

General Specifications

GS 01E20D01-01E

AXF
Magnetic Flowmeter
Integral Flowmeter
/Remote Flowtube

ADMAG AXF™

The AXF magnetic flowmeter series are sophisticated products with outstanding reliability and ease of operation, developed on the basis of decades of field-proven experience.

The combination of a replaceable electrode and the diagnostic to detect adhesion level on the electrodes dramatically improves maintainability.

The AXF employs the fluid noise free "Dual Frequency Excitation Method" (for sizes up to 400 mm (16 in.)) and the newly added "Enhanced Dual Frequency Excitation Method" as an option for more difficult applications to ensure greater stability and quicker response.

Note: The "Dual Frequency Excitation Method" is Yokogawa's unique technology.

FOUNDATION Fieldbus protocol type is also available.



Integral Flowmeter

Remote Flowtube

■ FEATURES

Refer to GS 01E20F02-01E for Fieldbus communication type marked with "◇"

● User-oriented Functionality

Fluid Adhesion Level Diagnosis

By constantly monitoring the level of insulating substance on the electrodes, it is possible to determine when maintenance is required.

With the utilization of an optional replaceable electrode, the electrodes can be easily removed from the flowmeter and cleaned.

Flexible Electrical Connection Direction

The converter or the terminal box can be rotated arbitrarily to change the directions of electrical connection on the site.

Clear and Versatile Indications

The LCD indicator employs a large, backlit full dot-matrix, that can facilitate various displays.

One to three lines are available. When there is an alarm condition, a full description of the countermeasure is indicated.

"Easy Setup" Parameters "◇"

The most frequently used parameters are arranged in a group at the top.

The infra-red switches enable the users to set parameters without opening the cover.

● Expansion of Product Lineup

Improved Accuracy Specification

The standard accuracy is 0.35% of reading. Also available is an optional high accuracy calibration rated at 0.2% of reading.

Extra Small Size Flange Type

The flange type is now available from a 2.5 mm size.

Various Sanitary Connections

A variety of sanitary connections are available, such as Tri-Clamp, ISO, DIN and SMS.

● Enhanced Performance and Specifications

Enhanced Dual Frequency Excitation Method

The "Enhanced Dual Frequency Excitation Method" can be optionally selected.

For difficult applications such as for high concentration slurries or low conductivity fluid, extremely stable measurements can be realized.

Improved Minimum Conductivity

The newly designed AXF converter permits the measurement of fluids with conductivity as low as 1μS/cm.

High-Speed Pulse Output "◇"

The pulse rate now goes up to 10,000 pps (pulse/second) for use with high speed applications such as in short time batch processes.

Versatile Input/output Function Now Available for Integral Flowmeter "◇"

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■ STANDARD SPECIFICATIONS

● Converter (Integral flowmeter)

- *1: Select two points from: one pulse output, one alarm output, one status input, or two status outputs.
- *2: For models without an indicator, the hand-held terminal is necessary to set parameters.

Excitation Method:

- Standard dual frequency excitation:
Size 2.5 to 400 mm (0.1 to 16 in.)
- Enhanced dual frequency excitation:
Size 25 to 200 mm (1.0 to 8.0 in.)
(Optional code HF1 or HF2)

Input Signal (*1) “◇”:

- One Status Input: Dry contact
- Load Resistance: 200 Ω or less (ON), 100 kΩ or more (OFF)

Output Signals “◇”:

- One Current Output: 4 to 20 mA DC (load resistance: 750Ω maximum, including cable resistance)
- One Pulse Output (*1):
Transistor contact output (open collector)
Contact capacity: 30 V DC (OFF), 200 mA (ON)
Output rate: 0.0001 to 10,000 pps (pulse/second)
- One Alarm Output (*1):
Transistor contact output (open collector)
Contact capacity: 30 V DC (OFF), 200 mA (ON)
- Two Status Outputs (*1):
Transistor contact output (open collector)
Contact capacity: 30 V DC (OFF), 200 mA (ON)

Communication Signals “◇”:

- BRAIN or HART communication signal
(Superimposed on the 4 to 20 mA DC signal)
- Distance from Power Line: 15 cm (6 in.) or more
(Parallel wiring should be avoided.)

BRAIN:

Communication Distance:

- Up to 2 km (1.25 miles), when polyethylene insulated PVC-sheathed cables (CEV cables) are used.
- Communication distance varies depending on the type of cable and wiring used.

Load Resistance:

- 250 to 600Ω (including cable resistance)

Load Capacitance:

- 0.22 μF or less

Load Inductance:

- 3.3 mH or less

Input Impedance of Communicating Device:

- 10 kΩ or more (at 24 kHz)

HART:

Communication Distance:

- Up to 1.5 km (0.9 mile), when using multiple twisted pair cables. Communication distance varies depending on the type of cable used.

Load Resistance:

230 to 600Ω (including cable resistance)

Cable Length for Specific Applications:

Use the following formula to determine the cable length for specific applications.

$$L = \frac{65 \times 10^6}{(R \times C)} - \frac{(Cf + 10,000)}{C}$$

where:

- L = length in meters or feet
- R = resistance in Ω (including barrier resistance)
- C = cable capacitance in pF/m or pF/ft
- Cf = maximum shunt capacitance of receiving devices in pF/m or pF/ft

Note: HART is a registered trademark of the HART Communication Foundation.

Data Security During Power Failure:

Data (parameters, totalizer value, etc.) storage by EEPROM. No back-up battery required.

Indicator (*2):

Full dot-matrix LCD (32×132 pixels)

Lightning Protector “◇”:

The lightning protector is built into the current output and pulse/alarm/status input and output terminals. When optional code A is selected, the lightning protector is built into the power terminals.

Protection:

General-purpose Use/Sanitary Type/TIIS Flameproof type:

IP66, IP67, JIS C0920 immersion-proof type

Explosion proof type except TIIS:

In case of explosion proof type except TIIS, refer to description of "Enclosure" in "HAZARDOUS AREA CLASSIFICATION".

Coating:

Case and Cover: Polyurethane corrosion-resistant
Coating Color: Mint green coating (Munsell 5.6 BG
3.3/2.9 or its equivalent)

Converter Material:

Case and Cover : Aluminum alloy

Mounting/Shapes (Integral Flowmeter):

- Electrical Connection: ANSI 1/2 NPT female
ISO M20 ×1.5 female
JIS G1/2 (PF1/2) female
- Direction of Electrical Connection: The direction can be changed even after delivery.
- Terminal Connection: M4 size screw terminal

Grounding:

Grounding resistance 100 Ω or less

When optional code A is selected, grounding resistance 10 Ω or less shall be applied.

- * In case of explosion proof type except TIIS, follow the domestic electrical requirements as regulated in each country.
- * In case of TIIS Flameproof type, refer to description of "HAZARDOUS AREA CLASSIFICATION".

Functions “◇”**How to Set Parameters (*2):**

The indicator's LCD and three infra-red switches enable users to set parameters without opening the case cover. Parameters can also be set by means of the HHT (Handheld terminal).

Displayed Languages (*2):

Users can choose a language from among English, Japanese, German, French, Italian, and Spanish.

Instantaneous Flow Rate/Totalized Value Display Functions (for models with an indicator) (*2):

The full dot-matrix LCD enables user selections of displays from one line to three lines for:

- Instantaneous flow rate
- Instantaneous flow rate (%)
- Instantaneous flow rate (bar graph)
- Current output value (mA)
- Totalized value
- Tag No.
- Results of electrode adhesion diagnostics

Totalizer Display Function (*2):

The flow rate is counted one pulse at a time according to the setting of totalization pulse weights. For forward and reverse flow measurement functions, the totalized values of the flow direction (forward or reverse) and the flow direction are displayed on the indicator together with the units. The difference of totalized values between the forward and reverse flow rate can be displayed. Totalization for the reverse flow rate is carried out only when "Forward and reverse flow measurement functions" is selected.

Damping Time Constant (*2):

Time constant can be set from 0.1 second to 200.0 seconds (63% response).

Span Setting Function (*2):

Span flows can be set in units such as volume flow rate, mass flow rate, time, or 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), kbbi (US)*, bbl (US)*, mbbl (US)*, μ bbl (US)*, MI (megaliter), m^3 , kl (kiloliter), l (liter), cm^3

Mass Flow Rate Unit (Density must be set.): klb (US), lb (US), t (ton), kg, g

Velocity Unit: ft, m (meter)

Time Unit: s (sec), min, h (hour), d (day)

* "US oil" or "US Beer" can be selected.

Pulse Output (*1)(*2):

Scaled pulse can be output by setting a pulse weight.

Pulse Width: Duty 50% or fixed pulse width (0.05, 0.1, 0.5, 1, 20, 33, 50, 100 ms) can be selected.

Output Rate: 0.0001 to 10,000 pps (pulse/second)

Multi-range Function (*1)(*2):

- Range switching via status input
Status input enables the switching of up to two ranges.

- Automatic range switching
When the flow rate exceeds 100 % of the range, transition to the next range (up to four ranges) is carried out automatically. Range switching can be confirmed by status outputs and indicator.

Forward and Reverse Flow Measurement Functions (*1)(*2):

Flows in both forward and reverse directions can be measured. The reverse flow measurement can be confirmed by status output and indicator.

Totalization Switch (*1)(*2):

The status output is carried out when a totalized value becomes equal to or greater than the set value.

Preset Totalization (*1)(*2):

The parameter setting or status input enables a totalized value to be preset to a setting value or zero.

0% Signal Lock (*1)(*2):

Status input forcibly fixes the instantaneous flow rate display, current output, pulse output, and flow rate totalization to 0%.

Alarm Selection Function (*2):

Alarms are classified into the System Alarms (hard failures), Process Alarms (such as 'Empty Pipe', 'Signal Overflow' and 'Adhesion Alarm'), Setting Alarms, and Warnings.

Whether alarms should be generated or not can be selected for each item.

The current output generated for an alarm can be selected from among 2.4 mA or less, fixed to 4 mA, 21.6 mA or more, or HOLD.

Alarm Output (*1)(*2):

Alarms are generated only for the items selected via the 'Alarm Selection Function' if relevant failures occur.

Self Diagnostics Functions (*2):

If alarms are generated, details of the System Alarms, Process Alarms, Setting Alarms and Warnings are displayed together with concrete descriptions of countermeasures.

Flow Upper/Lower Limit Alarms (*1)(*2):

If a flow rate becomes greater or smaller than the set value, this alarm is generated. In addition, two upper limits (H, HH) and two lower limits (L, LL) can be set.

If a flow rate becomes greater or smaller than any of the set values, the status is output.

Electrode Adhesion Diagnostics Function (*1) (*2):

This function enables monitoring of the adhesion level of insulating substances to the electrodes. Depending on the status of adhesion, users are notified by a warning or an alarm via status outputs. If replaceable electrodes are used, they can be removed and cleaned when adhesion occurs.

● Flowtubes (Remote Flowtube/Integral Flowmeter)

Size of AXF Flowtubes: AXF Standard (Lay length code 1)

Unit: mm (in.)

Use	Process Connection	Lining	Remote Flowtube	Integral Flowmeter	High Grade Accuracy 0.2% of Rate (*3)	Enhanced Dual Frequency Excitation (Optional code HF1,HF2) (*3)	Replaceable Electrode (Electrode structure code 2)
General-purpose Use	Wafer	PFA	2.5 (0.1), 5 (0.2), 10 (0.4), 15 (0.5), 25 (1.0), 32 (1.25), 40 (1.5), 50 (2.0), 65 (2.5), 80 (3.0), 100 (4.0), 125 (5.0), 150 (6.0), 200 (8.0), 250 (10), 300 (12)	25 (1.0), 32 (1.25), 40 (1.5), 50 (2.0), 65 (2.5), 80 (3.0), 100 (4.0), 125 (5.0), 150 (6.0), 200 (8.0)	25 (1.0), 32 (1.25), 40 (1.5), 50 (2.0), 65 (2.5), 80 (3.0), 100 (4.0), 125 (5.0), 150 (6.0), 200 (8.0)	25 (1.0), 32 (1.25), 40 (1.5), 50 (2.0), 65 (2.5), 80 (3.0), 100 (4.0), 125 (5.0), 150 (6.0), 200 (8.0), 250 (10), 300 (12)	
		Polyurethane Rubber	25 (1.0), 32 (1.25), 40 (1.5), 50 (2.0), 65 (2.5), 80 (3.0), 100 (4.0), 125 (5.0), 150 (6.0), 200 (8.0), 250 (10), 300 (12)	—	25 (1.0), 32 (1.25), 40 (1.5), 50 (2.0), 65 (2.5), 80 (3.0), 100 (4.0), 125 (5.0), 150 (6.0), 200 (8.0)	25 (1.0), 32 (1.25), 40 (1.5), 50 (2.0), 65 (2.5), 80 (3.0), 100 (4.0), 125 (5.0), 150 (6.0), 200 (8.0), 250 (10), 300 (12)	
		Natural Soft Rubber	50 (2.0), 65 (2.5), 80 (3.0), 100 (4.0), 125 (5.0), 150 (6.0), 200 (8.0), 250 (10), 300 (12)	—	50 (2.0), 65 (2.5), 80 (3.0), 100 (4.0), 125 (5.0), 150 (6.0), 200 (8.0)	—	
		EPDM Rubber	50 (2.0), 65 (2.5), 80 (3.0), 100 (4.0), 125 (5.0), 150 (6.0), 200 (8.0), 250 (10), 300 (12)	—	50 (2.0), 65 (2.5), 80 (3.0), 100 (4.0), 125 (5.0), 150 (6.0), 200 (8.0)	—	
		Ceramics (*1)	15 (0.5), 25 (1.0), 40 (1.5), 50 (2.0), 80 (3.0), 100 (4.0), 150 (6.0), 200 (8.0)	25 (1.0), 40 (1.5), 50 (2.0), 80 (3.0), 100 (4.0), 150 (6.0), 200 (8.0)	25 (1.0), 40 (1.5), 50 (2.0), 80 (3.0), 100 (4.0), 150 (6.0), 200 (8.0)	—	
	Flange	PFA	2.5 (0.1), 5 (0.2), 10 (0.4), 15 (0.5), 25 (1.0), 32 (1.25), 40 (1.5), 50 (2.0), 65 (2.5), 80 (3.0), 100 (4.0), 125 (5.0), 150 (6.0), 200 (8.0), 250 (10), 300 (12), 350 (14), 400 (16)	25 (1.0), 32 (1.25), 40 (1.5), 50 (2.0), 65 (2.5), 80 (3.0), 100 (4.0), 125 (5.0), 150 (6.0), 200 (8.0)	25 (1.0), 32 (1.25), 40 (1.5), 50 (2.0), 65 (2.5), 80 (3.0), 100 (4.0), 125 (5.0), 150 (6.0), 200 (8.0)	25 (1.0), 32 (1.25), 40 (1.5), 50 (2.0), 65 (2.5), 80 (3.0), 100 (4.0), 125 (5.0), 150 (6.0), 200 (8.0), 250 (10), 300 (12), 350 (14), 400 (16)	
		Polyurethane Rubber	25 (1.0), 32 (1.25), 40 (1.5), 50 (2.0), 65 (2.5), 80 (3.0), 100 (4.0), 125 (5.0), 150 (6.0), 200 (8.0), 250 (10), 300 (12), 350 (14), 400 (16), 500(20), 600(24), 700(28), 800(32), 900(36), 1000(40), 1100(44), 1200(48), 1350(54), 1500(60), 1600(64), 1800(72), 2000(80), 2200(88), 2400(96), 2600(104)	25 (1.0), 32 (1.25), 40 (1.5), 50 (2.0), 65 (2.5), 80 (3.0), 100 (4.0), 125 (5.0), 150 (6.0), 200 (8.0), 250 (10), 300 (12), 350 (14), 400 (16)	—	25 (1.0), 32 (1.25), 40 (1.5), 50 (2.0), 65 (2.5), 80 (3.0), 100 (4.0), 125 (5.0), 150 (6.0), 200 (8.0)	25 (1.0), 32 (1.25), 40 (1.5), 50 (2.0), 65 (2.5), 80 (3.0), 100 (4.0), 125 (5.0), 150 (6.0), 200 (8.0), 250 (10), 300 (12), 350 (14), 400 (16)
		Natural Soft Rubber	50 (2.0), 65 (2.5), 80 (3.0), 100 (4.0), 125 (5.0), 150 (6.0), 200 (8.0), 250 (10), 300 (12), 350 (14), 400 (16)	—	50 (2.0), 65 (2.5), 80 (3.0), 100 (4.0), 125 (5.0), 150 (6.0), 200 (8.0)	—	
		EPDM Rubber	50 (2.0), 65 (2.5), 80 (3.0), 100 (4.0), 125 (5.0), 150 (6.0), 200 (8.0), 250 (10), 300 (12), 350(14), 400(16)	—	50 (2.0), 65 (2.5), 80 (3.0), 100 (4.0), 125 (5.0), 150 (6.0), 200 (8.0)	—	
	Union Joint	Ceramics (*2)	2.5 (0.1), 5 (0.2), 10 (0.4)	—	—	—	

Size of AXF Flowtubes: AXF Standard (Lay length code 1) (continued)

Use	Process Connection	Lining	Remote Flowtube	Integral Flowmeter	High Grade Accuracy 0.2% of Rate (*3)	Enhanced Dual Frequency Excitation (Optional code HF1,HF2) (*3)	Replaceable Electrode (Electrode structure code 2)	Unit: mm (in.)
Submersible Type	Wafer	PFA	15 (0.5), 25 (1.0), 32 (1.25), 40 (1.5), 50 (2.0), 65 (2.5), 80 (3.0), 100 (4.0), 125 (5.0), 150 (6.0), 200 (8.0), 250 (10), 300 (12)	—	25 (1.0), 32 (1.25), 40 (1.5), 50 (2.0), 65 (2.5), 80 (3.0), 100 (4.0), 125 (5.0), 150 (6.0), 200 (8.0)	25 (1.0), 32 (1.25), 40 (1.5), 50 (2.0), 65 (2.5), 80 (3.0), 100 (4.0), 125 (5.0), 150 (6.0), 200 (8.0)	—	
		Polyurethane Rubber	25 (1.0), 32 (1.25), 40 (1.5), 50 (2.0), 65 (2.5), 80 (3.0), 100 (4.0), 125 (5.0), 150 (6.0), 200 (8.0), 250 (10), 300 (12)	—	—	25 (1.0), 32 (1.25), 40 (1.5), 50 (2.0), 65 (2.5), 80 (3.0), 100 (4.0), 125 (5.0), 150 (6.0), 200 (8.0)	—	
		Natural Soft Rubber	50 (2.0), 65 (2.5), 80 (3.0), 100 (4.0), 125 (5.0), 150 (6.0), 200 (8.0), 250 (10), 300 (12)	—	—	50 (2.0), 65 (2.5), 80 (3.0), 100 (4.0), 125 (5.0), 150 (6.0), 200 (8.0)	—	
		EPDM Rubber	50 (2.0), 65 (2.5), 80 (3.0), 100 (4.0), 125 (5.0), 150 (6.0), 200 (8.0), 250 (10), 300 (12)	—	—	50 (2.0), 65 (2.5), 80 (3.0), 100 (4.0), 125 (5.0), 150 (6.0), 200 (8.0)	—	
	Flange	PFA	15 (0.5), 25 (1.0), 32 (1.25), 40 (1.5), 50 (2.0), 65 (2.5), 80 (3.0), 100 (4.0), 125 (5.0), 150 (6.0), 200 (8.0), 250 (10), 300 (12), 350 (14), 400 (16)	—	25 (1.0), 32 (1.25), 40 (1.5), 50 (2.0), 65 (2.5), 80 (3.0), 100 (4.0), 125 (5.0), 150 (6.0), 200 (8.0)	25 (1.0), 32 (1.25), 40 (1.5), 50 (2.0), 65 (2.5), 80 (3.0), 100 (4.0), 125 (5.0), 150 (6.0), 200 (8.0)	—	
		Polyurethane Rubber	25 (1.0), 32 (1.25), 40 (1.5), 50 (2.0), 65 (2.5), 80 (3.0), 100 (4.0), 125 (5.0), 150 (6.0), 200 (8.0), 250 (10), 300 (12), 350 (14), 400 (16), 500(20), 600 (24), 700 (28), 800 (32), 900(36), 1000(40), 1100(44), 1200(48), 1350(54), 1500(60), 1600(64), 1800(72), 2000(80), 2200(88), 2400(96), 2600(104)	—	—	25 (1.0), 32 (1.25), 40 (1.5), 50 (2.0), 65 (2.5), 80 (3.0), 100 (4.0), 125 (5.0), 150 (6.0), 200 (8.0)	—	
		Natural Soft Rubber	50 (2.0), 65 (2.5), 80 (3.0), 100 (4.0), 125 (5.0), 150 (6.0), 200 (8.0), 250 (10), 300 (12), 350 (14), 400 (16)	—	—	50 (2.0), 65 (2.5), 80 (3.0), 100 (4.0), 125 (5.0), 150 (6.0), 200 (8.0)	—	
		EPDM Rubber	50 (2.0), 65 (2.5), 80 (3.0), 100 (4.0), 125 (5.0), 150 (6.0), 200 (8.0), 250 (10), 300 (12), 350 (14), 400 (16)	—	—	50 (2.0), 65 (2.5), 80 (3.0), 100 (4.0), 125 (5.0), 150 (6.0), 200 (8.0)	—	
		PFA	2.5 (0.1), 5 (0.2), 10 (0.4), 15 (0.5), 25 (1.0), 32 (1.25), 40 (1.5), 50 (2.0), 65 (2.5), 80 (3.0), 100 (4.0), 125 (5.0), 150 (6.0), 200 (8.0), 250 (10), 300 (12)	—	25 (1.0), 32 (1.25), 40 (1.5), 50 (2.0), 65 (2.5), 80 (3.0), 100 (4.0), 125 (5.0), 150 (6.0), 200 (8.0)	25 (1.0), 32 (1.25), 40 (1.5), 50 (2.0), 65 (2.5), 80 (3.0), 100 (4.0), 125 (5.0), 150 (6.0), 200 (8.0)	—	
		Ceramics (*1)	15 (0.5), 25 (1.0), 40 (1.5), 50 (2.0), 80 (3.0), 100 (4.0), 150 (6.0), 200 (8.0)	—	25 (1.0), 40 (1.5), 50 (2.0), 80 (3.0), 100 (4.0), 150 (6.0), 200 (8.0)	25(1.0),40(1.5),50(2.0),80(3.0),100(4.0),150(6.0),200(8.0)	—	
	Flange	PFA	2.5 (0.1), 5 (0.2), 10 (0.4), 15 (0.5), 25 (1.0), 32 (1.25), 40 (1.5), 50 (2.0), 65 (2.5), 80 (3.0), 100 (4.0), 125 (5.0), 150 (6.0), 200 (8.0), 250 (10), 300 (12), 350 (14), 400 (16)	—	25 (1.0), 32 (1.25), 40 (1.5), 50 (2.0), 65 (2.5), 80 (3.0), 100 (4.0), 125 (5.0), 150 (6.0), 200 (8.0)	25 (1.0), 32 (1.25), 40 (1.5), 50 (2.0), 65 (2.5), 80 (3.0), 100 (4.0), 125 (5.0), 150 (6.0), 200 (8.0)	—	
	Union Joint	Ceramics (*2)	2.5 (0.1), 5 (0.2), 10 (0.4)	—	—	—	—	
Sanitary Type	Clamp: Tri-Clamp (*4), DIN32676 ISO2852/SMS3016	PFA	15 (0.5), 25 (1.0), 32 (1.25), 40 (1.5), 50 (2.0), 65 (2.5), 80 (3.0), 100 (4.0), 125 (5.0)	—	25 (1.0), 32 (1.25), 40 (1.5), 50 (2.0), 65 (2.5), 80 (3.0), 100 (4.0), 125 (5.0)	25 (1.0), 32 (1.25), 40 (1.5), 50 (2.0), 65 (2.5), 80 (3.0), 100 (4.0), 125 (5.0)	—	
DIN11851 ISO2853 (*5) SMS1145 (*6)								
Butt Weld: DIN11850, ISO203								

*1: AXF standard lay length dimensions for wafer type ceramics linings are the same as those for ADMAG ceramics linings.

