

ZR802S

Explosion-proof Zirconia Oxygen Analyzer, Converter

Start-up and Safety Precautions

IM 11M13G01-01EN

This Start-up Manual explains mainly the installation and wiring of the ZR802S.
For detailed information and other information, the User's Manual of the ZR802S should be referred to.

◆ Introduction

Thank you for purchasing the ZR802S.

This Instructor's Manual contains all essential information for the user to make full use of ZR802S.

Please read the following respective documents before installing and using the ZR802S. The related documents are listed as follows.

General Specifications

Contents	Document number	Note
ZR22S, ZR802S, and ZR202S Explosion-proof Zirconia Oxygen Analyzer	GS 11M13G01-01EN	Online manual

"EN" in the document number is the language code.

User's Manual

Contents	Document number	Note
ZR802S Explosion-proof Zirconia Oxygen Analyzer, Converter Start-up and Safety Precautions	IM 11M13G01-01EN	Printed manual (This manual)
ZR22S and ZR802S Explosion-proof Zirconia Oxygen Analyzer	IM 11M13G01-02EN	Online manual

"EN" in the document number is the language code.

An exclusive User's Manual might be attached to the products whose suffix codes or option codes contain the code "Z" (made to customers' specifications). Please read it along with this manual.

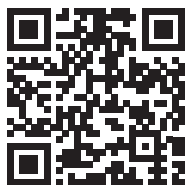
Technical Information

Contents	Document number	Note
ZR802G and ZR802S Zirconia Oxygen/Humidity Analyzer, Converter HART Communication	TI 11M12G01-61EN	Online manual
ZR802G and ZR802S Zirconia Oxygen/Humidity Analyzer, Converter MODBUS Communication	TI 11M12G01-62EN	Online manual

"EN" in the document number is the language code.

You can download the latest documents from our website.

<http://www.yokogawa.com/an/ZR802/download/>



For details on detectors and other related products, please read the individual instruction manuals.

■ Notes on Handling User's Manuals

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

■ Drawing Conventions

Some drawings may be partially emphasized, simplified, or omitted, for the convenience of description.

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

■ Trademark Notices

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.

■ Product Disposal

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

◆ CE marking products

■ Authorized Representative in the EEA and the Importer into the EU/EEA Market

The Authorized Representative for this product in the EEA and the importer for this product into the EU/EEA market via Yokogawa sale channel is:

Yokogawa Europe B.V.
Euroweg 2, 3825 HD Amersfoort, The Netherlands

■ Identification Tag

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

■ Users

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

■ How to dispose Batteries and Waste batteries:

(Only valid in the EU for EU Battery Directive/Regulation and in the UK for UK Battery Regulation)

Batteries are included in this product. This marking indicates they shall be sorted out and collected as ordained in the EU battery Directive/Regulation and UK battery Regulation.

When you need to replace batteries, contact your local Yokogawa office in the EEA and/or UK respectively.

Do not dispose them as domestic household waste.

Battery type : Manganese dioxide lithium battery



Notice: The symbol (see above) means they shall be sorted out and collected as ordained in the EU Battery Directive.

■ Information of the WEEE Directive

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

This product should be disposed in accordance with local and national legislation/regulations.

The WEEE Directive is only valid in the EU.

Control of Pollution Caused by the Product

This is an explanation for the product based on "Control of Pollution caused by Electronic Information Products" in the People's Republic of China.

产品中有害物质的名称及含量

部件名称	有害物质									
	铅 (Pb)	汞 (Hg)	镉 (Cd)	六价铬 (Cr (VI))	多溴联苯 (PBB)	多溴二苯醚 (PBDE)	邻苯二甲酸二正丁酯 (DBP)	邻苯二甲酸二异丁酯 (DIBP)	邻苯二甲酸丁基苄酯 (BBP)	邻苯二甲酸二(2-乙基)己酯 (DEHP)
外壳(金属)	×	×	×	×	○	○	○	○	○	○
外壳(塑料)	×	×	×	×	○	○	○	○	○	○
印刷电路板组件	×	×	×	×	○	○	○	○	○	○
电池	○	○	○	○	○	○	○	○	○	○

注1: ○: 表示该有害物质在该部件所有均质材料中的含量均不超出电器电子产品有害物质限制使用国家标准要求。

×: 表示该有害物质至少在该部件的某一均质材料中含量超出电器电子产品有害物质限制使用国家标准要求。

注2: 以上未列出的部件, 表明其有害物质含量均不超出电器电子产品有害物质限制使用国家标准要求。

环保使用期限: 这个标志是基于SJ/T11364, 在中国 (不包括台湾, 香港, 澳门) 販售的电器电子产品所适用的环保使用期限。



只要遵守产品上关于安全及使用上的注意事项, 从制造之日起计算在该年限内, 不会发生制品内的有害物质外泄, 突然变异, 对环境或人体以及财产产生重大影响的情况。

(注) 该年限是《环境保护使用期限》, 不是产品的保质期限。

另外, 关于替换部件的推荐替换周期, 请阅读使用说明书。

Safety Precautions

Safety, Protection, and Modification of the Product

- In order to protect the system controlled by the product and the product itself and ensure safe operation, observe the safety precautions described in this user's manual. We assume no liability for safety if users fail to observe these instructions when operating the product.
- If this instrument is used in a manner not specified in this user's manual, the protection provided by this instrument may be impaired.
- If any protection or safety circuit is required for the system controlled by the product or for the product itself, prepare 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.
- Modification of the product is strictly prohibited.
- The following safety symbols are used on the product as well as in this manual.



WARNING

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



CAUTION

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

CAUTION

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

NOTE

This symbol indicates information that complements the present topic.



This symbol indicates Protective Ground Terminal.

■ Warning and Disclaimer

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

■ All rights reserved

The copyright of the programs and online manuals contained in the software media shall remain with YOKOGAWA.

You are allowed to print the required pages of the online manuals for the purposes of using and/or operating the product. However, you are not allowed to print or reproduce the entire document.

Except as stated above, no part of the online manual may be reproduced, either in electronic or written form, registered, recorded, transferred, sold, or distributed (in any manner including without limitation, in the forms of paper documents, electronic media, films, or transmission via the network). Any in-action and/or silence by YOKOGAWA with regard to any breach of the above shall not be taken as any waiver of its rights whatsoever and YOKOGAWA reserves all its rights until expressly waived by written notification and no other occasions.

■ Precautions for the product



WARNING

Installation and wiring

The ZR802S should only be used with equipment that meets the relevant IEC, American or Canadian standards.

Yokogawa accepts no responsibility for the misuse of this unit.

Before opening the cover of the ZR802S converter, remove power and make sure of nonhazardous (*) atmospheres.

(*) The text plate says “Open circuit at non-hazardous location before removing cover,” since the internal energy of the ZR802S converter decreases under the specified value.
The definition of the non-hazardous area is followed by the description in the Users Guide to Installing Flameproof Electrical Apparatus at Plants, issued by the Technology Institution of Industrial Safety, Japan: As a non-hazardous area is considered a place where no occurrence of explosive gas atmospheres is guaranteed by the foreperson and confirmed by a written document. Therefore, if non-hazardous area is secured, it is allowed to open the cover in the field. Do not use an abrasive or organic solvent in cleaning the instrument.

Electrostatic discharge

The ZR802S contains devices that can be damaged by electrostatic discharge. When servicing this equipment, please observe proper procedures to prevent such damage. Replacement components should be shipped in conductive packaging. Repair work should be done at grounded workstations using grounded soldering irons and wrist straps to avoid electrostatic discharge.



