2023

HMIs and Industrial PCs

Design, quality, and service that is ready for the future

HMIs and industrial PCs

Human-machine interfaces (HMIs) and industrial personal computers (IPCs) are essential for the efficient operation and monitoring of systems and machines. From PCs installed directly on the machine for field operation to complex visualization concepts for extensive automation systems – you will find the right solution for your application within the Phoenix Contact product portfolio.

HMIs – efficient touch panels and web panels

Efficient automation requires the right visualization. Our touch panels with integrated Visu+ runtime and web panels with open browsers for HTML5 applications simplify the operation and monitoring of your automation solution. Benefit from intuitive user guidance and a high level of efficiency. We have the right HMI to provide the ideal user interface for your application.

Box PCs – compact solutions for machine-oriented data processing

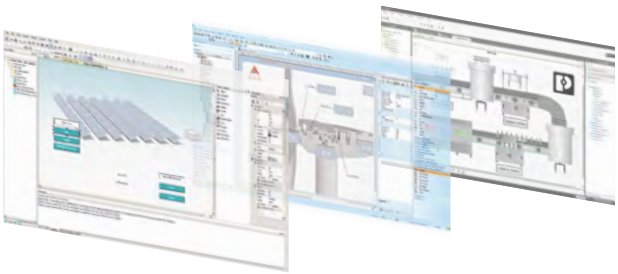
Our compact box PCs are designed for a wide range of automation tasks – from simple data acquisition to complex IoT and edge applications. With DIN rail or wall mounting, you can benefit from a particularly robust and space-saving design. Due to their scalable performance and the wide range of interfaces, our embedded PCs provide the appropriate IPC solution for practically every industry and application.

Rackmount PCs – powerful solutions for demanding applications

Our rackmount PCs provide you with maximum system performance for the acquisition and processing of large volumes of data in industrial automation or machine learning for machine building and systems manufacturing. The rackmount computers conform to the universal 19-inch standard, with the flexibility to extend according to your application. Benefit from the high performance of these systems.

Software for visualization

Whether in the central control room, in production, or directly on the machine, efficient automation requires the right visualization. Whatever your visualization task, we have the right software. Benefit from our extensive portfolio covering all aspects of operation and monitoring for your HMIs and IPCs.



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Panel PCs – modern solutions for operation and monitoring

Benefit from the advantages of our scalable and modern panel PCs for acquiring, processing, measuring, controlling, and visualizing your data. Touch panel PCs are the business card for every visualization solution. Available in flush-mounted or support-arm versions with IP65 or IP69K protection, industrial panel PCs impress with their robustness, performance, and state-of-the-art touch technology.

Touch monitors – a robust front end for machine operation

For operating concepts where the industrial PC and industrial monitor are physically separated, our functional multi-touch monitors are the ideal solution. These robust devices with industrial touchscreens can be used directly on the machine. Numerous graphical interfaces enable easy connection to any PC.

HMIs and industrial PCs

Design, quality, and service that is ready for the future

Are you looking for intelligent solutions for the operation and monitoring of machines and systems? Phoenix Contact offers a wide range of robust and reliable technology, from HMIs and powerful industrial PCs to custom solutions for special industrial requirements. We will provide you with an impressive package that delivers exceptional design, quality, and service.

Design
Our HMIs and industrial PCs offer an attractive and intuitive product design. Compact and functional, they can be incorporated seamlessly into your system or machine design and are the perfect interface between user and machine.

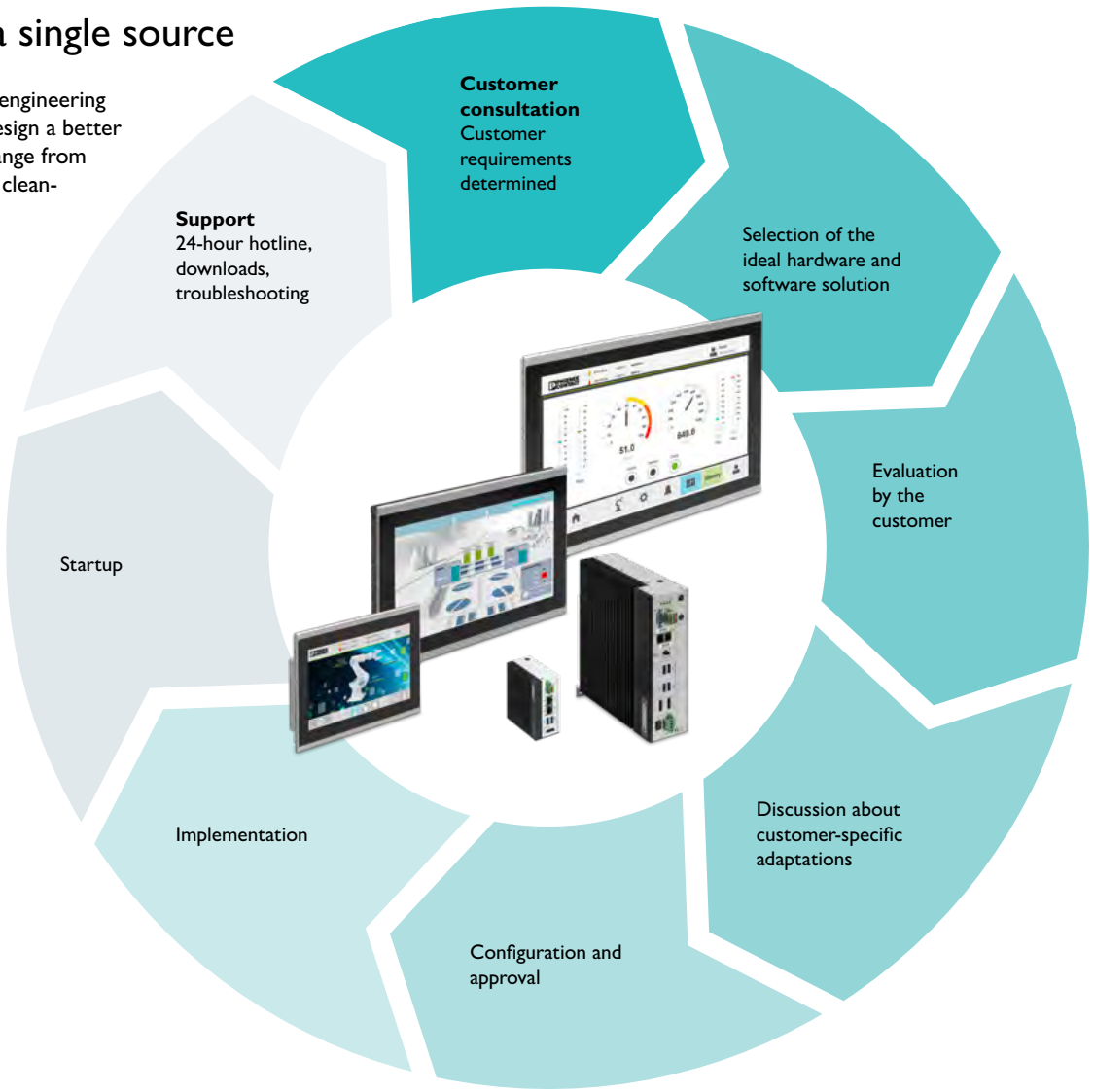
Quality
Made by Phoenix Contact – you can rely on our promise of quality. Our focus is to provide durable components that meet industry standards and stringent requirements. Our HMI and IPC portfolio is produced from high-quality and reliable components and always offers the best performance.

Service
Benefit from our comprehensive service. From product selection to retrofitting your existing industrial systems, we develop the perfect concept for individual automation tasks with our customers.

Ready for the future – open automation
Our HMI/IPC portfolio is ready for open automation solutions. The runtime of our edge PCs feature all the advantages of the PLCnext Technology ecosystem. Benefit from simple integration into an existing IT infrastructure through centralizing data in the cloud, closing the gap between the IT and OT worlds.

Everything from a single source

From customized solutions to engineering support, we can help you to design a better automation system. Services range from pre-loaded software images to clean-sheet designs based on your requirements.



Our added value

Multi-touch
There is a sensor pattern for projective capacitive touchscreen (PCAP). Changes in the electrical field are evaluated individually in each part of the pattern. This enables multi-touch functions and gesture control.

Cost savings
Phoenix Contact offers cost-effective alternatives for operating and monitoring tasks.

Enhanced touch capabilities
Latest touchscreen technology allows the operation of PCAP multi-touch interfaces with gloves. These touchscreens are also permissible in moist and wet locations.

Fanless
Carefully selected components and a sophisticated passive cooling system enable a completely fanless operation. This increases device reliability, decreases dust contamination, and reduces noise.

Remote access
The Visu+ mobile visualization app or the HTML5 web server integrated in the runtime enable convenient use of your visualization on a smartphone or tablet. SCADA functions such as trend display or alarm handling are also available on mobile end devices.

SSL encryption
Secure communication with SSL-encrypted data transmission.

Hardware security
Implement a module to increase the security of a PC on a hardware level. The module is used by software to encrypt the system and protect intellectual property and data.

Extended temperature range
This refers to the ambient temperature in which the device will be permanently operated. Special components are often used for systems that are designated for extended temperature ranges.

High ingress protection
Protected from dust, water, and other particles.

Service-friendly
If maintenance is required, certain components of the device are accessible without the need for tools.

Cockpit
Administration and configuration made easy. Everything required for setup and operation is consolidated at a single location.

HTML5
The web standard, providing all options for HMI projects in combination with CSS and JavaScript.

What is it?

