

General Specifications

ADMAG TI Series AXG Magnetic Flowmeter



GS 01E22A01-01EN

■ GENERAL DESCRIPTION

The ADMAG TI (Total Insight) series AXG magnetic flowmeter is a high-quality and highly reliable product developed based on years of experience and achievement, such as enhancement of application by our proprietary dual frequency excitation method.

The AXG magnetic flowmeter is ideal for industrial process lines like oil & gas, chemical, pulp & paper, food & beverage, or metal & mining applications. With outstanding reliability and ease of operation and maintenance, developed on decades of field-proven experience, the AXG will increase user benefits while reducing total cost of ownership.

The sizes are available from 2.5 to 500 mm (0.1 to 20 in.). For lining, fluorocarbon PFA lining or ceramics tube which can be applied to severe applications can be selected. Process connection also supports various specifications such as ASME, EN, AS, and JIS.

Note: For AXFA11G remote transmitter, read general specifications (GS 01E20C01-01E).

■ FEATURES

● Stable Measurement

Our own dual frequency excitation method realizes stable flow measurement even under high flow noise in the fluid with highly concentrated slurry.

● Multiple Inputs and Outputs

Maximum four inputs/outputs of current, pulse, and status signals can be selected. Mass or calorie calculation using temperature input is available.

● Improved Operation and Monitoring Function

Operation authority level setting for ensuring safety, process data trend display, display backlight flashing (Squawk) function, and data store / restore function with display unit internal memory or microSD card are available.

● Improved Maintainability

Diagnostic functions that contribute to preventive maintenance of the plant are installed. Diagnosis of the device (verification function) that can be executed without demounting from piping, detection of the process condition by monitoring the flow noise and electric conductivity of the fluid, electrode insulation deterioration diagnosis, electrode adhesion diagnosis, and wiring connection diagnosis are available.

● Communication Protocol

HART7, BRAIN, Modbus



Integral Flowmeter



Remote Transmitter



Remote Sensor

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■ GENERAL

Measuring Principal:

By applying the occurrence of electromotive force proportional to the flow velocity when fluid moves in the magnetic field, the flowmeter can measure the flow velocity of conductive liquid. It calculates the instantaneous flow rate, integrated flow rate, etc. from the measured flow velocity.

System Configuration:

The flowmeter consists of a sensor that detects the flow velocity and a transmitter that amplifies, and converts the signal.

Structurally, there is an integral type (integrated structure of a sensor and a transmitter), and remote type (separated structure of a sensor and a transmitter).

In the remote type, the signal cable for the flow signal and the excitation cable for the coil excitation are added to the constituent elements.

Main Element of Sensor:

Wetted Part:

Lining (*1), Electrodes, Grounding Devices (*2), Adapters for hygienic.

*1: including ceramics tube.

*2: grounding ring plate, grounding ring electrode, built-in grounding electrode

Note: Grounding devices are for taking the reference electric potential from the process fluid in measuring the electromotive force, and are fixed (or built-in) at two locations, upstream and downstream of the flow. They are unnecessary when the reference potential is taken from installed piping. For details of grounding, read "Cautions on Selection and Installation".

Non-wetted Part:

Flanges, Housing, Excitation coil, Measuring pipe (excluding ceramics tube)

Main Element of Transmitter:

Display unit, Setting keys, Amplifier unit (including I/Os and power supply unit)

■ CONSTRUCTION

Use:

Use	Specification
General-purpose	Non explosion protection for the use in non-hazardous area. Applicable to Integral Flowmeter, Remote Sensor, or Remote Transmitter. IP Protection Grade: IP66/67, Type 4X (CSA)
Submersible	Temporary submersion is possible. Applicable to Remote Sensor only. Note: Urethane resin potting is applied in the terminal box of a remote sensor. Signal and excitation cables (when optional code L### is not selected, cable length is each 30 m) are pre-wired and waterproof glands with union joints are attached at factory. Performance: Conforms to continuous immersion under the following test condition. Test Condition: 50 m below the surface of the water, equivalent to 0.5 MPa hydraulic pressure, for one month. In case of bad condition such as sewage and seawater, this does not apply. Also, waterproof and protect the cable separately by conduit piping, etc.
Explosion Protection	Explosion protection for the use in hazardous area. Applicable to Integral Flowmeter, Remote Sensor, or Remote Transmitter. IP Protection Grade: Read "Explosion Protection".
Hygienic	Integrated piping adapters with hygienic standards. Applicable to Integral Flowmeter, or Remote Sensor. IP Protection Grade: IP66/67, Type 4X (CSA)
Hygienic with Explosion Protection	Integrated piping adapters with hygienic standards. Explosion protection for the use in hazardous area. Applicable to Integral Flowmeter, or Remote Sensor. IP Protection Grade: Read "Explosion Protection".

Construction:Integral Type:

A flowmeter in integrated structure of a sensor and a transmitter.

Remote Type:

A flowmeter in separated structure of a sensor and a transmitter, which are connected by a signal cable and an excitation cable. The excitation cable is to be supplied by customer except for submersible.

Combined Transmitter (*1) (*2) (*3) (*4) (*5):

Remote Sensor Size	Remote Transmitter
2.5 to 400 mm (0.1 to 16 in.)	AXG4A, AXFA11G
500 mm (20 in.)	AXFA11G

- *1: When changing the combination transmitter, readjustment of the meter factor by actual flow calibration is necessary to ensure accuracy.
- *2: For AXFA11G remote transmitter, read general specifications (GS 01E20C01-01E).
- *3: When combining explosion protection AXG remote detector with general-purpose AXG4A remote transmitter, low conductivity detection may not perform properly.
- *4: When selecting the optional code E21 for the AXG4A remote transmitter, select either general-purpose or explosion protection for both of the AXG remote sensor and the AXG 4A remote transmitter.
- *5: The Remote Sensor for Japan Flameproof can be connected only with a Remote Transmitter authorized by Yokogawa Electric Corporation.

Maximum Cable Length:

- 100 m (328 ft) for AXG4A remote transmitter
- 200 m (656 ft) for AXFA11G remote transmitter

Process Connection:

Available process connections are wafer, flange, union joint (screw type, welding type), clamp, union, and welded joint type. For the linings and size ranges that can be combined with these connections, read "MODEL AND SUFFIX CODE".

Wafer:

- ASME Class 150, Class 300
- EN PN10, PN16, PN40
- JIS F12, 10K, 20K
- JPI Class 150

Flange:

- ASME Class 150, Class 300, Class 600
- EN PN10, PN16, PN40
- JIS F12, 10K, 20K
- JPI Class 150
- AS Table D, Table E

Union Joint:Screw Type:

- 1/4 NPT (for sizes 2.5 to 5 mm (0.1 to 0.2 in.))
- 3/8 NPT (for size 10 mm (0.4 in.))
- R 1/4 (for sizes 2.5 to 5 mm (0.1 to 0.2 in.))
- R 3/8 (for size 10 mm (0.4 in.))

Welding Type:Outer Diameter of Welding Union Joint:

- 18.5 mm / 0.73 in. (for sizes 2.5 to 5 mm (0.1 to 0.2 in.))
- 22.5 mm / 0.89 in. (for size 10 mm (0.4 in.))

Clamp:

- Tri-Clamp
- DIN 32676 Clamp
- ISO 2852 / SMS 3016 Clamp
- ISO 2852 Clamp (for JIS G3447 Piping)

Union:

- DIN 11851 Union
- ISO 2853 Union
- SMS 1145 Union (Open groove packing type)
- ISO 2853 Union (for JIS G3447 Piping)

Butt Weld Joint:

- DIN 11850 Piping Butt Weld Joint
- ISO 2037 Piping Butt Weld Joint
- JIS G3447 Piping Butt Weld Joint

Wetted Part:**Lining Material:**

Fluorocarbon PFA, Ceramics (*)

* : Alumina ceramics (99.8%)

Electrode Material:

Stainless steel 316L, Nickel alloy (*), Platinum-Iridium, Tantalum, Titanium, Tungsten carbide, Platinum-Alumina cermet

* : ASTM B574 UNS N10276 or ASME SB-574 UNS N10276

Electrode Construction:PFA Lining:

External insertion type or internal insertion type (*)

* : Internal insertion type is for models with Hygienic or Hygienic Explosion Protection, size 500 mm (20 in.), or ASME Class 600 flange high pressure type.

Ceramics Tube:

Electrode integrally sintered type (Platinum-Alumina Cermet)

Grounding Device Material:Grounding Ring Plate:

Stainless steel 316L, Nickel alloy (*), Titanium

* : ASTM B575 UNS N10276 or ASME SB-575 UNS N10276

Grounding Ring Electrode:

Platinum-Iridium, Tantalum

Built-in Grounding Electrode:

Platinum-Iridium, Tantalum

Grounding Device Construction:Grounding Ring Plate:

Ring flat plate, with mounting bracket

Grounding Ring Electrode:

Electrode is inserted into ring-shaped short pipe with PFA lining, with mounting bracket

Built-in Grounding Electrode:

Electrode is inserted on the inner surface of the measuring pipe

Gasket Material:

The following is a description of the material of gaskets, which are supplied with flowmeter, to be used between the sensor pipe and grounding rings, or the installed pipe flanges. This includes if the gaskets are necessary or not, or if some gaskets should be supplied by customer.

For details of gaskets, read "Cautions on Selection and Installation" and "Optional Code".

PFA Lining:

General-purpose, Submersible, and Explosion Protection (excluding ASME Class 600 flange high pressure type):

Standard:

None (not necessary), or supplied by customer

Optional (for plastic piping):

GA: Fluororubber

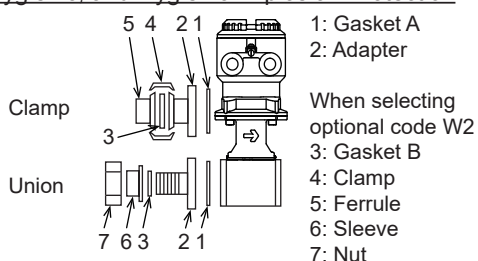
GC: Acid-resistant fluororubber

GD: Alkali-resistant fluororubber

ASME Class 600 flange high pressure type:

Standard: Fluororubber (FKM) (O-ring)

Hygienic, and Hygienic Explosion Protection:



F01.ai

Gasket A:

Standard: Ethylene propylene diene rubber (EPDM)

Optional:

GH: Silicone rubber

Gasket B:

Optional:

W2:

Sizes 15 to 100 mm (0.5 to 4 in.):

Ethylene propylene diene rubber (EPDM)

Sizes 125 mm (5 in.):

Silicone rubber

W2 and GH: Silicone rubber

Ceramics Tube:

Standard:

Fluororesin with ceramic fillers (Valqua #7020)

Optional (for plastic piping):

GA: Fluororubber

GC: Acid-resistant fluororubber

GD: Alkali-resistant fluororubber

Optional (for metal piping):

GF: Fluororesin with alkali-resistant carbons

Installed Pipe:

Standard:

None (supplied by customer)

Optional (for wafer type, with bolts, nuts, and gaskets):

BSC: Chloroprene rubber (CR)

BSF: PTFE-sheathed non-asbestos joint sheet

Adapters for Hygienic:

Process Connection (Clamp):

HJA: Stainless steel F304

Optional W2 (Hygienic Connection Parts):

Clamp: Stainless steel SCS13 (*1)

Ferrule:

Size 15 mm (0.5 in.): Stainless steel 316L

Sizes 25 to 125 mm (1 to 5 in.): Stainless steel 304

HJB: Stainless steel F316L

Optional W2 (Hygienic Connection Parts):

Clamp: Stainless steel SCS13 (*1)

Ferrule: Stainless steel 316L

HAB, HDB, HKB: Stainless steel F316L

Process Connection (Union):

JJA: Stainless steel F304

Optional W2 (Hygienic Connection Parts):

Nut: Stainless steel 304

Sleeve: Stainless steel 304

JJB: Stainless steel F316L

Optional W2 (Hygienic Connection Parts):

Nut: Stainless steel 304

Sleeve: Stainless steel F316L

JDB, JKB, JSB: Stainless steel F316L

Process Connection (Butt Weld Joint):

KJA: Stainless steel F304

KJB, KDB, KKB: Stainless steel F316L

*1: JIS standard casting material

Union Joint for Ceramics Tube:

Screw Union Joint:

GUN, GUR: Stainless steel F316L

Welding Union Joint:

GUW: Stainless steel F316L

Note: Contact YOKOGAWA office if plastic union joint is required.

Non-wetted Part Material:

Sensor Terminal Box:

Low copper aluminum alloy EN AC-43400

Transmitter Housing:

Low copper aluminum alloy EN AC-43400

Sensor Housing:

Size	Material
2.5 to 15 mm (0.1 to 0.5 in.)	Stainless steel SCS11 (*1)
25 to 125 mm (1 to 5 in.)	Stainless steel 304
150 to 500 mm (6 to 20 in.)	Carbon steel SPCC (*2) or its equivalent

*1: JIS standard casting material

*2: JIS standard or JIS standard-based material

Mini-flange (subject to pressure in wafer type):

PFA Lining

Size	Material
150 to 200 mm (6 to 8 in.)	Carbon steel A105 (*3)

Note: In the wafer type other than the above, there is no mini flange because the measuring pipe and the connecting part have a one-piece casting structure.

Flange:

Process Connection Code	Material
B##	Stainless steel F304
D##	
E##	
P##	Stainless steel F316
C##	Carbon steel A105 (*3)

*3: ASTM standard forged material

Measuring Pipe:**PFA Lining**

(excluding Hygienic, Hygienic Explosion Protection, or ASME Class 600 flange high pressure type)

Size	Material
2.5 to 15 mm (0.1 to 0.5 in.)	Stainless steel SCS13 (*4)
25 to 125 mm (1 to 5 in.)	Stainless steel CF8 (*5)
150 to 500 mm (6 to 20 in.)	Stainless steel 304

PFA Lining

(ASME Class 600 flange high pressure type)

Size	Material
25 to 100 mm (1 to 4 in.)	Stainless steel 304

PFA Lining

(for Hygienic, or Hygienic Explosion Protection)

Size	Material
15 to 25 mm (0.5 to 1 in.)	Stainless steel SCS13 (*4)
32 to 125 mm (1.25 to 5 in.)	Stainless steel CF8 (*5)

*4: JIS standard casting material

*5: ASME standard casting material

Note: Read "Lining Material" for ceramics tube, which is a wetted part material.

Coating:**General-purpose, and Explosion Protection (Integral Flowmeter, Remote Sensor and Transmitter):****Standard Coating:**

Coated Part	Coating Specification
Sensor housing	Polyurethane resin solvent coating, or no coating (*1)
Sensor flanges (for flange type)	
Sensor terminal box (for remote type, incl. cover)	Urethane curing type polyester resin powder coating
Transmitter housing (incl. cover)	

Rugged Coating (*2):

Coated Part	Coating Specification
Sensor housing	Epoxy and polyurethane resin solvent coating, or no coating (*1)
Sensor flanges (for flange type)	
Sensor terminal box (for remote type, incl. cover)	Epoxy and polyurethane resin solvent coating
Transmitter housing (incl. cover)	

Submersible (Remote Sensor):**Standard Coating:**

Coated Part	Coating Specification
Sensor housing	Non-tar epoxy resin solvent coating
Sensor flanges	
Sensor terminal box (incl. cover)	

Hygienic, and Hygienic with Explosion Protection (Integral Flowmeter, and Remote Sensor):**Standard Coating:**

Coated Part	Coating Specification
Sensor housing	No coating
Adapter for piping	
Sensor terminal box (for remote type, incl. cover)	Urethane curing type polyester resin powder coating
Transmitter housing (incl. cover)	

*1: No coating for General-purpose and Explosion Protection with stainless steel flanges in sizes 2.5 to 125 mm (0.1 to 5 in.). Coating is done to sizes 150 mm (6 in.) and more, or to carbon steel flanges.

*2: Rugged coating is for applications which need salt tolerance resistance, alkali resistance, acid resistance, and/or weather resistance. Epoxy resin undercoating twice and polyurethane resin overcoating once are performed to the same area as standard coating.

Coating Color:

General-purpose, Explosion Protection, Hygienic, and Hygienic Explosion Protection:

Mint green (Munsell 5.6BG3.3/2.9 equivalent)

Submersible:

Black

Cable Entry:

JIS G1/2 female

ASME 1/2 NPT female

ISO M20 x 1.5 female

Cable Entry Direction:

For Integral Flowmeter and Remote Sensor, the cable entry direction can be specified from +90, +180, or -90 degree rotation when optional code RH is ordering, and also can be changed by customer after delivery. However, it can not be changed after delivery when Submersible, or district heating and cooling / condensation-proof use (optional code DHC) is selected.

Wiring Terminal:

Intra-system Connection Part (*1):

M4 Screw type

Extra-system Connection Part (*2):

M4 Screw or Clamp type

*1: Connections between Remote Sensor and Remote Transmitter for flow signal and excitation current.

*2: Connections at Integral Flowmeter and Remote Transmitter for input/output signals and power supply.

Mounting:

Remote Transmitter: 2-inch pipe mounting

Grounding:

Grounding Resistance: 10 Ω or less

Note: When the built-in lightning protector as standard is not required, grounding resistance 100 Ω or less can be applied.

For grounding of explosion protection, appropriate construction is required according to the regulations of each country.

■ FUNCTIONS

Note: For AXFA11G remote transmitter, read general specifications (GS 01E20C01-01E).

Display and Setting:

Parameter setting is possible through LCD with three infrared switches without opening the cover of the display.

Note: Parameter setting by setting tool such as HHT (handheld terminal) and FieldMate (device adjustment / management software) is also possible.

Display:

Full dot matrix LCD, 64 × 128 dots, with backlight, dot reversal display available

Display Language (*):

Display Code 1:

English, French, German, Italian, Spanish, Portuguese, Russian and Japanese. The display languages are selectable and can be changed by customer.

Display Code 2:

English and Chinese. The display languages are selectable and can be changed by customer.

*: The setting is English when shipped from factory.

Display Screen Configuration:

Display Screen Item:

Status display (icon), Time (necessary to set the time at power-on), Data display (max. four lines), Infrared switch operation status

Flow Rate Screen:

Measured Data Screen or Online Trend Screen is available. Update period selectable from 0.2, 0.4, 1, 2, 4, and 8 seconds.

Measured Data Screen:

Display up to 4 data points simultaneously with numbers, bar graphs, icons, or character strings. Specify up to 8 points of data and change display data with infrared switches or automatic scroll function (scroll period 2, 4, or 8 seconds).

Selectable Data in Measured Data Screen:

Flow rate (%), Flow velocity, Volume flow rate, Mass flow rate, Calorie, Totalizer 1, Totalizer 2, Totalizer 3, Adhesion level, Current output 1, Current output 2, Flow noise level, Tag number, Communication protocol

Note: Calorie is available for Input / Output signal types H, J, and K, and Current output 2 for types B, C, and H.

Online Trend Screen:

Display one data as trend graph. The display data can be changed with infrared switches or automatic scroll function (scroll period 2, 4, or 8 seconds) selecting up to four data.

Selectable Data in Online Trend Screen:

Flow rate (%), Flow velocity, Volume flow rate, Mass flow rate, Calorie, Totalizer 1, Totalizer 2, Totalizer 3, Current output 1, Current output 2

Note: Calorie is available for Input / Output signal types H, J, and K, and Current output 2 for types B, C, and H.

Alarm Screen:

When an alarm occurs, the flow rate screen and the alarm screen are alternately displayed in the cycle (2, 4, or 8 seconds) linked with the flow rate screen update cycle. Select simple screen (single line display) or detail screen (with alarm countermeasure display).

NAMUR NE 107 Alarm Display Function:

Based on NAMUR NE 107, alarms are classified and displayed as follows. It can also be set to hide.

F: Failure

C: Function Check

S: Out of Specification

M: Maintenance Required

Offline Trend Screen (when microSD card (optional code MC) is selected):

Data stored by the data logging function can be displayed on the trend screen. The selectable data is the same as that for the Online Trend Screen.

Display Backlight Flashing (Squawk) Function:

Display backlight can be set to flash once or continuously at 4-second cycle to identify the device.

Display Operation Authority:

Display operation authority level against the parameters can be controlled by selecting from operator, maintenance, or specialist by passcode.

Operator:

Only parameters related to display setting can be set.

Maintenance:

Only parameters related to display setting and zero adjustment can be set.

Specialist:

All parameters can be set.

Communication Function:

BRAIN Communication:

Communication Signal:

Superimposed on the Current Output 1

Communication Line Condition:

Load Resistance:

250 to 450 Ω (including cable resistance)

Load Capacitance: 0.22 μ F or less

Load Inductance: 3.3 mH or less

Input Impedance of Communicating Device:
10 k Ω or more (at 2.4 kHz)

Communication Distance:

Up to 1.5 km (0.93 miles), when polyethylene insulated PVC-sheathed cables (CEV cables) are used. Communication distance varies depending on the type of cable and wiring used.

Distance from Power Line:

15 cm (6 in.) or more. (Parallel wiring should be avoided)

HART Communication:

Protocol Version: HART 7

Communication Signal:

Superimposed on the Current Output 1

Communication Line Condition:

Load Resistance:

230 to 600 Ω (including cable resistance)

Modbus Communication:

Communication protocol:
 2-wire half duplex RS-485 Modbus
 Flow control: None
 Baud rate [bps]: 1200, 2400, 4800, 9600, 19200*,
 38400, 57600, 115200
 Start bit: 1 bit (Fixed)
 Stop bit: 1 bit*, 2 bits
 Parity bit: Odd, Even*, None
 Transfer mode:
 RTU (Remote Terminal Unit)
 ASCII
 Data length: 8 bits
 LSB (Least Significant Bit sent first)
 Slave address: 1* to 247
 Support function: See IM 01E21A02-05EN
 (Modbus communication type).
 Bus termination:
 Standard RS-485 bus termination
 ON (bus end), OFF* (not bus end)
 *: Factory default setting

Modbus cable

3-Wire cable (twisted pair (D0, D1) and Common) with shield should be used. Wire gauge should be AWG24 or wider. The characteristic impedance of the cable higher than 100ohm may be preferred.

Line Termination

Modbus cable requires Line Termination at each of the two ends of the bus to minimize the reflections. For details, please refer to "Modbus over serial line specification and implementation guide V1.02".

Input/Output Function:**Input/Output Signal:**

Input/Output up to four points can be selected from type A to K, 0, 2, 4, 6 in the table.

Input/Output (HART communication, BRAIN communication)

Type	Input/Output Signal				Communication and I/O Code	
	I/O1 Terminal	I/O2 Terminal	I/O3 Terminal	I/O4 Terminal	BRAIN	HART 7
Type A	Current Output 1 (Active)	Pulse/Status Output 1 (Passive)	None	None	DA	JA
Type B			Pulse/Status Output 2 (Passive)	Current Output 2 (Active)	DB	JB
Type C			Status Input (No-voltage)	Current Output 2 (Active)	DC	JC
Type D			Status Output (Passive)	Pulse/Status Output 2 (Passive)	DD	JD
Type E			Status Input (No-voltage)	Pulse/Status Output 2 (Passive)	DE	JE
Type F			Status Input (No-voltage)	Pulse/Status Output 2 (Active, with internal resistor)	DF	JF
Type G			Status Input (No-voltage)	Pulse/Status Output 2 (Active, without internal resistor)	DG	JG
Type H			Current Output 2 (Passive)	Current Input (Active)	DH	JH
Type J			Pulse/Status Output 2 (Passive)	Current Input (Active)	DJ	JJ
Type K			Status Input (No-voltage)	Current Input (Active)	DK	JK

Note: "Active" means no external power supply, "Passive" means external power supply is required.

Input/Output (Modbus communication)

Type	Input/Output Signal						Communication and I/O Code
	I/O1 Terminal	I/O2 Terminal	I/O3 Terminal		I/O4 Terminal		
			I/O3+	I/O3-	I/O4+	I/O4-	
Type 0	None	Pulse/Status Output (Passive)	—	Modbus C(Common)	Modbus B(D1)	Modbus A(D0)	M0
Type 2	Current Input (Active)						M2
Type 6	Current Output 2 (Active)						M6

Note: "Active" means no external power supply, "Passive" means external power supply is required.

Input Signal

- **Current Input (Active) (Type H, J, K, 2)**
4 to 20 mA DC temperature signal from two-wire type transmitter.
Internal Power Supply: 24 V DC $\pm 20\%$,
Current Range: 2.4 to 21.6 mA
- **Status Input (Dry contact) (Type C, E, F, G, K)**
Load Resistance:
200 Ω or less (ON), 100 k Ω or more (OFF)

Output Signal

- **Current Output (Active) (Type A to K, 6)**
4 to 20 mA DC signal
Load Resistance:
750 Ω maximum, including cable resistance
- **Current Output (Passive) (Type H)**
4 to 20 mA DC signal
External Power Supply: 10.5 to 32 V DC
Load Resistance:
911 Ω maximum, including cable resistance
- **Pulse/Status Output (Passive) (Type A to K, 0, 2, 6)**
Transistor contact output (open collector)
Contact Capacity: 30 V DC (OFF), 200 mA (ON)
Pulse Rate:
0.0001 to 10000 pps (pulse per second)
Pulse Width:
0.05, 0.1, 0.5, 1, 20, 33, 50, 100, 200, 330, 500, 1000, or 2000 ms configurable
Frequency Output Range: 1 to 12500 Hz
- **Pulse/Status Output (Active)**
Without Internal Resistor (Type G)
 - Driving Electronic Counter
Load Resistance: 1 k Ω or more,
Internal Power Supply: 24 V DC $\pm 20\%$
Pulse Rate:
0.0001 to 10000 pps (pulse per second)
Pulse Width:
0.05, 0.1, 0.5, 1, 20, 33, 50, 100, 200, 330, 500, 1000, or 2000 ms configurable
Frequency Output Range: 1 to 12500 Hz
 - Driving Electromechanical Counter
Maximum Current: 150 mA,
Internal Power Supply: 24 VDC $\pm 20\%$
Pulse Rate: 0.0001 to 2 pps (pulse per second)
Pulse Width: 20, 33, 50, or 100 ms configurable
- With Internal Resistor (Type F)**
Internal resistor: 2.2 k Ω ,
Internal Power Supply: 24 VDC $\pm 20\%$
Pulse Rate:
0.0001 to 10000 pps (pulse per second)
Pulse Width:
0.05, 0.1, 0.5, 1, 20, 33, 50, 100, 200, 330, 500, 1000, or 2000 ms configurable
- **Digital communication (RS485 Modbus protocol) (Type 0, 2, 6)**
2-wire half duplex RS-485 Modbus

Temperature Input Processing Function:

Input current signal as temperature difference or absolute temperature. It can be used for temperature check by parameter, mass flow calculation by density correction, and calorie calculation.

Flow Calculation Function:Excitation Method:

- Dual Frequency Excitation for sizes 2.5 to 400 mm (0.1 to 16 in.)
- Pulsed DC Excitation for size 500 mm (20 in.)

Span Setting:

Span flow can be set in units such as volume flow rate, mass flow rate, time, and flow rate value. The velocity unit can also be set.

Volume Flow Rate Unit:

kcf, cf, mcf, Mgal (US), kgal (US), gal (US), mgal (US), kbbbl (US)*, bbl (US)*, mbbbl (US)*, μ bbl (US)*, MI (megaliter), m³, kl (kiloliter), l (liter), cm³
*: "US Oil" or "US Beer" can be selected.

Mass Flow Rate Unit:

klb (US), lb (US), t (ton), kg, g

Calorie Unit:

MJ, kJ, J, kcal, cal, BTU (Specific heat setting and temperature input required)

Velocity Unit: ft, m (meter)Time Unit: s (sec), min, h (hour), d (day)Mass Flow Rate Processing:

The mass flow rate V_m is obtained in the following expression.

$$V_m = V_f \times \rho$$

V_m : Mass flow rate [kg/s]

V_f : Volume flow rate [m³/s]

ρ : Density [kg/m³]

Calorie Processing:

The calorie Q is obtained in the following expression.

$$Q = c \times V_m \times \Delta T$$

Q: Calorie [J/s]

C: Specific heat [J/kg·K]

V_m : Mass flow rate [kg/s]

ΔT : Temperature difference [K]

Damping Function (63% response):

Can be set for each measurement value of flow velocity, volume flow rate, mass flow rate, calorie, flow noise.

Output Damping:

For each measured value, the time constant for instantaneous value output and the time constant for totalization / pulse output can be individually set. Time constant 0.1 to 200.0 seconds (shipped with 3.0 seconds). In the case of piston pump etc., it is possible to measure pulsatile flow up to 1 Hz with output damping 0.1 sec. However, note that decreasing damping time generally increases output fluctuation.

Display Damping:

A common time constant can be set for each screen display value of each measurement value. Time constant 0.0 to 200.0 seconds (shipped with 0.0 seconds).

Current Output:

Current signal (4 to 20 mA DC) proportional to instantaneous flow rate is outputted.

Pulse Output:

The totalized value of the flow rate is converted into the number of pulses converted by the pulse rate, and is outputted.

Frequency Output:

Frequency signal (Duty 50%) proportional to the instantaneous value of the flow rate is outputted. Output terminal is shared with pulse output.

Totalization Function:

Three independent totalizers can be allocated independently, including the start and stop of integration, for each measured value of volume flow rate, mass flow rate, and calorie.

Totalization Type:

Forward / reverse difference flow totalization, Absolute value totalization, Forward direction totalization, Reverse direction totalization

Totalization Display:

Select from actual flow rate display or count value display scaled by counter conversion rate.

Low-cut Function:

Cut below the set actual flow rate value for each flow rate of current output, pulse output, and frequency output (*). It is independent for current output, common for pulse output and frequency output. Low-cut function is not applied for display of process value on display.

*: When "Forward and Reverse Flow Measurement" or "Absolute Range" is used, cut below the set actual flow rate value against the absolute value of the measured value.

Output Processing Function:**Multi-range:**

Flow range can be switched to two ranges by status input or automatic switching. By status output, it is possible to identify in what range the measurement is being measured, and the status is also displayed on the display.

Forward and Reverse Flow Measurement:

Flow rate measurement in both forward and reverse directions is possible. By status output, it is possible to identify in which direction the measurement is being performed, and the status is also displayed on the display.

Absolute Range:

With 12 mA as flow rate zero, measurements in the forward (12 to 20 mA) and reverse (4 to 12 mA) directions are possible in a single range.

Totalization Switch:

Status signal is outputted when the totalized value becomes equal to or larger than the set value.

Preset Totalization:

By parameter setting or status input, the totalized value is preset to zero or a set value.

0% Signal Lock:

With status input, the current output is forcibly fixed to 0%. Output processing for instantaneous flow rate display, pulse output, and flow rate totalization continues.

Alarm Function:**Alarm Configuration:**

Alarms are classified into system alarm (device failure), process alarm, setting alarm, and warning. Alarm output availability can be selected for each item.

Current Output at Alarm Occurrence:

The current output at alarm occurrence is arbitrarily selected from 2.4 mA or less, 3.8 mA fixed, 4 mA fixed, 20.5 mA fixed, 21.6 mA or more, measured value, or HOLD.

Alarm Countermeasure Indication:

A specific countermeasure method can be displayed on the display when an alarm occurs.

Alarm Type:**System Alarm:**

CPU failure, A/D converter failure, Sensor coil circuit break (open), Sensor coil short circuit

Process Alarm:

Input signal error (signal overflow), Sensor empty pipe, Electrode adhesion (of insulator)

Setting Alarm:

Detect inconsistency in parameter setting

Warning:

Warning in a state where measurement can be continued

Alarm History: Keep history of up to four alarms.

Verification Function:

Function to diagnose the soundness of the device itself. Diagnose the magnetic circuit, excitation circuit, arithmetic processing circuit, etc. offline (i.e. flow measurement function stopped) and display the result without demounting the device from piping.

Data Management Function:**Store / Restore Function of Parameters:**

Main parameters can be stored and restored using nonvolatile memory of display unit or optional microSD card. The restore can also be used for copying parameters to another device (except for parameters under unmatched specification for the devices).

Data Logging Function (when microSD card (optional code MC) is selected):

It is possible to log up to four process data at the same time. In addition to displaying the logged results on the trend screen, it is also possible to connect the microSD card to a PC and retrieve the data.

Logging Cycle:

1 second, 10 seconds, 30 seconds, 1 minute, 5 minutes, 30 minutes, 1 hour

Logging Time:

10 minutes, 30 minutes, 1 hour, 3 hours, 12 hours, 24 hours, 72 hours, 240 hours

Logging Data:

Flow velocity, Volume flow rate, Mass flow rate, Calorie, Flow noise, Adhesion resistance, Electrode potential (A, B), Flow signal peak value

Data Security During Power Failure:

Protection of data, such as parameters and integrated values, by nonvolatile memory at power failure.

Factory Default Parameter Restore:

It is possible to restore the parameters to the values that were set at the time of factory shipment.

Lightning Protection:

Built-in lightning protector for excitation(*), signal common(*), input / output terminals, and power supply terminal.

Test Standard: IEC61000-4-5

Test Method:

Series mode 1 kV / Common mode 2 kV
Surge waveform 8/20 μ s

*: Integral Flowmeter is excluded.

■ CONFORMITY STANDARDS

Safety Requirements:

Note: The size 500 mm (20 in.) is not applicable.

EN61010-1
EN61010-2-030
CAN/CSA-C22.2 No.61010-1-12
CAN/CSA-C22.2 No.61010-2-30-12
CAN/CSA-C22.2 No.94.2-07
UL 61010-1 (3rd Edition)
UL 61010-2-030 (1st Edition)
UL 50E
IEC 60529
Altitude at Installation Site:
Max. 2000 m above sea level
Installation Category (Overvoltage category): II
Micro Pollution Degree: 2
Macro Pollution Degree: 4
Protection Degree: IP66/67, Type 4X (CSA)

EMC:

EN61326-1 Class A, Table 2
EN61326-2-3
EN61000-3-2 Class A
EN61000-3-3

CE marking (optional code EC):

CE marking is attached to non-Explosion protected type and ATEX Explosion protected type.
The product which is attaching CE marking is in conformity with the statutory requirements of the applicable EU Directives.

EU RoHS Directive:

EN 50581
Note: Only applicable when CE marking (optional code EC) is selected.

PED (Pressure Equipment Directive):

Note: Applicable only when CE marking (optional code EC) is selected.

- **Technical Data**

Module: H

Type of Equipment: Piping

Type of Fluid: Liquid and Gas

Group of Fluid*4: 1 and 2

- **General-purpose, Submersible, and Explosion Protection**

MODEL	PROCESS CONNECTION	DN*1 (mm)	PS*1 (MPa)	PS•DN (MPa•mm)	CATEGORY*2, *4
AXG002	Wafer, Flange	2.5	4	10	Sound Engineering Practice (SEP)*3
AXG005	Wafer, Flange	5	4	20	Sound Engineering Practice (SEP)*3
AXG010	Wafer, Flange	10	4	40	Sound Engineering Practice (SEP)*3
AXG015	Wafer, Flange	15	4	60	Sound Engineering Practice (SEP)*3
AXG025	Wafer, Flange	25	4	100	Sound Engineering Practice (SEP)*3
AXG032	Wafer, Flange	32	4	128	II
AXG040	Wafer, Flange	40	4	160	II
AXG050	Wafer, Flange	50	4	200	II
AXG065	Wafer, Flange	65	4	260	II
AXG080	Wafer, Flange	80	4	320	II
AXG100	Wafer, Flange	100	4	400	III
AXG125	Wafer	125	2	250	II
	Flange	125	4	500	III
AXG150	Wafer	150	2	300	II
	Flange	150	4	600	III
AXG200	Wafer	200	2	400	III
	Flange	200	4	800	III
AXG250	Flange	250	2	500	III
AXG300	Flange	300	2	600	III
AXG350	Flange	350	1.8	630	III
AXG400	Flange	400	1.6	640	III

- **Hygienic, and Hygienic Explosion Protection**

MODEL	DN*1 (mm)	PS*1 (MPa)	PS•DN (MPa•mm)	CATEGORY*2, *4
AXG015	15	1	15	Sound Engineering Practice (SEP)*3
AXG025	25	1	25	Sound Engineering Practice (SEP)*3
AXG032	32	1	32	I
AXG040	40	1	40	I
AXG050	50	1	50	I
AXG065	65	1	65	I
AXG080	80	1	80	I
AXG100	100	1	100	I
AXG125	125	1	125	II

*1: PS: Maximum allowable pressure for Pipe
DN: Nominal size

*2: For details, refer to "Table 6 covered by ANNEX II of Directive 2014/68/EU".

*3: Article 4, paragraph 3 of Directive 2014/68/EU

*4: Models classified in categories I or II shall not be used for unstable gases of Group 1.

■ HAZARDOUS AREA CLASSIFICATION

ATEX

Applicable Standard:
EN 60079-0, EN 60079-1, EN 60079-7,
EN 60079-11, EN 60079-31
Certificate: FM 17ATEX0031X

(Integral Flowmeter)

Type of Gas Atmosphere Protection:

Group: II
Category: 2G
Type of Protection:
Ex db eb ia IIC T6...T3 Gb
(Transmitter Wiring Terminal: M4 screw type)
Ex db eb ia IIC T6...T3 Gb
Terminal Compartment: Ex db or Ex eb
(Transmitter Wiring Terminal: Clamp type)

Type of Dust Atmosphere Protection

Group: II
Category: 2D
Type of Protection: Ex tb IIIC T75°C...T130°C Db

Enclosure: IP66/IP67 in accordance with EN 60529

Maximum Surface Temperature:

See Table(a) and Table(b).

Ambient Temperature:

See Table(a) and Table(b).

Process Temperature:

See Table(a) and Table(b).

Power Supply:

100 to 240 Va.c. (50/60 Hz) / 100 to 120 Vd.c.

24 Va.c. (50/60 Hz) / 24 Vd.c.

Um: 250 V

Current I/O: 4 to 20 mA, 32 Vd.c. max.

Digital I/O: 30 Vd.c. max., 200 mA max.

(Remote Sensor)

Type of Gas Atmosphere Protection

Group: II
Category: 2G
Type of Protection: Ex db eb ia IIC T6...T3 Gb

Type of Dust Atmosphere Protection

Group: II
Category: 2D
Type of Protection: Ex tb IIIC T75°C...T150°C Db

Enclosure: IP66/IP67 in accordance with EN 60529

Maximum Surface Temperature:

See Table(a) and Table(b).

Ambient Temperature:

See Table(a) and Table(b).

Process Temperature:

See Table(a) and Table(b).

Um: 250 V

(Remote Transmitter)

Type of Gas Atmosphere Protection

Group: II
Category: 2G
Type of Protection:
Ex db IIC T6 Gb
(Transmitter Wiring Terminal: M4 screw type)
Ex db IIC T6 Gb or Ex db eb IIC T6 Gb
(Transmitter Wiring Terminal: Clamp type)

Type of Dust Atmosphere Protection

Group: II
Category: 2D
Type of Protection: Ex tb IIIC T75°C Db

Enclosure: IP66/IP67 in accordance with EN 60529

Maximum Surface Temperature: T75°C

Ambient Temperature: -40°C to +60°C

Power Supply:

100 to 240 Va.c. (50/60 Hz) / 100 to 120 Vd.c.

24 Va.c. (50/60 Hz) / 24 Vd.c.

Current I/O: 4 to 20 mA, 32 Vd.c. max.

Digital I/O: 30 Vd.c. max., 200 mA max.

Table (a): Temperature Table (ATEX)

Model	Size	Process Connection	Lining	Temperature Table*	
				Integral Flowmeter	Remote Sensor
AXG002, AXG005, AXG010, AXG015	2.5 to 15 mm (0.1 to 0.5 in.)	Wafer, Flange	PFA Lining	Table A	Table C
AXG025, AXG032, AXG040, AXG050, AXG065, AXG080, AXG100, AXG125	25 to 125 mm (1 to 5 in.)	Wafer, Flange	PFA Lining	Table B	Table D
AXG150, AXG200, AXG250, AXG300, AXG350, AXG400	150 to 400 mm (6 to 16 in.)	Wafer, Flange	PFA Lining	Table A	Table C
AXG015, AXG025, AXG032, AXG040, AXG050, AXG065, AXG080, AXG100, AXG125	15 to 125 mm (0.5 to 5 in.)	Clamp, Union, Butt Weld Joint	PFA Lining	Table E	Table F
AXG002, AXG005, AXG010, AXG015, AXG025, AXG040, AXG050, AXG080, AXG100, AXG150, AXG200	2.5 to 200 mm (0.1 to 8 in.)	Wafer	Ceramics Tube	Table G	Table H

*: For details, see Table No. on Table (b).

Table (b): Ambient Temperature and Process Temperature (ATEX)

Table No.	Ambient Temperature	Temperature Class	Maximum Surface Temperature	Process Temperature
A	-40°C to +60°C	T6	T75°C	-40°C to +75°C
		T5	T90°C	-40°C to +90°C
		T4	T120°C	-40°C to +120°C
		T3	T130°C	-40°C to +130°C
B	-40°C to +45°C	T6	T75°C	-40°C to +50°C
	-40°C to +60°C	T5	T90°C	-40°C to +75°C
		T4	T120°C	-40°C to +120°C
		T3	T130°C	-40°C to +130°C
C	-40°C to +60°C	T6	T75°C	-40°C to +75°C
		T5	T90°C	-40°C to +90°C
		T4	T120°C	-40°C to +120°C
		T3	T150°C	-40°C to +150°C
D	-40°C to +45°C	T6	T75°C	-40°C to +50°C
	-40°C to +60°C	T5	T90°C	-40°C to +75°C
		T4	T120°C	-40°C to +120°C
		T3	T150°C	-40°C to +150°C
E	-10°C to +45°C	T6	T75°C	-10°C to +50°C
	-10°C to +60°C	T5	T90°C	-10°C to +75°C
		T4	T120°C	-10°C to +120°C
		T3	T130°C	-10°C to +130°C
F	-10°C to +45°C	T6	T75°C	-10°C to +50°C
	-10°C to +60°C	T5	T90°C	-10°C to +75°C
		T4	T120°C	-10°C to +120°C
		T3	T150°C	-10°C to +150°C
G	-10°C to +60°C	T6	T75°C	-10°C to +75°C
		T5	T90°C	-10°C to +90°C
		T4	T120°C	-10°C to +120°C
		T3	T130°C	-10°C to +130°C
H	-10°C to +60°C	T6	T75°C	-10°C to +75°C
		T5	T90°C	-10°C to +90°C
		T4	T120°C	-10°C to +120°C
		T3	T150°C	-10°C to +150°C

IECEX

Applicable Standard:
IEC 60079-0, IEC 60079-1,
IEC 60079-7, IEC 60079-11, IEC 60079-31
Certificate:
IECEX FMG 17.0014X

(Integral Flowmeter)**Type of Gas Atmosphere Protection**

Ex db eb ia IIC T6...T3 Gb
(Transmitter Wiring Terminal: M4 screw type)
Ex db eb ia IIC T6...T3 Gb
Terminal Compartment: Ex db or Ex eb
(Transmitter Wiring Terminal: Clamp type)

Type of Dust Atmosphere Protection

Ex tb IIIC T75°C...T130°C Db

Enclosure: IP66/IP67 in accordance with IEC 60529
Maximum Surface Temperature:
See Table(c) and Table(d).
Ambient Temperature:
See Table(c) and Table(d).
Process Temperature:
See Table(c) and Table(d).
Power Supply:
100 to 240 Va.c. (50/60 Hz) / 100 to 120 Vd.c.
24 Va.c. (50/60 Hz) / 24 Vd.c.
Um: 250 V
Current I/O: 4 to 20 mA, 32 Vd.c. max.
Digital I/O: 30 Vd.c. max., 200 mA max.

