# User's Manual

# **Read Me First**

IM 01W01F01-11EN



This document specifies the important information to use this product correctly and safely and the Use Consent Contract of Attached Software for Field Wireless Integrated Gateway.

Before use the product, be sure to read this document first.

# Contents

Introduction	2
Safety Precautions	4
Explosion Proof Specifications	. 10
How to Use Online Manual	. 23
Preparation to Install YFGW710 Attached Software	. 23
Copyright and Trademark Notices	. 24
About User's Manual	. 25
Information of User's Manual Revision	. 25
YFGW710 Software License Agreement	. 26



IM 01W01F01-11EN 6th Edition

# Introduction

### Regarding This User's Manual

- This manual should be provided to the end user. Please recommend end users to keep this manual at hand and refer to it as needed.
- Before use, read this manual thoroughly to comprehend its contents.
- The purpose of the user's manual is to describe details of functions provided in this product, not to warrant the product's suitability to the specific purposes of customers.
- No part of this manual may be reproduced in any form without Yokogawa's written permission.
- The contents of this manual may be changed without prior notice.
- All reasonable effort has been made to ensure the accuracy of the contents of this manual. However, if any errors or omissions are found, please inform any of sales offices listed on the back cover or your local distributor.
- Special specifications are not described.
- Please note that this user's manual may not be revised for any specification changes, construction changes or operating part changes that are not considered to affect function or performance.

### ATEX Documentation

### This is only applicable to the countries in European Union.

GB

DK

L

Е

NL

SF

Ρ

F

D

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

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

Tutti i manuali operativi di prodotti ATEX contrassegnati con Ex sono disponibili in inglese, tedesco e francese. 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.

Todos los manuales de instrucciones para los productos antiexplosivos de ATEX están disponibles en inglés, alemán y francés. 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.

Alle handleidingen voor producten die te maken hebben met ATEX explosiebeveiliging (Ex) zijn verkrijgbaar in het Engels, Duits en Frans. 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.

Kaikkien ATEX Ex -tyyppisten tuotteiden käyttöhjeet ovat saatavilla englannin-, saksan- ja ranskankielisinä. Mikäli tarvitsette Ex -tyyppisten tuotteiden ohjeita omalla paikallisella kielellännne, ottakaa yhteyttä lähimpään Yokogawa-toimistoon tai -edustajaan.

Todos os manuais de instruções referentes aos produtos Ex da ATEX estão disponíveis em Inglês, Alemão e Francês. 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.

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

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



GR

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

Ολα τα εγχειρίδια λειτουργίας των προϊόντων με ΑΤΕΧ Εχ διατίθενται στα Αγγλικά, Γερμανικά και Γαλλικά. Σε περίπτωση που χρειάζεστε οδηγίες σχετικά με Εχ στην τοπική γλώσσα παρακαλούμε επικοινωνήστε με το πλησιέστερο γραφείο της Yokogawa ή αντιπρόσωπο της.



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



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



LV

Visos gaminiø ATEX Ex kategorijos Eksploatavimo instrukcijos teikiami anglø, vokieèiø ir prancûzø kalbornis. Norëdami gauti prietaisø Ex dokumentacijà kitomis kalbomis susisiekite su artimiausiu bendrovës "Yokogawa" biuru arba atstovu.

Visas ATEX Ex kategorijas izstrâdâjumu Lietoðanas instrukcijas tiek piegâdâtas angïu, vâcu un franèu valodâs. Ja vçlaties saòemt Ex ierîèu dokumentâciju citâ valodâ, Jums ir jâsazinâs ar firmas Jokogava (Yokogawa) tuvâko ofisu vai pârstâvi.



PL

Kõik ATEX Ex toodete kasutamisjuhendid on esitatud inglise, saksa ja prantsuse keeles. Ex seadmete muukeelse dokumentatsiooni saamiseks pöörduge lähima lokagava (Yokogawa) kontori või esindaja poole.

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



Vsi predpisi in navodila za ATEX Ex sorodni pridelki so pri roki v angliščini, nemščini ter francoščini. Èe so Ex sorodna navodila potrebna v vašem tukejnjem jeziku, kontaktirajte vaš najbliši Yokogawa office ili predstaunika.



BG

Az ATEX Ex mûszerek gépkönyveit angol, német és francia nyelven adjuk ki. Amennyiben helyi nyelven kérik az Ex eszközök leírásait, kérjük keressék fel a legközelebbi Yokogawa irodát, vagy képviseletet.

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



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

M

II-manwali kollha ta' I-istruzzjonijiet għal prodotti marbuta ma' ATEX Ex huma disponibbli bI-Ingliż, bil-Germaniż u bil-Franċiż. Jekk tkun teħtieġ struzzjonijiet marbuta ma' Ex fil-lingwa lokali tiegħek, għandek tikkuntattja lilI-eqreb rappreżentan jew uffiċċju ta' Yokogawa.

# **Safety Precautions**

### Safety, Protection, and Modification of the Product

- Safety, Protection, and Modification of the Product
- In order to protect the operator, product, and system controlled by the product, observe the safety precautions described in this user's manual. If users handle contrary to these instructions, we can not guarantee the safety.
- If this instrument is used in a manner not specified in this user's manual, the protection provided by this instrument may be impaired.
- Modification of the product is strictly prohibited.
- If customers attempt to repair or modify explosion-proof type products and fail to return them to their original state, the explosion-proof structure of this product will be lost, resulting in a hazardous state. All repairs and modifications of the product must be consulted with Yokogawa.
- 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 Electric Corporation (hereafter simply referred to as YOKOGAWA) when replacing parts or consumables.
- The following symbols are used in the product and user's manual to indicate that there are precautions for safety:

# 

Indicates that caution is required for operation. This symbol is placed on the parts necessary to refer to the user's manual for protecting the operator and equipment. In the user's manuals you will find precautions to avoid physical injury or death of the operator, including electrical shocks, injuries of human body, and so on.



### WARNING

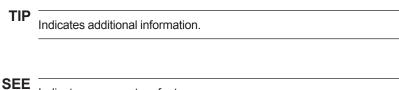
Indicates instructions that must be observed in order to prevent the software or hardware from being damaged or the system from becoming faulty.



Indicates important information required to understand operations or functions.

# 🖄 ΝΟΤΕ

Draws attention to information essential for understanding the operation and features.



ALSO Indicates a source to refer to

- Indicates a protective grounding terminal. Before using the product, ground the terminal.
- $\pm$  Indicates a functional grounding terminal. Before using the product, ground the terminal.
- --- Indicates a DC supply

### Warranty

- The warranty terms of this instrument are described in the quotation. We will
  make any repairs that may become necessary during the guaranteed term free
  of charge.
- Please contact our sales office or your local distributor if this instrument requires repair.
- If the instrument is faulty, contact us with complete details about the problem and the length of time it has been faulty, and state the model and serial number. We would appreciate the inclusion of drawings or additional information.
- The results of our examination will determine whether the product will be repaired free of charge or on an at-cost basis.

