FMAG550 Series

Electro Magnetic Flow Meter

FMAG550 ▶▶▶

한국아토셀(주)
ATOZCELL KOREA CO.,LTD.

Electro Magnetic Flow Meter

FMAG550 ▶▶▶

PART Ⅰ. DETECTOR

The FMAG550's flow detectors offer the strength and durability of steel with a choice of chemical or abrasive resistant liners.

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Features

- The FMAG550 flow detector uses the well proven electromagnetic method of measurement, which applies Faraday's Law as the principle of operation.
- No moving parts
- High accuracy
- Wide operating range
- No obstruction to the flow
- Little to no pressure loss
- Liners to suit chemical or abrasive applications
- A choice of electrodes to suit the process
- Variety of flange types available
- Robust construction
- Steel welded construction
- Submersible to 10 meters (5 feet) of water
- Suitable for buried service
- Minimal straight pipe installation requirements
- FMAG550 transmitter which features multiple outputs and flexible programming

General Applications

- Water production and distribution.
- Waste water monitoring and treatment.
- Irrigation flow measurement.
- Mining slurries.
- Effluent discharge
- Pulp and paper applications

Technical Data and Specifications

Accuracy

Display and Outputs	0.5% of rate or 1m m/sec whichever is greater (Option 0.2%)
Velocity Range:	0.1 to 10m/sec (0.01m/sec option.)
Turndown from Full Scale:	> 1000:1
Pressure Effects:	Negligible effect
Repeatability:	< 0.05 %
Power Supply Variations:	Negligible

Note : Under reference conditions

Specifications

Sizes	10mm-1200mm NB
Metering Tube	304 Stainless steel
Lining	Chloroprene Rubber F.E.P PTFE Lina tex, Polyurethane
Electrodes	316L SS (Std.) Hastelloy-C Tantalum Titanium Tungsten Carbide Monel
Earthing	316SS (Std.) Hastelloy-C Tungsten Tipped 304SS Discs
Process Flange Connections	KS 10K / 20K ANSI 150# / 300# Other available on request
Pressure Limits	Limited by flange rating
Temperature Limitations	Dependent on Linear selection, Hard Ebonite Rubber = 80℃ PTFE = 150℃ FEP = 120℃
Environmental Protection	IP65 / IP67
Housing	All steel welded case with two part 304 Flange

Electro Magnetic Flow Meter

FMAG550 ▶▶▶

PART Ⅱ. TRANSMITTER

Comprehensive range of electromagnetic flowmeters to suit applications from water to abrasive and corrosive process fluids.

Features

- The FMAG550 uses the well proven electro-magnetic method of measurement, which applies Faraday's Law as the principle of operation. This technique features a straight through section of pipe with no obstruction to restrict flow and no moving parts to wear or break.
- Highly accurate. 0.2 % of rate from 0.5 to 10 meters per second.
- Integral key pad standard. All configuration is performed via front keypad. No plug-in programmer required.
- 32 character display standard, displays rate, total and diagnostic messages.
- Display guides operator with menu prompts during configuration.
- Comprehensive output options, Include multiple analogue, relay, digital and serial outputs.
- Self calibrating system with in-field verification.
- Self monitoring and diagnostic functions. Constantly monitors system integrity and measurement validity. Diagnostics can be linked to outputs for diagnostic alarm.
- Combined type flow transmitter

General Applications

Electromagnetic flowmeters for the accurate flow measurement of any conductive fluid, Ideally suited to water and waste water treatment plants, mining and general industry.

Technical Data

Display: 32 character (2 line x 16 character) alpha-numeric backlit LCD. Displays rate of flow, total flow, alarms, analogue outputs and relay enunciators. Displays text prompts in programming mode.

Configuration: All functions are accessible via 4 button integral key pad. A logical 4 group menu system with display prompts ensures ease of configuration.

