

Start-up Manual

Model SA11
Smart Adapter



(BG)

Всички ультивания за продукти от серията ATEX Ex се предлагат на английски език. Ако се нуждаете от ультивания за продукти от серията Ex на родния ви език, се свържете с най-близкия офис или представителство на фирма Yokogawa.

(CZ)

Všechny uživatelské příručky pro výrobky, na něž se vztahuje nevýbušné schválení ATEX Ex, jsou dostupné v angličtině. Požadujete-li pokyny týkající se výrobků s nevýbušným schválením ve vašem lokálním jazyku, kontaktujte prosím vaši nejbližší reprezentační kancelář Yokogawa.

(D)

Alle Betriebsanleitungen für ATEX Ex bezogene Produkte stehen in den Sprachen Englisch. Sollten Sie die Betriebsanleitungen für Ex-Produkte in Ihrer Landessprache benötigen, setzen Sie sich bitte mit Ihrem örtlichem Yokogawa-Vertreter in Verbindung.

(DK)

Alle brugervejledninger for produkter relateret til CE er tilgængelige på engelsk. Skulle De ønske yderligere oplysninger om håndtering af CE produkter på eget sprog, kan De rette henvendelse herom til den nærmeste Yokogawa afdeling eller forhandler.

(EST)

Kõik ATEX Ex toodete kasutamishendid on esitatud inglise keeles. Ex seadmete muukeelse dokumentatsiooni saamiseks pöörduge lähima lokagava (Yokogawa) kontori või esindaja poole.

(E)

Todos los manuales de instrucciones para los productos antiexplosivos de ATEX están disponibles en inglés. Si desea solicitar las instrucciones de estos artículos antiexplosivos en su idioma local, deberá ponerse en contacto con la oficina o el representante de Yokogawa más cercano.

(F)

Tous les manuels d'instruction des produits ATEX Ex sont disponibles en langue anglaise. Si vous nécessitez des instructions relatives aux produits Ex dans votre langue, veuillez bien contacter votre représentant Yokogawa le plus proche.

(GB)

All instruction manuals for ATEX Ex related products are available in English. Should you require Ex related instructions in your local language, you are to contact your nearest Yokogawa office or representative.

(GR)

Όλα τα εγχειρίδια λειτουργίας των προϊόντων με ATEX Ex διατίθενται στα Αγγλικά. Σε περίπτωση που χρειάζεστε οδηγίες σχετικά με Ex στην τοπική γλώσσα παρακαλούμε επικοινωνήστε με το πλησιέστερο γραφείο της Yokogawa ή αντιπροσωπο της.

(H)

Az ATEX Ex műszerek gépkönyveit angol nyelven adjuk ki. Amennyiben helyi nyelven kéri az Ex eszközök leírását, kérjük keressék fel a legközelebbi Yokogawa irodát, vagy képviselőt.

(I)

Tutti i manuali operativi di prodotti ATEX contrassegnati con Ex sono disponibili in inglese. Se si desidera ricevere i manuali operativi di prodotti Ex in lingua locale, mettersi in contatto con l'ufficio Yokogawa più vicino o con un rappresentante.

(LV)

Visas ATEX Ex kategorijas izstrādājumu Lietošanas instrukcijas tiek piegādātas angļu valodās. Ja vēlaties saņemt Ex ierīšu dokumentāciju citā valodā, Jums ir jāsazinās ar firmas Jokogava (Yokogawa) tuvāko ofisu vai pārstāvi.

(LT)

Visos gaminio ATEX Ex kategorijos Eksploatavimo instrukcijos teikiami anglų kalbomis. Norėdami gauti priestaisø Ex dokumentaciją kitomis kalbomis susisiekit su atimniausiu bendrovės Yokogawa biuru arba atstovu.

(M)

Il-manwali kollha ta' l-istruzzjonijiet għal prodotti marbuta ma' ATEX Ex huma disponibbli bl-Ingliż. Jekk tkun teħtiegħ struzzjonijiet marbuta ma' Ex fil-lingwa lokali tiegħek, għandek tikkuntattja lill-eqreb rappreżentant jew ufficiju ta' Yokogawa.

(NL)

Alle handleidingen voor producten die te maken hebben met ATEX explosiebeveiliging (Ex) zijn verkrijgbaar in het Engels. Neem, indien u aanwijzingen op het gebied van explosiebeveiliging nodig hebt in uw eigen taal, contact op met de dichtstbijzijnde vestiging van Yokogawa of met een vertegenwoordiger.

(P)

Todos os manuais de instruções referentes aos produtos Ex da ATEX estão disponíveis em Inglês. Se necessitar de instruções na sua língua relacionadas com produtos Ex, deverá entrar em contacto com a delegação mais próxima ou com um representante da Yokogawa.

(PL)

Wszystkie instrukcje obsługi dla urządzeń w wykonaniu przeciwwybuchowym Ex, zgodnych z wymaganiami ATEX, dostępne są w języku angielskim. Jeżeli wymagana jest instrukcja obsługi w Państwa lokalnym języku, prosimy o kontakt z najbliższym biurem Yokogawy.

(RO)

Toate manualele de instructiuni pentru produsele ATEX Ex sunt in limba engleza. In cazul in care doriti instructiunile in limba locala, trebuie sa contactati cel mai apropiat birou sau reprezentant Yokogawa.

(S)

Alla instruktionsböcker för ATEX Ex (explosionssäkra) produkter är tillgängliga på engelska. Om Ni behöver instruktioner för dessa explosionssäkra produkter på annat språk, skall Ni kontakta närmaste Yokogawakontor eller representant.