### The guarantee will not apply in the following cases:

- Damage due to negligence or insufficient maintenance on the part of the customer.
- Problems or damage resulting from handling, operation or storage that violates the intended use and specifications.
- Problems that result from using or performing maintenance on the instrument in a location that does not comply with the installation location specified by Yokogawa.
- Problems or damage resulting from repairs or modifications not performed by Yokogawa or someone authorized by Yokogawa.
- Problems or damage resulting from inappropriate installation after delivery.
- Problems or damage resulting from disasters such as fires, earthquakes, storms, floods, or lightning strikes and external causes.

### Warranty and Disclaimer

- Yokogawa assumes no responsibilities for this product except as stated in the warranty.
- 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 can not predict in advance.

### Notes on Hardware

#### Appearance and Accessories

Check the following when you receive the product:

- Appearance
- Standard accessories

Contact our sales representative or your local distributor if the product's coating has come off or nay accessories are missing.

### Model and Suffix Codes

The name plate on the product contains the model and suffix codes. Compare them with those in the general specification to make sure the product is the correct one. If you have any questions, contact our sales office or your local distributor.

### Notes on Attached Software

- Before opening the media package, read YFGW710 Software License Agreement. Once the package is opened, it is thought that the contract is agreed.
- Yokogawa assumes no responsibilities for this software except as stated in the warranty.
- This software is used with this product exclusively. This can be installed in the computer which connects with this product.
- Insulation Resistance and Dielectric Strength Test
  - Insulation Resistance and dielectric strength test could not be carried out for YFGW710, due to the circuit ground is connected directly to the frame of YFGW710 via RF cable shield.

### Cautions for Safely Applying the Device

### • EMC Conformity Standards

EN61326-1 Class A, Table 2 (For use in industrial locations), EN61000-6-2

# 

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

### • R&TTE Conformity Standards:

ETSI EN 300 328, ETSI EN 301 489-17, EN61010-1, EN62311

Indoor/Outdoor use

### Low Voltage Directive

Applicable standard: EN61010-1

### (1) Pollution Degree 2

"Pollution degree" describes the degree to which a solid, liquid, or gas which deteriorates dielectric strength or surface resistivity is adhering. "2" applies to normal indoor atmosphere. Normally, only non-conductive pollution occurs. Occasionally, however, temporary conductivity caused by condensation must be expected.

#### (2) Installation Category I

"Overvoltage category (Installation category)" describes a number which defines a transient overvoltage condition. It implies the regulation for impulse withstand voltage.

"I" applies to electrical equipment which is supplied from the circuit when appropriate transient overvoltage control means (interface) are provided.

### Regulatory Compliance for Radio and Telecommunication

Please confirm that a installation region fulfils a standards, require additional regulatory information and approvals, contact to Yokogawa Electric Corporation.

#### Radio and Telecommunications

### Terminal Equipment Directive (R&TTE) ( €

We, Yokogawa Electric Corporation hereby declare that this equipment, YFGW710 is in compliance with the essential requirements and other relevant provisions of Directive 1999/5/EC.

The CE declaration of conformity for R&TTE for this product can be found at http://www. yokogawa.com/fld/

### FCC compliance

This device complies with Part 15 pf FCC Riles. 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 this device.

#### **Co-located:**

This transmitter must not be co-located or operated in conjunction with any other antenna or transmitter.

#### FCC WARNING:

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

# 

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 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 interferences 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.

### • Industry Canada (IC) compliance

This Class A digital apparatus complies with Canadian ICES-003.

This device complies with Industry Canada licence-exempt RSS standard(s). 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.

Under Industry Canada regulations, this radio transmitter may only operate using an antenna of a type and maximum (or lesser) gain approved for the transmitter by Industry Canada. To reduce potential radio interference to other users, the antenna type and its gain should be so chosen that the equivalent isotropically radiated power (e.i.r.p.) is not more than that necessary for successful communication.

This radio transmitter IC Number 8999A-WIC001 has been approved by Industry Canada to operate with the antenna types listed below with the maximum permissible gain and required antenna impedance for each antenna type indicated. Antenna types not included in this list, having a gain greater than the maximum gain indicated for that type, are strictly prohibited for use with this device.

Antenna type:	Gain:
COLLINEAR	9dBi, 50Ω
Sleeve	2.14dBi, 50Ω

#### French:

Cet appareil numérique de la classe A est conforme à la norme NMB-003 du Canada.

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, et (2) l'utilisateur de l'appareil doit accepter tout brouillage radioé-lectrique subi, même si le brouillage est susceptible d'en compromettre le fonctionnement.

Conformément à la réglementation d'Industrie Canada, le présent émetteur radio peut fonctionner avec une antenne d'un type et d'un gain maximal (ou inférieur) approuvé pour l'émetteur par Industrie Canada. Dans le but de réduire les risques de brouillage radioélectrique à l'intention des autres utilisateurs, il faut choisir le type d'antenne et son gain de sorte que la puissance isotrope rayonnée équivalente (p.i.r.e.) ne dépasse pas l'intensité nécessaire à l'établissement d'une communication satisfaisante.

Le présent émetteur radio IC Number 8999A-WIC001 a été approuvé par Industrie Canada pour fonctionner avec les types d'antenne énumérés ci-dessous et ayant un gain admissible maximal et l'impédance requise pour chaque type d'antenne. Les types d'antenne non inclus dans cette liste, ou dont le gain est supérieur au gain maximal indiqué, sont strictement interdits pour l'exploitation de l'émetteur.

Antenne type:	Gain:
COLLINEAR	9dBi, 50Ω
Sleeve	2.14dBi, 50Ω

9

# **Explosion Proof Specifications**

# 

This instrument has been tested and certified as being explosion proof. Please note that severe restrictions apply to this instrument's construction, installation, external wiring, maintenance and repair. A failure to abide by these restrictions could make the instrument a hazard to operate.