Phoenix Contact eXtended Reality

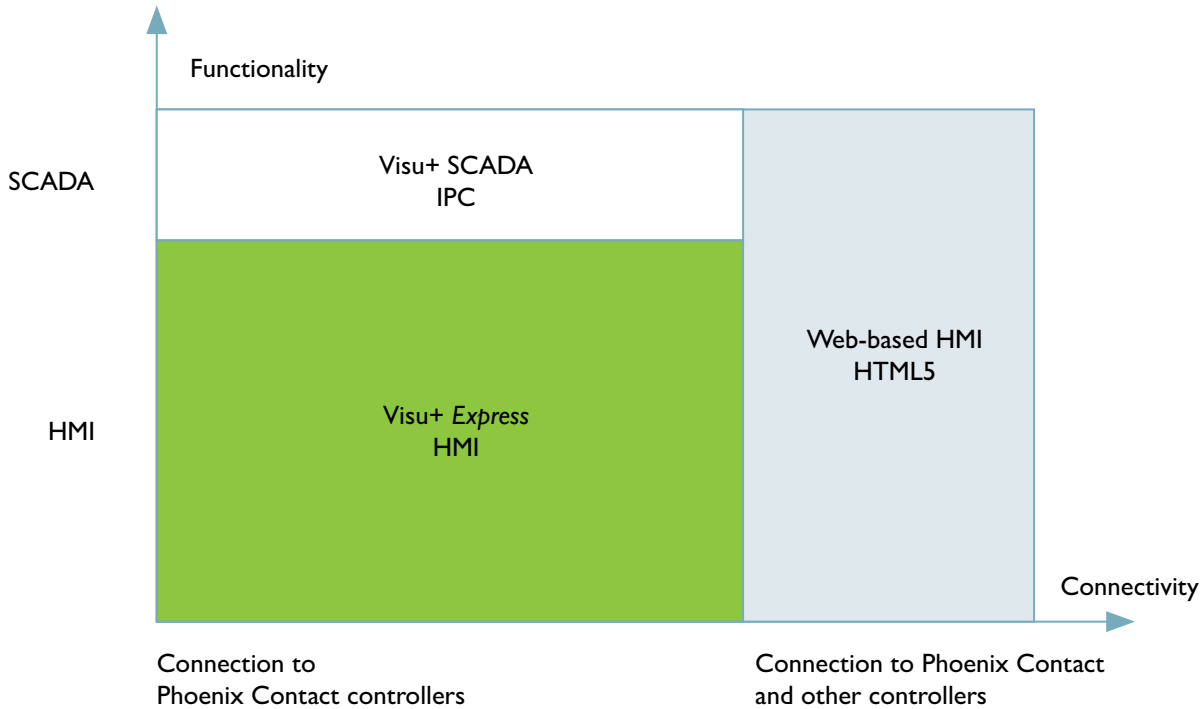
Using PXR
Scan QR codes located throughout this document with your mobile device camera or QR code reader to launch **PXR**.

Interact with the 3D model of the product. Click the "View product list" button to see listings or "View in my space" to project the model into your area (AR experience).

Scan the QR code on the right to get started!

Selection guide for HMIs

Our human-machine interfaces provide user-friendly visualization for automation systems in a multitude of industries and applications.



Visu+ *Express*
Free visualization software for connection to all well-known controller manufacturers with a comprehensive range of visualization tools.

Visu+
Powerful visualization software for complex visualization tasks and comprehensive SCADA functions for connection to all well-known controller manufacturers.

HTML5
HMI panels with integrated embedded browser in kiosk/full-screen mode with optimum HTML5 support enable operation and monitoring options for the high-performance display of web-based content.

Step 1: Visualization as the basis for selecting an HMI

The requirements for the user interface, functionality, and system coupling determine which visualization system is appropriate and which particular HMI type should be selected.

- The user interface aspect refers to the graphical options for designing an interface
- The functionality aspect indicates the software's operation and monitoring functions
- The system coupling aspect refers to communication and integration in control systems

Step 2: Assess the resource requirements based on the scope of the application

It is crucial to match each application with the right HMI. Response and display refresh times can vary significantly with the number of graphics and their overall complexity. HMI applications can range from simple push-button replacers to graphic-rich user interfaces utilizing advanced alarming, trending, or recipe-handling features.

Step 3: Select the right device

Based on their features (CPU capacity, display resolution, and memory capacity) as well as their suitability for different applications, the individual device families can be divided into three classes: basic (BWP 2000, BTP 2000), standard (WP 6000 and TP 6000), and high-end applications (IPC). Select the right operator panel to meet your application needs.

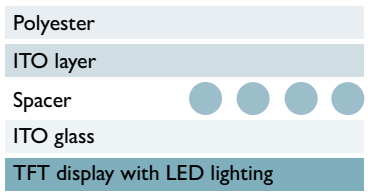
			HMI for HTML5		HMI for Visu+		Industrial PC
			BWP 2000	WP 6000	BTP 2000	TP 6000	IPC
Page			10	11	14	15	16
Visualization		Runtime on HMI panel			●	●	●
		Web based	●	●			●
Connection to control systems	Phoenix Contact	AXC or RFC controller running PLCnext	●	●	●	●	●
		ILC, AXC, or RFC controller running PCWorx	●	●	●	●	●
		Emalytics View & Automation, Niagara, Dglux		o			●
		PLC logic			●	●	
	Other	OPC UA			●	●	●
		Third-party manufacturer	●	●	●	●	●
		Multi-driver PLC communication			o	●	●
		CODESYS	o	●			●
Remote Data Access (RDA)			o	●	o	●	●
Touch technology/ interface		Resistive touch (polyester)	●		●		●
		PCAP touch		●		●	●
Hardware		Metal housing		●		●	●
		Plastic housing	●		●		
Environmental influences and approvals		Expanded temperature range					●
		Displays can be read in direct sunlight					●
		UL (Ordinary/Hazardous location)	●/●	●/–	●/●	●/+	●/●
		ATEX Zone II and IECEx Zone II					●
		Value / Performance	●/o	o/●	●/o	o/●	●/●

* With browser or visualization software installed
● Best option
o Limited / alternative option
\+ Planned / future implementation
– Not available

Touch technologies

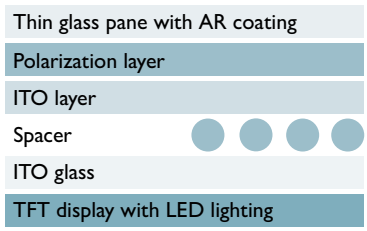
Ideal for industrial applications

The touch screen is a popular control element that invokes a reaction from the system by touching a special surface. The touch interface has quickly evolved and surpassed simple analog resistive interfaces to meet the ever-changing demands of customers and applications. Phoenix Contact understands these changing environments and offers a number of touch technologies to fully address the demands of both operators and environments.



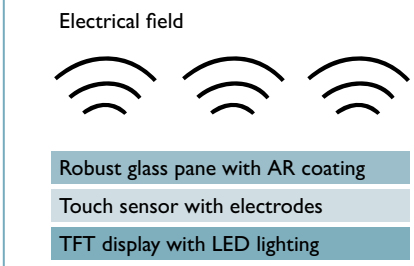
Analog resistive touch screen (polyester)

Analog resistive touch screens are made of two thin polyester foils that are separated by spacer dots. Contact is made when pressure is applied, thus indicating the exact position of the pointer.



Glass-film-glass touch screen (GFG)

The GFG touch combines proven, pressure-based analog resistive touch technology with a high-quality glass design. The surface is not polyester film, but rather a thin, resistant glass pane, which also serves as a moisture barrier. As such, the GFG touch is particularly suited for harsh ambient conditions. It can be operated with fingers, even when wearing gloves, or with stylus pens, without causing damage.



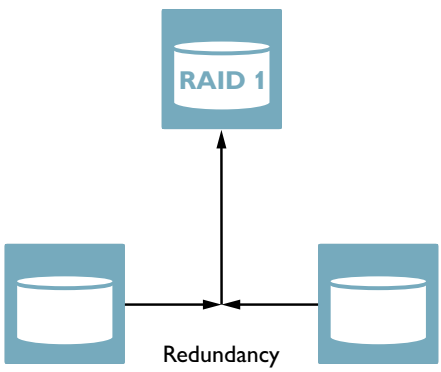
Projective capacitive touch screen (PCAP)

A transparent ITO layer of touch sensors underneath the glass cover projects a uniform electrical field that changes when touched. The touch controller localizes the coordinates of the touch points with high precision. Even the use of thicker glass and operation when wearing suitable gloves are no problem. Hardened glass is very robust and durable when it comes to aggressive substances. The operator panels support multi-touch functions and gesture control.

RAID support

A RAID (Redundant Array of Independent Disks) system combines multiple hard disks, which enables increased data security. There are different types of memory models (levels); Phoenix Contact uses the RAID 1 system for its VL3 box and panel PCs.

RAID level 1
The RAID 1 system enables information to be stored redundantly on two hard disks. If one data memory fails, the information on the second data memory is automatically used.



Notes

HMIs with open web browsers for HTML5-based visualizations

HTML5 web technology enhances control and visualization systems by allowing easy data exchange between the HMI and any web server. The HTML5-based web panel simply requires configuration of the web server's IP address, and its contents can be displayed on both our competitive BWP 2000 and WP 6000 series HMIs. This makes these web panels the perfect fit for PLCnext-based control systems or any other device with a built-in web server.

Your advantages

- ☑ Open web standards ensure/guarantee compatibility with any web server
- ☑ No runtime license costs
- ☑ Independent visualization where you can program your JavaScript applications
- ☑ Time and location independence – interact with your machine remotely via smartphone or PC

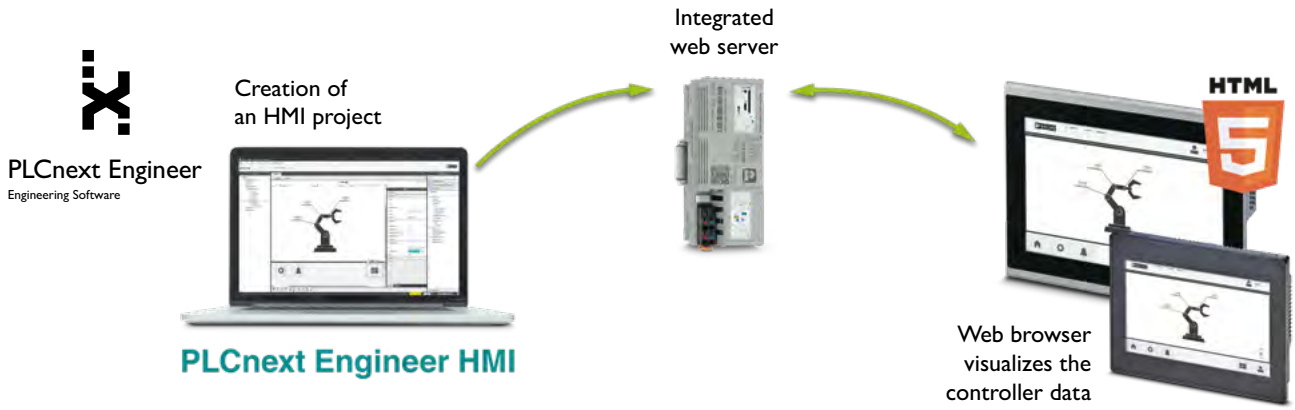
PLCnext Engineer

PLCnext Engineer software is optimized for the creation of modern visualization solutions. With respect to the technology, the visualization integrated into PLCnext Engineer is based on open standards such as HTML5 and JavaScript.
No web skills are required, since the software offers numerous symbols and templates that can be individually extended.

