No. SS2-MGG200-0100



MagneW[™] PLUS+ Electromagnetic Flowmeter Detector (General, FM Nonincendive Approval)

Model MGG18/MGG19/MGG11

OVERVIEW

azbi

The MagneW PLUS+ electromagnetic flowmeter detector is a high performance, highly reliable flowmeter developed with Azbil Corporation's proven MagneW3000 flow measurement technologies. Model MGG18 (watertight model) and model MGG19 (submersible model) offer superior process flowrate measurement and couple with a wide range of MagneW PLUS+ converters.

FEATURES

High performance lining

- A new, exclusive high quality lining technology and a special mirror-finish PFA lining offers higher anti-adhesive properties than existing models.
- The mirror-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 (0.1 to 24 inches) are available, making selection of the best lining easy for a wide variety of applications.

Replacement interfacing detector (optional)

• This detector can replace the detector interfaces of our existing models and those of other manufacturers. Please consult an Azbil Corp. representative for details.

Rugged detector structure

- A stainless steel case has been adopted for sizes of 2.5 mm to 200 mm (0.1 to 8 inches).
- A watertight structure effective for environments where moisture and condensation tends to occur is used for the water-tight model (model MGG18).



A wide variety of piping connections

- A hose or union joint or clamp can be selected for very small size models (diameters of 2.5 to 15 mm (0.1 to 1/2 inches)).
- A flange structure is available for all sizes (sizes of 2.5 to 1100 mm (0.1 to 44 inches).
- A wafer construction can be also selected (sizes of 2.5 to 200 mm (0.1 to 8 inches)).
- Sizes of 65 and 125 mm (2½ and 5 inches) have been added to our existing product lineup.

Compatibility

• Remote model converters can be used in combination with our conventional converters. Please consult an Azbil Corp. representative for details.

Type of protection

Model MGG 18/19 are suitable for use in FM Nonincendive Class I, Division 2, Groups A, B, C and D; Class II, Division 2, Groups F and G; Class III, Division 2.

Improved Accuracy Specification

The standard accuracy is +/- 0.5 % of rate. Also available is an optional high accuracy calibration rated at +/- 0.35 % of rate (sizes of 40 mm to 350 mm ($1\frac{1}{2}$ to 14 inches), combined with MGG14C).

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

Aluminum 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.

FUNCTIONAL SPECIFICATIONS

Type of protection

Model MGG18, MGG11

JIS C 0920 watertight model NEMA ICS6-110 TYPE4X IEC PUBL 529 IP67

Model MGG19

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.

FM approval for MGG18 and MGG19

Nonincendive for Class I, Division 2, Groups A, B, C and D Suitable for Class II, Division 2, Groups F and G Suitable for Class III, Division 2, indoor and outdoor (type 4X) hazardous locations.

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 5 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 5 of this document
- Maximum pressure for SEP equipment defined by the PED: see (4) above
- Maximum pressure for the flange: see the applicable standard

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Table 1: Maximum allowable pressure for SEP products									
(1) Fluid	group	Grou	up 1	Grou	ıp 2	Grou	ıp1	Group 2	
(2) Vapor pressure		(i)	(i) (ii))	(ii)		
PED t	able	Tabl	le 6	Tabl	le 7	Tabl	e 8	Tabl	e 9
				(4) Maxim	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	0.05	6.6	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

Line size

2.5, 5, 10, 15, 25, 40, 50, 65, 80, 100, 125, 150, 200, 250, 300, 350, 400, 450, 500, 600, 700, 800, 900, 1000, 1100 mm

(0.1, 0.2, 3/8, 1/2, 1, 1½, 2, 2½, 3, 4, 5, 6, 8, 10, 12, 14, 16, 18, 20, 24, 28, 32, 36, 40, 44 inches)

Flange rating

JIS 10K, JIS 16K, JIS 20K, JIS 30K, JPI 150, JPI 300, ANSI 150, ANSI 300, DIN PN10, DIN PN16, DIN PN25, DIN PN40 (Size 2.5 to 65 mm (0.1 to 2.5 inches))

JIS 10K, JIS 16K, JIS 20K, JIS 30K, JIS G3443-2 F12 JPI 150, JPI 300,ANSI 150, ANSI 300, DIN PN10, DIN PN16, DIN PN25, DIN PN40 (Size 80 to 200 mm (3 to 8 inches))

JIS 10K, JIS 16K, JIS 20K, JIS G3443-2 F12 JPI 150, JPI 300, ANSI 150, ANSI 300, DIN PN10, DIN PN16, DIN PN25 (Size 250 to 600 mm (10 to 24 inches), PFA/ETFE lining)

JIS 10K, JIS G3443-2 F12, JPI 150, ANSI 150, DIN PN10 (Size 700 to 1100 mm (28 to 44 inches), chloroprene rubber lining)

Reference flange standard

JIS B 2210 (1984) ANSI B16.5 (1988) JPI-7S-15-93

Optional specifications

Test report

Calibration certificate, withstand voltage test, insulation resistant, hydrostatic pressure test, physical inspection are included.

Traceability certificate

The following three documents are included.

- Traceability System Chart
- Traceability Certificate
- Test Report

Material certificate

Material certificate for electrode/grounding ring

Gasket for plastic piping

When the detector is being mounted on plastic pipe, attach this gasket between the lining and the grounding ring, and between the grounding ring and the plastic pipe flange.

Attaching the tag number to the terminal box

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

Attaching the tag number to the neck section

Stamp the tag with the specified number and attach to the neck section of the detector with stainless wire. The maximum number of characters of the tag number is 16.

Water free treatment

Condensation is removed from wetted surfaces.

Oil free treatment

When removed from wetted surfaces.

Note) For additional specifications, please contact your Azbil Corporation representative.

PERFORMANCE SPECIFICATIONS

Accuracy

(in combination with the model MGG14C converter) <Size 2.5 to 15 mm (0.1 to 1/2 inch)> Vs = Velocity of setting range

Vs (m/s)	Velocity during measurement ≥ Vs × 40 %	Velocity during measurement ≤ Vs × 40 %
$1.0 \le Vs \le 10$	±0.5 % of rate	±0.2 % of Vs
$0.1 \le Vs \le 1.0$	±(0.1/Vs+0.4)% of rate	±0.4(0.1/Vs+0.4)% of Vs

<Size 25 to 600 mm (1 to 24 inches)> Vs = Velocity of setting range

Vs (m/s)	Velocity during measurement ≥ Vs ×20 %	Velocity during measurement ≤ Vs ×20 %
$1.0 \le Vs \le 10$	±0.5 % of rate	±0.1 % of Vs
$0.1 \le Vs \le 1.0$	$\pm (0.1/Vs+0.4)\%$	±0.2(0.1/Vs+0.4)%
$0.1 \leq VS \leq 1.0$	of rate	of Vs

<Size 700 to 1100 mm (28 to 44 inches)>

Vs = Velocity of setting range

Vs (m/s)	Velocity during measurement ≥ Vs × 50 %	Velocity during measurement ≤ Vs × 50 %
$1.0 \le Vs \le 10$	±1.0 % of rate	±0.5 % of Vs
$0.1 \le Vs \le 1.0$	±(0.2/Vs+0.8)% of rate	(0.1/Vs+0.4)% of Vs
	orrate	01 V S

Accuracy is guaranteed by the totalized flow volume under the condition of continuous flow measurement for 30 seconds or longer.

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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

Γ	Diamatan	Measurable fluid temperature (°C)				
Diameter (mm)		Integral model Remote model		Submersible		
	(11111)			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	tegral model Remote model			
. ,			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	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	_					

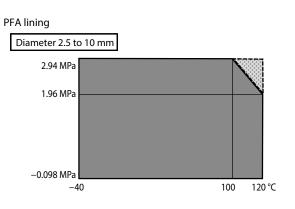
Measurable fluid pressure range (depending on Frange rating):

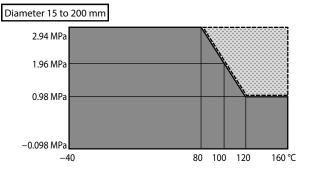
PFA/ETFE lining; -0.098 to +2.94 MPa

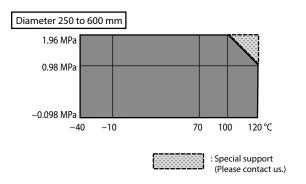
Polyurethane rubber lining; -0.098 to +2.94 MPa Chloroprene rubber lining;

-0.098 to +0.98 MPa

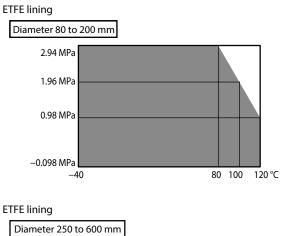
Integral/remote models



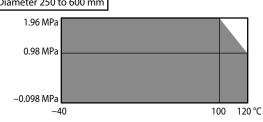




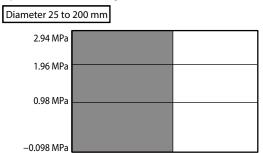
Integral/remote models





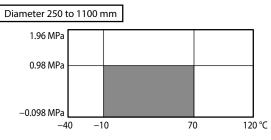


Polyurethane rubber lining



Chloroprene rubber lining

40

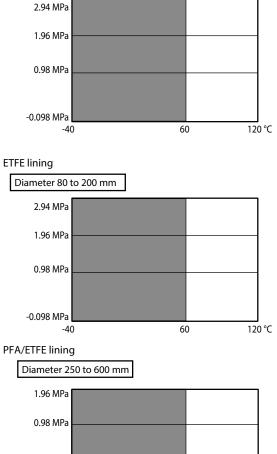


50

120 °C

Submersible model

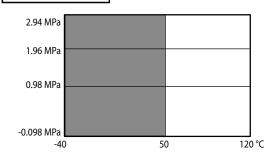
PFA lining Diameter 15 to 200 mm





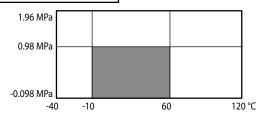
Polyurethane rubber lining

Diameter 25 to 200 mm



Chloroprene rubber lining

Diameter 250 to 600 mm



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

Size		Minimum flow v 0 to 0.1 m/s (Minimu	0 to 0.33 ft/s)	0 to 10 m/s (Maximum flow velocity range is 0 to 10 m/s (0 to 32.8 ft/s) Maximum range	
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	1½	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)