(Remote Sensor)**Type of Gas Atmosphere Protection**

Ex db eb ia IIC T6...T3 Gb

Type of Dust Atmosphere Protection

Ex tb IIIC T75°C...T150°C Db

Enclosure: IP66/IP67 in accordance with IEC 60529
Maximum Surface Temperature:
See Table(c) and Table(d).
Ambient Temperature:
See Table(c) and Table(d).
Process Temperature:
See Table(c) and Table(d).
Um: 250 V

(Remote Transmitter)**Type of Gas Atmosphere Protection**

Ex db IIC T6 Gb
(Transmitter Wiring Terminal: M4 screw type)
Ex db IIC T6 Gb or Ex db eb IIC T6 Gb
(Transmitter Wiring Terminal: Clamp type)

Type of Dust Atmosphere Protection

Ex tb IIIC T75°C Db

Enclosure: IP66/IP67 in accordance with IEC 60529
Maximum Surface Temperature: T75°C
Ambient Temperature: -40°C to +60°C
Power Supply:
100 to 240 Va.c. (50/60 Hz) / 100 to 120 Vd.c.
24 Va.c. (50/60 Hz) / 24 Vd.c.
Current I/O: 4 to 20 mA, 32 Vd.c. max.
Digital I/O: 30 Vd.c. max., 200 mA max.

Table (c): Temperature Table (IECEX)

Model	Size	Process Connection	Lining	Temperature Table*1	
				Integral Flowmeter	Remote Sensor
AXG002, AXG005, AXG010, AXG015	2.5 to 15 mm (0.1 to 0.5 in.)	Wafer, Flange	PFA Lining	Table A	Table C
AXG025, AXG032, AXG040, AXG050, AXG065, AXG080, AXG100, AXG125	25 to 125 mm (1 to 5 in.)	Wafer, Flange	PFA Lining	Table B [Table I]*2	Table D [Table I]*2
AXG150, AXG200, AXG250, AXG300, AXG350, AXG400	150 to 400 mm (6 to 16 in.)	Wafer, Flange	PFA Lining	Table A	Table C
AXG015, AXG025, AXG032, AXG040, AXG050, AXG065, AXG080, AXG100, AXG125	15 to 125 mm (0.5 to 5 in.)	Clamp, Union, Butt Weld Joint	PFA Lining	Table E	Table F
AXG002, AXG005, AXG010, AXG015, AXG025, AXG040, AXG050, AXG080, AXG100, AXG150, AXG200	2.5 to 200 mm (0.1 to 8 in.)	Wafer	Ceramics Tube	Table G	Table H

*1: For details, see Table No. on Table (d).

*2: When process connection EA4 is specified, table specified inside [] is applied.
Process connection EA4 can be applicable for AXG025, AXG040, AXG050, AXG080 and AXG100.

Table (d): Ambient Temperature and Process Temperature (IECEX)

Table No.	Ambient Temperature	Temperature Class	Maximum Surface Temperature	Process Temperature
A	-40°C to +60°C	T6	T75°C	-40°C to +75°C
		T5	T90°C	-40°C to +90°C
		T4	T120°C	-40°C to +120°C
		T3	T130°C	-40°C to +130°C
B	-40°C to +45°C	T6	T75°C	-40°C to +50°C
	-40°C to +60°C	T5	T90°C	-40°C to +75°C
		T4	T120°C	-40°C to +120°C
		T3	T130°C	-40°C to +130°C
C	-40°C to +60°C	T6	T75°C	-40°C to +75°C
		T5	T90°C	-40°C to +90°C
		T4	T120°C	-40°C to +120°C
		T3	T150°C	-40°C to +150°C
D	-40°C to +45°C	T6	T75°C	-40°C to +50°C
	-40°C to +60°C	T5	T90°C	-40°C to +75°C
		T4	T120°C	-40°C to +120°C
		T3	T150°C	-40°C to +150°C
E	-10°C to +45°C	T6	T75°C	-10°C to +50°C
	-10°C to +60°C	T5	T90°C	-10°C to +75°C
		T4	T120°C	-10°C to +120°C
		T3	T130°C	-10°C to +130°C
F	-10°C to +45°C	T6	T75°C	-10°C to +50°C
	-10°C to +60°C	T5	T90°C	-10°C to +75°C
		T4	T120°C	-10°C to +120°C
		T3	T150°C	-10°C to +150°C
G	-10°C to +60°C	T6	T75°C	-10°C to +75°C
		T5	T90°C	-10°C to +90°C
		T4	T120°C	-10°C to +120°C
		T3	T130°C	-10°C to +130°C
H	-10°C to +60°C	T6	T75°C	-10°C to +75°C
		T5	T90°C	-10°C to +90°C
		T4	T120°C	-10°C to +120°C
		T3	T150°C	-10°C to +150°C
I	-10°C to +60°C	T6	T75°C	-10°C to +75°C
		T5	T90°C	-10°C to +90°C
		T4	T120°C	-10°C to +100°C
		T3	T150°C	-10°C to +100°C

Japan Flameproof**(Integral Flowmeter)**

Applicable Standard:

JNIOH-TR-46-1: 2015

JNIOH-TR-46-2: 2018

JNIOH-TR-46-5: 2018

JNIOH-TR-46-6: 2015

JNIOH-TR-46-9: 2018

Construction: Ex db eb ia IIC T4 Gb

Ex tb IIIC T120°C Db

Enclosure: IP66/IP67

Ambient Temperature:

-40°C to +60°C (PFA Lining)

-10°C to +60°C (Ceramics Tube)

Process Temperature:

-40°C to +120°C (PFA Lining)

-10°C to +120°C (Ceramics Tube)

Maximum Surface Temperature: +120°C

Power Supply:

100 to 240 Va.c. (50/60 Hz) / 100 to 120 Vd.c.

24 Va.c. (50/60 Hz) / 24 Vd.c.

Um=250 V

Current I/O: 4 to 20 mA, 32 Vd.c. max.

Digital I/O: 30 Vd.c. max., 200 mA max.

Excitation Circuit: 160 V max.

Power consumption: 13 W max.

(Remote Sensor)

Applicable Standard:

JNIOH-TR-46-1: 2015

JNIOH-TR-46-2: 2018

JNIOH-TR-46-5: 2018

JNIOH-TR-46-6: 2015

JNIOH-TR-46-9: 2018

Construction: Ex db eb ia IIC T4 Gb

Ex tb IIIC T120°C Db

Enclosure: IP66/IP67

Ambient Temperature:

-40°C to +60°C (PFA Lining)

-10°C to +60°C (Ceramics Tube)

Process Temperature:

-40°C to +120°C (PFA Lining)

-10°C to +120°C (Ceramics Tube)

Maximum Surface Temperature: +120°C

Um=250 V

Excitation Circuit: 160 V max, 13 W max.

(Remote Transmitter)

Applicable Standard:

JNIOH-TR-46-1: 2015

JNIOH-TR-46-2: 2018

JNIOH-TR-46-9: 2018

Construction: Ex db IIC T6 Gb

Ex tb IIIC T75°C Db

Enclosure: IP66/IP67

Ambient Temperature: -40°C to +60°C

Maximum Surface Temperature: +75°C

Power Supply:

100 to 240 Va.c. (50/60 Hz) / 100 to 120 Vd.c.

24 Va.c. (50/60 Hz) / 24 Vd.c.

Current I/O: 4 to 20 mA, 32 Vd.c. max.

Digital I/O: 30 Vd.c. max., 200 mA max.

Excitation Circuit: 160 V max.

Power consumption: 13 W max.

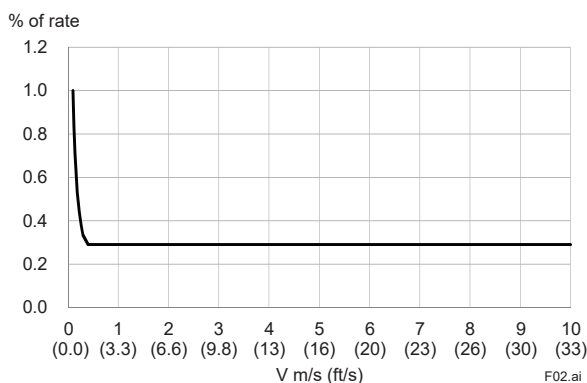
■ PERFORMANCE**Accuracy:**

- AXG Integral Flowmeter, or combination of AXG Remote Sensor and AXG4A Remote Transmitter

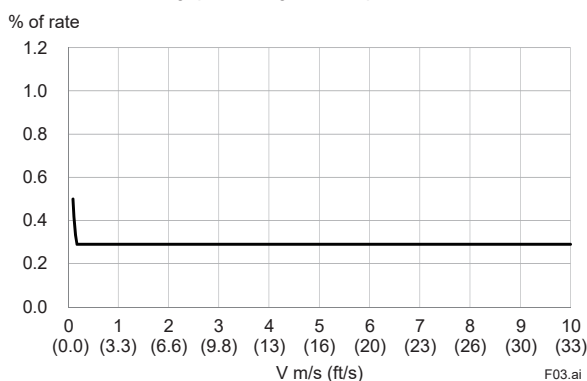
Size mm (in.)	Flow Velocity V m/s (ft/s)	Standard Accuracy (Accuracy Code B)
2.5 to 15 (0.1) (0.5)	$V < 0.3$ (1)	±1.0 mm/s
	$0.3 \leq V \leq 10$ (1) (33)	±0.3 % of rate
25 to 400 (1) (16)	$V < 0.15$ (0.5)	±0.5 mm/s
	$0.15 \leq V \leq 10$ (0.5) (33)	±0.3 % of rate

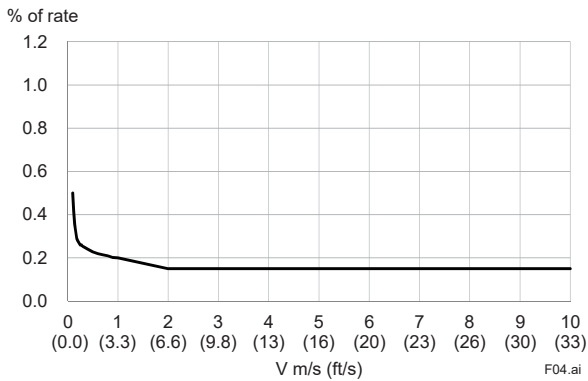
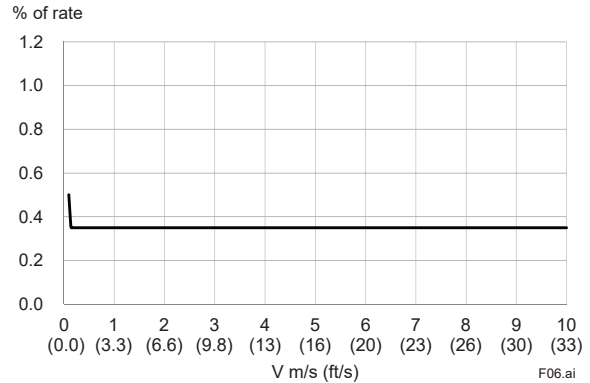
Size mm (in.)	Flow Velocity V m/s (ft/s)	High Grade Accuracy (Accuracy Code C)
25 to 200 (1) (8)	$V < 0.15$ (0.5)	±0.5 mm/s
	$0.15 \leq V < 1$ (0.5) (3.3)	±0.18% of rate ± 0.2 mm/s
	$1 \leq V \leq 10$ (3.3) (33)	±0.15% of rate

Sizes 2.5 to 15 mm (0.1 to 0.5 in.)
Standard Accuracy (Accuracy Code B)



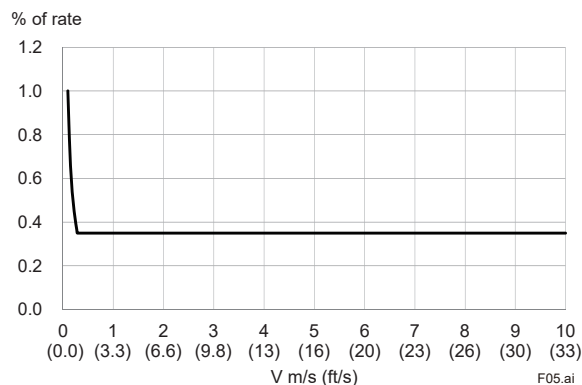
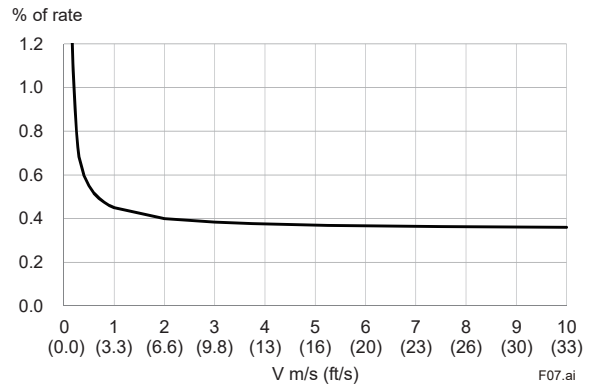
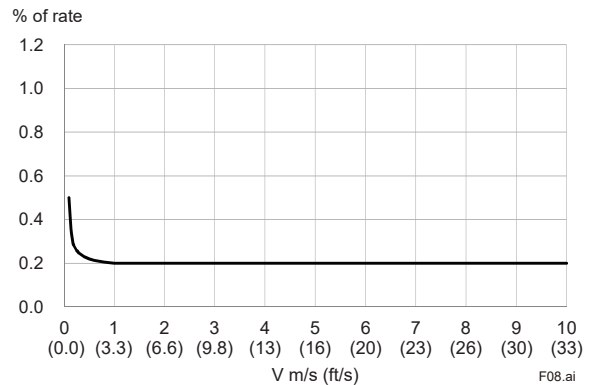
Sizes 25 to 400 mm (1 to 16 in.)
Standard Accuracy (Accuracy Code B)



**Sizes 25 to 200 mm (1 to 8 in.)
High Grade Accuracy (Accuracy Code C)**

**Sizes 25 to 400 mm (1 to 16 in.)
with AXFA11 Standard Accuracy (Accuracy Code B)**

• Combination of AXG Remote Sensor and AXFA11 Remote Transmitter

Size mm (in.)	Flow Velocity V m/s (ft/s)	Standard Accuracy (Accuracy Code B)
2.5 to 15 (0.1) (0.5)	$V < 0.3$ (1)	± 1.0 mm/s
	$0.3 \leq V \leq 10$ (1) (33)	± 0.35 % of rate
25 to 400 (1) (16)	$V < 0.15$ (0.5)	± 0.5 mm/s
	$0.15 \leq V \leq 10$ (0.5) (33)	± 0.35 % of rate
500 (20)	$V < 0.3$ (1)	± 2.0 mm/s
	$0.3 \leq V \leq 10$ (1) (33)	± 0.35 % of rate ± 1.0 mm/s

Size mm (in.)	Flow Velocity V m/s (ft/s)	High Grade Accuracy (Accuracy Code C)
25 to 200 (1) (8)	$V < 0.15$ (0.5)	± 0.5 mm/s
	$0.15 \leq V < 1$ (0.5) (3.3)	± 0.18 % of rate ± 0.2 mm/s
	$1 \leq V \leq 10$ (3.3) (33)	± 0.2 % of rate

**Sizes 2.5 to 15 mm (0.1 to 0.5 in.)
with AXFA11 Standard Accuracy (Accuracy Code B)**

**Size 500 mm (20 in.)
with AXFA11 Standard Accuracy (Accuracy Code B)**

**Sizes 25 to 200 mm (1 to 8 in.)
with AXFA11 High Grade Accuracy (Accuracy Code C)**


Note: The accuracy above is the result of calibration test at our water flow facility before shipment. It is defined by the integrated value of the pulse output. As for the current output accuracy, add $\pm 8 \mu A$ (± 0.05 % of span) to the accuracy above.

Calibration takes place at reference conditions as below.

Medium: Water

Density: 0.9 to 1.1 kg/l

Medium temperature: 10 to 35°C (50 to 95°F)

(Average temperature 22.5°C (72.5°F))

Ambient temperature: 10 to 35°C (50 to 95°F)

Process pressure (absolute):
0.1 to 0.2 MPa (15 to 29 psi)

Reference Standards:

JIS B 7554, ISO 4185, ISO 5168, ISO 20456,
BS EN 29104

Repeatability:

±0.1% of rate (Velocity 1 m/s (3.3 ft/s) or above)
 ±0.05% of rate ± 0.5 mm/s (Velocity below 1 m/s (3.3 ft/s))

Measurement Range:

Minimum Span Velocity: 0.1 m/s (0.33 ft/s)
 0.5 m/s (1.64 ft/s) when option E21 is applied
 Maximum Span Velocity: 10 m/s (33 ft/s)

Note: For details of span flow rate, read "Sizing Data", and "Ordering Information".

Power Consumption:

Integral Type: 13 W

Remote Type: 13 W (with AXG4A Remote Transmitter)
 20 W (with AXFA11 Remote Transmitter)

Note: The power consumption is the same as above regardless of the communication and I/O type.

Insulation Resistance:**Integral Flowmeter:**

Between power supply terminals and ground terminal:

100 MΩ/500 V DC

Between power supply terminals and input/output terminals:

100 MΩ/500 V DC

Between ground terminal and input/output terminals:

20 MΩ/100 V DC or 125 V DC

Between input/output terminals*:

20 MΩ/100 V DC or 125 V DC

*: Not applicable for I/O3 and I/O4+ of Modbus

Remote Sensor:

Between signal terminals*:

100 MΩ/500 V DC

Between signal terminals and common terminal*:

100 MΩ/500 V DC

*: Not applicable for Explosion protection type

Between excitation current terminal and signal / common terminals:

100 MΩ/500 V DC

Remote Transmitter:

Between power supply terminals and ground terminal:

100 MΩ/500 V DC

Between power supply terminals and input/output or excitation current terminals:

100 MΩ/500 V DC

Between ground terminal and input/output or excitation current terminals:

20 MΩ/100 V DC or 125 V DC

Between input/output* and excitation current terminals:

20 MΩ/100 V DC or 125 V DC

*: Not applicable for I/O3 and I/O4+ of Modbus

Withstand Voltage:**Integral Flowmeter:**

Between power supply terminals and ground terminal:

1400 V AC for 2 seconds

Between power supply terminals and input/output terminals:

1400 V AC for 2 seconds

Remote Sensor (Optional code WT1):

Between excitation current terminal and ground terminal:

1000 V AC for 1 minute

Remote Sensor (Optional code WT2):

Between excitation current terminal and ground terminal:

1500 V AC for 1 minute

Between signal terminals and excitation current terminal:

1500 V AC for 1 minute

Remote Sensor (Explosion protection type):

Between excitation current terminal and ground terminal:

1500 V AC for 1 minute, or 1800 V AC for 0.2 second

Between signal terminals and excitation current terminal:

1500 V AC for 1 minute, or 1800 V AC for 0.2 second

Remote Transmitter:

Between power supply terminals and ground terminal:

1400 V AC for 2 seconds

Between power supply terminals and input/output terminals:

1400 V AC for 2 seconds

Between excitation current terminal and ground terminal:

160 V AC for 2 seconds

Between excitation current terminal and input/output terminals:

350 V AC for 2 seconds

■ NORMAL OPERATING CONDITIONS**Ambient Temperature:**

−40 to 60°C (−40 to 140°F)

Note: Minimum value is limited according to minimum fluid temperature of sensor's specification. Read "Fluid Temperature and Pressure".

Display operating range is −20 to 60°C (−4 to 140°F).

Refer to the HAZARDOUS AREA CLASSIFICATION for Explosion protection type.

Ambient Humidity:

0 to 100%

Note: Lengthy continuous operation at 95% or more is not recommended.

Power Supply:**Power Supply Code 1:**

AC Type:

Rated Power Supply: 100 to 240 V AC, 50/60 Hz

Operating Voltage Range: 80 to 264 V AC

DC Type:

Rated Power Supply: 100 to 120 V DC

Operating Voltage Range: 90 to 130 V DC

Power Supply Code 2:

AC Type:

Rated Power Supply: 24 V AC, 50/60 Hz

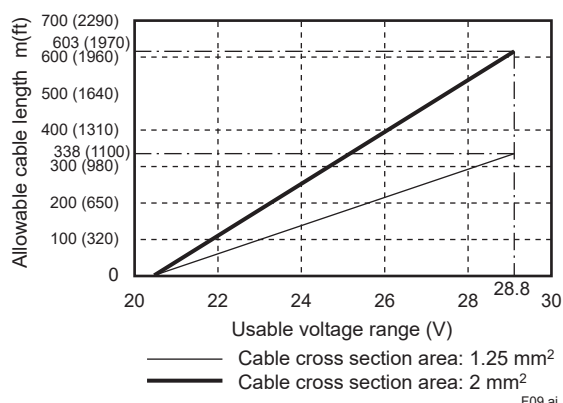
Operating Voltage Range: 20.4 to 28.8 V AC

DC Type:

Rated Power Supply: 24 V DC

Operating Voltage Range: 20.4 to 28.8 V DC

Supply Voltage and Power Supply Cable Length for Power Supply Code 2:



Fluid Conductivity:

Size 2.5 to 10 mm (0.1 to 0.4 in.): 5 μ S/cm or larger

Size 15 to 125 mm (0.5 to 5 in.): 1 μ S/cm or larger

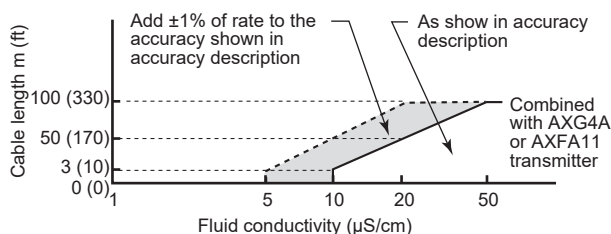
Size 150 to 400 mm (6 to 16 in.): 3 μ S/cm or larger

Size 500 mm (20 in.): 20 μ S/cm or larger

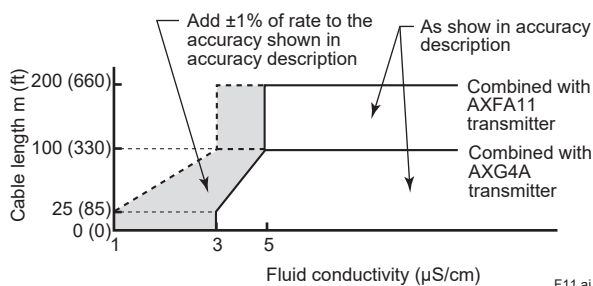
Note: For measuring low conductivity fluids, read "Cautions on Selection and Installation".

Signal Cable Length and Fluid Conductivity (Remote Sensor):

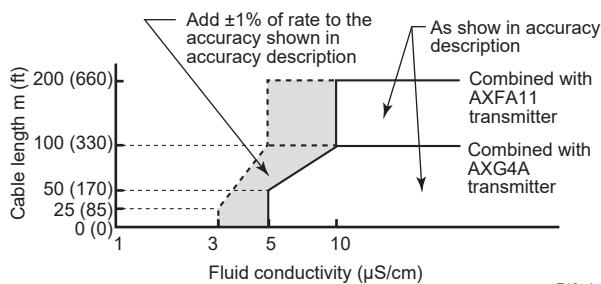
Sizes 2.5 to 10 mm (0.1 to 0.4 in.)



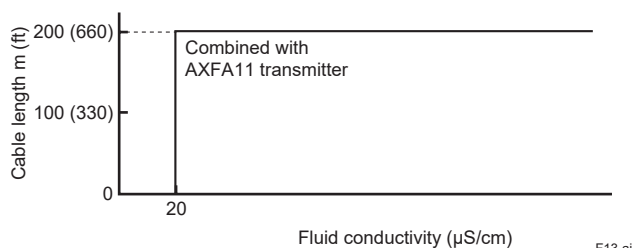
Sizes 15 to 125 mm (0.5 to 5 in.)



Sizes 150 to 400 mm (6 to 16 in.)



Size 500 mm (20 in.)

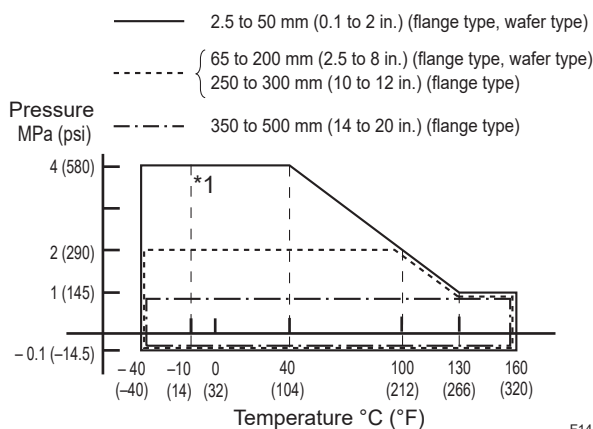


Fluid Temperature and Pressure:

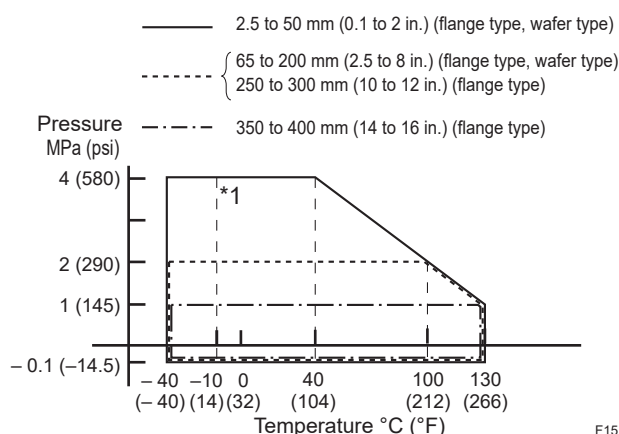
The following figure shows the usable temperature and pressure range of the sensor in each specification. It is also limited by the flange pressure rating of the process connection.

For fluid temperature of the Explosion Protection, read descriptions of "Explosion Protection".

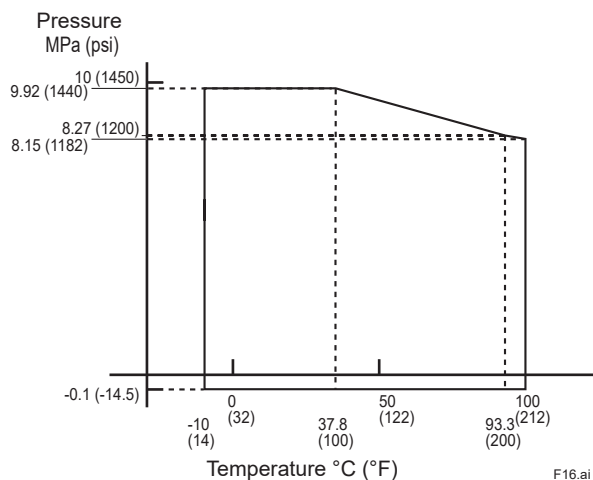
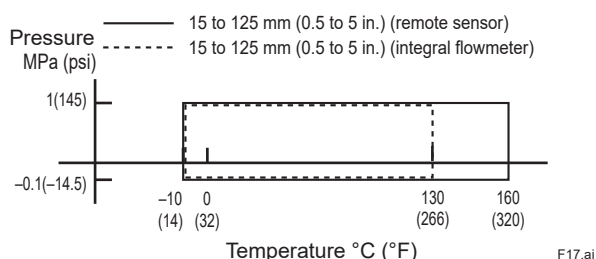
PFA Lining, Remote Sensor (excluding high pressure type (ASME Class 600 flange) and Hygienic)



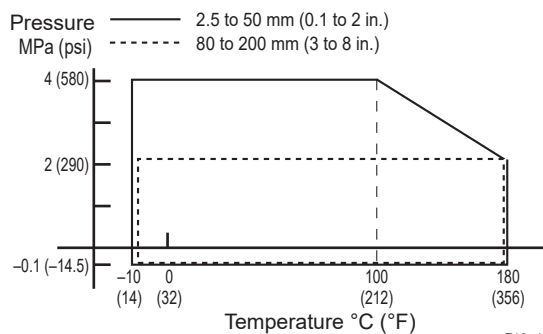
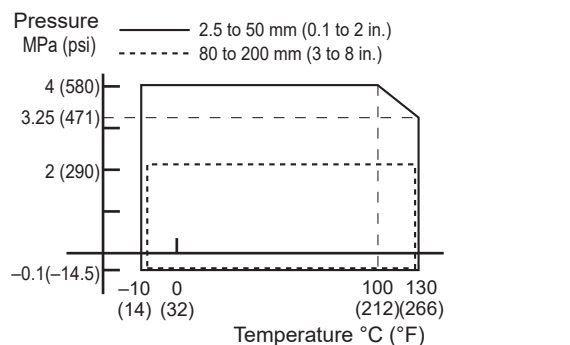
PFA Lining, Integral Flowmeter (excluding high pressure type (ASME Class 600 flange), and Hygienic)



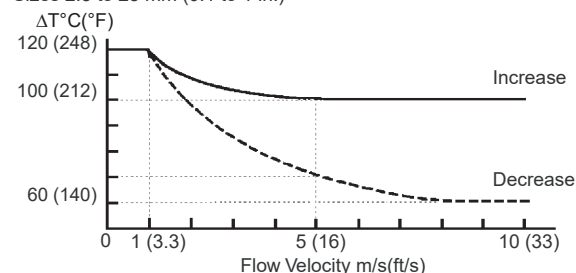
*1: For wafer types of 150 to 200 mm (6 to 8 in.) or carbon steel flange types (process connection code: C##) of 50 to 500 mm (2 to 20 in.), the minimum temperature is -10°C (14°F).

**PFA Lining, Remote Sensor and Integral Flowmeter
(high pressure type (ASME Class 600 flange))****PFA Lining, Remote Sensor and Integral Flowmeter
(Hygienic)**

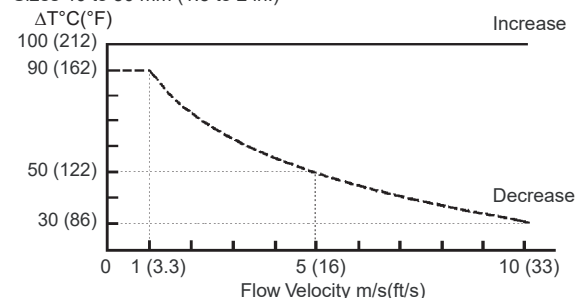
Note: For fluid temperature of 120°C (248°F) or more
(Maximum: 160°C (320°F)), select optional code GH.

Ceramics Tube, Remote Sensor**Ceramics Tube, Integral Flowmeter****Thermal Shock Temperature and Flow Velocity of
Ceramics Tube:**

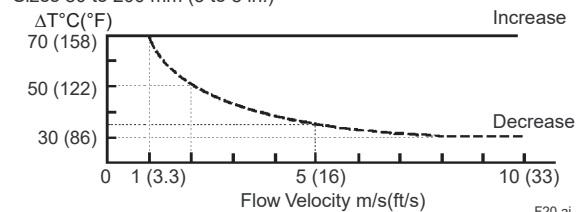
Sizes 2.5 to 25 mm (0.1 to 1 in.)



Sizes 40 to 50 mm (1.5 to 2 in.)



Sizes 80 to 200 mm (3 to 8 in.)



“Decrease” means that the temperature of a measured fluid drops rapidly, while “Increase” means that the temperature rises rapidly. The maximum allowable ranges in both cases are indicated by the curves shown in the diagrams, with the solid line indicating the maximum increase, and the broken line the maximum decrease.

ΔT : Change in temperature of measured fluid in one second

Flow velocity: Flow velocity of the measured fluid

**Allowable Conditions for Cleaning Lining
(Hygienic, and Hygienic Explosion Protection):**

Steam or hot water cleaning:

Max. temp. 150°C (302°F), time period 60 minutes or less

Vibration Conditions:

Integral Flowmeter:

19.6 m/s² - rms (5 to 2000 Hz)

Remote Sensor:

34.3 m/s² - rms (5 to 2000 Hz)

Remote Transmitter:

19.6 m/s² - rms (5 to 2000 Hz)

Note: Vibration conditions are based on IEC 60068-2-64.

Avoid installation in a place with much vibration (vibration frequency 2000 Hz or more). It may cause damage to the device.

■ CAUTIONS ON SELECTION AND INSTALLATION

Combined Transmitter:

In the following cases, combine with AXFA11G remote transmitter. If it is considered that the flow noise in the fluid could be large because of low conductivity, or high concentration slurry, etc. and the size is 250 mm (10 in.) or more, it is recommended to combine with AXFA11G remote transmitter.

- When mounting remote transmitter to wall or panel
- When cable length exceeds 100 m
- When using 5 or more input/output terminals

Lining:

PFA Lining:

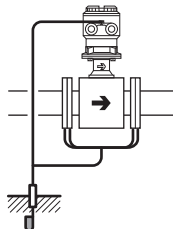
It is excellent in chemical resistance. We adopt the material approved by FDA (US Food and Drug Administration).

Ceramics Tube:

It is excellent in chemical resistance, heat resistance and abrasion resistance. Measuring pipe sintered with high purity alumina ceramics is a structure that also serves as a lining.

Grounding Device:

The grounding device can be selected as an optional specification. It is unnecessary to use it for metal piping which has no lining. In that case, connect the piping and the sensor flange part (mini-flange or one-piece casting structured measuring pipe for wafer type) with grounding wire supplied by customer (see the figure below). Be sure to select the grounding device when installed at plastic or lining piping.



F21.ai

There are thin type (thickness 1 to 2 mm) and thick type (thickness 3 to 4 mm, or 8.5 to 10.5 mm for high pressure type) for grounding rings. If the flange is ASME Class 300, EN PN 40 etc. for high fluid pressure and the tightening torque is high, the thick type is recommended.

Grounding ring (electrode type) and built-in grounding electrode can not be used for permeable fluid (e.g. nitric acid, hydrofluoric acid, high temperature sodium hydroxide etc.).

The built-in grounding electrode (for sizes 150 to 400 mm, 6 to 16 in.) has fewer seals against fluid than the grounding ring, so leakage possibility will be less if the installed piping is plastic or lining one.

Recommended Gasket (for installed piping flange):

Use compressed non-asbestos joint sheet gaskets, PTFE-sheathed non-asbestos joint sheet gaskets or gaskets which have equivalent elasticity. When selecting optional code GA, GC, or GD for plastic piping, use rubber gaskets or ones which have equivalent elasticity (such as PTFE-sheathed rubber gaskets).

Dimensions of the gasket should be determined with reference to the following table (by process connection and lining) and figure. If the inner diameter of the gasket is too large or the outer diameter is too small, liquid leakage may occur.

Unit: mm

Size	PFA Lining								Ceramics Tube				
	Wafer				Flange				Wafer				
	Inner Diameter for Effective Sealing [øA]	Outer Diameter for Effective Sealing [øB]	Recommended Inner Diameter of Gasket Flat Gasket [øC] PTFE-sheathed Gasket [øD]	Minimum Inner Diameter of Gasket*2	Inner Diameter for Effective Sealing [øA]	Outer Diameter for Effective Sealing [øB]	Recommended Inner Diameter of Gasket Flat Gasket [øC] PTFE-sheathed Gasket [øD]	Minimum Inner Diameter of Gasket*2	Inner Diameter for Effective Sealing [øA]	Outer Diameter for Effective Sealing [øB]	Recommended Inner Diameter of Gasket Flat Gasket [øC] PTFE-sheathed Gasket [øD]	Minimum Inner Diameter of Gasket*2	
2.5	15	38	17 22	15	15	30	17 [15]*1 22 [19]*1	15	—	—	—	—	—
5	15	38	17 22	15	15	30	17 [15]*1 22 [19]*1	15	—	—	—	—	—
10	15	38	17 22	15	15	30	17 [15]*1 22 [19]*1	15	—	—	—	—	—
15	18	38	22	15	22	34	22	15	15	33	22	15	15
25	32	54	35	28	35	54	35	29	27	50	35	27	27
32	37	58	43	34	40	64	43	34	—	—	—	—	—
40	45	71	49	41	48	72	49	41	40	68	49	40	40
50	58	84	61	53	61	89	61	53	52	82	61	52	52
65	69	103	84	66	72	108	84	66	—	—	—	—	—
80	81	114	90	81	85	119	90	81	81	112	90	81	81
100	106	140	115	102	110	146	115	102	98	134	115	98	98
125	131	165	141	128	136	173	141	128	—	—	—	—	—
150	164	190	167	147	164	209 [216]*1	167	150	144	188	167	144	144
200	218	240	218	199	218	259 [272]*1	218	201	192	240	218	192	192
250	—	—	—	—	270	320 [332]*1	270	250	—	—	—	—	—
300	—	—	—	—	321	367 [392]*1	321	301	—	—	—	—	—
350	—	—	—	—	350	412	359	330	—	—	—	—	—
400	—	—	—	—	401	475	410	381	—	—	—	—	—
500	—	—	—	—	581	581 <606>*1	513	465	—	—	—	—	—

Unit: inch

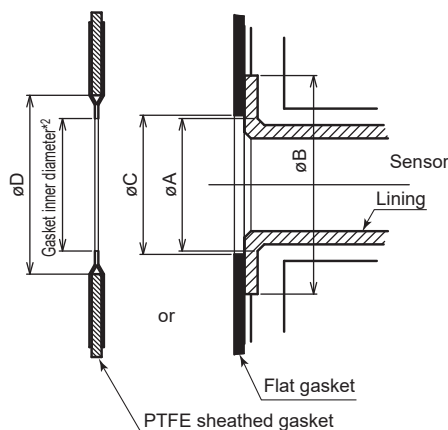
Size	PFA Lining								Ceramics Tube				
	Wafer				Flange				Wafer				
	Inner Diameter for Effective Sealing [øA]	Outer Diameter for Effective Sealing [øB]	Recommended Inner Diameter of Gasket Flat Gasket [øC] PTFE-sheathed Gasket [øD]	Minimum Inner Diameter of Gasket*2	Inner Diameter for Effective Sealing [øA]	Outer Diameter for Effective Sealing [øB]	Recommended Inner Diameter of Gasket Flat Gasket [øC] PTFE-sheathed Gasket [øD]	Minimum Inner Diameter of Gasket*2	Inner Diameter for Effective Sealing [øA]	Outer Diameter for Effective Sealing [øB]	Recommended Inner Diameter of Gasket Flat Gasket [øC] PTFE-sheathed Gasket [øD]	Minimum Inner Diameter of Gasket*2	
0.1	0.59	1.50	0.67 0.87	0.59	0.59	1.18	0.67 [0.59]*1 0.87 [0.75]*1	0.59	—	—	—	—	—
0.2	0.59	1.50	0.67 0.87	0.59	0.59	1.18	0.67 [0.59]*1 0.87 [0.75]*1	0.59	—	—	—	—	—
0.4	0.59	1.50	0.67 0.87	0.59	0.59	1.18	0.67 [0.59]*1 0.87 [0.75]*1	0.59	—	—	—	—	—
0.5	0.71	1.50	0.87	0.59	0.87	1.34	0.87	0.59	0.59	1.30	0.87	0.59	0.59
1.0	1.26	2.13	1.38	1.10	1.39	2.13	1.38	1.14	1.06	1.97	1.38	1.06	1.06
1.25	1.46	2.28	1.69	1.34	1.59	2.53	1.69	1.34	—	—	—	—	—
1.5	1.76	2.80	1.93	1.61	1.89	2.83	1.93	1.61	1.57	2.68	1.93	1.57	1.57
2.0	2.26	3.31	2.40	2.09	2.39	3.50	2.40	2.09	2.05	3.23	2.40	2.05	2.05
2.5	2.73	4.06	3.31	2.60	2.84	4.25	3.31	2.60	—	—	—	—	—
3.0	3.19	4.49	3.54	3.19	3.33	4.69	3.54	3.19	3.19	4.41	3.54	3.19	3.19
4.0	4.19	5.51	4.53	4.02	4.34	5.75	4.53	4.02	3.86	5.28	4.53	3.86	3.86
5.0	5.14	6.50	5.55	5.04	5.34	6.81	5.55	5.04	—	—	—	—	—
6.0	6.46	7.48	6.57	5.79	6.46	8.23 [8.50]*1	6.57	5.91	5.67	7.40	6.57	5.67	5.67
8.0	8.58	9.45	8.58	7.83	8.58	10.20 [10.71]*1	8.58	7.91	7.56	9.45	8.58	7.56	7.56
10	—	—	—	—	10.61	12.60 [13.07]*1	10.63	9.84	—	—	—	—	—
12	—	—	—	—	12.64	14.44 [15.43]*1	12.64	11.85	—	—	—	—	—
14	—	—	—	—	13.76	16.22	14.13	12.99	—	—	—	—	—
16	—	—	—	—	15.78	18.70	16.14	15.00	—	—	—	—	—
20	—	—	—	—	22.87	22.87 <23.86>*1	20.20	18.31	—	—	—	—	—

*1: The value varies depending on the selection of process connection code:

DJ1, DJ2, DE4: Values in [].

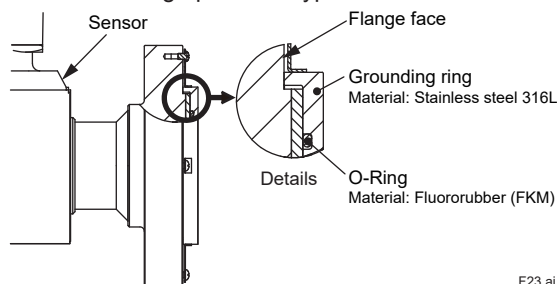
BA2, BJ2, CA2, CJ2, PA2: Values in { }.

BE2, CE2: Values in < >.



*2: To prevent the gasket from protruding into the flow path, make sure that this length is smaller than the minimum inner diameter of the gasket in the table.

For high pressure type (ASME Class 600 flange), use a flat gasket that matches the outer diameter and inner diameter of the grounding ring considering the dimensions of the seal structure of the flange. Do not use a spiral wound gasket. Also, be careful not to damage the flange surface of the sensor by excessive tightening. The structural figure of grounding ring with flange and the dimensions of inner and outer diameter of the grounding ring are shown below. Note that the grounding ring must be selected for high pressure type.



Grounding Rings for High Pressure Type

Unit: mm (approx. in.)

