



# HMIs and industrial PCs

Product catalog

# 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

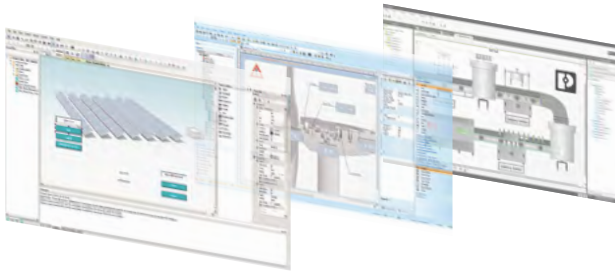
Our HMIs provide user-friendly visualization for automation systems in a multitude of industries. Phoenix Contact offers devices for Visu+ software or for HTML5 applications, as well as robust operator and display panels for use on ships with the necessary approvals.

## 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

|  |    |
|--|----|
| HMIs   | 8  |
| HMIs for web visualization                           | 12 |
| HMIs with Visu+ software                             | 16 |
| Industrial PCs                                       | 20 |
| Box PCs  | 22 |
| Panel PCs  | 28 |
| IP65-protected panel PCs                             | 34 |
| Hygienic stainless-steel industrial panels           | 36 |
| Industrial touch monitors                            | 38 |
| Remote monitoring                                    | 40 |
| Programmable edge computers                          | 42 |
| HMIs and industrial PCs for harsh ambient conditions | 44 |
| Industrial PCs for explosive areas                   | 46 |