(SF)

Kaikkien ATEX Ex-tyyppisten tuotteiden käyttöohjeet ovat saatavilla englannin-. Mikäli tarvitsette Ex-tyyppisten tuotteiden ohjeita omalla paikallisella kielellänne, ottakaa yhteyttä lähimpään Yokogawa-toimistoon tai -edustajaan.

(SK)

Všetky návody na obsluhu pre prístroje s ATEX Ex sú k dispozícii v jazyku anglickom. V prípade potreby návodu pre Ex-prístroje vo Vašom národnom jazyku, skontaktujte prosím miestnu kanceláriu firmy Yokogawa.

(SLO)

Vsi predpisi in navodila za AEX Ex sorodni pridelki so pri roki v angliščini. Če so Ex sorodna navodila potrebna v vašem tukejnem jeziku, kontaktirajte vaš najbliži Yokogawa office ili predstavnika.

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1. Introduction

Thank you for purchasing the SA11 Smart Adapter. Please read this Start-up Manual before installing and using the SA11. Refer to the SA11 Smart Adapter User's Manual for details. The SA11 Smart Adapter only works with YOKOGAWA sensors equipped with an ID-chip. If sensors without ID-chip are connected, all calculated output data of the SA11 will be disabled.

The SA11 Smart Adapter can be used in a system with other peripherals. Please refer to their belonging User Manuals for correct installation and correct working.

User's Manual

Contents	Document number	Note
SA11 Smart Adapter Start-up Manual	IM 12A06S01-01EN-P	Attached to the product
SA11 Smart Adapter User's Manual (English version)	IM 12A06S01-00EN-P	Available for download
SA11 Smart Adapter User's Manual (Japanese version)	IM 12A06S01-00JA-P	Available for download
FLXA402 4-wire Analyzer User's Manual	IM 12A01F01-02	Available for download
UM33A-S00 Digital Indicator	IM 05P09D21-11EN	Attached to the product
BA11 Active Junction Box	IM 12B06W03-01E-E	Attached to the product
WU11 Interconnection cable	IM 12B06W02-03E-E	Attached to the product
WE10	IM 12B06W02-02E-E	Attached to the product
IB100 Interface Box	IM 12B06J09-01E-E	Available for download
Fieldmate	IM 01R01A01-01E	Available for download

The "E" or "EN" in the document number is the language code for English version, the "JA" indicates the Japanese version.

Downloads can be done from: <https://www.YOKOGAWA.com/solutions/products-platforms/process-analyzers/liquid-analyzers/#Downloads>

You can use the QR-code for quick-access.



NOTE

- Please hand over the user's manuals to your end users so that they can keep the user's manuals on hand for convenient reference.
- Please read the information thoroughly before using the product.
- The purpose of these user's manuals is not to warrant that the product is well suited to any particular purpose but rather to describe the functional details of the product.
- No part of the user's manuals may be transferred or reproduced without prior written consent from YOKOGAWA .
- YOKOGAWA reserves the right to make improvements in the user's manuals and product at any time, without notice or obligation.
- If you have any questions, or you find mistakes or omissions in the user's manuals, please contact our sales representative or your local distributor.

Drawing Conventions

Some drawings may be partially emphasized, simplified, or omitted, for the convenience of description. Some screen images depicted in the user's manual may have different display positions or character types (e.g., the upper / lower case). Also note that some of the images contained in this user's manual are display examples.

2. Safety Precautions

2-1. Safety, Protection, and Modification of the Product

- In order to protect the system controlled by the product and the product itself and ensure safe operation, observe the safety precautions described in this user's manual. YOKOGAWA Process Analyzers (simply referred to as YOKOGAWA) is not liability for safety if users fail to observe these instructions when operating the product.
- If this instrument is used in a manner not specified in this user's manual, the protection provided by this instrument may be impaired.
- If any protection or safety circuit is required for the system controlled by the product or for the product itself, prepares it separately.
- Be sure to use the spare parts approved by YOKOGAWA when replacing parts or consumables.
- Modification of the product is strictly prohibited.
- The following safety symbols are used on the product as well as in this manual.



This symbol indicates that an operator must follow the instructions laid out in this manual in order to avoid the risks, for the human body, of injury, electric shock, or fatalities. The manual describes what special care the operator must take to avoid such risks.



This symbol indicates that the operator must refer to the instructions in this manual in order to prevent the instrument (hardware) or software from being damaged, or a system failure from occurring.

CAUTION

This symbol gives information essential for understanding the operations and functions.

NOTE

This symbol indicates information that complements the present topic.



This symbol indicates Protective Ground Terminal.



This symbol indicates Function Ground Terminal. Do not use this terminal as the protective ground terminal.

2-2. Warning and Disclaimer

The product is provided on an "as is" basis. YOKOGAWA shall have neither liability nor responsibility to any person or entity with respect to any direct or indirect loss or damage arising from using the product or any defect of the product that YOKOGAWA cannot predict in advance.

2-3. SA11



CAUTION

The SA11 should only be used with equipment that meets the relevant IEC, American, Canadian, and Japanese standards. YOKOGAWA accepts no responsibility for the misuse of this unit.



CAUTION

The Instrument is packed carefully with shock absorbing materials, nevertheless, the instrument may be damaged or broken if subjected to strong shock, such as if the instrument is dropped. Handle with care.



CAUTION

The SA11 contains devices that can be damaged by electrostatic discharge. When servicing this equipment, please observe proper procedures to prevent such damage



CAUTION

Do not use an abrasive or organic solvent in cleaning the instrument.



CAUTION

This instrument is an EN61326-1 Class A product, and it is designed for use in the industrial environment. Please use this instrument in the industrial environment only.

