HMI Visualization Options

Dan Kandray

January 30, 2020

PanelView Plus HMI Terminals

- Human Machine Interfaces were developed to replace hardwired panel controls including:

    - Pushbuttons

    - Selector Switches

    - Pilot Lights

    - Additional features include:

        - Data-entry fields, message displays, alarms, diagnostics, screen selectors, full color graphic objects, and animation

- Run applications designed using FactoryTalk View ME (machine edition) software OR Connected Components Workbench (CCW) software (PanelView 800 only)

Control System Visualization Considerations

To control a machine, consider these options	
If you want to use...	**Consider this product line...**
Open architecture with your own software:	VersaView 5200 Thin Client
Small or Medium Computers	VersaView 5400
Large Computers	6181P or 6177R
Hazardous Location Computers	6181X
Display-only Monitors	VersaView 5100 6176M 6186M
Small HMI Systems	PanelView 5310 PanelView 800 PanelView Plus 7 Standard PanelView Plus 6 Compact
Medium or Large HMI Systems	PanelView Plus 6 Panelview Plus 7 Performance PanelView 5500 PanelView 5510 Mobile View

Additional Considerations

- Which controller and communication network are you connecting to?

- Which development environment (runtime version) does the terminal need to support?

- Which terminal size and screen count do you need?

- How many controllers and alarms do you need?

- Which features are required and desired?

PanelView Terminal Comparison

Swagelok®

	PanelView Plus 7 Performance	PanelView Plus 7 Standard	PanelView Plus 6	PanelView 800
Connectivity				
CompactLogix® & ControlLogix® (L6, L7) Controllers	Yes	Yes	Yes	L1, L2, L3 [2]
CompactLogix 5380 (L3) & ControlLogix 5580 (L8) Controllers	Yes	Yes	Yes	–
CompactLogix 5480				
PLC-5/SLC Controllers – Ethernet	Yes	Yes	Yes	Yes
PLC-5/SLC/MicroLogix™ Controllers – Serial (DF1)	–	–	Yes	Yes
PLC-5/SLC Controllers – DH+ / ControlNet	–	–	Yes	–
Micro800® Controllers	Yes	Yes	Yes	Yes
Third Party Controllers	Yes	Yes	Yes	–
Development Environment				
Studio 5000® Environment	–	–	–	–
FactoryTalk® ME Software	3.2, 4, 5.x, 6.x, 7, 8.x, 9.x	5.1, 6.x, 7.x, 8.x, 9.x	3.2, 4, 5.x, 6.x, 7, 8.x, 9.x	–
Connected Components Workbench™ Software	–	–	–	7, 8.x, 9.x, 10.x
Scale				
Screen Size (Rounded Inches)	7, 9W, 10, 12W, 15, 19	4W, 6, 7, 9W, 10, 12W, 15	4, 6, 7, 10, 12, 15	4, 7, 10
Screen Count / Controllers / Alarms	No limit (based on memory and CPU)	50 (25 replace, 25 on-top faceplates)/1/500	No limit (based on memory and CPU)	25/1/200 **

