

# Welcome

**HMI's Phoenix Contact** 

BTP TP

BWP WP



#### Agenda

### **HMI's Phoenix Contact**

- BTP 2000
- TP 6000
- BWP 2000
- WP 4000
- VISU+ EXPRESS

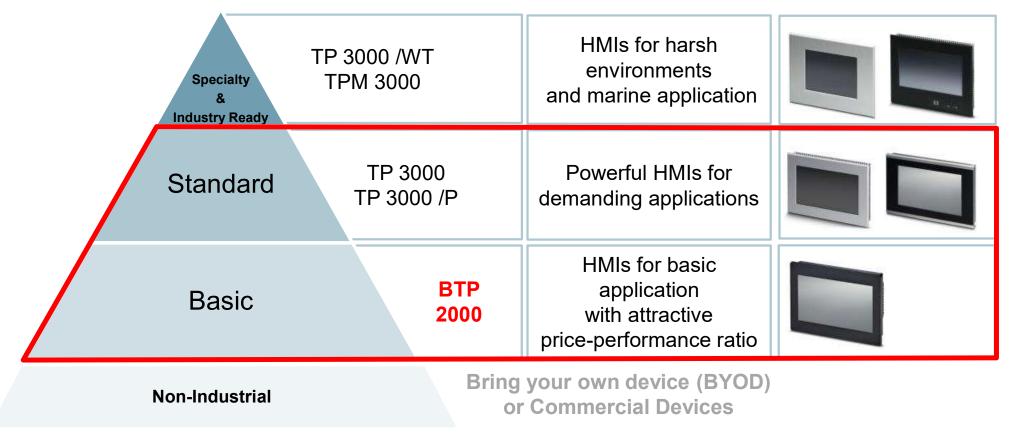




# BTP 2000



#### Visu+ HMI tailored for all needs





#### **BTP 2000**

### **Compatibility with Existing Products**

#### **Advantages**

- Global technical support is already in place.
- Does not increase our portfolio of Visualization software
- Visu+/Visu+ Express projects are compatible with all PxC Windows CE HMI hardware, enabling OEM and users to scale from Basic over Standard to Specialty and Industry Ready HMI hardware platforms that match your application and budget needs.





# Basic HMI - BTP2000



#### TP 3000 vs. BTP 2000

# Comparison





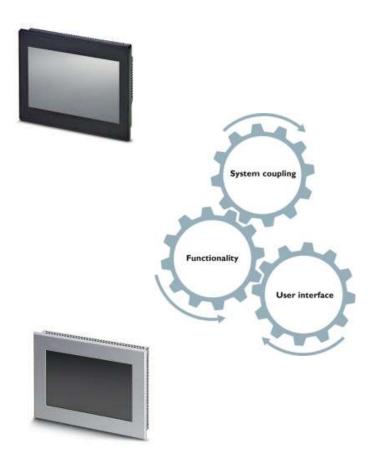
TP	3000	ВТ	P 2000
1.	Display sizes from 5.7" to 15" in 4:3 and 16:9 aspect ratio	1.	3 display sizes in 16:9 aspect ratio, 4,3", 7" and 10.2"
2.	Powerful HMIs for demanding applications covering most industries	2.	Designed for basic applications with attractive price-performance ratio
3.	Ressources for full feature set	3.	Ressources for basic feature set



TP 3000 vs. BTP 2000

#### **Similarities**

- One Editor for all product lines Visu+
   Express free of charge
- Connection to all relevant control systems, thanks to a large number of available drivers
- Integration in PxC control Systems with PLCI driver





TP 3000 vs. BTP 2000

# Message

Visu+ HMIs for different performance levels

BTP 2000 for half list price of TP 3000







#### BTP 2000

# **Advantages**

	Criteria	Phoenix Contact			
	Pricing	✓			
ø	Globale presence	$\checkmark$			
Service	System provider with Drives	✓			
Hardware	SD Card Slot	$\checkmark$			
	Interface: Ethernet, USB Host, USB Progr., seriel	✓			
	Web Client	$\checkmark$			
Software	Multitude Driver	<b>✓</b>			
Sof	Free of charge development tool	✓			



#### BTP 2070W and Micro 820 Allen Bradley

#### **Modbus RTU**



Phoenix Visu+ Modbus Serial RTU RS-232 – PART 1 - Testing on PC



Phoenix Visu+ Modbus Serial RTU RS-232 - PART 2 - HMI program for actual HMI COM PORT



