

# 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.

### 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

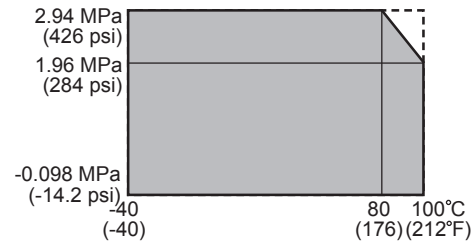
FM explosionproof Class I, Division 1, Groups B, C, and D; Class II, Division 1, Groups E, F and G; Class III, Division 1 locations. (Only electrodes within the detector are of intrinsically safe circuits)

### Line size

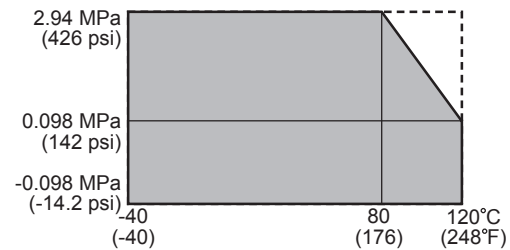
2.5, 5, 10, 15, 25, 40, 50, 65, 80, 100, 125, 150, 200, 250, 300, 350, 400 mm  
(0.1, 0.2, 3/8, 1/2, 1, 1-1/2, 2, 2-1/2, 3, 4, 5, 6, 8, 10, 12, 14, 16 inches)

### Temperature range and pressure range of process fluid

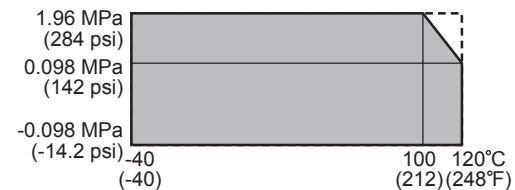
Size 2.5 to 10 mm (0.1 to 3/8 inch)



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 <sup>3</sup> /h	GPM	m <sup>3</sup> /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 $\geq$ Vs $\times$ 40 %	Velocity during measurement $\leq$ Vs $\times$ 40 %
$1.0 \leq V_s \leq 10$	$\pm 0.5$ % of rate	$\pm 0.2$ % of Vs
$0.1 \leq V_s \leq 1.0$	$\pm(0.1/V_s+0.4)$ % of rate	$\pm 0.4(0.1/V_s+0.4)$ % of Vs

<Size 25 to 400 mm (1 to 16 inches)>

Vs = Velocity of setting range

Vs (m/s)	Velocity during measurement $\geq$ Vs $\times$ 20 %	Velocity during measurement $\leq$ Vs $\times$ 20 %
$1.0 \leq V_s \leq 10$	$\pm 0.5$ % of rate	$\pm 0.1$ % of Vs
$0.1 \leq V_s \leq 1.0$	$\pm(0.1/V_s+0.4)$ % of rate	$\pm 0.2(0.1/V_s+0.4)$ % 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  $\Omega$

