HMIs and industrial PCs

Product catalog

PHOENIX CONTACT
INSPIRING INNOVATIONS

HMIs and industrial PCs

HMIs (Human Machine Interfaces) and industrial PCs (IPCs) are essential for the efficient operation and monitoring of your systems and machines. From the mobile tablet PC for field operation to complex visualization concepts for extensive automation systems – you'll find the right solution for your application within the Phoenix Contact product portfolio.

HMIs

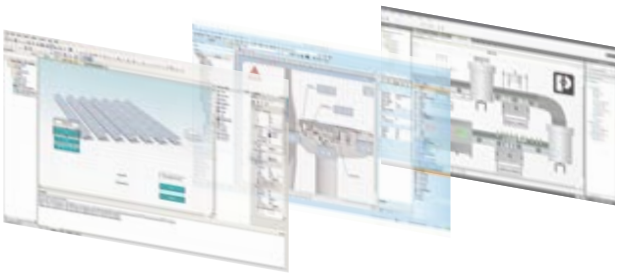
Our Human Machine Interfaces (HMIs) provide user-friendly visualization for automation systems in a multitude of industries. Phoenix Contact offers devices for Visu+ software or for HTML5 applications, as well as robust operator and display panels for use on ships with the necessary approvals.

HMIs and IPCs for harsh ambient conditions

Our HMIs and IPCs for harsh environments are designed for applications in demanding environments, like marine or oil and gas. They offer additional features, like direct sunlight-readable displays, wide operating temperature ranges, and industry-relevant approvals.

Software for operation and monitoring

Efficient automation with the right visualization for every area of application.



IPCs

Industrial PCs combine the computing power of modern processors with the robustness and reliability of industrial components. They are also available with triple approval, including UL HazLoc, ATEX, and IECEx certification for use in hazardous areas.

Contents

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 above QR code to get started!

HMIs and IPCs

Design, quality, service

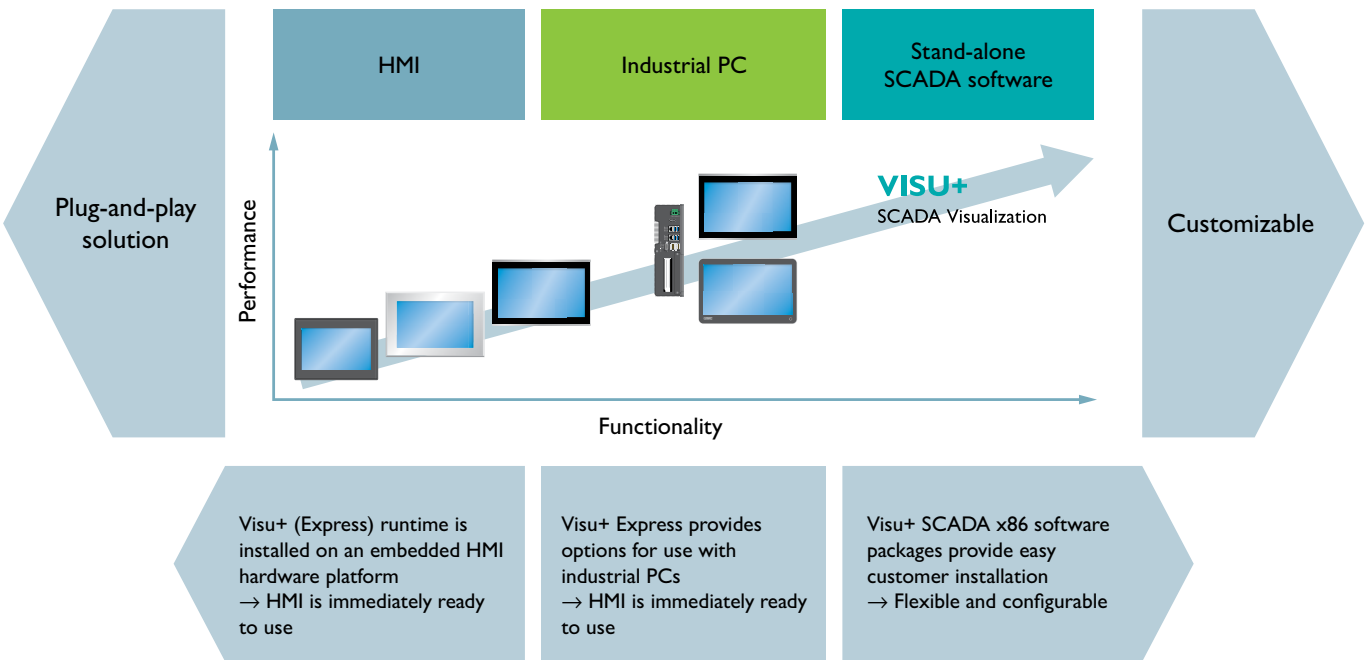
Are you looking for intelligent solutions for the operation and monitoring of machines and systems? Phoenix Contact offers a wide range of robust and reliable technology, from HMIs and powerful industrial PCs to custom solutions for special industrial requirements. We will provide you with an impressive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

Quality
Made by Phoenix Contact means that you can rely on our promise of quality. We put great emphasis on producing durable components that meet industry standards and quality requirements.

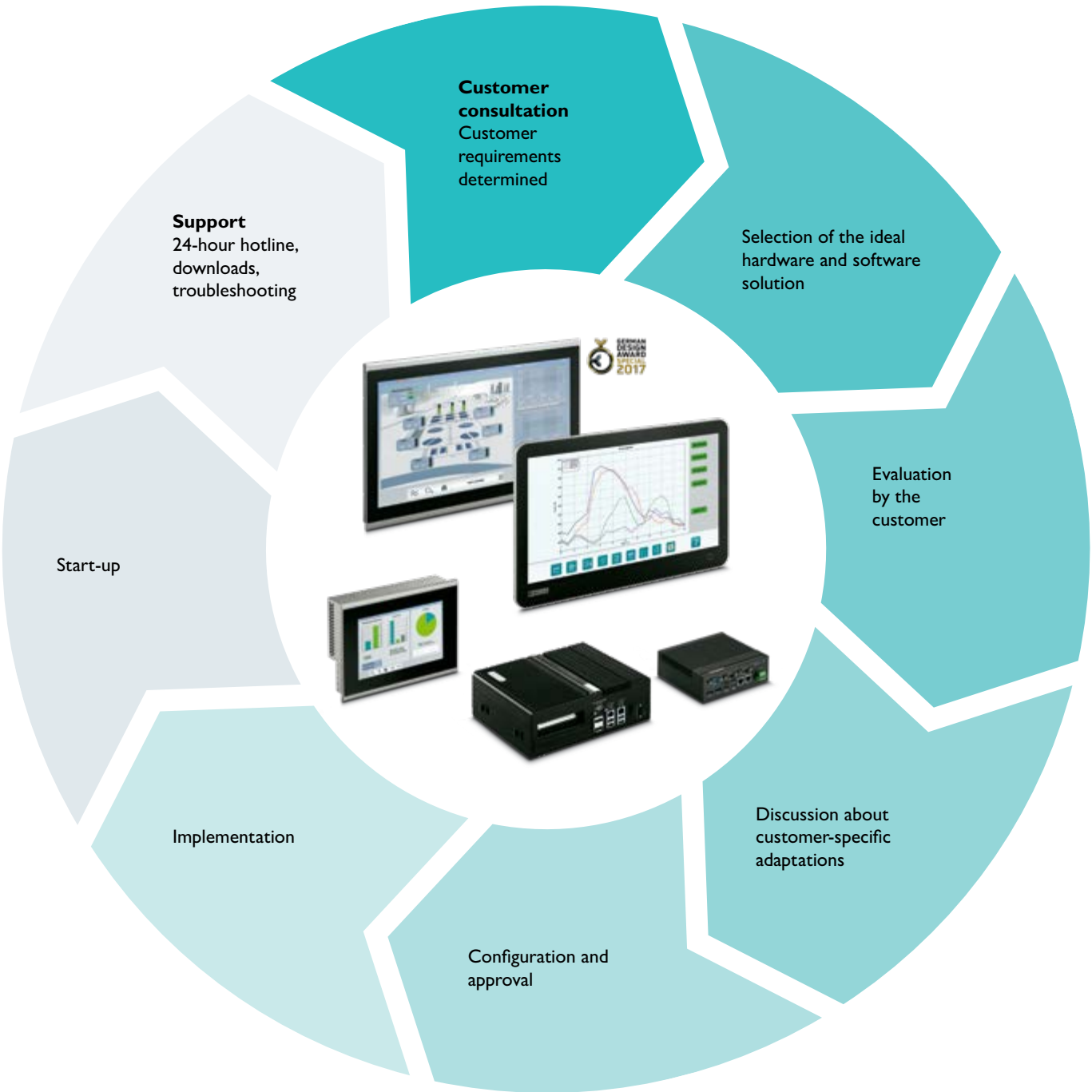
Service
From customized solutions to engineering support, we can help you to design a better automation system. Services range from preloaded software images to clean-sheet designs based on your requirements.

Benefit from the scalability of our hardware and software portfolio – from simple operating concepts on HMIs to industry-specific and graphic-intensive visualization concepts running on PC platforms. We offer the right solution to meet your needs.



Everything from a single source

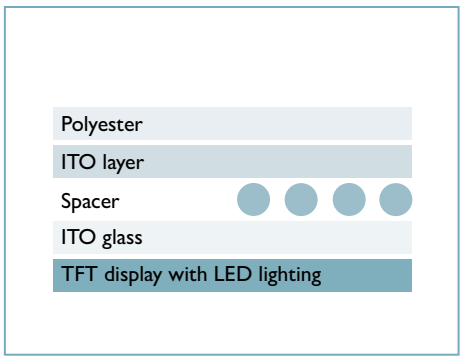
From customized solutions to engineering support, we can help you to design a better automation system. Services range from pre-loaded software images to clean-sheet designs based on your requirements.