PHYSICAL SPECIFICATIONS

Main body material

Measuring pipe materials

SUS304 stainless steel

Flange

SUS304 stainless steel (size 2.5 to 65 mm (0.1 to $2\frac{1}{2}$ inches))

Carbon steel + corrosion-preventive coating (size 80 to 600 mm (3 to 24 inches))

Carbon steel (size 700 to 1100 mm (28 to 44 inches))

Case

SCS13 stainless steel (size 2.5 to 15 mm (0.1 to 1/2 inch)) SUS304 stainless steel (size 25 to 200 mm (1 to 8 inches)) SS400 carbon steel (size 250 to 1100 mm (10 to 44 inches))

Terminal box

Aluminum alloy (remote model)

finish

Paint

Model MGG18

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

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

Epoxy paint

Corrosion-proof paint

Terminal box

Epoxy paint

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

Epoxy paint

Model MGG19

Tar epoxy paint

Color

Model MGG18

Cover: light beige (Munsell 4Y7.2/1.3) Housing: dark beige (Munsell 10YR4.7/0/5)

Model MGG19

black

Process wetted material

Lining

PFA (size 2.5 to 600 mm (0.1 to 24 inches)) ETFE (size 80 to 600 mm (3 to 24 inches))

Polyurethane rubber (size 25 to 200 mm (1 to 8 inches)) Chloroprene rubber (size 250 to 1100 mm (10 to 44 inches))

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Electrode

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

Grounding ring

SUS316, ASTM B575 (Hastelloy C-276 equivalent), titanium, zirconium, tantalum, platinum

Union joint

SUS316 (size 2.5 to 15 mm (0.1 to 1/2 inch))

Hose

SUS316 (size 2.5 to 15 mm (0.1 to 1/2 inch))

IDF Clamp SUS316 (size 2.5 to 15 mm (0.1 to 1/2 inch))

Tri Clamp SUS316 (size 2.5 to 15 mm (0.1 to 1/2 inch))

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

O-ring Viton rubber (with union joints)

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INSTALLATION

Ambient temperature limits

-25 to + 60 °C (-13 to + 140 °F) (integral model)

-30 to + 80 °C (-22 to + 176 °F) (remote model, PFA lining)

-30 to + 60 °C (-22 to + 140 °F) (remote model, polyure than

rubber lining/chloroprene rubber lining)

-30 to + 60 °C (-22 to + 140 °F) (Submersible model, PFA/ ETFA lining)

-30 to + 50 °C (-22 to + 122 °F) (Submersible model, polyure-thane rubber lining)

Ambient humidity limits

5 to 100 % RH

Electrical connection

Integral model

Connected to converter

Remote model

General model

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

FM Nonincendive model

1/2NPT internal thread for model MGG18 Watertight gland for model MGG19

Pipe connection

Wafer (size 2.5 to 200 mm (0.1 to 8 inches)) Flange (size 2.5 to 1100 mm (0.1 to 44 inches)) Union (size 2.5 to 15 mm (0.1 to 1/2 inch)) Hose (size 2.5 to 15 mm (0.1 to 1/2 inch)) IDF Clamp (size 2.5 to 15 mm (0.1 to 1/2 inch)) Tri Clamp (size 2.5 to 15 mm (0.1 to 1/2 inch))

Nuts and bolts (for wafer models)

S20C carbon steel, SUS304 stainless steel

Grounding

Resistance less than 100 Ω

Length of straight pipe

Upstream side

A minimum five straight pipe diameters A minimum 10 straight pipe diameters is required if a diffuser/valve/pump is installed upstream side.

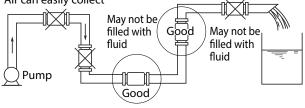
Downstream side

Two straight pipe diameters is recommended.

Installation location Install this product in a place where the inside of the detector will always be filled with the process fluid. An installation

Air can easily collect

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.*

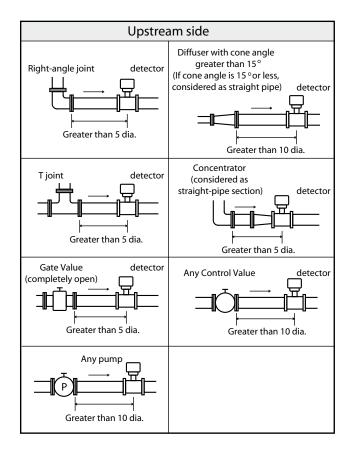


Figure 1.

Cable (between remote detector and converter)

Maximum length 300 m (984 ft) (depends on fluid conductivity) Outer diameter 10 to 12 mm (0.4 to 0.47 inch)

Signal cable

Dedicated cable: MGA12W (O.D. 11.4 mm, 0.75 mm²) or equivalent (CVVS, CEEV etc.)

Excitation cable

Dedicated cable: MGA12W (O.D. 10.5 mm, 2 mm²) or equivalent (CVV and others)

Maximum cable length of MGA12W cable

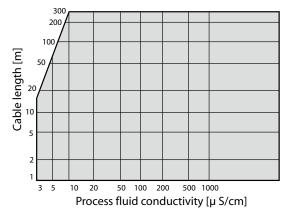


Figure 2. Maximum cable length of MGA12W cable

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.

11

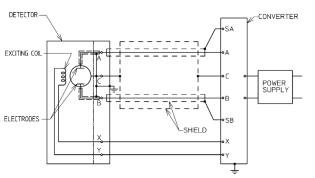
For FM Nonincendive model

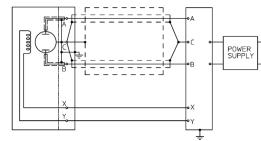
This equipment is suitable for use in Class I, Division 2, Groups A, B, C and D, Class II, Division 2, Groups F and G; Class III, Division 2.

If the combination of detector MGG 18/19 and converter MGG 14 C is used as an FM - NI product, both the detector and the converter must be used in combination with the NI specification.

▲ CAUTION

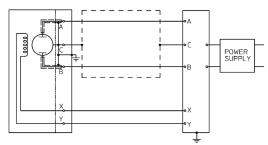
Power supply and internal voltage of ordinary equipment to the earth shall not exceed 250 V AC 50/60 Hz, 250 V DC in case of normal /fault conditions.



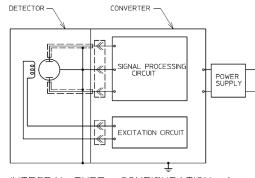


·Preferred for 2.5mm to 10mm detectors to minimize noise REMOTE TYPE : CONFIGURATION ± 1

REMOTE TYPE : CONFIGURATION #2



REMOTE TYPE : CONFIGURATION #3



INTEGRAL TYPE : CONFIGURATION #1

TYPE	MODEL NO.	MAX.AMBIENT TEMP.	MAX.FLUID TEMP	LINING	SIZE
	MGG14C		-	_	_
	MGM14C		_	_	_
	MGM18D,F	(0.9C)	120 °C	PFA,ETFE	40 to 600A
INTEGRAL	MGG18D,F,U	60 °C	120 °C	PFA,ETFE	2.5 to 600A
	MGG18D		50 °C	POLYURETHANE	25 to 200A
	MGS18U		120 °C	PFA	15 to 125A
	MGG14C	60 °C	-	-	-
			160 °C	PFA	2.5 to 200A
	MGG18D,F	80 °C	100.00	PFA	250 to 600A
			120 °C	ETFE	2.5 to 600A
REMOTE	MGG18D 60 °C		50 °C	POLYURETHANE	25 to 200A
	MGG18U	22.00	120 °C	PFA,ETFE	2.5 to 15A
	MGG19D,F,U	80 °C	120 °C	PFA,ETFE	2.5 to 600A
	MGG19D	60 °C	50 °C	POLYURETHANE	25 to 200A
	MGS18U	80 °C	160 °C	PFA	15 to 125A

Table 2

Note 1. Ambient Temperature, Process Temperature: See table 2.

2. Power Supply and Internal Voltage of Ordinary Equipment to the Earth.

 $shall\ not\ exceed\ AC250V\ 50/60Hz,\ DC250V\ incase\ of\ Normal/Fault\ conditions.$

3. In Division 2 Location.

- Fluid being measured must be non-flammable.
- Install Wiring per NEC 501-4(b) or 502-4(b).
- 4. Degree of Protetion of EnclosureMGG14C, MGG18D,U,F, MGS18U, MGM14C, MGM18D,F:Type 4XMGG19D,U,F:Type 6P

MODEL SELECTION

Contents of model number table

Detector (General model)

Structure / Basic model no.	Lining	Pipe connection	Size		Ref. page
Watertight model MGG18U	PFA	Union / Hose / Clamp	2.5 to 15 mm	(0.1 to 1/2 inch)	page 14
Watertight model MGG18D	PFA	Wafer	2.5 to 10 mm	(0.1 to 3/8 inch)	page 15
Watertight model MGG18D	PFA / ETFE	Wafer	15 to 200 mm	(1/2 to 8 inches)	page 16
Watertight model MGG18F	PFA / ETFE	Flange	15 to 200 mm	(1/2 to 8 inches)	page 17
Watertight model MGG18F	PFA / ETFE	Flange	250 to 600 mm	(10 to 24 inches)	page 18
Watertight model MGG18D	Polyurethane rubber	Wafer	25 to 200 mm	(1 to 8 inches)	page 19
Watertight model MGG18F	Chloroprene rubber	Flange	250 to 600 mm	(10 to 24 inches)	page 20
Watertight model MGG11F	Chloroprene rubber	Flange	700 to 1100 mm	(28 to 44 inches)	page 21

Detector (Submersible model)

Structure / Basic model no.	Lining	Pipe connection	Size		Ref. page
Submersible model MGG19D	PFA / ETFE	Wafer	15 to 200 mm	(1/2 to 8 inches)	page 22
Submersible model MGG19F	PFA / ETFE	Flange	15 to 200 mm	(1/2 to 8 inches)	page 23
Submersible model MGG19F	PFA / ETFE	Flange	250 to 600 mm	(10 to 24 inches)	page 24
Submersible model MGG19D	Polyurethane rubber	Wafer	25 to 200 mm	(1 to 8 inches)	page 25

Note) All MGG19 models satisfy FM Nonincendive approval.