- Programming and visualization for the new generation of Phoenix Contact controllers
- End-to-end engineering: Configuration, programming, visualization, and diagnostics
- Comprehensive symbol libraries can be extended and reused as often as required
- Free download and licensed add-ins available at phoenixcontact.com

Further information on controllers compatible with PLCnext Engineer available at:

Web code: #2310



HTML5 web panels with resistive touch

General technical data

- Display type: TFT
- Processor: Arm® 9 i.MX6DL DualLite, 454 MHz (dual-core)
- Memory: 1 GB RAM, 4 GB eMMC Flash
- Interfaces: 1 x Ethernet (10/100 Mbps), 1 x USB Host 2.0
- Housing: plastic
- Degree of protection: IP66 (front), IP20 (back)
- Power supply: 24 V DC ±15%
- Installation type: portrait (planned)/landscape
- Mounting type: front installation
- Approvals: UL/cUL, Class I, Div 2

Your advantages

- HTML5-compatible browser integrated in all devices
- Easy startup: Just enter the IP address and URL
- No security updates required for Java or Flash plug-ins
- Energy-efficient LED backlight
- Best price/performance ratio

Launch pxr

Web panels with open browsers for simple HTML5 applications

Designation	BWP 2043W	BWP 2070W	BWP 2102W
Item number	1060549	1060632	1060630
Display size (cm / in)	10.92 / 4.3"	17.78 / 7"	25.9 / 10.2"
Touch technology	Analog resistive (polyester)		
Colors	16.7 million		
Resolution, W x H (pixels)	480 x 272 (WQVGA)	800 x 480 (WVGA)	1024 x 600 (WSVGA)
Brightness (cd/m)	400	350	
Backlight MTBF (h)	20,000	25,000	
Viewing angle, left / right / top / bottom (°)	70 / 70 / 50 / 70		65 / 65 / 45 / 65
Front plate dimensions, W x H x D (mm)	120 x 89 x 5	186 x 138 x 5	268 x 190 x 5
Mounting cutout, W x H (mm)	111 x 80	175 x 127	256 x 178
Installation depth (mm)	31.5	31	33
Weight (kg)	0.2	0.4	0.9
Power consumption (W)	5.3	6	8.4
Operating temperature	0°C to +50°C (-20°...60°C for non-UL)		
Storage temperature	-20°C to +85°C		
Relative humidity	10% to 90%, non-condensing		

HTML5 web panels with PCAP multi-touch

General technical data

- Display type: TFT
- Processor: Arm® Cortex®-A9, 1.6 GHz, Quad-core
- Memory: 4 GB RAM, 8 GB eMMC Flash
- Interfaces: 1 x Ethernet (10/100/1000 Mbps), 2 x USB Host 2.0,
- 1 x USB-C; 1 x microSD
- Operating system: Linux Yocto
- Housing: aluminum/sheet steel, zinc-plated
- Degree of protection: IP66 (front), IP20 (back)
- Power supply: 24 V DC ±20%
- Installation type: portrait/landscape
- Mounting type: front installation
- Approvals: UL/cUL

Your advantages

- ☑ Flexible with open web standards and a choice of HTML5 web servers and visualization software
- ☑ No security updates required for Java or Flash plug-ins
- ☑ Ideal for use with PLCnext Engineer or CODESYS V3
- ☑ Secure communication with SSL-encrypted data transmission

Launch PXC

Web panels with open browser for HTML5 applications

Designation	WP 6070-WVPS	WP 6101-WXPS	WP 6121-WXPS	WP 6156-WHPS	WP 6185-WHPS	WP 6215-WHPS
Item number	1290800	1290801	1290802	1290803	1290807	1290809
Display size (cm / in)	17.78 / 7"	25.65 / 10.1"	30.73 / 12.1"	39.6 / 15.6"	47 / 18.5"	54.6 / 21.5"
Touch technology	Projective capacitive (PCAP)					
Colors	16.7 million					
Resolution, W x H (pixels)	800 x 480 (WVGA)	1280 x 800 (WXGA)		1920 x 1080 (FHD)		
Brightness (cd/m²)	500		400	450	350	400
Backlight MTBF (h)	50,000					
Viewing angle left / right / top / bottom in (°)	89 / 89 / 89 / 89	85 / 85 / 85 / 85	88 / 88 / 88 / 88	85 / 85 / 85 / 85	89 / 89 / 89 / 89	
Front plate dimensions, W x H x D (mm)	202 x 146 x 6.9	263 x 200 x 6.9	302 x 229 x 6.9	398 x 273 x 6.9	465 x 310 x 6.9	532 x 346 x 6.9
Mounting cutout, W x H (mm)	195 x 139	252 x 189	292 x 219	388 x 263	455 x 300	522 x 336
Installation depth (mm)	51					
Weight (kg)	1.3	2.1	2.5	4.2	4.8	6.4
Power consumption (W)	14.7	19.0	21.5	30.5	32.2	32.9
Operating temperature	-20°C to +50°C			0°C to +50°C		
Storage temperature	-25°C to +85°C			-20°C to +60°C		
Relative humidity	20% to 85%, non-condensing			10% to 90%, non-condensing		

HMIs with Visu+ software
Scalable for demanding applications

Visu+ is Phoenix Contact's visualization software, which allows you to create graphic-rich user interfaces for industrial applications. The free Express version is designed for our BTP 2000 and TP 6000 HMI series, as well as select IPCs. Visu+ is available with different feature sets, either configured to work as a high-end HMI when bundled with our industrial PCs, or as a SCADA system with the stand-alone Visu+ software license options.

Visu+ / Visu+ *Express*

Visualizations with SCADA functions deliver impressive scalability and versatility. Monitor and operate complex machines, systems, or automated processes with Visu+.

- Create sophisticated graphical user interfaces
- Native communication drivers provide direct communication with all relevant PLC and device manufacturers in the industrial marketplace
- Remote data access via Visu+ mobile app and HTML5 web client
- The license for the runtime environment is already included in the price of HMI devices
- Visu+ is also available as a configuration option for our industrial PCs to create PC-based HMI solutions

Visu+ *Express*:
- Free *Express* version
- Functionality optimized for typical HMI requirements

Visu+:
- SCADA scope of functions
- Supports all touch panels and IPCs

Try the free Visu+ *Express* development license today. Visit the Phoenix Contact website and search for part number 2402774.

VISU+

SCADA Visualization

Touch panels with resistive touch

General technical data

- Display type: TFT
- Processor: Arm® Cortex® A7, 700 MHz
- Memory: 512 MB RAM, 4 GB eMMC
- Interfaces: 1 x Ethernet (10/100 MBit/s), 1 x USB Host 2.0, 1 x µUSB device, 2 x COM (RS-232/422/485), 1 x SD card slot
- Operating system: Windows® Embedded Compact 7
- Housing: plastic
- Degree of protection: IP66 (front), IP20 (back)
- Power supply: 24 V DC ±15%
- Mounting type: front installation
- Approvals: CE, UL/cUL, Class I, Div 2

Your advantages

- ☑ Visu+ runtime included in all devices
- ☑ Native communication drivers for direct communication to all relevant PLC and device manufacturers in the industrial marketplace
- ☑ Developed for simple applications with an attractive price/performance ratio
- ☑ Remote data access via Visu+ mobile app and HTML5 web client

Launch pxr

Visu+ Touch panels with resistive touch

Designation	BTP 2043W	BTP 2070W	BTP 2102W
Item number	1050387	1046666	1046667
Display size (cm / in.)	10.92 / 4.3"	17.78 / 7"	25.9 / 10.2"
Touch technology	Analog resistive (polyester)		
Colors	262,144		
Resolution, W x H (pixels)	480 x 272 (WQVGA)	800 x 480 (WVGA)	
Brightness (cd/m²)	400	350	400
Backlight MTBF (h)	50,000		
Viewing angle, horizontal / vertical (°)	70 / 70 / 50 / 70		65 / 65 / 45 / 65
Front plate dimensions, W x H x D (mm)	120 x 89 x 5	186 x 138 x 5	268 x 190 x 5
Mounting cutout, W x H (mm)	111 x 80	175 x 127	256 x 178
Installation depth (mm)	31.5	31	33
Weight (kg)	0.2	0.4	0.9
Power consumption (W)	4	9	7
Operating temperature	0°C to +50°C (-20°...60°C for non-UL)		
Storage temperature	-20°C to +85°C		
Relative humidity	10% to 90%, non-condensing		

Touch panels with PCAP multi-touch

General technical data

- Display type: TFT
- Processor: Arm® Cortex®-A9, i.MX6, 800 MHz (4 cores)
- Memory: 8 GB eMMC, 1 GB RAM
- Interfaces: 1 x Ethernet (10/100/1000 Mbps), RJ45 Intel, 2 x USB 2.0, 1 x COM (RS-232/422/485), 1 x MicroSD
- Operating system: Windows® Embedded Compact 7
- Housing: aluminum/sheet steel
- Degree of protection: IP66 (front), IP20 (back)
- Power supply: 24 V DC ±20%
- Mounting type: front installation, VESA 100
- Approvals: CE, UL/cUL

Your advantages

- ☑ Robust and sturdy with glass front suitable for industrial use
- ☑ Visu+ runtime included in all devices
- ☑ Native communication drivers for direct communication to all relevant PLC and device manufacturers in the industrial marketplace
- ☑ Powerful quad-core processor with fast response and display refresh times
- ☑ Remote data access via Visu+ mobile app and HTML5 web client

Launch pxr

Visu+ Touch panels with PCAP multi-touch

Designation	TP 6070-WVPS	TP 6101-WXPS	TP 6121-WXPS	TP 6156-WHPS	TP 6185-WHPS	TP 6215-WHPS
Item number	1189629	1190417	1190420	1190421	1190423	1190424
Display size (cm / in.)	17.78 / 7"	25.65 / 10.1"	30.73 / 12.1"	39.6 / 15.6"	47 / 18.5"	54.6 / 21.5"
Touch technology	Protective capacitive (PCAP)					
Colors	16.7 million					
Resolution, W x H (pixels)	800 x 480 (WVGA)	1280 x 800 (WXGA)		1920 x 1080 (FHD)		
Brightness (cd/m²)	500		400	450	350	400
Backlight MTBF (h)	50,000					
Viewing angle, horizontal / vertical (°)	89 / 89 / 89 / 89	85 / 85 / 85 / 85	88 / 88 / 88 / 88	85 / 85 / 85 / 85	89 / 89 / 89 / 89	
Front plate dimensions, W x H x D (mm)	202 x 146 x 6.9	263 x 200 x 6.9	302 x 229 x 6.9	398 x 273 x 6.9	465 x 310 x 6.9	532 x 346 x 6.9
Mounting cutout, W x H (mm)	195 x 139	252 x 189	292 x 219	388 x 263	455 x 300	522 x 336
Installation depth (mm)	51					
Weight (kg)	1.3	2.1	2.5	1.7	4	5.5
Power consumption (W)	14.71	19.01	21.53	16.8	24	28.8
Operating temperature	-20°C to +50°C			0°C to +50°C		
Storage temperature	-25°C to +85°C			-20°C to +60°C		
Relative humidity	20% to 85%, non-condensing			10% to 90%, non-condensing		

Industrial PCs
The right system for every application

As the interface between human and machine or as a central system controller, industrial PCs are an essential component in industrial applications. In addition to box PCs, the Phoenix Contact portfolio also includes powerful panel PCs as well as devices for special industrial requirements. Enjoy the benefits of a robust and configurable solution for collecting, processing, measuring, controlling, and visualizing your data.

