Foxboro™ DCS

Thin Client

PSS 41H-4THNCLNT

Product Specification

November 2025



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Overview

Thin clients are physical hardware terminals with a compact form factor that are capable of monitoring and responding to system events using the operating software via a remote connection to a remote server.

Schneider Electric qualified the HP® t755 Windows 10 IoT Enterprise LTSC 2021, Quad Monitor dual NIC (RH103HM) thin client for use with the Foxboro DCS.

NOTE: The single NIC version of the thin client is no longer offered.

A QWERTY keyboard is shipped with this thin client.

Thin clients support these configuration options, which must be purchased separately:

- Up to four LCD monitors (part numbers P0928JJ and RH103FR)
- USB speaker set (part number RH103DN)
- Up to four optional Annunciator Keyboards (part numbers P0924TT and P0924WV)

  NOTE: For thin clients with QWERTY keyboards only, FoxPanels can be used as an alternative to the Annunciator Keyboard.

A USB DVD drive is required to install the thin client software, SE RDP Connection Manager, and Annunciator Keyboard (ANKB) software.

Thin clients can access their Foxboro DCS software suite via network connections to these different types of remote servers:

- Model H90 server running Microsoft Windows Server operating systems
- Model H94 server running Microsoft Windows Server operating systems
- Virtual machine (VM) running on a Foxboro DCS V91 server virtualization host
- Virtual machine (VM) running on a Foxboro DCS V95 server virtualization host

Thin clients communicate with the Foxboro DCS through a physical or virtual Auxiliary Communications Network (ACN) via a 1 GB copper Ethernet connection. The ACN is a 1 GB network made up from managed Ethernet switches. Separately, Schneider Electric provides an engineering process to establish the network connections.

Features

With a smaller footprint than a workstation, the t755 HP® thin clients are mounted local to their remote user and used in traditional and virtualized Foxboro DCS systems. Thin clients allow operators to perform similar tasks as a workstation, provide ease of use, and help increase security as compared to physical stations.

The t755 thin clients can:

- Serve as human machine interface (HMI) stations with remote connections to remote servers running Microsoft® Remote Desktop Services or SE RDP Connection Manager
- Remotely, allow you to view and manage your Foxboro DCS software suite
- Communicate with Foxboro DCS servers through the Auxiliary Communications Network (ACN) via a single or redundant NIC network connection
- Automatically shift between RDP servers if one has a detected failure

Configurations

Thin clients can be set up in one of these configurations:

- A specific thin client restricted to connect to one particular virtual machine or one physical Foxboro DCS server.
- A specific thin client connected automatically to only one particular virtual machine, or one physical Foxboro DCS server when the thin client boots up.
- A specific thin client with an option to connect to one of several different virtual machines and/or physical Foxboro DCS servers for one at a time redundancy.
- A specific thin client with an option to connect to multiple virtual machines and/or multiple physical Foxboro DCS servers simultaneously.
- A specific thin client connected automatically to multiple virtual machines and/or multiple physical Foxboro DCS servers when the thin client boots up.
- A specific thin client used within the Local Edition Control Core Services and Off-Domain in the Enterprise Edition Control Core Services.

Sizing

A single remote server running Microsoft Remote Desktop Services can support up to 30 FoxView simultaneous remote sessions and up to 10 Control HMI remote sessions. Collectively, the virtualization host server cannot support more than 60 Remote Desktop Protocol (RDP) sessions across the VMs due to bandwidth constraints of the physical Ethernet ports.

NOTE: The allowable number of RDP sessions depends on the number and types of applications being run in the remote sessions.

Cybersecurity

Thin clients can be configured to restrict connections to certain remote servers. After a thin client establishes a connection with a remote server, the remote server's configuration determines what privileges to grant the user based on the user profile logged into the remote server.

For more information on the security aspects, best practices, and considerations of the Foxboro Distributed Control System (DCS) and components, see *EcoStruxure™ Foxboro™ DCS Cybersecurity Reference Guide* (B0700HZ).