## PXR 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!**



# 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.

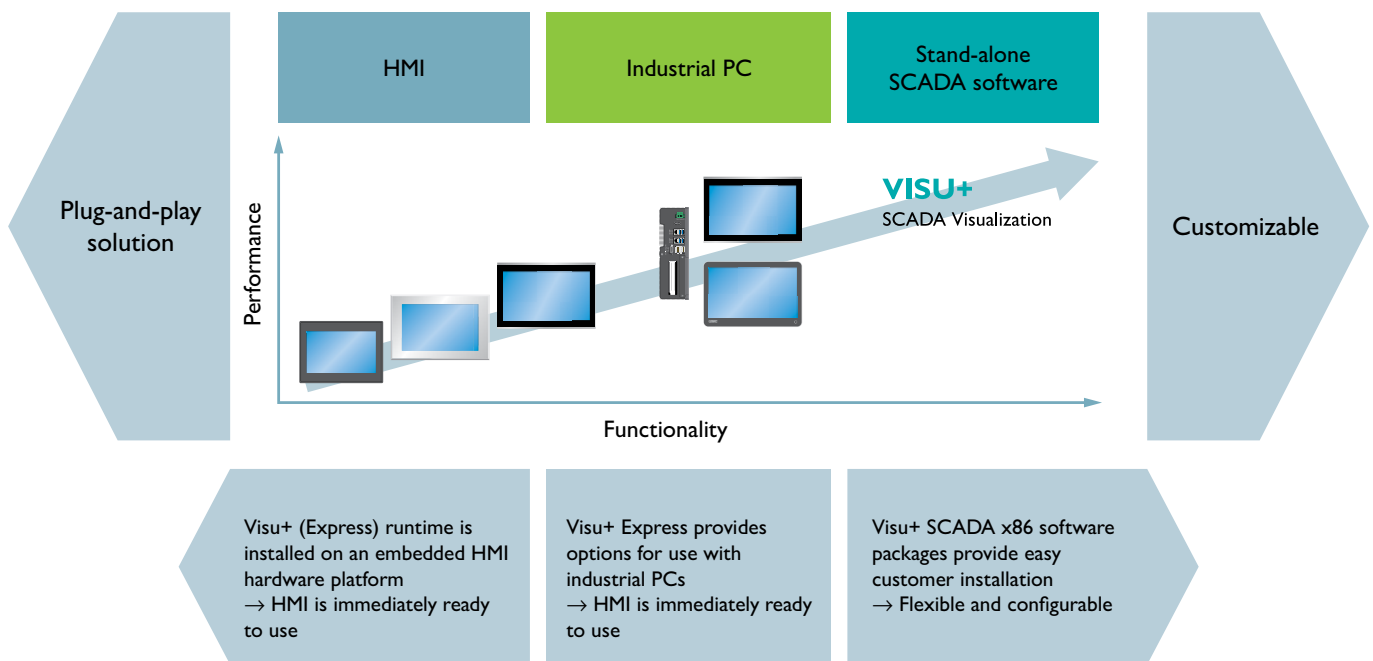
### Quality

Made by Phoenix Contact 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

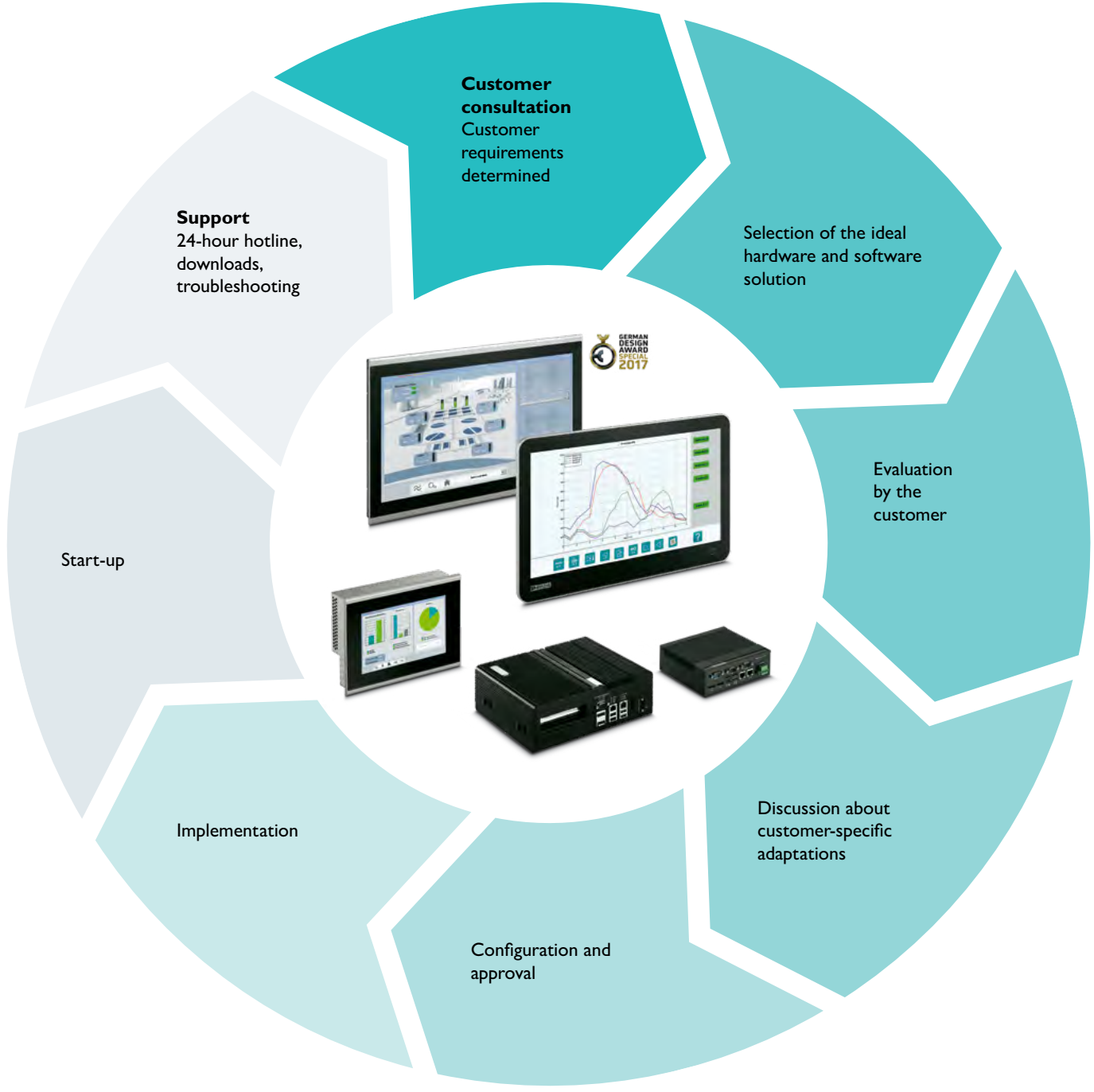
From customized solutions to engineering support, we can help you to design a better automation system. Services range from preloaded software images to clean-sheet designs based on your requirements.

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.

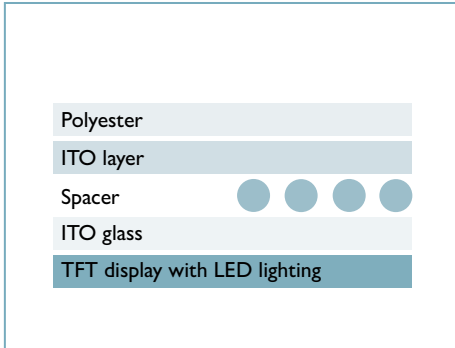


# Touch technologies

## Ideal for industrial applications

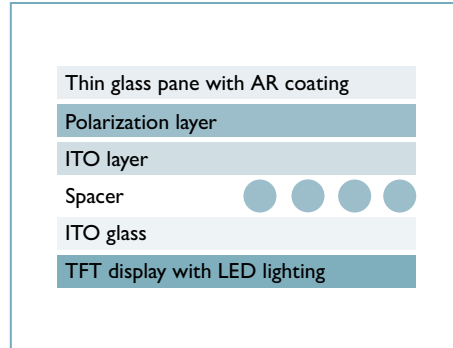
The touch screen is a popular control element that invokes a reaction from the system by touching a special surface. The touch interface has quickly evolved and surpassed simple analog resistive interfaces to meet the ever-changing demands of customers and applications. Phoenix Contact understands

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



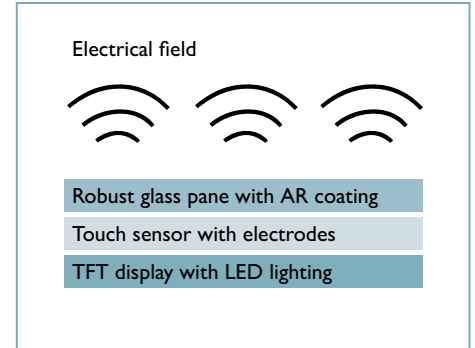
### Analog resistive touch screen (polyester)

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)

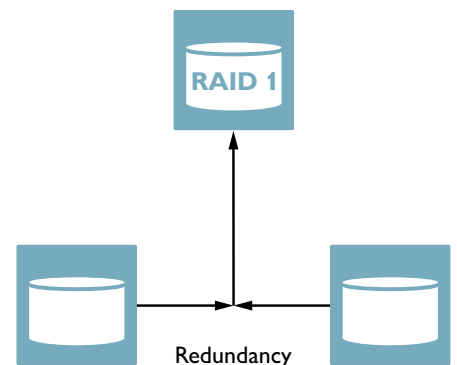
A transparent ITO layer of touch sensors underneath the glass cover projects a uniform electrical field that changes when touched. The touch controller localizes the coordinates of the touch points with high precision. Even the use of thicker glass and operation when wearing suitable gloves are no problem. 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  $-30^{\circ}\text{C}$  to  $+70^{\circ}\text{C}$ .