Box PCs

- The right performance for every application with Intel Atom® through Intel® Core™ processors
- Passive cooling and no moving parts
- Access to all important components without the use of tools
- Easy connection to existing I/O devices via serial interfaces

For further information, refer to pages 18 to 23

Touch monitors

- Display sizes ranging from 15.6" to 21.5" in 16:9 format
- PCAP multi-touch functionality
- High shock resistance and electromagnetic protection
- Easy VESA 100 mounting

For further information, refer to pages 36 to 37

Programmable edge computer

- Connectivity from sensor to cloud
- Based on PLCnext Technology
- Integrated programming tools
- Bridge between IT and OT

For additional information, refer to pages 40-41

Panel PCs

- The right performance for every application with Intel® Atom™ through Intel® Core™ processors
- Display sizes ranging from 7" to 21.5" in 4:3 or 16:9 format
- Analog resistive or PCAP touch
- Passive cooling and no moving parts

For further information, refer to pages 26 to 35

Industrial PCs for hazardous locations

- Display sizes ranging from 15.6" to 21.5" in 16:9 wide-screen format
- Extended temperature range
- Designed and certified to operate in explosive atmospheres

For further information, refer to pages 42 to 43

Box PCs

Box PCs are designed to work in a wide variety of automation tasks, from simple data collection to high-speed control systems. Their rugged design, various mounting options, and scalable performance provide the right IPC solution for virtually any industry or application.

Box PCs

General technical data

- Operating systems (configurable): Windows® 10 IoT Enterprise 2021
- Housing: sheet steel/aluminum
- Degree of protection: IP30
- Power supply: 24 V DC ±20%
- Mounting type: wall or DIN rail mounting
- Approvals: UL/cUL, Class I, Div 2

Your advantages

- ☑ Passive cooling and no moving parts
- ☑ Service-friendly with easily accessible components
- ☑ Individually configurable
- ☑ Windows® 11 ready
- ☑ Secure hardware option, equipped with TPM 2.0

Launch PXR

VL3 box PCs				
				
Designation	**VL3 BPC**			
Item number	1376797			
Processor	Intel® Celeron® 6305E 1.8 GHz (dual-core)	Intel® Core™ i3-1115G4E 3.0 GHz (dual-core)	Intel® Core™ i5-1145G7E 2.6 GHz (quad-core)	Intel® Core™ i7-1185G7E 2.8 GHz (quad-core)
Cooling	Passive			
RAM (configurable)	Max. 16 GB DDR4	Max. 64 GB DDR4		
Data memory (configurable)	2 x m.2 SSD			
RAID support (configurable)	0/1			
Ethernet interfaces	2 x (10/100/1000 Mbps), RJ45, Intel® i225LM; i211AT			
USB	4 x USB 3.1			
Serial interfaces	1 x COM (RS-232/RS-422/RS-485) Optional: Wireless LAN Optional: Extended Function modules			
Hardware security	Trusted Platform Module (TPM 2.0)			
Video output	2 x DisplayPort (DP++)			
Graphics processor	Intel® HD Graphics	Intel® HD Graphics 4400		
PCI/PCIe slots (configurable)	1 x full size PCIe			
Dimensions, W x H x D (mm)	70 x 225 x 230 mm (base system) // 109 x 225 x 230 mm (with PCIe)			
Weight (kg)	3.7 (4.2 with PCIe expansion)			3.8 (4.3 with PCI expansion)
Power consumption1 (W)[1]	97	97	112	120
Operating temperature	-20°C to +50°C			
Storage temperature	-40°C to +70°C			
Relative humidity	10% to 95%, non-condensing			

[1] Power consumption value represents maximum power consumption without a PCIe interface. Actual system power consumption depends on system loading. See user manual for details.

Compromising between size, performance, and connectivity is no longer necessary

The palm-sized embedded VL3 UPC is the perfect fit for IIoT applications such as edge computing or decentralized data collection and processing. The passive cooling design, use of M.2 SSD mass storage devices, and expansion options in the robust metal housing allow for 24/7 operation in demanding industrial environments.

Compact box PCs

General technical data

- Graphics processor: Intel® UHD Graphics for 10th gen. processors
- Video output: 1 x DisplayPort (DP++)
- Ethernet interfaces: 2 x (10/100/1000 Mbps), RJ45, Intel® i225
- USB: 2 x USB 3.1 gen. 1
- Hardware security: TPM 2.0
- Operating system: Windows® 10 IoT, Linux
- Operating temperature[2]: -20°C to +60°C
- Storage temperature: -40°C to +85°C
- Relative humidity: 10% to 95%, non-condensing
- Housing: sheet steel/aluminum
- Degree of protection: IP30
- Power supply: 24 V DC ± 20%
- Mounting: DIN rail (wall mount optional)
- Approvals: CE, UL/cUL

Your advantages

- ☑ A modern hardware platform that is scalable in performance, memory, and storage
- ☑ Long-term available Elkhart Lake processors
- ☑ Best-in-class connectivity options enable communication to a multitude of networks and peripherals simultaneously
- ☑ Compact form factor for installations into small enclosures

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VL3 UPC series box PCs

Designation	VL3 UPC		
Item number	1459506		
Processor	Intel® Atom® x6211E 1.3 GHz (2 core)		Intel® Atom® x6413E 1.5 GHz (2 core)
RAM	2 GB LPDDR4	8 GB LPDDR4	16 GB LPDDR4
Data memory	30 GB NVMe SSD	60 GB NVMe SSD	120 GB NVMe SSD
Optional Serial interfaces	2 x COM (RS-232/422/485)		
Optional Wireless LAN	1 x WLAN (a, b, g, n)		
Dimensions, W x H x D (mm)	100 x 100 x 50		
Dimensions with expansion option, W x H x D (mm)	100 x 100 x 80		
Expansion option 1	2 x 10/100/1000, RJ45 (i225), 1 x M.2 2242 B-key (storage)		
Expansion option 2	1 x 4G / LTE + microSIM, 1 x M.2 2242 B-key (storage)		
Weight (kg)	0.70 / 0.96		
Power consumption1 (W)[1]	Depends on configuration		

[1] Power consumption value represents typical power consumption. Actual system power consumption depends on system loading. See user manual for details.
[2] Temperatures listed require a minimum of 0.5 m/s airflow.

Compact box PCs

General technical data

- Graphics processor: Intel® HD Graphics 500
- Video output: 1 x DisplayPort (DP++)
- Ethernet interfaces: 2 x (10/100/1000 Mbps), RJ45, Intel® i210
- USB: 2 x USB 3.0
- Operating system: Windows® 10 IoT, Linux
- Storage temperature: -40°C to +85°C
- Relative humidity: 5% to 95%, non-condensing
- Housing: sheet steel/aluminum
- Degree of protection: IP30
- Power supply: 12-30 V DC
- Mounting: DIN rail (wall mount optional)
- Approvals: CE, UL/cUL

More configurations available on **www.phoenixcontact.com**

Your advantages

- ☑ Compact design fits into small cabinet boxes
- ☑ Efficient performance Intel CPUs
- ☑ High reliability with passive cooling and solid-state mass-storage media
- ☑ Secure hardware option, equipped with TPM 2.0
- ☑ Flexible mounting options to complement your application

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BL2 series box PCs

Designation – BL2 BPC…	1501S	1541S-4/64	1541S-4/64-W10	1501E	1501E-W	1501E-64-W10	1501E-64-W10-T	1501E-128-W10	1501E-128-W10-T
Item number	1130682	1272827	1272688	1141843	1141843	1158241	1158247	1158235	1158243
Processor: Intel® Celeron® N3350, 1.1 GHz (2 core)	●			●	●	●	●	●	●
Processor: Intel® Atom® E3940, 1.6 GHz (4 core)		●	●						
RAM	4 GB LPDDR4								
Onboard data storage (eMMC SSD)	32 GB	64 GB		32 GB					
Additional data storage (M.2 SSD)	N/A					64 GB		128 GB	
Serial interfaces	N/A			1 x COM (RS-232); 1 x COM (RS 232/422/485)					
Wireless LAN				●					
Windows 10 IOT			●			●	●	●	●
Hardware security	N/A								
Dimensions, W x H x D (mm)	97 x 46 x 94			97 x 63 x 94					
Weight (kg)	0.614			0.746					
Power consumption (W)[1]	10.8			12.72					
Operating temperature[2]	-20 to 50°C	-40 to 70°C		-20 to 50°C					

[1] Power consumption value represents maximum power consumption. Actual system power consumption depends on system loading. See user manual for details.

[2] Temperatures listed require a minimum of 0.5 m/s airflow.

Notes

Rackmount PCs for large, centralized automation installations

For the data collection and processing of large amounts of sensor data, extensive SCADA visualization and image processing are available with the powerful 19" rack-installed industrial PCs from Phoenix Contact. Offering advanced performance for demanding applications, the 19" rack form factor allows simple installation into controlled industrial environments.