2-4. Special conditions of Use



WARNING

Potential electrostatic charging hazard – When the equipment is used in hazardous locations, avoid any actions which generate electrostatic discharge, such as rubbing with a dry cloth.



AVERTISSEMENT

Risque potentiel de charge électrostatique - Lorsque l'équipement est utilisé dans des zones dangereuses, évitez toute action générant une décharge électrostatique, comme un frottement avec un chiffon sec.



WARNING

The Input Port connections incorporate an earthed conductor. Care shall be taken to prevent ignition-capable earth currents resulting from differing earth potentials between the SA11 and Host. Refer to section 5-3 for instructions concerning earthing and isolation of the SA11.



AVERTISSEMENT

Les connexions du port d'entrée comportent un conducteur mis à la terre. Des précautions doivent être prises pour éviter les courants de terre capables d'allumage résultant de potentiels de terre différents entre le SA11 et l'hôte. Reportez-vous à la section 5-3 pour les instructions concernant la mise à la terre et l'isolement du SA11.

Ambient temperature conditions depend on the temperature class:

T6: $-30^{\circ}\text{C} \leq T_a \leq +40^{\circ}\text{C}$

T5: $-30^{\circ}\text{C} \leq T_a \leq +60^{\circ}\text{C}$

T4: $-30^{\circ}\text{C} \leq T_a \leq +80^{\circ}\text{C}$

T3: $-30^{\circ}\text{C} \leq T_a \leq +80^{\circ}\text{C}$

2-5. Product Disposal

The instrument should be disposed of in accordance with local and national legislation/regulations.

2-6. Warranty and service

YOKOGAWA products and parts are guaranteed free from defects in workmanship and material under normal use and service for a period of (typically) 12 months from the date of shipment from the manufacturer.

Individual sales organizations can deviate from the typical warranty period, and the conditions of sale relating to the original purchase order should be consulted. Damages caused by wear and tear, inadequate maintenance, corrosion, or by the effects of chemical processes are excluded from this warranty coverage.

In the event of warranty claim, the defective goods should be sent (freight paid) to the service department of the relevant sales organization for replacement (at YOKOGAWA discretion).

The following information must be included in the letter accompanying the returned goods:

- Part number, model code and serial number
- Original purchase order and date
- Length of time in service and a description of the process
- Description of the fault, and the circumstances of failure
- Process/environmental conditions that may be related to the failure of the device.
- A statement whether warranty or non-warranty service is requested
- Complete shipping and billing instructions for return of material, plus the name and phone number of a contact person who can be reached for further information.

Returned goods that have been in contact with process fluids must be decontaminated / disinfected before shipment. Goods should carry a certificate to this effect, for the health and safety of our employees. Material safety data sheets should also be included for all components of the processes to which the equipment has been exposed.

2-7. Copyright and Trademark Notices

The online manual is protected by the PDF security from modification; however, it can be output via a printer. Printing out the online manual is only allowed for the purpose of using the product.

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2-8. SA11 fonts

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3. CE marking products

3-1. Authorized Representative in EEA

The Authorized Representative for this product in EEA is YOKOGAWA Europe B.V., Euroweg 2, 3825 HD Amersfoort, The Netherlands.

3-2. Identification Tag

This manual and the identification tag attached on a packing box are essential parts of the product. Keep them together in a safe place for future reference.

3-3. Users

This product is designed to be used by a person with specialized knowledge.

4. Introduction and general description

This Quick Start-up Manual describes how to use SA11 with YOKOGAWA 's HOST systems and sensors. Please read carefully this manual and the instruction manual of the relevant HOST system and sensor before using this SA11 slave device.

4-1. Instrument check

Upon delivery, unpack the device carefully and inspect it to ensure that it was not damaged during shipment. If damage is found, retain the original packing materials (including the outer box) and then immediately notify the carrier and the relevant YOKOGAWA sales office.

4-2. Checking the model and suffix code

Make sure the model and suffix code on the metallized label affixed to the device housing are in line with the order.

NOTE

Be sure to apply the correct power to the device as detailed on the labels in Figure 1.1. The Serial Number (S/N) is identifying the manufacturing date as a Year- and Month code. Please refer to the IM 12A06S01-00EN-P for detailed explanation.

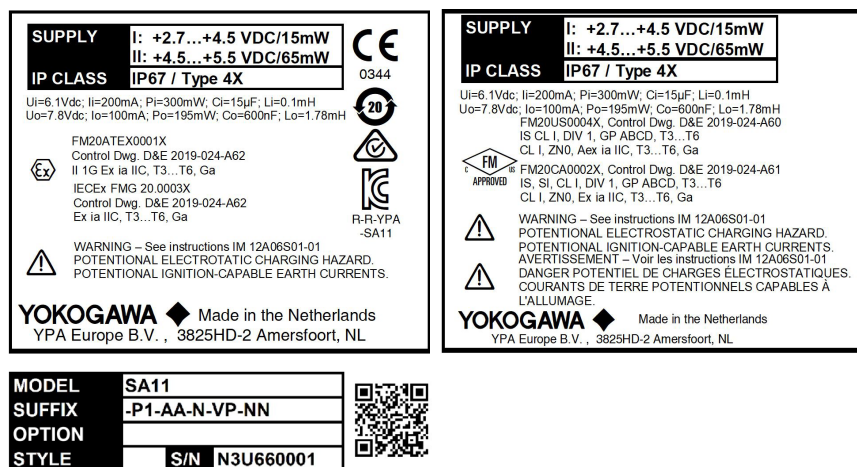


Figure 1.1: Example of label SA11

4-3. Checking the accessories

Make sure that besides the SA11 device the accessories in Table 1.1 are included. Options are available only if ordered.