### IP67 protection class

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

# HMI

## 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.



### 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 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



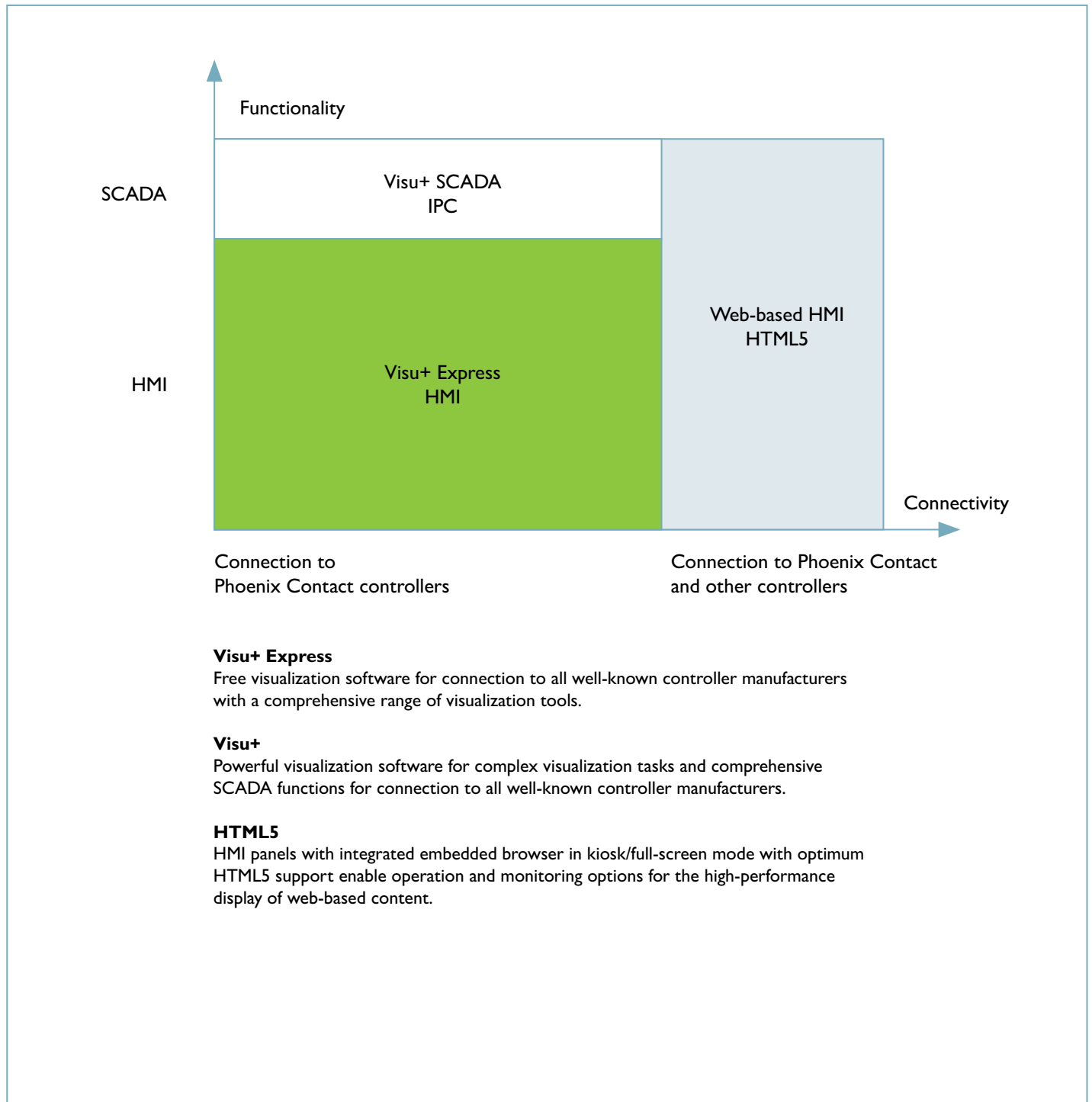
## HMI for special industrial requirements

- 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 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.



## 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 (WVP 6000

and TP 6000), and high-end applications (IPC). Select the right operator panel to meet your application needs.

|  |                     |   | HMI for HTML5 |         | HMI for Visu+ |         | Industrial PC |
|--|---------------------|---|---------------|---------|---------------|---------|---------------|
|  |                     |   | BWP 2000      | WP 6000 | BTP 2000      | TP 6000 | IPC           |
| Page                                   |                     |   | 14            | 15      | 18            | 19      | 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 |               | ○       |               |         | ●             |
|  |                     | PLC logic                                   |               |         | ●             | ●       |               |
|  | Other               | 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 |                     | Expanded temperature range                  |               |         |               |         | ●             |
|  |                     | Displays can be read in direct sunlight     |               |         |               |         | ●             |
|  |                     | UL (Ordinary/Hazardous location)            | ●/●           | ●/–     | ●/●           | ●/+     | ●/●           |
|  |                     | ATEX II and IECEx II                        |               |         |               |         | ●             |
|  |                     | Maritime approvals                          |               |         |               |         |               |
|  | Value / Performance | ●/○   | ○/●           | ●/○     | ○/●           | ●/●     |               |

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

# HMI's 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 6000 series HMI's. 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.

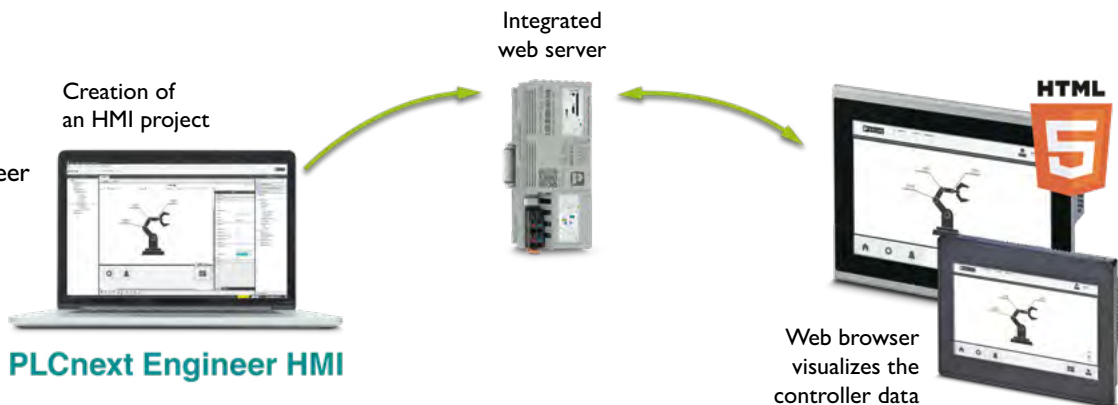
No web skills are required, since the software offers numerous symbols and templates that can be individually extended.

