



# HMIs and industrial PCs

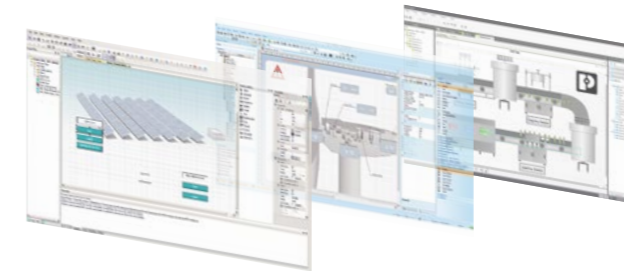
Product overview

# HMIs and industrial PCs

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

## Software for operation and monitoring

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



## Contents

HMIs and industrial PCs	2
HMIs	8
Selection guide for HMIs	10
HMIs with open web browser for HTML5-based visualizations	12
HMIs with Visu+ software	16
HMIs for maritime applications	22
Industrial PCs	24
Box PCs	26
Panel PCs	32
Panel PCs in IP65	38
Standalone IP65 protected panel PCs	40
Industrial touch monitors	42
Remote monitoring	44
HMIs and IPCs for harsh ambient conditions	46
Industrial PCs for Ex areas	50
Warranty	54



### HMIs

Our Human Machine Interfaces (HMI) 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.

### 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.

## PXR What is it? Phoenix Contact eXtended Reality

### Using PXR

Scan the QR code with your mobile device camera or QR code reader to launch **PXR**.

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



# HMI and IPCs

## Design, quality, service

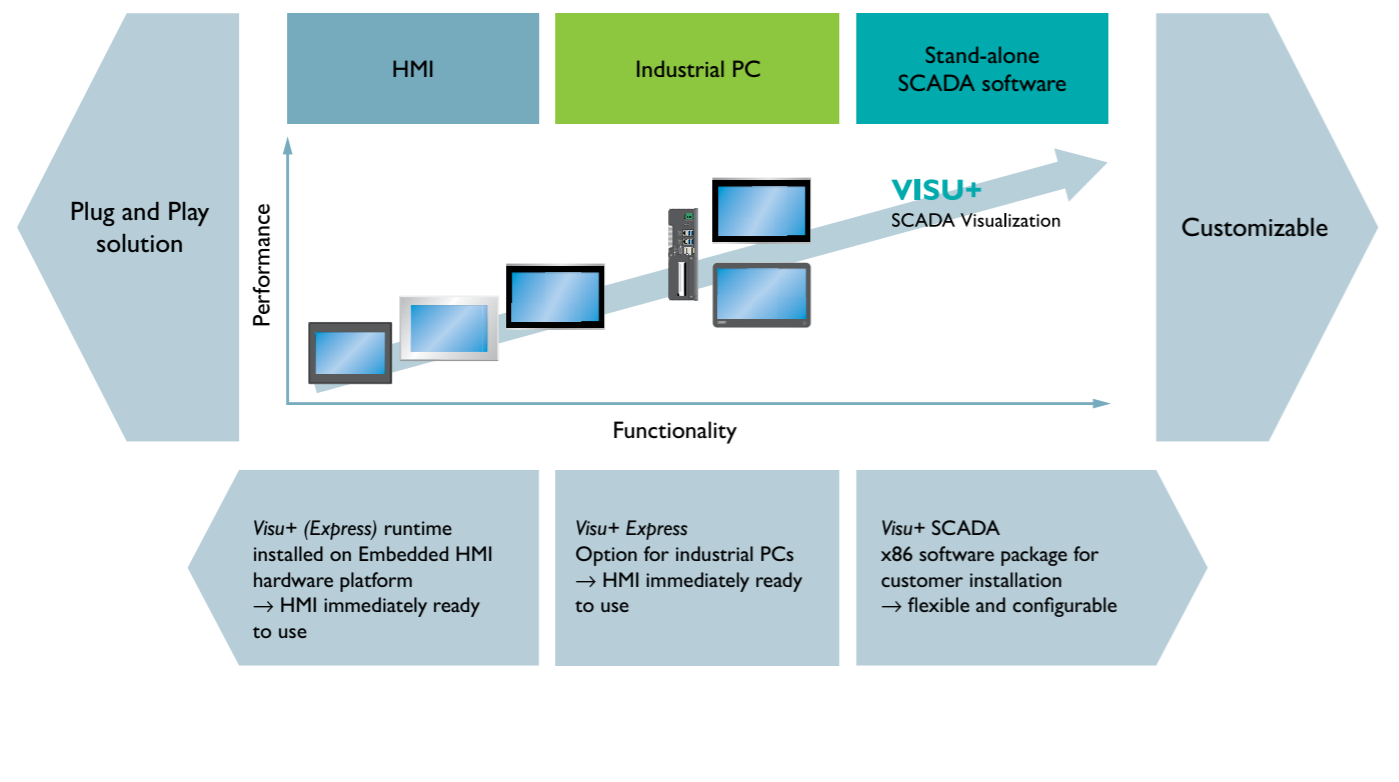
Are you looking for intelligent solutions for the operation and monitoring of machines and systems? Phoenix Contact offers a wide range of robust and reliable technology, from HMIs and powerful industrial PCs to custom solutions for special industrial requirements. We will provide you with an impressive 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 – you can rely on our promise of quality. We put great emphasis on producing durable components that meet industry standards and quality requirements.

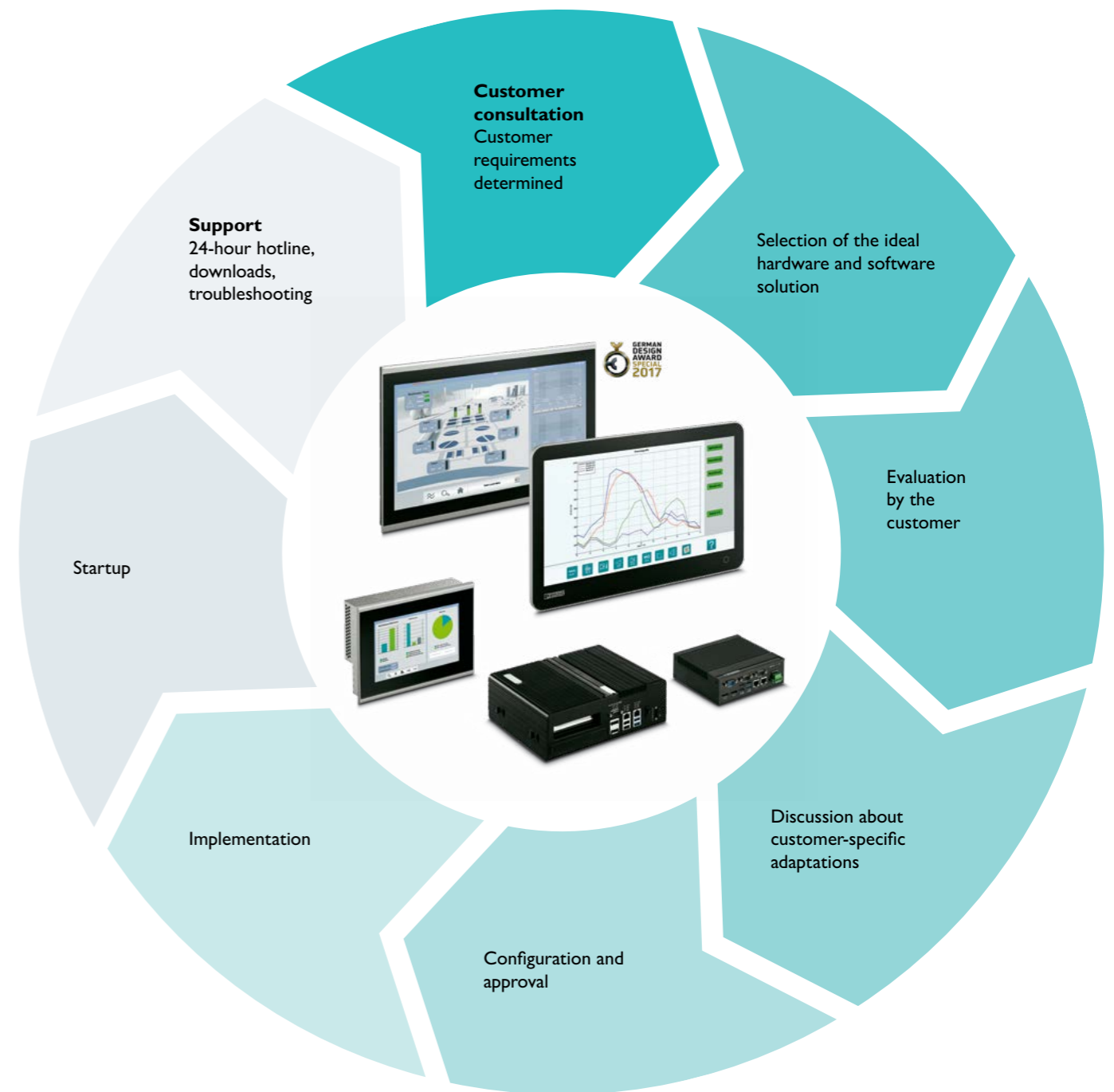
**Service**  
From customized solutions to engineering support we can help you to design a better automation system. Services range from pre-loaded software images to clean-sheet designs based on your requirements.

