

General Specifications

Model FLXA402 4-Wire Converter

GS 12A01F01-01EN

■ General

The new FLXA402 4-Wire Converter is designed to combine the superior functionality and ease of use from the Yokogawa EXAxt series with the digitization of the future.

The FLXA402 is designed to accept traditional analog or SENCOM 4.0 digital Smart sensors. The FLXA402 offers the possibility of connecting to five sensor measurements at one time.

The modular-designed converter is a multi-parameter instrument offering a wide range of measurement choices; such as: pH/ORP (oxidation-reduction potential), Resistivity/Conductivity (SC), Inductive conductivity (ISC), % Concentration, Dissolved Oxygen (DO) and 4-20 mA input – with the respective sensor module. Multiple sensor measurements offer additional functionalities; calculated data function that can be customized.

The FLXA402 converter includes a color Human Machine Interface (HMI), that offers easy touch screen operation and simple instinctive menu structure in 9 languages. Menus of display, execution and setting are displayed in a selected language. Start up and commission time is minimal with the quick startup menu for immediate measurement.

The FLXA402 offers a variety of communications, mA/HART, Modbus TCP, Modbus RTU/RS485. And FieldMate working on tablet PC can be used as a local display via Bluetooth or RS485.

■ Features

- Connectable to multiple sensors
- Easily viewable color LCD
- Touch screen operation
- Aluminum alloy cast with corrosion-resistant coating for wide range of industrial environments
- IP66/NEMA Type4X ½ DIN enclosure for field mounting and panel mounting.
- Simple HMI menu structure in 9 languages
- Quick setup menu for immediate measurement
- Calculated data from sensor measurements
- Connection of new SENCOM SA Smart Adapter
- Easy maintenance using SD card, Ethernet, RS485 and Bluetooth
- Indication of sensor wellness



FLXA402 Related products and documents

Model, Title of document	GS
SA11 Smart Adapter	GS 12A06S01-00EN
BA11 Active Junction Box	GS 12B06W03-01E-E
WU11 Interconnection/Extension Cable for SENCOM Products	GS 12B06W02-04E-E
IB100 interface box	GS 12B06J09-01E-E
pH and ORP Sensors	GS 12B07B02-E
PH4/OR4 Sensor Series pH and ORP Sensors	GS 12B10B00-01EN
PH20, FU20 and FU24 analog 4 in 1 pH sensor	GS 12B06J03-E-E
Conductivity Detectors/Sensors	GS 12D08G02-E
ISC40□J Inductive Conductivity Sensors ISC40F□J Holders and Adapters	GS 12D06B01-01E
ISC40G (S) Inductive Conductivity sensor and fittings	GS 12D08J02-E-E
DO30G Sensor for Dissolved Oxygen Analyzer	GS 12J05D03-01E
DO30G and FD30/PB30 Sensor and fittings for Dissolved Oxygen	GS 12J06K04-E-E
DO70G Optical Dissolved Oxygen Sensor	GS 12J05D04-01E
Sensor Holders	GS 12J05C02-00E
FSA111 FieldMate	GS 01R01A01-01E

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■ System Configuration

Configuration according to module combination

1st Input (Code)		System configuration
pH/ORP, SC, ISC, DO (-P1, -C1, -C5, -D1)		Config. A
Digital sensor (-D5)		
SENCOM SA (-S5)	Direct connection	
	Multiple sensor measurement (*)	Config. B

(*): multiple sensor connection with a junction box BA11.

Configurable sensors

measurement sensors *1	pH/ORP	SC	ISC	DO
Analog sensors *2 (-P1, -C1, -C5, -D1)	FU20 FU24 SM21/SR20 PH20 SC25V SC21 SC29C PH8E□P PH4□ PH4□T OR8E□G OR4□	SC4A SC42 SX42 SC4AJ SC8SG SC210G	ISC40G ISC40S ISC40GJ ISC40SJ	DO30G
Digital sensor (Optical DO Sensor) (-D5)	—	—	—	DO70G *3
Sensor for SENCOM SA (-S5)	FU20-VS PH21 FU24 PH8E□P...-V *3	—	—	—

*1: Inside parenthesis explain suffix code for 1st (2nd) input

*2: means conventional sensors, not including sensors for SENCOM SA.

*3: Pending

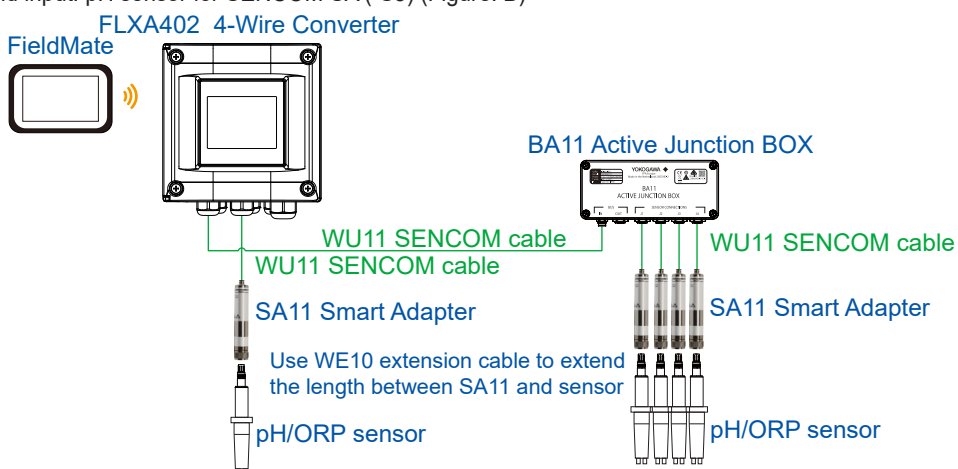
Config. B

• Multiple sensor measurement with BA11

When 1st input connects to SENCOM SA (-S5) with BA11- multiple sensor measurement- BA11 can connect up to 4 sensors for SENCOM SA. One sensor can connect to 2nd input.

