EcoStruxure™

Foxboro DCS

Model M90 (P0928KM) Industrial Server for Windows Server® 2008 R2 Operating System

PSS 41H-4M90

Product Specification

November 2018

Schneider Electric™

www.schneider-electric.com

Legal Information

Overview

Demand for increased software capability requires increase in processing power, storage, and connectivity to peripherals. Server class computers provide these capabilities in standard rack enclosures. This greatly concentrated capability reduces the volume needed and permits security measures to be effectively put into practice. Magelis servers offer a cost effective and industrialized alternative to standard servers and are suitable as Domain Controllers and Engineering Workstations.

The Model M90 EcoStruxure Foxboro DCS Industrial Server is a multipurpose server running the Windows Server 2008 R2 operating system. It supports hosting EcoStruxure Foxboro DCS Control Core Services (Control Core Services) or EcoStruxure Foxboro DCS Control Software (the Control Software). It also supports data acquisition and processing related to a broad range of applications, file serving capabilities, and the display of graphics and text. It interfaces with corporate communication networks.

The Magelis servers also support a USB mouse, a QWERTY keyboard, and two video monitors. The server also supports an optional USB touchscreen.

These servers have an Intel Xeon® E3-1225 quad-core processor with 500 GB of internal hard disk storage in a RAID1 configuration and 8 GB of ECC DDR-3 SDRAM. Client/server communications are accomplished using the TCP/IP networking protocol.

> **NOTE:** Remote client workstations are supported by the M90 Industrial Servers, however the availability of the complete solution must be considered before implementation, due to performance considerations. When remote client stations are dependent on applications running in the Magelis server, a detected failure or shutdown of the server will affect all these remote stations. Also, due to the variability of demand that can be placed on the server by remote client sessions, the performance of the applications running on the Magelis server may not be as deterministic as it is on a dedicated, single-user workstation.

Network Connections

The M90 Industrial Servers are connected to the Foxboro DCS Control Network (the control network) through two onboard integrated Ethernet ports. It can also be connected to an auxiliary control or corporate network via the 10/100/1000 PCIe Ethernet network interface card. Standard security practices should be followed when this is done.

Server Security

Foxboro DCS servers support optional product features that allow customers to meet plant compliance for enhanced workstation security. Plant requirements for enhanced Foxboro DCS servers security can be met through a combination of new product security enhancements as well as current best practices, policies, and procedures.

Foxboro DCS server enhanced product security requirements are supported in two broad categories, namely, server software including passwords and server platform hardening.

Magelis Server software:

- Changeable log-on passwords
- Individual user passwords
- Password lock-out after a user-configurable number of unsuccessful log-in attempts and mechanisms to reset login
- Password aging that requires password change on a periodic basis

- Password support of alphanumeric and symbol characters as per Microsoft conventions
- Password file protection
- User accounts for Microsoft Server 2008 managed from a central location through Microsoft Domains and Active Directory
- User account creation, deletion and modifications tracking
- User logon/ logoff tracking
- Least privilege file and account access
- Necessary system services running in non-admin accounts where possible
- Security patches from software suppliers, including Microsoft, are supported plus patch status reporting
- Anti-virus software including malware protection and Anti-Spyware software support. For a full listing of supported endpoint protection features, refer to *Symantec Endpoint Protection* (PSS 31S-4SYMANTC).

Foxboro DCS server hardening:

- Unnecessary services, software, and programs removed
- Unneeded software ports disabled
- Documentation on how to re-enable services and ports where required by special circumstances
- Secure BIOS changes.

Installation Considerations

These security enhancements are supported on Windows Server 2008 R2 stations which support the control network and require a software update to the latest Foxboro DCS software release to obtain these features. The enhancements can be deployed on a sub-set of servers to help increase security, but in order to help maximize security protection, all workstations need to be updated to the latest software release to obtain the full benefits.