Benefit from the scalability of our hardware and software portfolio – from simple operating concepts on HMIs through 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.

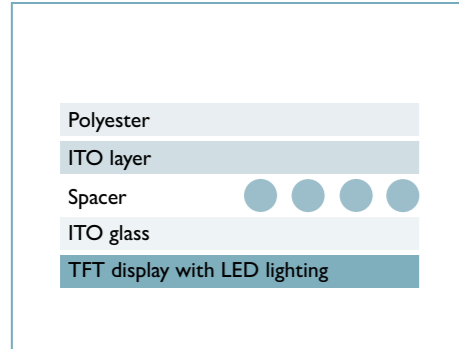


# Touch technologies

## Ideal for industrial applications

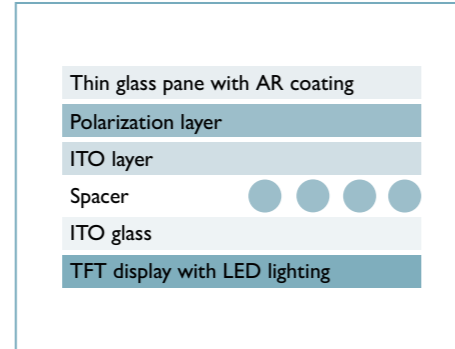
The touch screen is a popular control element that invokes a reaction from the system by touching a special surface. The touch interface has quickly evolved and surpassed simple analog resistive interfaces to meet the ever-changing demands of customers and applications. Phoenix Contact understands

these changing environments, and offers a number of touch technologies to fully address the demands of both operators and environments.



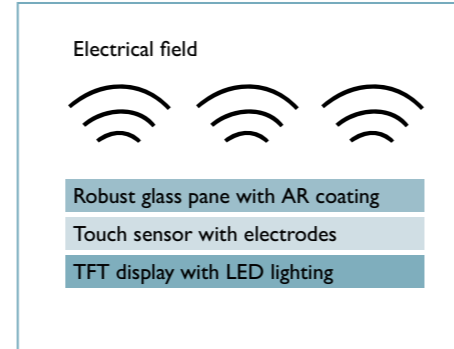
### Analog resistive touch screen (polyester)

Analog resistive touch screens are made out of two thin polyester foils which 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 HMI 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.



# HMI

## 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 on site or centrally in the control center – benefit from our many years of automation expertise.



### HMI 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



### HMI for standard requirements

- Resistive or PCAP touch
- Display variants ranging from 4.3" 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



### HMI 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 23 and 51



### Visualization software for every application

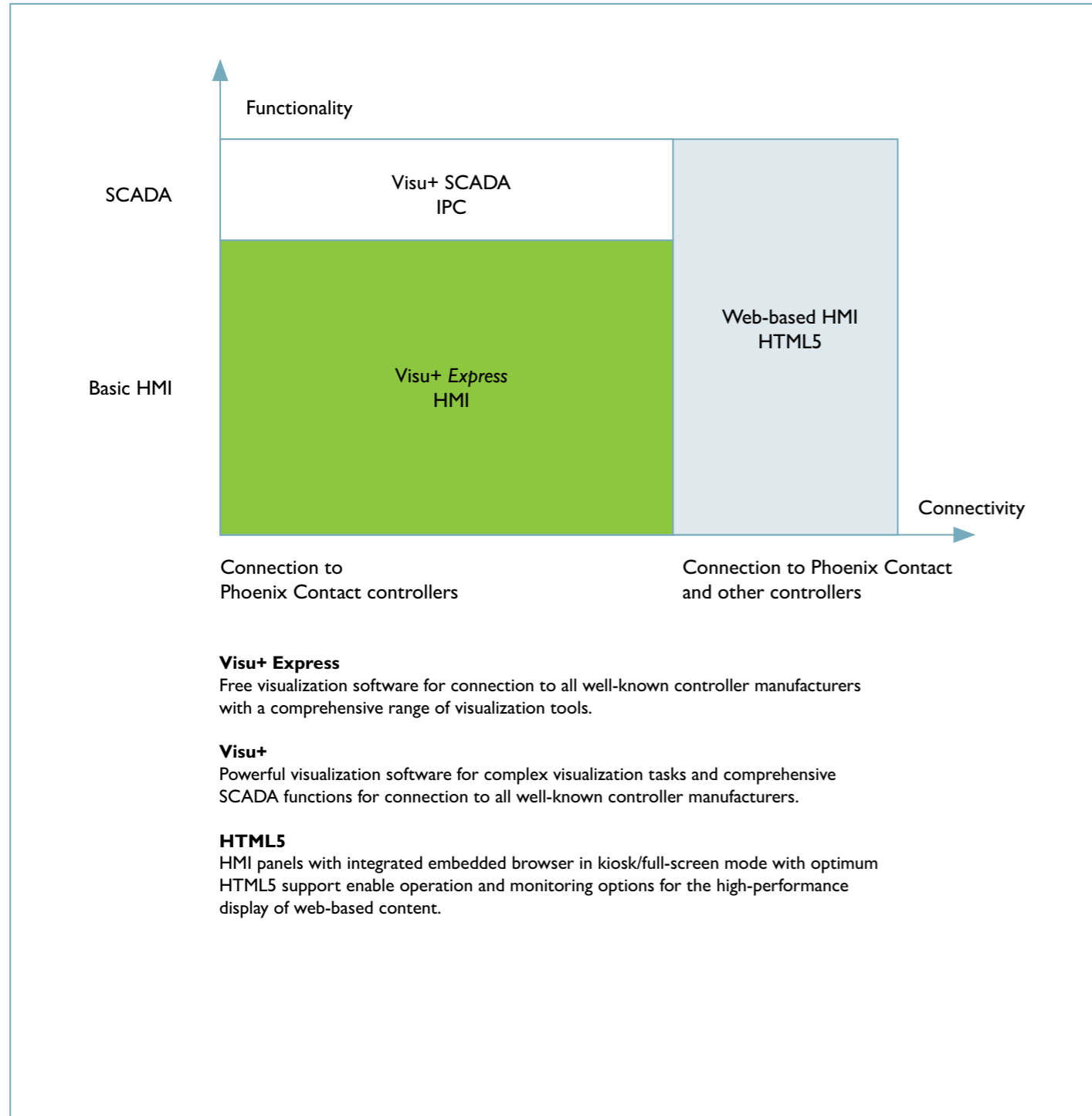
Whether in the central control room, in production, or directly on the machine, efficient automation requires the right visualization. Benefit from our extensive portfolio covering all aspects of operation and monitoring.

