azbil

Specification

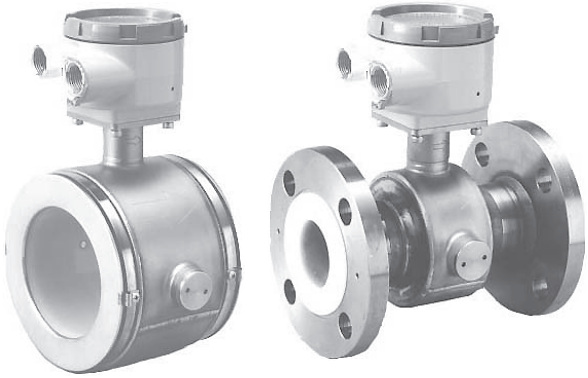
MagneW™ PLUS+

Electromagnetic Flowmeter Detector (FM Explosionproof Approval)

Model MGG17

OVERVIEW

The MagneW PLUS+ electromagnetic flowmeter detector is a high performance and highly reliable flowmeter developed with Azbil Corporation's proven MagneW3000 flow measurement technologies. Model MGG17 for FM Explosionproof use offer superior process flowrate measurement and couple with a wide range of MagneW PLUS+ converters.



Wafer type Flange type

Size 2.5 to 400 mm (0.1 to 16 inches)

FEATURES

High performance lining

- A new, exclusive high quality lining technology and a special, mirror-finish PFA lining offer 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 400 mm 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.

A wide variety of piping connections

- A flange structure is used for all diameters (sizes of 15 to 400 mm (1/2 to 16 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 (2-1/2 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 17 are approved by FM to be used in Class I, Division 1, Groups B, C, and D; Class II, Division 1, Groups E, F and G; Class III, Division 1 locations.(Only electrodes within the detector are of intrinsically safe circuits)

APPLICATIONS

Model MGG17 can be used for Division 1 location.

Petroleum / petrochemical / chemicals

Corrosive liquids, dyestuffs, chemicals, industrial water, waste 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

Enclosure rating

JIS C 0920 watertight model
NEMA ICS6-180 TYPE4X
IEC PUBL 529 IP67

Hazardous areas certifications

FM explosionproof Class I, Division 1, Groups B, C, and D; Class II, Division 1, Groups E, F and G; Class III, Division 1 locations. (Only electrodes within the detector are of intrinsically safe circuits)

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 3 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 3 of this document
- Maximum pressure for SEP equipment defined by the PED: see (4) above
- Maximum pressure for the flange: see the applicable standard

Table 1: Maximum allowable pressure for SEP products

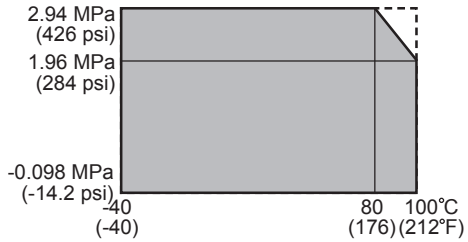
(1) Fluid group		Group 1		Group 2		Group 1		Group 2	
(2) Vapor pressure		(i)		(i)		(ii)		(ii)	
PED table		Table 6		Table 7		Table 8		Table 9	
	(4) Maximum allowable pressure								
	mm	bar	MPa	bar	MPa	bar	MPa	bar	MPa
(3) Nominal size (DN)	2.5	No limit	No limit	No limit	No limit	No limit	No limit	No 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
	125	0.5	0.05	8.0	0.80	16.0	1.60	No limit	No limit
	150	0.5	0.05	6.6	0.66	13.3	1.33	No limit	No limit
	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

Line size

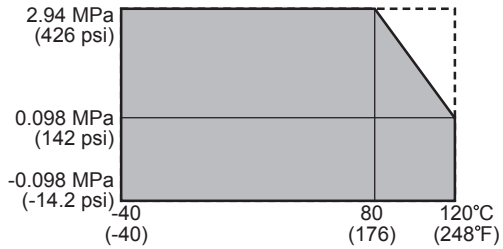
2.5, 5, 10, 15, 25, 40, 50, 65, 80, 100, 125, 150, 200, 250, 300, 350, 400 mm
(0.1, 0.2, 3/8, 1/2, 1, 1-1/2, 2, 2-1/2, 3, 4, 5, 6, 8, 10, 12, 14, 16 inches)

Temperature range and pressure range of process fluid

Size 2.5 to 10 mm (0.1 to 3/8 inch)



Size 15 to 200 mm (1/2 to 8 inches)



Size 250 to 400 mm (10 to 16 inches)