As an option, Trellix Endpoint Security can provide additional security enhancement features to help complement the security features already built into our products. Trellix Endpoint Security (ENS) helps provide the advanced Threat Prevention feature. The license entitlement for the first five years after purchase is included when purchased for the t755 thin client. After five years, a renewal is required.

Licensing

These types of licensing apply when using thin clients with a Foxboro DCS:

- Software Suite License for Foxboro DCS
- Microsoft licensing

Foxboro DCS, Control Core Services, and Control Software Licensing

- There is no specific Foxboro DCS, CCS, or CS *hardware* license for thin clients.
- There is no specific Foxboro DCS, CCS, or CS *software* license for thin clients.
- Existing Software Suite License for Foxboro DCS still applies with regard to remote sessions. However, the license resides with the remote server **not** with the remote client.

  For example, the Foxboro DCS Software Suite license is needed for any Foxboro DCS server (physical machine or virtual machine) as well as the thin clients connected to these servers. Depending on the type of Foxboro DCS software is installed or used on the server or thin client, the correct license part numbers need to be used.

Microsoft Licensing

- Microsoft Windows Server permits remote access for two users without CALs solely for administrative and technical product support purposes. These sessions are in addition to the local desktop session which can run in conjunction with these RDP sessions.
- There are additional Microsoft licenses needed if a thin client is being used for additional connections to Microsoft Remote Desktop Services servers (formally known as Terminal Services sessions). These licenses are available in BuyAutomation in five license packs or single license pack for both a “license per user” or “license per device” model.

Remote Desktop Services (RDS) Client Access License (CAL)

- Formally known as Terminal Services Client Access License (TS CAL).
- An RDS CAL is necessary for every additional remote session that connects to and displays applications running on a Remote Desktop Services server.

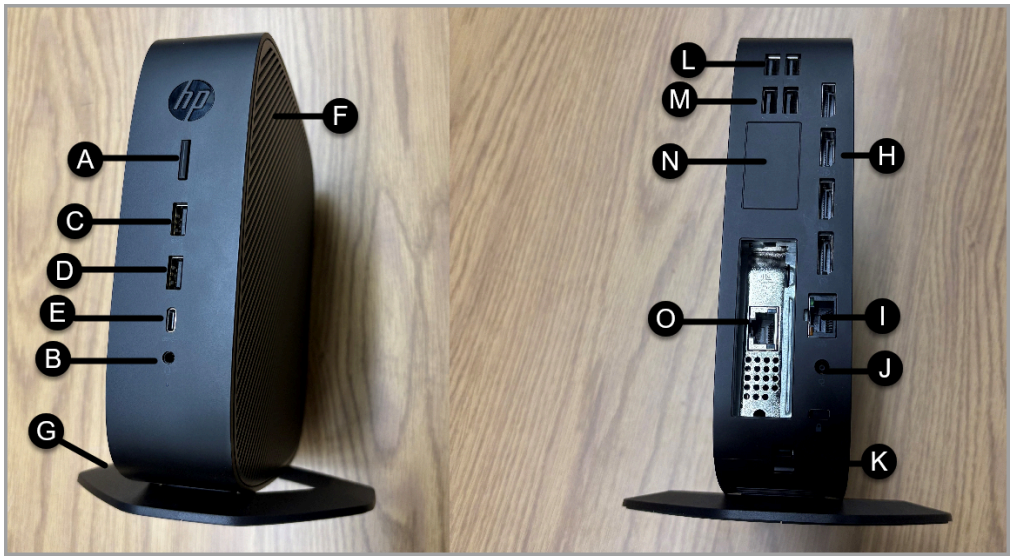
- Foxboro DCS servers *do not* ship with any RDS CALs included. Therefore, you must determine the number of Users or Devices to be included in your CAL license scheme.

