

### GENERAL

**MAGMAX®** EGM6300C is the compact type electromagnetic flowmeter with a converter mounted integrally on a primary head. The sanitary compact flowmeter consists of a primary head EGS6000 with sanitary PFA lining and a high performance converter EGC300.

The PFA lining material for liquid contact surfaces conforms to FDA (Food and Drug Administration in U.S.A.) requirements. The flowmeter is certified by EHEDG (European Hygienic Equipment Design Group) and 3A (3 consolidated bodies on milk sanitary in U.S.A.). The ISO clamp connection adopted as a standard practice enables its easy mounting on piping and dismounting. It can be used for a wide variety of services in food, beverages or pharmaceutical industries.

### FEATURES

- ❑ Stainless steel SS304 housing for the primary head is hygienic and aseptic.
- ❑ High quality and colorless PFA liner for wet parts complies with FDA requirements.  
Reinforced with embedded stainless steel grid, the PFA liner on the inner surface of the measuring tube has the creep resistance against heat stress caused by fluids and also deformation by vacuum pressure.
- ❑ Effective CIP and SIP cleaning without any moving parts and flow hindrance inside the measuring tube.
- ❑ Easy mounting and dismounting from piping with ISO clamp connection as a standardized practice.
- ❑ High accuracy of  $\pm 0.5\%$  of reading
- ❑ High speed data processing for quick response. Suitable for batch process control and pulsation flow.
- ❑ Certified by EHEDG and 3A

### STANDARD SPECIFICATION

#### General Specification

- Excitation : Square wave
- Nominal size : 25, 40, 50, 65, 80, 100 mm  
See DIMENSIONS for the matching of the sanitary pipe size (S) with the meter size.
- Measuring range : Flow velocity  
Min. 0 to 0.3 m/s  
Max. 0 to 12 m/s  
Flow rate  
Min. 0 to 0.53 m<sup>3</sup>/h  
(Minimum flow at 25 mm size)  
Max. 0 to 339 m<sup>3</sup>/h  
(Maximum flow at 100 mm size)
- Protection class : IP66/67 (IEC 60529)
- Housing material :  
Primary head housing : Stainless steel SS304  
Converter housing : Aluminum alloy \* 1  
\* 1 Anti-corrosive painting



- Wetted part material :  
Liner : PFA  
Electrode : Hastelloy® C22 [Standard]  
[Option] : Stainless steel SS316L, Titanium  
Process adapter : Stainless steel SS316L  
Gaskets for process adapter : Silicone rubber
- Painting : Siloxane coating \* 2
- Color : Grey (Converter housing), Jade green (Converter cover / terminal box cover)
- Cable entry : 2 × G1/2 female thread or  
2 × 1/2 NPT female thread or  
2 × M20 with watertight glands  
(Option : Watertight glands for G1/2)  
(Option : Number of wiring connection ; 3)
- Supply voltage : 100 to 230 V AC (85 to 253 V AC)  
24 V DC (9 to 31 V)
- Supply frequency : 48 to 63 Hz (AC)
- Power consumption : AC; (approx.) 22 VA  
DC; (approx.) 12 W
- Ambient temp. : - 40 to + 65°C (Fluid temp.  $\leq 120^\circ\text{C}$ )  
- 50 to + 70°C (For storage)
- Grounding : Grounding resistance must be less than 100  $\Omega$ .
- Process connection: ISO 2852 Clamp  
\* 2 Painting is applied only for the converter. The stainless steel parts of the primary head and process connection has no paint.

#### Fluid Specification

- Temperature : - 40 to + 120°C  
Note : When cleaning the flowmeter with steam, use steam with lower temperature than 140°C for less than 30 minutes.
- Pressure : - 0.098 to + 0.98 MPa
- Conductivity : To be 1  $\mu\text{S}/\text{cm}$  or more  
(To be 20  $\mu\text{S}/\text{cm}$  or more for water)