Phoenix Visu+ Modbus Serial RTU RS-232 - PART 3 - HMI program for actual HMI COM PORT

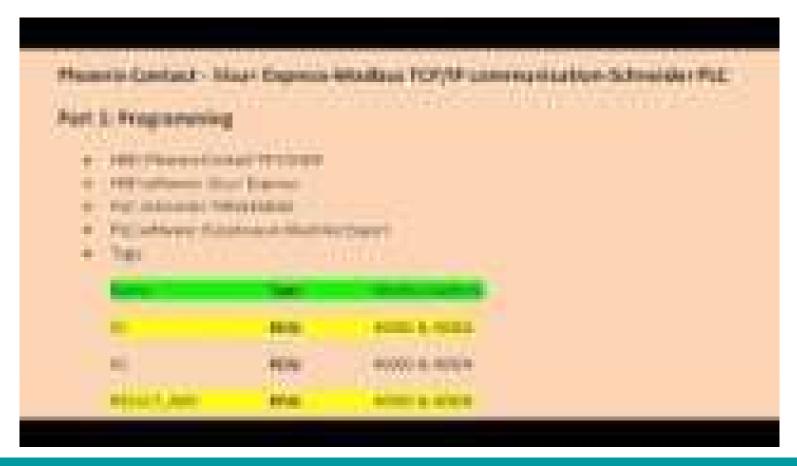
### **BTP**





**Tutorial Touch panel BTP 2102W 10.2" TFT-displej and PLC Simatic** 





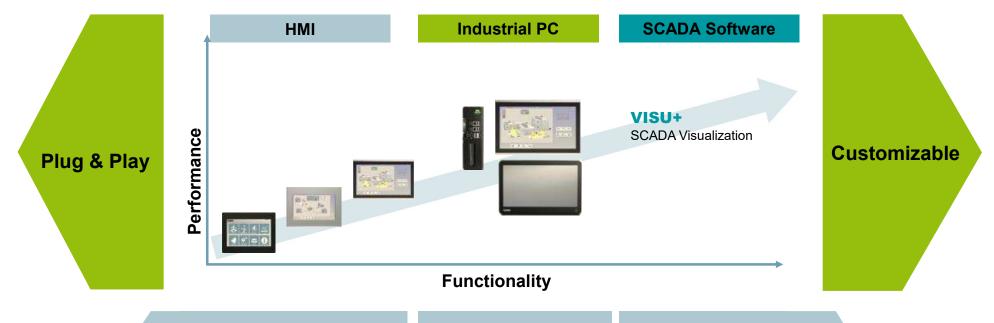
Phoenix Contact - Visu+ Express-Modbus TCP/IP communication-Schneider PLC (P1)







## **Operation and Monitoring with runtime based HMIs**

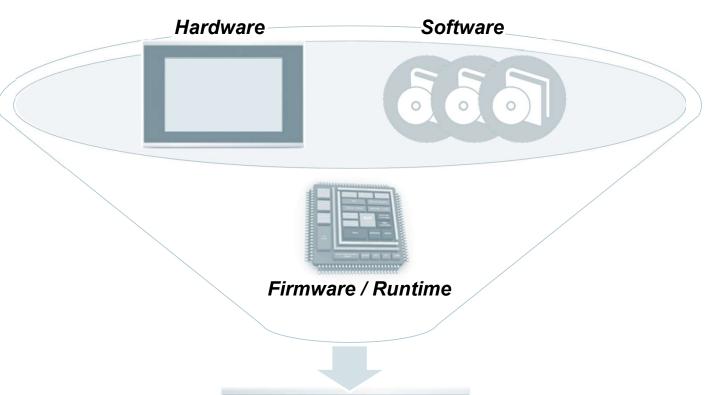


Visu+ (Express) runtime installed on Embedded HMI Hardware Platform
→ Ready-To-Use HMI

Visu+ Express
Option for Industrial
PCs
→ Ready-To-Use HMI

Visu+ SCADA x86 software package for Customer Installation →Flexible and Configurable