HMI Levels of Control
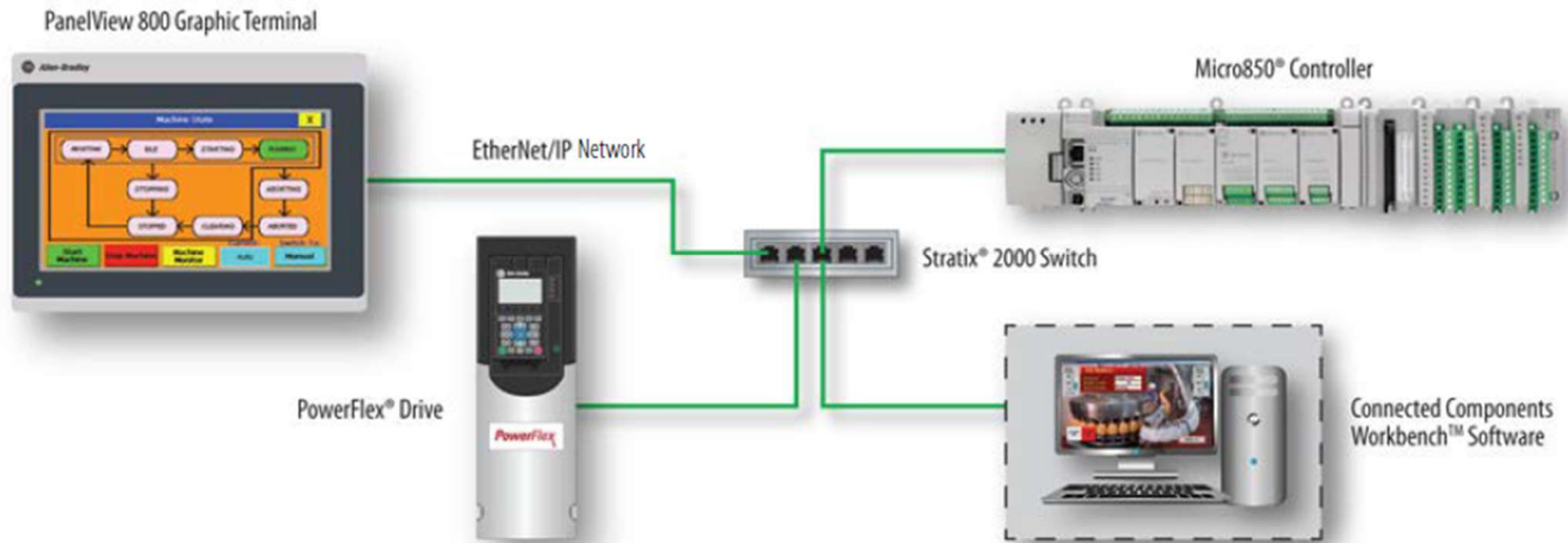
Swagelok

- Component Class

  – PanelView 800 & Micro800 PLCs

- Small Control Class

  – Midrange Class

  – PanelView Plus 7 Standard & Performance

  – Supports Star, Linear and Device Level Ring Configuration

- Integrated Architecture Class

  – ControlLogix and PanelView 5500s & PanelView Plus 7 Performance
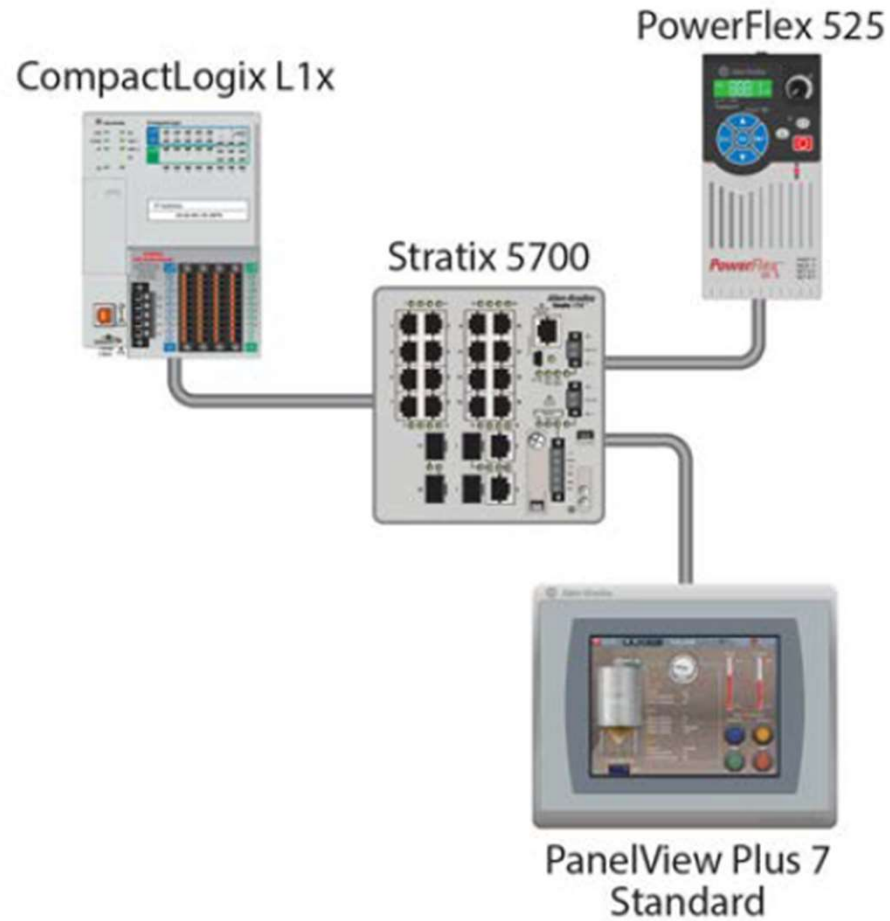
Component Class Configurations

