Yokogawa F3RP45-2P/L1

Technical Reference

Yokogawa F3RP45-2P/L1 is a legacy FA-M3 VxWorks CPU execution built on the documented F3RP45-2P base module.

PRODUCT ROLE AND VERIFIED FEATURES

Feature 1

Runs a retained VxWorks real-time control application.

Feature 2

Uses the documented F3RP45-2P base hardware.

Feature 3

Occupies an FA-M3/e-RT3 CPU position.

Feature 4

Requires application and hardware records to be preserved because the base model is discontinued.

VERIFIED DATA SNAPSHOT

CPU family	FA-M3 VxWorks CPU
Base module	F3RP45-2P
System platform	FA-M3 / e-RT3
Lifecycle status	Sales and support ended
Module handling	System power off for installation or removal
ESD control	Static discharge required before handling
Installation environment	Pollution degree 2

SYSTEM RELATIONSHIP

Field device → **Product interface** → **System channel** → **Verified response**

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Technical profile

Verified technical values for the complete product string are arranged below for selection and engineering review.

CPU family	FA-M3 VxWorks CPU
Base module	F3RP45-2P
System platform	FA-M3 / e-RT3
Lifecycle status	Sales and support ended
Module handling	System power off for installation or removal
ESD control	Static discharge required before handling
Installation environment	Pollution degree 2

SELECTION ANCHORS

- Runs a retained VxWorks real-time control application.
- Uses the documented F3RP45-2P base hardware.
- Occupies an FA-M3/e-RT3 CPU position.
- Requires application and hardware records to be preserved because the base model is discontinued.

IMPORTANT NOTICE	Use the values as one matched configuration. Do not substitute a nearby ordering code without a separate check.

CONFIGURATION CONTROL

Configuration identity	Yokogawa F3RP45-2P/L1
Technical boundary	Apply only the functions and interfaces shown for this product or its identified system family.
Selection control	Match the complete ordering string and installed interfaces before purchase or installation.

ADDITIONAL ENGINEERING CHECKS

Which handling control protects Yokogawa F3RP45-2P/L1 electronics?	Discharge static electricity and use the site's approved ESD controls before touching the module.
What test closes a Yokogawa F3RP45-2P/L1 replacement?	Confirm normal boot, application execution, I/O exchange, communication and every affected machine interlock.

System role and architecture

Field device → **Product interface** → **System channel** → **Verified response**

APPLICATION POINTS

Legacy machine control

Maintains an installed FA-M3 VxWorks application.

Special-purpose sequencing

Executes the retained real-time program and I/O exchange.

CPU spare strategy

Keeps a verified replacement for an obsolete controller position.

Migration planning

Provides the baseline hardware and application record for a controlled upgrade.

INTEGRATION RECORD

Identity	Record the complete marking and installed position.
Mechanical interface	Confirm mounting, support, clearance and connector engagement.
Electrical interface	Confirm signal path, shield, common and receiving-channel assignment.
Configuration	Retain the controlled channel settings and acceptance criteria.
Functional evidence	Record the expected static value, dynamic response and system status.

F3RP45-2P/L1 should be matched to the documented system position, companion hardware and retained project configuration before the channel or station is returned to control.

ENGINEERING REVIEW QUESTIONS

Which base hardware underlies Yokogawa F3RP45-2P/L1?	The official lifecycle record identifies F3RP45-2P as the base VxWorks CPU module.
What operating-system family is associated with Yokogawa F3RP45-2P/L1?	The F3RP45-2P base belongs to Yokogawa's VxWorks-compatible CPU family.
Where is Yokogawa F3RP45-2P/L1 installed?	It occupies a CPU position in an FA-M3 or e-RT3 modular control station.
Why must the application image be retained before changing Yokogawa F3RP45-2P/L1?	The real-time program, boot configuration and I/O relationships are part of the working controller execution.

Engineering checks and acceptance

PRODUCT PRECAUTIONS

01	Record the full F3RP45-2P/L1 label and installed slot.
02	Back up the VxWorks application and all boot media.
03	Capture connected I/O, serial interfaces and network settings.
04	Turn off FA-M3 system power before removal or insertion.
05	Discharge static electricity before touching the module.
06	Preserve protective earth and noise-separation wiring.
07	Restore the exact boot and application configuration.
08	Verify startup, I/O exchange and machine interlocks before release.

RELEASE EVIDENCE

Exact identity	Product marking and intended system position agree.
Interface condition	Mounting, connectors, terminals and cable routing are secure.
Signal response	The expected static and dynamic behavior has been observed.
Protection state	Channel status, alarms and controlled bypass state are restored.

IMPORTANT NOTICE	Confirm the complete F3RP45-2P/L1 marking, assigned system position and mating interfaces before installation.

APPLICATION BOUNDARIES

Legacy machine control	Maintains an installed FA-M3 VxWorks application.
Special-purpose sequencing	Executes the retained real-time program and I/O exchange.
CPU spare strategy	Keeps a verified replacement for an obsolete controller position.
Migration planning	Provides the baseline hardware and application record for a controlled upgrade.