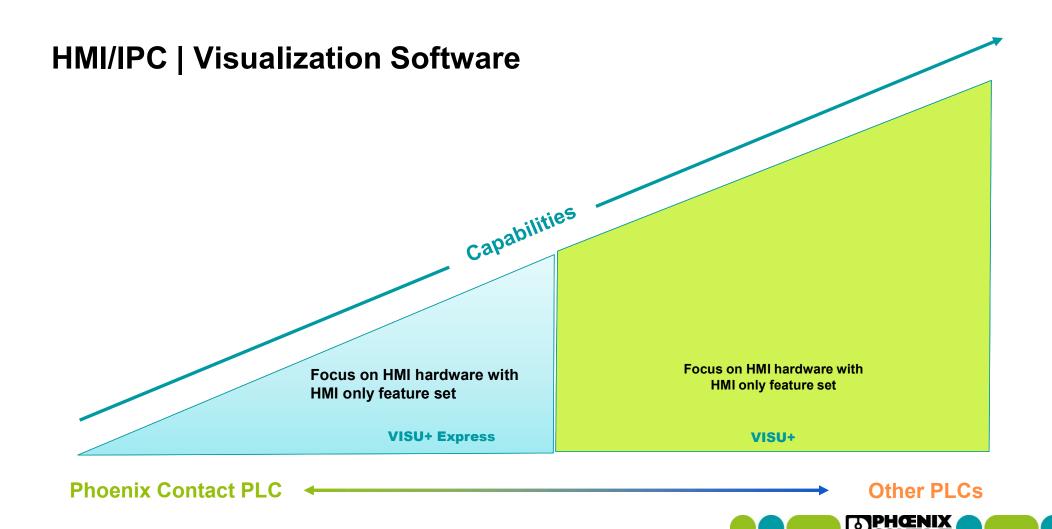






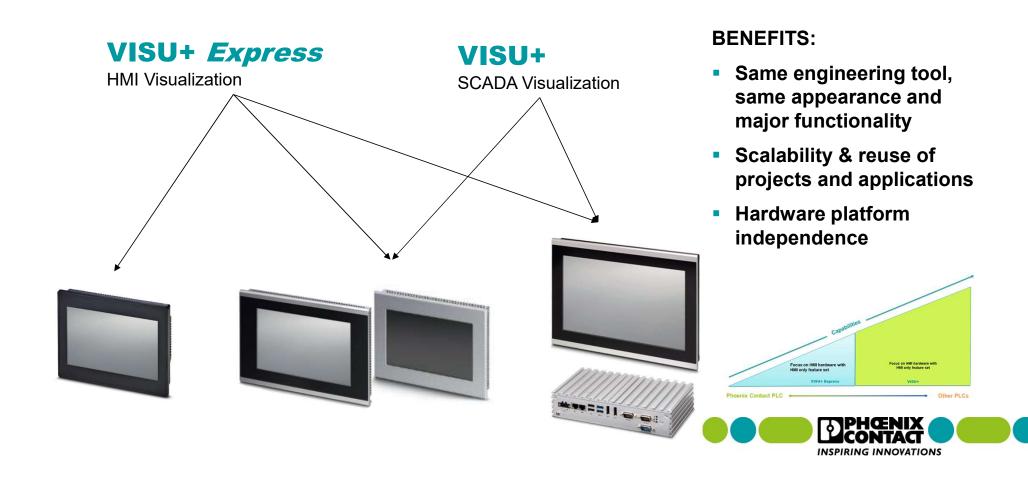
## HMI Solution





INSPIRING INNOVATIONS

# **HMI/IPC | Visualization Software**



### **Design Software**

## **VISU+ Express**

#### **HMI** Visualization

#### EXPRESS is FREE

- Free download
- Search for 2402774

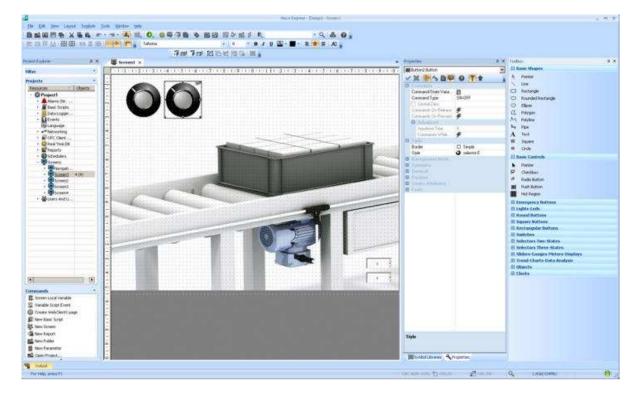
#### Scalable

- Derived from SCADA package
- High quality graphics
- Simplified user interface

#### Advanced

- Alarming
- Trending
- Data Logging
- Recipe Handling
- Remote Screen Access

• ...