CAUTION

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

When you open the front panel, make sure the screws are completely out of the screw holes, and then open the front panel slowly in order not to damage the threaded parts on the housing. If the threaded parts are damaged and the screws cannot be tightened, the explosion-proof performance will deteriorate.

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.

The HART communication may be influenced by strong electromagnetic field.

In this case another trial of the HART communication and/or operation with ZR802S touch panel or infrared switch can be carried out.



Compliant Standards

Explosion-proof approval of major standards and directives:

ATEX:	Applicable Standard:	EN IEC 60079-0 EN 60079-1 EN 60079-31 EN 60529 +A1 +A2	
	Type of protection	II 2G Ex db IIC T6 Gb II 2D Ex tb IIIC T85°C Db	
	Temperature class for Ex “db”	T6	
	The maximum surface temperature for Ex “tb”	T85°C	
	Ambient temperature	-20°C and 55°C	
	Enclosure Rating	IP66	
IECEx:	Applicable Standard:	IEC 60079-0 IEC 60079-1 IEC 60079-31	
	Type of protection:	Ex db IIC T6 Gb Ex tb IIIC 85°C Db	
	Temperature class for Ex “db”	T6	
	The maximum surface temperature for Ex “tb”:	T85°C	
	Ambient temperature	-20°C and 55°C	
	Enclosure Rating	IP66	
US (by FM):	Applicable Standard	FM Class 3600 FM Class 3615 FM Class 3616 FM Class 3810	ANSI/UL 60079-0 ANSI/UL 60079-1 ANSI/UL 60079-31 ANSI/UL 61010-1 ANSI/UL 61010-2-30 ANSI/UL 50E
		NEMA 250	NEMA 250
			ANSI/IEC 60529
	Type of protection	Class I Division 1, Groups B, C, D; T6	Class I, Zone 1, AEx db IIC T6 Gb
		Class II, Division 1, Groups E, F, G, Class III, Division 1; T6	Zone 21 AEx tb IIIC T85°C Db
	Temperature Class:	T6	—
	Temperature class for Ex “db”	—	T6
	The maximum surface temperature for Ex “tb”:	—	T85°C
	Ambient temperature	-20°C and 55°C	-20°C and 55°C
	Enclosure Rating	Type4X, IP66	Type4X, IP66
CANADIAN (CSA):	Applicable Standard:	CSA-C22.2 No. 94.2 CSA-C22.2 No. 60079-0 CAN/CSA-C22.2 No. 60079-1 CAN/CSA C22.2 No.60079-31 CAN/CSA-C22.2 No. 60529 CAN/CSA-C22.2 No. 61010-1 CAN/CSA-C22.2 No. 61010-2-030	
	Type of protection	Ex db IIC T6 Gb Ex tb IIIC T85°C Db	
	Temperature class for Ex “db”	T6	
	The maximum surface temperature for Ex “tb”:	T85°C	
	Ambient temperature	-20°C and 55°C	
	Enclosure Rating	Type 4X, IP66	

Explosion-proof approval and registration in specific countries:

KOREA EX (by KTL):	Applicable Standard:	Notice of Ministry of Labor No. 2021-22
	Type of protection:	Ex db IIC T6 Gb Ex tb IIIC 85°C Db
	Temperature class for Ex "db"	T6
	The maximum surface temperature for Ex "tb":	T85°C
	Ambient temperature	-20°C and 55°C
	Enclosure Rating	IP66
CHINA EX (by NEPSI):	Applicable Standard:	GB/T 3836.1 GB/T 3836.2 GB/T 3836.31
	Type of protection:	Ex db IIC T6 Gb Ex tb IIIC 85°C Db
	Temperature class for Ex "db"	T6
	The maximum surface temperature for Ex "tb":	T85°C
	Enclosure Rating	IP66
TAIWAN EX:	Registration	IECEX registered and approved for use in Taiwan. For explosion-proof specifications, please refer to the IECEX section.
INDIA:	Approval	IECEX approved for use in INDIA. For explosion-proof specifications, please refer to the IECEX section. However, in India, only IECEX certificate of conformity for "d" is applicable.
EAC:	Applicable Standard:	ГОСТ 31610.0 ГОСТ IEC 60079-1 ГОСТ IEC 60079-31
	Type of protection	1Ex db IIC T6 Gb X Ex tb IIIC T85°C Db X
	Temperature class for Ex "db"	T6
	The maximum surface temperature for Ex "tb":	T85°C
	Ambient temperature	-20°C and 55°C
	Enclosure Rating	IP66

Safety, EMC, and RoHS conformity standards of ZR802S

Installation altitude: 2000 m or less

Installation category: (IEC61010); II

Pollution degree: (IEC61010); 2

Measurement category: O (other)

- Note
- Installation category, called overvoltage category, specifies impulse withstanding voltage. Category II is for electrical equipment.
 - Pollution degree indicates the degree of existence of solid, liquid, gas or other inclusions which reduce dielectric strength. Degree 2 is the normal indoor environment.

Safety:

CE	EN 61010-1 EN IEC 61010-2-030
UL	UL61010-1 UL61010-2-030
CSA	CAN/CSA-C22.2 No. 61010-1 CAN/CSA-C22.2 No. 61010-2-030
Morocco/LVD Arrêté:	NM EN 61010 1 NM EN 61010 2 030
GB	GB30439 Part 1
EAC	ГОСТ 12.2.007.0-75

EMC:

CE	EN 61326-1 Class A Table 2 EN 61326-2-3 EN 61000-3-2, EN IEC 61000-3-2
Morocco/EMC Arrêté:	NM EN 61326 1 NM EN 61326 2 3 NM EN 61000 3 2
RCM	EN61326-1 Class A Table 2
KC	Korea Electromagnetic Conformity Standard
EAC	ГОСТ 30804.6.2 (IEC 61000-6-2) ГОСТ IEC 61000-6-4

- Note
- 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.
 - Influence of immunity environment (Criteria A) : Output shift is specified within $\pm 20\%$ of F.S.

RoHS: EN IEC 63000

Others:

REACH Regulation EC 1907/2006

Information of the WEEE Directive

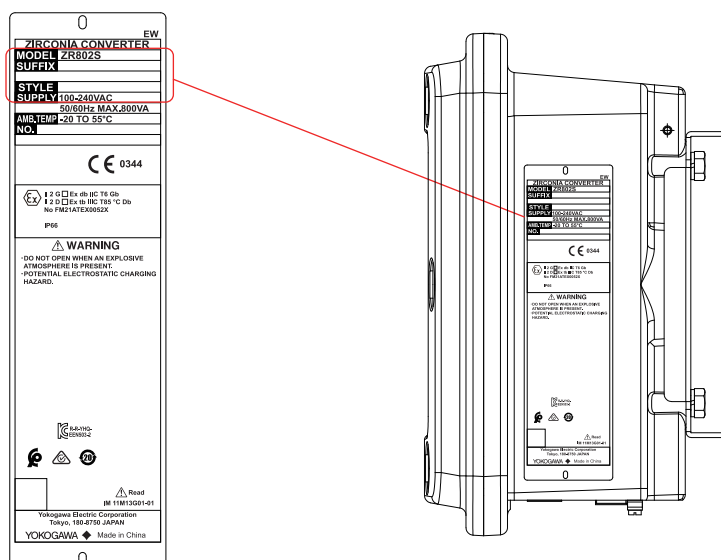
This product is purposely designed to be used in a large scale fixed installations only and, therefore, is out of scope of the WEEE Directive. The WEEE Directive is only valid in the EU.

1 Instrument Check

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

■ Checking the model and suffix code

Make sure the model and suffix code on the nameplate affixed to the left side of the housing. Model and suffix code is shown in Table 2.