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.

Union / Hose / Clamp type (2.5 to 15 mm (0.1 to 1/2 inch)) PFA lining

Model MGG18U - I II III IV V VI VII VIII IX - X - Y / Options (some options can be selected per each model)

	Basic model no.		Selections								Optic	onal	selec	tio
	MGG1	8U	-										- 1	
													Ī	
Ι	Line size	2.5 mm	(0.1 inch)	002	1									
		5 mm	(0.2 inch)	005	1									
		10 mm	(3/8 inch)	010										
		15 mm	(1/2 inch)	015	1									
II	Lining	PFA			Р	1								
III	Piping	Union join	nt R1/2 (PT1/2) external thread			U1]							
	connection	Union join	nt 1/2NPT external thread			U2]							
			nt R $1/2$ (PT $1/2$) internal thread			U3]							
		Union join	nt 1/2NPT internal thread			U4]							
		Hose joint				H1]							
		IDF clamp				C1								
		Tri clamp				C2								
IV	Electrode	SUS316L					L							
		ASTM B57	74 (Hastelloy C-276 equivalent)				C							
		Titanium					K							
		Zirconium	l				Н							
		Tungsten c	carbide (only for size 10 mm or upper)				W							
		Other					_							
V	Grounding ring	SUS316						S						
VI	Electrical	Integral ty							1					
	connection / watertight gland	Remote	G1/2 internal thread / without water						2					
	water tight giand	type	G1/2 internal thread / with brass (Ni		nt glan	d			3					
			G1/2 internal thread / with plastic wa						4					
			1/2NPT internal thread / without wa		ote 1)				5					
			CM20 internal thread / without wate						6					
			Pg 13.5 internal thread / without wat						7					
			G1/2 internal thread / with SUS304 v	vatertight gland					8					
VII	Face-to-face	Standard								A				
VIII	Installation /	Integral ty	•								H			
	wiring direction	Remote	Upstream side (horizontal / vertical p								A			
		type	Downstream side (horizontal / vertic								B			
			Horizontal piping mounting / left sid								C	ļ		
			Horizontal piping mounting / right s	ide viewed from u	ıpstre	am					D			
IX	Calibration	Standard										A		
		Other										-		
X	Finish	Standard			-									
л	11111511		-resistant finish		-									+ -
		Corrosion	-proof finish											

su	Azbil Corporation version (must be selected)	Y
Options	Traceability certificate for detector	В
Ō	Material certificate (only for electrodes and ground rings)	С
	Attachment of the TAG number to the terminal box for detector (Note 2)	K
	Attachment of the TAG number plate to the neck section for detector (Note 2) (Note 3)	L
	PFA lining heat treatment	М
	Water free treatment	Е
	Oil free treatment	F

Note) 1. Must be selected for FM NI approval

2. Must be selected for Tag no. requirement

3. This option code cannot be selected with Electrical connection code "5".

Wafer type (2.5 to 10 mm (0.1 to 3/8 inch)) PFA lining

Model MGG18D - I II III IV V VI VII VIII IX - X XI - Y / Options (some options can be selected per each model)

	Basic model no.		-	Selec	tions						Option	al sel	ectio	ons	_
	MGG18	D	-										· [
			-												ſ
Ι	Line size	2.5 mm	(0.1 inch)	002]										
		5 mm	(0.2 inch)	005											
		10 mm	(3/8 inch)	010	1										Ĺ
II	Lining	PFA		·	Р	1									
III	Piping	Wafer JIS 10	K		I	11									
	connection	Wafer JIS 20				12									L
		Wafer JIS 30				13									
			/20K for 10 mm flange			14									
			K for 10 mm flange			15									
		Wafer ANSI	*			21									
		Wafer ANSI				22									
		Wafer DIN H				41									
						41									
		Wafer DIN I			-										
		Wafer DIN I				43									
		Wafer DIN I				44									
			PN10/16/25/40 for 10 mm flange			45									
		Wafer JPI 15				61									
		Wafer JPI 30	0			62									
IV	Electrode	SUS316L					L								
		-	(Hastelloy C-276 equivalent)				С								
		Titanium					K								
		Zirconium					Н								
		Tantalum					Т								
		Tungsten car	rbide (only for size 10 mm)				W								
		Platinum iri	dium				Р								
		Other					_	1							
V	Grounding ring	SUS316						S							
		ASTM B575	(Hastelloy C-276 equivalent)					С							
		Titanium			-			K							
		Zirconium						Н							
		Tantalum						Т							
		Platinum						P							
		Other						1							
х 7 т					-			_	1						
VI	Electrical connection /	Integral type Remote	G1/2 internal thread / without watertight	ماسما					1 2						
	watertight gland		G1/2 internal thread / with brass (Ni-plat	č	ار سرار										
	water tight giand	type			giand				3						
			G1/2 internal thread / with plastic waterti		1)				4						
			1/2NPT internal thread / without watertig		e 1)				5						
			CM20 internal thread / without watertigh	ě					6						
			Pg 13.5 internal thread / without watertig	-					7						
		ļ	G1/2 internal thread / with SUS304 water	tight gland					8						
VII	Face-to-face	Standard								Α					
	dimensions	Other		_						_					
/III	Installation /	Integral type									Н				
	wiring direction	Remote	Upstream side (horizontal / vertical pipin	g mounting)							Α				
		type	Downstream side (horizontal / vertical pi	ping mounting	g)						В				
			Horizontal piping mounting / left side vie								С				
			Horizontal piping mounting / right side v								D				1
IX	Calibration	Standard										A			Ĺ
		Other													
	1	L													
Х	Finish	Standard												Х	
л	171111511		asistant finish										-+		
			esistant finish											1 2	
VT	D-14 / /	Corrosion-p	1001 1111511											2	┞
XI	Bolt / nut	None													┞
		Carbon steel													┡
		SUS304													L
suc	Azbil Corporation v				Y										
Ĕ	Traceability certifica				В										
D_		amber fam al anter	odes and ground rings)		C										
Options	Material certificate (With gasket for plast		sacs and ground rings)		I										

- *Note)* 1. *Must be selected for FM NI approval*
 - 2. Must be selected for Tag no. requirement

3. This option code cannot be selected with Electrical connection code "5".

Κ

L

М

Е

F

Attachment of the TAG number to the terminal box for detector (Note 2)

PFA lining heat treatment

Water free treatment

Oil free treatment

Attachment of the TAG number plate to the neck section for detector (Note 2) (Note 3)

Wafer type (15 to 200 mm (1/2 to 8 inches)) PFA / ETFE lining

Model MGG18D - I II III IV V VI VII VIII IX - X XI - Y / Options (some options can be selected per each model)

	Basic model no.	D	1	Select	10118	1					,	Option		
	MGG18	U	J -										· –	
T	Line size	15 mm	(1/2 inch)	015										
1	Line Size	25 mm	(1 inch)	025										
		40 mm	(1½ inches)	040	ł									
		50 mm	(2 inches)	050										
		65 mm	(2½ inches)	065										
		80 mm	(3 inches)	080										
		100 mm	(4 inches)	100										
		125 mm	(5 inches)	125	1									
		150 mm	(6 inches)	150]									
		200 mm	(8 inches)	200										
II	Lining		to 200 mm (3 to 8 inches))		Е									
		PFA			Р									
III	Piping	Wafer JIS 10K				11								
	connection	Wafer JIS 20K				12								
		Wafer JIS 30K				13	-							
		Wafer ANSI 15				21	-							
		Wafer ANSI 30				22	-							
			43-2 F12 (size 80 mm or larger)			31	-							
		Wafer DIN PN				41								
		Wafer DIN PN Wafer DIN PN				42 43								
		Wafer DIN PN Wafer DIN PN				43								
		Wafer JPI 150	UT			61	-							
		Wafer JPI 130 Wafer JPI 300				62								
IV	Electrode	SUS316L				52	L	1						
1 V	Liectione		Hastelloy C-276 equivalent)				C							
		Titanium					K							
		Zirconium					Н							
		Tantalum					Т	1						
		Tungsten carbi	ide				W	1						
		Platinum iridi	um				Р	1						
		Other					_	1						
V	Grounding ring	SUS316						S	1					
•	Grounding ing		Hastelloy C-276 equivalent)					С						
		Titanium	· ·					K	1					
		Zirconium						Н	1					
		Tantalum						Т						
		Platinum						Р						
		Other						_						
VI	Electrical	Integral type							1					
	connection /	Remote type	G1/2 internal thread / without watertigh	t gland					2					
	watertight gland		G1/2 internal thread / with brass (Ni-pla	ted) watertight gla	nd				3					
			G1/2 internal thread / with plastic water	tight gland					4					
			1/2NPT internal thread / without watert	ight gland (Note 1))				5					
			CM20 internal thread / without watertig	•					6					
			Pg 13.5 internal thread / without waterti						7					
			G1/2 internal thread / with SUS304 water	ertight gland					8					
VII	Face-to-face	Standard								Α				
	dimensions	Other												
VIII	Installation /	Integral type									Н			
	wiring direction	Remote type	Upstream side (horizontal / vertical pipi			-	-				A			
			Downstream side (horizontal / vertical p								В			
			Horizontal piping mounting / left side vi								C			
_		0. 1 -	Horizontal piping mounting / right side	viewed from upstr	eam						D			
IX	Calibration	Standard										A		
			ate calibration (Size 40 to 200 mm (1 1/2 to	o 8 inches))								U		
		Other										_		
		r												
		Standard												Х
Х	Finish		istant finish											1
Х	Finish	Corrosion-resi												1
		Corrosion-pro												2
X XI	Finish Bolt / nut	Corrosion-pro None												2
		Corrosion-pro												2