(e.g.) 1st input: 4 pH sensors for SENCOM SA with BA11(-S5)

2nd input: pH sensor for SENCOM SA (-S5) (Figure. B)



(Figure B) Config.B an example of multiple sensor measurement

Config. A

• 1 sensor connects to 1st (and 2nd) input for each

When 1st input is pH/ORP, SC, ISC, DO, SENCOM SA (-P1, -C1, -C5, -D1, -S5)

(e.g.) 1st input: pH sensor for SENCOM SA(-S5)

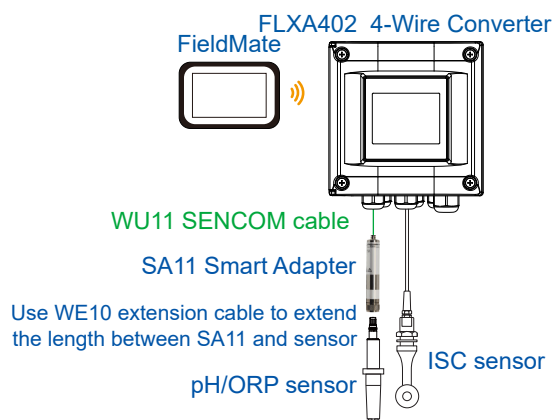
2nd input: analog ISC sensor (-C5) (Figure. A)

• 1st input connects to Digital sensor

When Digital sensors connects to 1st input (-D5)

(e.g.) 1st input: digital sensor (-D5)

2nd input: analog pH sensor (-P1)



(Figure A) Config.A

General Specifications

1. Basic

■ Measurement Object

- pH/Oxidation-reduction Potential (pH/ORP)
- Conductivity (SC)
- Inductive Conductivity (ISC)
- Dissolved Oxygen (DO)

Note: The available measurement object depends on a sensor module installed on the converter.

● Types of Sensor Module

Analog sensor module for analog sensors

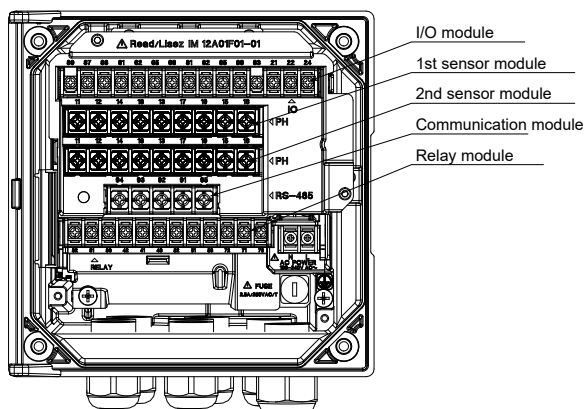
- PH: for analog pH/ORP
- SC: for analog Resistivity/ Conductivity
- ISC: for analog Inductive Conductivity
- DO: for analog Dissolved Oxygen

Digital sensor module

- SENCOM SA: for SA11
- Digital sensor: for optical DO

● Other Modules

- IO: mA output, mA input, contact input
- Relay: SPDT relay
- Digital communication: Modbus TCP/IP(Ethernet) or Modbus RTU (RS485)



● Combination of Sensor Module

There are two sensor module slots; up to Five sensor measurements are available in case of the combination of SENCOM SA module and BA11 junction box

The combination of two same sensor modules or different type of sensor modules is possible except in the case of Optical DO sensor. Please reference the following combination chart.

1st sensor module (1st input)	2nd sensor module (2nd input)	# of Total Inputs
Analog pH/ORP (-P1)	Analog pH/ORP (-P1)	2
	Analog SC (-C1)	2
	Analog ISC (-C5)	2
	Analog DO (-D1)	2
	SENCOM SA (-S5)	2
Analog SC (-C1)	Analog pH/ORP (-P1)	2
	Analog SC (-C1)	2
	Analog ISC (-C5)	2
	Analog DO (-D1)	2
	SENCOM SA (-S5)	2
Analog ISC (-C5)	Analog pH/ORP (-P1)	2
	Analog SC (-C1)	2
	Analog ISC (-C5)	2
	Analog DO (-D1)	2
	SENCOM SA (-S5)	2
Analog DO (-D1)	Analog pH/ORP (-P1)	2
	Analog SC (-C1)	2
	Analog ISC (-C5)	2
	Analog DO (-D1)	2
	SENCOM SA (-S5)	2
SENCOM SA (-S5)	Analog pH/ORP (-P1)	5
	Analog SC (-C1)	5
	Analog ISC (-C5)	5
	Analog DO (-D1)	5
	SENCOM SA (-S5)	5
Digital sensor for optical DO (-D5)	Analog pH/ORP (-P1)	2
	Analog SC (-C1)	2
	Analog ISC (-C5)	2
	Analog DO (-D1)	2
	SENCOM SA (-S5)	2

Digital sensor module (for optical DO):

Combination of two Digital sensor modules isn't available. Digital sensor module should be in 1st sensor module (1st input). In case that Digital sensor module is used, SENCOM SA can handle only one SENCOM SA. BA11 Junction Box isn't available.

2. Measurement

2-1. pH/ORP (PH)

When 1st or 2nd input is -P1 (PH)

(when 1st or 2nd input is -S5 (SENCOM SA), see
2-6 SENCOM SA Smart Adapter.)

■ Input Specification

Dual high impedance input ($\geq 10^{12} \Omega$)

■ Input Range

pH: -2 to 16 pH (with option /K: 0 to 14 pH)

ORP: -1500 to 1500 mV

rH: 0 to 100 rH

Temperature:

Pt1000: -30 to 140 °C

Pt100: -30 to 140 °C

6k8: -30 to 140 °C

PTC10k: -30 to 140 °C

NTC 8k55: -10 to 120 °C

3k Balco: -30 to 140 °C

PTC500: -30 to 140 °C

■ Output Range

pH: min. span 1 pH

max. span 20 pH

ORP: min. span 100 mV

max. span 3000 mV

rH: min. span 2 rH

max. span 100 rH

Temperature: min. span 25 °C

max. span 170 °C

■ Performance (Accuracy)

(The specifications are expressed with simulated inputs.)

pH

Linearity: ± 0.01 pH

Repeatability: ± 0.01 pH

Accuracy: ± 0.01 pH

ORP

Linearity: ± 1 mV

Repeatability: ± 1 mV

Accuracy: ± 1 mV

Temperature

with Pt1000, 6k8, PTC10k, NTC 8k55, 3k Balco,
PTC500

Linearity: ± 0.3 °C

Repeatability: ± 0.1 °C

Accuracy: ± 0.3 °C

with Pt100

Linearity: ± 0.4 °C

Repeatability: ± 0.1 °C

Accuracy: ± 0.4 °C

2-2. Conductivity (SC)

When 1st or 2nd input is -C1 (SC)

■ Input Specification

Two or four electrodes measurement with square wave excitation, using max 60m (200 ft) cable (WU40/WF10) and cell constants from 0.005 to 50.0 cm^{-1}

■ Input Range

Conductivity:

min.: 0 $\mu\text{S}/\text{cm}$

max.: 200 $\text{mS} \times (\text{Cell constant})$
(over range 2000 mS/cm)

Resistivity:

min.: 0.005 $\text{k}\Omega / (\text{Cell constant})$

max.: 1000 $\text{M}\Omega \times \text{cm}$

Temperature:

Pt1000: -20 to 250 °C

Pt100: -20 to 200 °C

Ni100: -20 to 200 °C

NTC 8k55: -10 to 120 °C

Pb36(JIS NTC 6k): -20 to 120 °C

■ Output Range

Conductivity:

min. 0.01 $\mu\text{S}/\text{cm}$

max. 2000 mS/cm (max 90% zero suppression)

Resistivity:

min. 0.001 $\text{k}\Omega \times \text{cm}$

max. 1000 $\text{M}\Omega \times \text{cm}$ (max 90% zero suppression)

Temperature:

min. span 25 °C

max. span 270 °C

■ Performance (Accuracy)

(The specifications are expressed with simulated inputs.)

