Honeywell

Technical Information

Experion Panel PC Software Specification

EP03-150-500

Release 500

May 2017, Version 1

Revision History

Revision	Date	Description
1	May 2017	Release version

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1. Introduction

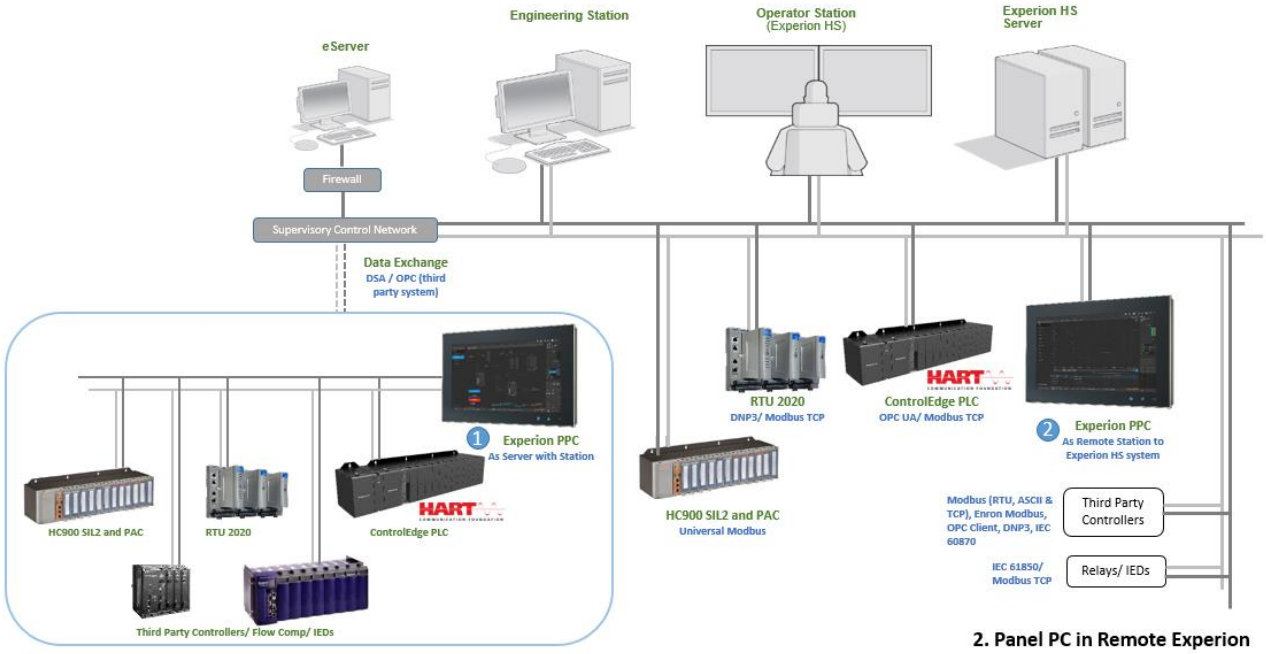
1.1. Experion Panel PC Software System

Experion® Panel PC Software is a powerful platform that incorporates innovative Touch interface based applications for Human Machine Interface applications (HMI) and supervisory control and data acquisition (SCADA). It is comprised of a subset of Experion PKS components specifically packaged to provide a targeted and robust system for Panel PC based field operations with proven touchscreen experience.

Various brands of controllers can be brought together into a single touch operator environment where plant visualization, history, trending, alarming and reporting are performed in a simple, consistent fashion. Experion Panel PC Software is easy and intuitive, and can be used by plant operators for machine and/or process control. Combined with Experion system, Experion Panel PC Software provides a transparent plant-wide integration that greatly improves startup and commissioning time and reduces data integration costs. The Experion Panel PC Software can perform as a remote Experion station, as an Experion server with station or as a remote thin client connecting to the engineering station. These flexible operation modes help meet different local operation needs regardless of your industry, process or machine size and complexity.

1.2. Architecture Overview

The Experion Panel PC Software system can be used in any mix of *Remote Station* and *Sever with Station* operation modes depending upon the needs of the application and system availability objectives. The architecture below represents a subset of the possible nodes and controllers that can be connected with Experion Panel PC Software system.



