

GENERAL

MAGMAX[®] EGS5000 is a separate type primary head of electromagnetic flowmeters with Ceramic measuring tube. The erosion and corrosion resistant, and highly durable EGS5000 is widely applicable for chemical liquid, slurry and many other applications. From the smallest 2.5 mm to 100 mm, 10 sizes are available. EGS5000 is used in combination with **MAGMAX[®]** series converter of electromagnetic flowmeter.

FEATURES

- ❑ Combination of Ceramic tube and Platinum electrodes is adopted for high anti-corrosive, anti-erosion, and anti-penetration capability.
- ❑ The dimensionally stable measuring tube made of ceramic offers a life-long higher accuracy than plastic liners.
- ❑ Stainless steel housing is adopted.
- ❑ By reducing the affect caused by upstream velocity profile disturbances, the newly designed reducing tube offers an increased accuracy and stability even in low flow as well as mechanical durability of measuring tube.
- ❑ High accuracy of $\pm 0.5\%$ of reading.



STANDARD SPECIFICATION

General Specification

- Converter for combination : **MAGMAX[®]** series Converter EGC300F/W, EGC100W or others
- Excitation : Square wave
- Nominal size : 2.5, 4, 6, 10, 15, 25, 40, 50, 80, 100 mm
- Measuring range : Flow velocity Min. 0 to 0.3 m/s
Max. 0 to 12 m/s
Flow rate Min. 0 to 0.0054 m³/h
(Minimum flow at 2.5 mm size)
Max. 0 to 339 m³/h
(Maximum flow at 100 mm size)
- Protection class : IP66/67
IP68 as an option (IEC 60529)
- Housing material
Primary head : Size 2.5 to 15 mm : Stainless steel cast
Size 25 to 100 mm : Stainless steel
Terminal box : Aluminum alloy^(*1)
- (*1) Anti-corrosive painting
- Wetted part material
Measuring tube : Size 2.5 to 25 mm
Zirconia ceramics (ZrO₂)
Size 40 to 100 mm
Alumina ceramics (Al₂O₃)
Electrode : Size 2.5 to 25 mm ; Pt CERMET
Size 40 to 100 mm ; Platinum
Earth ring : Stainless steel/SS316 [Standard],
Hastelloy[®] B, Hastelloy[®] C, Titanium,
Tantalum^{(*2) (*3)}
Gasket for earth ring^(*3) : PTFE jacket type with joint sheet
core or Fluorocarbon resin
- (*2) Tantalum earth ring is a combination of tantalum plate and PTFE jacket type gasket with Viton core.
- (*3) Refer to "Operating range for the earth ring gaskets".
- Painting : Siloxane coating^(*4)

- Color^(*4) : Grey (Primary head housing/Terminal box housing)
Jade green (Terminal box cover)
- Cable entry : 2 × G1/2 female thread
2 × 1/2 NPT female thread
2 × M20 with watertight glands
(Option : Watertight glands for G1/2)
- Power supply : Supplied from converter
- Ambient temperature : -40 to +65°C (For operation)
-50 to +70°C (For storage)
- Process connection : Wafer type
- Flanges : JIS10K/20K/30K/40K, ASME class
150/300, DIN PN16/40
- Grounding : Grounding resistance must be 100Ω or less

(*4) Terminal box only, Stainless housing of primary head has no painting.

Fluid Specification

- Temperature : -40 to +180°C
Note: Consult TOKYO KEISO on ATEX model.
- Pressure : Size 2.5 to 80 mm ; 0 Pa (abs) to 4 MPa
Size 100 mm ; 0 Pa (abs) to 1.6 MPa
Note: The limitation for fluid temperature and pressure is subject to gasket for earth ring. Refer to "Operating range for the earth ring gaskets" table as details.
- Conductivity : 1 μS/cm or more for size 25 to 100 mm
5 μS/cm or more for size 4 to 15 mm
10 μS/cm or more for size 2.5 mm
(20 μS/cm or more for water)
Note: The minimum conductivity is restricted according to the kind of the converter to combine and the length of electrode signal cable.
Refer to the Technical Guidance for Converter.
- Permissible temperature change : Temperature rising
in 10 minutes ; ΔT ≤ 150°C
(for sudden change ; ΔT ≤ 120°C)
Temperature falling
in 10 minutes ; ΔT ≤ 100°C
(for sudden change ; ΔT ≤ 80°C)

Accuracy

±0.5% of reading

Note: Refer to the Technical Guidance for Converter as details.

