MagneWTM FLEX+ **Electromagnetic Flowmeter Detector**

Model MGG11_ (Watertight Model) Model MGG12 _(Submersible Model)

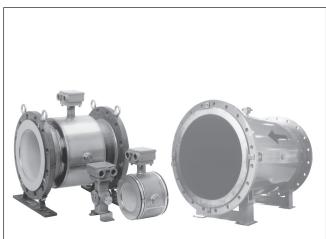
Introduction

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The MagneWFLEX+ electromagnetic flowmeter detector is a high performance, highly reliable flowmeterdeveloped with Azbil Corporation's proven MagneW 3000 flow measurement technologies. MGG11 and MGG12 models for watertight and submerged use offer superior flowrate and process measurement when couple a with one of our MagneW FLEX+ converters.

Special features

- (1) High performance lining
 - A new, exclusive high quality lining technology and a special, mirror-finish PFA lining offer higher antiadhe-sive properties than existing models.
 - The specular finish PFA lining is particularly applicable for measurement of sticky pulp and gypsum slurries.
 - Only pure white PFA with no additives is used to make new linings.
 - The successful embedded punch plate that offers proven performance under conditions such as rapid thermal change and negative pressure.
 - PFA linings with diameter ranges from 2.5 mm to 600 mm available, making selection of the best lining easy for a wide variety of applications.
- (2) Replacement interfacing detector (optional)
 - This detector can replace the detector interfaces of our existing models and those of other manufacturers. Please consult your Azbil Corporation representative for details.
- (3) Rugged detector structure
 - A stainless steel case has been adopted for diameters of 2.5 mm to 200 mm.
 - A watertight structure effective for environments where moisture condensation tends to occur is used for the water-tight model (MGG11).



(Diameter 2.5 to 600 mm)

(Diameter 700 to 1000 mm)

No. SS2-MGG100-0100

Specification

- (4) A wide variety of piping connections
 - A hose or union joint or clamp can be selected for very small diameter models (diameters of 2.5 to 15 mm).
 - A flange structure is used for all diameters (diameters of 2.5 to 1100 mm).
 - A wafer construction can be also selected (diameters of 2.5 to 200 mm).
 - Diameters of 65 and 125 mm have been added to our existing product lineup.
- (5) Compatibility
 - Remote model converters can be used in combination with our conventional converters. Please consult your Azbil Corporation representative for details.

Wide variety of applications

Pulp and paper:

Pulp liquids, chemicals, corrosive liquids, industrial water, wastewater, etc.

Petroleum/petrochemical/chemicals:

Corrosive liquids, dyestuffs, chemicals, industrial water, waste water, etc.

Public utilities:

Water supply systems, sewage systems, community drainage, human waste, sludge, sediment slurry, regulation of total effluent, etc.

Food:

Potable water, light, medium and high density fluids, industrial water, waste water, etc.

Steel/nonferrous metals/ceramics:

Alumina slurry, cooling water, industrial water, corrosive liquids, wastewater, etc.

Machinery/equipment/electric machinery:

Corrosive liquids, cooking water, circulating water, industrial water, wastewater, etc.

Construction:

Building material slurry, sediment slurry, cement slurry, industrial water, etc.

Shipbuilding:

Sediment slurry etc.

Electric power:

Corrosive liquids, cooling water, industrial water, wastewater, etc.

Gas:

Circulating water for air conditioning, etc.

Detector Specifications (standard)

Equipment specifications

Structure:

- MGG11: JIS C 0920 water-tight model NEMA ICS6-110 TYPE4X IEC PUBL 529 IP67
- MGG12: JIS C 0920 submersible model NEMA ICS6-110 TYPE6 IEC PUBL 529 IP68

Note: The performance of the submersible model was evaluated by sinking it 1 m below the surface of contaminated water for 1 month. If the product will be submerged for a long consecutive period of time or in a corrosive fluid, please contact us.

Paint:

MGG11: Standard: Terminal box Baked acrylic paint Detector case (size 250 to 1100 mm (10 to 44 inches)) Epoxy paint Corrosion-resistant paint: Terminal box Baked acrylic paint

Azbil Corporation

Detector case (size 250 to 1100 mm (10 to 44 inches)) Epoxy paint

Corrosion-proof paint: Terminal box Baked acrylic paint Detector case (size 250 to 1100 mm (10 to 44 inches))

Epoxy paint

MGG12: Tar epoxy pain

Color:

MGG11:Light beige (Munsell 4Y7.2/1.3)MGG12:Black

Main body material:

Measuring pipe materials: SUS304 stainless steel Flange: SUS304 stainless steel (diameter: 2.5 to 65 mm)

- Carbon steel + corrosion-preventive coating (diameter 80 to 600 mm)
- Carbon steel

(diameter 700 to 1100 mm)

Case: SCS13 stainless steel

(diameter 2.5 to 15 mm)

SUS304 stainless steel

(diameter 25 to 200 mm)

SS400 carbon steel

(diameter 250 to 1100 mm)

Terminal box: Aluminum alloy (remote model)

Material of parts in contact with liquid:

Lining: PFA (diameter: 2.5 to 600 mm) ETFE (diameter: 80 to 600 mm) Polyurethane rubber (diameter 25 to 200 mm) Chloroprene rubber

(diameter 250 to 1100 mm)

Electrode: SUS316L, ASTM B574 (Hastelloy C-276 equivalent) , titanium, zirconium, tantalum, tungsten-carbide, platinum/iridium

Ground ring: SUS316, ASTM B575 (Hastelloy C-276 equivalent), titanium, zirconium, tanta-lum, platinum

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Union joint: SUS316 (diameter 2.5 to 15 mm)
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Hose: SUS316 (diameter 2.5 to 15 mm)

IDF Clamp: SUS316

Tri Clamp: SUS316

Gasket: PTFE (if the grounding ring is not made of SUS316)

O-ring: Fluoro rubber (with union joints) Fluoro rubber (with hose)

Structure of electrode:

MGG11: External insertion (electrode can be removed) MGG12: External insertion (electrode cannot be removed)

European Pressure Equipment Directive (2014/68/EU)

This product is subject to the European Pressure Equipment Directive (PED).

Article 4 of the PED differentiates pressure equipment according to the degree of danger.

The maximum allowable pressure of this product is stated on page 6 of this document. Note, however, that because this product is designed and manufactured in accordance with sound engineering practice (SEP) as described in article 4, section 3 of the PED, there are restrictions on the pressure range when this product is used in a country where PED is applicable.

Determine the maximum allowable pressure by checking the following items.

(1) Group of the fluid

Check the group of the fluid according to article 13 of the PED.

- Group 1: Hazardous fluids
- Group 2: Non-hazardous fluids

(2) Vapor pressure at the maximum allowable temperature of the measured fluid

Check the applicable category, (i) or (ii).

- (i) Liquid whose vapor pressure at the maximum allowable temperature is greater than 0.5 bar above normal atmospheric pressure (1013 mbar)
- (ii) Liquid having a vapor pressure at the maximum allowable temperature of not more than 0.5 bar above normal atmospheric pressure (1013 mbar)
- (3) Nominal size (DN) of the electromagnetic flowmeter Check the nominal size of the flowmeter.
- (4) Maximum allowable pressure for equipment designed by SEP.

In table 1, find the cell where the results of (1), (2), and (3) meet.

"Tables 6–9" shown in table 1 below are taken from article 4 and annex II of the PED.

(5) Maximum pressure

Whichever of the pressures below is the lowest is the applicable pressure.

- Maximum pressure for this product: see page 6 of this document
- Maximum pressure for SEP equipment defined by the PED: see (4) above
- Maximum pressure for the flange: see the applicable standard

(1) Fluid	group	Grou	.up 1	Grou	ıp 2	Grou	ıp 1	Group 2			
(2) Vapor	pressure	(i)	(i)	(ii)	(ii)		
PED t	able	Tab	le 6	Tab	le 7	Tabl	e 8	Table 9			
				(4) Maxin	num allowable	e pressure					
	mm	bar	MPa	bar	MPa	bar	MPa	bar	MPa		
	2.5	No limit	No limit	No limit	No limit	No limit	No limit	No limit	No limit		
	5	No limit	No limit	No limit	No limit	No limit	No limit	No limit	No limit		
	10	No limit	No limit	No limit	No limit	No limit	No limit	No limit	No limit		
	15	No limit	No limit	No limit	No limit	No limit	No limit	No limit	No limit		
	25	No limit	No limit	No limit	No limit	No limit	No limit	No limit	No limit		
	40	0.5	0.05	25.0	2.50	No limit	No limit	No limit	No limit		
	50	0.5	0.05	20.0	2.00	No limit	No limit	No limit	No limit		
	65	0.5	0.05	15.3	1.53	No limit	No limit	No limit	No limit		
	80 0.5		0.05	12.5	1.25	25.0	2.50	No limit	No limit		
	100	0.5	0.05	10.0	1.00	20.0	2.00	No limit	No limit		
(3)	125	0.5	0.05	8.0	0.80	16.0	1.60	No limit	No limit		
Nominal size	150	0.5			0.66	13.3	1.33	No limit	No limit		
(DN)	200	0.5	0.05	5.0	0.50	10.0	1.00	No limit	No limit		
	250	0.5	0.05	4.0	0.40	8.0	0.80	20.0	2.00		
	300	0.5	0.05	3.3	0.33	6.6	0.66	16.6	1.66		
	350	0.5	0.05	2.8	0.28	5.7	0.57	14.2	1.42		
	400	0.5	0.05	2.5	0.25	5.0	0.50	12.5	1.25		
	450	0.5	0.05	2.2	0.22	4.4	0.44	11.1	1.11		
	500	0.5	0.05	2.0	0.20	4.0	0.40	10.0	1.00		
	600	0.5	0.05	1.6	0.16	3.3	0.33	10.0	1.00		
	700	0.5	0.05	1.4	0.14	2.8	0.28	10.0	1.00		
	800	0.5	0.05	1.2	0.12	2.5	0.25	10.0	1.00		
	900	0.5	0.05	1.1	0.11	2.2	0.22	10.0	1.00		
	1000	0.5	0.05	1.0	0.10	2.0	0.20	10.0	1.00		
	1100	0.5	0.05	0.9	0.09	1.8	0.18	10.0	1.00		