1. Panel PC in Server with Station Operation mode

2. Panel PC in Remote Experion Station Operation mode

2. Experion Panel PC Software Specifications

2.1. Remote Experion Station Operation Mode

In this operation mode, Panel PC Software can be used as Remote Station of Experion HS system. This operation mode is provided through a specifically packaged Experion station software suitable for touch operations. The Experion HS station license can be used with desktop or touch panel hardware platform.

Item	Specification	Comments
Maximum number of Stations	20	Stations can be configured with a static or rotary connection. Any mix of Desktop and Panel Stations can be used within this limit.
Please refer Experion HS R500 Specification (EP03-050-500) for more details.		

2.1.1. Model Number

Model Number	Description
EP-HSTA01 [1]	Experion HS Station
Note 1 – The HS base license includes 1xFlex Station. Up to 19 additional Stations can be ordered for a maximum of 20 Stations per Server in any mix of Desktop and Touch Panel hardware.	

2.2. Server with Station Operation Mode

In this operation mode, Experion Panel PC Software is used for independent local operations where the Touch Panel PC acts as Experion Server with Station. This operation mode is provided through a specifically packaged Experion Server and Station software package suitable for touch operations. There are separate set of Experion Panel PC Software licenses under this operation mode.

2.2.2. Model Numbers

2.2.2.1. Experion Server Database Software

Model Number	Description
EP-PNBASE [1]	Experion Panel HMI Database Base Software
EP-HME500 [2]	Experion HS Media Kit – Standard

Note 1 – Experion HS bases software includes 550 SCADA points, 1 Flex Station license, 1 Display Builder license, 1 Quick Builder license, Display Versioning Control, Recipe Management, ODBC Driver, Network Server, User Scan task, Batch Report, Honeywell ControlEdge PLC Integration, Allen-Bradley integration, Allen Bradley Serial Interface, Allen Bradley RSLinx Interface, Modbus interface, Honeywell S9000 interface, Honeywell 620 LCS interface, Honeywell RM7800 Flame Safeguard, Honeywell DPR Recorders interface, DNP3 interface, Honeywell Safety Manager and FSC interface, Interface to various EFM controllers/ protocols (Enron Modbus Interface, ABB Totalflow, Fisher ROC, Omni, FlowX, and Bristol Babcock OpenBSI), GE Fanuc Series 90 PLC via Ethernet, OPC Client Interface, OPC Display Data Client, 3 Excel Data Exchange Users, User Scan task, ODBC driver and OPC Data Access Server with 3 Client Access Instances.

Note 2 – The Panel PC software doesn't require hardware security dongle

2.2.2.2. Database Size Expansions

Model Number	Description
EP-PME01K	Experion Panel HMI 1000 Points Adder
EP-PME04K	Experion Panel HMI 4000 Points Adder
EP-PME08K	Experion Panel HMI 8000 Points Adder
EP-PME16K	Experion Panel HMI 16000 Points Adder

Note 1 – Up to 16,000 additional Points can be ordered for a maximum of 16,550 Points per Server

2.2.2.3. Distributed System Architecture (DSA) Data Publish

Model Number	Description
EP-PDSAP1[1,2]	Experion Panel HMI DSA Publish License

Note 1 – Unlike Experion HS Server, the Experion Panel PC base software doesn't include the optional feature of publish data in a DSA design. EP-PDSAP1 is required once for a Panel PC server system that needs to publish data to other Experion systems. This includes Experion PKS, Experion LX and PlantCruise by Experion Server systems. Refer DSA compatibility for more details.

Note 2 – Experion Panel PC Server can't subscribe data from any other Experion system. It can only publish data.

2.2.2.5. Runtime only Packages

Below list covers various runtime only licenses. A run-time only system does not contain any engineering tools.

Model Number	Description
Runtime options for new purchase	
EP-PRB550	Experion Panel HMI Runtime Only -550 points
EP-PRB01K	Experion Panel HMI Runtime Only -1050 points
EP-PRB04K	Experion Panel HMI Runtime only -4050 points
EP-PRB08K	Experion Panel HMI Runtime Only -8050 points
EP-PRB16K	Experion Panel HMI Runtime Only -up to 16K points
Expansion of Runtime Licenses	
EP-PRBEX2	Experion Panel HMI Runtime Expansion 550 to 1050 points
EP-PRBEX3	Experion Panel HMI Runtime Expansion 1050 to 4050 points
EP-PRBEX4	Experion Panel HMI Runtime Expansion 4050 to 8050 points
EP-PRBEX5	Experion Panel HMI Runtime Expansion 8050 to 16050 points

2.2.2.6. Other Options

Below list covers various licensed options of Experion HS that can be used with Panel PC Software system when running as Server with Station. This is in addition to the interfaces and options that are included in Panel PC Software base software EP-PNBASE.

