

MagneW 3000 PLUS Smart Electromagnetic Flowmeter Detector (FM/CSA Explosionproof Approval)

Model MGG17

OVERVIEW

The MagneW 3000 PLUS electromagnetic flowmeter detector is a high performance and highly reliable flowmeter developed with Yamatake's proven MagneW 3000 flow measurement technologies. Model MGG17 for FM/CSA Explosion-proof use offer superior process flowrate measurement and couple with a wide range of MagneW 3000 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 your Yamatake 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 (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 your Yamatake representative for details.

Type of protection

- Model MGG 17 are approved by FM and CSA 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

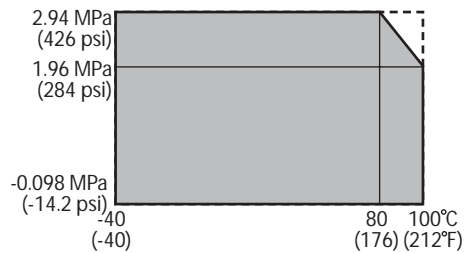
FM/CSA explosionproof Class I, Division 1, Groups B, C, and D; Class II, Division 1, Groups E, F and G; Class III, Division 1 locations.(Only electrodes within the detector are of intrinsically safe circuits)

Line size

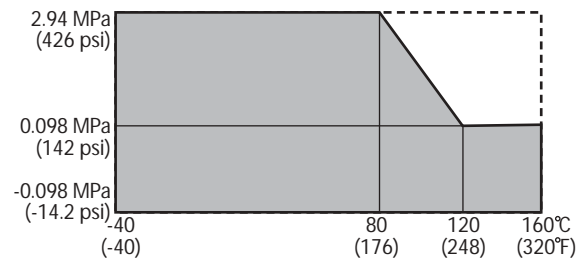
2.5, 5, 10, 15, 25, 40, 50, 65, 80, 100, 125, 150, 200, 250, 300, 350, 400 mm
(0.1, 0.2, 3/8, 1/2, 1, 1½, 2, 2½, 3, 4, 5, 6, 8, 10, 12, 14, 16 inches)

Temperature range and pressure range of process fluid

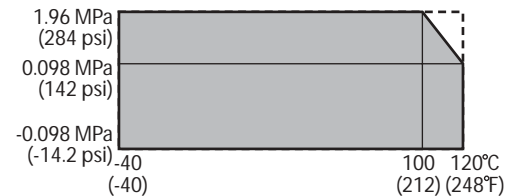
Size 2.5 to 10 mm (0.1 to 3/8 inch)



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 0.02825	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	2½	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)>

V_s = Velocity of setting range

V _s (m/s)	Velocity during measurement $\geq V_s$ $\times 40\%$	Velocity during measurement $\leq V_s$ $\times 40\%$
$1.0 \leq V_s \leq 10$	$\pm 0.5\%$ of rate	$\pm 0.2\%$ of V _s
$0.1 \leq V_s \leq 1.0$	$\pm(0.1/V_s+0.4)\%$ of rate	$\pm 0.4(0.1/V_s+0.4)\%$ of V _s

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

V_s = Velocity of setting range

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

PHYSICAL SPECIFICATIONS**Main body material****Measuring pipe materials**

SUS304 stainless steel

Flange

SUS304 stainless steel

(size 15 to 65 mm (1/2 to 2½ 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

Finish**Standard****Terminal box**

Baked acryl paint

Case (size 250 to 400 mm (10 to 16 inches))

Polyurethane paint

Corrosion-resistant**Terminal box**

Baked acryl paint

Case (size 250 to 400 mm (10 to 16 inches))

Polyurethane paint

Corrosion-proof**Terminal box**

Baked epoxy paint

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, Hastelloy C, titanium, zirconium, tantalum, tungsten-carbide, platinum/iridium

Ground ring

SUS316, Hastelloy C, 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 mm²) or equivalent (CVVS, CEEV, etc.)