- 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](http://phoenixcontact.com)

Further information on controllers compatible with PLCnext Engineer available at:

 **Web code: #2310**

  
PLCnext Engineer  
Engineering Software



# 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



## 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                |

# HTML5 web panels

## General technical data

- Display type: TFT
- CPU: Arm® Cortex®-A9, 1.3 GHz, Quad-core
- Memory: 4 GB RAM, 8 GB eMMC Flash
- Interfaces: 1 x Ethernet (10/100 Mbps), 2 x USB Host 2.0,
- 1 x USB-C; 1 x μSD
- Operating system: Linux Yocto
- Housing: aluminum/sheet steel, zinc-plated
- Degree of protection: IP66 (front), IP20 (back)
- Power supply: 24 V DC ±20%
- Installation type: portrait/landscape
- Mounting type: front installation
- Approvals: UL/cUL, NEMA 4

## Your advantages

- ✓ Flexible with open web standards and 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 HTML5 applications



| Designation                                      | WP 6070-WVPS                 | WP 6101-WXPS      | WP 6121-WXPS      | WP 6156-WXPS               | WP 6185-WHPS      | WP 6215-WHPS    |
|--|------------------------------|-------------------|-------------------|----------------------------|-------------------|-----------------|
| Order no.  | 1290800                      | 1290801           | 1290802           | 1290803                    | 1290807           | 1290809         |
| Display size (in cm)                             | 17.78 (7")                   | 25.65 (10.1")     | 30.73 (12.1")     | 39.6 (15.6")               | 47 (18.5")        | 54.6 (21.5")    |
| Touch technology                                 | Projective capacitive (PCAP) |                   |                   |                            |                   |                 |
| Colors   | 16.7 million                 |                   |                   |                            |                   |                 |
| Resolution (W x H in pixels)                     | 800 x 480 (WVGA)             | 1280 x 800 (WXGA) |                   | 1920 x 1080 (FHD)          |                   |                 |
| Brightness (in cd/m <sup>2</sup> )               | 500                          |                   | 400               | 450                        | 350               | 400             |
| Backlight MTBF (in h)                            | 50,000                       |                   |                   |                            |                   |                 |
| Viewing angle (left / right / top / bottom in °) | 89 / 89 / 89 / 89            | 85 / 85 / 85 / 85 | 88 / 88 / 88 / 88 | 85 / 85 / 85 / 85          | 89 / 89 / 89 / 89 |                 |
| Front plate dimensions (W x H x D in mm)         | 202 x 146 x 6.9              | 263 x 200 x 6.9   | 302 x 229 x 6.9   | 398 x 273 x 6.9            | 465 x 310 x 6.9   | 532 x 346 x 6.9 |
| Mounting cutout (W x H in mm)                    | 195 x 139                    | 252 x 189         | 292 x 219         | 388 x 263                  | 455 x 300         | 522 x 336       |
| Installation depth (in mm)                       | 51                           |                   |                   |                            |                   |                 |
| Weight (in kg)                                   | 1.3                          | 2.1               | 2.5               | 4.2                        | 4.8               | 6.4             |
| Power consumption (in W)                         | 14.7                         | 19.0              | 21.5              | 30.5                       | 32.2              | 32.9            |
| Operating temperature                            | -20°C to +50°C               |                   |                   | 0°C to +50°C               |                   |                 |
| Storage temperature                              | -25°C to +85°C               |                   |                   | -20°C to +60°C             |                   |                 |
| Relative humidity                                | 20% to 85%, non-condensing   |                   |                   | 10% to 90%, non-condensing |                   |                 |

# 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 BTP 2000 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



BTP 2000

## Touch panels with resistive touch



| Designation                              | BTP 2043W                    | BTP 2070W        | 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/m <sup>2</sup>          | 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<sup>1)</sup>

- 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



## Touch panels with PCAP touch



| Designation                              | TP 6070-WVPS                 | TP 6101-WXPS      | TP 6121-WXPS      | TP 6156-WHPS               | TP 6185-WHPS      | TP 6215-WHPS    |
|--|------------------------------|-------------------|-------------------|----------------------------|-------------------|-----------------|
| Order no.                                | 1189629                      | 1190417           | 1190420           | 1190421                    | 1190423           | 1190424         |
| Display size in cm (in.)                 | 17.78 (7")                   | 25.65 (10.1")     | 30.73 (12.1")     | 39.6 (15.6")               | 47 (18.5")        | 54.6 (21.5")    |
| Touch technology                         | Protective capacitive (PCAP) |                   |                   |                            |                   |                 |
| Colors                                   | 16.7 million                 |                   |                   |                            |                   |                 |
| Resolution (W x H) in pixels             | 800 x 480 (WVGA)             | 1280 x 800 (WXGA) |                   | 1920 x 1080 (FHD)          |                   |                 |
| Brightness in cd/m <sup>2</sup>          | 500                          |                   | 400               | 450                        | 350               | 400             |
| Backlight MTBF in h                      | 50,000                       |                   |                   |                            |                   |                 |
| Viewing angle (horizontal/vertical) in ° | 89 / 89 / 89 / 89            | 85 / 85 / 85 / 85 | 88 / 88 / 88 / 88 | 85 / 85 / 85 / 85          | 89 / 89 / 89 / 89 |                 |
| Front plate dimensions (W x H x D) in mm | 202 x 146 x 6.9              | 263 x 200 x 6.9   | 302 x 229 x 6.9   | 398 x 273 x 6.9            | 465 x 310 x 6.9   | 532 x 346 x 6.9 |
| Mounting cutout (W x H) in mm            | 195 x 139                    | 252 x 189         | 292 x 219         | 388 x 263                  | 455 x 300         | 522 x 336       |
| Installation depth in mm                 | 51                           |                   |                   |                            |                   |                 |
| Weight in kg                             | 1.3                          | 2.1               | 2.5               | 1.7                        | 4                 | 5.5             |
| Power consumption in W                   | 14.71                        | 19.01             | 21.53             | 16.8                       | 24                | 28.8            |
| Operating temperature                    | -20°C to +50°C               |                   |                   | 0°C to +50°C               |                   |                 |
| Storage temperature                      | -25°C to +85°C               |                   |                   | -20°C to +60°C             |                   |                 |
| Relative humidity                        | 20% to 85%, non-condensing   |                   |                   | 10% to 90%, non-condensing |                   |                 |

