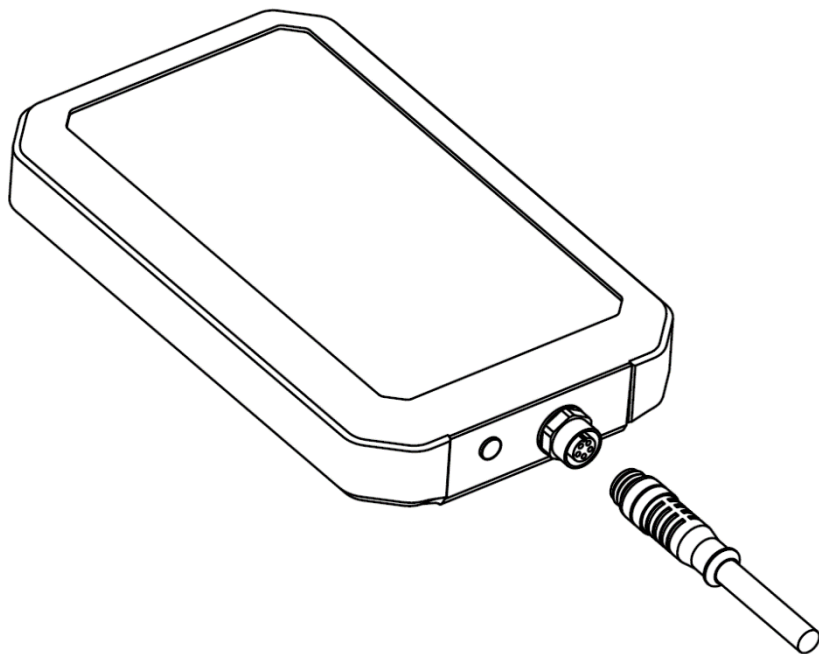

Instruction Manual Model IB100
 InterfaceBox



(BG)

Всички улътвания за продукти от серията ATEX Ex се предлагат на английски език. Ако се нуждаете от улътвания 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 παρακαλούνμε επικοινωνήστε με το πλησιέστερο γραφείο της Yokogawa ή αντιπροσωπιο της.

(H)

Az ATEX Ex műszerek gépkönyveit angol nyelven adjuk ki. Amennyiben helyi nyelven kéri az Ex eszközök leírásait, 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 gaminiø ATEX Ex kategorijos Eksploataavimo instrukcijos teikiami anglø kalbomis. Norëdami gauti priestaisø Ex dokumentacijà kitomis kalbomis susisiekite su artimiausiu bendrovës Yokogawa biuru arba atstovu.

(M)

Il-manwali kollha ta' l-istruzzjonijiet għal prodotti marbuta ma' ATEX Ex huma disponibbli bl-Ingliż. Jekk tkun teñtiegħ struzzjonijiet marbuta ma' Ex fil-lingwa lokali tiegħek, għandek tikkuntattja lill-eqreb rappreżentant jew ufficiċju 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 anglišèini. Èe so Ex sorodna navodila potrebna v vašem tukejnem jeziku, kontaktirajte vaš najbliži Yokogawa office ili predstavnika.

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1. PREFACE

1.1 Introduction

Thank you for purchasing the IB100 Interface Box.

Please read this instruction manual and related documents below for proper use of this equipment. Be sure to read Safety precautions" before use. Please store this instruction manual where it can be read at any time.

Related documents

For connecting to SA11 SMART Adapter

Document name	Document No.	Note
SA11 Smart Adapter User's Manual	IM 12A06S01-00EN-P	Available for download
SA11 Smart Adapter Start-up Manual	IM 12A06S01-01EN-P	Attached to the product
WU11 Interconnection/Extension Cable for SENCOM Products	IM 12B06W02-03E-E	Attached to the product
Fieldmate Versatile Device Management Wizard	IM 01R01A01-01E	Available for download
Fieldmate Versatile Device Management Wizard Getting Started	IM 01R01A04-01E	Available for download
Calibration Management for Liquid Analyzer	IM 01R01A07-01EN	Available for download

For connecting to FU20F/FU24F/SC25F

Document name	Document No.	Note
FU20F pH/ORP SENCOM sensor	IM 12B6J3-04	Attached to the product
WU11 Interconnection/Extension Cable for SENCOM Products	IM 12B06W02-03E-E	Attached to the product
SPS24 SENCOM PC Software	IM 12A01S02-01	Included in CD-ROM (Attached only for "/CV2" option code)

A QR code can be used for quick access:

<https://www.yokogawa.com/solutions/products-platforms/process-analyzers/liquid-analyzers/#Downloads>



<https://www.yokogawa.com/solutions/products-platforms/field-instruments/device-smart-communicators-2/mobile-field-device-management-fieldmate/#Downloads> downloads 739



Information for this instruction manual

- Please operate this product after reading and understanding this instruction manual.
- No part of this manual may be transferred or reproduced without prior written consent from YOKOGAWA
- Contents in this instruction manual may be changed without notice. If you have any doubt, mistakes, or omissions on contents in this instruction manual, please contact our company document department, our sales department or our distributor.

Notation of figures

- Figures in this instruction manual may be emphasized, simplified, and omitted a part of itself to explain.
- The screen in this instruction manual may differ from actual display in display position and characters (large / small letters, etc.) without interference of function understanding and operation monitoring. In addition, displayed contents may be "display example".

Trademark

- SENCOM and FieldMate are registered trademarks of Yokogawa Electric Corporation.
- Other company names and products names used in this instruction manual are registered trademarks.
- TM and © marks are not displayed in registered trademarks in this instruction manual.