Outputs:

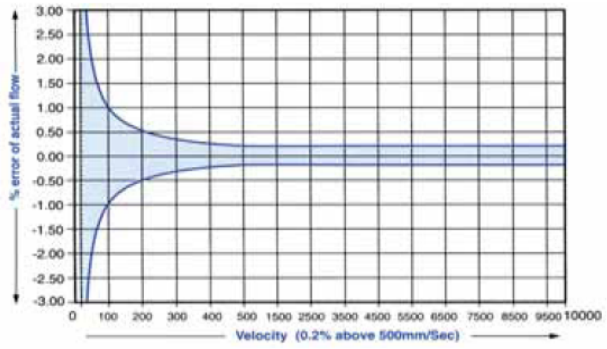
- 24VDC Power Output
- 1 x 4-20 mA Output Fully isolated. (max. load 750 ohms)
- 2 x relays with change over contacts. Hi / Low alarm
- 2 x Digital open collector output
- 1 x RS422/RS232 (Optional)

Power supply: 24VDC. 85-265 VAC 50/60Hz. (* 20%). Power consumption, 25 VA.

Enclosure: Rated IP65 Combined type

Accuracy: *0.2% of rate or *0.001 meters (*0.003 feet) per second, whichever is greater, from 0.5 to 10 meters (1 - 65 to 33 feet) per second.

Velocity/Accuracy Graph



Resolution	18 bit.
Linearity	< 0.05%
Repeatability	< 0.05%
Temp, stability	< 0.05% range, minus 10-55°C (14-131°F)
Voltage effects	Negligible
Turndown from FS	> 1000:1
Separation	100 metres (328 feet).
Conductivity	5µS/cm.

Electro Magnetic Flow Meter

FMAG550

Set-up and Operation

The operation and set-up of the system are broken into two main areas:

Commissioning Mode

Only accessible through a security code to avoid unauthorised access. This mode is used to set the Flow System to your application requirements, including Flow Range, Flow Units, Response Time, Simulations, Outputs etc. Settings may be made either direct via the four button keypad or remotely using the Comms Port. When information is provided, the FMAG 550 is supplied configured to customer requirements.

Operations Menu

Displays readings in normal run mode. The default display shows the Flow rate and Totaliser with an indication of Forward Flow.
The operator may also call up other displays, using the up/down arrow key, such as

- Total / Rate
- Accumulated Total
- Error Status

The display automatically reverts back to default display after ten seconds.

Diagnostics

The FMAG550 incorporates advanced diagnostics which monitor the integrity of the system, including:

- Detector Head Current
- Detector Head Cabling
- Internal Reference Voltages
- A to D Conversion

Configuration options

- Detector Head Size
- Low-flow Cut-off
- Detector Head Constant
- Failsafe Modes
- Flow range
- Relay functions
- Outputs

The LCD display and integral keypad allows the user complete control over all configurable functions.

Operator interface

The FMAG550 includes an integral 2 line alphanumeric display and keypad as standard. No plug in programmer is required. Password protection is included to prevent unauthorized tampering. All parameters are sequenced in a logical, easy to follow order. Configuration prompts on the display further simplifies set-up.

Automatic electrode cleaning

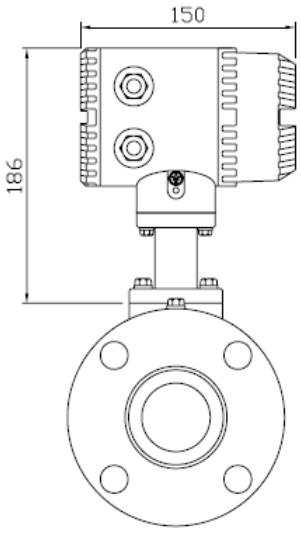
A high frequency applied to the Electrodes between each measurement cycle is used to continuously clean the electrodes. This feature removes the errors caused by coating which typically occurs in many applications.