P/N	CAL Type	Amount
J0202AW	Remote Desktop Services 2016 Device	5
J0202AV	Remote Desktop Services 2016 User	5
J0202EC	Remote Desktop Services 2022 Device	5
J0202EB	Remote Desktop Services 2022 User	5
J0202EF	Remote Desktop Services 2022 Device	1
J0202EG	Remote Desktop Services 2022 User	1

  - **RDS CALs per DEVICE** license: One RDS CAL per device is required for each device which accesses a remote desktop session. Devices can be thin clients, computers or portable devices. Once a device has accessed the remote desktop server, the RDS CAL per device license will be consumed by that device and no other device can use that license. That device will continue to be able to connect to the remote desktop server with any user logging on.
  - **RDS CALs per USER** license: One RDS CAL per user is required for each user that accesses a remote desktop session. RDS CALs per user licenses are tied to the users logged on to the remote desktop server, regardless of the device they are connecting from.
  - RDS CALS must be installed and activated on a license server (usually an RDS server).

Thin Client Hardware Description

Figure 1 - Base Configuration



Front	
A	Power (with integrated power indicator)
B	3.5 mm combo headset/audio jack
C	USB-A 3.2 Gen 1 port
D	USB-A 3.2 Gen 1 port
E	USB 3.2 Gen 2 Type C® port
F	Access panel to information labels and VESA 100 mounting holes
G	System stand
Rear	
H	DisplayPort 1.2 digital video outputs (4)
I	RJ-45 GbE network interface connector
J	19 VDC power input
K	Rear I/O panel removal latch
L	USB-A 2.0 ports (2)
M	USB-A 3.2 Gen 1 ports (2)
N	Blank
O	Intel Network Interface Card (NIC)

The HP Quad Monitor Series thin client contains these elements:

- AMD® processor
- Four integrated DisplayPort 1.2 connections
- 10/100/1000BaseT Ethernet port

- Universal Serial Bus (USB) interface ports for:
  - QWERTY keyboard
  - Mouse (optional)
  - Trackball (optional)
  - Annunciator Keyboard (up to four optional)
  - Audio speakers (optional)
  - Touchscreens (optional)
  - USB printers (optional)
- Onboard NIC cards for communication on the ACN
  - Two NIC cards for the t755 thin client for redundancy

Mounting Options

The HP thin clients can be either mounted vertically or horizontally on a plastic base (supplied).

Networking Redundancy

The t755 thin client includes a second NIC to provide a redundant network configuration.

Reliability

The low cost of thin clients provides the option of having additional thin clients as spares for quick, easy replacement, if needed.

Functional Specifications

Operating System	Windows 10 IoT Enterprise LTSC 2021
Processor Type	AMD® processor
Processor	AMD Ryzen™ V2546B with Radeon™ Graphics (3 GHz base clock, up to 3.95 GHz max boost clock, 2 MB cache, 6 cores)
Memory	32 GB DDR4-3200 SDRAM Transfer rates up to 3200 MT/s
Internal Storage	256 GB Flash memory
Devices Served	Video Displays (Up to 4) • 23-inch LCD USB Touchscreen Monitor (P0928JJ) • 24-inch LCD Monitor (RH103FR) Interfaces to External Devices • USB ◦ Mouse or optional trackball ◦ QWERTY keyboard ◦ Annunciator keyboard (up to 4) (P0924TT and P0924WV) ◦ External speakers ◦ External DVD drive, required for t755 Thin Client Software for Windows 10 DVD. The RDP Connection Manager is included with the t755 thin client.
Internal Diagnostics	Self-checking is performed at power-up.
Video	Output Type • Four DisplayPort 1.2 video ports Screen Presentation • Refresh Rate ◦ Up to 60 Hz • Colors ◦ Over 65,000[a] • Resolution ◦ Widescreen (16:9) Aspect Ratio – Up to 1920 x 1080 pixels for CCS and CS displays
Network Ethernet Interface Communications	One Integrated Ethernet port (10/100/1000Base-T) One plugin Ethernet port (10/100/1000Base-T)
Network Interface Card	One onboard NIC card and a second plugin 10/100/1000 CATS NIC card for the redundancy standard with the t755 Thin Client
DCS Auxiliary Communications Network Interface	TYPE: TCP-IP

Power Requirements	Input Voltage • 100 or 240 VAC (nominal), auto select • 50 to 60 Hz Operating Line Frequency Range Power Consumption[b] • 90 W maximum
(a) Might be limited by specific software specifications. (b) The actual power consumption at your location could vary and is dependent on many factors including but not limited to software load on the thin client, attached peripherals, and environmental factors.	