Touch technologies

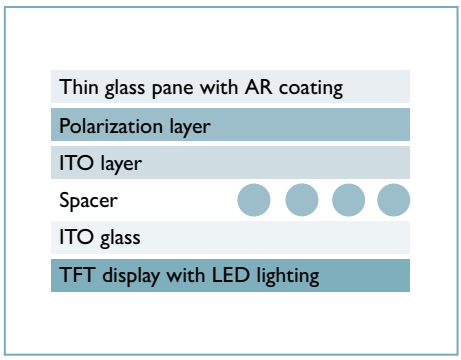
Ideal for industrial applications

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.



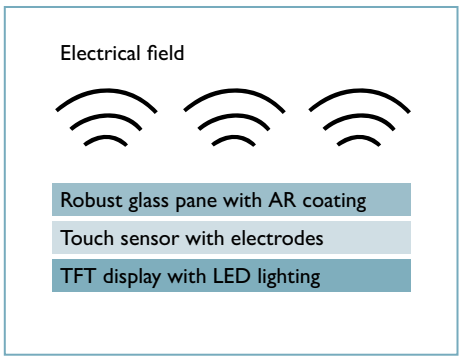
Analog resistive touch screen (polyester)

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.



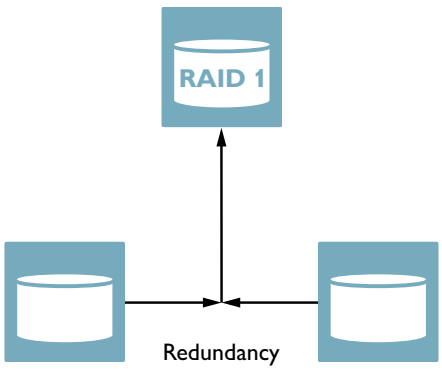
Projective capacitive touch screen (PCAP)

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 enable increased data security. There are different types of memory models (levels); Phoenix Contact uses the RAID 1 system for its VL2 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.



Our added value

Multi-touch
There is a sensor pattern for projective capacitive touch screens (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.

Readability in sunlight
Anti-reflective (AR) coatings are used to reduce disruptive light reflections on display surfaces.

Service-friendly
In the event that 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.

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.

Remote monitoring
Our remote monitoring software (PORTICO) and industrial-grade KVM Extenders allow you to monitor data over large distances.

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 an extended temperature range from -30°C to +70°C.

IP67 protection class
Equipped with a dustproof and waterproof display front for the most stringent HMI and IPC demands.

HMIs
A wide range of operating concepts

Perfectly tailor your operating concept to your machine or system. Our comprehensive portfolio provides appropriate HMI devices for all visualization requirements. Whether located directly onsite or centrally in the control center, you can benefit from our many years of automation expertise.

HMIs for basic requirements

- Resistive touch
- Display variants range from 4.3" to 10.2" in 16:9 wide screen format
- HMI variants for Visu+ or with integrated HTML5-compatible browser for operation with PLCnext controllers
- Phoenix Contact PLCs, third-party controllers, and other popular devices with built-in web servers are supported

For further information, refer to pages 14 and 18

HMIs for standard requirements

- Resistive or PCAP touch
- Display variants ranging from 5.7" to 18.5" in 4:3 and 16:9 format
- HMI variants for Visu+ or with integrated HTML5-compatible browser for operation with PLCnext controllers
- Phoenix Contact PLCs, third-party controllers, and other popular devices with built-in web servers are supported

For further information, refer to pages 15 and 19-21

Visualization software for every application

Whether in the central control room, in production, or directly on the machine, efficient automation requires the right visualization. Benefit from our extensive portfolio covering all aspects of operation and monitoring.

PLCnext Engineer
Engineering Software

VISU+
SCADA Visualization

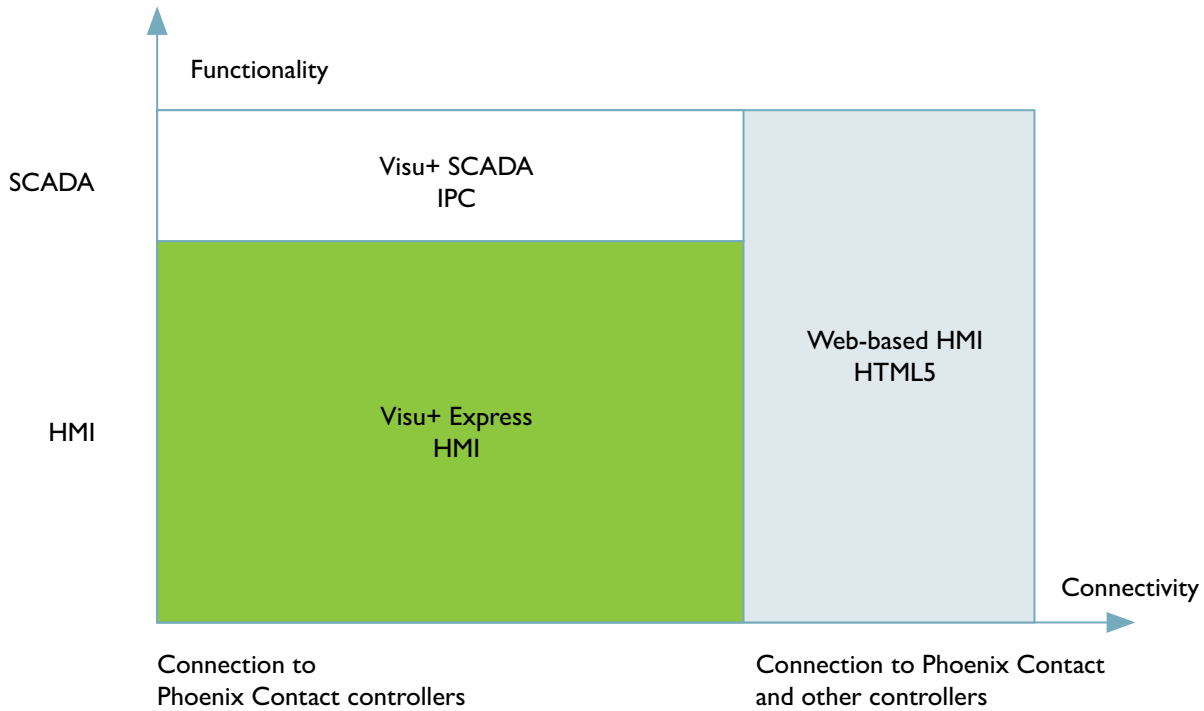
HMIs for special industrial requirements

- Resistive touch
- Display sizes ranging from 5.7" to 15" in 4:3 and 16:9 format
- Industry-specific characteristics and special approvals
- With integrated Visu+ runtime
- Phoenix Contact PLCs and popular third-party controllers supported

For further information, refer to pages 48 and 49

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 greatly 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 4000, TP 6000, and TP 3000), 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 4000	BTP 2000	TP 6000	TP 3000	IPC
Page			14	15	18	19	20	24
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			●	●	o	
	Other	OPC UA	●	o	●	●	●	●
		Third-party manufacturer	●	●	●	●	●	●
		Multi-driver PLC communication		●	o	●	●	●
		CODESYS	o	●				●
Remote Data Access (RDA)			o	o	o	●	●	●
Touch technology/ interface		Resistive touch (polyester)	●	●	●		●	●
		Resistive touch (glass-film-glass)					●	●
		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 II and IECEx II						●
		Maritime approvals					o	
		Value / Performance	●/o	o/●	●/o	o/●	o/●	●/●

* With browser or visualization software installed
● Best option
o Limited / alternative option
\+ Planned / future implementation

HMIs with open web browser 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 then its contents can be displayed on both our competitive BWP 2000 and rugged WP 4000 series HMIs. This makes these web panels the perfect fit for PLCnext-based control systems or any other device with 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

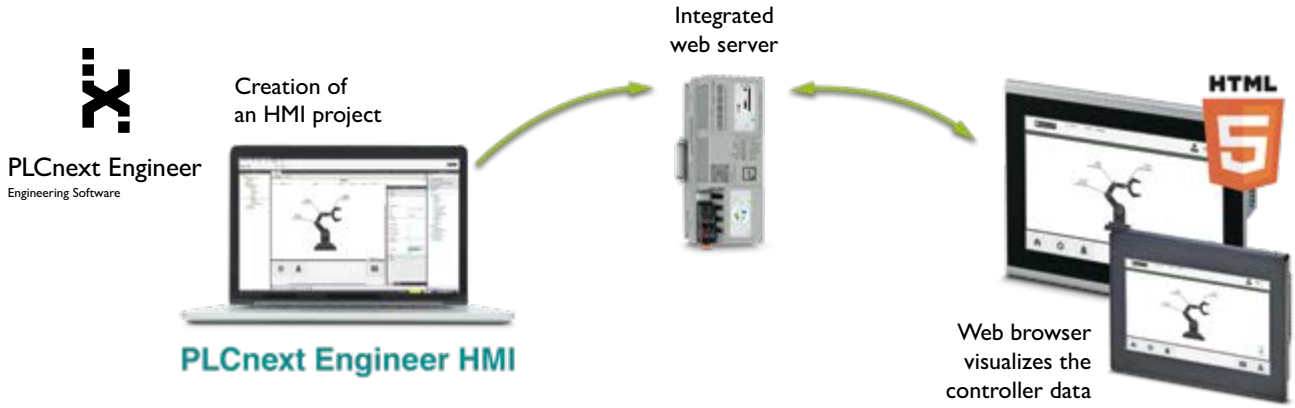
PLCnext Engineer

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

General technical data

- Display type: TFT
- CPU: 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
- Operating system: Linux Yocto
- Operating temperature: 0°C to +50°C
- Storage temperature: -20°C to +85°C
- Relative humidity: 10% to 95%, non-condensing
- 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 1 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 browser for simple HTML5 applications

Designation	BWP 2043W	BWP 2070W	BWP 2102W
Order no.	1060549	1060632	1060630
Display size (in cm)	10.92 (4.3")	17.78 (7")	25.9 (10.2")
Touch technology	Analog resistive (polyester)		
Colors	16.7 million		
Resolution (W x H in pixels)	480 x 272 (WQVGA)	800 x 480 (WVGA)	1024 x 600 (WSVGA)
Brightness (in cd/m²)	400	350	
Backlight MTBF (in h)	20,000	25,000	
Viewing angle (left / right / top / bottom in °)	70 / 70 / 50 / 70		65 / 65 / 45 / 65
Front plate dimensions (W x H x D in mm)	120 x 89 x 5	186 x 138 x 5	268 x 190 x 5
Mounting cutout (W x H in mm)	111 x 80	175 x 127	256 x 178
Installation depth (in mm)	31.5	31	33
Weight (in kg)	0.2	0.4	0.9
Power consumption (in W)	5.3	6	8.4