Measurable electrical conductivity

Combined with model MGG14C converter 3 μS/cm or more

Measurement flow range

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

Size		Minimum flow velocity range is 0 to 0.1 m/s (0 to 0.33 ft/s)		Maximum flow velocity range is 0 to 10 m/s (0 to 32.8 ft/s)		conversion factor K
		Minimum range		Maximum range		
mm	inch	m^3/h	GPM	m^3/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	1-1/2	0 to 0.4524	0 to 1.993	0 to 45.23	0 to 199.2	0.2210
50	2	0 to 0.7069	0 to 3.113	0 to 70.68	0 to 311.2	0.1415
65	2-1/2	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 to 636.1	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

Flange rating

JIS10K, JIS16K, JIS20K, JIS30K,
JPI150, JPI300, ANSI150, ANSI300,
DIN PN10, DIN PN16, DIN PN25, DIN PN40
(size 2.5 to 50 mm (0.1 to 2 inches))

JIS10K, JIS16K, JIS20K, JIS30K,
JPI150, JPI300, ANSI150, ANSI300,
DIN PN10, DIN PN16, DIN PN25, DIN PN40,
(size 80 to 200 mm (3 to 8 inches))

JIS10K, JIS16K, JIS20K,
JPI150, JPI300, ANSI150, ANSI300,
DIN PN10, DIN PN16, DIN PN25,
(size 250 to 400 mm (10 to 16 inches))

Ambient temperature limits

-10 to +60 °C (+14 to +140 °F)

Ambient humidity limits

5 to 100 % RH

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.

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 ≤ Vs ≤ 10	±0.5 % of rate	±0.2 % of Vs
0.1 ≤ Vs ≤ 1.0	±(0.1/Vs+0.4)% of rate	±0.4(0.1/Vs+0.4)% of Vs

<Size 25 to 400 mm (1 to 16 inches)>
Vs = Velocity of setting range

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

PHYSICAL SPECIFICATIONS

Main body material

Measuring pipe materials

SUS304 stainless steel

Flange

SUS304 stainless steel
(size 15 to 65 mm (1/2 to 2-1/2 inches))
Carbon steel + corrosion-preventive painting
(size 80 to 400 mm (3 to 16 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 400 mm (10 to 16 inches))

Terminal box

Aluminum alloy

Paint

Standard

Terminal box

Baked acrylic paint

Detector case (size 250 to 400 mm (10 to 16 inches))

Epoxy paint

Corrosion-resistant paint

Terminal box

Baked acrylic paint

Detector case (size 250 to 400 mm (10 to 16 inches))

Epoxy paint

Corrosion-proof paint

Terminal box

Baked acrylic paint

Detector case (size 250 to 400 mm (10 to 16 inches))

Epoxy paint

Color

Light beige (Munsell 4Y7.2/1.3)

Process wetted material

Lining

PFA

Electrode

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

Ground ring

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

Gasket

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

INSTALLATION

Electrical connection

1/2 NPT internal thread

Pipe connection

Wafer (size 2.5 to 200 mm (0.1 to 8 inches))
Flange (size 15 to 400 mm (1/2 to 16 inches))

Nuts and bolts (for models of wafer construction)

S20C carbon steel, SS304 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

Cable (between remote detector and converter)

Maximum length

300 m (984 ft) (depending on fluid conductivity)

Outer diameter

10 to 12 mm (0.4 to 0.47 inch)

Signal cable

Dedicated cable: model MGA12W (O.D. 11.4 mm, 0.75 mm^2) or equivalent (CVVS, CEEV, etc.)

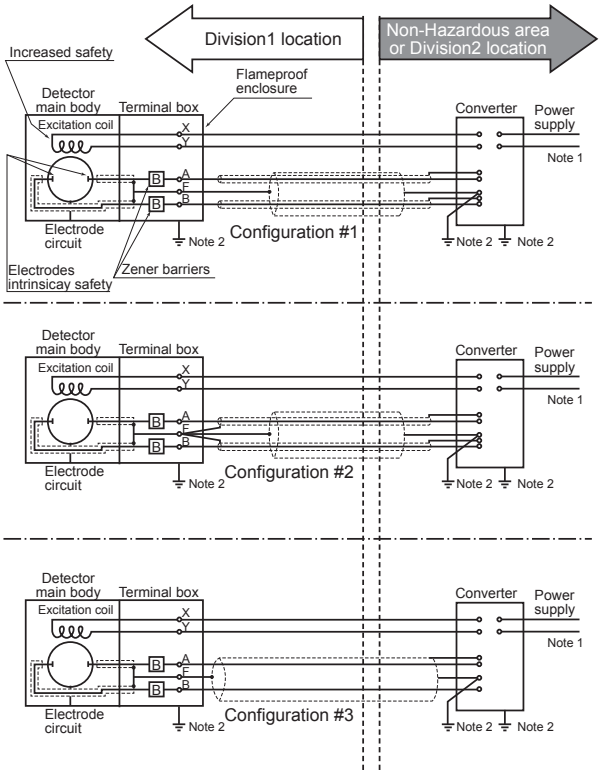
Excitation cable

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

For FM Explosionproof model

The wiring of model MGG17 detector is shown below with the diagram.

