

μR10000 / μR20000 Usage Precautions

Safety Precautions

The general safety precautions described here must be observed during all phases of operation.

- **Safety Standards and EMC Standards**

This recorder conforms to IEC safety class I (provided with terminal for protective grounding), Overvoltage Category II or I, Pollution Degree 2, Measurement Category II (CAT II), and EN61326-1 (EMC standard), class A (use in a commercial, industrial, or business environment). The influence rate (judgment condition A) in the immunity test environment is within ± 10 % of the range.

This recorder is designed for indoor use.

CSA: CAN/CSA-C22.2 No. 61010-1, CSA-C22.2 No. 61010-2-030

Overvoltage Category II or I^{*1}, Pollution Degree 2^{*2}, Measurement Category II^{*3}

UL: UL 61010-1, UL Std. No. 61010-2-030 (CSA NRTL/C)

Overvoltage Category II or I^{*1}, Pollution Degree 2^{*2}, Measurement Category II^{*3}

CE, UKCA:

EMC directive:

EN 61326-1 Class A, Table 2 (For use in industrial locations) compliant

EN 61000-3-2 compliant, EN IEC 61000-3-2 compliant, EN 61000-3-3 compliant,

EN 55011 Class A Group 1 compliant

Low voltage directive:

EN 61010-1, EN IEC 61010-2-030 compliant

Overvoltage Category II or I^{*1}, Pollution Degree 2^{*2}, Measurement Category II^{*3}

EU RoHS directive: EN IEC 63000 compliant

WEEE Directive: Compliant

EMC Regulatory Arrangement in Australia and New Zealand(RCM): EN 55011 Class A Group 1 compliant

KC marking: KS C9811, KS C9610-6-2 compliant

- ***1 Overvoltage Category**

Describes a number which defines a transient overvoltage condition. It implies the regulation for impulse withstand voltage. Applies to electrical equipment which is supplied from fixed installations like distribution boards.

II: Applied to standard power supply (100 - 240 VAC)

I: Applied to /P1 option (24 VDC/AC)

- ***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.

- ***3 Measurement Category II (CAT II)**

Applies to measuring circuits connected to low voltage installation, and electrical instruments supplied with power from fixed equipment such as electric switchboards.

- **Installation Location**

- Allowable power supply voltage range: 90 to 264 VAC (rated supply voltage: 100 to 240 VAC)
21.6 to 26.4 VDC/AC (24 VDC/AC power supply (/P1 option))
- Ambient temperature range between 0 to 50 °C
- Ambient humidity between 20 to 80 %RH (at 5 to 40 °C) or 30 to 50 %RH (at 0 to 5, 40 to 50 °C), No condensation should be present.
- Altitude 2000 m or less

• About This Manuals

- This manual should be read by the end user.
- Read this manual thoroughly and have a clear understanding of the product before operation.
- This manual explains the functions of the product. YOKOGAWA does not guarantee that the product will suit a particular purpose of the user.
- Under absolutely no circumstances may the contents of this manual be transcribed or copied, in part or in whole, without permission.
- The contents of this manual are subject to change without prior notice.
- Every effort has been made in the preparation of this manual to ensure the accuracy of its contents. However, should you have any questions or find any errors or omissions, please contact your nearest YOKOGAWA dealer.
- This manual is part of this product. Keep this manual on safe place for future reference.

• Precautions Related to the Protection, Safety, and Alteration of the Product

The following safety symbols are used on the product and in this manual.



"Handle with care." To avoid injury and damage to the instrument, the operator must refer to the explanation in the manual.



Protective ground terminal



"High temperature." To avoid injury caused by hot surface, do not touch locations where this symbol appears.



AC



DC

- For the protection and safe use of the product and the system controlled by it, be sure to follow the instructions and precautions on safety that are stated in this manual whenever you handle the product. Take special note that if you handle the product in a manner that violate these instructions, the protection functionality of the product may be damaged or impaired. In such cases, YOKOGAWA does not guarantee the quality, performance, function, and safety of the product.
- When installing protection and/or safety circuits such as lightning protection devices and equipment for the product and control system or designing or installing separate protection and/or safety circuits for fool-proof design and fail-safe design of the processes and lines that use the product and the control system, the user should implement these using additional devices and equipment.
- If you are replacing parts or consumable items of the product, make sure to use parts specified by YOKOGAWA.
- This product is not designed or manufactured to be used in critical applications that directly affect or threaten human lives. Such applications include nuclear power equipment, devices using radioactivity, railway facilities, aviation equipment, air navigation facilities, aviation facilities, and medical equipment. If so used, it is the user's responsibility to include in the system additional equipment and devices that ensure personnel safety.
- Do not modify this product.
- Use care when cleaning the recorder, especially any plastic parts. When cleaning, wipe using a dry soft cloth. Do not use chemicals such as benzene or thinner, since these may cause discoloring and deformation.