# Optional Specifications(For Explosion Protected Types)

ltem	Description		
Factory Mutual (FM)	FM nonincendive approval Applicable standard: FM3600, FM3611, FM3810, ANSI/NEMA250 Nonincendive for Class I, Division 2, Groups A, B, C and D; Class II, Division 2, Groups F and G; Class III, Division 1 hazardous (Classified) locations. Enclosure: NEMA 4X Temp. Class: T4, Amb. Temp.: –40 to 60°C (–40 to 140°F)		
ATEX	ATEX Type n declaration Applicable standard: EN60079-0: 2009, EN60079-0: 2012, EN60079-11: 2012, EN60079-15: 2010, EN60079-28: 2007 II 3G Ex nA [ic] [op is] IIC T4 Gc (with 100BASE-FX) II 3G Ex nA [ic] IIC T4 Gc (without 100BASE-FX) Enclosure: IP66 Amb. Temp.: -40 to 60°C (-40 to 140°F)		
Canadian Standards Association (CSA)			
IECEx Scheme	IECEx Type n approval Certificate: IECEx DEK 13.0047 Applicable standard: IEC60079-0:2011, IEC60079-15:2010, IEC 60079-11:2011 Ex nA [ic] IIC T4 Gc Enclosure: IP66 Amb. Temp.: -40 to 60°C (-40 to 140°F)	SN27	

### FM Approval

Caution for FM nonincendive. (Following contents refer to "DOC.NO. NFM023-A14 P.1 AND P.2.")

# Note 1. Model YFGW710 Field Wireless Integrated Gateway with optional code /FN17 is applicable for use in hazardous (Classified) locations.

- Applicable standard: FM3600, FM3611, FM3810, ANSI/NEMA 250
- Nonincendive for Class I, Division 2, Groups A, B, C and D. Class II, Division 2, Groups F and G. Class III, Division 1 hazardous (Classified) locations.
- Enclosure: NEMA 4X (Indoors and outdoors).
- Temperature Class: T4
- Ambient Temperature: -40 to 60°C

#### Note 2. Installation



- WARNING
  - The installation of the devices 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.
  - The installation should be in accordance with NEC (the National Electric Code: ANSI/NFPA-70) or local electric code.
  - Make sure that the breakers are installed in the power supply circuits located in non-hazardous areas so that the power can be shutoff when abnormality occurs.
  - In the course of installation, the related documents of GS (General specifications),TI (Technical Information of Installation Guidance) and IM (User's Manuals) should be referenced and the instructions described in the documents should be observed.
  - YFGW710 should be installed in upright position.
  - YFGW710 does not have the nonincendive Field Wiring. The conduit wiring is required for the power cable and the metal network cable to be connected to YFGW710.
  - To satisfy type of protection and NEMA4X, apply suitable devices to the electrical connection port.
  - YFGW710 does not have a power switch inside. Prepare a dedicated breaker for the external power line to turn ON/OFF the device.
  - Note a warning label worded

"DO NOT REMOVE COVER WHILE CIRCUIT IS LIVE WHEN A FLAMMABLE OR COM-BUSTIBLE ATMOSPHERE IS PRESENT."

"INSTALL IN ACCORDANCE WITH DOC.NO. NFM023-A14 P.1 AND P.2"

- Electrostatic charge may cause an explosion hazard. Avoid any actions that cause the generation of electrostatic charge, such as rubbing with a dry cloth on coating face of product.
- Take care not to generate mechanical sparking when access to the instrument and peripheral devices in hazardous locations.

### Note 3. Maintenance and Repair



## WARNING

- The instrument modification or parts replacement by other than authorized Representative of Yokogawa Electric Corporation is prohibited and will void FM Approvals approval.
- When opening the cover, the enclosure should be dry and clean to prevent from ingress water or dust.

### CSA Certification

Caution for CSA nonincendive/Type n. (Following contents refer to "Doc No. NCS013")

#### Note 1. Model YFGW710 Field Wireless Integrated Gateway with optional code /CN17 is applicable for use in hazardous locations.

Certificate: 2342292

[For CSA C22.2]

- Applicable standard: C22.2 No.0, C22.2 No.0.4, C22.2 No.25, C22.2 No.94, C22.2 No.213, • C22.2 No.61010-1
- Nonincendive for Class I, Division 2, Groups A, B, C, D. Class II, Division 2, Groups F, G. Class III, Division 1
- Enclosure: Type 4X
- Temp. Code: T4 •
- Ambient Temperature: –40 to 60°C

[For CSA E60079]

- Applicable standard: CAN/CSA E60079-0, CAN/CSA E60079-15, IEC60529:2001
- Ex nAnL IIC T4
- Enclosure: IP66 ٠
- Ambient Temperature: -40 to 60°C

#### Note 2. Electrical Connection

The type of electrical connection is depends on the model code suffix.

The model code suffix is shown on the main label in front of YFGW710.

The second character following the letter A shows the type of electrical connection as below.

Character <u>b</u> on Suffix: Aa <u>b</u> -cdefghjkm	The type of electrical connection
2	1/2 NPT female *1
4	M20 female *2

Note \*1: 1/2 NPT is realized by the conversion adapter from M20 female to 1/2NPT female.

Note \*2: When the cable glands or another device are necessary, user needs to prepare them which adapt to M20 female entry.

### Note 3. Installation



### WARNING

- The installation of the devices 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.
- The installation should be in accordance with Canadian Electrical Code Part I or Local Electrical Code.
- YFGW710 should be installed in upright position.
- To satisfy type of protection "n" and degree of protection provided by enclosure IP66, apply suitable devices to the electrical connection port.
- Make sure that the breakers are installed in the power supply circuits located in non-hazardous areas so that the power can be shutoff when abnormality occurs.
- In the course of installation, the related documents of GS (General specifications),TI (Technical Information of Installation Guidance) and IM (User's Manuals) should be referenced and the instructions described in the documents should be observed.
- YFGW710 does not have the Nonincendive Field Wiring. The conduit wiring is required for the power cable and the metal network cable to be connected to YFGW710.
- When the cable glands are necessary, user needs to prepare the cable glands. The cable glands shall be certified in type of protection "n" suitable for the conditions of use and correctly installed.
- To maintain the degree of ingress protection IP66 according to IEC 60529, and TYPE4X according to CSA C22.2 No.94 special care must be taken to avoid water.
- · Note a warning label worded
  - "DO NOT OPEN WHEN AN EXPLOSIVE ATMOSPHERE MAY BE PRESENT."
  - "POTENTIAL ELECTROSTATIC CHARGING HAZARD SEE INSTRUCTIONS."
- Electrostatic charge may cause an explosion hazard. Avoid any actions that cause the generation of electrostatic charge, such as rubbing with a dry cloth on coating face of product.
- Take care not to generate mechanical sparking when access to the instrument and peripheral devices in hazardous locations.

### Note 4. Maintenance and Repair



- The instrument modification or parts replacement by other than authorized Representative of Yokogawa Electric Corporation is prohibited and will void CSA certification.
- When Opening the cover, the enclosure should be dry and clean to prevent from ingress water or dust.

### ATEX Declaration

### (1) Technical Data

Caution for ATEX Type n

# Note 1. Model YFGW710 Field Wireless Integrated Gateway with optional code /KN27 is applicable for use in hazardous area.