Size	Outer Diameter	Inner Diameter
25 (1)	69 (2.72)	29.0 (1.14)
40 (1.5)	92 (3.62)	35.4 (1.39)
50 (2)	108 (4.25)	46.5 (1.83)
80 (3)	147 (5.79)	70.9 (2.79)
100 (4)	185 (7.28)	93.0 (3.66)

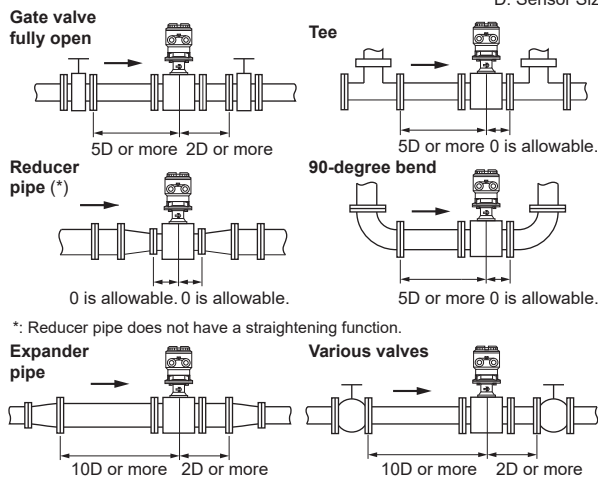
Noise Avoidance:

The flowmeter should be installed away from electrical motors, transformers, and other power sources in order to avoid interference with measurement. When using multiple magnetic flowmeters, install the flowmeters setting the distance from each other by at least five times of the diameter of the larger one.

Mounting of Flowmeters and Required Lengths of Straight Runs:

Based on JIS B 7554 "Electromagnetic Flowmeters" and our piping condition test data, we recommend the piping conditions as shown in the following figures. This is not always enough when the piping line incorporates multiple conditions at the same time.

D: Sensor Size



*: Reducer pipe does not have a straightening function.

Required straight runs

- Do not install anything in the vicinity that may interfere with the magnetic field, induced signal voltages, or flow velocity distributions of the flowmeter.
- A straight run may not be required on the downstream side of the flowmeter. However, if a downstream valve or other fitting causes irregularity or deviation in flows, provide a distance of 2D to 3D on the downstream side.
- The valves shall be mounted on the downstream side so that deviated flows do not occur in the sensor and to avoid startup from an empty condition.
- In case the piping conditions are compounded, install on the straight pipe section where the upstream part is sufficiently rectified.

Maintaining Stable Fluid Conductivity:

Do not install the flowmeter where fluid conductivity tends to become uneven. If chemicals are fed near the upstream side of a magnetic flowmeter, they may affect the flow-rate's indications. To avoid this situation, it is recommended that the chemical feed ports be located on the downstream side of the flowmeter. If it is unavoidable that chemicals must be fed on the upstream side, provide a sufficient length of straight run (approximately 50D or more) to ensure the proper mixture of fluids.

Low Conductivity Fluid:

When used for fluids with high flow noise (pure water, low viscosity and low conductivity fluid such as alcohols), the output fluctuation increases and the measurement is affected. In that case, using the capacitance magnetic flowmeter ADMAG CA, vortex flowmeter, or coriolis flowmeter is recommended.

Permeable Fluid:

For use with permeable fluid (e.g. nitric acid, hydrofluoric acid, high-temperature sodium hydroxide, etc.), selecting a model with PFA lining, vent hole (optional code H), and grounding ring plate (thick type)(optional code GRN, GRJ, or GRW), or the capacitance magnetic flowmeter ADMAG CA is recommended. Those help reduce the adhesion on the inner surface of the pipe.

Adhesive Fluid of Insulator:

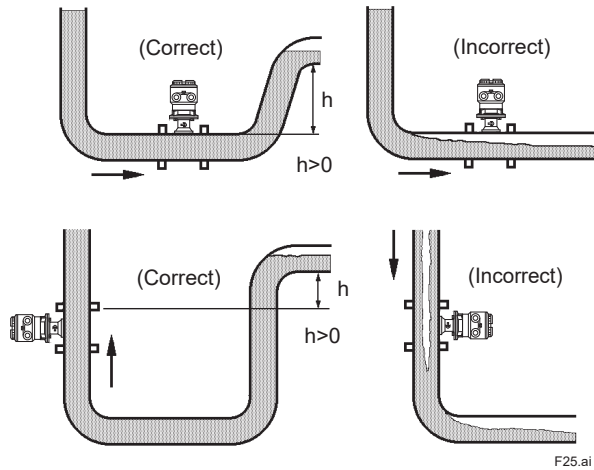
When measuring adhesive fluid of insulator, selecting mirror finished PFA lining or ceramics tube (optional code PM or CM), or the capacitance magnetic flowmeter ADMAG CA is recommended.

Abrasive Slurry Fluid:

For abrasive slurry fluids mixed with minerals, earth and sand etc., install on vertical piping. This reduces uneven wear of the lining. For sizes 200 mm (8 in.) or less, the AXG magnetic flowmeter with ceramics tube, the capacitance magnetic flowmeter ADMAG CA, or the AXW magnetic flowmeter with natural soft rubber lining is recommended.

Mounting Positions:

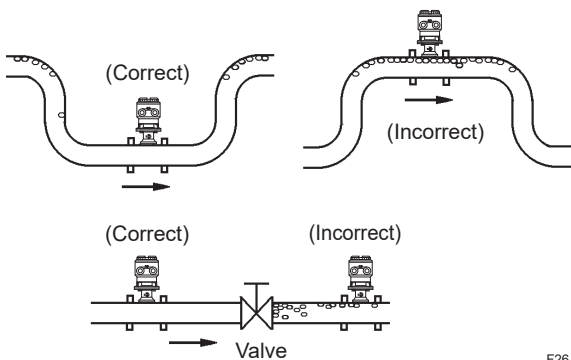
- Pipes must be fully filled with liquids. It is essential that pipes remain fully filled at all times, otherwise flow rate indications may be affected and measurement errors may be caused. Piping shall be designed so as to maintain the sensor filled with fluids. Vertical mounting is effective in such cases as when fluids tend to separate or solid matter may be precipitated. When employing vertical mounting, direct the fluids from the bottom to the top to ensure that the pipes remain fully filled.



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Mounting Positions

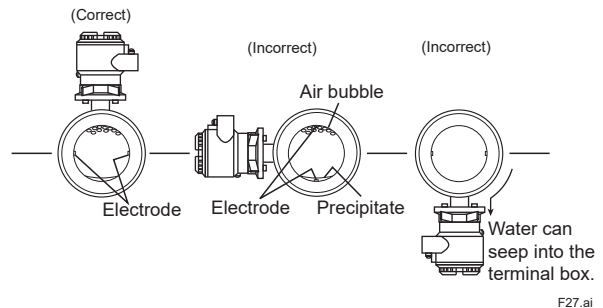
- Avoiding Air Bubbles.** If air bubbles enter a measurement pipe, flow rate indications may be affected and measurement errors may be caused. In cases where fluids contain air bubbles, piping must be designed to prevent them from accumulating in the measurement pipe of a sensor. If a valve exists near the sensor, try to mount the sensor on the valve's upstream side in order to prevent a possible reduction of pressure inside the pipe, thereby avoiding the possibility of air bubbles.



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Avoiding Air Bubbles**Mounting Orientation:**

If electrodes are perpendicular to the ground, air bubbles near the top or precipitates at the bottom may cause measurement errors. Ensure that the terminal box of a remote sensor and transmitter of an integral flowmeter are mounted above the piping to prevent water from entering them.



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Mounting Orientation

■ MODEL AND SUFFIX CODE

Note:

- 1: There are some limitations on the combination of specifications. Read specification code table when selecting specification code.
- 2: For both wafer and flange type of 2.5 to 10 mm (0.1 to 0.4 in.), prepare 15 mm (0.5 in.) diameter nominal flanges on the process pipe side. However, for the flanges EN PN40, JIS 10K, JIS 20K, types for the nominal diameter 10 mm (0.4 in.) flange can also be selected (Process Connection Code DE4, DJ1, and DJ2). The process connection of ceramics tube sizes 2.5 to 10 mm (0.1 to 0.4 in.) is only Union Joint (Screw and Welding type).
- 3: For EN standard wafer and flange type of sizes 2.5 to 50 mm (0.1 to 2 in.), select PN40 even for lower pressure rating because the dimensions of mating faces for PN10, 16, and 40 are the same. For EN standard wafer and flange type of sizes 65 to 150 mm (2.5 to 6 in.), select PN16 even for lower pressure rating because the dimensions of mating faces for PN10 and 16 are the same.
- 4: The dimensions of mating faces are based on the following flange standards. The usable range is also limited by fluid temperature and pressure conditions.
JIS F12: JIS G 3443-2, JIS 10K, 20K: JIS B 2220 and JIS G 3443-2,
ASME: ASME B 16.5, EN: EN 1092-1, JPI: JPI-7S-15, AS: AS2129
- 5: The grounding device is selectable from none, grounding ring, or built-in grounding electrode. When selecting the grounding ring or the built-in grounding electrode, it is also necessary to select its type (material etc.) from the optional codes.
- 6: The lay length (face to face) of the flange type of PFA lining sizes 15 to 400 mm (0.5 to 16 in.) conforms to ISO standard (ISO 20456) except for ASME Class 600 flange high pressure type. The lay length for ceramics tube (wafer and union joint) and Hygienic are the same as those of the conventional model ADMAG AXF series (AXF standard lay length). The lay length depends on the presence or absence of the optional grounding rings or gaskets, so see the Dimensional Drawings.
- 7:  Lining, electrode, pipe connection adapter (for Hygienic, or Hygienic Explosion Protection), and grounding device (grounding ring plate, grounding ring electrode, built-in grounding electrode) are wetted parts.
Users must consider the characteristics of selected wetted parts material and influence of process fluids. The use of inappropriate materials can result in the leakage of corrosive process fluids and cause injury to personnel and/or damage to plant facilities. It is also possible that the instrument itself can be damaged and that fragments from the instrument can contaminate the user's process fluids. Be very careful with highly corrosive process fluids such as hydrochloric acid, sulfuric acid, hydrogen sulfide, sodium hypochlorite, and high-temperature steam (150°C [302°F] or above). Contact Yokogawa for detailed information of the wetted parts material.
- 8: In the case of remote sensor, select "None (or Without)" for each specification code of "Power Supply", "Communication and I/O", "Transmitter Wiring Terminal" and "Display".

●General-purpose, Submersible, Explosionprotection, Wafer, Flange, PFA Lining (2.5 to 400 mm/0.1 to 16 in.)

Model	Suffix Code	Description	Limitation
AXG002		Magnetic Flowmeter (2.5 mm/0.1 in)	
AXG005		Magnetic Flowmeter (5 mm/0.2 in)	
AXG010		Magnetic Flowmeter (10 mm/0.4 in)	
AXG015		Magnetic Flowmeter (15 mm/0.5 in)	
AXG025		Magnetic Flowmeter (25 mm/1 in)	
AXG032		Magnetic Flowmeter (32 mm/1.25 in)	
AXG040		Magnetic Flowmeter (40 mm/1.5 in)	
AXG050		Magnetic Flowmeter (50 mm/2 in)	
AXG065		Magnetic Flowmeter (65 mm/2.5 in)	
AXG080		Magnetic Flowmeter (80 mm/3 in)	
AXG100		Magnetic Flowmeter (100 mm/4 in)	
AXG125		Magnetic Flowmeter (125 mm/5 in)	
AXG150		Magnetic Flowmeter (150 mm/6 in)	
AXG200		Magnetic Flowmeter (200 mm/8 in)	
AXG250		Magnetic Flowmeter (250 mm/10 in)	
AXG300		Magnetic Flowmeter (300 mm/12 in)	
AXG350		Magnetic Flowmeter (350 mm/14 in)	
AXG400		Magnetic Flowmeter (400 mm/16 in)	
Use	-G	General-purpose	
	-C	Explosion protection	
	-W	Submersible	15 to 400 mm (0.5 to 16 in.), only for Remote sensor
Construction	A	Integral Flowmeter	
	D	Remote Sensor (for AXFA11)	
	G	Remote Sensor (for AXG4A)	
Explosion Protection	000	Non Explosion Protection Approval	
	KF2	ATEX Flameproof	See Restriction for Explosion Protection type
	SF2	IECEx Flameproof	See Restriction for Explosion Protection type
	JF5	Japan Flameproof	See Restriction for Explosion Protection type
Process Connection	Wafer	AA1	ASME Class 150 Wafer
		AA2	ASME Class 300 Wafer
		AE1	EN PN10 Wafer
		AE2	EN PN16 Wafer
		AE4	EN PN40 Wafer
		AG1	JIS F12 Wafer
		AJ1	JIS 10K Wafer
		AJ2	JIS 20K Wafer
		AP1	JPI Class 150 Wafer
	Stainless Steel Flange (F304)	BA1	ASME Class 150 Flange
		BA2	ASME Class 300 Flange
		BE1	EN PN10 Flange
		BE2	EN PN16 Flange
		BE4	EN PN40 Flange
		BG1	JIS F12 Flange
		BJ1	JIS 10K Flange
		BJ2	JIS 20K Flange
		BP1	JPI Class 150 Flange
		DE4	EN PN40 Flange (Nominal Diameter 10 mm)
		DJ1	JIS 10K Flange (Nominal Diameter 10 mm)
		DJ2	JIS 20K Flange (Nominal Diameter 10 mm)

(Continued)

Process Connection	Stainless Steel Flange (F316)	PA1	ASME Class 150 Flange	32, 65, and 125 mm (1.25, 2.5, and 5 in.) are not available.	
		PA2	ASME Class 300 Flange	2.5 to 300 mm (0.1 to 12 in.) (32, 65, and 125 mm (1.25, 2.5, and 5 in.) are not available.)	
		PE1	EN PN10 Flange	200 to 400 mm (8 to 16 in.)	
		PE2	EN PN16 Flange	80 to 300 mm (3 to 12 in.) (125 mm (5 in.) is not available.)	
		PE4	EN PN40 Flange	2.5 to 50 mm (0.1 to 2 in.) (32 mm (1.25 in.) is not available.)	
		PJ1	JIS 10K Flange	32, 65, and 125 mm (1.25, 2.5, and 5 in.) are not available.	
	Carbon Steel Flange	CA1	ASME Class 150 Flange	50 to 400 mm (2 to 16 in.)	
		CA2	ASME Class 300 Flange	50 to 300 mm (2 to 12 in.)	
		CE1	EN PN10 Flange	200 to 400 mm (8 to 16 in.)	
		CE2	EN PN16 Flange	65 to 300 mm (2.5 to 12 in.)	
		CE4	EN PN40 Flange	50 mm (2 in.)	
		CG1	JIS F12 Flange	80 to 400 mm (3 to 16 in.)	
		CJ1	JIS 10K Flange	50 to 400 mm (2 to 16 in.)	
		CJ2	JIS 20K Flange	50 to 300 mm (2 to 12 in.)	
		CS1	AS Table D Flange	50 to 400 mm (2 to 16 in.) (65, and 125 mm (2.5, and 5 in.) are not available.)	
	CS2	AS Table E Flange	50 to 400 mm (2 to 16 in.) (65, and 125 mm (2.5, and 5 in.) are not available.)		
	Lining		A	PFA Lining	
	Electrode	L	Stainless Steel 316L		
		P	Platinum-Iridium		
H		Nickel Alloy			
T		Tantalum			
V		Titanium			
W		Tungsten Carbide	2.5 mm, 5 mm, 10 mm (0.1, 0.2, 0.4 in.) are not available		
Grounding Device		1	None		
		2	Grounding Rings	Select an optional code	
		3	Built-in Grounding Electrodes	Select an optional code	
Housing and Coating		1	Standard Material with Standard Coating		
		2	Standard Material with Rugged Coating	Not applicable for Submersible	
Cable Entry		0	JIS G1/2 Female	See Restriction for Explosion Protection type	
		2	ASME 1/2 NPT Female	Not applicable for Submersible, See Restriction for Explosion Protection type	
		4	ISO M20×1.5 Female	Not applicable for Submersible, See Restriction for Explosion Protection type	
Accuracy		B	Standard		
		C	High Grade	25 to 200 mm (1 to 8 in.)	
Power Supply		-1	100-240 V AC / 100-120 V DC	Only for Integral Flowmeter	
		-2	24 V AC / DC	Only for Integral Flowmeter	
		-N	None (Remote Sensor)	Only for Remote Sensor	

(Continued)

Communication and I/O	D#	#: A, B, C, D, E, F, G, H, J, K BRAIN and I/O (Type A to K, See separate table)	Only for Integral Flowmeter
	J#	#: A, B, C, D, E, F, G, H, J, K HART 7 and I/O (Type A to K, See separate table)	Only for Integral Flowmeter
	M#	#: 0, 2, 6 Modbus and I/O (Type 0, 2, 6, See separate table)	Only for Integral Flowmeter
	NN	None (Remote Sensor)	Only for Remote Sensor
Transmitter Wiring Terminal	1	M4 Screw-type	
	2	Clamp Type	
	N	None (Remote Sensor)	Only for Remote Sensor
Display	1	With Display (English, Multi-language)	Only for Integral Flowmeter
	2	With Display (English, Chinese)	Only for Integral Flowmeter
	N	Without Display/Remote Sensor	
Optional Specification		/# Refer to optional specification table.	

●General-purpose, Submersible, Flange, PFA Lining (500 mm/20 in.)

Model	Suffix Code		Description	Limitation
AXG500			Magnetic Flowmeter (500 mm/20 in)	
Use	-G		General-purpose	
	-W		Submersible	
Construction	D		Remote Sensor (for AXFA11)	
Explosion Protection	000		Non Explosion Protection Approval	
Process Connection	Stainless Steel Flange (F304)	BA1	ASME Class 150 Flange	
		BE1	EN PN10 Flange	
		BE2	EN PN16 Flange	
	Carbon Steel Flange	CA1	ASME Class 150 Flange	
		CE1	EN PN10 Flange	
		CE2	EN PN16 Flange	
Lining	A		PFA Lining	
Electrode	L		Stainless Steel 316L	
	H		Nickel Alloy	
Grounding Device	1		None	
	2		Grounding Rings	Select an optional code
Housing and Coating	1		Standard Material with Standard Coating	
	2		Standard Material with Rugged Coating	Not applicable for Submersible
Cable Entry	0		JIS G1/2 Female	
	2		ASME 1/2 NPT Female	Not applicable for Submersible
	4		ISO M20×1.5 Female	Not applicable for Submersible
Accuracy	B		Standard	
Power Supply	-N		None	
Communication and I/O	NN		None	
Transmitter Wiring Terminal	N		None	
Display	N		Remote Sensor	
Optional Specification			/# Refer to optional specification table.	

●General-purpose, Submersible, Explosionprotection, Flange, PFA Lining (High Pressure Type, ASME Class 600)

Model	Suffix Code		Description	Limitation
AXG025			Magnetic Flowmeter (25 mm/1 in)	
AXG040			Magnetic Flowmeter (40 mm/1.5 in)	
AXG050			Magnetic Flowmeter (50 mm/2 in)	
AXG080			Magnetic Flowmeter (80 mm/3 in)	
AXG100			Magnetic Flowmeter (100 mm/4 in)	
Use	-G		General-purpose	
	-C		Explosion protection	
	-W		Submersible	
Construction	A		Integral Flowmeter	
	D		Remote Sensor (for AXFA11)	
	G		Remote Sensor (for AXG4A)	
Explosion Protection	000		Non Explosion Protection Approval	
	SF2		IECEx Flameproof	See Restriction for Explosion Protection type
Process Connection	Stainless Steel Flange (F304)	EA4	ASME Class 600 Flange (High Pressure)	
Lining		A	PFA Lining	
Electrode		L	Stainless Steel 316L	
Grounding device		2	Grounding Rings	Select an optional code
Housing and Coating		1	Standard Material with Standard Coating	
		2	Standard Material with Rugged Coating	Not applicable for Submersible
Cable Entry		0	JIS G1/2 Female	See Restriction for Explosion Protection type
		2	ASME 1/2 NPT Female	Not applicable for Submersible, See Restriction for Explosion Protection type
		4	ISO M20×1.5 Female	Not applicable for Submersible, See Restriction for Explosion Protection type
Accuracy		B	Standard	
Power Supply		-1	100-240 V AC / 100-120 V DC	Only for Integral Flowmeter
		-2	24 V AC / DC	Only for Integral Flowmeter
		-N	None (Remote Sensor)	Only for Remote Sensor
Communication and I/O		D#	#: A, B, C, D, E, F, G, H, J, K BRAIN and I/O (Type A to K, See separate table)	Only for Integral Flowmeter
		J#	#: A, B, C, D, E, F, G, H, J, K HART 7 and I/O (Type A to K, See separate table)	Only for Integral Flowmeter
		M#	#: 0, 2, 6 Modbus and I/O (Type 0, 2, 6, See separate table)	Only for Integral Flowmeter
		NN	None (Remote Sensor)	Only for Remote Sensor
Transmitter Wiring Terminal		1	M4 Screw-type	
		2	Clamp Type	
		N	None (Remote Sensor)	Only for Remote Sensor
Display		1	With Display (English, Multi-language)	Only for Integral Flowmeter
		2	With Display (English, Chinese)	Only for Integral Flowmeter
		N	Without Display/Remote Sensor	
Optional Specification			/# Refer to optional specification table.	

●General-purpose, Explosionprotection, Ceramics Tube

Model	Suffix Code		Description	Limitation
AXG002			Magnetic Flowmeter (2.5 mm/0.1 in)	
AXG005			Magnetic Flowmeter (5 mm/0.2 in)	
AXG010			Magnetic Flowmeter (10 mm/0.4 in)	
AXG015			Magnetic Flowmeter (15 mm/0.5 in)	
AXG025			Magnetic Flowmeter (25 mm/1 in)	
AXG040			Magnetic Flowmeter (40 mm/1.5 in)	
AXG050			Magnetic Flowmeter (50 mm/2 in)	
AXG080			Magnetic Flowmeter (80 mm/3 in)	
AXG100			Magnetic Flowmeter (100 mm/4 in)	
AXG150			Magnetic Flowmeter (150 mm/6 in)	
AXG200			Magnetic Flowmeter (200 mm/8 in)	
Use	-G		General-purpose	
	-C		Explosion protection	
Construction	A		Integral Flowmeter	
	D		Remote Sensor (for AXFA11)	
	G		Remote Sensor (for AXG4A)	
Explosion Protection	000		Non Explosion Protection Approval	
	KF2		ATEX Flameproof	See Restriction for Explosion Protection type
	SF2		IECEX Flameproof	See Restriction for Explosion Protection type
	JF5		Japan Flameproof	See Restriction for Explosion Protection type
Process Connection	Wafer	AA1	ASME Class 150 Wafer	15 to 200 mm (0.5 to 8 in.) (125 mm (5 in.) is not available.)
		AA2	ASME Class 300 Wafer	15 to 200 mm (0.5 to 8 in.) (125 mm (5 in.) is not available.)
		AE1	EN PN10 Wafer	200 mm (8 in.)
		AE2	EN PN16 Wafer	80 to 200 mm (3 to 8 in.) (125 mm (5 in.) is not available.)
		AE4	EN PN40 Wafer	15 to 50 mm (0.5 to 2 in.)
		AG1	JIS F12 Wafer	80 to 200 mm (3 to 8 in.) (125 mm (5 in.) is not available.)
		AJ1	JIS 10K Wafer	15 to 200 mm (0.5 to 8 in.) (125 mm (5 in.) is not available.)
		AJ2	JIS 20K Wafer	15 to 200 mm (0.5 to 8 in.) (125 mm (5 in.) is not available.)
	Union Joint Stainless Steel (F316)	GUN	Screw Union Joint	2.5 to 5 mm (0.1 to 0.2 in.): 1/4 NPT 10 mm (0.4 in.): 3/8 NPT
		GUR	Screw Union Joint	2.5 to 5 mm (0.1 to 0.2 in.): R 1/4 10 mm (0.4 in.): R 3/8
		GUW	Welding Union Joint	2.5 to 10 mm (0.1 to 0.4 in.)
Lining		C	Ceramics Tube	
Electrode		E	Platinum-alumina Cermet	
Grounding Device		1	None	
		2	Grounding Rings	2.5 mm, 5 mm, 10 mm (0.1, 0.2, 0.4 in.) are not available Select an optional code
Gousing and Coating		1	Standard Material with Standard Coating	
		2	Standard Material with Rugged Coating	

(Continued)

Cable Entry	0	JIS G1/2 Female	See Restriction for Explosion Protection type
	2	ASME 1/2 NPT Female	See Restriction for Explosion Protection type
	4	ISO M20×1.5 Female	See Restriction for Explosion Protection type
Accuracy	B	Standard	
	C	High Grade	
Power Supply	-1	100-240 V AC / 100-120 V DC	Only for Integral Flowmeter
	-2	24 V AC / DC	Only for Integral Flowmeter
	-N	None (Remote Sensor)	Only for Remote Sensor
Communication and I/O	D#	#: A, B, C, D, E, F, G, H, J, K BRAIN and I/O (Type A to K, See separate table)	Only for Integral Flowmeter
	J#	#: A, B, C, D, E, F, G, H, J, K HART 7 and I/O (Type A to K, See separate table)	Only for Integral Flowmeter
	M#	#: 0, 2, 6 Modbus and I/O (Type 0, 2, 6, See separate table)	Only for Integral Flowmeter
	NN	None (Remote Sensor)	Only for Remote Sensor
Transmitter Wiring Terminal	1	M4 Screw-type	
	2	Clamp Type	
	N	None (Remote Sensor)	Only for Remote Sensor
Display	1	With Display (English, Multi-language)	Only for Integral Flowmeter
	2	With Display (English, Chinese)	Only for Integral Flowmeter
	N	Without Display/Remote Sensor	
Optional Specification		/# Refer to optional specification table.	

●Hygienic, Hygienic Explosion protection, PFA Lining

Model	Suffix Code		Description	Limitation
AXG015			Magnetic Flowmeter (15 mm/0.5 in)	
AXG025			Magnetic Flowmeter (25 mm/1 in)	
AXG032			Magnetic Flowmeter (32 mm/1.25 in)	
AXG040			Magnetic Flowmeter (40 mm/1.5 in)	
AXG050			Magnetic Flowmeter (50 mm/2 in)	
AXG065			Magnetic Flowmeter (65 mm/2.5 in)	
AXG080			Magnetic Flowmeter (80 mm/3 in)	
AXG100			Magnetic Flowmeter (100 mm/4 in)	
AXG125			Magnetic Flowmeter (125 mm/5 in)	
Use	-H		Hygienic	
	-J		Hygienic Explosion Protection	
Construction	A		Integral Flowmeter	
	D		Remote Sensor (for AXFA11)	
	G		Remote Sensor (for AXG4A)	
Explosion Protection	000		Non Explosion Protection Approval	
	KF2		ATEX Flameproof	See Restriction for Explosion Protection type
	SF2		IECEx Flameproof	See Restriction for Explosion Protection type
	JF5		Japan Flameproof	See Restriction for Explosion Protection type
Process Connection	Clamp	HAB	Tri-Clamp, Stainless Steel F316L	15 to 100 mm (0.5 to 4 in.) (32 mm (1.25 in.) is not available.)
		HDB	DIN 32676 Clamp, Stainless Steel F316L	
		HJA	ISO 2852 Clamp (for JIS G3447 Piping), Stainless Steel F304	
		HJB	ISO 2852 Clamp (for JIS G3447 Piping), Stainless Steel F316L	
		HKB	ISO 2852 / SMS 3016 Clamp, Stainless Steel F316L	
	Union	JDB	DIN 11851 Union, Stainless Steel F316L	
		JJA	ISO 2853 Union (for JIS G3447 Piping), Stainless Steel F304	25 to 100 mm (1 to 4 in.)
		JJB	ISO 2853 Union (for JIS G3447 Piping), Stainless Steel F316L	25 to 100 mm (1 to 4 in.)
		JKB	ISO 2853 Union, Stainless Steel F316L	15 to 100 mm (0.5 to 4 in.)
		JSB	SMS 1145 Union (Open groove packing type), Stainless Steel F316L	25 to 100 mm (1 to 4 in.)
	Butt Weld Joint	KDB	DIN 11850 Piping Butt Weld Joint, Stainless Steel F316L	
		KJA	JIS G3447 Piping Butt Weld Joint, Stainless Steel F304	
		KJB	JIS G3447 Piping Butt Weld Joint, Stainless Steel F316L	
		KKB	ISO 2037 Piping Butt Weld Joint, Stainless Steel F316L	
Lining		A	PFA Lining	
Electrode		L	Stainless Steel 316L	
Grounding Device		1	None	
Housing and Coating		1	Standard Material with Standard Coating	
Cable Entry		0	JIS G1/2 Female	See Restriction for Explosion Protection type
		2	ASME 1/2 NPT Female	See Restriction for Explosion Protection type
		4	ISO M20×1.5 Female	See Restriction for Explosion Protection type
Accuracy		B	Standard	
		C	High Grade	

(Continued)

Power Supply	-1	100-240 V AC / 100-120 V DC	Only for Integral Flowmeter
	-2	24 V AC / DC	Only for Integral Flowmeter
	-N	None (Remote Sensor)	Only for Remote Sensor
Communication and I/O	D#	#: A, B, C, D, E, F, G, H, J, K BRAIN and I/O (Type A to K, See separate table)	Only for Integral Flowmeter
	J#	#: A, B, C, D, E, F, G, H, J, K HART 7 and I/O (Type A to K, See separate table)	Only for Integral Flowmeter
	M#	#: 0, 2, 6 Modbus and I/O (Type 0, 2, 6, See separate table)	Only for Integral Flowmeter
	NN	None (Remote Sensor)	Only for Remote Sensor
Transmitter Wiring Terminal	1	M4 Screw-type	
	2	Clamp Type	
	N	None (Remote Sensor)	Only for Remote Sensor
Display	1	With Display (English, Multi-language)	Only for Integral Flowmeter
	2	With Display (English, Chinese)	Only for Integral Flowmeter
	N	Without Display/Remote Sensor	
Optional Specification		/# Refer to optional specification table.	

●General-purpose, Explosion protection. Remote Transmitter

Model	Suffix Code	Description	Limitation
AXG4A		Magnetic Flowmeter Remote Transmitter	
Use	-G	General-purpose	
	-C	Explosion Protection	
Explosion Protection	000	Non Explosion Protection Approval	
	KF2	ATEX Flameproof	See Restriction for Explosion Protection type
	SF2	IECEx Flameproof	See Restriction for Explosion Protection type
	JF5	Japan Flameproof	See Restriction for Explosion Protection type
Housing and Coating	1	Standard Material with Standard Coating	
	2	Standard Material with Rugged Coating	
Cable Entry	0	JIS G1/2 Female	See Restriction for Explosion Protection type
	2	ASME 1/2 NPT Female	See Restriction for Explosion Protection type
	4	ISO M20×1.5 Female	See Restriction for Explosion Protection type
Power Supply	1	100-240 V AC / 100-120 V DC	
	2	24 V AC / DC	
Communication and I/O	D#	#: A, B, C, D, E, F, G, H, J, K BRIN and I/O (Type A to K, See separate table)	
	J#	#: A, B, C, D, E, F, G, H, J, K HART 7 and I/O (Type A to K, See separate table)	
	M#	#: 0, 2, 6 Modbus and I/O (Type 0, 2, 6, See separate table)	
Transmitter Wiring Terminal	1	M4 Screw-type	
	2	Clamp Type	
Display	1	With Display (English, Multi-language)	
	2	With Display (English, Chinese)	
	N	Without Display	
Optional Specification		/# Refer to optional specification table.	

●Signal Cable

Model	Suffix Code	Optional Code	Description
AX01C			Magnetic Flowmeter Signal Cable
Cable Finish and Length	-A### (*1)		Unfinished, Cable length ### m, Set of Finishing Parts for M4 Screws
	-C### (*1)		Finished for AXG4A, Cable Length ### m
	-D### (*1)		Finished for AXFA11, Cable Length ### m
Finishing Parts		/C# (*2)	Finishing Parts (# sets)

*1: Specify the cable length in the "###" with the numerical value three digits (001 to 200) as multiple of 1 meter (e.g. 001, 002, or 005) for a length up to 5 m, as multiple of 5 meters up to 100 m (e.g. 010, 020, or 100), or as multiple of 10 meters up to 200 m (e.g. 110, 120, or 200).

The maximum cable length: -A###: 200 m, -C###: 100 m, -D###: 200 m

*2: Specify the finishing parts quantity in the "#" with the numerical value one digit (1 to 9).

●Details: Communication and I/O (HART type, BRAIN type)

Type	Communication and I/O Code		Number of Input and Output							
	BRAIN	HART 7	Current Output (Active)	Pulse/ Status Output (Passive)	Status Input (No-voltage)	Status Output (Passive)	Pulse/ Status Output (Active, with internal resistor)	Pulse/ Status Output (Active, without internal resistor)	Current Output (Passive)	Current Input (Active)
Type A	DA	JA	1	1	—	—	—	—	—	—
Type B	DB	JB	2	2	—	—	—	—	—	—
Type C	DC	JC	2	1	1	—	—	—	—	—
Type D	DD	JD	1	2	—	1	—	—	—	—
Type E	DE	JE	1	2	1	—	—	—	—	—
Type F	DF	JF	1	1	1	—	1	—	—	—
Type G	DG	JG	1	1	1	—	—	1	—	—
Type H	DH	JH	1	1	—	—	—	—	1	1
Type J	DJ	JJ	1	2	—	—	—	—	—	1
Type K	DK	JK	1	1	1	—	—	—	—	1

●Details: Communication and I/O (Modbus type)

Type	Communication and I/O Code	Number of Input and Output		
	Modbus	Current Output (Active)	Pulse/ Status Output (Passive)	Current Input (Active)
Type 0	M0	—	1	—
Type 2	M2	—	1	1
Type 6	M6	1	1	—

●Details: Restriction for Explosion protection type

For Explosion protection type, the following combinations of suffix code or optional code are restricted. For other optional codes, see optional code tables.

Item	Code	Restriction of Combination	
		Mandatory	Not Available
ATEX Flameproof	KF2	• Optional Code: EC	• Cable Entry: 0 (JIS G1/2) • Process Connection: AG1, AJ#, AP1, BG1, BJ#, BP1, CG1, CJ#, CS#, DJ#, EA4, PJ1
IECEx Flameproof	SF2	—	• Cable Entry: 0 (JIS G1/2) • Optional Code: EC
Japan Flameproof	JF5	• Cable Entry: 4 (ISO M20) • Optional Code: V5#	• Cable Entry: 0 (JIS G1/2), 2(ASME 1/2NPT) • Process Connection: C## • Display (Integral Flowmeter or Remote Transmitter): N (Without Display) • Optional Code: EC

■ OPTIONAL CODE

●Application, Usage, and Operating Function

●: Applicable ○: Applicable (except Explosion Protection) —: Not Applicable

Item	Specification and Applicable Condition	Applicable Model						Code
		General-purpose Explosion protection		Submersible	Hygienic Hygienic with Explosion protection		General-purpose Explosion protection	
		Integral Flowmeter	Remote Sensor	Remote Sensor	Integral Flowmeter	Remote Sensor	Remote Transmitter	
Mirror Finished PFA (for adhesive fluid)	Finish the inner surface of the PFA lining (sizes 15 to 400 mm (0.5 to 16 in.), except for high pressure type) to a mirror finish. The Ra is average of measured values on several points. Sizes 15 to 200 mm (0.5 to 8 in.) : Ra 0.05 to 0.15 μm Sizes 250 to 400 mm (10 to 16 in.) : Ra 0.05 to 0.25 μm	●	●	●	●	●	—	PM
Mirror Finished Ceramics (for adhesive fluid)	Finish the inner surface of the ceramics tube (5 to 200 mm (0.2 to 8 in.)) to a mirror finish with Ra 0.1 μm or less. The Ra is average of measured values on several points.	●	●	—	—	—	—	CM
Vent Hole (for permeable fluid)	For permeable fluid applications (e.g. nitric acid, hydrofluoric acid, high temperature sodium hydroxide, black liquor etc.). A vent hole is provided for letting fluid permeated between the lining and the measuring pipe escape. Applicable for flange type of PFA lining except for high pressure type.	●	●	—	—	—	—	H
DC Noise Cut Circuit (for electrolytic bath)	Built-in DC noise cut circuit. It works effectively when the size is 15 mm (0.5 in.) or more and fluid conductivity is 50 μS/cm or more. Empty pipe detection, electrode adhesion diagnosis, electrode potential measurement, and wetted resistance measurement function can not be used. For remote transmitter, it must be combined with remote sensor of size 15 mm (0.5 in.) or more.	●	—	—	●	—	●	ELC
Potting Terminal Box with Cable (For district heating and cooling or condensation-proof)	Urethane resin potting is applied in the terminal box of a remote sensor. Signal and excitation cables (when optional code L### is not selected, cable length is each 30 m) are pre-wired and waterproof glands with union joints are attached at factory. For cable entry, selection of JIS G1/2 female thread is necessary. When optional code DHC is selected, the optional code of plastic and waterproof glands can not be selected.	—	○	—	—	○	—	DHC
Signal and Excitation Cable Length	Change the length of signal cable and excitation cable pre-wired for a remote sensor of Submersible or one with optional code DHC. Specify the cable length in the "####" with the numerical value three digits (001 to 200) as multiple of 1 meter (e.g. 001, 002, or 005) for a length up to 5 m, as multiple of 5 meters up to 100 m (e.g. 010, 020, or 100), or as multiple of 10 meters up to 200 m (e.g. 110, 120, or 200). The maximum cable length is 100 m in combination with the AXG4A transmitter, and 200 m in combination with the AXFA11 transmitter. When optional code L### is not selected, a 30-meter length cable is pre-wired.	—	○	●	—	○	—	L###
Oil Prohibited Use	Electrodes, linings, grounding devices (grounding rings plate type, grounding rings electrode type, built-in grounding electrodes), gaskets, and piping adapters and connection parts (for Hygienic) of sizes 2.5 to 400 mm (0.1 to 16 in.) are assembled and packed with polyethylene after being cleaned with water and acetone and dried with air. The label "OIL FREE" is affixed.	●	●	—	●	●	—	K1

●Application, Usage, and Operating Function (Continued)

●: Applicable ○: Applicable (except Explosion Protection) —: Not Applicable

Item	Specification and Applicable Condition	Applicable Model						Code
		General-purpose Explosion protection		Submersible	Hygienic Hygienic with Explosion protection		General-purpose Explosion protection	
		Integral Flowmeter	Remote Sensor	Remote Sensor	Integral Flowmeter	Remote Sensor	Remote Transmitter	
Oil Prohibited Use with Dehydration	Electrodes, linings, and grounding devices (grounding rings plate type, grounding rings electrode type, built-in grounding electrodes) of sizes 2.5 to 400 mm (0.1 to 16 in.) are assembled and packed with polyethylene including desiccants after being cleaned with water and acetone and dried with air. The label "OIL & WATER FREE" is affixed.	●	●	—	—	—	—	K5
Mass Unit Setting	The flow rate calculation is performed in mass unit. In addition to fluid density, specify span flow rate, pulse weight, and totalization weight in mass unit. For specifying procedures, read "Ordering Information". For remote sensor, specified parameters are set in the transmitter that is ordered in combination.	●	●	●	●	●	—	MU
Signal Down on Failure	Set the current output signal as follows when shipped. Output signal at CPU failure or alarm occurrence: 2.4 mA (–10 %) or less (The standard setting is 21.6 mA (110%) or more at CPU failure or alarm occurrence.)	●	—	—	●	—	●	C1
Signal Down on Failure (NAMUR NE 43 Compliant)	Set the current output signal as follows when shipped. Output signal limits: 3.8 to 20.5 mA Output signal at CPU failure or alarm occurrence: Low: 2.4 mA (–10%) or less	●	—	—	●	—	●	C2
Signal Up on Failure (NAMUR NE 43 Compliant)	Set the current output signal as follows when shipped. Output signal limits: 3.8 to 20.5 mA Output signal at CPU failure or alarm occurrence: High: 21.6 mA (110%) or more	●	—	—	●	—	●	C3
microSD Card	A microSD card slot is added to the display unit, and a microSD card (capacity 1 GB, format FAT 16) is inserted when shipped. When using parameter store / restore function, and/or data logging function, specify optional code MC.	●	—	—	●	—	●	MC
CE Marking	CE marking is indicated on the nameplate of sizes 2.5 to 400 mm (0.1 to 16 in.). When a flowmeter is used in the countries where CE marking is required, specify optional code EC. Optional code EC can be selected with the following process connection codes. AA#, AE#, BA#, BE#, CA#, CE#, DE#, GU#, H##(*), J##(*), K##, PA#, PE# *: It can not be combined with optional code W2.	●	●	●	●	●	●	EC
NAMUR NE21	Compliant to NAMUR NE21 under span setting of 0.5 m/s or more in terms of flow velocity. For specifiable span, read "Ordering Information". Combination with CE marking (optional code EC) is necessary.	●	—	—	●	—	●	E21

●Tag Plate and Mounting Bracket

●: Applicable ○: Applicable (except Explosion Protection) —: Not Applicable

Item	Specification and Applicable Condition	Applicable Model						Code
		General-purpose Explosion protection		Submersible	Hygienic Hygienic with Explosion protection		General-purpose Explosion protection	
		Integral Flowmeter	Remote Sensor	Remote Sensor	Integral Flowmeter	Remote Sensor	Remote Transmitter	
Stainless Steel Tag Plate	The pendant type tag plate (stainless steel 304) is wired around the flowmeter neck. Select optional code SCT when necessary in addition to that on the nameplate, on which the Tag No. is inscribed. Plate size (Height x Width): Approx. 12.5 mm x 40 mm (4.92 in. x 15.7 in.)	●	●	●	●	●	●	SCT
Stainless Steel Mounting Bracket	Change the material of the remote transmitter mounting bracket, from carbon steel to stainless steel 304.	—	—	—	—	—	●	SB

●Piping Parts

●: Applicable ○: Applicable (except Explosion Protection) —: Not Applicable

Item	Specification and Applicable Condition	Applicable Model					Code
		General-purpose Explosion protection		Submersible	Hygienic Hygienic with Explosion protection		
		Integral Flowmeter	Remote Sensor	Remote Sensor	Integral Flowmeter	Remote Sensor	
Bolts, Nuts and Gaskets (Type C)	The mounting bolts, nuts and gaskets of wafer type (process connection code: AJ1, AJ2, AA1) are supplied. For PFA lining and ceramics tube, when adopting the optional code BSC together with the optional earth ring plate, there is a risk of liquid leakage due to the difference in elasticity, so between the detector and the earth ring, also using a gasket of hardness equivalent to chloroprene rubber is recommended. Bolt: Stainless steel 304 Nut: Stainless steel 304 Gasket(*): Chloroprene rubber (CR), thickness: 3 mm (0.12 in.) *: The allowable temperature and pressure is equivalent to that of Valqua #2010 series.	●	●	●	—	—	BSC
Bolts, Nuts and Gaskets (Type F)	The mounting bolts, nuts and gaskets of wafer type (process connection code: AJ1, AJ2, AA1) are supplied. Bolt: Stainless steel 304 Nut: Stainless steel 304 Gasket(*): PTFE-sheathed non-asbestos joint sheet, thickness: 3 mm (0.12 in.) *: The allowable temperature and pressure is equivalent to that of Valqua #7030 (S) series.	●	●	●	—	—	BSF

●Piping Parts (Continued)

●: Applicable ○: Applicable (except Explosion Protection) —: Not Applicable

Item	Specification and Applicable Condition	Applicable Model					Code
		General-purpose Explosion protection		Submersible	Hygienic Hygienic with Explosion protection		
		Integral Flowmeter	Remote Sensor	Remote Sensor	Integral Flowmeter	Remote Sensor	
Hygienic Connection Parts	Connection parts for hygienic are supplied. Optional code W2 can be selected with the following process connection codes. HJA: Clamp: Stainless steel SCS13 Ferrule: Size 15 mm (0.5 in.): Stainless steel 316L Sizes 25 to 125 mm (1 to 5 in.): Stainless steel 304 Gasket: Ethylene propylene diene rubber (EPDM) (*) HJB: Clamp: Stainless steel SCS13 Ferrule: Stainless steel 316L Gasket: Ethylene propylene diene rubber (EPDM) (*) JJA: Nut: Stainless steel 304 Sleeve: Stainless steel 304 Gasket: Ethylene propylene diene rubber (EPDM) (*) JJB: Nut: Stainless steel 304 Sleeve: Stainless steel F316L Gasket: Ethylene propylene diene rubber (EPDM) (*) *: The gasket material is silicone rubber, when size 125 mm (5 in.) or optional code GH is selected.	—	—	—	●	●	W2

●Grounding Device

Grounding devices are attached at factory.