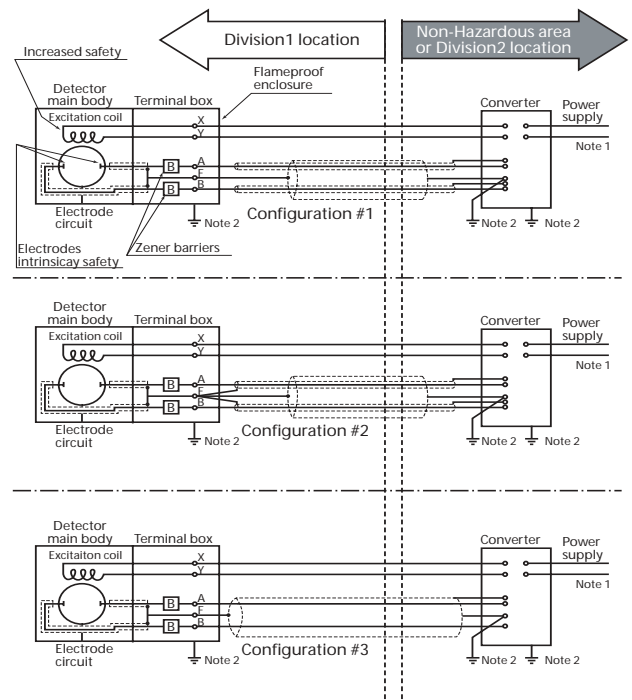
Excitation cable

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

For FM/CSA 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 250V 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 +160°C



- Note) 1. Power supply and internal voltage of Ordinary Equipment to the Earth shall not exceed AC250V 50/60Hz, 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/CSA 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 Yamatake 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					
		Hastelloy C		C					
		Titanium		K					
		Zirconium		H					
		Tantalum		T					
		Tungsten carbide (only for size 10 mm)		W					
		Platinum iridium		P					
		Others		<input type="checkbox"/>					
V	Grounding ring	SUS316		S					
		Hastelloy C		C					
		Titanium		K					
		Zirconium		H					
		Tantalum		T					
		Platinum iridium		P					
		Others		<input type="checkbox"/>					
		VI	Electrical connection / watertight gland	Remote type	1/2NPT internal thread / without watertight gland	5			
Standard					A				
VII	Face-to-face dimensions	Standard			<input type="checkbox"/>				
		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			<input type="checkbox"/>				
X	Finish	Standard				X			
		Corrosion-resistant finish				1			
		Corrosion-proof finish				2			
XI	Bolt / nut	None				X			
		Carbon steel				1			
		SUS304				2			

Options		
	Yamatake version (must be selected)	Y
	Calibration certificate (sent to ordering location separately)	A
	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
	Attachment of the TAG number plate to neck section for detector	L

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

FM/CSA 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 (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	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	
Hastelloy C					C			
Titanium					K			
Zirconium					H			
Tantalum					T			
Tungsten carbide					W			
Platinum iridium					P			
Others					<input type="checkbox"/>			
V	Grounding ring	SUS316			S			
		Hastelloy C			C			
		Titanium			K			
		Zirconium			H			
		Tantalum			T			
		Platinum iridium			P			
		Others			<input type="checkbox"/>			
VI	Electrical connection / watertight gland	Remote type	1/2NPT internal thread / without watertight gland	5				
VII	Face-to-face dimensions	Standard			A			
		Others			<input type="checkbox"/>			
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			<input type="checkbox"/>			
X	Finish	Standard				X		
		Corrosion-resistant finish					1	
		Corrosion-proof finish						2
XI	Bolt / nut	None					X	
		Carbon steel						1
		SUS304						2

Options		
	Yamatake version (must be selected)	Y
	Calibration certificate (sent to ordering location separately)	A
	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
	Attachment of the TAG number plate to neck section for detector	L