Table 1: Maximum allowable pressure for SEP products

Installation specifications Ambient temperature:

-25 to +60 °C (integral model)
-30 to +80 °C (remote model, PFA lining)
-30 to +60 °C (remote model, polyurethane rubber lining/ chloroprene rubber lining)
-30 to + 60 °C (Submersible model, PFA/ETFA lining/ chloroprene rubber lining)

-30 to + 50 °C (Submersible model, polyurethane rubber lining)

Ambient humidity: 5 to 100 % RH

Cable connection port:

Integral model; Connected to converter Remote model;

G1/2 (PF1/2) internal thread, 1/2 NPT internal thread, CM20 internal thread, Pg 13.5 internal thread

Pipe connection;

Wafer (models 2.5 to 200 mm in diameter) Flange (models 2.5 to 1100 mm in diameter) Union (models 2.5 to 15 mm in diameter) Hose (models 2.5 to 15 mm in diameter) IDF Clamp (models 2.5 to 15 mm in diameter) Tri Clamp (models 2.5 to 15 mm in diameter)

Nuts and bolts (for models of wafer construction):

S20C carbon steel, SUS304 stainless steel

Flange rating:

JIS10K, JIS20K, JIS30K, JPI150, JPI300,ANSI150, ANSI300, DIN PN10, DIN PN16, DIN PN25, DIN PN40 (diameter 2.5 to 50 mm)

JIS10K, JIS20K, JIS30K, JPI150, JPI300,ANSI150, ANSI300, DIN PN10, DIN PN16, DIN PN25, DIN PN40, JIS G3443-2 F12 (diameter 80 to 200 mm)

JIS10K, JIS20K, JPI150, JPI300, ANSI150, ANSI300, DIN PN10, DIN PN16, DIN PN25, JIS G3443-2 F12 (diameter 250 to 600 mm, PFA/ETFE lining)

JIS10K, JPI150, ANSI150, DIN PN10 JIS G3443-2 F12(diameter 250 to 1100 mm, chloroprene rubber lining)

Reference flange standard:

JIS; JIS B2210 (1984) ANSI; ANSI B 16.5 (1988) JPI; JPI-7S-15-93

Grounding: Category D (Grounding resistance: lower than 100 Ω)

Mounting: Horizontally-mounted electrode

Length of straight pipe:

Upstream side;

Five (5) times or longer than the diameter. However, 10 times or longer than the diameter if a diffuser, valve, pump, etc., are installed.

Downstream side;

Not required. However, 2 times or longer than the diameter if influence exists from drift current of such equipment as a valve.

Cable (between remote detector and converter):

Maximum length:300 m (depending on fluid conductivity) Outer diameter: 10 to 12 mm

Signal cable	Dedicated cable
	(11.4 mm, 0.75 mm ² diameter)
	or equivalent (CVVS, CEEV, etc.)

Excitation cable: Dedicated cable (10.5 mm, 2 mm² diameter)

or equivalent (CVV and others)

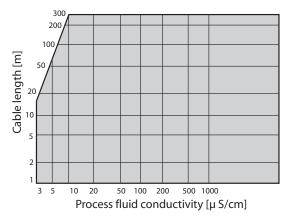


Figure 1. Maximum cable length of MGA12W cable

Additional specifications (optional)

Certification of traceability:

From 3 sources: configuration of measuring management system for electromagnetic flowmeter, repair certification, and test report.

Mill sheet:

Data sheet describing materials and charge numbers of electrodes and grounding rings.

Moisture treatment:

When shipped, condensation is removed from wetted surfaces.

Oil removal treatment:

When shipped, oil is removed from wetted surfaces.

Gasket for resin pipe (for general use):

When installing the detector on a resin pipe, attach this gasket between the lining and the grounding ring, and between the grounding ring and the pipe flange.

Attaching the tag number to the terminal box:

Mark the tag with the specified number and attach to the terminal box of the cover. The maximum number of characters in the tag number is 8.

Attaching the tag number on the neck section:

Mark the tag number specified and attach it to the neck section of the detector. The maximum number of characters in the tag number is 16.

Countermeasure for condensation:

With this option selected, the flowmeter is protected from water drops formed from condensed ambient moisture when the process fluid is colder than the ambient temperature.

For additional specifications, please contact your Azbil Corporation representative.

Performance (standard)

Accuracy (in combination with the MGG10C converter)

Table 2.

<diameter 2.<="" th=""><th>5 to 15 mm></th><th colspan="8">Upper limit value of Vs=set velocity range</th></diameter>	5 to 15 mm>	Upper limit value of Vs=set velocity range							
Vs(m/s)	Velocity during	Velocity during							
	measurement≥Vs×40%	measurement≤Vs×409							
1.0≤Vs≤10	±0.5% of indicated value	±0.2% of Vs							
0.1≤Vs≤1.0	±(0.1/Vs+0.4)% of the indicated value	±0.4(0.1/Vs+0.4)% of Vs							
<diameter 25<="" td=""><td>to 600 mm></td><td colspan="6">Upper limit value of Vs=set velocity range</td></diameter>	to 600 mm>	Upper limit value of Vs=set velocity range							
Vs(m/s)	Velocity during	Velocity during							
	measurement≥Vs×20%	measurement≤Vs×20%							
$1.0 \leq Vs \leq 10$	±0.5% of indicated value	±0.1% of Vs							
0.1≤Vs≤1.0	±(0.1/Vs+0.4)% of the	±0.2(0.1/Vs+0.4)% of Vs							
	indicated value								
<diameter 70<="" td=""><td>0 to 1100 mm></td><td>Upper limit value of Vs=set velocity range</td></diameter>	0 to 1100 mm>	Upper limit value of Vs=set velocity range							
Vs(m/s)	Velocity during	Velocity during							
	measurement≥Vs×50%	measurement≤Vs×50%							
1.0≤Vs≤10	±1.0% of indicated value	±0.5% of Vs							
0.1≤Vs≤1.0	±(0.2/Vs+0.8)% of the	(0.1/Vs+0.4)% of Vs							
	indicated value								

Accuracy is guaranteed by the totalized flow volume under the condition of continuous flow measurement for 30 seconds or longer. With the damping function set to 3 seconds.

Additional accuracy:

Effect of ambient magnetic field: ± 0.2 % FS (at 400 A/m) or less

Vibration effect

Integral style: $4.9 \text{ m/s}^2 (0.5 \text{ G}) \text{ max}$. Remote style converter: $4.9 \text{ m/s}^2 (0.5 \text{ G}) \text{ max}$. Remote style detector: $19.6 \text{ m/s}^2 (2 \text{ G}) \text{ max}$.

Output fluctuation:

When $1 \le Vs \le 10$ m/s: ± 0.1 % FS or less When $0.1 \le Vs \le 1$ m/s: $\pm 0.1/Vs$ % FS or less

Measurable fluid temperature range:

PFA lining

Diamatar	Measura	Measurable fluid temperature (°C)												
Diameter	Integral model	Remote model	Submersible											
(mm)	_		model											
2.5 to 10	-40 to +120	-40 to +100	-											
15 to 200	-40 to +120	-40 to +160	-40 to +60											
250 to 600	-40 to +120	-40 to +120	-40 to +60											

Note: The maximum measurable fluid temperature for the submersible model (MGG12) is 60 °C.

ETFE lining

Diamatan	Measurable fluid temperature (°C)											
Diameter (mm)	Integral model	Remote model	Submersible									
(mm)			model									
80 to 200	-40 to +120	-40 to +120	-40 to +60									
250 to 600	-40 to +120	-40 to +120	-40 to +60									

Polyurethane rubber lining

Diameter	Measurable fluid temperature (°C)
(mm)	Integral/remote/submersible models
25 to 200	-40 to +50

Chloroprene rubber lining

Diameter	Measurable fluid temperature (°C)											
(mm)	Integral/remote models	Submersible model										
250 to 600	-10 to +70	-10 to +60										
700 to 1100	-10 to +70	_										

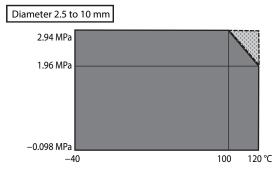
Measurable fluid pressure range(depending on Frange rating):

PFA/ETFE lining;

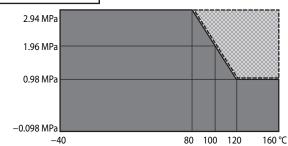
-0.098 to +2.94 MPa Polyurethane rubber lining; -0.098 to +2.94 MPa Chloroprene rubber lining; -0.098 to +0.98 MPa