*2: AXF standard lay length dimensions for union joint type ceramics linings are the same as those for ADMAG ceramics linings.

*3: Enhanced dual frequency excitation is not available for models with High grade accuracy.

*4: Not available with 32 mm (1.25 in.), 125 mm (5.0 in.)

*5: Not available with 125 mm (5.0 in.)

*6: Not available with 15 mm (0.5 in.), 125 mm (5.0 in.)

T21.EPS

Size of AXF Flowtubes: Replacement model for earlier ADMAG or ADMAG AE (Lay length code 2)

Use	Process Connection	Lining	Remote Flowtube	Integral Flowmeter	High Grade Accuracy 0.2% of Rate	Enhanced Dual Frequency Excitation (Optional code HF1,HF2)	Replaceable Electrode (Electrode structure code 2)	Unit: mm (in.)
General-purpose use	Wafer (*6)	PFA	2.5 (0.1), 5 (0.2), 10 (0.4), 15 (0.5), 25 (1.0), 40 (1.5), 50 (2.0), 80 (3.0), 100 (4.0), 150 (6.0), 200 (8.0)	—	25 (1.0), 40 (1.5), 50 (2.0), 80 (3.0), 100 (4.0), 150 (6.0), 200 (8.0)	—	—	T22.EPS
		Polyurethane rubber	25 (1.0), 40 (1.5), 50 (2.0), 80 (3.0), 100(4.0), 150 (6.0), 200(8.0)	—	25 (1.0), 40(1.5), 50 (2.0), 80(3.0), 100 (4.0), 150 (6.0), 200 (8.0)	—	—	
	Flange (*7)	PFA	150 (6.0), 200 (8.0), 250 (10)	—	150 (6.0), 200 (8.0)	150 (6.0), 200 (8.0), 250 (10)	150 (6.0), 200 (8.0), 250 (10)	
		Polyurethane rubber	150 (6.0), 200 (8.0), 250 (10)	—	150 (6.0), 200 (8.0)	150 (6.0), 200 (8.0), 250 (10)	150 (6.0), 200 (8.0), 250 (10)	
	Submersible Type	Wafer (*6)	15 (0.5), 25 (1.0), 40 (1.5), 50 (2.0), 80 (3.0), 100 (4.0), 150 (6.0), 200 (8.0)	—	—	25 (1.0), 40 (1.5), 50 (2.0), 80 (3.0), 100 (4.0), 150 (6.0), 200 (8.0)	—	
			25 (1.0), 40 (1.5), 50 (2.0), 80 (3.0), 100 (4.0), 150 (6.0), 200 (8.0)	—	—	25 (1.0), 40 (1.5), 50 (2.0), 80 (3.0), 100 (4.0), 150 (6.0), 200 (8.0)	—	
		Flange (*7)	PFA	150 (6.0), 200 (8.0), 250(10)	—	150 (6.0), 200 (8.0)	—	
			Polyurethane rubber	150 (6.0), 200 (8.0), 250 (10)	—	150 (6.0), 200 (8.0)	—	
Explosion proof Type	Wafer (*6)	PFA	2.5 (0.1), 5 (0.2), 10 (0.4), 15 (0.5), 25 (1.0), 40 (1.5), 50 (2.0), 80 (3.0), 100 (4.0), 150 (6.0), 200 (8.0)	—	25 (1.0), 40 (1.5), 50 (2.0), 80 (3.0), 100 (4.0), 150 (6.0), 200 (8.0)	—	—	
	Flange (*7)	PFA	150 (6.0), 200 (8.0), 250 (10)	—	150 (6.0), 200 (8.0)	—	—	

*6: ADMAG lay length dimensions for wafer type of 250 mm (10 in.), and 300 mm (12 in.) are the same as those for AXF Standard.

And, in case of "platinum-iridium (grounding ring code P) or tantalum (grounding ring code T) or None (grounding ring code N)" in wafer type of 2.5 mm (0.1 in.) to 15 mm (0.5 in.), the lay lengths of Replacement model are the same as those for AXF Standard.

*7: ADMAG lay length dimensions for flange type of 15 mm (0.5 in.) to 100 mm (4.0 in.), or 300 mm (12 in.) to 2600 mm (104 in.) are the same as those for AXF Standard. However, in case of platinum-iridium (grounding ring code P) or tantalum (grounding ring code T) or None (grounding ring code N) in flange type of 15 mm (0.5 in.) to 100 mm (4.0 in.), the lay length of AXF Standard are longer by approx. 4mm (0.16 in) than those of earlier ADMAG or ADMAG AE.

Protection:**General-Purpose Use/Sanitary Type/TIIS Flameproof Type:**

IP66, IP67, JIS C0920 immersion-proof type
Explosion proof type except TIIS:

In case of explosion proof type except TIIS, refer to description of "Enclosure" in "HAZARDOUS AREA CLASSIFICATION".

Submersible Type (only for Remote Flowtube):

IP68 (can be used for temporary submergence)

JIS C0920 Submersible Type

Note: Test Condition: 50 m below the surface of the water, equivalent to 0.5 MPa hydraulic pressure, for one month.

Cable should be protected at customer site. In the case of installation always under water or corrosion fluid, contact Yokogawa office.

Coating:**General-Purpose Use/Explosion proof Type:**

Size 2.5 to 125 mm (0.1 to 5.0 in.) (Wafer type),

Size 2.5 to 125 mm (0.1 to 5.0 in.) (Process connection code B or D of flange type):

- Housing: No coating (Stainless steel surface)
- Flange (Flange type only) : No coating (Stainless steel surface)

Terminal Box and Cover (Remote Flowtube):

Polyurethane corrosion-resistant coating

Coating color: Mint green (Munsell 5.6 BG 3.3/2.9 or its equivalent)

Size 150 to 300 mm (6.0 to 12 in.) (Wafer type),
Size 150 to 400 mm (6.0 to 16 in.) (Process connection code B of flange type),
Size 50 to 2600 mm (2.0 to 104 in.) (Process connection code C of flange type):

- Housing, Flange (Flange type only), Terminal Box

and Cover (Remote Flowtube):

Polyurethane corrosion-resistant coating

Coating color: Mint green (Munsell 5.6 BG 3.3/2.9 or its equivalent)

Sanitary Type:

Size 15 to 125 mm (0.5 to 5.0 in.):

- Housing: No coating (Stainless steel surface)

- Adapter : No coating (Stainless steel surface)

Terminal Box and Cover (Remote Flowtube):

Polyurethane corrosion-resistant coating

Coating color: Mint green (Munsell 5.6 BG 3.3/2.9 or its equivalent)

Submersible Type: Non-tar epoxy coating (black)

Flowtube Material:**Size 2.5 mm (0.1 in.) to 15 mm (0.5 in.)**

Part Name		Material
Housing		Stainless steel-JIS SCS11
Flange		Stainless steel-JIS SUS304 or SUSF304 (AISI 304 SS/EN 1.4301 equivalent)
Mini-Flange	Wafer Type PFA/Polyurethane Rubber lining	Stainless steel-JIS SCS13 (EN 1.4308 equivalent)
	Wafer Type Ceramics lining [only for 15 mm (0.5 in.)]	Stainless steel-JIS SUS316L (AISI 316 SS/EN 1.4404 equivalent)
	Sanitary Type [only for 15 mm (0.5 in.)]	Stainless steel-JIS SCS13 (EN 1.4308 equivalent)
Pipe	Wafer Type PFA/Polyurethane Rubber lining	Stainless steel-JIS SCS13 (EN 1.4308 equivalent)
	Wafer Type/Union Joint Ceramics lining	Alumina ceramics (99.9%)
	Flange Type PFA lining	Stainless steel-JIS SCS13 (EN 1.4308 equivalent) and SUS304 (AISI 304 SS/EN 1.4301 equivalent)
	Sanitary Type [only for 15 mm (0.5 in.)]	Stainless steel-JIS SCS13 (EN 1.4308 equivalent)
Terminal Box (Remote Flowtube)		Aluminum alloy

T03.EPS

Size 25 mm (1.0 in.) to 125 mm (5.0 in.)

Part Name		Material
Housing		Stainless steel-JIS SUS304 (AISI 304 SS/EN 1.4301 equivalent)
Flange	Process Connection code: B**	Stainless steel-JIS SUS304 or SUSF304 (AISI 304 SS/EN 1.4301 equivalent)
	Process Connection code: C** [(Size 50 mm (2.0 in.) to 125 mm (5.0 in.))]	Carbon steel-JIS SS400
Mini-Flange	Wafer Type PFA/Polyurethane Rubber/Natural Soft Rubber/EPDM Rubber lining	Stainless steel- EN 1.4308 (SCS13 equivalent)
		Stainless steel-JIS SUS430 (ASTM 43000/DIN X6Cr17/EN 1.4016 equivalent)
		Stainless steel-JIS SUS430 (ASTM 43000/DIN X6Cr17/EN 1.4016 equivalent)
	Wafer Type Ceramics lining	Stainless steel-JIS SUS316L (AISI 316L SS/EN 1.4404 equivalent)
Sanitary Type	Size 25 mm (1.0 in.)	Stainless steel-JIS SUS304 (AISI 304 SS/EN 1.4301 equivalent)
	Size 32 mm (1.25 in.) to 125 mm (5.0 in.)	Stainless steel-JIS SUS304 (AISI 304 SS/EN 1.4301 equivalent)
	Size 25 mm (1.0 in.)	Stainless steel-JIS SCS13 (EN 1.4308 equivalent)
	Size 32 mm (1.25 in.) to 125 mm (5.0 in.)	Stainless steel-JIS SUS304 (AISI 304 SS/EN 1.4301 equivalent)
Pipe	Wafer Type PFA/Polyurethane Rubber/Natural Soft Rubber/EPDM Rubber lining	Stainless steel- EN 1.4308 (SCS13 equivalent)
		Stainless steel-JIS SUS304 (AISI 304 SS/EN 1.4301 equivalent)
		Stainless steel-JIS SUS304 (AISI 304 SS/EN 1.4301 equivalent)
	Flange Type PFA/Polyurethane Rubber/Natural Soft Rubber/EPDM Rubber lining	Stainless steel- EN 1.4308 (SCS13 equivalent)
	Wafer Type Ceramics lining	Stainless steel-JIS SUS304 (AISI 304 SS/EN 1.4301 equivalent)
	Sanitary Type	Alumina ceramics (99.9%)
Terminal Box (Remote Flowtube)		Aluminum alloy

T04.EPS

Size 150 mm (6.0 in.) to 400 mm (16 in.)

Part Name		Material
Housing		Carbon steel-JIS SPCC
Flange	Process Connection code: B**	Stainless steel-JIS SUS304 or SUS304 (AISI 304 SS/EN 1.4301 equivalent)
	Process Connection code: C**	Carbon steel-JIS SS400
Mini-Flange	Wafer Type PFA/Polyurethane Rubber/Natural Soft Rubber/ EPDM Rubber lining	Carbon steel-JIS SS400
	Wafer Type Ceramics lining [available with 150 mm (6.0 in.), 200 mm (8.0 in.)]	Stainless steel-JIS SUS304 (AISI 304 SS/EN 1.4301 equivalent)
Pipe	Flange Type/Wafer Type PFA/Polyurethane Rubber/Natural Soft Rubber/ EPDM Rubber lining	Stainless steel-JIS SUS304 (AISI 304 SS/EN 1.4301 equivalent)
	Wafer Type Ceramics lining [available with 150 mm (6.0 in.), 200 mm (8.0 in.)]	Alumina ceramics (99.9%)
Terminal Box (Remote Flowtube)		Aluminum alloy

T05.EPS

Size 500 mm (20 in.) to 2600 mm (104 in.)

Part Name		Material
Housing		Carbon steel-JIS SPCC
Flange		Carbon steel-JIS SS400
Pipe		Stainless steel-JIS SUS304 (AISI 304 SS/EN 1.4301 equivalent)
Terminal Box (Remote Flowtube)	Case, Cover (500 to 1000 mm) (20 to 40 in.)	Aluminum alloy
	Case (1100 to 2600 mm) (44 to 104 in.)	Stainless steel-JIS SUS304 (AISI 304 SS/EN 1.4301 equivalent) Electrical connection: Carbon steel
	Cover (1100 to 2600 mm) (44 to 104 in.)	Aluminum alloy

T05-1.EPS

Wetted Part Material:**Lining:**

Fluorocarbon PFA*1 lining

Polyurethane Rubber lining

Natural Soft Rubber lining*2

EPDM Rubber lining*3

Alumina ceramics lining

*1: PFA is FDA (U.S. Food and Drug Administration) approval material.

*2: Natural soft rubber is a material which can reduce wear of the lining due to fluids mixed with slurries. If the concentration of mixed slurries is high, contact Yokogawa as necessary measures need to be taken separately for the electrodes.

*3: EPDM rubber lining is superior in the ozone proof.

Electrode:

Stainless steel-JIS SUS316L (AISI 316L SS/EN 1.4404 equivalent), Hastelloy*1 C276 equivalent, Titanium, Tantalum, Platinum-Iridium, Tungsten Carbide, Platinum-Alumina cermet(only for ceramics lining)

Note : For size over 500 mm and sanitary type, SUS316L only.

Grounding Ring/Grounding Electrode:

- Grounding Ring(plate type)

Stainless steel-JIS SUS316 (AISI 316 SS/EN 1.4401 equivalent),

Stainless steel-JIS SUS316L (AISI 316L SS/EN 1.4404 equivalent),

Hastelloy*1 C276 equivalent, Titanium,

Stainless steel-JIS SUS304 (AISI 304 SS/EN 1.4301 equivalent) for size 500 to 1000mm (20 to 40 in.) only,

SS400 carbon steel lined with stainless steel-JIS SUS316 (AISI 316 SS/EN 1.4404 equivalent) for size 1100 to 2600mm (44 to 104 in.) only.

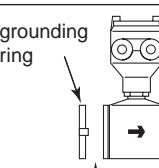
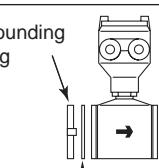
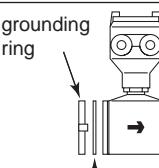
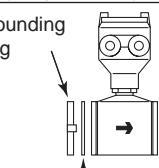
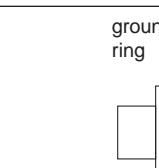
- Grounding Electrode(electrode type)

Fluorocarbon PFA lining + grounding electrode (Tantalum, Platinum-Iridium)

*1: Hastelloy is a registered trademark of Haynes International Inc.

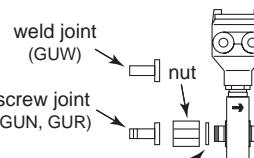
*2: Available with sizes 2.5 to 200mm (0.1 to 8.0 in.), PFA and ceramics linings only. However, the permeable fluids (such as nitric acid, hydrofluoric acid, or sodium hydroxide at high temperature) are unusable.

Gasket:

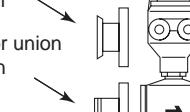
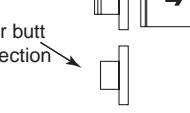
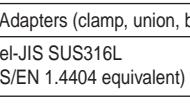
Use	General-Purpose Use / Submersible Type / Explosion proof Type			
Lining	PFA/Polyurethane Rubber/ Natural Soft Rubber/ EPDM Rubber	Ceramics		
Standard	grounding ring  No gasket within Flowtube	grounding ring  Gasket within Flowtube		
	Gasket Material (within Flowtube)			
	—	Fluororesin with ceramic fillers (Valqua #7020)		
Optional code (GA, GC, GD, or GF)	grounding ring  Gasket within Flowtube	grounding ring  Gasket within Flowtube		
	Gasket Material (within Flowtube)			
	GA: Fluororubber for PVC pipes (Viton®) GC: Acid-resistant fluororubber for PVC pipes (Viton®) GD: Alkali-resistant fluororubber for PVC pipes (Viton®) GF*: Fluororesin with alkali-resistant carbons for metal pipes			
(Only when selecting the PFA lining/ ceramics lining)				
*1: GF is applicable only for ceramics lining.				
Optional code (BCF, BSF, BCC, or BSC)	 Flange of user's pipe Gasket for user's flange			
	Gasket Material (for user's flange)			
	BCF, BSF: PTFE-sheathed non-asbestos BCC, BSC: Chloroprene rubber			

T23-1.EPS

Joints:

Lining	Ceramics Union Joints (size 10 mm or less)	
Standard	weld joint (GUW) 	nut
	screw joint (GUN, GUR)	
	Gasket within Flowtube	
Materials for Union Joint		
Process Connection Code GUW: Union Joint (weld joint)		
Process Connection Code GUN, GUR: union joint (screw joint)		Stainless steel (JIS SUS316L (ANSI 316L SS/EN 1.4404 equivalent))

Note: Contact Yokogawa office if PVC union joint is required.
T23-3.EPS

Use	Sanitary Type
Standard	Adapter for clamp connection 
	Adapter for union connection 
	Adapter for butt weld connection 
Materials for Adapters (clamp, union, butt weld)	
Stainless steel-JIS SUS316L (AISI 316L SS/EN 1.4404 equivalent)	

T23-4.EPS

O-Ring (Replaceable electrode type only):

Fluororubber (Part number : G9303SE)

Electrode Construction:**Non-replaceable Electrode Type**

General-Purpose Use/Submersible Type/Explosion proof Type:

PFA, Polyurethane Rubber lining:

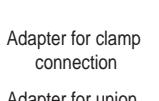
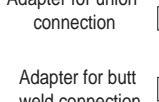
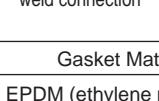
External insertion type

Natural Soft Rubber, EPDM Rubber lining:

Internal insertion type

Ceramics lining: Integral type

Sanitary Type: Internal insertion type

Use	Sanitary Type
Lining	PFA
Standard	Adapter for clamp connection 
	Adapter for union connection 
	Adapter for butt weld connection 
Gasket Material (within Flowtube)	
EPDM (ethylene propylene) rubber	
Optional code (GH)	GH: Silicone rubber

T23-2.EPS

Replaceable Electrode Type

Electrode parts can be put into unit to facilitate replacement or mounting at customer site.
The optional dedicated tool (F9807SK) is required.