Industrial PCs for 19" racks

General technical data

- Ethernet interfaces: 2 x (10/100/1000 Mbps), RJ45
- Operating system (configurable): Windows® 10
- Power supply: 110 to 230 V AC
- Operating temperature: 0°C to +50°C
- Storage temperature: 0°C to +70°C
- Relative humidity: 5% to 95%, non-condensing
- Housing: powder-coated sheet metal
- Protection class: IP20
- Approvals: CE, UL/cUL

Your advantages

- ☑ Fits perfectly into 19" racks
- ☑ Available in sizes 2U and 4U
- ☑ Mass-storage devices are mechanically protected and locked
- ☑ Easy serviceability with hot-swappable mass-storage devices
- ☑ Easily serviceable air filters

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Rack IPCs		
		
Designation	**BL Rackmount 2U**	**BL Rackmount 4U**
Item number	2400063	2400064
Processor (configurable)	Intel® Core i3-9100TE, 2.2 GHz // Intel Core i7-9700TE 1.8 GHz	
Cooling	Active – forced air	
RAM configurable	8 GB to 64 GB DDR4	
Data memory (configurable)	Up to 4 TB 3.5" HDD or up to 480 GB 2.5" SSD per drive	
RAID level (configurable)	0/1	0/1/5
Number of slots for mass-storage devices	2	3
USB	2 x USB 2.0, 2 x USB 3.0	4 x USB 2.0, 2 x USB 3.0
Serial ports	1 x COM (RS-232), 1 x COM (RS-232/422/485)	
Video output	DVI-I	
Graphics processor	Intel® Graphics 630	
PCI/PCIe slots (configurable)	3 x PCI, 1 x PCIe x8, 1 x PCIe x16	8 x PCI, 3 x PCIe x1, 1 x PCIe x16
Mounting	Rackmount 2U	Rackmount 4U
Dimensions, W x H x D (mm)	482 x 89 x 429	482 x 177 x 461
Weight (kg)	13.5	14.5
Power consumption (W)	500	

Panel PCs

Panel PCs are the front end of any high-end control or visualization task. The VL3 panel PCs provide a reliable user interface for a multitude of applications and industries requiring touchscreen operation and rugged design. Combined with the Visu+ software, you can design high-end, graphics-rich visualization systems.

Panel PCs

General technical data

- Display type: TFT
- Colors: 16.7 million
- Operating system (configurable): Windows® 10 IoT Enterprise 2021
- Operating temperature: -20°C to +50°C
- Storage temperature: -40°C to +70°C
- Relative humidity: 10% to 95%, non-condensing
- Housing: aluminum/sheet steel
- Degree of protection: IP66 (front), IP30 (back)
- Power supply: 24 V DC ±20%
- Mounting type: front installation
- Approvals: UL/cUL, Class I, Div 2 (future)

Your advantages

- ☑ Passive cooling and no moving parts (excludes i7)
- ☑ Easy access to all essential components, including storage devices and RTC battery
- ☑ Glove-capable PCAP touchscreens in full HD resolution
- ☑ Individually configurable
- ☑ Windows® 11 ready

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VL3 series panel PCs

Designation	VL3 PPC		
Item number	1376798		
Display size (cm / in)	39.6 / 15.6"	47 / 18.5"	54.6 / 21.5"
Touch technology	10 pt. projected capacitive (PCAP), glove capable, wet application suitable		
Resolution, W x H (pixels)	1920 x 1080 (Full HD)		
Brightness (cd/m²)	450	350	400
Backlight MTBF (h)	50,000		
Viewing angle, left / right / top / bottom (°)	85 / 85 / 85 / 85	89 / 89 / 89 / 89	89 / 89 / 89 / 89
Processor	Celeron 6305E 1.8 GHz (2 core); Core i3-1115G4E 3.0 GHz (2 core); Core i5-1145G7E 2.6 GHz (4 core); Core i7-1185G7E 2.8 GHz (4 core)		
Cooling	Passive (i7 model with convection booster)		
RAM (configurable)	Up to 64 GB DDR4		
Data memory (configurable)	2 x m.2 SSD, RAID capable		
Interfaces	2 x 10/100/1000 Mbps, RJ45, Intel i211 / i225 4 x USB 3.1 1 x COM (RS-232 / 422 / 485), BIOS configurable 1 x DisplayPort (DP++)		
System expansion options	WLAN a, b, g, n 4 x COM (RS-232 / 422 / 485), BIOS configurable 4 x COM (RS-232/422/485), ISOLATED, BIOS configurable 1 x GB Ethernet + 1 x COM (RS-232/422/485), 2 x USB		
Graphics processor	Intel UHD Graphics (Celeron, i3) / Intel Iris Xe (i5; i7)		
Dimensions incl. front plate, W x H x D (mm)	398 x 273 x 89	465 x 310 x 89	532 x 346 x 89
Mounting cutout, W x H (mm)	388 x 263	455 x 300	522 x 336
Weight (kg)	6.9 (7.1 with i7 configuration)	8 (8.2 with i7 configuration)	8.8 (9 with i7 configuration)
Power consumption (W)[1]	70 / 82 / 84 / 91	72 / 80 / 84 / 91	72 / 80 / 91 / 93

[1] Power consumption value represents maximum power consumption at 24V DC without system expansion options. Actual system power consumption depends on system loading. See user manual for details.

Compact panel PCs

General technical data

- Display type: TFT
- CPU: Intel® Celeron® N3350 1.1 / 2.4 GHz, passive cooled
- Memory: up to 8 GB
- Interfaces: 2 x (10/100/1000 MBit/s) RJ45 Intel i210, 2 x USB 2.0; 2 x USB 3.0, 1 x DP, WIFI option (configurable)
- Operating system: Windows® 10 IoT Enterprise
- Operating temperature: -5°C to +50°C
- Storage temperature: -20°C to +70°C
- Relative humidity: 10% to 90%, non-condensing
- Housing: Aluminum, steel sheet
- Degree of protection: IP65 (front), IP20 (back)
- Power supply: 24V DC ±20%
- Mounting options: front installation
- Approvals: CE, UL/cUL

Your advantages

- ☑ Passive cooling and no moving parts
- ☑ Rugged, full metal construction
- ☑ Modern appearance and flush design
- ☑ Perfect for demanding budget applications

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BL2 1200 series panel PCs		
		
Designation	**BL2 PPC 1200**	
Article number	1138377	
Display size in inches	7"	10"
Touch technology	10pt. Projected Capacitive (PCAP)	
Resolution (W x H in pixels)	1024 x 600	1280 x 800
Brightness (in cd/m²)	300	
Backlight MTBF (in h)	50,000	
Viewing angle (left / right / top / bottom in °)	70 / 70 / 60 / 60	85 / 85 / 85 / 85
RAM	4 GB DDR3	
Data memory	64 GB M.2 SSD	128 GB M.2 SSD
Dimensions incl. front plate (W x H x D in mm)	196 x 134 x 48	266 x 184 x 48
Mounting cutout (W x H in mm)	186 x 124	229 x 155
Weight (in kg)	2.1	2.9
Power consumption (in W)[1]	25.7	31.9

[1] Power consumption value represents maximum power consumption. Actual system power consumption depends on system loading. See user manual for details.

Panel PCs with resistive touch

General technical data

- Display type: TFT
- Colors: 16.2 million
- Ethernet interfaces: 2 x (10/100/1000 Mbps), RJ45, Intel i210-AT
- Operating system: Windows® 10 IoT Enterprise
- Operating temperature: 0°C to +50°C
- Storage temperature: -40°C to +70°C
- Relative humidity: 5% to 95%, non-condensing
- Housing: sheet steel/aluminum
- Degree of protection: IP65 (front), IP20 (back)
- Power supply: 24 V DC ±20%
- Mounting type: front installation
- Approvals: UL/cUL

Your advantages

- ☑ Passive cooling and no moving parts
- ☑ Easy connection to existing I/O devices via serial interfaces
- ☑ Individually configurable
- ☑ 7th generation Intel® processor (Intel's 15-year support roadmap)
- ☑ Windows® 10 IoT support

BL2 series panel PCs with resistive touch

Designation	BL2 PPC 1000	BL2 PPC 2000	BL2 PPC 7000
Item number	2404845	2404846	1016236
Display size (cm / in.)	30.7 / 12.1"; 38.1 / 15"; 43 / 17"		
Touch technology	Analog resistive (polyester)		
Resolution, W x H (pixels)	1024 x 768 (XGA) / 1024 x 768 (XGA) / 1280 x 1024 (SXGA)		
Brightness (cd/m²)	500 / 300 / 350		
Backlight MTBF (h)	50,000		
Viewing angle, left / right / top / bottom (°)	Depends on the configuration	Depends on the configuration	Depends on the configuration
Processor	Intel® Celeron® N3350 1.1/2.4 GHz (dual-core)	Intel® Pentium® N4200 1.1/2.5 GHz (quad-core)	Intel® Core™ i5-7442EQ 2.1/2.9 GHz (quad-core)
Cooling	Passive		Convection booster
RAM (configurable)	max. 4 GB DDR3L	max. 8 GB DDR3L	Max. 16 GB DDR4
Data memory (configurable)	M.2 SSD		
Number of slots	1		
USB	2 x USB 2.0, 2 x USB 3.0		
Serial interfaces	1 x COM (RS-232/RS-422/RS-485), 2 x COM (RS-232)		
Video output	2 x DisplayPort (DP++)		
Graphics processor	Intel® HD Graphics 500	Intel® HD Graphics 505	Intel® HD Graphics 630
PCI/PCIe slots (configurable)	1 x Mini PCIe 802.11 a/b/g/n WLAN		
Dimensions incl. front plate, W x H x D (mm)	365 x 282 x 84 / 410 x 309 x 86 / 452 x 356.5 x 86		
Mounting cutout, W x H (mm)	334 x 253 / 386.6 x 285.6 / 424 x 329.5		
Weight (kg)	4.1 / 5.7 / 7.1		4.6 / 6.2 / 7.6
Power consumption (W)[1] depending on screen size	31.9 / 34.8 / 42.7	39.4 / 42 / 46.8	52.6 / 54 / 60

[1] Power consumption value represents maximum power consumption. Actual system power consumption depends on system loading. See user manual for details.

Stand-alone IP65-protected panel PCs

The BL2 PPC AIO65 is a family of configurable, all-around IP65-protected industrial PCs. Choose from a variety of performance classes, display and mounting options, as well as matching expansion options, including the push-button box and stack light. The modular design of the BL2 PPC AIO65 offers an advanced level of solution flexibility – directly on the machine.