HTML5 web panels

General technical data

- Display type: TFT
- CPU: Arm® Cortex®-A53, 1.2 GHz, Quad-core
- Memory: 1 GB RAM, 8 GB eMMC Flash
- Interfaces: 1 x Ethernet (10/100 Mbps), 2 x USB Host 2.0, 1 x µSD
- Operating system: Linux Yocto
- Operating temperature: 0°C to +50°C
- Storage temperature: -25°C to +70°C
- Relative humidity: 20% to 85%, non-condensing
- Housing: aluminum/sheet steel, zinc-plated
- Degree of protection: IP65 (front), IP20 (back)
- Power supply: 24 V DC ±20%
- Installation type: portrait/landscape
- Mounting type: front installation
- Approvals: UL/cUL, NEMA 1 (polyester), NEMA 4 (PCAP)

Your advantages

- ☑ Flexible with open web standards and free 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 pxr

Web panels with open browser for HTML5 applications

Designation	WP 4070-WVRS	WP 4070-WXPS	WP 4101-WXPS	WP 4120-WXPS	WP 4156-WHPS	WP 4185-WHPS
Order no.	1148694	1148693	1148687	1148689	1148691	1148690
Display size (in cm)	17.78 (7")		25.65 (10.1")	30.73 (12.1")	39.6 (15.6")	47 (18.5")
Touch technology	Analog resistive (polyester)	Projective capacitive (PCAP)				
Colors	262,144	16.7 million				
Resolution (W x H in pixels)	800 x 480 (WVGA)	1280 x 800 (WXGA)			1366 x 768 (WXGA)	
Brightness (in cd/m²)	350	500	850	380	320	240
Backlight MTBF (in h)	40,000	50,000			70,000	50,000
Viewing angle (left / right / top / bottom in °)	70 / 70 / 65 / 65	85 / 85 / 85 / 85			80 / 80 / 80 / 80	85 / 85 / 80 / 80
Front plate dimensions (W x H x D in mm)	203 x 147 x 5	185.5 x 146.2 x 6	262.7 x 199.3 x 6	302 x 229 x 6	436 x 278 x 6	485 x 329 x 8
Mounting cutout (W x H in mm)	195 x 139	175 x 136	252 x 189	292 x 219	425 x 260	475 x 311
Installation depth (in mm)	43	45			53	
Weight (in kg)	0.8		1.3	1.7	4	5.5
Power consumption (in W)	9.6		14.4	16.8	24	28.8

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, TP 3000, and TP 6000 HMI series, as well as select IPCs. Visu+ is available with different feature sets, 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 panel 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 for Visu+ applications

General technical data

- Display type: TFT
- CPU: Arm®9 i.MX28, 454 MHz
- Memory: 128 MB RAM, 512 MB Flash
- 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)
- Operating system: Windows CE 6.0
- Operating temperature: 0°C to +50°C
- Storage temperature: -20°C to +85°C
- Relative humidity: 10% to 95%, non-condensing
- Housing: plastic
- Degree of protection: IP66 (front), IP20 (back)
- Power supply: 24 V DC ±15%
- Mounting type: front installation
- Approvals: CE, UL/cUL, Class 1 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

Touch panels with resistive touch

Designation	BTP 2043W	BTP 2020W	BTP 2102W
Order no.	1050387	1046666	1046667
Display size in 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) in pixels	480 x 272 (WQVGA)	800 x 480 (WVGA)	
Brightness in cd/m²	400	350	400
Backlight MTBF in h	50,000		
Viewing angle (horizontal/vertical) in °	70 / 70 / 50 / 70		65 / 65 / 45 / 65
Front plate dimensions (W x H x D) in mm	120 x 89 x 5	186 x 138 x 5	268 x 190 x 5
Mounting cutout (W x H) in mm	111 x 80	175 x 127	256 x 178
Installation depth in mm	31.5	31	33
Weight in kg	0.2	0.4	0.9
Power consumption in W	4	9	7

Touch panels for Visu+ applications

General technical data[1)]

- Display type: TFT
- CPU: 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: MS Windows® Embedded Compact 7
- Operating temperature: -20°C to +50°C
- Storage temperature: -40°C to +85°C
- Relative humidity: 5% to 85%, non-condensing
- 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

Touch panels with PCAP touch

Designation	TP 6070-WVPS	TP 6101-WXPS	TP 6121-WXPS	TP 3156W/P[2)]	TP 3185W/P[2)]
Order no.	1189629	1190417	1190420	2403462	2403862
Display size in cm (in.)	17.79 (7")	25.9 (10.1")	30.73 (12.1")	39.62 (15.6")	47.02 (18.5")
Touch technology	PCAP (2pt.)	PCAP (5pt.)		PCAP (10pt.)	
Colors	16.7 million			65,535	
Resolution (W x H) in pixels	800 x 480	1280 x 800 (WXGA)		1366 x 768 (WXGA)	
Brightness in cd/m²	500			320	240
Backlight MTBF in h	50,000			70,000	50,000
Viewing angle (horizontal/vertical) in °	89 / 89 / 89 / 89	85 / 85 / 85 / 85	88 / 88 / 88 / 88	80 / 80 / 80 / 80	85 / 85 / 80 / 80
Front plate dimensions (W x H x D) in mm	202.4 x 146.4 x 7	263 x 200 x 7	302 x 229 x 7	436 x 278 x 6	485 x 329 x 6
Mounting cutout (W x H) in mm	195 x 139	252 x 189	292 x 219	425 x 260	475 x 311
Installation depth in mm	45			53	
Weight in kg	1.3	2.1	2.5	4	5.6
Power consumption in W	14.71	19.01	21.53	24	28.8

[1)] General technical data only applies for TP 6000 articles

[2)] General technical data for TP3156W/P and TP3185W/P can be found on the next page

Touch panels for Visu+ applications

General technical data

- Display type: TFT
- CPU: Arm® Cortex®-A8, 1 GHz, real-time clock (battery-backed)
- Memory: 512 SDRAM, 1 GB Flash
- Interfaces: 1 x Ethernet (10/100 Mbps), 2 x USB Host 2.0, 1 x SD
- Serial interfaces (optional): 1 x COM (RS-232), 1 x COM (RS-422/RS-485) (electrically isolated)
- Fieldbus interfaces (optional): 2 x CAN (electrically isolated)
- Operating system: MS Windows® Embedded Compact 7
- Operating temperature: 0°C to +50°C
- Storage temperature: -25°C to +70°C
- Relative humidity: 20% to 85%, non-condensing
- Housing: aluminum/sheet steel, zinc-plated
- Degree of protection: IP65 (front), IP20 (back)
- Power supply: 24 V DC ±20%
- Installation type: portrait/landscape
- Mounting type: front installation
- Approvals: UL/cUL, Class 1 Div 2, NEMA 4X

Your advantages

- ☑ Visu+ RT integrated in all devices
- ☑ Native communication drivers for direct communication to all relevant PLC and device manufacturers in the industrial marketplace
- ☑ Remote data access via Visu+ mobile app and HTML5 web client
- ☑ Slim and compact metal housing design
- ☑ Audible warning from alarms via integrated buzzer (85 dB)

Touch panels with polyester touch

Designation	TP 3057V	TP 3070W	TP 3090W	TP 3105S
Order no.	2400453	2400454	2402630	2400455
Display size in cm (in.)	14.48 (5.7")	17.78 (7")	22.86 (9")	26.42 (10.4")
Touch technology	Analog resistive (polyester)			
Colors	262,144		16.7 million	262,144
Resolution (W x H in pixels)	640 x 480 (VGA)	800 x 480 (WVGA)		800 x 600 (SVGA)
Brightness (in cd/m²)	400	350	800	340
Backlight MTBF (in h)	40,000		70,000	50,000
Viewing angle (left / right / top / bottom in °)	65 / 65 / 55 / 52	70 / 70 / 65 / 65	85 / 85 / 85 / 85	70 / 70 / 50 / 60
Front plate dimensions (W x H x D in mm)	168 x 126 x 5	203 x 147 x 5	260 x 172 x 5	295 x 220 x 5
Mounting cutout (W x H in mm)	160 x 118	195 x 139	252 x 164	287 x 212
Installation depth (in mm) incl. fieldbus interface	42 71		54 59	
Weight (in kg)	0.8		1.3	1.9
Power consumption (in W) / incl. fieldbus interface	7.2 / 9.6		16.8 / 19.2	12 / 14.4

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Touch panels with polyester touch

Designation	TP 3121S	TP 3120W	TP 3150S	TP 3154W
Order No.	2400456	2400457	2400458	2402631
Display size in cm (in.)	30.73 (12.1")		38.1 (15")	39.1 (15.4")
Touch technology	Analog resistive (polyester)			
Colors	262,144	65,535		
Resolution (W x H in pixels)	800 x 600 (SVGA)	1280 x 800 (WXGA)	1024 x 768 (XGA)	1280 x 800 (WXGA)
Brightness (in cd/m²)	360	320	480	360
Backlight MTBF (in h)	50,000			
Viewing angle (left / right / top / bottom in °)	80 / 80 / 60 / 80	88 / 88 / 88 / 88	80 / 80 / 65 / 80	80 / 80 / 70 / 70
Front plate dimensions (W x H x D in mm)	340 x 270 x 5	330 x 225 x 5	400 x 329 x 5	420 x 297 x 5
Mounting cutout (W x H in mm)	313 x 243	322 x 217	372 x 301	396 x 273
Installation depth (in mm) incl. fieldbus interface	55 60	48 53	55 60	59 64
Weight (in kg)	2.2	1.7	3	3.3
Power consumption (in W) / incl. fieldbus interface	12 / 14.4	16.8 / 19.2		19.2 / 21.6

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 includes powerful panel and tablet PCs as well as devices for special industrial requirements. Enjoy the benefits of a robust and configurable solution for collecting and processing, measuring, controlling, and visualizing your data.