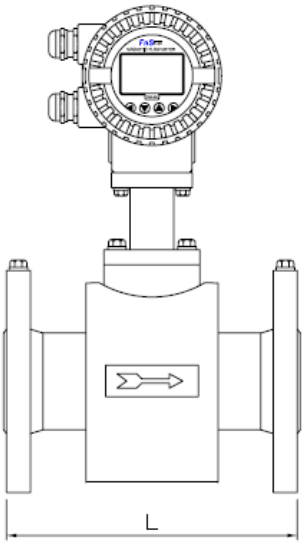
Electro Magnetic Flow Meter

FMAG550 ▶▶▶

Flow Range Charts

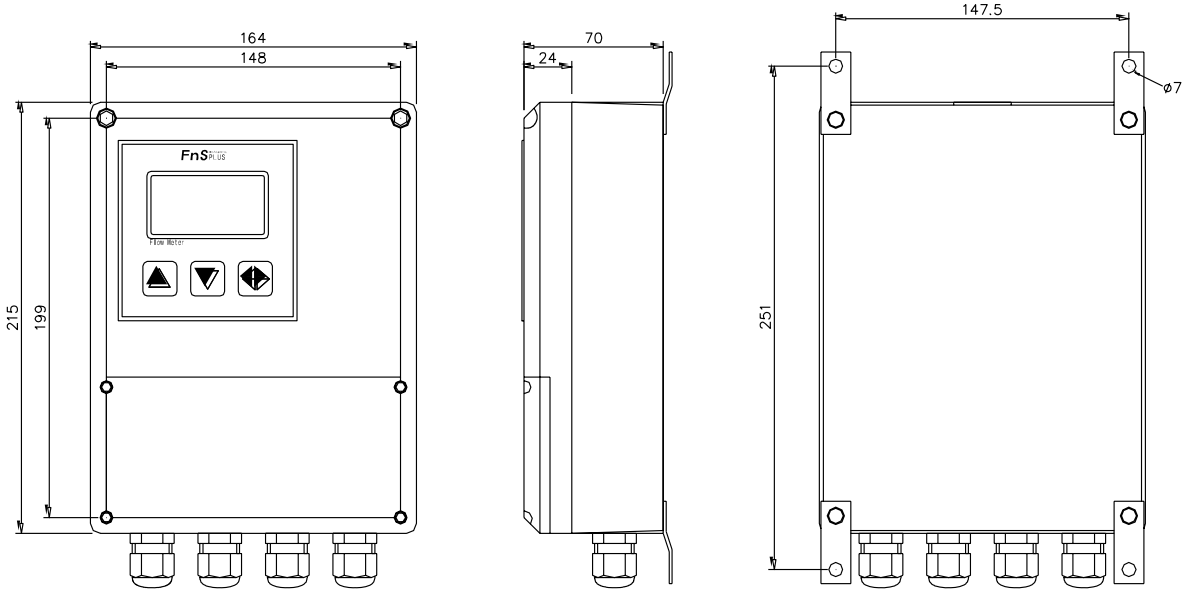
Meter Size		Drawing size		Standard Pressure Rating PN	Mini. Flow Range Flow Velocity 0 to 0.01 m/s				Max. Flow Range Flow Velocity 0 to 10 m/s			
DN	Inch	D	L									
10	3/8	90	150	40	0	to	0.04	l/min	0	to	40	l/min
15	1/2	95	150	40	0	to	0.10	l/min	0	to	100	l/min
20	3/4	100	200	40	0	to	0.15	l/min	0	to	150	l/min
25	1	115	200	40	0	to	0.20	l/min	0	to	200	l/min
32	1-1/4	140	200	40	0	to	0.40	l/min	0	to	400	l/min
40	1-1/2	140	200	40	0	to	0.60	l/min	0	to	600	l/min
50	2	165	200	40	0	to	0.06	m³/h	0	to	60	m³/h
65	2-1/2	185	200	40	0	to	0.12	m³/h	0	to	120	m³/h
80	3	200	240	40	0	to	0.18	m³/h	0	to	180	m³/h
100	4	220	240	16	0	to	0.24	m³/h	0	to	240	m³/h
125	5	285	250	16	0	to	0.42	m³/h	0	to	420	m³/h
150	6	280	300	16	0	to	0.60	m³/h	0	to	600	m³/h
200	8	340	350	10/16	0	to	1.08	m³/h	0	to	1,080	m³/h
250	10	395	400	10/16	0	to	1.80	m³/h	0	to	1,800	m³/h
300	12	445	500	10/16	0	to	2.40	m³/h	0	to	2,400	m³/h
350	14	505	500	10/16	0	to	3.30	m³/h	0	to	3,300	m³/h
400	16	565	600	10/16	0	to	4.50	m³/h	0	to	4,500	m³/h
450	18	615	600	10/16	0	to	6.00	m³/h	0	to	6,000	m³/h
500	20	670	600	10	0	to	6.60	m³/h	0	to	6,600	m³/h
600	24	780	600	10	0	to	9.60	m³/h	0	to	9,600	m³/h
700	28	895	700	10	0	to	13.2	m³/h	0	to	13,200	m³/h
800	32	1015	800	10	0	to	18.0	m³/h	0	to	18,000	m³/h
900	36	1140	900	10	0	to	24.0	m³/h	0	to	24,000	m³/h
1000	40	1245	1000	10	0	to	27.0	m³/h	0	to	27,000	m³/h