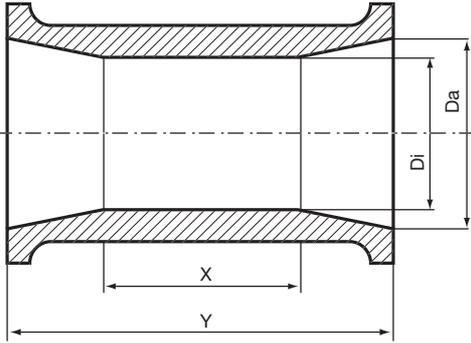
Operating range for the earth ring gaskets

Gasket	Fluid pressure	Fluid temperature
PTFE jacket type with joint sheet core (equivalent to VALQUA No. N7035)	≤1.5MPa	≤140°C
Fluorocarbon resin (equivalent to VALQUA No. 7020)	≤4MPa	≤180°C
Tantalum earth ring (PTFE jacket type gasket with Viton core)	≤0.7MPa	≤140°C

FLOW RANGE

Nominal size (mm)	Possible setting range (m ³ /h)	
	Min. (Flow velocity : 0 to 0.3 m/s)	Max. (Flow velocity : 0 to 12 m/s)
2.5	0 to 0.0054	0 to 0.212
4	0 to 0.0136	0 to 0.542
6	0 to 0.0306	0 to 1.22
10	0 to 0.0849	0 to 3.39
15	0 to 0.191	0 to 7.63
25	0 to 0.531	0 to 21.2
40	0 to 1.36	0 to 54.2
50	0 to 2.13	0 to 84.6
80	0 to 5.43	0 to 217
100	0 to 8.49	0 to 339

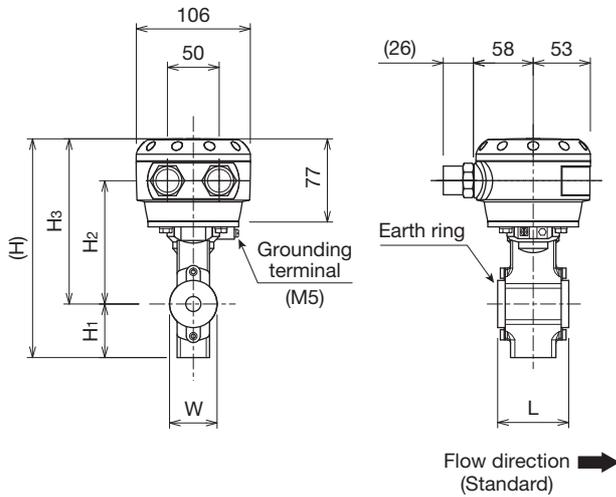
DIMENSIONS FOR CERAMIC TUBE



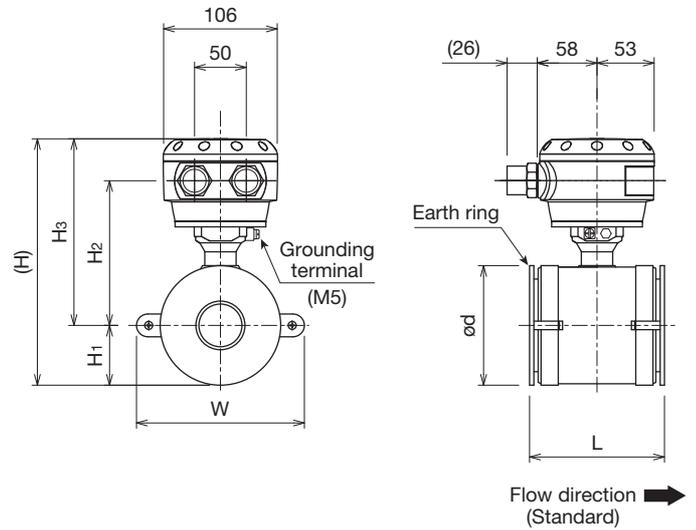
Nominal size (mm)	Dimensions (mm)			
	Da	Di	X	Y
2.5	6	2	20	50
4	7	3	20	50
6	9	5	20	50
10	12	7	20	50
15	14	12	20	50
25	24	20	26	55
40	37	30	36	80
50	49	40	51	100
80	78	60	70	150
100	98	80	103	200

DIMENSIONS

Nominal size: 2.5 to 15 mm



Nominal size: 25 to 100 mm



Nominal size (mm)	Dimensions (mm)							Mass (kg)
	L*	(H)	H ₁	H ₂	H ₃	W	d	
2.5 to 15	68	206	51	119	155	44	-	2
25	69	193	34	123	159	102	68	2
40	94	208	42	130	166	117	84	3
50	114	226	51	139	175	136	102	3
80	164	258	67	155	191	168	134	7
100	214	283	79	168	204	193	158	9

