



IECEx Certificate of Conformity

INTERNATIONAL ELECTROTECHNICAL COMMISSION IEC Certification Scheme for Explosive Atmospheres

for rules and details of the IECEx Scheme visit www.iecex.com

Certificate No.:	IECEx DEK 11.0044X	Issue No: 5	<u>Certificate history:</u> Issue No. 5 (2015-09-09) Issue No. 4 (2014-08-14) Issue No. 3 (2014-03-20) Issue No. 2 (2012-10-25) Issue No. 1 (2012-08-16) Issue No. 0 (2011-08-11)
Status:	Current	Page 1 of 5	
Date of Issue:	2015-09-09		
Applicant:	Yokogawa Electric Corporation 2-9-32 Nakacho, Musashino-shi, Tokyo, 180-8750 Japan		
Electrical Apparatus: Optional accessory:	Two Wire Analyzer Model FLXA21 and Model FLXA202		
Type of Protection:	Ex I		
Marking:	Ex ia IIC T4 Ga		

Approved for issue on behalf of the IECEx
Certification Body:

R. Schuller

Position:

Certification Manager

Signature:
(for printed version)

Date:


2015-09-09

1. This certificate and schedule may only be reproduced in full.
2. This certificate is not transferable and remains the property of the issuing body.
3. The Status and authenticity of this certificate may be verified by visiting the [Official IECEx Website](http://www.iecex.com).

Certificate issued by:

DEKRA Certification B.V.
Meander 1051,
6825 MJ Arnhem
The Netherlands





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Manufacturer: **Yokogawa Electric Corporation**
2-9-32 Nakacho,
Musashino-shi,
Tokyo, 180-8750
Japan

Additional Manufacturing
location(s):

**Yokogawa Manufacturing Corporation
Komine Factory**
2 Kominedai
Akiruno-shi
Tokyo, 190-0153
Japan

**Yokogawa Manufacturing Corporation Kofu
Factory**
155 Takamuro-cho, Kofu-shi
Yamanashi-ken, 400-8558
Japan

Yokogawa Electric Asia Pte. Ltd.
5 Bedok South Road
Singapore 469270
Singapore

This certificate is issued as verification that a sample(s), representative of production, was assessed and tested and found to comply with the IEC Standard list below and that the manufacturer's quality system, relating to the Ex products covered by this certificate, was assessed and found to comply with the IECEx Quality system requirements. This certificate is granted subject to the conditions as set out in IECEx Scheme Rules, IECEx 02 and Operational Documents as amended.

STANDARDS:

The electrical apparatus and any acceptable variations to it specified in the schedule of this certificate and the identified documents, was found to comply with the following standards:

IEC 60079-0 : 2011 Explosive atmospheres - Part 0: General requirements
Edition:6.0

IEC 60079-11 : 2011 Explosive atmospheres - Part 11: Equipment protection by intrinsic safety "i"
Edition:6.0

*This Certificate **does not** indicate compliance with electrical safety and performance requirements other than those expressly included in the Standards listed above.*

TEST & ASSESSMENT REPORTS:

A sample(s) of the equipment listed has successfully met the examination and test requirements as recorded in

Test Report:

NL/DEK/ExTR11.0036/03 NL/DEK/ExTR11.0036/04

Quality Assessment Report:

NL/DEK/QAR11.0022/04 NL/DEK/QAR11.0025/03 NL/DEK/QAR11.0026/04
NL/DEK/QAR11.0029/03



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Schedule

EQUIPMENT:

Equipment and systems covered by this certificate are as follows:

The two wire analyzer model FLXA21 and model FLXA202 are water quality analyzers that consist of a common functionality part (Housing Assembly) with 4-20 mA dc supply overlaid with digital communication protocol (HART) and communication unit, LCD and touch panel with two slots for insertion of one or two measuring modules (Sensor Modules).

For model FLXA21, optionally Housing Assembly can be of FOUNDATION Fieldbus / PROFIBUS PA type, in which case Housing Assembly outputs measured/calculated value directly to digital frame on the bus instead of 4-20 mA / HART outputs.

The following Sensor Modules are available: pH module, Contact Conductivity (SC) module, Inductive conductivity (ISC) module, Dissolved Oxygen (DO) module and SENCOM module.