Box PCs

- The right performance for every application with Intel® Celeron™ through 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 24 to 29

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 42 to 45

Edge programmable computer

- Connectivity from sensor to cloud
- Integrated programming tools
- Bridge between IT and OT

For additional information,
refer to page 46

Panel PCs

- The right performance for every application with Intel® Atom™ through Core™ processors
- Display sizes ranging from 7" to 24" in 4:3 or 16:9 format
- Analog resistive or PCAP touch
- Passive cooling and no moving parts

For further information, refer to pages
30 to 41

Industry-specific PCs

- Display sizes ranging from 7" to 21.5" in 4:3 or 16:9 format
- Extended temperature range
- Resistant to UV and IR radiation and other environmental influences such as salt spray
- Passive cooling and no moving parts

For further information, refer to pages
50 to 53

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

- 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: IP30
- Power supply: 24 V DC ±20%
- Mounting type: wall or bookshelf mounting
- Approvals: UL/cUL, Class 1 Div 2

Your advantages

- ☑ Passive cooling and no moving parts
- ☑ Service-friendly with easily accessible components
- ☑ High reliability with thermal isolation of data memory and CPU
- ☑ Individually configurable

VL2 series box PCs

				
Designation	**VL2 BPC 2000**	**VL2 BPC 3000**	**VL2 BPC 7000**	**VL2 BPC 9000**
Order no.	2400332	2400492	2400333	2400499
CPU	Intel® Celeron® N2930 1.83 GHz (quad-core)	Intel® Core™ i3-4010U 1.7 GHz (dual-core)	Intel® Core™ i5-4300U 1.9 GHz (dual-core)	Intel® Core™ i7-6822EQ 2 GHz (quad-core)
Cooling	Passive			Convection booster
RAM (configurable)	max. 8 GB DDR3	max. 16 GB DDR3		max. 32 GB DDR4
Data memory (configurable)	2.5" HDD or SSD			
Number of slots	1			
RAID support (configurable)	–	0/1		
USB	4 x USB 2.0	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			
Graphics processor	Intel® HD Graphics	Intel® HD Graphics 4400		Intel® HD Graphics 530
PCI/PCIe slots (configurable)	1 x PCI or 1 x PCIe			
Dimensions (W x H x D in mm)	264 x 215 x 95			
Weight (in kg)	4.2	4.8		
Power consumption (in W)[1]	37.4	41.3	42.7	38.9
Operating temperature	HDD: 0°C to +45°C SSD: -20°C to +65°C		HDD: 0°C to +45°C SSD: -10°C to +65°C	HDD: 0°C to +45°C SSD: -20°C to +60°C
Storage temperature	-40°C to +70°C			
Relative humidity	5% to 95%, non-condensing			

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

Box PCs

General technical data

- 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: IP20
- Power supply: 24 V DC ±20%
- Mounting type: wall or DIN rail mounting
- Approvals: UL/cUL

Your advantages

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

BL2 series box PCs

			
Designation	**BL2 BPC 1000**	**BL2 BPC 2000**	**BL2 BPC 7000**
Order No.	2404777	2404844	1016240
CPU	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 DDR3L
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		
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 (W x H x D in mm)	162 x 146 x 49		186 x 146 x 49
Weight (in kg)	1.5		2
Power consumption (in W)[1]	25.7	34.6	43.9

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

Box PCs

General technical data

- Ethernet interfaces: 2 x (10/100/1000 Mbps), RJ45, Intel i210-IT
- Operating systems (configurable): Windows® 7 and Windows® 10 IoT Enterprise
- Operating temperature: 0°C to +50°C
- Storage temperature: -40°C to +70°C
- Relative humidity: 10% to 90%, non-condensing
- Housing: sheet steel/aluminum
- Degree of protection: IP20
- Power supply: 24 V DC ±20%
- Mounting type: wall mount and DIN rail (2100 only)
- Approvals: UL/cUL

Your advantages

- ☑ Passive cooling and no moving parts
- ☑ Compact design in high-quality metal housing
- ☑ Individually configurable
- ☑ 6th generation Intel processor (Intel's 15-year support road map)
- ☑ Windows 10 IoT and Windows 7 support
- ☑ Support for 2.5" HDD / SSD SATA drive

BL2 series box PCs

Designation	BL2 BPC 1100	BL2 BPC 2100	BL2 BPC 3100	BL2 BPC 7100	BL2 BPC 9100
Order No.	1105772	1105773	1105776	1105777	1105778
CPU	Intel® Celeron® N3350 1.1/2.4 GHz (dual-core)	Intel® Pentium® N4200 1.1/2.5 GHz (quad-core)	Intel® Core™ i3-6100U 2.3 GHz (dual-core)	Intel® Core™ i5-6300U 2.4/3.0 GHz (dual-core)	Intel® Core™ i7-6600U 2.6/3.4 GHz (dual-core)
Cooling	Passive				
RAM (configurable)	max. 8 GB DDR3		max. 16 GB DDR3		
Data memory (configurable)	M.2 SSD	M.2 SSD, 2.5" SSD or HDD			
Number of slots	-				
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				
Graphics processor	Intel® HD Graphics 500	Intel® HD Graphics 505	Intel® HD Graphics 520	Intel® HD Graphics 630	Intel® HD Graphics 520
PCI/PCIe slots (configurable)	1 x Mini PCIe				
Dimensions (W x H x D in mm)	185 x 131 x 54		247 x 145 x 54		
Weight (in kg)	1.2		2		
Power consumption (in W)[1]	26.4	31.2	45.6	46.1	47.3

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
- Onboard storage: 32 GB eMMC
- 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 +/- 20%
- Mounting: DIN rail (wall mount optional)
- Approvals: CE, UL/cUL

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

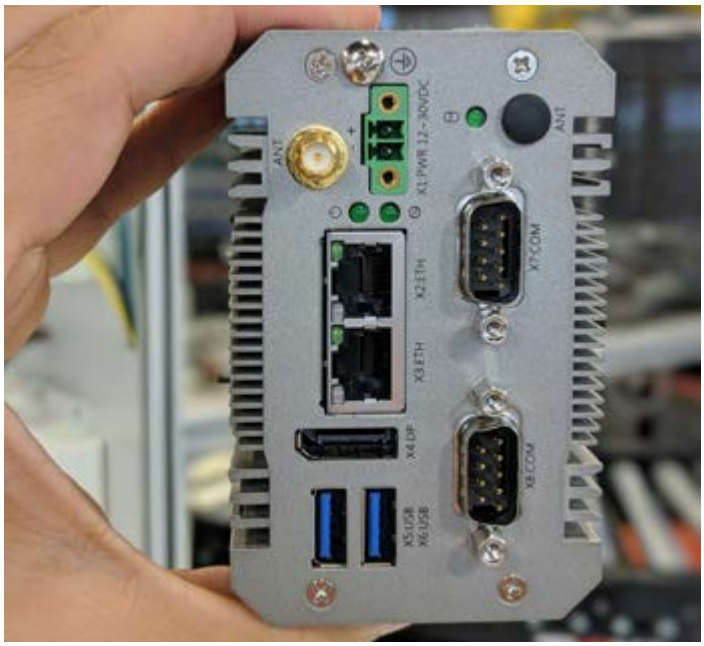
Designation – BL2 BPC…	1501S	1501S-W	1501E	1501E-W	1501E-64-W10	1501E-W-64-W10	1501E-128-W10	1501E-W-128-W10	1501E-64-W10-T	1501E-W-64-W10-T	1501E-128-W10-T	1501E-W-128-W10-T
Order no.	1130682	1141904	1130669	1141843	1158241	1158252	1158235	1158245	1158247	1158244	1158243	1158231
CPU	Intel® Celeron® N3350, 1.1 / 2.4 GHz (dual-core), passive cooled											
RAM	2 GB LPDDR4		4 GB LPDDR4									
Data memory	N/A		N/A		64 GB m.2 SSD		128 GB m.2 SSD		64 GB m.2 SSD		128 GB m.2 SSD	
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 in mm)	97 x 46 x 94		97 x 63 x 94									
Weight (in kg)	0.55		0.65									
Power consumption (in W)[1]	10.8		12.72									
Operating temperature	-20°C to +50°C											

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

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 +/- 20%
- Mounting: DIN rail (wall mount optional)



BL2 series box PCs

				
Designation	**BL2 BPC 1541S-4/64**	**BL2 BPC 1541S-4/64-W10**	**BL2 BPC 1541E-8/0**	**BL2 BPC 1541E-8/128-W10**
Order no.	1272827	1272688	1272829	1272687
CPU	Intel® Atom® E3940 1.6 / 1.8 GHz (quad-core), passive cooled			
RAM	4 GB LPDDR4		8 GB LPDDR4	
Data memory	64 GB eMMC		N/A	128 GB m.2
Serial interfaces	N/A		1 x COM (RS-232); 1 x COM (RS-232/422/485)	
Wireless LAN	Future addition			
Windows® 10 IOT		●		●
Hardware security	Future addition			
Dimensions (W x H x D in mm)	97 x 46 x 94		97 x 63 x 94	
Weight (in kg)	0.55		0.65	
Power consumption (in W)[1]	10.8		12.72	
Operating temperature	-40°C to +70°C		-20°C to +60°C	

Panel PCs

Panel PCs are the front end of any high-end control or visualization task. The BL2 and VL2 series panel PCs provide a reliable user interface for a multitude of applications and industries requiring touch screen operation and rugged design. Combined with the Visu+ software, you can design high-end, graphics-rich visualization systems.

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	Configurable	
Data memory	Configurable	
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

Note: Above PPC is a configurable item. Fixed configuration versions are available upon request.