For the applicable condition of grounding devices and gaskets, see the separate table.

●: Applicable ○: Applicable (except Explosion Protection) —: Not Applicable

Item	Specification and Applicable Condition	Applicable Model					Code
		General-purpose Explosion protection		Submersible	Hygienic Hygienic with Explosion protection		
		Integral Flowmeter	Remote Sensor	Remote Sensor	Integral Flowmeter	Remote Sensor	
Grounding Rings (Plate Type L)	Material: Stainless Steel 316L, Thin Type. Thickness: 1 mm (0.04 in.) for sizes 2.5 to 200 mm (0.1 to 8 in.) 2 mm (0.08 in.) for sizes 250 to 400 mm (10 to 16 in.)	●	●	●	—	—	GRL
Grounding Rings (Plate Type N)	Material: Stainless Steel 316L, Thick Type. Thickness: Except for high pressure type (ASME Class 600 flange): 3 mm (0.12 in.) for sizes 2.5 to 400 mm (0.1 to 16 in.) 4 mm (0.16 in.) for size 500 mm (20 in.) For high pressure type (ASME Class 600 flange): 8.5 mm (0.33 in.) for size 25 mm (1 in.) 10.5 mm (0.41 in.) for sizes 40 to 100 mm (1.5 to 4 in.).	●	●	●	—	—	GRN
Grounding Rings (Plate Type H)	Material: Nickel Alloy, Thin Type. Thickness: 1 mm (0.04 in.) for sizes 2.5 to 200 mm (0.1 to 8 in.) 2 mm (0.08 in.) for sizes 250 to 400 mm (10 to 16 in.)	●	●	●	—	—	GRH

●Grounding Device (Continued)

●: Applicable ○: Applicable (except Explosion Protection) —: Not Applicable

Item	Specification and Applicable Condition	Applicable Model					Code
		General-purpose Explosion protection		Submersible	Hygienic Hygienic with Explosion protection		
		Integral Flowmeter	Remote Sensor	Remote Sensor	Integral Flowmeter	Remote Sensor	
Grounding Rings (Plate Type J)	Material: Nickel Alloy, Thick Type. Thickness: 3 mm (0.12 in.) for sizes 2.5 to 400 mm (0.1 to 16 in.) 4 mm (0.16 in.) for size 500 mm (20 in.)	●	●	●	—	—	GRJ
Grounding Rings (Plate Type V)	Material: Titanium, Thin Type. Thickness: 1 mm (0.04 in.) for sizes 2.5 to 200 mm (0.1 to 8 in.) 2 mm (0.08 in.) for sizes 250 to 400 mm (10 to 16 in.)	●	●	●	—	—	GRV
Grounding Rings (Plate Type W)	Material: Titanium, Thick Type. Thickness: 3 mm (0.12 in.) for sizes 2.5 to 400 mm (0.1 to 16 in.)	●	●	●	—	—	GRW
Grounding Rings (Electrode Type P)	Material: Platinum-Iridium Width: 14 mm (0.55 in.) for sizes 2.5 to 125 mm (0.1 to 5 in.) 16 mm (0.63 in.) for sizes 150 to 200 mm (6 to 8 in.)	●	●	●	—	—	GRP
Grounding Rings (Electrode Type T)	Material: Tantalum Width: 14 mm (0.55 in.) for sizes 2.5 to 125 mm (0.1 to 5 in.) 16 mm (0.63 in.) for sizes 150 to 200 mm (6 to 8 in.)	●	●	●	—	—	GRT
Built-in Grounding Electrodes (Type P)	Material: Platinum-Iridium For electrode material selected by the suffix code, selection of platinum-iridium is necessary.	●	●	●	—	—	GBP
Built-in Grounding Electrodes (Type T)	Material: Tantalum For electrode material selected by the suffix code, selection of tantalum is necessary.	●	●	●	—	—	GBT

Size Range by Grounding Device

Grounding Ring Plate:

Stainless Steel 316L

2.5 to 500 mm, 0.1 to 20 in. (for PFA Lining)

15 to 200 mm, 0.5 to 8 in. (for Ceramics Tube)

Nickel Alloy

2.5 to 500 mm, 0.1 to 20 in. (for PFA Lining)

15 to 200 mm, 0.5 to 8 in. (for Ceramics Tube)

Titanium

2.5 to 400 mm, 0.1 to 16 in. (for PFA Lining)

15 to 200 mm, 0.5 to 8 in. (for Ceramics Tube)

Grounding Ring Electrode:

Platinum-Iridium

2.5 to 200 mm, 0.1 to 8 in. (for PFA Lining)

15 to 200 mm, 0.5 to 8 in. (for Ceramics Tube)

Tantalum

2.5 to 200 mm, 0.1 to 8 in. (for PFA Lining)

15 to 200 mm, 0.5 to 8 in. (for Ceramics Tube)

Built-in Grounding Electrode:

Platinum-Iridium

150 to 400 mm, 6 to 16 in. (for PFA Lining, Flange type)

Tantalum

150 to 400 mm, 6 to 16 in. (for PFA Lining, Flange type)

●Gasket

Grounding devices are attached at factory.

For applicable condition of grounding devices and gaskets, see the separate table.

●: Applicable ○: Applicable (except Explosion Protection) —: Not Applicable

Item	Specification and Applicable Condition	Applicable Model					Code
		General-purpose Explosion protection		Submersible	Hygienic Hygienic with Explosion protection		
		Integral Flowmeter	Remote Sensor	Remote Sensor	Integral Flowmeter	Remote Sensor	
Plastic Pipe Gaskets	Fluororubber gasket (Viton) for plastic piping such as PVC. The allowable temperature and pressure range is the same as those of Valqua #4010 with no special formulation.	●	●	●	—	—	GA
Plastic Pipe Acid-resistant Gaskets	Acid-resistant fluororubber gasket (Viton) for plastic piping such as PVC. The allowable temperature and pressure range is the same as those of Valqua #4010 with special formulation D2470.	●	●	●	—	—	GC
Plastic Pipe Alkali-resistant Gaskets	Alkali-resistant fluororubber gasket (Viton) for plastic piping such as PVC. The allowable temperature and pressure range is the same as those of Valqua #4010 with special formulation D0970.	●	●	●	—	—	GD
Metal Pipe Alkali-resistant Gaskets	Alkali-resistant (fluorocarbon resin containing carbon) gasket for metal piping. The allowable temperature and pressure range is the same as those of Valqua #7026.	●	●	—	—	—	GF
Hygienic Use Silicone Rubber Gaskets	For Hygienic (sizes 15 to 25, and 40 to 125 mm (0.5 to 1, and 1.5 to 5 in.)), change the material of the gasket fixed between the measuring pipe and piping connection adapter from ethylene propylene diene rubber (EPDM)) to silicone rubber. Select optional code GH, when the fluid temperature is 120 °C (248 °F) or more (Maximum: 160 °C (320 °F)),	—	—	—	●	●	GH

●Details: Applicable Condition for Grounding Devices and Gaskets

●: Applicable —: Not Applicable

Lining	PFA Lining																Ceramics Tube			
Process Connection	Flange												Wafer	Clamp Union Butt Weld Joint	Union Joint	Wafer				
	Except for High Pressure Type										High Pressure Type									
Size mm (inch)	2.5 to 15 (0.1 to 0.5)		25 to 125 (1 to 5)		150 to 200 (6 to 8)		250 to 400 (10 to 16)		500 (20)		25 to 100 (1 to 4)		2.5 to 200 (0.1 to 8)		15 to 125 (0.5 to 5)		2.5 to 10 (0.1 to 0.4)		15 to 200 (0.5 to 8)	
Code (Grounding Device) Code (Gasket)	Not selected	GA GC GD	Not selected	GA GC GD	Not selected	GA GC GD	Not selected	GA GC GD	Not selected	GA GC GD	Not selected	GA GC GD	Not selected	GA GC GD	Not selected	GH	Not selected	GF	Not selected	GA GC GD GF
Not selected	●	—	●	—	●	—	●	—	●	—	—	—	●	—	●	●	●	●	●	—
GRL	●	—	●	—	●	—	●	—	—	—	—	—	●	—	—	—	—	—	—	—
GRN	—	●	●	●	●	●	●	—	●	—	●	—	—	●	—	—	—	—	●	●
GRH	●	—	●	—	●	—	●	—	—	—	—	—	●	—	—	—	—	—	—	—
GRJ	—	●	●	●	●	●	●	—	●	—	—	—	—	●	—	—	—	—	●	●
GRV	●	—	●	—	●	—	●	—	—	—	—	—	●	—	—	—	—	—	—	—
GRW	—	●	●	●	●	●	●	—	—	—	—	—	—	●	—	—	—	—	●	●
GRP	●	●	●	●	●	●	—	—	—	—	—	—	●	●	—	—	—	—	●	●
GRT	●	●	●	●	●	●	—	—	—	—	—	—	●	●	—	—	—	—	●	●
GBP	—	—	—	—	●	—	●	—	—	—	—	—	—	—	—	—	—	—	—	—
GBT	—	—	—	—	●	—	●	—	—	—	—	—	—	—	—	—	—	—	—	—

●Direction of Cable Entry, Waterproof, Plastic and Flameproof Glands

●: Applicable ○: Applicable (except Explosion Protection) —: Not Applicable

Item	Specification and Applicable Condition	Applicable Model						Code
		General-purpose Explosion protection		Submersible	Hygienic Hygienic with Explosion protection		General-purpose Explosion protection	
		Integral Flowmeter	Remote Sensor	Remote Sensor	Integral Flowmeter	Remote Sensor	Remote Transmitter	
Cable Entry Direction Change	Rotate the transmitter of integral flowmeter or the terminal box of remote sensor and change the direction of the cable entry (+90, +180, or -90 degree). For specifying procedures, read "Ordering Information".	●	●	●	●	●	—	RH
Waterproof Glands (Type G)	2 pcs. of waterproof gland For cable entry, selection of JIS G1/2 female thread is necessary.	—	○	—	—	○	—	EG
Waterproof Glands (Type G2)	2 pcs. of waterproof gland, and a blanking plug For cable entry, selection of JIS G1/2 female thread is necessary.	○	—	—	○	—	—	EG2
Waterproof Glands (Type G3)	3 pcs. of waterproof gland For cable entry, selection of JIS G1/2 female thread is necessary.	○	—	—	○	—	—	EG3
Waterproof Glands (Type G4)	4 pcs. of waterproof gland, and a blanking plug For cable entry, selection of JIS G1/2 female thread is necessary.	—	—	—	—	—	●	EG4
Waterproof Glands (Type G5)	5 pcs. of waterproof gland For cable entry, selection of JIS G1/2 female thread is necessary.	—	—	—	—	—	●	EG5
Waterproof Glands (Type U)	2 pcs. of waterproof gland with union joint For cable entry, selection of JIS G1/2 female thread is necessary.	—	○	—	—	○	—	EU
Waterproof Glands (Type U2)	2 pcs. of waterproof gland with union joint, and a blanking plug For cable entry, selection of JIS G1/2 female thread is necessary.	○	—	—	○	—	—	EU2
Waterproof Glands (Type U3)	3 pcs. of waterproof gland with union joint For cable entry, selection of JIS G1/2 female thread is necessary.	○	—	—	○	—	—	EU3
Waterproof Glands (Type U4)	4 pcs. of waterproof gland with union joint, and a blanking plug For cable entry, selection of JIS G1/2 female thread is necessary.	—	—	—	—	—	●	EU4
Waterproof Glands (Type U5)	5 pcs. of waterproof gland with union joint For cable entry, selection of JIS G1/2 female thread is necessary.	—	—	—	—	—	●	EU5
Plastic Glands (Type P)	2 pcs. of plastic gland For cable entry, selection of JIS G1/2 female thread is necessary.	—	○	—	—	○	—	EP
Plastic Glands (Type P2)	2 pcs. of plastic gland, and a blanking plug For cable entry, selection of JIS G1/2 female thread is necessary.	○	—	—	○	—	—	EP2
Plastic Glands (Type P3)	3 pcs. of plastic gland For cable entry, selection of JIS G1/2 female thread is necessary.	○	—	—	○	—	—	EP3
Plastic Glands (Type P4)	4 pcs. of plastic gland, and a blanking plug For cable entry, selection of JIS G1/2 female thread is necessary.	—	—	—	—	—	●	EP4
Plastic Glands (Type P5)	5 pcs. of plastic gland For cable entry, selection of JIS G1/2 female thread is necessary.	—	—	—	—	—	●	EP5
Waterproof Glands (Type W)	2 pcs. of waterproof gland with JIS G3/4 female For cable entry, selection of JIS G1/2 female thread is necessary.	—	○	—	—	○	—	EW

●Direction of Cable Entry, Waterproof, Plastic and Flameproof Glands (Continued)

●: Applicable ○: Applicable (except Explosion Protection) —: Not Applicable

Item	Specification and Applicable Condition	Applicable Model						Code
		General-purpose Explosion protection		Submersible	Hygienic Hygienic with Explosion protection		General- purpose Explosion protection	
		Integral Flowmeter	Remote Sensor	Remote Sensor	Integral Flowmeter	Remote Sensor	Remote Transmitter	
Flameproof* gland 1 piece	1 piece of Flameproof gland with JIS G1/2 female. For cable entry, selection of M20 female thread is necessary.	●	—	—	●	—	—	V51
Flameproof* gland 2 pcs.	2 pcs. of Flameproof gland with JIS G1/2 female. For cable entry, selection of M20 female thread is necessary.	●	●	—	●	●	—	V52
Flameproof* gland 3 pcs.	3 pcs. of Flameproof gland with JIS G1/2 female. For cable entry, selection of M20 female thread is necessary.	●	—	—	●	—	●	V53
Flameproof* gland 4 pcs.	4 pcs. of Flameproof gland with JIS G1/2 female. For cable entry, selection of M20 female thread is necessary.	—	—	—	—	—	●	V54
Flameproof* gland 5 pcs.	5 pcs. of Flameproof gland with JIS G1/2 female. For cable entry, selection of M20 female thread is necessary.	—	—	—	—	—	●	V55

*: The thread of connection between AXG and Flameproof gland is M20, and the thread of connection between Flameproof gland and CABLE is G1/2.

●Certificate, Calibration, and Various Test

●: Applicable ○: Applicable (except Explosion Protection) —: Not Applicable

Item	Specification and Applicable Condition	Applicable Model						Code
		General-purpose Explosion protection		Submersible	Hygienic Hygienic with Explosion protection		General-purpose Explosion protection	
		Integral Flowmeter	Remote Sensor	Remote Sensor	Integral Flowmeter	Remote Sensor	Remote Transmitter	
Material Certificate	Material certificate is issued. Target Parts: PFA Lining: Measuring Pipe, Electrodes, Grounding Devices (Grounding Rings Plate Type, Grounding Rings Electrode Type, or Built-in Grounding Electrodes), Flanges (for flange type), Mini-flanges (for wafer type), Adapters for Hygienic Ceramics Tube: Grounding Devices (Grounding Rings Plate Type, or Grounding Rings Electrode Type), Union Joint	●	●	●	●	●	—	M01
Material Certificate (EN 10204-3.1)	For sizes 2.5 to 400 mm (0.1 to 16 in.), except for high pressure type, material certificates according to EN 10204 Type 3.1 with a dedicated cover is issued. The target parts are the same as optional code M01.	●	●	●	●	●	—	E01
Calibration Certificate (Level 2)	The Declaration and the Calibration Equipment List are issued.	●	●	●	●	●	●	L2
Calibration Certificate (Level 3)	The Declaration and the Primary Standard List are issued.	●	●	●	●	●	●	L3
Calibration Certificate (Level 4)	The Declaration and the Yokogawa Measuring Instruments Control System are issued.	●	●	●	●	●	●	L4
Specified Span Five-point Calibration	With the customer's specified span, the actual flow inspection of 5 points around 0, 25, 50, 75, and 100% is performed. Instead of the flow inspection at the standard flow rate of 2 m/s (6.56 ft/s), the result of flow inspection with the customer specified span is described in a test certificate (QIC). For specifiable spans, read "Ordering Information".	●	●	●	●	●	—	SC
Hydrostatic Test	The water pressure depending on the process connection is applied to the lining (measuring pipe) for 10 minutes to check that there is no leakage, and the result is described in a test certificate (QIC). For the test water pressure on each process connection, see the separate table.	●	●	●	—	—	—	T01
Withstand Voltage Test (Type 1)	Withstand voltage test on remote sensor (sizes 2.5 to 400 mm (0.1 to 16 in.)) is performed, and the result is described in a test certificate (QIC). WT1: Between excitation current terminal and ground terminal: 1000 V AC for 1 minute	—	○	●	—	○	—	WT1
Withstand Voltage Test (Type 2)	WT2: Between excitation current terminal and ground terminal: 1500 V AC for 1 minute Between signal terminals and excitation current terminal: 1500 V AC for 1 minute	—	○	●	—	○	—	WT2
PMI Test (Type 1)	Fluorescent X-ray analysis of nickel, chromium and molybdenum is performed on parts made of stainless steel or nickel alloy, and a test report is issued. For applicable condition, see the separate table.	●	●	●	—	—	—	PM1
PMI Test (Type 2)	Target Parts: PM1: Grounding Rings (Plate Type)	●	●	●	—	—	—	PM2
PMI Test (Type 3)	PM2: Flange (Stainless steel only) PM3: Measuring Pipe	●	●	●	●	●	—	PM3
Liquid Penetrant Test	Liquid penetrant test on welded parts of flanges (for flange type) or mini-flanges (for wafer type) is performed and a test report is issued. For applicable condition, see the separate table.	●	●	●	—	—	—	PT

●Details: Water Pressure of Hydrostatic Test (Optional Code T01):

Process connection code	Process connection	Size: mm (in.)	Water pressure (MPa)
#A1	ASME Class 150	2.5 to 300 (0.1 to 12)	3.0
		350 to 500 (14 to 20)	1.5
#A2	ASME Class 300	2.5 to 50 (0.1 to 2)	6.0
		65 to 300 (2.5 to 12)	3.0
#A4	ASME Class 600	25 to 100 (1 to 4)	15.5
#E1	EN PN10	200 to 500 (8 to 20)	1.5
#E2	EN PN16	65 to 300 (2.5 to 12)	2.4
		500 (20)	1.5
#E4	EN PN40	2.5 to 50 (0.1 to 2)	6.0
#G1	JIS F12	80 to 300 (3 to 12)	1.8
		350 to 400 (14 to 16)	1.5
#J1	JIS 10K	2.5 to 300 (0.1 to 12)	2.1
		350 to 400 (14 to 16)	1.5
#J2	JIS 20K	2.5 to 50 (0.1 to 2)	6.0
		65 to 300 (2.5 to 12)	3.0
#P1	JPI Class 150	2.5 to 300 (0.1 to 12)	3.0
		350 to 400 (14 to 16)	1.5
#S1	AS Table D	50 to 400 (2 to 16)	1.1
#S2	AS Table E	50 to 300 (2 to 12)	2.1
GU#	Union Joint	2.5 to 10 (0.1 to 0.4)	6.0

●Details: Applicable Condition for PMI Test
○Grounding Rings (Plate Type) (Optional Code PM1)

●: Applicable —: Not Applicable

Lining		PFA Lining				Ceramics Tube	
Process Connection		Flange		Wafer	Clamp Union Butt Weld Joint	Union Joint	Wafer
Code (Grounding Device)	Size mm (inch)	2.5 to 400 (0.1 to 16)	500 (20)	2.5 to 200 (0.1 to 16)	15 to 125 (0.5 to 5)	2.5 to 10 (0.1 to 0.4)	15 to 200 (0.5 to 8)
	Not selected	—	—	—	—	—	—
	GRL	●	—	●	—	—	—
	GRN	●	—	●	—	—	●
	GRH	●	—	●	—	—	—
	GRJ	●	—	●	—	—	●
	GRV	—	—	—	—	—	—
	GRW	—	—	—	—	—	—

○Flange (Optional Code PM2)

●: Applicable —: Not Applicable

Lining		PFA Lining						Ceramics Tube	
Process Connection		Flange				Wafer	Clamp Union Butt Weld Joint	Union Joint	Wafer
Size mm (inch)	Code (Process Connection)	B##	C##	D##	E##	P##	A##	H## J## K##	G## A##
2.5 (0.1)		●	—	●	—	●	—	—	—
5 (0.2)		●	—	●	—	●	—	—	—
10 (0.4)		●	—	●	—	●	—	—	—
15 (0.5)		●	—	—	—	●	—	—	—
25 (1)		●	—	—	●	●	—	—	—
32 (1.25)		●	—	—	—	—	—	—	—
40 (1.5)		●	—	—	●	●	—	—	—
50 (2)		●	—	—	●	●	—	—	—
65 (2.5)		●	—	—	—	—	—	—	—
80 (3)		●	—	—	●	●	—	—	—
100 (4)		●	—	—	●	●	—	—	—
125 (5)		●	—	—	—	—	—	—	—
150 (6)		●	—	—	—	●	—	—	—
200 (8)		●	—	—	—	●	—	—	—
250 (10)		●	—	—	—	●	—	—	—
300 (12)		●	—	—	—	●	—	—	—
350 (14)		●	—	—	—	●	—	—	—
400 (16)		●	—	—	—	●	—	—	—
500 (20)		—	—	—	—	—	—	—	—

○Measuring Pipe (Optional Code PM3)

●: Applicable —: Not Applicable

Lining Size mm (inch)	Process Connection	PFA Lining			Ceramics Tube	
		Flange	Wafer	Clamp Union Butt Weld Joint	Union Joint	Wafer
2.5 (0.1)		●	●	—	—	—
5 (0.2)		●	●	—	—	—
10 (0.4)		●	●	—	—	—
15 (0.5)		●	●	●	—	—
25 (1)		●	●	●	—	—
32 (1.25)		●	●	●	—	—
40 (1.5)		●	●	●	—	—
50 (2)		●	●	●	—	—
65 (2.5)		●	●	●	—	—
80 (3)		●	●	●	—	—
100 (4)		●	●	●	—	—
125 (5)		●	●	●	—	—
150 (6)		●	●	—	—	—
200 (8)		●	●	—	—	—
250 (10)		●	—	—	—	—
300 (12)		●	—	—	—	—
350 (14)		●	—	—	—	—
400 (16)		●	—	—	—	—
500 (20)		—	—	—	—	—

●Details: Applicable Condition for Liquid Penetrant Test (Optional Code PT)

●: Applicable —: Not Applicable

Lining Size mm (inch)	Process Connection Code (Process Connection)	PFA Lining						Ceramics Tube	
		Flange				Wafer	Clamp Union Butt Weld Joint	Union Joint	Wafer
		B##	C##	D##	E##	P##	A##	H## J## K##	G## A##
2.5 (0.1)		—	—	—	—	—	—	—	—
5 (0.2)		—	—	—	—	—	—	—	—
10 (0.4)		—	—	—	—	—	—	—	—
15 (0.5)		—	—	—	—	—	—	—	—
25 (1)		●	—	—	●	●	—	—	—
32 (1.25)		●	—	—	—	—	—	—	—
40 (1.5)		●	—	—	●	●	—	—	—
50 (2)		●	●	—	●	●	—	—	—
65 (2.5)		●	●	—	—	—	—	—	—
80 (3)		●	●	—	●	●	—	—	—
100 (4)		●	●	—	●	●	—	—	—
125 (5)		●	●	—	—	—	—	—	—
150 (6)		●	●	—	—	●	●	—	—
200 (8)		●	●	—	—	●	●	—	—
250 (10)		●	●	—	—	●	—	—	—
300 (12)		●	●	—	—	●	—	—	—
350 (14)		●	●	—	—	●	—	—	—
400 (16)		●	●	—	—	●	—	—	—
500 (20)		●	●	—	—	—	—	—	—

■ ACCESSORIES

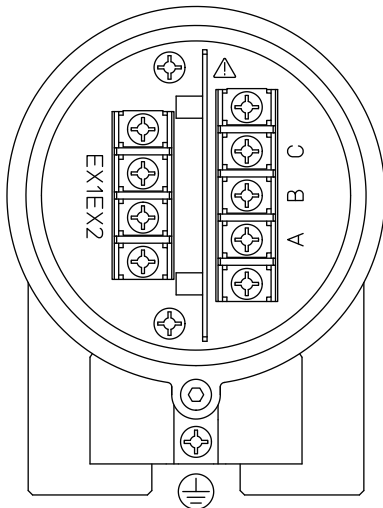
- Centering Device (wafer type only): 1 set
 - Blanking Plug: 1 to 2 pcs.
 - Gasket (sensor side): 2 sheets
 - Mounting Bracket (transmitter only): 1 set
- Note: Accessories differ depending on specifications to be selected.

■ TERMINAL CONFIGURATION

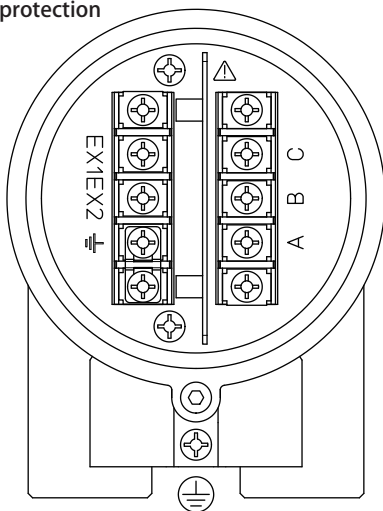
Remote Sensor:

<To be wired to Remote Transmitter>

Non Explosion Protection



Explosion protection

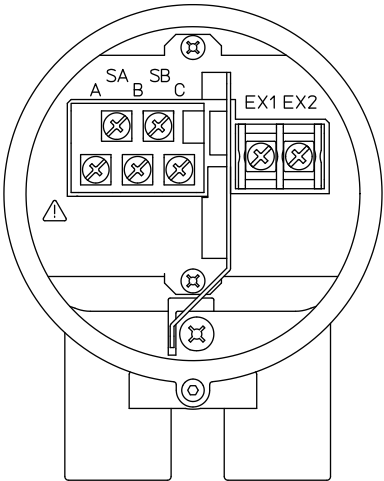


Terminal Symbol	Description
A B C	Flow Signal Output
EX1 EX2	Excitation Current Input
	Protective Grounding (Outside of the terminal box)
	Functional grounding (Only for explosion proof type)

Note: When submersible use or optional code DHC is selected, waterproof glands with union joints and cables are attached.

Remote Transmitter:

<To be wired to Remote Sensor>

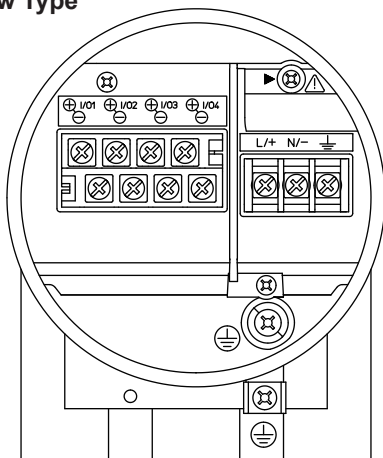
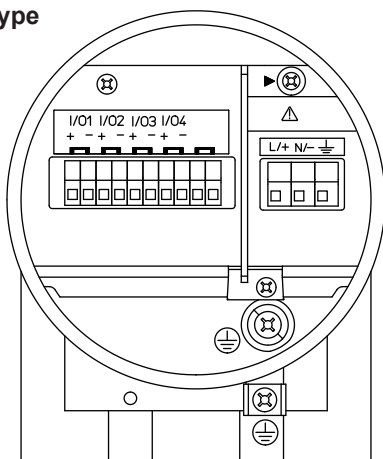


Terminal Symbol	Description
SA SB A B C	Flow Signal Input
EX1 EX2	Excitation Current Output

F29.ai

Integral Flowmeter and Remote Transmitter:

<To be wired to Power Supply and I/Os>

M4 Screw Type**Clamp Type****Recommended Cable for Excitation, Power and Input / Output:**

JIS C 3401 control cable equivalent

JIS C 3312 power cable equivalent

14 AWG Belden 8720 equivalent

Outer Diameter:

Without gland:

6.5 to 12 mm (0.26 to 0.47 in.)

With waterproof gland (optional code EG, EG#, EU, EU#, EW):

For excitation cable:

10.5 or 11.5 mm (0.41 or 0.45 in.)

For power and input/output cable:

7.5 to 12 mm (0.30 to 0.47 in.)

With plastic gland (optional code EP, EP#):

6 to 12 mm (0.24 to 0.47 in.)

Nominal Cross Section:

Single wire: 0.5 to 2.5 mm²Stranded wire: 0.5 to 1.5 mm²**Excitation Cable for Submersible Use and Optional Code DHC:**

Heat resistant vinyl resin sheath cable

Outer diameter ø10.5 mm (0.41 in.)

Terminal Symbol	Description
▶	Shorting Screw (Need to be fixed for normal operation)
⏏	Functional Grounding
N/- L/+	Power Supply
I/O4 - I/O4 + I/O3 - I/O3 + I/O2 - I/O2 + I/O1 - I/O1 +	Selected Input/Output (Note)
⏏	Protective Grounding (Inside and outside of the terminal box)

F30.ai

Note: Read "Functions" for the input/output signal terminals.

DIMENSIONAL DRAWINGS

(1) Integral Flowmeter, Remote Sensor

• Wafer (PFA Lining)

Unit: mm (approx. in.)

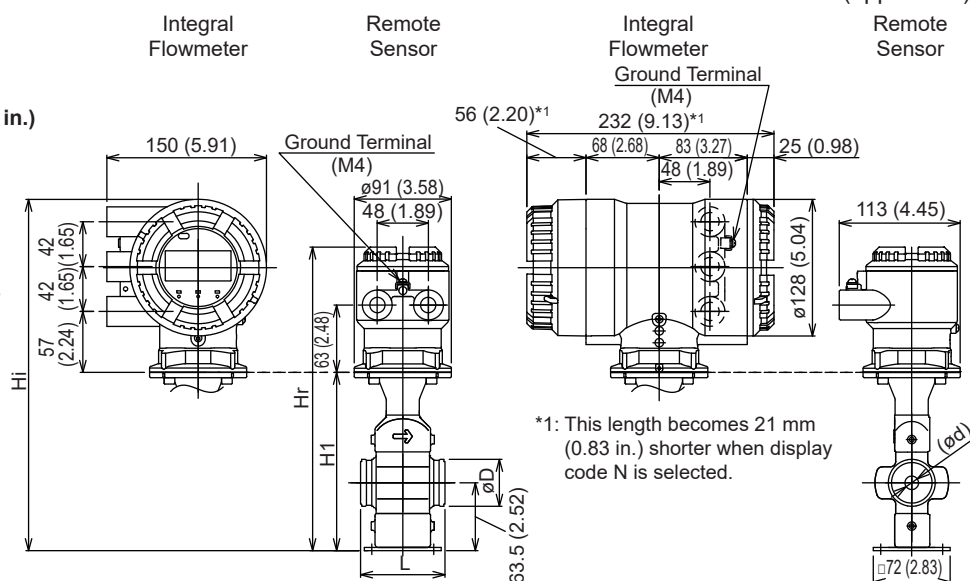
Size 2.5 to 15 mm (0.1 to 0.5 in.)

AXG002
AXG005
AXG010
AXG015

Size Code

Process Connection Code

Lining Code



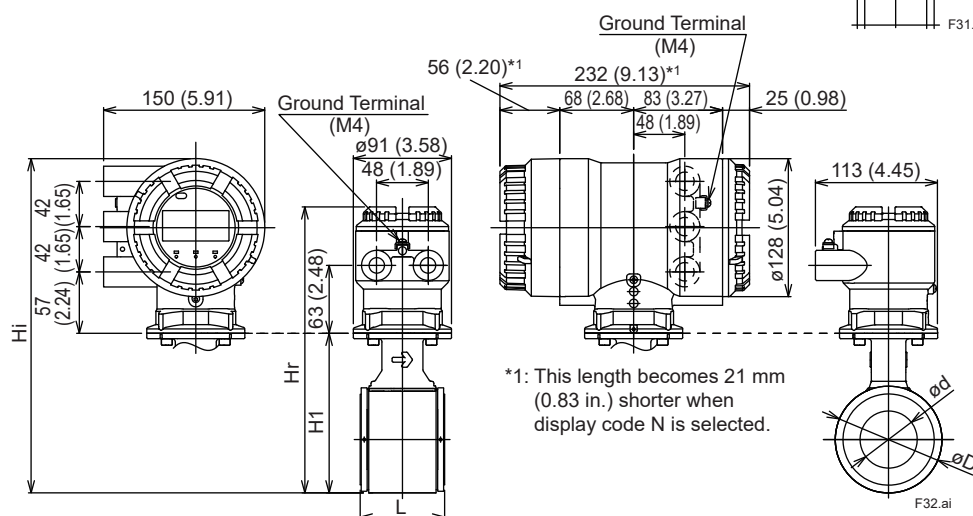
Size 25 to 125 mm (1 to 5 in.)

AXG025
AXG032
AXG040
AXG050
AXG065
AXG080
AXG100
AXG125

Size Code

Process Connection Code

Lining Code



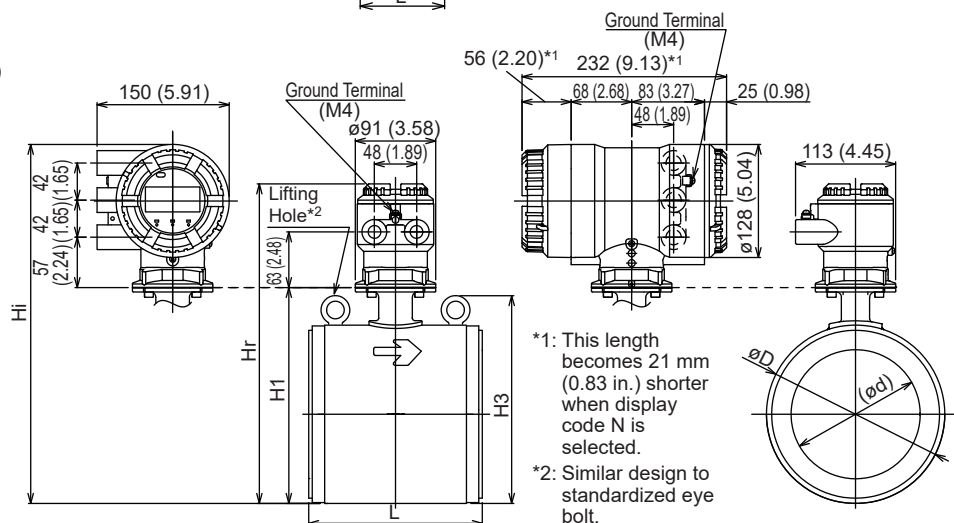
Size 150 to 200 mm (6 to 8 in.)

AXG150
AXG200

Size Code

Process Connection Code

Lining Code



Unit: mm (approx. in.)

Model	Process Connection Code		AA1, AA2, AJ1, AJ2													
			AE4							AE2						
			-	-	-	-	-	-	-	-	-	-	-	-	-	AE1
			-	-	-	-	-	-	-	-	-	-	-	-	-	-
			AP1				-	AP1			-	AP1			-	AP1
			002	005	010	015	025	032	040	050	065	080	100	125	150	200
Remote Sensor	Size Code		2.5 (0.1)	5 (0.2)	10 (0.4)	15 (0.5)	25 (1)	32 (1.25)	40 (1.5)	50 (2)	65 (2.5)	80 (3)	100 (4)	125 (5)	150 (6)	200 (8)
	Size		A	A	A	A	A	A	A	A	A	A	A	A	A	A
	Lining Code		A	A	A	A	A	A	A	A	A	A	A	A	A	A
	Lay Length (*1)	L	79 (3.11)	79 (3.11)	79 (3.11)	79 (3.11)	58 (2.30)	68 (2.69)	68 (2.69)	78 (3.09)	98 (3.87)	118 (4.66)	148 (5.84)	198 (7.81)	197 (7.74)	247 (9.70)
	Outer Diameter	øD	44 (1.73)	44 (1.73)	44 (1.73)	44 (1.73)	68 (2.66)	73 (2.87)	86 (3.39)	99 (3.90)	117 (4.61)	129 (5.08)	155 (6.10)	183 (7.20)	202 (7.94)	252 (9.91)
Integral Flowmeter	Lining Inner Diameter	ød	2 (0.09)	5 (0.19)	8 (0.30)	13 (0.51)	24 (0.93)	29 (1.13)	37 (1.44)	49 (1.94)	61 (2.40)	73 (2.87)	97 (3.82)	121 (4.76)	145 (5.72)	194 (7.65)
	Height	H1	167 (6.57)	167 (6.57)	167 (6.57)	167 (6.57)	110 (4.33)	116 (4.57)	129 (5.08)	148 (5.83)	165 (6.50)	175 (6.89)	201 (7.91)	230 (9.06)	244 (9.62)	294 (11.59)
	Height	H3	-	-	-	-	-	-	-	-	-	-	-	-	235 (9.26)	285 (11.22)
Remote Sensor	Maximum Height	Hr	284 (11.18)	284 (11.18)	284 (11.18)	284 (11.18)	227 (8.94)	233 (9.17)	246 (9.69)	265 (10.43)	282 (11.10)	292 (11.50)	318 (12.52)	347 (13.66)	362 (14.24)	412 (16.21)
	Approx. Weight, Unit: kg (lb) (*2)		2.7 (6.0)	2.7 (6.0)	2.7 (6.0)	2.7 (6.0)	2.2 (4.9)	2.4 (5.3)	2.6 (5.7)	3.2 (7.1)	3.9 (8.6)	4.6 (10.1)	6.3 (13.9)	10.5 (23.2)	15 (33.1)	22 (48.6)
Integral Flowmeter	Maximum Height	Hi	329 (12.95)	329 (12.95)	329 (12.95)	329 (12.95)	272 (10.71)	278 (10.94)	291 (11.46)	310 (12.20)	327 (12.87)	337 (13.27)	363 (14.29)	392 (15.43)	406 (16.00)	456 (17.97)
	Approx. Weight, Unit: kg (lb)		5.3 (11.7)	5.3 (11.7)	5.3 (11.7)	5.3 (11.7)	4.8 (10.6)	4.9 (10.8)	5.1 (11.2)	5.7 (12.6)	6.4 (14.1)	7.2 (15.9)	8.8 (19.4)	13.1 (28.9)	17 (37.5)	25 (55.2)
Gaskets (BSC, BSF) (*1)			+6 (+0.24)	+6 (+0.24)	+6 (+0.24)	+6 (+0.24)	+6 (+0.24)	+6 (+0.24)	+6 (+0.24)	+6 (+0.24)	+6 (+0.24)	+6 (+0.24)	+6 (+0.24)	+6 (+0.24)	+6 (+0.24)	+6 (+0.24)
Grounding rings thin type (GRL, GRH, GRV) (*1)			+2 (+0.08)	+2 (+0.08)	+2 (+0.08)	+2 (+0.08)	+2 (+0.08)	+2 (+0.08)	+2 (+0.08)	+2 (+0.08)	+2 (+0.08)	+2 (+0.08)	+2 (+0.08)	+2 (+0.08)	+2 (+0.08)	+2 (+0.08)
Grounding rings thin type (GRL, GRH, GRV) and gaskets (BSC, BSF) (*1)			+8 (+0.31)	+8 (+0.31)	+8 (+0.31)	+8 (+0.31)	+8 (+0.31)	+8 (+0.31)	+8 (+0.31)	+8 (+0.31)	+8 (+0.31)	+8 (+0.31)	+8 (+0.31)	+8 (+0.31)	+8 (+0.31)	+8 (+0.31)
Grounding rings thick type (GRN, GRJ, GRW) with gaskets (GA, GC, GD) (*1)			+8 (+0.31)	+8 (+0.31)	+8 (+0.31)	+8 (+0.31)	+10 (+0.39)	+10 (+0.39)	+10 (+0.39)	+10 (+0.39)	+10 (+0.39)	+10 (+0.39)	+10 (+0.39)	+10 (+0.39)	+12 (+0.47)	+12 (+0.47)
Grounding rings thick type (GRN, GRJ, GRW) with gaskets (GA, GC, GD) and gaskets (BSC, BSF) (*1)			+14 (+0.55)	+14 (+0.55)	+14 (+0.55)	+14 (+0.55)	+16 (+0.63)	+16 (+0.63)	+16 (+0.63)	+16 (+0.63)	+16 (+0.63)	+16 (+0.63)	+16 (+0.63)	+16 (+0.63)	+18 (+0.71)	+18 (+0.71)
Grounding rings electrode type (GRP, GRT) (*1)			+28 (+1.10)	+28 (+1.10)	+28 (+1.10)	+28 (+1.10)	+28 (+1.10)	+28 (+1.10)	+28 (+1.10)	+28 (+1.10)	+28 (+1.10)	+28 (+1.10)	+28 (+1.10)	+28 (+1.10)	+32 (+1.26)	+32 (+1.26)
Grounding rings electrode type (GRP, GRT) and gaskets (BSC, BSF) (*1)			+34 (+1.34)	+34 (+1.34)	+34 (+1.34)	+34 (+1.34)	+34 (+1.34)	+34 (+1.34)	+34 (+1.34)	+34 (+1.34)	+34 (+1.34)	+34 (+1.34)	+34 (+1.34)	+34 (+1.34)	+38 (+1.50)	+38 (+1.50)
Grounding rings electrode type (GRP, GRT) with gaskets (GA, GC, GD) (*1)			+30 (+1.18)	+30 (+1.18)	+30 (+1.18)	+30 (+1.18)	+32 (+1.26)	+32 (+1.26)	+32 (+1.26)	+32 (+1.26)	+32 (+1.26)	+32 (+1.26)	+32 (+1.26)	+32 (+1.26)	+38 (+1.50)	+38 (+1.50)
Grounding rings electrode type (GRP, GRT) with gaskets (GA, GC, GD) and gaskets (BSC, BSF) (*1)			+36 (+1.42)	+36 (+1.42)	+36 (+1.42)	+36 (+1.42)	+38 (+1.50)	+38 (+1.50)	+38 (+1.50)	+38 (+1.50)	+38 (+1.50)	+38 (+1.50)	+38 (+1.50)	+38 (+1.50)	+44 (+1.73)	+44 (+1.73)

*1: Add the value above (which is the total of both ends) to the lay length "L" when selecting optional grounding rings with/without gaskets.