The Housing Assembly with 4-20 mA (HART) protocol can contain up to two Sensor Modules, except for the ISC module and SENCOM module, where only one module can be installed at a time. Appropriate sensors can be connected to the Sensor Modules.

The Housing Assembly of FOUNDATION Fieldbus / PROFIBUS PA type can contain one Sensor Module only.

Ambient Temperature range: -20 °C to 55 °C.

CONDITIONS OF CERTIFICATION: YES as shown below:

For applications in an area where the use of EPL Ga apparatus is required, electrostatic charges on the non-metallic or coated parts of the two wire analyzer shall be avoided.

Since the enclosure of the Model FLXA202 is made of aluminium, if it is mounted in an area where the use of EPL Ga equipment is required, it must be installed such, that, even in the event of rare incidents, ignition sources due to impact and friction sparks are excluded.



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EQUIPMENT (continued):

Enclosure options

Model FLXA21 of 4-20 mA / HART type can have enclosure made either of polycarbonate or stainless steel.

Model FLXA21 of FOUNDATION Fieldbus / PROFIBUS PA type can have enclosure made of polycarbonate material only.

Model FLXA202 can have enclosure made of aluminium only.

For model codes and electrical data refer to Annex 1.



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DETAILS OF CERTIFICATE CHANGES (for Issues 1 and above):

- Assessment of the new FOUNDATION Fieldbus / PROFIBUS PA type.
- Addition of aluminium enclosure for the Housing Assembly with 4-20 mA (HART) protocol
- Temperature class T6 removal from the marking
- Model codes and model name altered
- Housing Assembly output data removed
- Measuring Modules input data removed
- Added manufacturing locations

Annex:

[218106000-Annex to IECEx DEK 11.0044X Iss5 ExTR11.0036.04.pdf](#)

Annex 1 to Certificate of Conformity IECEx DEK 11.0044X, issue 5
Annex A1 to NL/DEK/ExTR11.0036/04

Description

The two wire analyzer model FLXA21 and model FLXA202 are water quality analyzers that consist of a common functionality part (Housing Assembly) with 4-20 mA dc supply overlaid with digital communication protocol (HART) and communication unit, LCD and touch panel with two slots for insertion of one or two measuring modules (Sensor Modules).

For model FLXA21, optionally Housing Assembly can be of FOUNDATION Fieldbus / PROFIBUS PA type, in which case Housing Assembly outputs measured/calculated value directly to digital frame on the bus instead of 4-20 mA / HART outputs.

The following Sensor Modules are available: pH module, Contact Conductivity (SC) module, Inductive conductivity (ISC) module, Dissolved Oxygen (DO) module and SENCOM module.

The Housing Assembly with 4-20 mA (HART) protocol can contain up to two Sensor Modules, except for the ISC module and SENCOM module, where only one module can be installed at a time. Appropriate sensors can be connected to the Sensor Modules.

The Housing Assembly of FOUNDATION Fieldbus / PROFIBUS PA type can contain one Sensor Module only.

Ambient Temperature range: -20 °C to 55 °C

Enclosure options

Model FLXA21 of 4-20 mA / HART type can have enclosure made either of polycarbonate or stainless steel material.

Model FLXA21 of FOUNDATION Fieldbus / PROFIBUS PA type can have enclosure made of polycarbonate material only.

Model FLXA202 can have enclosure made of aluminium only.

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Model codes

<u>Model No.</u>	<u>Suffix code</u>
FLXA21	- D - b - c - de - fg - hi - j - N - LA - k - NN / l

b = Housing

P : Plastic
S : Stainless steel
U : Stainless steel + urethane coating
E : Stainless steel + epoxy coating
W : Stainless steel + high anti-corrosion coating
Z : Stainless steel + high anti-corrosion coating

c = Display

S : Standard LCD
D : Anti-glare LCD

de = Type

CB : IS for ATEX, IECEx

fg = 1st input

P1 : pH/ORP
C1 : Conductivity (SC)
C5 : Inductive conductivity (ISC)
D1 : Dissolved oxygen (DO)
S1 : pH/ORP (SENCOM sensor)

hi = 2nd input

NN : Without input
P1 : pH/ORP
C1 : Conductivity (SC)
D1 : Dissolved oxygen (DO)

j = Output

A : 4–20mA + HART
F : FOUNDATION Fieldbus
P : PROFIBUS PA

k = Country (not relevant to safety)

l = Options (not relevant to safety)