Replaceable electrodes are available for the following:**AXF standard:**

Use	Process Connection	Available Size	Lining	Electrode Material
General-Purpose Use	Wafer	25 to 300 mm (1.0 to 12 in.)	PFA/ Polyurethane Rubber	JIS SUS316L (AISI 316L) SS/EN 1.4404 equivalent) ^(*)1)
	Flange	25 to 400 mm (1.0 to 16 in.)		

T06.EPS

Replacement model for earlier ADMAG or ADMAG AE:

Use	Process Connection	Available Size	Lining	Electrode Material
General-Purpose Use	Flange	150 to 250 mm (6.0 to 10 in.)	PFA/ Polyurethane Rubber	JIS SUS316L (AISI 316L) SS/EN 1.4404 equivalent) ^(*)1)

T07.EPS

*1: If any other electrode materials are required, please contact Yokogawa office.

Mounting/Shapes (Remote Flowtube):

- Electrical Connection: ANSI 1/2 NPT female
ISO M20 × 1.5 female
JIS G1/2 (PF1/2) female
- Direction of Electrical Connection: The direction can be changed even after delivery.
Note: In case of submersible types, an optional code DHC, and sizes of 1100 mm or larger, the direction can not be changed after delivery.
- Terminal Connection at Terminal Box: M4 size screw

Grounding:

Grounding resistance 100 Ω or less

- * In case of explosion proof type except TIIS, follow the domestic electrical requirements as regulated in each country.
- * In case of TIIS Flameproof type, refer to description of "HAZARDOUS AREA CLASSIFICATION".

Combined Converter:

- A remote flowtube for sizes of up to 400 mm can be combined with the AXFA11 Converter or the AXFA14 Converter. If a combined converter is changed from AXFA11 to AXFA14 or vice versa, a new meter factor must be adjusted by flow calibrations.
- In case that size 250 mm (10 in.) or larger is used in low conductivity or high concentration slurries, please use the AXFA11 Converter.
- A remote flowtube for sizes of 500 mm or larger can be combined with the AXFA11 Converter only.
- Maximum Cable Length:

Combination of AXF remote Flowtube and AXFA11:
up to 200 m (660 ft)

Combination of AXF remote Flowtube and AXFA14:
up to 100 m (330 ft)

■ HAZARDOUS AREA CLASSIFICATION**FM:**

*AXF002C – AXF400C

Applicable Standard:

FM3600, FM3610, FM3615,
FM3810, ANSI/NEMA 250

(Integral Flowmeter)

Explosion proof for Class I, Division 1, Groups A, B, C & D.

Dust-ignition proof for Class II/III, Division1, Groups E, F & G.

Intrinsically safe (electrodes) for Class I, Division 1, Groups A, B, C & D.

"SEAL ALL CONDUITS WITHIN 18 INCHES"

"WHEN INSTALLED IN DIV. 2, SEALS NOT REQUIRED"

Electrode Circuit Um: 250 Vac/dc

Maximum power supply voltage: 250 Vac/130 Vdc

Excitation Circuit: 140V max

Enclosure: NEMA 4X

Temperature Code: T6

Refer to following table;

Temperature Code	Maximum Process Temperature	Minimum Process Temperature
T6	+70°C (+158°F)	-40°C (-40°F)
T5	+85°C (+185°F)	-40°C (-40°F)
T4	+120°C (+248°F)	-40°C (-40°F)
T3	+130°C (+266°F)	-40°C (-40°F)

T27-1_1.EPS

Ambient Temp.: -40°C to +60°C (-40°F to +140°F)

(Remote Flowtube)

Explosion proof for Class I, Division 1, Groups A, B, C & D.

Dust-ignition proof for Class II/III, Division1, Groups E, F & G.

Intrinsically safe (electrodes) for Class I, Division 1, Groups A, B, C & D.

"SEAL ALL CONDUITS WITHIN 18 INCHES"

"WHEN INSTALLED IN DIV. 2, SEALS NOT REQUIRED"

Electrode Circuit Um: 250 Vac/dc

Excitation Circuit: 170V max

Enclosure: NEMA 4X

Temperature Code: T6

Refer to following table;

Temperature Code	Maximum Process Temperature	Minimum Process Temperature
T6	+70°C (+158°F)	-40°C (-40°F)
T5	+85°C (+185°F)	-40°C (-40°F)
T4	+120°C (+248°F)	-40°C (-40°F)
T3	+150°C (+302°F)	-40°C (-40°F)

T28-1_1.EPS

Ambient Temp.: -40°C to +60°C (-40°F to +140°F)

Note: Installation shall be in accordance with the manufacturer's instructions and National Electric code, ANSI/NFPA-70.

CENELEC ATEX (KEMA):

*AXF002C – AXF400C

Applicable Standard:

EN 50014, EN 50018, EN 50019,
 EN 50020, EN 50028, EN 50281-1-1,
 EN 60529, EN 61010-1
 Certificate: KEMA 03ATEX2435

(Integral Flowmeter)**CENELEC ATEX (KEMA) Flameproof Type**

Group: II

Category: 2G

EEx dme[ia] IIC T6...T3

Electrode Circuit Um: 250 Vac/dc

Maximum power supply voltage: 250 Vac/130 Vdc

Excitation Circuit: 140V max

Enclosure: IP66, IP67

Temperature Class:

Temperature Class	Maximum Process Temperature	Minimum Process Temperature
T6	+70°C (+158°F)	-40°C (-40°F)
T5	+85°C (+185°F)	-40°C (-40°F)
T4	+120°C (+248°F)	-40°C (-40°F)
T3	+130°C (+266°F)	-40°C (-40°F)

T27-2.EPS

Ambient Temp.: -40°C to +60°C (-40°F to +140°F)

CENELEC ATEX (KEMA) Type of Protection “Dust”

Group: II

Category: 1D

Electrode Circuit Um: 250 Vac/dc

Maximum power supply voltage: 250 Vac/130 Vdc

Excitation Circuit: 140V max

Enclosure: IP66, IP67

Maximum surface temperature:

Maximum Surface Temperature	Maximum Process Temperature
T75°C (+167°F)	+70°C (+158°F)
T85°C (+185°F)	+85°C (+185°F)
T100°C (+212°F)	+120°C (+248°F)
T110°C (+230°F)	+130°C (+266°F)

T29.EPS

Ambient Temp.: -40°C to +60°C (-40°F to +140°F)

(Remote Flowtube)**CENELEC ATEX (KEMA) Flameproof Type**

Group: II

Category: 2G

EEx dme[ia] IIC T6...T3

Electrode Circuit Um: 250 Vac/dc

Excitation Circuit: 170V max

Enclosure: IP66, IP67

Temperature Class:

Temperature Class	Maximum Process Temperature	Minimum Process Temperature
T6	+70°C (+158°F)	-40°C (-40°F)
T5	+85°C (+185°F)	-40°C (-40°F)
T4	+120°C (+248°F)	-40°C (-40°F)
T3	+150°C (+302°F)	-40°C (-40°F)

T28-2.EPS

Ambient Temp.: -40°C to +60°C (-40°F to +140°F)

CENELEC ATEX (KEMA) Type of Protection “Dust”

Group: II

Category: 1D

Electrode Circuit Um: 250 Vac/dc

Excitation Circuit: 170V max

Enclosure: IP66, IP67

Maximum surface temperature:

Maximum Surface Temperature	Maximum Process Temperature
T75°C (+167°F)	+70°C (+158°F)
T85°C (+185°F)	+85°C (+185°F)
T100°C (+212°F)	+120°C (+248°F)
T115°C (+239°F)	+150°C (+302°F)

T30.EPS

Ambient Temp.: -40°C to +60°C (-40°F to +140°F)

CSA:

*AXF002C – AXF400C

Applicable Standard:

For CSA C22.2 Series;
C22.2 No 0, C22.2 No 0.4, C22.2 No 0.5,
C22.2 No 25, C22.2 No 30, C22.2 No 94,
C22.2 No 157, C22.2 No 1010.1

For CSA E79 Series;
CAN/CSA-E79-0, CAN/CSA-E79-1,
CAN/CSA-E79-7, CAN/CSA-E79-11,
CAN/CSA-E79-18

Certificate: 1481213

(Integral Flowmeter)**For CSA C22.2 Series**

Explosion proof for Class I, Division 1, Groups A, B, C & D.

Dust-ignition proof for Class II/III, Division 1, Groups E, F & G.

Intrinsically safe (electrodes) for Class I, Division 1, Groups A, B, C & D.

"SEAL ALL CONDUITS WITHIN 50 cm OF THE ENCLOSURE"

"WHEN INSTALLED IN DIV. 2, SEALS NOT REQUIRED"

Electrode Circuit Um: 250 Vac/dc

Maximum power supply voltage: 250 Vac/130 Vdc

Excitation Circuit: 140V max

Enclosure: Type 4X

Temperature Code:

Temperature Code	Maximum Process Temperature	Minimum Process Temperature
T6	+70°C (+158°F)	-40°C (-40°F)
T5	+85°C (+185°F)	-40°C (-40°F)
T4	+120°C (+248°F)	-40°C (-40°F)
T3	+130°C (+266°F)	-40°C (-40°F)

T27-1.EPS

Ambient Temp.: -40°C to +60°C (-40°F to +140°F)

For CSA E79 Series

Flameproof for Zone 1, Ex dme[ia] IIC T6...T3

Intrinsically safe (electrodes), Ex ia IIC T6...T3

Electrode Circuit Um: 250 Vac/dc

Maximum power supply voltage: 250 Vac/130 Vdc

Excitation Circuit: 140V max

Enclosure: IP66, IP67

Temperature Code:

Temperature Code	Maximum Process Temperature	Minimum Process Temperature
T6	+70°C (+158°F)	-40°C (-40°F)
T5	+85°C (+185°F)	-40°C (-40°F)
T4	+120°C (+248°F)	-40°C (-40°F)
T3	+130°C (+266°F)	-40°C (-40°F)

T27-1.EPS

Ambient Temp.: -40°C to +60°C (-40°F to +140°F)

(Remote Flowtube)**For CSA C22.2 Series**

Explosion proof for Class I, Division 1, Groups A, B, C & D.

Dust-ignition proof for Class II/III, Division 1, Groups E, F & G.

Intrinsically safe (electrodes) for Class I, Division 1, Groups A, B, C & D.

"SEAL ALL CONDUITS WITHIN 50 cm OF THE ENCLOSURE"

"WHEN INSTALLED IN DIV. 2, SEALS NOT REQUIRED"

Electrode Circuit Um: 250 Vac/dc

Excitation Circuit: 170V max

Enclosure: Type 4X

Temperature Code:

Temperature Code	Maximum Process Temperature	Minimum Process Temperature
T6	+70°C (+158°F)	-40°C (-40°F)
T5	+85°C (+185°F)	-40°C (-40°F)
T4	+120°C (+248°F)	-40°C (-40°F)
T3	+150°C (+302°F)	-40°C (-40°F)

T28-1.EPS

Ambient Temp.: -40°C to +60°C (-40°F to +140°F)

For CSA E79 Series

Flameproof for Zone 1, Ex dme[ia] IIC T6...T3

Intrinsically safe (electrodes), Ex ia IIC T6...T3

Electrode Circuit Um: 250 Vac/dc

Excitation Circuit: 170V max

Enclosure: IP66, IP67

Temperature Code:

Temperature Code	Maximum Process Temperature	Minimum Process Temperature
T6	+70°C (+158°F)	-40°C (-40°F)
T5	+85°C (+185°F)	-40°C (-40°F)
T4	+120°C (+248°F)	-40°C (-40°F)
T3	+150°C (+302°F)	-40°C (-40°F)

T28-1.EPS

Ambient Temp.: -40°C to +60°C (-40°F to +140°F)

IECEx:

*AXF002C – AXF400C

Applicable Standard:

IEC60079-0: 2004, IEC60079-1: 2003,
 IEC60079-7: 2001,
 IEC60079-11: 1999, IEC60079-18: 2004,
 IEC61241-0: 2004, IEC61241-1: 2004,
 IEC60529: 1999 + Edition 2.1: 2001

Certificate: IECEx KEM 05.0018

(Integral Flowmeter)**IECEx Flameproof Type**

Ex demb[ia] IIC T6...T3

Electrode Circuit Um: 250 Vac/dc

Maximum power supply voltage: 250 Vac/130 Vdc

Excitation Circuit: 140V max

Enclosure: IP66, IP67

Temperature Class:

Temperature Class	Process Temperature
T6	-40°C to +70°C (-40°F to +158°F)
T5	-40°C to +85°C (-40°F to +185°F)
T4	-40°C to +120°C (-40°F to +248°F)
T3	-40°C to +130°C (-40°F to +266°F)

T27-3.EPS

Ambient Temp.:

PFA Lining; -40°C to +60°C (-40°F to +140°F)

Ceramics Lining; -15°C to +60°C (5°F to +140°F)

IECEx Type of Protection “Dust”

Ex tD A21 IP6x T95°C, T105°C, T120°C, T130°C

Electrode Circuit Um: 250 Vac/dc

Maximum power supply voltage: 250 Vac/130 Vdc

Excitation Circuit: 140V max

Enclosure: IP66, IP67

Maximum surface temperature:

Maximum Surface Temperature	Process Temperature
T95°C (+203°F)	-40°C to +70°C (-40°F to +158°F)
T105°C (+221°F)	-40°C to +85°C (-40°F to +185°F)
T120°C (+248°F)	-40°C to +120°C (-40°F to +248°F)
T130°C (+266°F)	-40°C to +130°C (-40°F to +266°F)

T27-4.EPS

Ambient Temp.:

PFA Lining; -40°C to +60°C (-40°F to +140°F)

Ceramics Lining; -15°C to +60°C (5°F to +140°F)

(Remote Flowtube)**IECEx Flameproof Type**

Ex demb[ia] IIC T6...T3

Electrode Circuit Um: 250 Vac/dc

Excitation Circuit: 170V max

Enclosure: IP66, IP67

Temperature Class:

Temperature Class	Process Temperature
T6	-40°C to +70°C (-40°F to +158°F)
T5	-40°C to +85°C (-40°F to +185°F)
T4	-40°C to +120°C (-40°F to +248°F)
T3	-40°C to +150°C (-40°F to +302°F)

T27-5.EPS

Ambient Temp.:

PFA Lining; -40°C to +60°C (-40°F to +140°F)

Ceramics Lining; -15°C to +60°C (5°F to +140°F)

IECEx Type of Protection “Dust”

Ex tD A21 IP6x T95°C, T105°C, T120°C, T135°C

Electrode Circuit Um: 250 Vac/dc

Excitation Circuit: 170V max

Enclosure: IP66, IP67

Maximum surface temperature:

Maximum Surface Temperature	Process Temperature
T95°C (+203°F)	-40°C to +70°C (-40°F to +158°F)
T105°C (+221°F)	-40°C to +85°C (-40°F to +185°F)
T120°C (+248°F)	-40°C to +120°C (-40°F to +248°F)
T135°C (+275°F)	-40°C to +150°C (-40°F to +302°F)

T27-6.EPS

Ambient Temp.:

PFA Lining; -40°C to +60°C (-40°F to +140°F)

Ceramics Lining; -15°C to +60°C (5°F to +140°F)

TIIS:

Certificate:

Lining Size: mm (inch)	Integral Flowmeter		Remote Flowtube	
	PFA Lining	Ceramics Lining	PFA Lining	Ceramics Lining
2.5 (0.1)	C16630	C16645	C16654	C16669
5 (0.2)	C16630	C16645	C16654	C16669
10 (0.4)	C16630	C16645	C16654	C16669
15 (0.5)	C16630	C16646	C16654	C16670
25 (1.0)	C16631	C16647	C16655	C16671
32 (1.25)	C16632	—	C16656	—
40 (1.5)	C16633	C16648	C16657	C16672
50 (2.0)	C16634	C16649	C16658	C16673
65 (2.5)	C16635	—	C16659	—
80 (3.0)	C16636	C16650	C16660	C16674
100 (4.0)	C16637	C16651	C16661	C16675
125 (5.0)	C16638	—	C16662	—
150 (6.0)	C16639	C16652	C16663	C16676
200 (8.0)	C16640	C16653	C16664	C16677
250 (10)	C16641	—	C16665	—
300 (12)	C16642	—	C16666	—
350 (14)	C16643	—	C16667	—
400 (16)	C16644	—	C16668	—

T33.EPS

(Integral Flowmeter)

- Construction: Ex de[ia] IIC T4
 - : Converter ; Explosion proof
 - Flowtube ; Increased Safety and Intrinsic Safety(ia)
 - Electrode ; Intrinsic Safety(ia)
- Ambient Temperature: -20 to 60°C (power supply code 1)
 - 20 to 50°C (power supply code 2)
- Fluid Temperature: 120°C max
- Electrode Circuit: 250V AC/DC
- Maximum power supply voltage: 250V AC/130V DC
- Grounding: JIS Class C(grouding resister 10Ω or less) or JIS Class A(grouding resister 10Ω or less)

*In case that ambient temperature exceeds 50°C, use heat-resistant cables with maximum allowable temperature of 70°C or above.

(Remote Flowtube)

- Construction: Ex de[ia] IIC T4
 - : Terminal box ; Explosion proof
 - Flowtube ; Increased Safety and Intrinsic Safety(ia)
 - Electrode; Intrinsic Safety(ia)
- Ambient Temperature: -20 to 60°C
- Fluid Temperature: 120°C max
- Electrode Circuit: 250V AC/DC
- Grounding: JIS Class C(grouding resistance 10Ω or less) or JIS Class A(grouding resistance 10Ω or less)

Note : In case of TIIS Flameproof type, a remote flowtube is available for combined use with the AXFA14 converter only.

*In case that ambient temperature exceeds 50°C, use heat-resistant cables with maximum allowable temperature of 70°C or above.

■ STANDARD PERFORMANCE**Reference Conditions:**

Similar to BS EN 29104 (1993); ISO9104 (1991)

- Fluid temperature: 20°C ± 10°C (+68°F ± 18°F)
- Ambient temperature: 25°C ± 5°C (+77°F ± 9°F)
- Warm-up time: 30 min
- Straight runs:
Upstream > 10 × DN
Downstream > 5 × DN
- Properly grounded
- Properly centered

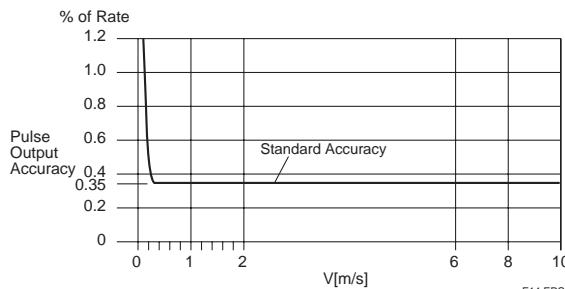
Accuracy (at reference conditions)**Pulse Output:****PFA/Ceramics Lining:**

Size mm (in.)	Flow Velocity V m/s (ft/s)	Standard Accuracy (Calibration code B)	Flow Velocity V m/s (ft/s)	High Grade Accuracy (Calibration code C)
2.5 (0.1) to 15 (0.5)	$V < 0.3$ (1)	± 1.0 mm/s	—	
	$0.3 \leq V \leq 10$ (1) (33)	$\pm 0.35\%$ of Rate		
25 (1.0) to 200 (8.0)	$V < 0.15$ (0.5)	± 0.5 mm/s	$V < 0.15$ (0.5)	± 0.5 mm/s
	$0.15 \leq V \leq 10$ (0.5) (33)	$\pm 0.35\%$ of Rate	$0.15 \leq V < 1$ (0.5) (3.3)	$\pm 0.18\%$ of Rate ± 0.2 mm/s
	$1 \leq V \leq 10$ (3.3) (33)		$1 \leq V \leq 10$ (3.3) (33)	$\pm 0.2\%$ of Rate
250 (10) to 400 (16)	$V < 0.15$ (0.5)	± 0.5 mm/s	—	
	$0.15 \leq V \leq 10$ (0.5) (33)	$\pm 0.35\%$ of Rate		

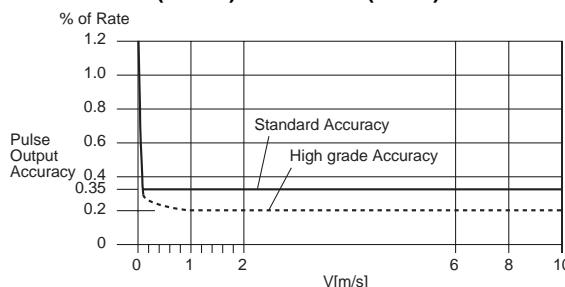
T08.EPS

Enhanced dual frequency excitation(Option code HF2):

Standard accuracy ± 1 mm/s

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

F14.EPS

Size 25 mm (1.0 in.) to 400 mm (16 in.)

