

OUTLINE

The compact and lightweight electromagnetic flowmeter **EGM5500C** is easy to install on filling machines and is suitable for a batch control of beverages, detergents or other liquids. Its lightness, compactness, high accuracy, easy cleaning and durability have been realized by putting customers' requirements together and by making use of our field experiences. Designed on the concept of simplicity and reliability, it is powered by 24 VDC with only a pulse output by the open collector without local indication. The straight measuring tube made of zirconia ceramic allows an easy cleaning and low pressure loss. Either 10 or 15 mm in size suitable for mounting on the machines is selectable. It will meet various requirements of filling machines including high temperature services.

*1 See next page for the note.

FEATURES

- Compact and lightweight design suitable for mounting on the machines

Dimensions : 179 × 107 × 50 mm

Mass : 1.4 kg

- Easy cleaning and low pressure loss

The measuring tube made of zirconia ceramic allows an easy cleaning and low pressure loss with a straight construction and without any moving parts. It is compatible with CIP requirements for hygienic use.

- Environmentally-resistant

The fully sealed construction endures severe conditions as in cleaning operation or in humid atmosphere. No ingress of moisture or water mists thanks to all welded body without any openings.

- High speed pulse output

It assures a high resolution and accuracy with the high speed pulse output as fast as the maximum 10,000 Hz with a resolution of 0.1 mL per pulse.

STANDARD SPECIFICATIONS

- Measuring principle : Electromagnetic
- Size : 10, 15 mm
- Measuring fluid : Liquids with conductivity 5 $\mu\text{S}/\text{cm}$ or more and water with 20 $\mu\text{S}/\text{cm}$ or more
- Enclosure classification : IP69K (IEC 60529/EN 60529)
- Fluid temperature : -20 to 140°C depending on ambient temperature. See table 1.
- Ambient temperature : -40 to 60°C
- Fluid pressure : 0 Pa abs to 1.6 MPa for measuring tube
- Installation : Wafer (Sandwiched with flanges)
A modification is required. Optional installation using 4 screws is available.



● Material

Parts	Materials
Measuring tube (Wetted parts)	Zirconia ceramics
Electrodes (Wetted parts)	Platinum cermet
Body housing	Stainless steel

- Output : Pulse output by open collector
- Rating : 30 VDC, 20 mA or less
- Pulse rate : Max. 10,000 Hz at full scale
- Pulse width : Duty factor 1 : 1

● Power supply

- Voltage : 24 VDC $\pm 25\%$
- Consumption : 3 w
- Inrush current : 5 A/100 μ second or less when 24 VDC is switched on.

● Accuracy

- Accuracy : $\pm 0.2\%$ of reading + 1 mm/sec
- Reference conditions : Measuring water with flow velocity $\geq 1\text{m/s}$, conductivity 400 $\mu\text{S}/\text{cm}$, temperature 20°C, pressure 0.1MPa, upstream straight runs 10 D or more, downstream 5 D or more
- Repeatability : Depending on the filling time,
 - 1.5 to 3 seconds : Less than 0.3%
 - 3 to 5 seconds : Less than 0.15%
 - 5 seconds or more : Less than 0.08%

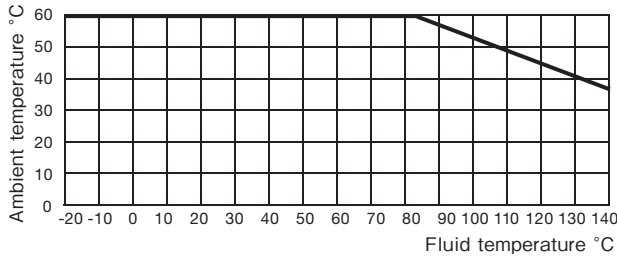
RECOMMENDED FILLING FLOW RATE

Size	Recommended filling flow rate (mL/sec)	Minimum filling volum (mL)	Minimum filling time (second)
10 mm	60 to 200	100	1.5
15 mm	150 to 600	200	1.5

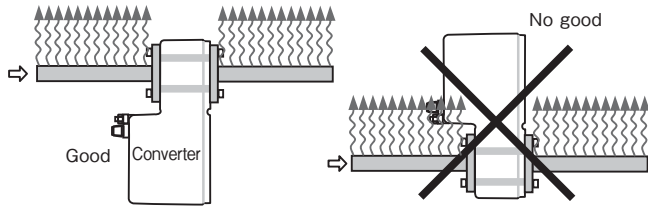
The maximum flow range is decided by the maximum flow velocity of 12 m/sec.

FLUID TEMPERATURE

- Allowable temperature shock : 3°C/sec
- Allowable temperature range in fluid and ambient temperature (Table 1.)

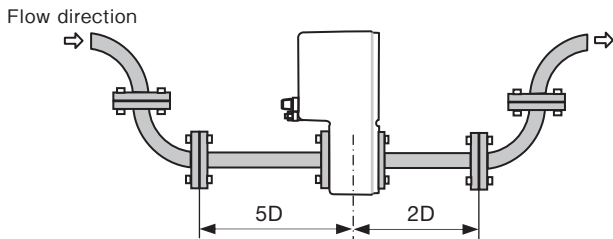


- Precaution on installation for a hot filling
Place the converter underneath hot lines as shown below to avoid a temperature effect.