Annex 1 to Certificate of Conformity IECEx DEK 11.0044X, issue 5
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<u>Model No.</u>	<u>Suffix code</u>
FLXA202	- D - b - c - de - fg - hi - j - N - LA - k - NN / l

b = Housing

B : Aluminum alloy cast + urethane coating

C : Aluminum alloy cast + epoxy coating

D : Aluminum alloy cast+ high anti-corrosion coating

c = Display

D : Anti-glare LCD

de = Type

CB : IS for ATEX, IECEx

fg = 1st input

P1 : pH/ORP

C1 : Conductivity (SC)

C5 : Inductive conductivity (ISC)

D1 : Dissolved oxygen (DO)

S1 : pH/ORP (SENCOM sensor)

hi = 2nd input

NN : Without input

P1 : pH/ORP

C1 : Conductivity (SC)

D1 : Dissolved oxygen (DO)

j = Output

A : 4–20mA + HART

k = Country (not relevant to safety)

l = Options (not relevant to safety)

Electrical data

Main communication unit (Housing Assembly):

4-20 mA Type

Supply and output circuit (terminals + and –):

in type of protection intrinsic safety Ex ia IIC, only for connection to a certified intrinsically safe circuit, with the following maximum values:

$U_i = 30\text{ V}$; $I_i = 100\text{ mA}$; $P_i = 0.75\text{ W}$; $C_i = 13\text{ nF}$; $L_i = 0\text{ mH}$, linear power source only.

FOUNDATION Fieldbus / PROFIBUS PA type

Supply and output circuit (terminals + and –):

in type of protection intrinsic safety Ex ia IIC, only for connection to a certified intrinsically safe circuit, with the following maximum values:

$U_i = 24\text{ V}$; $I_i = 250\text{ mA}$; $P_i = 1.25\text{ W}$; $C_i = 2.2\text{ nF}$; $L_i = 0\text{ mH}$.

Annex 1 to Certificate of Conformity IECEx DEK 11.0044X, issue 5

Annex A1 to NL/DEK/ExTR11.0036/04

Supply and output circuit (terminals + and -):

in type of protection intrinsic safety Ex ia IIC, only for connection to a certified intrinsically safe circuit or a circuit in accordance with FISCO, with the following maximum values:

$U_i = 17.5 \text{ V}$; $I_i = 380 \text{ mA}$; $P_i = 5.32 \text{ W}$; $C_i = 2.2 \text{ nF}$; $L_i = 0 \text{ mH}$.

Measuring Modules:

pH, SC, DO

Sensor circuit of Measuring Modules pH (terminals 11, 12, 13, 14, 15, 16, 17, 18, 19), SC (terminals 11, 12, 13, 14, 15, 16) and DO (terminals 11, 12, 13, 14, 15, 16, 17, 18):

in type of protection intrinsic safety Ex ia IIC, with the following maximum values:

$U_o = 11.76 \text{ V}$; $I_o = 116.5 \text{ mA}$; $P_o = 0.3424 \text{ W}$; $C_o = 100 \text{ nF}$; $L_o = 1.7 \text{ mH}$.

ISC

Sensor circuit of Measuring Module ISC (terminals 11, 12, 13, 14, 15, 16 and 17):

in type of protection intrinsic safety Ex ia IIC, with the following maximum values:

$U_o = 11.76 \text{ V}$; $I_o = 60.6 \text{ mA}$; $P_o = 0.178 \text{ W}$; $C_o = 100 \text{ nF}$; $L_o = 8 \text{ mH}$.

SENCOM

Sensor circuit of Measuring Module SENCOM (terminals 82, 83, 84, 86, and 87):

in type of protection intrinsic safety Ex ia IIC, with the following maximum values:

$U_o = 5.36 \text{ V}$; $I_o = 106.16 \text{ mA}$; $P_o = 0.1423 \text{ W}$; $C_o = 31 \text{ }\mu\text{F}$; $L_o = 0.45 \text{ mH}$.