F15.EPS

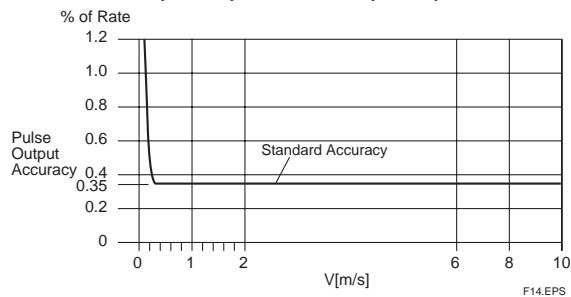
Polyurethane Rubber /Natural Soft Rubber / EPDM Rubber Lining:

Size mm (in.)	Flow Velocity V m/s (ft/s)	Standard Accuracy (Calibration code B)
25 (1.0) to 400 (16)	$V < 0.3$ (1.0)	± 1.0 mm/s
	$0.3 \leq V \leq 10$ (1.0) (33)	$\pm 0.35\%$ of Rate
500 (20) to 1000 (40)	$V < 0.3$ (1.0)	± 1.75 mm/s
	$0.3 \leq V < 1$ (1.0) (3.3)	$\pm 0.25\%$ of Rate ± 1 mm/s
	$1 \leq V \leq 10$ (3.3) (33)	$\pm 0.35\%$ of Rate
1100 (44) to 2000 (80)	$V < 0.3$ (1.0)	± 2.2 mm/s
	$0.3 \leq V < 1$ (1.0) (3.3)	$\pm 0.4\%$ of Rate ± 1 mm/s
	$1 \leq V \leq 10$ (3.3) (33)	$\pm 0.5\%$ of Rate
2200 (88) to 2600 (104)	$V < 1$ (3.3)	± 8.5 mm/s
	$1 \leq V \leq 10$ (3.3) (33)	$\pm 0.85\%$ of Rate

T09.EPS

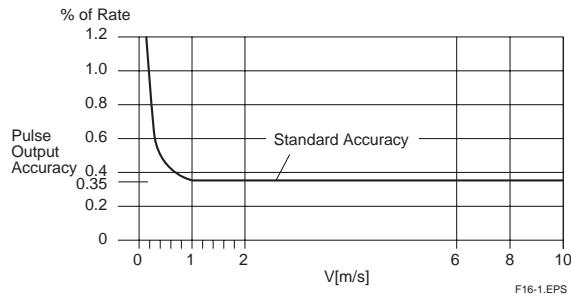
Enhanced dual frequency excitation(Option code HF2) : Standard accuracy ± 1 mm/s

Size 25 mm (1.0 in.) to 400 mm (16 in.)



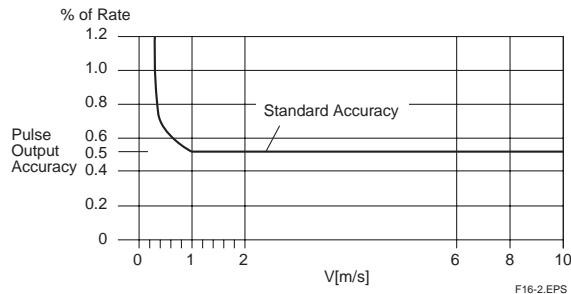
F14.EPS

Size 500 mm (20 in.) to 1000 mm (40 in.)



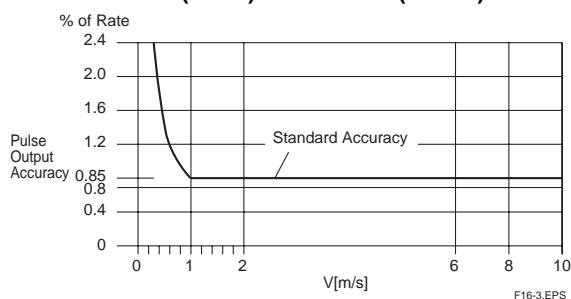
F16-1.EPS

Size 1100 mm (44 in.) to 2000 mm (80 in.)



F16-2.EPS

Size 2200 mm (88 in.) to 2600 mm (104 in.)



F16-3.EPS

Current Output “◇”: Pulse output accuracy plus $\pm 0.05\%$ of Span

Repeatability:

$\pm 0.1\%$ of Rate ($V \geq 1$ m/s (3.3 ft/s))
 $\pm 0.05\%$ of Rate ± 0.5 mm/s ($V < 1$ m/s (3.3 ft/s))

Maximum Power Consumption:

Integral Flowmeter: 12W
 Remote Flowtube: Combined with AXFA11: 20W
 Combined with AXFA14: 12W

Insulation Resistance (*1):

Integral Flowmeter:

Between power supply terminals and ground terminal : $100M\Omega$ at 500V DC
 Between power supply terminals and input/output terminals : $100M\Omega$ at 500V DC
 Between ground terminal and input/output terminals : $20M\Omega$ at 100V DC
 Between input/output terminals : $20M\Omega$ at 100V DC

Remote Flowtube:

Between excitation current terminal and signal / common terminals : $100M\Omega$ at 500V DC
 Between signal terminals : $100M\Omega$ at 500V DC
 Between signal terminals and common terminal (C) : $100M\Omega$ at 500V DC

Withstand Voltage (*1):

Integral Flowmeter

Between power supply terminals and ground terminal : 1390V AC for 2 seconds
 Between power supply terminals and input/output terminals : 1390V AC for 2 seconds

Remote Flowtube (option code JF3, KF2, CF1, and SF2)
 Between excitation current terminal and ground terminal : 1500V AC for 1 minute

Between signal terminals and ground terminal : 1500V AC for 1 minute
 Between signal terminals and excitation current terminal : 2000V AC for 1 minute

Remote Flowtube (option code FF1)
 Between signal terminals and ground terminal : 500V AC for 1 minute or 600V AC for 1 second
 Between signal terminals and excitation current terminal : 2000V AC for 1 minute or 2400V AC for 1 second.

**CAUTION**

- *1: When performing the Insulation Resistance Test or the Withstand Voltage Test, please obey the following caution.
- Following the relevant test, wait for more than 10 seconds after the power supply has been turned off before removing the cover.
 - Remove all wires from terminals before testing.
 - When the power terminal has a lighting protector (optional code A), remove the short bar at the ground terminal.
 - After testing, be sure to discharge by using a resistance and return all wires and the short bar to its correct position.
 - Screws must be tightened to a torque of 1.18 N·m or more.
 - After closing the cover, the power supply can be restored.

Safety Requirement Standards:

EN61010-1

- Altitude at installation site: Max. 2000 m above sea level
- Installation category based on IEC1010:
Overvoltage category II ("II" applies to electrical equipment which is supplied from the fixed installation like distribution board.)
- Pollution degree based on IEC1010
Pollution degree 2 ("Pollution degree" describes the degree to which a solid, liquid, or gas which deteriorates dielectric strength or surface resistivity is adhering. "2" applies to a normal indoor atmosphere.)

EMC Conformity Standards:

EN61326

EN61000-3-2, EN61000-3-3

AS/NZS CISPR11

Pressure Equipment Directive:

Module: H

Type of Equipment: Piping

Type of Fluid: Liquid and Gas

Group of Fluid: 1 and 2

General-Purpose Use/Submersible Type/Explosion proof Type:

MODEL	DN (mm) (*1)	PS (MPa) (*1)	PS DN (MPa · mm)	CATEGORY(*2)
AXF002G/C	2.5	4	10	Article 3, (*3) paragraph 3
AXF005G/C	5	4	20	Article 3, (*3) paragraph 3
AXF010G/C	10	4	40	Article 3, (*3) paragraph 3
AXF015G/W/C	15	4	60	Article 3, (*3) paragraph 3
AXF025G/W/C	25	4	100	Article 3, (*3) paragraph 3
AXF032G/W/C	32	4	128	II
AXF040G/W/C	40	4	160	II
AXF050G/W/C	50	4	200	II
AXF065G/W/C	65	2	130	II
AXF080G/W/C	80	2	160	II
AXF100G/W/C	100	2	200	II
AXF125G/W/C	125	2	250	II
AXF150G/W/C	150	2	300	II
AXF200G/W/C	200	2	400	III
AXF250G/W/C	250	2	500	III
AXF300G/W/C	300	2	600	III
AXF350G/W/C	350	1	350	II
AXF400G/W/C	400	1	400	III

T10-1.EPS

Sanitary Type:

MODEL	DN (mm) (*1)	PS (MPa) (*1)	PS D (MPa · mm)	CATEGORY (*2)
AXF015H	15	1	15	Article 3, (*3) paragraph 3
AXF025H	25	1	25	Article 3, (*3) paragraph 3
AXF032H	32	1	32	I
AXF040H	40	1	40	I
AXF050H	50	1	50	I
AXF065H	65	1	65	I
AXF080H	80	1	80	I
AXF100H	100	1	100	I
AXF125H	125	1	125	II

T10-2.EPS

Note : The sizes of 500 to 2600 mm (20 to 104 in.) are not attached CE marking of PED.

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

*2: For details, see "Table 6 covered by ANNEX II of EC Directive on Pressure Equipment Directive 97/23/EC."

*3: AXF002G/C to AXF025G/W/C, AXF015H and AXF025H are outside the scope of CE marking of PED.

■ NORMAL OPERATING CONDITIONS

Ambient Temperature:

- *1: Minimum temperature should also be limited according to minimum fluid temperature of linings.
- *2: Indicator's operating range (integral flowmeter): -20° to +60°C (-4° to +140°F)
- *3: Maximum temperature should be +50°C (+122°F) in the case of power supply code 2 (integral flowmeter).

Ambient Humidity:

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

Power Supply (integral flowmeter):

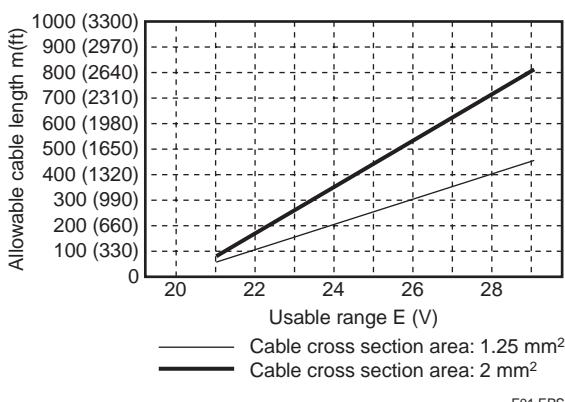
Power supply code 1:

- AC specifications
Rated power supply: 100 to 240 V AC, 50/60 Hz
(Operating voltage range: 80 to 264 V AC)
- DC specifications
Rated power supply: 100 to 120 V DC
(Operating voltage range: 90 to 130 V DC)

Power supply code 2:

- AC specifications
Rated power supply: 24 V AC, 50/60 Hz
(Operating voltage range: 20.4 to 28.8 V AC)
- DC specifications
Rated power supply: 24 V DC
(Operating voltage range: 20.4 to 28.8 V DC)

Supplied Voltage and Cable Length for Power Supply Code 2



Fluid Conductivity:

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

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

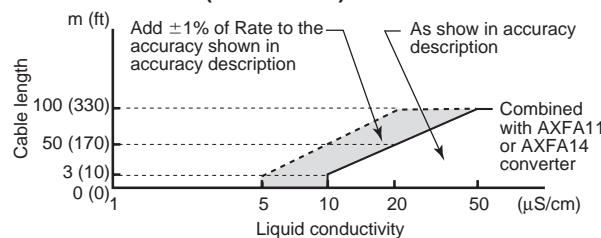
Size 150 to 400 mm (6 to 16 in.): 3 µS/cm or larger

Note: In the case of fluids which have large flow noise (pure water, pure alcohol or others), low conductivity and low viscosity, please contact Yokogawa office.

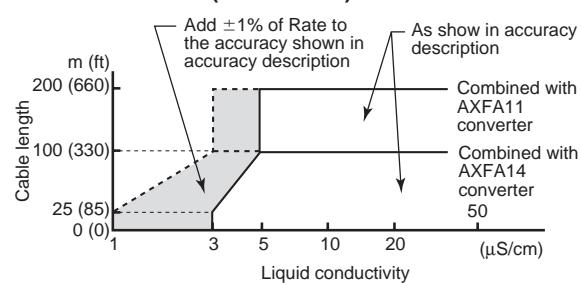
Size 500 to 2600 mm (20 to 104 in.): 50 µS/cm or larger.

Cable Length and Liquid Conductivity (Remote Flowtube):

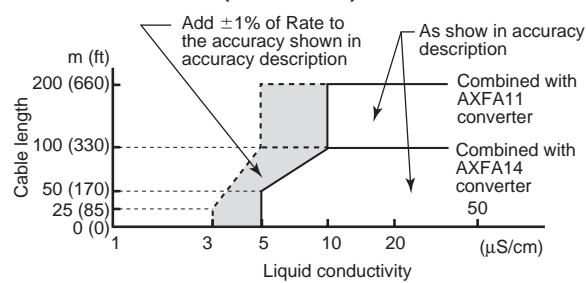
Size 2.5 to 10 mm (0.1 to 0.4 in.)



Size 15 to 125 mm (0.5 to 5.0 in.)



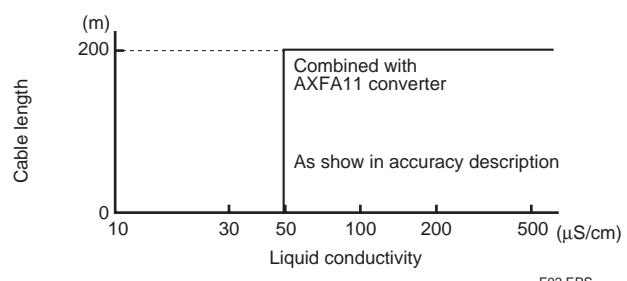
Size 150 to 400 mm (6.0 to 16 in.)



F03.EPS

Note: In case that size 250 or 300 mm (10 or 12 in.) is used for high conductivity fluid (ex. caustic soda, seawater), please use the flange type.

Size 500 to 2600 mm (20 to 104 in.)



F02.EPS

Measurable Flow Rate Range:SI Units (Size: mm, Flow rate: m³/h)

Size (mm)	0 to Min. Span Flow Rate (0.1 m/s)	0 to Max. Span Flow Rate (10 m/s)
2.5	0 to 0.0018 m ³ /h	0 to 0.1767 m ³ /h
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 0.2897	0 to 28.967
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 1,130.9
250	0 to 17.672	0 to 1,767.1
300	0 to 25.447	0 to 2,544.6
350	0 to 34.64	0 to 3,463
400	0 to 45.24	0 to 4,523
500	0 to 70.69	0 to 7,068
600	0 to 101.79	0 to 10,178
700	0 to 138.55	0 to 13,854
800	0 to 180.96	0 to 18,095
900	0 to 229.03	0 to 22,902
1000	0 to 282.75	0 to 28,274

T11.EPS

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

Size (in.)	0 to Min. Span Flow Rate (0.33ft/s)	0 to Max. Span Flow Rate (33ft/s)
0.1	0 to 0.0081 GPM	0 to 0.8031 GPM
0.2	0 to 0.0322	0 to 3.212
0.4	0 to 0.1286	0 to 12.850
0.5	0 to 0.2008	0 to 20.078
1.0	0 to 0.8032	0 to 80.31
1.25	0 to 1.004	0 to 100.39
1.5	0 to 1.8071	0 to 180.70
2.0	0 to 3.213	0 to 321.2
2.5	0 to 5.020	0 to 501.9
3.0	0 to 7.229	0 to 722.8
4.0	0 to 12.851	0 to 1,285.0
5.0	0 to 20.079	0 to 2,007.8
6.0	0 to 28.914	0 to 2,891.3
8.0	0 to 51.41	0 to 5,140
10	0 to 80.32	0 to 8,031
12	0 to 115.66	0 to 11,565
14	0 to 157.42	0 to 15,741
16	0 to 205.61	0 to 20,560
20	0 to 321.3	0 to 32,125
24	0 to 462.7	0 to 46,261
28	0 to 629.7	0 to 62,966
32	0 to 822.5	0 to 82,242
36	0 to 1040.9	0 to 104,082
40	0 to 1285.1	0 to 128,503

T24.EPS

Size (mm)	0 to Min. Span Flow Rate (0.3 m/s)	0 to Max. Span Flow Rate (10 m/s)
1100	0 to 1,026.4 m ³ /h	0 to 34,211 m ³ /h
1200	0 to 1,221.5	0 to 40,715
1350	0 to 1,545.9	0 to 51,529
1500	0 to 1,908.6	0 to 63,617
1600	0 to 2,171.5	0 to 72,382
1800	0 to 2,748.3	0 to 91,608
2000	0 to 3,393	0 to 113,097
2200	0 to 4,106	0 to 136,847
2400	0 to 4,886	0 to 162,860
2600	0 to 5,735	0 to 191,134

T11-1.EPS

Size (in.)	0 to Min. Span Flow Rate (1.0ft/s)	0 to Max. Span Flow Rate (33ft/s)
44	0 to 4,665 GPM	0 to 155,489 GPM
48	0 to 5,552	0 to 185,045
54	0 to 7,026	0 to 234,197
60	0 to 8,674	0 to 289,133
64	0 to 9,870	0 to 328,969
72	0 to 12,491	0 to 416,351
80	0 to 15,421	0 to 514,014
88	0 to 18,659	0 to 621,957
96	0 to 22,206	0 to 740,181
104	0 to 26,061	0 to 868,684

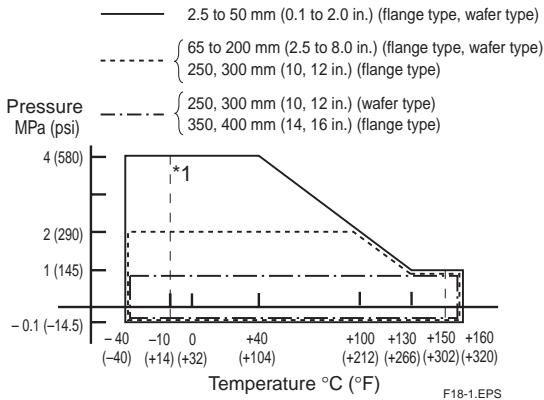
T24-1.EPS

Fluid Temperature and Pressure:

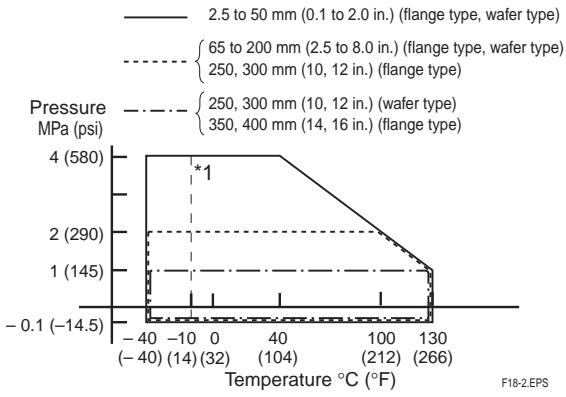
- Note *1 The following figures show maximum allowable fluid pressure for the flowtube itself. Further fluid pressure should also be limited according to flange rating.
- *2 For fluid temperature of the explosion proof type, refer to descriptions of "HAZARDOUS AREA CLASSIFICATION".

PFA Lining (*1)

General-Purpose Use, Submersible Type, Explosion proof Type, Remote Flowtube (electrode structure code 1: Non-replaceable electrode)

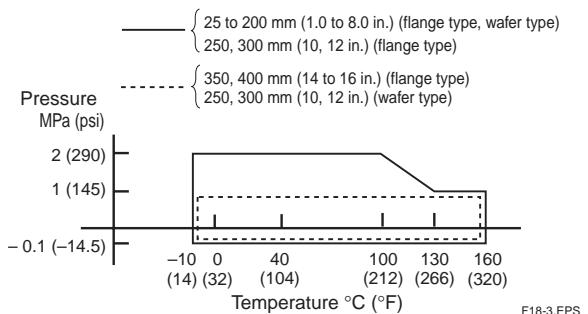


General-Purpose Use and Explosion proof Type, Integral Flowmeter (electrode structure code 1: Non-replaceable electrode)



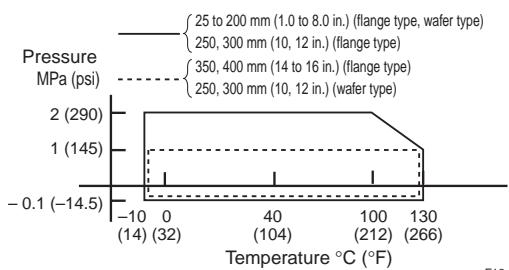
- *1: For lay length code 2 in wafer types of 25 mm (1.0 in.), and for wafer types of 32 mm to 300 mm (1.25 to 12 in.), and for carbon steel flange types (process connection code: C**) of 50 to 400 mm (2.0 to 16 in.) the minimum temperature is -10°C (+14°F).
- *2: For fluid temperature of the explosion proof type, refer to descriptions of "HAZARDOUS AREA CLASSIFICATION".

General-Purpose Use, Remote Flowtube (electrode structure code 2: replaceable electrode)



F18-3.EPS

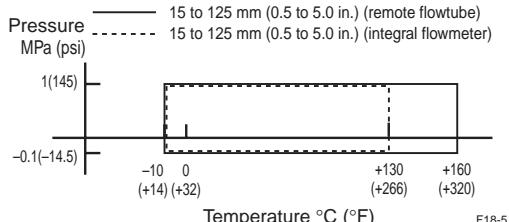
General-Purpose Use, Integral Flowmeter (electrode structure code 2: replaceable electrode)



F18-4.EPS

Note: For replaceable electrodes for fluid temperatures of 10°C (50°F) or less, please contact Yokogawa office.