Disposal of products

Products must be disposed in accordance with local and national legislation / regulations.

Waste Electrical and Electronic Equipment (WEEE), Directive

(This directive is valid in the EU member countries)

This product complies with the WEEE Directive marking requirement. The following marking indicates that you must not discard this electrical/electronic product in domestic household waste.

Product Category:

With reference to the equipment types in the WEEE directive, this product is classified as a "Monitoring and control instruments".

Do not dispose of this product in domestic household waste.

When disposing of products in the EU, contact your local Yokogawa office.



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. However, the normal warranty period can be changed at each business office and shall be in accordance with sales conditions of the purchase order sheet. Damages due to wear, breakage, inappropriate maintenance work, corrosion and chemical processes is not covered by the warranty.
- For requesting warranty, please send nonconforming product to the person in charge of the service in the sales office. (Shipping fee is paid by the customer) We exchange or repair according to our judgment.
- For sending products, be sure to attach documents included below information
 - Model name
 - Serial number
 - Purchase order sheet
 - Purchase date
 - Period of use
 - Contents of incompatibility / occurrence status / environmental situation considered relevant
 - Warranty availability
 - Implementation status of warranty repair or non-warranty repair
 - How to return to customers
 - Detailed information on billing address (name of person in charge, phone number)

1. Introduction

1.1 Features

IB100 is an accessory device for connecting Yokogawa's SENCOM products (parameter specific SA11, FU20F, FU24F, SC25F) to PC or tablet. This IB100 device is converting digital signal from SENCOM sensors/adapters to Bluetooth standard radio signal. By using dedicated software (FieldMate or SPS24 SENCOM PC software) it is possible to manage data such as calibration values and setting values of SENCOM sensors or SENCOM Smart Adapters.

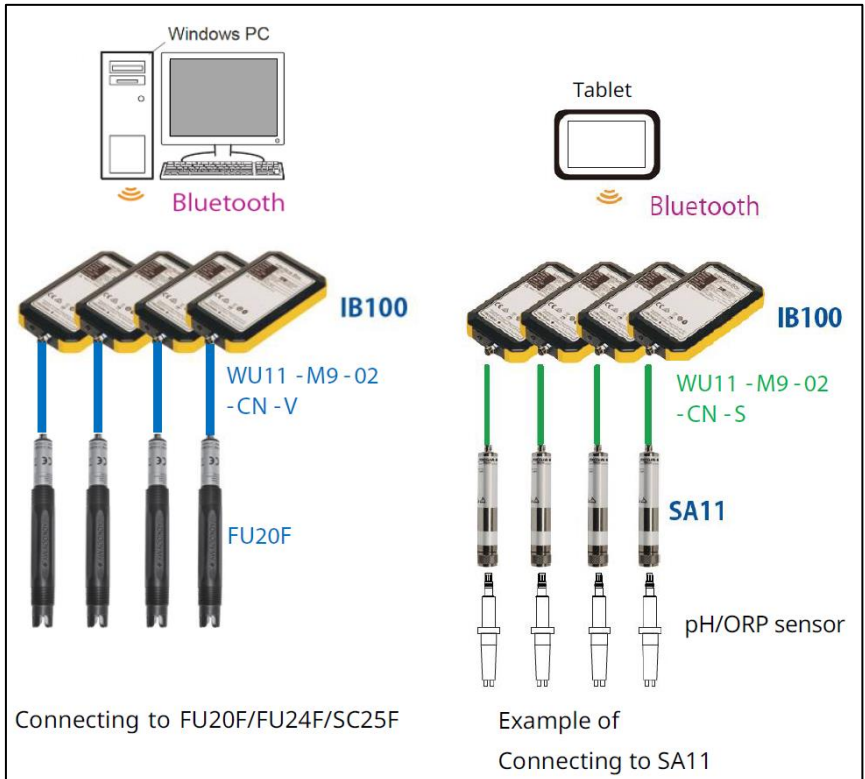


Figure 1: Configuration overview IB100 with tablet and PC

SPS24 SENCOM PC software/FieldMate can display four IB100 signals. It is up to capabilities of PC system if that can be displayed simultaneously.

1.2 Safety precautions

Accidents occurred by wrong usage are explained by warning symbol marks and signal words below.



WARNING

When displayed on product

To protect operators and products from serious accidents, this symbol is attached to the place where you need to refer this instruction manual certainly.

When displayed in instruction manual

If there is a possibility that operator's life or body may be dangerous such as an electric shock accident (at the same time products may be damaged), notes to avoid the danger are described.



CAUTION

When displayed on product

To protect operators and products from accidents, this symbol is attached to the place where you need to refer this instruction manual certainly.

When displayed in instruction manual

If there is a possibility that a minor injury accident of operators or damage to products, notes to avoid the danger are described.



WARNING

Bluetooth communication

IB100 has a Bluetooth wireless module. Before using, be sure to confirm whether IB100 meet the relevant standards such as radio regulation of the area you use. In case of violation, there is a possibility of being punished by law.

For details on compliance standards, please refer to chapter 4 "Specifications".