*2: When submersible use or optional code DHC is selected, waterproof glands with union joints and cables are attached. When the cable length is 30-meters, add 9.5 kg (20.9 lb) to the weight in the table.

● Flange (PFA Lining, excluding High Pressure Type)

Unit: mm (approx. in.)

Size 2.5 to 15 mm (0.1 to 0.5 in.)

AXG002
AXG005
AXG010
AXG015

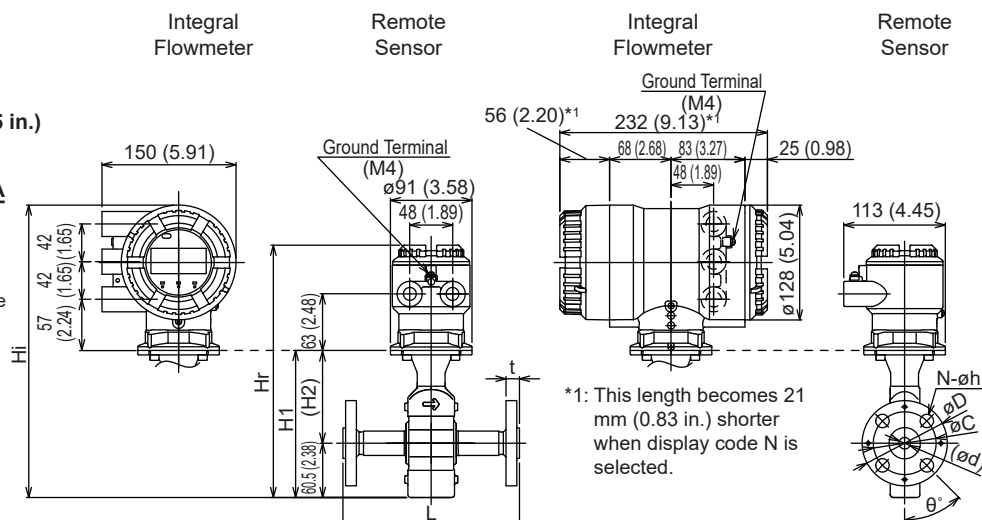
Size Code

■=B, D, P

□□□□□■□□A

Process Connection Code

Lining Code



F34.ai

Size 25 to 125 mm (1 to 5 in.)

AXG025
AXG032
AXG040
AXG050
AXG065
AXG080
AXG100
AXG125

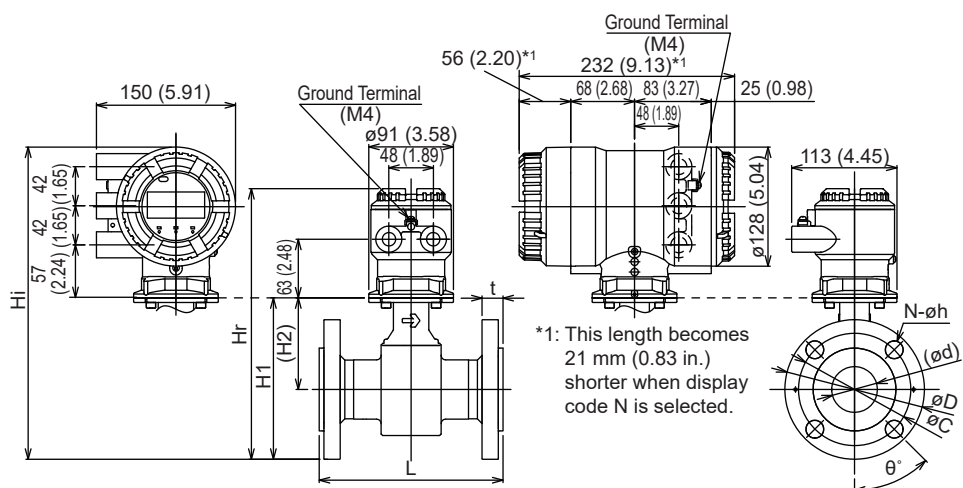
Size Code

■=B, C, P

□□□□□■□□A

Process Connection Code

Lining Code



F35.ai

Size 150 to 200 mm (6 to 8 in.)

AXG150
AXG200

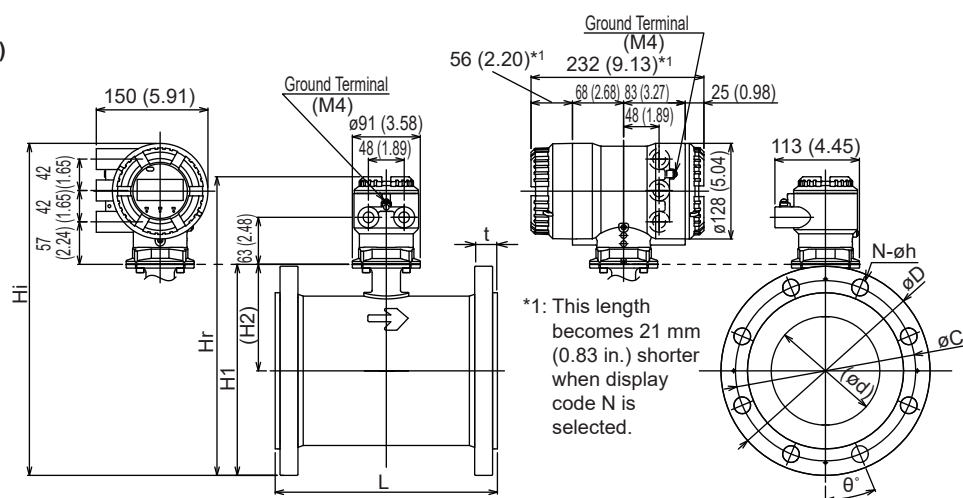
Size Code

■=B, C, P

□□□□□■□□A

Process Connection Code

Lining Code



F36.ai

○ Flange, ASME Class 150

Unit: mm (approx. in.)

Model	Process Connection Code		BA1																			
			-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	
	PA1										CA1											
	Size Code	002	005	010	015	025	032	040	050	065	080	100	125	150	200	250	300	350	400	500		
Size	2.5 (0.1)	5 (0.2)	10 (0.4)	15 (0.5)	25 (1)	32 (1.25)	40 (1.5)	50 (2)	65 (2.5)	80 (3)	100 (4)	125 (5)	150 (6)	200 (8)	250 (10)	300 (12)	350 (14)	400 (16)	500 (20)			
Lining Code	A	A	A	A	A	A	A	A	A	A	A	A	A	A	A	A	A	A	A	A		
Remote Sensor	Lay Length (*1) (*3)	L	148 (5.83)	148 (5.83)	148 (5.83)	198 (7.80)	198 (7.78)	198 (7.78)	198 (7.78)	198 (7.78)	198 (7.78)	248 (9.74)	248 (9.74)	298 (11.71)	348 (13.68)	446 (17.54)	496 (19.51)	546 (21.48)	596 (23.44)	600 (23.62)		
	Flange Outer Diameter	øD	90 (3.54)	90 (3.54)	90 (3.54)	90 (3.54)	110 (4.33)	115 (4.53)	125 (4.92)	150 (5.91)	180 (7.09)	190 (7.48)	230 (9.06)	255 (10.04)	280 (11.02)	345 (13.58)	405 (15.94)	485 (19.09)	535 (21.06)	700 (27.56)		
	Flange Thickness (incl. lining flare)	t	19.2 (0.76)	19.2 (0.76)	19.2 (0.76)	16.2 (0.64)	18.7 (0.74)	19.3 (0.76)	20.9 (0.82)	22.5 (0.89)	25.7 (1.01)	27.3 (1.07)	27.3 (1.07)	27.3 (1.07)	30.4 (1.20)	33.5 (1.32)	35.6 (1.40)	37.2 (1.46)	40.9 (1.61)	42.5 (1.67)	48.6 (1.91)	
	Lining Inner Diameter	ød	2 (0.09)	5 (0.19)	8 (0.30)	13 (0.51)	24 (0.93)	29 (1.13)	37 (1.44)	49 (1.94)	61 (2.40)	73 (2.87)	97 (3.82)	121 (4.76)	145 (5.72)	194 (7.65)	243 (9.55)	292 (11.51)	323 (12.73)	374 (14.70)	491 (18.07)	
	Bolt Circle Diameter	øC	60.3 (2.37)	60.3 (2.37)	60.3 (2.37)	60.3 (2.37)	79.4 (3.13)	88.9 (3.50)	98.4 (3.87)	120.7 (4.75)	139.7 (5.50)	152.4 (6.00)	190.5 (7.50)	215.9 (8.50)	241.3 (9.50)	298.5 (11.75)	362.0 (14.25)	431.8 (17.00)	476.3 (18.75)	539.8 (21.25)	600 (25.00)	
	Bolt Hole Interval	θ°	45	45	45	45	45	45	45	45	45	45	22.5	22.5	22.5	22.5	15	15	15	11.25	9	
	Bolt Hole Diameter	øh	15.9 (0.63)	15.9 (0.63)	15.9 (0.63)	15.9 (0.63)	15.9 (0.63)	15.9 (0.63)	15.9 (0.63)	19.1 (0.75)	19.1 (0.75)	19.1 (0.75)	19.1 (0.75)	22.2 (0.87)	22.3 (0.88)	22.3 (0.88)	25.4 (1.00)	25.4 (1.00)	28.6 (1.13)	28.6 (1.13)	31.8 (1.25)	
	Number of Bolt Holes	N	4	4	4	4	4	4	4	4	4	4	8	8	8	8	12	12	12	16	20	
	Height	H1	164 (6.46)	164 (6.46)	164 (6.46)	164 (6.46)	135 (5.31)	144 (5.67)	149 (5.87)	174 (6.85)	198 (7.80)	209 (8.23)	239 (9.41)	266 (10.47)	283 (11.12)	340 (13.39)	401 (15.78)	465 (18.32)	512 (20.14)	569 (22.41)	689 (27.12)	
	Height	H2	104 (4.09)	104 (4.09)	104 (4.09)	104 (4.09)	80 (3.15)	86 (3.39)	86 (3.39)	99 (3.90)	108 (4.25)	114 (4.49)	124 (4.88)	138 (5.43)	143 (5.61)	168 (6.60)	198 (7.81)	223 (8.77)	244 (9.61)	272 (10.70)	339 (13.34)	
Height	H3	-	-	-	-	-	-	-	-	-	-	-	-	-	-	456 (17.95)	536 (21.10)	595 (23.43)	655 (25.79)	760 (29.92)		
Remote Sensor	Maximum Height	Hr	281 (11.06)	281 (11.06)	281 (11.06)	281 (11.06)	252 (9.92)	261 (10.28)	266 (10.47)	291 (11.46)	315 (12.40)	326 (12.83)	356 (14.02)	383 (15.08)	400 (15.74)	457 (18.01)	518 (20.40)	583 (22.94)	629 (24.76)	687 (27.03)	806 (31.74)	
	Approx. Weight, Unit: kg (lb) (*2)		3.6 (7.9)	3.6 (7.9)	3.6 (7.9)	3.8 (8.4)	4.2 (9.3)	4.8 (10.6)	5.5 (12.1)	7.4 (16.3)	10.8 (23.8)	13.0 (28.7)	18.2 (40.1)	22.8 (50.3)	31 (68.4)	50 (110.4)	79 (174.4)	109 (240.6)	136 (300.2)	173 (381.9)	233 (514.4)	
Integral Flowmeter	Maximum Height	Hi	326 (12.83)	326 (12.83)	326 (12.83)	326 (12.83)	297 (11.69)	306 (12.05)	311 (12.24)	336 (13.23)	360 (14.17)	371 (14.61)	401 (15.79)	428 (16.85)	445 (17.50)	502 (19.77)	563 (22.16)	627 (24.69)	674 (26.52)	731 (28.79)	-	
	Approx. Weight, Unit: kg (lb)		6.1 (13.5)	6.1 (13.5)	6.1 (13.5)	6.4 (14.1)	6.7 (14.8)	7.3 (16.1)	8.0 (17.6)	9.9 (21.8)	13.7 (30.2)	15.5 (34.2)	20.7 (45.6)	25.4 (56.0)	34 (75.1)	52 (114.8)	82 (181.0)	111 (245.0)	138 (304.6)	175 (386.3)	-	
Grounding rings thin type (GRL, GRH, GRV) (*1)			+2 (+0.08)	+2 (+0.08)	+2 (+0.08)	+2 (+0.08)	+2 (+0.08)	+2 (+0.08)	+2 (+0.08)	+2 (+0.08)	+2 (+0.08)	+2 (+0.08)	+2 (+0.08)	+2 (+0.08)	+2 (+0.08)	+2 (+0.08)	+4 (+0.16)	+4 (+0.16)	+4 (+0.16)	+4 (+0.16)	-	
Grounding rings thick type (GRN, GRJ, GRW) (*1)			+6 (+0.24)	+6 (+0.24)	+6 (+0.24)	+6 (+0.24)	+6 (+0.24)	+6 (+0.24)	+6 (+0.24)	+6 (+0.24)	+6 (+0.24)	+6 (+0.24)	+6 (+0.24)	+6 (+0.24)	+6 (+0.24)	+6 (+0.24)	+6 (+0.24)	+6 (+0.24)	+6 (+0.24)	+6 (+0.24)	+8 (+0.31)	
Grounding rings thick type (GRN, GRJ, GRW) with gaskets (GA, GC, GD) (*1)			+10 (+0.39)	+10 (+0.39)	+10 (+0.39)	+10 (+0.39)	+10 (+0.39)	+10 (+0.39)	+10 (+0.39)	+10 (+0.39)	+10 (+0.39)	+10 (+0.39)	+10 (+0.39)	+10 (+0.39)	+10 (+0.39)	+12 (+0.47)	+12 (+0.47)	-	-	-	-	
Grounding rings electrode type (GRP, GRT) (*1)			+28 (+1.10)	+28 (+1.10)	+28 (+1.10)	+28 (+1.10)	+28 (+1.14)	+29 (+1.14)	+29 (+1.14)	+29 (+1.14)	+29 (+1.14)	+29 (+1.14)	+29 (+1.14)	+29 (+1.14)	+29 (+1.14)	+34 (+1.34)	+34 (+1.34)	-	-	-	-	
Grounding rings electrode type (GRP, GRT) with gaskets (GA, GC, GD) (*1)			+32 (+1.26)	+32 (+1.26)	+32 (+1.26)	+32 (+1.26)	+33 (+1.30)	+33 (+1.30)	+33 (+1.30)	+33 (+1.30)	+33 (+1.30)	+33 (+1.30)	+33 (+1.30)	+33 (+1.30)	+33 (+1.30)	+40 (+1.57)	+40 (+1.57)	-	-	-	-	

*1: Add the value above (which is the total of both ends) to the lay length "L" when selecting optional grounding rings with/without gaskets.

*2: When submersible use or optional code DHC is selected, waterproof glands with union joints and cables are attached. When the cable length is 30-meters, add 9.5 kg (20.9 lb) to the weight in the table.

*3: The tolerance of the lay length "L" is as follows.

- Size 2.5 to 200 mm (0.1 to 8 in.): 0/-3 mm
- Size 250 to 400 mm (10 to 16 in.): 0/-5 mm

○ Flange, ASME Class 300

Unit: mm (approx. in.)

Model	Process Connection Code		BA2															
			-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
	Size Code		PA2				PA2				PA2				PA2			
	Size		002 (0.1)	005 (0.2)	010 (0.4)	015 (0.5)	025 (1)	032 (1.25)	040 (1.5)	050 (2)	065 (2.5)	080 (3)	100 (4)	125 (5)	150 (6)	200 (8)	250 (10)	300 (12)
Remote Sensor	Lining Code		A	A	A	A	A	A	A	A	A	A	A	A	A	A	A	A
	Lay Length (*1) (*3)	L	148 (5.83)	148 (5.83)	148 (5.83)	198 (7.80)	198 (7.78)	198 (7.78)	198 (7.78)	198 (7.78)	198 (7.78)	198 (7.78)	248 (9.74)	248 (9.74)	298 (11.71)	348 (13.68)	446 (17.54)	496 (19.51)
	Flange Outer Diameter	øD	95 (3.74)	95 (3.74)	95 (3.74)	95 (3.74)	125 (4.92)	135 (5.31)	155 (6.10)	165 (6.50)	190 (7.48)	210 (8.27)	255 (10.04)	280 (11.02)	320 (12.60)	380 (14.96)	445 (17.52)	520 (20.47)
	Flange Thickness (incl. lining flare)	t	20.3 (0.80)	20.3 (0.80)	20.3 (0.80)	17.3 (0.68)	21.9 (0.86)	22.5 (0.89)	24.1 (0.95)	25.7 (1.01)	28.9 (1.14)	32.0 (1.26)	35.2 (1.39)	38.4 (1.51)	41.5 (1.63)	46.2 (1.82)	53.1 (2.09)	56.3 (2.22)
	Lining Inner Diameter	ød	2 (0.09)	5 (0.19)	8 (0.30)	13 (0.51)	24 (0.93)	29 (1.13)	37 (1.44)	49 (1.94)	61 (2.40)	73 (2.87)	97 (3.82)	121 (4.76)	145 (5.72)	194 (7.65)	243 (9.55)	292 (11.51)
	Bolt Circle Diameter	øC	66.7 (2.63)	66.7 (2.63)	66.7 (2.63)	66.7 (2.63)	88.9 (3.50)	98.4 (3.87)	114.3 (4.50)	127.0 (5.00)	149.2 (5.87)	168.3 (6.63)	200.0 (7.87)	235.0 (9.25)	269.9 (10.63)	330.2 (13.00)	387.4 (15.25)	450.8 (17.75)
	Bolt Hole Interval	θ°	45	45	45	45	45	45	45	22.5	22.5	22.5	22.5	22.5	15	15	11.25	11.25
	Bolt Hole Diameter	øh	15.9 (0.63)	15.9 (0.63)	15.9 (0.63)	15.9 (0.63)	19.1 (0.75)	19.1 (0.75)	22.2 (0.87)	22.2 (0.75)	22.2 (0.87)	22.2 (0.87)	22.2 (0.87)	22.2 (0.87)	22.2 (0.87)	25.4 (1.00)	28.6 (1.13)	31.8 (1.25)
	Number of Bolt Holes	N	4	4	4	4	4	4	4	8	8	8	8	8	12	12	16	16
	Height	H1	164 (6.46)	164 (6.46)	164 (6.46)	164 (6.46)	143 (5.63)	154 (6.06)	164 (6.46)	182 (7.17)	203 (7.99)	219 (8.62)	252 (9.92)	278 (10.94)	303 (11.91)	358 (14.08)	421 (16.57)	483 (19.01)
	Height	H2	104 (4.09)	104 (4.09)	104 (4.09)	104 (4.09)	80 (3.15)	86 (3.39)	99 (3.90)	108 (4.25)	124 (4.49)	142 (4.88)	164 (5.43)	188 (5.61)	214 (6.60)	243 (7.81)	278 (7.81)	318 (8.77)
	Height	H3	-	-	-	-	-	-	-	-	-	-	-	-	-	-	496 (19.53)	571 (22.48)
	Maximum Height	Hr	281 (11.06)	281 (11.06)	281 (11.06)	281 (11.06)	260 (10.24)	271 (10.67)	281 (11.06)	299 (11.77)	320 (12.60)	336 (13.23)	369 (14.53)	395 (15.55)	420 (16.53)	475 (18.70)	538 (21.19)	600 (23.62)
	Approx. Weight, Unit: kg (lb) (*2)		3.9 (8.6)	3.9 (8.6)	3.9 (8.6)	4.0 (8.8)	5.2 (11.5)	6.2 (13.7)	8.0 (17.6)	9.3 (20.5)	13.2 (29.1)	17.2 (37.9)	26.7 (58.9)	35.5 (78.3)	47 (103.8)	71 (156.7)	112 (247.2)	152 (335.5)
Integral Flowmeter	Maximum Height	Hi	326 (12.83)	326 (12.83)	326 (12.83)	326 (12.83)	305 (12.01)	316 (12.44)	326 (12.83)	344 (13.54)	365 (14.37)	381 (15.00)	414 (16.30)	440 (17.32)	465 (18.29)	520 (20.46)	583 (22.95)	645 (25.38)
	Approx. Weight, Unit: kg (lb)		6.5 (14.3)	6.5 (14.3)	6.5 (14.3)	6.6 (14.6)	7.8 (17.2)	8.8 (19.4)	10.5 (23.2)	11.8 (26.0)	15.7 (34.6)	19.7 (43.4)	29.2 (64.4)	38.0 (83.8)	50 (110.4)	74 (163.4)	114 (251.7)	155 (342.2)
Grounding rings thin type (GRL, GRH, GRV) (*1)			+2 (+0.08)	+2 (+0.08)	+2 (+0.08)	+2 (+0.08)	+2 (+0.08)	+2 (+0.08)	+2 (+0.08)	+2 (+0.08)	+2 (+0.08)	+2 (+0.08)	+2 (+0.08)	+2 (+0.08)	+2 (+0.08)	+2 (+0.08)	+4 (+0.16)	+4 (+0.16)
Grounding rings thick type (GRN, GRJ, GRW) (*1)			+6 (+0.24)	+6 (+0.24)	+6 (+0.24)	+6 (+0.24)	+6 (+0.24)	+6 (+0.24)	+6 (+0.24)	+6 (+0.24)	+6 (+0.24)	+6 (+0.24)	+6 (+0.24)	+6 (+0.24)	+6 (+0.24)	+6 (+0.24)	+6 (+0.24)	+6 (+0.24)
Grounding rings thick type (GRN, GRJ, GRW) with gaskets (GA, GC, GD) (*1)			+10 (+0.39)	+10 (+0.39)	+10 (+0.39)	+10 (+0.39)	+10 (+0.39)	+10 (+0.39)	+10 (+0.39)	+10 (+0.39)	+10 (+0.39)	+10 (+0.39)	+10 (+0.39)	+10 (+0.39)	+12 (+0.47)	+12 (+0.47)	-	-
Grounding rings electrode type (GRP, GRT) (*1)			+28 (+1.10)	+28 (+1.10)	+28 (+1.10)	+28 (+1.10)	+29 (+1.14)	+29 (+1.14)	+29 (+1.14)	+29 (+1.14)	+29 (+1.14)	+29 (+1.14)	+29 (+1.14)	+29 (+1.14)	+34 (+1.34)	+34 (+1.34)	-	-
Grounding rings electrode type (GRP, GRT) with gaskets (GA, GC, GD) (*1)			+32 (+1.26)	+32 (+1.26)	+32 (+1.26)	+32 (+1.26)	+33 (+1.30)	+33 (+1.30)	+33 (+1.30)	+33 (+1.30)	+33 (+1.30)	+33 (+1.30)	+33 (+1.30)	+33 (+1.30)	+40 (+1.57)	+40 (+1.57)	-	-

*1: Add the value above (which is the total of both ends) to the lay length "L" when selecting optional grounding rings with/without gaskets.

*2: When submersible use or optional code DHC is selected, waterproof glands with union joints and cables are attached. When the cable length is 30-meters, add 9.5 kg (20.9 lb) to the weight in the table.

*3: The tolerance of the lay length "L" is as follows.

- Size 2.5 to 200 mm (0.1 to 8 in.): 0/-3 mm
- Size 250 to 400 mm (10 to 16 in.): 0/-5 mm

○ Flange, EN PN16, EN PN40

Unit: mm (approx. in.)

Model	Process Connection Code	DE4			BE4										BE2									
		-	-	-	-	-	-	-	-	-	-	-	-	CE4	-	PE2			-	PE2			-	
		-	-	-	PE4					-	PE4					-	PE2			-	PE2			-
		002	005	010	002	005	010	015	025	032	040	050	065	080	100	125	150	200	250	300	500			
Size Code	2.5 (0.1)	5 (0.2)	10 (0.4)	2.5 (0.1)	5 (0.2)	10 (0.4)	15 (0.5)	25 (1)	32 (1.25)	40 (1.5)	50 (2)	65 (2.5)	80 (3)	100 (4)	125 (5)	150 (6)	200 (8)	250 (10)	300 (12)	500 (20)				
Lining Code	A	A	A	A	A	A	A	A	A	A	A	A	A	A	A	A	A	A	A	A				
Lay Length (*1) (*3)	L	148 (5.83)	148 (5.83)	148 (5.83)	148 (5.83)	148 (5.83)	148 (5.83)	198 (7.80)	198 (7.78)	198 (7.78)	198 (7.78)	198 (7.78)	198 (7.78)	248 (9.74)	248 (9.74)	298 (11.71)	348 (13.68)	446 (17.54)	496 (19.51)	600 (23.62)				
Flange Outer Diameter	øD	90 (3.54)	90 (3.54)	90 (3.54)	95 (3.74)	95 (3.74)	95 (3.74)	115 (4.53)	140 (5.51)	150 (5.91)	165 (6.50)	185 (7.28)	200 (7.87)	220 (8.66)	250 (9.84)	285 (11.22)	340 (13.39)	405 (15.94)	460 (18.11)	715 (28.15)				
Flange Thickness (incl. lining flare)	t	20.0 (0.79)	20.0 (0.79)	20.0 (0.79)	20.0 (0.79)	20.0 (0.79)	20.0 (0.79)	19.0 (0.75)	22.0 (0.87)	21.0 (0.83)	23.0 (0.91)	21.0 (0.83)	23.0 (0.91)	23.0 (0.91)	23.0 (0.91)	25.0 (0.98)	25.5 (1.00)	27.5 (1.08)	30.0 (1.10)	49.3 (1.94)				
Lining Inner Diameter	ød	2 (0.09)	5 (0.19)	8 (0.30)	2 (0.09)	5 (0.19)	8 (0.30)	13 (0.51)	24 (0.93)	29 (1.13)	37 (1.44)	49 (1.94)	61 (2.40)	73 (2.87)	97 (3.82)	121 (4.76)	145 (5.72)	194 (7.65)	243 (9.55)	292 (11.51)				
Bolt Circle Diameter	øC	60 (2.36)	60 (2.36)	60 (2.36)	65 (2.56)	65 (2.56)	65 (2.56)	85 (3.35)	100 (3.94)	110 (4.33)	125 (4.92)	145 (5.71)	160 (6.30)	180 (7.09)	210 (8.27)	240 (9.45)	295 (11.61)	355 (13.98)	410 (16.14)	650 (25.59)				
Bolt Hole Interval	θ°	45	45	45	45	45	45	45	45	45	45	22.5	22.5	22.5	22.5	22.5	15	15	15	9				
Bolt Hole Diameter	øh	14 (0.55)	14 (0.55)	14 (0.55)	14 (0.55)	14 (0.55)	14 (0.55)	14 (0.55)	18 (0.71)	18 (0.71)	18 (0.71)	18 (0.71)	18 (0.71)	18 (0.71)	18 (0.71)	22 (0.87)	22 (0.87)	26 (1.02)	26 (1.02)	33 (1.30)				
Number of Bolt Holes	N	4	4	4	4	4	4	4	4	4	4	8	8	8	8	8	12	12	12	20				
Integral Flowmeter	Height	H1	164 (6.46)	164 (6.46)	164 (6.46)	164 (6.46)	164 (6.46)	164 (6.46)	138 (5.43)	156 (6.14)	161 (6.31)	182 (7.17)	201 (7.91)	214 (8.43)	234 (9.24)	263 (10.35)	285 (11.22)	338 (13.29)	401 (15.78)	453 (17.82)				
	Height	H2	104 (4.09)	104 (4.09)	104 (4.09)	104 (4.09)	104 (4.09)	104 (4.09)	80 (3.15)	86 (3.39)	86 (3.39)	99 (3.90)	108 (4.25)	114 (4.49)	124 (4.88)	138 (5.43)	168 (6.60)	198 (7.81)	223 (8.77)	339 (13.34)				
	Height	H3	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	456 (17.95)	511 (20.12)	786 (30.94)			
Remote Sensor	Maximum Height	Hr	281 (11.06)	281 (11.06)	281 (11.06)	281 (11.06)	281 (11.06)	281 (11.06)	255 (10.04)	273 (10.75)	278 (10.94)	299 (11.77)	318 (12.52)	331 (13.03)	351 (13.82)	380 (14.96)	402 (15.84)	455 (17.91)	518 (20.40)	570 (22.44)				
	Approx. Weight, Unit: kg (lb) (*2)		3.9 (8.6)	3.9 (8.6)	3.9 (8.6)	4.1 (9.0)	4.1 (9.0)	4.1 (9.0)	4.2 (9.3)	4.8 (10.6)	6.4 (14.1)	7.1 (15.7)	8.9 (19.6)	9.9 (21.8)	12.4 (33.1)	15.0 (33.1)	20.7 (45.6)	29 (64.0)	44 (97.1)	73 (161.2)				
Integral Flowmeter	Maximum Height	Hi	326 (12.83)	326 (12.83)	326 (12.83)	326 (12.83)	326 (12.83)	326 (12.83)	300 (11.81)	318 (12.52)	323 (12.72)	344 (13.54)	363 (14.29)	376 (14.80)	396 (15.59)	425 (16.73)	447 (19.67)	500 (19.67)	563 (12.61)	615 (24.20)				
	Approx. Weight, Unit: kg (lb)		6.5 (14.3)	6.5 (14.3)	6.5 (14.3)	6.7 (14.8)	6.7 (14.8)	6.7 (14.8)	7.4 (15.0)	9.0 (16.3)	9.6 (19.8)	11.4 (21.2)	12.4 (25.1)	14.4 (27.3)	15.0 (33.1)	17.6 (38.8)	23.3 (51.4)	31 (68.4)	46 (101.6)	75 (165.6)				
Grounding rings thin type (GRL, GRH, GRV) (*1)			+2 (+0.08)	+2 (+0.08)	+2 (+0.08)	+2 (+0.08)	+2 (+0.08)	+2 (+0.08)	+2 (+0.08)	+2 (+0.08)	+2 (+0.08)	+2 (+0.08)	+2 (+0.08)	+2 (+0.08)	+2 (+0.08)	+2 (+0.08)	+2 (+0.08)	+2 (+0.08)	+4 (+0.16)	+4 (+0.16)				
Grounding rings thick type (GRN, GRJ, GRW) (*1)			+6 (+0.24)	+6 (+0.24)	+6 (+0.24)	+6 (+0.24)	+6 (+0.24)	+6 (+0.24)	+6 (+0.24)	+6 (+0.24)	+6 (+0.24)	+6 (+0.24)	+6 (+0.24)	+6 (+0.24)	+6 (+0.24)	+6 (+0.24)	+6 (+0.24)	+6 (+0.24)	+6 (+0.24)	+8 (+0.31)				
Grounding rings thick type (GRN, GRJ, GRW) with gaskets (GA, GC, GD) (*1)			+10 (+0.39)	+10 (+0.39)	+10 (+0.39)	+10 (+0.39)	+10 (+0.39)	+10 (+0.39)	+10 (+0.39)	+10 (+0.39)	+10 (+0.39)	+10 (+0.39)	+10 (+0.39)	+10 (+0.39)	+10 (+0.39)	+10 (+0.39)	+10 (+0.39)	+10 (+0.39)	+12 (+0.47)	-				
Grounding rings electrode type (GRP, GRT) (*1)			+28 (+1.10)	+28 (+1.10)	+28 (+1.10)	+28 (+1.10)	+28 (+1.10)	+28 (+1.10)	+28 (+1.14)	+29 (+1.14)	+29 (+1.14)	+29 (+1.14)	+29 (+1.14)	+29 (+1.14)	+29 (+1.14)	+29 (+1.14)	+29 (+1.14)	+29 (+1.14)	+34 (+1.34)	-				
Grounding rings electrode type (GRP, GRT) with gaskets (GA, GC, GD) (*1)			+32 (+1.26)	+32 (+1.26)	+32 (+1.26)	+32 (+1.26)	+32 (+1.26)	+32 (+1.26)	+33 (+1.26)	+33 (+1.30)	+33 (+1.30)	+33 (+1.30)	+33 (+1.30)	+33 (+1.30)	+33 (+1.30)	+33 (+1.30)	+33 (+1.30)	+33 (+1.30)	+40 (+1.57)	-				

*1: Add the value above (which is the total of both ends) to the lay length "L" when selecting optional grounding rings with/without gaskets.

*2: When submersible use or optional code DHC is selected, waterproof glands with union joints and cables are attached. When the cable length is 30-meters, add 9.5 kg (20.9 lb) to the weight in the table.

*3: The tolerance of the lay length "L" is as follows.

- Size 2.5 to 200 mm (0.1 to 8 in.): 0/-3 mm
- Size 250 to 400 mm (10 to 16 in.): 0/-5 mm

○ Flange, EN PN10

Unit: mm (approx. in.)

Model	Process Connection Code		BE1 CE1					
			PE1					-
	Size Code		200	250	300	350	400	500
	Size		200 (8)	250 (10)	300 (12)	350 (14)	400 (16)	500 (20)
Lining Code		A	A	A	A	A	A	
Remote Sensor Integral Flowmeter	Lay Length (*1) (*3)	L	348 (13.68)	446 (17.54)	496 (19.51)	546 (21.48)	596 (23.44)	600 (23.62)
	Flange Outer Diameter	øD	340 (13.39)	395 (15.55)	445 (17.52)	505 (19.88)	565 (22.24)	670 (26.38)
	Flange Thickness (incl. lining flare)	t	27.5 (1.08)	30.0 (1.18)	29.0 (1.14)	29.5 (1.16)	29.5 (1.16)	33.3 (1.31)
	Lining Inner Diameter	ød	194 (7.65)	243 (9.55)	292 (11.51)	323 (12.73)	374 (14.70)	459 (18.07)
	Bolt Circle Diameter	øC	295 (11.61)	350 (13.78)	400 (15.75)	460 (18.11)	515 (20.28)	620 (24.41)
	Bolt Hole Interval	θ°	22.5	15	15	11.25	11.25	9
	Bolt Hole Diameter	øh	22 (0.87)	22 (0.87)	22 (0.87)	22 (0.87)	26 (1.02)	26 (1.02)
	Number of Bolt Holes	N	8	12	12	16	16	20
	Height	H1	338 (13.29)	396 (15.58)	445 (17.53)	497 (19.55)	554 (21.82)	674 (26.53)
	Height	H2	168 (6.60)	198 (7.81)	223 (8.77)	244 (9.61)	272 (10.70)	339 (13.34)
	Height	H3	-	446 (17.56)	496 (19.53)	565 (22.24)	625 (24.61)	730 (28.74)
	Remote Sensor	Maximum Height	Hr	455 (17.91)	513 (20.20)	563 (22.15)	614 (24.17)	672 (26.44)
Approx. Weight, Unit: kg (lb) (*2)		44 (97.1)	70 (154.5)	84 (185.4)	105 (231.8)	132 (291.4)	189 (417.2)	
Integral Flowmeter	Maximum Height	Hi	500 (19.67)	558 (21.96)	607 (23.91)	659 (25.93)	716 (28.20)	-
	Approx. Weight, Unit: kg (lb)		47 (103.8)	72 (158.9)	87 (192.1)	108 (238.4)	135 (298.0)	-
Grounding rings thin type (GRL, GRH, GRV) (*1)			+2 (+0.08)	+4 (+0.16)	+4 (+0.16)	+4 (+0.16)	+4 (+0.16)	-
Grounding rings thick type (GRN, GRJ, GRW) (*1)			+6 (+0.24)	+6 (+0.24)	+6 (+0.24)	+6 (+0.24)	+6 (+0.24)	+8 (+0.31)
Grounding rings thick type (GRN, GRJ, GRW) with gaskets (GA, GC, GD) (*1)			+12 (+0.47)	-	-	-	-	-
Grounding rings electrode type (GRP, GRT) (*1)			+34 (+1.34)	-	-	-	-	-
Grounding rings electrode type (GRP, GRT) with gaskets (GA, GC, GD) (*1)			+40 (+1.57)	-	-	-	-	-

- *1: Add the value above (which is the total of both ends) to the lay length "L" when selecting optional grounding rings with/without gaskets.
- *2: When submersible use or optional code DHC is selected, waterproof glands with union joints and cables are attached. When the cable length is 30-meters, add 9.5 kg (20.9 lb) to the weight in the table.
- *3: The tolerance of the lay length "L" is as follows.
- Size 2.5 to 200 mm (0.1 to 8 in.): 0/-3 mm
 - Size 250 to 400 mm (10 to 16 in.): 0/-5 mm

○ Flange, JIS F12

Unit: mm (approx. in.)

Model	Process Connection Code		BG1									
			CG1									
	Size Code		080	100	125	150	200	250	300	350	400	
	Size		80 (3)	100 (4)	125 (5)	150 (6)	200 (8)	250 (10)	300 (12)	350 (14)	400 (16)	
Lining Code			A	A	A	A	A	A	A	A	A	
Remote Sensor Integral Flowmeter	Lay Length (*1) (*3)	L	198 (7.78)	248 (9.74)	248 (9.74)	298 (11.71)	348 (13.68)	446 (17.54)	496 (19.51)	546 (21.48)	596 (23.44)	
	Flange Outer Diameter	øD	211 (8.31)	238 (9.37)	263 (10.35)	290 (11.42)	342 (13.46)	410 (16.14)	464 (18.27)	530 (20.87)	582 (22.91)	
	Flange Thickness (incl. lining flare)	t	23.0 (0.91)	23.0 (0.91)	25.0 (0.98)	26.5 (1.04)	26.5 (1.04)	29.0 (1.14)	28.0 (1.10)	30.5 (1.20)	30.5 (1.20)	
	Lining Inner Diameter	ød	73 (2.87)	97 (3.82)	121 (4.76)	145 (5.72)	194 (7.65)	243 (9.55)	292 (11.51)	323 (12.73)	374 (14.70)	
	Bolt	øC	168	195	220	247	299	360	414	472	524	
	Circle Diameter		(6.61)	(7.68)	(8.66)	(9.72)	(11.77)	(14.17)	(16.30)	(18.58)	(20.63)	
	Bolt Hole Interval	ø°	45	45	30	30	22.5	22.5	18	18	15	
	Bolt Hole Diameter	øh	19 (0.75)	19 (0.75)	19 (0.75)	19 (0.75)	19 (0.75)	23 (0.91)	23 (0.91)	25 (0.98)	25 (0.98)	
	Number of Bolt Holes	N	4	4	6	6	8	8	10	10	12	
	Height	H1	220 (8.66)	243 (9.57)	270 (10.63)	288 (11.32)	339 (13.33)	403 (15.88)	455 (17.90)	509 (20.04)	563 (22.16)	
	Height	H2	114 (4.49)	124 (4.88)	138 (5.43)	143 (5.61)	168 (6.60)	198 (7.81)	223 (8.77)	244 (9.61)	272 (10.70)	
	Height	H3	-	-	-	-	-	461 (18.15)	515 (20.28)	591 (23.27)	643 (25.31)	
	Remote Sensor	Maximum Height	Hr	337 (13.27)	360 (14.17)	387 (15.24)	405 (15.94)	456 (17.95)	521 (20.50)	572 (22.52)	626 (24.66)	680 (26.78)
		Approx. Weight, Unit: kg (lb) (*2)		12.8 (28.2)	16.1 (35.5)	21.2 (46.7)	30 (66.2)	43 (94.9)	73 (161.2)	88 (194.3)	114 (251.7)	140 (309.1)
Integral Flowmeter	Maximum Height	Hi	382 (15.04)	405 (15.94)	432 (17.01)	450 (17.70)	501 (19.71)	565 (22.26)	617 (24.28)	671 (26.42)	725 (28.54)	
	Approx. Weight, Unit: kg (lb)		15.3 (33.7)	18.7 (41.2)	23.6 (52.0)	33 (72.9)	46 (101.6)	75 (165.6)	90 (198.7)	116 (256.1)	142 (313.5)	
Grounding rings thin type (GRL, GRH, GRV) (*1)			+2 (+0.08)	+2 (+0.08)	+2 (+0.08)	+2 (+0.08)	+2 (+0.08)	+4 (+0.16)	+4 (+0.16)	+4 (+0.16)	+4 (+0.16)	
Grounding rings thick type (GRN, GRJ, GRW) (*1)			+6 (+0.24)	+6 (+0.24)	+6 (+0.24)	+6 (+0.24)	+6 (+0.24)	+6 (+0.24)	+6 (+0.24)	+6 (+0.24)	+6 (+0.24)	
Grounding rings thick type (GRN, GRJ, GRW) with gaskets (GA, GC, GD) (*1)			+10 (+0.39)	+10 (+0.39)	+10 (+0.39)	+12 (+0.47)	+12 (+0.47)	-	-	-	-	
Grounding rings electrode type (GRP, GRT) (*1)			+29 (+1.14)	+29 (+1.14)	+29 (+1.14)	+34 (+1.34)	+34 (+1.34)	-	-	-	-	
Grounding rings electrode type (GRP, GRT) with gaskets (GA, GC, GD) (*1)			+33 (+1.30)	+33 (+1.30)	+33 (+1.30)	+40 (+1.57)	+40 (+1.57)	-	-	-	-	

*1: Add the value above (which is the total of both ends) to the lay length "L" when selecting optional grounding rings with/without gaskets.

*2: When submersible use or optional code DHC is selected, waterproof glands with union joints and cables are attached.
When the cable length is 30-meters, add 9.5 kg (20.9 lb) to the weight in the table.

*3: The tolerance of the lay length "L" is as follows.

- Size 2.5 to 200 mm (0.1 to 8 in.): 0/-3 mm
- Size 250 to 400 mm (10 to 16 in.): 0/-5 mm

Unit: mm (approx. in.)

*1: Add the value above (which is the total of both ends) to the lay length "L" when selecting optional grounding rings with/without gaskets.

*2: When submersible use or optional code DHC is selected, waterproof glands with union joints and cables are attached. When the cable length is 30-meters, add 9.5 kg (20.9 lb) to the weight in the table.

*3: The tolerance of the lay length "L" is as follows.

- Size 2.5 to 200 mm (0.1 to 8 in.): 0/-3 mm
- Size 250 to 400 mm (10 to 16 in.): 0/-5 mm

○ Flange, JIS 20K

Unit: mm (approx. in.)

