200	323	163	200	160	8x18	12.5	323	163	191	152.4	4x19	12.5	323	163	185	150	8x19	12.5
100	4	250	333	174	220	180	8x18	16	333	174	229	190.5	8x19	16	333	174	210	175	8x19	16
125	5	250	350	188	250	210	8x18	17.5	350	188	254	215.9	8x22.2	23.5	350	188	250	210	8x23	17.5
150	6	300	360	202	285	240	8x22	26.5	360	202	279	241.3	8x22.2	26.5	360	202	280	240	8x23	26.5
200	8	350	390	230	340	295	12x22	33.5	390	230	343	298.4	8x22.2	33.5	390	230	330	290	12x23	33.5
250	10	450	418	258	405	350	12x26	59.5	418	258	406	361.9	12x25.4	64.5	418	258	400	355	12x25	59.5
300	12	500	445	285	460	400	12x26	70.5	445	286	483	431.8	12x25.4	73.5	445	285	445	400	12x25	70.5
350	14	550	475	316	520	470	16x26	106	475	316	533	476.2	12x28.6	109.5	475	316	490	445	16x25	105.5
400	16	600	500	340	580	525	16x30	148	500	340	597	539.7	16x28.6	155	500	340	580	510	16x27	148
450	18	600	530	401	640	585	20x30	167	530	401	635	577.8	16x31.7	185	530	401	620	565	20x27	167
500	20	600	560	460	715	650	20x33	198	525	460	699	635	20x31.7	210	560	460	675	620	20x27	198
600	24	600	620	460	840	770	20x36	287	620	460	813	749.3	20x34.9	302	620	460	795	730	24x33	287
650	26	650							645	486	870	806.4	24x34.9	350						
700	28	700	655	495	910	840	24x36	383	715	553	927	864	28x34.9	360	655	495	905	840	24x33	383
750	30	750							700	540	984	914.4	28x34.9	414						
800	32	800	710	548	1025	950	24x39	482	780	619	1060	978	28x41.3	450	710	548	1020	950	28x33	482
850	34	850							755	594	1111	1028.7	32x41.3	550						
900	36	900	760	598	1125	1050	28x39	595	780	622	1188	1085.8	32x41.3	630	760	598	1120	1050	28x33	595
1000	42	1000	820	657	1255	1170	28x42	700	870	708	1346	1257.3	36x41.3	780	820	657	1235	1160	28x39	700

* Length tolerances according to ISO Standard 13359



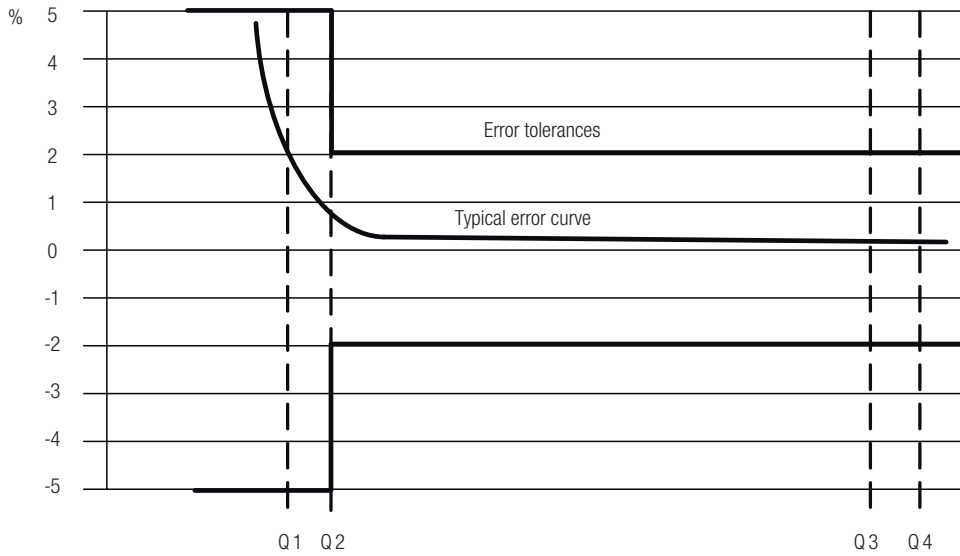
$$v = \frac{Q \cdot 353,68}{DN^2}$$

v [m/s]
 Q [m³/h]
 DN [mm]

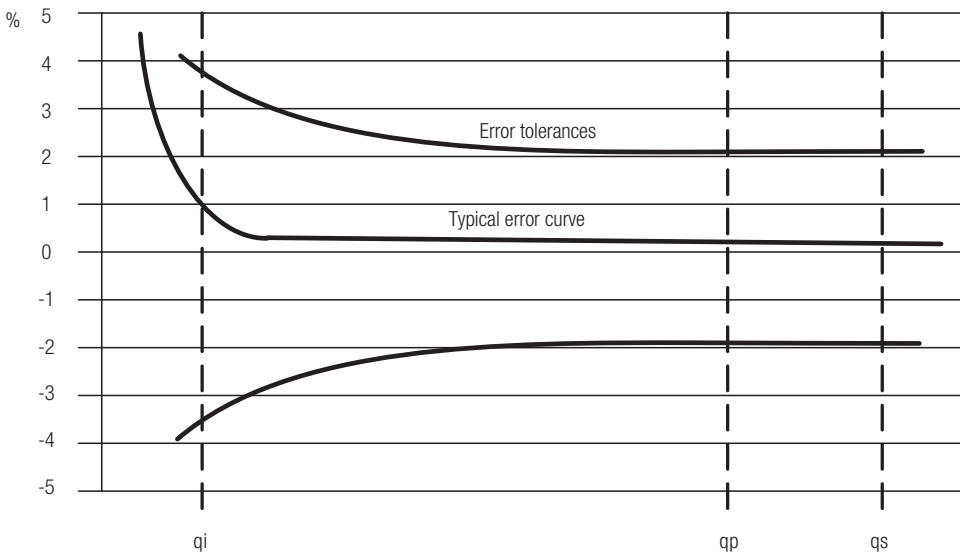


Measurement error limits

Water meter: accuracy class 2 to OIML R49



Hydraulic sensor: accuracy class 2 to EN 1434



DISTRIBUTOR:

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