WARNING

For associated intrinsically safe type (Model code: IB100-CB)

- Associated intrinsically safe type IB100 (AIS type IB100) is designed to maintain the intrinsically safe performance of explosion protected type (Ex type) SENCOM sensors. Be sure to use AIS type IB100 for Ex type SENCOM sensors. Explosion protected standards complied with AIS type IB100 depend on model code. Before using, be sure to confirm whether AIS type IB100 and Ex type SENCOM sensors meet the applicable standards of the area you use.
- AIS type IB100 cannot be used as an explosion protected barrier. Connection with intrinsically safe equipment is possible only when intrinsically safe equipment is in non-hazardous area.
- Do not take IB100 to hazardous area. Do not connect to any equipment in hazardous area.
- Changes and modifications are not permitted.
- For details on compliance standards, please refer to chapter 4 "Specifications".
- Before using, be sure to read Appendix 1 "Safety precautions for associated intrinsically safe type (Model code: IB100-CB)".



CAUTION

This equipment is not intended for use in residential environments and may not provide adequate protection to radio reception in such environments.



CAUTION

For USA

- **FCC CAUTION**

Changes or modifications not expressly approved by the party responsible for compliance could void the user's authority to operate the equipment.

Note:

This equipment has been tested and found to comply with the limits for a Class A digital device, pursuant to part 15 of the FCC Rules. These limits are designed to provide reasonable protection against harmful interference when the equipment is operated in a commercial environment. This equipment generates, uses, and can radiate radio frequency energy and, if not installed and used in accordance with the instruction manual, may cause harmful interference to radio communications. Operation of this equipment in a residential area is likely to cause harmful interference in which case the user will be required to correct the interference at his own expense.

- This transmitter must not be co-located or operated in conjunction with any other antenna or transmitter.
- This equipment complies with FCC radiation exposure limits set forth for an uncontrolled environment and meets the FCC radio frequency (RF) Exposure Guidelines. This equipment should be installed and operated keeping the radiator at least 20cm or more away from person's body.



CAUTION

For Canada

- (English) This device complies with Industry Canada's licence-exempt RSSs. Operation is subject to the following two conditions:
 - (1) This device may not cause interference, and
 - (2) This device must accept any interference, including interference that may cause undesired operation of the device.
- (French) Le présent appareil est conforme aux CNR d'Industrie Canada applicables aux appareils radio exempts de licence. L'exploitation est autorisée aux deux conditions suivantes:
 - (1) l'appareil ne doit pas produire de brouillage,
 - (2) l'utilisateur de l'appareil doit accepter tout brouillage radioélectrique subi, même si le brouillage est susceptible d'en compromettre le fonctionnement.
- (English) This equipment complies with IC radiation exposure limits set forth for an uncontrolled environment and meets RSS-102 of the IC radio frequency (RF) Exposure rules. This equipment should be installed and operated keeping the radiator at least 20cm or more away from person's body.
- (French) Cet équipement est conforme aux limites d'exposition aux rayonnements énoncées pour un environnement non contrôlé et respecte les règles d'exposition aux fréquences radioélectriques (RF) CNR-102 de l'IC. Cet équipement doit être installé et utilisé en gardant une distance de 20 cm ou plus entre le radiateur et le corps humain.

**CAUTION****For Australia and New Zealand**

- This equipment is designed to be used, or held, more than 20cm from the human body.

**CAUTION****For Korea**

- 해당 무선설비는 전파혼신 가능성이 있으므로 인명안전과 관련된 서비스는 할 수 없습니다.
- A 급 기기 (업무용 방송통신기자재)이 기기는 업무용 환경에서 사용할 목적으로 적합성평가를 받은 기기로서 가정용 환경에서 사용하는 경우 전파간섭의 우려가 있습니다.
- 본 기기는 통상 이용 상태의 경우 인체(머리, 몸통)와 20cm 초과하는 거리에서 사용되어야 합니다.

**CAUTION****For China**

1.
 - 使用频率：2.4 - 2.4835 GHz
 - 等效全向辐射功率(EIRP)：天线增益 < 10dBi时：≤100 mW 或 ≤20 dBm
 - 最大功率谱密度：天线增益 < 10dBi时：≤20 dBm / MHz(EIRP)
 - 载频容限：20 ppm
 - 带外发射功率(在2.4-2.4835GHz频段以外) ≤-80 dBm / Hz (EIRP)
 - 杂散发射(辐射)功率(对应载波±2.5倍信道带宽以外)：

- ≤-36 dBm / 100 kHz (30 - 1000 MHz)
- ≤-33 dBm / 100 kHz (2.4 - 2.4835 GHz)
- ≤-40 dBm / 1 MHz (3.4 - 3.53 GHz)
- ≤-40 dBm / 1 MHz (5.725 - 5.85 GHz) ≤-30 dBm / 1 MHz (其它1 - 12.75 GHz)

2. 不得擅自更改发射频率、加大发射功率(包括额外加装射频功率放大器)，不得擅自外接天线或改用其它发射天线；

3. 使用时不得对各种合法的无线电通信业务产生有害干扰；一旦发现有干扰现象时，应立即停止使用，并采取措施消除干扰后方可继续使用；

4. 使用微功率无线电设备，必须忍受各种无线电业务的干扰或工业、科学及医疗应用设备的辐射干扰；

5. 不得在飞机和机场附近使用。

**CAUTION****Batteries to use**

- Install batteries to IB100 in a dry place.
- Installing batteries, do not mistake the direction of + (plus) and - (minus). IB100 may be damaged.
- Do not leave end of life batteries attached. Batteries leakage causes malfunction.
- Replace all batteries at the same time. Charging from new batteries to old ones may occur and cause malfunction.
- Use only AA alkaline batteries (LR6) or AA hydrogen nickel batteries (HR6). (Do not use lithium battery, lithium-ion battery, and lithium-ion polymer battery absolutely because of a possibility to cause ignition)
- Do not mix different types of batteries.