- Applicable standard: EN60079-0: 2009, EN60079-0: 2012, EN60079-11: 2012, EN60079-15: 2010, EN60079-28: 2007
- Marking: 🖾 II 3G Ex nA [ic] [op is] IIC T4 Gc (with 100BASE-FX)
- Ambient temperature: -40 to +60°C
- IP code: IP66
- Power supply: 10.0 V DC to 26.4 V DC (Rated voltage: 24.0 V DC)
- Um: 250 V
- Power dissipation: ≤ 10 W
- RF power: ≤ 20 mW (ISA100.11a; IEEE802.15.4)
- Cable parameters for antenna connection: Cc: 4 nF, Lc: 20 μH
- Specific condition of use: Precautions shall be taken to minimize the risk from electrostatic discharge of painted parts.

### Note 2. Electrical Connection

The type of electrical connection is depends on the model code suffix.

The model code suffix is shown on the main label in front of YFGW710.

The second character following the letter A shows the type of electrical connection as below.

Character <u>b</u> on Suffix: Aa <u>b</u> -cdefghjkm	The type of electrical connection
2	1/2 NPT female *1
4	M20 female *2

Note \*1: 1/2 NPT is realized by the conversion adapter from M20 female to 1/2NPT female.

Note \*2: When the cable glands or another device are necessary, user needs to prepare them which adapt to M20 female entry.

### Note 3. Installation



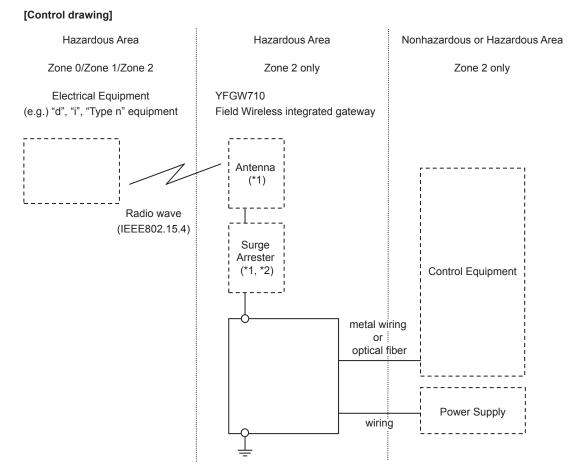
- The installation of the devices should be carried out by the engineers or other professional
  personnel of the related expertise. The installation should not be carried out by operators or
  other unprofessional personnel.
- The installation should be in accordance with EN60079-14 and Local Electrical Code.
- The equipment shall be installed in accordance with the user's manual.
- YFGW710 should be installed in upright position.

- The thread type of the cable entries shall be confirmed according to the user's manual.
- Cable glands, adapters and/or blanking elements shall be of type "n", type "e" or type "d" and shall be installed so as to maintain the specified degree of protection (IP code) of the equipment.
- Keep the cap attached to the antenna connector (N type) until the installation of the antenna or antenna cables to protect the inside of the connector from exposure of light. In case the antenna or antenna cables are removed from the connector, the inside of the antenna connector should be protected from exposure of light.
- The antenna and the surge arrester shall be a simple apparatus in accordance with EN60079-11. Li and Ci of the simple apparatus shall be negligible. Temperature class of them shall be determined from Po = 20 mW.
- The equipment shall be earthed in accordance with EN60079-14, in order to maintain intrinsic safety. A cable lug or a similar device shall be used to maintain the secureness of the connection to the equipment. Care should be taken to avoid multi-point earthing since the equipment is not galvanically isolated from the power supply.
- YFGW710 does not have a power switch inside. Prepare a dedicated breaker for the external power line to turn ON/OFF the device.
- Make sure that the breakers are installed in the power supply circuits located in non-hazardous areas so that the power can be shutoff when abnormality occurs.
- Note a warning label worded

"DO NOT OPEN WHEN AN EXPLOSIVE ATMOSPHERE MAY BE PRESENT."

"POTENTIAL ELECTROSTATIC CHARGING HAZARD - SEE INSTRUCTIONS."

- Electrostatic charge may cause an explosion hazard. Avoid any actions that cause the generation of electrostatic charge, such as rubbing with a dry cloth on coating face of product and the antenna.
- Take care not to generate mechanical sparking when access to the instrument and peripheral devices in hazardous area.



\*1: These apparatus are simple apparatus.

\*2: Surge Arrester may not be installed.

### (2) Operation

# WARNING

• Take care not to generate mechanical sparking when access to the instrument and peripheral devices in hazardous area.

#### (3) Maintenance and Repair

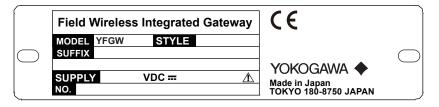


## WARNING

- The instrument modification or parts replacement by other than authorized Representative of Yokogawa Electric Corporation is prohibited and will void the EHSRs.
- When Opening the cover, the enclosure should be dry and clean to prevent from ingress water or dust.

### (4) Name Plate

Main name plate



MODEL:	Specified model code.
STYLE:	Style code.
SUFFIX:	Specified suffix code.
SUPPLY:	Specified supply voltage and wattage.
NO.:	Serial number and year of production *1.
YOKOGAWA	TOKYO 180-8750 JAPAN: The manufacturer name and the address *2.

\*1: The third figure from the last of the serial number shows the year of production. For example, the production year of the product engraved in "NO." column on the name plate as follows is 2010. 91K506412 019

# The year 2010

\*2: "180-8750" is a postal code which represents the following address. 2-9-32 Nakacho, Musashino-shi, Tokyo Japan

Hazardous class name plate with 100 BASE-FX

( KN27-1	(Fr) II 3G	Ex nA [ic][op is] IIC T4 Gc Tamb40 to 60°c, ENCLOSURE: IP66	C
		DO NOT OPEN WHEN AN EXPLOSIVE ATMOSPHERE MAY BE PRESENT.	
		POTENTIAL ELECTROSTATIC CHARGING HAZARD - SEE INSTRUCTIONS.	
•	Hazardous class	aname plate without 100 BASE-FX	

( (KN27-0	(Ex) II 3G	Ex nA [ic] IIC T4 Gc Tamb40 to 60°c, ENCLOSURE: IP66	$\bigcirc$
		DO NOT OPEN WHEN AN EXPLOSIVE ATMOSPHERE MAY BE PRESENT.	
		POTENTIAL ELECTROSTATIC CHARGING HAZARD - SEE INSTRUCTIONS.	
(			

### IECEx Certification

### (1) Technical Data

# Model YFGW710 Field Wireless Integrated Gateway with optional code /SN27 is applicable for use in hazardous locations.

- Applicable standard: IEC60079-0:2011, IEC60079-15:2010, IEC60079-11:2011
- Certificate: IECEx DEK 13.0047
- Type of Protection and Marking Code: Ex nA [ic] IIC T4 Gc
- Ambient Temperature: -40 to 60°C
- IP Code: IP66
- Power Supply: 10.0 V d.c. to 26.4 V d.c. (Rated voltage: 24.0 V d.c.)
- Overvoltage Category: I
- Power Dissipation: ≤ 10 W
- RF Power: ≤ 20 mW (ISA100.11a; IEEE802.15.4)
- Cable parameters for antenna connection Cc: 4 nF Lc: 20 µH

Specific Condition of Use:

Precautions shall be taken to minimize the risk from electrostatic discharge of painted parts.