su	Azbil Corporation version (must be selected)	Y
Options	Traceability certificate for detector	В
0 ^I O	Material certificate (only for electrodes and ground rings)	С
	With gasket for plastic piping	J
	Attachment of the TAG number to the terminal box for detector (Note 2)	K
	Attachment of the TAG number plate to the neck section for detector (Note 2) (Note 3)	L
	PFA lining heat treatment (Note 4)	М
	Water free treatment	E
	Oil free treatment	F

- Note) 1. Must be selected for FM NI approval
 - 2. Must be selected for Tag no. requirement
 - 3. This option code cannot be selected with Electrical connection code "5".
 - 4. This option code can only be selected with Lining code "P".

Flange type (15 to 200 mm (1/2 to 8 inches)) PFA / ETFE lining

Model MGG18F - I II III IV V VI VII VIII IX X - XI - Y / Options (some options can be selected per each model)

	Basic model no.		_	Selecti	ons						Option	al selec	tions	_
	MGG18	3F	-										- [Γ
													T	Γ
Ι	Line size	15 mm	(1/2 inch)	015										
		25 mm	(1 inch)	025										
		40 mm	(1½ inches)	040										
		50 mm	(2 inches)	050										
		65 mm	(2½ inches)	065										
		80 mm	(3 inches)	080										
		100 mm	(4 inches)	100										
		125 mm	(5 inches)	125										
		150 mm	(6 inches)	150										
		200 mm	(8 inches)	200	P									
II	Lining		to 200 mm (3 to 8 inches))		E P									
	D' '	PFA Flange JIS 10K	-		Р	11	-							
III	Piping	Flange JIS 20K				J1	1							
	connection	Flange JIS 20K				J2	-							
		Flange ANSI 1				J3 A1	-							
		Flange ANSI 3					1							
		-	443-2 F12 (line size 80 mm or larger)			A2 G1	-						1	
		Flange DIN Pl				D1							1	
		Flange DIN PI				D1 D2	-						1	
		Flange DIN PI				D2 D3							1	
		Flange DIN PI				D3 D4								
		Flange JPI 150				P1	1							
		Flange JPI 300				P1 P2							1	
IV	Flange material	Standard	·			12	1							
1 V	Frange material	Other						1						
V	Electrode	SUS316L					-	L						
v	Electrode		Hastelloy C-276 equivalent)					C						
		Titanium	misteney e 2/ e equivalency					K						
		Zirconium						Н						
		Tantalum						T						
		Tungsten carb	ide				-	W						
		Platinum iridi						P						
		Other						-						
VI	Casun din a ain a	SUS316						-	S					
V I	Grounding ring		Hastelloy C-276 equivalent)						C					
		Titanium	nastenoy e-270 equivalent)						K	1				
		Zirconium							H					
		Tantalum							Т					
		Platinum							P	1				
		Other							-	1				
711	Electrics 1	Integral type								1				
VII	Electrical connection /		G1/2 internal thread / without watertight g	rland						2				
	watertight gland	Remote type	G1/2 internal thread / with brass (Ni-plate		d					3			1	
	water ugint giand		G1/2 internal thread / with plastic watertig							4			1	
			1/2NPT internal thread / with plastic watertig							4 5			1	
			CM20 internal thread / without watertight							6			1	
			Pg 13.5 internal thread / without watertight							7				
			G1/2 internal thread / with SUS304 watert							8				
/III	Face-to-face	Standard		-9 Brand						0	A			
111	dimensions	Other									<u> </u>			
IX	Installation /	Integral type										н	1	
іл	wiring direction	Remote type	Upstream side (horizontal / vertical piping	mounting)								A	1	
	wiring direction	Keniote type	Downstream side (horizontal / vertical piping									B	1	
	1		Horizontal piping mounting / left side view		<u> </u>							C	1	
			Horizontal piping mounting / right side view									D	1	
			1 ronzontal piping mounting / right side vie	encu nom upstrea									-	
v	Calibration	Standard										A		
X	Calibration	Standard	at a alteration (C - 40 + 200) (1.1/2)	in ab a->>>				÷						
X	Calibration	+/- 0.35 % of r	rate calibration (Size 40 to 200 mm (1 1/2 to 8	3 inches))								U		
X	Calibration		ate calibration (Size 40 to 200 mm (1 1/2 to 8	3 inches))								U		
		+/- 0.35 % of r Other	ate calibration (Size 40 to 200 mm (1 1/2 to 8	3 inches))							· · · · · · · · · · · · · · · · · · ·			
X XI	Calibration	+/- 0.35 % of r		3 inches))							· · · · · · · · · · · · · · · · · · ·]	+

su	Azbil Corporation version (must be selected)	Y
tio	Traceability certificate for detector	В
Options	Material certificate (only for electrodes and ground rings)	С
	With gasket for plastic piping	J
	Attachment of the TAG number to the terminal box for detector (Note 2)	K
	Attachment of the TAG number plate to the neck section for detector (Note 2) (Note 3)	L
	PFA lining heat treatment (Note 4)	М
	Water free treatment	E
	Oil free treatment	F

- Note) 1. Must be selected for FM NI approval
 - 2. Must be selected for Tag no. requirement
 - 3. This option code cannot be selected with *Electrical connection code* "5".
 - 4. This option code can only be selected with Lining code "P".

Flange type (250 to 600 mm (10 to 24 inches)) PFA / ETFE lining

Model MGG18F - I II III IV V VI VII VIII IX X - XI - Y / Options (some options can be selected per each model)

	Basic model no.		_	Selectio	ons						Optio	nal	select	ions	
	MGG18	3F] .											-	
	•		-												
Ι	Line size	250 mm	(10 inches)	250											
-		300 mm	(12 inches)	300											
		350 mm	(14 inches)	350											
		400 mm	(16 inches)	400											
		450 mm	(18 inches)	450											
		500 mm	(20 inches)	500											
		600 mm	(24 inches)	600											
II	Lining	ETFE			Е										
	8	PFA			Р										
III	Piping	Flange JIS 10K		•		J1									
	connection	Flange JIS 20K				J2									
		Flange ANSI 1	.50			A1									
		Flange ANSI 3	300 (Size 16 inches or smaller)			A2									
		Flange JIS G34	143-2 F12			G1									
		Flange DIN Pl	N10			D1									
		Flange DIN Pl	N16			D2									
		Flange DIN Pl	N25			D3									
		Flange JPI 150				P1									
		Flange JPI 300	(Size 400 mm or smaller)			P2									
IV	Flange material	Standard					1]							
		Other					_]							
V	Electrode	SUS316L						L							
		ASTM B574 (I	Hastelloy C-276 equivalent)					С							
		Titanium						K							
		Zirconium						Н							
		Tantalum						Т							
		Tungsten carb	ide					W							
		Platinum iridi	um					Р							
		Other						_							
VI	Grounding ring	SUS316							S						
		ASTM B575 (I	Hastelloy C-276 equivalent)						С						
		Titanium							K						
		Other													
VII	Electrical	Integral type								1					
	connection /	Remote type	G1/2 internal thread / without waterti	ght gland						2					
	watertight gland		G1/2 internal thread / with brass (Ni-	plated) watertight gland	1					3	1				
			G1/2 internal thread / with plastic wat	ertight gland						4					
			1/2NPT internal thread / without wate	ertight gland (Note 1)						5					1
			CM20 internal thread / without water	tight gland						6					1
			Pg 13.5 internal thread / without water	rtight gland						7					
			G1/2 internal thread / with SUS304 wa	atertight gland						8					
VIII	Face-to-face	Standard									A				
	dimensions	Other													
IX	Installation /	Integral type									·	Η			
	wiring direction	Remote type	Upstream side (horizontal / vertical pi	ping mounting)								А			
	Ĭ		Downstream side (horizontal / vertica									В			
			Horizontal piping mounting / left side	viewed from upstream	L							С			
			Horizontal piping mounting / right sic	le viewed from upstrea	m							D			
Х	Calibration	Standard	•								I		A		
		+/- 0.35 % of r	rate calibration (Size 250 to 350 mm (10 t	to 14 inches))									U		
		Other													
		I											. –		
XI	Finish	Standard													+
111	1 111011	Corrosion-resi	istant finish												

su	Azbil Corporation version (must be selected)	Y
tio	Traceability certificate for detector	В
Options	Material certificate (only for electrodes and ground rings)	С
	With gasket for plastic piping	J
	Attachment of the TAG number to the terminal box for detector (Note 2)	K
	Attachment of the TAG number plate to the neck section for detector (Note 2) (Note 3)	L
	PFA lining heat treatment (Note 4)	М
	Water free treatment	E
	Oil free treatment	F

- Note) 1. Must be selected for FM NI approval
 - 2. Must be selected for Tag no. requirement
 - 3. This option code cannot be selected with Electrical connection code "5".
 - 4. This option code can only be selected with Lining code "P".