Micro800® with PanelView 800

PanelView 800 Graphic Terminal

Micro850® Controller

EtherNet/IP Network

Stratix® 2000 Switch

PowerFlex® Drive

Connected Components Workbench™ Software

Small Control Class Configurations

Swagelok

Star Configuration

CompactLogix L1x

PowerFlex 525

Stratix 5700

PanelView Plus 7
Standard

Small Control Class Configurations

Swagelok

Linear Configuration

PanelView Plus 7 Standard

Stratix 5700

CompactLogix L2x

Kinetix 5500

PowerFlex 525

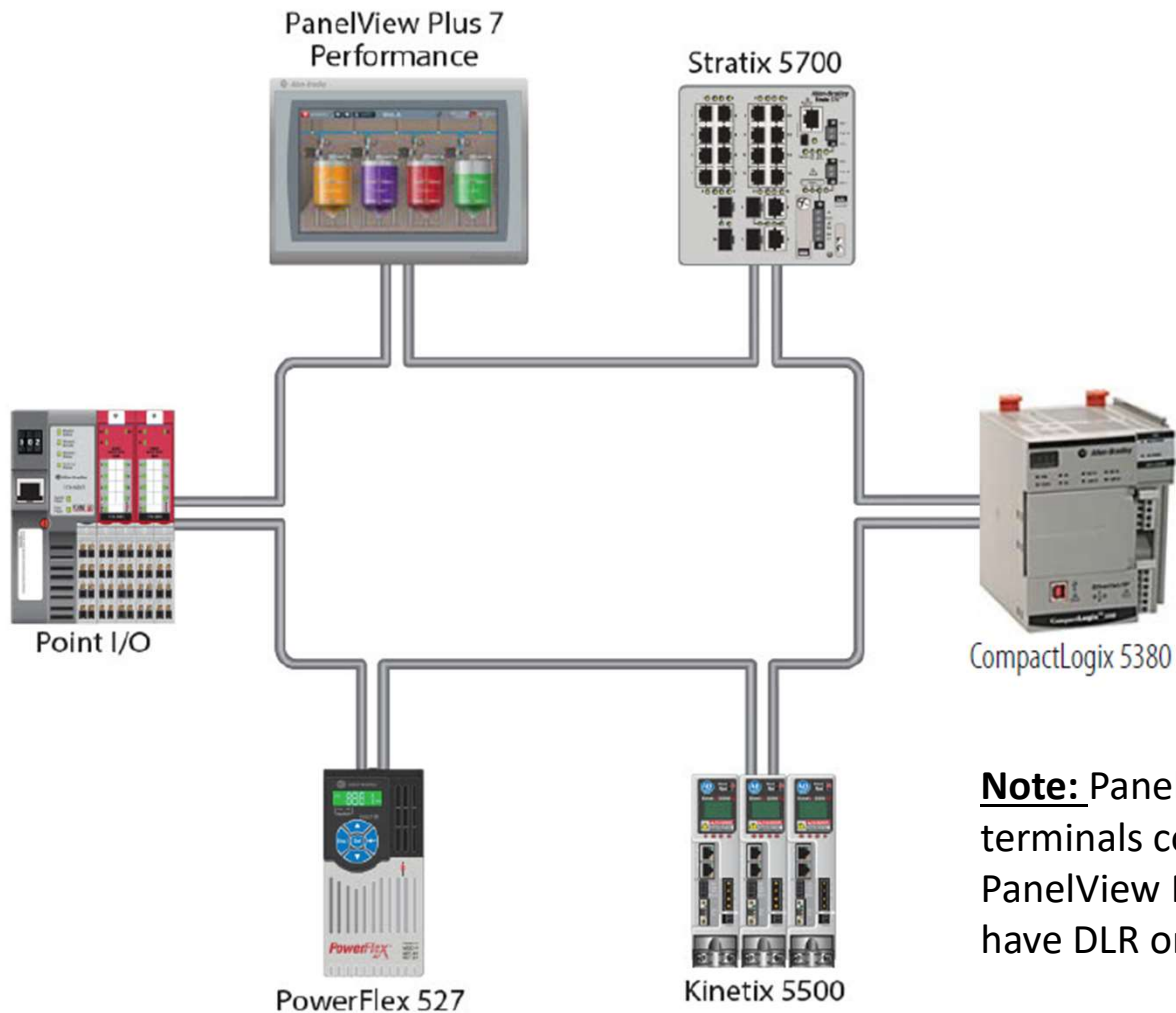Point I/O
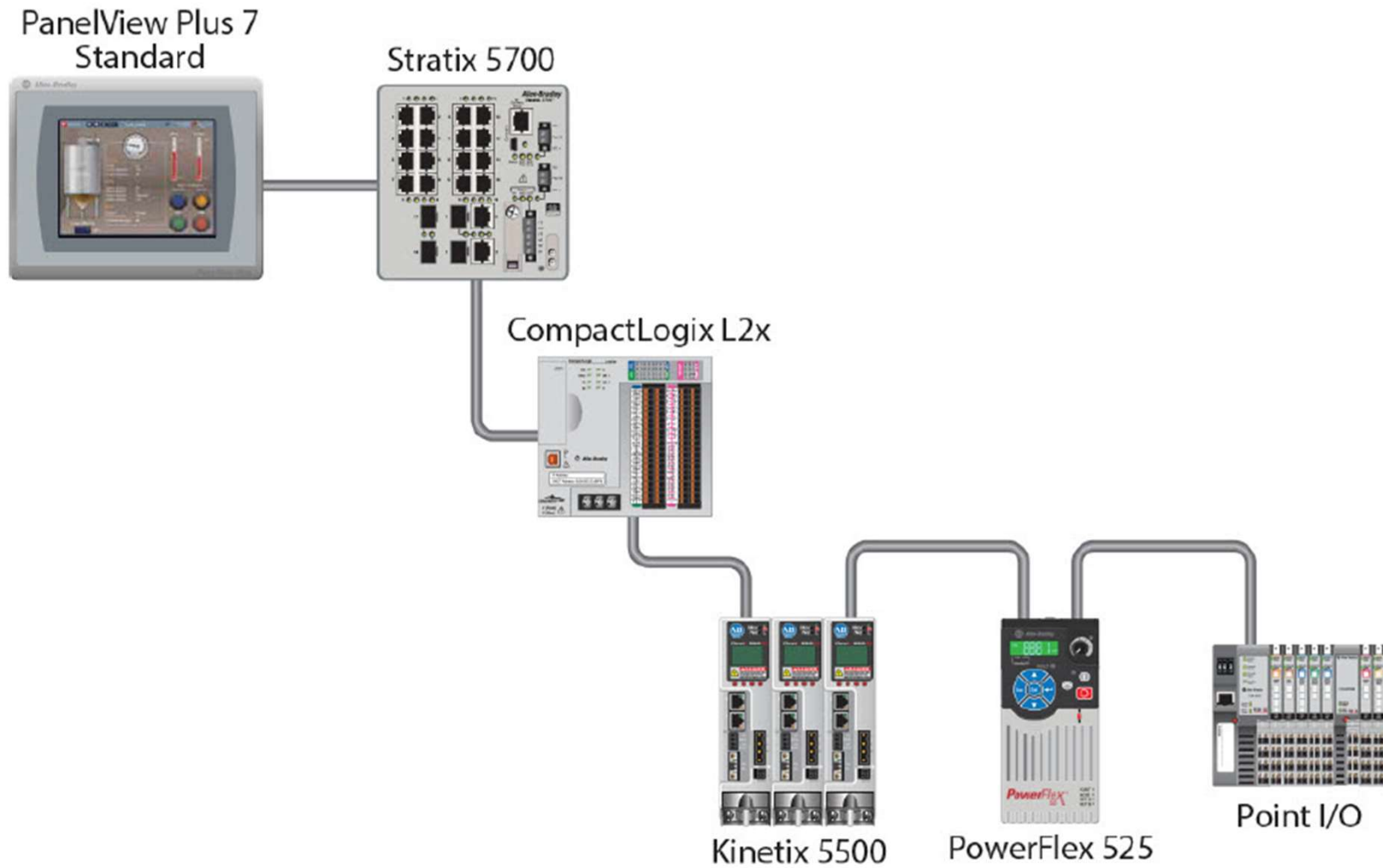
Small Control Class Configurations