A Server class workstation in the system as the Primary Domain Controller runs standard Microsoft domain services. A Secondary Domain Controller is recommended as a back-up, but not strictly required. The standard install creates default Organizational Unit, Security Groups, and Group Policies and is documented in *Security Enhancements User's Guide for I/A Series® Workstations with Windows 7 or Windows Server 2008 Operating Systems* (B0700ET). However, customization of the Domain Server configuration requires Microsoft knowledgeable personnel.

The Primary and Secondary Domain Controller servers are installed as Foxboro DCS Servers. However, they must be dedicated to their domain controller tasks and must not be used to run Foxboro DCS applications or Remote Desktop Services. Domain Controllers are key resources since they provide user authentication for all the workstations in the domain.

Features

The M90 Industrial Server for Windows Server 2008 Release 2 (R2) operating system, available with a Foxboro DCS S10 software license features:

- An Intel Xeon processor speed, 8 GB of memory, two 500 GB drives in a RAID1 mirrored configuration and redundant hot-swap power supplies
- The ability to host control stations and/or support data acquisition and monitoring functions
- The ability to host the Control Core Services software or the Control Software application platform and a human interface station
- The ability to support viewing Control Core Services software or the Control Software applications from remote client stations over local area networks (LANs)

M90 Industrial Server Configuration

The M90 Industrial Server includes the following elements:

- Intel Xeon E3-1225 quad-core processor running at 3.1 GHz
- 8GB ECC RAM
- Two 500GB HDD 24/7 configured in redundant RAID1 configuration mounted in front trays with Windows Server 2008R2 pre-loaded
- One optical DVD-RW drive
- Redundant 500 watt power supplies
- Two user exchangeable fans with speed control
- Three copper Ethernet 10/100/1000 Mbps ports
- Two RS-232 ports
- Four USB 2.0 ports
- Two USB 3.0 ports
- One VGA port which up to 2048 x 1536 resolution at 75 Hz refresh rate
- One DVI port with up to 1920 x 1200 resolution at 60 Hz
- USB Keyboard
- USB Mouse
- Symantec End Point Protection

Functional Specifications

Processor Type	Intel Xeon, E3-1225 quad-core
Memory	8 GB ECC DDR-3 SDRAM standard
Devices Served	• Peripherals ◦ Two internal system disk drives (24/7) ◦ One SATA CD-RW/DVD drive • Video Displays (Up to 2) ◦ 23-inch LCD USB Touchscreen Monitor ◦ 23-inch LCD Monitor ◦ 40-inch LCD Overview Monitor. • Interfaces to External Devices ◦ USB – Mouse – QWERTY Keyboard – Single optional touchscreen – External speakers ◦ *Serial* – Customer-supplied serial devices
Internal Diagnostics	Self-checking performed at power-up.
Video	• Output Type ◦ One VGA ◦ One DVI • Screen Presentation ◦ Refresh Rate – VGA 75 Hz – DVI 60 Hz ◦ Resolution – VGA Up to 2048 x 1536 – DVI Up to 1920 x 1200
Serial Interface Port	Type: RS-232-C compatible
Ethernet Interface Communications	Two onboard integrated 10/100/1000 NICs and one plug in 10/100/1000 PCIe NIC, for a total of three network connections.
Power Supplies	Two redundant, hot-swap, 500 W auto-switching input power supplies, each with a separate power cord.
Power Requirements	Input Voltage: 100-240 V ac, 50 to 60 Hz, auto ranging
Cooling	Two system fans. Each redundant power supply contains a fan.
Part Number	P0928KM