- A specially designed shielded cable must be used for flow rate signal transmission from the detector to the converter because the electrodes from a high impedance source generating very low e.m.f.
- The power supply to the converter is limited to 250 V r.m.s.
- The detector enclosure rated type 4X provides adequate weather and corrosion resistance.
- Ambient temperature: -10 °C to +60 °C
- Process fluid temperature: -40 °C to +120 °C



Note) 1. Power supply and internal voltage of Ordinary Equipment to the Earth shall not exceed AC 250 V 50/60 Hz. 250 V DC in case of Normal/Fault.

2. Protection Ground.

MODEL SELECTIONS

Contents of model number table

Structure / basic model no.	Lining	Pipe connection	Size	page
Watertight model MGG17D	PFA	Wafer	2.5 to 10 mm (0.1 to 3/8 inch)	page 8
Watertight model MGG17D	PFA	Wafer	15 to 200 mm (1/2 to 8 inches)	page 9
Watertight model MGG17F	PFA	Flange	15 to 200 mm (1/2 to 8 inches)	page 10
Watertight model MGG17F	PFA	Flange	250 to 400 mm (10 to 16 inches)	page 11

FM Explosion-proof detector (Wafer type 2.5 to 10 mm (0.1 to 3/8 inch)) - PFA lining

Model MGG17D - I II III IV V VI VII VIII IX - X XI - Y / Options (some options can be selected per each model)
Option "Y" must be for Azbil Corporation version

	Basic model no.		Selections									Optional selections	
	MGG17D	-									-		
I	Line size	2.5 mm (0.1 inch)	002										
		5 mm (0.2 inch)	005										
		10 mm (3/8 inch)	010										
II	Lining	PFA		P									
III	Piping connection	Wafer JIS 10K			11								
		Wafer JIS 20K			12								
		Wafer JIS 30K			13								
		Wafer JIS 10/20K for 10 mm flange			14								
		Wafer JIS 30K for 10 mm flange			15								
		Wafer ANSI 150			21								
		Wafer ANSI 300			22								
		Wafer DIN PN10			41								
		Wafer DIN PN16			42								
		Wafer DIN PN25			43								
		Wafer DIN PN40			44								
		Wafer DIN PN10/16/25/40 for 10 mm flange			45								
		Wafer JPI 150			61								
		Wafer JPI 300			62								
IV	Electrode	SUS316L				L							
		ASTM B574 (Hastelloy C-276 equivalent)				C							
		Titanium				K							
		Zirconium				H							
		Tantalum				T							
		Tungsten carbide (only for size 10 mm)				W							
		Platinum iridium				P							
		Others				_							
V	Grounding ring	SUS316					S						
		ASTM B575 (Hastelloy C-276 equivalent)					C						
		Titanium					K						
		Zirconium					H						
		Tantalum					T						
		Platinum					P						
		Others					_						
VI	Electrical connection / watertight gland	Remote type	1/2NPT internal thread / without watertight gland					5					
VII	Face-to-face dimensions	Standard							A				
		Others							_				
VIII	Installation / wiring direction	Remote type	Upstream side (horizontal / vertical piping mounting)							A			
			Downstream side (horizontal / vertical piping mounting)							B			
			Horizontal piping mounting / left side viewed from upstream							C			
			Horizontal piping mounting / right side viewed from upstream							D			
IX	Calibration	Standard									A		
		Others									_		
X	Finish	Standard										X	
		Corrosion-resistant finish										1	
		Corrosion-proof finish										2	
XI	Bolt / nut	None											X
		Carbon steel											1
		SUS304											2

Options	Azbil Corporation version (must be selected)	Y
	Traceability certificate for detector	B
	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

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

FM Explosion-proof detector (Wafer type 15 to 200 mm (1/2 to 8 inches)) PFA lining

Model MGG17D - I II III IV V VI VII VIII IX - X XI - Y/Options (some options can be selected per each model)