Technical questions and related models

MODEL-SPECIFIC QUESTIONS

Which base hardware underlies Yokogawa F3RP45-2P/L1?	The official lifecycle record identifies F3RP45-2P as the base VxWorks CPU module.
What operating-system family is associated with Yokogawa F3RP45-2P/L1?	The F3RP45-2P base belongs to Yokogawa's VxWorks-compatible CPU family.
Where is Yokogawa F3RP45-2P/L1 installed?	It occupies a CPU position in an FA-M3 or e-RT3 modular control station.
Why must the application image be retained before changing Yokogawa F3RP45-2P/L1?	The real-time program, boot configuration and I/O relationships are part of the working controller execution.
What lifecycle constraint applies to Yokogawa F3RP45-2P/L1?	Yokogawa lists the F3RP45-2P base model as discontinued with support ended.
When may Yokogawa F3RP45-2P/L1 be removed from its base?	Removal or insertion should occur only after FA-M3 system power is switched off under the approved procedure.

RELATED MODELS ON APTERPOWER

Yokogawa ALF111-S50 S1	Related product reference. Review the complete ordering string before selection.
Yokogawa ET5*B	Related product reference. Compare the required interface and system position.
Yokogawa PW401 S2	Related product reference. Confirm the execution independently for the intended task.

CONFIGURATION AND SELECTION RECORD

Configuration identity	Yokogawa F3RP45-2P/L1
Technical boundary	Apply only the functions and interfaces shown for this product or its identified system family.
Selection control	Match the complete ordering string and installed interfaces before purchase or installation.

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品名	対象形名	後継商品		販売終了日	サポート終了日
		形名	注意事項		
BASIC CPU	F3BP20-0N	-	後継商品はありません。 ラダー言語（F3SP□□）スクリプト機能、または、C 言語（F3RP□□）への置換えが必要です。	2017/3/31	サポート終了
	F3BP30-0N	-		2017/3/31	サポート終了
Linux 対応 CPU	F3RP61-2R[*2]	F3RP61-2R/2N	COM ポートコネクタを変更しています。COM ポートを使用する場合は、KM72-2N が必要です。 KM72-1N との接続はできません。	2016/5/31	サポート終了
	F3RP61-2L[*2]	F3RP61-2L/2N		2016/5/31	サポート終了
	F3RP61-1R/2N	F3RP70-2L	後継商品への置き換えは、アプリケーションの修正/テストが必要です。	2023/12/29	2028/12/29
		F3RP71-1R			
	F3RP61-2L/2N	F3RP70-2L			
		F3RP71-2L			
VxWorks 対応 CPU	F3RP41-2P	F3RP62-2R/2N F3RP62-2L/2N	プロセッサの性能及び ROM,RAM の容量が変更になります。別途、F3RP62 用の開発環境の購入が必要です。 COM ポートコネクタを変更しています。COM ポートを使用する場合は、KM72-2N が必要です。 KM72-0N との接続はできません。	2010/9/30	サポート終了
	F3RP42-2P			2008/9/30	サポート終了
	F3RP44-2P			2010/9/30	サポート終了
	F3RP45-2P			2008/9/30	サポート終了
	F3RP52-2P			2013/3/29	サポート終了
	F3RP54-2P			2008/9/30	サポート終了
	F3RP62-2R[*2]	F3RP62-2R/2N F3RP62-2L/2N	COM ポートコネクタを変更しています。COM ポートを使用する場合は、KM72-2N が必要です。 KM72-1N との接続はできません。	2016/5/31	サポート終了
	F3RP62-2L[*2]			2016/5/31	サポート終了
	F3RP51-2P	F3RP62-2R/2N F3RP62-2L/2N	別途、F3RP62 用の開発環境の購入が必要です。COM ポートコネクタを変更しています。COM ポートを使用する場合は、KM72-2N が必要です。KM72-0N との接続はできません。	2018/3/31	サポート終了
	F3RP55-2P			2018/3/31	サポート終了
	F3RP62-2R/2N	F3RP73-2L	後継商品への置き換えは、アプリケーションの修正/テストが必要です。	2023/12/29	2028/12/29
	F3RP62-2L/2N			2023/12/29	2028/12/29
NORTi 対応 CPU	F3RP41-3P	F3RP71-1R F3RP71-2L	他 OS(Linux)でのご対応をお願いします。 ユーザプログラムを開発いただく必要があります。	2018/3/31	サポート終了
	F3RP42-3P			2008/9/30	サポート終了
	F3RP44-3P			2008/9/30	サポート終了
	F3RP45-3P			2008/9/30	サポート終了
	F3RP51-3P			2018/3/31	サポート終了
	F3RP52-3P			2018/3/31	サポート終了
	F3RP54-3P			2018/3/31	サポート終了
	F3RP55-3P			2018/3/31	サポート終了

Precautions

■ About This Manual

- This Manual should be passed on to the end user.
- This manual is an essential part of the product; keep it in a safe place for future reference.
- This product is designed to be used by a person with specialized knowledge.
- Before using the product, read this manual thoroughly to have a clear understanding of the product.
- This manual explains the functions of this product, but there is no guarantee that they will suit the 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 to ensure accuracy in the preparation of this manual. However, should any errors or omissions come to the attention of the user, please contact the nearest Yokogawa Electric representative or sales office.