Indication and Output Specification

- Indicator : Blue, dot matrix LCD (With backlight)  
128 × 64 pixels (59 × 31 mm)  
The touch sensor system by infrared sensor  
3-page composition, Indication change of one to three lines is possible for the 1 or 2nd page by data setup.  
Contents of indication :  
Flow rate, velocity, total flow, conductivity, coil temperature, self-diagnosis result, and setting menu etc.
- Current output :  
4 to 20mA DC (Max. 22 mA in over range mode at error)  
Internal power supply :  
Less than 1000ohms (Load resistance)  
External power supply :  
32V DC (External voltage)
- Pulse output  
Open collector output  
Rating : Less than 32V DC, 20mA (≦10kHz)  
Less than 100mA (≦100Hz)  
Pulse rate  
2 to 36,000,000 pulse/h (0.00056Hz to 10kHz)  
Pulse width  
One of the following selectable  
1) Automatic :Pulse width by which duty factor to be 50% at full scale  
2) Duty factor 1:1 fixed  
3) Free setting ; 0.05 to 2000m/s
- Status output  
Open collector output  
Rating : 32V DC, 100mA Max.  
Contents of output  
One of the following selectable:  
1) No status output (Standard factory setting)  
2) Identification of flow direction  
3) Over range  
4) Error  
5) Flow alarm  
6) Identification of range (For double range measurement)  
7) Empty detection
- Control input  
Voltage input  
Low : 0 to 2.5V DC High : 19 to 32V DC  
Contents  
One of the following selectable:  
1) No control input (Standard factory setting)  
2) Signal hold  
3) Signal lock to 0%  
4) Total counter reset  
5) Error reset  
6) Range selection (For double range measurement)
- Description of input and output terminal

Terminal	Standard setup	Switchover by reprogramming
A (A, A / A-)	Current output	-
B (B / B-)	Status output	Control input
C (C / C-)	Status output	-
D (D / D-)	Pulse output	Status output

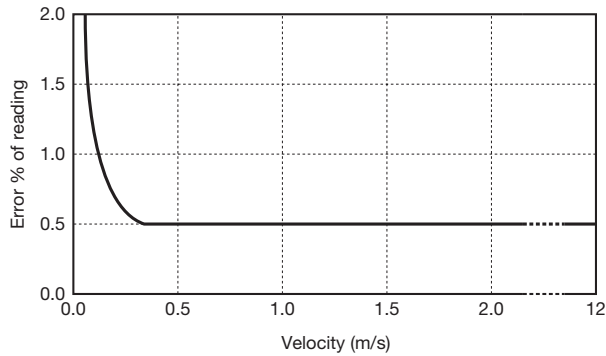
- Low flow cutoff  
Current output, Pulse output, Indicator (Separate setting is possible.)  
Setting value : 0.0 to 20.0% FS  
Setting value (Standard) :  
Current output, Pulse output ; ON 1%, OFF 2% FS  
Indicator ; Without low flow cutoff
- Damping time constant  
Current output, Pulse output, Indicator (Separate setting is possible.)  
Setting value : 0.0 to 100.0s  
Setting value (Standard) :  
Current output, Indicator ; 4s  
Pulse output ; Damping time constant 0
- Isolation of input and output  
Each circuit of power supply, electrode input, excitation output terminal A, terminal B, terminal C, and terminal D are isolated.

Standard Functions

- Customer's free measuring unit setting function  
Volume (or mass) and time unit in 7 characters can be created.
- Automatic zero adjustment function  
Zero adjustment is automatically conducted at "ZERO ADJUST MODE" (Subject to zero flow)
- Bi-directional flow measurement function  
A flow-direction distinction signal is outputted in state output and current.
- Double range measurement function  
Possible range setting range ratio 1 : 20 to 1 : 1.25 (Setting range of low range : 5 to 80% of high range)  
Range selection ; By automatic or control input signal
- Excitation current frequency switching function  
Standard mode :  
1/6 of supply frequency (Standard)  
High frequency mode :  
1/50 to 2 times of supply frequency \* 2  
\* 2 Can be switched according to applications such as slurry or pulsation flow.
- Self diagnosis function  
The following conditions are indicated by error message;  
Functional diagnosis :  
Coil disconnection, CPU, Memory, Software, Output module, and Output connection  
Status diagnosis :  
Velocity distribution, Linearity, Magnetizing current / frequency, Empty detection, Over range, Counter over flow, and Power fail detection
- Memory save function for power failure  
Operation parameters and totalization figures are stored for more than 10 years by EEPROM (Non volatile memory).
- Testing function  
Simulating output function for current, pulse and status outputs is integrated.  
Current output test :  
Arbitrary output (0.0 to 22.0 mA)  
Pulse output test :  
Arbitrary output (1Hz to 10kHz)  
Status output test : On / Off
- HART communication  
Standard

Accuracy \* 3

- Indication and pulse output  
 (Nominal size 25 mm to 100 mm)  
 For velocity  $\geq 0.33\text{m/s}$ ;  $\pm 0.5\%$  of reading  
 For velocity  $< 0.33\text{m/s}$ ;  $\pm 0.2\%$  of reading + velocity error  
 of  $\pm 0.001\text{m/s}$