2.2.2.6.1. SCADA Interfaces and Data Exchange Options

Model Number	Description
Industry Standard Interfaces	
EP-HDNPHB	DNP3 History backfill functionality
HS-I60870	IEC 60870 Protocol SCADA Interface
HS-I61850	IEC 61850 Protocol SCADA Interface
Honeywell Device Interfaces	
EP-HSUMOD	Honeywell Universal Modbus Interface
EP-HSMLSR	Honeywell Master Logic Integration
HS-IADDVM	DVM Integration (Via Point Server)

Model Number	Description
EP-HHWUMH	HC900 Universal Modbus History Backfill
HS-IADDVM	DVM Integration (Via Point Server)
Third Party Devices	
EP-HBBREF	Bristol Babcock OPN BSI, EFM Export Option
EP-HEMBOE	ENRON MODBUS INTERFACE, EFM Export Option
EP-HFLXEF	Flow-X Flow Computer, EFM Export Option [4]
EP-HOMNEF	HS Omni SCADA, EFM Export Option [4]
EP-HROCEF	HS Fisher ROC SCADA, EFM Export Option [4]
EP-HTFLEF	ABB Totalflow SCADA, EFM Export Option [4]
OPC and Data Exchange	
EP-HMOHDA	Experion HS OPC History Data Access CAI [2]
HS-OPCINT	Experion HS OPC Integrator SAI [3]
HS-OPCSAE	Experion HS OPC Alarm and Event Server CAI [2]
EP-HODBCD	Experion HS ODBC Data Exchange
Note 1 – DNP3 interface is included in the Panel PC database license Note 2 – CAI stands for Client Application Instance Note 3 – SAI stands for server Application Instance Note 3 – EFM protocol interface is included in the Panel PC base software. This license is needed for EFM export feature Note 5– Refer section 2.2.4 for various OPC options included with Panel PC database license	

2.2.2.6.2. Application Development Tools and Enablers

Model Number	Description
Application Development Tools	
EP-HASHED	Experion HS Point Control Scheduler
EP-HMESAO	Honeywell Application Communication
EP-PMDEV1 [1 2]	Experion HS 16050 Pt Off-Process Development License
Application Enablers	
EP-HSIG01 [3,4]	Experion HS Electronic signature option
HS-DEQ100	100 Equipment Point Adders to Database Size

Model Number	Description
EP-AGBP25 [5]	GAS OPS CORE, 25 PIPE SEGMENTS [7]
EP-APLP25 [6]	GAS OPS LEAK DETECT, 25 PIPE SEGMENTS [7]

Note 1 – This license is sold for demonstration purposes and is not intended for on-process use. Security is provided by a 5 hour time-out. No hardware security key (dongle) is required when using this license.

Note 2 – This license is also sold for development of run-time only systems

Note 3 – Provides Electronic Signatures on SCADA points, Electronic Signatures on Point Scheduler and the ability to securely enable and disable Electronic Signatures by asset.

Note 4 – Provides the necessary functions, such as Electronic Signature support, for regulated industries. The Experion Server provides enhanced capabilities to support the Pharmaceutical industry and other FDA regulated industries and their unique requirements related to regulations such as 21 CFR Part 11. These features may be employed in any industry but are specifically designed to meet the guidelines of 21 CFR Part 11.

Note 5 – Requires equipment Points

Note 6 – Can only be ordered in combination with an equivalent number of EP-AGBP25

Note 7 – Definitions:
Pipe Segment: The smallest building block of a pipeline. A length of pipeline with the same physical characteristics. E.g., diameter, material, coating. A segment is bound by two pipeline nodes.
Node: The beginning or end of a segment. A node is a unique point on the pipeline where something of interest is located. For example, Meter Station, Tee/Lateral, Compressor Station, Valve Stations, Reducer, etc. A node will have instrumentation connected to the SCADA system that affect SCADA application calculations.

2.2.2.6.3. Advanced Alarm and HMI Features

Model Number	Description
EP-HAPAGE	Experion HS Alarm Pager
HS-DASENB	Dynamic Alarm Suppression
HS-ALMTND	Alarm Tracker
EP-HSVALG	Alarm Shelving
EP-HPZE00	Station Pan and Zoom, Per Server
EP-HADSP1	Advanced HMIWeb Solution Pack

2.2.4. HMI Capacity, Performance and Specifications

Limits shown here apply to a single Experion Panel PC software system.