Conductivity

2 $\mu\text{S} \times \text{K cm}^{-1}$ to 200 $\text{mS} \times \text{K cm}^{-1}$

Accuracy: $\pm 0.5\%$ F.S.

1 $\mu\text{S} \times \text{K cm}^{-1}$ to 2 $\mu\text{S} \times \text{K cm}^{-1}$

Accuracy: $\pm 1\%$ F.S.

Resistivity

0.005 $\text{k}\Omega / \text{K cm}^{-1}$ to 0.5 $\text{M}\Omega / \text{K cm}^{-1}$

Accuracy: $\pm 0.5\%$ F.S.

0.5 $\text{M}\Omega / \text{K cm}^{-1}$ to 1 $\text{M}\Omega / \text{K cm}^{-1}$

Accuracy: $\pm 1\%$ F.S.

Temperature

with Pt1000, Pb36, Ni100

Accuracy: ± 0.3 °C

with Pt100, NTC 8k55

Accuracy: ± 0.4 °C

Temperature compensation

NaCl table: $\pm 1\%$

Matrix: $\pm 3\%$

Step response: 90 % (< 2 decades) in 7 seconds

Note: "F.S." means maximum setting value of converter output.

"K" means cell constant.

YOKOGAWA provides conductivity sensors of which cell constants are 0.1 to 10 cm^{-1} .

2-3. Inductive Conductivity (ISC)

When 1st or 2nd input is -C5 (ISC)

■ Input Specification

Compatible with the Yokogawa inductive conductivity ISC40 series with integrated temperature sensor: NTC30k or Pt1000.

■ Input Range

Conductivity: 0 to 2000 mS/cm at 25 °C reference temperature.

Temperature: -20 to 140 °C

Cable length:

max. 60 meters total length of fixed sensor cable + WF10(J) extension cable.

Influence of cable can be adjusted by doing an AIR CAL with the cable connected to a dry cell.

■ Output Range

Conductivity:

min. span: 100 $\mu\text{S}/\text{cm}$

max. span: 2000 mS/cm (max 90% zero suppression)

Temperature:

min. span 25 °C

max. span 160 °C

■ Performance (Accuracy)

(The specifications are expressed with simulated inputs.)
(Output span is 0-100 μ S/cm or more)

Conductivity:

Linearity: $\pm(0.4 \% \text{F.S.} + 0.3 \mu\text{S/cm})$

Repeatability: $\pm(0.4 \% \text{F.S.} + 0.3 \mu\text{S/cm})$

Temperature: $\pm 0.3 ^\circ\text{C}$

Step response: 90 % (< 2 decades) in 8 seconds

Note: "F.S." means maximum setting value of converter output.

2-4. Dissolved Oxygen (DO)

When 1st or 2nd input is -D1 (DO)

(When 1st input is -D5 (Digital sensor), see 2-5.
Digital Sensor.)

■ Input Specification

The FLXA402 accepts output from membrane covered Dissolved Oxygen sensors. These sensors can be Galvanic type, where the sensor generates its own driving voltage or Polarographic type, where the sensor uses external driving voltage from the converter.

The input range is 0 to 50 μ A for Galvanic sensors and 0 to 1 micro A for Polarographic sensors. For temperature compensation, the FLXA402 accepts Pt1000 (DO30 sensor) and NTC22k elements (OXYFERM and OXYGOLD sensors).

■ Input Range

DO30G sensor:

Dissolved Oxygen: 0 to 50 mg/l (ppm)

Temperature: -20 to 150 $^\circ\text{C}$

Note: Process temperature for DO30 is 0 to 40 $^\circ\text{C}$

Hamilton sensors:

Oxyferm:

Measurement range: 10 ppb to 40 ppm

Temperature range: 0 to 130 $^\circ\text{C}$

Oxygold G:

Measurement range: 2 ppb to 40 ppm

Temperature range: 0 to 130 $^\circ\text{C}$

Oxygold B:

Measurement range: 8 ppb to 40 ppm

Temperature range: 0 to 100 $^\circ\text{C}$

■ Output Range

DO concentration:

mg/l (ppm):

min.: 1 mg/l (ppm)

max.: 50 mg/l (ppm)

ppb:

min.: 1 ppb

max.: 9999 ppb

% saturation:

min.: 10 %

max.: 600 %

Temperature:

min. span 25 $^\circ\text{C}$

max. span 170 $^\circ\text{C}$

■ Performance (Accuracy)

(The specifications are expressed with simulated inputs.)

Performance in ppm mode:

Linearity: $\pm 0.05 \text{ ppm}$ or $\pm 0.8 \% \text{F.S.}$, whichever is greater

Repeatability: $\pm 0.05 \text{ ppm}$ or $\pm 0.8 \% \text{F.S.}$, whichever is greater

Accuracy: $\pm 0.05 \text{ ppm}$ or $\pm 0.8 \% \text{F.S.}$, whichever is greater

Performance in ppb mode:

Linearity: $\pm 1 \text{ ppb}$ or $\pm 0.8 \% \text{F.S.}$, whichever is greater

Repeatability: $\pm 1 \text{ ppb}$ or $\pm 0.8 \% \text{F.S.}$, whichever is greater

Accuracy: $\pm 1 \text{ ppb}$ or $\pm 0.8 \% \text{F.S.}$, whichever is greater

Temperature

Linearity: $\pm 0.3 ^\circ\text{C}$

Repeatability: $\pm 0.1 ^\circ\text{C}$

Accuracy: $\pm 0.3 ^\circ\text{C}$

Note: "F.S." means maximum setting value of converter output.