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

Panel PCs

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
- Operating temperature: HDD: 0°C to +45°C, SSD: -10°C to +60°C
- Storage temperature: -40°C to +70°C
- Relative humidity: 5% to 95%, non-condensing
- Housing: aluminum/sheet steel, zinc-plated
- Degree of protection: IP66 (front), IP30 (back)
- Power supply: 24 V DC ±20%
- Mounting type: front installation
- Approvals: UL/cUL, Class 1 Div 2, NEMA 4

Your advantages

- ☑ Passive cooling and no moving parts
- ☑ High reliability with thermal isolation of data memory and CPU
- ☑ Access to all important components without the use of tools
- ☑ Easily removable rotating or solid-state drives in various sizes
- ☑ Individually configurable

VL2 series panel PCs

Designation	VL2 PPC 2000	VL2 PPC 3000
Order No.	2400334	2400498
Display size (in cm)	39.6 (15.6”) / 47 (18.5”) / 54.6 (21.5”)	
Touch technology	Projective capacitive (PCAP)	
Resolution (W x H in pixels)	1366 x 768 (HD) / 1920 x 1080 (Full HD)	
Brightness (in cd/m²)	400 / 300 / 300	
Backlight MTBF (in h)	50,000	
Viewing angle (left / right / top / bottom in °)	Depends on the configuration	
CPU	Intel® Celeron® N2930 1.83 GHz / 2.16 GHz	Intel® Core™ i3-4010U 1.7 GHz (dual-core)
Cooling	Passive	
RAM (configurable)	max. 8 GB DDR3	max. 16 GB DDR3
Data memory (configurable)	2.5” HDD or SSD	2.5” HDD or SSD, RAID support 0/1
Number of slots	1	
USB	4 x USB 2.0	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	
Graphics processor	Intel® HD Graphics	Intel® HD Graphics 4400
PCI/PCIe slots (configurable)	1 x PCI or 1 x PCIe	
Dimensions incl. front plate (W x H x D in mm) incl. optional interfaces	408 x 275 x 121 / 465 x 313 x 123 / 532 x 354 x 119	
Mounting cutout (W x H in mm)	394 x 263 / 455 x 303 / 522 x 344	
Weight (in kg)	8.6 / 10.4 / 12.7	
Power consumption (in W)	Depends on the configuration	

Launch

VL2 series panel PCs

Designation	VL2 PPC 7000	VL2 PPC 9000
Order No.	2400346	2400500
Display size (in cm)	39.6 (15.6") / 47 (18.5") / 54.6 (21.5")	
Touch technology	Projective capacitive (PCAP)	
Resolution (W x H in pixels)	1366 x 768 (HD) / 1920 x 1080 (Full HD)	
Brightness (in cd/m²)	400 / 300 / 300	
Backlight MTBF (in h)	50,000	
Viewing angle (left / right / top / bottom in °)	Depends on the configuration	
CPU	Intel® Core™ i5-4300U 1.9 GHz (dual-core)	Intel® Core™ i7-6822EQ 2 GHz (quad-core)
Cooling	Passive	Convection booster
RAM (configurable)	max. 16 GB DDR3	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	
Graphics processor	Intel® HD Graphics 4400	Intel® HD Graphics 530
PCI/PCIe slots (configurable)	1 x PCI or 1 x PCIe	
Dimensions incl. front plate (W x H x D in mm)	408 x 275 x 121 / 465 x 313 x 123 / 532 x 354 x 119	
Mounting cutout (W x H in mm)	394 x 263 / 455 x 303 / 522 x 344	
Weight (in kg)	8.6 / 10.4 / 12.7	
Power consumption (in W)	Depends on the configuration	

Panel PCs

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 road map)
- ☑ Windows 10 IoT support

BL2 series panel PCs with resistive touch

Designation	BL2 PPC 1000	BL2 PPC 2000	BL2 PPC 7000
Order no.	2404845	2404846	1016236
Display size in cm (in.)	30.7 (12.1") / 38.1 (15") / 43.2 (17")		
Touch technology	Analog resistive (polyester)		
Resolution (W x H in pixels)	1024 x 768 (XGA) / 1024 x 768 (XGA) / 1280 x 1024 (SXGA)		
Brightness (in cd/m²)	500 / 300 / 350		
Backlight MTBF (in h)	50,000		
Viewing angle (left / right / top / bottom in °)	Depends on the configuration	Depends on the configuration	Depends on the configuration
CPU	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 DDR3L
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		
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 in mm)	365 x 282 x 84 / 410 x 309 x 86 / 452 x 356.5 x 86		
Mounting cutout (W x H in mm)	334 x 253 / 386.6 x 285.6 / 424 x 329.5		
Weight (in kg)	4.1 / 5.7 / 7.1		4.6 / 6.2 / 7.6
Power consumption (in 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.

Panel PCs

General technical data

- Display type: TFT
- Colors: 16.2 million
- Ethernet interfaces: 2 x (10/100/1000 Mbps), RJ45, Intel i210-AT
- Operating systems (configurable): Windows® 7 and Windows® 10 IoT Enterprise
- Operating temperature: 0°C to +50°C
- Storage temperature: -40°C to +70°C
- Relative humidity: 10% to 90%, 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
- ☑ PCAP multi-touch
- ☑ Individually configurable
- ☑ 6th generation Intel processor (Intel's 15-year support road map)
- ☑ Windows 10 IoT and Windows 7 support
- ☑ Support for 2.5" HDD/SSD SATA drive

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BL2 series panel PCs with PCAP touch

Designation	BL2 PPC 2100	BL2 PPC 3100	BL2 PPC 7100	BL2 PPC 9100
Order no.	1105780	1105781	1105782	1105783
Display size in cm (in.)	30.7 (15.6") / 38.1 (18.5") / 43.2 (21.5")			
Touch technology	Projective capacitive (PCAP)			
Resolution (W x H in pixels)	1366 x 768 (WXGA) / 1366 x 768 (WXGA) / 1920 x 1080 (FHD)			
Brightness (in cd/m²)	300			
Backlight MTBF (in h)	50,000			
Viewing angle (left / right / top / bottom in °)	85 / 85 / 80 / 80			
CPU	Intel® Pentium® N4200 1.1 GHz (quad-core)	Intel® Core™ i3-6100U 2.3 GHz (dual-core)	Intel® Core™ i5-6300U 2.4/3.0 GHz (dual-core)	Intel® Core™ i7-6600U 2.6/3.4 GHz (dual-core)
Cooling	Passive			
RAM (configurable)	max. 4 GB DDR3	max. 16 GB DDR3		
Data memory (configurable)	m.2 SATA or 2.5" SATA			
Number of slots	-			
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			
Graphics processor	Intel® HD Graphics 505	Intel® HD Graphics 520	Intel® HD Graphics 630	Intel® HD Graphics 520
PCI/PCIe slots (configurable)	1 x Mini PCIe			
Dimensions incl. front plate (W x H x D in mm)	417 x 312 x 82 / 475 x 305 x 81 / 562 x 382 x 81			
Mounting cutout (W x H in mm)	401 x 296 / 475 x 306 / 547 x 367			
Weight (in kg)	5.5 / 6.2 / 7.8	6 / 6.7 / 8.3		
Power consumption (in W)[1] depending on screen size	40.8 / 43.2 / 50.4	55.4 / 56.2 / 64.3	55.4 / 56.6 / 65.5	58.1 / 55.4 / 66.7

Panel PCs in IP65

The fully-enclosed, IP65, direct machine-mount industrial PCs of the Designline product family offer a slim, modern, and attractive design. The installation and serviceability concept of Designline allows for easy setup and maintenance. The all-in-one panel PCs allow for space-saving installations outside of the control cabinet via VESA or pendant arm mounting options. Service doors on the back housing allow for the quick access of mass storage devices and BIOS battery.

Panel PCs with all-around IP65 protection

General technical data

- Display type: TFT
- Colors: 16.2 million
- Ethernet interfaces: 2 x (10/100/1000 Mbps), RJ45, Intel i210-AT
- 1 x audio port
- Operating systems (configurable): Windows® 7 and Windows® 10 IoT Enterprise
- Operating temperature: HDD: 0°C to +45°C SSD: -20°C to +45°C
- Storage temperature: -40°C to +70°C
- Relative humidity: 5% to 95%, non-condensing
- Housing: aluminum
- Degree of protection: IP65
- Power supply: 24 V DC ±20%
- Mounting type: VESA MIS-D 100, support arm
- Approvals: UL/cUL

Your advantages

- ☑ All-around IP65 protection without an enclosure
- ☑ Low space requirements on the machine with minimal device depth
- ☑ VESA and support arm mounting possible
- ☑ Light weight allows selection of a lightweight support arm
- ☑ High-performance, fanless system design
- ☑ Individually configurable
- ☑ Service-friendly with easily accessible components

DL series panel PCs

			
Designation	**DL PPC15M 7000**	**DL PPC18.5M 7000**	**DL PPC21.5M 7000**
Order no.	2400017	2400015	2400016
Display size in cm (in.)	38.1 (15")	47 (18.5")	54.6 (21.5")
Touch technology	Projective capacitive (PCAP)		
Resolution (W x H in pixels)	1024 x 768 (XGA)	1366 x 768 (WXGA)	1920 x 1080 (FHD)
Brightness (in cd/m²)	400		
Backlight MTBF (in h)	50,000		
Viewing angle (left / right / top / bottom in °)	80 / 80 / 80 / 80		
CPU	Intel® Core™ i7-4650U 3.3 GHz		
Cooling	Passive		
RAM (configurable)	max. 12 GB DDR3		
Data memory (configurable)	2.5" HDD or SSD		
Number of slots	1		
USB	4 x USB 2.0, 1 x USB 3.0		
Serial interfaces	1 x COM (RS-232/RS-422/RS-485)		
Graphics processor	Intel® HD Graphics 5000		
Dimensions incl. front plate (W x H x D in mm)	375 x 315 x 60	469 x 315 x 60	534 x 355 x 60
Weight (in kg)	4.4	5.7	7.6
Power consumption (in W)[1]	32.1	36.7	37.4