### 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<sup>2</sup>) or equivalent (CVVS, CEEV, etc.)

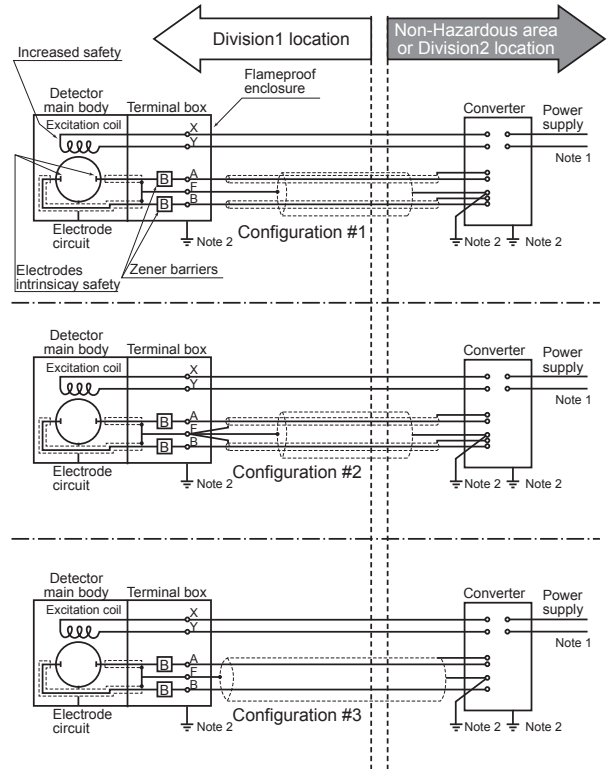
**Excitation cable**

Dedicated cable: model MGA12W (O.D.10.5 mm, 2 mm<sup>2</sup> 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 7
Watertight model MGG17D	PFA	Wafer	15 to 200 mm (1/2 to 8 inches)	page 8
Watertight model MGG17F	PFA	Flange	15 to 200 mm (1/2 to 8 inches)	page 9
Watertight model MGG17F	PFA	Flange	250 to 400 mm (10 to 16 inches)	page 10

**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	Description	Code
	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

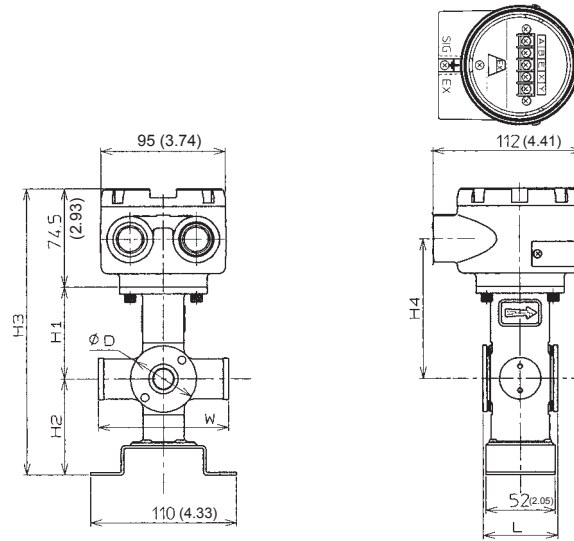
Note) 1. Must be selected for Tag no. requirement

## DIMENSIONS

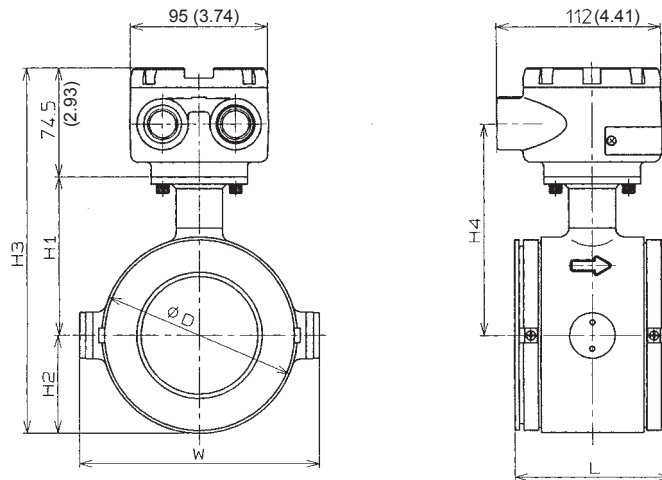
### Wafer

(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	ØD	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.

