

Superior Temperature Control with Easy Setup

Toolbox for Temperature Control and Monitoring Module

SF661-ECW



Easy Setup of Operation Parameters

This software is a parameter setup tool for use with the FA-M3R Temperature Control and PID Modules and the Temperature Monitoring Module. It supports a range of functions from initial setup to action testing, and simplifies the tedious tuning process by enabling graphical display of monitored values.



Tuning

User-friendly setup screens

- On-line help information on module parameters simplifies parameter setup.
- Setup screens can be customized with the required parameters displayed in the appropriate order to match user operation.

Powerful debugging and data logging

- Display of preset values, action monitoring and display of error information are available during action testing.
- Input field data can be logged, and exported (in CSV format) as external data to be used in subsequent reporting, analysis or processing.

Temperature Control/PID Modules

F3CU04-0N, F3CU04-1N

Up to 144
Loops Supported



Sampling
0.1 s

Accuracy
 $\pm 0.1\%$

Resolution
0.1°C

Versatile control at high speed, accuracy and resolution

This module enables fine control at high speed, accuracy and resolution. Its built-in "SUPER" function suppresses overshooting using fuzzy theory to deliver improved manufacturing quality. Its superior functions and performance can be easily harnessed using its "dynamic auto-tuning" function or setup tool.

High speed, accuracy and resolution

- Input sampling cycle: 100 ms/2 CH, 200 ms/4 CH
- Input accuracy: $\pm 0.1\%$ of F.S.
- Input resolution: 0.1°C (5-digit display)

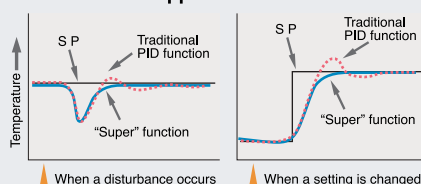
Universal Input

A single module can be used to support a variety of inputs (thermocouple, RTD, DC mV and DC V), selectable for each channel. By configuring individual channels to separate inputs, it delivers high efficiency at low cost.

Dynamic auto-tuning function

- Requiring a user to set the minimum number of parameters (such as input/output range and control set point), this module automatically calculates the optimal PID parameters to simplify startup preparation, saving tuning effort and cost.
- It even recalculates the PID parameters automatically when there is a major change in the control condition (i.e. change in control set point) during operation.

● Overshoot Suppression Function SUPER



Temperature Monitoring Module

F3CX04-0N

Easy temperature monitoring with superior cost-performance

Up to 144
channels Supported



- Input sampling cycle: 100 ms/2 CH, 200 ms/4 CH
- Input accuracy: $\pm 0.1\%$ of F.S.
- Input resolution: 0.1°C (5-digit display)
- Universal input
- UP to 144 channels

Item		Specification		
		F3CU04-0N	F3CU04-1N	F3CX04-0N
Number of loops/channels		4 loops		4 channels
Insulation method	Between input terminals and internal circuit:	Isolated by photocouplers and transformers		
	Between input terminals:	Independent circuits for different channel		
Input type		Universal input (individual inputs configurable separately by software or collectively by hardware): 15 thermocouples, $\square 9$ RTDs, 2 DC mV ranges, and 4 DC V ranges		
Input sampling cycle		100 ms for 2 channels or 200 ms for 4 channels		
Input impedance		1M Ω or more		
Allowable signal impedance		250 Ω max. for thermocouple and DC mV, 100 Ω max. for RTD (with same wire resistance), and 2 k Ω max. for DC V		
Burnout detection function		Yes		
Output type	Time proportioning PID (Open collector output)	Yes (ON/OFF control, forward/reverse)		—
	Continuous PID (4-20 mA output)	No	Yes	—
Control section	Control function	ON/OFF, PID, heating/cooling, setting output, dynamic auto-tuning, and "Super"		—
	Control cycle	Same as input sampling cycle		—

USB - Serial Converter KM13-1N

Connect directly to USB port of personal computer

Cable for connecting to programming port of sequence CPU (F3SP□□) or USB port of personal computer.



■ Hardware List

Name	Type name	Specification
Temperature Control And PID Modules	F3CU04-0N	4 universal inputs (TC, RTD or voltage), 100 ms/2 CH or 200 ms/4 CH
	F3CU04-1N	4-20 mA continuous output in addition to the functions of F3CU04-0N
Temperature Monitoring Module	F3CX04-0N	4 universal inputs (TC, RTD or voltage)
Toolbox for Temperature Control and Monitoring Modules	SF661-ECW	Windows95, 98, Me, NT, 2000, XP compatible, English version, CD-ROM (compatible with F3CU□□/F3CX□□)
USB - Serial Converter	KM13-1N	USB port connection cable (USB 1.1-compliant), approx. 3m long

■ Manuals

Name	Document No.
Temperature Control and PID Modules	IM 34M6H62-01E
Temperature Monitoring Module	IM 34M6H63-01E
FA-M3 Toolbox Manual	IM 34M6Q30-01E
FA-M3 Toolbox for Temperature Control and Monitoring Module	IM 34M6Q31-02E

FA-M3R Website

www.yokogawa.com/itc

Trademarks:

The product and company names that are referred to in this document are trademarks or registered trademarks of the respective companies.

YOKOGAWA 

⚠ Caution

- For proper and safe use of this product, read the instruction manual thoroughly.
- If faults of this product are expected to result in accidents or losses, install additional external protection and/or safety circuits.
- If the product is to be used in applications which may directly affect or threaten human lives and safety, such as railway facilities, aviation and space navigation, medical equipment or transport equipment, please contact Yokogawa's sales office.

YOKOGAWA ELECTRIC CORPORATION
International Marketing Gr.
Product Marketing Dept. IT Controller Div.
Control Products Business Headquarters
2-9-32, Nakacho, Musashino-shi, Tokyo 180-8750, JAPAN
Phone: 81-422-52-5622 Fax.: 81-422-55-1728

YEA : YOKOGAWA ENGINEERING ASIA PTE.LTD.
 Product Sales & Marketing Op.
 Test & Measurement Division
 5 Bedok South Road, Singapore 469270
 Phone : (Singapore) 65-6241-9933
 Fax. : (Singapore) 65-6241-9919

YKO : YOKOGAWA ELECTRIC KOREA CO.,LTD.
 NetSOL Sales Team/PLC
 (Specialty Construction Center 28F) 395-70, Shindaebang-Dong,
 Dongjak-Gu, Seoul, 156-010, KOREA
 Phone : (Korea) 82-2-3284-3054
 Fax. : (Korea) 82-2-3284-3016

YBI : YOKOGAWA BLUE STAR LIMITED
 Marketing, Control Systems Business Unit, Product Div.
 Unit-2, Plot No. 96, Electronics City Complex
 Hosur Road, Bangalore, 561229, INDIA
 Phone : (India) 91-80-2852-8656
 Fax. : (India) 91-80-2852-0625

YCA : YOKOGAWA CORPORATION OF AMERICA
 NetSOL Division
 2 Dart Road, Newnan GA30265-1040 USA
 Phone : (USA) 1-770-254-0400
 Fax. : (USA) 1-770-251-6427

YXC : YOKOGAWA XIYI CO.,LTD.
 Sales Department 1
 Rm 2101-2103 Gangtai Plaza
 700 Yanan East Road, Shanghai, 200001,
 CHINA
 Phone : (China) 21-5385-0567
 Fax. : (China) 21-6303-8554

Represented by:

M3