



SpireMag Series MAG888

High-Performance Magnetic Flowmeter

No Moving Parts Plug & Play Minimal Straight Pipe Required
Telemetry Ready

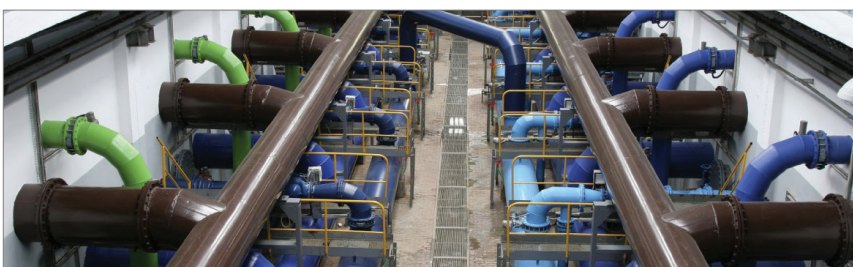
The SpireMag Series MAG888 high-performance magnetic flowmeter accurately measures the flow volume of any conductive liquids, such as water, salt water, sewage, pulps, slurry, acid, alkali, or, any mixtures of liquids and solids which have a specific minimum of $5\mu\text{S}/\text{cm}$ electrical conductivity. SpireMag Series MAG888 has been widely used in municipal, waste water treatment, irrigation, chemicals, as well as industrial liquid processes.



Remote Type

Compared with other measurement methods, MAG888 electromagnetic flowmeters offer the following particular advantages:

- No moving parts to wear and tear
- Short straight-pipe run required, thus, suitable for any desired installation location
- Plug and play. All parameters are pre-configured at the factory
- High accuracy. $\pm 0.5\%$ accuracy is the standard offer $\pm 0.3\%$ accuracy available for DN15-300 ($\frac{1}{2}$ "~12") sizes upon request
- Large operable flow range, 1200:1. Reliable and accurate measurement over widely varying flow rates, including minimal flow rates, which occur in typical water distribution networks at night time
- Wide size selection, from DN15 up to DN2000 ($\frac{1}{2}$ "~80")
- No pressure loss
- Standard output: 4-20mA, pulse, RS232, or RS485/MODBUS
- Optional HART or PROFIBUS communication interface
- Self-diagnosing capability to minimize operational downtime



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Introduction



Integral Type

An Electromagnetic flowmeter is an induction type flow instrument often used to measure the volumetric flowrate of a conductive medium based on Faraday's Law in closed pipelines.

The advantages of Spire Metering's electromagnetic flowmeter are reliable performance, high accuracy, and exceptional ease of use due to the microprocessor and exclusive integrated circuit. The high speed CPU and advanced signal processing technology ensure a wide measuring range (0.01m/s to 12m/s or 0.03ft/s to 36ft/s). The two-line LCD display makes the readings and parameter settings comprehensive and convenient.

Spire Metering's electromagnetic flowmeter can be widely used in industries such as chemical, power supply, metallurgical mining, water supply and drainage, paper plants, pharmaceutical, food, and various other industries.

Specifications

Accuracy*	±0.5% of reading for DN600 / 32" and smaller size and ±1% for DN700 / 28" and larger size. ±0.3% accuracy available for DN15 / ½"-DN300 / 12" size upon request.
Damping Time	0.2~100s selectable
Display and Buttons	Large LCD display with backlight. Displays the instantaneous flow, total flow, and alarm
Totalizers	Three built-in totalizers: forward flow totalizer, reverse flow totalizer and net totalizer
Security	Keypad can be locked with a password
Outputs Signals	
• Analog Output	Bi-directional, isolated 0~10mA/4~20mA. Load resistor: 0~1.5KΩ for 0~10mA, 0~750Ω for 4~20mA
• Frequency Output	Forward & reverse flow output with a frequency range of 1~5000Hz. The external voltage must be lower than 35V and the max output current must be 250mA when the transistor is turned on.
• Alarm Output	Alarm output: Two isolated Open Collector Transistor (OCT) outputs for alarm signals. The external voltage must be lower than 35V and the max output current must be 250mA when the transistor is turned on. Alarm will be activated when the pipe is empty, the excitation circuits are broken or the volume of flow rate exceeds the designed limits.