# Industrial PCs

## The right system for every application

As the interface between human and machine or as a central system controller, industrial PCs are an essential component in industrial applications. In addition to box PCs, the Phoenix Contact portfolio 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<br>1.83 GHz (quad-core)   | Intel® Core™ i3-4010U<br>1.7 GHz (dual-core) | Intel® Core™ i5-4300U<br>1.9 GHz (dual-core) | Intel® Core™ i7-6822EQ<br>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)<br>Optional: 2 x COM (RS-232) + 1 x COM (RS-232/RS-422/RS-485)<br>Optional: Mini PCI Express (mPCIe)<br>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) <sup>1</sup> | 37.4  | 41.3   | 42.7   | 38.9  |
| Operating temperature                 | HDD: 0°C to +45°C<br>SSD: -20°C to +65°C  |  | HDD: 0°C to +45°C<br>SSD: -10°C to +65°C     | HDD: 0°C to +45°C<br>SSD: -20°C to +60°C    |
| Storage temperature                   | -40°C to +70°C  |  |  |   |
| Relative humidity                     | 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<br>1.1/2.4 GHz (dual-core) | Intel® Pentium® N4200<br>1.1/2.5 GHz (quad-core) | Intel® Core™ i5-7442EQ<br>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  |

<sup>1</sup> 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<br>1.1/2.4 GHz<br>(dual-core) | Intel® Pentium® N4200<br>1.1/2.5 GHz<br>(quad-core) | Intel® Core™ i3-6100U<br>2.3 GHz<br>(dual-core) | Intel® Core™ i5-6300U<br>2.4/3.0 GHz<br>(dual-core) | Intel® Core™ i7-6600U<br>2.6/3.4 GHz<br>(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<br>500                           | Intel® HD Graphics<br>505                           | Intel® HD Graphics<br>520                       | Intel® HD Graphics<br>630                           | Intel® HD Graphics<br>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  |

# 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



## 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) <sup>1</sup> | 10.8   |         | 12.72                                      |         |               |                |                |                 |                |                  |                 |                   |
| Operating temperature                 | -20°C to +50°C   |         |  |         |               |                |                |                 |                |                  |                 |                   |

<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

- 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)



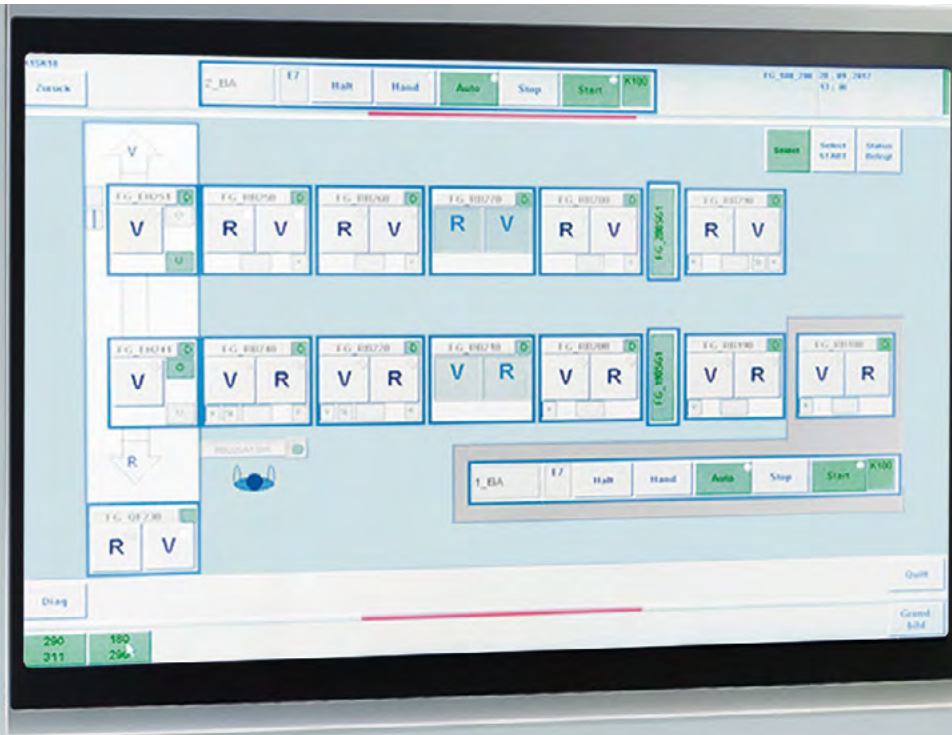
## BL2 series box PCs



| 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) <sup>1</sup> | 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



## 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/m <sup>2</sup> )               | 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) <sup>1</sup>            | 25.7                              | 31.9              |

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

<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

## 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)<br>Optional: 2 x COM (RS-232) + 1 x COM (RS-232/RS-422/RS-485)<br>Optional: Mini PCI Express (mPCIe)<br>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 /<br>465 x 313 x 123 /<br>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  |   |



## 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/m <sup>2</sup> )                  | 400 / 300 / 300   |  |
| Backlight MTBF (in h)                               | 50,000  |  |
| Viewing angle<br>(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)<br>Optional: Mini PCI Express (mPCIe)<br>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<br>(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<br>1.1/2.4 GHz (dual-core)     | Intel® Pentium® N4200<br>1.1/2.5 GHz (quad-core) | Intel® Core™ i5-7442EQ<br>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.

# 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



## 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/m <sup>2</sup> )                             | 300   |  |  |  |
| Backlight MTBF (in h)  | 50,000  |  |  |  |
| Viewing angle (left / right / top / bottom in °)               | 85 / 85 / 80 / 80                                     |  |  |  |
| CPU  | Intel® Pentium® N4200<br>1.1 GHz (quad-core)          | Intel® Core™ i3-6100U<br>2.3 GHz (dual-core) | Intel® Core™ i5-6300U<br>2.4/3.0 GHz (dual-core) | Intel® Core™ i7-6600U<br>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) <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                               |

## 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



## 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/m <sup>2</sup> )               | 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<br>21.5" display: 89 / 89 / 89 / 89 |   |  |  |
| CPU  | Intel® Pentium N4200<br>1.1 / 2.5 GHz (4-core)                           | Intel® Core i5-7442EQ<br>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) <sup>1</sup>            | 49.4 / 52.1 / 48   | 64.6 / 67 / 60                                  |  |  |

<sup>1</sup> 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



## Hygienic industrial PCs and monitors



| Designation                                      | All-in-one industrial PC   |                       | Monitors                        |   |                            |
|--|--|-----------------------|---------------------------------|---|----------------------------|
|  | 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/m <sup>2</sup> )               | 400 cd/m <sup>2</sup>  | 250 cd/m <sup>2</sup> | 400 cd/m <sup>2</sup>           | 250 cd/m <sup>2</sup>                                   | 400 cd/m <sup>2</sup>      |
| 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)<br>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<br>2 x USB 3.0   |                       | 1 x USB 2.0<br>1 x display port | 3 x USB; 2.01 x USB slave<br>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<br>1261658      | FPM 17.3 69K SP<br>1261656                              | FPM 23.8 69K SP<br>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/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 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.