	Basic model no.			Selections										Optional selections	
	MGG17D		-										-		
I	Line size	15 mm (1/2 inch)		015											
		25 mm (1 inch)		025											
		40 mm (1-1/2 inches)		040											
		50 mm (2 inches)		050											
		65 mm (2-1/2 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	PFA			P										
III	Piping connection	Wafer JIS 10K				11									
		Wafer JIS 20K				12									
		Wafer JIS 30K				13									
		Wafer ANSI 150				21									
		Wafer ANSI 300				22									
		Wafer DIN PN10				41									
		Wafer DIN PN16				42									
		Wafer DIN PN25				43									
		Wafer DIN PN40				44									
		Wafer JPI 150				61									
		Wafer JPI 300				62									
IV	Electrode	SUS316L					L								
		ASTM B574 (Hastelloy C-276 equivalent)					C								
		Titanium					K								
		Zirconium					H								
		Tantalum					T								
		Tungsten carbide					W								
		Platinum iridium					P								
		Others					_								
V	Grounding ring	SUS316						S							
		ASTM B575 (Hastelloy C-276 equivalent)						C							
		Titanium						K							
		Zirconium						H							
		Tantalum						T							
		Platinum						P							
		Others						_							
VI	Electrical connection / watertight gland	Remote type	1/2NPT internal thread / without watertight gland						5						
VII	Face-to-face dimensions	Standard								A					
		Others								_					
VIII	Installation / wiring direction	Remote type	Upstream side (horizontal / vertical piping mounting)								A				
			Downstream side (horizontal / vertical piping mounting)								B				
			Horizontal piping mounting / left side viewed from upstream								C				
			Horizontal piping mounting / right side viewed from upstream								D				
IX	Calibration	Standard										A			
		Others										_			
X	Finish	Standard											X		
		Corrosion-resistant finish											1		
		Corrosion-proof finish											2		
XI	Bolt / nut	None												X	
		Carbon steel												1	
		SUS304												2	

Options	Azbil Corporation version (must be selected)	Y
	Traceability certificate for detector	B
	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

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

FM Explosion-proof detector (Flange type 15 to 200 mm (1/2 to 8 inches))PFA lining

Model MGG17F - I II III IV V VI VII VIII IX X - XI - Y/Options (some options can be selected per each model)

	Basic model no.			Selections										Optional selections
	MGG17F		-										-	
I	Line size	15 mm (1/2 inch)		015										
		25 mm (1 inch)		025										
		40 mm (1-1/2 inches)		040										
		50 mm (2 inches)		050										
		65 mm (2-1/2 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	PFA			P									
III	Piping connection	Flange JIS 10K				J1								
		Flange JIS 20K				J2								
		Flange JIS 30K				J3								
		Flange ANSI 150				A1								
		Flange ANSI 300				A2								
		Flange DIN PN10				D1								
		Flange DIN PN16				D2								
		Flange DIN PN25				D3								
		Flange DIN PN40				D4								
		Flange JPI 150				P1								
		Flange JPI 300				P2								
IV	Flange material	Standard					1							
		Others					_							
V	Electrode	SUS316L						L						
		ASTM B574 (Hastelloy C-276 equivalent)						C						
		Titanium						K						
		Zirconium						H						
		Tantalum						T						
		Tungsten carbide						W						
		Platinum iridium						P						
		Others						_						
VI	Grounding ring	SUS316							S					
		ASTM B575 (Hastelloy C-276 equivalent)							C					
		Titanium							K					
		Zirconium							H					
		Tantalum							T					
		Platinum							P					
		Others							_					
VII	Electrical connection / watertight gland	Remote type	1/2NPT internal thread / without watertight gland							5				
VIII	Face-to-face dimensions	Standard									A			
		Others									_			
IX	Installation / wiring direction	Remote type	Upstream side (horizontal / vertical piping mounting)									A		
			Downstream side (horizontal / vertical piping mounting)									B		
			Horizontal piping mounting / left side viewed from upstream									C		
			Horizontal piping mounting / right side viewed from upstream									D		
X	Calibration	Standard											A	
		Others											_	

XI	Finish	Standard	X
		Corrosion-resistant finish	1
		Corrosion-proof finish	2

Options	Azbil Corporation version (must be selected)	Y
	Traceability certificate for detector	B
	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

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

FM Explosion-proof detector (Flange type 250 to 400 mm (10 to 16 inches)) PFA lining

Model MGG17F - I II III IV V VI VII VIII IX X - XI - Y/Options (some options can be selected per each model)