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•Pulse Alarm	The OCT circuit is used for forward or reverse flowrate output. The upper frequency of the output can be up to 5000cp/s. The incremental pulse values are from 0.1L/p to 1000m³/p. Pulse width can be set in intervals of 10ms up to 400ms or 50% occupancy. The external voltage must be lower than 35Vand maximum output current must be 250mA when the transistor is on.		
Flow Direction Indication	The converter (main unit) is capable of measuring both forward and reverse flow and recognizing flow direction. The converter outputs 0V low level for forward flow, and +12V high level for reverse flow.		
Communication	RS232, RS485/MODBUS, PROFIBUS or HART Communication selectable. GPRS wireless telemetry available upon request.		
Protection Class			
•For electronic box	IP65 (outdoor) or IP 67 (optional)		
•For sensor	IP65 (outdoor) or IP 68 (submersible, only available for remote type)		
Nominal Pressure	DN15-DN100 (1/2"~4"): 2.5MPa (362psig)		
	DN125-DN250 (5"~10"): 1.6MPa (232psig)		
	DN300-DN1000 (12"~40"): 1.0MPa (145psig)		
	DN1200-DN2000 (48"~80"): 0.6MPa (87psig)		
	Higher pressure rating is available upon request		
Lining Material	Rubber, PTFE, Polyurethane, PFA		
Electrode Type	Standard type, scraper type or replaceable type		
Electrode Material	316L SS, Hastelloy B, Hastelloy C, Titanium, Tantalum		
Sensor Material			
•Measuring tube	Stainless steel		
•Housing	Carbon steel as standard offer. Stainless steel available upon request		
•Flange	Carbon steel as standard offer. Stainless steel available upon request		
Pipe Connection	DIN flange as standard offer	ASME ANSI flange	
	Clamped type	Flange Wafer type	
Medium Temperature			
•Integral type	-10°C~+80°C (14°F~176°F)		
•Remote type	Neoprene & Polyurethane Liner -10°C ~+80°C (14°F~176°F)	PTFE Liner -10°C~+150°C (14°F~302°F)	PFA Liner -10°C~204°C (14°F~400°F)
Ambient Temperature	-25°C~+60°C (-13°F~140°F)		
Ambient Humidity	5~95%RH (relative humidity)		
Medium Electrical Conductivity	≥ 5µs/cm		
Measuring Range	1200:1, flow rate ≤12m/s (39ft/s)		
Power Supply	16~36VDC or 85~250VAC, <20W		
Structure Type	Integral type, remote type, submersible type		



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The measured fluid must be conductive liquid or slurry with conductivity no less than 5 μ s/cm. Please avoid fluid with too much ferromagnetic substance or bubbles. The pressure rating, liner material, electrode material and instrument structure should be chosen based on the characteristics of the fluid.

Normally, an electromagnetic flowmeter consists of a converter (main unit) and a flow sensor. The flow sensor is composed of a stainless steel measuring tube, carbon steel housing, flanges, copper wire, liner and electrodes. The housing and flanges can also be stainless steel for durability. The flanges are welded on the measuring tube.

Range of application: Conductive liquid or solid-liquid phase medium, such as drinking water, beverages, sewage, slurry as well as strongly corrosive mediums like sulfuric acid.