1.3 Disclaimer

We do not guarantee anything about this product except as provided in warranty clauses. We cannot assume the responsibility that customers or third party suffer damages directly and indirectly due to the use of this product or defects of this product which we cannot predict

1.4 Unpacking and confirmation

Please be careful enough to unpack and confirm products has not damaged during transportation. If damage is found, return products to the original package, and contact the shipping company and the relevant sales office immediately.

Please confirm model name and serial number of IB100 are same as the product label and the delivery sheet. If you also bought options together, please confirm they are included properly.

1.5 Serial number definition

The Serial Number is defined by nine (9) alphanumeric characters:

X_1X_2 Production Location
 X_3X_4 Year/Month code
 $X_5X_6X_7X_8X_9$ Tracking number

Example: N3P600028

Method used for manufactured year/month numbering:

Year	Year code	Year	Year code	Month	Month code
2014	P	2026	3	January	1
2015	R	2027	4	February	2
2016	S	2028	5	March	3
2017	T	2029	6	April	4
2018	U	2030	7	May	5
2019	V	2031	8	June	6
2020	W	2032	9	July	7
2021	X	2033	A	August	8
2022	Y	2034	B	September	9
2023	Z	2035	C	October	A
2024	1	2036	D	November	B
2025	2	2037	E	December	C

1.6 Label

Example of the label for model IB100-CB.

Interface Box

MODEL	IB100
SUFFIX	-CB
OPTION	
STYLE	S/N N3V599999
SUPPLY	Battery type --- LR6 1.5Vx2 / HR6 1.2Vx2
AMB. TEMP	-10 TO 50°C
IP CLASS	IP54
BLUETOOTH	Class 2, 10m

Uo:5V Io:205mA Po:260mW
Read Control drawing IIE032-A31

Read/Lisez IM 12B06J09-01

WARNING/AVERTISSEMENT
NON-HAZARDOUS AREA ONLY
ZONE NON DANGEREUSE UNIQUEMENT

This device complies with part 15 of the FCC Rules. Operation is subject to the following two conditions: (1) This device may not cause harmful interference, and (2) this device must accept any interference received, including interference that may cause undesired operation.

APPROVED
CL I/II/III, DIV 1, GP ABCDEFG
CL I, ZN 0, [AEx ia] IIC

II (1) G [Ex ia Gc] IIC
FM16ATEX0110X

[Ex ia Gc] IIC
Associated apparatus for
CL I/II/III, DIV 1, GP ABCDEFG
FM16CA0186X
IECEx FMG 16.0041X

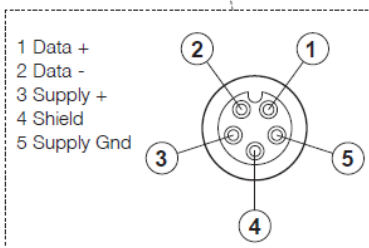
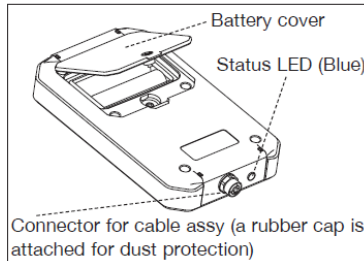
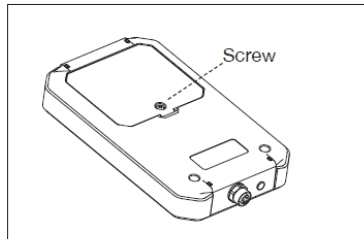
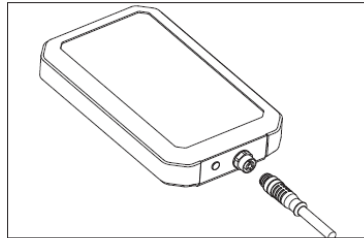
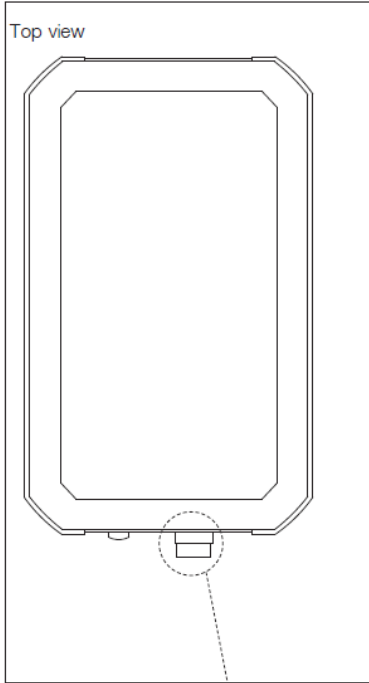
Contains FCC ID: P14411B
Contains IC: 1931B-BTM411

Yokogawa Process Analyzers Europe B.V.
Euroweg 2, 3825HD Amersfoort, The Netherlands
YOKOGAWA ◆ Made in the Netherlands

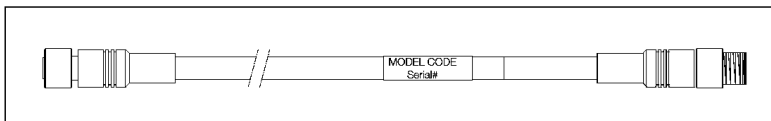
2. Installation

2.1 Product details

IB100 (BOX ASSY)