**PLCnext Engineer**  
Engineering Software

**VISU+**  
SCADA Visualization

# Selection guide for HMIs

Our Human Machine Interfaces (HMI) provide user-friendly visualization for automation systems in a multitude of industries and applications.



## 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 amount of the 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

(VWP 4000, 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 3000	IPC	
<b>Page</b>		14	15	20	21	26	
Visualization	Runtime on HMI panel			●	●	●	
	Web-based	●	●			●	
Connection to control systems	Phoenix Contact	PLCnext Control	○	●	○	●	
		Axioline (AXC)	○	●	●	●	
		Inline (ILC)	○	○	●	●	●
	Other	PLC logic			●	○	
		OPC UA	●	●	●	●	●
		Third-party manufacturer	●	●	●	●	●
		Multi-driver PLC communication		●	○	●	●
CODESYS	○	●			●		
Remote data access (RDA)	○	○	○	●	●		
Touch technology/ interface	Resistive touch (polyester)	●	○	●	●	●	
	Resistive touch (glass-film-glass)				●	●	
	PCAP touch		●		●	●	
Hardware	Metal housing		●		●	●	
	Plastic housing	●		●			
Environmental influences and approvals	Extended temperature range				●	●	
	Display can be read in direct sunlight				●	●	
	UL (Ordinary/Hazardous Location)	●/–	●/–	●/–	●/●	●/●	
	ATEX II & IECEx II					●	
	Maritime approvals				○		
Cost-effective display and design	●		●		○		

- Best option
- Limited/alternative option



## HMI 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 BWP2000 and rugged WVP 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 smart phone or PC

### PLCnext Engineer

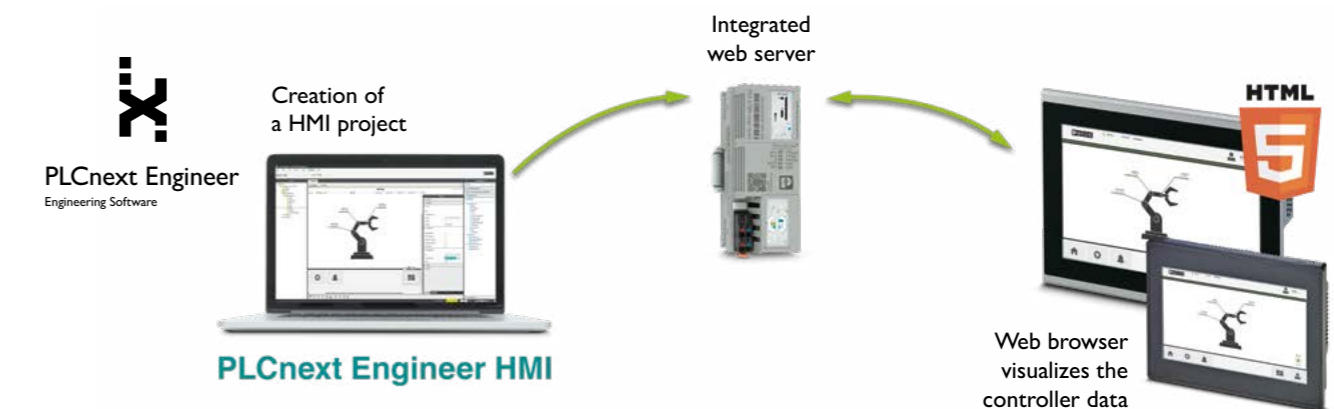
PLCnext Engineer software is optimized for the creation of modern visualization solutions. With respect to the technology, the visualization integrated into PLCnext Engineer is based on open standards such as HTML5 and JavaScript. No web skills are required, since the software offers numerous symbols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

**i** Web code: #2310





## HTML5 web panels

### General technical data

- Display type: TFT
- CPU: Arm® Cortex®-A9, 1 GHz
- 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

## HTML5 web panels

### General technical data

- Display type: TFT
- CPU: Arm® Cortex®-A53, 4 x 1.2 GHz
- 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



### 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/m <sup>2</sup> )	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

### 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/m <sup>2</sup> )	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	



## HMI 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 TP3000 HMIs as well as select IPCs. The full version of Visu+, exclusively designed for high end IPC systems, offers an even broader feature set including additional third party communication drivers.



### 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 for direct communication to all relevant PLC and device manufacturers in the industrial marketplace (e.g. EtherNet/IP, Profinet, Modbus TCP, OPC UA, etc.)
- 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

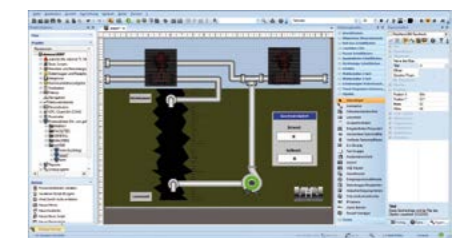
#### Visu+ Express:

- Free Express version
- Functionality optimized for typical HMI requirements
- Supports all touch panel and select IPC configurations

#### 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 Mbps), 1 x USB Host 2.0, 1 x µSD, 1 x µUSB device, 2 x COM (RS-232/RS-422/RS-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%
- Installation type: portrait/landscape
- Mounting type: front installation
- Approvals: UL/cUL, Class 1 Div 2

### 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
- ✓ Developed for simple applications with an attractive price/performance ratio
- ✓ Remote data access via Visu+ mobile app

### Touch panels with polyester touch



Designation	BTP 2043W	BTP 2070W	BTP 2102W
Order No.	1050387	1046666	1046667
Display size (in cm)	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	300	350
Backlight MTBF (in h)	20,000		
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)	4	9	7

## Touch panels for Visu+ applications

### General technical data

- Display type: TFT
- CPU: Arm® Cortex®-A8, 1 GHz, real-time clock (battery-backed)
- Memory: 512 MB SDRAM, 1 MB SRAM, 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

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

### Touch panels with PCAP touch



Designation	TP 3070W/P	TP 3090W/P	TP 3120W/P	TP 3156W/P	TP 3185W/P
Order No.	2403459	2403460	2403461	2403462	2403862
Display size (in cm)	17.78 (7")	22.86 (9")	30.73 (12.1")	39.62 (15.6")	47.02 (18.5")
Touch technology	Projective capacitive (PCAP)				
Colors	16.77 million		65,535		
Resolution (W x H in pixels)	800 x 480 (WVGA)		1280 x 800 (WXGA)	1366 x 768 (WXGA)	
Brightness (in cd/m²)	400	800	320		240
Backlight MTBF (in h)	50,000	70,000	50,000	70,000	50,000
Viewing angle (left / right / top / bottom in °)	70 / 70 / 60 / 60	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)	208 x 148.5 x 6	271 x 179.2 x 6	336 x 234 x 6	436 x 278 x 8	485 x 329 x 8
Mounting cutout (W x H in mm)	198 x 138	261 x 169	326 x 224	425 x 260	475 x 311
Installation depth (in mm) incl. fieldbus interface	53 80				
Weight (in kg)	1.3	1.8	2.7	4	5.6
Power consumption (in W) / incl. fieldbus interface	7.2 / 9.6		19.2		24 28.8

# Touch panels for Visu+ applications


## General technical data


- Display type: TFT
- CPU: Arm® Cortex®-A8, 800 MHz, 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
- ✓ Easy installation, low installation depth, and compact design