■ Checking accessories

The instrument is shipped with standard accessories. Optional accessories are sold separately if necessary. Make sure the accessories in Table 1 or Table 2 are included.

Table 1 Standard accessories

Item	Q'ty				Description
	Std.	/RC	/AC	/RC, /AC	
Fuse	1	1	1	1	3.15 A Parts No. A1113EF
Fuse	—	—	2	2	2.5 A Parts NO. A1112EF
Mounting bracket (standard)	1	—	1	—	Parts No. K8001PN
Mounting bracket (Rugged Coating)	—	1	—	1	Parts No. K8001PR
U-bolt for pipe mounting	2	2	2	2	2B
Tag label (standard)	1	1	1	1	(Note1)

(Note 1) Tag label is included when suffix code except for /SCT is specified.
A blank label is included when no TAGNO. is specified.

Table 2 Model and suffix code

Model	Suffix code	Option code	Description
ZR802S	-----	-----	Explosion-proof Zirconia Oxygen Analyzer, Converter
Conformity in Hazardous location	-A	-----	EU-Type Examination certificate of conformity for “d” and “t” (ATEX) (*1)
	-B	-----	US certificate of conformity for “d”, “t”, and Class I, II, III Division 1 (by FM) (*2)
	-C	-----	Canadian certificate of conformity for “d” and “t” (CSA) (*2)
	-D	-----	IECEx certificate of conformity for “d” and “t” (*1) (*3)
	-M	-----	China Ex certificate of conformity for “d” and “t” (by NEPSI) (*1)
	-K	-----	Korea Ex certificate of conformity for “d” and “t” (by KTL) (*1)
	-Q	-----	EAC certified explosion-proof for “d” and “t” with PA (*1) (*4) (*5)
	-R	-----	EAC certified explosion-proof for “d” and “t” without PA (*1) (*4) (*5)
Converter thread	-M	-----	M20 x 1.5 mm
	-T	-----	1/2 NPT
Digital communication	-H	-----	HART
	-M	-----	HART+Modbus RS485
	-E	-----	HART+Modbus Ethernet
—	-N	-----	Always -N
—	-N	-----	Always -N
Options	/SCT		TAGNO. Engraved on the metal nameplate (*6)
	/H		Awning hood
	/CJ		Cold junction temperature compensation (with Pt1000 resistance thermometer) (*7)
	/AI		Analog input with no power supply
	/AC		With solenoid valve drive output for automatic calibration (*8)
	/RC		Rugged Coating (epoxy + urethane coating)
	/JP		Made in Japan (*4)

*1: Only “-M” can be specified to the converter thread.

*2: Only “-T” can be specified to the converter thread.

*3: If you want to order Taiwan Ex specification, please select -D. (Taiwan Ex registration based on IECEx)

If you want to order Indian Ex specification, please select -D. (Indian Ex approval based on IECEx)

However, in India, only IECEx certificate of conformity for “d” is applicable.

*4: If /JP is not selected, it is made in China. Cannot be specified for China Ex (-M), Korea Ex (-K), EAC Ex with PA (-Q) and EAC Ex without PA (-R).

*5: Please select -Q for final destination of Russian Federation.

Please select -R for final destination of Kazakhstan and Belarus.

For more information about certification availability, please contact Yokogawa office.

*6: When suffix code except for /SCT is specified, it will be supplied the tag label with TAGNO. printed.

*7: Connect the supplied Pt1000 resistance thermometer for cold junction temperature compensation to CJ terminal, when /CJ is specified.

*8: Explosion-proof solenoid valves must be provided by customer.

2. Wiring and Installation

Open the front panel and remove the shield cover and then install the cable glands. The shield cover will be re-installed after the wiring is completed.

For details, refer to the User's Manual IM 11M13G01-02EN.

2.1 Installation site

The ZR802S is weatherproof and can be installed both inside and outside (Construction: NEMA/ CSA TYPE 4X). It should, however, be installed as close as possible to the sensor to avoid long cable runs between the instrument and sensor.

Select an installation site where the ambient temperature, humidity and power voltage are within the limits of the instrument specifications as below. If the instrument is installed outside and exposed to direct sunlight, a sun shade hood should be used.

Ambient Operating Temperature: -20 to +55°C

Storage Temperature: -30 to +70°C

Humidity: 10 to 90% RH at 40°C (Non-condensing)

Power Supply Voltage: Ratings; 100 to 240 V AC
Acceptable range; 85 to 264 V AC

Power Supply Frequency: Ratings; 50/60 Hz
Acceptable range; 47 to 63 Hz

Power Consumption: Max. 800 VA, approx. 330 VA for ordinary use.

Select an installation site that meets the following conditions.

- Mechanical vibrations and shocks are negligible
- No relay switch and power switch are installed close to the converter
- There is space for cable connection beneath the cable glands
- Not exposed to direct sunlight or severe weather conditions
- Maintenance is possible
- No corrosive atmosphere

The ZR802S can be mounted on a wall or pipe when the mounting kit is ordered. For dimensional information please refer to the User's Manual IM 11M13G01-02EN.

2.2 Open and Close

■ Open

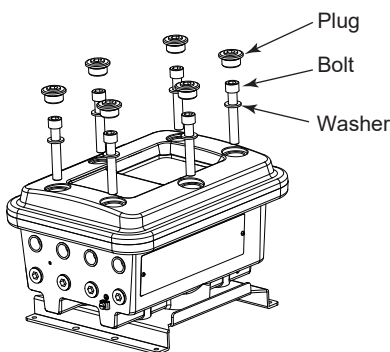
Remove the plugs, bolts, and washers at six positions respectively.

NOTE

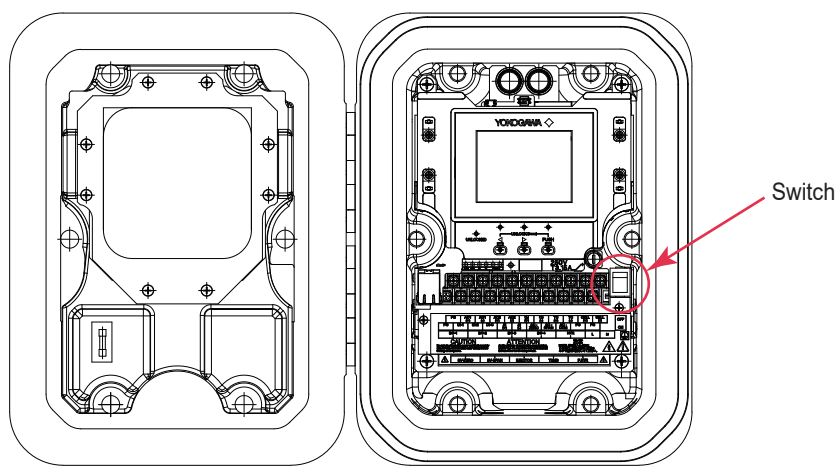
Be careful not to lose the washer when attaching or detaching.

■ Close

- Tighten the plug/bolt with a 42 N·m.
- Be sure to install the washer. Doing so may damage the seating surface of the cover.



NOTE Make sure the amplifier is switched ON prior to closing the enclosure.