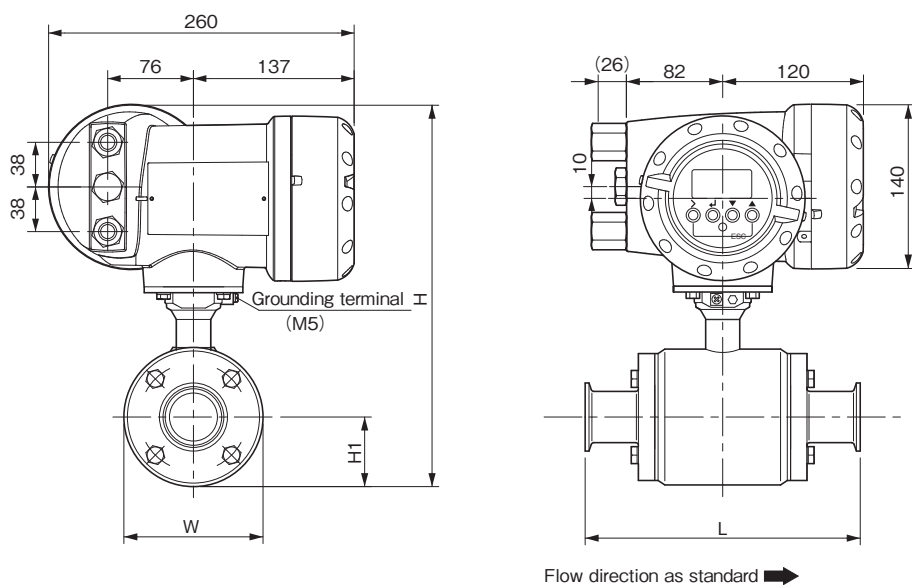


- Current output :  
 Additional error of  $\pm 0.01\text{mA}$  be added onto display and pulse output.
- \* 3 Reference condition
  - Fluid : Water
  - Fluid temperature : 10 to 30°C
  - Conductivity : 150  $\mu\text{S/cm}$  or more
  - Supply voltage : Rated voltage  $\pm 2\%$
  - Ambient temperature : 18 to 28°C
  - Upstream / Downstream pipe length : 10D / 2D (D: Diameter)
  - Warm-up time : About 10 minutes
  - Measuring time : 100s

## FLOW RANGE

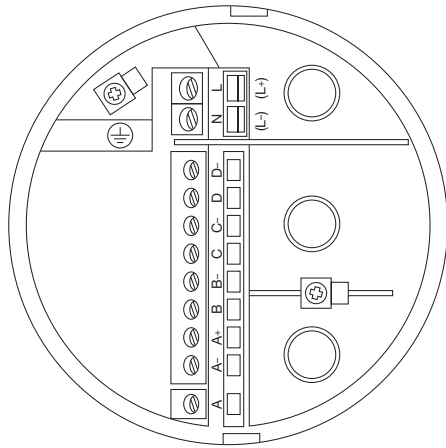
Sanitary pipe diameter (S)	Nominal size (mm)	Possible setting range (m <sup>3</sup> /h)	
		Min. (Velocity: 0 to 0.3 m/s)	Max. (Velocity: 0 to 12 m/s)
1S	25	0 to 0.531	0 to 21.2
1.5S	40	0 to 1.36	0 to 54.2
2S	50	0 to 2.13	0 to 84.8
2.5S	65	0 to 3.59	0 to 143
3S	80	0 to 5.43	0 to 217
4S	100	0 to 8.49	0 to 339

## DIMENSIONS

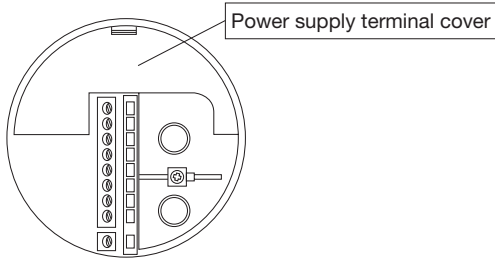


Sanitary tube diameter (S)	Nominal size (mm)	Dimensions (mm)				Mass (kg)
		L	H	H1	W	
1S	25	175	283	44.5	89	7.5
1.5S	40	273	308	57	114	9.6
2S	50	273	308	57	114	9.4
2.5S	65	273	335	70.5	141	13.7
3S	80	333	346	76	152	15.4
4S	100	333	397	101.5	203	23.3

ELECTRICAL CONNECTION



Protection cover is provided for power supply terminals.