Touch panels with polyester touch				
				
Designation	TP 3043W	TP 3057V	TP 3070W	TP 3090W
Order No.	2402629	2400453	2400454	2402630
Display size (in cm)	10.92 (4.3")	14.48 (5.7")	17.78 (7")	22.86 (9")
Touch technology	Analog resistive (polyester)			
Colors	262,144		16.7 million	
Resolution (W x H in pixels)	480 x 272 (WQVGA)	640 x 480 (VGA)	800 x 480 (WVGA)	
Brightness (in cd/m²)	385	400	350	800
Backlight MTBF (in h)	40,000			70,000
Viewing angle (left / right / top / bottom in °)	75 / 75 / 63 / 75	65 / 65 / 55 / 52	70 / 70 / 65 / 65	85 / 85 / 85 / 85
Front plate dimensions (W x H x D in mm)	140 x 100 x 5	168 x 126 x 5	203 x 147 x 5	260 x 172 x 5
Mounting cutout (W x H in mm)	132 x 92	160 x 118	195 x 139	252 x 164
Installation depth (in mm) incl. fieldbus interface	42 / 71		54 / 59	
Weight (in kg)	0.55	0.8		1.3
Power consumption (in W) / incl. fieldbus interface	4.8 / 7.2	7.2 / 9.6		16.8 / 19.2

Touch panels with polyester touch					
					
Designation	TP 3105S	TP 3121S	TP 3120W	TP 3150S	TP 3154W
Order No.	2400455	2400456	2400457	2400458	2402631
Display size (in cm)	26.42 (10.4")	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)	340	360	320	480	360
Backlight MTBF (in h)	50,000				
Viewing angle (left / right / top / bottom in °)	70 / 70 / 50 / 60	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)	295 x 220 x 5	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)	287 x 212	313 x 243	322 x 217	372 x 301	396 x 273
Installation depth (in mm) incl. fieldbus interface	54 / 59	55 / 60	48 / 53	55 / 60	59 / 64
Weight (in kg)	1.9	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



# HMI's for maritime applications

## Confidence on the high seas

For demanding use on ships, Phoenix Contact offers rugged operator and display panels that are specifically tailored to the requirements of maritime applications. The Visu+ based touch panels for maritime applications have all the relevant approvals. They ensure user-friendly and reliable operation, monitoring, and alarm generation while at sea.



## Touch panels for use on ships

### General technical data

- Display type: TFT
- CPU: Arm® Cortex®-A8, 1 GHz, real-time clock (battery-backed)
- Memory: 512 SDRAM, 1 MB SRAM, 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-485) / 1 x COM (RS-232), 1 x COM (RS-485), 2 x CAN / 2 x CAN
- Operating system: MS Windows® Embedded Compact 7
- Operating temperature: 0°C to +55°C (silv), -20°C to +60°C (bk)
- Storage temperature: -25°C to +70°C (silv), -30°C to +80°C (bk)
- 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, ABS, BV, DNV-GL, LR, KR, RINA, EN 60945

### Your advantages

- ✓ Visu+ RT integrated in all devices
- ✓ Light-absorbing front plates
- ✓ Dimmable backlight
- ✓ Certification in accordance with ABS, BV, DNV-GL, LR, KR, RINA
- ✓ Certified compass safe distance in accordance with DIN EN 60945
- ✓ Integrated buzzer (85dB)
- ✓ Native communication drivers for direct communication to all relevant PLC and device manufacturers in the industrial marketplace

### Maritime touch panels in two versions



Designation	TPM 3057	TPM 3070	TPM 3105	TPM 3120	TPM 3150
Order No.	2404517	2404518	2404520	2404522	2404524
Display size (in cm)	14.48 (5.7")	17.78 (7")	26.42 (10.4")	30.73 (12.1")	38.1 (15")
Touch technology	Analog resistive (polyester)				
Colors	262,144			65,535	
Resolution (W x H in pixels)	640 x 480 (VGA)	800 x 480 (WVGA)	800 x 600 (SVGA)	1280 x 800 (WXGA)	1024 x 768 (XGA)
Brightness (in cd/m²)	400	350	340	320	480
Backlight MTBF (in h)	40,000			50,000	
Viewing angle (left / right / top / bottom in °)	65 / 65 / 55 / 52	70 / 70 / 65 / 65	70 / 70 / 50 / 60	88 / 88 / 88 / 88	80 / 80 / 65 / 80
Front plate dimensions (W x H x D in mm)	silv: 168 x 126 x 5 bk: 168 x 147 x 5	silv: 203 x 147 x 5 bk: 203 x 165 x 5	silv: 295 x 220 x 5 bk: 328 x 265 x 5	silv: 330 x 225 x 5 bk: 336 x 252 x 5	silv: 400 x 329 x 5 bk: 400 x 338 x 5
Mounting cutout (W x H in mm)	silv: 160 x 118 bk: 160 x 139	silv: 195 x 139 bk: 195 x 157	silv: 287 x 212 bk: 302 x 237	silv: 322 x 217 bk: 310 x 226	silv: 372 x 301 bk: 373 x 312
Installation depth (in mm) incl. fieldbus interface	silv: 42; bk: 49 silv: 71; bk: 75	silv: 42; bk: 42 silv: 71; bk: 71	silv: 54; bk: 58 -	silv: 48; bk: 54 -	silv: 55; bk: 63 -
Weight (in kg)	silv: 0.8; bk: 1.0	silv: 0.8; bk: 1.15	silv: 1.9; bk: 2.2	silv: 1.7; bk: 2.3	silv: 3.0; bk: 3.6
Power consumption (in W) / incl. fieldbus interface	7.2 / 9.6		12 / 14.4	16.8 / 19.2	



# 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 27 and 31



### 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 45 and 47



### Panel PCs

- The right performance for every application with Intel® Atom™ through 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 34 to 43



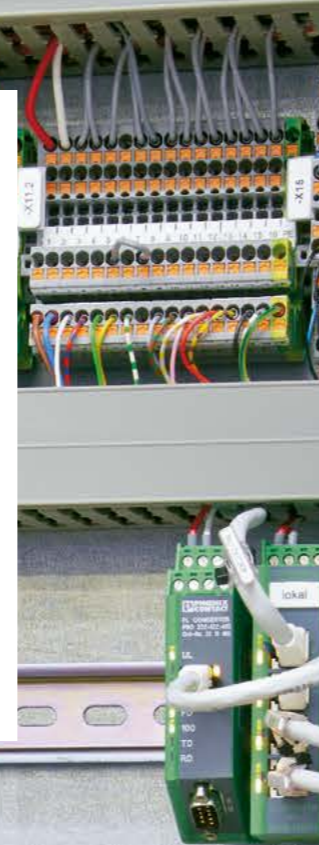
### Industry-specific PCs

- 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 and 57

# 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 1000	VL2 BPC 2000	VL2 BPC 3000	VL2 BPC 7000	VL2 BPC 9000
Order No.	2403046	2400332	2400492	2400333	2400499
CPU	Intel® Atom™ E3845 1.91 GHz (quad-core)	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. 4 GB DDR3	max. 8 GB DDR3	max. 16 GB DDR3		max. 32 GB DDR4
Data memory (configurable)	SD, HDD or SSD	HDD or SSD			
Number of slots	1	1			
RAID support (configurable)	-		0/1		
USB	2 x USB 2.0, 1 x USB 3.0	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: 1 x COM (RS-232) + 1 x COM (RS-485), 2 x CAN	1 x COM (RS-232/RS-422/RS-485) Optional: 2 x COM (RS-232) + 1 x COM (RS-232/RS-422/RS-485)			
Video output	1 x DisplayPort	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)	271 x 211 x 65		264 x 215 x 95		
Weight (in kg)	2.4	4.2	4.8		
Power consumption (in W) <sup>1</sup>	21.6	37.4	41.3	42.7	38.9
Operating temperature	HDD: 0°C to +45°C SSD: 0°C to +50°C	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	-25°C to +70°C		-40°C to +70°C		
Relative humidity	20% to 85%, non-condensing		5% to 95%, non-condensing		

<sup>1</sup> 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) <sup>1</sup>	25.7	34.6	43.9