All-in-one panel PCs with IP65 protection

General technical data

- Display type: TFT
- Colors: 16.7 million
- Ethernet interfaces: 2 x (10/100/1000 Mbps), RJ45, Intel® i210-AT
- USB interfaces: 2 x USB Host 2.0, 2 x USB 3.0
- Serial interfaces: 1 x COM (RS-232/422/485)
- Operating System: Windows® 10 IoT Enterprise
- Operating temperature: 0°C to +45°C
- Storage temperature: -40°C to 70°C
- Relative humidity: 5% to 95%, non-condensing
- Housing: Aluminum
- Degree of protection: IP65 all-around
- Power supply: 24 V DC ±20%
- Mounting types: VESA, swing arm mount, pole mount
- Approvals: UL/cUL

Your advantages

- ☑ All-around IP65 protection without the need for a cabinet
- ☑ Attractive, modern industrial design
- ☑ Scalable processor performance
- ☑ Easy installation and service
- ☑ Highly reliable with passive cooling and solid state mass storage media
- ☑ Optional push-buttons box and stack light

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BL2 series all-in-one panel PCs

Designation	BL2 PPC AIO65 2000	BL2PPC AIO65 7000	BL2 AIO65 9 PB Box	BL2 AIO65 11PB Box
Item number	1138366	1138367	1160210	1160209
Display size (cm / in.)	39.6 / 15.6"; 47 / 18.5"; 54.6 / 21.5"		PB boxes are compatible only with pole-mount, not VESA	Push-button box, prepared to accommodate eleven 22-mm push-buttons. Wiring and buttons not included.
Touch technology	PCAP multi-touch			
Resolution, W x H (pixels)	1920 x 1080			
Brightness (cd/m²)	400 / 450 / 300			
Backlight MTBF (h)	50000			
Viewing angle, left / right / top / bottom (°)	15.6" and 18.5" display: 85/85/80/80 21.5" display: 89 / 89 / 89 / 89			
Processor	Intel® Pentium® N4200 1.1 / 2.5 GHz (4-core)	Intel® Core™ i5-7442EQ 2.1 / 2.9 GHz (4-core)	Push-button box, prepared to accommodate nine 22-mm push-buttons. Wiring and buttons not included.	
RAM (configurable)	Max. 8 GB DDR3L	Max. 16 GB DDR4		
Data memory (configurable)	mSATA SSD			
Graphics processor	Intel® HD Graphics 505	Intel® HD Graphics 630		
Dimensions VESA mount, W x H x D (mm)	410 x 275 x 86 / 475 x 313 x 86 / 546 x 352 x 86			
Dimensions pole mount, W x H x D (mm)	410 x 275 x 100 / 475 x 313 x 100 / 546 x 352 x 100			
Weight VESA mount (kg)	7.7 / 8.4 / 9.4			
Weight pole mount (kg)	8.6 / 9.3 / 9.7			
Power consumption (W)[1]	49.4 / 52.1 / 48	64.6 / 67 / 60		

[1] Power consumption value represents maximum power consumption. Actual system power consumption depends on system loading. See user manual for details.

Hygienic industrial panels in stainless steel

Hygienic industrial PCs and monitors from Phoenix Contact are protected on all sides by a stainless-steel enclosure where all device surfaces are shielded from contaminant build-up. These powerful and reliable panel PCs and monitors are optimized for use with machines in the hygienic-restricted areas of the pharma, food, beverage, and chemical industries.

Panels with stainless-steel enclosures

General technical data

- Display type: TFT
- Colors: Max of 16.2 million colors
- Operating temperature: 0°C to +45°C, (17,3" panel version 0°C to 50°C)
- Storage temperature -10°C to +60°C, (17,3" panel version 0°C to +50°C)
- Relative humidity: 10% to 85%, non-condensing
- Housing: All-around protected stainless steel (V2A / 304)
- Protection class: IP69K all around
- Power supply: 24 V DC (18 - 30 V DC)
- Mounting types: VESA, swing arm mount, pole mount
- Approvals: IEC/UL 61010 (17,3" and 23,8" FPM only)

Your advantages

- ☑ Robust and powerful in extreme environments
- ☑ Rugged construction inside a stainless-steel enclosure
- ☑ Hygienic design with passive cooling
- ☑ Scalable processor performance
- ☑ Easy installation to VESA, pole, or swing arm systems
- ☑ Options to connect to WLAN or Bluetooth-capable devices
- ☑ Capacitive multi-touch display can be operated with gloves

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Hygienic industrial PC monitors

	Monitors		
Designation	**FPM 15.6 69K**	**FPM 17.3 69K**	**FPM 23.8 69K**
Item number	1261660	1261657	1261659
Display size (cm / in.)	39.6 / 15.6"	44 / 17.3"	60.4 / 23.8"
Touch technology	PCAP multi-touch		
Resolution, W x H (pixels)	1920 x 1080 (FHD)		
Brightness (cd/m²)	400	400	250
Backlight MTBF (h)	50,000	50,000	30,000
Viewing angle, left / right / top / bottom (°)	90 / 90 / 90 / 90	89 / 89 / 89/ 89	
Processor	-	-	-
RAM	-	-	-
Data memory	-	-	-
Ethernet interfaces	-	-	-
Interfaces	1 x USB 2.0 1 x DisplayPort (DP)	3 x USB; 2.01 x USB slave 1 x HDMI; 1 x DisplayPort (DP)	
Wireless interfaces (optional)	-	-	-
Operating system (optional)	-	-	-
Dimensions, W x H x D (mm)	372 x 239 x 31	431 x 261 x 68	578 x 347 x 67
Weight (kg)	4.5	5	7.5
Power consumption (W)	Max. 48	Max. 48	Max. 12
Panel with screen shatter protection	FPM 15.6 69K SP 1261658	FPM 17.3 69K SP 1261656	FPM 23.8 69K SP 1261662

Industrial touch monitors

Phoenix Contact offers multi-touch monitors in a modern industrial design for industrial operating concepts where the processing unit and display unit are physically separated. The robust devices can be used directly on the machine. A choice of graphical interfaces allows for easy connection to any PC without the need for adapters or converters.

Touch monitors

General technical data

- Display type: TFT
- Colors: 16.7 million
- Operating temperature: -10°C to +60°C
- Storage temperature: -20°C to +75°C
- Relative humidity: 10% to 90%, non-condensing
- Housing: sheet steel, painted
- Degree of protection: IP65 (front), IP20 (back)
- Power supply: 24 V DC ±20%
- Mounting type: front installation/VESA MIS-D, 100
- Approvals: UL/cUL

Your advantages

- ☑ Multi-touch screens with 10-point technology
- ☑ PCAP multi-touch interface
- ☑ Numerous video interfaces
- ☑ Slim design

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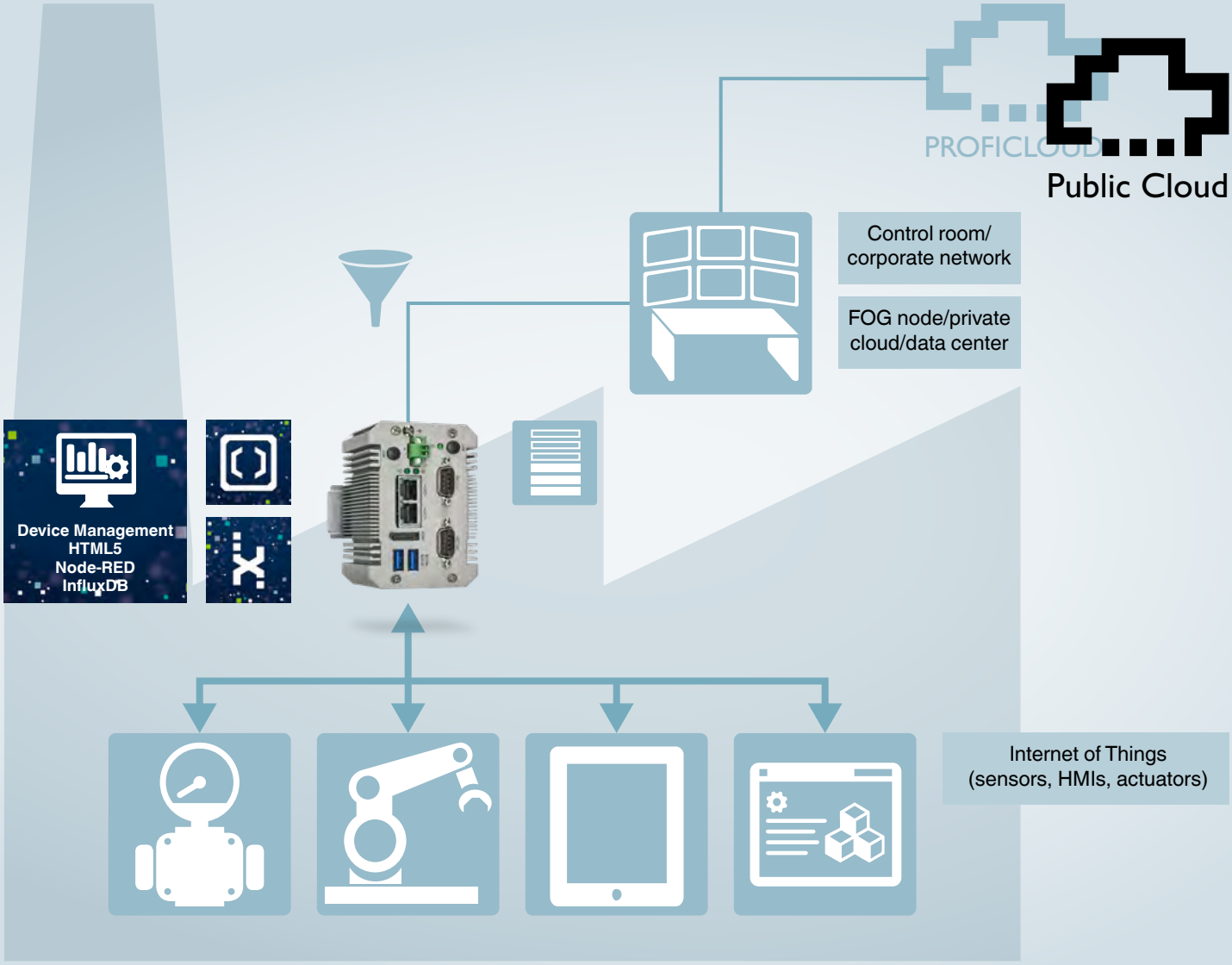
Industrial monitors with PCAP touch

Designation	BL FPM 15.6	BL FPM 18.5	BL FPM 21.5
Item number	2402980	2402981	2400515
Display size (cm / in.)	39.6 / 15.6"	46.9 / 18.5"	54.6 / 21.5"
Touch technology	Projective capacitive (PCAP)		
Resolution, W x H (pixels)	1366 x 768 (WXGA)		1920 x 1080 (Full HD)
Brightness (cd/m²)	300		
Backlight MTBF (h)	50,000		
Viewing angle, left / right / top / bottom (°)	85 / 85 / 80 / 80		
USB	1 x USB 2.0		
With front USB	–		
Video input	1 x DisplayPort (DP++), 1 x VGA, 1 x DVI-D		
Front plate dimensions, W x H x D (mm)	417 x 312 x 6	491 x 321 x 10	562 x 382 x 9
Mounting cutout, W x H (mm)	401 x 296	475 x 306	547 x 367
Installation depth (mm)	46	41	42
Weight (kg)	5.48	6.24	7.87
Power consumption (W)	14.2	17.8	21.6

Optimized data usage with edge computing for PLCnext Technology

Process your data at the edge of your network and take advantage of modern cloud solutions to save resources. Data processing close to data sources reduces network latency and increases the response time and flexibility of your application. These controllers combine the ruggedness of industrial PCs with open PLCnext Technology, enabling the setup of intelligent IoT edge solutions to close the gap between IT and OT worlds.



