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 | _ | | | | | |

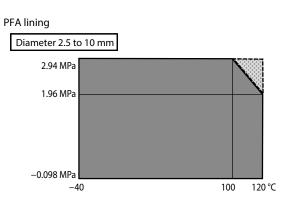
Measurable fluid pressure range (depending on Frange rating):

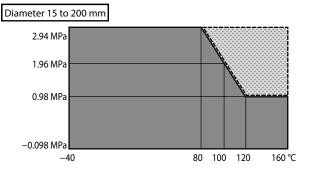
PFA/ETFE lining; -0.098 to +2.94 MPa

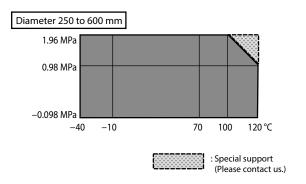
Polyurethane rubber lining; -0.098 to +2.94 MPa Chloroprene rubber lining;

-0.098 to +0.98 MPa

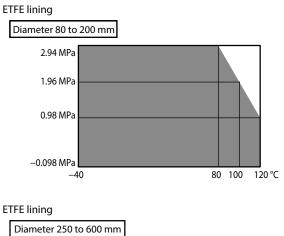
Integral/remote models



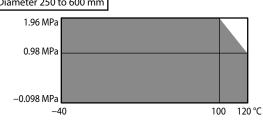




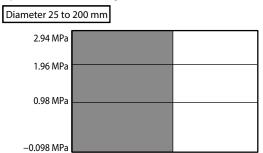
Integral/remote models





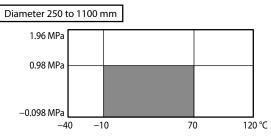


Polyurethane rubber lining



Chloroprene rubber lining

40

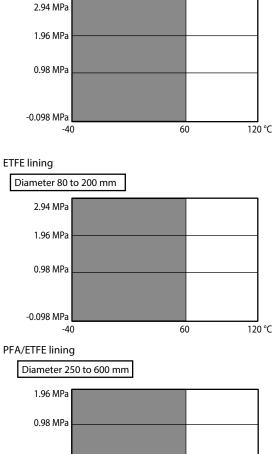


50

120 °C

Submersible model

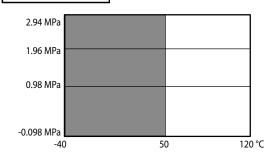
PFA lining Diameter 15 to 200 mm





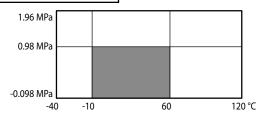
Polyurethane rubber lining

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.

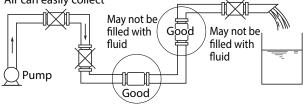
Downstream side

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.*

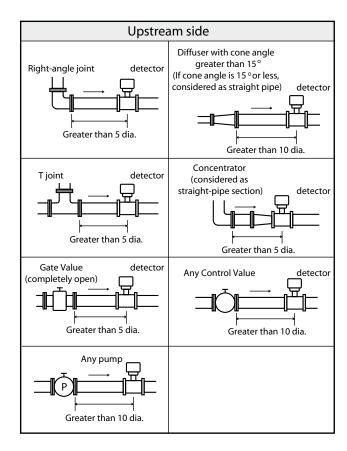


Figure 1.

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

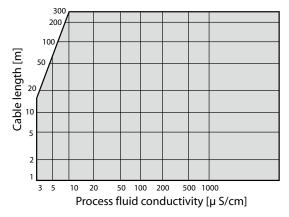


Figure 2. Maximum cable length of MGA12W cable

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.

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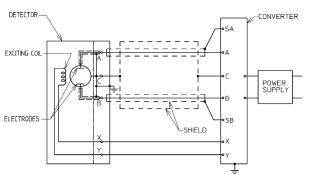
For FM Nonincendive model

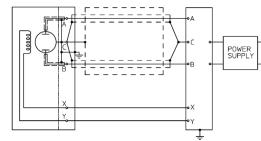
This equipment is suitable for use in Class I, Division 2, Groups A, B, C and D, Class II, Division 2, Groups F and G; Class III, Division 2.

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

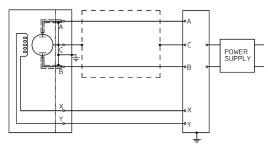
Power supply and internal voltage of ordinary equipment to the earth shall not exceed 250 V AC 50/60 Hz, 250 V DC in case of normal /fault conditions.



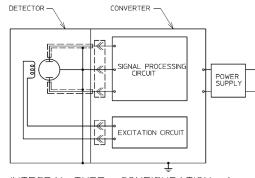


·Preferred for 2.5mm to 10mm detectors to minimize noise REMOTE TYPE : CONFIGURATION ± 1

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 | | | |

19

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)

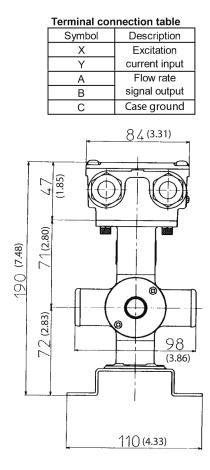
| | Basic model no. | | | Select | tions | | | | | | Optic | onal | sel | ectio | ns |
|---------|---|-------------|--|----------|---------|---------|-------|---|---|---|-------|------|-----|-------|----|
| | MGG19D |) |] . | | | | | | | | | | - | | |
| | | | - | | | | | | | | | | | | |
| Ι | Line size | 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