## 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 roadmap)
- ✓ 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. 4 GB DDR3		max. 8 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) <sup>1</sup>	26.4	31.2	45.6	46.1	47.3

<sup>1</sup> 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

- Ethernet interfaces: 2 x (10/100/1000 Mbps), RJ45, Intel i210
- Operating System: Windows® 10 IoT; Linux
- Operating temperature: 0 to 50°C
- Storage temperature: -40 to 85°C
- Relative humidity: 5% to 95%, non-condensing
- Housing material: aluminum
- Degree of protection: IP30
- Power supply: 12-30 V DC +/- 20%
- Mounting type: DIN rail (optional wall mount)
- Approvals: UL/cUL

## Your advantages

- ✓ Compact design to fit into small cabinet boxes
- ✓ Efficient performance with Intel Celeron N3350 CPU
- ✓ 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



### BL2 series box PCs



Designation – BL2 BPC...	1501S	1501S-W	1501E	1501E-W	1501E-64-W10	1501E-W-64-W10
Order No.	1130682	1141904	1130669	1141843	1158241	1158252
CPU	Intel® Celeron N3350 1.1 / 2.4 GHz (dual-core)					
Cooling	Passive					
RAM	2 GB LPDDR4		4 GB LPDDR4			
Onboard storage	32 GB eMMC					
Additional data memory	N/A		N/A		64 GB m.2 SSD	64 GB m.2 SSD
USB	2 x USB 3.0					
Serial interfaces	N/A		1 x COM (RS-232); 1 x COM (RS 232/422/485)			
Wireless LAN		•		•		•
Hardware Security (TPM 2.0)	None					
Video output	1 x display port (DP)					
Graphics processor	Intel® HD Graphics 500					
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) <sup>1</sup>	10.8		12.72			

### BL2 series box PCs



Designation – BL2 BPC...	1501E-128-W10	1501E-W-128-W1	1501E-64-W10-T	1501E-W-64-W10-T	1501E-128-W10-T	1501E-W-128-W10-T
Order No.	1158235	1158245	1158247	1158244	1158243	1158231
CPU	Intel® Celeron N3350 1.1 / 2.4 GHz (dual-core)					
Cooling	Passive					
RAM	4 GB LPDDR4					
Onboard storage	32 GB eMMC					
Additional data memory	128 GB m.2 SSD	128 GB m.2 SSD	64 GB m.2 SSD	64 GB m.2 SSD	128 GB m.2 SSD	128 GB m.2 SSD
USB	2 x USB 3.0					
Serial interfaces	1 x COM (RS-232); 1 x COM (RS 232/422/485)					
Wireless LAN		•		•		•
Hardware Security (TPM 2.0)			•	•	•	•
Video output	1 x Display Port (DP)					
Graphics processor	Intel® HD Graphics 500					
Dimensions (W x H x D in mm)	97 x 63 x 94					
Weight (in kg)	0.65					
Power consumption (in W) <sup>1</sup>	12.72					

<sup>1</sup> Power consumption value represents maximum power consumption. Actual system power consumption depends on system loading. See user manual for details.



# 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.

# 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: 0°C to +50°C (with Intel® E3845), -20°C to +60°C (with Intel® E3827)
- Storage temperature: -25°C to +70°C
- Relative humidity: 20% to 85%, non-condensing
- Housing: aluminum/sheet steel, zinc-plated
- Degree of protection: IP66 (front), IP20 (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
- ✓ Projective capacitive or analog resistive touch screens for various areas of application
- ✓ Individually configurable



## VL2 series panel PCs



Designation	VL2 PPC7 1000	VL2 PPC9 1000	VL2 PPC12 1000
Order No.	2403708	2403709	2403710
Display size (in cm)	17.8 (7")	22.9 (9")	30.7 (12.1")
Touch technology (configurable)	Projective capacitive (PCAP) / analog resistive (polyester)		
Resolution (W x H in pixels)	800 x 480 (WVGA)		1280 x 800 (WXGA)
Brightness (in cd/m²)	350	400	320
Backlight MTBF (in h)	40,000	70,000	50,000
Viewing angle (left / right / top / bottom in °)	70 / 70 / 60 / 60	85 / 85 / 85 / 85	88 / 88 / 88 / 88
CPU	Intel® Atom™ E3827 2 x 1.75 GHz (Dual core) / Intel® Atom™ E3845 4 x 1.91 GHz (quad-core)		Intel® Atom™ E3845 4 x 1.91 GHz (quad-core)
Cooling	Passive		
RAM (configurable)	max. 2 GB DDR3L (E3827) / max. 4 GB DDR3L (E3845)		
Data memory (configurable)	SSD		
Number of slots	1		
USB	2 x USB 2.0, 1 x USB 3.0		
Serial interfaces	1 x COM (RS-232/RS-422/RS-485), optional: 1 x COM (RS-232) + 1 x COM (RS-485), 2 x CAN		
Video output	1 x DisplayPort		
Graphics processor	Intel® HD Graphics		
Dimensions incl. front plate (W x H x D in mm)	208 x 148.5 x 88 / 203 x 147 x 87	271 x 179 x 88 / 260 x 172 x 87	336 x 234 x 88 / 330 x 225 x 87
incl. optional interfaces <sup>1</sup>	D: 111 / 110	D: 111 / 110	D: 111 / 110
Mounting cutout (W x H in mm) <sup>1</sup>	198 x 138 / 195 x 139	261 x 169 / 252 x 164	326 x 224 / 322 x 217
Weight (in kg) <sup>1</sup>	2.3	2.6	3.3
Power consumption (in W) <sup>2</sup>	26.4	33.6	

<sup>1</sup> First value – analog resistive touch screen version; Second value – PCAP touch screen version

<sup>2</sup> Power consumption value represents power consumption under typical usage. 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
- ✓ Ideal for high-end visualization



Scan using  
**PXR**



## VL2 series panel PCs



Designation	VL2 PPC 1000	VL2 PPC 2000	VL2 PPC 3000
Order No.	2403047	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)/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® Atom™ E3845 4 x 1.91 GHz (quad-core)	Intel® Celeron® N2930 1.83 GHz / 2.16 GHz	Intel® Core™ i3-4010U 1.7 GHz (dual-core)
Cooling	Passive		
RAM (configurable)	max. 4 GB DDR3L	max. 8 GB DDR3	max. 16 GB DDR3
Data memory (configurable)	HDD or SSD, RAID support 0/1		
Number of slots	1		
USB	2 x USB 2.0, 1 x USB 3.0	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: 1 x COM (RS-232) + 1 x COM (RS-485), 2 x CAN	1 x COM (RS-232/RS-422/RS-485), optional: 2 x COM (RS-232) + 1 x COM (RS-232/RS-422/RS-485)	
Video output	1 x DisplayPort	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 100 / 465 x 313 x 102 / 532 x 354 x 99	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)	6.3 / 8.1 / 10.4	8.6/10.4/12.7	
Power consumption (in W)	Depends on the configuration		

## 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)/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)	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)	
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 roadmap)
- ✓ Windows 10 IoT support

## 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 roadmap)
- ✓ Windows 10 IoT and Windows 7 support
- ✓ Support for 2.5" HDD/SSD SATA drive



### 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)	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) <sup>1</sup> depending on screen size	31.9/34.8/42.7	39.4/42/46.8	52.6/54/60

<sup>1</sup> Power consumption value represents maximum power consumption. Actual system power consumption depends on system loading. See user manual for details.

### 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)	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. 8 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) <sup>1</sup> 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 series offer a slim, modern, and attractive design. They allow for space-saving installation outside of the control cabinet via VESA or pendant arm mounting options.