2-5. Digital Sensor

When 1st input is -D5 (Digital sensor)

Measurement with the digital sensor DO70G Optical Dissolved Oxygen Sensor.

See GS 12J05D04-01E for information on DO70G.

2-6. SENCOM SA Smart Adapter

When 1st or 2nd input is -S5 (SENCOM SA)

Measurement with digital adapter SA11 SENCOM Smart Adapter.

See GS 12A01F00-01E for information on SA11.

3. Electrical

■ Transmission Signals

General:

Isolated outputs: 4-20 mA DC

Accuracy: $\pm 0.02 \text{ mA}$

Repeatability: $\pm 0.02 \text{ mA}$

Linearity: $\pm 0.02 \text{ mA}$

Maximum load: 600 ohm

Bi-directional HART digital communication (HART 7 protocol) superimposed on mA1 (4-20mA) signal

Number of outputs: selectable by suffix code.

2 isolated outputs: -A2

4 isolated outputs: -A4

Output function:

Linear or Non-linear (21-step table) for available signals

Burn out function:

Burn up (22.0 mA) or burn down (2.2 mA) to signal failure according to NAMUR NE43.

Hold:

The mA-outputs are frozen to the last/fixed value during calibration/ commissioning.

■ Analog Input (mA Output type; -A4)

It is used for pressure compensation (only DO) and temperature compensation (pH, SC, ISC, DO).

■ Contact Outputs

General:

Four SPDT relay contacts with display indicators.
Contacts are dry, not powered.

Switch capacity:

Maximum values: 100 VA, 250 VAC, 5 Amps.

Maximum values: 50 Watts, 24 VDC, 5 Amps.

Note: When contact output current is more than 4 Amps,
ambient temperature should be less than 40 °C.

Status:

High/Low process alarms, selected from available signals.

Configurable delay time and hysteresis.

Warning/Failure annunciation

Fail

Contact S4 is programmed as fail- safe contact.

Control function:

On/Off

Wash:

Contact can be used to start manual or interval
time wash cycles.

Hold:

Contact can be used to signal the Hold situation.

■ Contact Inputs

Contact input controls starting WASH CYCLE or
changing RANGE of 4-20 mA output (programmable)
each for pH/ORP, SC, ISC and DO.

General:

Isolated input

Close: less than 200Ω

Open: more than 100kΩ

Voltage-free contact (do not apply voltage)

■ Digital communication (Option)

• Ethernet (Modbus TCP):

10/100Mbps

Cable length: Max.100m

• RS-485 (Modbus RTU):

115200/38400/9600bps

Cable length: 115200bps: Max 600m

38400bps, 9600bps: Max 1200m

■ Bluetooth

Communication distance:

Approx. 10 m (depends on the operating
environment.)

■ Temperature compensation

Function:

Automatic or manual. Compensation to Nernst
equation. Process compensation by configurable
temperature coefficient, NEN6411 for water or
strong acids/bases or programmable matrix.

■ Calibration

Semi-automatic 1, 2 or 3 point calibration using
pre-configured NIST, US, DIN buffer tables 4,
7 & 9, or with user defined buffer tables, with
automatic stability check. Manual adjustment.

■ Logbook

Software record of important events and diagnostic
data readily available in the display.

■ Display

QVGA color LCD with a touch screen.

Message language: 9 (English, Chinese, Czech,
French, German, Japanese, Korean, Portuguese,
and Spanish)

■ Refresh interval of data

500ms: number of measurement ≤ 2

1 s: number of measurement ≥ 3

■ Power supply

FLXA402-A

Ratings: 100-240 V AC

Acceptable range: 90 to 264 V AC

Ratings: 50/60 Hz

Acceptable range; 50 Hz ±5%, 60 Hz ±5%

Power Consumption: 35 VA

FLXA402-D

Ratings: 12-24 V DC

Acceptable range: 10.8 to 26.4 V DC

Power Consumption; 15 W

NAMUR NE21: DC power is restricted below

Ratings: 24 V DC

Acceptable range: 21.6 to 26.4 V DC

Power Consumption: 15 W

4. Mechanical and others

■ Housing

Case color and finish

Color: Silver gray

Finish: chemically resistant coating or high
anti-corrosion coating

Window

Polycarbonate (flexible)

Protection

NEMA Type4X (USA), Type4X (Canada), IP66

■ Cable and Terminal

Cable size:

Outer diameter: 6 to 12 mm (suitable for M20
cable gland)

Terminal screw size: M3 (Power/Earth terminal: M4)

torque of screw up: 1.2 N•m

■ Cable Entry

8 holes

M20 cable gland x 8 pcs

Note: Cable gland and plug are delivered with an
converter, but not assembled into the converter.

■ Mounting hardware (option)

• Universal mounting kit (Note)

• Pipe and wall mounting hardware

• Panel mounting hardware

Note: This kit contains the pipe and wall mounting
hardware and the panel mounting hardware.

■ Hood (option)

• Stainless steel

• Stainless steel with chemically resistant coating

■ Stainless Steel Tag Plate (option)

When the additional code "/SCT" with a tag number
is specified, the tag plate on which the tag number is
inscribed is delivered with the converter. Tag plate is
hanging type.

■ Conduit adapter (option)

Using optional adapter

• G1/2 (quantity: 8)

• 1/2NPT (quantity: 8)

• M20 x 1.5 (quantity: 8)

These conduit adapters are delivered with an converter,
but not assembled into the converter.

■ Size of Housing Case

165 x 165 x 168.5 mm (W x H x D) (without cable
gland)

■ Weight

Max. 3.0 kg

■ Warm up time

Approx. 30 min.

■ Ambient Operating Temperature

-20 to +55 °C

■ Storage Temperature

-30 to +70 °C

■ Humidity

10 to 90% RH at 40°C (Non-condensing)

■ Document

Following documents are delivered with a converter;

Paper copy:

Start-up Manual and Safety Precautions

Other documents are to be downloaded from website:

User's Manual

Safety Regulations Manual,

General Specifications,

User Setting Table of measurement / sensor type

■ Regulatory Compliance

Safety:

EN 61010-1

EN 61010-2-030

UL 61010-1

UL 61010-2-030

CAN/CSA-C22.2 No.61010-1

CAN/CSA-C22.2 No.61010-2-030

GB30439

Installation altitude: 2000 m or less

Category based on IEC 61010: I (DC model)

Category based on IEC 61010: II (AC model) (Note1)

Pollution degree based on IEC 61010: 2 (Note2)

Note1: Installation category, called over-voltage category, specifies impulse withstand voltage.