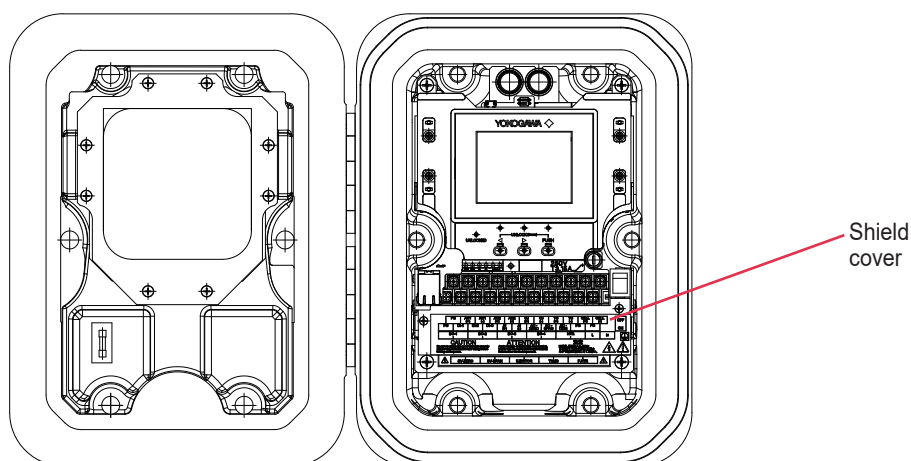
2.3 Wiring

■ Preparation

Power supply and relay contact should be connected first. Those terminals are behind the shield cover. Next, connect the others. For details, refer to the User's Manual IM 11M13G01-02EN. Read it carefully before wiring. This manual describes how to use the ZR802S with Yokogawa's sensors. Please read carefully this manual and the instruction manuals relevant to those sensors you use before using this instrument.

⚠ WARNING

- Cables that withstand temperatures of at least 75°C should be used for wiring.
- Wiring work should be performed to meet IP66 or higher requirements.
- Use cables that comply with UL2556VW-1 or equivalent.
- Always place the shield cover over the power supply and contact terminals for safety reasons and to avoid interference.



■ Cables, Terminals, glands and conduit adapter

The ZR802S is supplied with terminals suitable for the connection of finished wires in the size range of 0.13 to 2.5 sq.mm. (26 to 14 AWG). The cable glands supplied will form a tight seal on cables with an outside diameter of 6 to 12 mm (0.24 to 0.47 inches). Unused cable entry holes must be sealed with cable glands including the close up plugs supplied.

For details, refer to the User's Manual IM 11M13G01-02EN.

■ Wiring the power supply and heater line

WARNING

Do not turn on the power until you have confirmed that the power and heater are wired correctly according to the User's Manual IM 11M13G01-02EN.

Turning on the power with incorrect wiring may cause the temperature control circuit of the detector to malfunction, resulting in a false operation.

CAUTION

Make sure the power supply is switched off. Power rating must comply with ZR802S specification. Power voltage must match with the one indicated on the name plate.

WARNING

- You must install external power supply switch or circuit breaker for power supply.
- The external power supply switch or a circuit breaker must comply with a current rating of 5A or IEC60947-1 or IEC60947-3
- Yokogawa recommend installing the external power supply switch, circuit breaker and ZR802S converter all in the same location.
- Install the external power supply switch or circuit breaker to the place where operators access easily. To alert users, put a label on the external power switch.
- Wire cables of power supply, contact output securely with cable rack, conduit and vinyl band. Unplugged cables are dangerous and may cause an electric shock.

You should check local safety regulation to see if you shall install external circuit breaker. Follow the local regulation and install if necessary.

ZR802S is protected by fuse which provides overcurrent protection of inner circuit.

Specific current and voltage ratings of fuse vary depending on power system. Use always a time-delay fuse for 250 VAC fuse in accordance with IEC60127.

WARNING

Fuse replacement should be performed only by a qualified service personnel. See Chapter 4. MAINTENANCE, ● Fuse.

● Access to terminal and cable entry

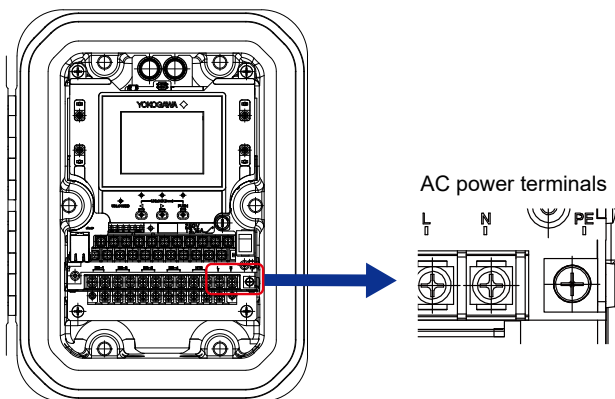
The power supply terminals are behind the shield cover.

Guide the power cables through the gland. The terminals will accept wires of 2.5 mm² (14 AWG). Always use cable finishings. For details, refer to the User's Manual IM 11M13G01-02EN.

● Power supply terminals

Connect power supply to the power supply terminals.

For details, refer to the User's Manual IM 11M13G01-02EN.

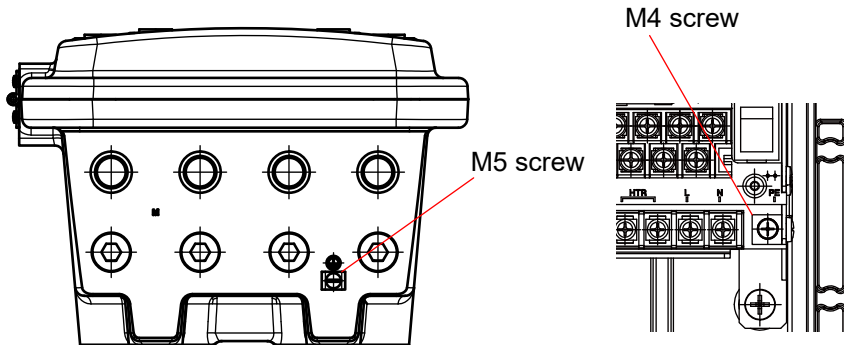


- **Wiring for power to detector heater**

Wire to terminals to connect to the heater in the detector. For details, refer to the User's Manual IM 11M13G01-02EN.

- **Grounding the converter**

For the safety of the user and to protect the instrument against interference, the housing must always be connected to ground. This has to be done by a cable with large cross-sectional area. This cable can be fixed to the bottom of the housing or the internal ground connections. For details, refer to the User's Manual IM 11M13G01-02EN.



WARNING

The minimum cross sectional area of the protective grounding wire should be 0.75 mm². Use cables with a cross section of 0.75 - 2.1 mm².

■ **Wiring the contact signals**

- **Contact outputs**

The ZR802S unit's four contacts (switches) that can be wired and configured to suit user requirements. Contact S4 is programmed as a fail-safe contact. Refer to the User's Manual IM 11M13G01-02EN for contact outputs setup.

Use a cable with the rated voltage of 300 V AC or higher and with the electric current capacity according to the load connected to contact output.

- **Contact inputs**

For details, refer to the User's Manual IM 11M13G01-02EN.

■ **Wiring the mA-input/ output signals**

- **mA-input signals**

The mA-inputs receive current signals of 4-20 mA. Should be used the cable beyond 30 V AC. It is necessary to use screening/shielding on the input signal cables. For details, refer to the User's Manual IM 11M13G01-02EN.

- **mA-output signals**

The output signals consist of current signals of 4-20 mA. The maximum load can be 550 ohms on each. Should be used the cable beyond 30 V AC. It is necessary to use screening/shielding on the output signal cables. For details, refer to the User's Manual IM 11M13G01-02EN.

■ **Wiring the sensor**

The ZR802S can be used with a wide range of commercially available sensor types, both from Yokogawa and other manufacturers.

Pin terminal, ring terminal and spade terminal can be used.

For details, refer to the User's Manual IM 11M13G01-02EN.

■ Wiring the communication

The ZR802S can equip Ethernet (Modbus TCP) communication, RS-485 (Modbus RTU) communication.

It is necessary to use screening/shielding on the communication cable.