WARNING

- **Power Supply**
Ensure that the source voltage matches the voltage of the power supply before turning ON the power.
- **Protective Grounding**
Make sure to connect the protective grounding to prevent electric shock before turning ON the power.
- **Necessity of Protective Grounding**
Never cut off the internal or external protective earth wire or disconnect the wiring of the protective earth terminal. Doing so invalidates the protective functions of the instrument and poses a potential shock hazard.
- **Defect of Protective Grounding**
Do not operate the instrument if the protective earth or fuse might be defective. Make sure to check them before operation.
- **Do Not Operate in an Explosive Atmosphere**
Do not operate the instrument in the presence of flammable liquids or vapors. Operation in such environments constitutes a safety hazard.
- **Do Not Remove Covers**
The cover should be removed by YOKOGAWA's qualified personnel only. Opening the cover is dangerous, because some areas inside the instrument have high voltages.
- **External Connection**
Connect the protective grounding before connecting to the item under measurement or to an external control unit.
- **Damage to the Protective Structure**
Operating the recorder in a manner not described in this manual may damage its protective structure.
- **Precautions to Be Taken While Wiring**
 - If a voltage of more than 30 VAC or 60 VDC is to be applied to the output terminals, use ring-tongue crimp-on lugs with insulation sleeves on all terminals to prevent the wires from slipping out when the screws become loose.
 - Furthermore, use double-insulated wires (dielectric strength of 3000 VAC or more) for the signal wires on which a voltage of more than 30 VAC or 60 VDC is to be applied. For all other wires, use basic insulated wires (dielectric strength of 1500 VAC). To prevent electric shock, attach the terminal cover after wiring and make sure not to touch the terminals.
- **Wiring the Power Supply**
 - To prevent the possibility of fire, use 600 V PVC insulated wire (AWG20 to AWG16; JISC3307) or an equivalent wire for power wiring.
 - Use crimp-on lugs (designed for 4-mm screws) for power and ground wiring termination.
 - To prevent electric shock, make sure to close the transparent cover for the power supply wires.
 - For safety, provide a double-pole switch in an easily operable location near the recorder to disconnect the recorder from the main power supply. Put an indication on this switch as the breaker on the power supply line for the recorder and indications of ON and OFF.

Switch specifications	Rated power current: 1 A or more (other than /P1), 3 A or more (/P1 option)
	Rated rush current: 60 A or more (other than /P1), 70 A or more (/P1 option)
	Complies with IEC 60947-1 and IEC60947-3.

Portable Type (/H5x Option)

- **Use the Correct Power Supply**
Ensure that the power supply is within the maximum rated voltage range of the provided power cord before connecting the power cord.
- **Use the Correct Power Cord and Plug**
To prevent electric shock or fire, be sure to use the power cord supplied by YOKOGAWA. The main power plug must be plugged into an outlet with a protective earth terminal. Do not disable this protection by using an extension cord without protective earth grounding. The power cord is designed for use with this instrument. Do not use the power cord with other instruments.
- **Connect the Protective Grounding Terminal**
The power cord for the recorder is a three-prong type power cord. Connect the power cord to a properly grounded three-prong outlet.



CAUTION

- This instrument is a Class A product. Operation of this instrument in a residential area may cause radio interference, in which case the user is required to take appropriate measures to correct the interference.
- Use the following circuit voltage for the connection to the alarm/FAIL/status output terminal.
 - When the connection is to Mains Circuits (primary AC power source circuits): 150 V or less
 - When the connection is to circuits derived from Mains Circuits (secondary circuits): 250 V or less (Mains Circuits voltage is less than 300 V, and connection must be used by isolation transformer.)
- Do not apply a voltage exceeding the following value to the input terminals as this may damage the recorder.
 - Maximum input voltage:
Voltage range less than or equal to 200 mVDC, TC, RTD, and DI: ± 10 VDC
Ranges other than those listed above: ± 60 VDC
 - Maximum common mode voltage:
 ± 60 VDC (under measurement category II conditions)
- To prevent fire, use signal wires for recorder having a temperature rating of 70 °C or more.

Exemption from Responsibility

- YOKOGAWA makes no warranties regarding the product except those stated in the WARRANTY that is provided separately.
- YOKOGAWA assumes no liability to any party for any loss or damage, direct or indirect, caused by the user or any unpredictable defect of the product.

Protection of Environment

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.