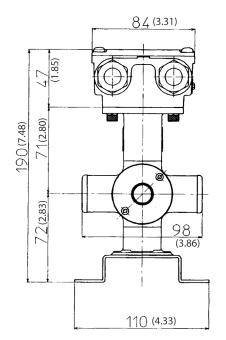
DIMENSIONS

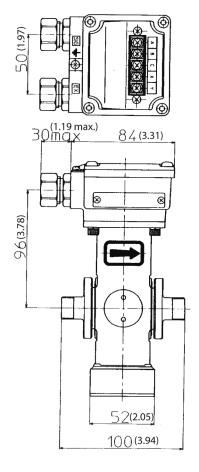
(Unit : mm (inch))

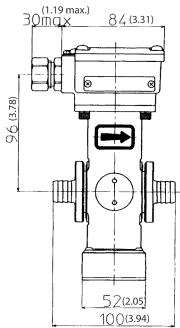
Union joint (size 2.5 to 15 mm (0.1 to 1/2 inch))



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



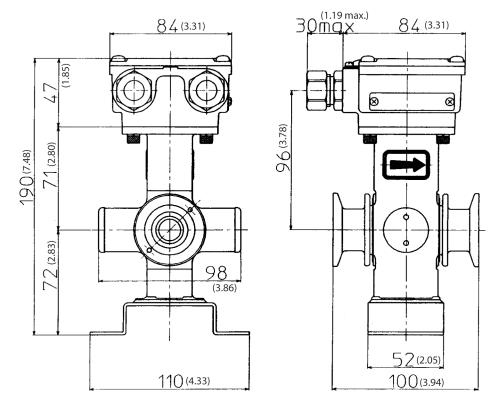




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IDF / Tri clamp (size 2.5 to 15 mm (0.1 to 1/2 inch))

(Unit : mm (inch))



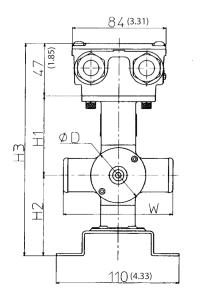
Note) 1. An integral detector includes an integral converter instead of a terminal box.2. Clamp size: 1S

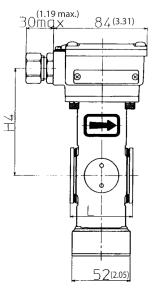
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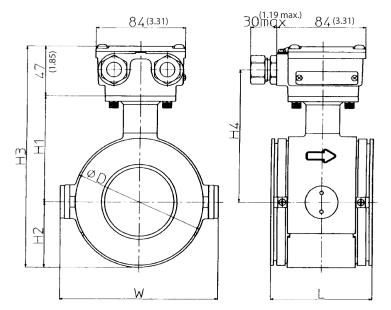
(Unit : mm (inch))

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))

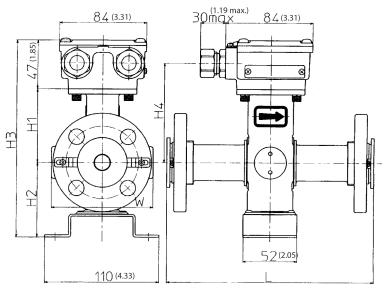


| Size | | mm | 2.5 | 5 | 10 | 15 | 25 | 40 | 50 | 65 | 80 | 100 | 125 | 150 | 200 |
|-------------------|----|----------|--------|--------|--------|--------|--------|--------|--------|--------|--------|--------|---------|---------|---------|
| 5120 | | (inches) | (0.1) | (0.2) | (3/8) | (1/2) | (1) | (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) |

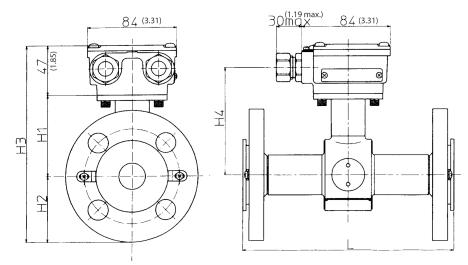
Note) 1. An integral detector includes an integral converter instead of a terminal box.

(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.

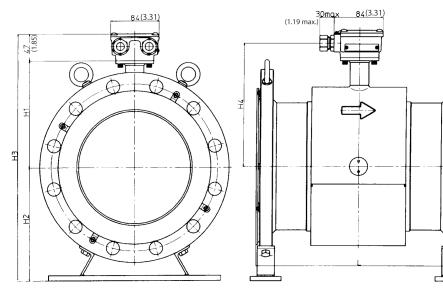
3. The table indicates dimensions for ANSI 150 flange.

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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.*

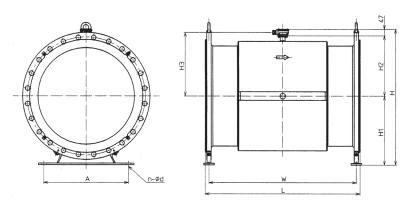
2. An integral detector includes an integral converter instead of a terminal box.

3. The table indicates dimensions for ANSI 150 flange.

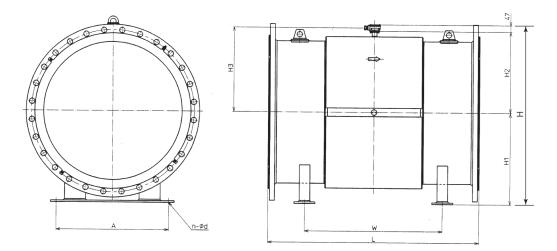
No. SS2-MGG200-0100

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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