	Basic model no.		Selections										Optional selections
	MGG17F	-										-	
I	Diameter	250 mm (10 inches)	250										
		300 mm (12 inches)	300										
		350 mm (14 inches)	350										
		400 mm (16 inches)	400										
II	Lining	PFA		P									
III	Piping connection	Flange JIS 10K			J1								
		Flange JIS 20K			J2								
		Flange ANSI 150			A1								
		Flange ANSI 300			A2								
		Flange DIN PN10			D1								
		Flange DIN PN16			D2								
		Flange DIN PN25			D3								
		Flange JPI 150			P1								
		Flange JPI 300			P2								
IV	Flange material	Standard				1							
		Others				_							
V	Electrode	SUS316L					L						
		ASTM B574 (Hastelloy C-276 equivalent)					C						
		Titanium					K						
		Zirconium					H						
		Tantalum					T						
		Tungsten carbide					W						
		Platinum iridium					P						
		Others					_						
VI	Grounding ring	SUS316						S					
		ASTM B575 (Hastelloy C-276 equivalent)						C					
		Titanium						K					
		Others						_					
VII	Electrical connection / watertight gland	Remote type	1/2NPT internal thread / without watertight gland / with zener barrier						5				
VIII	Face-to-face dimensions	Standard								A			
		Others								_			
IX	Installation / wiring direction	Remote type	Upstream side (horizontal / vertical piping mounting)								A		
			Downstream side (horizontal / vertical piping mounting)								B		
			Horizontal piping mounting / left side viewed from upstream								C		
			Horizontal piping mounting / right side viewed from upstream								D		
X	Calibration	Standard										A	
		Others										_	

XI	Finish	Standard	X
		Corrosion-resistant finish	1
		Corrosion-proof finish	2

Options	Azbil Corporation version (must be selected)	Y
	Traceability certificate for detector	B
	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

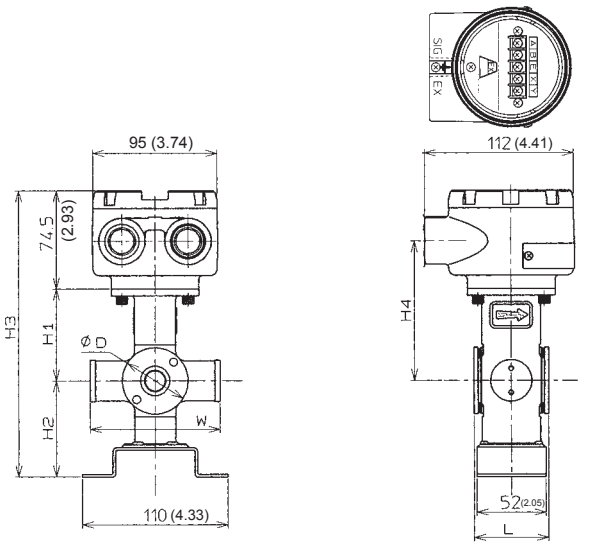
Note) 1. Must be selected for Tag no. requirement

DIMENSIONS

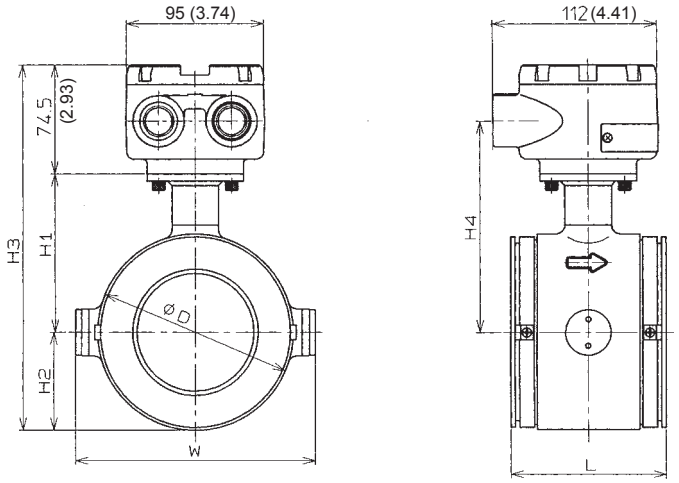
Wafer

(Unit : mm (inch))

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



25 to 200 mm (1 to 8 inches)