* Accuracy Table

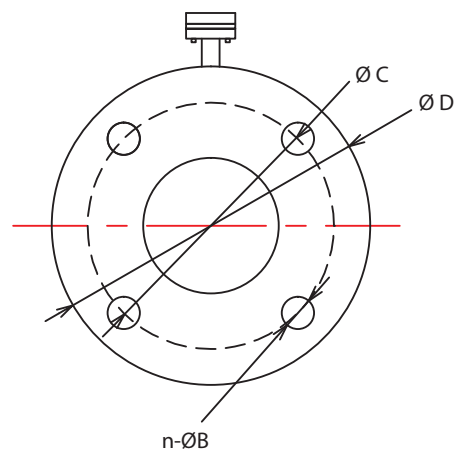
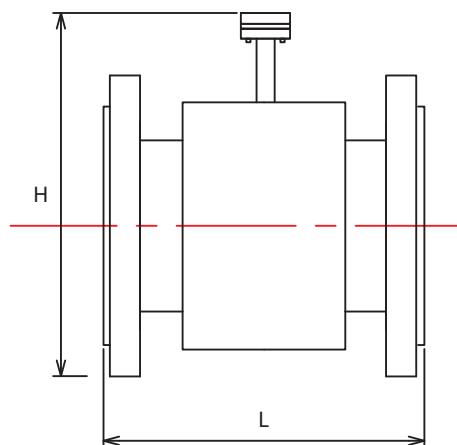
Size mm (inch)	Velocity m/s	0.3% Grade Accuracy	0.5% Grade Accuracy	1.0% Grade Accuracy
15~20 (1/2-3/4)	<0.3		$\pm 1\text{mm/s}$	$\pm 1.2\text{mm/s}$
	0.3~1		$\pm 0.5\%R$	$\pm 1.0\%R$
	1~15		$\pm 0.5\%R$	$\pm 1.0\%R$
25~300 (1-12)	<0.3	$\pm 0.75\text{mm/s}$	$\pm 1\text{mm/s}$	$\pm 1.2\text{mm/s}$
	0.3~0.5	$\pm 1.5\text{mm/s}$	$\pm 0.5\%R$	$\pm 1.0\%R$
	0.5~1	$\pm 0.3\%R$	$\pm 0.5\%R$	$\pm 1.0\%R$
	1~15	$\pm 0.3\%R$	$\pm 0.5\%R$	$\pm 1.0\%R$
350~600 (14-24)	<0.3		$\pm 1\text{mm/s}$	$\pm 1.2\text{mm/s}$
	0.3~1		$\pm 0.5\%R$	$\pm 1.0\%R$
	1~15		$\pm 0.5\%R$	$\pm 1.0\%R$
700~2000 (28-80)	<0.3			$\pm 1.5\text{mm/s}$
	0.3~1			$\pm 1.0\%R$
	1~15			$\pm 1.0\%R$

%R: relative to reading



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Dimensions and Pressure Rating of Flow Sensor (full bore only)

Nominal Size*	Nominal Pressure	Dimension						Weight	
		L		H		D			
		mm	in	mm	in	mm	in	kg	lbs
15 (½")	2.5 MPa (362psig)	200	7.9	220	8.7	80	3.1	8	17.6
20 (¾")		200	7.9	220	8.7	90	3.5	10	22
25 (1")		200	7.9	223	8.8	100	3.9	12	26.4
32 (1 ¼")		200	7.9	240	9.4	120	4.7	13	28.7
40 (1 ½")		200	7.9	250	9.8	130	5.1	14	30.9
50 (2")		200	7.9	263	10.4	140	5.5	15	33.1
65 (2 ½")	1.6 MPa (232psig)	200	7.9	283	11.1	180	7.1	18	39.7
80 (3")		200	7.9	290	11.4	195	7.7	20	44.1
100 (4")		250	9.8	318	12.5	215	8.5	25	55
125 (5")		250	9.8	350	13.8	245	9.6	28	61.7
150 (6")		300	11.8	380	15.0	280	11.0	30	66.1
200 (8")		350	13.8	430	16.9	335	13.2	50	110
250 (10")	1.0 MPa (145 psig)	450	17.7	495	19.5	405	15.9	70	154
300 (12")		500	19.7	547	21.5	440	17.3	95	209
350 (14")		550	21.7	602	23.7	500	19.7	120	264
400 (16")		600	23.6	665	26.2	565	22.2	140	308
450 (18")		600	23.6	720	28.3	615	24.2	160	352
500 (20")		600	23.6	783	30.8	670	26.4	200	440
600 (24")		600	23.6	897	35.3	780	30.7	280	616
700 (28")		700	27.6	982	38.7	895	35.2	350	770
800 (32")		800	31.5	1092	43.0	1010	39.8	400	880
900 (36")		900	35.4	1192	46.9	1110	43.7	480	1056
1000 (40")		1000	39.4	1299	51.1	1220	48.0	550	1210



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Dimensions of Flow Cell

ANSI B16.5 150lb for DN sizes ≤ 24"

ANSI B16.47 150lb Series A for DN sizes > 24"