WU11 (CABLE ASSY) ※Option item



2.2 Preparation

Connection to SA11 SMART Adapter

No.	Name	Model name
1	Box ASSY	IB100
2	Cable ASSY	WU11-M9-02-CN-2
3	SENCOM smart adapter	SA11
4	SA11 compatible sensor	e.g., FU20 compatible with SA11 (Variopin and ID-chip)
5	PC or tablet PC	e.g., FSA310 Requirement: -Bluetooth communication is available FieldMate R3.04.00 or later is installed
6	AA batteries 2 pieces	AA alkaline batteries (LR6) or AA hydrogen nickel batteries (HR6)

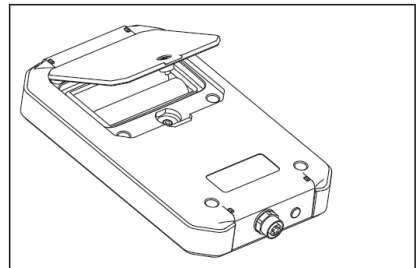
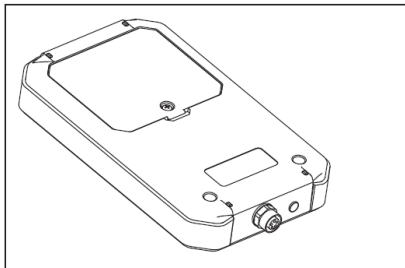
Connection to FU20F/FU24F/SC25F

No.	Name	Model name
1	Box ASSY	IB100
2	Cable ASSY	WU11-M9-02-CN-V
3	Sencom sensor	e.g., FU20F
4	PC	Requirement: -Bluetooth communication is available -SPS24 SENCOM PC software installed (see addendum 2 for details)
5	AA batteries 2 pieces	AA alkaline batteries (LR6) or AA hydrogen nickel batteries (HR6)

Note 1: SA11 does not support SPS24 SENCOM PC software. Please use FieldMate.

Note 2: FU20F/FU24F/SC25F does not support FieldMate. Please use SPS24 SENCOM PC software.

2.3 Installing batteries



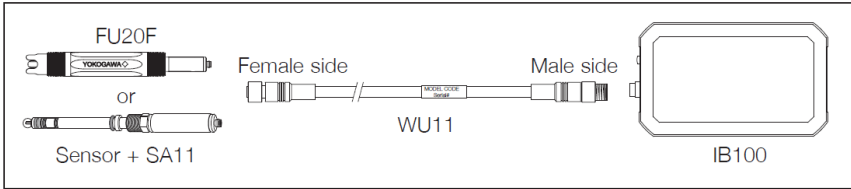
Remove the battery cover on the back of IB100 and install batteries. After batteries are installed properly, status LED starts lighting. After a while, status LED stop lighting but it is ready for operation.

2.4 Wiring of equipment

Please use the correct type WU11 cable (see Notes) to connect the IB100 to the SENCOM sensor/SA11 SENCOM Smart Adapter. Please tighten nuts securely after connection. To prevent misconnection, the connector and counterpart both have positioning notch. After IB100 and SENCOM sensor are properly connected, status LED starts lighting (Status LED goes off after a while).

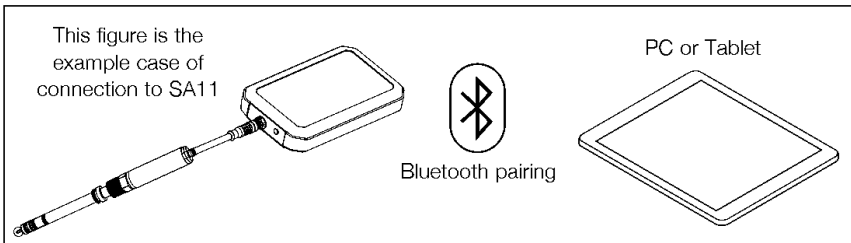
Note 1: For connecting SA11, be sure to use “WU11-M9-02-CN-S”

Note 2: For connecting FU20F/FU24F/SC25F, be sure to use “WU11-M9-02-CN-V”

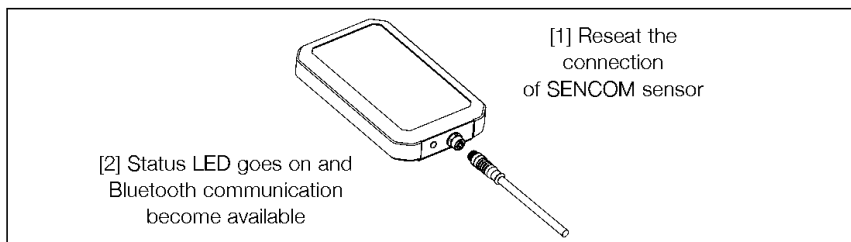


2.5 Connection with PC/Tablet (Bluetooth pairing)

To access SENCOM sensor/SENCOM Smart Adapter connected to IB100 from the dedicated software installed in PC/Tablet, it is necessary to do Bluetooth pairing with IB100 and PC/Tablet. For the concrete method of pairing, please confirm how to add Bluetooth device in Windows. IB100 is displayed as “Yokogawa IB100” in Windows Bluetooth device menu. Paring only must be executed once, but if PC pairing is failing remove IB100 and repeat pairing action. With the dedicated software up to four SENCOM sensors/SENCOM Smart Adapter can be accessed at the same time by using multiple IB100s, each with their own COM ports. Please do pairing with each IB100 and PC and note the COM port on the IB100 device for easy recognition. Be aware that if you replace a IB100 at a COM port, first remove device before pairing the new IB100.



PC/Tablet can find IB100 as Bluetooth device while IB100’s status LED is on because it means Bluetooth communication is available. During paring of IB100 with PC/Tablet the status LED should be on. When status LED is off you must reseal the connection of the SENCOM sensor/Smart Adapter. When LED stays off even after reseating then battery needs to be replaced.