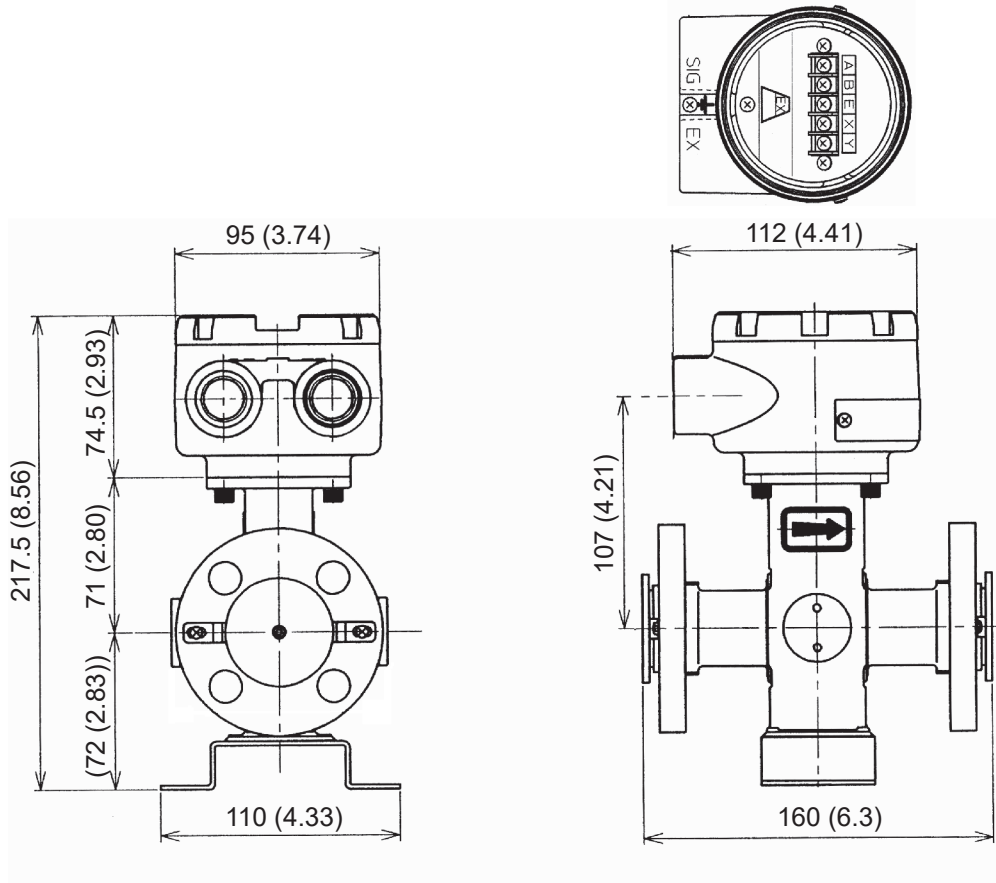
For other material grounding rings other than SUS316, gaskets are included. (Gasket thickness: 3 mm)

**Flange**

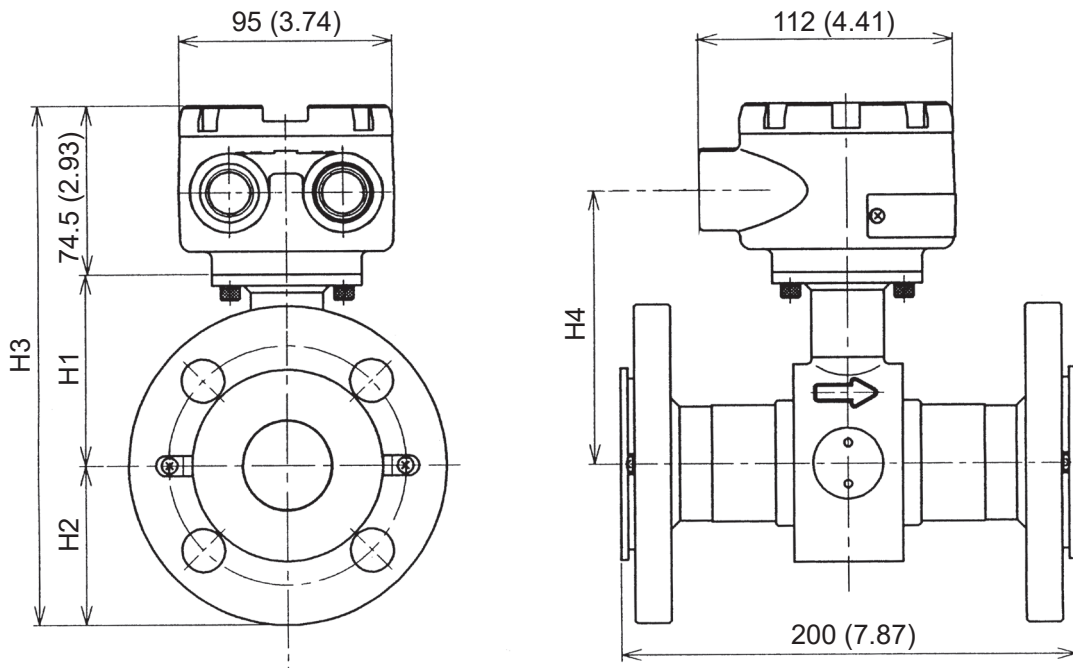
(Unit : mm (inch))

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.