Wafer type (25 to 200 mm (1 to 8 inches)) Polyurethane rubber lining

Model MGG18D - I II III IV V VI VII VIII IX - X XI - Y / Options (some options can be selected per each model)

	Basic model no.		•	Selecti	ons						Optional	select	selections				
	MGG18	BD	-									-					
		r															
Ι	Line size	25 mm	(1 inch)	025													
		40 mm	(1½ inches)	040													
		50 mm	(2 inches)	050													
		65 mm	(2½ inches)	065													
		80 mm	(3 inches)	080													
		100 mm	(4 inches)	100													
		125 mm 150 mm	(5 inches) (6 inches)	125													
		200 mm	(8 inches)	150 200													
II	Lining	Polyurethane r		200	Q												
		Wafer JIS 10K	ubbei			11											
II	Piping connection	Wafer JIS 20K				12											
	connection	Wafer JIS 30K				13											
		Wafer ANSI 15	50			21											
		Wafer ANSI 30				22											
			43-2 F12 (line size 80 mm or larger)			31											
		Wafer DIN PN				41											
		Wafer DIN PN				42											
		Wafer DIN PN				43											
		Wafer DIN PN				44											
		Wafer JPI 150	· · · · · · · · · · · · · · · · · · ·	· · ·		61											
		Wafer JPI 300				62											
V	Electrode	SUS316L			I		L										
		Titanium					Κ										
		Tungsten carbi	de (only for size 10 mm)				W										
		Other															
V	Grounding ring	SUS316					_	S									
		Titanium						К									
		Other															
VI	Electrical	Integral type						_	1								
	connection /	Remote type	G1/2 internal thread / without watertight gl	and					2								
	watertight gland		G1/2 internal thread / with brass (Ni-plated) watertight gland	1				3								
			G1/2 internal thread / with plastic watertight	nt gland					4								
			1/2NPT internal thread / without watertigh	t gland (Note 1)					5								
			CM20 internal thread / without watertight	gland					6								
			Pg 13.5 internal thread / without watertight	-					7								
			G1/2 internal thread / with SUS304 watertig	ght gland					8								
VII	Face-to-face	Standard								А							
/III	dimensions Installation /	Integral type									Н						
111	wiring direction	Remote type	Upstream side (horizontal / vertical piping	mounting)							A						
	witting direction	fieldet type	Downstream side (horizontal / vertical pipi	0.							B						
			Horizontal piping mounting / left side view								C						
			Horizontal piping mounting / right side vie								D						
IX	Calibration	Standard									A						
		+/- 0.35 % of ra	ate calibration (Size 40 to 200 mm (1 1/2 to 8	inches))							U	1					
		Other									_						
												_					
Х	Finish	Standard											X				
		Corrosion-resi											1				
		Corrosion-pro	of finish										2				
XI	Bolt / nut	None												\vdash			
		Carbon steel															
		SUS304															
s	Azbil Corporation ver	sion (must be cal	ected)	Y													
Options	Traceability certificate		cecuj	B													
)pti	Material certificate (or		and ground rings)	С													
0	With gasket for plastic		and ground rings)				Note)	1. N	1ust be	e selec	ted for FM	NI appr	oval				
			terminal box for detector (Note 2)	K													
			o the neck section for detector (Note 2) (Note					2. N	iust be	e selec	ted for Tag	no. requ	iremer	nt			
			o the neek section for detector (INOR 2) (INOR														
	Water free treatment	I I	. , , ,	E				3. T	his op	tion c	ode cannot	be select	ed wit	h			

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Flange type (250 to 600 mm (10 to 24 inches)) Chloroprene rubber lining

Model MGG18F - I II III IV V VI VII VIII IX X - XI - Y / Options (some options can be selected per each model)

	Basic model no.			Select	tions						Optic	onal	select	ions	_
	MGG1	8F	-											-	Ĩ
			_											Γ	Γ
Ι	Line size	250 mm	(10 inches)	250											
		300 mm	(12 inches)	300											
		350 mm	(14 inches)	350											
		400 mm	(16 inches)	400											
		450 mm	(18 inches)	450											
		500 mm	(20 inches)	500											
		600 mm	(24 inches)	600											
II	Lining	Chloropren	ne rubber		R										
III	Piping	Flange JIS 1	10K			J1									
	connection	Flange ANS	SI 150			A1]								
		Flange JIS O	G3443-2 F12			G1]								
		Flange DIN				D1									
		Flange JPI	150			P1									
IV	Flange material	Standard					1]							
		Other					_								
V	Electrode	SUS316L						L							
		Titanium						K							
		Tungsten ca	arbide					W	1						
		Other						_	1						
VI	Grounding ring	SUS316													ĺ
		Titanium													ĺ
		Other													
VII	Electrical	Integral typ	pe							1	1				
	connection /	Remote	G1/2 internal thread / without w	atertight gland						2	1				Ì
	watertight gland	type	G1/2 internal thread / with brass	(Ni-plated) wa	tertigl	nt glan	d			3					
			G1/2 internal thread / with plast	ic watertight gla	and					4	1				
			1/2NPT internal thread / withou	t watertight gla	nd (N	ote 1)				5	1				
			CM20 internal thread / without	watertight gland	ł					6					
			Pg 13.5 internal thread / without							7					
			G1/2 internal thread / with SUS3							8					
VIII	Face-to-face	Standard									Α	1			
	dimensions	Other							-		_	1			
IX	Installation /	Integral typ	be and the second se									Н			
	wiring direction	Remote	Upstream side (horizontal / verti	cal piping mou	nting)							Α			
		type	Downstream side (horizontal / v									В			
			Horizontal piping mounting / lef	110		0	n					С			
			Horizontal piping mounting / rig									D			
Х	Calibration	Standard		·		•						I	A		
			of rate calibration (Size 250 to 350	mm (10 to 14 ir	nches))							U	ĺ	
		Other		`		-									
														J	
		1													
XI	Finish														+
XI	Finish	Standard	resistant finish												+

su	Azbil Corporation version (must be selected)	Y
Options	Traceability certificate for detector	В
0	Material certificate (only for electrodes and ground rings)	C
	With gasket for plastic piping	J
	Attachment of the TAG number to the terminal box for detector (Note 2)	K
	Attachment of the TAG number plate to the neck section for detector (Note 2) (Note 3)	L
	Water free treatment	E
	Oil free treatment	F

Note) 1. Must be selected for FM NI approval

2. Must be selected for Tag no. requirement

3. This option code cannot be selected with Electrical connection code "5".

Flange type (700 to 1100 mm (28 to 44 inches)) Chloroprene rubber lining

Model MGG11F - I II III IV V VI VII VIII IX X - XI - Y / Options (some options can be selected per each model)

	Basic model no.			Selection	s					Optic	nal	selectio	ons	
	MGG1	1F	-										-	
			-										Ī	
Ι	Line size	700 mm	(28 inches)	700										1
		800 mm	(32 inches)	800										1
		900 mm	(36 inches)	900										1
		1000 mm	(40 inches)	10H										
		1100 mm	(44 inches)	11H										
II	Lining	Chloroprer	ne rubber	R										
III	Piping	Wafer JIS 1	0K	·	J1	1								
	connection	Wafer ANS	I 150		A1									
		Wafer JIS G	G3443-2 F12		G1	1								
		Wafer DIN	PN10		D1	1								
		Wafer JPI 1	50		P1	1								1
IV	Flange material	Standard				1	1							
V	Electrode	SUS316L					L							1
		Titanium					K							1
		Tungsten ca	arbide				W							1
		Other					_							
VI	Grounding ring	SUS316						S						
		Other						_						1
VII	Electrical	Integral typ	be a second s						1	1				1
	connection /	Remote	G1/2 internal thread / without wate	ertight gland					2					1
	watertight gland	type	G1/2 internal thread / with brass (1		ght glan	d			3					1
			G1/2 internal thread / with plastic						4	1				1
			1/2NPT internal thread / without w	vatertight gland					5	1				1
			CM20 internal thread / without wa	tertight gland					6					1
			Pg 13.5 internal thread / without w	atertight gland					7					1
			G1/2 internal thread / with SUS304	4 watertight gland					8	1				1
VIII	Face-to-face	Standard								Α				1
	dimensions	Other								_				
IX	Installation /	Integral typ									Η			
	wiring direction	Remote	Upstream side (horizontal / vertica								А			
		type	Downstream side (horizontal / ver								В			1
			Horizontal piping mounting / left s								С			1
			Horizontal piping mounting / right	t side viewed fron	1 upstre	am					D			1
Х	Calibration	Standard										A		
		Other										_		l
XI	Finish	Standard												Х
		Corrosion-	resistant finish											1
		Corrosion-	proof finish											2

Azbil Corporation version (must be selected)	Y
Traceability certificate for detector	В
Material certificate (only for electrodes and ground rings)	C
Attachment of the TAG number to the terminal box for detector (Note 1)	K
Attachment of the TAG number plate to the neck section for detector (Note 1)	L
Water free treatment	Е
Oil free treatment	F
	Traceability certificate for detector Material certificate (only for electrodes and ground rings) Attachment of the TAG number to the terminal box for detector (Note 1) Attachment of the TAG number plate to the neck section for detector (Note 1) Water free treatment

Note) 1. Must be selected for Tag no. requirement

Submersible detector with FM NI approval

Wafer type (15 to 200 mm (1/2 to 8 inches)) PFA / ETFE lining

Model MGG19D - I II III IV V VI VII VIII IX - X XI - Y / Options (some options can be selected per each model)