After pairing is completed, IB100 status LED starts blinking which means you can access SENCOM sensor by each dedicated software. For the concrete procedure, please refer to each software instruction manual.

SENCOM sensor	Dedicated software	Instruction Manual
SA11	Fieldmate R3.04.00 or later	IM 01R01A07-01
FU20F/FU24F/SC25F	SPS24 SENCOM PC software	IM 12A01S02-01 *Note

Note: In this manual, "USB type" Interface Box is described for a representative example. Please change and read them all as IB100.

Note

- After Bluetooth pairing of IB100 and PC/Tablet is completed, IB100 is recognized as serial communication device from PC/Tablet, and two COM ports are assigned per one IB100.
- The dedicated software requires selecting COM port to access SENCOM sensor. You need to select correct COM port which is displayed as "Yokogawa IB100 'SPP Dev'" or "Outgoing" on Bluetooth Settings window of Windows.
- These setting details of COM ports can be confirmed from "Bluetooth Settings" on Window 7 or "More Bluetooth options" on Windows 10.
- If the dedicated software does not access SENCOM sensor for a while, IB100's status LED goes off and Bluetooth communication become unavailable. For using the dedicated software, please confirm that status LED is on.

2.6 Operation mode

IB100's status LED definitions are as follows

Status LED	Operation mode
OFF (continuously)	Sleep - Bluetooth communication is not available
ON (continuously)	Standby - Bluetooth communication is available
Blink	Operational - Bluetooth communication with PC is being connected by dedicated software
Fast blink	Standby - Bluetooth communication available - Please replace batteries because capacities are low

3. Troubleshooting

If dedicated software cannot access SENCOM sensor/SENCOM Smart Adapter check following:

- COM port is selected correctly.
- IB100 is not in sleep mode (to confirm Bluetooth communication is available).
- Bluetooth pairing is done properly.
 - To re-access the SENCOM sensor/SENCOM Smart Adapter do pairing again.
If IB100 cannot be detected from PC at the time of pairing, please stop using nearby 2.4GHz band wireless devices. Check Bluetooth communication of PC is working properly.
- PC is working correctly. If not, reboot PC.
- Batteries are good. If not, replace batteries of IB100 with new ones.

If you cannot solve above mentioned problems, please feel free to contact the distributor you purchased or our service department.

4. Specifications

4.1. General Specifications

Operating conditions	
Ambient Temperature	: -10°C to 50°C
Ambient Humidity	: 10% to 85% RH
Installation Altitude	: 2000m or less
Installation location	: Only indoors

4.2 Enclosure

Material	: ABS
Protection degree	: IP 54, with cable assembly connected (IEC 60529)
Connector type	: M9 5pin female

4.3 Power Supply

Battery	: 2x 1.5V AA alkaline batteries (LR6) or 2x 1.2V AA hydrogen nickel batteries (HR6) (Not attached to this product)
Power consumption	: 200mW (Not including SENCOM sensor/ or SA11 SMART adapter)

4.4 Bluetooth communication

Bluetooth SIG ID	: D032445
Version	: Bluetooth Ver 2.1 + EDR
Supported profile	: SPP (Serial port profile)
Carrier freq. band	: 2404MHz to 2480MHz
Channel spacing	: 1 MHz
Number of channels	: 79
Max. transmitting power	: +4dBm
Communication distance	: 10m (Class 2)

4.5 Serial communication

Protocol	: MODBUS RTU
Physical layer	: RS485 half-duplex (2 wire)
Baud rate	: 9600bps (E/8/1)

4.6 Environmental conditions

Storage temperature	: -30°C to +70°C (-22°F to +158°F)
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4.7 Shipping details

Packaging (LxWxH)	: Approx. 235x145x45 mm (9.3x5.7x1.8 inch)
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4.8 Regulatory compliance

Type	Country	Laws and regulations		Compliance standard
-AB	EU	CE	RED (Article 3 2.)	EN 300 328 V2.1.1
			LVD (RED Article 3 1.a)	EN 61010-1: 2010 *Note 1 Pollution degree 2 installation category I EN 62311: 2008
			EMC (RED Article 3 1.b)	EN 61326-1: 2013 Class A, Table2 (For use in industrial locations) EN 301 489-1 V2.1.1 EN 301 489-17 V3.1.1
			RoHS	EN IEC 63000:2018
		REACH	Regulation (EC) 1907/2006	
		WEEE2	Directive 2012/19/EU	
		USA	FCC	FCC ID: PI4411B * Note 2 47CFR Part15 subpart B
	Safety		FM Class 3810: 2005 ANSI/ISA 61010-1: 2012	
	Canada	Industry Canada	IC ID: 1931B-BTM411 * Note 2 ICES-003	
	Japan	Radio	Construction design attestation number: 204-320077 * Note 1	
	Australia, New Zealand	RCM	EMC	EN 61326-1: 2013 Class A, Table2 (For use in industrial locations)
			Radio	AS/NZS 4268 [EN 300 329 V.2.1.1]
			EME	AS/NZS 2772.2: 2016
	Korea	KC	EMC	KN 301 489-1 KN 301 489-17
			Radio	신고하지 아니하고 개설했 수 있는 무선국용 무선설비의 기술기준 (미래창조과학부 고시 제 2016- 127 호)
			(Certification No.)	(MSIP-CRM-YPA-WEN018)
	China	Radio	信部无[2002] 353 号 (CMIT ID: 2017DJ3320)	
China RoHS				
China PL				