产品中有毒有害物质或元素的名称及含量

部件名称		有毒有害物质或元素					
		铅 Pb	汞 Hg	镉 Cd	六价铬 (Cr 6+)	多溴联苯 PBB	多溴二苯醚 PBDE
印刷电路板配件		N/A	N/A	N/A	✓	✓	✓
显示器		N/A	N/A	N/A	✓	✓	✓
箱体		N/A	N/A	N/A	✓	✓	✓
前盖		N/A	N/A	N/A	✓	✓	✓
内部单元底座		✓	✓	✓	✓	✓	✓
电源		N/A	N/A	N/A	✓	✓	✓
操作键		N/A	N/A	N/A	✓	✓	✓
打印单元		N/A	N/A	N/A	✓	✓	✓
制动器(电机, 螺线管)		N/A	N/A	N/A	✓	✓	✓
输入端子和选配件端子		N/A	N/A	N/A	✓	✓	✓
电缆		N/A	✓	✓	✓	✓	✓
附件/ 选配件	电源线	N/A	N/A	N/A	✓	✓	✓
	6色盒式色带 B9901AX、B9906JA	✓	✓	✓	✓	✓	✓
	可拆卸式毡笔 B9902AM、B9902AN、 B9902AP、B9902AQ	✓	✓	✓	✓	✓	✓
	打印笔 B9902AR	✓	✓	✓	✓	✓	✓
	安装支架 B9900BX	N/A	N/A	N/A	✓	✓	✓
	分流电阻 415920、415921 、415922、438920 、438921、438922	N/A	N/A	N/A	✓	✓	✓
SD存储卡		N/A	N/A	N/A	✓	✓	✓

✓: 表示该部件的所有均质材料中的有毒有害物质或元素的含量均低于GB/T 26572标准所规定的限量要求。
 N/A: 表示该部件中至少有一种均质材料中的有毒有害物质或元素的含量超过GB/T 26572标准所规定的限量要求。
 本产品的部分部件包含RoHS指令中的限用物质, 但是其使用方法不受该指令限制。
 Some parts of this product include the restricted substances of RoHS Directive, but their applications are under the exemption of the directive.

环保使用期限



该标志为环境保护使用期限，根据SJ/T11364，适用于在中国（台湾、香港、澳门除外）销售的电子电气产品。只要您遵守该产品相关的安全及使用注意事项，在自制造日起算的年限内，则不会因产品中有害物质泄漏或突发变异，而造成对环境的污染或对人体及财产产生恶劣影响

注）该年数为“环保使用期限”，并非产品的质量保质期。零件更换的推荐周期，请参照使用说明书

• Proper Disposal of This Product

This is an explanation of how to dispose of this product based on Waste Electrical and Electronic Equipment (WEEE), Directive and Regulation. Only valid in the EEA for EU WEEE Directive and in the UK for UK WEEE Regulation.



• Marking

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

When disposing of products in the EEA or UK, contact your local Yokogawa office in the EEA or UK respectively.

• How to Dispose the Batteries



This is an explanation about the EU Battery Directive/Regulation and UK Battery Regulation.

Only valid in the EEA for EU Battery Directive/Regulation and in the UK for UK Batter Regulation. Batteries are included in this product. Batteries incorporated into this product cannot be removed by yourself. Dispose them together with this product. When you dispose this product in the EEA or UK, contact your local Yokogawa office in the EEA or UK respectively. Do not dispose them as domestic household waste.

Battery type: Lithium battery

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

Authorised Representative in the EEA and the Importer into the EU/EEA Market

The Authorised 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

Importer for This Product into the Great Britain Market

In relation to UKCA marking, the importer for this product into the Great Britain market via the YOKOGAWA sales channel is :

Yokogawa United Kingdom Limited

Stuart Road Manor Park Runcorn, WA7 1TR, United Kingdom

QR Code

The product has a QR Code pasted for efficient plant maintenance work and asset information management. It enables confirming the specifications of purchased products and user's manuals.

For more details, please refer to the following URL.

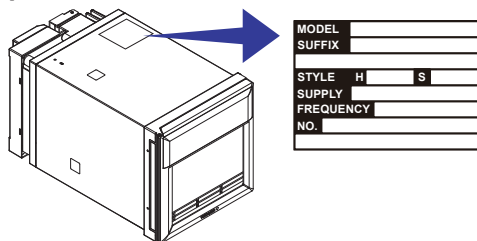
<https://www.yokogawa.com/qr-code>

QR Code is a registered trademark of DENSO WAVE INCORPORATED.

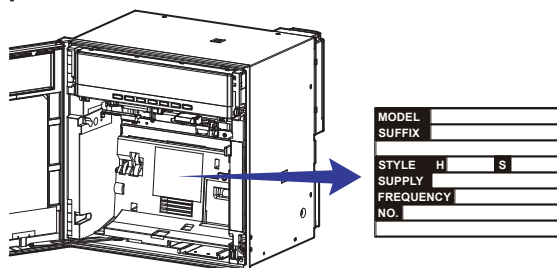
Product Identification

A name plate is affixed to the case. Check that the model name and suffix code given on the name plate on the rear panel match those on your order. For model name and suffix codes, refer to General Specifications.