Equipment with "Category I" is used for connection to circuit in which measures are taken to limit transient over-voltage to an appropriately low level. Category II is energy-consuming equipment to be supplied from the fixed installation.

Note 2: Pollution degree indicates the degree of existence of solid, liquid, gas or other inclusions which may reduce dielectric strength. Degree 2 is the normal indoor environment.

EMC:

EN61326-1 Class A, Table 2

(For use in industrial locations)

EN61326-2-3

EN61000-3-2

EN61000-3-3

RCM: EN 55011 Class A, Group 1

Korea Electromagnetic Conformity Standard

한국 전자파적합성 기준 Class A

Bluetooth

Compliant standard: Bluetooth Ver 3.0

Applicable countries / regions; (regulations)

Japan, EU, USA/Canada, Oceania, Singapore

EN 301 489-1

EN 301 489-17

EN 300 328

EN 62479

FCC15B

ICES-003 Issue5:2012 Class A

AS/NZS4268, AS/NZS2772.2

IMDA TS SRD

Environmental regulation:

RoHS: EN50581

REACH: Regulation EC 1907/2006

Information of the WEEE Directive

This product is purposely designed to be used in a large scale fixed installations only and, therefore, is out of scope of the WEEE Directive. The WEEE Directive does not apply.

The WEEE Directive is only valid in the EU.

NAMUR: NE43, 107

■ Model & Suffix Codes

Model	Suffix code	Option code	Description
FLXA402	.....	.....	4-Wire Converter
Power supply	-A -D	..... .....	AC version DC version
Housing (*1)	-B -D	..... .....	Aluminum alloy cast + urethane coating Aluminum alloy cast + high anti-corrosion coating
Type	-AB -AD -AG -AJ	..... ..... ..... .....	General purpose for CE, RCM, China standard General purpose for CSA General purpose for KC General purpose
1st input	-P1 -C1 -C5 -D1 -D5 -S5	..... ..... ..... ..... ..... .....	pH/ORP (PH) Conductivity (SC) Inductive conductivity (ISC) Dissolved oxygen (DO) Digital sensor (pending) SENCOM SA (*2)
2nd input	-NN -P1 -C1 -C5 -D1 -S5	..... ..... ..... ..... ..... .....	Without input pH/ORP (PH) Conductivity (SC) Inductive conductivity (ISC) Dissolved oxygen (DO) SENCOM SA (*3)
mA Output/Input	-A2 -A4	..... .....	2 x 4-20 mA Output + 1 x Contact Input (mA1 output: with HART) 4 x 4-20 mA Output + 2 x Contact Input + 1 x 4-20 mA Input (mA1 output: with HART)
Relay	-NR -WR	..... .....	Without Relay Relay
Bluetooth	-N -B	..... .....	Without Bluetooth Bluetooth
Digital Communication	-N -E -R	..... ..... .....	Without Digital communication Modbus TCP/IP Modbus RTU (RS-485)
Country (*4)	-N -J	..... .....	Global except Japan Japan
—	-NN	.....	Always -NN
Option	Mounting hardware Hood Tag plate Conduit adapter (*7)	/UM /U /PM /H6 /H7 /SCT /CB4 /CD4 /CF4 /CB6 /CD6 /CF6	Universal mounting kit (*5) Pipe and wall mounting hardware Panel mounting hardware Hood, stainless steel Hood, stainless steel + urethane coating Stainless steel tag plate G1/2 x 4 pcs 1/2NPT x 4 pcs M20 x 1.5 x 4 pcs G1/2 x 3 pcs + G 1/2 for Ethernet x 1 pcs (*6) 1/2NPT x 3 pcs + 1/2 NPT for Ethernet x 1 pcs (*6) M20 x 1.5 x 3 pcs + M20 for Ethernet x 1 pcs (*6)

Notes:

- *1. Urethane coating is acid resistant.
- *2. On 1st input, with a connection to BA11 Junction Box, up to 4 sensors equipped with SA11 can be connected.
- *3. On 2nd input, only 1 sensor equipped with SA11 can be connected.
- *4. Select only "-J" if you use the converter in Japan. Only SI unit (International System of Units) applies.
- *5. Universal mounting kit contains pipe, wall mounting hardware (/U) and panel mounting hardware (/PM).
- *6. Available only when "-E" (Modbus TCP/IP) via digital communication is selected.
- *7. There are 8 cable entry holes. Check the table below to additionally purchase required parts.

Spec.	Power	1st input	2nd input	mA output/input	Relay	Digital Communication
Code	All	All	-NN the others	-A2 -A4	-NR -WR	-N -E -R
Required No. of cable entry holes	1	1	0 1	1 2	0 2	0 1* 1

*: Conduit exclusively for Ethernet

Following is the specification restriction by combination

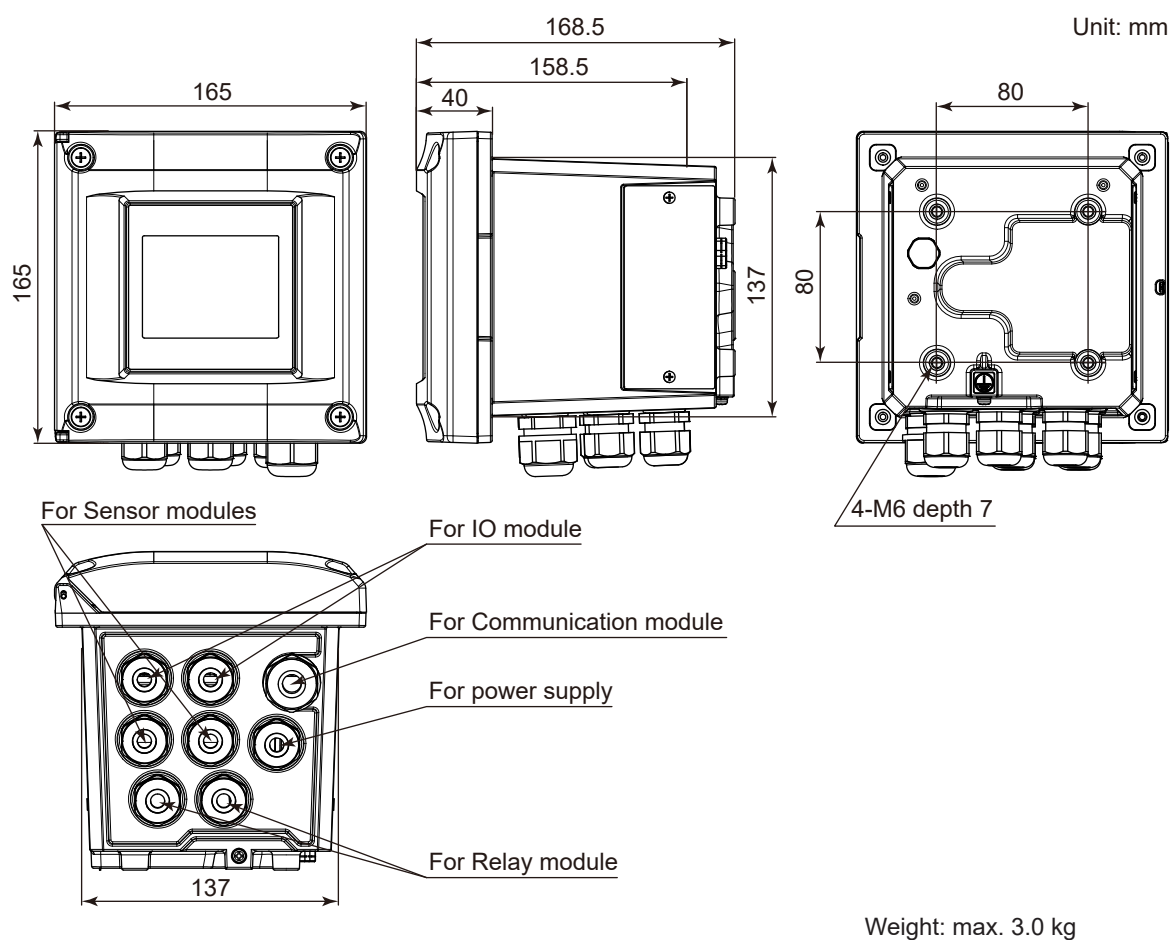
■ Conduit adapter (need to be purchased additionally)