Table 1.1: Accessories

Product Name	Quantity	Remark
SA11 Smart Adapter dust caps	2 pcs/device	To prevent dust inside the connectors
Option: Universal mounting set	1 set	Option code /UM*
Startup Manual	1 copy	Quick startup description
QIS/QIC	1 copy	Test certificate

*Option /UM contains Pipe and Wall mounting hardware

NOTE Be sure to remove the dust caps before using the device.

4-4. Regulatory Compliance

- **Safety:** IEC 61010-1
EN 61010-1
ANSI/UL 61010-1
CAN/CSA C22.2 No. 61010-1

Category I (Note 1)
Pollution 2 (Note 2)

Note 1: Installation category, called over-voltage category, specifies impulse withstand voltage. Equipment with "Category I" is used for connection to circuits in which measures are taken to limit transient over-voltages to an appropriately low level.

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

- **Intrinsic Safety:**

- **IECEX** Ex ia IIC T3...T6 Ga
Standards: IEC 60079-0: 2017
IEC 60079-11: 2011
Certificate no. IECEX FMG 20.0003X
Control drawing D&E 2019-024-A62

- **ATEX**  II 1G Ex ia IIC T3...T6 Ga
Standards: EN IEC 60079-0: 2018
EN 60079-11: 2012 (/IS 01: 2014)
Certificate no. FM20ATEX0001X
Control drawing D&E 2019-024-A62

- **FM-US** IS CL I, DIV 1, Groups ABCD, T3...T6
CL I, ZN0, AEx ia IIC, T3...T6, Ga
Standards: FM 3600: 2018
FM 3610: 2018
FM 3810: 2018
ANSI/UL 60079-0: 2019
ANSI/UL 60079-11: 2014
Certificate no. FM20US0004X
Control drawing D&E 2019-024-A60

- **FM-CANADA** IS, SI, CL I, DIV 1, Groups ABCD, T3...T6
CL I, ZN0, Ex ia IIC, T3...T6, Ga
Standards: CAN/CSA-C22.2 No. 60079-0: 2019
CAN/CSA-C22.2 No. 60079-11: 2014
Certificate no. FM20CA0002X
Control drawing D&E 2019-024-A61

For specific conditions of use refer to section 2-4.

- **EMC:** EN61326-1 Class A, Table 2 (For use in industrial locations)
Influence of immunity environment (Criteria A): Output is within accuracy
EN61326-2-3
AS/NZS CISPR 11
KC (registered as R-R-YPA-SA11)
- **RoHS2:** EN 50581
- **Installation altitude:** 2000 m or less

4-5. Model and suffix code

Model code	Suffix code	Option code	Description
SA11			SENCOM Smart Adapter
Measuring Parameter	-P1 -P2 -C1		pH/ORP, conventional pH/ORP, differential Specific conductivity (SC)
Type	-AA -CB -CD		General purpose IS for ATEX, IECEx IS for FM-US, FM-Canada
Region	-N		Not specified
Connection type	-VS		Variopin connector for SENCOM ID-chip in sensor
Style	-NN		Always -NN
Option		/UM	Pipe and wall mounting hardware

4-6. Spare part list

Order no.	Product Name	Quantity	Remark
K1548PQ	Universal mounting set	1 set	Option /UM
K1548GF	O-ring set (5 pieces)	1 set	

Option /UM contains Pipe and Wall mounting hardware

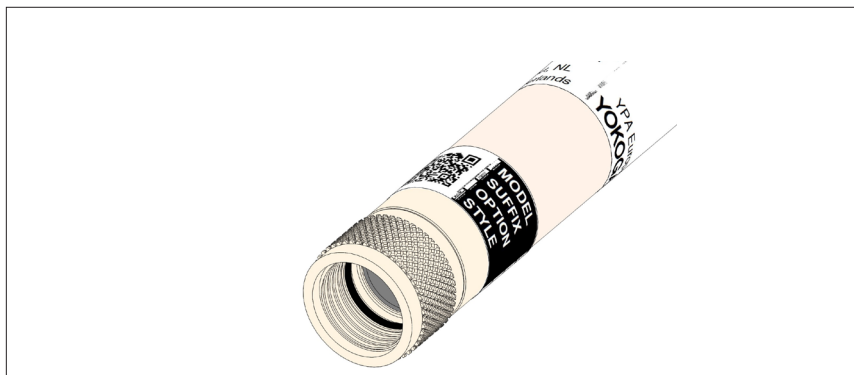


Figure 4.1 Positioning of O-ring

5. Wiring and installation

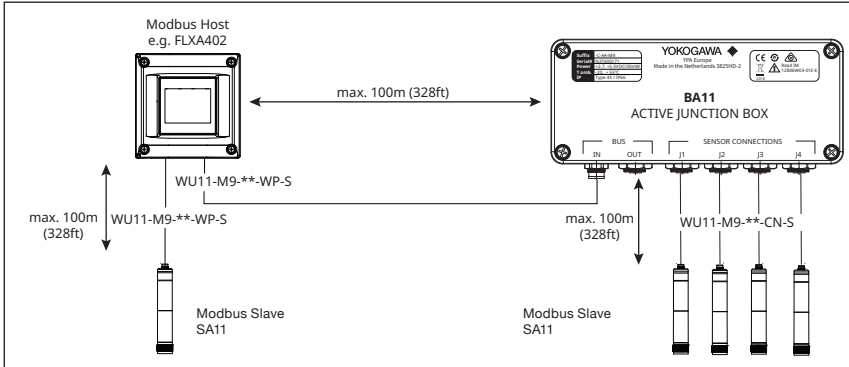


Figure 5.1: Installation diagram SA11

Please check the Control Drawings in Sections 6, 7 and 8 too for wiring and installation in a hazardous area.