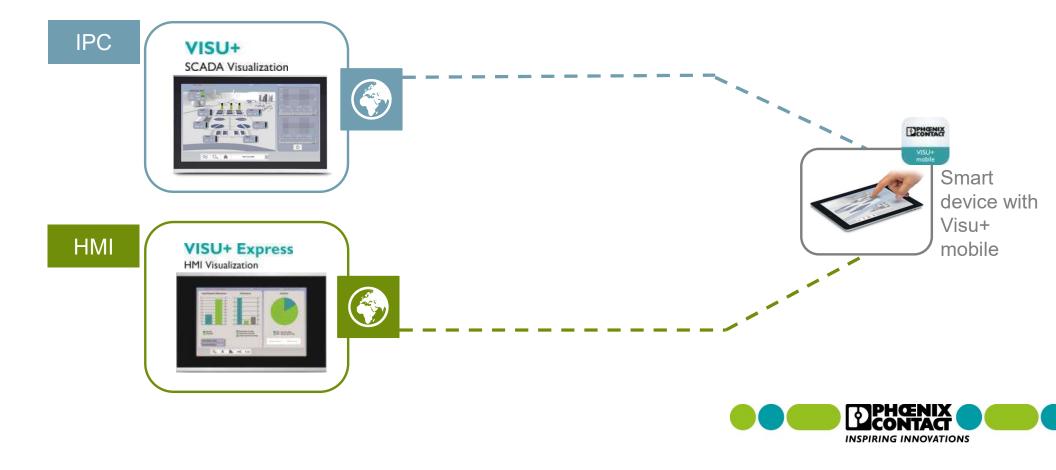




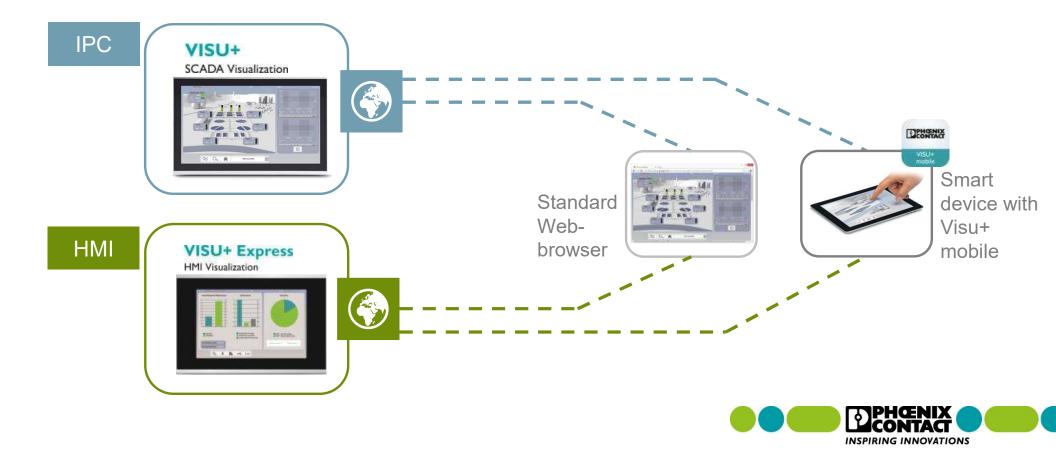
# VISU+ / VISU+ Express – communication drivers



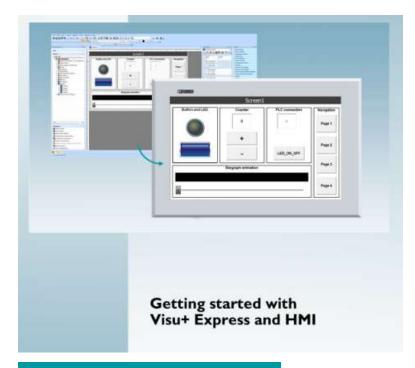
### Remote data access with WebClient



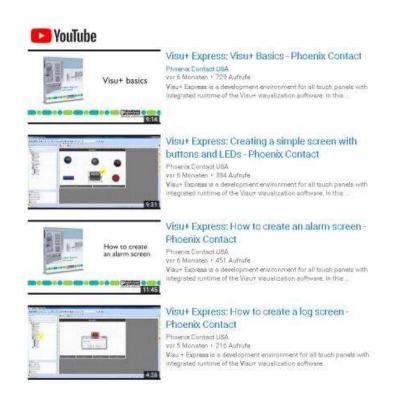
### Remote data access with WebClient and HTML5