Nominal Size	Dimension						Weight	
	L		D		H		Remote**	
	mm	in	mm	in	mm	in	kg	lbs
15 (½")	200	7.9	88.9	3.5	220	8.7	8	17.6
20 (¾")	200	7.9	98.6	3.9	220	8.7	10	22
25 (1")	200	7.9	108	4.3	220	8.7	12	26.4
32 (1 ¼")	200	7.9	117.3	4.6	230	9.1	13	28.7
40 (1 ½")	200	7.9	127	5	240	9.4	14	30.9
50 (2")	200	7.9	152.4	6	260	10.2	15	33.1
65 (2 ½")	200	7.9	177.8	7	280	11	18	39.7
80 (3")	200	7.9	190.5	7.5	285	11.2	20	44.1
100 (4")	250	9.8	228.6	9	315	12.4	26	57.3
125 (5")	250	9.8	254	10	345	13.6	28	61.7
150 (6")	300	11.8	279.4	11	370	14.6	30	66.1
200 (8")	350	13.8	342.9	13.5	430	16.9	55	121.3
250 (10")	450	17.7	406.4	16	495	19.5	72	158.7
300 (12")	500	19.7	482.6	19	557	21.9	110	242.5
350 (14")	550	21.7	533.4	21	608	23.9	142	313.1
400 (16")	600	23.6	596.9	23.5	670	26.4	166	366
450 (18")	600	23.6	635	25	720	28.3	175	385.9
500 (20")	600	23.6	689.5	27.1	775	30.5	212	467.4
600 (24")	600	23.6	812.8	32	885	34.8	295	650.4
700 (28")	750	29.5	927.1	36.5	998	39.3	700	1543.3
800 (32")	850	33.5	1060.5	41.8	1115	43.9	750	1653.5
900 (36")	950	37.4	1168.4	46	1215	47.8	960	2116.4
1000 (40")	1050	41.3	1289.1	50.7	1325	52.2	1100	2425.1
1050 (42")	1200	47.2	1346.2	53	1350	53.1	1250	2755.8
1100 (44")	1150	45.3	1405	55.3	1488	58.6	1500	3306.9
1500 (60")	1600	62.9	1855	73	1930	75.9	2500	5511.6

Dimensions of Flow Cell

ANSI B16.5 300lb for DN sizes ≤ 24"

ANSI B16.47 300lb Series A for DN sizes > 24"

Nominal Size	Dimension						Weight	
	L		D		H		Remote**	
	mm	in	mm	in	mm	in	kg	lbs
400 (16")	650	25.6	647.7	25.5	700	27.6	300	661
500 (20")	650	25.6	774.7	30.5	810	31.8	410	904
600 (24")	700	27.6	914.4	36	934	36.8	600	1323
1050 (42")	1200	47.2	1289.1	50.7	1330	52.4	1250	2756
1500 (60")	1600	62.9	1810	71.2	1910	75.2	2700	3747.9



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Dimensions and Pressure Rating of Flanges (full bore flow sensor only)