Sanitary Type (electrode structure code 1: Non-replaceable electrode)

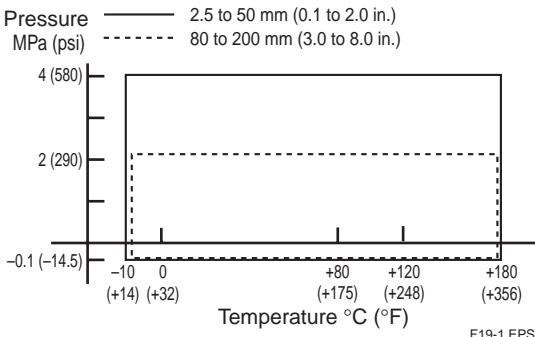


F18-5.EPS

Note: In case of 120 to 160°C (248 to 320°F) of fluid temperature, please select optional code GH.

Ceramics Lining

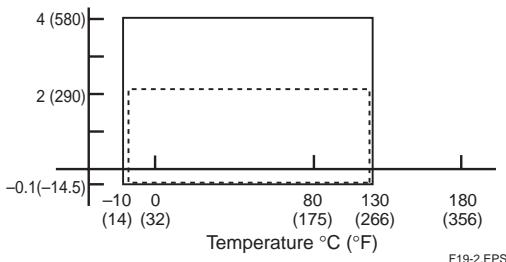
General-Purpose Use and Explosion proof Type, Remote Flowtube (electrode structure code 1: Non-replaceable electrode)



F19-1.EPS

**General-Purpose Use and Explosion proof Type,
Integral flowmeter (electrode structure code 1: Non-replaceable electrode)**

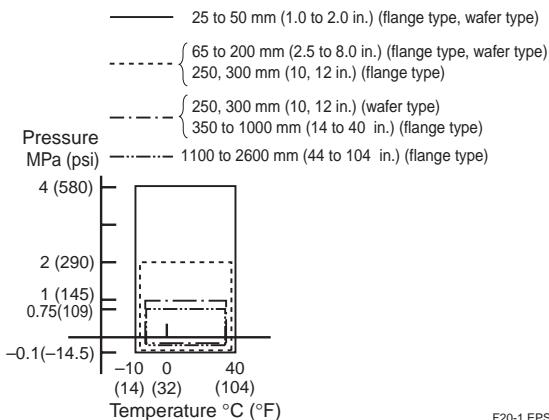
Pressure
MPa (psi)
—— 2.5 to 50 mm (0.1 to 2.0 in.)
----- 80 to 200 mm (3.0 to 8.0 in.)



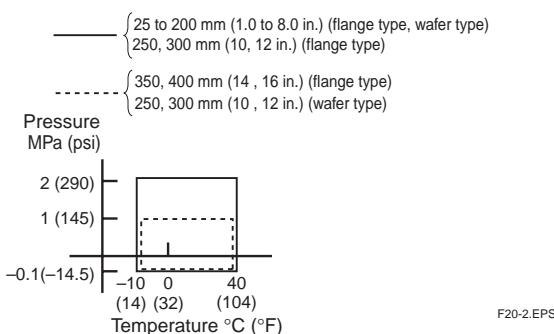
*1: For fluid temperature of the explosion proof type, refer to descriptions of "HAZARDOUS AREA CLASSIFICATION".

Polyurethane Rubber Lining

**General-Purpose Use and Submersible Type,
Remote Flowtube (electrode structure code 1: Non-replaceable electrode)**

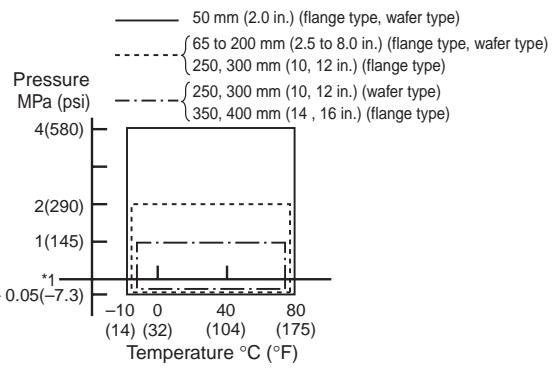


General-Purpose Use, Integral Flowmeter (electrode structure code 2: replaceable electrode)



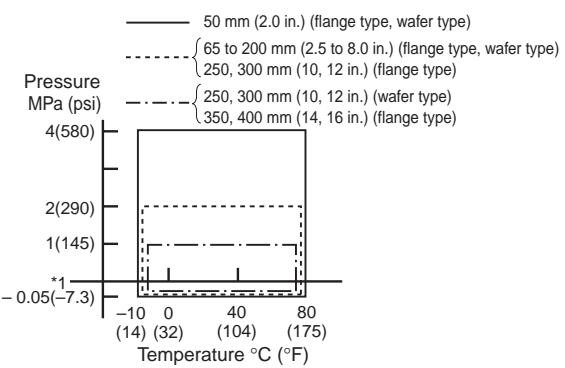
Natural Soft Rubber Lining

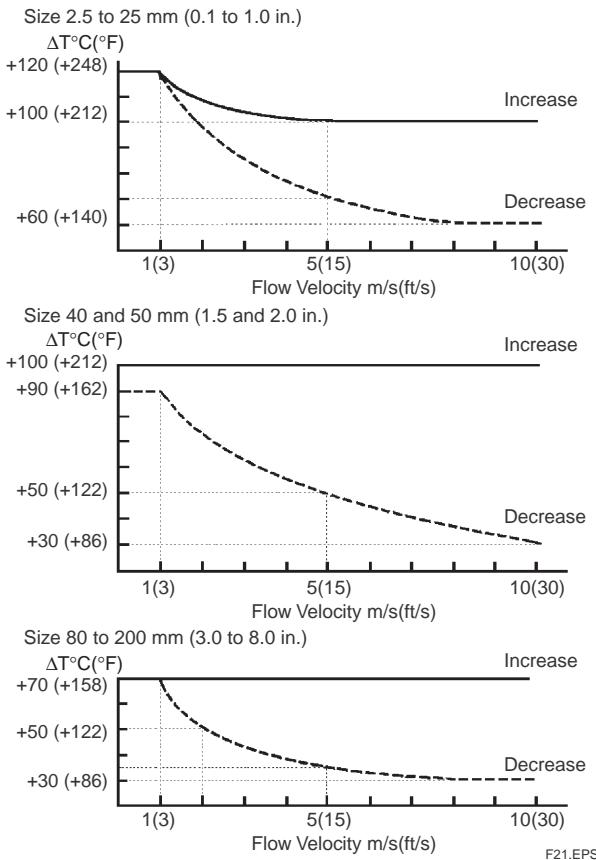
**General-Purpose Use and Submersible Type,
Remote Flowtube (electrode structure code 1: Non-replaceable electrode)**



EPDM Rubber Lining

**General-Purpose Use and Submersible Type,
Remote Flowtube (electrode structure code 1: Non-replaceable electrode)**



Reasonable Figure for Thermal Shock of Ceramics Lining:

"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 Sanitary Type Linings

Steam or hot water cleaning: Max.temp.= +150 °C (+302°F), time= 60 minutes or less

Vibration Conditions:

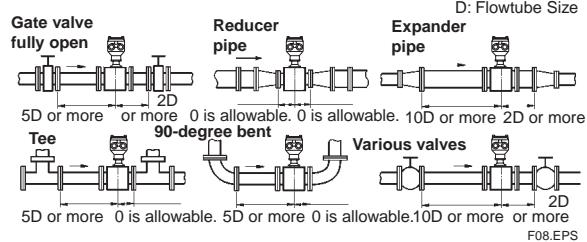
Level of vibration in conformity with IEC 60068-2-6 (SAMA 31.1-1980)

- Integral Flowmeter: 1 G or less (frequency 500 Hz or less)
- Remote Flowtube (size 2.5 to 400 mm (0.1 to 16 in.)): 2 G or less (frequency 500 Hz or less)

Note: Avoid locations with much vibration (where the pipe vibration frequency is 500 Hz or more), which may cause damage to the equipment.

■ CAUTIONS FOR INSTALLATION**Mounting of Flowmeters and Required Lengths of Straight Runs**

(See JIS B7554 "Electromagnetic flowmeters.")

**Required straight runs**

- *1: Do not install anything in the vicinity that may interfere with the magnetic field, induced signal voltages, or flow velocity distributions of the flowmeter.
- *2: 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 straight run of 2D to 3D on the downstream side.
- *3: Highly recommend to mount valves on the downstream side so that deviated flows do not occur in the flowtube and to avoid startup from an empty condition.

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) to ensure the proper mixture of fluids.

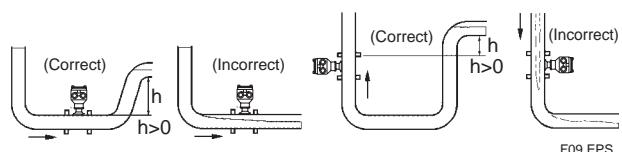
Mounting Positions

- 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 flowtube 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.

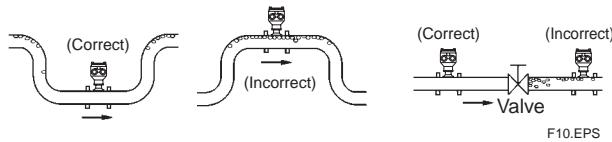
**Mounting Positions**

- Avoid 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 flowtube.

If a valve exists near the flowtube, try to mount the flowtube 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.



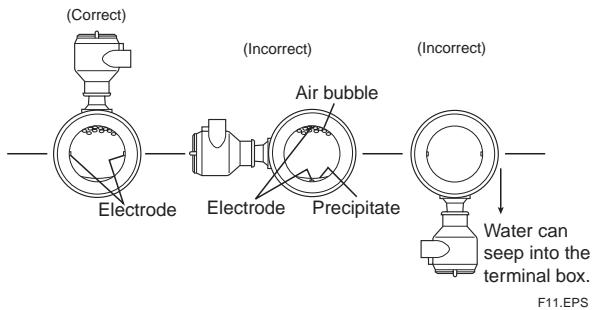
Avoiding Air Bubbles

F10.EPS

• 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 flowtube and converter of an integral flowmeter are mounted above the piping to prevent water from entering them.



Mounting Orientation

F11.EPS

■ INNER DIAMETER OF GROUNDING RING

Unit: mm (in.)

	AXF Standard		Replacement Model for earlier ADMAG or ADMAG AE
Lining Size	PFA /Polyurethane Rubber/Natural Soft Rubber/ EPDM Rubber	Ceramics	PFA /Polyurethane Rubber
2.5 (0.1)	15 (0.59)*1	—	15 (0.59)
5 (0.2)	15 (0.59)*1	—	15 (0.59)
10 (0.4)	15 (0.59)*1	—	15 (0.59)
15 (0.5)	15 (0.59)	15 (0.59)	15 (0.59)
25 (1.0)	28 (1.10)	27 (1.06)	27 (1.06)
32 (1.25)	34 (1.34)	—	—
40 (1.5)	41 (1.61)	40 (1.57)	40 (1.57)
50 (2.0)	53 (2.09)	52 (2.05)	52 (2.05)
65 (2.5)	66 (2.60)	—	—
80 (3.0)	77 (3.03)	81 (3.19)	81 (3.19)
100 (4.0)	102 (4.02)	98 (3.86)	98 (3.86)
125 (5.0)	128 (5.04)	—	—
150 (6.0)	146.1 (5.75)	144 (5.67)	140.7 (5.6)
200 (8.0)	193.6 (7.62)	192 (7.56)	188.9 (7.5)
250 (10)	Wafer: 243.7 (9.60) Flange: 243 (9.57)	—	243 (9.57)
300 (12)	Wafer: 294.7 (11.60) Flange: 291.3 (11.47)	—	—
350 (14)	Flange: 323.4 (12.73)	—	—
400 (16)	Flange: 373.5 (14.70)	—	—

T25.EPS

*1: The I.D. of the process connection code: DD4, DJ1, DJ2 is 12 mm (0.47 in.)

Note: Please ensure that the I.D. of the gasket does not protrude into the I.D. of the grounding ring.
(This dimension is also applied to when no grounding ring is used).

If the I.D. of the gasket is too large, however, fluid leakage may result.

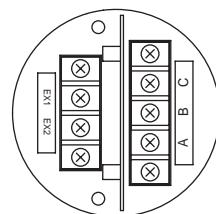
Size	AXF Standard	
	Lining	Polyurethane Rubber
500 (20)	468 (18.42)	[485 (19.09)]*1
600 (24)	563 (22.16)	[589 (23.18)]*1
700 (28)	665 (26.18)	[689 (27.12)]*1
800 (32)	765 (30.11)	[788 (31.02)]*1
900 (36)	855 (33.66)	[888 (34.96)]*1
1000 (40)	942 (37.08)	[990 (38.97)]*1
1100 (44)	1085 (42.71)	
1200 (48)	1185 (46.65)	
1350 (54)	1335 (52.55)	
1500 (60)	1485 (58.46)	
1600 (64)	1585 (62.40)	
1800 (72)	1785 (70.27)	
2000 (80)	1985 (78.14)	
2200 (88)	2185 (86.02)	
2400 (96)	2385 (93.89)	
2600 (104)	2585 (101.77)	

*1: Values in brackets [] indicate a process connection code CG1.

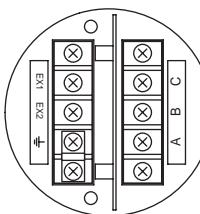
T16-2.EPS

● Remote Flowtube

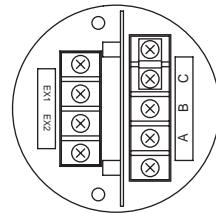
Terminal configuration



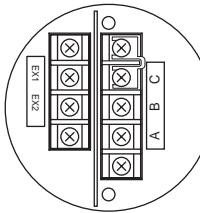
size 2.5 to 400 mm (0.1 to 16 in.)



(Only for Explosion proof type)



size 500 to 1000 mm (20 to 40 in.)



size 1100 to 2600 mm (44 to 104 in.)

Terminal wiring

Terminal Symbols	Description
A	Flow signal output
B	
C	
EX1	Excitation current input
EX2	
\pm	Functional grounding (Only for explosion proof type)
\ominus	Protective grounding (Outside of the terminal)

F42.EPS

Note: When submersible type or option code DHC is selected, waterproof glands and a 30m long cable are attached.

● Recommended Excitation, Power and Output Cable:

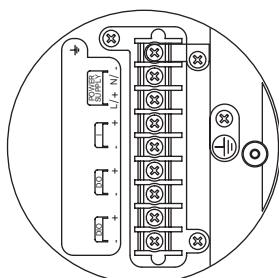
Use polyvinyl chloride insulated and sheathed portable power cables (JIS C3312) or equivalents.

- Outer Diameter: 6.5 to 12 mm (0.26 to 0.47 in.)
10.5 or 11.5 mm (0.41 to 0.45 in.) for optional code EG, EU and EW.
6 to 12 mm (0.24 to 0.47 in.) for optional code EP.
- Nominal Cross section (single wire): 0.5 to 2.5 mm²
- Nominal Cross section (standard wire): 0.5 to 1.5 mm²

■ TERMINAL CONFIGURATION AND TERMINAL WIRING

● Integral Flowmeter “◇”

Terminal configuration



Terminal wiring

Terminal Symbols	Description
\pm	Functional grounding
N/-L+	Power supply
I ⁺ -I ⁻	Current output 4 to 20mA DC
DO ⁺ -DO ⁻	Pulse output/Alarm output/ Status output
DIO ⁺ -DIO ⁻	Alarm output/Status output/ Status input
\ominus	Protective grounding (Outside of the terminal)

F41.EPS

■ MODEL AND SUFFIX CODE

AXF STANDARD (Wafer Type)

General-purpose Use/Submersible Type/Explosion proof Type, PFA/Polyurethane Rubber/Natural Soft Rubber/EPDM Rubber Lining

Model	Suffix Code	Description	Applicable Model	
AXF002		Size 2.5 mm (0.1 in.) Integral Flowmeter/Remote Flowtube		
AXF005		Size 5 mm (0.2 in.) Integral Flowmeter/Remote Flowtube		
AXF010		Size 10 mm (0.4 in.) Integral Flowmeter/Remote Flowtube		
AXF015		Size 15 mm (0.5 in.) Integral Flowmeter/Remote Flowtube		
AXF025		Size 25 mm (1.0 in.) Integral Flowmeter/Remote Flowtube		
AXF032		Size 32 mm (1.25 in.) Integral Flowmeter/Remote Flowtube		
AXF040		Size 40 mm (1.5 in.) Integral Flowmeter/Remote Flowtube		
AXF050		Size 50 mm (2.0 in.) Integral Flowmeter/Remote Flowtube		
AXF065		Size 65 mm (2.5 in.) Integral Flowmeter/Remote Flowtube		
AXF080		Size 80 mm (3.0 in.) Integral Flowmeter/Remote Flowtube		
AXF100		Size 100 mm (4.0 in.) Integral Flowmeter/Remote Flowtube		
AXF125		Size 125 mm (5.0 in.) Integral Flowmeter/Remote Flowtube		
AXF150		Size 150 mm (6.0 in.) Integral Flowmeter/Remote Flowtube		
AXF200		Size 200 mm (8.0 in.) Integral Flowmeter/Remote Flowtube		
AXF250		Size 250 mm (10 in.) Integral Flowmeter/Remote Flowtube		
AXF300		Size 300 mm (12 in.) Integral Flowmeter/Remote Flowtube		
Use	G	General-Purpose Use		
	W	Submersible Type	Size 15 mm (0.5 in.) to 300 mm (12 in.) Remote Flowtube only	
	C	Explosion proof Type (*5)	PFA lining only	
Converter Output Signal and Communication	-D	Integral Flowmeter with 4 to 20mA DC Output and BRAIN Communication		
	-E	Integral Flowmeter with 4 to 20 mA DC Output and HART Communication		
	-F	Integral Flowmeter with Digital communication (FOUNDATION Fieldbus protocol) (*9)		
	-N	Remote Flowtube for Combined Use with AXFA11		
	-P	Remote Flowtube for Combined Use with AXFA14		
Power Supply	1	Integral Flowmeter, 100 V to 240 V AC or 100 to 120 V DC		
	2	Integral Flowmeter, 24V AC/DC		
	N	Remote Flowtube		
Lining (*8)	A	Fluorocarbon PFA	Size 25 mm (1.0 in.) to 300 mm (12 in.)	
	U	Polyurethane Rubber	Size 50 mm (2.0 in.) to 300 mm (12 in.)	
	D	Natural Soft Rubber	Size 50 mm (2.0 in.) to 300 mm (12 in.)	
	G	EPDM Rubber		
Electrode Material (*8)	L	JIS SUS316L (AISI 316L SS/EN 1.4404 Equivalent)	PFA lining only	
	P	Platinum-iridium		
	H	Hastelloy C276 Equivalent		
	T	Tantalum	PFA lining only	
	V	Titanium		
	W	Tungsten Carbide	PFA/Polyurethane Rubber lining only	
Electrode Structure	1	Non-replaceable		
	2	Replaceable	General-Purpose use, Size 25 mm (1.0 in.) to 300 mm (12 in.), PFA/Polyurethane Rubber lining only	
			Electrode Material: JIS SUS316L only	
Grounding Ring and Grounding Electrode Material (*8)	N	None		
	S	JIS SUS316 (AISI 316 SS/EN 1.4401 Equivalent)		
	L	JIS SUS316L (AISI 316L SS/EN 1.4404 Equivalent)		
	P	Platinum-iridium	Size 2.5 mm (0.1 in.) to 200 mm (8.0 in.), PFA lining only	
	H	Hastelloy C276 Equivalent		
	T	Tantalum	Size 2.5 mm (0.1 in.) to 200 mm (8.0 in.), PFA lining only	
	V	Titanium		
Process Connection (*3)	-AA1	ANSI Class 150	Wafer (*1)	Size 2.5 mm (0.1 in.) to 300 mm (12 in.)
	-AA2	ANSI Class 300	Wafer (*1)	Size 2.5 mm (0.1 in.) to 200 mm (8.0 in.)
	-AD1	DIN PN 10	Wafer (*2)	Size 200 mm (8.0 in.) to 300 mm (12 in.)
	-AD2	DIN PN 16	Wafer (*2)	Size 65 mm (2.5 in.) to 300 mm (12 in.)
	-AD4	DIN PN 40	Wafer (*1)(*2)	Size 2.5 mm (0.1in.) to 50 mm (2.0 in.)
	-AJ1	JIS 10K	Wafer (*1)	Size 2.5 mm (0.1in.) to 300 mm (12 in.)
	-AJ2	JIS 20K	Wafer (*1)	Size 2.5 mm (0.1in.) to 200 mm (8.0 in.)
	-AG1	JIS F12 (JIS75M)	Wafer	Size 80 mm (3.0 in.) to 300 mm (12 in.)
Lay Length	1	Standard		
Electrical Connection (*6)	-0	JIS G1/2 female		
	-2	ANSI 1/2 NPT female	Not available for Submersible Type	
	-4	ISO M20×1.5 female	Not available for Submersible Type	
Indicator (*4)(*7)	1	Integral Flowmeter with indicator (Horizontal)		
	2	Integral Flowmeter with indicator (Vertical)		
	N	Integral Flowmeter without indicator /Remote Flowtube		
Calibration	B	Standard		
	C	High Grade	Size 25 mm (1.0 in.) to 200 mm (8.0 in.), PFA lining only	
		<input type="checkbox"/> Optional code (See the Table of Optional Specifications)		

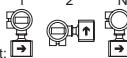
*1: For a wafer type of 2.5 to 10 mm (0.1 to 0.4 in.), prepare 15 mm (0.5 in.) diameter nominal flanges on the process pipe side.
(Process connection codes: AA1, AA2, AD4, AJ1, and AJ2)

T15.EPS

*2: Even when DIN PN10 or 16 is required for a model of size 2.5 to 50 mm (0.1 to 2.0 in.), select PN40 (Process connection code: AD4) because there is no difference in the dimensions of the mating faces.