## 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 2000	DL PPC15M 7000	DL PPC18.5M 7000	DL PPC21.5M 7000
Order No.	1107937	2400017	2400015	2400016
Display size (in cm)	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/m <sup>2</sup> )	400			
Backlight MTBF (in h)	50,000			
Viewing angle (left / right / top / bottom in °)	80 / 80 / 80 / 80			
CPU	Intel® Celeron™ 2980U 1.6 GHz	Intel® Core™ i7-4650U 3.3 GHz		
Cooling	Passive			
RAM (configurable)	max. 12 GB DDR3			
Data memory (configurable)	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) <sup>1</sup>	32.1	36.7	37.4	

<sup>1</sup> Power consumption value represents power consumption under typical usage. Actual system power consumption depends on system loading. See user manual for details.



# Standalone 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, 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 +50°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: 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
- ✓ Push-buttons, switches or Emergency STOP direct at screen with push-button box

### 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)	30.7 (15.6") / 38.1 (18.5") FHD			
Touch technology	PCAP multi-touch			
Resolution (W x H in pixels)	1920 x 1080			
Brightness (in cd/m²)	400	450		
Backlight MTBF (in h)	50000			
Viewing angle (left / right / top / bottom in °)	85/85/80/80	85/85/80/80		
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 (W x H x D in mm)	375 x 315 x 60 / 475 x 425 x 60			
Weight (in kg)	4.4 / 5.5			
Power consumption (in W) <sup>1</sup>	49.4 / 52.1	64.6 / 67		
			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.

<sup>1</sup> Power consumption value represents maximum power consumption. Actual system power consumption depends on system loading. See user manual for details.



BL2 PPC AIO65 in pole mount or swing arm mount version



BL2 PPC AIO65 with VESA mount option



BL2 PPC AIO65 in pole mount or swing arm mount version and push-button box



## 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 video 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 inputs



### 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)	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/m <sup>2</sup> )	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 305	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 large 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.

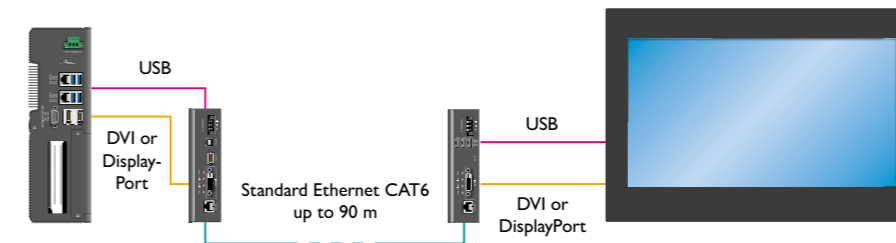


# Hardware and software solution

## 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

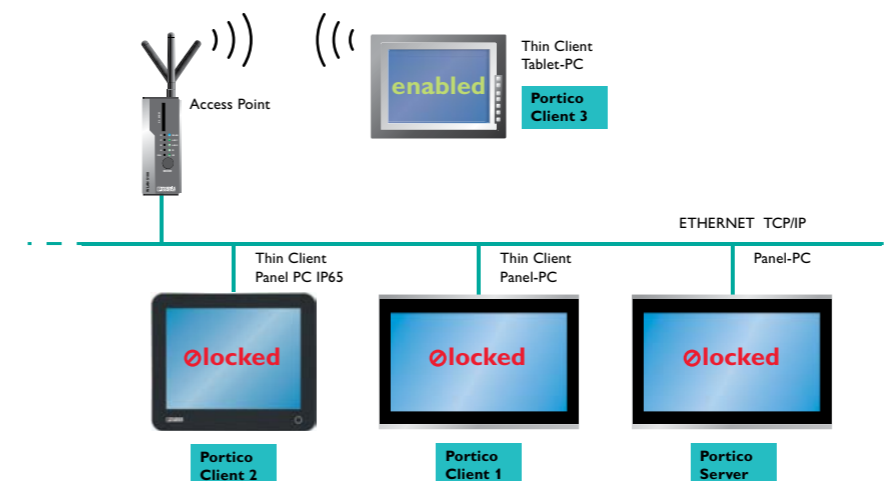
With the Portico software, you can install up to 16 thin clients exactly where you need them. The simultaneous display of IPC screen information at several operating stations without a server operating system enables simultaneous access to one machine from different locations. The integrated

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

## 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, 1000 MHz
- 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
- Degree of protection: IP67 (front), IP20 (back)
- 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
- ✓ Can be operated with gloves

### Robust HMIs with GFG touch

Designation	TP 3043W/WT	TP 3057V/WT	TP 3070W/WT	TP 3121S/WT	TP 3120W/WT	TP 3150S/WT
Order No.	2404286	2403464	2403465	2403466	1029308	1029281
Display size (in cm)	10.92 (4.3")	14.48 (5.7")	17.78 (7")	30.73 (12.1")		38.1 (15")
Touch technology	Analog resistive (GFG), anti-reflective coating					
Colors	262,144		16.77 million	262,144	65,536	
Resolution (W x H in pixels)	480 x 272 (WQVGA)	640 x 480 (VGA)	800 x 480 (WVGA)	800 x 600 (SVGA)	1280 x 800 (WXGA)	1024 x 768 (XGA)
Brightness (in cd/m²)	385	400		360	320	480
Backlight MTBF (in h)	40,000			50,000		
Viewing angle (left / right / top / bottom in °)	75 / 75 / 63 / 75	65 / 65 / 55 / 52	70 / 70 / 60 / 60	80 / 80 / 65 / 75	88 / 88 / 88 / 88	80 / 80 / 65 / 80
Front plate dimensions (W x H x D in mm)	171 x 131 x 5	195 x 153 x 5	234 x 174 x 5	359 x 280 x 5	344 x 248 x 5	416 x 325 x 5
Mounting cutout (W x H in mm)	136 x 96	161 x 119	200 x 140	323 x 244	309 x 214	381 x 290
Installation depth (in mm) incl. fieldbus interface	42 68		48.5 75	58 58	59 59	64 64
Weight (in kg)	0.55	0.8	1.1	2.6	2.3	3.6
Power consumption (in W) / incl. fieldbus interface	4.8 / 7.2	7.2 / 9.6	9.6 / 12	12 / 16.8	16.8 / 19.2	16.8 / 21.6

All IP65 versions can be found on our website under web code #2309



## Robust panel PCs

### General technical data

- Display type: TFT
- Ethernet interfaces: 2 x (10/100/1000 Mbps), RJ45, Intel® i210
- Operating systems (configurable): Windows® 7 and Windows® 10 IoT Enterprise
- Operating temperature: 0°C to +50°C (with Intel® E3845), -20°C to +60°C (with Intel® E3827)
- Storage temperature: -25°C to +70°C
- Relative humidity: front: 5% to 95%, non-condensing, back: 20% to 85%, 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

- ✓ Display can be read in direct sunlight
- ✓ Proven system design with passive cooling and no moving parts
- ✓ Resistant to UV and IR radiation as well as environmental influences such as salt spray



### VL2 series panel PCs with sunlight-readable display

Designation	VL2 PPC7 1000		VL2 PPC12 1000	
	Order No.	2403708		2403710
Display size (in cm)	17.8 (7")		30.7 (12.1")	
Touch technology (configurable)	Analog resistive (GFG)	Projective capacitive (PCAP)	Analog resistive (GFG)	Projective capacitive (PCAP)
Resolution (W x H in pixels)	800 x 480 (WXGA)		1280 x 800 (WXGA)	
Brightness (in cd/m²)	350	400	360	320
Backlight MTBF (in h)	40,000		50,000	
Viewing angle (left / right / top / bottom in °)	70 / 70 / 65 / 65	70 / 70 / 60 / 60	80 / 80 / 65 / 75	88 / 88 / 88 / 88
CPU	Intel® Atom E3827 2 x 1.75 GHz (Dual core) / Intel® Atom™ E3827 1.75 GHz (dual-core)			
Cooling	Passive			
RAM	4 GB DDR3			
Data memory	Max. 2 GB DDR3L (E3827) / max. 4 GB DDR3L (E3845)			
Number of slots	1			
USB	2 x USB 2.0, 1 x USB 3.0			
Serial interfaces	1 x COM (RS-232/RS-422/RS-485) Optional: 1 x COM (RS-232) + 1 x COM (RS-485) / 2 x CAN + 1 x COM (RS-232) + 1 x COM (RS-485)			
Video output	1 x DisplayPort			
Graphics processor	Intel® HD Graphics			
Dimensions incl. front plate (W x H x D in mm) incl. optional interfaces	215 x 158 x 87 D: 110	208 x 148.5 x 88 D: 111	336 x 234 x 87 D: 110	336 x 234 x 88 D: 111
Mounting cutout (W x H in mm)	195 x 139	198 x 138	322 x 217	326 x 224
Weight (in kg)	2.3		3.3	
Power consumption (in W) <sup>1</sup>	26.4		33.6	

<sup>1</sup> Power consumption value represents power consumption under typical usage. Actual system power consumption depends on system loading. See user manual for details.