Nominal Size*	DIN Flange (mm)					ANSI RF#150 Flange (in)				Nominal Pipe Size (NPS)	Class 300 (in)			
	Nominal Pressure	D	Ø B	n	Ø C	D	Ø B	n	Ø C		D	n	Ø B	Ø C
15 (½")	2.5 MPa (362psig)	80	12	4	55	3 ½	½	4	2 ¾	½"	3 ¾	4	½	2 ⅝
20 (¾")		90	12	4	60	3 ⅞	½	4	2 ¾	¾"	4 ⅝	4	⅝	3 ¼
25 (1")		100	12	4	75	4 ¼	½	4	3 ⅞	1"	4 ⅞	4	⅝	3 ½
32 (1 ¼")		120	14	4	80	4 ⅝	½	4	3 ½	1 ¼"	5 ¼	4	⅝	3 ⅞
40 (1 ½")		130	14	4	100	5	½	4	3 ⅞	1 ½"	6 ⅞	4	¾	4 ½
50 (2")		140	14	4	110	6	⅝	4	4 ¾	2"	6 ½	8	⅝	5
65 (2 ½")	1.6 MPa (232psig)	180	18	4	145	7	⅝	4	5 ½	2 ½"	7 ½	8	¾	5 ⅞
80 (3")		195	18	8	160	7 ½	⅝	4	6	3"	8 ¼	8	¾	6 ⅝
100 (4")		215	18	8	180	9	⅝	8	7 ½	4"	10	8	¾	7 ⅞
125 (5")		245	18	8	210	10	¾	8	8 ½	5"	11	8	¾	9 ¼
150 (6")		280	23	8	240	11	¾	8	9 ½	6"	12 ½	12	¾	10 ⅝
200 (8")		335	23	12	295	13 ½	¾	8	11 ¾	8"	15	12	⅞	13
250 (10")		405	25	12	355	16	⅞	12	14 ¼	10"	17 ½	16	1	15 ¼
300 (12")	1.0 MPa (145psig)	440	23	12	400	19	⅞	12	17	12"	20 ½	16	1 ⅞	17 ¾
350 (14")		500	23	16	460	21	1	12	18 ¾	14"	23	20	1 ⅞	20 ¼
400 (16")		565	25	16	515	23 ½	1	16	21 ¼	16"	25 ½	20	1 ¼	22 ½
450 (18")		615	25	20	565	25	1 ⅞	16	22 ¾	18"	28	24	1 ¼	24 ¾
500 (20")		670	25	20	620	27 ½	1 ⅞	20	25	20"	30 ½	24	1 ¼	27
600 (24")		780	30	20	725	32	1 ¼	20	29 ½	24"	36	24	1 ½	32
700 (28")		895	30	24	840	36 ½	1 ¼	28	34	28"	40 ¾	28	1 ⅝	37
800 (32")		1010	34	24	950	41 ¾	1 ½	28	38 ½	32"	45 ¼	28	1 ⅞	41 ½
900 (36")		1110	34	28	1050	46	1 ½	32	42 ¾	36"	50	32	2	46
1000 (40")		1220	34	28	1160	50 ¾	1 ½	36	47 ¼	40"	48 ¾	32	1 ⅝	45 ½
1050 (42")						53	1 ½	36	49 ½	42"	50 ¾	32	1 ⅝	47 ½
1100 (44")						55 ¼	1 ⅝	40	51 ¾	44"	53 ¼	32	1 ⅞	49 ¾
1500 (60")						73	1 ⅞	52	69 ¼	60"	70 ¼	32	2 ⅞	67

Notes:

* For size above DN1500(60"), Please contact support@spiremt.com for details.



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Flow Sensor Selection

Selection of Liner Material

Liner Material	Main Performance	Applications
Polytetrafluoroethylene (PTFE)	<ol style="list-style-type: none"> 1. A plastic material with the most stable chemical properties, able to resist the corrosion of boiling hydrochloric acid, sulfuric acid, nitric acid, aqua regia, concentrated alkali and many kinds of organic solvents. 2. Unable to resist the corrosion of chlorine trifluoride, high temperature vanadyltrifluoride, high flow-rate liquid fluorine, liquid oxygen and ozone. 3. Poor abrasion resistance. 4. Poor ability of anti-negative pressure. 	<ol style="list-style-type: none"> 1. 100°C (212°F) 2. Strong corrosive mediums like concentrated acid, alkali, and more.
Chloroprene rubber (Neoprene rubber)	<ol style="list-style-type: none"> 1. Excellent elasticity, retractility and abrasion resistance. High degree of tensile strength, good wear resistance. 2. Able to resist the corrosion of low concentration acid, alkali and salt, but unable to resist that of that oxidative medium. 	<ol style="list-style-type: none"> 1. <80°C (176°F) 2. Water, sewage, slurry, polluted water, with very low abrasive quality.
Polyurethane rubber	<ol style="list-style-type: none"> 1. Excellent wear resistance (ten times higher than that of the natural rubber). 2. Not suitable for acid and alkaline applications. 3. Unable to work with water mixed with organic solvents. 	<ol style="list-style-type: none"> 1. <80°C (176°F) 2. Medium and strong wearability for ore pulp, coal pulp, mud, and more. 3. Highly abrasive liquids such as mineral rich liquids, slurry.
PFA Liner	<ol style="list-style-type: none"> 1. Outstanding chemical and solvent resistance. 2. High temperature stability. 	<ol style="list-style-type: none"> 1. <204°C (400°F) 2. Often used in various grades of purity and cleanliness.