Item	Specification	Comments
Maximum number of composite SCADA points[1]	16,550	The database starts at a minimum of 550 points with increments of 1000 points up to 16,050 points
Maximum number of SCADA channels	50	
Maximum number of SCADA controllers	500	
Assets	1,000	The asset model represents the organization of items in the enterprise, for example, process units, individual pieces of equipment or facilities, etc. The relationship or hierarchy between assets and entities forms the asset model.
Assignable assets	500 per Flex Station	Assignable assets provide a way to assign assets to an operator's scope of responsibility. An assigned asset includes all asset children of the assigned asset including any points associated with those assets or any alarm groups that have been designated by that asset for scope of responsibility purposes.
Alarm groups	500	
Trend pens per set	32	Trend Periods: 1, 5, 20 minutes 1, 2, 4, 8, 12 hours 1, 2, 5 days, 1, 2, 4 weeks 3, 6 months, 1 year
Number of dynamic parameters per display		350 or fewer
Typical non-complex display call up time with 100 or less parameters[2]		< 1 seconds
Typical field change to display update time with 300 or less parameters per display		< 2 seconds
Typical complex display call up time with 200 or less parameters[2,3]		< 2 seconds
Maximum number of active alarms		500
Maximum number of active messages		500

Standard history	• Predefined collection rates of 1, 2, 5, 10 and 30 minutes • 3 additional user defined collection rates can be defined.
Fast history	• Predefined collection rates of 5, 10, 15, 20 and 30 seconds. • 3 additional user defined collection rates can be defined.
Average (based on Standard History rates)	Predefined collection rates of 6, 60, 480 and 1440 minutes
Extended history	• 1-hour snapshot • 8-hour snapshot • 24-hour snapshot
Exception history	• 5, 10, 15, 30, and 60 seconds • 5, 10, 15, 30, and 60 minutes • 2, 4, 6, 8, 12, and 24 hours
OPC Components Supported and versions	• OPC Client Interface: 1.05 and 2.05a • OPC Display Data Client: 2.05a • OPC Data Access Server: 1.0 and 2.05a • OPC Alarm and Event Server: 1.1 • OPC Historical Data Access Server: 1.2 • OPC Integrator: 2.05a

Note 1- Points have a composite data structure that can represent several field values. For example, you only need one analog point for a control loop that maintains the temperature of a furnace or reactor because the point's data structure can include the process variable (PV), output variable (OP), setpoint (SP) and mode (MD).

Note 2 – Call up time depends on display complexity: specification is based on a non-complex custom display using standard HMIWeb Display Builder objects with limited use of scripts. This excludes the first initial call up and is based on a client node running a single instance of Station.

Note 3 – Complex displays are defined by the number of data bound objects identified, large amount of total objects on the display, and some amount of scripting.

2.2.5. DSA Interoperability –Between Experion Panel PC Software and Experion Releases

Experion Panel PC software release R50x can publish data over DSA to Experion HS R50x, R43x, R41x and R40x, Experion PKS R50x, R43x, R41x and R40x, Experion LX R12x and R11x systems. Experion Panel PC software can't subscribe DSA from any of the above Experion release or from another Experion Panel PC software.

2.2.6. Reference list of features supported by Experion Panel PC Software

Below list covers features that are supported by Experion Panel PC software. Please refer model number section to identify the ones which need separate software license.

Feature	Function	Comments/Limitations
Microsoft Excel Data Exchange	Enables capture of real-time point parameter and history information, and displays the data in a Microsoft Excel spreadsheet, using cell formulas or the Microsoft Excel Data Exchange Wizard.	Excel 2010 SP2, Excel 2013 SP1 and Excel 2016 (And any future service pack releases from Microsoft)
ODBC Driver	Enables two-way exchange of data between the Primarily intended for reporting, the ODBC driver enables an ODBC-compliant application to access data in the Experion database, such as history, event, and point parameter values.	
ODBC Data Exchange	Experion Server database and an ODBC-compliant local or network third-party database.	
Alarm Pager		
Point Control Scheduler	The Scheduler option allows point supervisory control to be automatically scheduled to occur at a specified time. This may occur on a “one-shot” basis, daily, workday, weekend, holiday, or a day of the week.	
Recipe Management	Recipe Management provides facilities to create recipes and download them to nominated process units.	Each recipe may have up to 30 items and recipes can be chained together to form larger recipes, if required.
Batch Reporting	Batch reporting enables integrated reporting of batches or lots of a production process run, to be compiled and archived automatically by the Experion Server.	
Dynamic Alarm Suppression	Dynamic alarm suppression enables a user to reduce alarm floods or the number of standing alarms by removing an alarm or group of alarms from the summary when an initiating alarm has occurred.	
Gas Operations Suite with Pipeline Leak Detection	Gas Operations Suite is an Experion license option that allows organizations in the gas transmission pipeline industry to monitor the quality and linepack of gas flow, as well as compressor performance.	