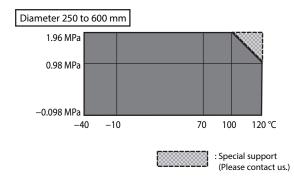
Integral/remote models

PFA lining



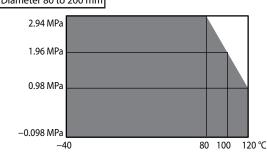
Diameter 15 to 200 mm



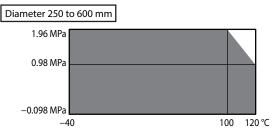


Integral/remote models

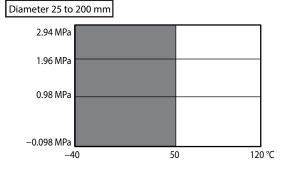
ETFE lining Diameter 80 to 200 mm



ETFE lining

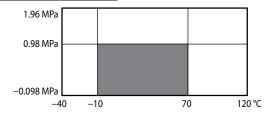


Polyurethane rubber lining

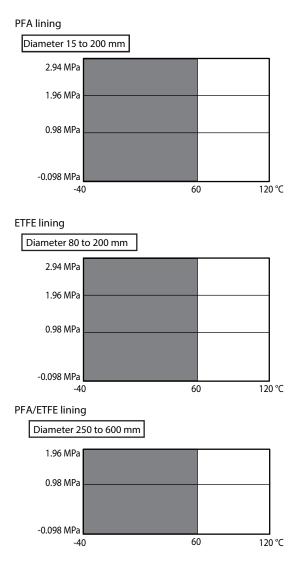


Chloroprene rubber lining

Diameter 250 to 1100 mm



Submersible model

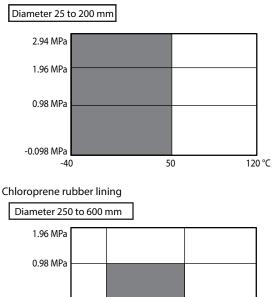


Polyurethane rubber lining

-0.098 MPa

-40

-10



60

120 °C

Measurable electrical conductivity

Combined with model MGG14C converter 3 $\mu\text{S/cm}$ or more

Measurement flow range

Refer to the minimum/maximum set ranges shown in the table below

Si	ze	Minimum flow 0 to 0.1 m/s (Minimu		Maximum flow 0 to 10 m/s (Maximu	– Conversion factor K	
mm	inch	m³/h	GPM	m³/h	GPM	
2.5	0.1	0 to 0.001768	0 to 0.007782	0 to 0.1767	0 to 0.7781	56.59
5	0.2	0 to 0.007069	0 to 0.03113	0 to 0.7068	0 to 3.112	14.15
10	3/8	0 to 0.02828	0 to 0.1246	0 to 2.827	0 to 12.45	3.537
15	1/2	0 to 0.06362	0 to 0.2802	0 to 6.361	0 to 28.01	1.572
25	1	0 to 0.1768	0 to 0.7782	0 to 17.67	0 to 77.81	0.5659
40	11/2	0 to 0.4524	0 to 1.993	0 to 45.23	0 to 199.2	0.2210
50	2	0 to 0.7069	0 to 3.113	0 to 70.68	0 to 311.2	0.1415
65	21⁄2	0 to 1.195	0 to 5.261	0 to 119.4	0 to 526.0	0.08371
80	3	0 to 1.810	0 to 7.969	0 to 180.9	0 to 796.8	0.05526
100	4	0 to 2.828	0 to 12.46	0 to 282.7	0 to 1245	0.03537
125	5	0 to 4.418	0 to 19.46	0 to 441.7	0 to 1945	0.02264
150	6	0 to 6.362	0 to 28.02	0 to636.1	0 to 2801	0.01572
200	8	0 to 11.31	0 to 49.81	0 to 1130	0 to 4980	0.008842
250	10	0 to 17.68	0 to 77.82	0 to 1767	0 to 7781	0.005659
300	12	0 to 25.45	0 to 112.1	0 to 2544	0 to 11205	0.003930
350	14	0 to 34.64	0 to 152.6	0 to 3463	0 to 15251	0.002887
400	16	0 to 45.24	0 to 199.3	0 to 4523	0 to 19920	0.002210
450	18	0 to 57.26	0 to 252.2	0 to 5725	0 to 25211	0.001747
500	20	0 to 70.69	0 to 311.3	0 to 7068	0 to 31125	0.001415
600	24	0 to 101.8	0 to 448.3	0 to 10178	0 to 44820	0.0009824
700	28	0 to 138.6	0 to 610.1	0 to 13854	0 to 61005	0.0007218
800	32	0 to 181.0	0 to 796.9	0 to 18095	0 to 79680	0.0005526
900	36	0 to 229.1	0 to 1009	0 to 22902	0 to 100846	0.0004366
1000	40	0 to 282.8	0 to 1246	0 to 28274	0 to 124501	0.0003537
1100	44	0 to 342.2	0 to 1507	0 to 34211	0 to 150646	0.0002923

Flow conversion Velocity $V(m/s) = K \times Q$

K = Flow conversion factor =
$$\frac{1}{3600} \times \frac{4}{\pi D^2}$$

Q = Flow rate (m^3/h)

Notice for installation

To fully enjoy the performance of the device, please choose an appropriate location according to the following.

Notice after installation

When removing the device from the piping, make sure that there is no line pressure or process fluid inside of the device. Removing the device before depressurizing may result in serious injury.

▲ CAUTION

Do not use the device as a foothold. It may cause injury or damage of the device.

Notice for environment

- Install the flowmeter in a location with an ambient temperature of -25 °C to 60 °C (-13 °F to 140 °F) and an ambient humidity of 5 to 100%RH to prevent equipment malfunction or output errors.
- Do not install the flowmeter near high-current power lines, motors or transformers to prevent damage from electromagnetic induction, which can cause equipment malfunction or output errors.
- Do not install the flowmeter in a location subject to severe vibration or in a highly corrosive atmosphere. The converter and detector can be damaged.
- When install some electromagnetic flowmeters in closer location, keep minimum 500 mm (20 inch) space from each flowmeter. Closer electromagnetic flowmeter installation may cause magnetic interference each other and results in output errors.
- When installing DC-powered electromagnetic flow meters adjacent to each other, make sure that there is a space of 500 mm or more between the ends of the detectors.

Notice for application

- Electrochemically homogeneous fluid Install the device where the process fluid is electrochemically homogeneous. If two kind of process fluids are mixed at the upstream side, the process fluid must be uniformly mixed.
- The application which the electric conductivity changes or non-homogeneous fluid

Do not use the device for the following fluid conditions even if the electric conductivity, temperature, and pressure are within the device specifications. Those fluid may cause of inaccurate flow measurement.

• Fluids that have sufficient conductivity at high temperature but do not meet the conductivity requirement at room temperature (about 20 °C (68 °F)).

(e.g. fatty acids and soap)

• Some fluids contain surfactant

(e.g. rinse, shampoo and CWM (coal water mixture))

• Insulating adhesive materials

(eg. kaolinite, kaolin, calcium stearate)

- Insufficiently mixed fluid (Ex.: Fluid just after chemical dosing)
- If the fluid is cold water and there is a possibility of condensation, select optional specification 6, "Condensation countermeasure," when ordering.
- The following fluids will permeate the PFA liner. The vent hole option is recommended for the following fluids.
 - Nitric acid
 - Aqueous ammonia
 - High temperature sodium hydrate

If an electromagnetic flowmeter is installed in air-conditioning equipment, etc., where black pipes are often used for closed piping and water temperature is about 85 °C, black rust (a conductive substance) may be generated due to pipe corrosion. If it sticks to the inner surface of the flowmeter, the measured output value may drop. To be precise, depending on various environmental conditions such as the amount of dissolved oxygen, black rust may occur even at temperatures around 60 °C. The rate of progress of corrosion, the type and amount of corrosion, and the amount of adhesion also differ depending on the environment at the installation site. If the electromagnetic flowmeter is used in such an installation environment, it is necessary to control the water quality to prevent pipe corrosion by measures such as using a corrosion inhibitor.

To further ensure reliable measurement, periodic wiping of the inside of the electromagnetic flowmeter is needed.

* Please contact an Azbil representative for cleaning of the inside of the electromagnetic flowmeter.

Notes on installation location:

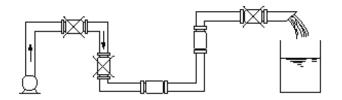
• Legs are attached to some models to prevent them from falling over before installation. If the product is installed with the legs attached, please also consider earthquake resistance where appropriate.

Notes on submersible models:

• The entire surface of the detector's terminal box is covered with waterproof paint. If opened, the terminal box is no longer waterproof.

Installation location

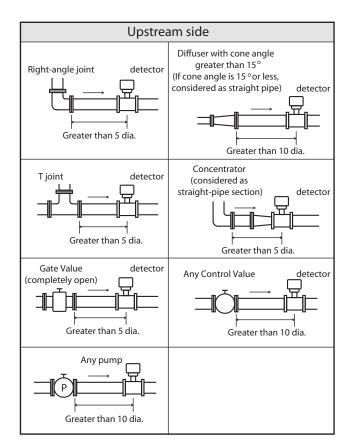
Install this product in a place where the inside of the detector will always be filled with the process fluid. An installation example is shown in the figure below.