# How to get started?



**2402774 - VISU+ Express** 

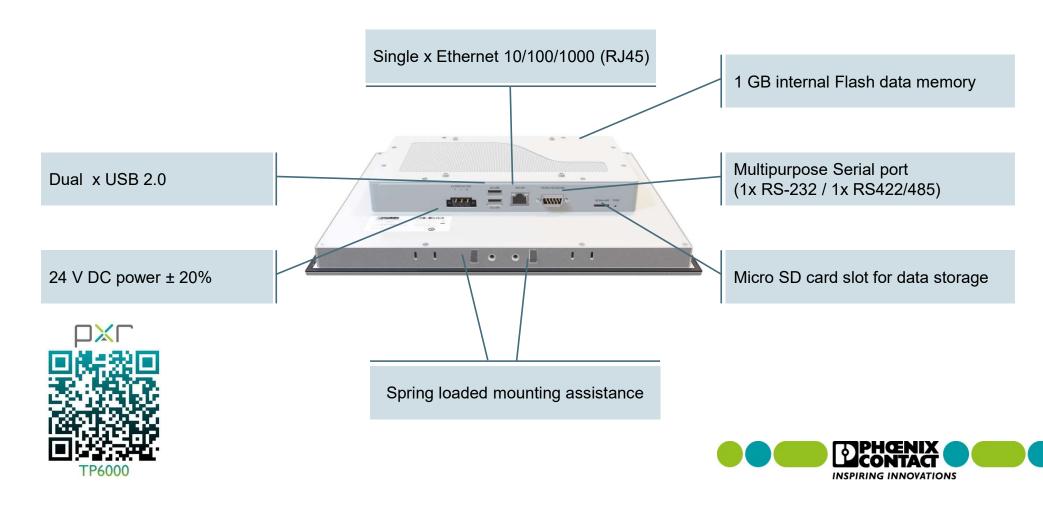




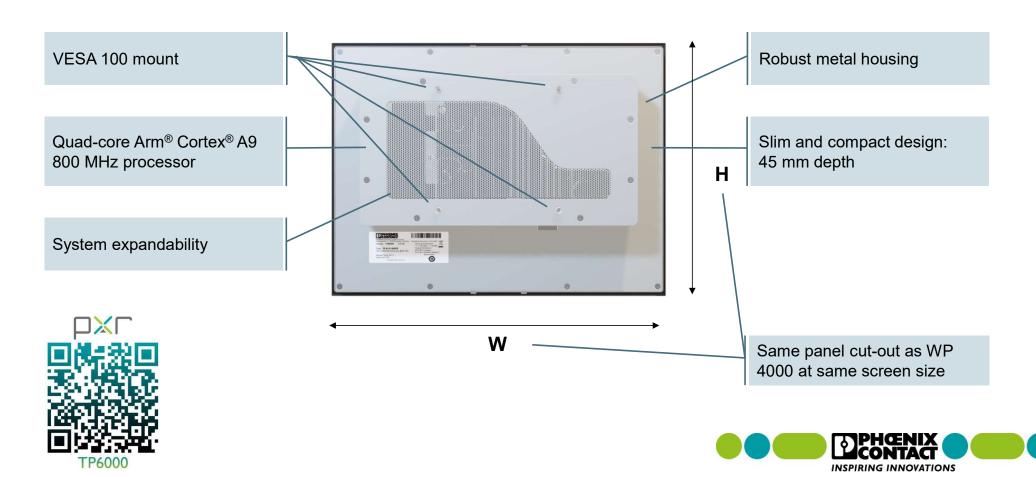
# **TP 6000 - HMI Panel with Capacitive Touch**



# **TP 6000 - HMI Panel with Capacitive Touch**



# **TP 6000 - HMI Panel with Capacitive Touch**



# Compatibility with existing TP / BTP / IPC products

### **Visualization software continuity**

- Existing Visu+ customers can use the same visualization
- Same engineering tool
- Same communication drivers
- Same remote data access
- No changes to existing projects necessary
- → No transition pains!

Technical support structure is already in place

- Experienced
- Synergy with other Visu+ products





# Compatibility with Existing WP / IPC products

### **Hardware Continuity**

- Existing customers benefit from same front panel appearance, no matter if they use TP 6000, WP 4000 or 'VL' class panel PCs
- Same flush front design
- Same IP65 ingress protection
- Same panel cut-out as WP 4000 at same screen size
- → Full Scalability between product platforms!





# **Example: Compatibility with Existing WP 4000 products**

Customer uses runtime based visualization and wants to also access the visualization remotely.