DNP3 History Backfill	DNP3 History Backfill makes use of the time stamped values reported by the RTU after recovery from a communications failure to backfill data into Experion history.	Experion DNP3 History backfill functionality has been qualified for the following devices: • Honeywell RC500 RTU • Honeywell RTU 2020 • Foxboro SCADA RTU50 • Kingfisher CP21
HC900 Universal Modbus History backfill	This option enables uploading the plant history data from HC900 controller into the Experion Server	
Electronic Flow Measurement	This option enables collecting the following data from flow meters: • Historical flow logs (typically hourly and daily transaction records) • Meter configuration logs • Alarm/event/audit logs	The data collected is automatically exported to text (CSV) / binary FLOWCAL® CFX file formats for use by third-party gas measurement and/or billing systems.
IEC 61850	This option enables support for IEC-61850 Edition 2 Protocol SCADA interface. This included support for new PRP and HSR communication protocols	
IEC 60870	The IEC 60870 protocol is prevalent in the energy and utilities sector. The protocol is used for real-time communication with telecontrol equipment and systems. The protocol is also used for monitoring and controlling geographically distributed processes.	

2.4. Interfaces

2.4.1. Honeywell Devices

Interface Software	Connection Type
Honeywell FSC and Safety Manager Integration [1]	Serial and Ethernet
Honeywell ControlEdge PLC Integration	Ethernet [4] (OPC UA)
Honeywell S9000 Integration	Ethernet
Honeywell 620 LCS Serial and Ethernet Interface	Serial and Ethernet
Honeywell UDC 3000/5000/6300 Integration	Serial ASCII
Honeywell DPR Recorders (DPR 100, 180, 250, 3000)	Serial
Honeywell RM7800 Flame Safeguard	Serial (to Q7700 Network Interface)
Honeywell Universal Modbus Interface (HC900, UMC800, DPR180/250, UDC2300/3300, DR4300/4500, X-Series) [2, 3]	Serial and Ethernet
Honeywell MasterLogic Integration (ML200 and ML200R)	Ethernet

Note 1 – The Honeywell FSC and Safety Manager Serial and Ethernet Integration is standard included with the Experion base software.

Note 2 – Please refer to the Honeywell Universal Modbus Interface Reference for more details.

Note 3 – Comes with a history backfill option.

Note 4 – Standard Modbus interface is available in ControlEdge PLC using the Experion Modbus interface. Advanced integration features such as system built diagnostics and point generation are supported only over OPC UA

2.4.2. Industry Standard SCADA Interfaces

Interface Software	Connection Type
Modbus (RTU, ASCII & TCP) Interface	Serial, (RTU or ASCII), and Ethernet
Enron Modbus Interface [1]	Serial through Terminal Server (RTU or ASCII) and Ethernet
OPC Client Interface [2]	Dependent on OPC server used
DNP3 Protocol Interface [3]	Serial and Ethernet (TCP/IP & UDP/IP)
IEC 60870 protocol Interface	Serial (IEC 60870-5-101) and Ethernet (IEC 60870-5-104)
IEC 61850 protocol Interface	Ethernet

Note 1 – Comes with an EFM custody transfer data option. Requires the use of EFM meter points.

Note 2 – Numerous third party devices are supported using the OPC Client Interface in combination with MatrikonOPC drivers.

Note 3 – Comes with a history backfill option.