μR10000



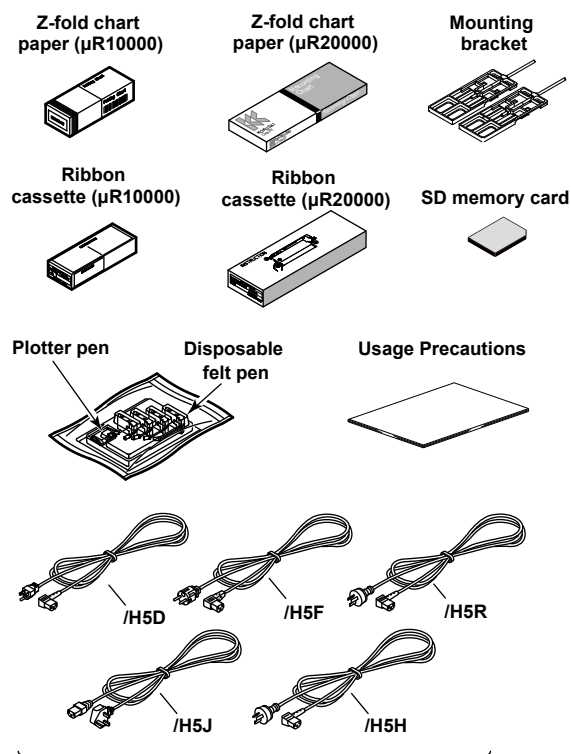
μR20000



Standard Accessories

The standard accessories below are supplied with the instrument.

Check that all contents are present and undamaged.



One of these power cord types is supplied according to the instrument's suffix code

Item	1-Pen	2-Pen	3-Pen	4-Pen	Dot
Z-fold chart paper	1	1	1	1	1
Ribbon cassette	-	-	-	-	1
Disposable felt pen	Red	1	1	1	-
	Green	-	1	1	-
	Blue	-	-	1	-
	Violet	-	-	1	-
Plotter pen	Purple	1	1	1	-
Mounting bracket (included with models without /H5x)	2	2	2	2	2
Power cord (included with /H5x)	1	1	1	1	1
SD memory card 1 GB (included with /EM1)	1	1	1	1	1
μR10000 / μR20000	1	1	1	1	1
Usage Precautions (this manual)	1	1	1	1	1

Part Number	Note
A1006WD	Provided when optional code /H5D is specified. Maximum rated power voltage: 125 V
A1009WD	Provided when optional code /H5F is specified. Maximum rated power voltage: 250 V
A1024WD	Provided when optional code /H5R is specified. Maximum rated power voltage: 250 V
A1023WD	Provided when optional code /H5J is specified. Maximum rated power voltage: 250 V
A1064WD	Provided when optional code /H5H is specified. Maximum rated power voltage: 250 V

Downloadable Electronic Manuals

You can download the latest manuals from the following website.

<http://www.yokogawa.com/ns/mr/im/>

Manual Title	Manual No.*
Model 436101/436102/436103/436104/436106 μR10000 Operation Guide	IM 04P01B01-02E
Model 436101/436102/436103/436104/436106 μR10000 Recorder User's Manual	IM 04P01B01-01E
Model 437101/437102/437103/437104/437106/437112/437118/437124 μR20000 Operation Guide	IM 04P02B01-02E
Model 437101/437102/437103/437104/437106/437112/437118/437124 μR20000 Recorder User's Manual	IM 04P02B01-01E
Model 436101/436102/436103/436104/436106/437101/437102/437103/437104/437106 /437112/437118/437124 μR10000/μR20000 Communication Interface User's Manual	IM 04P01B01-17E
μR10000/μR20000 SD Memory Card (/EM1 Option) User's Manual	IM 04P01B01-03E
μR10000/μR20000 Usage Precautions	IM 04P01B01-93E
RXA10-01 and RXA10-02 Configuration Software User's Manual	IM 04L01B01-61E

General Specifications

For specifications, refer to General Specifications.

General Specifications Title	General Specifications No.*
μR10000 Recorder	GS 04P01B01-01E
μR20000 Recorder	GS 04P02B01-01E

- * The last character of the manual number and general specifications number indicates the language in which the manual or general specifications is written.

**YOKOGAWA ELECTRIC CORPORATION**

Headquarters

2-9-32, Naka-cho Musashino-shi, Tokyo 180-8750 JAPAN

YOKOGAWA CORPORATION OF AMERICA

Head office

12530 West Airport Blvd, Sugar Land, Texas 77478, USA

Georgia office

2 Dart Road, Newnan, Georgia 30265, USA

YOKOGAWA EUROPE SOLUTIONS B.V.

Headquarters

Euroweg 2, 3825 HD Amersfoort, THE NETHERLANDS

<http://www.yokogawa.com/>