#### TP 6000 vs. TP 3000

# Comparison





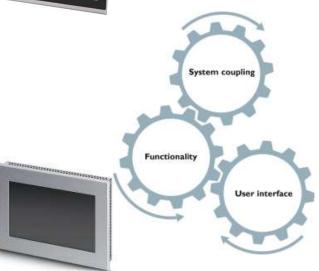
TP 6000	TP 3000
<ol> <li>Wide screen display sizes from 7" to 12.1"         <ul> <li>a) 15.6" to 21.5" screen versions in Q4/21</li> </ul> </li> <li>Common communication interface         <ul> <li>a) Dual 9pin dsub Serial &amp; RJ45 Ethernet</li> </ul> </li> <li>PCAP touch screen</li> <li>Proximity sensor saves energy and backlight life (12" screen size and up)</li> <li>Standard Single person install</li> <li>Standard Vesa Mount</li> <li>More onboard memory</li> <li>Onboard Gigabit Etherent</li> <li>Industry solution panels (Rugged) planned</li> <li>Competitively priced</li> </ol>	<ol> <li>Display sizes from 5.7" to 15" in 4:3 and 16:9 aspect ratio</li> <li>Resistive, GFG and PCAP touch options</li> <li>Panel mount only</li> <li>10/100 MBps Ethernet</li> <li>Industry solution panels (Marine, Rugged)</li> <li>Pricy</li> </ol>

#### TP 6000 vs. TP 3000

#### **Similarities**

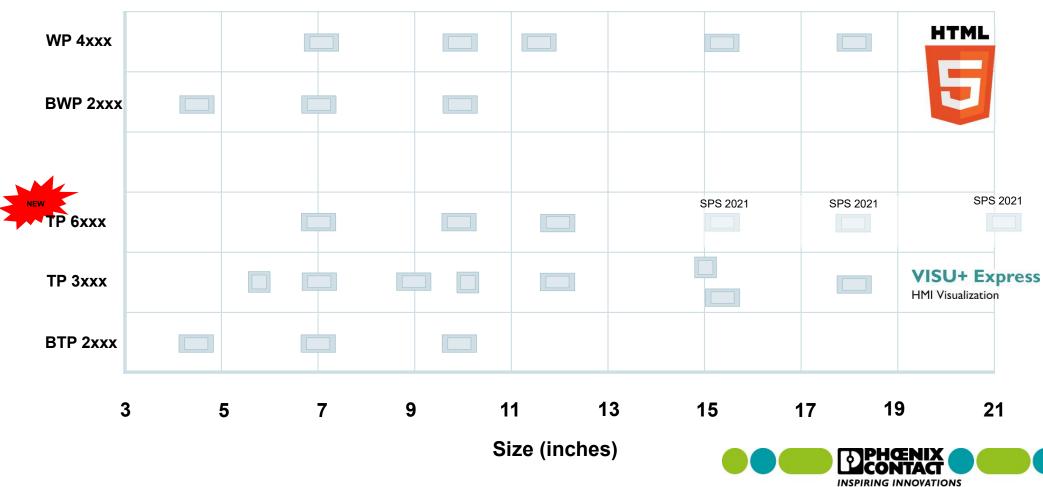
- 1. A single engineering environment for all visualization product lines
  - Visu+ Express free of charge
  - Visu+ powerful SCADA
- Same native communication drivers
  - Seamless connection to all relevant control systems
- 3. Same OPC UA / DA connectivity
  - Seamless connection to other devices
- Integration in PxC control Systems with PLCI driver







# HMI product families and available screen sizes



# Thank you













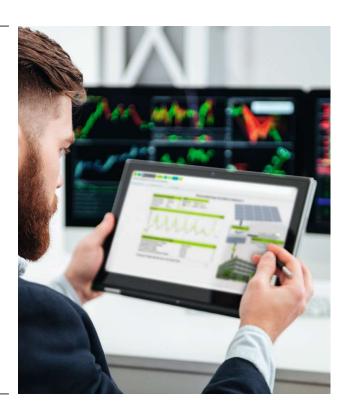
# BWP 2000 WP 4000



#### Webinars

# **Agenda**

- > HTML5
- ➤ Oferta de HMIs para HTML5
- ➤ VISU+ Express and VISU+ remote access via Webpage HTML5
- ➤ WP 4000 WITH CoDeSys Connections
- Softwares de Programación HTML5
- Webvisit
- ➤ SpiderControl WebServer