2.4.3. Third Party Devices

Interface Software	Connection Type
Allen-Bradley (Serial Interface and RSLinx [1])	Serial, Ethernet, DH+ and ControlNet
Bristol Babcock RTU and OpenBSI [2] Interface	Serial and Ethernet, (using the OpenBSI API)
GE Fanuc Series 90 PLC	Ethernet
Fisher ROC Interface	Serial, Ethernet
Omni Interface	Serial, Ethernet
FlowX Interface	Ethernet
ABB Totalflow Interface	Serial, Ethernet

Note 1 – Includes the Allen-Bradley Serial Interface, the Allen-Bradley RSLinx interface and Allen-Bradley Integration. When the RSLinx interface is used, RSLinx is required and can be purchased from Honeywell or a Rockwell Automation distributor. Consider using the OPC Client Interface with the Allen Bradley OPC server from MatrikonOPC instead.

Note 2 – When OpenBSI is utilized, OpenBSI is required and can be purchased from an Emerson distributor. OpenBSI support is dependent upon third party OpenBSI software support of Windows 10 Enterprise 2106 LTSB.

2.5. ControlEdge PLC Integration

Item	Specification
Description	
Experion Panel PC Software provides integration with ControlEdge PLC in a fast, easy and secure way. The integration capabilities are similar to Experion HS R500. Key integration features include- • Variable namespace addressing over OPC UA • Auto configuration of Experion Database for PLC points • Prebuilt PLC Diagnostics display and alarms • Secure IPSec based communication between CE PLC and Experion as per ISA99 Level 2 compliance (Optional) • DCS grade HMI integration- faceplates, detail displays and shape library • Use of Experion PPC (Panel PC) for field operations with consistent Experion HMI and tools	
Details	
Maximum number of addressed variables per ControlEdge PLC controller in Experion	3000 [1]
Maximum number of ControlEdge PLC controllers per Experion HS Server	50
Supported ControlEdge PLC releases for Integration	ControlEdge PLC R140 and later
Note 1 - Additional logical Experion controllers can be configured for each ControlEdge PLC if required	

3. Experion Panel PC Hardware Requirements

A Panel PC hardware must meet the following specifications to be used for Experion HS. These guidelines are intended to provide a minimum baseline. The actual hardware requirements will depend on the system configuration. Computers platforms should meet or exceed these specifications.

Honeywell offers Experion PPC (Panel PC) hardware platform that is built on a robust, maintenance free hardware configuration and comes pre-installed with Windows 10 Enterprise LTSB operating system. Honeywell strongly recommends to use Experion PPC (Panel PC) with Experion Panel PC Software.

3.1. Experion Panel PC Hardware

System Configuration [1]	Specifications
Processor	Single Intel i5-4300U, 1.9GHz or equivalent
RAM	8GB
Networking	100 Mbps Ethernet or FTE
Video resolution	1920x1080 [2]; 65K colors
Display brightness	350 cd/m^2
Hard drive	256 GB [3]
Touch screen type	Projected capacitive (PCAP) multi touch
Operating system	Windows 10 Enterprise 2106 LTSB
Browser type	Microsoft Internet Explorer 11
Example Hardware	Experion PPC (Panel PC)- Honeywell model number: MZ-PPCT01 [4]

Note 1 - Above specification covers the hardware requirement for both Remote Station and Server with Station operation modes of Experion Panel PC software

Note 2 – Experion Panel PC Software only supports true widescreen 1920x1080 resolution

Note 3 – Use of Solid State Drive is recommended to achieve display performance specifications mentioned in this document

Note 4 – Please refer MZ-PPCT01 hardware specifications for more details

4. Glossary

Term or Acronym	Description
DSA	Distributed System Architecture
Experion HS Server	The node at the heart of Experion HS. The servers encompasses a wide range of subsystems including history collection, SCADA interfaces, alarm/event, etc.
FSC	Fail Safe Controller
HC900	Honeywell process automation controller
I/O	Input / Output
LAN	Local area network based on Ethernet technology
MD	Mode
ODBC	Open DataBase Connectivity
PV	Process Variable
SCADA	Supervisory control and data acquisition
SM	Honeywell Safety Manager
SP	Setpoint
SQL	Structured Query Language
UTC	Universal Coordinated Time
USB	Universal Serial Bus
HMI	Human machine interface
HMIWeb	Human machine interface based on Web Technology
HTML	Hypertext Markup Language
OPC	Series of standard specification for open connectivity in industrial automation originally based on Microsoft's OLE COM and DCOM technologies.
pps	Parameters per second
RTU	Remote Terminal Unit

For More Information

Learn more about how Honeywell's Experion PPC Software can improve your operations, visit honeywellprocess.com > Experion Panel PC or contact your Honeywell Account Manager, Distributor or System Integrator.

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