Even when DIN PN10 is required for a model of size 65 to 150 mm (2.5 to 6.0 in.), select PN16 (Process connection code: AD2) because there is no difference in the dimensions of the mating faces.

*3: Mating dimensions are based on standards as follow:



ANSI/ASME B 16.5, DIN: DIN 2501, JIS: JIS B 2220 and JIS G 3451

*4: N shall be always selected for remote flowtubes

In the case of an integral flowmeter, select from among the figures at the right:



*5: For explosion proof types, specify types of explosion proof certification using the optional codes. In case of TIIS flameproof type, the remote flowtube is available only for combined use with the AXFA14. For the TIIS flameproof type with wiring using a flameproof packing adapter, select optional code G12 or G11. Available only for JIS G1/2 electrical connections.

*6: JIS G1/2 Female electrical connection is available only for TIIS flameproof type.

*7: In case of integral flowmeters of the TIIS flameproof type, select "with indicator"(code 1 or 2).

*8: △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.

*9: For FOUNDATION Fieldbus protocol, refer to GS 01E20F02-01E

AXF STANDARD (Flange Type) Size 500 mm (20 in.) to 2600 mm (104 in.)
General-purpose Use/Submersible Type, Polyurethane Rubber Lining

Model	Suffix Code	Description	Applicable Model
AXF500	.....	Size 500 mm (20 in.) Remote Flowtube	
AXF600	.....	Size 600 mm (24 in.) Remote Flowtube	
AXF700	.....	Size 700 mm (28 in.) Remote Flowtube	
AXF800	.....	Size 800 mm (32 in.) Remote Flowtube	
AXF900	.....	Size 900 mm (36 in.) Remote Flowtube	
AXF10L	.....	Size 1000 mm (40 in.) Remote Flowtube	
AXF11L	.....	Size 1100 mm (44 in.) Remote Flowtube	
AXF12L	.....	Size 1200 mm (48 in.) Remote Flowtube	
AXF13L	.....	Size 1350 mm (54 in.) Remote Flowtube	
AXF15L	.....	Size 1500 mm (60 in.) Remote Flowtube	
AXF16L	.....	Size 1600 mm (64 in.) Remote Flowtube	
AXF18L	.....	Size 1800 mm (72 in.) Remote Flowtube	
AXF20L	.....	Size 2000 mm (80 in.) Remote Flowtube	
AXF22L	.....	Size 2200 mm (88 in.) Remote Flowtube	
AXF24L	.....	Size 2400 mm (96 in.) Remote Flowtube	
AXF26L	.....	Size 2600 mm (104 in.) Remote Flowtube	
Use	G	General-Purpose Use	
	W	Submersible Type	
Converter	-N	Remote Flowtube for Combined Use with AXFA11	
Power Supply	| N	Remote Flowtube	
Lining (*4)	| U	Polyurethane Rubber	
Electrode Material (*4)	| L	JIS SUS316L(AISI 316L SS/EN 1.4404 Equivalent)	
Electrode Structure	| 1	Non-replaceable	
Grounding Ring material (*4)	| S	JIS SUS304 (AISI 304 SS/EN 1.4301 Equivalent) SS400 Carbon Steel lined with Stainless Steel SUS316	Size 500 mm (20 in.) to 1000 mm (40 in.) Size 1100 mm (44 in.) to 2600 mm (104 in.)
Process Connection (*1)	-CA1	ANSI Class 150 Flange (Carbon Steel) (*2)	Size 500 mm (20 in.), 600 mm (24 in.)
	-CD1	DIN PN10 Flange (Carbon Steel) (*2)	Size 500 mm (20 in.) to 1000 mm (40 in.)
	-CJ1	JIS 10K Flange (Carbon Steel) (*2)	Size 500 mm (20 in.) to 1000 mm (40 in.)
	-CG1	JIS F12 (JIS 75M) Flange (Carbon Steel) (*2)(*3)	Size 500 mm (20 in.) to 2600 mm (104 in.)
Lay Length	| 1	AXF Standard	
Electrical Connection	-0	JIS G1/2 female	
	-2	ANSI 1/2 NPT female	Size 500 mm (20 in.) to 1000 mm (40 in.), Not available for Submersible Type
	-4	ISO M20×1.5 female	Size 500 mm (20 in.) to 1000 mm (40 in.), Not available for Submersible Type
Indicator	| N	None	
Calibration	| B	Standard	
Options	/□	Optional code (See the Table of Optional Specifications)	

*1: Mating dimensions are based on standards as follows:

ANSI:ASME B 16.5, DIN: DIN 2501, JIS:JIS B 2220 and JIS G 3451

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*2: Carbon steel Flange Material: JIS SS400(EN S275 Equivalent)

*3: There are no differences in dimensions of mating faces between JIS F12(JIS 75M) and JIS 7.5K.

*4: △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.

AXF STANDARD (Clamp/Union/Butt Weld Connection)**Sanitary Type , PFA Lining**

Model	Suffix Code	Description	Applicable Model
AXF015	.....	Size 15 mm (0.5 in.), Integral Flowmeter/Remote Flowtube	
AXF025	.....	Size 25 mm (1.0 in.), Integral Flowmeter/Remote Flowtube	
AXF032	.....	Size 32 mm (1.25 in.), Integral Flowmeter/Remote Flowtube	
AXF040	.....	Size 40 mm (1.5 in.), Integral Flowmeter/Remote Flowtube	
AXF050	.....	Size 50 mm (2.0 in.), Integral Flowmeter/Remote Flowtube	
AXF065	.....	Size 65 mm (2.5 in.), Integral Flowmeter/Remote Flowtube	
AXF080	.....	Size 80 mm (3.0 in.), Integral Flowmeter/Remote Flowtube	
AXF100	.....	Size 100 mm (4.0 in.), Integral Flowmeter/Remote Flowtube	
AXF125	.....	Size 125 mm (5.0 in.), Integral Flowmeter/Remote Flowtube	
Use	H	Sanitary Type	
Converter Output Signal and Communication	-D	Integral Flowmeter with 4 to 20 mA DC Output and BRAIN Communication	
	-E	Integral Flowmeter with 4 to 20 mA DC Output and HART Communication	
	-F	Integral Flowmeter with Digital communication (FOUNDATION Fieldbus protocol) (*5)	
	-N	Remote Flowtube for Combined use with AXFA11	
	-P	Remote Flowtube for Combined use with AXFA14	
Power Supply	1	Integral Flowmeter, 100 V to 240 V AC or 100 to 120 V DC	
	2	Integral Flowmeter, 24 V AC/DC	
	N	Remote Flowtube	
Lining (*4)	A	Fluorocarbon PFA	
Electrode Material (*4)	L	JIS SUS316L (AISI 316L SS/EN 1.4404 Equivalent)	
Electrode Structure	1	Non-replaceable	
Grounding Ring	N	None	
Process Connection (*2) (*4)	-HAB	Tri-Clamp (3A), JIS SUS316L (AISI 316L SS/EN1.4404 Equivalent)(*1)	Size 15 mm (0.5 in.) to 100 mm (4.0in.), except 32 mm (1.25 in.)
	-HDB	DIN32676 Clamp, JIS SUS316L (AISI 316L SS/EN1.4404 Equivalent)	Size 15 mm (0.5 in.) to 125 mm (5.0 in.)
	-HKB	ISO2852/SMS3016 Clamp, JIS SUS316L (AISI 316L SS/ EN1.4404 Equivalent)	Size 15 mm (0.5 in.) to 125 mm (5.0 in.)
	-JDB	DIN11851 Union, SUS316L (AISI 316L SS/EN1.4404 Equivalent)	Size 15 mm (0.5 in.) to 125 mm (5.0 in.)
	-JKB	ISO2853 Union, SUS316L (AISI 316L SS/EN1.4404 Equivalent)	Size 15 mm (0.5 in.) to 100 mm (4.0 in.)
	-JSB	SMS1145 Union, SUS316L (AISI 316L SS/EN1.4404 Equivalent)	Size 25 mm (1.0 in.) to 100 mm (4.0 in.)
	-KDB	Butt Weld for DIN 11850 Pipe Connection (SUS316L [AISI 316L SS/EN1.4404 Equivalent])	Size 15 mm (0.5 in.) to 125 mm (5.0 in.)
	-KKB	Butt Weld for ISO 2037 Pipe Connection (SUS316L [AISI 316L SS/EN1.4404 Equivalent])	Size 15 mm (0.5 in.) to 125 mm (5.0 in.)
Lay Length	1	Standard	
Electrical Connection	-0	JIS G1/2 female	
	-2	ANSI 1/2 NPT female	
	-4	ISO M20×1.5 female	
Indicator (*3)	1	Integral Flowmeter with indicator (Horizontal)	
	2	Integral Flowmeter with indicator (Vertical)	
	N	Integral Flowmeter without indicator /Remote Flowtube	
Calibration	B	Standard	
	C	High Grade	Size 25 mm (1.0 in.) to 125 mm (5.0 in.)
	<input type="checkbox"/>	Optional code (See the Table of Optional Specifications)	

*1: For a tri-clamp type of size15 mm (0.5 in.)(Process connection code: HAB), prepare a 3/4 in. tri-clamp on the process pipe side.

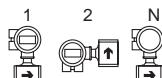
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*2: The detail dimensions of process connections (clamp/union/butt weld) are shown in the 'EXTERNAL DIMENSIONS' section of the sanitary type.

In case of Butt Weld type, ferrules, sleeves, or alternative must be provided by the user. User need to weld these parts to the butt weld adapter.

*3: N shall be always selected for remote flowtubes.

In the case of an integral flowmeter, select from among the following figures.



*4: △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.

*5: For FOUNDATION Fieldbus protocol, refer to GS 01E20F02-01E

■ OPTIONAL SPECIFICATIONS FOR FLOWTUBES

● Table of Optional Specifications (Size 2.5 mm (0.1 in.) to 400 mm (16 in.)) “◇”

○: Available -: Not available

Item	Specifications	Applicable Model								Code			
		General		Explosion proof		Submersible		Sanitary					
		Integral Flowmeter	Remote Flowtube	Integral Flowmeter	Remote Flowtube	Remote Flowtube	Integral Flowmeter	Integral Flowmeter	Remote Flowtube				
		AXF***G-D	AXF***G-E	AXF***G-N	AXF***G-P	AXF***C-D	AXF***C-E	AXF***C-N	AXF***W-N	AXF***H-D	AXF***H-E	AXF***H-N	AXF***H-P
For District Heating and Cooling or Condensation-proof	Urethane resin potting is applied in the terminal box of a remote flowtube. Select JIS G1/2 for the electrical connections. 30-m signal and excitation cables are pre-wired and waterproof gramps with union joints are attached at factory.	-	○	-	-	-	-	-	-	○	DHC		
User-specified Signal and Excitation Cable Length	Available for the submersible type and a model with optional code DHC. The cable length is limited up to 200 meters when combined with an AXFA11 converter, or 100 meters when combined with an AXFA14 converter. Following "L" specify the cable length in three digits as a multiple of 1 meter (e.g., 001, 002, or 005) for a length up to 5 m, or as a multiple of 5 meters (i.e., 005, 010, 015, or the like) for a length of 5 meters or more. If this optional code is not selected, a 30m long cable is attached.	-	○	-	-	○	-	-	○	L***			
Lightning Protector	A lightning protector is built into the power terminals.	○	-	○	-	-	○	-	-	A			
DC Noise Cut Circuit	The DC Noise Cut Circuit is built in. Available for 15 mm (0.5 in.) and larger sizes, and for fluids with the conductivity of 50 μ S/cm or higher. Nullifies the empty check and electrode adhesion diagnostic function.	○	-	○	-	-	○	-	-	ELC			
Burn Out Down	The output level is set to 0 mA during a CPU failure and is set 2.4 mA (-10 %) or less during an alarm. Standard products are delivered with a setting 25 mA during a CPU failure and 21.6 mA (110%) or more during an alarm.	○	-	○	-	-	○	-	-	C1			
NAMUR NE43 Compliance	Output signal limits: 3.8 to 20.5 mA	Failure alarm down-scale: The output level is set to 0 mA during a CPU failure and is set 2.4 mA (-10%) or less during an alarm.	○	-	○	-	-	○	-	C2			
		Failure alarm up-scale: The output level is set to 25 mA during a CPU failure and is set 21.6 mA (110%) or more during an alarm.	○	-	○	-	-	○	-	C3			
Active Pulse Output	Active pulses are output in order to drive an external electromagnetic or electronic counter directly using the converter's internal power supply. (Nullifies the standard transistor contact pulse output.) Output voltage: 24 V DC \pm 20% Pulse specifications: <ul style="list-style-type: none">• The drive current of 30 to 150 mA• Pulse rate: 0.0001 to 2 pps (pulse/second); Pulse width: 20, 33, 50, or 100 ms	○	-	○	-	-	○	-	-	EM			
Mass Unit Setting	The flow rate span, transmission pulse weight, and totalizer display pulse weight can be set in terms of mass unit. Specify the density of the process fluid when ordering in addition to the mass flow rate span, transmission pulse weight (for mass unit), and totalizer display pulse weight (for mass unit). When ordering a remote flowtube, parameters for 'Mass Unit Setting' will be set in the corresponding converter before shipment. 1. Density <ul style="list-style-type: none">a. Available density Numerics: Specify the numeric within the value of 0.0001 to 32000. And it can be up to five digits, to a maximum of 32000 ignoring the decimal point. A fraction is limited to the fourth decimal place.b. Available density units: kg/m³, lb/gal, lb/cf Example: A water density is about 1000kg/m³. In this case specify "1000kg/m³". However a density is changed by temperature. Specify the actual density. (The 1000kg/m³ is equivalent to 8.345lb/gal and 62.43lb/cf.) 2. The mass flow rate span, transmission pulse weight, and totalizer display pulse weight <ul style="list-style-type: none">a. Available density Numerics: Specify the numeric within the value of 0.0001 to 32000. And it can be up to five digits, to a maximum of 32000 ignoring the decimal point. A fraction is limited to the fourth decimal place.b. Mass Units Available mass units: t, kg, g, klb, lb Available time units: /d, /h, /min, /s Note1: In case of specifying the mass flow span, calculate the volumetric flow span by the setting density, and specify the available value in the mass flow span. Note2: In case of transmission pulse weight and totalizer display pulse weight, specify the mass unit which was specified as the flow unit.	○	○	○	○	○	○	○	○	MU			

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● Table of Optional Specifications (Size 2.5 mm (0.1 in.) to 400 mm (16 in.)) (continued)

Item	Specifications	Applicable Model							Code
		General		Explosion proof		Submersible		Sanitary	
		Integral Flowmeter	Remote Flowtube	Integral Flowmeter	Remote Flowtube	Remote Flowtube	Integral Flowmeter	Remote Flowtube	
		AXF***G-D AXF***G-E	AXF***G-N AXF***G-P	AXF***C-D AXF***C-E	AXF***C-N AXF***C-P	AXF***W-N AXF***W-P	AXF***H-D AXF***H-E	AXF***H-N AXF***H-P	
G3/4 Female Waterproof Glands	Waterproof glands for G3/4 conduits or flexible tubes are attached to the electrical connections. Available only for JIS G1/2 electric connections.	—	○	—	—	—	—	○	EW
Waterproof Glands	Waterproof glands are attached to the electrical connections. Available only for JIS G1/2 electric connections.	○	○	—	—	—	○	○	EG
Waterproof Glands with Union Joints	Waterproof glands with union joints are attached to the electrical connections. Available only for JIS G1/2 electric connections.	○	○	—	—	—	○	○	EU
Plastic Glands	Plastic glands are attached to the electrical connections. Available only for JIS G1/2 electric connections.	○	○	—	—	—	○	○	EP
Mirror Finished PFA Lining	Mirror finishing on the PFA lining inside of the tube to the smoothness lying. Available for 15 mm (0.5 in.) and larger sizes. The Ra is average of measured values on several point. Size 15 to 200 mm (0.5 to 8.0 in.) : Ra 0.05 to 0.15 μm Size 250 to 400 mm (10 to 16 in.) : Ra 0.05 to 0.25 μm	○	○	○	○	○	○	○	PM
Mirror Finished Ceramics	Mirror finishing on the inside of the ceramics tube to Rmax ≤ 1 μm. Available for 5 mm (0.2 in.) and larger sizes.	○	○	○	○	—	—	—	CM
Stainless Steel Tag Plate	A pendant tag plate of JIS SUS304 (AISI 304 SS/EN 1.4301 equivalent) is provided. Choose this option when a pendant tag plate is required in addition to the standard nameplate with the tag number inscribed on it. Dimension (Height × Width): Appr. 12.5 (4.92) × 40 (15.7) mm (inch)	○	○	○	○	○	○	○	SCT
Direction change of the electrical connection (*1)	+90 degrees rotated converter (or terminal box) to change the direction of the electrical connection.	○	○	○	○	○	○	○	RA
	+180 degrees rotated converter (or terminal box) to change the direction of the electrical connection.	○	○	○	○	○	○	○	RB
	-90 degrees rotated converter (or terminal box) to change the direction of the electrical connection.	○	○	○	○	○	○	○	RC
Bolts, Nuts, and Gaskets (*2)	Bolts, nuts, and gaskets are provided for wafer connections.	○	○	○	○	○	—	—	BCC
	Available only for ANSI 150, JIS10K, or, JIS20K wafer connections.	○	○	○	○	○	—	—	BCF
	Bolts: JIS SUS304 (AISI 304 SS stainless steel equivalent); Nuts: JIS SUS403 (AISI 403SS stainless steel equivalent); Gaskets: Chloroprene rubber	○	○	○	○	○	—	—	BSC
	Bolts: JIS SUS304 (AISI 304 SS stainless steel equivalent); Nuts: JIS SUS403 (AISI 403SS stainless steel equivalent); Gaskets: PTFE-sheathed non-asbestos	○	○	○	○	○	—	—	BSF
	Viton® gaskets for use with a PFA or ceramics lining with PVC piping. Valqua #4010, special fluororubber not mixed. Available for 2.5 mm (0.1 in.) to 200 mm (8.0 in.) of PFA lining or 15 to 200 mm (0.5 to 8 in.) sizes of ceramics lining.	○	○	○	○	○	—	—	GA
Special Gaskets (*3)	Acid-resistant Viton® gaskets for use with a PFA or ceramics lining with PVC piping. Valqua #4010, special fluororubber mixed (mixing #RCD470). Available for 2.5 mm (0.1 in.) to 200 mm (8.0 in.) of PFA lining or 15 to 200 mm (0.5 to 8 in.) sizes of ceramics lining.	○	○	○	○	○	—	—	GC
	Alkali-resistant Viton® gaskets for use with a PFA or ceramics lining with PVC piping. Valqua #4010, special fluororubber mixed (mixing #RCD970). Available for 2.5 mm (0.1 in.) to 200 mm (8.0 in.) of PFA lining or 15 to 200 mm (0.5 to 8 in.) sizes of ceramics lining.	○	○	○	○	○	—	—	GD
	Alkali-resistant carbonized fluororesin gaskets for use with a ceramics lining with metal piping. Valqua #7026.	○	○	○	○	—	—	—	GF
	Silicon rubber gaskets for Sanitary Type, provided between the lining and the adapter. For the condition of fluid temp. 120 to 160°C (248 to 320°F).	—	—	—	—	—	○	○	GH
	Oil-prohibited Use	Electrodes, linings, and grounding rings are assembled and packed with polyethylene after being cleaned with water and acetone and dried with air. The label 'OIL FREE' is affixed.	○	○	○	—	—	—	K1

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● Table of Optional Specifications (Size 2.5 mm (0.1 in.) to 400 mm (16 in.)) (continued)