For details, refer to the User's Manual IM 11M13G01-02EN

3. Operation

When all wiring is completed, turn on the power to the instrument. Make sure that the LCD screen turns on, and then wait for the Home display appears. If configurations are not proper, an error indicator may be displayed, or the measurement values displayed may be incorrect. Check the initial settings and change them to suit your purpose.

For details, refer to the following User's Manual.

Contents	Document number
ZR22S and ZR802S Explosion-proof Zirconia Oxygen Analyzer	IM 11M13G01-02EN
ZR802G and ZR802S Zirconia Oxygen/Humidity Analyzer, Converter HART Communication	TI 11M12G01-61EN
ZR802G and ZR802S Zirconia Oxygen/Humidity Analyzer, Converter MODBUS Communication	TI 11M12G01-62EN

● Change language

The default language setting for the ZR802S is English. To select a different language other than English, refer to the User's Manual IM 11M13G01-02EN.

4. Maintenance

■ Periodic maintenance

The ZR802S requires very little periodic maintenance, except to make sure the front window is kept clean in order to permit a clear view of the display and allow proper operation of the touch panel. If the window becomes soiled, clean it using a soft damp cloth or soft tissue.

To deal with more stubborn stains, a neutral detergent may be used.

When you must open the front cover and/or glands, make sure that the seals are clean and correctly fitted when the unit is re-assembled in order to maintain the housing's weatherproof integrity against water and water vapor.



CAUTION

Never use harsh chemicals or solvents. In the event that the window does become heavily stained or scratched, refer to the parts list for replacement part numbers.

● Battery

The ZR802S contains a lithium cell (battery) to support the clock function when the power is switched off. The cell has an expected working life of 10 years. Should this cell need to be replaced, contact your nearest Yokogawa service center.

● Fuse

There is a circuit board mounted fuse protecting the instrument. If a fuse blows soon after the change, contact your nearest Yokogawa service center.

5. Explosion protected Type Instrument

In this section, further requirements and differences for explosion proof type instrument are described. For explosion protected type, the description in this section is prior to other description in this User's Manual.



CAUTION

ZR802S has been tested and certified as being explosion proof. Please note that severe restrictions apply to these instrument's construction, installation, external wiring, maintenance and repair. A failure to abide by these restrictions could make the instrument a hazard to operate.

■ ZR802S (General Instruction)

● Installation

Refer to chapter 3 of the IM 11M13G01-02EN for other than that described below.

- In order to prevent the earthing conductor from loosening, the conductor must be secured to the terminal, tightening the screw with torque of approx. 2.0N·m (M5) or 1.2N·m (M4). Care must be taken not to twist the conductor.
- Unused entries shall be closed with suitable certified blanking elements.
- Cable entry devices suitable for the thread form and the size of the cable entries must be used, according to the following marking on the equipment

Marking	Screw form / size
M	ISO M20x1.5
N	ANSI 1/2NPT

- When installing the equipment, the selected Type of Protection should be ticked as follows.
 - ☒ Ex db IIC T6 Gb
 - ☐ Ex tb IIIC T85 °C Db

● Operation



WARNING

POTENTIAL ELECTROSTATIC CHARGING HAZARD

- In hazardous areas, risk from electrostatic discharge and propagating brush discharges caused by rapid flow of dust shall be avoided. Avoid any actions which generate electrostatic charges, such as rubbing the equipment with a dry cloth.



WARNING

DO NOT OPEN WHEN AN EXPLOSIVE ATMOSPHERE MAY BE PRESENT

- Take care not to generate mechanical spark when access to the equipment and the peripheral devices in hazardous locations.
- Do not damage the mating surface of the case and cover.



CAUTION

All the blind plugs which accompany the ZR802S upon shipment from the factory are certified by the applicable agency in combination with those analyzers. The plugs for cable entries which are marked with the symbols "□ Ex" on their surfaces are certified only in combination with the ZR802S.

● Specific condition of use

1. Precaution shall be taken to minimize the risk from electrostatic discharges on the non-metallic parts (excluding glass parts) or coated parts of the equipment.
2. Flameproof joints are not intended to be repaired. Contact Yokogawa representative or Yokogawa office.
3. The fasteners used to fasten the cover and case shall only be replaced with Yokogawa fastener, Part number: K8001MD.

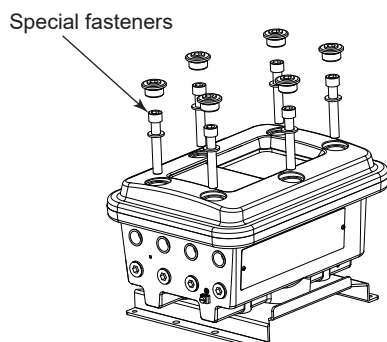


Figure 5.1 Special fasteners

● Maintenance and repair



WARNING

- A modification of the equipment would no longer comply with the construction described in the certificate documentation.
- Only personnel authorized by Yokogawa Electric Corporation can repair the equipment.

■ ZR802S-A (EU-Type Examination certificate of conformity (ATEX))

● Technical data

- Applicable standards

EN IEC 60079-0

EN 60079-1

EN 60079-31

EN 60529 + A1 + A2

- Certificate No.

ATEX: FM21ATEX0052X

Note: The symbol "X" placed after the certificate number indicates that the equipment is subjected to specific conditions of use.
Refer to specific condition of use.

- Specifications

Refer to chapter 2 of the IM 11M13G01-02EN for other specifications than that described below.

- Equipment ratings (Ex marking)

II 2 G ☐ Ex db IIC T6 Gb

II 2 D ☐ Ex tb IIIC T85 °C Db

Note: "☐" is the checkbox for selecting type of protection. Select the type of protection and check one of "☐" on the nameplate.
Once the type of protection is selected, it shall not be changed.

- Enclosure

IP66

- Ambient temperature

-20 to +55°C

● Installation

Refer to chapter 3 of the IM 11M13G01-02EN for other than that described below.

- The equipment shall be installed in accordance with EN 60079-14 and relevant local codes and requirements.
- Cable glands, adapters and/ or blanking elements shall be installed so as to maintain the specified type of protection(s) and the rating of the equipment.

Nameplate

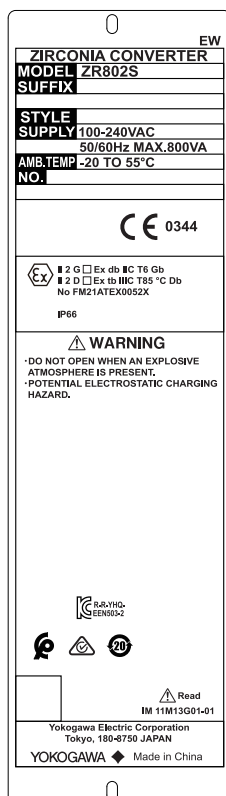


Figure 5.2 Example of nameplate (Design and texts may be changed)

- **MODEL:** Specified model code
- **SUFFIX:** Specified suffix code
- **STYLE:** Specified style code
- **SUPPLY:** Specified supply voltage and wattage
- **Tamb:** Specified ambient temperature range
- **No.:** Serial number
- **MANUFACTURED:** Month and year of production

Ex marking:

II 2 G ☐ Ex db IIC T6 Gb

II 2 D ☐ Ex tb IIIC T85 °C Db

Note: "□" is the checkbox for selecting type of protection. Select the type of protection and check one of "□" on the nameplate. Once the type of protection is selected, it shall not be changed.

- **Enclosure:** IP66
- **Certificate No.**
ATEX: FM21ATEX0052X
- **ZIP CODE 180-8750 :** 2-9-32 Nakacho, Musashino-shi, Tokyo



WARNING

DO NOT OPEN WHEN AN EXPLOSIVE ATMOSPHERE MAY BE PRESENT.
POTENTIAL ELECTROSTATIC CHARGING HAZARD.