Electrode Material	Applications
Mo-containing stainless steel (0Cr18Ni12Mo2Ti)	Liquids with weak corrosivity, such as industrial water, sewage, household water, and polluted water are widely used in processes such as, chemical, petrochemical, urea, vinylon, and carbamide.
Hastelloy B (HB)	Good corrosion resistance for different concentrations of hydrochloric acid (under boiling point), resists the corrosion of non-oxidizing acids, alkali, non-oxidizing salt solutions, such as sulfuric acid, phosphoric acid, or organic acid.
Hastelloy C (HC)	Able to resist the corrosion of oxidizing acids, such as, nitric acid, mixed acid, a mixture of chromic acid and sulfuric acid, oxidizing salt, Fe ⁺⁺⁺ , Cu ⁺⁺ or other oxidants such as, hypochlorite solutions at high temperatures or seawater.
Titanium (Ti)	Seawater, chloride, hypochlorite salt, oxidable acid, organic acid, alkali, etc. Unable to resist the corrosion of more pure reducing acids like sulfuric acid and hydrochloric acid. The corrosivity of alpha hydroxy acids will be substantially decreased if there are oxidants such as nitric acid, Fe ⁺⁺⁺ or Cu ⁺⁺
Tantalum (Ta)	The corrosion resistance of tantalum is as good as glass. Except hydrofluoric acid, fuming nitric acid and alkali, it is able to resist the corrosion of almost any other chemical medium.



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As there is a great variety of mediums and the corrosiveness of each medium could change significantly depending upon temperature, concentration, and flow rate, the above two tables can only be used as a reference.

Users should choose the liner and electrode materials according to the specific nature of their application. If necessary, corrosion resistance experiments using similar materials should be performed prior to selecting the liner and electrode material.

Selection of Flange and Grounding Flange

Type of Flange	Applications
Grounding Flange	Applicable to non-conductive pipeline such as plastic pipeline. However, it is not required for the sensor with polytetrafluoroethylene (PTFE) liner.
Inlet Protection Flange	Applicable when the medium is highly corrosive, often used with polyurethane liner. However, it is not applicable for a sensor with polytetrafluoroethylene (PTFE) liner.

Nominal Diameter Selection

1. The MAG888 electromagnetic flowmeter has a high turndown ratio of 1200:1. For best results, Spire Metering recommends selecting the nominal diameter of the flow sensor to be the same as that of the process pipe.

2. If there are solid particles in the medium, a flow velocity range of 1~3m/s (3~10ft/s) is recommended.

• If the actual velocity is over 10ft/s and it is inconvenient or difficult to reduce the flow velocity, Spire Metering recommends selecting a nominal diameter one size larger than that of the process pipe. This will cause the flow velocity to decrease and the abrasion of the electrode and liner caused by particles will be alleviated.

• If the actual flow velocity is below 3ft/s and it is inconvenient or difficult to increase, Spire Metering recommends selecting a nominal diameter one size smaller than that of the process pipe. This will increase the flow velocity and will avoid particle deposition and accuracy degradation.



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When you select a flow sensor with a nominal diameter that is different than the process pipe, a pipe size reducer or expander (pipe adapter) should be connected upstream and downstream to the flow sensor. The centertaper angle should be no more than 150° and there should be a straight pipe of at least 5 times the process pipediameter joined to the pipe adapter and the flange of the flow sensor.