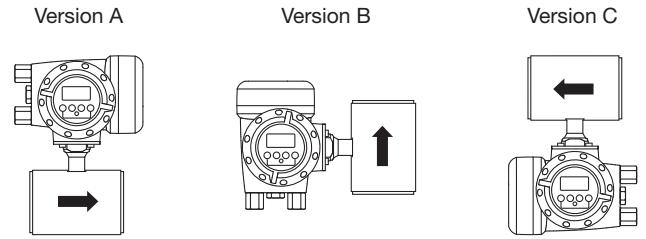
Terminal	Description
L / L+	L+ (+) • L- (-) (AC power supply / DC power supply)
N / L-	
⊕	Grounding

Terminal	Description	Polarity
D-	Pulse output or Status output	-
D		+
C-	Status output	-
C		+
B-	Status output or Control input	-
B		+
A+	Current output (4 to 20 mA DC / HART: Internal power supply)	+
A-	Current output (4 to 20 mA DC / HART: External power supply)	-
A		- +

- Terminal type : Plug-in type screw terminal
- Connection capacity : 0.5 to 2.5mm<sup>2</sup>

Mounting position of LCD display

Indication part of EGM6300C can be changed according to the flow direction.



The mounting position will be arranged according to the customer's request when ordering.

The arrow indicates standard flow direction.

Flow direction can be changed by data setting.

## MODEL AND SPECIFICATION CODE

● Nominal size : 25 to 100mm

Model : EGM6300C

Primary head Spec. code	V	N	2	2	4	L	0	1	C	0	0	0	0	0	0	0	0	0	0	0	0	0	0	Description	Standard	
Primary head code	V	N	2	2																				Sanitary type, PFA lining	○	
(Fixed code)					4																			always 4	Sanitary pipe diameter (S)	○
Nominal size						B																		25 mm	1S	○
						B																		40 mm	1.5S	○
						C																		50 mm	2S	○
						D																		65 mm	2.5S	○
						E																		80 mm	3S	○
						F																		100 mm	4S	○
Process connection						L																		ISO 2852 Clamp connection	○	
(Fixed code)							0																	Always 0	○	
Type								1	C																Compact type (EGC300 Converter)	○
(Fixed code)										0															Always 0	○
Gasket material for process adapter											D														Silicone rubber	○
Electrode material												3													Hastelloy® C22	○
												6													Titanium	○
												A													Stainless steel SS316L	○
(Fixed code)																								Always 0000	○	
Calibration																									Standard calibration	○
(Fixed code)																									Always 0200000	○
Special feature																								(Blank)	None	○
																								/Z	Included *1	○

Converter Spec. code	V	N	3	0	4	4	0	2	0	0	1	2	1	0	0	0	0	0	0	0	0	0	Description	Standard		
Converter code	V	N	3	0																				Type EGC300 (Cylindrical housing)	○	
(Fixed code)					4																			always 4	○	
Type						4																		LCD indication	○	
Power supply																								24 V DC (18 to 31 V)	○	
																								100 to 230 V AC (85 to 253 V)	○	
(Fixed code)																								Always 0	○	
Cable entry																									1/2 NPT female thread	○
																									G1/2 female thread	○
																									M20 with watertight glands	○
(Fixed code)																								Always 200	○	
Housing												1													Standard (Aluminum alloy)	○
(Fixed code)													2												Always 2	○
Output																									Standard (Current output + Pulse output + Control input + Status output)	○
(Fixed code)																									Always 00000	○
Special feature																								(Blank)	None	○
																								/Z	Included *1	○

\*1: In case that Special feature are involved, put [/Z] at the end of spec. code and specify the details. It is recommended to consult TOKYO KEISO for such availability before ordering.

## STANDARD ACCESSORIES

- Parameter sheet : 1
- Instruction manual : 1

## OPTION

- G1/2 watertight glands for cable entry : 1 set [Symbol : WG]
- Number of wiring connection : 3 [Symbol : 3G]

## ORDERING INSTRUCTIONS

Specify the following when ordering :

1. Model and spec. code

Example : Model : EGM6300C

Primary head spec. code :

VN2248L01C00300000200000

Converter spec. code :

VN3044A0520012100000

2. Flow range

3. Option (Specify if necessary.)

Specify the symbol with reference to the option.

4. Fluid name

\* Specification is subject to change without notice.

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