	Basic model no.			Selecti	ons						Optic	nal	sele	ectior	15
	MGG19D		-										· [
													Γ		Γ
Ι	Line size	15 mm	(1/2 inch)	015											1
		25 mm	(1 inch)	025											1
		40 mm	(1½ inches)	040											1
		50 mm	(2 inches)	050											Ĺ
		65 mm	(2½ inches)	065											1
		80 mm	(3 inches)	080											1
		100 mm	(4 inches)	100											1
		125 mm	(5 inches)	125											Ĺ
		150 mm	(6 inches)	150											1
		200 mm	(8 inches)	200											1
II	Lining	ETFE (Size 80	to 200 mm (3 to 8 inches))		Е										Ĺ
		PFA			Р										1
III	Piping connection	Wafer JIS 10K				11									1
		Wafer JIS 20K				12									1
		Wafer JIS 30K				13									1
		Wafer ANSI 15	0			21									1
		Wafer ANSI 30				22									1
			13-2 F12 (line size 80 mm or larger)			31									Ĺ
		Wafer DIN PN	10			41									Ĺ
		Wafer DIN PN				42									1
		Wafer DIN PN				43									1
		Wafer DIN PN	40			44									1
		Wafer JPI 150				61									1
		Wafer JPI 300				62									
IV	Electrode	SUS316L					L								Ĺ
			Iastelloy C-276 equivalent)				С								1
		Titanium					К								1
		Zirconium					Н								1
		Tantalum					Т								
		Tungsten carbi					W								
		Platinum iridiu	ım				Р								1
		Other					_								1
V	Grounding ring	SUS316						S							1
			Hastelloy C-276 equivalent)					С							1
		Titanium						Κ							1
		Zirconium						Н							1
		Tantalum						Т							
		Platinum						Р							
		Other						_							1
					aland				3						Ĺ
VI	Electrical connection	Remote type	G1/2 internal thread / with brass (Ni-plated) wa	tertight	gianu				8						Ĺ
VI	Electrical connection / watertight gland	Remote type	G1/2 internal thread / with brass (Ni-plated) wa G1/2 internal thread / with SUS304 watertight g		giana				ð						1
VI VII		Remote type Standard	· · ·	•	gianu				8	А					1
	/ watertight gland		· · ·	•					8	A					
VII	/ watertight gland Face-to-face dimensions	Standard Other	· · ·	gland	gianu				8	A _	A				
	/ watertight gland Face-to-face dimensions Installation / wiring	Standard	G1/2 internal thread / with SUS304 watertight g Upstream side (horizontal / vertical piping mou	gland unting)					8	A _	AB				
VII	/ watertight gland Face-to-face dimensions	Standard Other	G1/2 internal thread / with SUS304 watertight g Upstream side (horizontal / vertical piping mou Downstream side (horizontal / vertical piping n	gland inting) nounting	;)				8	A _					
VII	/ watertight gland Face-to-face dimensions Installation / wiring	Standard Other	G1/2 internal thread / with SUS304 watertight g Upstream side (horizontal / vertical piping mou	gland inting) nounting rom upst	;) ream				8	A 	В				
VII VIII	/ watertight gland Face-to-face dimensions Installation / wiring direction	Standard Other	G1/2 internal thread / with SUS304 watertight g Upstream side (horizontal / vertical piping mou Downstream side (horizontal / vertical piping n Horizontal piping mounting / left side viewed fi	gland inting) nounting rom upst	;) ream				8	A _	B C	A			
VII	/ watertight gland Face-to-face dimensions Installation / wiring	Standard Other Remote type Standard	G1/2 internal thread / with SUS304 watertight g Upstream side (horizontal / vertical piping mou Downstream side (horizontal / vertical piping n Horizontal piping mounting / left side viewed Horizontal piping mounting / right side viewed	yland noting) nounting rom upst from up	;) ream				8	A	B C	AU			
VII VIII	/ watertight gland Face-to-face dimensions Installation / wiring direction	Standard Other Remote type Standard	G1/2 internal thread / with SUS304 watertight g Upstream side (horizontal / vertical piping mou Downstream side (horizontal / vertical piping n Horizontal piping mounting / left side viewed fi	yland noting) nounting rom upst from up	;) ream				<u>ð</u>	A 	B C				
VII VIII	/ watertight gland Face-to-face dimensions Installation / wiring direction	Standard Other Remote type Standard +/- 0.35 % of ra	G1/2 internal thread / with SUS304 watertight g Upstream side (horizontal / vertical piping mou Downstream side (horizontal / vertical piping n Horizontal piping mounting / left side viewed Horizontal piping mounting / right side viewed	yland noting) nounting rom upst from up	;) ream				8	A 	B C				
VII VIII IX	/ watertight gland Face-to-face dimensions Installation / wiring direction Calibration	Standard Other Remote type Standard +/- 0.35 % of ra Other	G1/2 internal thread / with SUS304 watertight g Upstream side (horizontal / vertical piping mou Downstream side (horizontal / vertical piping n Horizontal piping mounting / left side viewed Horizontal piping mounting / right side viewed	yland noting) nounting rom upst from up	;) ream				<u>8</u>	A	B C			x	
VII VIII IX X	/ watertight gland Face-to-face dimensions Installation / wiring direction Calibration	Standard Other Remote type Standard +/- 0.35 % of ra Other Standard	G1/2 internal thread / with SUS304 watertight g Upstream side (horizontal / vertical piping mou Downstream side (horizontal / vertical piping n Horizontal piping mounting / left side viewed Horizontal piping mounting / right side viewed	yland noting) nounting rom upst from up	;) ream				8	A	B C			X	
VII VIII IX	/ watertight gland Face-to-face dimensions Installation / wiring direction Calibration	Standard Other Remote type Standard +/- 0.35 % of ra Other	G1/2 internal thread / with SUS304 watertight g Upstream side (horizontal / vertical piping mou Downstream side (horizontal / vertical piping n Horizontal piping mounting / left side viewed Horizontal piping mounting / right side viewed	yland noting) nounting rom upst from up	;) ream				8	A	B C			x	

su	Azbil Corporation version (must be selected)	Y
tio	Traceability certificate for detector	В
Options	Material certificate (only for electrodes and ground rings)	C
	With gasket for plastic piping	J
	Attachment of the TAG number to the terminal box for detector (Note 1)	K
	PFA lining heat treatment (Note 2)	М
	Water free treatment	E
	Oil free treatment	F

Note) 1. Must be selected for Tag no. requirement

2. This option code can only be selected with Lining code "P".

Submersible detector with FM NI approval

Flange type (15 to 200 mm (1/2 to 8 inches)) PFA / ETFE lining

Model MGG19F - I II III IV V VI VII VIII IX X - XI - Y / Options (some options can be selected per each model)

	Basic model no.			Select	ions						Optio	nal	select	ions	
	MGG19F		-											-	Г
											i i				
Ι	Line size	15 mm	(1/2 inch)	015											
1	Line size	25 mm	(1 inch)	025											
		40 mm	(1½ inches)	040											
		50 mm	(2 inches)	050											
		65 mm	(2½ inches)	065											
		80 mm	(3 inches)	080											
		100 mm	(4 inches)	100											
		125 mm	(5 inches)	125											
		150 mm	(6 inches)	150											
		200 mm	(8 inches)	200											
II	Lining		to 200 mm (3 to 8 inches))		Е										
11		PFA			P	1									
III	Piping connection	Flange JIS 10K			-	J1	1								
111		Flange JIS 20K				J2	1								
		Flange JIS 20K				J2 J3									
		Flange ANSI 1				A1									
		Flange ANSI 3				A1 A2									
		-	43-2 F12 (line size 80 mm or larger)			G1	1								
		Flange DIN PN	÷.			D1	1								
		Flange DIN PN				D1 D2	1								
		Flange DIN PN				D2 D3	1								
		Flange DIN PN				D3	1								
IV	Flange material	Standard	10			D4	1	1							
1 V	Flange material	Other					1	-							
3.7							-	T							
V	Electrode	SUS316L	Lastallan C 27(a minutant)					L C							
			Hastelloy C-276 equivalent)												
		Titanium						K							
		Zirconium						H							
		Tantalum	1					T							
		Tungsten carbi						W							
		Platinum iridiu	ım					Р							
		Other						_							
VI	Grounding ring	SUS316							S						
			Hastelloy C-276 equivalent)						С						
		Titanium							K						
		Zirconium							Н						
		Tantalum							Т						
		Platinum							Р						
		Other							_						
VII	Electrical connection	Remote type	G1/2 internal thread / with brass (Ni	-plated) watertight	gland					3					
	/ watertight gland		G1/2 internal thread / with SUS304 v	watertight gland		-				8					
VIII	Face-to-face	Standard									A				
	dimensions	Other													
IX	Installation / wiring	Remote type	Upstream side (horizontal / vertical p	piping mounting)								А	1		
	direction		Downstream side (horizontal / vertic		g)		-					В	1		
			Horizontal piping mounting / left sid	11 0	<u>.</u>							C	1		
			Horizontal piping mounting / right s			1						D	1		
Х	Calibration	Standard	I Friend Street								l	~	A	1	
Λ	Calibration		ate calibration (Size 40 to 200 mm (1 1	/2 to 8 inches))									U	1	
		Other		_ 10 0 menes/)										1	
		Juici											<u> </u>	J	

su	Azbil Corporation version (must be selected)	Y
Options	Traceability certificate for detector	В
Op	Material certificate (only for electrodes and ground rings)	C
	With gasket for plastic piping	J
	Attachment of the TAG number to the terminal box for detector (Note 1)	K
	PFA lining heat treatment (Note 2)	М
	Water free treatment	E
	Oil free treatment	F