Environmental Specifications

Operating[a]	Temperature • 10 to 40°C (50 to 104°F) Relative Humidity • 10% to 90%, noncondensing • 20% to 80%, condensing Altitude • 300 m to 3 km (1000 to 10,000 ft)
Storage	Temperature • -30 to +65°C (-22 to +149°F) Relative Humidity • 10% to 90%, noncondensing Altitude • 300 m to 3 km (1000 to 10,000 ft)
Accessibility	Section 508 Accessibility. VPAT report available
Product Safety, EMC, and Environmental Compliance Information	See the product information for the HP t755 Thin Client found on hp.com.
(a) Specifications are at sea level with no direct, sustained sunlight. Upper limit might be limited by the type and number of options installed.	

Physical Specifications

Dimensions	Vertical Orientation • Height ◦ 210 mm (8.26 in) • Width ◦ 50 mm (1.97 in) • Depth ◦ 210 mm (8.26 in)
Mounting	• Tabletop • VESA 100
Weight	1297 g (2.86 lb)
Heat Dissipation[a]	90 W Power Supply • @ 100 VAC (60 Hz) ◦ 28.14 BTU/hour, short idle ◦ 24.65 BTU/hour, long idle ◦ 2.73 BTU/hour, sleep ◦ 2.35 BTU/hour, off • @ 115 VAC (60 Hz) ◦ 28.38 BTU/hour, short idle ◦ 24.93 BTU/hour, long idle ◦ 2.83 BTU/hour, sleep ◦ 2.53 BTU/hour, off • @ 230 VAC (50 Hz) ◦ 28.24 BTU/hour, short idle ◦ 24.72 BTU/hour, long idle ◦ 2.8 BTU/hour, sleep ◦ 2.42 BTU/hour, off
(a) Heat dissipation is calculated based on the measured watts, assuming the service level is attained for one hour.	

Related Documents

Topic	Document
Annunciator Keyboard Support	*EcoStruxure™ Foxboro™ DCS USB-Based Annunciator Keyboard User's Guide* (B0700FT)
Central Virtualization Management	*EcoStruxure™ Foxboro™ DCS Centralized Virtualization Management for Windows Server 2016 User's Guide* (B0700HC)
	EcoStruxure™ Foxboro™ DCS Centralized Virtualization Management for Windows Server 2022 User's Guide (B0700JH)
DCS Auxiliary Communications Network (ACN) Configuration	*EcoStruxure™ Foxboro™ DCS Switch Configurator Application Software (SCAS) for the Control Network User's Guide* (B0700CA)
Endpoint Protection	*EcoStruxure™ Foxboro™ DCS Trellix Security Products* (PSS 41S-4Trellix)
Virtualization	*EcoStruxure™ Foxboro™ DCS Hypervisor Technology – Microsoft® Hyper-V™ Hypervisor* (PSS 41S-8HYPRVOV)
	EcoStruxure™ Foxboro™ DCS Virtualization for Windows Server 2016 User's Guide (B0700HD)
	EcoStruxure™ Foxboro™ DCS Virtualization for Windows Server 2022 User's Guide (B0700WW)
Virtualization Host Servers	*EcoStruxure™ Foxboro™ DCS Model V91 Virtualization Host Server (HP DL380 Gen10) for Windows Server 2016 User's Guide* (B0700HQ)
	EcoStruxure™ Foxboro™ DCS Model V91 Virtualization Host Server (HP DL380 Gen10) for Windows Server 2022 User's Guide (B0700WT)
	EcoStruxure™ Foxboro™ DCS Model V95 (HPE DL380 Gen11) Virtualization Host Server for Windows Server 2022 User's Guide (B0700JF)
Supported Monitors	*EcoStruxure™ Foxboro™ DCS Liquid Crystal Display (LCD) Monitors* (PSS 41H-4VDU)
Thin Client Hardware and Configuration	*EcoStruxure™ Foxboro™ DCS t755 Thin Client with Windows 10 User's Guide* (B0700JT)

Proposition 65

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.

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