Type	Parts number	Quantity	Remark
G 1/2 (Cable gland for adapter + adapter)	K9703WP	1 set	for Option code /CB
	K9703WS	1 set	for Option code /CB□ Ethernet cable
1/2 NPT (Cable gland for adapter + adapter)	K9703WQ	1 set	for Option code /CD□
	K9703WT	1 set	for Option code /CD□ Ethernet cable
M 20 x 1.5 (Cable gland for adapter + adapter)	K9703WR	1 set	for Option code /CF□
	K9703WU	1 set	for Option code /CF□ Ethernet cable

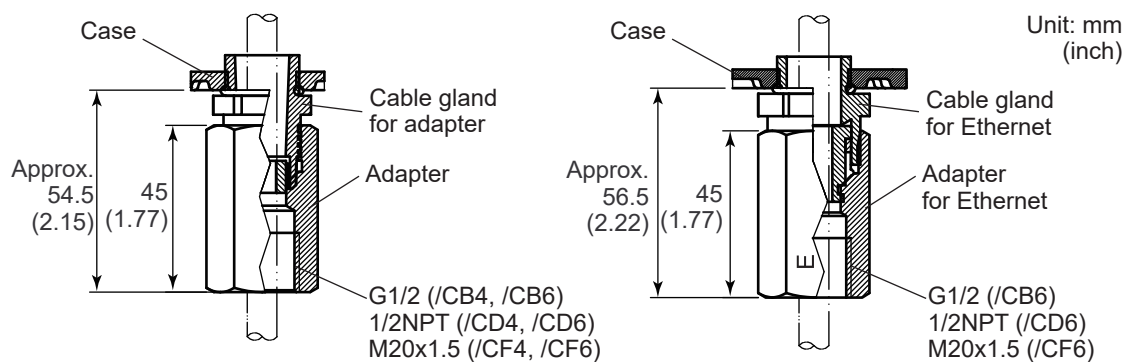
■ Optional parts

Name		Parts number	Quantity	Remark
Mounting hardware	for pipe, wall mounting (stainless)	K9703SS	1 set	same as Option code /U
	for panel mounting (stainless)	K9703ZD	1 set	same as Option code /PM
Sun shade hood	Stainless	K9698WK	1 set	same as Option code /H6
	stainless + urethane	K9698WL	1 set	same as Option code /H7
Rubber plug attachment		K9703ZN	1pcs	for Cable gland
Fuse		A1633EF	1pcs	250V/2.5A (minimum 5 pcs)

■ Dimensions



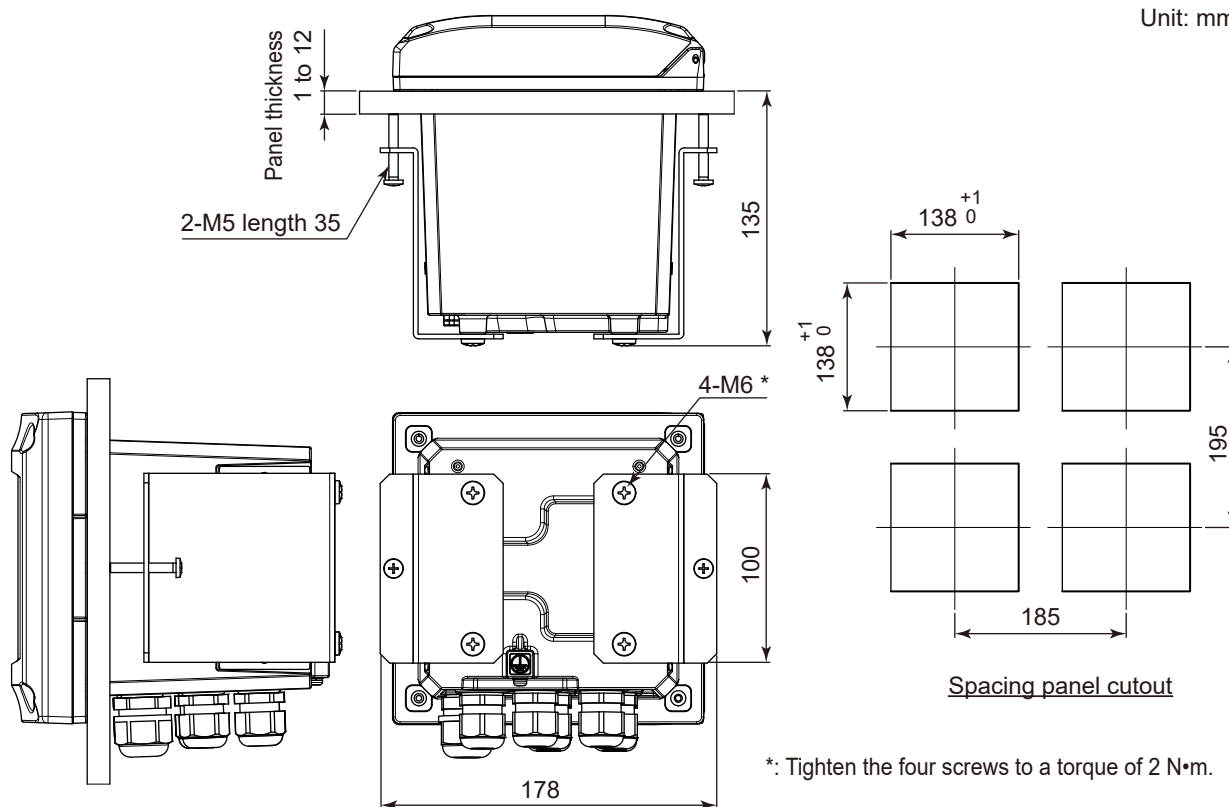
Conduit adaptor (/CB4, /CD4, /CF4/, /CB6, /CD6, /CF6)