■ Safety Symbols



- **”Handle with care.”** This symbol on the product indicates that the operator must follow the instructions laid out in this user's manual to avoid the risk of personnel injuries, fatalities, or damage to the instrument.



- **Protective Conductor Terminal**

  This terminal is to prevent electric shock. Before using the instrument, connect to the Protective earth (Comply with the regulation of each country.), and route the line through the shortest path possible.



- **Functional Earth Terminal**

  This terminal is for stable operation. Before using the instrument, be sure to ground this terminal.



- **Alternating current.** Indicates alternating current.



- **Direct current.** Indicates direct current.

The following symbols are used only in the user's manual.

WARNING

- Draws attention to information essential to prevent electrical shock or other dangers that may result in injury or the loss of life.

CAUTION

- Draws attention to information essential to prevent hardware damage, software damage or system failure.

NOTE

- Draws attention to information essential to the understanding of operation and functions.

■ Safety Precautions when Using/Maintaining the Product

- 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 stated in this manual whenever handling the product. Take special note that if you handle the product in a manner other than prescribed in these instructions, the protection feature of the product may be damaged or impaired. In such cases, Yokogawa cannot 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 as well as designing or installing separate protection and/or safety circuits for fool-proof design and fail-safe design of processes and lines using the product and the system controlled by it, the user should implement it using devices and equipment, additional to this product.
- If component parts or consumable are to be replaced, be sure to use parts specified by the company.
- This product is not designed or manufactured to be used in critical applications which directly affect or threaten human lives and safety — such as nuclear power equipment, devices using radioactivity, railway facilities, aviation equipment, shipboard equipment, aviation facilities or 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 attempt to modify the product.
- To avoid electrical shock, turn off the power before wiring.
- This product is classified as Class A for use in industrial environments. If used in a residential environment, it may cause electromagnetic interference (EMI).

  In such situations, it is the user's responsibility to adopt the necessary measures against EMI.

■ Exemption from Responsibility

- Yokogawa Electric Corporation (hereinafter simply referred to as Yokogawa Electric) makes no warranties regarding the product except those stated in the WARRANTY that is provided separately.
- Yokogawa Electric assumes no liability to any party for any loss or damage, direct or indirect, caused by the use or any unpredictable defect of the product.

■ General Requirements for Using the FA-M3 / e-RT3 Controller

● Set the product in a location that fulfills the following requirements:

- INDOOR USE ONLY
- This product is an open equipment. The product must be installed in a metallic panel enclosure with an impact rating IK08 or more.
- Where the product will not be exposed to direct sunlight, and where the operating surrounding air temperature is from 0°C to 55°C (32°F to 131°F).

  There are modules that must be used in an environment where the operating surrounding air temperature is in a range smaller than 0°C to 55°C (32°F to 131°F). Refer to “Hardware Manual” (IM 34M06C11-01E) or the applicable user's manual. In case of attaching such a module, the entire system's operating surrounding air temperature is limited to the module's individual operating surrounding air temperature.
- Where the relative humidity is from 10 to 90%.

  In places where there is a chance of condensation, use a space heater or the like to constantly keep the product warm and prevent condensation.
- For use in Pollution Degree 2 Environment.
- Where there are no corrosive or flammable gases.
- Where the product will not be exposed to mechanical vibration or shock that exceed specifications.
- Where there is no chance the product may be exposed to radioactivity.

● Use the correct types of wire for external wiring:

- USE COPPER CONDUCTORS ONLY.
- Use conductors with temperature rating above 75°C.

● Securely tighten screws:

- Securely tighten module mounting screws and terminal screws to avoid problems such as faulty operation.
- Tighten terminal block screws with the correct tightening torque as given in this manual. Refer to the “Hardware Manual” (IM 34M06C11-01E) or the applicable user's manual for the appropriate tightening torque.

● Securely lock connecting cables:

- Securely lock the connectors of cables, and check them thoroughly before turning on the power.

● Interlock with emergency-stop circuitry using external relays:

- Equipment incorporating the FA-M3 / e-RT3 controller must be furnished with emergency-stop circuitry that uses external relays. This circuitry should be set up to interlock correctly with controller status (stop/run).

● Ground for low impedance:

- For safety reasons, connect the [FG] grounding terminal to a protective earth (Comply with the regulation of each country.). For compliance to CE Marking, use braided or other wires that can ensure low impedance even at high frequencies for grounding.