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 ±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 m³/h
  
  (Minimum flow at 25 mm size)
  
  Max. 0 to 339 m³/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
- **Electric**
  
  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. ≤120°C)
  
  −50 to +70°C (For storage)
- **Grounding**: Grounding resistance must be less than 100Ω.
- **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 1μS/cm or more
  
  (To be 20 μS/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)
  - 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
  - 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**

<table>
<thead>
<tr>
<th>Terminal</th>
<th>Standard setup</th>
<th>Switchover by reprogramming</th>
</tr>
</thead>
<tbody>
<tr>
<td>A (A, A–)</td>
<td>Current output</td>
<td>–</td>
</tr>
<tr>
<td>B (B–)</td>
<td>Status output</td>
<td>Control input</td>
</tr>
<tr>
<td>C (C–)</td>
<td>Status output</td>
<td>–</td>
</tr>
<tr>
<td>D (D–)</td>
<td>Pulse output</td>
<td>Status output</td>
</tr>
</tbody>
</table>

- **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 ≥ 0.33 m/s: ±0.5% of reading
  For velocity < 0.33 m/s: ±0.2% of reading + velocity error
  of ±0.001 m/s

- Current output:
  Additional error of ±0.01 mA be added onto display and pulse output.

* 3 Reference condition
- Fluid: Water
- Fluid temperature: 10 to 30°C
- Conductivity: 150 μS/cm or more
- Supply voltage: Rated voltage ±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

<table>
<thead>
<tr>
<th>Sanitary pipe diameter (S)</th>
<th>Nominal size (mm)</th>
<th>Possible setting range (m³/h)</th>
<th>Min. (Velocity: 0 to 0.3 m/s)</th>
<th>Max. (Velocity: 0 to 12 m/s)</th>
</tr>
</thead>
<tbody>
<tr>
<td>1S</td>
<td>25</td>
<td>0 to 0.531</td>
<td>0 to 21.2</td>
<td></td>
</tr>
<tr>
<td>1.5S</td>
<td>40</td>
<td>0 to 1.36</td>
<td>0 to 54.2</td>
<td></td>
</tr>
<tr>
<td>2S</td>
<td>50</td>
<td>0 to 2.13</td>
<td>0 to 84.8</td>
<td></td>
</tr>
<tr>
<td>2.5S</td>
<td>65</td>
<td>0 to 3.59</td>
<td>0 to 143</td>
<td></td>
</tr>
<tr>
<td>3S</td>
<td>80</td>
<td>0 to 5.43</td>
<td>0 to 217</td>
<td></td>
</tr>
<tr>
<td>4S</td>
<td>100</td>
<td>0 to 8.49</td>
<td>0 to 339</td>
<td></td>
</tr>
</tbody>
</table>

## DIMENSIONS

![Flow meter dimensions diagram](image)

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

Mounting position of LCD display
Indication part of EGM6300C can be changed according to the flow direction.

Version A  Version B  Version C

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.

Protection cover is provided for power supply terminals.

<table>
<thead>
<tr>
<th>Terminal</th>
<th>Description</th>
<th>Polarity</th>
</tr>
</thead>
<tbody>
<tr>
<td>L / L+</td>
<td>L+ (+) • L– (–) (AC power supply / DC power supply)</td>
<td></td>
</tr>
<tr>
<td>N / L–</td>
<td>Grounding</td>
<td></td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Terminal</th>
<th>Description</th>
<th>Polarity</th>
</tr>
</thead>
<tbody>
<tr>
<td>D–</td>
<td>Pulse output or Status output</td>
<td>–</td>
</tr>
<tr>
<td>D</td>
<td></td>
<td>+</td>
</tr>
<tr>
<td>C–</td>
<td>Status output</td>
<td>–</td>
</tr>
<tr>
<td>C</td>
<td></td>
<td>+</td>
</tr>
<tr>
<td>B–</td>
<td>Status output or Control input</td>
<td>–</td>
</tr>
<tr>
<td>B</td>
<td></td>
<td>+</td>
</tr>
<tr>
<td>A+</td>
<td>Current output (4 to 20 mA DC / HART: Internal power supply)</td>
<td></td>
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<tr>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>A–</td>
<td>Current output (4 to 20 mA DC / HART: Internal power supply)</td>
<td></td>
</tr>
<tr>
<td>A</td>
<td>Current output (4 to 20 mA DC / HART: External power supply)</td>
<td>+</td>
</tr>
</tbody>
</table>