■ ZR802S-B (US certificate of conformity)

● Technical data

- Applicable standards

[Division system]

FM 3600

FM 3615

FM 3616

FM 3810

NEMA 250

[Zone system]

ANSI/UL 61010-1

ANSI/UL 61010-2-30

ANSI/UL 60079-0

ANSI/UL 60079-1

ANSI/UL 60079-31

ANSI/UL 50E

ANSI/IEC 60529

- Certificate No.

FM21US0088X

Note: The symbol "X" placed after the certificate number indicates that the equipment is subjected to specific conditions of use.
Refer to specific condition of use.

- Specifications

Refer to chapter 2 of the IM 11M13G01-02EN for other specifications than that described below.

- Equipment ratings (Ex marking)

☐ CL I/II/III DIV 1 GP BCDEFG T6

☐ CL I ZN 1 AEx db IIC T6 Gb

☐ ZN 21 AEx tb IIIC T85 °C Db

Note: "□" is the checkbox for selecting type of protection. Select the type of protection and check one of "□" on the nameplate.
Once the type of protection is selected, it shall not be changed.

- Enclosure

TYPE4X, IP66

- Ambient temperature

-20 to +55°C

● Installation

Refer to chapter 3 of the IM 11M13G01-02EN for other than that described below.

- The equipment shall be installed in accordance with NFPA 70 and relevant local codes and requirements.
- SEAL ALL CONDUITS WITHIN 18 INCHES.
- In a hazardous area, use appropriate certified cable glands for connecting cables, adaptors and/ or blanking element to maintain the specific degree of protection of the equipment.



WARNING

WHEN $T_a \geq 50^\circ\text{C}$, USE CABLE AND/OR DEVICE WITH A RATING $\geq 65^\circ\text{C}$

Nameplate

EX	
ZIRCONIA CONVERTER	
MODEL	ZR802S
SUFFIX	
STYLE	
SUPPLY	100-240VAC
	50/60Hz MAX.800VA
AMB.TEMP	-20 TO 55°C
NO.	
 APPROVED	
☐ CL I/II/III DIV 1 GP BCDEFG T6 ☐ CL I ZN 1 AEx db IIC T6 Gb ☐ ZN 21 AEx tb IIC T85 °C Db TYPE 4X, IP66	
WARNING •DO NOT OPEN WHEN AN EXPLOSIVE ATMOSPHERE IS PRESENT. •POTENTIAL ELECTROSTATIC CHARGING HAZARD. •WHEN $T_a \geq 50^\circ\text{C}$, USE CABLE AND/OR DEVICE WITH A RATING $\geq 65^\circ\text{C}$. •SEAL ALL CONDUITS WITHIN 18 INCHES.	
   	
 Read IM 11M13G01	
Yokogawa Electric Corporation Tokyo, 160-8750 JAPAN YOKOGAWA ◆ Made in China	

Figure 5.3 Example of nameplate (Design and texts may be changed)

- MODEL: Specified model code
- SUFFIX: Specified suffix code
- STYLE: Specified style code
- SUPPLY: Specified supply voltage and wattage
- AMB.TEMP: Specified ambient temperature range
- No.: Serial number
- MANUFACTURED: Month and year of production

Ex marking:

- ☐ CL I/II/III DIV 1 GP BCDEFG T6
- ☐ CL I ZN 1 AEx db IIC T6 Gb
- ☐ ZN 21 AEx tb IIC T85 °C Db

Note: "□" is the checkbox for selecting type of protection. Select the type of protection and check one of "□" on the nameplate. Once the type of protection is selected, it shall not be changed.

- Enclosure: TYPE4X, IP66

WARNING

WHEN $T_a \geq 50^\circ\text{C}$, USE CABLE AND/OR DEVICE WITH A RATING $\geq 65^\circ\text{C}$.
 DO NOT OPEN WHEN AN EXPLOSIVE ATMOSPHERE MAY BE PRESENT.
 POTENTIAL ELECTROSTATIC CHARGING HAZARD.
 SEAL ALL CONDUITS WITHIN 18 INCHES

■ ZR802S-C (Canadian certificate of conformity)

● Technical data

- Applicable standards
CSA-C22.2 No. 60079-0
CAN/CSA-C22.2 No. 60079-1
CAN/CSA-C22.2 No. 60079-31
CAN/CSA-C22.2 No. 61010-1
CAN/CSA-C22.2 No. 61010-2-030
CAN/CSA-C22.2 No. 60529
CSA-C22.2 No. 94.2

- Certificate No.
FM21CA0057X

Note: The symbol "X" placed after the certificate number indicates that the equipment is subjected to specific conditions of use.
Refer to specific condition of use.

- Specifications

Refer to chapter 2 of the IM 11M13G01-02EN for other specifications than that described below.

- Equipment ratings (Ex marking)
☐ Ex db IIC T6 Gb
☐ Ex tb IIIC T85 °C Db

Note: "□" is the checkbox for selecting type of protection. Select the type of protection and check one of "□" on the nameplate.
Once the type of protection is selected, it shall not be changed.

- Enclosure
TYPE4X, IP66
- Ambient temperature
-20 to +55°C

● Installation

Refer to chapter 3 of the IM 11M13G01-02EN for other than that described below.

- The equipment shall be installed in accordance with C22.1 and relevant local codes and requirements.
- In a hazardous area, use appropriate certified cable glands for connecting cables, adaptors and/ or blanking element to maintain the specific degree of protection of the equipment.



WARNING

WHEN $T_a \geq 50^\circ\text{C}$, USE CABLE AND/OR DEVICE WITH A RATING $\geq 65^\circ\text{C}$.



AVERTISSEMENT

QUAND $T_a \geq 50^\circ\text{C}$, UTILISER UN CÂBLE ET/OU UN APPAREIL AVEC UNE VALEUR $\geq 65^\circ\text{C}$.

● Operation



WARNING

POTENTIAL ELECTROSTATIC CHARGING HAZARD.



AVERTISSEMENT

DANGER POTENTIEL DE CHARGES ÉLECTROSTATIQUES.

Nameplate

ZIRCONIA CONVERTER	
MODEL	ZR802S
SUFFIX	
STYLE	
SUPPLY	100-240VAC
	50/60Hz MAX.800VA
AMB.TEMP	-20 TO 55°C
NO.	
 APPROVED	
☐ Ex db IIC T6 Gb ☐ Ex tb IIIC T85 °C Db No FM21CA0057X TYPE 4X, IP66	
⚠ WARNING •DO NOT OPEN WHEN AN EXPLOSIVE ATMOSPHERE IS PRESENT. •POTENTIAL ELECTROSTATIC CHARGING HAZARD. •WHEN Ta ≥ 50°C, USE CABLE AND/OR DEVICE WITH A RATING ≥ 65°C	
⚠ AVERTISSEMENT •QUAND Ta ≥ 50°C, UTILISER UN CÂBLE ET/OU UN APPAREIL AVEC UNE VALEUR ≥ 65°C •NE PAS OUVRIR EN PRÉSENCE D'UNE ATMOSPHERE EXPLOSIVE. •DANGER POTENTIEL DE CHARGES ÉLECTROSTATIQUES.	
    	