Type	Country	Laws and regulations		Compliance standard	
-CB	EU	CE	ATEX	EN 60079-0:2012 +A11: 2013 EN 60079-11: 2012	
			RED (Article 3 2.)	EN 300 328 V2.1.1 EN 62311: 2008	
			LVD (RED Article 3 1.a)	EN 61010-1: 2010 * Note 1 Pollution degree 2 installation category I EN 62311: 2008	
			EMC (RED Article 3 1.b)	EN 61326-1: 2013 Class A, Table2 (For use in industrial locations) EN 301 489-1 V2.1.1 EN 301 489-17 V3.1.1	
		RoHS2	EN IEC 63000:2018		
		REACH	Regulation EC 1907/2006		
		WEEE2	Directive 2012/19/EU		
	USA	Explosion protected		FM Class 3600: 2011 FM Class 3610: 2015 ANSI/UL 60079-0: 2013 ANSI/UL 60079-11: 2014	
			FCC	FCC ID: PI4411B * Note 2 47CFR Part15 subpart B	
			Safety	FM Class 3810: 2005 ANSI/ISA 61010-1: 2012	
	Canada	Explosion protected		CAN/CSA-C22.2 No. 60079-0: 2015 CAN/CSA-C22.2 No. 60079-11: 2014	
			Industry Canada	IC ID: 1931B-BTM411 * Note 2 ICES-003	
		Safety	CAN/CSA-C22.2 No. 61010-1: 2012		
	Australia, New Zealand	Explosion protected		IEC 60079-0: 2011 IEC 60079-11: 2011	
			RCM	EMC	EN 61326-1: 2013 Class A, Table2 (For use in industrial locations)
				Radio	AS/NZS 4268 [EN 300 329 V.2.2.1]
		EME	AS/NZS 2772.2: 2016		

Note 1:

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. Installation category describes a number which defines a transient overvoltage condition. It implies the regulation for impulse withstand voltage. "I" applies for connection to circuits in which measures are taken to limit transient over voltages to an appropriately low level.

Note 2:

Modular approval for Bluetooth module built in the product.

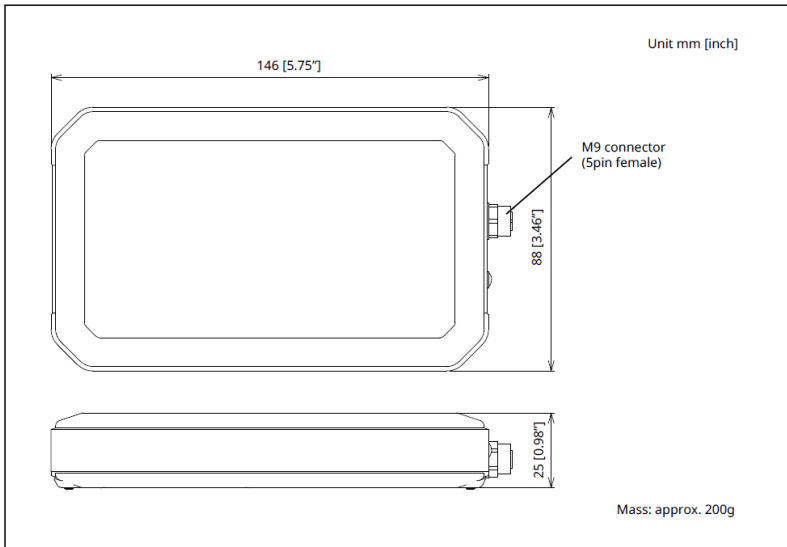
5. Model and Suffix code

Model	Suffix Code	Option code	Description
IB100			Interface box for SENCOM
Type	-AB -CB		General purpose. Intrinsically safe for EU, USA, CAN, AUS/NZL. (Note *1,2)
Options		/CS2 /CV2	2m WU11 cable for SA11 2m WU11 cable for FU20F, FU24F and SC25F with SENCOM PC software

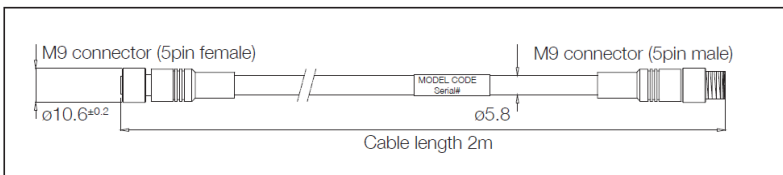
Note 1: It cannot be used as an explosion-proof related device in Japan

Note 2: Please note that it is necessary to meet the regulations of each country such as the Radio Law in addition to explosion proof

6. Outline dimensions



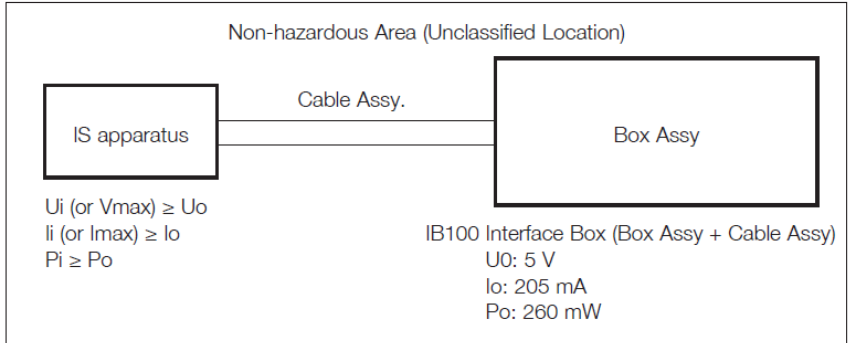
WU11 (cable assembly: 2m connection cable) (/CV2, /CS2)



Addendum 1: Control drawing

Safety precautions for associated intrinsically safe type (Model: IB100-CB)

1. Control drawing



Specific Condition of Use:


This is an accessory device intended for connection to the intrinsically safe apparatus only when the intrinsically safe apparatus is located in a non-hazardous area.