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

FM/CSA 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 (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	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		
Others	<input type="checkbox"/>				
V	Electrode	SUS316L	L		
		Hastelloy C	C		
		Titanium	K		
		Zirconium	H		
		Tantalum	T		
		Tungsten carbide	W		
		Platinum iridium	P		
		Others	<input type="checkbox"/>		
VI	Grounding ring	SUS316	S		
		Hastelloy C	C		
		Titanium	K		
		Zirconium	H		
		Tantalum	T		
		Platinum iridium	P		
		Others	<input type="checkbox"/>		
VII	Electrical connection / watertight gland	Remote type	1/2NPT internal thread / without watertight gland	5	
VIII	Face-to-face dimensions	Standard		A	
		Others		<input type="checkbox"/>	
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		<input type="checkbox"/>	
XI	Finish	Standard			X
		Corrosion-resistant finish			1
		Corrosion-proof finish			2

Options		
	Yamatake version (must be selected)	Y
	Calibration certificate (sent to ordering location separately)	A
	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
	Attachment of the TAG number plate to neck section for detector	L

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

FM/CSA Explosion-proof detector (Flange type 250 to 400 mm (10 to 16 inches)) PFA 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.		Selections					Optional selections				
MGG19F											
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	<input type="checkbox"/>								
V	Electrode	SUS316L	L								
		Hastelloy C	C								
		Titanium	K								
		Zirconium	H								
		Tantalum	T								
		Tungsten carbide	W								
		Platinum iridium	P								
		Others	<input type="checkbox"/>								
VI	Grounding ring	SUS316	S								
		Hastelloy C	C								
		Titanium	K								
		Others	<input type="checkbox"/>								
VII	Electrical connection / watertight gland	Remote type	1/2NPT internal thread / without watertight gland / with zener barrier	5							
		Standard									
VIII	Face-to-face dimensions	Standard						A			
		Others	<input type="checkbox"/>								
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	<input type="checkbox"/>								
XI	Finish	Standard								X	
		Corrosion-resistant finish								1	
		Corrosion-proof finish								2	

Options		
	Yamatake version (must be selected)	Y
	Calibration certificate (sent to ordering location separately)	A
	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
	Attachment of the TAG number plate to neck section for detector	L

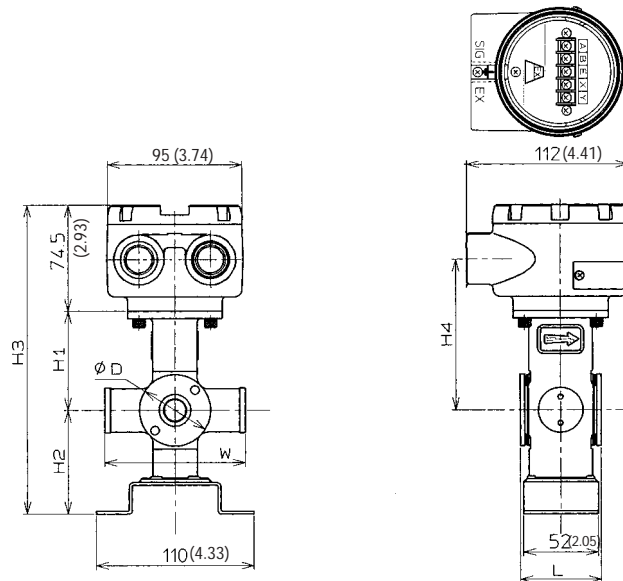
Note) 1. Must be selected for Tag no. requirement