5-1. Installation site

The SA11 is weatherproof and can be installed both inside and outside. Select an installation site that meets the following conditions:

- Mechanical vibrations and shocks are negligible
- No relay switch and power switch are installed close to the device
- There is space mounting the device to the Yokogawa- sensor & Yokogawa HOST system
- Not exposed to direct sunlight or severe weather conditions
- Maintenance is possible
- No corrosive atmosphere
- Water Protection: IP67, NEMA Type 4X

5-2. Connecting to the sensor

Direct mounting

The SA11 can be installed directly on top of the YOKOGAWA labelled sensor by means of the Variopin connection system. In this case the temperature limit of the device is determined by the process temperature, limited from -30 up to +100°C / -22 up to +212°F for power supply +2.7 to +4.5VDC, -30 up to +125°C / -22 up to +257°F for power supply +4.5 to +5.5VDC.

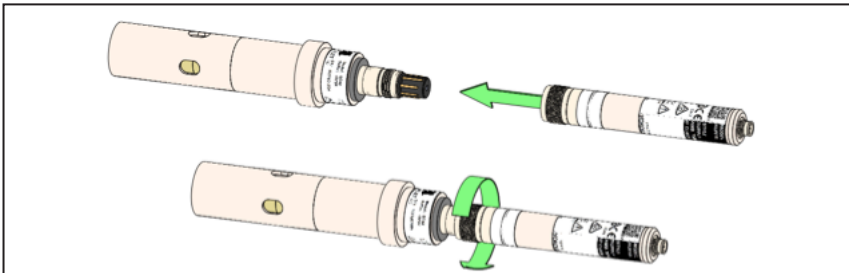


Figure 5.2: Example of direct mounting of SA11 to sensor

CAUTION

Place the Variopin connectors securely to guarantee IP67.

Cable mounting

When there is less room to install the SA11 on top of the YOKOGAWA labelled sensor or when the process conditions are higher than +100°C (for power supply +2.7 to +4.5VDC) or +125°C (for power supply +4.5 to +5.5VDC), an alternative mounting method is to install the SA11 using the optional wall/pipe mounting hardware. The SA11 in this case is connected to the sensor using the dedicated extension cable model WE10 with a fixed length of 3 meter. The ambient temperature limit of the device has to be within -30 to +55°C.

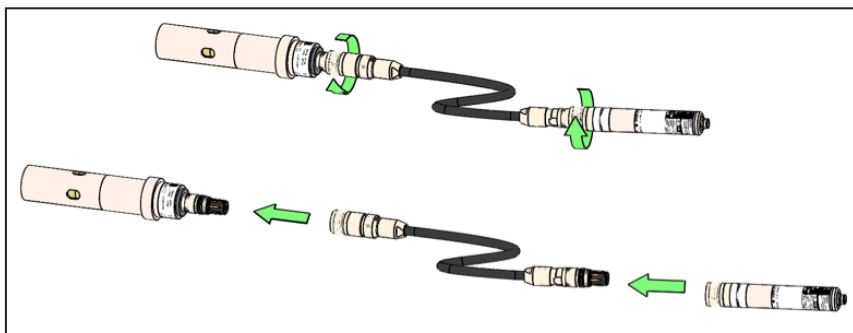


Figure 5.3: Example of cable mounting of SA11 to sensor

CAUTION

Place the Variopin connectors securely to guarantee IP67.

NOTE Use the correct Variopin cable. For correct measurement without loss of specification the SA11-P1 must be used with WE10-H-D-003-V1, all other types must be used with WE10-H-D-003-V2.

5-3. Wiring to the HOST system

Wired connection

The YOKOGAWA HOST system is connected to the SA11 using the WU11 type S interconnection cable with at one end wired terminals and on the other end a M9 connector. This cable is specified for reliable transfer of digital signals, and especially designed to be installed in a heavy industrial environment. The double shielded cable will protect the connected devices for interference from high voltages and currents which are present on other cables. The cable is specified to be used in IP67 applications, allowing it to be submerged as a whole. The WU11 type S cable is available length up to a maximum of 100 meter (328ft).

Connection concept

The YOKOGAWA HOST system model FLXA402 can be connected to maximum five SA11 devices. In case of more than two SA11 devices connected, the BA11 Active Junction Box must be used. Connection in between the FLXA402 and BA11 is done by using the WU11 type -S interconnection cable with at one end wired terminals and on the other end a M9 connector. Connection in between the BA11 and the SA11 is done using the WU11 type -S interconnection cable with at both ends a M9 connector. In both cases the maximum length has to be within 100 meter (328ft).

Wireless connection

In laboratory environments the HOST Fieldmate system can be connected to the SA11 using the YOKOGAWA Bluetooth device model IB100. Interconnection in between the IB100 and SA11 is done using the WU11 type -S interconnection cable with at both ends a M9 connector. The wireless communication in between the Fieldmate system and IB100 is limited to a distance of 10 meter.

Grounding

The measuring system must always be connected to a class D ground (a ground resistance of 100 Ohm or less), preferably done at the HOST side. To protect the SA11 device against interference, such as electromagnetic noise or common mode, all wires in WU11 type -S cable are connected at HOST. This makes the housing of the SA11 grounded. For correct measurement without loss of specifications, it is strongly recommended to ensure that the process liquid is grounded. Figure 5.4 shows the connection diagram in case without/UM option.