Note) 1. Must be selected for Tag no. requirement

2. This option code can only be selected with Lining code "P".

Submersible detector with FM NI approval

Flange type (250 to 600 mm (10 to 24 inches)) PFA / ETFE lining

Model MGG19F - I II III IV V VI VII VIII IX X - XI - Y / Options (some options can be selected per each model)

	Basic model no.		-	Select	ions						Optio	nal	select	ions	
	MGG19F		-					<u> </u>						-	ļ
-			(10 ; 1)												
Ι	Line size	250 mm	(10 inches)	250											
		300 mm	(12 inches)	300											
		350 mm	(14 inches)	350											
		400 mm	(16 inches)	400											
		450 mm	(18 inches)	450											
		500 mm	(20 inches)	500											
**	T · ·	600 mm	(24 inches)	600	P										
II	Lining	ETFE			E										
	Di la ci	PFA	017		Р		-								
III	Piping connection	Flange JIS				J1									
		Flange JIS 2				J2									
		Flange ANS		<u> </u>		A1									
			SI 300 (Size 16 inches or smaller)		A2									
			G3443-2 F12			G1									
		Flange DIN				D1									
		Flange DIN				D2									
137	Elan ao matanial	Flange DIN Standard	1 PIN25			D3	1	-							
IV	Flange material						1	-							
V	Electrode	Other SUS316L					_	L							
v	Electrode		4 (Hestellow C 276 a quivelent)					L C	-						
		Titanium	4 (Hastelloy C-276 equivalent)					K	-						
		Zirconium						H H	-						
		Tantalum				-		T	-						
			arbida			-		W	-						
		Tungsten ca Platinum ir						P	-						
		Other	Idiulii					r	1						
VI	Grounding ring	SUS316						-	S						
V1	Grounding ring		E (Hastellow C 276 aquivalant)			-			C						
		Titanium	5 (Hastelloy C-276 equivalent)						K						
		Other							N.						
VII	Electrical connection	Remote	G1/2 internal thread / with br	ass (Ni-plated)	water	tight o	dand		l –	3					
V 11	/ watertight gland	type	G1/2 internal thread / with SU				Janu		-	3 8					
VIII	Face-to-face	Standard		Jobor water tig	in gial	14				0	A				
v 111	dimensions	Other									л				
IX	Installation / wiring	Remote	Upstream side (horizontal / v	ertical piping m	ounti	ng)					<u> </u>	A	-		
171	direction	type	Downstream side (horizontal	110		0.	1					B	-		
		/1	Horizontal piping mounting /									D C	-		
			Horizontal piping mounting /									D	-		
Х	Calibration	Standard		ingin side view	cu iit	in ups	arcaill		-			D	A		
л	Calibration		of rate calibration (Size 250 to 2	50 mm (10 tr 1)	1 in ch	(ac))							U A		
			of rate calibration (Size 250 to 3		+ men	((5))									
		Other												J	
															1

su	Azbil Corporation version (must be selected)	Y
tio	Traceability certificate for detector	В
Options	Material certificate (only for electrodes and ground rings)	С
	With gasket for plastic piping	J
	Attachment of the TAG number to the terminal box for detector (Note 1)	K
	PFA lining heat treatment (Note 2)	М
	Water free treatment	Е
	Oil free treatment	F

Note) 1. Must be selected for Tag no. requirement

2. This option code can only be selected with Lining code "P".

Submersible detector with FM NI approval

Wafer type (25 to 200 mm (1 to 8 inches)) Polyurethane rubber lining

Model MGG19D - I II III IV V VI VII VIII IX - X XI - Y / Options (some options can be selected per each model)

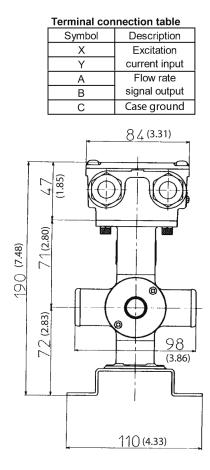
	Basic model no.			Select	tions						Optic	onal	sel	ectio	ns
	MGG19D)] .										-		
			-												
Ι	Line size	25 mm	(1 inch)	025											
		40 mm	(1½ inches)	040											
		50 mm	(2 inches)	050											
		65 mm	(2½ inches)	065											
		80 mm	(3 inches)	080											
		100 mm	(4 inches)	100											
		125 mm	(5 inches)	125											
		150 mm	(6 inches)	150											
		200 mm	(8 inches)	200											
II	Lining	Polyuretha	ne rubber		Q										
III	Piping connection	Wafer JIS 1	0K			11									
		Wafer JIS 2	0K			12									
		Wafer JIS 3				13									
		Wafer ANS	I 150			21									
		Wafer ANS	I 300			22									
		Wafer JIS G	3443-2 F12 (line size 80 mm or larger)			31									
		Wafer DIN	-			41									
		Wafer DIN	PN16			42									
		Wafer DIN	PN25			43									
		Wafer DIN	PN40			44									
		Wafer JPI 1				61									
		Wafer JPI 3				62									
IV	Electrode	SUS316L					L								
		Titanium					К								
		Tungsten ca	arbide (only for size 10 mm)				W								
		Other													
V	Grounding ring	SUS316				I	_	S							
		Titanium						K							
		Other													
VI	Electrical connection	Remote	G1/2 internal thread / with brass (Ni-	-plated)	water	tight g	land		3						
	/ watertight gland	type	G1/2 internal thread / with SUS304 w						8						
VII	Face-to-face dimensions	Standard		0					-	Α					
VIII	Installation / wiring	Remote	Upstream side (horizontal / vertical p	piping n	nounti	ng)					A				
	direction	type	Downstream side (horizontal / vertic								В				
			Horizontal piping mounting / left sid								С				
			Horizontal piping mounting / right si	ide view	ved fro	m ups	tream				D				
IX	Calibration	Standard										Α			
		+/- 0.35 %	of rate calibration (Size 40 to 200 mm (1 1/2 to	8 inch	es))						U			
		Other										_			
]			
Х	Finish	Standard												Х	1
XI	Bolt / nut	None													X
		Carbon stee													1
		SUS304													2
suc	Azbil Corporation version		ed)	Y											
Options	Traceability certificate for d		d di	B	_										
0	Material certificate (only fo With gasket for plastic pipi		i ground rings)	C	-										
			ninal box for detector (Note 1)	K	-										
	Water free treatment			E	1										

Note) 1. Must be selected for Tag no. requirement

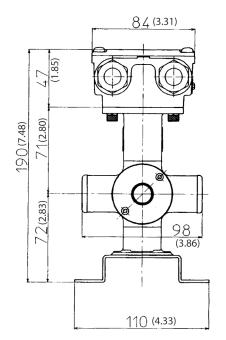
DIMENSIONS

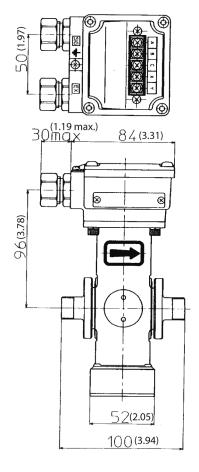
(Unit : mm (inch))

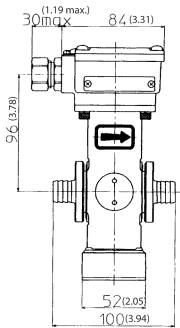
Union joint (size 2.5 to 15 mm (0.1 to 1/2 inch))



Hose joint (size 2.5 to 15 mm (0.1 to 1/2 inch))



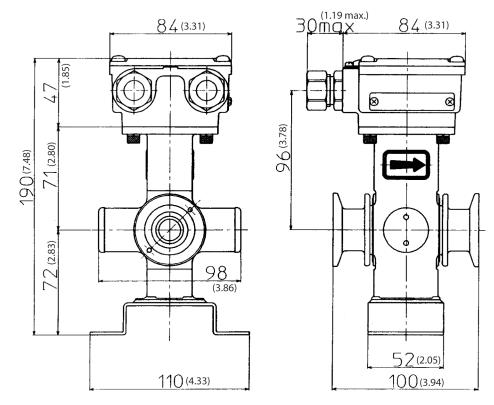




26

IDF / Tri clamp (size 2.5 to 15 mm (0.1 to 1/2 inch))

(Unit : mm (inch))



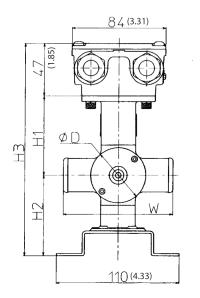
Note) 1. An integral detector includes an integral converter instead of a terminal box.2. Clamp size: 1S

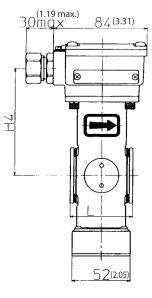
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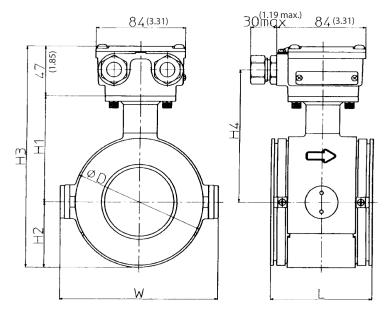
(Unit : mm (inch))

Wafer type (size 2.5 to 15 mm (0.1 to 1/2 inch))





Wafer type (size 25 to 200 mm (1 to 8 inches))