### (2) Electrical Connection

The type of electrical connection is depends on the model code suffix.

The model code suffix is shown on the main label in front of YFGW710.

The second character following the letter A shows the type of electrical connection as below.

Character b on Suffix: Aab-cdefghjkm	The type of electrical connection
2	1/2 NPT female *1
4	M20 female *2

Note \*1: 1/2 NPT is realized by the conversion adapter from M20 female to 1/2NPT female.

Note \*2: When the cable glands or another device are necessary, user needs to prepare them which adapt to M20 female entry.

#### (3) Installation



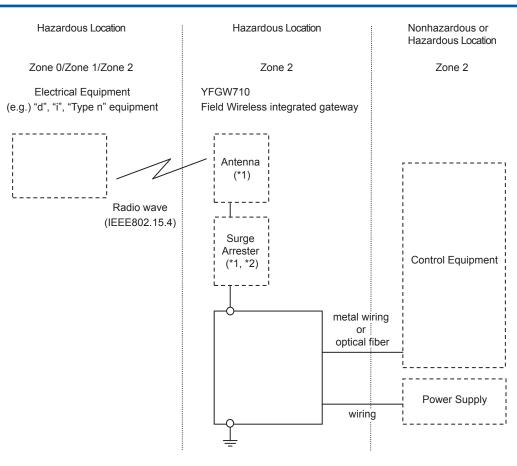
### WARNING

- The installation of the devices 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.
- The installation should be in accordance with IEC 60079-14 and local electrical code.
- YFGW710 should be installed in upright position.
- The equipment shall be installed in accordance with the user's manual.
- The instrument modification or parts replacement by other than authorized representative of Yokogawa Electric Corporation is prohibited and will void IECEx certificate.
- The thread type of the cable entries shall be confirmed according to the user's manual.
- Screws of power supply terminals shall be tightened with specified torque values: 1.2N•m to 1.4N•m.
- Cable glands, adapters and/or blanking elements shall be of Ex "n", Ex "e" or Ex "d" and shall be installed so as to maintain the specified degree of protection (IP Code) of the equipment.
- Keep the cap attached to the antenna connector (N type) until the installation of the antenna or antenna cables to protect the inside of the connector from exposure of light. In case the antenna or antenna cables are removed from the connector, the inside of the antenna connector should be protected from exposure of light.
- The antenna and the surge arrester shall be a simple apparatus in accordance with IEC 60079-11. Li and Ci of the simple apparatus shall be negligible. Temperature class of them shall be determined from Po = 20 mW.
- Cable parameters for the connection of the antenna and/or the surge arrester are: Cc = 4 nF; Lc = 20  $\mu H$
- The equipment shall be earthed in accordance with IEC 60079-14, in order to maintain intrinsic safety. A cable lug or a similar device shall be used to maintain the secureness of the connection to the equipment. Care should be taken to avoid multi-point earthing since the equipment is not galvanically isolated from the power supply.
- YFGW710 does not have a power switch inside. Prepare an dedicated breaker for the external power line to turn ON/OFF the device.
- Make sure that the breakers are installed in the power supply circuits located in non-hazardous areas so that the power can be shutoff when abnormality occurs.
- Note a warning label worded

"DO NOT OPEN WHEN AN EXPLOSIVE ATMOSPHERE MAY BE PRESENT."

"POTENTIAL ELECTROSTATIC CHARGING HAZARD - SEE INSTRUCTIONS."

- Electrostatic charge may cause an explosion hazard. Avoid any actions that cause the generation of electrostatic charge, such as rubbing with a dry cloth on coating face of product and antenna.
- Take care not to generate mechanical sparking when access to the instrument and peripheral devices in hazardous locations.



\*1: These apparatus are simple apparatus.

\*2: Surge Arrester may not be installed.

#### (4) Maintenance and Repair



### WARNING

The instrument modification or parts replacement by other than authorized Representative of Yokogawa Electric Corporation is prohibited and will void the certification.

• When Opening the cover, the enclosure should be dry and clean to prevent from ingress water or dust.

#### (5) Name Plate

Main name plate

*	Field Wireless Integrated Gateway	CE	
$\bigcirc$	MODEL YFGW STYLE		$\frown$
$\bigcirc$	SUPPLY VDC 🕰	YOKOGAWA 🔶 Made in Japan	$\bigcirc$
~	NO.	TOKYO 180-8750 JAPAN	

- MODEL: Specified model code.
- STYLE: Style code.
- SUFFIX: Specified suffix code.
- SUPPLY: Specified supply voltage and wattage.
- NO.: Serial number and year of production<sup>\*1</sup>.
- YOKOGAWA ◆ TOKYO 180-8750 JAPAN: The manufacturer name and the address<sup>\*2</sup>.
- \*1: The third figure from the last of the serial number shows the year of production. For example, the production year of the product engraved in "NO." column on the name plate as follows is 2010.

#### 91K506412 <u>0</u>19 ↑

- The year 2010
- \*2: "180-8750" is a postal code which represents the following address. 2-9-32 Nakacho, Musashino-shi, Tokyo Japan
- Hazardous class name plate



21

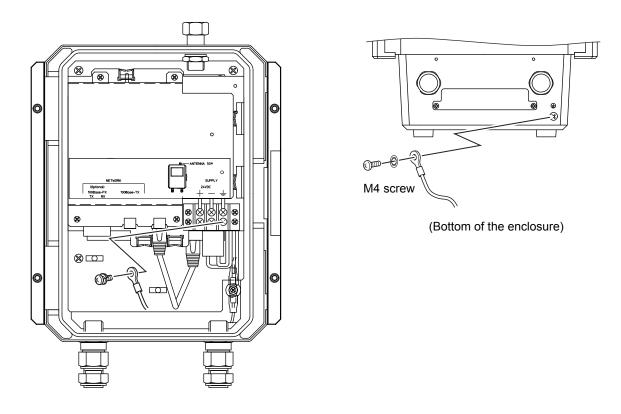
### Ground Cable Connection

The grounding terminals are located on the inside and outside of the terminal area. Connect the cable to grounding terminal in accordance with wiring procedure 1) or 2).