Item	Specifications	Applicable Model								Code	
		General		Explosion proof		Submersible		Sanitary			
		Integral Flowmeter	Remote Flowtube	Integral Flowmeter	Remote Flowtube	Remote Flowtube	Integral Flowmeter	Integral Flowmeter	Remote Flowtube		
		AXF***G-D AXF***G-E	AXF***G-N AXF***G-P	AXF***C-D AXF***C-E	AXF***C-N AXF***C-P	AXF***W-N AXF***W-P	AXF***H-D AXF***H-E	AXF***H-N AXF***H-P	AXF***H-P		
Oil-prohibited Use with Dehydrating Treatment	Electrodes, linings, and grounding rings 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	
Painting Color Change	Coated in black (Munsell N1.5 or its equivalent.)	○	○	○	○	—	○	○	○	P1	
	Coated in jade green (Munsell 7.5 BG 4/1.5 or its equivalent.)	○	○	○	○	—	○	○	○	P2	
	Coated in metallic silver.	○	○	○	○	—	○	○	○	P7	
Epoxy Resin Coating	Epoxy resin coating which has alkali-resistance instead of standard polyurethane resin coating. The color is same as standard type.	○	○	○	○	—	—	—	—	X1	
High Anti-corrosion Coating	Three-layer coating (polyurethane coating on two-layer epoxy resin coating) in the same range as that for the standard coating. The color is same as standard type. Salt/alkali/acid/weather-resistance.	○	○	○	○	—	—	—	—	X2	
Material Certificate	Reproduced material certificates for : PFA/polyurethane: Pipe, electrodes, grounding rings/grounding electrodes, flanges or mini flanges, adapters (for sanitary type) Ceramics: only grounding rings or grounding electrodes	○	○	○	○	○	○	○	○	M01	
Hydrostatic Test	The test verifies the absence of leaks by applying the following water pressures (which are determined under process connection conditions) to linings for ten minutes. Test results are described in the Note column of a test certificate (QIC). Process Connection: Water Pressure: ANSI Class 150, DIN PN10, JIS 10K 1.5 MPa ANSI Class 300, DIN PN16, JIS 20K 3.0 MPa DIN PN40, Union joint (Ceramics lining) 6.0 MPa JIS F12 1.25 MPa	○	○	○	○	○	—	—	—	T01	
Calibration Certificate	Level 2: The Declaration and the Calibration Equipment List are issued.	○	○	○	○	○	○	○	○	L2	
	Level 3: The Declaration and the Primary Standard List are issued.	○	○	○	○	○	○	○	○	L3	
	Level 4: The Declaration and the Yokogawa Measuring Instruments Control System are issued.	○	○	○	○	○	○	○	○	L4	
Vent Hole	With a vent hole provided for permeable fluids (such as nitric acid, hydrofluoric acid, or sodium hydroxide at high temperature). Available only for a PFA lining flange type tube.	○	○	○	○	—	—	—	—	H	
Enhanced Dual Frequency Excitation (*4)	Available for 25 to 200 mm (1.0 to 8.0 in.) sizes. Products are delivered with the Standard dual frequency excitation mode and the Enhanced dual frequency excitation mode enabled. As flow calibration is not performed for optional code HF1 while in Enhanced dual frequency excitation. Excitation mode select optional code HF2 when an accurate flow measurement is required.	○	○	○	○	○	○	○	○	HF1	
	Available for 25 to 200 mm (1.0 to 8.0 in.) sizes. Products are delivered with the Standard dual frequency excitation mode and the Enhanced dual frequency excitation mode enabled. The meter factor for the Enhanced dual frequency excitation obtained by flow calibration is inscribed on the nameplate and set into the combined converter in addition to the meter factor for the Standard dual frequency excitation.	○	○	○	○	○	○	○	○	HF2	

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● Table of Optional Specifications (Size 2.5 mm (0.1 in.) to 400 mm (16 in.)) (continued)

Item	Specifications	Applicable Model								Code
		General		Explosion proof		Submersible		Sanitary		
		Integral Flowmeter	Remote Flowtube	Integral Flowmeter	Remote Flowtube	Remote Flowtube	Integral Flowmeter	Remote Flowtube		
		AXF***G-D AXF***G-E	AXF***G-N AXF***G-P	AXF***C-D AXF***C-E	AXF***C-N AXF***C-P	AXF***W-N AXF***W-P	AXF***H-D AXF***H-E	AXF***H-N AXF***H-P		
Five-point Calibration in User-specified Span	A flow test at 0, 25, 50, 75, and 100% of the user-specified span is performed instead of the flow test of the standard 2m/s span and a test certificate (QIC) is submitted. Specify the span (100% flow span) whose corresponding flow velocity lies between 0.5 to 10 m/s and that is less than the maximum line capacity. Selectable range of flow rate span is showing below. Size : mm Selectable range of flow rate span : m ³ /h (in.) (Flow rate span velocity : m/s) 2.5 (0.1) 0.009 (0.5) to 0.05 (2.83) 5 (0.2) 0.036 (0.5) to 0.2 (2.83) 10 (0.4) 0.15 (0.5) to 0.96 (3.40) 15 (0.5) 0.32 (0.5) to 2.8 (4.40) 25 (1) 0.89 (0.5) to 11 (6.22) 32 (1.25) 1.45 (0.5) to 8.9 (10.00) 40 (1.5) 2.27 (0.5) to 32 (7.07) 50 (2) 3.54 (0.5) to 56 (7.92) 65 (2.5) 5.98 (0.5) to 80 (6.70) 80 (3) 9.05 (0.5) to 126 (6.96) 100 (4) 14.2 (0.5) to 220 (7.78) 125 (5) 22.1 (0.5) to 300 (6.79) 150 (6) 31.9 (0.5) to 380 (5.97) 200 (8) 56.6 (0.5) to 670 (5.92) 250 (10) 88.4 (0.5) to 1000 (5.66) 300 (12) 128 (0.5) to 1200 (4.72) 350 (14) 174 (0.5) to 1200 (3.47) 400 (16) 227 (0.5) to 1350 (2.98)	○	○	○	○	○	○	SC		
FM Approval	FM Explosion proof See "HAZARDOUS AREA CLASSIFICATION"	-	-	○	○	-	-	-	-	FF1
CENELEC ATEX Certification (KEMA Approval)	ATEX Explosion proof See "HAZARDOUS AREA CLASSIFICATION"	-	-	○	○	-	-	-	-	KF2
CSA Certification	CSA Explosion proof See "HAZARDOUS AREA CLASSIFICATION"	-	-	○	○	-	-	-	-	CF1
IECEx Certification (*5)	IECEx Explosion proof See "HAZARDOUS AREA CLASSIFICATION"	-	-	○	-	-	-	-	-	SF2
TIIS Certification	TIIS Flameproof See "HAZARDOUS AREA CLASSIFICATION"	-	-	○	△ (*7)	-	-	-	-	JF3
Flameproof packing adapter for TIIS Flameproof Type (*6)	Two flameproof packing adapters	-	-	○	○	-	-	-	-	G12
	One flameproof packing adapter and one blind plug. Available for integral flowmeter and only when a four-wire cable is used for power input and signal output with a DC power supply.	-	-	○	-	-	-	-	-	G11

*1:	Standard	+ 90-degree rotation	+ 180-degree rotation	- 90-degree rotation
		Optional Code RA	Optional Code RB	Optional Code RC
Integral Flowmeter	Electrical Connection	Indicator	Indicator	Electrical Connection
Remote Flowtube		Electrical Connection		Electrical Connection

*2: When specifying the optional code BCC or BSC for a PFA or ceramics lining, it is advisable to specify the optional code GA, GC, or GD at the same time to prevent potential leakage caused by the difference in elasticity between the flowtube and chloroprene gaskets. Refer to description of "Gasket" in the "Wetted Part Material".

*3: Special gaskets are inserted between the flowtube and the grounding ring or grounding electrode.

*4: Enhanced dual frequency excitation is not available for models with calibration code C (High Grade Accuracy).

*5: Applicable only for Australia and New Zealand area.

*6: Select optional code G12 or G11 when TIIS Flameproof type with wiring using a flameproof packing adapter. Available only for JIS G1/2 electric connection.

*7: The TIIS flameproof type is only available for AXF***C-P (remote flowtube for combined use with AXFA14).

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● Table of Optional Specifications (Size 500 mm (20 in.) to 2600 mm (104 in.))

○: Available -: Not available

Item	Specifications	Applicable Model		Code
		General	Submersible	
For District Heating and Cooling or Condensation-proof	Urethane resin potting is applied in the terminal box of a remote flowtube. Select JIS G1/2 for the electrical connections. 30-m dedicated and excitation cables are pre-wired and waterproof glands with union joints are attached at factory.	<input type="radio"/>	-	DHC
User-specified Signal and Excitation Cable Length	Available for the submersible type and a model with optional code DHC. The cable length is limited up to 200 meters when combined with an AXFA11 converter. Following "L," specify the cable length in three digits as a multiple of 1 meter (e.g., 001, 002, or 005) for a length up to 5 meters, or as a multiple of 5 meters (i.e., 005, 010, 015, or the like) for a length of 5 meters or more. If this optional code is not selected, a 30m long cable is attached.	<input type="radio"/>	<input type="radio"/>	L***
Mass Unit Setting	<p>The flow rate span, transmission pulse weight, and totalizer display pulse weight can be set in terms of mass unit. Specify the density of the process fluid when ordering in addition to the mass flow rate span, transmission pulse weight (for mass unit), and totalizer display pulse weight (for mass unit).</p> <p>When ordering a remote flowtube, parameters for 'Mass Unit Setting' will be set in the corresponding converter before shipment.</p> <p>1. Density</p> <ul style="list-style-type: none"> a. Available density Numerics: Specify the numeric within the value of 0.0001 to 32000. And it can be up to five digits, to a maximum of 32000 ignoring the decimal point. A fraction is limited to the fourth decimal place. b. Available density units: kg/m³, lb/gal, lb/cf Example: A water density is about 1000kg/m³. In this case specify "1000kg/m³". However a density is changed by temperature. Specify the actual density. (The 1000kg/m³ is equivalent to 8.345lb/gal and 62.43lb/cf.) <p>2. The mass flow rate span, transmission pulse weight, and totalizer display pulse weight</p> <p>a. Available density Numerics: Specify the numeric within the value of 0.0001 to 32000. And it can be up to five digits, to a maximum of 32000 ignoring the decimal point. A fraction is limited to the fourth decimal place.</p> <p>b. Mass Units Available mass units: t, kg, g, klb, lb Available time units: /d, /h, /min, /s</p> <p>Note1: In case of specifying the mass flow span, calculate the volumetric flow span by the setting density, and specify the available value in the mass flow span.</p> <p>Note2: In case of transmission pulse weight and totalizer display pulse weight, specify the mass unit which was specified as the flow unit.</p>	<input type="radio"/>	<input type="radio"/>	MU
G3/4 Female Waterproof Glands	Waterproof glands for G3/4 conduits or flexible tubes are attached to the electrical connections. Available only for JIS G1/2 electric connections.	<input type="radio"/>	-	EW
Waterproof Glands	Waterproof glands are attached to the electrical connections. Available only for JIS G1/2 electric connections.	<input type="radio"/>	-	EG
Waterproof Glands with Union Joints	Waterproof glands with union joints are attached to the electrical connections. Available only for JIS G1/2 electric connections.	<input type="radio"/>	-	EU
Stainless Steel Tag Plate	Screwd JIS SUS304 (AISI 304 SS/EN 1.4301 stainless steel equivalent) stainless steel tag plate for size 1100 to 2600 mm, or a pendant tag plate of JIS SUS304 is provided for size 500 to 1000 mm. Choose this option when a SS tag plate is required in addition to the standard nameplate with the tag number inscribed on it. Dimension (Height × Width): Appr. 12.5 (4.92) × 40 (15.7) mm (inch)	<input type="radio"/>	<input type="radio"/>	SCT
Direction Change of Electrical Connection (*1)	+90 degrees rotated terminal box to change the direction of the electrical connection. Available for 1000 mm (40 in.) and smaller sizes.	<input type="radio"/>	<input type="radio"/>	RA
	+180 degrees rotated terminal box to change the direction of the electrical connection. Available for 1000 mm (40 in.) and smaller sizes.	<input type="radio"/>	<input type="radio"/>	RB
	-90 degrees rotated terminal box to change the direction of the electrical connection. Available for 1000 mm (40 in.) and smaller sizes.	<input type="radio"/>	<input type="radio"/>	RC
Material Certificate	Material certificates are provided for linings, electrodes, grounding rings, and flanges.	<input type="radio"/>	<input type="radio"/>	M01

*1:

Standard	+90-degree rotation	+180-degree rotation	-90-degree rotation
	Optional Code RA	Optional Code RB	Optional Code RC
Remote Flowtube			

T26-5.EPS

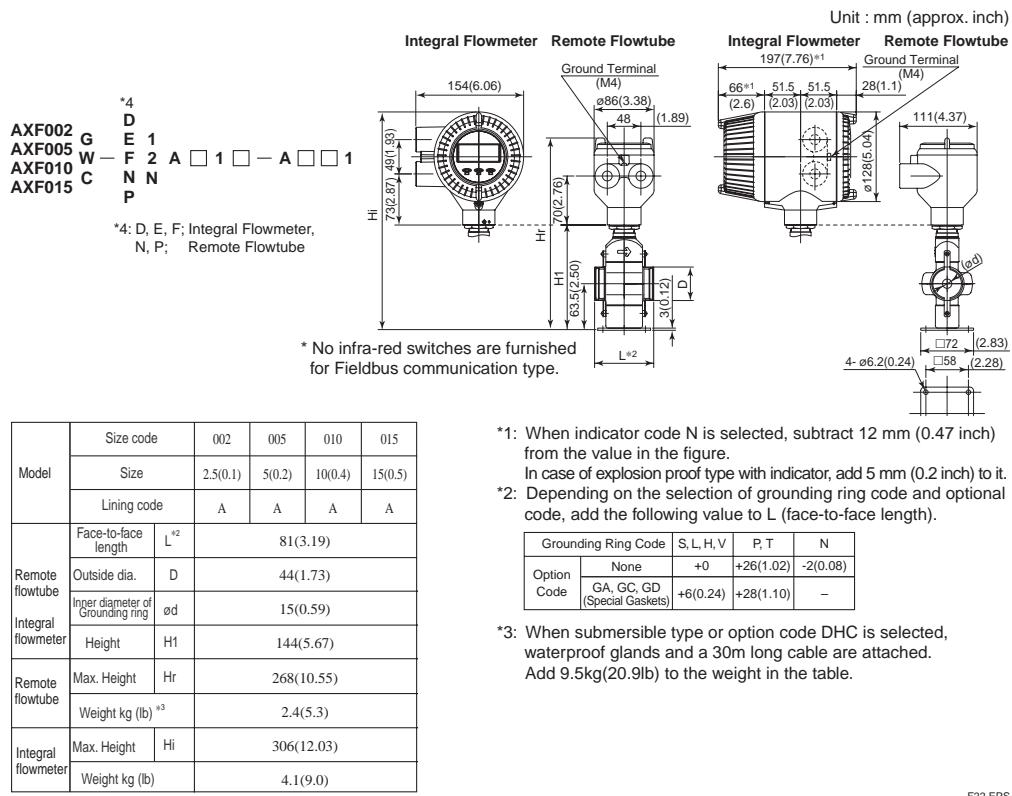
● Table of Optional Specifications (Size 500 mm (20 in.) to 2600 mm (104 in.)) (continued)

Item	Specifications	○: Available -: Not available		Code																																	
		Applicable Model																																			
		General	Submersible																																		
Hydrostatic Test	The test verifies the absence of leaks by applying the following water pressures (which are determined under process connection conditions) to lining for ten minutes. Test results are described in the Note column of a test certificate(QIC). Process Connection: JIS 10K, ANSI Class 150, DIN PN10 JIS F12 Water Pressure: 1.5 MPa 1.25 MPa	○	○	T01																																	
Calibration Certificate	Level 2: The Declaration and the Calibration Equipment List are issued.	○	○	L2																																	
	Level 3: The Declaration and the Primary Standard List are issued.	○	○	L3																																	
	Level 4: The Declaration and the Yokogawa Measuring Instruments Control System are issued.	○	○	L4																																	
Five-point Calibration in User-specified Span	A flow test at 0, 25, 50, 75, and 100% of the user-specified span is performed instead of the flow test of the standard 2m/s span and a test certificate (QIC) is submitted. Specify the span (100% flow span) whose corresponding flow velocity lies between 0.5 to 10 m/s and that is less than the maximum line capacity. Selectable range of flow rate span is showing below.																																				
<table> <thead> <tr> <th style="text-align:left;">Size : mm (in.)</th> <th style="text-align:left;">Selectable range of flow rate span : m³/h (Flow rate span velocity : m/s)</th> </tr> </thead> <tbody> <tr><td>500 (20)</td><td>354 (0.5) to 7068 (10.00)</td></tr> <tr><td>600 (24)</td><td>509 (0.5) to 8200 (8.06)</td></tr> <tr><td>700 (28)</td><td>693 (0.5) to 8200 (5.92)</td></tr> <tr><td>800 (32)</td><td>905 (0.5) to 8200 (4.53)</td></tr> <tr><td>900 (36)</td><td>1146 (0.5) to 8200 (3.58)</td></tr> <tr><td>1000 (40)</td><td>1414 (0.5) to 8200 (2.90)</td></tr> <tr><td>1100 (44)</td><td>1711 (0.5) to 8200 (2.40)</td></tr> <tr><td>1200 (48)</td><td>2036 (0.5) to 8200 (2.01)</td></tr> <tr><td>1350 (54)</td><td>2577 (0.5) to 41300 (8.01)</td></tr> <tr><td>1500 (60)</td><td>3181 (0.5) to 41300 (6.49)</td></tr> <tr><td>1600 (64)</td><td>3620 (0.5) to 41300 (5.71)</td></tr> <tr><td>1800 (72)</td><td>4581 (0.5) to 41300 (4.51)</td></tr> <tr><td>2000 (80)</td><td>5655 (0.5) to 41300 (3.65)</td></tr> <tr><td>2200 (88)</td><td>6843 (0.5) to 41300 (3.02)</td></tr> <tr><td>2400 (96)</td><td>8143 (0.5) to 41300 (2.54)</td></tr> <tr><td>2600 (104)</td><td>9557 (0.5) to 41300 (2.16)</td></tr> </tbody> </table>	Size : mm (in.)	Selectable range of flow rate span : m ³ /h (Flow rate span velocity : m/s)	500 (20)	354 (0.5) to 7068 (10.00)	600 (24)	509 (0.5) to 8200 (8.06)	700 (28)	693 (0.5) to 8200 (5.92)	800 (32)	905 (0.5) to 8200 (4.53)	900 (36)	1146 (0.5) to 8200 (3.58)	1000 (40)	1414 (0.5) to 8200 (2.90)	1100 (44)	1711 (0.5) to 8200 (2.40)	1200 (48)	2036 (0.5) to 8200 (2.01)	1350 (54)	2577 (0.5) to 41300 (8.01)	1500 (60)	3181 (0.5) to 41300 (6.49)	1600 (64)	3620 (0.5) to 41300 (5.71)	1800 (72)	4581 (0.5) to 41300 (4.51)	2000 (80)	5655 (0.5) to 41300 (3.65)	2200 (88)	6843 (0.5) to 41300 (3.02)	2400 (96)	8143 (0.5) to 41300 (2.54)	2600 (104)	9557 (0.5) to 41300 (2.16)			
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T26-6.EPS

■ EXTERNAL DIMENSIONS

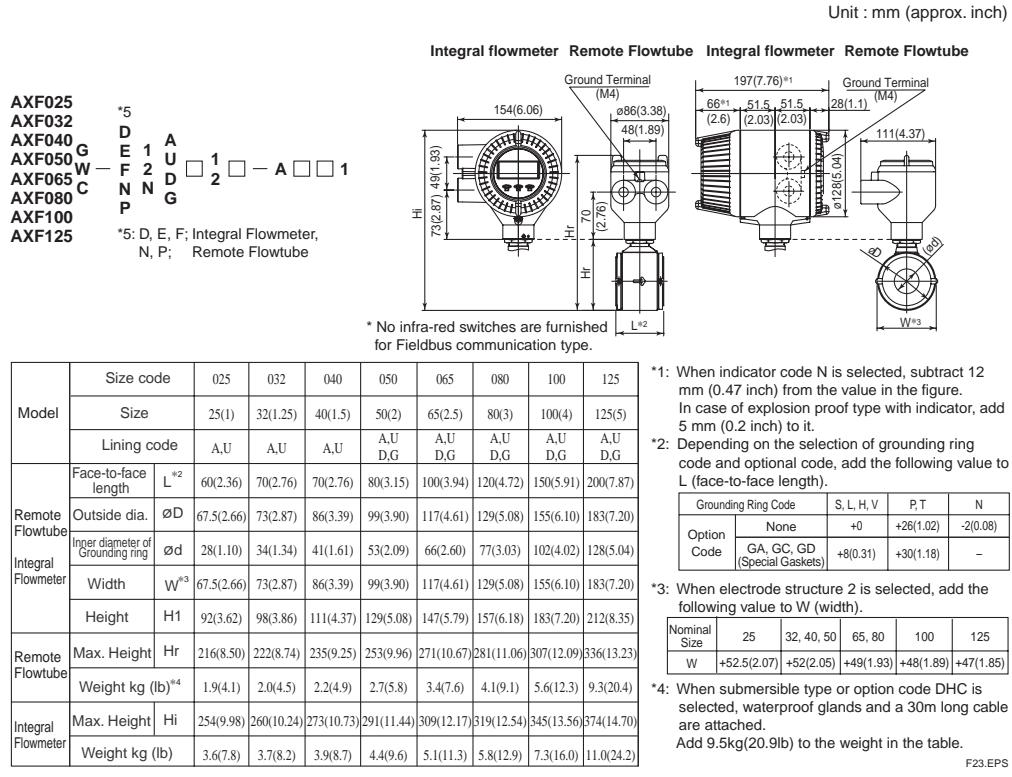
● AXF Standard, AXF002-AXF015, Wafer Type, PFA Lining