- Terminal type: Plug-in type screw terminal
- Connection capacity: 0.5 to 2.5mm²
MODEL AND SPECIFICATION CODE

- Nominal size: 25 to 100mm
- Model: EGM6300C

<table>
<thead>
<tr>
<th>Primary head Spec. code</th>
<th>V N 2 2</th>
<th>L O 1 C 0</th>
<th>0 0 0 0 0 2 0 0 0 0 0</th>
<th>Description</th>
<th>Standard</th>
</tr>
</thead>
<tbody>
<tr>
<td>Primary head code V N 2 2</td>
<td>4</td>
<td></td>
<td>Sanitary type, PFA lining</td>
<td></td>
<td>☑️</td>
</tr>
</tbody>
</table>

| Fixed code | 4 | 25 mm | 15 | ☑️ | |
| B | 40 mm | 1.55 | ☑️ | |
| C | 50 mm | 25 | ☑️ | |
| D | 65 mm | 2.55 | ☑️ | |
| E | 80 mm | 35 | ☑️ | |
| F | 100 mm | 45 | ☑️ | |

| Process connection | L | ISO 2892/2 Clamp connection | |
| Fixed code | 0 | Always 0 | |
| Type | 1 C | Compact type (EGC300 Converter) | |
| Fixed code | 0 | Always 0 | |
| Gasket material for process adapter | 6 | Silicon rubber | |
| Electrode material | 6 | Stainless steel SS316L | |
| Calibration | 0 | Standard calibration | |
| Fixed code | 0 2 0 0 0 0 0 | Always 0200000 | |

<table>
<thead>
<tr>
<th>Converter Spec. code</th>
<th>V N 3 0</th>
<th>4</th>
<th>0</th>
<th>2</th>
<th>0</th>
<th>0</th>
<th>1</th>
<th>2</th>
<th>1</th>
<th>0</th>
<th>0</th>
<th>0</th>
<th>0</th>
<th>Description</th>
<th>Standard</th>
</tr>
</thead>
<tbody>
<tr>
<td>Converter code V N 3 0</td>
<td>4</td>
<td>0</td>
<td>2</td>
<td>0</td>
<td>0</td>
<td>1</td>
<td>2</td>
<td>1</td>
<td>0</td>
<td>0</td>
<td>0</td>
<td>0</td>
<td>Type EGC300 (Cylindrical housing)</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Fixed code</td>
<td>4</td>
<td>Always 4</td>
<td></td>
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<tr>
<td>Type</td>
<td>4</td>
<td>LCD indication</td>
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<tr>
<td>Power supply</td>
<td>4 A</td>
<td>24 V DC (18 to 31 V)</td>
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</tr>
<tr>
<td>Fixed code</td>
<td>4 0</td>
<td>Always 0</td>
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<tr>
<td>Cable entry</td>
<td>4 5 6</td>
<td>1/2 NPT female thread</td>
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<tr>
<td>Housing</td>
<td>1 2</td>
<td>Standard (Aluminum alloy)</td>
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<tr>
<td>Fixed code</td>
<td>1 2</td>
<td>Always 2</td>
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<tr>
<td>Output</td>
<td>1</td>
<td>Standard (Current output + Pulse output + Control input + Status output)</td>
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</tr>
<tr>
<td>Fixed code</td>
<td>0 0 0 0</td>
<td>Always 00000</td>
<td></td>
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<tr>
<td>Special feature</td>
<td>(Blank)</td>
<td>None</td>
<td></td>
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</tbody>
</table>

* Specification is subject to change without notice.

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.