1) Internal grounding terminal

2) External grounding terminal

If the power cable is a shielded cable, the shield should be grounded at the terminal marked  $\pm$  as below.



Wiring Procedure for Grounding Terminals

# How to Use Online Manual

It is necessary to install Adobe Acrobat Reader to read the instruction manual (YFGW710 Field Wireless Integrated Gateway: IM 01W01F01-01EN).

Install the following Adobe Reader by the administrator authority.

Adobe Reader 9.3 or later

TIP

Adobe Reader can be downloaded from the Web site of Adobe Systems Incorporated.

### Reading of Online Manual

The online manual is stored in the attached DVD-ROM. The file is not installed in the PC even if the attached software is installed to PC. Open the file by Adobe Reader to read the manual.

DVD-ROM Drive:\Document\en\IM 01W01F01-01EN.pdf

# Preparation to Install YFGW710 Attached Software

It is necessary to install "Microsoft .NET Framework3.5 SP1" on PC beforehand to install the Attached Software with this product.

For details, refer to Readme\_en.txt in the attached DVD-ROM.

DVD-ROM Drive:\Readme\_en.txt

# **Copyright and Trademark Notices**

### All Rights Reserved

The copyrights of the media and this manual are reserved.

No part of the manual may be transferred, sold, distributed (including delivery via a commercial PC network or the like), or registered or recorded on video tapes or other media.

### Trademark Acknowledgments

- CENTUM, PRM, FieldMate, STARDOM and VigilantPlant are either trademarks or registered trademarks of Yokogawa.
- Microsoft, Windows, Windows Server, Windows Vista, Visual Basic, Visual C++, Visual Studio and Microsoft NET Framework 3.5 are either registered trademarks or trademarks of Microsoft Corporation in the United States and/or other countries.
- Adobe, Acrobat and Acrobat Reader are either registered trademarks or trademarks of Adobe Systems Incorporated in the United States and/or other countries.
- Ethernet is a registered trademark of XEROX Corporation.
- Java is a registered trademark of Sun Microsystems, Inc.
- PLC is a registered trademark of Rockwell Automation, Inc.
- "FOUNDATION" in "FOUNDATION fieldbus" is a registered trademark of Fieldbus Foundation.
- "HART" is a registered trademark of the HART Communication Foundation.
- All other company and product names mentioned in this user's manual are trademarks or registered trademarks of their respective companies.
- We do not use TM or ® mark to indicate those trademarks or registered trademarks in this user's manual.

# **About User's Manual**

### Composition of User's Manual

This chapter explains the composition of User's Manual.

The following printed user's manual is attached to YFGW710 hardware.

• IM 01W01F01-11EN: Read me first

The following online user's manual is stored in the attached DVD-ROM for YFGW710.

• IM 01W01F01-01EN: YFGW710 Field Wireless Integrated Gateway

# **Information of User's Manual Revision**

Material Name: Read Me First

Material Number: IM 01W01F01-11EN

Edition	Date	Page	Revised Item
1st Edition	August 2010		New Issue
2nd Edition	October 2010	7 9	Add "Cautions for Safely Applying the Device." Add "Explosion Proof Specifications."
3rd Edition	April 2011	- 9+ 20	Change CD-ROM to DVD-ROM. Add "IECEx Scheme Type n approval." Add "Windows Server."
4th Edition	July 2012	8	Add CE alert marking. Add applicable county code table.
5th Edition	March 2013	8+ 10 15 16	Delete CE alert marking. Change applicable standard for ATEX Typ n. Add control drawing. Change hazardous class name plate.
6th Edition	Janualy 2014	8 10 18,19	Delete country name table Change IECEx scheme Change IECEx Certification

# YFGW710 Software License Agreement

IMPORTANT - PLEASE READ CAREFULLY BEFORE INSTALLING OR USING: THIS AGREEMENT IS A LEGAL AGREEMENT BETWEEN YOU AND YOKOGAWA ELECTRIC CORPORATION AND/OR ITS SUBSIDIARIES (COLLECTIVELY, "YOKOGAWA") FOR YOU TO INSTALL OR USE YOKOGAWA YFGW710 SOFTWARE PRODUCT. BY INSTALLING OR OTH-ERWISE USING THE SOFTWARE PRODUCT, YOU AGREE TO BE BOUND BY THE TERMS AND CONDITIONS OF THIS AGREEMENT. IF YOU DO NOT AGREE, DO NOT INSTALL NOR USE THE SOFTWARE PRODUCT AND PROMPTLY RETURN IT TO THE PLACE OF PUR-CHASE FOR A REFUND, IF APPLICABLE.

IF YOU ARE NOT THE END USER OF THE SOFTWARE PRODUCT, YOU ARE REQUIRED TO PRESENT THE TERMS AND CONDITIONS OF THIS AGREEMENT TO THE END USER AND OBTAIN

ITS CONSENT TO ABIDE BY THEM BEFORE IT STARTS TO USE THE SOFTWARE PROD-UCT. SHOULD THERE BE ANY DISCREPANCY BETWEEN THIS AGREEMENT AND ANY OTHER WRITTEN AGREEMENT MADE BETWEEN YOU AND YOKOGAWA, THE LATTER SHALL PREVAIL.

### 1. Scope

- 1.1 This Agreement applies to the YFGW710 software products (the "Software Product"). The Software Product consists of:
  - a) Standard Software Product: The software products listed in the catalogues or "General Specifications" of Yokogawa.
  - b) Customized Software Product: The software products made by Yokogawa based on individually agreed specifications, which will be used with or in addition to the function of the Standard Software Product.
- 1.2 The Software Product includes, without limitation, computer programs, manuals and other associated documents, databases, fonts, input data, and any images, photographs, animations, video, voice, music, text, and applets (software linked to text and icons) embedded in the software.
- 1.3 Unless otherwise provided by Yokogawa, this Agreement applies to the updates and upgrades of the Software Product.