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

Stand-alone IP65-protected panel PCs

BL2 PPC AIO65 is a family of configurable, all-around IP65-protected industrial PCs. Choose from a variety of performance classes and 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 … +45 °C
- Storage temperature: -40 … 70 °C
- Relative humidity: 5 …95%, non-condensing
- Housing: Aluminum
- Degree of protection: IP65 all-around
- Power supply: 24V 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-button 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
Order no.	1138366	1138367	1160210	1160209
Display size in cm (in.)	30.7 (15.6") / 38.1 (18.5") / 54.6 (21.5")		Push-button box, prepared to accommodate nine 22 mm push-buttons. Wiring and buttons not included.	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 in pixels)	1920 x 1080			
Brightness (in cd/m²)	400 / 450 / 300			
Backlight MTBF (in h)	50000			
Viewing angle (left / right / top / bottom in °)	15.6" and 18.5" display: 85/85/80/80 21.5" display: 89 / 89 / 89 / 89			
CPU	Intel® Pentium N4200 1.1 / 2.5 GHz (4-core)	Intel® Core i5-7442EQ 2.1 / 2.9 GHz (4-core)		
RAM (configurable)	Max. 4 GB DDR3L	Max. 8 GB DDR3L		
Data memory (configurable)	mSATA SSD			
Graphics processor	Intel® HD Graphics 505	Intel® HD Graphics 630		
Dimensions VESA mount (W x H x D in mm)	410 x 275 x 86 / 475 x 313 x 86 / 546 x 352 x 86			
Dimensions pole mount (W x H x D in mm)	410 x 275 x 100 / 475 x 313 x 100 / 546 x 352 x 100			
Weight VESA mount (in kg)	7.7 / 8.4 / 9.4			
Weight pole mount (in kg)	8.6 / 9.3 / 9.7			
Power consumption (in 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 in a stainless-steel enclosure where all device surfaces are shielded from contaminant buildup. 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 … +45°C, (17,3" panel version 0°C … +50°C)
- Storage temperature -10 °C … +60 °C, (17,3" panel version 0°C … +50°C)
- Relative humidity: 10…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: UL / cUL

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 PCs and monitors

	All-in-one industrial PC		Monitors		
Designation	**PPC 17.3 AIO 69K**	**PPC 23.8 AIO 69K**	**FPM 15.6 69K**	**FPM 17.3 69K**	**FPM 23.8 69K**
Order no.	1262469	1262470	1261660	1261657	1261659
Display size in cm (in.)	44 (17.3")	60.4 (23.8")	30.7 (15.6")	44 (17.3")	60.4 (23.8")
Touch technology	PCAP multi-touch				
Resolution (W x H) in pixels	1920 x 1080 (FHD)				
Brightness (in cd/m²)	400 cd/m2	250 cd/m2	400 cd/m2	250 cd/m2	400 cd/m2
Backlight MTBF (in h)	50,000	30,000	50,000	50,000	30,000
Viewing angle (left / right / top / bottom in °)	89 / 89 / 89/ 89		90 / 90 / 90 / 90	89 / 89 / 89/ 89	
CPU	Intel® Celeron™ 1.6 GHz (2980U) Intel® Core™ i5 1.9 GHz (4300U)		-	-	-
RAM	Up to 8 GB DDR3		-	-	-
Data memory	120 GB 2,5“ SSD or 250 GB 2,5“ SSD		-	-	-
Ethernet interfaces	2 x 1 GBit/s Ethernet RJ45		-	-	-
Interfaces	1 x USB 2.0 2 x USB 3.0		1 x USB 2.0 1 x display port	3 x USB; 2.01 x USB slave 1 x HDMI; 1 x display port	
Wireless interfaces (optional)	Integrated WLAN-Modul IEEE 802.11 ac/a/b/g/n		-	-	-
Operating system (optional)	Windows® 10 IoT Enterprise		-	-	-
Dimensions (W x H x D)	431 x 261 x 68 mm	578 x 374 x 67 mm	372 x 239 x 31 mm	431 x 261 x 68 mm	578 x 347 x 67
Weight	5 kg	7.5 kg	4.5 kg	5 kg	7.5 kg
Power consumption (in W)	Max. 96		Max.48	Max. 48	Max. 12
Panel with screen shatter protection	(Configurable)		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

Industrial monitors with PCAP touch

Designation	BL FPM 15.6	BL FPM 18.5	BL FPM 21.5
Order no.	2402980	2402981	2400515
Display size in cm (in.)	39.6 (15.6")	46.9 (18.5")	54.6 (21.5")
Touch technology	Projective capacitive (PCAP)		
Resolution (W x H in pixels)	1366 x 768 (WXGA)		1920 x 1080 (Full HD)
Brightness (in cd/m²)	300		
Backlight MTBF (in h)	50,000		
Viewing angle (left / right / top / bottom in °)	85 / 85 / 80 / 80		
USB	1 x USB 2.0		
With front USB	–		
Video input	1 x DisplayPort, 1 x VGA, 1 x DVI-D		
Front plate dimensions (W x H x D in mm)	417 x 312 x 6	491 x 321 x 10	562 x 382 x 9
Mounting cutout (W x H in mm)	401 x 296	475 x 306	547 x 367
Installation depth (in mm)	46	41	42
Weight (in kg)	5.48	6.24	7.87
Power consumption (in W)	14.2	17.8	21.6

Remote monitoring

Our remote monitoring software (Portico) and industrial-grade KVM extenders allow you to manage data over long distances. With our remote software, you can manage and control cost-effective multi-access applications. Our KVM extender provides secure touch screen control and video transmission up to 90 meters.

KVM extender

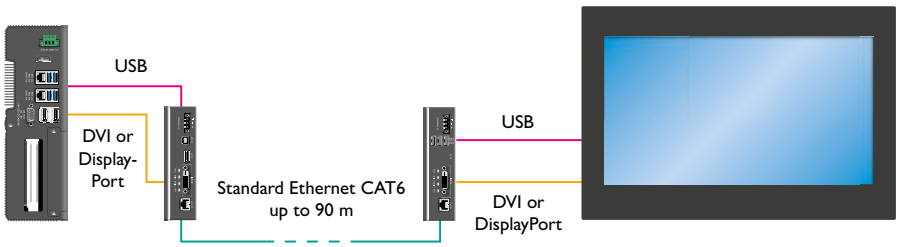
Transmit keyboard, video, and mouse signals over distances up to 90 m from the IPC.

Hardware and software solution

KVM extender

The VL KVM extender enables data transmission between an industrial PC and an operator panel over a distance of up to 90 m. With just one standard Ethernet cable, video, audio, and USB signals are transmitted between an operator panel and a control cabinet PC without losses. The system is platform-independent and is based on a pure hardware solution.

- Maximum resolution: 1920 x 1080 pixels at 60 Hz (Full HD)
- External dimensions: 150 x 80 x 43 mm
- Wall, bookshelf, or DIN rail mounting
- Interfaces: 1x DVI-D, 1x DP++
- 24 V DC ±20%
- Part Number: 2404770



Your advantages

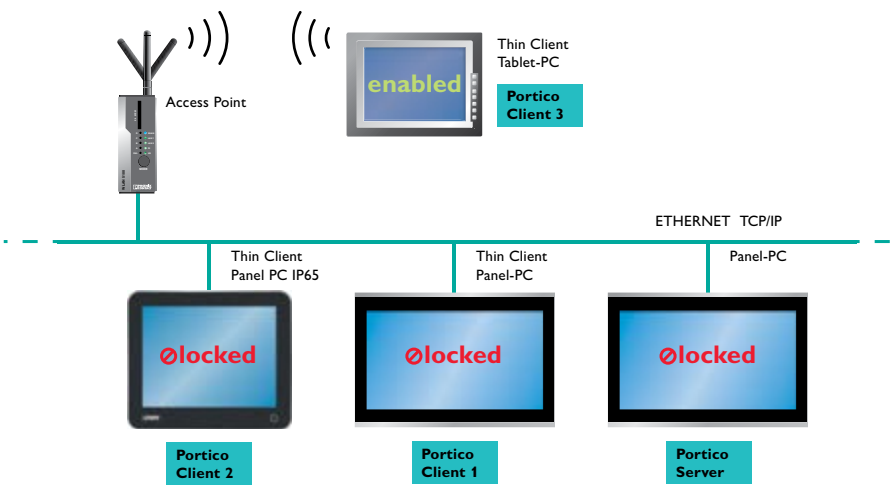
- ☑ Flexible remote operating solutions up to 90 m
- ☑ Cost-effective with the elimination of cable and mounting costs
- ☑ Increased system availability with the use of purely passive displays
- ☑ Industry-capable with the extended temperature range from -20°C to +50°C

Portico remote software

With the Portico software, you can install up to 16 thin clients exactly where you need them. The simultaneous display of IPC screen information at several operating stations without a server operating system enables simultaneous access to one machine from different locations. The integrated configuration tool enables the convenient management of access rights, protecting your system against unauthorized access.

Visit the Phoenix Contact website and search for part number 2701453.