Learn HTML5 - full course with code samples



# Web Panel Advantages

**EASY** - HMI that does not require any local software download. Simply points to IP address of <u>ANY</u> web server

**OPEN** – No longer tied to a communication protocol. No Profinet, Ethernet IP, MODBUS TCP, etc.

**UNIVERSAL** - Allows secure connection between <u>ANY</u> web server and the web panel regardless if they are "side-by-side" or "across the globe"





# HTML 5

# - OPEN AUTOMATION SYSTEM

- Total Flexibility in Engineering
  - ✓ Virtually no limits to the graphical capabilities, and usability features that can be utilized
  - ✓ Future proof
- Open standard
  - ✓ Visualization is located on PLC
  - ✓ Facilitates Responsive Design
  - ✓ HMI Hardware is independent from Engineering Tool
  - ✓ Works with industrial HMI devices, Smart Phones, Tablets and PCs









# HTML HMI product families

## Two classes of products

- Standard WP 4000
  - Best in class hardware f
  - Wide product choices



- Basic BWP 2000
  - Applications with basic performance needs
  - Price sensitive applications & markets







# 5

## **Standard Web Panel – WP 4000**

Screen sizes 7", 10.1", 12.1", 15.6", 18.5" PCAP Multi-Touch

Arm Cortex A53, 4 x 1,2 GHz (Quadcore)

Resistive 7" Single-Touch option



**HTML5 Browser Qt** 

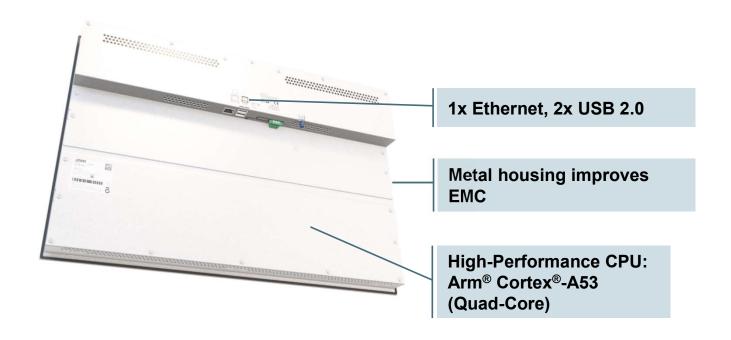
All metal housing





# E E

# **Standard Web Panel – WP 4000**







### HTML



# Standard Web Panel – WP 4000

		The six of the states of the s					
Description	WP 4070-WVRS	WP 4070-WXPS	WP 4101-WXPS	WP 4120-WXPS	WP 4156-WHPS	WP 4185-WHPS	
Display size	17.78 cm (7")		25.65 cm (10.1")	30.73 cm (12.1")	39.63 cm (15.6")	47 cm (18.5")	
Touch technology	Analog resistive (Polyester)	Projected capacitive (PCAP)					
Physical dimensions	203 x 147 x 48	186 x 146 x 51	263 x 199 x 51	302 x 229 x 51	436 x 278 x 59	485 x 329 x 61	
Weight	0.8 kg		1.3 kg	1.7 kg	4 kg	5.5 kg	
ArtNr.	1148694	1148693	1148687	1148689	1148691	1148690	



# 5

## **Standard Web Panel – BWP 2000**



## **Basic performance needs**





# HTML

# Comparison: WP 4000 vs. BWP 2000

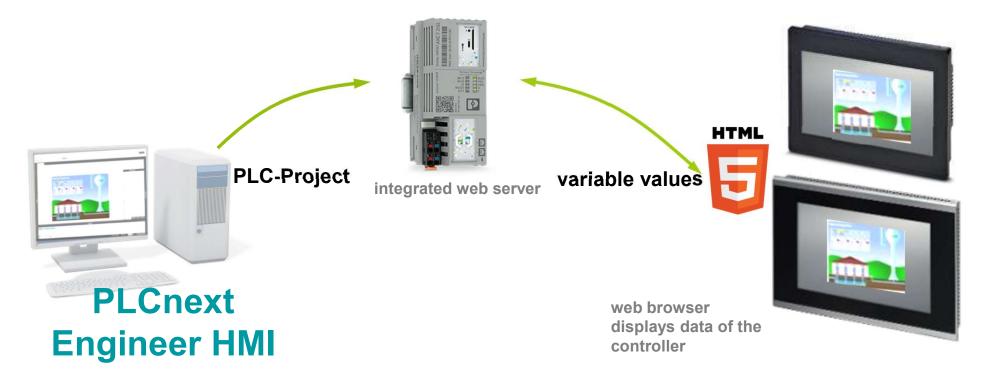
WP 4000	BWP 2000		
<ol> <li>6 display choices</li> <li>Capacitive or 7" Resistive touch</li> <li>Can target 4 IP addresses</li> <li>Higher screen resolution</li> <li>Metal housing</li> <li>Faster performance</li> <li>Higher price</li> </ol>	<ol> <li>3 display choices</li> <li>Resistive touch</li> <li>Can target 1 IP address</li> <li>Standard screen resolution</li> <li>Plastic housing</li> <li>Basic performance</li> <li>Lower price</li> </ol>		