## Robust panel PCs

### General technical data

- Display type: TFT
- Interfaces: 2 x (10/100/1000 Mbps), RJ45, 1 x COM (RS-232), 3 x USB 3.0, 1 x USB 3.0 on the front with cover, optional: 1 x COM (RS-232)
- Operating systems (configurable): Windows® 10 IoT Enterprise
- Optional: LTE/GPS module
- Optional: Wi-Fi 802.11 a/b/g/n/ac + Bluetooth
- Operating temperature: -30°C to 60°C
- Relative humidity: 5% to 95%, non-condensing
- Degree of protection: IP66
- Impact strength: IK08 (EN 62262)
- Supply voltage: 9 to 60 V DC
- Mounting type: VESA in back cover, optional additional holders
- Approvals: UL/cUL in preparation

### Your advantages

- ✓ Display can be read in direct sunlight
- ✓ Can be operated with gloves (also PCAP)
- ✓ Convenient operation using four customer configurable front buttons



### Sunlight-readable panel PCs for use on forklift trucks and vehicles

Designation	VMT 9000			
	Order No.	1084510 (configurable)		
Touch technology (configurable)	Analog resistive (polyester) / projective capacitive (PCAP)		Projective capacitive (PCAP)	Analog resistive (polyester) / projective capacitive (PCAP)
Display size (in cm)	26.4 (10.4")	30.7 (12.1")		38.1 (15")
Resolution (W x H in pixels)	1024 x 768 (XGA)		1280 x 800 (WXGA)	1024 x 768 (XGA)
Brightness (in cd/m²)	500	600	400	300
Backlight MTBF (in h)	50,000			
Viewing angle (left / right / top / bottom in °)	88 / 88 / 88 / 88	70 / 70 / 80 / 80	88 / 88 / 88 / 88	
CPU	Intel® Atom™ x7-E3950 2 GHz			
RAM (configurable)	max. 8 GB LPDDR4			
Data memory (configurable)	64 GB eMMC, optional: 128 GB M.2 SSD			
Cooling	Passive			
Dimensions (W x H x D in mm)	277 x 249 x 50	312 x 277 x 50	331 x 256 x 50	380 x 326 x 50
Weight (in kg)	3.2	3.65	3.7	4.7
Power consumption (in W)	Depends on the configuration			

## 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 or 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

### VL2 series box PCs for Ex areas



Designation	VL2 BPC 1000 EX	VL2 BPC 2000 EX	VL2 BPC 3000 EX	VL2 BPC 7000 EX	VL2 BPC 9000 EX
Order No.	1054028	1054027	1054025	105424	1054023
CPU	Intel® Atom™ E3845 4 x 1.91 GHz (quad-core)	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. 4 GB DDR3L	max. 8 GB DDR3	max. 16 GB DDR3		max. 32 GB DDR4
Data memory (configurable)	SD, HDD or SSD	HDD or SSD	HDD or SSD, RAID support 0/1		
Number of slots	1		1		
USB	2 x USB 2.0, 1 x USB 3.0	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: 1 x COM (RS-232) + 1 x COM (RS-485), 2 x CAN	1 x COM (RS-232/RS-422/RS-485) Optional: 2 x COM (RS-232) + 1 x COM (RS-232/RS-422/RS-485)			
Video output	1 x DisplayPort	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)	271 x 211 x 65		264 x 215 x 95		
Weight (in kg)	2.4	4.2	4.8		
Power consumption (in W) <sup>1</sup>	24	37.4	41.3	42.7	38.9
Operating temperature	HDD: 0°C to +45°C SSD: 0°C to +50°C	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	-25°C to +70°C				
Relative humidity	20% to 85%, non-condensing		5% to 95%, non-condensing		

## 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



### VL2 series panel PCs for Ex areas



Designation	VL2 PPC 1000 EX	VL2 PPC 2000 EX	VL2 PPC 3000 EX	VL2 PPC 7000 EX	VL2 PPC 9000 EX
Order No.	1050366	1050367	1050368	1050365	1050364
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)/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® Atom™ E3845 4 x 1.91 GHz (quad-core)	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. 4 GB DDR3L	max. 8 GB DDR3	max. 16 GB DDR3		max. 32 GB DDR4
Data memory (configurable)	HDD or SSD		HDD or SSD, RAID support 0/1		
Number of slots	1		1		
USB	2 x USB 2.0, 1 x USB 3.0	4 x USB 2.0	2 x USB 2.0, 2 x USB 3.0		
Serial interfaces	See left page				
Video output	1 x DisplayPort	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 100/ 465 x 313 x 102/ 532 x 354 x 99	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: 0°C to +50°C	HDD: 0°C to +45°C SSD: -20°C to +60°C		HDD: 0°C to +45°C SSD: -10°C to +60°C	HDD: 0°C to +45°C SSD: -20°C to +60°C
Relative humidity	20% to 85%, non-condensing		5% to 95%, non-condensing		

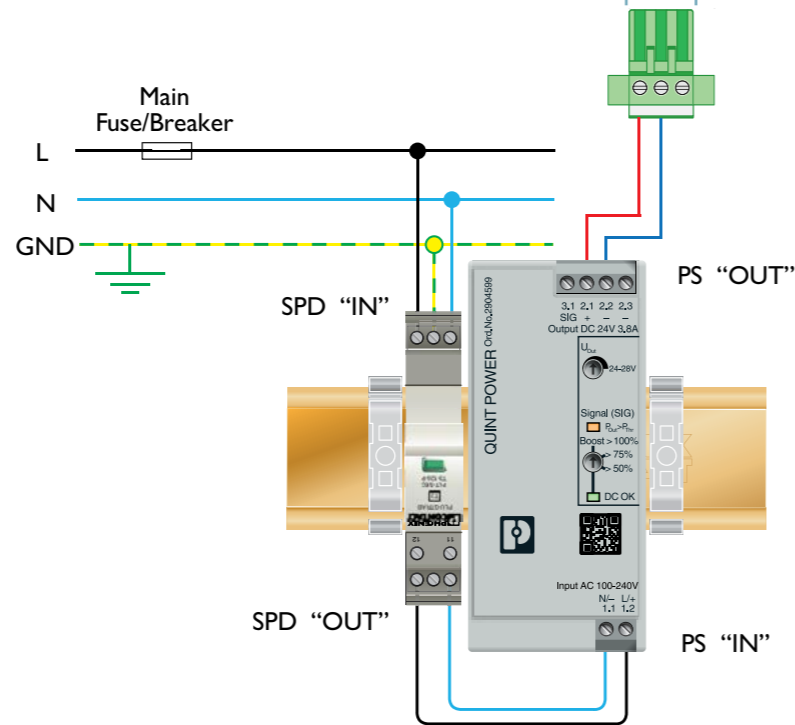
<sup>1</sup> Power consumption value represents maximum power consumption without PCI / PCIe interface. Actual system power consumption depends on system loading. See user manual for details.