Model	Process Connection Code		DJ2			BJ2																	
			-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-			
	Size Code		002	005	010	002	005	010	015	025	032	040	050	065	080	100	125	150	200	250	300		
	Size		2.5 (0.1)	5 (0.2)	10 (0.4)	2.5 (0.1)	5 (0.2)	10 (0.4)	15 (0.5)	25 (1)	32 (1.25)	40 (1.5)	50 (2)	65 (2.5)	80 (3)	100 (4)	125 (5)	150 (6)	200 (8)	250 (10)	300 (12)		
Remote Sensor	Lining Code		A	A	A	A	A	A	A	A	A	A	A	A	A	A	A	A	A	A	A		
	Lay Length (*1) (*3)		L	148 (5.83)	148 (5.83)	148 (5.83)	148 (5.83)	148 (5.83)	148 (5.83)	198 (7.80)	198 (7.78)	198 (7.78)	198 (7.78)	198 (7.78)	198 (7.78)	248 (9.74)	248 (9.74)	298 (11.71)	348 (13.68)	446 (17.54)	496 (19.51)		
	Flange Outer Diameter		øD	90 (3.54)	90 (3.54)	90 (3.54)	95 (3.74)	95 (3.74)	95 (3.74)	125 (4.92)	135 (5.31)	140 (5.51)	155 (6.10)	175 (6.89)	200 (7.87)	225 (8.86)	270 (10.63)	305 (12.01)	350 (13.78)	430 (16.93)	480 (18.90)		
	Flange Thickness (incl. lining flare)		t	18.0 (0.71)	18.0 (0.71)	18.0 (0.71)	20.0 (0.79)	20.0 (0.79)	20.0 (0.79)	17.0 (0.67)	22.0 (0.87)	23.0 (0.91)	23.0 (0.91)	25.0 (0.98)	27.0 (1.06)	29.0 (1.14)	31.0 (1.22)	32.5 (1.28)	34.5 (1.36)	39.0 (1.54)	40.0 (1.57)		
	Lining Inner Diameter		ød	2 (0.09)	5 (0.19)	8 (0.30)	2 (0.09)	5 (0.19)	8 (0.30)	13 (0.51)	24 (0.93)	29 (1.13)	37 (1.44)	49 (1.94)	61 (2.40)	73 (2.87)	97 (3.82)	121 (4.76)	145 (5.72)	194 (7.65)	243 (9.55)	292 (11.51)	
	Bolt		øC	65 (2.56)	65 (2.56)	65 (2.56)	70 (2.76)	70 (2.76)	70 (2.76)	90 (3.54)	100 (3.94)	105 (4.13)	120 (4.72)	140 (5.51)	160 (6.30)	185 (7.28)	225 (8.86)	260 (10.24)	305 (12.01)	380 (14.96)	430 (16.93)		
	Circle Diameter		ø*	45 (0.09)	45 (0.19)	45 (0.30)	45 (0.09)	45 (0.19)	45 (0.30)	45 (0.51)	45 (0.93)	45 (1.13)	45 (1.44)	45 (1.94)	45 (2.40)	45 (2.87)	45 (3.82)	45 (4.76)	45 (5.72)	45 (7.65)	45 (9.55)	45 (11.51)	
	Bolt Hole Interval		øh	15 (0.59)	15 (0.59)	15 (0.59)	15 (0.59)	15 (0.59)	15 (0.59)	19 (0.75)	19 (0.75)	19 (0.75)	19 (0.75)	19 (0.91)	19 (0.91)	23 (0.91)	23 (0.91)	25 (0.98)	25 (0.98)	25 (0.98)	27 (1.06)	27 (1.06)	
	Bolt Hole Diameter		øh	15 (0.59)	15 (0.59)	15 (0.59)	15 (0.59)	15 (0.59)	15 (0.59)	19 (0.75)	19 (0.75)	19 (0.75)	19 (0.75)	19 (0.91)	19 (0.91)	23 (0.91)	23 (0.91)	25 (0.98)	25 (0.98)	25 (0.98)	27 (1.06)	27 (1.06)	
	Number of Bolt Holes		N	4	4	4	4	4	4	4	4	4	4	8	8	8	8	8	12	12	12	16	
	Integral Flowmeter	Height		H1	164 (6.46)	164 (6.46)	164 (6.46)	164 (6.46)	164 (6.46)	164 (6.46)	143 (5.63)	154 (6.06)	156 (6.14)	177 (6.97)	196 (7.72)	214 (8.43)	237 (9.33)	273 (10.75)	295 (11.61)	343 (13.49)	413 (16.27)	463 (18.22)	
		Height		H2	104 (4.09)	104 (4.09)	104 (4.09)	104 (4.09)	104 (4.09)	104 (4.09)	80 (3.15)	86 (3.39)	86 (3.39)	99 (3.90)	108 (4.25)	114 (4.49)	124 (4.88)	138 (5.43)	143 (5.61)	168 (6.60)	198 (7.81)	223 (8.77)	
		Height		H3	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	481 (18.94)	531 (20.91)	
Remote Sensor	Maximum Height		Hr	281 (11.06)	281 (11.06)	281 (11.06)	281 (11.06)	281 (11.06)	281 (11.06)	260 (10.24)	271 (10.67)	273 (10.75)	294 (11.57)	313 (12.32)	331 (13.03)	354 (13.94)	390 (15.35)	412 (16.23)	460 (18.11)	531 (20.89)	580 (22.84)		
	Approx. Weight, Unit: kg (lb) (*2)			3.7 (8.2)	3.7 (8.2)	3.7 (8.2)	3.9 (8.6)	3.9 (8.6)	3.9 (8.6)	4.0 (8.8)	5.2 (11.5)	6.3 (13.9)	6.6 (14.6)	7.5 (16.5)	9.9 (21.8)	13.1 (28.9)	17.7 (39.0)	26.5 (58.4)	36 (79.5)	51 (112.6)	90 (198.7)	108 (238.4)	
Integral Flowmeter	Maximum Height		Hi	326 (12.83)	326 (12.83)	326 (12.83)	326 (12.83)	326 (12.83)	326 (12.83)	305 (12.01)	316 (12.44)	318 (12.52)	339 (13.35)	358 (14.09)	376 (14.80)	399 (15.71)	435 (17.13)	457 (17.99)	505 (19.87)	575 (22.65)	625 (24.60)		
	Approx. Weight, Unit: kg (lb)			6.3 (13.9)	6.3 (13.9)	6.3 (13.9)	6.5 (14.3)	6.5 (14.3)	6.5 (14.3)	6.6 (14.6)	7.7 (17.0)	8.8 (19.4)	9.2 (20.3)	10.0 (22.1)	12.5 (27.6)	15.6 (34.4)	20.2 (44.5)	29.1 (64.2)	39 (86.1)	53 (117.0)	92 (203.1)	111 (245.0)	
Grounding rings thin type (GRL, GRH, GRV) (*1)				+2 (+0.08)	+2 (+0.08)	+2 (+0.08)	+2 (+0.08)	+2 (+0.08)	+2 (+0.08)	+2 (+0.08)	+2 (+0.08)	+2 (+0.08)	+2 (+0.08)	+2 (+0.08)	+2 (+0.08)	+2 (+0.08)	+2 (+0.08)	+2 (+0.08)	+2 (+0.08)	+2 (+0.08)	+4 (+0.16)	+4 (+0.16)	
Grounding rings thick type (GRN, GRJ, GRW) (*1)				+6 (+0.24)	+6 (+0.24)	+6 (+0.24)	+6 (+0.24)	+6 (+0.24)	+6 (+0.24)	+6 (+0.24)	+6 (+0.24)	+6 (+0.24)	+6 (+0.24)	+6 (+0.24)	+6 (+0.24)	+6 (+0.24)	+6 (+0.24)	+6 (+0.24)	+6 (+0.24)	+6 (+0.24)	+6 (+0.24)	+6 (+0.24)	
Grounding rings thick type (GRN, GRJ, GRW) with gaskets (GA, GC, GD) (*1)				+10 (+0.39)	+10 (+0.39)	+10 (+0.39)	+10 (+0.39)	+10 (+0.39)	+10 (+0.39)	+10 (+0.39)	+10 (+0.39)	+10 (+0.39)	+10 (+0.39)	+10 (+0.39)	+10 (+0.39)	+10 (+0.39)	+10 (+0.39)	+10 (+0.39)	+10 (+0.39)	+12 (+0.47)	+12 (+0.47)	-	-
Grounding rings electrode type (GRP, GRT) (*1)				+28 (+1.10)	+28 (+1.10)	+28 (+1.10)	+28 (+1.10)	+28 (+1.10)	+28 (+1.10)	+28 (+1.10)	+29 (+1.14)	+29 (+1.14)	+29 (+1.14)	+29 (+1.14)	+29 (+1.14)	+29 (+1.14)	+29 (+1.14)	+29 (+1.14)	+29 (+1.14)	+34 (+1.34)	+34 (+1.34)	-	-
Grounding rings electrode type (GRP, GRT) with gaskets (GA, GC, GD) (*1)				+32 (+1.26)	+32 (+1.26)	+32 (+1.26)	+32 (+1.26)	+32 (+1.26)	+32 (+1.26)	+32 (+1.26)	+33 (+1.30)	+33 (+1.30)	+33 (+1.30)	+33 (+1.30)	+33 (+1.30)	+33 (+1.30)	+33 (+1.30)	+33 (+1.30)	+33 (+1.30)	+40 (+1.57)	+40 (+1.57)	-	-

*1: Add the value above (which is the total of both ends) to the lay length "L" when selecting optional grounding rings with/without gaskets.

*2: When submersible use or optional code DHC is selected, waterproof glands with union joints and cables are attached. When the cable length is 30-meters, add 9.5 kg (20.9 lb) to the weight in the table.

*3: The tolerance of the lay length "L" is as follows.

- Size 2.5 to 200 mm (0.1 to 8 in.): 0/-3 mm
- Size 250 to 400 mm (10 to 16 in.): 0/-5 mm

○ Flange, JPI Class 150

Unit: mm (approx. in.)

Model	Process Connection Code		BP1															
	Size Code		002	005	010	015	025	040	050	080	100	150	200	250	300	350	400	
	Size		2.5 (0.1)	5 (0.2)	10 (0.4)	15 (0.5)	25 (1)	40 (1.5)	50 (2)	80 (3)	100 (4)	150 (6)	200 (8)	250 (10)	300 (12)	350 (14)	400 (16)	
	Lining Code		A	A	A	A	A	A	A	A	A	A	A	A	A	A	A	
Remote Sensor Integral Flowmeter	Lay Length (*1) (*3)	L	148 (5.83)	148 (5.83)	148 (5.83)	198 (7.80)	198 (7.78)	198 (7.78)	198 (7.78)	198 (7.78)	248 (9.74)	298 (11.71)	348 (13.68)	446 (17.54)	496 (19.51)	546 (21.48)	596 (23.44)	
	Flange Outer Diameter	øD	90 (3.54)	90 (3.54)	90 (3.54)	90 (3.54)	110 (4.33)	125 (4.92)	150 (5.91)	190 (7.48)	230 (9.06)	280 (11.02)	345 (13.58)	405 (15.94)	485 (19.09)	535 (21.06)	595 (23.43)	
	Flange Thickness (incl. lining flare)	t	19.2 (0.76)	19.2 (0.76)	19.2 (0.76)	16.2 (0.64)	20.3 (0.80)	22.5 (0.89)	24.1 (0.95)	28.9 (1.14)	28.9 (1.14)	30.4 (1.20)	33.5 (1.32)	35.6 (1.40)	37.2 (1.46)	40.9 (1.61)	42.5 (1.67)	
	Lining Inner Diameter	ød	2 (0.09)	5 (0.19)	8 (0.30)	13 (0.51)	24 (0.93)	37 (1.44)	49 (1.94)	73 (2.87)	97 (3.82)	145 (5.72)	194 (7.65)	243 (9.55)	292 (11.51)	323 (12.73)	374 (14.70)	
	Bolt Circle Diameter	øC	60.3 (2.37)	60.3 (2.37)	60.3 (2.37)	60.3 (2.37)	79.4 (3.13)	98.4 (3.87)	120.7 (4.75)	152.4 (6.00)	190.5 (7.50)	241.3 (9.50)	298.5 (11.75)	362.0 (14.25)	431.8 (17.00)	476.3 (18.75)	539.8 (21.25)	
	Bolt Hole Interval	ø*	45	45	45	45	45	45	45	45	22.5	22.5	22.5	15	15	15	11.25	
	Bolt Hole Diameter	øh	16 (0.63)	16 (0.63)	16 (0.63)	16 (0.63)	16 (0.63)	16 (0.63)	19 (0.75)	19 (0.75)	19 (0.75)	22 (0.87)	22 (0.87)	22 (0.87)	26 (1.02)	29 (1.14)	29 (1.14)	
	Number of Bolt Holes	N	4	4	4	4	4	4	4	4	8	8	8	12	12	12	16	
	Height	H1	164 (6.46)	164 (6.46)	164 (6.46)	164 (6.46)	135 (5.31)	149 (5.87)	174 (6.85)	209 (8.23)	239 (9.41)	283 (11.12)	340 (13.39)	401 (15.78)	465 (18.32)	512 (20.14)	569 (22.41)	
	Height	H2	104 (4.09)	104 (4.09)	104 (4.09)	104 (4.09)	80 (3.15)	86 (3.39)	99 (3.90)	114 (4.49)	124 (4.88)	143 (5.61)	168 (6.60)	198 (7.81)	223 (8.77)	244 (9.61)	272 (10.70)	
	Height	H3	-	-	-	-	-	-	-	-	-	-	-	456 (17.95)	536 (21.10)	595 (23.43)	655 (25.79)	
	Remote Sensor	Maximum Height	Hr	281 (11.06)	281 (11.06)	281 (11.06)	281 (11.06)	252 (9.92)	266 (10.47)	291 (11.46)	326 (12.83)	356 (14.02)	400 (15.74)	457 (18.01)	518 (20.40)	583 (22.94)	629 (24.76)	687 (27.03)
		Approx. Weight, Unit: kg (lb) (*2)		3.7 (8.2)	3.7 (8.2)	3.7 (8.2)	3.8 (8.4)	4.3 (9.5)	5.7 (12.6)	7.7 (17.0)	13.2 (29.1)	18.4 (40.6)	31 (68.4)	50 (110.4)	79 (174.4)	109 (240.6)	135 (298.0)	172 (379.7)
Integral Flowmeter	Maximum Height	Hi	326 (12.83)	326 (12.83)	326 (12.83)	326 (12.83)	297 (11.69)	311 (12.24)	336 (13.23)	371 (14.61)	401 (15.79)	445 (17.50)	502 (19.77)	563 (22.16)	627 (24.69)	674 (26.52)	731 (28.79)	
	Approx. Weight, Unit: kg (lb)		6.1 (13.5)	6.1 (13.5)	6.1 (13.5)	6.2 (13.7)	6.8 (15.0)	8.2 (18.1)	10.1 (22.3)	15.7 (34.6)	20.8 (45.9)	34 (75.1)	52 (114.8)	81 (178.8)	111 (245.0)	138 (304.6)	175 (386.3)	
Grounding rings thin type (GRL, GRH, GRV) (*1)			+2 (+0.08)	+2 (+0.08)	+2 (+0.08)	+2 (+0.08)	+2 (+0.08)	+2 (+0.08)	+2 (+0.08)	+2 (+0.08)	+2 (+0.08)	+2 (+0.08)	+2 (+0.08)	+4 (+0.16)	+4 (+0.16)	+4 (+0.16)	+4 (+0.16)	
Grounding rings thick type (GRN, GRJ, GRW) (*1)			+6 (+0.24)	+6 (+0.24)	+6 (+0.24)	+6 (+0.24)	+6 (+0.24)	+6 (+0.24)	+6 (+0.24)	+6 (+0.24)	+6 (+0.24)	+6 (+0.24)	+6 (+0.24)	+6 (+0.24)	+6 (+0.24)	+6 (+0.24)	+6 (+0.24)	
Grounding rings thick type (GRN, GRJ, GRW) with gaskets (GA, GC, GD) (*1)			+10 (+0.39)	+10 (+0.39)	+10 (+0.39)	+10 (+0.39)	+10 (+0.39)	+10 (+0.39)	+10 (+0.39)	+10 (+0.39)	+10 (+0.39)	+12 (+0.47)	+12 (+0.47)	-	-	-	-	
Grounding rings electrode type (GRP, GRT) (*1)			+28 (+1.10)	+28 (+1.10)	+28 (+1.10)	+28 (+1.10)	+29 (+1.14)	+29 (+1.14)	+29 (+1.14)	+29 (+1.14)	+29 (+1.14)	+34 (+1.34)	+34 (+1.34)	-	-	-	-	
Grounding rings electrode type (GRP, GRT) with gaskets (GA, GC, GD) (*1)			+32 (+1.26)	+32 (+1.26)	+32 (+1.26)	+32 (+1.26)	+33 (+1.30)	+33 (+1.30)	+33 (+1.30)	+33 (+1.30)	+33 (+1.30)	+40 (+1.57)	+40 (+1.57)	-	-	-	-	

- *1: Add the value above (which is the total of both ends) to the lay length "L" when selecting optional grounding rings with/without gaskets.
- *2: When submersible use or optional code DHC is selected, waterproof glands with union joints and cables are attached. When the cable length is 30-meters, add 9.5 kg (20.9 lb) to the weight in the table.
- *3: The tolerance of the lay length "L" is as follows.
- Size 2.5 to 200 mm (0.1 to 8 in.): 0/-3 mm
 - Size 250 to 400 mm (10 to 16 in.): 0/-5 mm

○ Flange, AS Table D

Unit: mm (approx. in.)

Model	Process Connection Code		CS1								
	Size Code		050	080	100	150	200	250	300	350	400
	Size		50 (2)	80 (3)	100 (4)	150 (6)	200 (8)	250 (10)	300 (12)	350 (14)	400 (16)
Remote Sensor Integral Flowmeter	Lining Code		A	A	A	A	A	A	A	A	A
	Lay Length (*1) (*3)	L	198 (7.78)	198 (7.78)	248 (9.74)	298 (11.71)	348 (13.68)	446 (17.54)	496 (19.51)	546 (21.48)	596 (23.44)
	Flange Outer Diameter	øD	150 (5.91)	185 (7.28)	215 (8.46)	280 (11.02)	335 (13.19)	405 (15.94)	455 (17.91)	525 (20.67)	580 (22.83)
	Flange Thickness (incl. lining flare)	t	13.0 (0.51)	15.0 (0.59)	15.0 (0.59)	17.9 (0.70)	17.9 (0.70)	21.4 (0.84)	24.4 (0.96)	27.9 (1.10)	27.9 (1.10)
	Lining Inner Diameter	ød	49 (1.94)	73 (2.87)	97 (3.82)	145 (5.72)	194 (7.65)	243 (9.55)	292 (11.51)	323 (12.73)	374 (14.70)
	Bolt Circle Diameter	øC	114 (4.49)	146 (5.75)	178 (7.01)	235 (9.25)	292 (11.50)	356 (14.02)	406 (15.98)	470 (18.50)	521 (20.51)
	Bolt Hole Interval	θ°	45	45	45	22.5	22.5	22.5	15	15	15
	Bolt Hole Diameter	øh	18 (0.71)	18 (0.71)	18 (0.71)	18 (0.71)	18 (0.71)	22 (0.87)	22 (0.87)	26 (1.02)	26 (1.02)
	Number of Bolt Holes	N	4	4	4	8	8	8	12	12	12
	Height	H1	174 (6.85)	207 (8.15)	232 (9.13)	283 (11.12)	335 (13.19)	401 (15.78)	450 (17.73)	507 (19.94)	562 (22.12)
	Height	H2	99 (3.90)	114 (4.49)	124 (4.88)	143 (5.61)	168 (6.60)	198 (7.81)	223 (8.77)	244 (9.61)	272 (10.70)
	Height	H3	-	-	-	-	-	447 (17.58)	497 (19.55)	576 (22.68)	631 (24.84)
Remote Sensor	Maximum Height	Hr	291 (11.46)	324 (12.76)	349 (13.74)	400 (15.74)	452 (17.81)	518 (20.40)	568 (22.34)	624 (24.56)	679 (26.74)
	Approx. Weight, Unit: kg (lb) (*2)		5.5 (12.1)	8.7 (19.2)	11.8 (26.0)	25 (55.2)	37 (81.7)	65 (143.5)	80 (176.6)	105 (231.8)	131 (289.2)
Integral Flowmeter	Maximum Height	Hi	336 (13.23)	369 (14.53)	394 (15.51)	445 (17.50)	497 (19.57)	563 (22.16)	612 (24.10)	669 (26.32)	724 (28.50)
	Approx. Weight, Unit: kg (lb)		7.9 (17.4)	11.1 (24.5)	14.2 (31.3)	27 (59.6)	39 (86.1)	67 (147.9)	82 (181.0)	107 (236.2)	133 (293.6)
Grounding rings thin type (GRL, GRH, GRV) (*1)			+2 (+0.08)	+2 (+0.08)	+2 (+0.08)	+2 (+0.08)	+2 (+0.08)	+4 (+0.16)	+4 (+0.16)	+4 (+0.16)	+4 (+0.16)
Grounding rings thick type (GRN, GRJ, GRW) (*1)			+6 (+0.24)	+6 (+0.24)	+6 (+0.24)	+6 (+0.24)	+6 (+0.24)	+6 (+0.24)	+6 (+0.24)	+6 (+0.24)	+6 (+0.24)
Grounding rings thick type (GRN, GRJ, GRW) with gaskets (GA, GC, GD) (*1)			+10 (+0.39)	+10 (+0.39)	+10 (+0.39)	+12 (+0.47)	+12 (+0.47)	-	-	-	-
Grounding rings electrode type (GRP, GRT) (*1)			+29 (+1.14)	+29 (+1.14)	+29 (+1.14)	+34 (+1.34)	+34 (+1.34)	-	-	-	-
Grounding rings electrode type (GRP, GRT) with gaskets (GA, GC, GD) (*1)			+33 (+1.30)	+33 (+1.30)	+33 (+1.30)	+40 (+1.57)	+40 (+1.57)	-	-	-	-

*1: Add the value above (which is the total of both ends) to the lay length "L" when selecting optional grounding rings with/without gaskets.

*2: When submersible use or optional code DHC is selected, waterproof glands with union joints and cables are attached. When the cable length is 30-meters, add 9.5 kg (20.9 lb) to the weight in the table.

*3: The tolerance of the lay length "L" is as follows.

- Size 2.5 to 200 mm (0.1 to 8 in.): 0/-3 mm
- Size 250 to 400 mm (10 to 16 in.): 0/-5 mm

○ Flange, AS Table E

Unit: mm (approx. in.)

Model	Process Connection Code		CS2						
	Size Code		050	080	100	150	200	250	300
	Size		50	80	100	150	200	250	300
			(2)	(3)	(4)	(6)	(8)	(10)	(12)
Lining Code			A	A	A	A	A	A	A
Remote Sensor Integral Flowmeter	Lay Length (*1) (*3)	L	198 (7.78)	198 (7.78)	248 (9.74)	298 (11.71)	348 (13.68)	446 (17.54)	496 (19.51)
	Flange Outer Diameter	øD	150 (5.91)	185 (7.28)	215 (8.46)	280 (11.02)	335 (13.19)	405 (15.94)	455 (17.91)
	Flange Thickness (incl. lining flare)	t	15.0 (0.59)	16.0 (0.63)	18.0 (0.71)	21.9 (0.86)	23.9 (0.94)	27.4 (1.08)	30.4 (1.20)
	Lining Inner Diameter	ød	49 (1.94)	73 (2.87)	97 (3.82)	145 (5.72)	194 (7.65)	243 (9.55)	292 (11.51)
	Bolt Circle Diameter	øC	114 (4.49)	146 (5.75)	178 (7.01)	235 (9.25)	292 (11.50)	356 (14.02)	406 (15.98)
	Bolt Hole Interval	θ°	45	45	22.5	22.5	22.5	15	15
	Bolt Hole Diameter	øh	18 (0.71)	18 (0.71)	18 (0.71)	22 (0.87)	22 (0.87)	22 (0.87)	26 (1.02)
	Number of Bolt Holes	N	4	4	8	8	8	12	12
	Height	H1	174 (6.85)	207 (8.15)	232 (9.13)	283 (11.12)	335 (13.19)	401 (15.78)	450 (17.73)
	Height	H2	99 (3.90)	114 (4.49)	124 (4.88)	143 (5.61)	168 (6.60)	198 (7.81)	223 (8.77)
	Height	H3	-	-	-	-	-	456 (17.95)	506 (19.92)
	Remote Sensor	Maximum Height	Hr	291 (11.46)	324 (12.76)	349 (13.74)	400 (15.74)	452 (17.81)	518 (20.40)
Approx. Weight, Unit: kg (lb) (*2)		5.9 (13.0)	8.9 (19.6)	12.5 (27.6)	28 (61.8)	42 (92.7)	72 (158.9)	89 (196.5)	
Integral Flowmeter	Maximum Height	Hi	336 (13.23)	369 (14.53)	394 (15.51)	445 (17.50)	497 (19.57)	563 (22.16)	612 (24.10)
	Approx. Weight, Unit: kg (lb)		8.3 (18.3)	11.3 (24.9)	15.0 (33.1)	30 (66.2)	44 (97.1)	74 (163.4)	91 (200.9)
Grounding rings thin type (GRL, GRH, GRV) (*1)			+2 (+0.08)	+2 (+0.08)	+2 (+0.08)	+2 (+0.08)	+2 (+0.08)	+4 (+0.16)	+4 (+0.16)
Grounding rings thick type (GRN, GRJ, GRW) (*1)			+6 (+0.24)	+6 (+0.24)	+6 (+0.24)	+6 (+0.24)	+6 (+0.24)	+6 (+0.24)	+6 (+0.24)
Grounding rings thick type (GRN, GRJ, GRW) with gaskets (GA, GC, GD) (*1)			+10 (+0.39)	+10 (+0.39)	+10 (+0.39)	+12 (+0.47)	+12 (+0.47)	-	-
Grounding rings electrode type (GRP, GRT) (*1)			+29 (+1.14)	+29 (+1.14)	+29 (+1.14)	+34 (+1.34)	+34 (+1.34)	-	-
Grounding rings electrode type (GRP, GRT) with gaskets (GA, GC, GD) (*1)			+33 (+1.30)	+33 (+1.30)	+33 (+1.30)	+40 (+1.57)	+40 (+1.57)	-	-

- *1: Add the value above (which is the total of both ends) to the lay length "L" when selecting optional grounding rings with/without gaskets.
- *2: When submersible use or optional code DHC is selected, waterproof glands with union joints and cables are attached. When the cable length is 30-meters, add 9.5 kg (20.9 lb) to the weight in the table.
- *3: The tolerance of the lay length "L" is as follows.
- Size 2.5 to 200 mm (0.1 to 8 in.): 0/-3 mm
 - Size 250 to 400 mm (10 to 16 in.): 0/-5 mm

● Flange (PFA Lining, High Pressure Type)

Unit: mm (approx. in.)

Size 25 to 50 mm (1 to 2 in.)

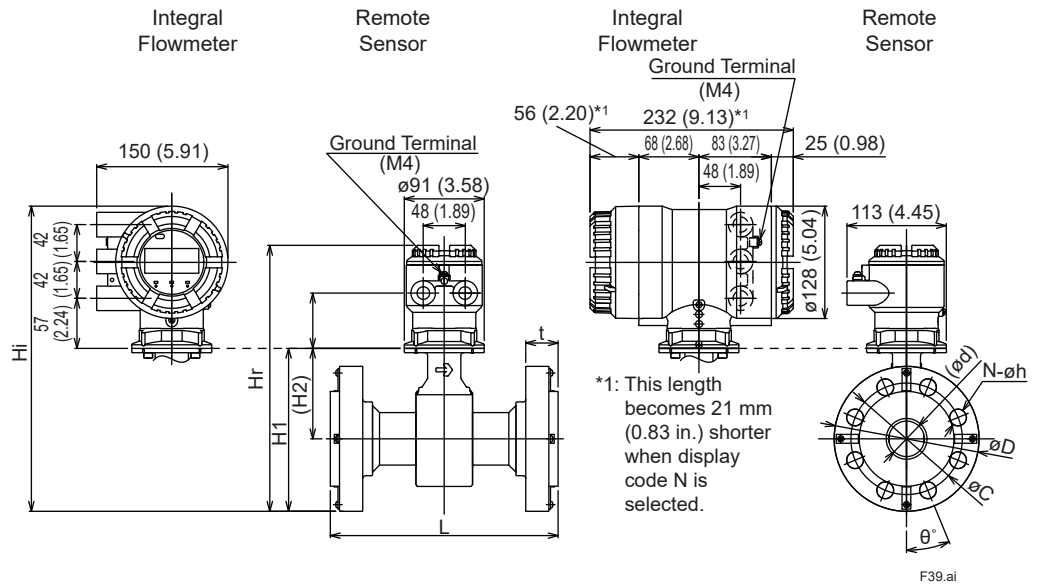
AXG025

AXG040 - □ □ □ □ □ E □ □ A

AXG050

Size Code

Process
Connection
Code
Lining Code



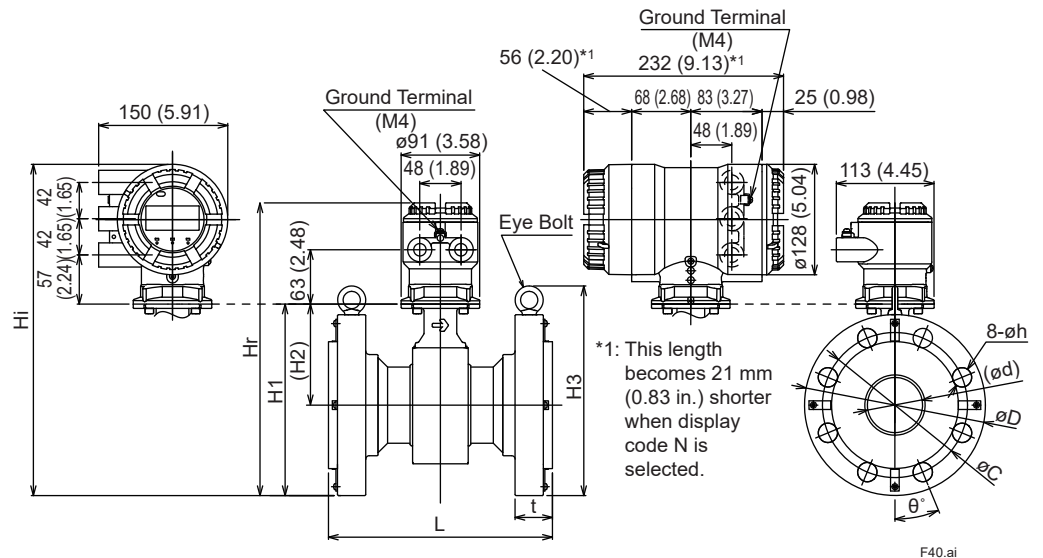
Size 80 to 100 mm (3 to 4 in.)

AXG080

AXG100 - □ □ □ □ □ E □ □ A

Size Code

Process
Connection
Code
Lining Code



○ Flange, ASME Class 600

Unit: mm (approx. in.)

Model	Process Connection Code		EA4				
	Size Code		025	040	050	080	100
	Size		25	40	50	80	100
	Lining Code		A	A	A	A	A
Remote Sensor Integral Flowmeter	Lay Length (*1) (*3)	L	209 (8.23)	261 (10.28)	261 (10.28)	261 (10.28)	311 (12.24)
	Flange Outer Diameter	øD	124.0 (4.88)	155.5 (6.12)	165.1 (6.50)	209.6 (8.25)	273.1 (10.75)
	Flange Thickness (incl. lining flare)	t	29.0 (1.14)	34.4 (1.35)	37.4 (1.47)	43.8 (1.72)	50.1 (1.97)
	Lining Inner Diameter	ød	24 (0.93)	29 (1.16)	41 (1.59)	64 (2.52)	87 (3.43)
	Bolt Circle Diameter	øC	88.9 (3.50)	114.3 (4.50)	127.0 (5.00)	168.1 (6.62)	215.9 (8.50)
	Bolt Hole Interval	θ°	45	45	22.5	22.5	22.5
	Bolt Hole Diameter	øh	19.1 (0.75)	22.4 (0.88)	19.1 (0.75)	22.4 (0.88)	25.4 (1.00)
	Number of Bolt Holes	N	4	4	8	8	8
	Height	H1	148 (5.83)	167 (6.57)	185 (7.28)	222 (8.74)	265 (10.43)
	Height	H2	86 (3.38)	90 (3.53)	103 (4.05)	117 (4.61)	129 (5.07)
	Height	H3	-	-	-	243 (9.57)	306 (12.05)
	Maximum Height	Hr	265 (10.43)	284 (11.18)	302 (11.89)	339 (13.35)	382 (15.04)
Remote Sensor	Approx. Weight, Unit: kg (lb) (*2)		5.8 (12.8)	9.2 (20.3)	11.0 (24.3)	19.4 (42.8)	36.9 (81.4)
	Maximum Height	Hi	310 (12.20)	329 (12.95)	347 (13.66)	384 (15.12)	427 (16.81)
Integral Flowmeter	Approx. Weight, Unit: kg (lb)		8.2 (18.1)	11.6 (25.6)	13.4 (29.5)	21.9 (48.3)	39.3 (86.6)

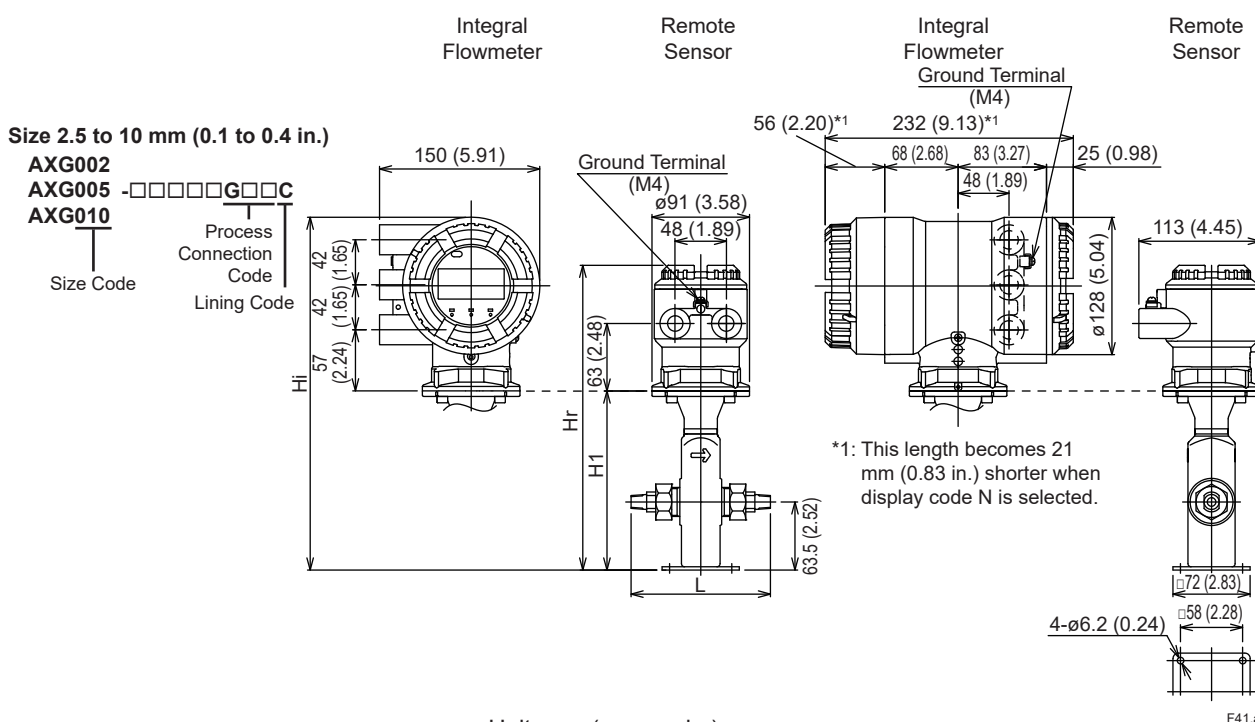
*1: The lay length "L" includes the thickness of the grounding rings (GRN) which always needs to be selected.

*2: When submersible use or optional code DHC is selected, waterproof glands with union joints and cables are attached.
When the cable length is 30-meters, add 9.5 kg (20.9 lb) to the weight in the table.

*3: The tolerance of the lay length "L" is as follows.
• Size 2.5 to 200 mm (0.1 to 8 in.): 0/-3 mm

• Ceramics Tube (Union Joint)

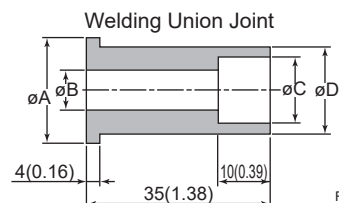
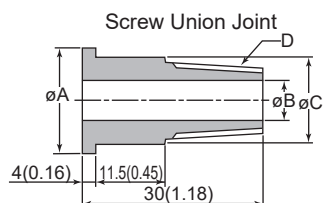
Unit: mm (approx. in.)



Unit: mm (approx. in.)

Model	Process Connection Code		GUN, GUR: Screw Union Joint			GUW: Welding Union Joint		
	Size Code		002	005	010	002	005	010
	Size		2.5 (0.1)	5 (0.2)	10 (0.4)	2.5 (0.1)	5 (0.2)	10 (0.4)
	Lining Code		C	C	C	C	C	C
Remote Sensor	Lay Length	L	130 (5.12)			140 (5.51)		
Integral Flowmeter	Height	H1	167 (6.57)			167 (6.57)		
Remote Sensor	Maximum Height	Hr	284 (11.18)			284 (11.18)		
	Approx. Weight, Unit: kg (lb) (*1)		2.7 (6.0)			2.7 (6.0)		
Integral Flowmeter	Maximum Height	Hi	329 (12.95)			329 (12.95)		
	Approx. Weight, Unit: kg (lb)		5.2 (11.5)			5.2 (11.5)		

*1: When optional code DHC is selected, waterproof glands with union joints and cables are attached. When the cable length is 30-meters, add 9.5 kg (20.9 lb) to the weight in the table.



F42.ai

Process Connection Code	GUN: Screw Union Joint			
Size	øA	øB	øC	D
2.5(0.1)	22(0.87)	8(0.31)	18.5(0.73)	NPT1/4
5(0.2)	22(0.87)	8(0.31)	18.5(0.73)	NPT1/4
10(0.4)	25(0.98)	10(0.39)	22.5(0.89)	NPT3/8

Process Connection Code	GUR: Screw Union Joint			
Size	øA	øB	øC	D
2.5(0.1)	22(0.87)	8(0.31)	18.5(0.73)	R1/4
5(0.2)	22(0.87)	8(0.31)	18.5(0.73)	R1/4
10(0.4)	25(0.98)	10(0.39)	22.5(0.89)	R3/8

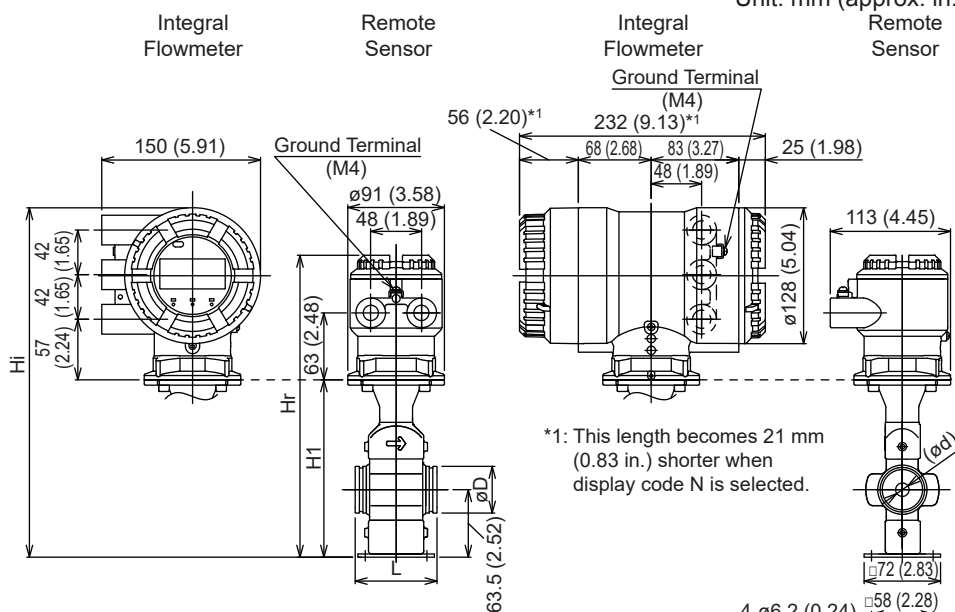
Process Connection Code	GUW: Welding Union Joint			
Size	øA	øB	øC	D
2.5(0.1)	22(0.87)	8(0.31)	14.3(0.56)	18.5(0.73)
5(0.2)	22(0.87)	8(0.31)	14.3(0.56)	18.5(0.73)
10(0.4)	25(0.98)	10(0.39)	17.8(0.70)	22.5(0.89)

● Ceramics Tube (Wafer)

Unit: mm (approx. in.)
Remote Sensor

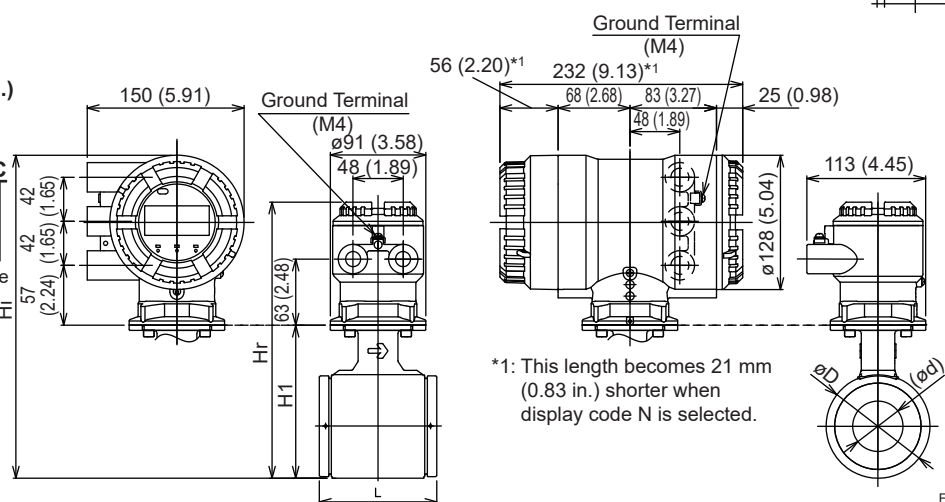
Size 15 mm (0.5 in.)

