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.

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

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: ±0.1% of F.S.
- Input resolution: 0.1°C (5-digit display)

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.

Temperature Monitoring Module  F3CX04-0N

Easy temperature monitoring with superior cost-performance
- Input sampling cycle: 100 ms/2 CH, 200 ms/4 CH
- Input accuracy: ±0.1% of F.S.
- Input resolution: 0.1°C (5-digit display)
- Universal input
- UP to 144 channels

<table>
<thead>
<tr>
<th>Item</th>
<th>F3CU04-0N</th>
<th>F3CU04-1N</th>
<th>F3CX04-0N</th>
</tr>
</thead>
<tbody>
<tr>
<td>Number of loops/channels</td>
<td>4 loops</td>
<td>4 channels</td>
<td></td>
</tr>
<tr>
<td>Insulation method</td>
<td>Between input terminals and internal circuit: Isolated by photocouplers and transformers</td>
<td>Between input terminals: Independent circuits for different channel</td>
<td></td>
</tr>
<tr>
<td>Input type</td>
<td>Universal input (individual inputs configurable separately by software or collectively by hardware): 15 thermocouples, 19 RTDs, 2 DC mV ranges, and 4 DC V ranges</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Input sampling cycle</td>
<td>100 ms for 2 channels or 200 ms for 4 channels</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Input impedance</td>
<td>1MO or more</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Allowable signal impedance</td>
<td>250 Ω max. for thermocouple and DC mV, 100 Ω max. for RTD (with same wire resistance), and 2 kΩ max. for DC V</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Burnout detection function</td>
<td>Yes</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Output type</td>
<td>Time proportioning PID (Open collector output)</td>
<td>Yes (ON/OFF control, forward/reverse)</td>
<td></td>
</tr>
<tr>
<td>Control section</td>
<td>Control function</td>
<td>ON/OFF, PID, heating/cooling, setting output, dynamic auto-tuning, and &quot;Super&quot;</td>
<td></td>
</tr>
<tr>
<td>Control cycle</td>
<td>Same as input sampling cycle</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>
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.

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

**Manuals**

<table>
<thead>
<tr>
<th>Name</th>
<th>Document No.</th>
</tr>
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<tbody>
<tr>
<td>Temperature Control and PID Modules</td>
<td>IM 34M6H62-01E</td>
</tr>
<tr>
<td>Temperature Monitoring Module</td>
<td>IM 34M6H63-01E</td>
</tr>
<tr>
<td>FA-M3 Toolbox Manual</td>
<td>IM 34M6Q30-01E</td>
</tr>
<tr>
<td>FA-M3 Toolbox for Temperature Control and Monitoring Module</td>
<td>IM 34M6Q31-02E</td>
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</table>

**FA-M3R Website**

www.yokogawa.com/itc

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**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.