## 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.



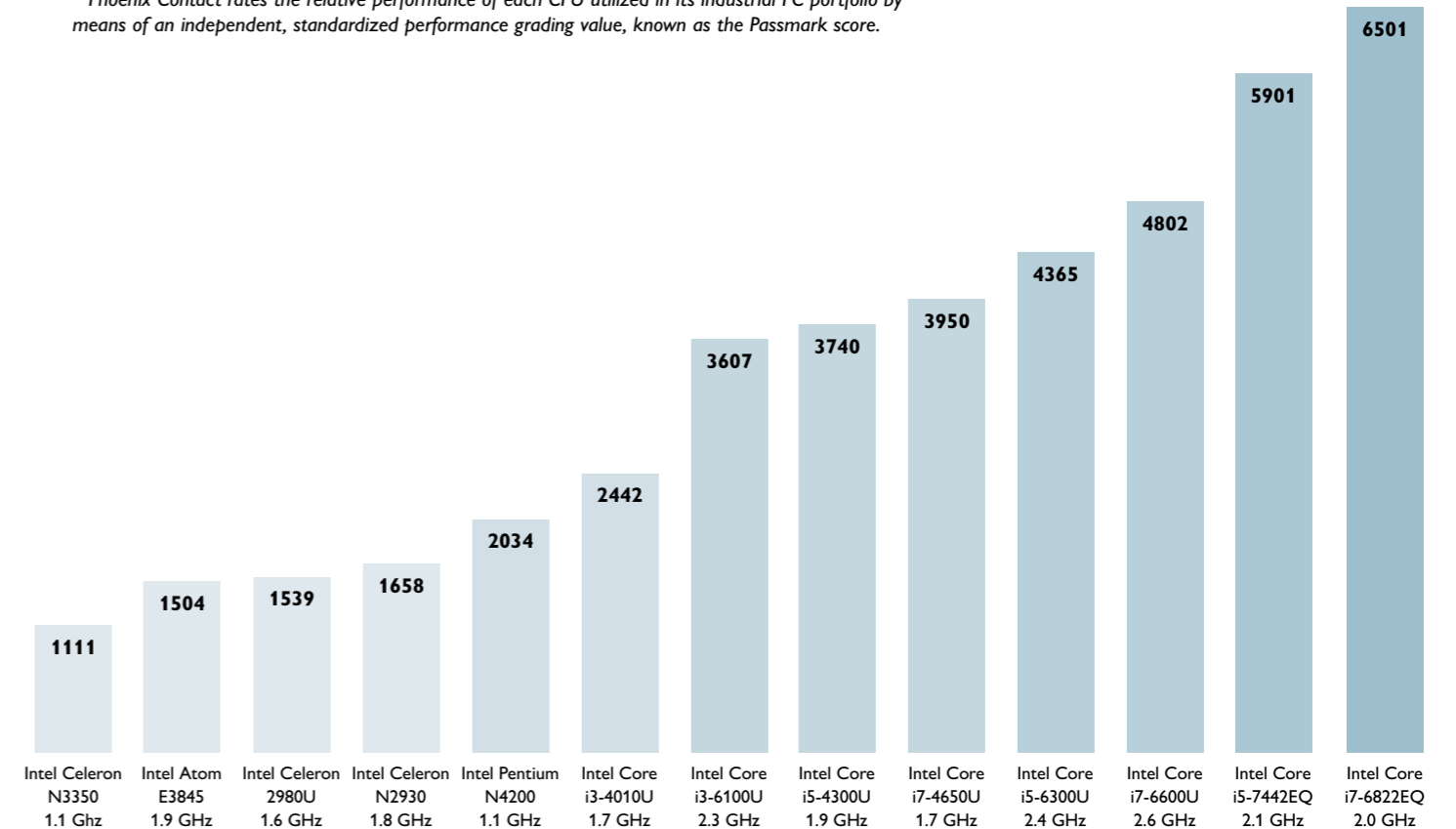
Type	Order number	Designation	Description
Power supply	2904599	QUINT4-PS/1AC/24DC/3.8/SC	3.8 A power supply
Power supply	2904600	QUINT4-PS/1AC/24DC/5	5 A power supply
Power supply	2903147	TRIO-PS-2G/1AC/24DC/3/C2LPS	3 A power supply
Power supply	2903148	TRIO-PS-2G/1AC/24DC/5	5 A power supply
Power supply	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 1000/1100/1500	1111
Intel Atom E3845 1.9GHz	VL2 1000	1504
Intel Celeron 2980U 1.6GHz	DL 2000	1539
Intel Celeron N2930 1.8GHz	BL 2000, VL 2000, VL2 2000	1658
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](http://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.

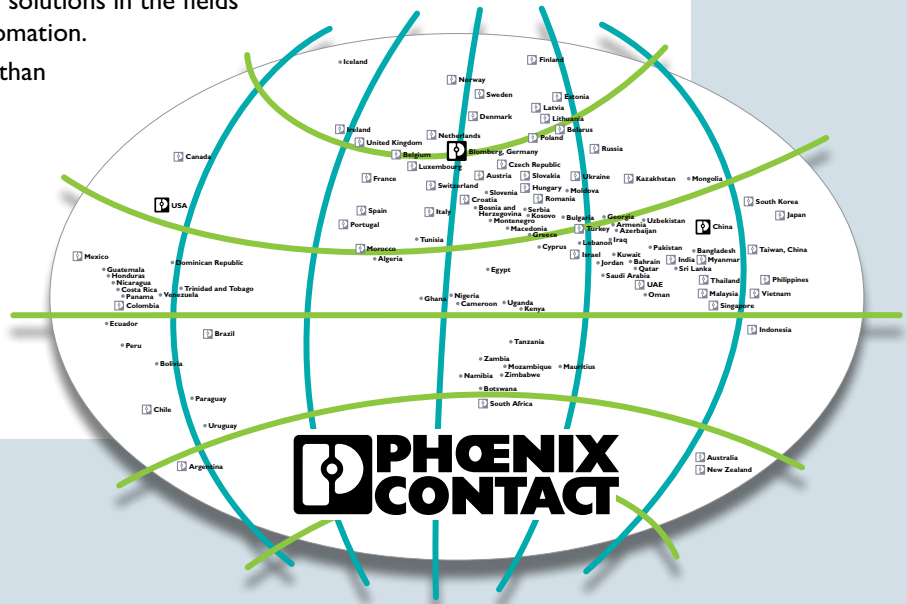




## Ongoing communication with customers and partners worldwide

Phoenix Contact is a global market leader based in Germany. Our group is known for its future-oriented components, systems, and solutions in the fields of electrical engineering, electronics, and automation.

With a global network reaching across more than 100 countries and 17,400 employees, we can stay in close contact with our customers, something we believe is essential to success. The wide variety of our innovative products makes it easy for our customers to find future-oriented solutions for multiple applications and industries. We especially focus on the fields of energy, infrastructure, process, and factory automation.



You will find our complete product range at:  
[www.phoenixcontact.com](http://www.phoenixcontact.com)

### USA

Phoenix Contact USA, Inc.  
P.O. Box 4100  
Harrisburg, PA 17111-0100  
Phone: 800-888-7388  
717-944-1300  
Technical Service: 800-322-3225  
Fax: 717-944-1625  
Email: [info@phoenixcon.com](mailto:info@phoenixcon.com)  
Website: [www.phoenixcontact.com](http://www.phoenixcontact.com)

### Canada

Phoenix Contact Ltd.  
8240 Parkhill Drive  
Milton, Ontario L9T 5V7  
Toll Free: 800-890-2820  
Phone: 905-864-8700  
Fax: 905-864-7900  
Email: [cdinfo@phoenixcontact.ca](mailto:cdinfo@phoenixcontact.ca)