Installation example

Note:

- Install the detector in a place like those circled in the above figure so that it stays full of fluid. If the detector is used when it is not full of fluid, an output error may result.
- If the process fluid is highly viscous, installing the detector in a vertical pipe is recommended in order to ensure axisymmetric flow.
- *Provide a straight pipe section upstream of the installation location. Refer to the figure below for the straight pipe length.*





Detector (General Model)

Structure/Basic Model No.	Lining	Pipe connection	Daimeter (mm)	Ref. page
Watertight model MGG11U	PFA	Union/Hose/Clamp	2.5 to 15	12
Watertight model MGG11D	PFA	Wafer	2.5 to 10	13
Watertight model MGG11D	PFA/ETFE	Wafer	15 to 200	14
Watertight model MGG11F	PFA	Flange	2.5 to 10	15
Watertight model MGG11F	PFA/ETFE	Flange	15 to 200	16
Watertight model MGG11F	PFA/ETFE	Flange	250 to 600	17
Watertight model MGG11D	Polyurethane rubber	Wafer	25 to 200	18
Watertight model MGG11F	Chloroprene rubber	Flange	250 to 600	19
Watertight model MGG11F	Chloroprene rubber	Flange	700 to 1100	20
Submersible mode MGG12U	PFA	Union/Hose/Clamp	15	21
Submersible mode MGG12D	PFA/ETFE	Wafer	15 to 200	22
Submersible mode MGG12F	PFA/ETFE	Flange	15 to 200	23
Submersible mode MGG12F	PFA/ETFE	Flange	250 to 600	24
Submersile model MGG12D	Polyurethane rubber	Wafer	25 to 200	25
Submersile model MGG12F	Chloroprene rubber	Flange	250 to 600	26

Contents of Model Number Tables



Lining Characteristics

PFA:

PFA is a chemical-resistant, heat-resistant, and adhesion-resistant lining material that can be used for almost any corrosive liquid. Select this lining for use with corrosive liquids (sulfuric acid, hydrochloric acid, caustic soda, acetic acid, etc.). However, for nitric acid and hydrofluoric acid, the service life may be shorter if the concentration and pressure are high.

ETFE:

Chemical resistance is slightly lower than that of a PFA lining. Do not use ETFE for strongly corrosive liquids such as sulfuric acid, fluoric acid, nitric acid, and hydrochloric acid. In terms of abrasion resistance, ETFE is about 1.5 times stronger than PFA. Therefore, it can be used for pulp slurry (except for black liquor) and will have a longer service life than PFA. However, because it has lower heat resistance than PFA, it cannot be used in a pipeline with fluids at 120 °C or higher. Do not use the flowmeter in a pipeline that will be cleaned with steam.

Rubber:

Both polyurethane and chloroprene are excellent for abrasion resistance, but because they have little chemical resistance, they cannot be used for corrosive liquids.

Basic Model No. Selections Optional selections	
Diameter 2.5 mm 002 X No option 5 mm 005 005 005 005 005 10 mm 010 15 mm 015 F Moisture treatment Lining PFA P P P P P	
Diameter 2.5 mm 002 X No option 5 mm 005 005 005 005 005 10 mm 010 15 mm 015 F Moisture treatment Lining PFA P P P P P	
Shift Solution Solution 5 mm 005 10 mm 010 15 mm 015 15 mm 015 F Oil removal treatment F Oil removal treatment	
5 mm 005 10 mm 010 15 mm 015 Lining PFA	
10 mm 010 15 mm 015 Lining PFA	oility
Is mm 015 E Moisture treatment Lining PFA P F Oil removal treatment	
Lining PFA P F Oil removal treatment	
Γ in	mber plate
connection Union joint 1/2NPT external thread U2	mote
Union joint R1/2 (PT1/2) internal thread U3	mbor plata
Union joint 1/2NPT internal thread U4	noei piate
Hose joint H1 6 Countermeasure for c	ondensation
IDF clamp C1 Other	
Tri clamp C2	
Others	
Electrodes SUS316L L X Finish Standard	
ASTM B574 (Hastelloy C-276 equivalent) O 1 Corrosion-resistant finish	1
Titanium K 2 Corrosion-proof finish	
Zirconium H	
Tungsten carbide W	
Others _	
Union/	
Hose/ SUS316 S	
Clamp material	
Wiring Integral model 1	
connection/ G1/2 internal thread/Without watertight gland 2	
Watertight G1/2 internal thread/With brass (Ni-plated)	
gland watertight gland 3	
Remote G1/2 internal thread/With plastic watertight gland 4	
model 1/2NPT internal thread/Without watertight gland 5	
CM20 internal thread/Without watertight gland 6	
Pg13.5 internal thread/Without watertight gland 7	
Others _	
Face to face Standard A	
Installation/ Integral model H	
Wiring Upstream side A direction	
Downstream side B	
model Horizontal piping mounting/Left side viewed from upstream C	
Horizontal piping mounting/Right side viewed from upstream D	
Calibration/ Standard calibration A	
Approval Others _	

No. SS2-MGG100-0100

MagneW FLEX+ (General Model) (Wafer detector 2.5 to 10 mm) PFA lining

Basic Model No.		Selections								Optional selections Options									
MGG	11D	_										-			_		Г		
MOO					_										1				
Diamet	2.5 mm		002														X	No option	
	5 mm		005														В	^ 	
	10 mm		010														С		
Lining	PFA		010	Р													Е		
Pipe		10K for 15 mm flange		-	11												F		
connection		20K for 15 mm flange		-	12												J	Gasket for resin pipe (for gen	neral
		30K for 15 mm flange		-	13												ľ	purposes)	
		16/20K for 10 mm flange		-	14												K	U I	
		30K for 10 mm flange		-	15												L	the terminal box (remote de Attaching the TAG number	
		SI150 for 15 mm flange		-	21													the neck section	Jale to
		SI300 for 15 mm flange		-	22												6		sation
		N PN10 for 15 mm flange		-	41													Other	
		V PN16 for 15 mm flange		_	42												<u> </u>	•	
		V PN25 for 15 mm flange		_	43														
		V PN40 for 15 mm flange		_	43														
		V PN10/16/25/40 for 10 mm flang		-	44 45								X	Fini	ich		Stand	lard	
					45 61									гш	1511				
		150 for 15 mm flange		_	61								1 2					osion-resistant finish osion-proof finish	
Electrodes	SUS316L	300 for 15 mm flange			02	т							2		1		Con		
Electrodes		74 (Hesteller C 276 servicelent)			_	L							1	v	D alt/		None		
		74 (Hastelloy C-276 equivalent)				С								X	Bolt/1	iuts	——		
	Titanium					K								1			——	on steel	
	Zirconiun	1				Н								2			SUS3	504	
	Tantalum	1.1				Т													
	Tungsten					W													
	Platinum	iridium				Р													
	Others					_	C												
Grounding ring	SUS316						S C												
8		75 (Hastelloy C-276 equivalent)																	
	Titanium						K												
	Zirconiun	1					Н												
	Tantalum						Т												
	Platinum						Р												
	Others	1.1					_												
Wiring connection/	Integral m			11				1											
Watertight		G1/2 internal thread/Without w G1/2 internal thread/With brass				rtiak		2											
gland		gland	(INI-PI	alcu)	wate	i ugi	11	3											
	Remote	G1/2 internal thread/With plasti	c wate	rtigh	t glan	ıd	-	4	1										
	model	1/2NPT internal thread/Withou	t water	tight	glan	d		5	1										
		CM20 internal thread/Without	waterti	ght g	land			6	1										
		Pg13.5 internal thread/Without	watert	ight g	gland			7	i										
		Others						_	i										
Face to face	Standard								Α										
	Others	Others							_										
Installation/	Integral m	nodel								Н	1								
Wiring	Upstream side									Α	1								
direction	Remote Downstream side							-	В										
	model Horizontal piping mounting/Left side vie					m up	ostrea	m		С									
	Horizontal piping mounting/Right side viewed									D									
Calibration/	Standard o	calibration								Α									
Approval	Others									_									

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MagneW FLEX+ (General Model) (Wafer detector 15 to 200 mm) PFA/ETFE lining

Basic Mode	el No.		Selection	ns							Option	nal se	elections	Op	tions
MGG	11D	_] _ ┌┌] _		
moo	110				<u> </u>				-		┦┡━	-	4		
Diameter	15 mm		015											Х	No option
Diameter	25 mm		025											В	Certification of traceability
	40 mm		040											С	Mill sheet
	50 mm		050											Е	Moisture treatment
														F	Oil removal treatment
	65 mm		065											J	Gasket for resin pipe (for general
	80 mm		080											ľ	purposes)
	100 mm		100											К	Attaching the TAG number plate to
	125 mm		125												the terminal box (remote detector)
	150 mm		150											L	Attaching the TAG number plate to
	200 mm		200												the neck section
Lining	PFA		Р											6	Countermeasure for condensation
		ameter 80 mm to 200 mm)	E											_	Other
Pipe	Wafer JIS	10K		11											
connection	Wafer JIS	20K		12	Į –										
	Wafer JIS	30K		13	ļ										
	Wafer AN	ISI150		21	ļ						X	Fin	ish	Star	ndard
	Wafer AN	ISI300		22							1			Co	rrosion-resistant finish
	Wafer JIS	G3443-2 F12 (Diameter 80 mm or	more)	31							2			Co	rrosion-proof finish
	Wafer DI	N PN10		41							_				
	Wafer DI	N PN16		42								Х	Bolt/nuts	No	ne
	Wafer DI	N PN25		43	1							1	1	Car	bon steel
1	Wafer DI	N PN40		44	1							2	1	SUS	\$304
	Wafer JPI	150		61	1									7	
	Wafer JPI	300		62	1										
Electrodes	SUS316L				L	1									
	ASTM B5	74 (Hastelloy C-276 equivalent)			С										
	Titanium				Κ										
	Zirconiur	n			Н										
	Tantalum				Т										
	Tungsten				W										
	Platinum				Р										
	Others				-										
Courseding	SUS316		I		-	S									
Grounding ring		75 (Hastelloy C-276 equivalent)				C									
ing	Titanium					K									
	Zirconiur			-		H									
	Tantalum					Т									
	Platinum					Р									
	Others					_									
Wiring	Integral n						1								
connection/		G1/2 internal thread/Without wa					2								
Watertight gland		G1/2 internal thread/With brass	(Ni-plated)) wate	ertigl	nt	3								
Siana		gland													
	Remote	G1/2 internal thread/With plastic					4								
	model	1/2NPT internal thread/Without		-			5								
		CM20 internal thread/Without w					6								
		Pg13.5 internal thread/Without w	vatertight g	gland			7								
		Others					_								
Face to face	Standard							Α							
	Others							_							
Installation/	Integral n	nodel							Н						
Wiring		Upstream side							А						
direction	Remote	Downstream side							В	1					
	model	Horizontal piping mounting/Left	side viewe	ed fro	om up	ostrea	m		С	1					
		Horizontal piping mounting/Right							D	1					
Calibration/	Standard	calibration								А	1				
Approval	Others										1				
**															