DIMENSIONS

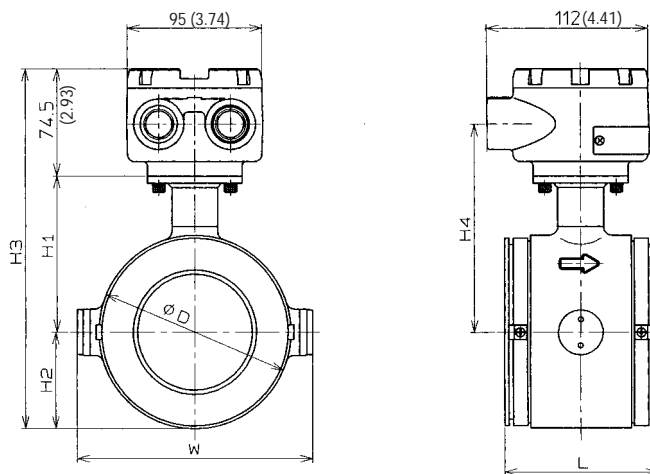
All dimensions are in millimeters, dimensions in brackets () are in inches (inch).

Wafer

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



25 to 200 mm (1 to 8 inches)



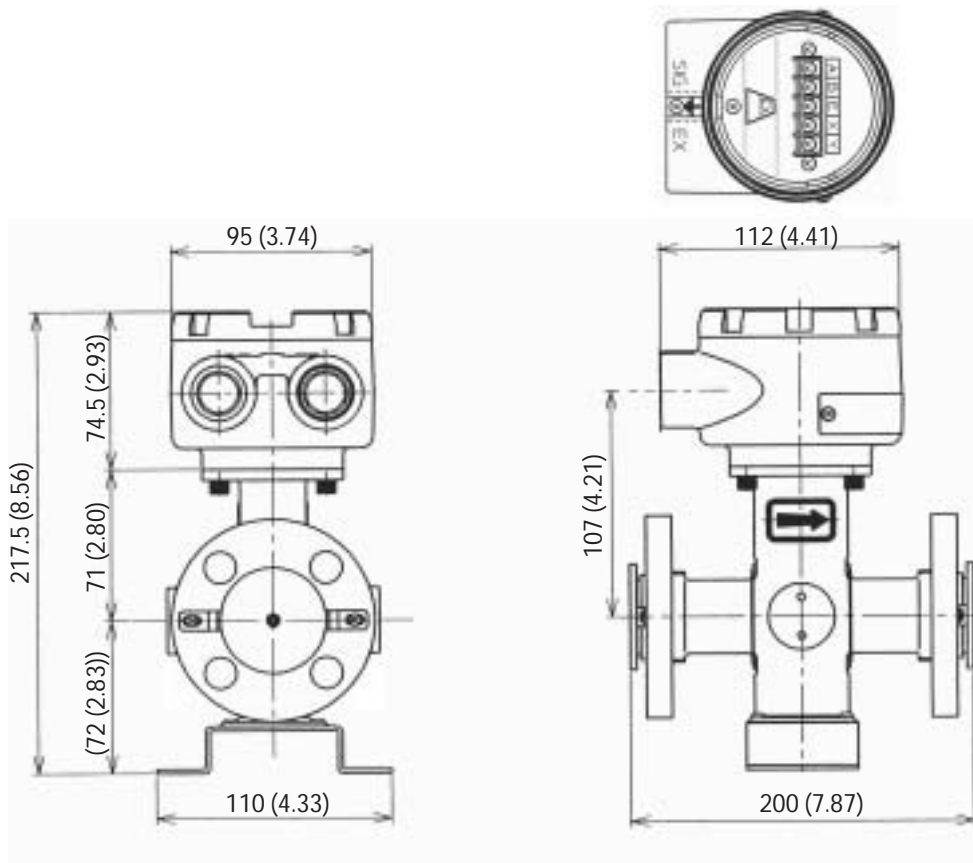
Size		mm	2.5	5	10	15	25	40	50	65	80	100	125	150	200
		(inches)	(0.1)	(0.2)	(3/8)	(1/2)	(1)	(1½)	(2)	(2½)	(3)	(4)	(5)	(6)	(8)
Face to face dimension	L	mm	56	56	56	56	56	80	86	96	106	120	140	160	200
		(inches)	(2.20)	(2.20)	(2.20)	(2.20)	(2.20)	(3.15)	(3.39)	(3.78)	(4.17)	(4.72)	(5.51)	(6.30)	(7.87)
Height	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