### 2. Grant of License

- 2.1 Subject to the terms and conditions of this Agreement, Yokogawa hereby grants to you a non-exclusive and non-transferable right to use the Software Product on the computer specified by Yokogawa or if not specified, on a single computer and solely for your internal operation use, in consideration of full payment by you to Yokogawa of the license fee separately agreed upon.
- 2.2 Unless otherwise agreed or provided by Yokogawa in writing, the following acts are prohibited:
  - a) to reproduce the Software Product;
  - b) to sell, lease, distribute, transfer, pledge, sublicense, make available via the network or otherwise convey the Software Product or the license granted herein to any other person or entity;
  - c) to use the Software Product on any unauthorized computer via the network;
  - d) to cause, permit or attempt to dump, disassemble, decompile, reverse-engineer, or otherwise translate or reproduce the Software Product into source code or other human readable format, or to revise or translate the Software Product into other language and change it to other formats than that in which Yokogawa provided;
  - e) to cause, permit or attempt to remove any copy protection used or provided in the Software Product; or
  - f) to remove any copyright notice, trademark notice, logo or other proprietary notices or identification shown in the Software Product.
- 2.3 Any and all technology, algorithms, know-how and process contained in the Software Product are the property or trade secret of Yokogawa or licensors to Yokogawa. Ownership of and all the rights in the Software Product shall be retained by Yokogawa or the licensors and none of the rights will be transferred to you hereunder.
- 2.4 You agree to maintain the aforementioned Yokogawa and the licensors property and trade secret in strict confidence, not to disclose it to any party other than your employees, officers, directors or similar staff who have a legitimate need to know to use the Software Product and agreed in writing to abide by the obligations hereunder.

- 2.5 Upon expiration or termination of this Agreement, the Software Product and its copies shall be returned to Yokogawa and any copies retained in your computer or media shall be deleted irretrievably. If you dispose of media in which the Software Product or its copy is stored, the contents shall be irretrievably deleted.
- 2.6 The Software Product may contain software which Yokogawa is granted a right to sublicense by third party suppliers ("Third Party Software"). If suppliers of the Third Party Software ("Supplier") provide special terms and conditions for the Third Party Software which differ from this Agreement, you agree to abide by such terms and conditions separately provided by Yokogawa.

### 3. Restrictions on Application

- 3.1 Unless otherwise agreed in writing between you and Yokogawa, the Software Product is not intended, designed, produced or licensed for aircraft operation or control, ship navigation or marine equipment control, or ground facility or device for support of the aforesaid operation or control, nor for planning, construction, maintenance or operation of any nuclear related facility.
- 3.2 If the Software Product is used for the abovementioned purposes, neither Yokogawa nor Supplier assumes liability for any claim or damage arising from the said use and you shall indemnify and hold Yokogawa, Supplier, their affiliates, subcontractors, officers, directors, employees and agents harmless from any liability or damage whatsoever, including any court costs and attorney's fees, arising out of or related to the said use.

#### 4. Warranty

- 4.1 Yokogawa warrants that, for one year from the delivery by Yokogawa or any other period to be agreed by Yokogawa in writing ("Warranty Period"), the Software Product shall, if it is properly used under the operational conditions and on the hardware designated by Yokogawa and if used in accordance with the environmental or other conditions defined by Yokogawa or hardware supplier, operate substantially in compliance with the manuals or functional specifications provided by Yokogawa or when any part of the Software Product is used for operation, whichever comes earlier.
- 4.2 Under no conditions will Yokogawa warrant that:
  - a) the Software Product is uninterrupted;
  - b) the Software Product is error free;
  - c) the Software Product is completely corrected;
  - d) the Software Product has no inconsistency or interference with other software;
  - e) the Software Product fits for a particular purpose or your intention; or
  - f) the Software Product or the results arising there from is precise, reliable or up-to-date.
- 4.3 In case, during the Warranty Period, it is found that the Software Product does not operate in compliance with the manuals or functional specifications of Yokogawa, or its medium has a physical defect, Yokogawa will, at Yokogawa's discretion, repair, replace or present a workaround without charge, unless otherwise agreed by Yokogawa. However, if Yokogawa engineer or other engineer is required to attend for repair, replacement or implementing a workaround at the site, you will be charged for the site service fee. If Yokogawa deems necessary, you are required to initialize or stop the operation of the system, facility or equipment in or on which the Software Product is installed.
- 4.4 The above warranties shall not be applied to and Yokogawa shall not be liable for the defect or noncompliance which is subject to any of the following circumstances:
  - a) the hardware on which the Software Product is installed has ceased to be covered by the warranty or maintenance contract of the hardware supplier;
  - b) if the hardware on which the Software Product needs to be installed is specified, the hardware has been changed to other hardware without consent of Yokogawa;
  - c) modification, improvement or alteration is made by a person other than Yokogawa or its designated service provider;
  - d) your or third party's (excluding the service provider designated by Yokogawa) misuse, alteration, addition of new function, or use for any purpose not provided in the functional specifications of Yokogawa;
  - e) the appropriate environmental or other conditions provided by Yokogawa or hardware supplier is not complied with;
  - f) the corrective action (including repair, replacement or workaround) for the defect or noncompliance is not implemented as suggested by Yokogawa; or
  - g) any other causes which are not deemed attributable to Yokogawa.
- 4.5 Notwithstanding the foregoing, any warranty with respect to the Third Party Software is sub-

ject to the terms and conditions of the Supplier.

4.6 THE ABOVE WARRANTY IS GIVEN AND ACCEPTED AS A SOLE AND EXCLUSIVE LIABILITY AND IN LIEU OF ALL OTHER LIABILITY OR WARRANTIES OF ANY KIND WHATSOEVER ON THE PART OF YOKOGAWA OR SUPPLIER. EXPRESS OR IMPLIED. IN FACT OR IN LAW. ALL IMPLIED WARRANTIES AND ESPECIALLY WARRANTIES OF MERCHANTABILITY, FITNESS FOR A PARTICULAR PURPOSE AND NON-INFRINGE-MENT ARE EXPRESSLY EXCLUDED AND DISCLAIMED. The warranty provisions of the applicable law are expressly excluded to the extent permitted.

### 5. Maintenance Services

- 5.1 Scope and terms and conditions of maintenance service for the Software Product shall be subject to the latest Yokogawa standard terms and conditions of service or otherwise defined by Yokogawa. Unless otherwise provided in Yokogawa catalogues or General Specifications, services for the Standard Software Product will be available only for the latest version and the immediately preceding version. In any event service for the immediately preceding version will be available only for 5 years after the latest version has been released. In addition, no service will be provided by Yokogawa for the Software Product which has been discontinued for more than 5 years. As for the Customized Software Product, basically, Yokogawa will not provide maintenance service after the Warranty Period, provided that Yokogawa may provide alteration work subject to individual written agreement.
- 5.2 Notwithstanding otherwise stated in the preceding sub-clause, any maintenance service for the Third Party Software shall be subject to the terms and conditions provided by the Supplier.

