Recreating a realistic virtual environment on your PC

Total support over system life cycle from startup through operation and maintenance

Simulation software for easier debugging and troubleshooting

The FA-M3 Simulation Software Virtual M3 simulates the operation of a sequence CPU module on PC so that ladder programs can be debugged without actual devices. It saves debugging time with useful functions such as I/O module simulation, HMI simulation, step operation, slow-motion, and one-touch playback. Also, connecting with Live Logic Analyzer further improves debugging efficiency.

Realistic debugging environment with external devices

- I/O module simulation
- HMI (Human-Machine Interface) simulation

Controlling ladder program execution during debugging

- Step operation
- Slow-motion operation

Monitoring signal movement in real-time

- Connection to Live Logic Analyzer (included in WideField3)

System error playback

- One-touch playback

Simulation of large systems

- Multi-CPU configuration
- FA link/FL-net configuration
Realistic Debugging Environment
Dynamic and flexible simulation

I/O module simulation
- Enables debugging of CPU operation interacting with I/O operation.
- I/O module operation is coded as a ladder program.
- Virtual I/O (I/O module operation) is downloaded using WideField3.
- The virtual I/O is executed to simulate ladder program execution on a real machine.

HMI (Human-machine Interface) simulation
- HMI development software is executed to allow HMI-integrated debugging.
- SCADA software is executed to allow SCADA-integrated debugging.
- Provides integration test environment for ladder program and HMI/SCADA on a single PC.

Connecting to HMI/SCADA
- Connects to real HMI tool.
- Effective for real HMI debugging!

System Error Playback

One-touch playback function
When a system error occurs on site, a memory dump can be saved to an SD card by one touch. The saved data can then be used by simulation to playback (recreate) the error to facilitate troubleshooting. By simulating post-modification operation using various operation patterns in advance, it will shorten recovery time, as well as prevent system degradation after program modification.

- Device data of real sequence CPU module is saved for off-site playback on VirtualM3.
- Data is saved on site by simply inserting an SD card (One-touch operation).
- The playback function can reproduce a system error state. When used jointly with external device simulation, it saves much troubleshooting time.
- By simulating various operation patterns, bug fix emissions and errors can be prevented.

Monitoring Signal Movement in Real Time

LLA (Live Logic Analyzer) Function (included with WideField3)

Operation check using time chart
- Live Logic Analyzer, included with WideField3, can be used in simulation.
- Multiple field data can be monitored with ease.
- Signal waveforms displayed for one scan or successive scans for multiple signals can be inspected in real time.
- Using step operation and slow motion operation jointly with LLA, signal changes for one scan can be inspected from the displayed waveform.

I/O operation programming!
Multi-CPU configuration

- Supports simulation of multi-CPU configuration (up to 4 CPUs).
- Shared relays (E) and shared registers (R) can be used in multi-CPU configuration.

FA link/FL-net configuration

- Supports inter-PLC communication network.
  Link relays (L) and link registers (W) can be used.
- Supports link refreshing via network for Virtual-M3 running on multiple PCs.

Station

- For link configuration including inter-PLC communications, up to 4 stations can operate concurrently.
- Realistic debugging environment can be built flexibly with multi-CPU configuration and link configuration.

Operation Environment

<table>
<thead>
<tr>
<th>Item</th>
<th>FA-M3 Simulation Software Virtual-M3 (SF681-MDW)</th>
</tr>
</thead>
<tbody>
<tr>
<td>OS</td>
<td>Microsoft Windows 7/8/8.1/10 (x86/64), English/Japanese OS version</td>
</tr>
<tr>
<td>CPU</td>
<td>Pentium 1 GHz or faster (or a compatible equivalent), adequate for the OS to run properly</td>
</tr>
<tr>
<td>Memory</td>
<td>1 GB or more, adequate for the OS to run properly</td>
</tr>
<tr>
<td>Hard Disk Capacity</td>
<td>400 MB or more available</td>
</tr>
<tr>
<td>Display</td>
<td>1024 x 768 dots or higher</td>
</tr>
</tbody>
</table>

Software

<table>
<thead>
<tr>
<th>Name</th>
<th>Type Name</th>
<th>Specifications</th>
</tr>
</thead>
<tbody>
<tr>
<td>FA-M3 Programming Tool WideField3</td>
<td>SF630-MCW</td>
<td>Windows 7/8/8.1/10 (x86/64) compatible, multi-lingual version, LiveLog/Analyzer function*, CD-ROM</td>
</tr>
<tr>
<td>FA-M3 Simulation Software Virtual-M3</td>
<td>SF681-MDW</td>
<td>Windows 7/8/8.1/10 (x86/64) compatible, multi-lingual version, Web download</td>
</tr>
<tr>
<td>WideField3 Simulation Package</td>
<td>SF631-MCW</td>
<td>Packaged product composed of FA-M3 Programming Tool WideField3 (SF630-MCW) and FA-M3 Simulation Software Virtual-M3 (SF681-MDW)</td>
</tr>
</tbody>
</table>

*1 For F3SP71-45/F3SP76-75 and F3SPV9-75

Synaptic Business Automation underlies a process of co-innovation and collaboration with customers that leverages Yokogawa’s domain knowledge and digital automation technologies to create sustainable value.

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