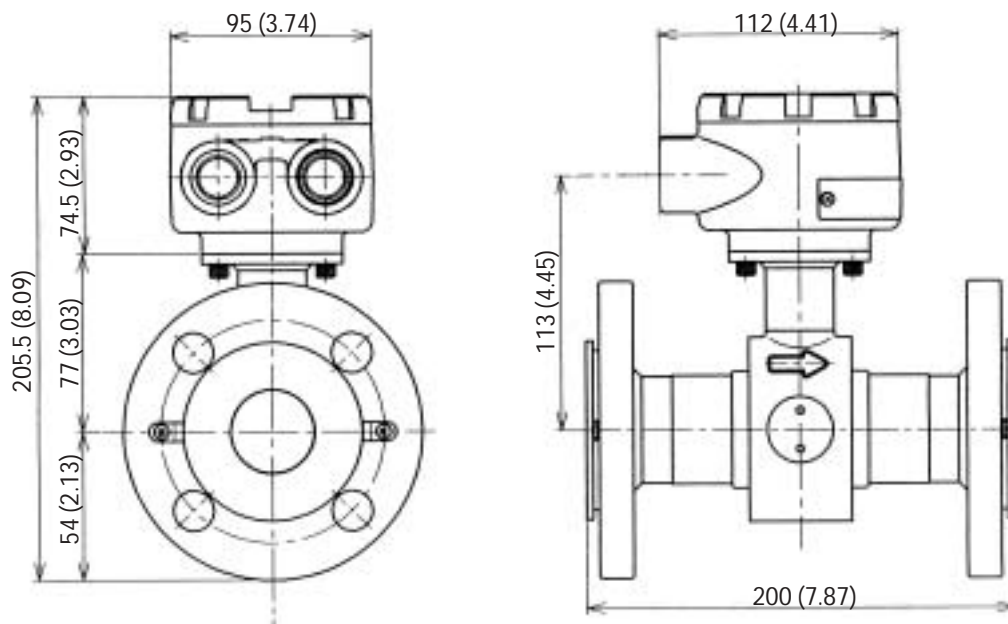
15 mm (1/2 inch)

Weight: 5.0 kg (11.0 lb)



25 mm (1 inch)

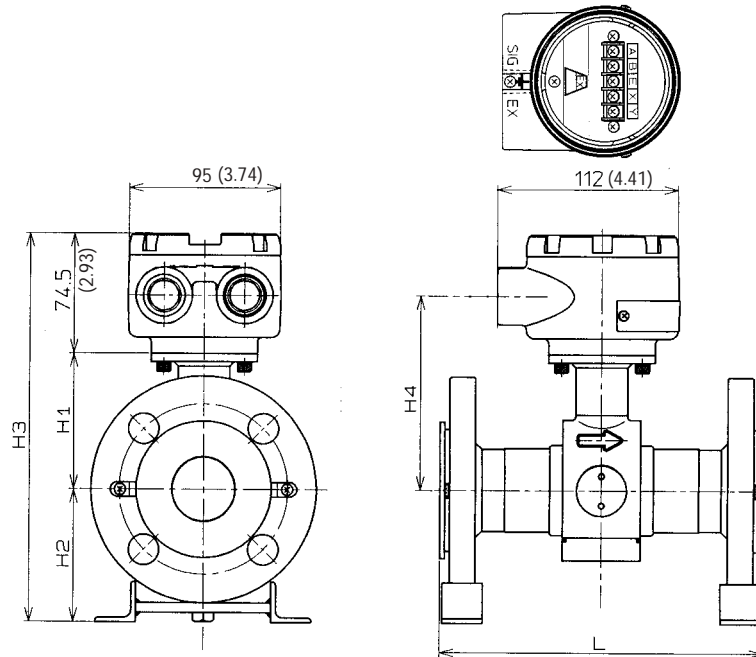
Weight: 7.0 kg (15.4 lb)