### 6. Infringement

- 6.1 If you are warned or receive a claim by a third party that the Software Product in its original form infringes any third party's patent (which is issued at the time of delivery of the Software Product), trade mark, copyright or other intellectual property rights ("Claim"), you shall promptly notify Yokogawa thereof in writing.
- 6.2 If the infringement is attributable to Yokogawa, Yokogawa will defend you from the Claim at Yokogawa's expense and indemnify you from the damages finally granted by the court or otherwise agreed by Yokogawa out of court. The foregoing obligation and indemnity of Yokogawa shall be subject to that i) you promptly notify Yokogawa of the Claim in writing as provided above, ii) you grant to Yokogawa and its designees the full authority to control the defense and settlement of such Claim and iii) you give every and all necessary information and assistance to Yokogawa upon Yokogawa's request.
- 6.3 If Yokogawa believes that a Claim may be made or threatened. Yokogawa may, at its option and its expense, either a) procure for you the right to continue using the Software Product, b) replace the Software Product with other software product to prevent infringement, c) modify the Software Product, in whole or in part, so that it become non-infringing, or d) if Yokogawa believes that a) through c) are not practicable, refund you the paid-up amount of the book value of the Software Product as depreciated.
- 6.4 Notwithstanding the foregoing, Yokogawa shall have no obligation nor liability for, and you shall defend and indemnify Yokogawa and its suppliers from, the Claim, if the infringement is arising from a) modification of the Software Product made by a person other than Yokogawa, b) combination of the Software Product with hardware or software not furnished by Yokogawa, c) design or instruction provided by or on behalf of you, d) not complying with Yokogawa's suggestion, or e) any other causes not attributable to Yokogawa.
- 6.5 This section states the entire liability of Yokogawa and its suppliers and the sole remedy of you with respect to any claim of infringement of a third party's intellectual property rights.

### 7. Limitation of Liability

EXCEPT TO THE EXTENT THAT LIABILITY MAY NOT LAWFULLY BE EXCLUDED IN CON-TRACT, YOKOGAWA AND SUPPLIERS SHALL NOT BE LIABLE TO ANY PERSON OR LEGAL ENTITY FOR LOSS OR DAMAGE, WHETHER DIRECT, INDIRECT, SPECIAL, INCIDENTAL, CONSEQUENTIAL OR EXEMPLARY DAMAGES, OR OTHER SIMILAR DAMAGES OF ANY KIND, INCLUDING WITHOUT LIMITATION, DAMAGES FOR LOSS OF BUSINESS PROFITS, BUSINESS INTERRUPTION, LOSS OR DESTRUCTION OF DATA, LOSS OF AVAILABILITY AND THE LIKE, ARISING OUT OF THE USE OR INABILITY TO USE OF THE SOFTWARE PRODUCT, OR ARISING OUT OF ITS GENERATED APPLICATIONS OR DATA, EVEN IF ADVISED OF THE POSSIBILITY OF SUCH DAMAGES, WHETHER BASED IN WARRANTY (EXPRESS OR IMPLIED), CONTRACT, STRICT LIABILITY, TORT (INCLUDING NEGLI-GENCE), OR ANY OTHER LEGAL OR EQUITABLE GROUNDS. IN NO EVENT YOKOGAWA AND SUPPLIER'S AGGREGATE LIABILITY FOR ANY CAUSE OF ACTION WHATSOEVER

(INCLUDING LIABILITY UNDER CLAUSE 6) SHALL EXCEED THE DEPRECIATED VALUE OF THE LICENSE FEE PAID TO YOKOGAWA FOR THE USE OF THE CONCERNED PART OF THE SOFTWARE PRODUCT.

If the Software Product delivered by Yokogawa is altered, modified or combined with other software or is otherwise made different from Yokogawa catalogues. General Specifications, basic specifications, functional specifications or manuals without Yokogawa's prior written consent, Yokogawa shall be exempted from its obligations and liabilities under this Agreement or law. 8. Assignment

You shall not assign its rights or obligations under this Agreement without prior written consent of Yokogawa. If you novate or assign this Agreement and the Software Product with Yokogawa's consent, you shall transfer all copies and whole part of the Software Product to the assignee and shall delete any copy of the Software Product in possession. This Agreement shall inure to the benefit of and shall be binding on the successors of the parties.

#### 9. Export Control

You agree to comply with the export control and related laws, regulations and orders of Japan. the United States of America, and any other applicable countries and, if you export or reexport the Software Product, to obtain export/import permit and take all necessary procedures under your own responsibility and at your own expense.

#### 10. Audit; Withholding

- 10.1 Yokogawa shall have the right to access and audit your facilities and any of your records, including data stored on computers, in relation to the use of the Software Product as may be reasonably necessary in Yokogawa's opinion to verify that the requirements of this Agreement are being met.
- 10.2 Even after license being granted under this Agreement, should there be any change in circumstances or environment of use which was not foreseen at the time of delivery and. in Yokogawa's reasonable opinion, is not appropriate for using the Software Product, or if Yokogawa otherwise reasonably believes it is too inappropriate for you to continue using the Software Product, Yokogawa may suspend or withhold the license provided hereunder.

#### 11. Termination

Yokogawa shall have the right to terminate this Agreement with immediate effect upon notice to you, if you or end users breach any of the terms and conditions hereof. Upon termination of this Agreement, you shall, and make end users, promptly cease using the Software Product and, in accordance with sub-clause 2.5, return or irretrievably delete all copies of the Software Product, certifying the same in writing. In this case the license fee paid by you for the Software Product shall not be refunded. Clauses 2.4 and 2.5, 6, 7 and 12 shall survive any termination of this Agreement.

#### 12. Governing Law; Disputes

This Agreement shall be governed by and construed in accordance with the laws of Japan. If you are a Japanese individual or entity, all disputes, controversies or differences which may arise between the parties hereto, out of, in relation to or in connection with this Agreement ("Dispute") shall be brought exclusively in the Tokyo District Court (The Main Court) in Japan. If you are not a Japanese individual or entity, any Dispute shall be finally settled by arbitration in Tokyo, Japan in accordance with the Commercial Arbitration Rules of the Japan Commercial Arbitration Association. All proceedings in arbitration shall be conducted in the English language, unless otherwise agreed. The award of arbitration shall be final and binding upon both parties, however, each party may make an application to any court having jurisdiction for judgment to be entered on the award and/or for enforcement of the award.

### 13. Miscellaneous

- 13.1 This Agreement supersedes all prior oral and written understandings, representations and discussions between the parties concerning the subject matter hereof to the extent such understandings, representations and discussions should be discrepant or inconsistent with this Agreement.
- 13.2 If any part of this Agreement is found void or unenforceable, it shall not affect the validity of the balance of the Agreement, which shall remain valid and enforceable according to its terms and conditions. The parties hereby agree to attempt to substitute for such invalid or unenforceable provision a valid or enforceable provision that achieves to the greatest extent possible the economic, legal and commercial objectives of the invalid or unenforceable provision.
- 13.3 Failure by either party to insist on performance of this Agreement or to exercise a right when entitled does not prevent such party from doing so at a later time, either in relation to that default or any subsequent one.