Model	Size code		002	005	010	015
	Size		2.5(0.1)	5(0.2)	10(0.4)	15(0.5)
	Lining code		A	A	A	A
Remote flowtube	Face-to-face length	L ^{*2}	81(3.19)			
Integral flowmeter	Outside dia.	D	44(1.73)			
Integral flowmeter	Inner diameter of Grounding ring	ød	15(0.59)			
Integral flowmeter	Height	H1	144(5.67)			
Remote flowtube	Max. Height	Hr	268(10.55)			
Integral flowmeter	Weight kg (lb) ^{*3}		2.4(5.3)			
Integral flowmeter	Max. Height	Hi	306(12.03)			
Integral flowmeter	Weight kg (lb)		4.1(9.0)			

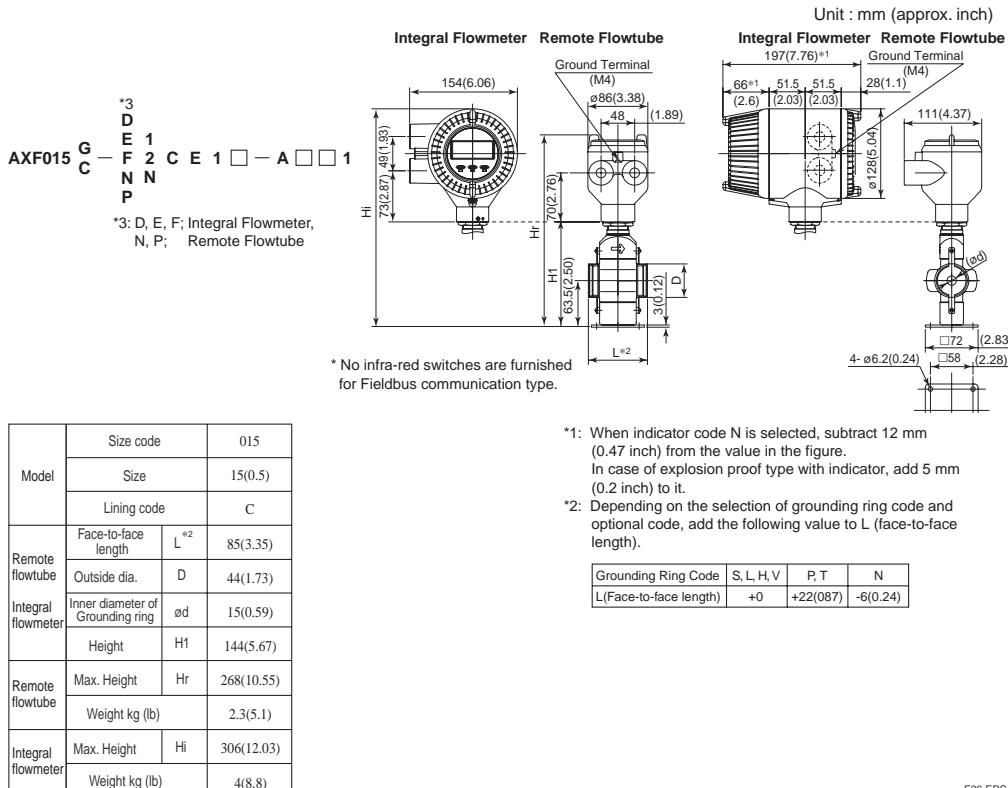
F22.EPS

● AXF Standard, AXF025-AXF125, Wafer Type, PFA /Polyurethane Rubber /Natural Soft Rubber /EPDM Rubber Lining

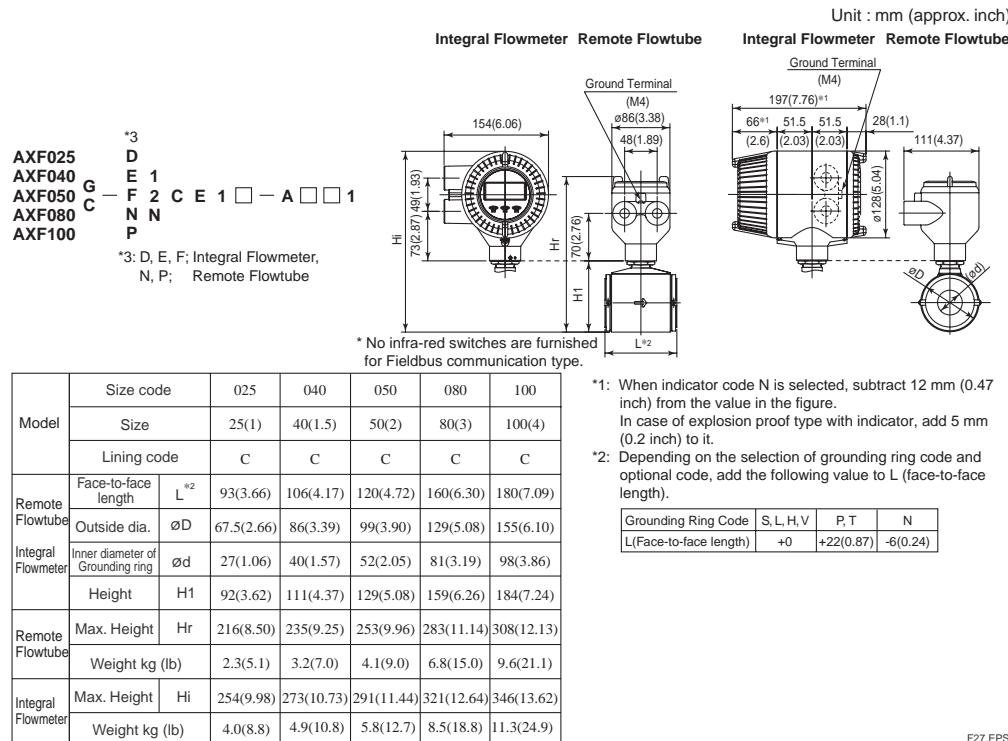


F23.EPS

● AXF Standard, AXF015, Wafer Type, Ceramics Lining



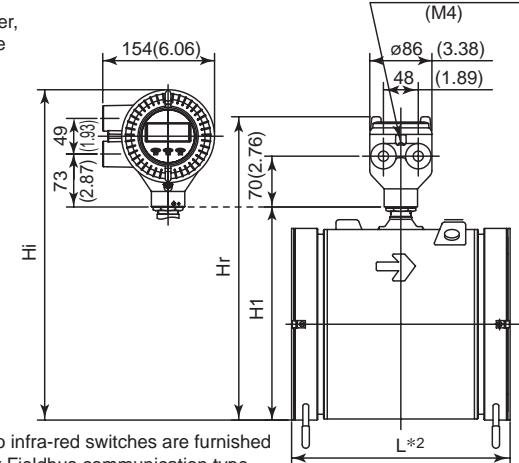
● AXF Standard, AXF025-AXF100, Wafer Type, Ceramics Lining



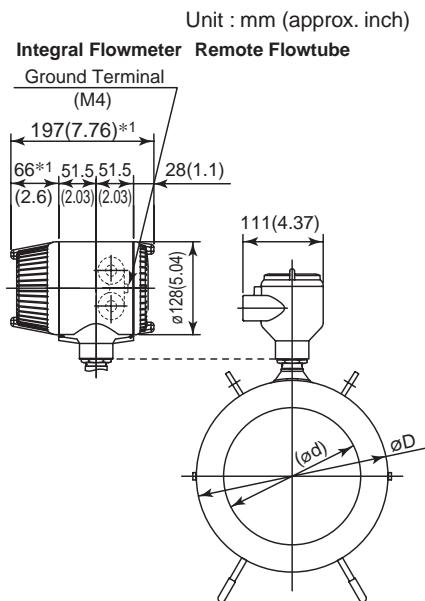
● AXF Standard, AXF150, AXF200, Wafer Type, Ceramics Lining

^{*3}
 D Integral Flowmeter
 E 1 Remote Flowtube
 AXF150 G — F 2 C E 1 □ — A □ □ 1
 AXF200 C — N N P

*3: D, E, F; Integral Flowmeter,
 N, P; Remote Flowtube



* No infra-red switches are furnished for Fieldbus communication type.



Model	Size code		150	200
	Size		150(6)	200(8)
	Lining code		C	C
Remote Flowtube	Face-to-face length	L ^{*2}	232(9.13)	302(11.89)
	Outside dia.	D	214(8.43)	264(10.39)
Integral Flowmeter	Inner diameter of Grounding ring	Ød	144(5.67)	192(7.56)
	Height	H1	254(10.00)	304(11.97)
Remote Flowtube	Max. Height	Hr	378(14.88)	428(16.85)
	Weight kg (lb)		20.2(44.5)	33.5(73.9)
Integral Flowmeter	Max. Height	Hi	416(16.36)	466(18.33)
	Weight kg (lb)		21.9(48.3)	35.2(77.6)

*1: When indicator code N is selected, subtract 12 mm (0.47 inch) from the value in the figure.

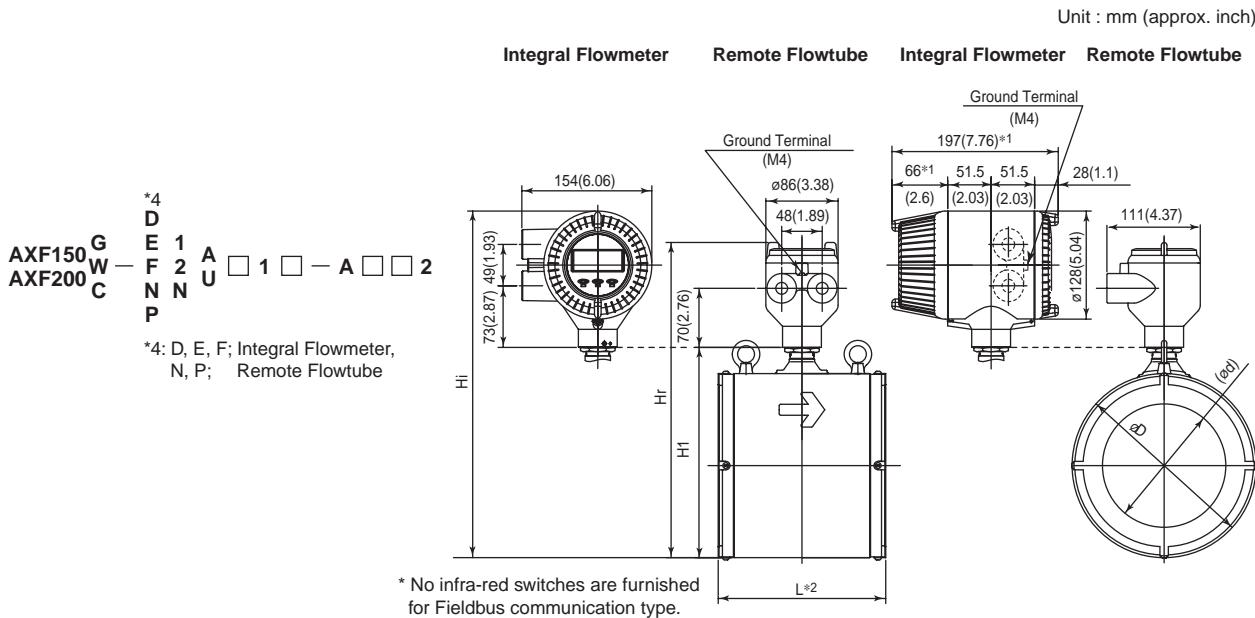
In case of explosion proof type with indicator, add 5 mm (0.2 inch) to it.

*2: Depending on the selection of grounding ring code and optional code, add the following value to L (face-to-face length).

Grounding Ring Code	S, L, H, V	P, T	N
L(Face-to-face length)	+0	+30(1.18)	-6(0.24)

F28.EPS

● Replacement model for Earlier ADMAG or ADMAG AE, AXF150, AXF200, Wafer Type,
PFA /Polyurethane Rubber Lining



Model	Size code		150	200
	Size		150(6)	200(8)
	Lining code		A,U	A,U
Remote flowtube	Face-to-face length	L ^{*2}	230(9.06)	300(11.81)
	Outside dia.	ØD	202(7.95)	252(9.92)
Integral flowmeter	Inner diameter of Grounding ring	Ød	140.7(5.54)	188.9(7.44)
	Height	H1	243(9.57)	293(11.54)
Remote flowtube	Max. Height	Hr	367(14.45)	417(16.42)
	Weight kg (lb) ^{*3}		17.9(39.5)	26.8(59.1)
Integral flowmeter	Max. Height	Hi	405(15.93)	455(17.89)
	Weight kg (lb)		19.6(43.2)	28.5(62.8)

*1: When indicator code N is selected, subtract 12 mm (0.47 inch) from the value in the figure.

In case of explosion proof type with indicator, add 5 mm (0.2 inch) to it.

*2: Depending on the selection of grounding ring code and optional code, add the following value to L (face-to-face length).

Grounding Ring Code		S, L, H, V	P, T	N
Option Code	None	+0	+28(1.1)	-6(0.24)
GA, GC, GD (Special Gaskets)	+2(0.08)	+30(1.18)	-	

*3: When submersible type or option code DHC is selected, waterproof glands and a 30m long cable are attached. Add 9.5kg(20.9lb) to the weight in the table.

F39.EPS

- Unless otherwise specified, difference in the dimensions are refer to the following table.

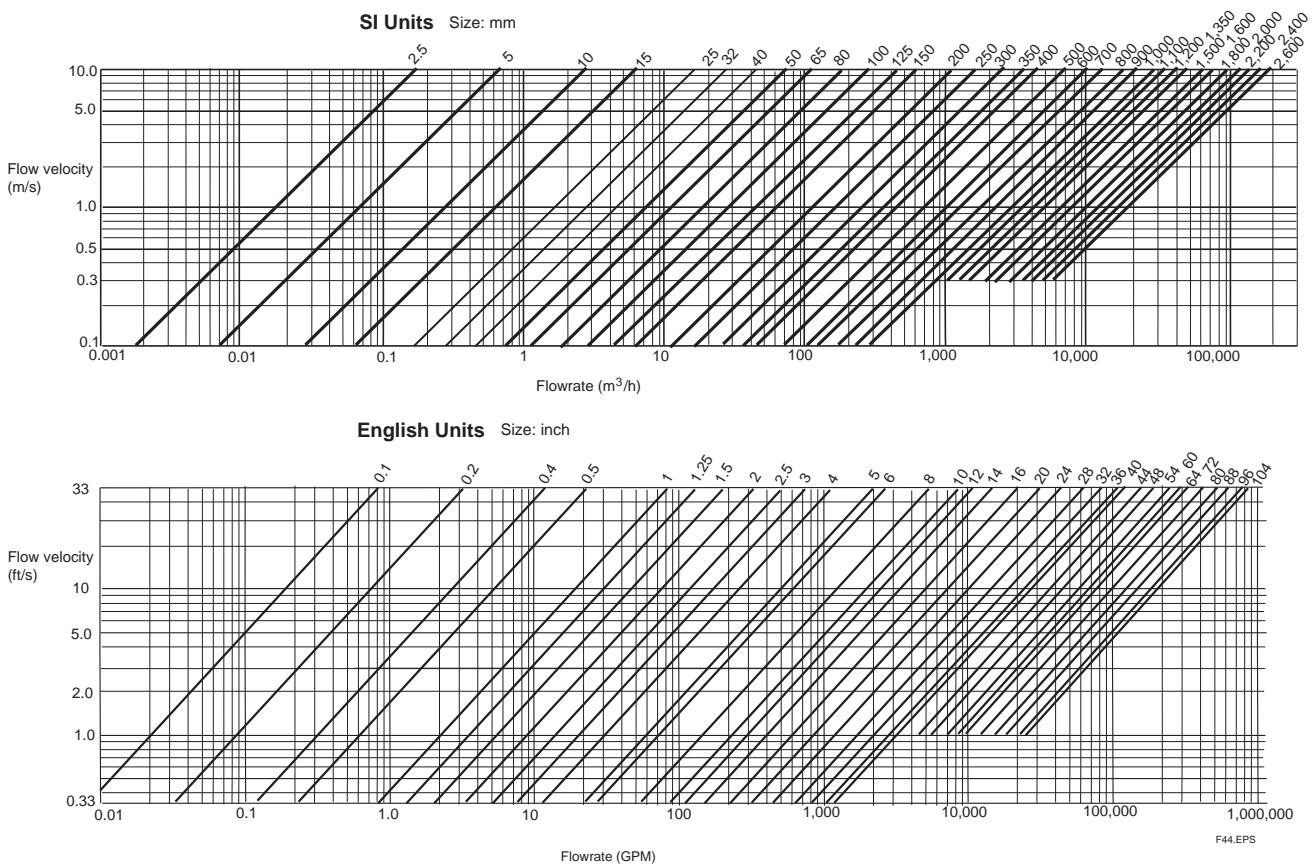
General tolerance in the dimensional outline drawing.

Unit : mm (approx.inch)

Category of basic dimension		Tolerance	Category of basic dimension		Tolerance
Above	Equal or below		Above	Equal or below	
	3 (0.12)	$\pm 0.7 (\pm 0.03)$	500 (19.69)	630 (24.80)	$\pm 5.5 (\pm 2.17)$
3 (0.12)	6 (0.24)	$\pm 0.9 (\pm 0.04)$	630 (24.80)	800 (31.50)	$\pm 6.25 (\pm 0.25)$
6 (0.24)	10 (0.39)	$\pm 1.1 (\pm 0.04)$	800 (31.50)	1000 (39.37)	$\pm 7.0 (\pm 0.28)$
10 (0.39)	18 (0.71)	$\pm 1.35 (\pm 0.05)$	1000 (39.37)	1250 (49.21)	$\pm 8.25 (\pm 0.32)$
18 (0.71)	30 (1.18)	$\pm 1.65 (\pm 0.06)$	1250 (49.21)	1600 (62.99)	$\pm 9.75 (\pm 0.38)$
30 (1.18)	50 (1.97)	$\pm 1.95 (\pm 0.08)$	1600 (62.99)	2000 (78.74)	$\pm 11.5 (\pm 0.45)$
50 (1.97)	80 (3.15)	$\pm 2.3 (\pm 0.09)$	2000 (78.74)	2500 (98.43)	$\pm 14.0 (\pm 0.55)$
80 (3.15)	120 (4.72)	$\pm 2.7 (\pm 0.11)$	2500 (98.43)	3150 (124.02)	$\pm 16.5 (\pm 0.65)$
120 (4.72)	180 (7.09)	$\pm 3.15 (\pm 0.12)$			
180 (7.09)	250 (9.84)	$\pm 3.6 (\pm 0.14)$			
250 (9.84)	315 (12.40)	$\pm 4.05 (\pm 0.16)$			
315 (12.40)	400 (15.75)	$\pm 4.45 (\pm 0.18)$			
400 (15.75)	500 (19.69)	$\pm 4.85 (\pm 0.19)$			

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

SIZING DATA (Measurable flow velocity is from 0 m/s.)



* Measurable flow velocity is from 0 m/s.

RECOMMENDED GASKETS BETWEEN FLOWTUBES AND USER'S FLANGES

Use compressed non-asbestos fiber gaskets, PTFE gaskets or gaskets which have equivalent elasticity. For optional codes GA, GC, and GD, use rubber gaskets or others which have equivalent elasticity (such as Teflon-coated rubber gaskets).

ORDERING INFORMATION “◇”

Note 1: When ordering a remote flowtube and a remote converter, specify the flow span, unit, pulse weight, and totalizer display pulse weight for the order details of the flowtube.

Then these parameters will then be set in the combined converter before shipment.

Note 2: Some options, if ordered, require the relevant specifications to be input when ordering.

1. Model, specification and option codes.
2. Converter for combined use (when ordering a remote flowtube)

Model, suffix code, optional code, and tag number (if specified) of a converter for combined use.

Refer to “ORDERING INFORMATION” of GS 01E20C01-01E, GS 01E20C02-01.

3. Tag number

Each tag number can be specified in up to 16 characters in a combination of letters (capital or small letters), numbers, “-” and “.”.

For HART protocol, up to 8 characters can be specified.

If specified, the tag number is inscribed on the product's name plate and tag plate (if optional code SCT is selected). If the product is an integral flowmeter, the tag number is also set into the memory of its converter.

If the user wishes to change only the tag number to be set into a converter's memory, specify the software tag.

If a tag number is not specified, the tag number is set as a blank.

4. Flow rate spans and units

Flow span can be specified the numeric within the value of 0.0001 to 32000.

And it can be up to five digits, to a maximum of 32000 ignoring the decimal point.

And a fraction is limited to the fourth decimal place. Integral flowmeter are set to the first range in the forward direction. Remote flowtube are set to the first range in the forward direction of the converter (AXFA11 or AXFA14) with which they are to be combined.

If a flow rate span and its unit are not specified, the relevant product is delivered with the setting at 1 m/s (3.3 ft/s).

5. Output pulse weight

If specified, volume per pulse shall be set. Unless specified, the relevant product is delivered with the setting at 0 pulse/second.

6. Totalizer display pulse weight

If specified, volume per pulse shall be set. Unless specified, the relevant product is delivered with the setting at 0 pulse/second.

7. Fluid name

RELATED INSTRUMENTS

Calibrator for Magnetic Flowmeter (AM012):

GS 01E06K02-00E

BT200 Brain Terminal: GS 1C0A11-E

AXFA11G Magnetic Flowmeter Remote Converter:

GS 01E20C01-01E

AXFA14G/C Magnetic Flowmeter Remote Converter:

GS 01E20C02-01E