Note: Universal Mounting kit (/UM) contains pipe, wall mounting hardware (/U) and panel mounting hardware (/PM).

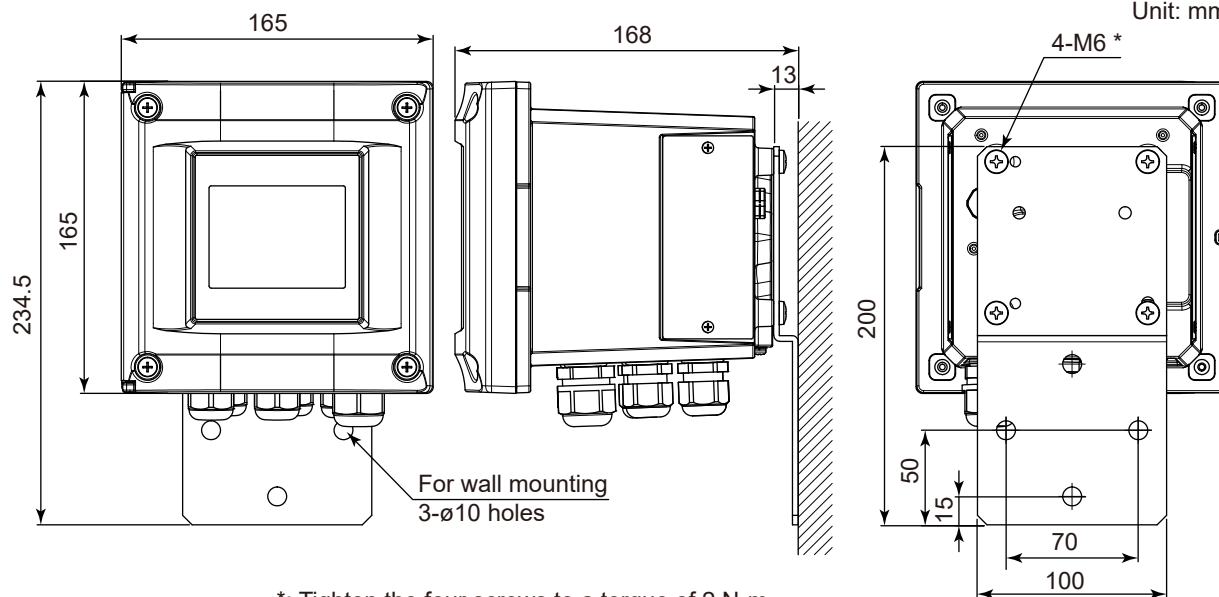
Panel mounting hardware (/PM, /UM)

Unit: mm



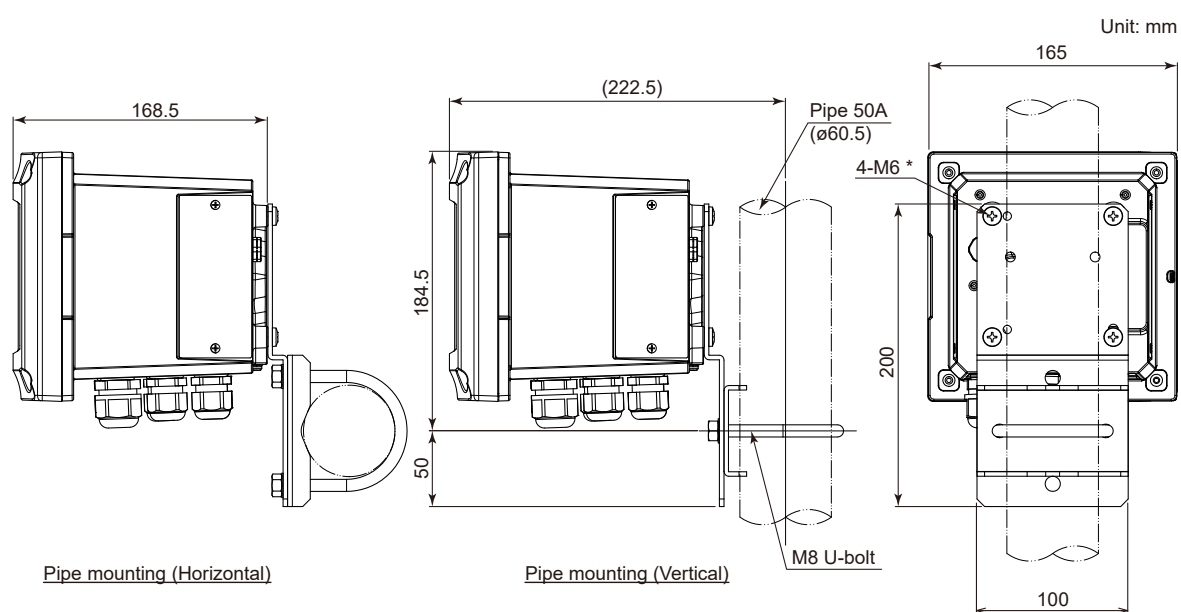
Wall mounting hardware (/U, /UM)