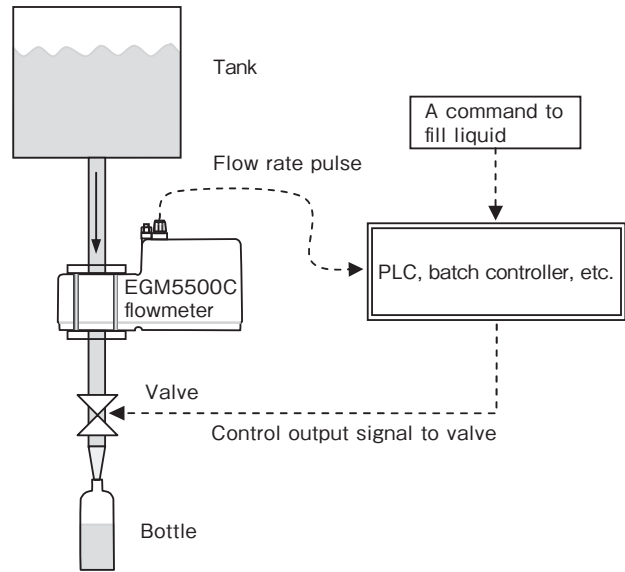
REQUIRED STRAIGHT RUNS

Upstream : Min. 5 D
Downstream : Min 2 D where D is pipe diameter



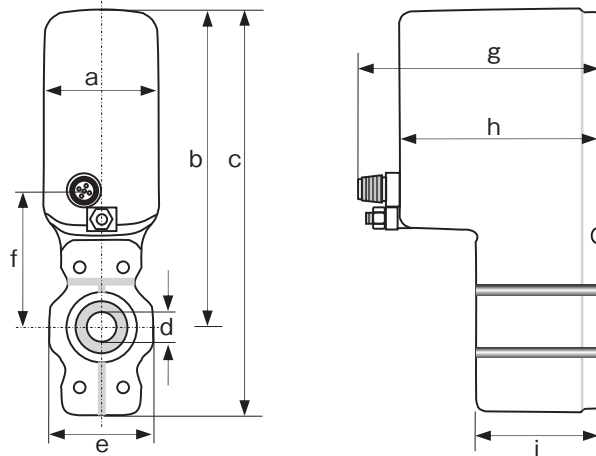
AN EXAMPLE OF APPLICATION

An example of filling application



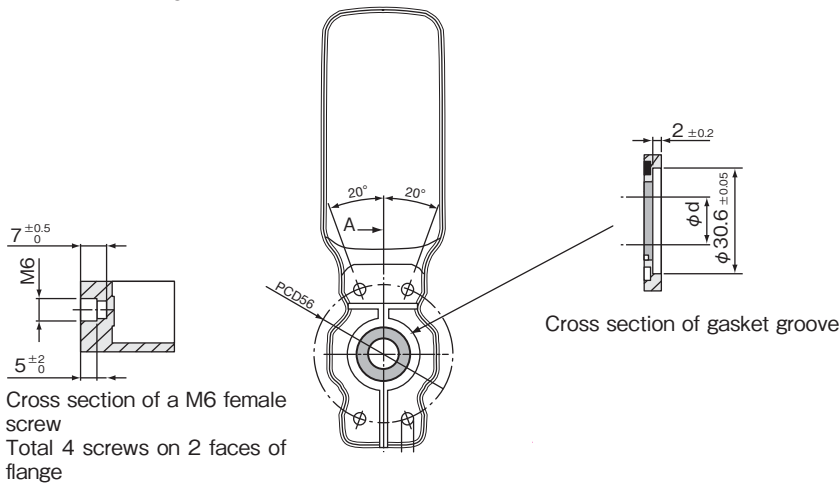
*1 A preliminary testing on your equipment is recommended to assess the compatibility. The allowable max. temperature for a hot filling is 80 °C.

DIMENSIONS

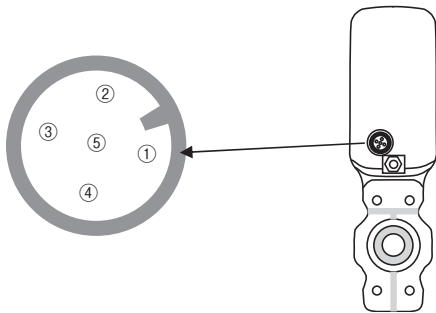


Size	Dimension (mm)									Mass (kg)
	a	b	c	d	e	f	g	h	i	
10mm	50	140	179	10.5	45.4	60	106.5	88	54	1.4
15mm	50	140	179	14	45.4	60	106.5	88	54	1.4

● Details of measuring tube



WIRING



M12 male screws

- ① Power supply 24 VDC (+)
- ② Pulse output (+)
- ③ Pulse output (-)
- ④ Power supply 24 VDC (-)
- ⑤ To be connected for service only. Not for customers.

ORDERING INSTRUCTIONS

Specify the following when ordering :

1. Model code : EGM5500C
2. Size : 10 or 15 mm
3. Pulse output : Volume pulse or pulse rate
 Example 1 : to designate a flow volume per pulse such as 0.1 mL/pulse, 1 mL/pulse, or 10 mL/pulse and so on.
 Example 2 : to designate the maximum frequency of pulse corresponding to the maximum flow range such as 0 to 1,000 Hz, 0 to 2,000 Hz or 0 to 10,000 Hz to the range of 0 to 100 mL/sec.
4. Other optional requirements

STANDARD ACCESSORIES

- Instruction manual : 1

OPTIONS

- A cable assembly 5 m in length with a straight plug for connection : Code CS
- A cable assembly 5 m in length with a L-shaped plug for connection : Code CL
 The plug for connection made of plastic is a 4 pole female connector 713 series (M12 x 1) made by Binder^{*2}.
^{*2} The protection class of connector plug in this option is IP67. Provide it when other protection class is required.
- A set of bolts and nuts made of SUS304 for installation on piping : Code BN

* Specification is subject to change without notice.

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