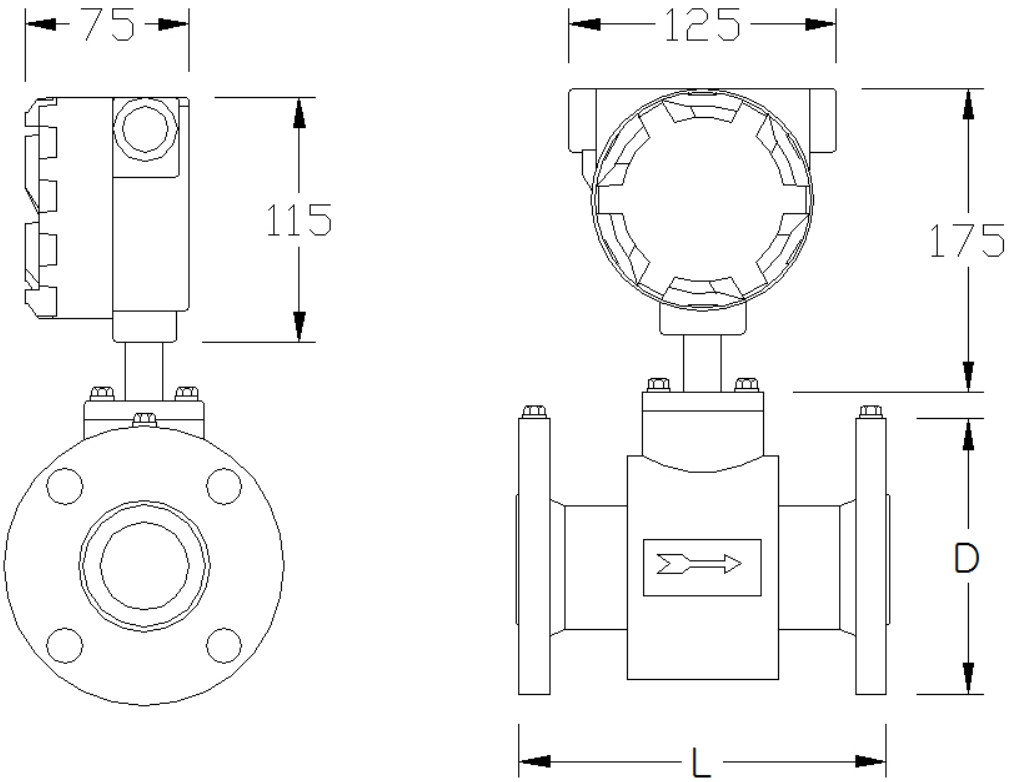




Electro Magnetic Flow Meter

FMAG550 ▶▶▶

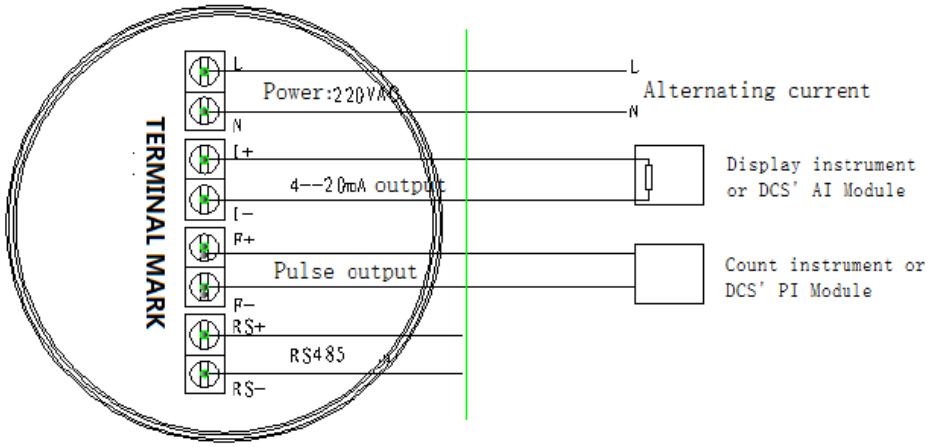


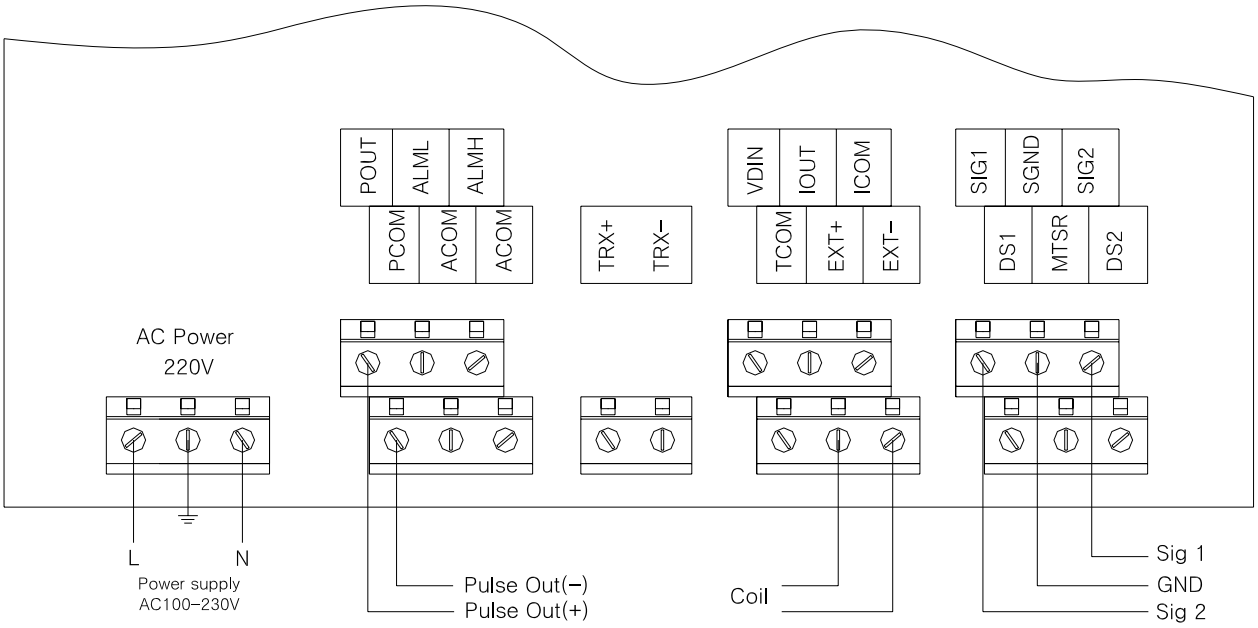


Electro Magnetic Flow Meter

FMAG550 ▶▶▶

Wiring Diagram





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Ordering Information

Example : FMAG550-F1A0-100A11SSR

Model		Order Code									Description
FMAG550											Magnetic Flow Meter
Transmitter	Power	D A E F									DC 24V AC 110V AC 220V AC 85-264V FREE
	Output		1A 2A								4-20mmA Pulse (Std.) 4-20mmA Pulse, 2-Relay (Opt.)
	Communication			0 1							RS-485 (Std.) RS-232C (Opt.)
Detector	Size (10 ~ 1000mm)				010 015 020 025 032 040 050 065 080 100 125 150 ~						10 mm 15 mm 20 mm 25 mm 32 mm 40 mm 50 mm 65 mm 80 mm 100 mm 125 mm 150 mm ~1000 mm
	Connection					A1 A2 B1 B2 P1 S1					KS 10K KS 20K ANSI 150# ANSI 300# PT Thraded TRICLOVER (Sanitary)
	Lining Material						1 2 3 4 5				Chloroprene Rubber F.E.P PTFE Lina tex Polyurethane
	Electrodes							S H T A U C M			316L SS (Std.) Hastelloy-C Titanium Tantalum Tungsten Carbide Monel
	Earth Ring								N S H D		None Earth Ring 316SS (Opt.) Hastelloy-C (Opt.) 304SS Discs (Opt.)
	Mounting									R I	Remote Integral