Unit: mm



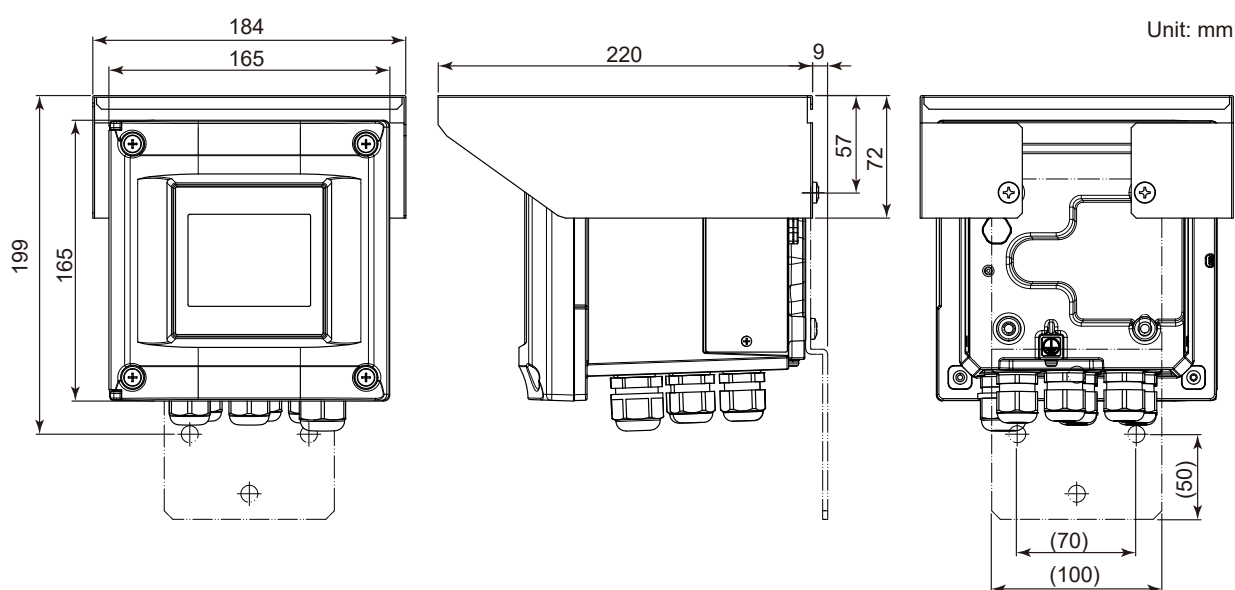
Note: For wall mounting, the wall should be strong enough to bear the weight of 8 kg or more.

Pipe mounting hardware (/U, /UM)

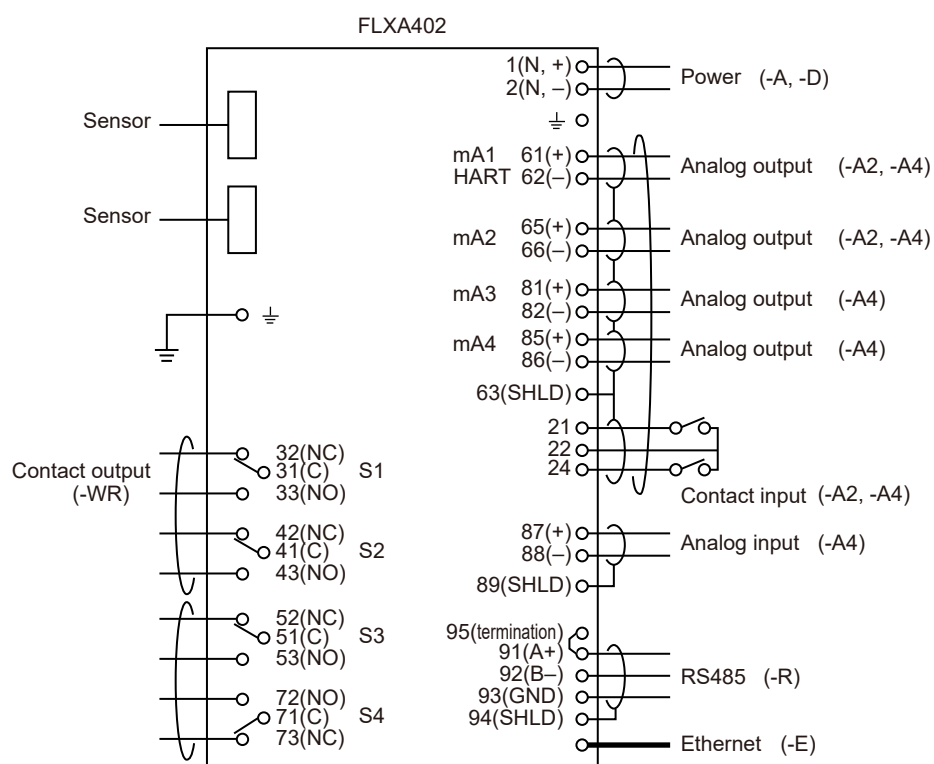


*: Tighten the four screws to a torque of 2 N•m.

Hood Stainless steel (/H6, /H7)



■ Wiring



■ Inquiry Specifications Sheet for FLXA402 4-Wire Converter

Make inquiries by placing checkmarks (✓) in the pertinent boxes and filling in the blanks.

1. General Information

Company name; _____
 Contact Person; _____ Department; _____
 Plant name; _____
 Measurement location; _____
 Purpose of use; ☐ Indication, ☐ Recording, ☐ Alarm, ☐ Control

2. Measurement Conditions

(1) Process temperature; _____ to _____ Normally _____ [°C]
 (2) Process pressure; _____ to _____ Normally _____ [kPa]
 (3) Flow rate; _____ to _____ Normally _____ [l/min]
 (4) Flow speed; _____ to _____ Normally _____ [m/s]
 (5) Slurry or contaminants; ☐ No, ☐ Yes
 (6) Name of process fluid; _____
 (7) Components of process fluid; _____
 (8) Others; _____

3. Installation Site

(1) Ambient temperature; _____ to _____ [°C]
 (2) Location; ☐ Outdoors, ☐ Indoors
 (3) Others; _____

4. Requirements

1st Input; ☐ pH/ORP (PH) ☐ Conductivity (SC) ☐ Inductive conductivity (ISC)
☐ Dissolved oxygen (DO) ☐ Digital sensor (pending) ☐ SENCOM SA (pH/ORP)
 2nd Input; ☐ Without input ☐ pH/ORP (PH) ☐ Conductivity (SC)
☐ Inductive conductivity (ISC) ☐ Dissolved oxygen (DO) ☐ SENCOM SA (pH/ORP)
 mA output; ☐ 2 x 4-20 mA Output + 1 x Contact Input
☐ 4 x 4-20 mA Output + 2 x Contact Input + 1 x 4-20 mA Input)
 Relay; ☐ Without Relay ☐ Relay
 Bluetooth; ☐ Without Bluetooth ☐ Bluetooth
 Digital Communication; ☐ Without Digital Communication
☐ Modbus TCP/IP (Ethernet) ☐ Modbus RTU (RS-485)
 Others; _____