 IM 11M13G01	
Yokogawa Electric Corporation Tokyo, 180-8750 JAPAN YOKOGAWA ◆ Made in China	

Figure 5.4 Example of nameplate (Design and texts may be changed)

- MODEL: Specified model code
- SUFFIX: Specified suffix code
- STYLE: Specified style code
- SUPPLY: Specified supply voltage and wattage
- Tamb: Specified ambient temperature range
- No.: Serial number
- MANUFACTURED: Month and year of production

Ex marking:

- ☐ Ex db IIC T6 Gb
- ☐ Ex tb IIIC T85 °C Db

Note: "□" is the checkbox for selecting type of protection. Select the type of protection and check one of "□" on the nameplate. Once the type of protection is selected, it shall not be changed.

- Enclosure: TYPE4X, IP66
- Certificate No. FM21CA0057X

 WARNING

WHEN Ta ≥ 50°C, USE CABLE AND/OR DEVICE WITH A RATING ≥ 65°C.
DO NOT OPEN WHEN AN EXPLOSIVE ATMOSPHERE MAY BE PRESENT.
POTENTIAL ELECTROSTATIC CHARGING HAZARD.

 AVERTISSEMENT

QUAND Ta ≥ 50°C, UTILISER UN CÂBLE ET/OU UN APPAREIL AVEC UNE VALEUR ≥ 65°C.
NE PAS OUVRIR EN PRÉSENCE D'UNE ATMOSPHERE EXPLOSIVE.
DANGER POTENTIEL DE CHARGES ÉLECTROSTATIQUES.

■ ZR802S-D (IECEx certificate of conformity)

● Technical data

- Applicable standards
IEC 60079-0 Ed. 7.0
IEC 60079-1 Ed. 7.0
IEC 60079-31 Ed. 2.0

- Certificate No.
IECEx FMG 21.0026X

Note: The symbol "X" placed after the certificate number indicates that the equipment is subjected to specific conditions of use.
Refer to specific condition of use.

- Specifications

Refer to chapter 2 of the IM 11M13G01-02EN for other specifications than that described below.

- Equipment ratings (Ex marking)

- ☐ Ex db IIC T6 Gb
- ☐ Ex tb IIIC T85 °C Db

Note: "□" is the checkbox for selecting type of protection. Select the type of protection and check one of "□" on the nameplate.
Once the type of protection is selected, it shall not be changed.

- Enclosure

IP66

- Ambient temperature
-20 to +55°C

● Installation

Refer to chapter 3 of the IM 11M13G01-02EN for other than that described below.

- The equipment shall be installed in accordance with IEC 60079-14 and relevant local codes and requirements.
- Cable glands, adapters and/ or blanking elements shall be installed so as to maintain the specified type of protection(s) and the rating of the equipment.

Nameplate

EZ	
ZIRCONIA CONVERTER	
MODEL ZR802S	
SUFFIX	
STYLE	
SUPPLY 100-240VAC	
50/60Hz MAX.800VA	
AMB.TEMP -20 TO 55°C	
NO.	
☐ Ex db IIC T6 Gb ☐ Ex tb IIIC T85 °C Db No IECEx FMG 21.0026X IP66	
⚠ WARNING ·DO NOT OPEN WHEN AN EXPLOSIVE ATMOSPHERE IS PRESENT. ·POTENTIAL ELECTROSTATIC CHARGING HAZARD.	
  TD04000C	
	
Yokogawa Electric Corporation Tokyo, 180-8750 JAPAN YOKOGAWA ◆ Made in China	

Figure 5.5 Example of nameplate (Design and texts may be changed)

- MODEL: Specified model code
- SUFFIX: Specified suffix code
- STYLE: Specified style code
- SUPPLY: Specified supply voltage and wattage
- Tamb: Specified ambient temperature range
- No.: Serial number
- MANUFACTURED: Month and year of production

Ex marking:

- ☐ Ex db IIC T6 Gb
- ☐ Ex tb IIIC T85 °C Db

Note: "□" is the checkbox for selecting type of protection. Select the type of protection and check one of "□" on the nameplate. Once the type of protection is selected, it shall not be changed.

- Enclosure: IP66
- Certificate No. IECEx FMG 21.0026X



WARNING

DO NOT OPEN WHEN AN EXPLOSIVE ATMOSPHERE MAY BE PRESENT.
POTENTIAL ELECTROSTATIC CHARGING HAZARD.

■ ZR802S-M (CHINA EX certificate of conformity)

● Technical data

- Applicable standards
GB/T 3836.1
GB/T 3836.2
GB/T 3836.31

- Certificate No. GYJ22.1821X

Note: The symbol "X" placed after the certificate number indicates that the equipment is subjected to specific conditions of use. Refer to specific condition of use.

- Specifications
Refer to chapter 2 of the IM 11M13G01-02EN for other specifications than that described below.
- Equipment ratings (Ex marking)
- Ex db IIC T6 Gb
- Ex tb IIIC T85°C Db

Note: "□" is the checkbox for selecting type of protection. Select the type of protection and check one of "□" on the nameplate. Once the type of protection is selected, it shall not be changed.

- Enclosure IP66
- Ambient temperature
-20 to +55°C

● Installation

Refer to chapter 3 of the IM 11M13G01-02EN for other than that described below.

- Installation and maintenance of the equipment shall be done in accordance with GB/T 3836.13, GB/T 3836.15, GB/T 3836.16, GB 50257 and GB 15577.
- Cable glands, adapters and/ or blanking elements shall be installed so as to maintain the specified type of protection(s) and the rating of the equipment.

Nameplate

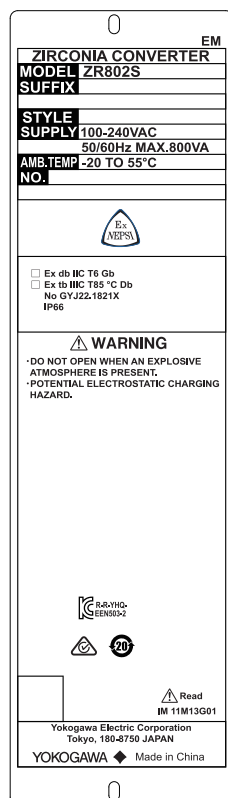


Figure 5.6 Example of nameplate (Design and texts may be changed)

- MODEL: Specified model code
- SUFFIX: Specified suffix code
- STYLE: Specified style code
- SUPPLY: Specified supply voltage and wattage
- Tamb: Specified ambient temperature range
- No.: Serial number
- MANUFACTURED: Month and year of production
- Ex marking:
- Ex db IIC T6 Gb
- Ex tb IIC T85 °C Db

Note: "□" is the checkbox for selecting type of protection. Select the type of protection and check one of "□" on the nameplate. Once the type of protection is selected, it shall not be changed.

- Enclosure: IP66
- Certificate No. GYJ22.1821X



WARNING

DO NOT OPEN WHEN AN EXPLOSIVE ATMOSPHERE MAY BE PRESENT. POTENTIAL ELECTROSTATIC CHARGING HAZARD.

Revision Information

- Manual Title : ZR802S Explosion-proof Zirconia Oxygen Analyzer, Converter
Start-up and Safety Precautions
- Manual No. : IM 11M13G01-01EN

Nov. 2025/ 7th Edition

Correction of Control of Pollution Caused by the Product (P. 4)

Oct. 2024/ 6th Edition

Added EAC conformity to the safety standards. (P.7, 8, 10)

Revised the cautionary note about wiring.(P. 13, 14)

July 2024/ 5th Edition

Revised EU DECLARATION OF CONFORMITY.

May 2024/ 4th Edition

Added option code /JP (P. 10) etc.

Sep. 2023/ 3rd Edition

Revised CE standard number (P. 8).

Revised EU DECLARATION OF CONFORMITY.

June 2023/ 2nd Edition

Deleted UKCA,UKEX (P. 3, 7, 8) and UK-DECLARATION OF CONFORMITY (five pages).

Added PESO standard (P. 7). Changed nameplate (P. 9, 18).