Comparison Table of Velocity and Flowrate

<div>Velocity m/s(ft/s)</div> <div>Flowrate m³/h (gpm)</div> <div>Diameter mm (inch)</div>	0.01(0.03) (Min)	1 (3.28)	2 (6.56)	3 (9.84)	4 (13.12)	5 (16.4)	15 (49.2) (Max)
15(½")	0.006(0.026)	0.64(2.82)	1.27(5.60)	1.9(8.40)	2.5(11.20)	3.2(14.00)	9.5(41.99)
20(¾")	0.011(0.048)	1.13(4.97)	2.26(9.95)	3.4(14.93)	4.5(19.91)	5.6(24.88)	16.9(74.64)
25(1")	0.018(0.079)	1.77(7.79)	3.53(15.55)	5.3(23.33)	7.1(31.10)	8.8(38.88)	26.5(116.63)
40(1½")	0.45(1.98)	4.52(19.89)	9.04(39.81)	13.5(59.72)	18.1(79.62)	22.6(99.53)	67.8(298.58)
50(2")	0.07(0.31)	7.07(31.11)	14.13(62.20)	21.2(93.31)	28.2(124.41)	35.3(155.51)	106.0(466.53)
65(2½")	0.12(0.53)	11.95(52.58)	23.89(105.12)	35.8(157.69)	47.7(210.25)	59.7(262.81)	179.2(788.43)
80(3")	0.18(0.79)	18.1(79.64)	36.19(159.24)	54.3(238.86)	72.3(318.48)	90.4(398.10)	271.4(1194.31)
100(4")	0.28(1.23)	28.27(124.41)	56.5(248.81)	84.8(373.22)	113.1(497.63)	141.3(622.04)	424.1(1866.11)
150(6")	0.63(2.80)	63.61(279.92)	127.2(559.83)	190.8(839.75)	254.4(1119.66)	318.1(1399.58)	954.2(4198.74)
200(8")	1.13(4.98)	113.1(497.63)	226.1(995.26)	339.3(1492.88)	452.3(1990.51)	565.4(2488.14)	1696.4(7464.42)
250(10")	1.76(7.78)	176.7(777.54)	353.4(1555.09)	530.1(2332.63)	706.8(3110.18)	883.5(3887.72)	2650.7(11663.16)
300(12")	2.54(11.2)	254.4(1119.66)	508.9(2239.33)	763.4(3358.99)	1017.8(4478.65)	1272.3(5598.32)	3817.0(16794.95)
350(14")	3.46(15.2)	346.3(1990.51)	692.7(3047.97)	1039.1(4571.96)	1385.4(6095.95)	1731.8(7619.93)	5195.4(22859.80)
400(16")	4.52(19.91)	452.3(4478.65)	904.7(3981.03)	1357.1(5971.54)	1809.5(7962.05)	2261.9(9952.57)	6785.8(29857.70)
450(18")	5.72(25.19)	572.5(2519.24)	1145.1(5038.49)	1717.6(7557.73)	2290.2(10076.97)	2962.7(13036.22)	8588.3(37788.65)
500(20")	7.06(31.10)	706.8(3110.18)	1413.7(6220.35)	2120.5(9330.53)	2827.4(12440.71)	3534.3(15550.88)	10602.8(46652.65)
600(24")	10.17(44.79)	1017.8(4478.65)	2035.7(8957.31)	3053.6(13435.96)	4071.5(17914.62)	5089.3(22393.27)	15268.1(67179.82)
700(28")	13.85(60.96)	1017.8(4478.65)	2770.8(12191.89)	4156.3(18287.84)	5541.7(24383.79)	6927.2(30479.73)	20781.6(91439.20)
800(32")	18.09(79.62)	1385.4(6095.95)	3619.1(15924.11)	5428.6(23886.16)	7238.2(31848.21)	9047.7(39810.26)	27143.3(119430.79)
900(36")	22.9(100.77)	1809.5(7962.05)	4580.4(20153.95)	6870.6(30230.92)	9160.8(40307.89)	11451.1(50384.86)	34353.3(151154.59)
1000(40")	28.27(124.41)	2290.2(10076.97)	5654.8(24881.41)	8482.3(37322.12)	11309.7(49762.83)	14137.1(62203.53)	42411.5(186610.60)
1200(48")	40.7(179.15)	2827.4(12440.71)	8143.0(35829.24)	12214.5(53743.85)	16286.0(71658.47)	20357.5(89573.09)	61072.5(268719.27)
1400(56")	55.4(243.84)	4071.5(17914.62)	11083.5(48767.57)	16625.3(73151.36)	22167.1(97535.14)	27708.8(121918.93)	83126.5(365756.78)
1600(64")	72.4(318.48)	5541.7(24383.79)	14476.4(63696.42)	21714.6(95544.63)	28952.9(127392.84)	36191.1(159241.05)	108573.4(477723.15)
1800(72")	91.6(403.08)	7238.2(31848.21)	18321.7(80615.78)	27482.6(120923.67)	36643.5(161231.56)	45804.4(201539.45)	137413.2(604618.36)
2000(80")	113.1(497.63)	9160.8(40307.89)	22619.4(99525.66)	33929.2(149288.48)	45238.9(199051.31)	56548.6(248814.14)	169646.0(746442.14)



SpireMag Series MAG888

High-Performance Magnetic Flowmeter

How to Order

Please select one option (ID) from each category.