Device Level Ring (DLR) Configuration

Note: PanelView Plus 7 Performance terminals come with DLR and PanelView Plus 7 Standard terminals have DLR only as an option.

Common HMI Terminals

- PanelView Plus 7 HMIs

    - Optimized for the following applications:

        - Individual machines or small processes

        - Machine-level monitoring & control (Small Control Class Configurations

        - Operator Interaction

PanelView Plus 7 HMIs – Available in two versions:

1. PanelView Plus 7 Standard (touchscreen only)

   – Focused toward machine builders

   – Available in 4 in to 15 in screens

   – Connects to **one** ControlLogix or CompactLogix controller via **EtherNet/IP only**

   – Supports up to 50 displays (screens) and 500 alarms

PanelView Plus 7 HMIs – Available in two versions:

2. PanelView Plus 7 Performance (touch or keypad/touch)

- – Focused toward industries requiring more complex applications

- – Number of displays and alarms depends on memory and CPU

- – Provides EtherNet/IP connectivity with embedded switch (Device Level Ring)

- – Supports Windows CE 6.0 extended features

PanelView 800 Terminals

- For Component Class Configurations

  - Reduced Cost

  - 4, 7, and 10 inch displays

- Integrates with:

  - MicroLogix

  - Micro800

  - CompactLogix 5370 (L1, L2, & L3)

  - SLC 500

- Programmed with Connected Components Workbench
- Supports 25 screens and 200 alarms
- EtherNet/IP and Serial communication ports

Other HMIs

- PanelView Plus Terminals

  - Introduced in 2003 (transitioning to legacy)

  - Locked at Windows CE V4.1

  - Remain in support due to widest range of communications options:

    - ControlNet, DH+, DH-485, EtherNet/IP, Remote I/O, RS-232 and Device Net

- PanelView Plus 6 Terminals

  - Support Windows CE V6.0

  - Optimized for higher-performance application needs

  - Modular, with many configuration options and capabilities