AXG015 -□□□□□**A**□□**C**
Size Code Process Connection Code Lining Code



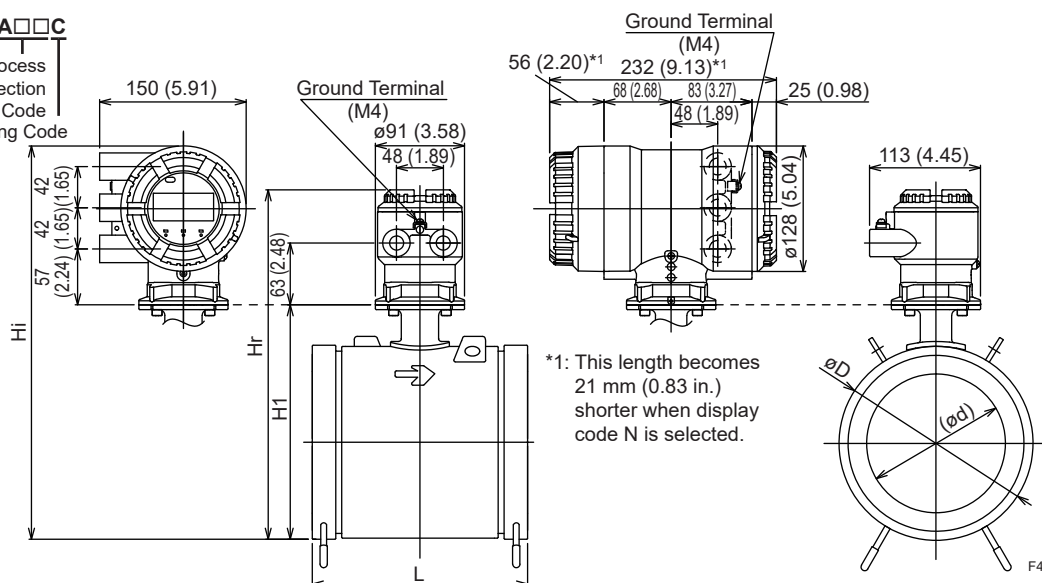
Size 25 to 100 mm (1 to 4 in.)

AXG025
AXG040
AXG050 -□□□□□**A**□□**C**
AXG080
AXG100
Size Code Process Connection Code Lining Code



Size 150 to 200 mm (6 to 8 in.)

AXG150
AXG200 -□□□□□**A**□□**C**
Size Code Process Connection Code Lining Code



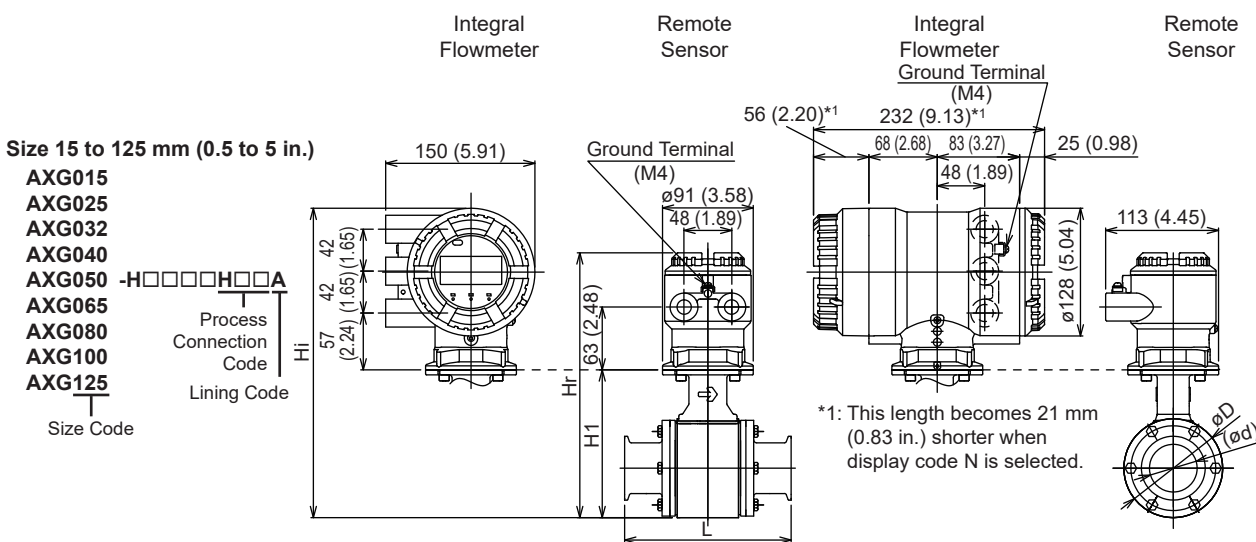
Unit: mm (approx. in.)

Model	Process Connection Code		AA1, AA2, AJ1, AJ2							
			AE4				AE2			
			-	-	-	-	-	-	-	AE1
			-	-	-	-	AG1			
	Size Code	015	025	040	050	080	100	150	200	
Size	15 (0.5)	25 (1)	40 (1.5)	50 (2)	80 (3)	100 (4)	150 (6)	200 (8)		
Lining Code	C	C	C	C	C	C	C	C		
Remote Sensor Integral Flowmeter	Lay Length (*1)	L	79 (3.11)	87 (3.43)	100 (3.94)	114 (4.49)	154 (6.06)	174 (6.85)	226 (8.90)	296 (11.65)
	Outer Diameter	øD	44 (1.73)	67.5 (2.66)	86 (3.39)	99 (3.90)	129 (5.08)	155 (6.10)	214 (8.43)	264 (10.39)
	Pipe Inner Diameter	ød	13 (0.51)	23 (0.91)	36 (1.42)	48 (1.89)	73 (2.87)	93 (3.66)	141 (5.55)	187 (7.36)
	Height	H1	167 (6.57)	110 (4.33)	129 (5.08)	148 (5.83)	175 (6.89)	201 (7.91)	255 (10.04)	305 (12.02)
Remote Sensor	Maximum Height	Hr	284 (11.18)	227 (8.94)	246 (9.69)	265 (10.43)	292 (11.50)	318 (12.52)	372 (14.66)	423 (16.63)
	Approx. Weight, Unit: kg (lb) (*3)		2.7 (6.0)	2.7 (6.0)	3.6 (7.9)	4.5 (9.9)	7.2 (15.9)	10.1 (22.3)	21 (46.4)	34 (75.1)
Integral Flowmeter	Maximum Height	Hi	329 (12.95)	272 (10.71)	291 (11.46)	310 (12.20)	337 (13.27)	363 (14.29)	417 (16.42)	467 (18.39)
	Approx. Weight, Unit: kg (lb)		5.2 (11.5)	5.2 (11.5)	6.1 (13.5)	7.0 (15.4)	9.7 (21.4)	12.6 (27.8)	23 (50.8)	36 (79.5)
Gaskets (BSC, BSF) (*1)			+6 (+0.24)	+6 (+0.24)	+6 (+0.24)	+6 (+0.24)	+6 (+0.24)	+6 (+0.24)	+6 (+0.24)	+6 (+0.24)
Grounding rings thick type (GRN, GRJ, GRW) (*1)			+6 (+0.24)	+6 (+0.24)	+6 (+0.24)	+6 (+0.24)	+6 (+0.24)	+6 (+0.24)	+6 (+0.24)	+6 (+0.24)
Grounding rings thick type (GRN, GRJ, GRW) and gaskets (BSC, BSF) (*1)			+12 (+0.47)	+12 (+0.47)	+12 (+0.47)	+12 (+0.47)	+12 (+0.47)	+12 (+0.47)	+12 (+0.47)	+12 (+0.47)
Grounding rings thick type (GRN, GRJ, GRW) with gaskets (GA, GC, GD, GF) (*1) (*2)			+6 (+0.24)	+6 (+0.24)	+6 (+0.24)	+6 (+0.24)	+6 (+0.24)	+6 (+0.24)	+6 (+0.24)	+6 (+0.24)
Grounding rings thick type (GRN, GRJ, GRW) with gaskets (GA, GC, GD, GF) and gaskets (BSC, BSF) (*1) (*2)			+12 (+0.47)	+12 (+0.47)	+12 (+0.47)	+12 (+0.47)	+12 (+0.47)	+12 (+0.47)	+12 (+0.47)	+12 (+0.47)
Grounding rings electrode type (GRP, GRT) (*1)			+28 (+1.10)	+28 (+1.10)	+28 (+1.10)	+28 (+1.10)	+28 (+1.10)	+28 (+1.10)	+36 (+1.42)	+36 (+1.42)
Grounding rings electrode type (GRP, GRT) and gaskets (BSC, BSF) (*1)			+34 (+1.34)	+34 (+1.34)	+34 (+1.34)	+34 (+1.34)	+34 (+1.34)	+34 (+1.34)	+42 (+1.65)	+42 (+1.65)
Grounding rings electrode type (GRP, GRT) with gaskets (GA, GC, GD, GF) (*1) (*2)			+28 (+1.10)	+28 (+1.10)	+28 (+1.10)	+28 (+1.10)	+28 (+1.10)	+28 (+1.10)	+36 (+1.42)	+36 (+1.42)
Grounding rings electrode type (GRP, GRT) with gaskets (GA, GC, GD, GF) and gaskets (BSC, BSF) (*1) (*2)			+34 (+1.34)	+34 (+1.34)	+34 (+1.34)	+34 (+1.34)	+34 (+1.34)	+34 (+1.34)	+42 (+1.65)	+42 (+1.65)

- *1: The lay length "L" includes the thickness of two gaskets which are supplied with the flowmeter. Be sure to always use the supplied gaskets. Add the value above (which is the total of both ends including the supplied two gaskets) to the lay length "L" when selecting optional grounding rings with/without gaskets.
- *2: When the optional code GA, GC, GD, or GF is selected, two gaskets which are supplied with the flowmeter are changed to the gaskets selected by the optional code.
- *3: When optional code DHC is selected, waterproof glands with union joints and cables are attached. When the cable length is 30-meters, add 9.5 kg (20.9 lb) to the weight in the table.

● Hygienic Use (Clamp, PFA Lining)

Unit: mm (approx. in.)



F46-1.ai

Unit: mm (approx. in.)

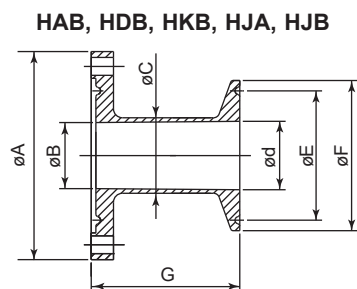
Model	Process Connection Code		HAB: Tri-Clamp (not applicable for size code 032 and 125) HDB: DIN 32676 Clamp HKB: ISO 2852 / SMS 3016 Clamp HJA, HJB: ISO 2852 Clamp (for JIS G3447 Piping)								
	Size Code		015	025	032	040	050	065	080	100	125
	Size		15 (0.5)	25 (1)	32 (1.25)	40 (1.5)	50 (2)	65 (2.5)	80 (3)	100 (4)	125 (5)
	Lining Code		A	A	A	A	A	A	A	A	A
Remote Sensor	Lay Length	L	166 (6.54)	166 (6.54)	166 (6.54)	166 (6.54)	176 (6.93)	196 (7.72)	216 (8.50)	246 (9.69)	316 (12.44)
	Outer Diameter	øD	73 (2.87)	73 (2.87)	73 (2.87)	86 (3.39)	99 (3.90)	117 (4.61)	129 (5.08)	155 (6.10)	183 (7.20)
Integral Flowmeter	Inner Diameter	ød	17.5 (0.69)	23.0 (0.91)	29.4 (1.16)	35.7 (1.41)	47.8 (1.88)	59.5 (2.34)	72.3 (2.85)	97.6 (3.84)	133.8 (5.27)
	Height	H1	116 (4.57)	116 (4.57)	116 (4.57)	129 (5.08)	149 (5.87)	166 (6.54)	176 (6.93)	202 (7.95)	230 (9.06)
Remote Sensor	Maximum Height	Hr	233 (9.17)	233 (9.17)	233 (9.17)	246 (9.69)	266 (10.47)	283 (11.14)	293 (11.54)	319 (12.56)	347 (13.66)
	Approx. Weight, Unit: kg (lb) (*1)		3.1 (6.8)	2.9 (6.4)	3.0 (6.6)	3.3 (7.3)	4.1 (9.0)	5.4 (11.9)	6.4 (14.1)	9.1 (20.1)	13.5 (29.8)
Integral Flowmeter	Maximum Height	Hi	278 (10.94)	278 (10.94)	278 (10.94)	291 (11.46)	311 (12.24)	328 (12.91)	338 (13.31)	364 (14.33)	392 (15.43)
	Approx. Weight, Unit: kg (lb)		5.6 (12.4)	5.4 (11.9)	5.5 (12.1)	5.8 (12.8)	6.7 (14.8)	7.9 (17.4)	8.9 (19.6)	11.7 (25.8)	16.1 (35.5)

*1: When optional code DHC is selected, waterproof glands with union joints and cables are attached.
When the cable length is 30-meters, add 9.5 kg (20.9 lb) to the weight in the table.

○ Clamp Connection Adapter

Unit: mm (approx. in.)

Process Connection Code	HAB: Tri-Clamp						
Size Code	015	025	040	050	065	080	100
Size	15 (0.5)	25 (1)	40 (1.5)	50 (2)	65 (2.5)	80 (3)	100 (4)
øA	70 (2.76)	70 (2.76)	83 (3.27)	96 (3.78)	114 (4.49)	126 (4.96)	152 (5.98)
øB	16.0 (0.63)	22.2 (0.87)	34.6 (1.36)	47.6 (1.87)	59.5 (2.34)	72.3 (2.85)	97.0 (3.82)
øC	19.2 (0.76)	25.4 (1.00)	38.1 (1.50)	50.8 (2.00)	63.5 (2.50)	76.2 (3.00)	101.6 (4.00)
ød	15.7 (0.62)	22.1 (0.87)	34.8 (1.37)	47.5 (1.87)	60.2 (2.37)	72.9 (2.87)	97.4 (3.83)
øE	-	43.6 (1.72)	43.6 (1.72)	56.3 (2.22)	70.6 (2.78)	83.3 (3.28)	110.3 (4.34)
øF	25.0 (0.98)	50.4 (1.98)	50.4 (1.98)	64.0 (2.52)	77.4 (3.05)	91.0 (3.58)	118.9 (4.68)
G	50 (1.97)	50 (1.97)	50 (1.97)	50 (1.97)	50 (1.97)	50 (1.97)	50 (1.97)
Parts No. (HAB)	F9811 HU	F9811 HV	F9811 HX	F9811 HY	F9811 HZ	F9811 JA	F9811 JB



F46-2.ai

Clamp Connection Adapter

Unit: mm (approx. in.)

Process Connection Code	HDB: DIN 32676 Clamp								
Size Code	015	025	032	040	050	065	080	100	125
Size	15 (0.5)	25 (1)	32 (1.25)	40 (1.5)	50 (2)	65 (2.5)	80 (3)	100 (4)	125 (5)
øA	70 (2.76)	70 (2.76)	70 (2.76)	83 (3.27)	96 (3.78)	114 (4.49)	126 (4.96)	152 (5.98)	180 (7.09)
øB	16.0 (0.63)	22.2 (0.87)	29.4 (1.16)	34.6 (1.36)	47.6 (1.87)	59.5 (2.34)	72.3 (2.85)	97.0 (3.82)	121.0 (4.76)
øC	20.0 (0.79)	30.0 (1.18)	36.0 (1.42)	42.0 (1.65)	54.0 (2.13)	70.0 (2.76)	85.0 (3.35)	104.0 (4.09)	129.0 (5.08)
ød	16.0 (0.63)	26.0 (1.02)	32.0 (1.26)	38.0 (1.50)	50.0 (1.97)	66.0 (2.60)	81.0 (3.19)	100.0 (3.94)	125.0 (4.92)
øE	27.5 (1.08)	43.5 (1.71)	43.5 (1.71)	43.5 (1.71)	56.5 (2.22)	83.5 (3.29)	97.0 (3.82)	110.0 (4.33)	146.0 (5.75)
øF	34.0 (1.34)	50.5 (1.99)	50.5 (1.99)	50.5 (1.99)	64.0 (2.52)	91.0 (3.58)	106.0 (4.17)	119.0 (4.69)	155.0 (6.10)
G	50 (1.97)	50 (1.97)	50 (1.97)	50 (1.97)	50 (1.97)	50 (1.97)	50 (1.97)	50 (1.97)	60 (2.36)
Parts No. (HDB)	F9811 JD	F9811 JE	F9811 JF	F9811 JG	F9811 JH	F9811 JJ	F9811 JK	F9811 JL	F9870 ZD

Unit: mm (approx. in.)

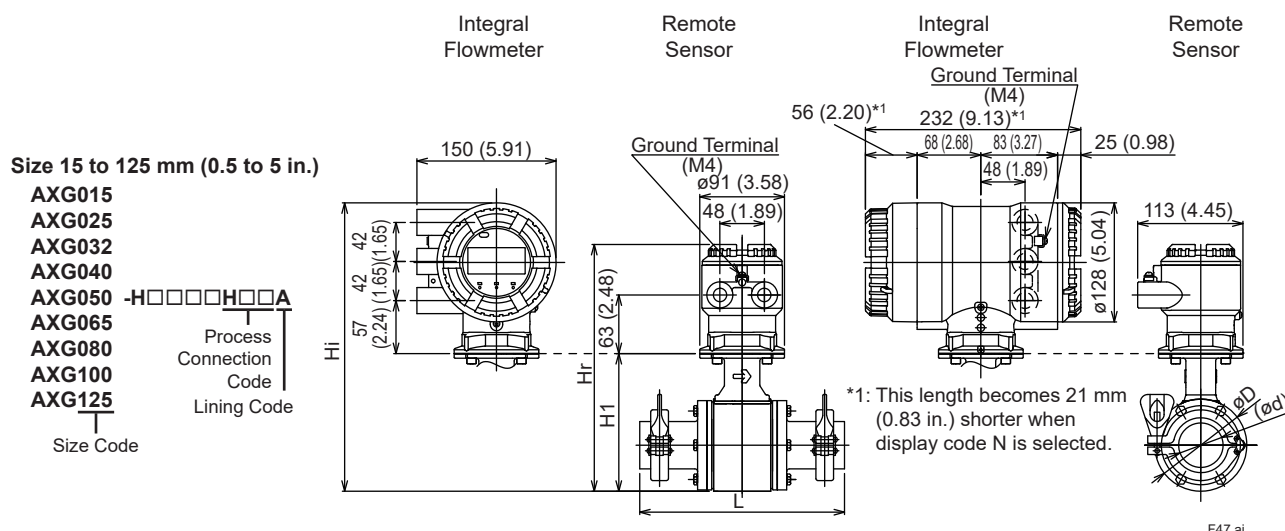
Process Connection Code	HKB: ISO 2852 / SMS 3016 Clamp								
Size Code	015	025	032	040	050	065	080	100	125
Size	15 (0.5)	25 (1)	32 (1.25)	40 (1.5)	50 (2)	65 (2.5)	80 (3)	100 (4)	125 (5)
øA	70 (2.76)	70 (2.76)	70 (2.76)	83 (3.27)	96 (3.78)	114 (4.49)	126 (4.96)	152 (5.98)	180 (7.09)
øB	16.0 (0.63)	22.2 (0.87)	29.4 (1.16)	34.6 (1.36)	47.6 (1.87)	59.5 (2.34)	72.3 (2.85)	97.0 (3.82)	121.0 (4.76)
øC	18.0 (0.71)	25.6 (1.01)	34.3 (1.35)	38.6 (1.52)	51.6 (2.03)	64.1 (2.52)	76.7 (3.02)	102.5 (4.04)	141.2 (5.56)
ød	15.2 (0.60)	22.6 (0.89)	31.3 (1.23)	35.6 (1.40)	48.6 (1.91)	60.3 (2.37)	72.9 (2.87)	97.6 (3.84)	135.7 (5.34)
øE	27.5 (1.08)	43.5 (1.71)	43.5 (1.71)	43.5 (1.71)	56.5 (2.22)	70.5 (2.78)	83.5 (3.29)	110.0 (4.33)	146.0 (5.75)
øF	34.0 (1.34)	50.5 (1.99)	50.5 (1.99)	50.5 (1.99)	64.0 (2.52)	77.5 (3.05)	91.0 (3.58)	119.0 (4.69)	155.0 (6.10)
G	50 (1.97)	50 (1.97)	50 (1.97)	50 (1.97)	50 (1.97)	50 (1.97)	50 (1.97)	50 (1.97)	60 (2.36)
Parts No. (HKB)	F9811 JN	F9811 JP	F9811 JQ	F9811 JR	F9811 JS	F9811 JT	F9811 JU	F9811 JV	F9870 ZE

Unit: mm (approx. in.)

Process Connection Code	HJA, HJB: ISO 2852 Clamp (for JIS G3447 Piping)								
Size Code	015	025	032	040	050	065	080	100	125
Size	15 (0.5)	25 (1)	32 (1.25)	40 (1.5)	50 (2)	65 (2.5)	80 (3)	100 (4)	125 (5)
øA	70 (2.76)	70 (2.76)	70 (2.76)	83 (3.27)	96 (3.78)	114 (4.49)	126 (4.96)	152 (5.98)	180 (7.09)
øB	16.0 (0.63)	22.2 (0.87)	29.4 (1.16)	34.6 (1.36)	47.6 (1.87)	59.5 (2.34)	72.3 (2.85)	97.0 (3.82)	121.0 (4.76)
øC	21.7 (0.85)	25.4 (1.00)	31.8 (1.25)	38.1 (1.50)	50.8 (2.00)	63.5 (2.50)	76.3 (3.00)	101.6 (4.00)	139.8 (5.50)
ød	17.5 (0.69)	23.0 (0.91)	29.4 (1.16)	35.7 (1.41)	47.8 (1.88)	59.5 (2.34)	72.3 (2.85)	97.6 (3.84)	133.8 (5.27)
øE	27.5 (1.08)	43.5 (1.71)	43.5 (1.71)	43.5 (1.71)	56.5 (2.22)	70.5 (2.78)	83.5 (3.29)	110.0 (4.33)	146.0 (5.75)
øF	34.0 (1.34)	50.5 (1.99)	50.5 (1.99)	50.5 (1.99)	64.0 (2.52)	77.5 (3.05)	91.0 (3.58)	119.0 (4.69)	155.0 (6.10)
G	50 (1.97)	50 (1.97)	50 (1.97)	50 (1.97)	50 (1.97)	50 (1.97)	50 (1.97)	50 (1.97)	60 (2.36)
Parts No. (HJA)	F9811 HA	F9811 HB	F9811 HC	F9811 HD	F9811 HE	F9811 HF	F9811 HG	F9811 HH	F9870 ZA
Parts No. (HJB)	F9811 HK	F9811 HL	F9811 HM	F9811 HN	F9811 HP	F9811 HQ	F9811 HR	F9811 HS	F9870 ZB

● Hygienic Use (Clamp, PFA Lining) with Connection Parts for HJA and HJB (Optional code W2)

Unit: mm (approx. in.)



Unit: mm (approx. in.)

Model	Process Connection Code		HJA, HJB: ISO 2852 Clamp (for JIS G3447 Piping)							
	Size Code		015	025	032	040	050	065	080	100
	Size		15 (0.5)	25 (1)	32 (1.25)	40 (1.5)	50 (2)	65 (2.5)	80 (3)	100 (4)
Remote Sensor	Lining Code		A	A	A	A	A	A	A	A
	Lay Length	L	204 (8.03)	211 (8.31)	204 (8.03)	211 (8.31)	221 (8.70)	241 (9.49)	261 (10.28)	291 (11.46)
	Outer Diameter	øD	73 (2.87)	73 (2.87)	73 (2.87)	86 (3.39)	99 (3.90)	117 (4.61)	129 (5.08)	155 (6.10)
	Inner Diameter	ød	17.5 (0.69)	23.0 (0.91)	29.4 (1.16)	35.7 (1.41)	47.8 (1.88)	59.5 (2.34)	72.3 (2.85)	97.6 (3.84)
Integral Flowmeter	Height	H1	116 (4.57)	116 (4.57)	116 (4.57)	129 (5.08)	149 (5.87)	166 (6.54)	176 (6.93)	202 (7.95)
	Maximum Height	Hr	233 (9.17)	233 (9.17)	233 (9.17)	246 (9.69)	266 (10.47)	283 (11.14)	293 (11.54)	319 (12.56)
	Approx. Weight, Unit: kg (lb) (*1)		3.0 (6.6)	2.7 (6.0)	2.9 (6.4)	3.2 (7.1)	3.9 (8.6)	5.1 (11.2)	5.9 (13.0)	8.1 (17.9)
	Maximum Height	Hi	278 (10.94)	278 (10.94)	278 (10.94)	291 (11.46)	311 (12.24)	328 (12.91)	338 (13.31)	364 (14.33)
Integral Flowmeter	Approx. Weight, Unit: kg (lb)		5.5 (12.1)	5.2 (11.5)	5.4 (11.9)	5.7 (12.6)	6.5 (14.3)	7.6 (16.8)	8.5 (18.7)	10.7 (23.6)
	Maximum Height	Hi	392 (15.43)	392 (15.43)	392 (15.43)	392 (15.43)	392 (15.43)	392 (15.43)	392 (15.43)	392 (15.43)

*1 When optional code DHC is selected, waterproof glands with union joints and cables are attached.
When the cable length is 30-meters, add 9.5 kg (20.9 lb) to the weight in the table.

Unit: mm (approx. in.)



Unit: mm (approx. in.)

*1: When optional code DHC is selected, waterproof glands with union joints and cables are attached.
When the cable length is 30-meters, add 9.5 kg (20.9 lb) to the weight in the table.

Unit: mm (approx. in.)

Model	Process Connection Code		JKB: ISO 2853 Union							
	Size Code		015	025	032	040	050	065	080	100
	Size		15	25	32	40	50	65	80	100
			(0.5)	(1)	(1.25)	(1.5)	(2)	(2.5)	(3)	(4)
	Lining Code		A	A	A	A	A	A	A	A
Remote Sensor	Lay Length	L	166 (6.54)	166 (6.54)	166 (6.54)	166 (6.54)	176 (6.93)	196 (7.72)	216 (8.50)	246 (9.69)
	Outer Diameter	øD	73 (2.87)	73 (2.87)	73 (2.87)	86 (3.39)	99 (3.90)	117 (4.61)	129 (5.08)	155 (6.10)
Integral Flowmeter	Inner Diameter	ød	15.2 (0.60)	22.6 (0.89)	31.3 (1.23)	35.6 (1.40)	48.6 (1.91)	60.3 (2.37)	72.9 (2.87)	97.6 (3.84)
	Height	H1	116 (4.57)	116 (4.57)	116 (4.57)	129 (5.08)	149 (5.87)	166 (6.54)	176 (6.93)	202 (7.95)
Remote Sensor	Maximum Height	Hr	233 (9.17)	233 (9.17)	233 (9.17)	246 (9.69)	266 (10.47)	283 (11.14)	293 (11.54)	319 (12.56)
	Approx. Weight, Unit: kg (lb) (*1)		3.0 (6.6)	3.0 (6.6)	3.1 (6.8)	3.4 (7.5)	4.3 (9.5)	5.5 (12.1)	6.5 (14.3)	9.2 (20.3)
	Maximum Height	Hi	278 (10.94)	278 (10.94)	278 (10.94)	291 (11.46)	311 (12.24)	328 (12.91)	338 (13.31)	364 (14.33)
Integral Flowmeter	Approx. Weight, Unit: kg (lb)		5.5 (12.1)	5.5 (12.1)	5.6 (12.3)	5.9 (13.0)	6.9 (15.2)	8.0 (17.6)	9.1 (20.1)	11.8 (26.0)

Unit: mm (approx. in.)

Model	Process Connection Code		JJA, JJB: ISO 2853 Union (for JIS G3447 Piping)					
	Size Code		025	032	040	050	065	080
	Size		25	32	40	50	65	80
	Lining Code		A	A	A	A	A	A
Remote Sensor	Lay Length	L	166 (6.54)	166 (6.54)	166 (6.54)	176 (6.93)	196 (7.72)	216 (8.50)
	Outer Diameter	øD	73 (2.87)	73 (2.87)	86 (3.39)	99 (3.90)	117 (4.61)	129 (5.08)
	Inner Diameter	ød	23.0 (0.91)	29.4 (1.16)	35.6 (1.40)	47.8 (1.88)	59.5 (2.34)	72.3 (2.85)
	Height	H1	116 (4.57)	116 (4.57)	129 (5.08)	149 (5.87)	166 (6.54)	176 (6.93)
Integral Flowmeter	Maximum		233	233	246	266	283	293
	Height	Hr	(9.17)	(9.17)	(9.69)	(10.47)	(11.14)	(11.54)
	Approx. Weight, Unit: kg (lb) (*1)		3.0 (6.6)	3.1 (6.8)	3.4 (7.5)	4.3 (9.5)	5.5 (12.1)	6.5 (14.3)
	Approx. Weight, Unit: kg (lb)		(12.1)	(12.3)	(13.0)	(15.2)	(17.6)	(20.1)

Unit: mm (approx. in.)

Model	Process Connection Code		JSB: SMS 1145 Union (Open groove packing type)					
	Size Code		025	032	040	050	065	080
	Size		25	32	40	50	65	80
	Lining Code		A	A	A	A	A	A
Remote Sensor	Lay Length	L	166 (6.54)	166 (6.54)	166 (6.54)	176 (6.93)	196 (7.72)	216 (8.50)
	Outer Diameter	øD	73 (2.87)	73 (2.87)	86 (3.39)	99 (3.90)	117 (4.61)	129 (5.08)
	Inner Diameter	ød	22.5 (0.89)	29.6 (1.17)	35.5 (1.40)	48.5 (1.91)	60.5 (2.38)	72.9 (2.87)
	Height	H1	116 (4.57)	116 (4.57)	129 (5.08)	149 (5.87)	166 (6.54)	176 (6.93)
Integral Flowmeter	Maximum		233	233	246	266	283	293
	Height	Hr	(9.17)	(9.17)	(9.69)	(10.47)	(11.14)	(11.54)
	Approx. Weight, Unit: kg (lb) (*1)		3.0 (6.6)	3.1 (6.8)	3.4 (7.5)	4.3 (9.5)	5.5 (12.1)	6.5 (14.3)
	Approx. Weight, Unit: kg (lb)		(12.1)	(12.3)	(13.0)	(15.2)	(17.6)	(20.1)

*1: When optional code DHC is selected, waterproof glands with union joints and cables are attached.
When the cable length is 30-meters, add 9.5 kg (20.9 lb) to the weight in the table.

○ Union Connection Adapter

Unit: mm (approx. in.)

Process Connection Code	JDB: DIN 11851 Union								
Size Code	015	025	032	040	050	065	080	100	125
Size	15	25	32	40	50	65	80	100	125
	(0.5)	(1)	(1.25)	(1.5)	(2)	(2.5)	(3)	(4)	(5)
øA	70	70	70	83	96	114	126	152	180
	(2.76)	(2.76)	(2.76)	(3.27)	(3.78)	(4.49)	(4.96)	(5.98)	(7.09)
øB	16.0	22.2	29.4	34.6	47.6	59.5	72.3	97.0	121.0
	(0.63)	(0.87)	(1.16)	(1.36)	(1.87)	(2.34)	(2.85)	(3.82)	(4.76)
øC	20.0	30.0	36.0	42.0	54.0	70.0	85.0	104.0	129.0
	(0.79)	(1.18)	(1.42)	(1.65)	(2.13)	(2.76)	(3.35)	(4.09)	(5.08)
ød	16.0	26.0	32.0	38.0	50.0	66.0	81.0	100.0	125.0
	(0.63)	(1.02)	(1.26)	(1.50)	(1.97)	(2.60)	(3.19)	(3.94)	(4.92)
øE	18.0	30.0	36.0	42.0	54.0	71.0	85.0	104.0	130.0
	(0.71)	(1.18)	(1.42)	(1.65)	(2.13)	(2.80)	(3.35)	(4.09)	(5.12)
øF	25.8	39.8	45.8	51.8	63.8	80.8	94.8	113.8	141.8
	(1.02)	(1.57)	(1.80)	(2.04)	(2.51)	(3.18)	(3.73)	(4.48)	(5.58)
G	RD34	RD52	RD58	RD65	RD78	RD95	RD110	RD130	RD160
	x 1/8"	x 1/6"	x 1/6"	x 1/6"	x 1/6"	x 1/6"	x 1/4"	x 1/4"	x 1/4"
H	50	50	50	50	50	50	60	60	65
	(1.97)	(1.97)	(1.97)	(1.97)	(1.97)	(1.97)	(2.36)	(2.36)	(2.56)
Parts No. (JDB)	F9811 KR	F9811 KS	F9811 KT	F9811 KU	F9811 KV	F9811 KW	F9811 KX	F9811 KY	F9870 ZH

Unit: mm (approx. in.)

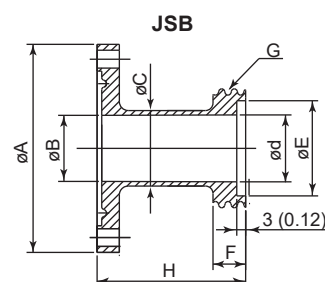
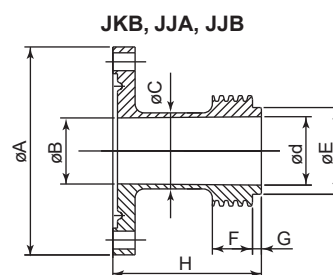
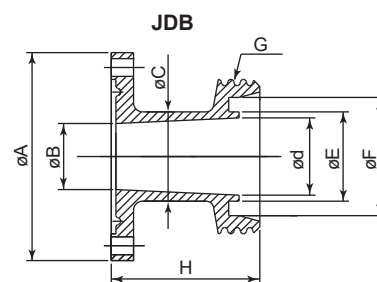
Process Connection Code	JKB: ISO 2853 Union								
Size Code	015	025	032	040	050	065	080	100	
Size	15	25	32	40	50	65	80	100	
	(0.5)	(1)	(1.25)	(1.5)	(2)	(2.5)	(3)	(4)	
øA	70	70	70	83	96	114	126	152	
	(2.76)	(2.76)	(2.76)	(3.27)	(3.78)	(4.49)	(4.96)	(5.98)	
øB	16.0	22.2	29.4	34.6	47.6	59.5	72.3	97.0	
	(0.63)	(0.87)	(1.16)	(1.36)	(1.87)	(2.34)	(2.85)	(3.82)	
øC	18.0	25.6	34.3	38.6	51.6	64.1	76.7	102.5	
	(0.71)	(1.01)	(1.35)	(1.52)	(2.03)	(2.52)	(3.02)	(4.04)	
ød	15.2	22.6	31.3	35.6	48.6	60.3	72.9	97.6	
	(0.60)	(0.89)	(1.23)	(1.40)	(1.91)	(2.37)	(2.87)	(3.84)	
øE	21.2	29.2	38.2	42.7	56.2	69.9	82.6	108.7	
	(0.83)	(1.15)	(1.50)	(1.68)	(2.21)	(2.75)	(3.25)	(4.28)	
F	13.5	13.5	13.5	13.5	13.5	13.5	13.5	13.5	
	(0.53)	(0.53)	(0.53)	(0.53)	(0.53)	(0.53)	(0.53)	(0.53)	
G	3	3	3	3	3	3	3	3	
	(0.12)	(0.12)	(0.12)	(0.12)	(0.12)	(0.12)	(0.12)	(0.12)	
H	50	50	50	50	50	50	50	50	
	(1.97)	(1.97)	(1.97)	(1.97)	(1.97)	(1.97)	(1.97)	(1.97)	
Parts No. (JKB)	F9811 LA	F9811 LB	F9811 LC	F9811 LD	F9811 LE	F9811 LF	F9811 LG	F9811 LH	

Unit: mm (approx. in.)

Process Connection Code	JJA, JJB: ISO 2853 Union (for JIS G3447 Piping)						
Size Code	025	032	040	050	065	080	100
Size	25	32	40	50	65	80	100
	(1)	(1.25)	(1.5)	(2)	(2.5)	(3)	(4)
øA	70	70	83	96	114	126	152
	(2.76)	(2.76)	(3.27)	(3.78)	(4.49)	(4.96)	(5.98)
øB	22.2	29.4	34.6	47.6	59.5	72.3	97.0
	(0.87)	(1.16)	(1.36)	(1.87)	(2.34)	(2.85)	(3.82)
øC	25.6	31.8	38.0	51.0	63.5	76.3	101.6
	(1.01)	(1.25)	(1.50)	(2.01)	(2.50)	(3.00)	(4.00)
ød	23.0	29.4	35.6	47.8	59.5	72.3	97.6
	(0.91)	(1.16)	(1.40)	(1.88)	(2.34)	(2.85)	(3.84)
øE	29.2	35.7	42.7	56.2	69.9	82.6	108.7
	(1.15)	(1.41)	(1.68)	(2.21)	(2.75)	(3.25)	(4.28)
F	13.5	10.0	13.5	13.5	13.5	13.5	18.0
	(0.53)	(0.39)	(0.53)	(0.53)	(0.53)	(0.53)	(0.71)
G	3	2.5	3	3	3	3	3
	(0.12)	(0.10)	(0.12)	(0.12)	(0.12)	(0.12)	(0.12)
H	50	50	50	50	50	50	50
	(1.97)	(1.97)	(1.97)	(1.97)	(1.97)	(1.97)	(1.97)
Parts No. (JJA)	F9811 JY	F9811 JZ	F9811 KA	F9811 KB	F9811 KC	F9811 KD	F9811 KE
Parts No. (JJB)	F9811 KH	F9811 KJ	F9811 KK	F9811 KL	F9811 KM	F9811 KN	F9811 KP

Unit: mm (approx. in.)

Process Connection Code	JSB: SMS 1145 Union (Open groove packing type)						
Size Code	025	032	040	050	065	080	100
Size	25	32	40	50	65	80	100
	(1)	(1.25)	(1.5)	(2)	(2.5)	(3)	(4)
øA	70	70	83	96	114	126	152
	(2.76)	(2.76)	(3.27)	(3.78)	(4.49)	(4.96)	(5.98)
øB	22.2	29.4	34.6	47.6	59.5	72.3	97.0
	(0.87)	(1.16)	(1.36)	(1.87)	(2.34)	(2.85)	(3.82)
øC	25.4	32.0	38.1	51.0	63.5	76.2	102.5
	(1.00)	(1.26)	(1.50)	(2.01)	(2.50)	(3.00)	(4.04)
ød	22.5	29.6	35.5	48.5	60.5	72.9	97.6
	(0.89)	(1.17)	(1.40)	(1.91)	(2.38)	(2.87)	(3.84)
øE	32.0	40.0	48.0	61.0	73.5	86.0	120.0
	(1.26)	(1.57)	(1.89)	(2.40)	(2.89)	(3.39)	(4.72)
F	11	13	15	15	19	19	30
	(0.43)	(0.51)	(0.59)	(0.59)	(0.75)	(0.75)	(1.18)
G	RD40	RD48	RD60	RD70	RD85	RD98	RD132
	x 1/6"	x 1/6"	x 1/6"	x 1/6"	x 1/6"	x 1/6"	x 1/6"
H	50	50	50	50	50	50	65
	(1.97)	(1.97)	(1.97)	(1.97)	(1.97)	(1.97)	(2.56)
Parts No. (JSB)	F9811 LK	F9811 LL	F9811 LM	F9811 LN	F9811 LP	F9811 LQ	F9811 LR

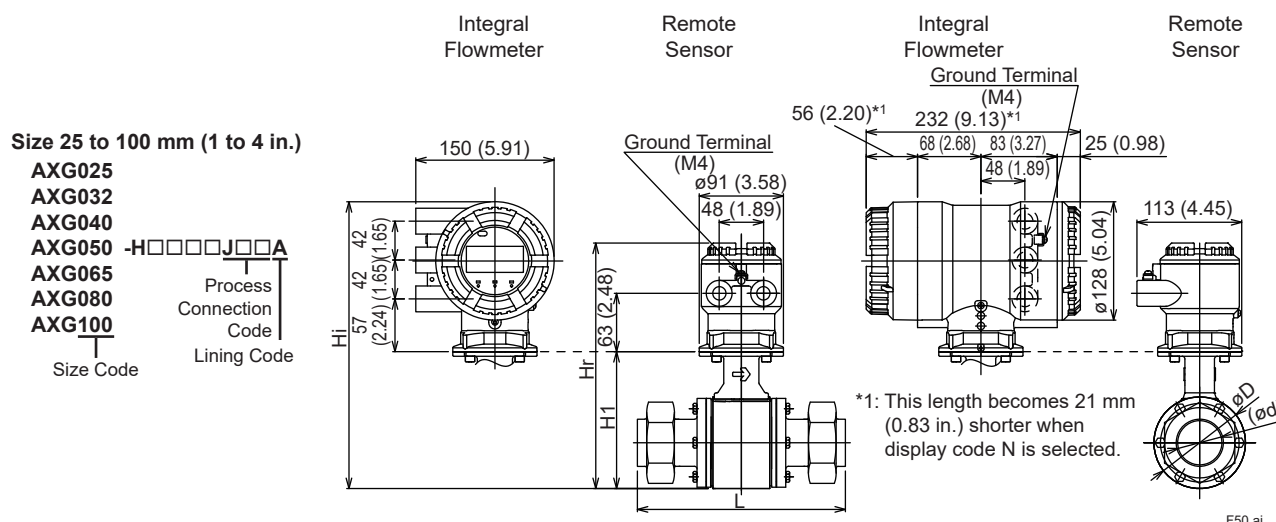


F49.ai

Union Connection Adapter

● Hygienic Use (Union, PFA Lining) with Connection Parts for JJA and JJB (Optional code W2)

Unit: mm (approx. in.)



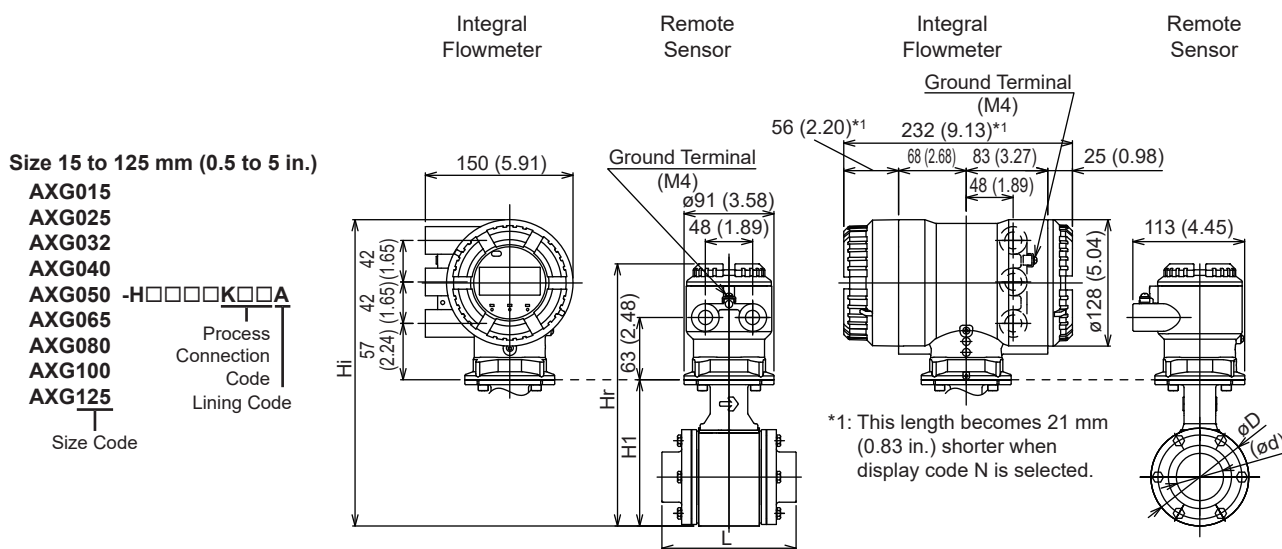
Unit: mm (approx. in.)