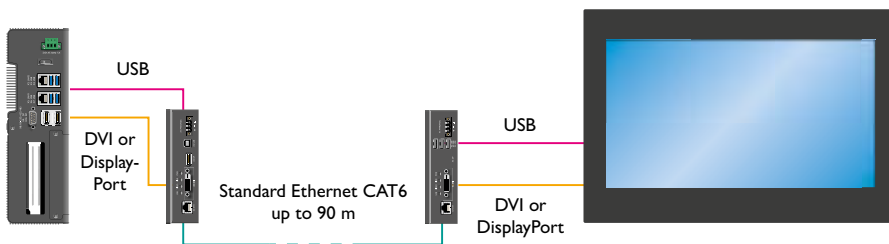


# Hardware and software solution

## 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  $\pm 20\%$
- 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

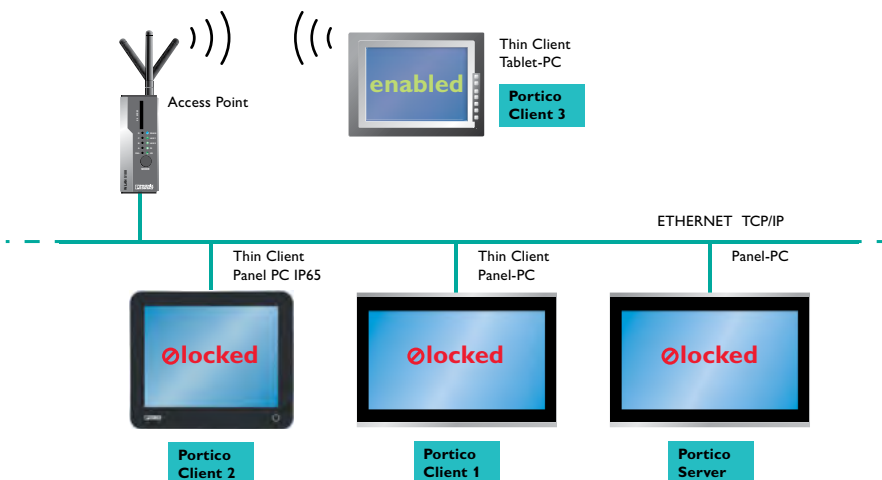
With the Portico software, you can install up to 16 thin clients exactly where you need them. The simultaneous display of IPC screen information at several operating stations without a server operating system enables simultaneous access to one machine from different locations. The integrated