Programmable edge computer

General technical data

- Ethernet interfaces: 2 x (10/100/1000 Mbps), RJ56, Intel i210
- Operating system: Linux
- Operating temperature: 0°C to 50°C
- Storage temperature: -40°C to 85°C
- Permissible humidity: 5% to 85%, non-condensing
- Housing material: Aluminum
- Degree of protection: IP30
- Power supply: 12-30 V DC ±20%
- Approvals: CE, UL
- PLCnext
- Node-RED
- Apps for direct download via the PLCnext Store
- HTML5-based configuration
- Local HTML5 server to support web-based visualization (eHMI)

Your advantages

- ☑ Pre-installed software tools such as Node-RED provide a local time-series database and simple cloud connection
- ☑ PLCnext-programmable
- ☑ Multiple configuration and programming tools
- ☑ Rugged, industrial PC hardware
- ☑ Perfect for maximizing application uptime and data retention
- ☑ Reduced network data traffic and latency

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EPC 1500 series industrial edge computers		
		
Designation	**EPC 1502**	**EPC 1522**
Item number	1185416	1185423
Processor	Intel® Celeron® N3350 1.1/2.4 GHz (dual core), passive cooled	
RAM	2 GB LPDDR4	4 GB LPDDR4
Storage	32 GB eMMC (onboard)	32 GB eMMC (onboard), 128 GB M.2 SSD
Interfaces	2 x USB 3.0	2 x USB 3.0, 2 x COM
Hardware security (TPM 1.2)	Yes	
Video output	1 x DisplayPort (DP++)	
Dimensions, W x H x D (mm)	97 x 46 x 94	97 x 63 x 94
Weight (kg)	0.55	0.65
Power consumption (W)	10.8	12.72
Device management	Pre-installed user interface via local HTML	
PLCnext inside	Yes	
Cloud	Local administration of PROFICLOUD, AWS, Azure, Google Cloud	

Industrial PCs for Ex environments

Our VL2 PPC EX series industrial PCs come with Triple HazLoc approval and are a perfect fit for applications in process plants and for utilization in the oil and gas industry.

They feature ATEX, IECEx, and UL Class I Div 2 approvals. These PCs are available with a powerful Intel® Core® i7 processor as a box PC, or as a panel PC in screen sizes from 15.6" to 21.5" to meet demanding application requirements.

Worldwide use

These approvals enable our devices to be used in all potentially explosive environments around the globe:

- UL Class I, Div. 2 for use in North America
- ATEX for use throughout Europe
- IECEx for applications in potentially explosive environments around the globe

Industrial PCs for Ex environments

General technical data

- Display type: TFT
- Colors: 16.7 million
- Ethernet interfaces: 2 x (10/100/1000 Mbps), RJ45, Intel® i210
- Operating systems (configurable):
  Windows® 7 and Windows® 10 IoT Enterprise
- Housing: sheet steel/aluminum
- Degree of protection: IP65 (front), IP30 (back)
- Power supply: 24 V DC ±20%
- Maximum current consumption (in A): depends on the configuration
- Connected load (in W): depends on the configuration
- Mounting type: front installation
- Approvals: UL/cUL, Class I, Div 2, NEMA 4, IECEx, ATEX Zone 2/22

Your advantages

- ☑ Passive cooling and no moving parts
- ☑ Certified for use in EX zones 2 and 22

Launch pxr

VL2 series panel PCs for Ex areas

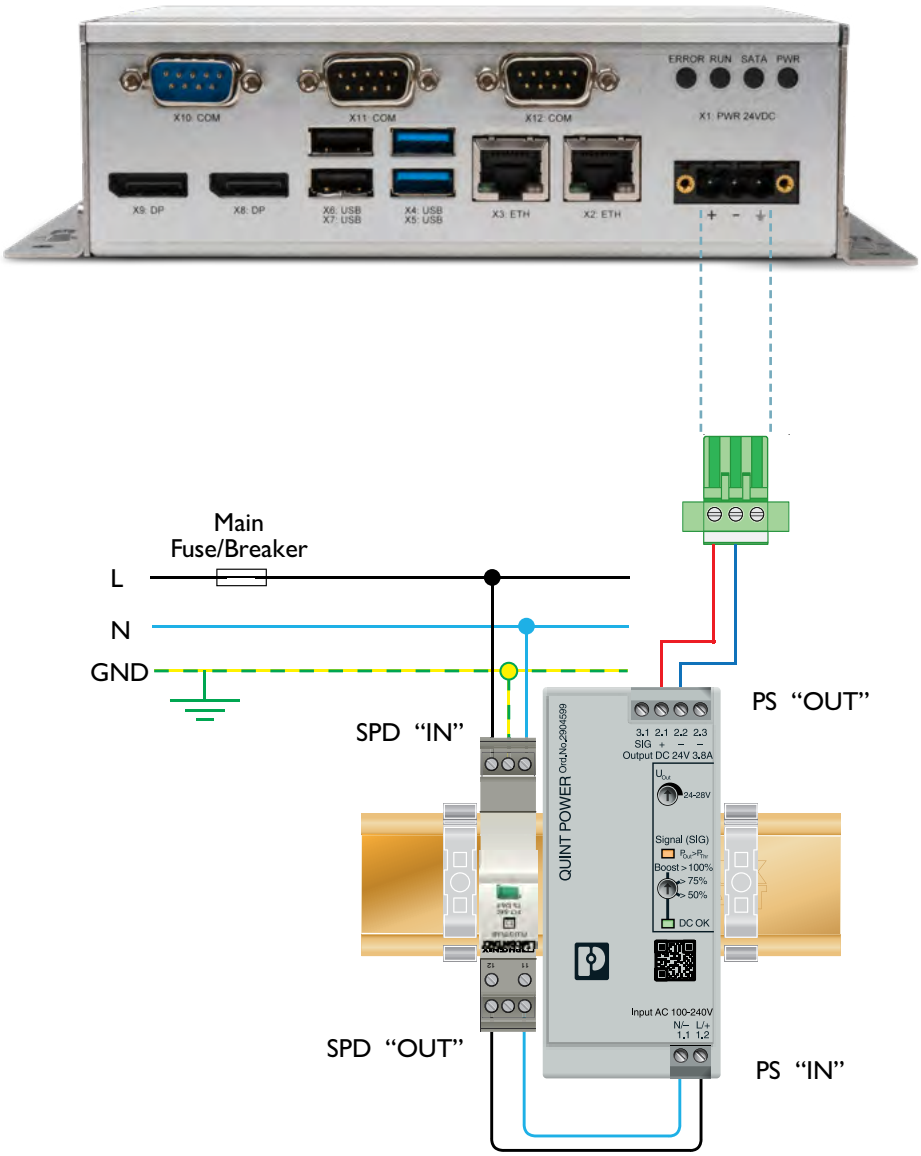
Designation	VL2 BPC 9000 EX	VL2 PPC 9000 EX
Item number	1054023	1050364
Display size (cm / in.)	NA	39.6 / 15.6"; 47 / 18.5"; 54.6 / 21.5"
Touch technology	NA	Projective capacitive (PCAP)
Resolution, W x H (pixels)	NA	1366 x 768 (HD) / 1920 x 1080 (Full HD)
Brightness (cd/m²)	NA	400 / 300 / 300
Viewing angle, left / right / top / bottom (°)	NA	89 / 89 / 89 / 89
Processor	Intel® Core™ i7-6822EQ 2.0 GHz / 2.8 GHz (quad-core)	
Cooling	Convection booster	
RAM (configurable)	max. 32 GB DDR4	
Data memory (configurable)	2.5" HDD or SSD, RAID support 0/1	
Number of slots	1	
USB	2 x USB 2.0, 2 x USB 3.0	
Serial interfaces	1 x COM (RS-232/RS-422/RS-485) Optional: 2 x COM (RS-232) + 1 x COM (RS-232/RS-422/RS-485) Optional: Mini PCI Express (mPCIe) Optional: WLAN	
Video output	2 x DisplayPort (DP++)	
Graphics processor	Intel® HD Graphics 530	
PCI/PCIe slots (configurable)	1 x PCI or 1 x PCIe	
Dimensions, W x H x D (mm)	264 x 215 x 95	408 x 275 x 121 / 465 x 313 x 123 / 532 x 354 x 119
Mounting cutout, W x H (mm)	NA	394 x 263 / 455 x 303 / 522 x 344
Weight (kg)	4.8	8.6 / 10.4 / 12.7
Operating temperature	HDD: 0°C to +45°C SSD: -20°C to +50°C	
Relative humidity	5% to 95%, non-condensing	

Warranty

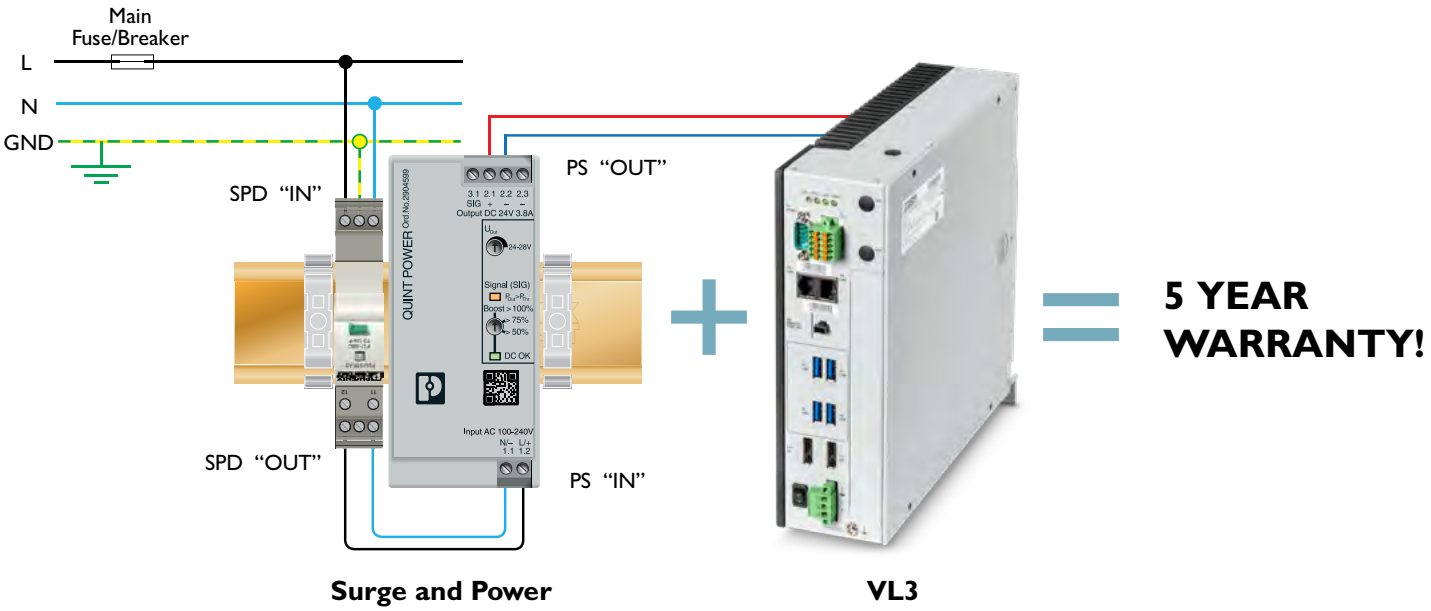
Phoenix Contact industrial PCs (IPCs) and HMI operator panels (HMIs) are used in a wide variety of automation, process visualization, and control applications. Reducing susceptibility to surges is crucial for increasing up-time and extending the life expectancy of the HMI/IPC and its power supply. Phoenix Contact's surge suppression protects these devices from damaging surges, protecting your investment.