Model	Process Connection Code		JJA, JJB: ISO 2853 Union (for JIS G3447 Piping)						
	Size Code		025	032	040	050	065	080	100
	Size		25	32	40	50	65	80	100
	Lining Code		A	A	A	A	A	A	A
Remote Sensor	Lay Length	L	215 (8.46)	208 (8.19)	215 (8.46)	225 (8.86)	245 (9.65)	265 (10.43)	309 (12.17)
	Outer Diameter	øD	73 (2.87)	73 (2.87)	86 (3.39)	99 (3.90)	117 (4.61)	129 (5.08)	155 (6.10)
	Inner Diameter	ød	23.0 (0.91)	29.4 (1.16)	35.7 (1.41)	47.8 (1.88)	59.5 (2.34)	72.3 (2.85)	97.6 (3.84)
	Height	H1	116 (4.57)	116 (4.57)	129 (5.08)	149 (5.87)	166 (6.54)	176 (6.93)	202 (7.95)
Remote Sensor	Maximum Height	Hr	233 (9.17)	233 (9.17)	246 (9.69)	266 (10.47)	283 (11.14)	293 (11.54)	319 (12.56)
	Approx. Weight, Unit: kg (lb) (*1)		3.5 (7.7)	3.6 (7.9)	3.9 (8.6)	5.0 (11.0)	6.5 (14.3)	7.9 (17.4)	12.1 (26.7)
Integral Flowmeter	Maximum Height	Hi	278 (10.94)	278 (10.94)	291 (11.46)	311 (12.24)	328 (12.91)	338 (13.31)	364 (14.33)
	Approx. Weight, Unit: kg (lb)		6.0 (13.2)	6.1 (13.4)	6.4 (14.1)	7.6 (16.8)	9.0 (19.8)	10.5 (23.1)	14.7 (32.4)

*1 When optional code DHC is selected, waterproof glands with union joints and cables are attached. When the cable length is 30-meters, add 9.5 kg (20.9 lb) to the weight in the table.

● Hygienic Use (Butt Weld Joint, PFA Lining)

Unit: mm (approx. in.)



Unit: mm (approx. in.)

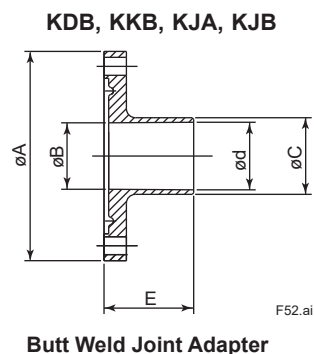
Model	Process Connection Code		KDB: DIN 11850 Piping Butt Weld Joint KKB: ISO 2037 Piping Butt Weld Joint KJA, KJB: JIS G3447 Piping Butt Weld Joint								
	Size Code		015	025	032	040	050	065	080	100	125
	Size		15 (0.5)	25 (1)	32 (1.25)	40 (1.5)	50 (2)	65 (2.5)	80 (3)	100 (4)	125 (5)
	Lining Code		A	A	A	A	A	A	A	A	A
Remote Sensor Integral Flowmeter	Lay Length	L	126 (4.96)	126 (4.96)	126 (4.96)	126 (4.96)	136 (5.35)	156 (6.14)	176 (6.93)	206 (8.11)	276 (10.87)
	Outer Diameter	øD	73 (2.87)	73 (2.87)	73 (2.87)	86 (3.39)	99 (3.90)	117 (4.61)	129 (5.08)	155 (6.10)	183 (7.20)
	Inner Diameter	ød	17.5 (0.69)	23.0 (0.91)	29.4 (1.16)	35.7 (1.41)	47.8 (1.88)	59.5 (2.34)	72.3 (2.85)	97.6 (3.84)	133.8 (5.27)
	Height	H1	116 (4.57)	116 (4.57)	116 (4.57)	129 (5.08)	149 (5.87)	166 (6.54)	176 (6.93)	202 (7.95)	230 (9.06)
Remote Sensor	Maximum Height	Hr	233 (9.17)	233 (9.17)	233 (9.17)	246 (9.69)	266 (10.47)	283 (11.14)	293 (11.54)	319 (12.56)	347 (13.66)
	Approx. Weight, Unit: kg (lb) (*1)		3.0 (6.6)	2.7 (6.0)	2.9 (6.4)	3.2 (7.1)	3.9 (8.6)	5.1 (11.2)	5.9 (13.0)	8.1 (17.9)	12.3 (27.1)
Integral Flowmeter	Maximum Height	Hi	278 (10.94)	278 (10.94)	278 (10.94)	291 (11.46)	311 (12.24)	328 (12.91)	338 (13.31)	364 (14.33)	392 (15.43)
	Approx. Weight, Unit: kg (lb)		5.5 (12.1)	5.2 (11.5)	5.4 (11.9)	5.7 (12.6)	6.5 (14.3)	7.6 (16.8)	8.5 (18.7)	10.7 (23.6)	14.9 (32.9)

*1: When optional code DHC is selected, waterproof glands with union joints and cables are attached.
When the cable length is 30-meters, add 9.5 kg (20.9 lb) to the weight in the table.

○ Butt Weld Joint Adapter

Unit: mm (approx. in.)

Process Connection Code	KDB: DIN 11850 Piping Butt Weld Joint								
Size Code	015	025	032	040	050	065	080	100	125
Size	15	25	32	40	50	65	80	100	125
	(0.5)	(1)	(1.25)	(1.5)	(2)	(2.5)	(3)	(4)	(5)
øA	70 (2.76)	70 (2.76)	70 (2.76)	83 (3.27)	96 (3.78)	114 (4.49)	126 (4.96)	152 (5.98)	180 (7.09)
øB	16.0 (0.63)	22.2 (0.87)	29.4 (1.16)	34.6 (1.36)	47.6 (1.87)	59.5 (2.34)	72.3 (2.85)	97.0 (3.82)	121.0 (4.76)
øC	20.0 (0.79)	30.0 (1.18)	36.0 (1.42)	42.0 (1.65)	54.0 (2.13)	70.0 (2.76)	85.0 (3.35)	104.0 (4.09)	129.0 (5.08)
ød	16.0 (0.63)	26.0 (1.02)	32.0 (1.26)	38.0 (1.50)	50.0 (1.97)	66.0 (2.60)	81.0 (3.19)	100.0 (3.94)	125.0 (4.92)
E	30 (1.18)	30 (1.18)	30 (1.18)	30 (1.18)	30 (1.18)	30 (1.18)	30 (1.18)	30 (1.18)	40 (1.57)
Parts No. (KDB)	F9811 ND	F9811 NE	F9811 NF	F9811 NG	F9811 NH	F9811 NJ	F9811 NK	F9811 NL	F9870 ZP



Unit: mm (approx. in.)

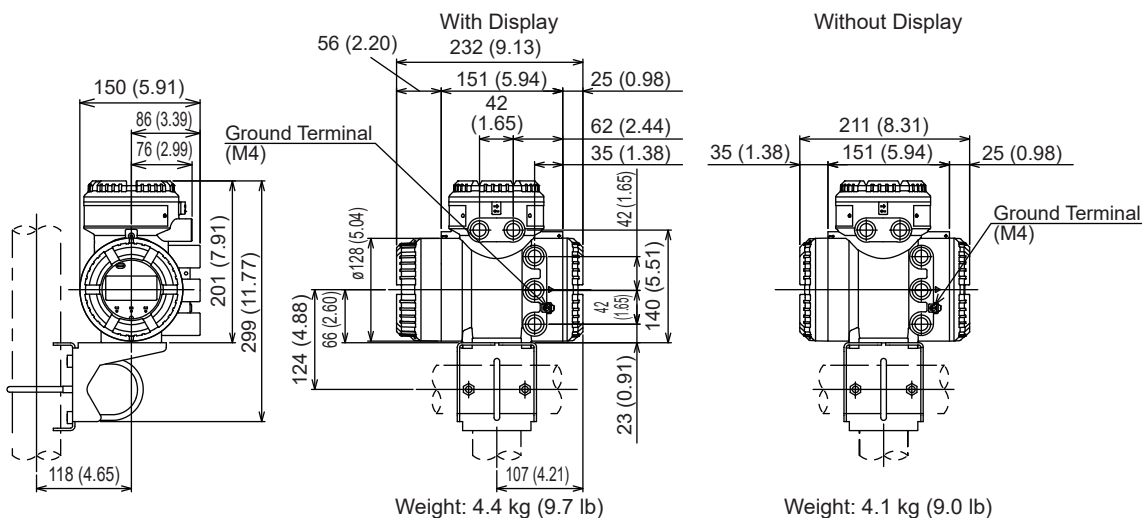
Process Connection Code	KKB: ISO 2037 Piping Butt Weld Joint								
Size Code	015	025	032	040	050	065	080	100	125
Size	15	25	32	40	50	65	80	100	125
	(0.5)	(1)	(1.25)	(1.5)	(2)	(2.5)	(3)	(4)	(5)
øA	70 (2.76)	70 (2.76)	70 (2.76)	83 (3.27)	96 (3.78)	114 (4.49)	126 (4.96)	152 (5.98)	180 (7.09)
øB	16.0 (0.63)	22.2 (0.87)	29.4 (1.16)	34.6 (1.36)	47.6 (1.87)	59.5 (2.34)	72.3 (2.85)	97.0 (3.82)	121.0 (4.76)
øC	18.0 (0.71)	25.6 (1.01)	34.3 (1.35)	38.6 (1.52)	51.6 (2.03)	64.1 (2.52)	76.7 (3.02)	102.5 (4.04)	141.2 (5.56)
ød	15.2 (0.60)	22.6 (0.89)	31.3 (1.23)	35.6 (1.40)	48.6 (1.91)	60.3 (2.37)	72.9 (2.87)	97.6 (3.84)	135.7 (5.34)
E	30 (1.18)	30 (1.18)	30 (1.18)	30 (1.18)	30 (1.18)	30 (1.18)	30 (1.18)	30 (1.18)	40 (1.57)
Parts No. (KKB)	F9811 NN	F9811 NP	F9811 NQ	F9811 NR	F9811 NS	F9811 NT	F9811 NU	F9811 NV	F9870 ZQ

Unit: mm (approx. in.)

Process Connection Code	KJA, KJB: JIS G3447 Piping Butt Weld Joint								
Size Code	015	025	032	040	050	065	080	100	125
Size	15	25	32	40	50	65	80	100	125
	(0.5)	(1)	(1.25)	(1.5)	(2)	(2.5)	(3)	(4)	(5)
øA	70 (2.76)	70 (2.76)	70 (2.76)	83 (3.27)	96 (3.78)	114 (4.49)	126 (4.96)	152 (5.98)	180 (7.09)
øB	16.0 (0.63)	22.2 (0.87)	29.4 (1.16)	34.6 (1.36)	47.6 (1.87)	59.5 (2.34)	72.3 (2.85)	97.0 (3.82)	121.0 (4.76)
øC	21.7 (0.85)	25.4 (1.00)	31.8 (1.25)	38.1 (1.50)	50.8 (2.00)	63.5 (2.50)	76.3 (3.00)	101.6 (4.00)	139.8 (5.50)
ød	17.5 (0.69)	23.0 (0.91)	29.4 (1.16)	35.7 (1.41)	47.8 (1.88)	59.5 (2.34)	72.3 (2.85)	97.6 (3.84)	133.8 (5.27)
E	30 (1.18)	30 (1.18)	30 (1.18)	30 (1.18)	30 (1.18)	30 (1.18)	30 (1.18)	30 (1.18)	40 (1.57)
Parts No. (KJA)	F9811 MA	F9811 MB	F9811 MC	F9811 MD	F9811 ME	F9811 MF	F9811 MG	F9811 MH	F9870 ZL
Parts No. (KJB)	F9811 MK	F9811 ML	F9811 MM	F9811 MN	F9811 MP	F9811 MQ	F9811 MR	F9811 MS	F9870 ZM

(2) AXG4A Remote Transmitter

Unit: mm (approx. in.)



E53. ai

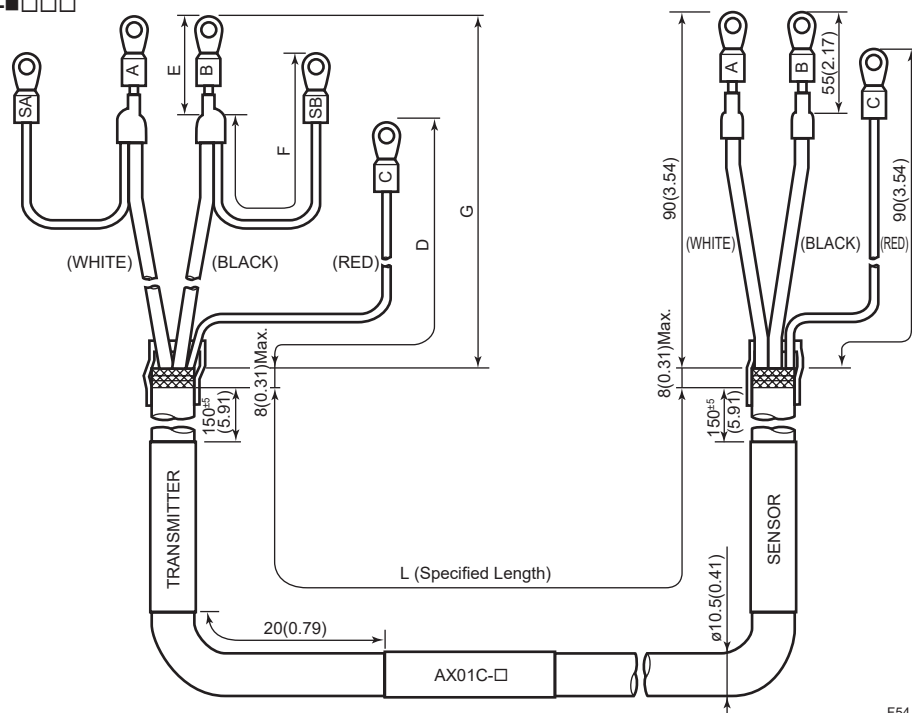
(3) AX01C Magnetic Flowmeter Signal Cable

Cable Finish: Finished

Unit: mm (approx. in.)

AX01C-■□□□

■=C, D



F54.ai

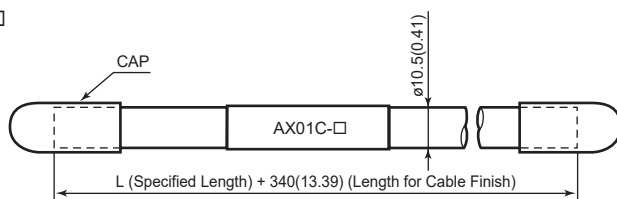
Unit: mm (approx. in.)

Specification Code	Length				Description
	D	E	F	G	
AX01C-C□□□	60 (2.4)	25 (1.0)	70 (2.8)	50 (2.0)	For AXG4A
AX01C-D□□□	70 (2.8)	25 (1.0)	50 (2.0)	60 (2.4)	For AXFA11

Cable Finish: Unfinished

AX01C-■□□□

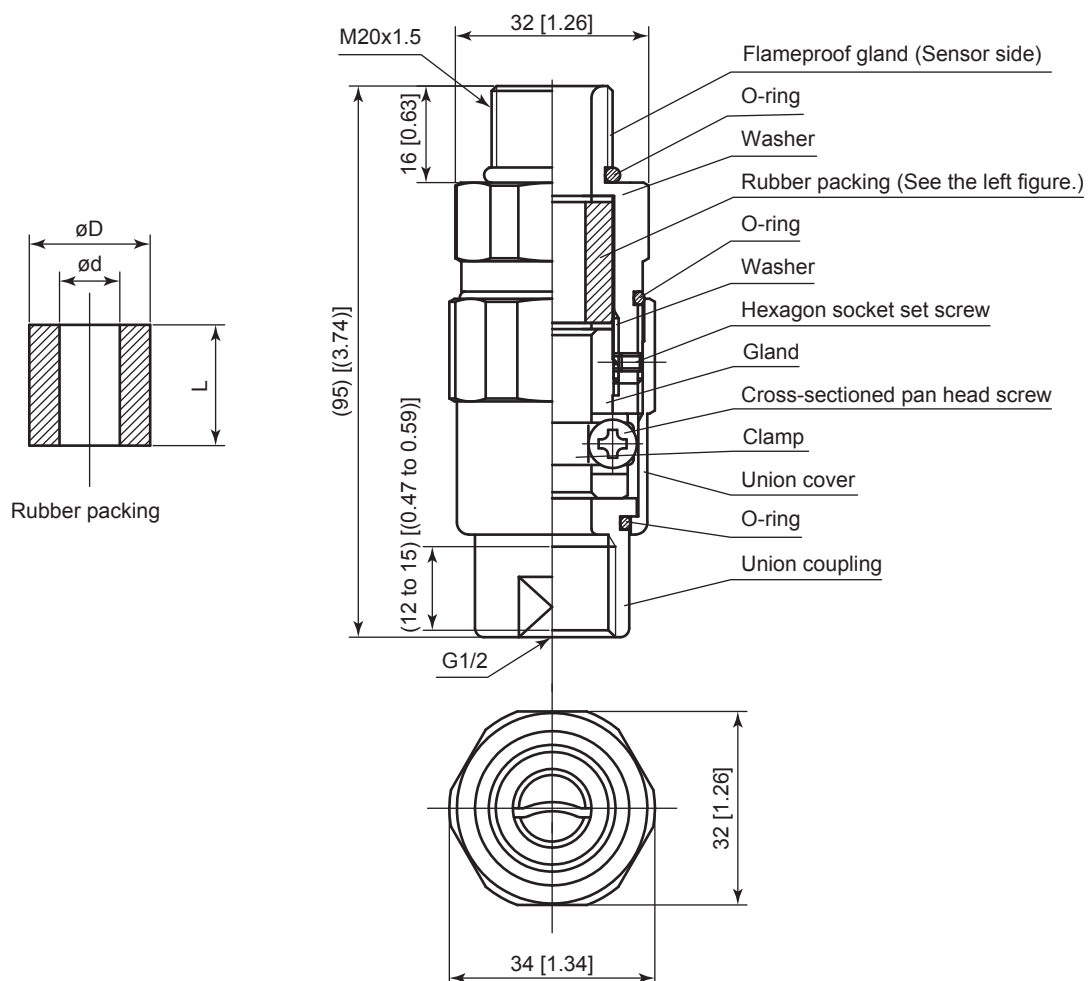
■=A



F55.ai

(4) Flameproof Packing Adapter (Optional code V5#: #=1 to 5)

Unit: mm ([]: approx.inch)



Unit: mm ([]: approx.inch)

Dimensions of rubber packing (before compression)			Identification mark of rubber packing	Cable outer diameter	
L	ϕD	ϕd		Min.	Max.
20 [0.79]	$\phi 20$ [0.79]	$\phi 10$ [0.39]	$\phi 10$ [0.39]	$\phi 8.0$ [0.31]	$\phi 10.0$ [0.39]
20 [0.79]	$\phi 20$ [0.79]	$\phi 12$ [0.47]	$\phi 12$ [0.47]	$\phi 10.0$ [0.39]	$\phi 12.0$ [0.47]

F56.ai

(5) Dimensional Tolerance

Unless otherwise specified, dimensional tolerances on the drawings are as shown in the following table.

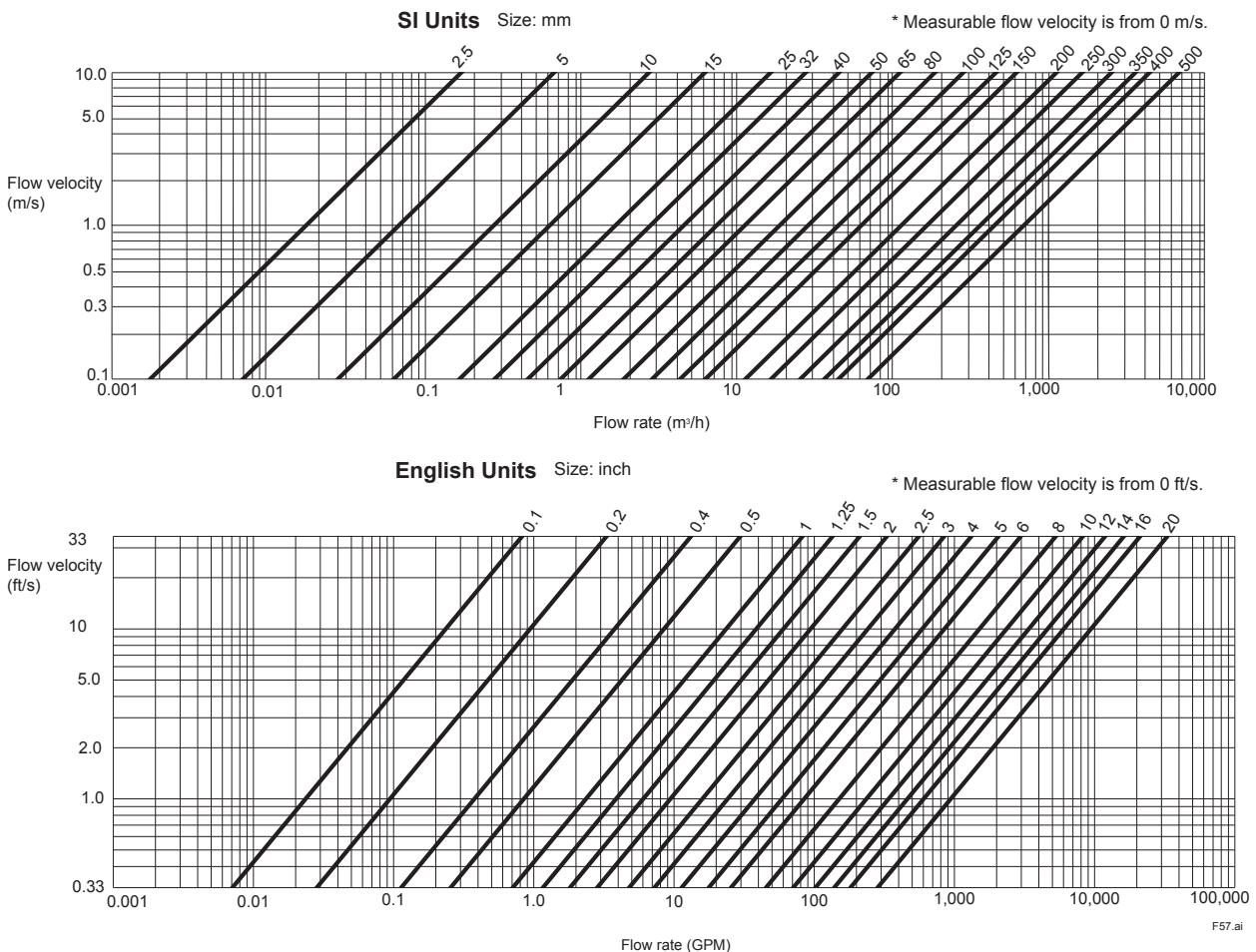
General tolerance in the dimensional outline drawing.

Unit: mm (approx. in.)

Category of basic dimension		Tolerance	Category of basic dimension		Tolerance
Above	Equal or below		Above	Equal or below	
	3 (0.12)	±0.7 (±0.03)	500 (19.69)	630 (24.80)	±5.5 (±0.22)
3 (0.12)	6 (0.24)	±0.9 (±0.04)	630 (24.80)	800 (31.50)	±6.25 (±0.25)
6 (0.24)	10 (0.39)	±1.1 (±0.04)	800 (31.50)	1000 (39.37)	±7.0 (±0.28)
10 (0.39)	18 (0.71)	±1.35 (±0.05)	1000 (39.37)	1250 (49.21)	±8.25 (±0.32)
18 (0.71)	30 (1.18)	±1.65 (±0.06)	1250 (49.21)	1600 (62.99)	±9.75 (±0.38)
30 (1.18)	50 (1.97)	±1.95 (±0.08)	1600 (62.99)	2000 (78.74)	±11.5 (±0.45)
50 (1.97)	80 (3.15)	±2.3 (±0.09)	2000 (78.74)	2500 (98.43)	±14.0 (±0.55)
80 (3.15)	120 (4.72)	±2.7 (±0.11)	2500 (98.43)	3150 (124.02)	±16.5 (±0.65)
120 (4.72)	180 (7.09)	±3.15 (±0.12)			
180 (7.09)	250 (9.84)	±3.6 (±0.14)			
250 (9.84)	315 (12.40)	±4.05 (±0.16)			
315 (12.40)	400 (15.75)	±4.45 (±0.18)			
400 (15.75)	500 (19.69)	±4.85 (±0.19)			

Remarks: The numeric is based on criteria of tolerance class IT18 in JIS B 0401-1.

■ SIZING DATA



■ ORDERING INFORMATION

- Note 1:** When ordering, the span flow rate, unit, output pulse weight, and totalizer display pulse weight can be specified. These parameters will then be set before shipment. In the case of remote type, specify combination information of sensor and transmitter. These parameters will be set in the combined transmitter. When ordering of a remote sensor alone or a remote transmitter alone, these parameters cannot be specified. Custom configuration request is necessary for setting these parameters out of regular setting range.
- Note 2:** Some options, if ordered, require the relevant specifications to be input when ordering.
- Note 3:** For AXFA11G remote transmitter, read general specifications (GS 01E20C01-01E). The contents and conditions of ordering informations are different.

1. Model, Suffix Code and Optional Code
2. Combination

This is necessary when ordering combination of remote sensor and transmitter. Specify the combination of a sensor and a transmitter one by one by their model name, specification code, or Tag No. etc. On the nameplate of each sensor and transmitter, the serial number of the specified combination partner is described when shipped.

3. Tag No.

The Tag No. can be specified by a combination of uppercase letters, lowercase letters (for HART communication excludes lower case letters), numbers, "-" (hyphen), "." (period), and " " (space)". See the table below for specifying procedure.

Items to be Specified	Described / Setting Destination	Maximum Number of Characters
TAG NO	- Nameplate - Stainless steel tag plate (with optional code SCT) - Memory in transmitter	30 (*1)
SOFTWARE TAG	Memory in transmitter (Overrides TAG NO designation)	See below

In the case of integral flowmeter and remote transmitter, the characters specified by "TAG NO" are also written to the memory (parameter) in the transmitter. If it is necessary to specify a different tag number only for the transmitter memory, specify "SOFTWARE TAG". It is also possible to specify only SOFTWARE TAG. Names of the parameter to be written and the maximum number of characters are as shown in the table below. If the number of specified characters exceed the maximum number, the characters from the beginning up to the maximum number is written.

Items to be Specified	Transmitter Memory		Maximum Number of Characters
	Communication	Parameter Name	
TAG NO and SOFTWARE TAG	BRAIN	TAG NO	16
	HART 7	Long Tag	32 (*1)
		Tag	8
	Modbus	Long Tag	32
		Tag	16

*1: For AXFA11G remote transmitter, the "TAG NO" is maximum 16 characters. And as its HART protocol is HART 5, the "Long Tag" is not available.

4. Span Flow Rate and Unit

Specify the range of span flow rate in the range of 0.0001 to 999999000000.0000 (the number of significant digits in operation is the upper six digits). Up to four digits below the decimal point that can be specified (by 0.001 unit). However, if the transmitter is BRAIN communication type, specify so that it is within the range of 0.0001 to 32000, it is up to four digits below the decimal point when it is included, and the numerical value excluding the decimal point is within 32000.

Specify units in the unit described in "Flow Calculation Function". This span flow rate is set to the positive first range. Be sure to specify the span flow rate and unit when selecting the Mass Unit Setting (optional code MU), or Specified Span Five-point Calibration (optional code SC). When selecting the NAMUR NE21 (optional code E21), specify the span flow rate of 0.5 m/s or more in terms of flow velocity.

Unless specified, it is set as the following when shipped.

- Integral Flowmeter, or combined with AXG4A Remote Transmitter span flow rate (unit m³/h) equivalent to flow velocity 1 m/s
- Combined with AXFA11 Remote Transmitter flow velocity 1 m/s

The measurement flow range (minimum and maximum of span flow rate) is shown below (in the case of flow rate unit m³/h and GPM). Specify the span flow within this range. The range specifying different unit must also fall into the same flow rate (flow velocity) range after conversion.

Measurable Flow Rate Range

- (1) Integral Flowmeter, or combined with AXG4A Remote Transmitter

SI Units (Size: mm, Flow rate: m³/h)

Size (mm)	0 to Min. Span Flow Rate m ³ /h (0.1 m/s)	0 to Min. Span Flow Rate m ³ /h (0.5 m/s)	0 to Max. Span Flow Rate m ³ /h (10 m/s)
2.5	0 to 0.0018	0 to 0.0089	0 to 0.1767
5	0 to 0.0071	0 to 0.0354	0 to 0.7068
10	0 to 0.0283	0 to 0.1414	0 to 2.8274
15	0 to 0.0637	0 to 0.3181	0 to 6.3617
25	0 to 0.1768	0 to 0.8836	0 to 17.6714
32	0 to 0.2896	0 to 1.4477	0 to 28.9529
40	0 to 0.4524	0 to 2.2620	0 to 45.2389
50	0 to 0.7069	0 to 3.5343	0 to 70.6858
65	0 to 1.1946	0 to 5.9730	0 to 119.459
80	0 to 1.8096	0 to 9.0478	0 to 180.955
100	0 to 2.8275	0 to 14.1372	0 to 282.743
125	0 to 4.4179	0 to 22.0894	0 to 441.786
150	0 to 6.3618	0 to 31.8087	0 to 636.172
200	0 to 11.3098	0 to 56.5487	0 to 1130.97
250	0 to 17.6715	0 to 88.3573	0 to 1767.14
300	0 to 25.4470	0 to 127.235	0 to 2544.69
350	0 to 34.6361	0 to 173.181	0 to 3463.60
400	0 to 45.2390	0 to 226.195	0 to 4523.89

English Units (Size: in., Flow rate: GPM)

Size (in.)	0 to Min. Span Flow Rate GPM (0.33 ft/s)	0 to Min. Span Flow Rate GPM (1.64 ft/s)	0 to Max. Span Flow Rate GPM (33 ft/s)
0.1	0 to 0.0078	0 to 0.0389	0 to 0.7780
0.2	0 to 0.0312	0 to 0.1557	0 to 3.1122
0.4	0 to 0.1245	0 to 0.6225	0 to 12.4488
0.5	0 to 0.2801	0 to 1.4005	0 to 28.0098
1	0 to 0.7781	0 to 3.8903	0 to 77.8050
1.25	0 to 1.2748	0 to 6.3738	0 to 127.475
1.5	0 to 1.9919	0 to 9.9591	0 to 199.181
2	0 to 3.1123	0 to 15.5611	0 to 311.220
2.5	0 to 5.2597	0 to 26.2982	0 to 525.962
3	0 to 7.9673	0 to 39.8363	0 to 796.724
4	0 to 12.4489	0 to 62.2441	0 to 1244.88
5	0 to 19.4513	0 to 97.2564	0 to 1945.12
6	0 to 28.0099	0 to 140.049	0 to 2800.98
8	0 to 49.7953	0 to 248.977	0 to 4979.52
10	0 to 77.8051	0 to 389.026	0 to 7780.5
12	0 to 112.040	0 to 560.197	0 to 11203.9
14	0 to 152.498	0 to 762.490	0 to 15249.7
16	0 to 199.182	0 to 995.906	0 to 19918.1

(2) Combined with AXFA11 Remote Transmitter

SI Units (Size: mm, Flow rate: m³/h)

Size (mm)	0 to Min. Span Flow Rate m ³ /h (0.1 m/s)	0 to Max. Span Flow Rate m ³ /h (10 m/s)
2.5	0 to 0.0018	0 to 0.1767
5	0 to 0.0071	0 to 0.7068
10	0 to 0.0283	0 to 2.8274
15	0 to 0.0637	0 to 6.361
25	0 to 0.1768	0 to 17.671
32	0 to 0.2896	0 to 28.952
40	0 to 0.4524	0 to 45.23
50	0 to 0.7069	0 to 70.68
65	0 to 1.1946	0 to 119.45
80	0 to 1.8096	0 to 180.95
100	0 to 2.8275	0 to 282.74
125	0 to 4.418	0 to 441.7
150	0 to 6.362	0 to 636.1
200	0 to 11.310	0 to 1130.9
250	0 to 17.672	0 to 1767.1
300	0 to 25.447	0 to 2544.6
350	0 to 34.64	0 to 3463
400	0 to 45.24	0 to 4523
500	0 to 70.69	0 to 7068

English Units (Size: in., Flow rate: GPM)

Size (in.)	0 to Min. Span Flow Rate GPM (0.33 ft/s)	0 to Max. Span Flow Rate GPM (33 ft/s)
0.1	0 to 0.0078	0 to 0.7780
0.2	0 to 0.0312	0 to 3.112
0.4	0 to 0.1245	0 to 12.44
0.5	0 to 0.1946	0 to 19.45
1	0 to 0.7781	0 to 77.80
1.25	0 to 1.216	0 to 121.5
1.5	0 to 1.751	0 to 175.0
2	0 to 3.113	0 to 311.2
2.5	0 to 4.863	0 to 486.2
3	0 to 7.003	0 to 700.2
4	0 to 12.45	0 to 1244
5	0 to 19.46	0 to 1945
6	0 to 28.01	0 to 2800
8	0 to 49.80	0 to 4979
10	0 to 77.81	0 to 7780
12	0 to 112.1	0 to 11203
14	0 to 152.5	0 to 15249
16	0 to 199.2	0 to 19918
20	0 to 311.3	0 to 31122

5. Output Pulse Weight (Pulse Status Output 1)

Specify the volume flow per pulse, after specifying the span flow rate. This output pulse weight is set to the Pulse Status Output 1. Specify it in the same unit as the span flow rate.

(Example: When "m³" is selected as "Span Flow Rate", specify "10 m³/p" as pulse weight unit.)

The specifiable numerical digit and range is the same as that for "4. Span Flow Rate and Unit".

Unless specified, it is set as the following when shipped.

- Integral Flowmeter, or combined with AXG4A Remote Transmitter 0 [span unit/p]
- Combined with AXFA11 Remote Transmitter 0 pulse/s

6. Totalizer Display Pulse Weight (Totalizer 1)

Specify the volume flow per pulse, after specifying the span flow rate. This totalizer display pulse weight is set to the Totalizer 1. The set value can be output only in communication as the integrated count of the integral flowmeter and the remote transmitter. Specify it in the same unit as the span flow rate.

(Example: When "m³" is selected as "Span Flow Rate", specify "10 m³/p" as totalizer display pulse weight unit.)

The specifiable numerical digit and range is the same as that for "4. Span Flow Rate and Unit".

Unless specified, it is set as the following when shipped.

- Integral Flowmeter, or combined with AXG4A Remote Transmitter 1 [span unit/p]
- Combined with AXFA11 Remote Transmitter 0 pulse/s

7. Mass Unit (optional code MU)

The flow rate calculation is performed in mass unit. In addition to fluid density, specify span flow rate, output pulse weight, and totalizer display pulse weight in mass unit.

The specifiable numerical digit and range is the same as that for "4. Span Flow Rate and Unit".

(1) Density

Numerical Value:

Specify within six digits (up to three digits below the decimal point) in the range of 500 to 2000 kg/m³ (4.2 to 16.7 lb/gal, 31.2 to 124.8 lb/cf). If BRAIN communication type is selected, specify so that the numerical value excluding the decimal point is within 32000.

Unit:

kg/m³, lb/gal, lb/cf

The density of water is about 1000 kg/m³. Then specify "1000 kg/m³" in this case.

However, as the density varies with temperature, specify the density at the time of flow measurement.

(2) Span Flow Rate

Numerical Value:

When setting the mass span flow rate, calculate the volume span flow rate from the "density" and it must be within the measurable flow rate range. The settable numerical range for the mass span flow rate is the same as that for the volume span flow rate.

Unit:

Mass Unit: t, kg, g, klb, lb

Time Unit: /d, /h, /min, /s

(3) Output Pulse Weight, Totalizer Display Pulse Weight

Set the value with the same unit as that for the mass span flow rate.

8. Specified Span Five-point Calibration (optional code SC)

A flow test at the five points around 0, 25, 50, 75, 100% of the customer specified span is performed. In the test certificate (QIC), the result for the customer specified span is recorded instead of that for the standard flow rate of 2 m/s (6.56 ft/s). Corresponding flow velocity of the selectable span lies between 0.5 to 10 m/s (1.64 to 33 ft/s) or 0.8 to 10 m/s (2.62 to 33 ft/s). The latter is applied when the size is 32, 65, or 125 mm (1.25, 2.5, or 5 in.). It is also limited by the capacity of our flow test facility. Specify it within the following range. The specifiable numerical digit and range is the same as that for "4. Span Flow Rate and Unit".

Selectable Range of Span Flow Rate

SI Units (Size: mm, Flow rate: m³/h)

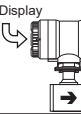
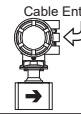
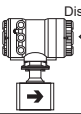
Size (mm)	Min. Span Flow Rate	Max. Span Flow Rate
	m ³ /h (m/s)	m ³ /h (m/s)
2.5	0.009 (0.5)	0.05 (2.83)
5	0.036 (0.5)	0.20 (2.83)
10	0.15 (0.5)	0.96 (3.40)
15	0.32 (0.5)	2.80 (4.40)
25	0.89 (0.5)	11.0 (6.22)
32	2.32 (0.8)	28.9 (9.98)
40	2.27 (0.5)	28.0 (6.19)
50	3.54 (0.5)	56.0 (7.92)
65	9.56 (0.8)	80.0 (6.70)
80	9.05 (0.5)	126 (6.96)
100	14.2 (0.5)	190 (6.72)
125	35.4 (0.8)	300 (6.79)
150	31.9 (0.5)	380 (5.97)
200	56.6 (0.5)	670 (5.92)
250	88.4 (0.5)	1000 (5.66)
300	128 (0.5)	1200 (4.72)
350	174 (0.5)	1200 (3.46)
400	227 (0.5)	1350 (2.98)
500	354 (0.5)	7068 (10.0)

English Units (Size: in., Flow rate: GPM)

Size (in.)	Min. Span Flow Rate	Max. Span Flow Rate
	GPM (ft/s)	GPM (ft/s)
0.1	0.039 (1.64)	0.2201 (9.28)
0.2	0.1557 (1.64)	0.8805 (9.28)
0.4	0.6225 (1.64)	4.2267 (11.1)
0.5	1.4005 (1.64)	12.328 (14.4)
1	3.8903 (1.64)	48.4315 (20.4)
1.25	10.1981 (2.62)	127.242 (32.7)
1.5	9.9591 (1.64)	123.280 (20.3)
2	15.5611 (1.64)	246.560 (25.9)
2.5	42.0770 (2.62)	352.229 (21.9)
3	39.8363 (1.64)	554.761 (22.8)
4	62.2441 (1.64)	836.544 (22.0)
5	156.052 (2.62)	1320.86 (22.2)
6	140.050 (1.64)	1673.08 (19.5)
8	248.977 (1.64)	2949.92 (19.4)
10	389.026 (1.64)	4402.86 (18.5)
12	560.197 (1.64)	5283.44 (15.4)
14	762.490 (1.64)	5283.44 (11.3)
16	995.906 (1.64)	5943.87 (9.78)
20	1556.11 (1.64)	31119.4 (32.8)

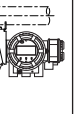
9. Direction of Cable Entry (optional code RH)

Rotate the transmitter of integral flowmeter or the terminal box of remote sensor and change the direction of the cable entry. See the table below and specify either +90, +180, or -90 degree. When the direction of cable entry is not changed, optional code RH is not necessary.

	Direction of Cable Entry			
	Standard (0 degree)	+90 degree rotation	+180 degree rotation	-90 degree rotation
Integral Flowmeter				
Remote Sensor				

10. Direction of Display

When the specification "With Display" is selected for the integral flowmeter or the remote transmitter, specify direction of the display. For the integral flowmeter, specify according to the horizontal or vertical direction of the installation piping. For the remote transmitter, specify according to the positional relation of mounting bracket or mounting pipe.

	Direction of Display		Without Display
	Horizontal	Vertical	
Integral Flowmeter			
Remote Transmitter			

11. Fluid Name

12. Modbus Protocol parameters

Specify the following parameters for Modbus communication.

Parameter to be specified	Selectable value
Baud rate [bps]	1200, 2400, 4800, 9600, 19200*, 38400, 57600, 115200
Stop bit	1 bit*, 2 bits
Parity bit	Odd, Even*, None
Slave address	1* to 247 (decimal value.)

*: Factory default setting. If the parameter is not specified at ordering, these settings are applied to the parameter for Modbus communication.

■ RELATED INSTRUMENTS

Product	Document Number
AM012 Calibrator for Magnetic Flowmeter	GS 1E6K2-E
BT200 BRAIN TERMINAL	GS 01C00A11-00EN
AXFA11G Magnetic Flowmeter Remote Converter	GS 01E20C01-01E
ADMAG CA Capacitance Magnetic Flowmeter	GS 01E08B01-00E
FieldMate Versatile Device Management Wizard	GS 01R01A01-01E
ADMAG TI Series AXW Magnetic Flowmeter [Size: 25 to 400 mm (1 to 16 in.)]	GS 01E24A01-01EN
ADMAG TI Series AXW Magnetic Flowmeter [Size: 500 to 1800 mm (20 to 72 in.)]	GS 01E25D11-01EN
FSA130 ADMAG TI Verification Tool	GS 01E21A04-01EN

■ REFERENCE STANDARD

Design and Test on Magnetic Flowmeters:

JIS B 7554(1997), ISO 20456(2017),
NAMUR NE70(2006), ASME MFC-16-2014

■ TRADEMARKS

HART is a registered trademark of FieldComm Group.

Viton is a registered trademark of DuPont.

Tri-Clamp is a registered trademark of Alfa Laval.

Modbus is a registered trademark of AEG Schneider.

ADMAG, AXG, AXW, BRAIN TERMINAL, and FieldMate are registered trademarks of Yokogawa Electric Corporation.

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In this document, trademarks or registered trademarks are not marked with TM or [®].

Note: The terms "transmitter" and "sensor" in this document are used in the same manner as "converter" and "flowtube" respectively which are used for our previous magnetic flowmeter models.

<Information on EU WEEE Directive>

EU WEEE (Waste Electrical and Electronic Equipment) Directive is only valid in the EU.

This instrument is intended to be sold and used only as a part of equipment which is excluded from WEEE

Directive, such as large-scale stationary industrial tools, a large-scale fixed installation and so on, and, therefore, subjected to the exclusion from the scope of the WEEE Directive. The instrument should be disposed of in accordance with local and national legislation/regulations.