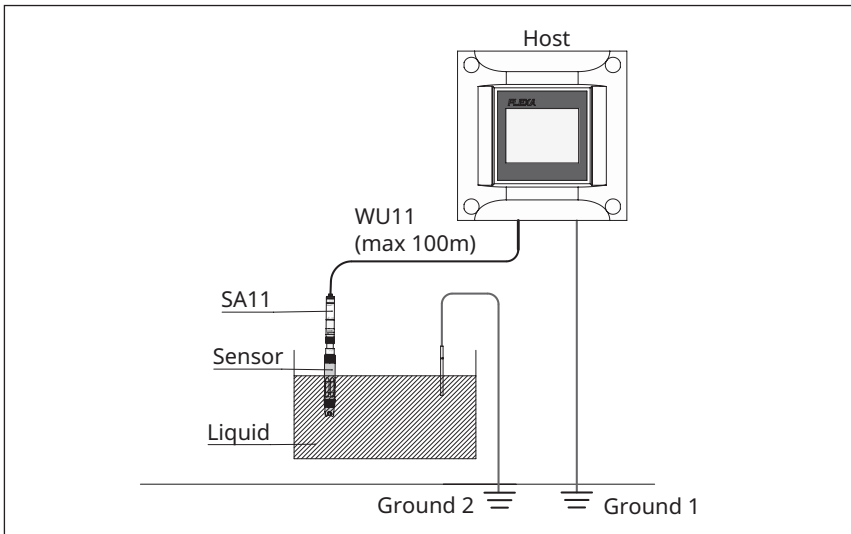


Figure 5.4: Typical installation of SA11 to host

However, in case that there is different potential between Ground at HOST side and Ground which the housing of the SA11 is connected, figure 5.5 shows the example of the installation. To prevent ground loop by this different potentials it is necessary to disconnect one of the ground references. This can be done at the HOST side by disconnecting the wire #82 of the WU11 type S cable. Please connect #82 to NC terminal on the SENCOM SA module when SA11 is connected to FLXA402. Please be sure to insulate contact pin of #82 wire from terminals and metal housing, when SA11 is connected to other host. The SA11 device must then be installed using the optional pipe and wall mounting hardware (UM) with a ground wire connected in between the ground terminal of the mounting bracket and the ground reference of the process.

Alternate way to prevent ground loop is to isolate the SA11 & mounting plate from ground 2 & keep the terminal 82 connected.

Remark: For the installation shown in Figure 5.5, in case the ground references at the HOST side (Ground 1) and process side (Ground 2) have no potential difference the shield wire of the WU11 type -S cable (wire #82) can stay connected to the (pre-defined) ground terminal at the HOST.

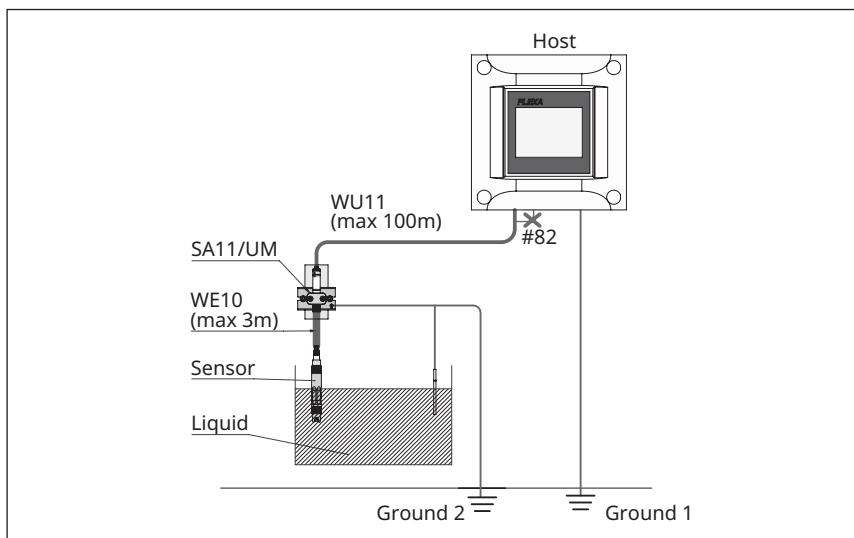


Figure 5.5: Typical installation example to prevent ground loop

In combination with Host who does not have grounding terminal to still meet the statutory regulations it is necessary to ground either the SA11 enclosure (e.g. by using the option / UM) or ground the shield of the cable. An example is shown in figure 5.6.

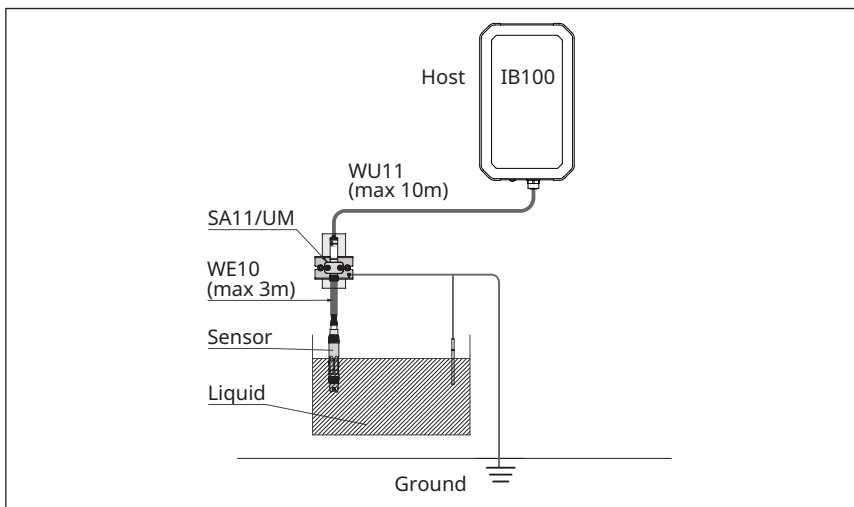


Figure 5.6: Installation example SA11 & IB100 to prevent interference

Operation

Select a YOKOGAWA parameter specific sensor equipped with an ID-chip which is suitable for the process. When all wiring is completed, turn on the power of the HOST system. Part of the setup of the SA11 will be done automatically by reading the content of the ID-chip of the sensor. These are sensor characteristics, factory calibration data, customer calibration data, diagnostics and loggings of calibration and events. For details refer to the SA11 Smart Adapter User's Manual. Other setups have to be done by the YOKOGAWA HOST system, for details see the belonging User's Manual. If the system is configured incorrectly, an error indicator may be displayed, or the measurement values displayed may be incorrect. Refer to the User Manual of the HOST system how to check the initial settings and change them to suit your purpose.