No. SS2-MGG100-0100

MagneW FLEX+ (General Model) (Flange detector 2.5 to 10 mm) PFA Lining

Basic Mode	el No.		Selectio	ons							Optio	ona	selection	s Op	tions
MGG	11F	_									_ [_		
MOO	111.					_	_	_			! L	_			
	1													X	No option
Diameter	2.5 mm		002											B	Certification of traceability
	5 mm		005												'
	10 mm		010											С	Mill sheet
Lining	PFA		Р											Е	Moisture treatment
Pipe	Flange JIS	10K for 15 mm flange		J1										F	Oil removal treatment
connection	Flnage JIS	620K for 15 mm flange		J2										J	Gasket for resin pipe (for general
	Flange JIS	330K for 15 mm flange		J3										К	purposes)
	Flange JIS	510K for 10 mm flange		J4										к	Attaching the TAG number plate to the terminal box (remote detector)
	Flange JIS	20K for 10 mm flange		J5										L	Attaching the TAG number plate to
	Flange JIS	30K for 10 mm flange		J6											the neck section
	Flange Al	VSI150 for 15 mm flange		A1										6	Countermeasure for condensation
		VSI300 for 15 mm flange		A2											Other
		N PN10 for 15 mm flange		D1										_	
		N PN16 for 15 mm flange		D2											
		N PN25 for 15 mm flange		D3											
		N PN40 for 15 mm flange		D3											
		N PN10/16 for 10 mm flange		D4 D5							l h	Х	Finish	Sto	ndard
		÷		P1							-	л 2	Finish	-	rrosion-proof finish
	-	I150 for 15 mm flange I300 for 15 mm flange		P1 P2							L	2		0	
		1500 Ioi 15 IIIII Ilalige		P2											
Flange	Standard				1										
material	Others				-										
Electrodes	SUS316L					L									
	ASTM B5	74 (Hastelloy C-276 equivalent)				0									
	Titanium					K									
	Zirconiur	n			1	Η									
	Tantalum					Г									
	Tungsten	carbide			1	N									
	Platinum	iridium				Р									
	Others					_									
Grounding	SUS316					S	1								
ring	ASTM B5	75 (Hastelloy C-276 equivalent)				С	1								
	Titanium					K	1								
	Zirconiur	n				Н	1								
	Tantalum					Т	1								
	Platinum					Р	1								
	Others					-									
Wiring	Integral n	nodel				-	1	1							
connection/		G1/2 internal thread/Without v	vatertight o	and			2								
Watertight		G1/2 internal thread/With bras			rtight	rland	3								
gland		G1/2 internal thread/With plas				gianu	4								
ľ	Remote		-				5								
	model	1/2NPT internal thread/Without					-								
		CM20 internal thread/Without					6								
		Pg13.5 internal thread/Without	watertight	t gland			7								
	0. 1 -	Others					_								
Face to face	Standard							Α							
ļ	Others														
Installation/	Integral n								Н						
Wiring		Upstream side							Α						
direction	Remote	Downstream side							В						
	model	Horizontal piping mounting/Le							С						
		Horizontal piping mounting/Ri	ght side vi	ewed fr	om up	stream			D		l				
Calibration/	Standard	calibration								Α	l				
Approval	Others														

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MagneW FLEX+ (General Model) (Flange detector 15 to 200 mm) PFA/ETFE Lining

Basic Mode	el No.		Selection	ns							Opt	iona	l selections	s Op	tions
MCC	110										1_				
MGG	TIIF	_			-	_		-	_		-		-		1
														V	Na anti-n
Diameter	15 mm		015											X	No option Certification of traceability
	25 mm		025											B C	Mill sheet
	40 mm		040												
	50 mm		050											E	Moisture treatment
	65 mm		065											F	Oil removal treatment
	80 mm		080											J	Gasket for resin pipe (for general
	100 mm		100											K	purposes) Attaching the TAG number plate to
	125 mm		125												the terminal box (remote)
	150 mm		150											L	Attaching the TAG number plate to
	200 mm	1	200												the neck section
Lining	PFA		Р											6	Countermeasure for condensation
	ETFE (Di	ameter 80 mm to 200 mm)	Е											_	Other
Pipe	Flange JIS	10K		J1											
connection	Flnage JIS	20K		J2											
	Flange JIS	30K		J3											
	Flange Al	VSI150		A1								Х	Finish	Star	ndard
	Flange Al	VSI300		A2								1			rosion-resistant finish
	Flnage JIS	G3443-2 F12 (Diameter 80 mm	or more)	G1								2		Cor	rosion-proof finish
	Flange DI	N PN10		D1											
	Flange DI	N PN16		D2											
	Flange DI	N PN25		D3											
	Flange DI	N PN40		D4											
	Flange JP	1150		P1											
	Flange JP	1300		P2											
Flange	Standard				1										
material	Others	-		- î	- 1										
Electrodes	SUS316L			Ī	Ť	L									
	ASTM B5	74 (Hastelloy C-276 equivalent)			Ť	С									
	Titanium				Ť	K									
	Zirconiur	n			Ť	Н									
	Tantalum				Ť	Т									
	Tungsten	carbide			1	W									
	Platinum				Ť	Р									
	Others				Ť										
Grounding	SUS316					S	1								
ring	ASTM B5	75 (Hastelloy C-276 equivalent)				С	1								
	Titanium					К	1								
	Zirconiur	n				Н	1								
	Tantalum					Т	1								
	Platinum					Р									
	Others														
Wiring	Integral n	nodel					1	1							
connection/		G1/2 internal thread/Without v	vatertight gl:	and			2	1							
Watertight		G1/2 internal thread/With bras			rtight	gland	3	1							
gland		G1/2 internal thread/With plas				0	4	1							
	Remote	1/2NPT internal thread/Withou					5	1							
	model	CM20 internal thread/Without			-		6	1							
		Pg13.5 internal thread/Without					7	1							
		Others	water tight §	510110			+	1							
Face to face	Standard	Onicis					—	А							
race to face	Others														
Installation/	Integral n	odel						<u> -</u>	Н	1					
Wiring	incegiai li	Upstream side							A						
direction	Damesta	Downstream side							A B						
	Remote model	Horizontal piping mounting/Le	off eide view	d fro-	n 110.04	ream			B C						
	model	Horizontal piping mounting/Re							D						
	Char 1 1		ight side viev	veu Ir	oni up	sueam			U						
Calibration/		calibration								Α					
Approval	Others									_	I				

No. SS2-MGG100-0100

MagneW FLEX+ (General Model) (Flange detector 250 to 600 mm) PFA/ETFE Lining

Basic Mode	el No.		Select	ons								Opt	iona	l selection	s Op	tions
MGG	11F	_										 		_		
MUU					-							ļ				· · · · · · · · · · · · · · · · · · ·
Discustor	250 mm		250												Х	No option
Diameter	300 mm		300												В	Certification of traceability
	350 mm		350												С	Mill sheet
	400 mm		400												Е	Moisture treatment
	400 mm		450												F	Oil removal treatment
	430 mm		500												J	Gasket for resin pipe (for general
	600 mm		600													purposes)
Lining	PFA			2											Κ	Attaching the TAG number plate to
8	ETFE			3												the terminal box (remote)
Pipe	Flange JIS	10K		J1	1										L	Attaching the TAG number plate to
connection	Flange AN			A1											6	the neck section Countermeasure for condensation
		G3443-2 F12		G1	1										-	Other
	Flange DI			D1	1										-	ouid
	Flange JPI			P1									Х	Finish	Co	rrosion-proof finish
Flange	Standard				1	i							1	1 111311		rosion-resistant finish
material	Others					1							2			rrosion-proof finish
Electrodes	SUS316L					L										1
	ASTM B5	74 (Hastelloy C-276 equivalent)				С										
	Titanium					K										
	Zirconiun	n				Н										
	Tantalum					Т										
	Tungsten	carbide				W										
	Platinum	iridium				Р										
	Others															
Grounding	SUS316						S									
ring	ASTM B5	75 (Hastelloy C-276 equivalent)					С									
	Titanium						Κ									
	Others						_									
Wiring	Integral n	nodel						1								
connection/		G1/2 internal thread/Without w	vatertight	gland				2								
Watertight		G1/2 internal thread/With brass	s (Ni-plat	ed) wat	ertigl	nt glaı	nd	3								
gland	Demote	G1/2 internal thread/With plast	ic waterti	ght glai	nd			4								
	Remote model	1/2NPT internal thread/Withou	ıt watertiş	ght glan	d			5								
	model	CM20 internal thread/Without	watertigh	t gland				6								
		Pg13.5 internal thread/Without	watertigl	nt gland	l			7								
	<u> </u>	Others						_								
Face to face	Standard								А							
	Others								_							
Installation/	Integral n	2								Η						
Wiring		Upstream side								Α						
direction	Remote	Downstream side								В						
	model	Horizontal piping mounting/Let								С						
		Horizontal piping mounting/Rig	ght side v	iewed f	rom 1	apstre	eam			D						
Calibration/		calibration									А					
Approval	Others										_					