Mar. 2023/ 1st Edition

Newly released.

Yokogawa Electric Corporation
2-9-32 Nakacho, Musashino-shi, Tokyo 180-8750, JAPAN
<http://www.yokogawa.com/>





Doc. No. AEN682-C03

EU DECLARATION OF CONFORMITY

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

declare under our sole responsibility that the product identified as:

Model code	Model name
ZR802S	Zirconia Oxygen Analyzer, Converter

further specified with model suffix and option codes:

As listed in General Specification: GS 11M13G01-01EN (Ed.4)

is in compliance with the EU law and legislation providing for the CE-marking, as listed in Appendix 1.

Information relevant to the conformity and identification of these Products is provided in Appendix 2 and Appendix 3.

Subject product is:

- Produced according to appropriate quality control procedure.
- Provided with the CE-marking as from **2021**.

Signature:

(Manufacturer)

Tokyo, 17 July 2024

(Authorized Representative in the EEA)

Amersfoort, 23 July 2024

Tetsuo Ooshita

Tetsuo Ooshita
General Manager
Analyzer Development Dept.
Sensing Center Development Div.
Yokogawa Products HQ
Yokogawa Electric Corporation

DocuSigned by:

Günter Klein

3051501CF33C498

Günter Klein
Head of QHSE Europe – Regional Process
Owner
Yokogawa Europe B.V.
Euroweg 2, 3825 HD Amersfoort,
P.O.Box 163, 3800 AD Amersfoort,
The Netherlands

Appendix 1

The products are built in compliance with requirements of the following EU Directives and Standards:

EU Directives and Standards	
EU Directives	Standards
2014/30/EU (EMC)	EN 61326-1:2013 Class A Table 2 Electrical equipment for measurement, control and laboratory use – EMC requirements- Part 1: General requirements EN 61326-2-3: 2013 Electrical equipment for measurement, control and laboratory use - EMC requirements - Part 2-3: Particular requirements – Test configurations, operational conditions and performance criteria for transducers with integrated or remote signal conditioning EN 55011:2016+A1:2017 Class A Group1 Industrial, scientific and medical equipment – Radio-frequency disturbance characteristics – Limits and methods of measurement EN 61000-3-2:2014 EN IEC 61000-3-2:2019 Electromagnetic compatibility (EMC) -- Part 3-2: Limits - Limits for harmonic current emissions (equipment input current ≤ 16 A per phase)
2014/35/EU (LVD)	EN 61010-1:2010+A1:2019 Safety requirements for electrical equipment for measurement, control, and laboratory use – Part 1: General requirements EN IEC 61010-2-030:2021+A11:2021 Safety Requirements for Electrical Equipment for Measurement, Control, and Laboratory Use – Part 2-030: Particular Requirements for Equipment Having Testing or Measuring Circuits
2011/65/EU^{*1} (RoHS)	EN IEC 63000:2018 Technical documentation for the assessment of electrical and electronic products with respect to the restriction of hazardous substances
2014/34/EU (ATEX)	EN IEC 60079-0:2018 Explosive atmospheres Part 0 : Equipment-General requirements EN 60079-1:2014 Explosive atmospheres Part 1 : Equipment protection by flameproof enclosures “d” EN 60079-31:2014 Explosive atmospheres Part 31: Equipment dust ignition protection by enclosure “t”
	 II 2 G Ex db IIC T6 Gb II 2 D Ex tb IIIC T85°C Db
	The number of the EU-Type Examination Certificate: FM21ATEX0052X is issued by: The Name of the Notified Body: FM Approvals Europe Limited The Identification Number of the Notified Body: 2809 The Address of the Notified Body: Element 78, Ground Floor Block A, One Georges Quay Plaza, Dublin 2 D02 E440, Ireland
	Quality Assurance Notification is issued by: The Name of the Notified Body: DEKRA Certification B.V. The Identification Number of the Notified Body: 0344 The Address of the Notified Body: Meander 1051 6825 MJ Arnhem, The Netherlands The Number of Quality Assurance Notification: DEKRA 11ATEXQ0127

^{*1} : Including the Commission Delegated Directive (EU) 2015/863 that defines the ten (10) restricted substances and amends Annex II to Directive 2011/65/EU.

Other Normative Standards
EN 60529:1991 +A1:2000 +A2:2013 Degrees of protection provided by enclosures(IP Code)

EU Regulation	
EU Regulation	Regulation name
2023/1542 (Battery)	REGULATION (EU) 2023/1542 OF THE EUROPEAN PARLIAMENT AND OF THE COUNCIL of 12 July 2023 concerning batteries and waste batteries, amending Directive 2008/98/EC and Regulation (EU) 2019/1020 and repealing Directive 2006/66/EC

Appendix 2

The accessories in the list below have CE-marking significant compliance relevance, as indicated per EU-Directive; their application and use – as described in **IM11M13G01-01EN** – is supported by this EU Declaration of Conformity. The full list of accessories for this product can be found in **IM11M13G01-01EN**.

Indications: 'C' = *The accessory is compliant with the Directive as a part of the product.*

'R' = *The accessory is relevant to the conformity of the product as a part of the product.*

'NS' = *The accessory does not support the Directive.*

'NR' = *The accessory is not relevant to the conformity of the product.*

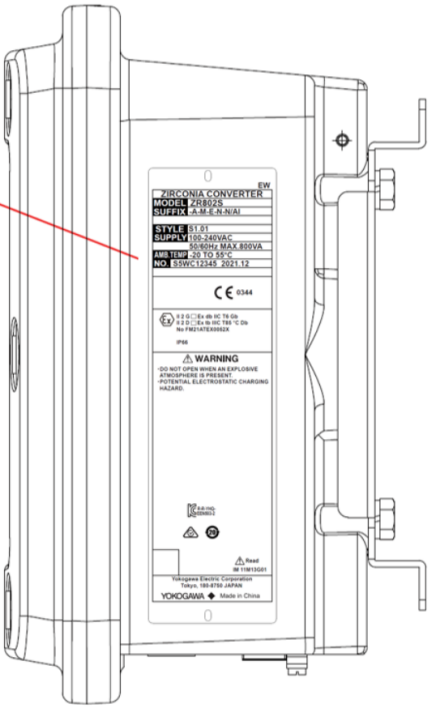
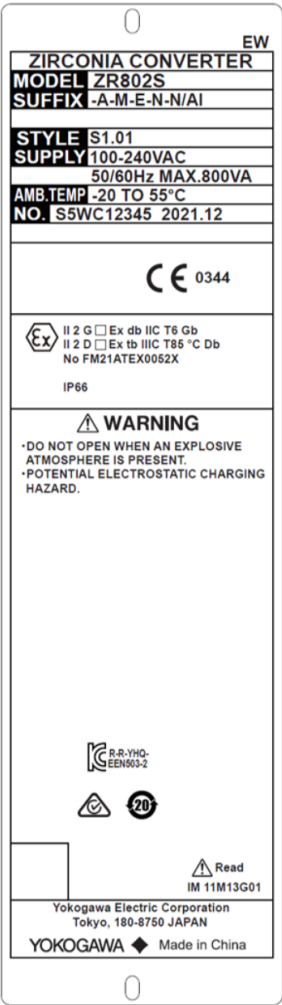
Model/Parts No.	Model/Parts Name	Relevant EU Directives/ Regulation				
		EMC	LVD	RoHS	ATEX	Battery
A1143EB	CR2450 Lithium Battery	NR	C	NR	C	C
IM 11M13G01- 01EN	User's Manual	R	R	R	R	R

Appendix 3

External View of ZR802S



Image of Nameplate
(Typical example; details may differ)



Side view of ZR802S

-/-