Size		mm	2.5	5	10	15	25	40	50	65	80	100	125	150	200
		(inches)	(0.1)	(0.2)	(3/8)	(1/2)	(1)	(1-1/2)	(2)	(2-1/2)	(3)	(4)	(5)	(6)	(8)
Face to face dimension	L	mm	56	56	56	56	56	80	86	96	106	120	140	160	200
		(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)
Height	H1	mm	71	71	71	71	77	84	93	100	108	120.5	133	160	185
		(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)	(7.28)
	H2	mm	72	72	72	72	34	43.5	52	62	67	79.5	95	110	135
		(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)
	H3	mm	217.5	217.5	217.5	217.5	185.5	202	219.5	236.5	249.5	274.5	302.5	344.5	394.5
		(inches)	(8.56)	(8.56)	(8.56)	(8.56)	(7.30)	(7.95)	(8.64)	(9.31)	(9.82)	(10.81)	(11.91)	(13.56)	(15.53)
	H4	mm	107	107	107	107	113	120	127	136	144	156.5	169	196	221
		(inches)	(4.21)	(4.21)	(4.21)	(4.21)	(4.45)	(4.72)	(5.08)	(5.35)	(5.67)	(6.16)	(6.65)	(7.72)	(8.70)
Housing width	W	mm	98	98	98	98	106	125	135	148	164	189	214	240	290
		(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 outer diameter	ϕD	mm	49.5	49.5	49.5	49.5	68	87	104	124	134	159	190	220	270
		(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	2.5	2.5	2.5	2.5	2.6	3.0	3.6	4.5	5.2	7.0	9.6	12.8	22.0
		(lb)	(5.5)	(5.5)	(5.5)	(5.5)	(5.7)	(6.6)	(7.9)	(9.9)	(11.5)	(15.4)	(21.2)	(28.2)	(48.5)

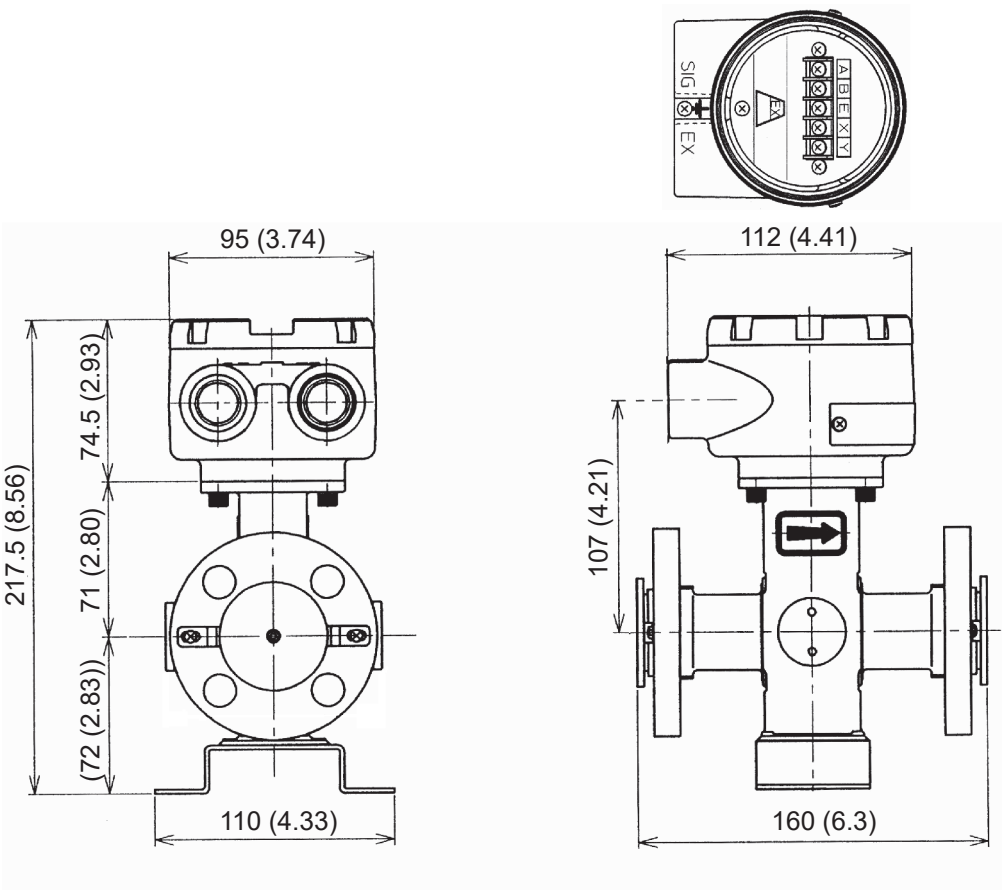
Note) Face to face dimension (L) indicates the dimension with SUS316 grounding rings without gaskets.

For other material grounding rings other than SUS316, gaskets are included. (Gasket thickness: 3 mm)