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



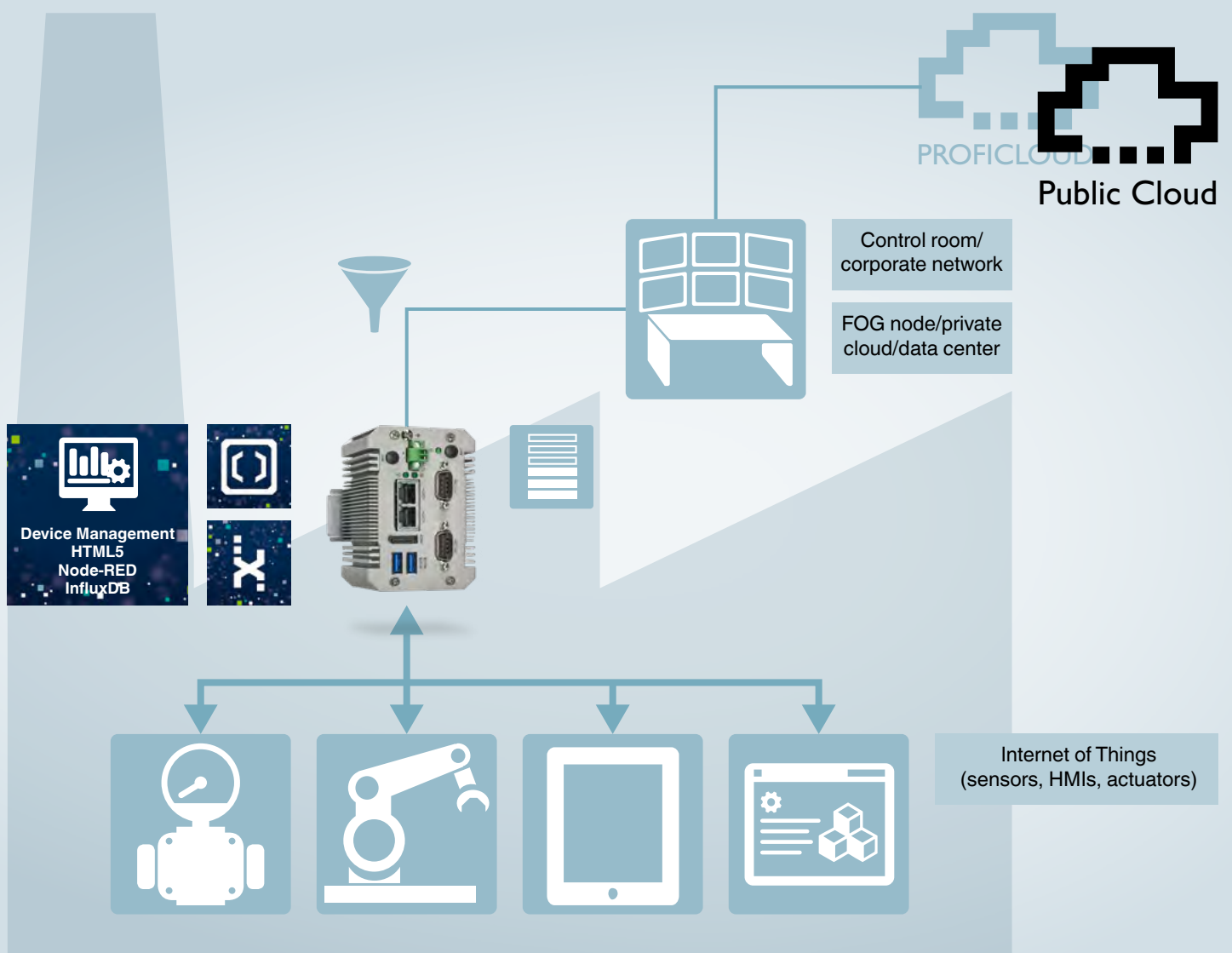
## Your advantages

- ✓ 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



## 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 |                                      |

# HMI and industrial PCs for harsh ambient conditions

HMI 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



## Robust HMIs with GFG touch



| Designation  | TP 3057<br>V/WT-65                              | TP 3057<br>V/WT | TP 3070<br>W/WT-65 | TP 3070<br>W/WT | TP 3121<br>S/WT-65 | TP 3121<br>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<br>(left / right / top / bottom in °)    | 65 / 65 / 55 / 52                               |                 | 70 / 70 / 60 / 60  |                 | 80 / 80 / 65 / 75  |                 |
| Front plate dimensions<br>(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)<br>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)<br>/ 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<br>1.83 GHz / 2.16 GHz<br>(quad-core)   | Intel® Core™ i3-4010U<br>1.7 GHz (dual-core) | Intel® Core™ i5-4300U<br>1.9 GHz / 2.9 GHz<br>(dual-core) | Intel® Core™<br>i7-6822EQ<br>2.0 GHz / 2.8 GHz<br>(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)<br>Optional: 2 x COM (RS-232) + 1 x COM (RS-232/RS-422/RS-485)<br>Optional: Mini PCI Express (mPCIe)<br>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) <sup>1</sup> | 37.4  | 41.3   | 42.7  | 38.9  |
| Operating temperature                 | HDD: 0°C to +45°C<br>SSD: -20°C to +50°C  |  | HDD: 0°C to +45°C<br>SSD: -10°C to +50°C                  | HDD: 0°C to +45°C<br>SSD: -20°C to +50°C                      |
| Storage temperature                   | -40°C to +70°C  |  |   |   |
| Relative humidity                     | 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.

# 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



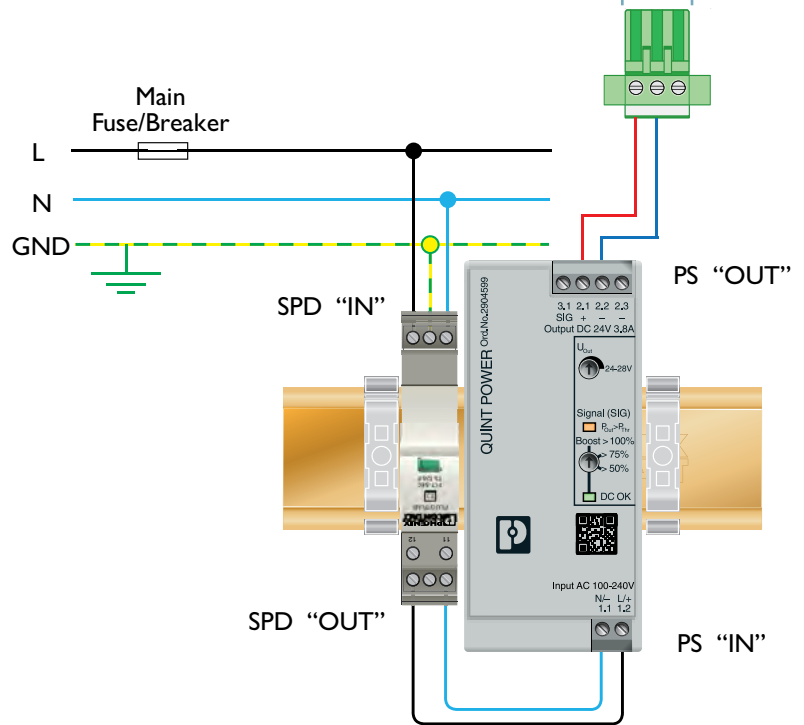
| Designation                                      | VL2 PPC 2000 EX   | VL2 PPC 3000 EX                              | VL2 PPC 7000 EX   | VL2 PPC 9000 EX  |
|--|---|--|---|--|
| Order no.  | 1050367   | 1050368                                      | 1050365   | 1050364  |
| Display size in cm (in.)                         | 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/m <sup>2</sup> )               | 400/300/300   |  |   |  |
| Viewing angle (left / right / top / bottom in °) | 89 / 89 / 89 / 89   |  |   |  |
| CPU  | Intel® Celeron® N2930<br>1.83 GHz / 2.16 GHz<br>(quad-core) | Intel® Core™ i3-4010U<br>1.7 GHz (dual-core) | Intel® Core™ i5-4300U<br>1.9 GHz / 2.9 GHz<br>(dual-core) | Intel® Core™ i7-6822EQ<br>2.0 GHz / 2.8 GHz<br>(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<br>SSD: -20°C to +50°C                    |  | HDD: 0°C to +45°C<br>SSD: -10°C to +50°C                  | HDD: 0°C to +45°C<br>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.