Portico
Remote Network Portal

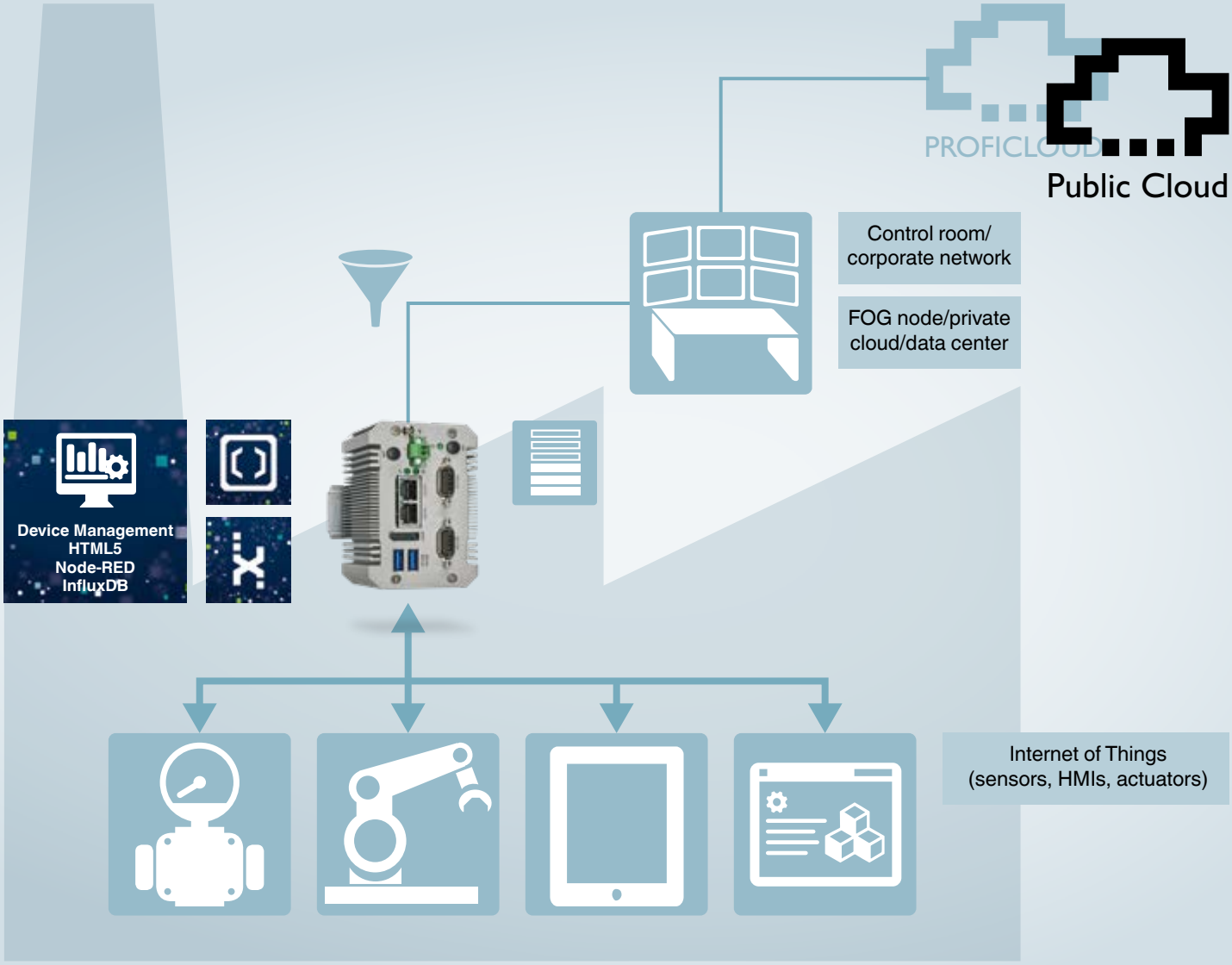


Your advantages

- ☑ Individual operation and monitoring concepts with up to 16 clients
- ☑ Inexpensive, due to the use of thin clients
- ☑ Fast screen and input response with communication via TCP/IP network protocol
- ☑ Low memory usage by server and client

Optimal data usage
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 computers

General technical data

- Ethernet interfaces: 2 x (10/100/1000 Mbps), RJ56, Intel i210
- Operating system: Linux
- Operating temperature: 0 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**
Order no.	1185416	1185423
CPU	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 DP	
Dimensions (W x H x D) in mm	97 x 46 x 94	97 x 63 x 94
Weight (in kg)	0.55	0.65
Power consumption (in W)	10.8	12.72
Device management	Preinstalled user interface via local HTML	
PLCnext inside	Yes	
Cloud	Local administration of PROFICLOUD, AWS, Azure, Google Cloud	

HMIs and industrial PCs for harsh ambient conditions

HMIs and industrial PCs are also used in places where they are exposed to extreme environmental conditions. The robust outdoor devices from Phoenix Contact are specifically designed to master these challenges. In addition to extended temperature ranges, sunlight-readable displays, and dustproof and waterproof housings, our devices also have all the necessary certifications.

Robust touch panels for Visu+ applications

General technical data

- Display type: TFT
- CPU: ARM® Cortex®-A8, 1 GHz
- Memory: 512 MB LPDDR SDRAM, 1 MB SRAM, 1 GB NAND Flash
- Interfaces: 1 x Ethernet (10/100 Mbps), 2 x USB Host 2.0, 1 x SD
- Serial interfaces (optional): 1 x COM (RS-232), 1 x COM (RS-422/ RS-485) (electrically isolated)
- Fieldbus interfaces (optional): 2 x CAN (electrically isolated)
- Operating system: MS Windows® Embedded Compact 7
- Operating temperature: -30°C (-20°C) to +70°C
- Storage temperature: -30°C (-20°C) to +80°C
- Relative humidity: 5% to 95% (front) / 20% to 85% (back), non-condensing
- Housing: aluminum/sheet steel, zinc-plated
- Installation type: portrait/landscape
- Mounting type: front installation
- Power supply: 24 V DC ±20%
- Approvals: UL/cUL, Class 1 Div 2, NEMA 4X

Your advantages

- ☑ Display can be read in direct sunlight
- ☑ Resistant to UV and IR radiation
- ☑ Extended temperature range
- ☑ Weatherproof and resistant to environmental influences such as salt spray, termites, and chemicals
- ☑ Glove operation
- ☑ Available with slim bezel in IP65 protection class, or with wider bezel and seal for IP67 protection
- ☑ Visu+ runtime with native communication drivers installed on all devices

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Robust HMIs with GFG touch

Designation	TP 3057 V/WT-65	TP 3057 V/WT	TP 3070 W/WT-65	TP 3070 W/WT	TP 3121 S/WT-65	TP 3121 S/WT
Article number	1044278	2403464	1044266	2403465	1029309	2403466
Display size	14.48 cm / 5.7"		17.78 cm / 7"		30.73 cm / 12.1"	
Touch technology	Analog resistive (GFG), anti-reflective coating					
Colors	262,144		16.77 million		262,144	
Resolution (W x H in pixels)	640 x 480 (VGA)		800 x 480 (WVGA)		800 x 600 (SVGA)	
Brightness (in cd/m²)	400				360	
Backlight MTBF (in h)	40,000		50,000			
Viewing angle (left / right / top / bottom in °)	65 / 65 / 55 / 52		70 / 70 / 60 / 60		80 / 80 / 65 / 75	
Front plate dimensions (W x H x D in mm)	168 x 132 x 5	195 x 153 x 5	148 x 208 x 5	234 x 174 x 5	340 x 270 x 5	359 x 280 x 5
Mounting cutout (W x H in mm)	161 x 119		200 x 140		315 x 244	323 x 244
Installation depth (in mm) incl. fieldbus interface	42 / 68		51 / 75	48.5 / 75	55 / -	58 / 58
Protection class (front / rear)	IP 65 / IP 20	IP 67 / IP 20	IP 65 / IP 20	IP 67 / IP 20	IP 65 / IP 20	IP 67 / IP 20
Weight (in kg)	0.8		1.1		2.6	
Power consumption (in W) / incl. fieldbus interface	7.2 / 9.6		9.6 / 12		12 / 16.8	

Industrial PCs for Ex areas

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

They feature ATEX, IECEx, and UL Class I Div 2 approvals. These IPCs are available in various performance levels and display sizes to meet demanding application requirements.

Worldwide use

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

- UL C1D2 for use in North America
- ATEX for use throughout Europe
- IECEx for applications in potentially explosive environments around the globe

Industrial PCs for Ex areas

General technical data

- 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: IP30
- Power supply: 24 V DC ±20%
- Mounting type: wall or bookshelf mounting
- Approvals: UL/cUL, Class 1 Div 2, IECEx, ATEX Zone 2

Your advantages

- ☑ Passive cooling and no moving parts
- ☑ Certified for use in EX zones 2 and 22
- ☑ Same physical dimensions and formats ensure easy integration into existing applications

VL2 series box PCs for Ex areas

Designation	VL2 BPC 2000 EX	VL2 BPC 3000 EX	VL2 BPC 7000 EX	VL2 BPC 9000 EX
Order no.	1054027	1054025	105424	1054023
CPU	Intel® Celeron® N2930 1.83 GHz / 2.16 GHz (quad-core)	Intel® Core™ i3-4010U 1.7 GHz (dual-core)	Intel® Core™ i5-4300U 1.9 GHz / 2.9 GHz (dual-core)	Intel® Core™ i7-6822EQ 2.0 GHz / 2.8 GHz (quad-core)
Cooling	Passive			Convection booster
RAM (configurable)	max. 8 GB DDR3	max. 16 GB DDR3		max. 32 GB DDR4
Data memory (configurable)	2.5" HDD or SSD	2.5" HDD or SSD, RAID support 0/1		
Number of slots	1			
USB	4 x USB 2.0	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			
Graphics processor	Intel® HD Graphics	Intel® HD Graphics 4400		Intel® HD Graphics 530
PCI/PCIe slots (configurable)	1 x PCI or 1 x PCIe			
Dimensions (W x H x D in mm)	264 x 215 x 95			
Weight (in kg)	4.2	4.8		
Power consumption (in W)[1]	37.4	41.3	42.7	38.9
Operating temperature	HDD: 0°C to +45°C SSD: -20°C to +50°C		HDD: 0°C to +45°C SSD: -10°C to +50°C	HDD: 0°C to +45°C SSD: -20°C to +50°C
Storage temperature	-40°C to +70°C			
Relative humidity	5% to 95%, non-condensing			

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

Industrial PCs for Ex areas

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 1 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
- ☑ Same display size and feature set as non-EX panels for easy integration into existing applications

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VL2 series panel PCs for Ex areas