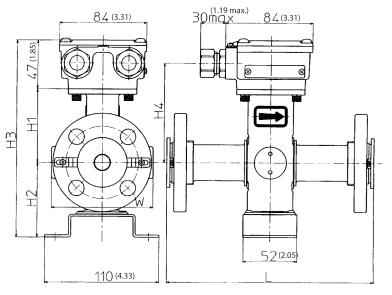


Size		mm	2.5	5	10	15	25	40	50	65	80	100	125	150	200
5120		(inches)	(0.1)	(0.2)	(3/8)	(1/2)	(1)	(1½)	(2)	(21⁄2)	(3)	(4)	(5)	(6)	(8)
Face to face	L	mm	56	56	56	56	56	80	86	96	106	120	140	160	200
dimension		(inches)	(2.20)	(2.20)	(2.20)	(2.20)	(2.20)	(3.15)	(3.39)	(3.78)	(4.17)	(4.72)	(5.51)	(6.30)	(7.87)
	H1	mm	71	71	71	71	77	84	93	100	108	121	133	160	185
	пі	(inches)	(2.80)	(2.80)	(2.80)	(2.80)	(3.03)	(3.31)	(3.66)	(3.94)	(4.25)	(4.76)	(5.24)	(6.30)	(7.28)
	H2	mm	72	72	72	72	34	43.5	52	62	67	79.5	95	110	135
Haisht	п2	(inches)	(2.83)	(2.83)	(2.83)	(2.83)	(1.34)	(1.71)	(2.05)	(2.44)	(2.64)	(3.13)	(3.74)	(4.33)	(5.31)
Height	H3	mm	190	190	190	190	158	175	192	209	222	247	275	317	367
	пэ	(inches)	(7.48)	(7.48)	(7.48)	(7.48)	(6.22)	(6.89)	(7.56)	(8.23)	(8.74)	(9.72)	(10.83)	(12.48)	(14.45)
	H4	mm	96	96	96	96	102	109	118	125	133	146	158	185	210
	П4	(inches)	(3.78)	(3.78)	(3.78)	(3.78)	(4.02)	(4.29)	(4.65)	(4.92)	(5.24)	(5.75)	(6.22)	(7.28)	(8.27)
Housing	W	mm	98	98	98	98	106	125	135	148	164	189	214	240	290
width	vv	(inches)	(3.86)	(3.86)	(3.86)	(3.86)	(4.17)	(4.92)	(5.31)	(5.83)	(6.46)	(7.44)	(8.43)	(9.45)	(11.42)
Housing		mm	49.5	49.5	49.5	49.5	68	87	104	124	134	159	190	220	270
outer diameter	φD	(inches)	(1.95)	(1.95)	(1.95)	(1.95)	(2.68)	(3.43)	(4.09)	(4.88)	(5.28)	(6.26)	(7.48)	(8.66)	(10.63)
Weight		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
weight		(lb)	(5.7)	(5.7)	(5.7)	(5.1)	(5.7)	(6.2)	(7.5)	(9.9)	(11.5)	(14.8)	(22.0)	(30.0)	(48.5)

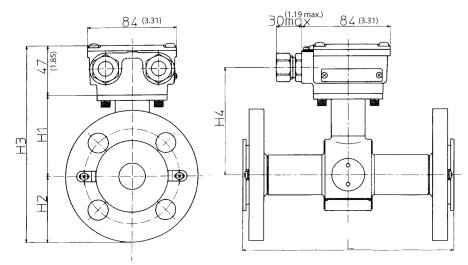
Note) 1. An integral detector includes an integral converter instead of a terminal box.

(Unit : mm (inch))

Flange type (size 2.5 to 15 mm (0.1 to 1/2 inch))



Flange type (size 25 to 150 mm (1 to 6 inch))



Size		mm	2.5	5	10	15	25	40	50	65	80	100	125	150
5120		(inches)	(0.1)	(0.2)	(3/8)	(1/2)	(1)	(1½)	(2)	(21⁄2)	(3)	(4)	(5)	(6)
Face to face	T	mm	160	160	160	200	200	200	200	200	200	250	250	300
dimension		(inches)	(6.30)	(6.30)	(6.30)	(7.87)	(7.87)	(7.87)	(7.87)	(7.87)	(7.87)	(9.84)	(9.84)	(11.81)
	H1	mm	71	71	71	71	77	84	93	100	108	121	133	160
		(inches)	(2.80)	(2.80)	(2.80)	(2.80)	(3.03)	(3.31)	(3.66)	(3.94)	(4.25)	(4.74)	(5.24)	(6.30)
	H2	mm	72	72	72	72	63	70	78	88	93	105	125	140
Unight	п2	(inches)	(2.83)	(2.83)	(2.83)	(2.83)	(2.48)	(2.76)	(3.05)	(3.44)	(3.64)	(4.13)	(4.92)	(5.51)
Height	H3	mm	190	190	190	190	187	201	218	235	248	273	305	347
	пэ	(inches)	(7.48)	(7.48)	(7.48)	(7.48)	(7.36)	(7.91)	(8.56)	(9.23)	(9.74)	(10.73)	(12.01)	(13.66)
	H4	mm	96	96	96	96	102	109	118	125	133	146	158	185
	114	(inches)	(3.78)	(3.78)	(3.78)	(3.78)	(4.02)	(4.29)	(4.65)	(4.92)	(5.24)	(5.73)	(6.22)	(7.28)
Weight		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
Weight		(lb)	(11.0)	(11.0)	(11.0)	(11.0)	(16.3)	(14.3)	(22.3)	(26.7)	(27.8)	(40.6)	(57.3)	(67.5)

Note) 1. *This table is for remote detectors.*

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

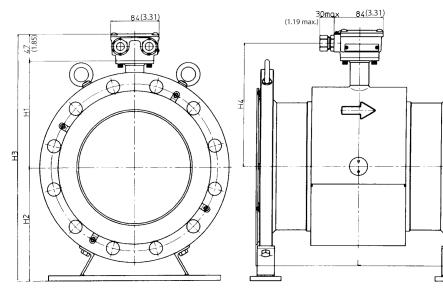
3. The table indicates dimensions for ANSI 150 flange.

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(Unit : mm (inch))





Size		mm	200	250	300	350	400	450	500	600
5120		(inches)	(8)	(10)	(12)	(14)	(16)	(18)	(20)	(24)
Face to face	L	mm	350	450	500	550	600	600	600	650
dimension	L	(inches)	(13.78)	(17.72)	(19.69)	(21.65)	(23.62)	(23.62)	(23.62)	(25.59)
	H1	mm	185	235	258	282	310	339	366	415
	пі	(inches)	(7.28)	(9.25)	(10.16)	(11.10)	(12.20)	(13.35)	(14.41)	(16.34)
	112	mm	196	221	250	273	321	353	383	446
Haight	H2	(inches)	(7.72)	(8.70)	(9.84)	(10.75)	(12.64)	(13.90)	(15.08)	(17.56)
Height	H3	mm	428	503	555	602	678	739	796	908
	пэ	(inches)	(16.85)	(19.80)	(21.85)	(23.70)	(26.69)	(29.09)	(31.34)	(35.75)
	H4	mm	210	260	283	307	335	364	391	440
	П4	(inches)	(8.27)	(10.24)	(11.14)	(12.09)	(13.19)	(14.33)	(15.39)	(17.32)
Waight (ltg)		kg	48.0	60.0	73.0	96.0	128.0	168.0	202.0	272.0
Weight (kg)		(lb)	(105.8)	(132.3)	(160.9)	(211.6)	(282.2)	(370.4)	(445.3)	(599.7)

Note) 1. *This table is for remote detectors.*

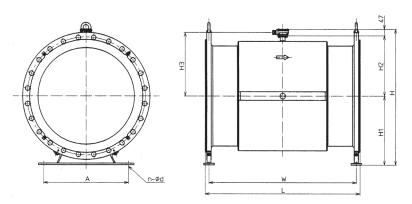
2. An integral detector includes an integral converter instead of a terminal box.

3. The table indicates dimensions for ANSI 150 flange.

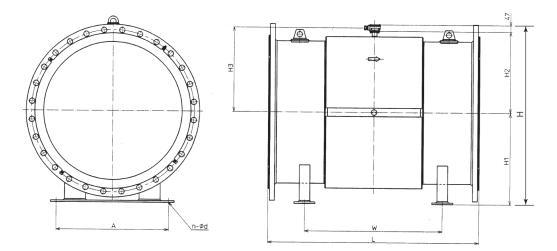
No. SS2-MGG200-0100

Flange type (size 700 to 900 mm (28 to 36 inches))

(Unit : mm (inch))



Flange type (size 1000, 1100 mm (40, 44 inches))



Size		mm	700	800	900	1000	1100
		(inches)	(28)	(32)	(36)	(40)	(44)
Face to face dimension	L	mm	1100	1200	1300	1500	1500
		(inches)	(43.31)	(47.24)	(51.18)	(59.06)	(59.06)
Height	Н	mm	967	1081	1185	1278	1399
		(inches)	(38.07)	(42.56)	(46.65)	(50.31)	(55.08)
	H1	mm	491	554	608	650	720
		(inches)	(19.33)	(21.81)	(23.94)	(25.59)	(28.35)
	H2	mm	429	480	530	581	632
		(inches)	(16.89)	(18.90)	(20.87)	(22.87)	(24.88)
	H3	mm	454	505	555	606	657
		(inches)	(17.87)	(19.88)	(21.85)	(23.86)	(25.87)
Feet length	W	mm	1049	1147	1245	980	1000
		(inches)	(41.30)	(45.16)	(49.02)	(38.58)	(39.37)
Feet width	А	mm	600	600	600	800	800
		(inches)	(23.62)	(23.62)	(23.62)	(31.50)	(31.50)
Feet halls *	n-ød	mm	4-φ33	4-φ33	4-φ33	4-φ33	4-\$33
		(inches)	(1.30)	(1.30)	(1.30)	(1.30)	(1.30)
Weight		kg	394	476.0	566	823	930
		(lb)	(15.51)	(18.74)	(22.28)	(32.40)	(36.61)

Note) The table indicates dimensions for ANSI 150 flange.

*: n = number, d = diameter

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