Environmental Specifications

	Processor Operating	Processor Storage
Temperature	Degree of Protection, IP20 IEC 60529 0° to 40°C (32° to 104°F) at sea level, IEC 60068-2-2	-40° to 70°C (-40° to 156°F). Maximum rate of change is 20°C/hr (36°F/hr).
Relative Humidity	10 to 95% relative humidity (Rh), 40°C (158°F), non-condensing, IEC 60068-2-78	10 to 95% relative humidity (Rh), 60°C (140°F), noncondensing.
Maximum Vibration and Shock	Random (operating): 0.002 G2/Hz; 1 Gr ms; 5...500 Hz; 1 hour per axis (X, Y, Z), IEC 60068-2-6 Shock 10 g (With 11 ms duration, half sine wave, IEC 60068-2-27	19.6 m/s2 (2 gn); 5...500 Hz; 1 octave / min; 1 hour per axis (X, Y, Z)
Altitude	3050 m (10,000 ft). This value may be limited by the type and number of options installed.	-16 to 10,600 m (-50 ft to 35,000 ft) Maximum allowable altitude change rate is 457 m/min (1500 ft/min).

Regulatory Compliance

Agency Certifications	Schneider Electric submitted this product for independent testing and qualification by third-party agencies. These agencies have certified this product as meeting the following standards: • Underwriters laboratories Inc., UL 60950-1, 2nd edition, and CSA C22.2 N° 60950-1-07, information technology equipment. Schneider Electric is in the process of certifying compliance with the following standards: • EAC Eurasian conformity. Refer to product markings. • CCC China compulsory product certification. Refer to product markings.
Compliance Standards	Schneider Electric tested this product for compliance with the following compulsory standards: • United States ◦ Federal communications commission, FCC Part 15 • Europe: CE ◦ Directive 2006/95/EC (Low voltage) ◦ Directive 2004/108/EC (EMC) ◦ EMI: EN55011 (Group 1, Class A), EN 61000-6-4 ◦ Information technology equipment: EN 60950-1 ◦ EMS: EN 61000-6-2
Qualification Standards	Schneider Electric voluntarily tested this product to additional standards. The additional tests performed, and the standards under which the tests were conducted, are identified in environmental characteristics.
Hazardous Substances	This product is compliant with: • WEEE, Directive 2012/19/EU • RoHS, Directive 2011/65/EU • RoHS China, Standard SJ/T 11363-2006 • REACH regulation EC 1907/2006
End of Life (WEEE)	The product contains electronic boards. It must be disposed of in specific treatment channels. The product contains cells and/or storage batteries which must be collected and processed separately, when they have run out and at the end of product life. Refer to the section maintenance to extract cells and batteries from the product. These batteries do not contain a weight percentage of heavy metals over the threshold notified by European Directive 2006/66/EC.

Physical Specifications

Dimensions	Processor • Height: 172.7 mm (6.8 in) • Width: 428.9 mm (16.89 in) • Depth: 643.9 mm (25.35 in)
Mounting	Tabletop, Metal Enclosure (1000x1000 mm) 19” Rack Mounting Kit available
Weight	24.20 kg (53.35 lbs)

Additional Technical Information

The technical characteristics of the devices described in this document also appear online at the Schneider Electric website.

To access this information online, proceed as follows:

1. Go to the Schneider Electric home page www.schneider-electric.com.
2. In the Search box, type the reference of a product or the name of this product HMIRSPSXR6S01. Do not include blank spaces in the modelnumber/product range. To get information on grouping similar modules, use asterisks (*).
3. If you entered a reference, go to the HMIRSUH3A3701 Product data sheets search results and click the reference that interests you. Depending on the size of your screen, you may need to scroll down to see the data sheet.

   To save or print a data sheet such as a .pdf file, click Download HMIRSUH3A3701 product data sheet.

⚠ **WARNING**: This product can expose you to chemicals including lead and lead compounds, which are known to the State of California to cause cancer and birth defects or other reproductive harm. For more information, go to www.p65warnings.ca.gov/.

Schneider Electric Systems USA, Inc.
38 Neponset Avenue
Foxborough, Massachusetts 02035–2037
United States of America

Global Customer Support: https://pasupport.schneider-electric.com

As standards, specifications, and design change from time to time, please ask for confirmation of the information given in this publication.

PSS 41H-4M90, Rev A