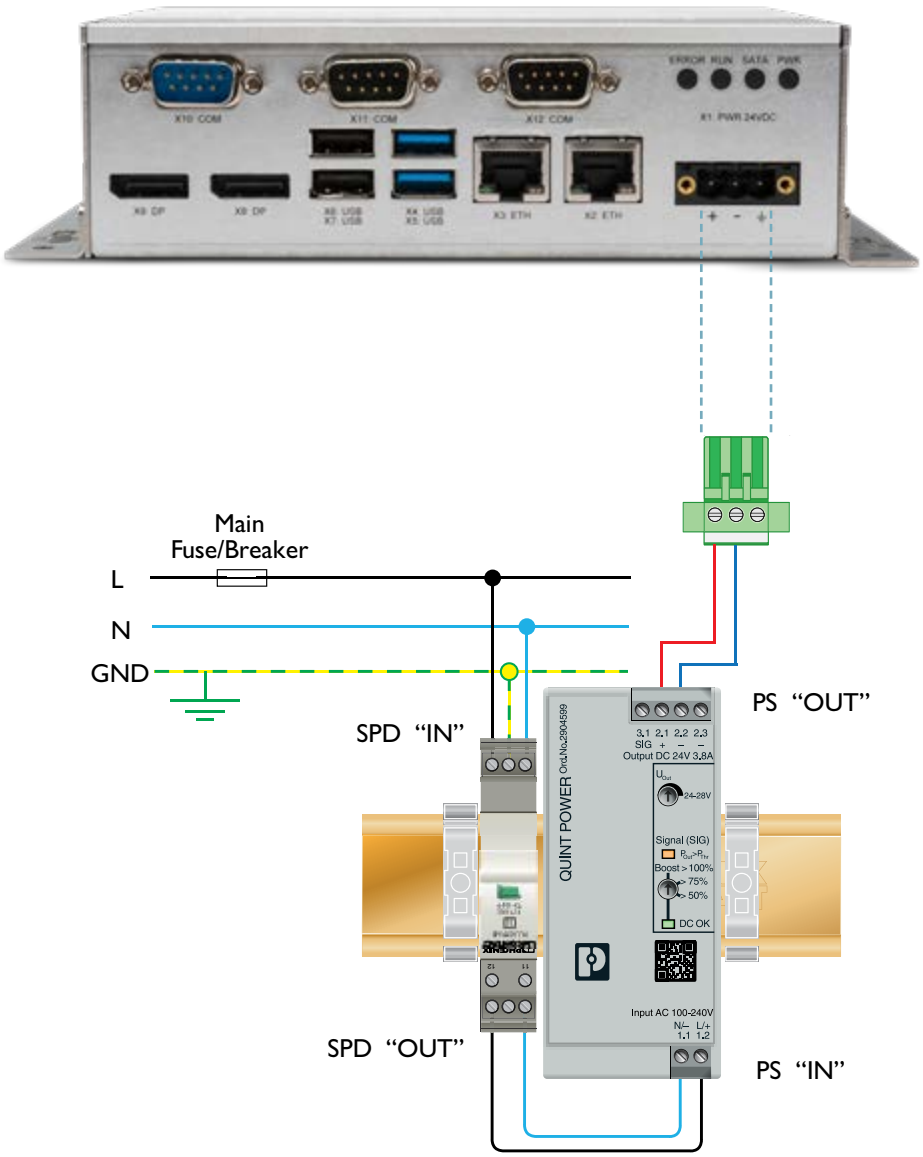
Designation	VL2 PPC 2000 EX	VL2 PPC 3000 EX	VL2 PPC 7000 EX	VL2 PPC 9000 EX
Order no.	1050367	1050368	1050365	1050364
Display size in cm (in.)	39.6 (15.6")/47 (18.5")/54.6 (21.5")			
Touch technology	Projective capacitive (PCAP)			
Resolution (W x H in pixels)	1366 x 768 (HD) / 1920 x 1080 (Full HD)			
Brightness (in cd/m²)	400/300/300			
Viewing angle (left / right / top / bottom in °)	89 / 89 / 89 / 89			
CPU	Intel® Celeron® N2930 1.83 GHz / 2.16 GHz (quad-core)	Intel® Core™ i3-4010U 1.7 GHz (dual-core)	Intel® Core™ i5-4300U 1.9 GHz / 2.9 GHz (dual-core)	Intel® Core™ i7-6822EQ 2.0 GHz / 2.8 GHz (quad-core)
Cooling	Passive			Convection booster
RAM (configurable)	max. 8 GB DDR3	max. 16 GB DDR3		max. 32 GB DDR4
Data memory (configurable)	2.5" HDD or SSD	2.5" HDD or SSD, RAID support 0/1		
Number of slots	1			
USB	4 x USB 2.0	2 x USB 2.0, 2 x USB 3.0		
Serial interfaces	See left page			
Video output	2 x DisplayPort			
Graphics processor	Intel® HD Graphics	Intel® HD Graphics 4400		Intel® HD Graphics 530
PCI/PCIe slots (configurable)	1 x PCI or 1 x PCIe			
Dimensions incl. front plate (W x H x D in mm)	408 x 275 x 121/465 x 313 x 123/532 x 354 x 119			
Mounting cutout (W x H in mm)	394 x 263/455 x 303/522 x 344			
Weight (in kg)	8.6/10.4/12.7			
Operating temperature	HDD: 0°C to +45°C SSD: -20°C to +50°C		HDD: 0°C to +45°C SSD: -10°C to +50°C	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.



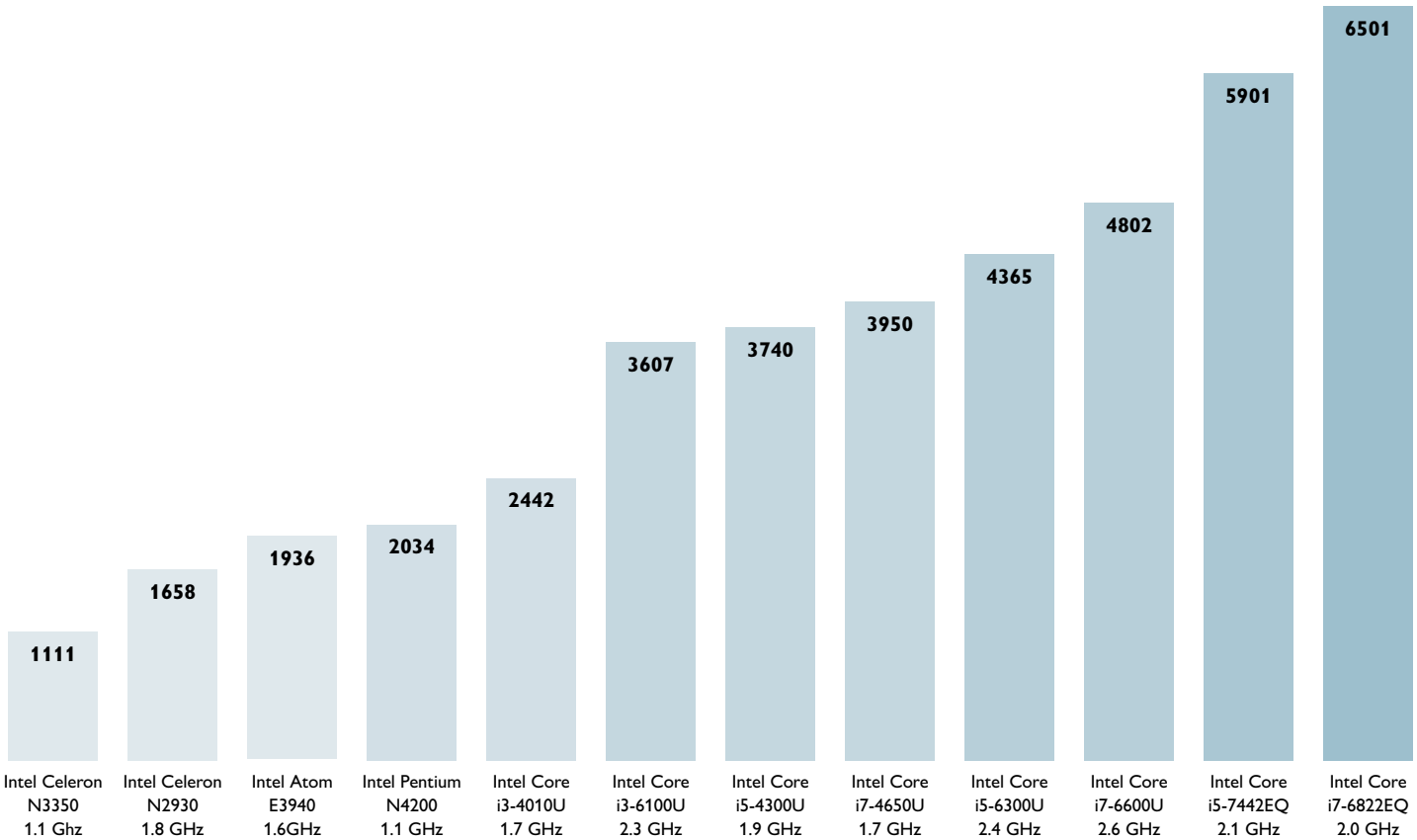
Type	Order number	Designation	Description
Power supply	2904599	QUINT4-PS/1AC/24DC/3.8/SC	3.8 A power supply
Power supply	2904600	QUINT4-PS/1AC/24DC/5	5 A power supply
Power supply	2903147	TRIO-PS-2G/1AC/24DC/3/C2LPS	3 A power supply
Power supply	2903148	TRIO-PS-2G/1AC/24DC/5	5 A power supply
Power supply	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 comparison

CPU Name and Model	Used in these IPCs	Passmark rating*
Intel Celeron N3350 1.1GHz	BL2 1000/1100/1200/1500	1111
Intel Celeron N2930 1.8GHz	BL2 2000, VL2 2000	1658
Intel Atom E3940 1.6GHz	BL2 BPC 1541	1936
Intel Pentium N4200 1.1GHz	BL2 2000/2100/AIO65 2000	2034
Intel Core i3-4010U 1.7GHz	VL 3000, VL2 3000	2442
Intel Core i3-6100U 2.3GHz	BL2 3100	3607
Intel Core i5-4300U 1.9GHz	VL2 7000	3740
Intel Core i7-4650U 1.7GHz	DL 7000	3950
Intel Core i5-6300U 2.4GHz	BL2 7100	4365
Intel Core i7-6600U 2.6GHz	BL2 9100	4802
Intel Core i5-7442EQ 2.1GHz	BL2 7000/AIO65 7000	5901
Intel Core i7-6822EQ 2.0GHz	VL2 9000	6501

Source: www.cpubenchmark.net

** Phoenix Contact rates the relative performance of each CPU utilized in its industrial PC portfolio by means of an independent, standardized performance grading value, known as the Passmark score.*



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Our wide variety of innovative products makes it easy for our customers to find future-oriented solutions for multiple applications and industries. We focus predominantly on the fields of energy, infrastructure, process, and factory automation.

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