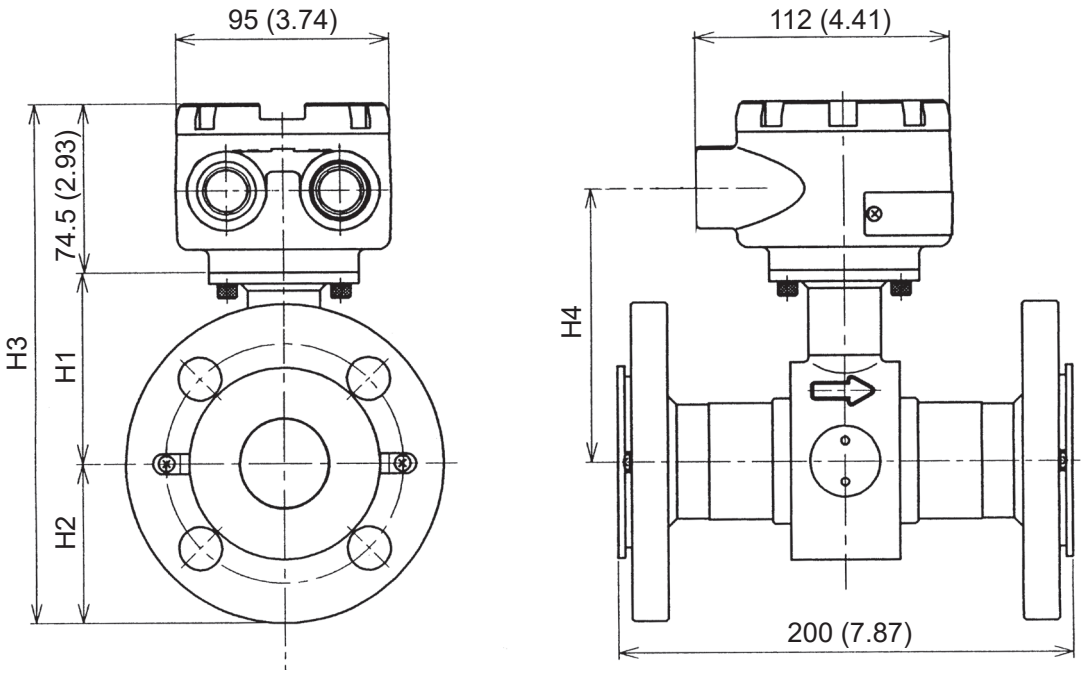
Flange

(Unit : mm (inch))

15 mm (1/2 inch)
Weight: 5.3 kg (11.7 lb)



25 to 80 mm (1 to 3 inch)



Note) The drawing indicates dimensions for ANSI 150 flange.

Face to face dimension (L) indicates the dimension with SUS316 grounding rings without gaskets.

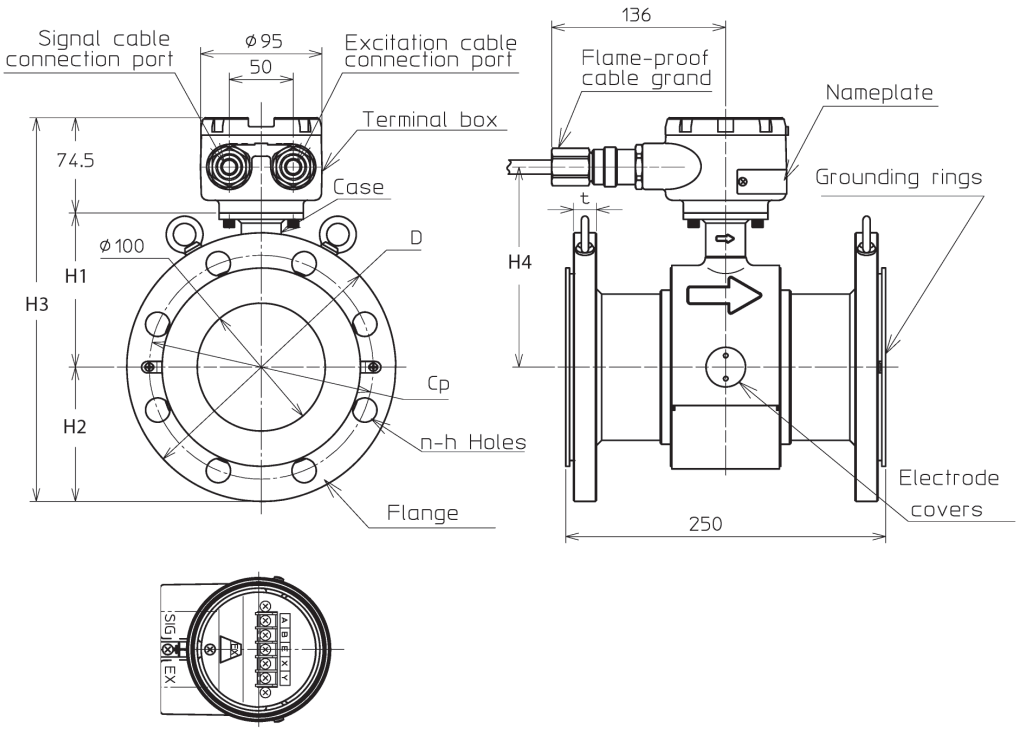
For other material grounding rings other than SUS316, gaskets are included. (Gasket thickness: 3 mm)