* Attention

For Flow Sensor Size, DN indicates Metric Unit system and should be written as MAG888-DN0015 for DN15 (15mm) meter size. IN indicates English Unit system and should be written as MAG888-IN0050 for 1/2" meter size.

Notes:

* Please consult the size-velocity-flowrate table on the previous page for size selection.

** Sensor flow tube is always SS, but housing & flange may be CS or SS.

*** Self-cleaning electrode, good for sewage applications (for size>DN200/8").

MAG888-

Unit System	ID
Metric	DN
English	IN

Sensor Size*	ID
DN15 (½")	0015 (0050)
DN20 (¾")	0020 (0075)
DN25 (1")	0025 (0100)
.....
DN2000 (80")	2000 (8000)

Nominal Pressure	ID
2.5MPa (362psig) / DN15-50(½"-2")	1
1.6MPa (232psig) / DN65-250(2½"-10")	2
1.0MPa (145psig) / DN300-1000(12"-40")	3
0.6MPa (87psig) / >DN1000 (40")	4
Other, please specify	5

End Connection	ID
DIN Flange	A
ANSI 150# Flange (up to 24" only)	B
ANSI 125# Flange (up to 80")	C
Wafer Flange	D
Other, please specify	E

Liner Material	ID
PTFE	1
Chloroprene Rubber (for size of DN50/2" or larger)	2
Polyurethane	3
PFA	4
Other, please specify	5

Electrode Material	ID
316LSS (OCr18N112M02Ti) (Default)	A
HB (Hastelloy B)	B
HC (Hastelloy C)	C
Ti (Titanium)	D
Ta (Tantalum)	E

ID	Sensor Cable
A	15m / 45ft (Default)
B	30m / 90ft
C	50m / 150ft
D	None for Integral Type

ID	Others
1	None
2	Ground Ring
3	Entrance Protection Flange
4	Blade-type Electrode***
5	Matching Flanges
6	Tri-electrode

ID	Enclosure
A	IP65 (Default)
B	IP67
C	Others

ID	Accuracy Class
1	1.0% (Size>DN600/24")
2	0.5% (Size≤DN600/24")
3	0.3% (available for DN25/1"-DN300/12' only)
4	Other, please specify

ID	Output & Communication
A	Pulse + 4-20mA (Default)
B	Pulse + 4-20mA + RS485 / MODBUS
C	Flow Volume HART Communication
D	Profibus DP

ID	Structure Type **
1	Integral Type, CS Housing & Flange
2	Remote Type, CS Housing & Flange (Default)
3	Remote Type, 304 SS Housing & Flange (DN15-DN600 / 1/2"-24")
4	Remote Type, 316 SS Housing & Flange (DN15-DN300 / 1/2"-12")
5	Remote Type, Submersible Sensor



SpireMag Series MAG888

High-Performance Magnetic Flowmeter

Required Accessories

Power Supply Cable	Model No.
110VAC (American Plug)	WA-PWC-1
220VAC (European Plug)	WA-PWC-2

Optional Accessories

External Adapter	Model No.
485-BACnet / MSTP Adapter (to connect to a BACnet Gateway)	WA-BACMSTP
485-GPRS (To connect to GPRS Telemetry Network)	WA-GPRS

Example

Model# MAG888-DN0100-2-A-1-A-2-B-2-A-1-A

Stands for MAG888 magmeter of size DN100 with 1.6MPa pressure rating DIN flange, PTFE lining and 316SS electrode. 4~20mA and RS485/MODBUS+ pulse outputs, Remote Type, CS Housing & Flange , 0.5% accuracy, IP65, No Ground Ring, 15m/45ft cable.

Model# WA-PWC-2

Stands for 220VAC power supply with European style power plug.

About Spire Metering Technology

Spire Metering is a global leader in flow and energy management solutions. Through continuous innovation, we transform cutting-edge technologies into affordable, reliable solutions for accurate flow and energy measurement. Spire Metering offers water, heat, electricity and gas meters as well as AMR/AMI and billing solutions. Let us help you with your application today.