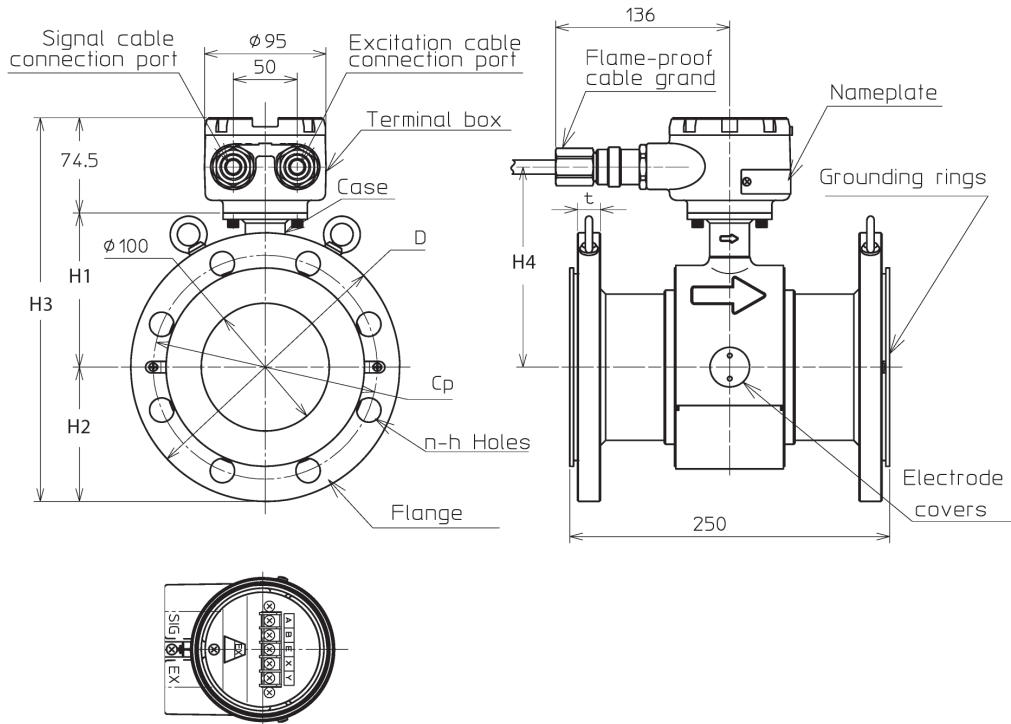
For other material grounding rings other than SUS316, gaskets are included. (Gasket thickness: 3 mm)

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)	

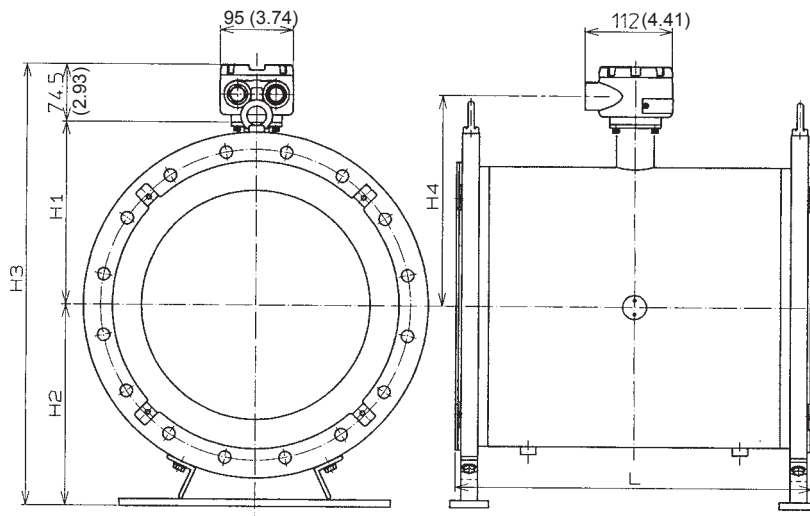
**Flange**

(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)



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