Trouble shooting

For limited functional check of the SA11, the device can be connected to a specific accessorie, simulator model QT11, which is intended as a diagnostic tool and is permitted to be connected only when both are located in a non-hazardous location/area.

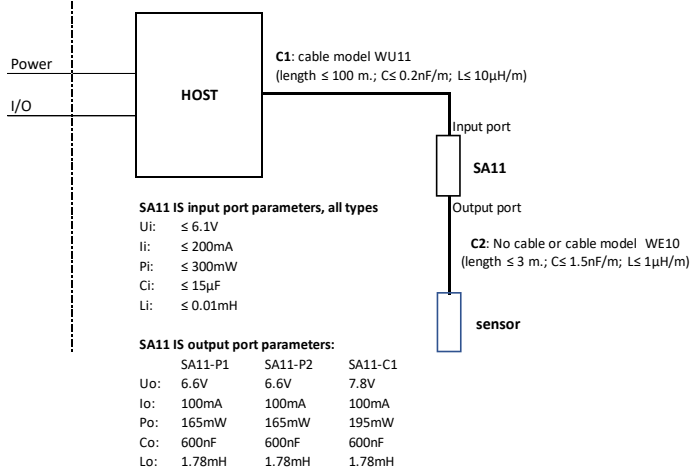
6. D&E 2019-024-A60: FM Control Drawing- United States

Non-hazardous Location

Hazardous Location

IS CL I, DIV 1, GP ABCD T3 / T4 / T5 / T6, Ga

Ta 80°C / 80°C / 60°C / 40°C



Specific conditions of use:

- Potential electrostatic charging hazard – When the equipment is used in hazardous locations, avoid any actions which generate electrostatic discharge, such as rubbing with a dry cloth.
- Potential ignition-capable earth currents – The Input Port connections incorporate an earthed conductor. Care shall be taken to prevent ignition-capable earth currents resulting from differing earth potentials between the SA11 and Host. Refer to section 5-3 of manufacturer's Start-Up Manual 12A06S01 for instructions concerning earthing and isolation of the SA11.

Remarks:

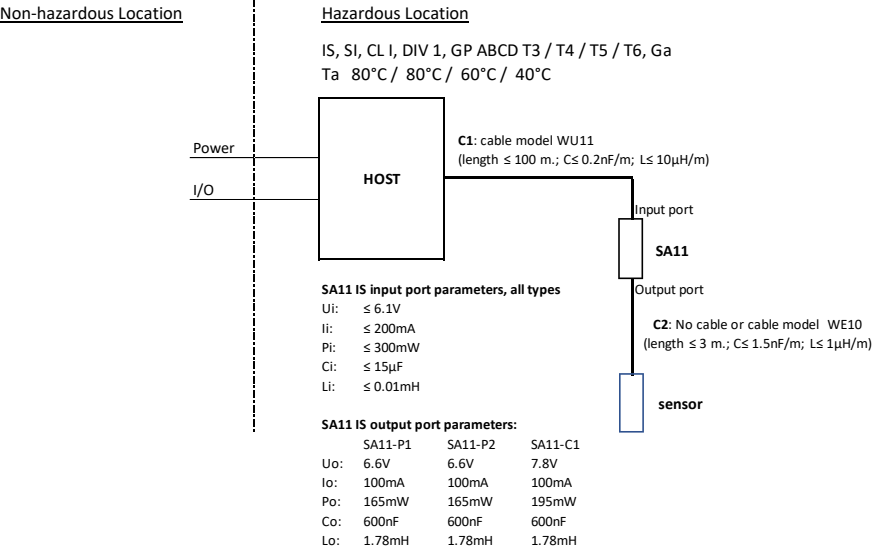
- No revision to this drawing without prior approval of FM.
- Installation must be in accordance with the National Electrical Code (ANSI/NFPA 70), ANSI/ISA-RP12.06.01, and relevant local codes.
- The SA11 shall be installed to a certified intrinsically safe HOST with the following maximum values:
U₀= 6.1 V, I₀ = 200 mA, P₀ = 300mW
- SA11 Model code:

Model	Suffix Codes	Option Codes
SA11	-ab-cd-e-fg-hi	/j

ab	Measuring parameter:	C1	Contact Conductivity
		P1	pH/ORP, conventional
		P2	pH/ORP, differential
cd	Type:	CD	IS for FM, CSA
e	Region:	One alphanumeric character (A to Z, 0 to 9 or hyphen) Region code specification not affecting intrinsic safety	
fg	Connection type:	VS	Variopin connector
hi	Spare code:	Two alphanumeric characters (A to Z, 0 to 9 or hyphen). Spare code specification not affecting intrinsic safety	
j	Option code:	Up to ten alphanumeric characters (A to Z, 0 to 9 or hyphen)	

- WARNING—POTENTIAL ELECTROSTATIC CHARGING HAZARD – SEE INSTRUCTIONS
WARNING—POTENTIAL IGNITION-CAPABLE EARTH CURRENTS – SEE INSTRUCTIONS

7. D&E 2019-024-A61: FM Control Drawing- Canada



- Specific conditions of use:
- Potential electrostatic charging hazard – When the equipment is used in hazardous locations, avoid any actions which generate electrostatic discharge, such as rubbing with a dry cloth.
 - Potential ignition-capable earth currents – The Input Port connections incorporate an earthed conductor. Care shall be taken to prevent ignition-capable earth currents resulting from differing earth potentials between the SA11 and Host. Refer to section 5-3 of manufacturer’s Start-Up Manual 12A06S01 for instructions concerning earthing and isolation of the SA11.