Size		mm	25	40	50	65	80
		(inches)	(1)	(1½)	(2)	(2½)	(3)
Face to face dimension	L	mm	200	200	200	200	200
		(inches)	(7.87)	(7.87)	(7.87)	(7.87)	(7.87)
Height	H1	mm	77	84	93	100	108
		(inches)	(3.03)	(3.31)	(3.66)	(3.94)	(4.25)
	H2	mm	54	62.5	75.0	90.0	95.0
		(inches)	(2.13)	(2.46)	(2.95)	(3.54)	(3.74)
	H3	mm	205.5	221	242.5	264.5	277.5
		(inches)	(8.09)	(8.70)	(9.55)	(10.41)	(10.93)
	H4	mm	113	120	129	136	144
		(inches)	(4.45)	(4.72)	(5.08)	(5.35)	(5.67)
Weight		kg	6.8	6.1	10.6	12.9	15.8
		(lb)	(15.00)	(13.4)	(23.4)	(28.4)	(34.8)

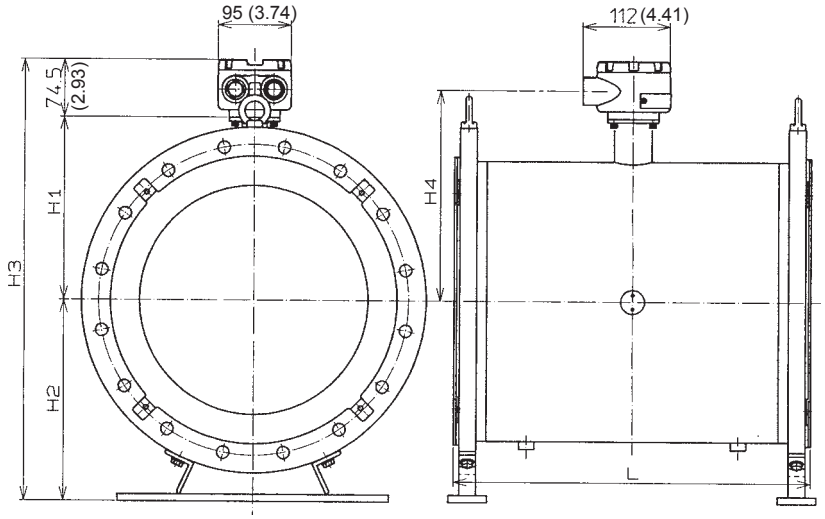
Flange

(Unit : mm (inch))

100 to 150 mm (4 to 6 inches)



200 to 400 mm (8 to 16 inches)



Size		mm	100	125	150	200	250	300	350	400
		(inches)	(4)	(5)	(6)	(8)	(10)	(12)	(14)	(16)
Face to face dimension	L	mm	250	250	300	350	450	500	550	600
		(inches)	(9.84)	(9.84)	(11.81)	(13.78)	(17.72)	(19.69)	(21.65)	(23.62)
Height	H1	mm	120.5	133	160	185	235	258	282	310
		(inches)	(4.74)	(5.24)	(6.30)	(7.28)	(9.25)	(10.16)	(11.10)	(12.20)
	H2	mm	115.0	127.5	140	204	224	271	297	340
		(inches)	(4.53)	(5.02)	(5.51)	(8.03)	(8.82)	(10.67)	(11.09)	(13.39)
	H3	mm	310	335	374.5	463.5	534	603	653.5	724.5
		(inches)	(12.20)	(13.19)	(14.74)	(18.25)	(21.02)	(23.74)	(25.73)	(28.52)
	H4	mm	156.5	169	196	221	271	294	318	346
		(inches)	(6.16)	(6.65)	(7.72)	(8.70)	(10.67)	(11.57)	(12.52)	(13.62)
Weight		kg	24.1	29.0	35.1	58.6	69.0	97.0	129	164
		(lb)	(53.1)	(63.9)	(77.4)	(129.2)	(152)	(213.8)	(284)	(362)

Note) The table indicates dimensions for ANSI 150 flange.

Face to face dimension (L) indicates the dimension with SUS316 grounding ring without gaskets.

For other material grounding rings other than SUS316, gaskets are included. (Gasket thickness: 3 mm)

Please read “Terms and Conditions” from the following URL before ordering and use.

https://www.azbil.com/products/factory/order.html

Specifications are subject to change without notice.

Azbil Corporation
Advanced Automation Company

1-12-2 Kawana, Fujisawa
Kanagawa 251-8522 Japan
URL: https://www.azbil.com/

1st edition: Feb. 1997
9th edition: Feb. 2023