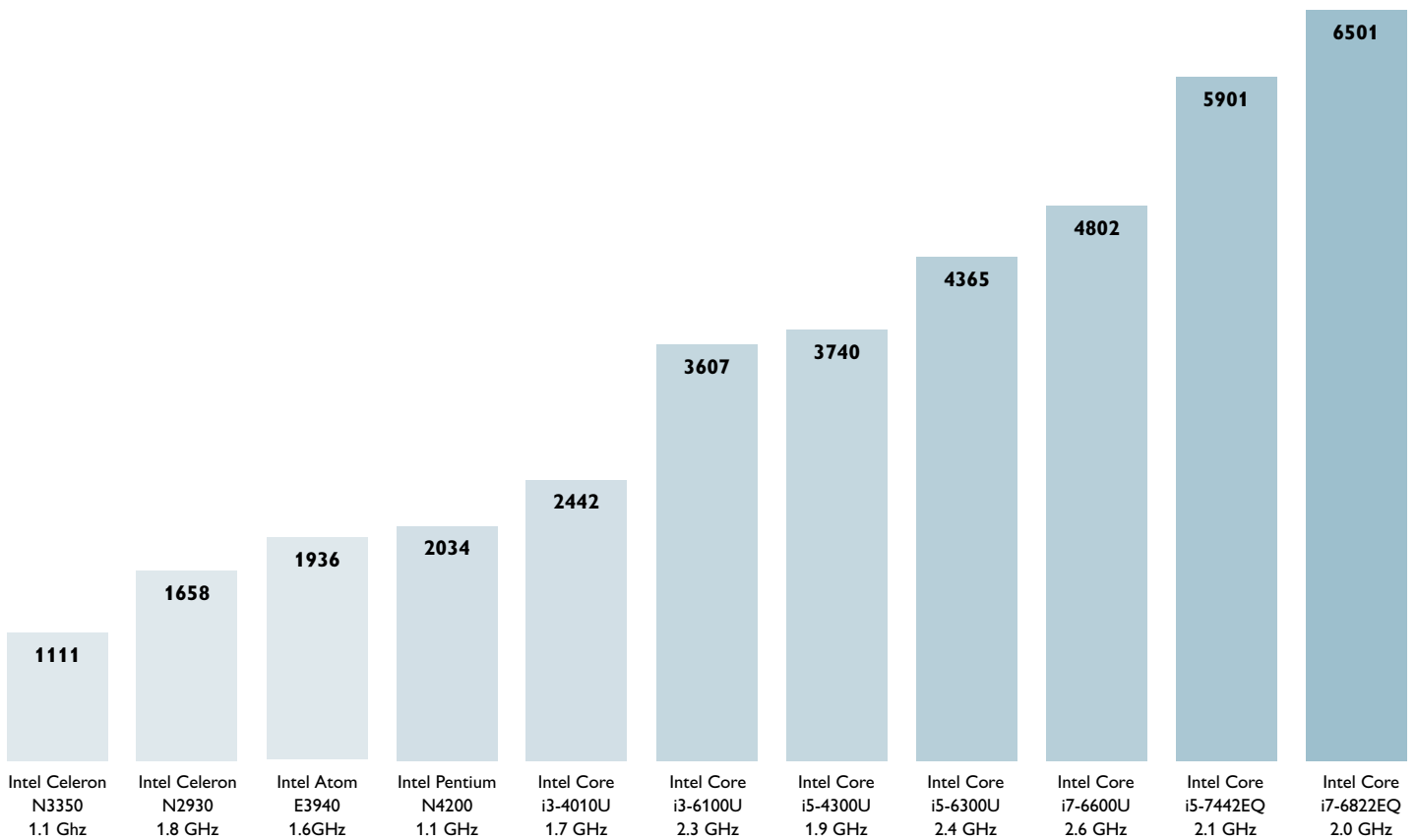
| Type             | Order number            | Designation                 | Description                              |
|------------------|-------------------------|-----------------------------|--|
| Power supply     | <a href="#">2904599</a> | QUINT4-PS/1AC/24DC/3.8/SC   | 3.8 A power supply     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

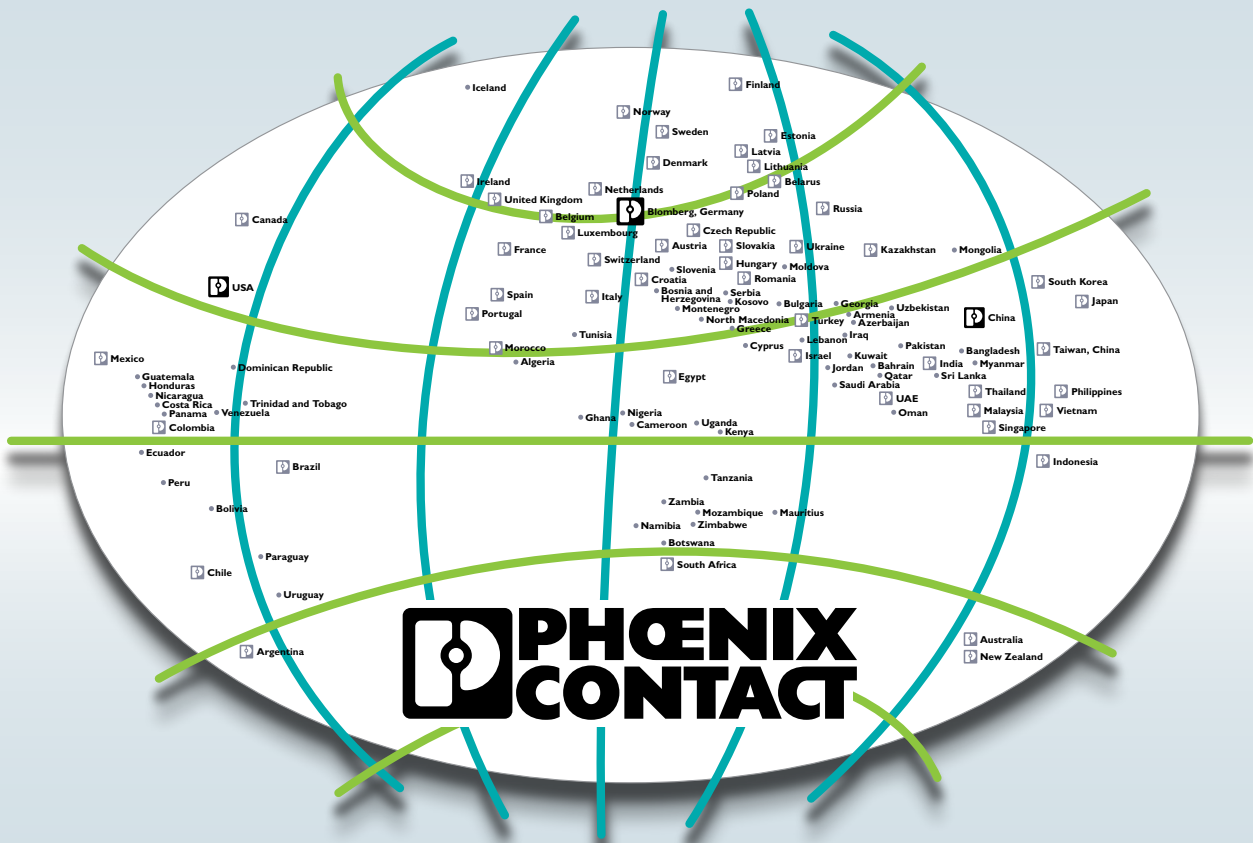
# CPU performance comparison

| 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 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. We are known for our 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 with over 17,400 employees, we stay in close contact with our customers, something we believe is essential for success.

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.

You can find your local partner at

[www.phoenixcontact.com](http://www.phoenixcontact.com)