- Remarks:
1. No revision to this drawing without prior approval of FM.
 2. Installation must be in accordance with Canadian Electrical Code (CEC) CSA C22.1, and relevant local codes.
 3. The SA11 shall be installed to a certified intrinsically safe HOST with the following maximum values:
Uo = 6.1 V, Io = 200 mA, Po = 300mW
 4. SA11 Model code:

Model	Suffix Codes	Option Codes
SA11	-ab-cd-e-fg-hi	/j

- | | | |
|----|----------------------|--|
| ab | Measuring parameter: | C1 Contact Conductivity
P1 pH/ORP, conventional
P2 pH/ORP, differential |
| cd | Type: | CD IS for FM, CSA |
| e | Region: | One alphanumeric character (A to Z, 0 to 9 or hyphen)
Region code specification not affecting intrinsic safety |
| fg | Connection type: | VS Variopin connector |
| hi | Spare code: | Two alphanumeric characters (A to Z, 0 to 9 or hyphen).
Spare code specification not affecting intrinsic safety |
| j | Option code: | Up to ten alphanumeric characters (A to Z, 0 to 9 or hyphen) |
5. WARNING—POTENTIAL ELECTROSTATIC CHARGING HAZARD – SEE INSTRUCTIONS
AVERTISSEMENT – DANGER POTENTIEL DE CHARGES ÉLECTROSTATIQUES – VOIR LES INSTRUCTIONS
WARNING—POTENTIAL IGNITION-CAPABLE EARTH CURRENTS – SEE INSTRUCTIONS
AVERTISSEMENT – COURANTS DE TERRE POTENTIONNELS CAPABLES À L'ALLUMAGE – VOIR LES INSTRUCTIONS

8. D&E 2019-024-A62: ATEX/IECEx Control Drawing

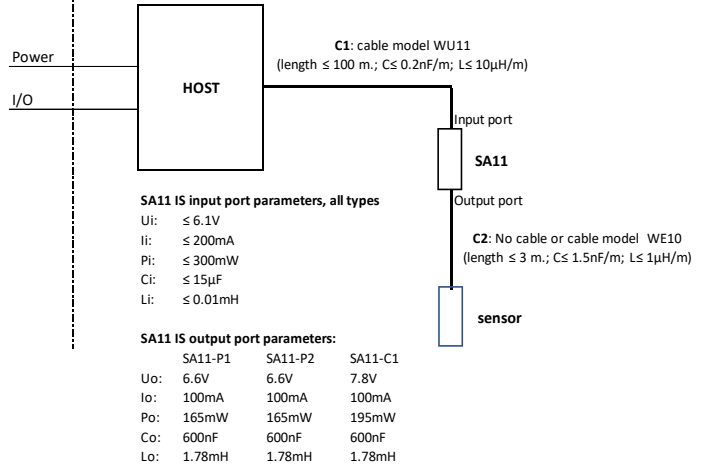
Non-hazardous Location

Hazardous (Classified) Location

IECEx: Ex ia IIC Ga

ATEX: II 1 G Ex ia IIC Ga

Temperature Class: T3 / T4 / T5 / T6 for Ta +80°C / +80°C / +60°C / +40°C



Specific conditions of use:

- Potential electrostatic charging hazard – When the equipment is used in hazardous locations, avoid any actions which generate electrostatic discharge, such as rubbing with a dry cloth.
- Potential ignition-capable earth currents – The Input Port connections incorporate an earthed conductor. Care shall be taken to prevent ignition-capable earth currents resulting from differing earth potentials between the SA11 and Host. Refer to section 5-3 of manufacturer's Start-Up Manual 12A06S01 for instructions concerning earthing and isolation of the SA11.

Remarks:

1. No revision to this drawing without prior approval of FM.
2. Installation must be in accordance with IEC60079-14 and relevant local codes.
3. The SA11 shall be installed to a certified intrinsically safe HOST with the following maximum values:
 $U_o = 6.1\text{ V}$, $I_o = 200\text{ mA}$, $P_o = 300\text{ mW}$
4. SA11 Model code:

Model	Suffix Codes	Option Codes
SA11	-ab-cd-e-fg-hi	/j

ab	Measuring parameter:	C1	Contact Conductivity
		P1	pH/ORP, conventional
		P2	pH/ORP, differential
cd	Type:	CB	IS for ATEX, IECEx
e	Region:	One alphanumeric character (A to Z, 0 to 9 or hyphen) Region code specification not affecting intrinsic safety	
fg	Connection type:	VS	Variopin connector
hi	Spare code:	Two alphanumeric characters (A to Z, 0 to 9 or hyphen). Spare code specification not affecting intrinsic safety	
j	Option code:	Up to ten alphanumeric characters (A to Z, 0 to 9 or hyphen)	

5. WARNING—POTENTIAL ELECTROSTATIC CHARGING HAZARD – SEE INSTRUCTIONS
 WARNING—POTENTIAL IGNITION-CAPABLE EARTH CURRENTS – SEE INSTRUCTIONS

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