Notes:

- No revision to this drawing without prior approval of FM.
- Warning: Do not either take IB100 into hazardous (classified) location or connect to any equipment located in a hazardous (classified) location
- Warning: Substitution of components may impair intrinsic safety

2. Technical Data

- US
 - Certificate: FM16US0405X
 - Applicable Standards: FM Class 3600: 2011
FM Class 3610: 2015
FM Class 3810: 2005
ANSI/UL 60079-0: 2013
ANSI/UL 60079-11: 2014
ANSI/ISA 61010-1: 2012
 - Ratings and Marking code: Associated apparatus for Class I/II/III, Division 1, Groups A, B, C, D, E, F, G
Class I, Zone 0, [AEx ia] IIC
- Canada
 - Certificate: FM16CA0186X
 - Applicable Standards: CAN/CSA-C22.2 No. 0-10: 2010 (R2015)
CAN/CSA-C22.2 No. 60079-0: 2015
CAN/CSA-C22.2 No. 60079-11: 2014
CAN/CSA-C22.2 No. 61010-1: 2012
 - Ratings and Marking code: [Ex ia Ga] IIC Associated apparatus for Class I/II/III, Division 1, Groups A, B, C, D, E, F, G

- Europe (ATEX)
 - Certificate: FM16ATEX0110X
 - Applicable Standards: EN 60079-0: 2012/A11:2013
EN 60079-11: 2012
- Ratings and Marking code:  II (1) G [Ex ia Ga] IIC

- International (IECEX)
 - Certificate: IECEX FMG 16.0041X
 - Applicable Standards: IEC 60079-0: 2011
IEC 60079-11: 2011
- Ratings and Marking code: [Ex ia Ga] IIC

3. Installation

The installation of IB100 should be carried out by the engineers or other professional personnel of the related expertise. The installation should not be carried out by operators or other unprofessional personnel.

4. WARNINGS

(English) NON-HAZARDOUS AREA ONLY

(French) ZONE NON DANGEREUSE UNIQUEMENT

5. Maintenance and Repair

Modification or parts replacement by other than authorized Representative of Yokogawa is prohibited and will void the certification.

Addendum 2: Installation of SPS24 SENCOM PC software

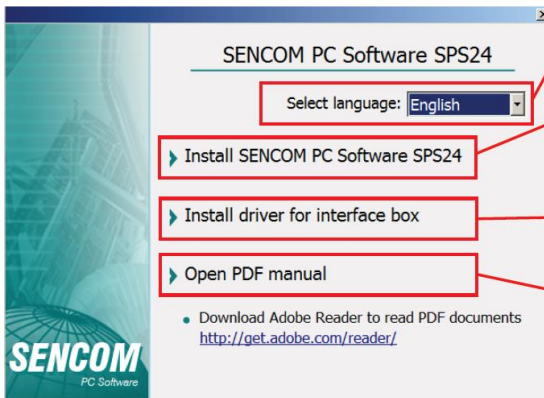
If you select and purchase the product with option code "/CV2", SPS24 SENCOM PC software which is PC management software for FU20F is included in the package as installer CD-ROM.

System requirements

Operating system (OS) :	Windows 7 SP1 (32 bit/64 bit) The operating system language and the software language are either English or Japanese.
PC hardware :	Installed with either of the OSs above and equipped with the CPU and memory listed below. Intel Core 2 Duo CPU E7500 or higher. Minimum 2 GB RAM
Display :	XGA (1024 x 768) or less
HDD :	At least 100 MB for application (more space may be required to save data)
Drive :	CD-ROM drive
Printer :	Units that can operate with either of the Windows system above

Installation

[1] Insert the installer CD-ROM into PC CD-ROM drive. If the installer does not start automatically, execute "SPS 24_Launcher.exe" on the CD-ROM.



[2] Select language according to usage environment

[3] Push the install button and install SPS24 according to the guide

No driver installation is required

You can read the instruction manual of SPS24

<p>YOKOGAWA ELECTRIC CORPORATION World Headquarters 9-32, Nakacho 2-chome, Musashino-shi Tokyo 180-8750 Japan www.yokogawa.com</p> <p>YOKOGAWA CORPORATION OF AMERICA 2 Dart Road Newnan GA 30265 USA www.yokogawa.com/us</p> <p>YOKOGAWA EUROPE BV Euroweg 2 3925 HD AMERSFOORT The Netherlands www.yokogawa.com/eu</p>	<p>YOKOGAWA ELECTRIC ASIA Pte. LTD. 5 Bedok South Road Singapore 469270 Singapore www.yokogawa.com/sg</p> <p>YOKOGAWA CHINA CO. LTD. Room 1801, Tower B, THE PLACE No. 100 Zunyi Road Changning District, Shanghai, China www.yokogawa.com/cn</p> <p>YOKOGAWA MIDDLE EAST B.S.C.(c) P.O. Box 10070, Manama Building 577, Road 2516, Busaiteen 225 Muharraq, Bahrain www.yokogawa.com/bh</p>	<p>Yokogawa has an extensive sales and distribution network. Please refer to the European website (www.yokogawa.com/eu) to contact your nearest representative.</p> <p> YOKOGAWA ◆</p>
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