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MagneW FLEX+ (General Model) (Wafer detector 25 to 200 mm) Polyurethane rubber lining

Basic Mode	el No.		Select	ions						(Optio	onal	l sel	ections	Op	tions
MGG	11D	_									- [_		
10100																
Diameter	25 mm		025												Х	No option
Diameter	40 mm		040												В	Certification of traceability
	50 mm		050												С	Mill sheet
	65 mm		065												Е	Moisture treatment
	80 mm		080												F	Oil removal treatment
	100 mm		100												J	Gasket for resin pipe (for general purposes)
	100 mm		125												К	Attaching the TAG number plate to
			125													the terminal box (remote detector)
	150 mm 200 mm		200												L	Attaching the TAG number plate to
Lining		hane rubber lining													6	the neck section Countermeasure for condensation
-	· ·			Q											0	Other
Pipe connection	Wafer JIS			1	_										_	ould
connection	Wafer JIS			11	_											
	Wafer JIS			1	_											
	Wafer A			2								_	Fini	sh		indard
	Wafer A			2	_						- 1-	1				rrosion-resistant finish
		G3443-2 F12 (Diameter 80 m	m or mor	_	_							2			Co	rrosion-proof finish
		IN PN10		4	_											
	Wafer D			4	_								Х	Bolt/nuts	No	
	Wafer D			4	3								1		<u> </u>	rbon steel
	Wafer D	IN PN40		4	4								2		SU	\$304
	Wafer JP	I150		6	1											
	Wafer JP	1300		6	2											
Electrodes	SUS316I				I											
	Titaniun	1			ŀ	<										
	Tungster	n carbide			V	V										
	Others					-										
Grounding	SUS316					S										
ring	Titaniun	1				K										
	Others					_										
Wiring	Integral	model					1	1								
connection/		G1/2 internal thread/With	out wate	rtight	glar	nd	2									
Watertight gland		G1/2 internal thread/With	brass (N	[i-plat	ed)		3	1								
giana		watertight gland					_									
	Remote	G1/2 internal thread/With	-		-	-	4									
	model	1/2NPT internal thread/W					5									
		CM20 internal thread/Wit					6									
		Pg13.5 internal thread/Wit	hout wa	tertigl	ht gl	and	7									
		Others					_									
Face to face	Standard Integral							Α								
Installation/	Integral								H							
Wiring direction		Upstream side							Α							
	D	Downstream side	17 0	1 .		1.6			В							
	Remote model	Horizontal piping mountir upstream							С							
		Horizontal piping mountir upstream	ng/Right	side v	viewe	ed froi	n		D							
Calibration/	Standard	calibration								А						
Approval	Others															

MagneW FLEX+ (General Model) (Flange detector 250 to 600 mm) Chloroprene rubber lining

Basic Mode	el No.		Selectio	ns								Opt	tiona	l selections -	Op	tions
MGG	11F	_] - [-		
11100	T T T				<u> </u>							1				
Diameter	250 mm		250												Х	No option
Diameter	300 mm		300												В	Certification of traceability
															С	Mill sheet
	350 mm		350												Е	Moisture treatment
	400 mm		400												F	Oil removal treatment
	450 mm		450												J	Gasket for resin pipe (for general
	500 mm		500												K	purposes) Attaching the TAG number plate to
т	600 mm		600												T.	the terminal box (remote)
Lining	-	ene rubber lining	R												L	Attaching the TAG number plate to
Pipe	Flange JI			J1												the neck section
connection	Flange A			A1											6	Countermeasure for condensation
		S G3443-2 F12		G1												Other
		IN PN10		D1									Χ	Finish		ndard
	Flange JI	PI150		P1									1		Co	rrosion-resistant finish
Flange	Standard				1								2		Co	rrosion-proof finish
material	Others				_											
Electrodes	SUS316I					L										
	Titaniun	1				Κ										
	Tungster	carbide				W										
	Others					_										
Grounding	SUS316						S									
ring	Titaniun	1					Κ									
	Others						-									
Wiring	Integral	nodel						1								
connection/		G1/2 internal thread/Witho	ut waterti	ght g	land			2								
Watertight		G1/2 internal thread/With l	orass (Ni-j	olated	l) wa	aterti	ght	3								
gland		gland						5								
	Remote	G1/2 internal thread/With p						4								
	model	1/2NPT internal thread/Wi						5								
		CM20 internal thread/With	out water	tight	glan	d		6								
		Pg13.5 internal thread/With	iout water	tight	glan	d		7								
		Others						_								
Face to	Standard								Α							
face	Others								_							
Installation/	Integral	nodel								Н						
Wiring		Upstream side								Α						
direction	Remote	Downstream side								В						
	model	Horizontal piping mounting	g/Left side	view	ved fi	rom	upst	ream	1	С						
		Horizontal piping mounting	g/Right sic	le vie	ewed	fron	n ups	strea	m	D						
Calibration/	Standard	calibration									Α	1				
Approval	Others										_	1				

MagneW FLEX+ (General Model) (Flange type detector 700 to 1100 mm)

Basic Mode	el No.		Select	ions								Opt	iona	l selectio	ns (Opt	ions
MGG	11F	_										_		_			
1100	111						-					ļ					
Di i	700		700												- Г	Х	No option
Diameter	700 mm		700												Ē	В	Certification of traceability
	800 mm		800													С	Mill sheet
	900 mm		900												_ I_		Moisture treatment
	1000 mn	1	10H												_ I	_	Oil removal treatment
	1100 mn		11H														Attaching the TAG number plate to
Lining		rene rubber	1	R											┠		the terminal box (remote type) Attaching the TAG number plate to
Pipe	Flange JI	S10K		J1												1	the neck section
connection	Flange A	NSI150		A1											F	6	Countermeasure for condensation
	Flange D	IN PN10		D1												_	Other
	Flange JI	PI150		P1													
	Flange JI	S G3443-2 F12		G1	1												
Flange	Standard				1	1											
material	Others				1_	1							Х	Finish		Star	ıdard
Electrodes	SUS316I	,				L	1						1		1	Cor	rosion-resistant finish
	Titaniun	1				К	1						2		1	Cor	rosion-proof finish
	Tungster	carbide				W	1										-
	Others						1										
Grounding	SUS316						S	1									
ring	Others																
Wiring	Integral	vpe						1	1								
connection/	integrai	G1/2 internal thread/With	out water	tight o	and	1		2	1								
Watertight gland		G1/2 internal thread/With gland					ight	3									
	Remote	G1/2 internal thread/With	plastic w	atertig	ght g	land		4	1								
	type	1/2NPT internal thread/W						5	1								
	, 1	CM20 internal thread/With			-			6									
		Pg13.5 internal thread/Wit			-			7	1								
		Others		-8-	0			†	1								
Face to	Standard							<u> </u>	А								
face	Others																
Installation/	Integral	ype								Н							
Wiring		Upstream side								А							
direction	Remote	Downstream side								В							
	type	Horizontal piping mountin	g/Left si	de viev	wed f	from	upst	rean	1	C							
	type	1 1 1 0 1 1 1 0	0				-										
	type	Horizontal piping mountin	g/Right	side vi	ewec	l fror	n up	strea	m	D							
Calibration/		Horizontal piping mountin calibration	g/Right :	side vi	ewec	l fror	n up	strea	ım	D	А	1					

No. SS2-MGG100-0100

MagneW FLEX+ (General Model) (Submersible model/ Union/Hose/Clamp detector 15 mm) PFA lining

Basic Mode	el No.		Selectio	ons							Opt	ional	selections	Op	otions
MGG	12U	_									_		_		
Diameter	15 mm		015											Х	No option
Lining	PFA		P	1										В	Certification of traceability
Pipe		oint R1/2 (PT1/2) external th	read	U1	İ									С	Mill sheet
connection	· · · ·	bint 1/2NPT external thread		U2										Е	Moisture treatment
	· · ·	pint R1/2 (PT1/2) internal th		U3										F	Oil removal treatment
		bint 1/2NPT internal thread		U4										Κ	Attaching the TAG number plate to
	Hose join			H1										L	the terminal box (remote detector) Attaching the TAG number plate to
	IDF clan	-		C1											the neck section
		1												_	Other
	Tri clam	р		C2											
	Others			_											
Electrodes	SUS316I				L										
	Hastello	·			С										
	Titaniun				K							Х	Finish	S	tandard
	Zirconiu				Н										
		n carbide			W										
	Others				_										
Union/ Hose/ Clamp material	SUS316					S									
Wiring connection/	Remote	G1/2 internal thread/With watertight gland	brass (Ni- _]	plated)		3								
Watertight gland	model	G1/2 internal thread /With	n SUS304 w	vaterti	ght g	land	8								
Face to face	Standard	1						А							
Installation/	1	Upstream side						T	Α						
Wiring		Downstream side							В						
direction	Remote model	Horizontal piping mounting	ng/Left side	view	ed fro	om uj	ostrea	am	С						
	mouer	Horizontal piping mountin upstream			_				D						
Calibration/	Standard	l calibration						-	-	А					
Approval	Others									_					

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MagneW FLEX+ (General Model) (Submersible model/Wafer detector 15 to 200 mm) PFA/ETFE lining