With properly installed surge protection devices (SPDs), any damage that occurs is contained within the SPD. The modular SPD design allows the end-of-life plug to be replaced without cutting off power. Additionally, the SPD can be connected to a remote monitoring system to notify the operator that the module needs to be replaced.

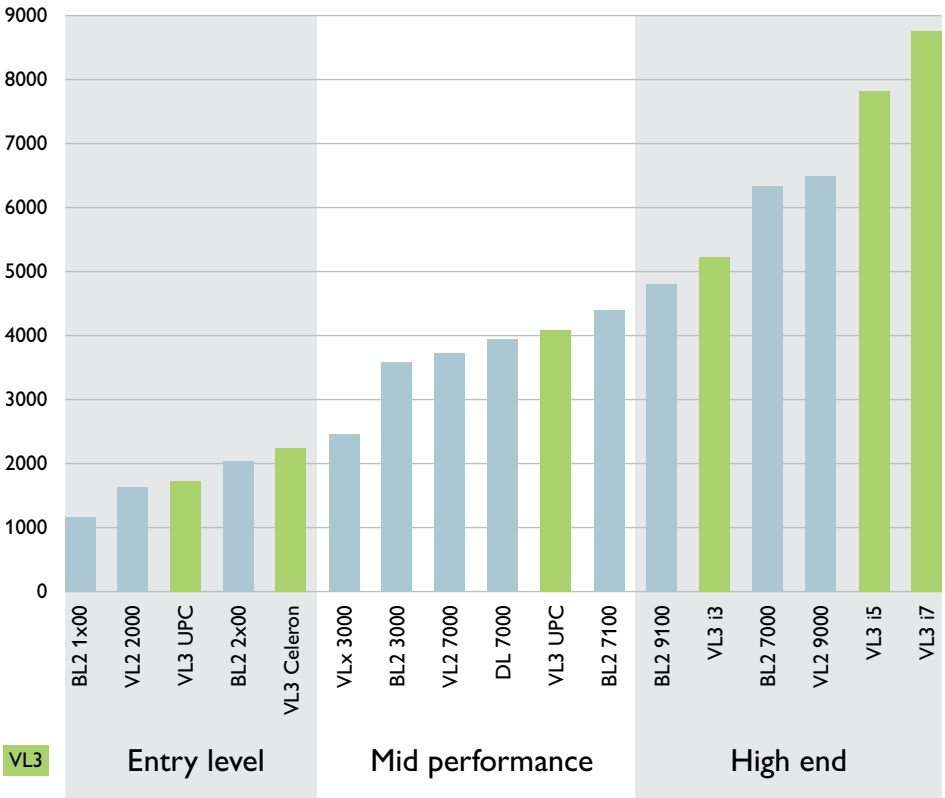
Phoenix Contact will extend the existing comprehensive two-year warranty on all HMIs/IPCs to a five-year limited warranty when used with the appropriate Phoenix Contact power supply and surge protection solution.



Type	Order number	Designation	Description
Power supply	2904599	QUINT4-PS/1AC/24DC/3.8/SC	3.8 A power supply
Power supply	2904600	QUINT4-PS/1AC/24DC/5	5 A power supply
Power supply	2903147	TRIO-PS-2G/1AC/24DC/3/C2LPS	3 A power supply
Power supply	2903148	TRIO-PS-2G/1AC/24DC/5	5 A power supply
Power supply	2902992	UNO-PS/1AC/24DC/60W	60 W power supply (equal to 2.5 A)
Power supply	2902993	UNO-PS/1AC/24DC/100W	100 W power supply (equal to 4.1 A)
Surge protection	2907918	PLT-SEC-T3-120-FM-UT	120 V AC surge suppression plug and base
Surge protection	2907922	PLT-SEC-T3-120-P-UT/PT	120 V AC surge suppression plug
Surge protection	2907919	PLT-SEC-T3-230-FM-UT	230 V AC surge suppression plug and base
Surge protection	2907923	PLT-SEC-T3-230-P-UT/PT	230 V AC surge suppression plug

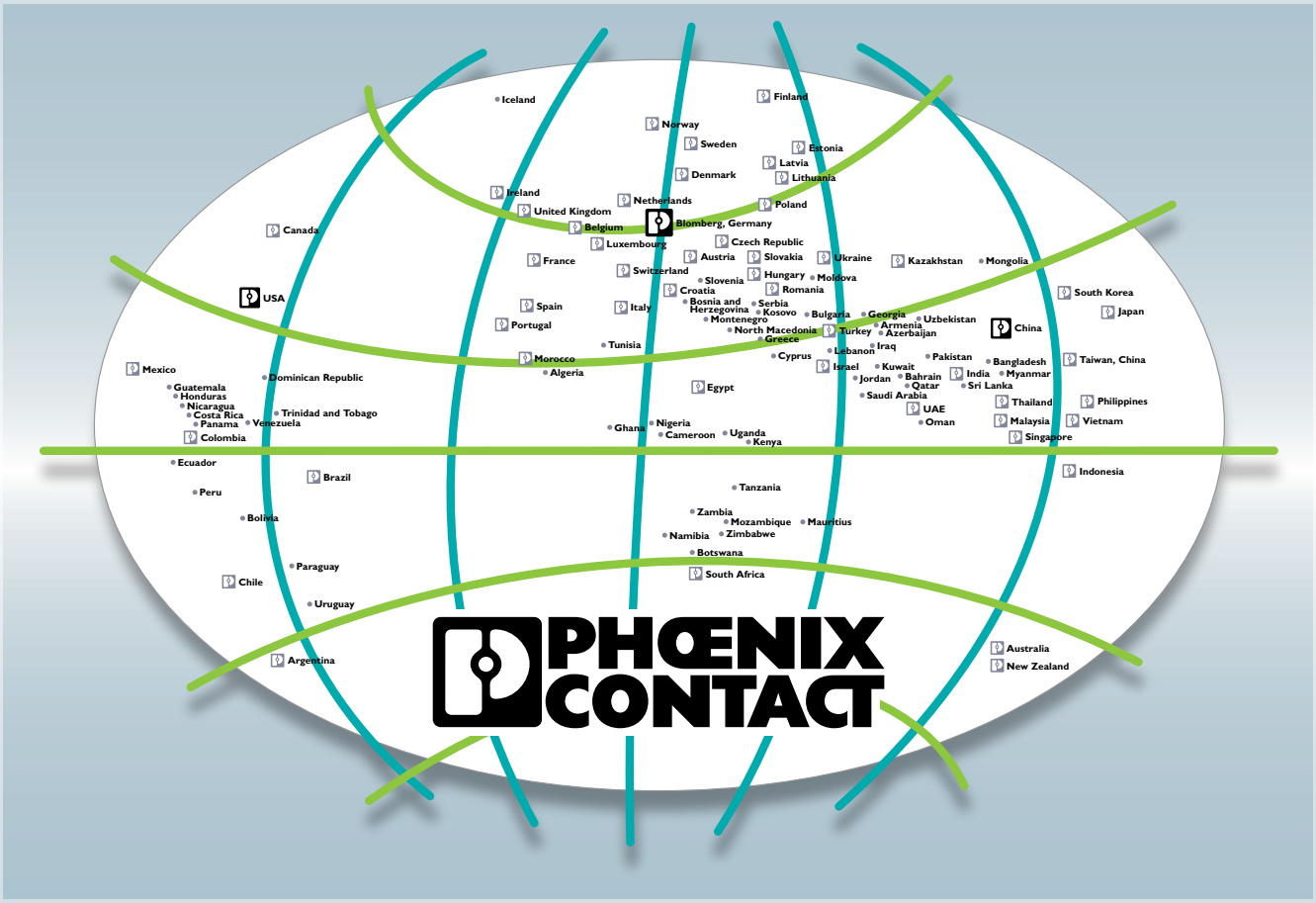


CPU performance classification



Products	Name	# of cores	CPU mark[1)2)]
BL2 1x00	N3350	2	1105
VL2 2000	N2930	4	1627
VL3 UPC	**x6211E**	**2**	**1695**
BL2 BPC 1541	E3940	4	1973
BL2 2x00	N4200	4	2026
VL3	**6305E**	**2**	**2246**
VL2 3000	i3-4010U	2	2437
BL2 3000	i3-6100U	2	3601
VL2 7000	i5-4300U	2	3741
VL3 UPC	**x6413E**	**4**	**4070**
BL2 7100	i5-6300U	2	4373
BL2 9100	i7-6600U	2	4801
VL3	**i3-1115G4E**	**2**	**5424**
BL2 7000	i5-7442EQ	4	6262
VL2 9000	i7-6822EQ	4	6427
VL3	**i5-1145G7E**	**4**	**7800**
VL3	**i7-1185G7E**	**4**	**8676**

[1)] CPU mark source: www.CPUbenchmark.net
[2)] CPU performance may vary depending on environment



Open communication with customers and partners worldwide

Phoenix Contact is a global market leader based in Germany. We are known for producing future-oriented products and solutions for the electrification, networking, and automation of all economy and infrastructure sectors. With a global network reaching more than 100 countries with over 20,000 employees, we maintain close relationships with our customers, which we believe is essential for our joint success. Our wide range of innovative products makes it easy for our customers to implement the latest technology in various applications and industries. This especially applies to the target markets of energy, infrastructure, industry, and mobility.

You can find your local partner at

phoenixcontact.com