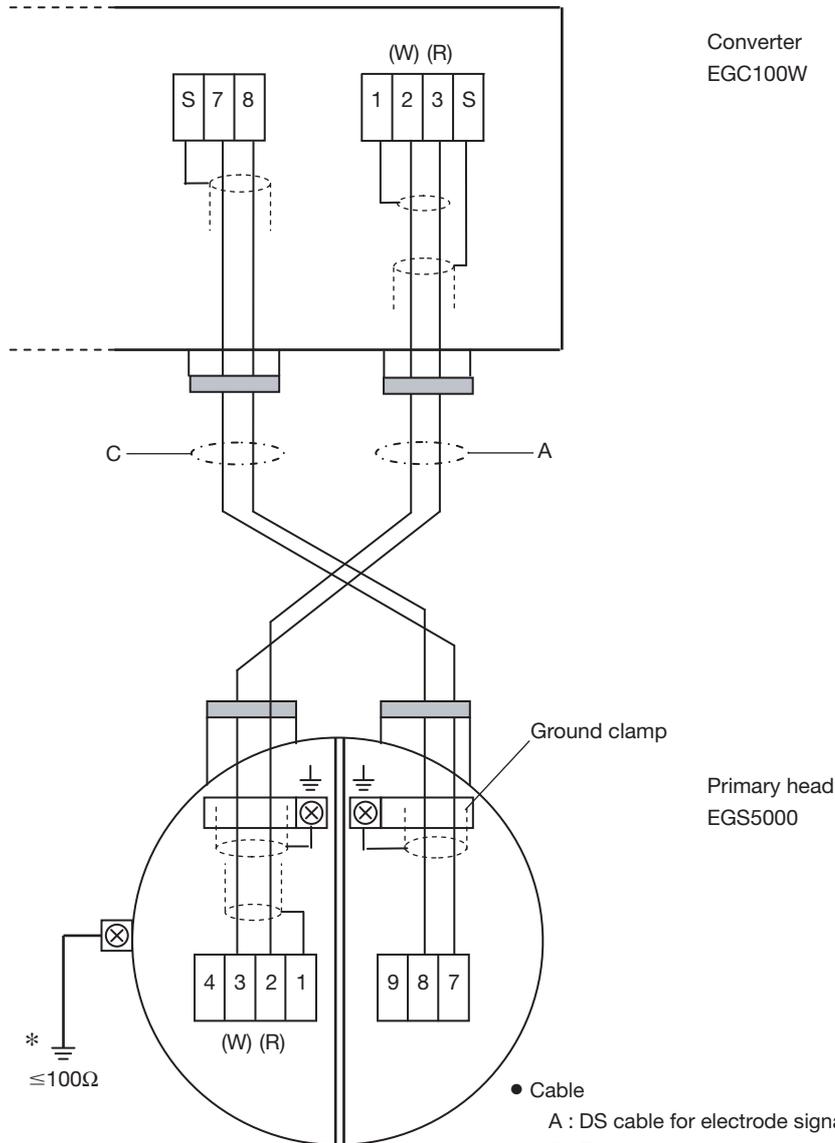
*1 Dimension L is for with PTFE jacket type gaskets for earth rings.

Dimension L is shorter by 2 mm in case of Fluorocarbon resin gaskets for earth rings.

*2 Dimension L is shorter by 5 mm (size 2.5 to 15 mm) or 1 mm (size 25 to 100 mm) in case of Tantalum earth rings.

ELECTRICAL CONNECTION

Following diagram shows the interconnection diagram between the primary head and EGC100W converter as an example. See the relevant technical guidance when other type of converter is interconnected.



Colors in () show sheath color of cores.
(R): Red, (W): White

- Cable
 - A : DS cable for electrode signal (Exclusive cable)
 - C : Excitation current cable
 - 2 cores × 0.75 to 2.5 mm² with shield
 - (To be supplied by customer)
- Terminal : Spring clamp terminal
- * Connect to the ground using the grounding wire in cross-section area from grounding terminal.
- (To be supplied by customer)

Cable length between Primary head and Converter

- The maximum length of electrode signal cable *1

Converter	Cable *2	size		
		2.5 mm	(4 to 15 mm)	(25 to 100 mm)
EGC300F/W	A	600 m		
	B	150 m	600 m	
EGC100W	A	600 m		

*1 The maximum length of electrode signal cable is subject to the fluid conductivity also. Refer to the technical guidance of converter to be connected.

*2 The electrode signal cable A : When DS cable is used
B : When BTS cable is used

Terminal No.	Description
1	Electrode signal output
2	
3	
4	Not used
7	Exciting current input
8	
9	Not used
S	Shield
⏏	Grounding