Basic Mode	el No.		Selection	ns							Op	otion	al se	elections	Op	tions
MGG	12D	_									_]		
11100	141]												4		
Diameter	15 mm		015												Х	No option
Diameter	25 mm		025												В	Certification of traceability
	40 mm		023												С	Mill sheet
	-														Е	Moisture treatment
	50 mm		050												F	Oil removal treatment
	65 mm		065												J	Gasket for resin pipe (for general
	80 mm		080													purposes)
	100 mm		100												Κ	Ű Í
	125 mm		125												L	the terminal box (remote detector) Attaching the TAG number plate to
	150 mm		150													the neck section
	200 mm		200												_	Other
Lining	PFA		Р													
		viameter 80 mm to 200 mm)	Е													
Pipe	Wafer JIS	1		11												
connection	Wafer JIS	\$20K		12	l											
	Wafer JIS	530K		13												
	Wafer Al	NSI150		21								Х	Fin	iish	Sta	ndard
	Wafer Al	NSI300		22												
	Wafer JIS	G3443-2 F12 (Diameter 80 mm	or more)	31	1								Х	Bolt/nuts	No	ne
	Wafer D	IN PN10		41	ĺ								1	1	Ca	rbon steel
	Wafer D	IN PN16		42	ĺ								2	1	SU	\$304
	Wafer D	IN PN25		43	ĺ											
	Wafer D	IN PN40		44	1											
	Wafer JP	I150		61	1											
	Wafer JP			62	ĺ											
Electrodes	SUS316I				L	1										
Littlibuto		574 (Hastelloy C-276 equivale	ent)		С											
	Titaniun				K											
	Zirconiu				Н											
	Tantalun				Т											
	Tungster				W											
		n iridium			P											
	Others															
	SUS316				-	S										
Grounding ring		575 (II t. II														
11115		575 (Hastelloy C-276 equivale	ent)			C										
	Titaniun					K										
	Zirconiu					Н										
	Tantalun					Т										
	Platinum	1				Р										
	Others	C1/2 internal (1 1/14791 1		1.4	1)											
Wiring connection/	Remote	G1/2 internal thread/With b watertight gland	rass (N1-p	natec	1)		3									
	Remote model	G1/2 internal thread /With S	US304 w	atert	ight i											
Watertight gland	mouer	gland			·5·11		8									
Face to	Standard							Α								
face	Others						-	-								
Installation/		Upstream side						_	А							
Wiring	Remote	Downstream side							В							
direction	Remote model	Horizontal piping mounting/Lef	t side view	ed fro	m ur	ostrea	m		C							
		Horizontal piping mounting/Rig							D							
Calibration/	Standard	calibration				rout			2	А						
Approval	Others									11						
11	Omers															

No. SS2-MGG100-0100

MagneW FLEX+ (General Model)(Submersible model/ Flange detector 15 to 200 mm) PFA/ETFE Lining Basic Model No. Selections Optional selections Options MGG12F No option Х Diameter 15 mm 015 Certification of traceability В 25 mm 025 С Mill sheet 40 mm 040 Е Moisture treatment 50 mm 050 F Oil removal treatment 65 mm 065 Gasket for resin pipe (for general 80 mm I 080 purposes) 100 100 mm Κ Attaching the TAG number plate to 125 125 mm the terminal box (remote) 150 150 mm L Attaching the TAG number plate to 200 200 mm the neck section Lining PFA Р Other Е ETFE (Diameter 80 mm to 200 mm) Flange JIS10K Pipe J1 connection Flnage JIS20K J2 J3 Flange JIS30K A1 X Finish Standard Flange ANSI150 Flange ANSI300 A2 G1 Flnage JIS G3443-2 F12 (Diameter 80 mm or more) Flange DIN PN10 D1 Flange DIN PN16 D2 Flange DIN PN25 D3 Flange DIN PN40 D4 Flange JPI150 P1 P2 Flange JPI300 Flange Standard 1 material Others Electrodes SUS316L L ASTM B574 (Hastelloy C-276 equivalent) С Κ Titanium Η Zirconium Т Tantalum Tungsten carbide W Р Platinum iridium Others SUS316 Grounding S ring ASTM B575 (Hastelloy C-276 equivalent) С Κ Titanium Н Zirconium Т Tantalum Р Platinum Others Wiring G1/2 internal thread/With brass (Ni-plated) watertight gland 3 Remote connection/ model Watertight G1/2 internal thread /With SUS304 watertight gland 8 gland Face to Standard A face Others Upstream side Installation/ А Wiring В Downstream side Remote direction Horizontal piping mounting/Left side viewed from upstream model С Horizontal piping mounting/Right side viewed from upstream D Standard calibration Calibration/ А Approval Others

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MagneW FLEX+ (General Model) (Submersible model/Flange detector 250 to 600 mm) PFA/ETFE Lining Basic Model No. Selections Optional selections Options MGG12F No option Х Diameter 250 mm 250 В Certification of traceability 300 mm 300 Mill sheet С 350 mm 350 Е Moisture treatment 400 mm 400 F Oil removal treatment 450 mm 450 Gasket for resin pipe (for general 500 mm 500 I purposes) 600 mm 600 К Attaching the TAG number plate to Lining PFA Р the terminal box (remote) Е ETFE Attaching the TAG number plate to L. Flange JIS10K Pipe J1 the neck section connection Flnage JIS20K J2 Other Flange ANSI150 A1 Flange ANSI300 A2 Flnage JIS G3443-2 F12 (Diameter 80 mm or more) G1 Flange DIN PN10 D1 Flange DIN PN16 D2 X Finish Standard Flange DIN PN25 D3 P1 Flange JPI150 Flange JPI300 P2 Flange Standard 1 material Others Electrodes SUS316L L С ASTM B574 (Hastelloy C-276 equivalent) Κ Titanium Η Zirconium Т Tantalum Tungsten carbide W Р Platinum iridium Others SUS316 S Grounding ring С ASTM B575 (Hastelloy C-276 equivalent) Κ Titanium Others G1/2 internal thread/With brass (Ni-plated) watertight gland Wiring 3 Remote connection model Watertight G1/2 internal thread /With SUS304 watertight gland 8 gland Standard А Face to face Others Upstream side А Installation Wiring В Downstream side Remote direction model Horizontal piping mounting/Left side viewed from upstream С Horizontal piping mounting/Right side viewed from upstream D Standard calibration Calibration/ А Approval Others

No. SS2-MGG100-0100

MagneW FLEX+ (General Model) (Submersible model/Wafer detector 25 to 200 mm) Polyurethane rubber lining

Basic Mode	el No.		Selecti	ons							OF	otion	al se	elections	Opt	tions
MGG	12D	_] -			_		
MOO	120				-					-	1					
Diameter	25 mm		025												Х	No option
Diameter	40 mm		023												В	Certification of traceability
	-														С	Mill sheet
	50 mm		050												Е	Moisture treatment
	65 mm		065												F	Oil removal treatment
	80 mm		080												J	Gasket for resin pipe (for general
	100 mm		100												V	purposes)
	125 mm		125												К	Attaching the TAG number plate to the terminal box (remote detector)
	150 mm		150												L	Attaching the TAG number plate to
	200 mm		200													the neck section
Lining	Polyuret	hane rubber lining	(2											_	Other
Pipe	Wafer JIS	\$10K		11												
connection	Wafer JIS	S20K		12												
	Wafer JIS	\$30K		13												
	Wafer Al	NSI150		21								Х	Fin	ish	Sta	ndard
	Wafer Al	NSI300		22	1							1	1		Co	rrosion-resistant finish
	Wafer JIS	G3443-2 F12 (Diameter 80 mr	n or mor	e) 31	1							2	1		Co	rrosion-proof finish
	Wafer D	IN PN10		41	1											
	Wafer D	IN PN16		42	1								Х	Bolt/nuts	No	ne
	Wafer D	IN PN25		43									1		Cai	bon steel
	Wafer D	IN PN40		44	1								2		SU	\$304
	Wafer JP	PI150		61	1									1		
	Wafer JP	1300		62	1											
Electrodes	SUS316I	_			L	1										
	Titaniun	n			К	1										
	Tungster	n carbide			W	1										
	Others				İ _	1										
Grounding	SUS316					S										
ring	Titaniun	n				К										
	Others															
		G1/2 internal thread/With	brass (Ni	-plate	d)		3				Ŀ.,					
	Remote	watertight gland					5									
	model	G1/2 internal thread /With	SUS304	watert	ight		8									
		gland														
Face to face	Standard		1					А								
		Upstream side							Α							
	Remote	Downstream side	<u> </u>						В							
	model	Horizontal piping mounting/Le							С							
	ļ	Horizontal piping mounting/Ri	ight side v	iewed f	rom 1	apstre	eam		D							
Calibration/		l calibration								Α	1					
Approval	Others									_	1					

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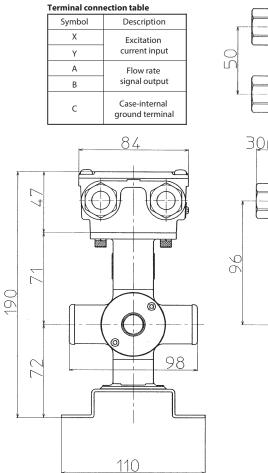
MagneW FLEX+ (General Model) (Submersible model/Flange detector 250 to 600 mm) Chloroprene rubber lining