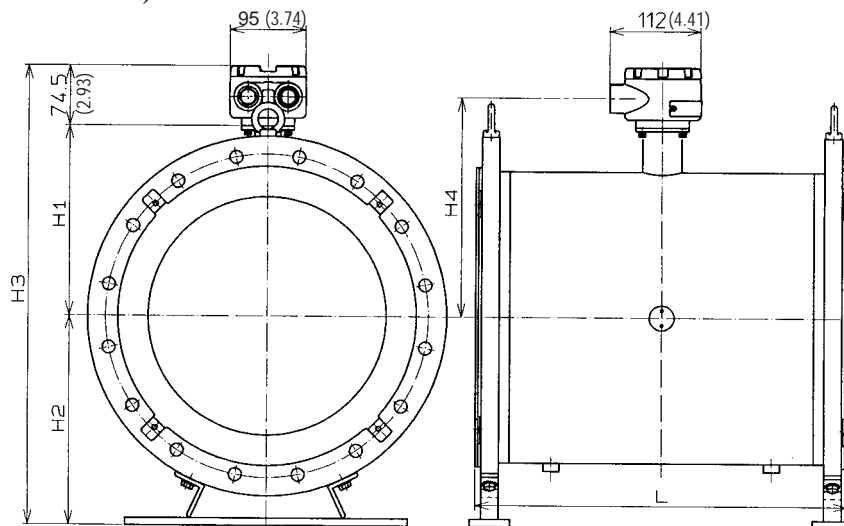
- Note)
- The drawing indicates dimensions for ANSI 150 flange.
 - Face to face dimension (L) indicates the dimension with SUS316 grounding rings without gaskets.
 - For other material grounding rings other than SUS316, gaskets are included. (Gasket thickness: 3 mm)

Flange

40 to 100 mm (1½ to 4 inches)



150 to 400 mm (6 to 16 inches)



Size	mm													
	40	50	65	80	100	125	150	200	250	300	350	400		
	(1½)	(2)	(2½)	(3)	(4)	(5)	(6)	(8)	(10)	(12)	(14)	(16)		
Face to face dimension	L	mm	200	200	200	200	250	250	300	350	450	500	550	600
		(inches)	(7.87)	(7.87)	(7.87)	(7.87)	(9.84)	(9.84)	(11.81)	(13.78)	(17.72)	(19.69)	(21.65)	(23.62)
Height	H1	mm	84	93	100	108	120.5	133	160	185	235	258	282	310
		(inches)	(3.31)	(3.66)	(3.94)	(4.25)	(4.74)	(5.24)	(6.30)	(7.28)	(9.25)	(10.16)	(11.10)	(12.20)
	H2	mm	77	88	103	113	131	145	174	204	224	271	297	340
		(inches)	(3.03)	(3.46)	(4.06)	(4.45)	(5.16)	(5.71)	(6.85)	(8.03)	(8.82)	(10.67)	(11.09)	(13.39)
	H3	mm	235.5	255.5	280	295.5	326	352.5	408.5	463.5	534	603	653.5	724.5
		(inches)	(9.27)	(10.06)	(11.02)	(11.63)	(12.83)	(13.88)	(16.08)	(18.25)	(21.02)	(23.74)	(25.73)	(28.52)
	H4	mm	120	129	136	144	156.5	169	196	221	271	294	318	346
		(inches)	(4.72)	(5.08)	(5.35)	(5.67)	(6.16)	(6.65)	(7.72)	(8.70)	(10.67)	(11.57)	(12.52)	(13.62)
Weight	kg	6.4	10.9	12.9	15.9	23.7	32.4	35.8	60.4	69.0	98.0	129	164	
	(lb)	(14.1)	(24.0)	(28.4)	(35.1)	(52.2)	(71.4)	(78.9)	(133)	(152)	(216)	(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)

Note

Note

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