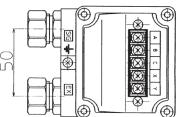
Basic Mode	el No.		Selection	ns								С	Optio	nal	selectio	ns O	ptions
MGG	12F	_										٦.	- [-		
Diameter	250 mm		250													X	No option
Diameter	300 mm		300													В	
	350 mm		350													0	· · · · · · · · · · · · · · · · · · ·
	400 mm		400													F	Moisture treatment
	450 mm		450													F	Oil removal treatment
	500 mm		500													J	Gasket for resin pipe (for general
	600 mm		600														purposes)
Lining		rene rubber lining	R													K	0 1
Pipe	Flange JI	S10K	· · · ·	J1													the terminal box (remote)
connection	Flange A			A1												I	Attaching the TAG number plate to the neck section
	-	5 G3443-2 F12		G1													Other
		DIN PN10		D1													
	Flange JI			P1									- [7	X	Finish	St	andard
Flange	Standard	1			1												
material	Others				_												
Electrodes	SUS316I	· ·				L											
	Titaniun	1				Κ											
	Tungster	n carbide				W											
	Others					_											
Grounding	SUS316						S										
ring	Titaniun	n					Κ										
	Others						_										
Wiring		G1/2 internal thread/With brass	s (Ni-plated)) wate	ertigh	ıt glar	nd	3									
connection/ Watertight gland	Remote model	G1/2 internal thread /With SUS	304 watertig	ght gl	and			8									
Face to	Standard	l							А								
face	Others								-								
Installation/		Upstream side				1				А	1						
Wiring	Remote	Downstream side								В	1						
direction	model	Horizontal piping mounting	g/Left side	view	red fi	rom	upsti	ream	l	С	1						
		Horizontal piping mounting	g/Right sid	e vie	wed	fron	n ups	strea	m	D							
Calibration/	Standard	l calibration									A	ł					
Approval	Others										_	_					
							_	-									

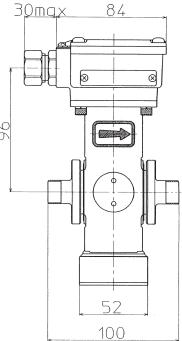
Dimension and terminal connection drawings

Union Joint

(Meter size 2.5 to 15 mm)



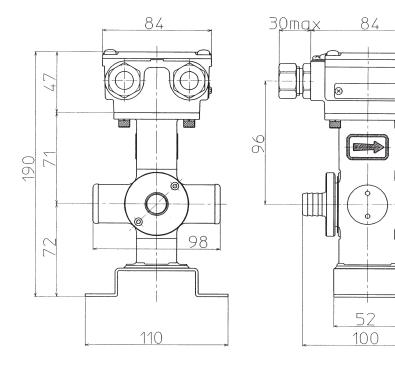




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Hose Joint

(Meter size 2.5 to 15 mm)



(Unit: mm)

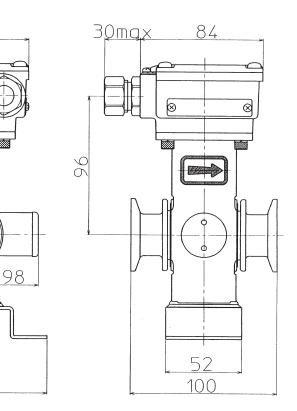
IDF/Tri Clamp

(Meter size 2.5 to 15 mm)

47

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Note) 1. An integral detector includes an integral converter instead of a terminal box.

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2. Clamp size : 1S

Wafer

(Meter size 2.5 to 15 mm)

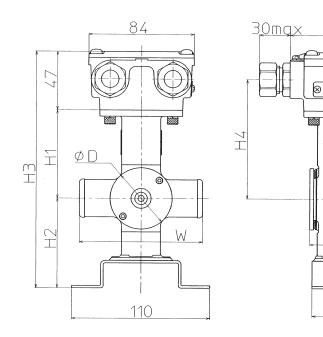
(Unit: mm)

84

52

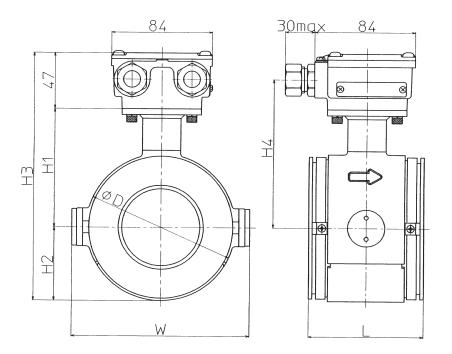
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Wafer

(Meter size 25 to 200 mm)



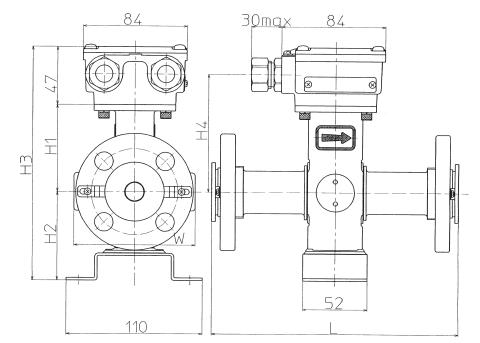
												(Unit	: mm)	
Detector diamete	er	2.5	5	10	15	25	40	50	65	80	100	125	150	200
Face to face dimension	L	56	56	56	56	56	80	86	96	106	120	140	160	200
	H1	71	71	71	71	77	84	93	100	108	120.5	133	160	185
Haight	H2	72	72	72	72	34	43.5	52	62	67	79.5	95	110	135
Height	H3	190	190	190	190	158	174.5	192	209	222	247	275	317	367
	H4	96	96	96	96	102	109	118	125	133	145.5	158	185	210
Width	W	98	98	98	98	106	125	135	148	164	189	214	240	290
Outer diameter	φD	49.5	49.5	49.5	49.5	68	87	104	124	134	159	190	220	270
Mass (kg)		2.6	2.6	2.6	2.3	2.6	2.8	3.4	4.5	5.2	6.7	10.0	13.6	22.0

Note) 1. *An integral detector includes an integral converter instead of a terminal box.*

(Unit: mm)

Flange

(Meter size 2.5 to 15 mm)



Flange

(Meter size 25 to 150 mm)

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												(1	Unit: mm)
Detector diamete	r	2.5	5	10	15	25	40	50	65	80	100	125	150
Face to face dimension	L	160	160	160	200	200	200	200	200	200	250	250	300
	H1	71	71	71	71	77	84	93	100	108	120.5	133	160
Haight	H2	72	72	72	72	63	70	77.5	87.5	92.5	105	125	140
Height	H3	190	190	190	190	187	201	217.5	234.5	247.5	272.5	305	347
	H4	96	96	96	96	102	109	118	125	133	145.5	158	185
Mass (kg)		5.0	5.0	5.0	5.0	7.4	6.5	10.1	12.1	12.6	18.4	26.0	30.6

Note) 1. This table is for remote detectors .

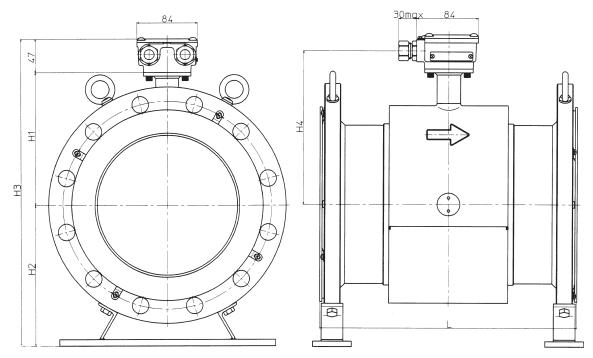
2. An integral detector includes an integral converter instead of a terminal box.

(Unit: mm)

(Unit: mm)

Flange

(Meter size 200 to 600 mm)



(Unit: mm)

		200	250	300	350	400	450	500	600
Face to face dimension	L	350	450	500	550	600	600	600	650
Height	H1	185	235	258	282	310	339	366	415
	H2	196	221	250	273	321	353	383	446
	H3	428	503	555	602	678	739	796	908
	H4	210	260	283	307	335	364	391	440
Mass (kg)		48 .0	60.0	73.0	96 .0	128.0	168.0	202.0	272.0

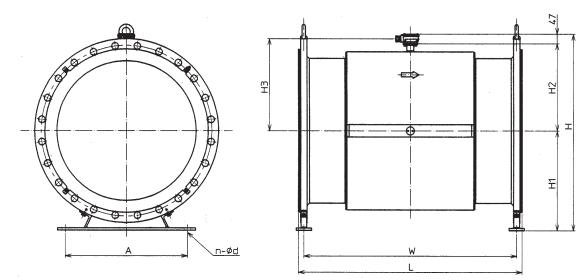
Note) 1. *This table is for the remote detector*.

2. An integral detector includes an integral converter instead of a terminal box.

Flange

(Meter size 700 to 900 mm)

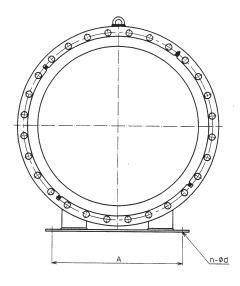
(Unit: mm)

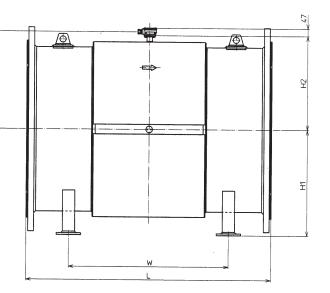


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Flange

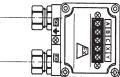
(Meter size 1000 to 1100 mm)





Detector diamete	700A	800A	900A	1000A	1100A	
Face to face dimension	L	1100	1200	1300	1500	1500
	Н	967	1081	1185	1278	1399
Height	H1	491	554	608	650	720
Height	H2	429	480	530	581	632
	H3	454	505	555	606	657
Feet length	W	1049	1147	1245	980	1000
Feet width	А	600	600	600	800	800
Feet halls*	n - ød	4 - φ33	4 - \$ 33	4 - \$ 33	4 - \$ 33	4 - φ33
Mass (kg)	394	476	566	823	930	

Terminal con	nection table	
Symbol	Description	
х	Excitation	
Y	current input	0
A	Flow rate	
В	signal output	
с	Case-internal ground terminal	



* : n = quantity, ϕd = diameter

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Specifications are subject to change without notice.

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