## **PLCnext Technology Components**

# Integrated web server for HMI







# HTML5 HMIs – ease & flexibility for sales



- No need to sell software
  - Customer does not need to be first convinced of the Visualization Engineering Tool
  - Makes the sale less complex as this is just a pure hardware component sale
  - Faster opportunity turnaround time



This guide will step you through on how to connect remotely to a Visu+ project through a web client.







Part 1 Connecting to a Touch Panel or Basic Touch Panel

#### **Number of Allowed Web Client Connections**

- BTPs allow for 1 remote web client connection.
- TPs allow for 2 simultaneous connections.





### **Preparations**

1. In a Windows PC, open a Command

Prompt and make sure you the target panel.

Microsoft Windows

```
Microsoft Windows [Version 10.0.17763.973]
(c) 2018 Microsoft Corporation. All rights reserved.

C:\WINDOWS\System32>ping 169.254.49.11

Pinging 169.254.49.11 with 32 bytes of data:
Reply from 169.254.49.11: bytes=32 time<1ms TTL=128
Reply from 169.254.49.11: bytes=32 time=1ms TTL=128
Reply from 169.254.49.11: bytes=32 time=1ms TTL=128
Reply from 169.254.49.11: bytes=32 time=1ms TTL=128

Ping statistics for 169.254.49.11:

Packets: Sent = 4, Received = 4, Lost = 0 (0% loss),
Approximate round trip times in milli-seconds:
Minimum = 0ms, Maximum = 1ms, Average = 0ms

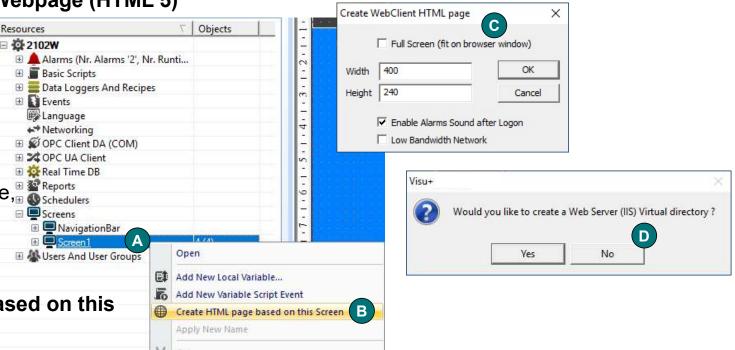
C:\WINDOWS\System32>
```



### **Preparations**

- To view screens from a browser you will need to make an HTML page of the opening Screen:
  - A. Under the project name, Schedulers open **Screens**, then right-click on the desired screen
  - B. Create HTML page based on this Screen.
  - C. If needed, specify the screen width and height in pixels then press OK.
  - D. Answer **No** for creating a Web Server IIS\* Virtual Directory.

\*Microsoft Internet Information Service



Сору

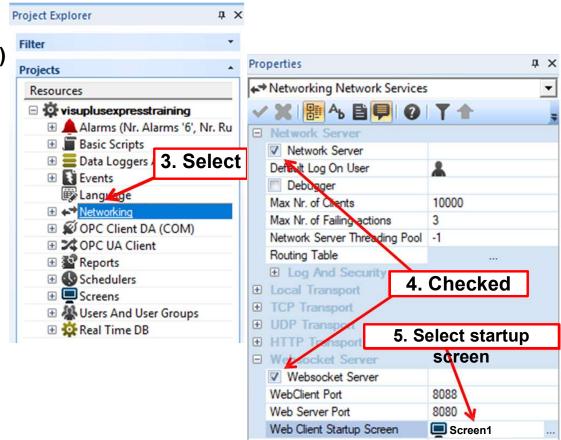
Paste Properties

Source Control



### **Preparations**

- 3. Under the Visu+ Project select **Networking**.
- 4. Under **Properties** make sure the following are checked:
  - Network Server
  - Websocket Server
- Select the Web Client (version of the)
   Startup Screen. This is the screen that was created as an HTML page in Step 2.

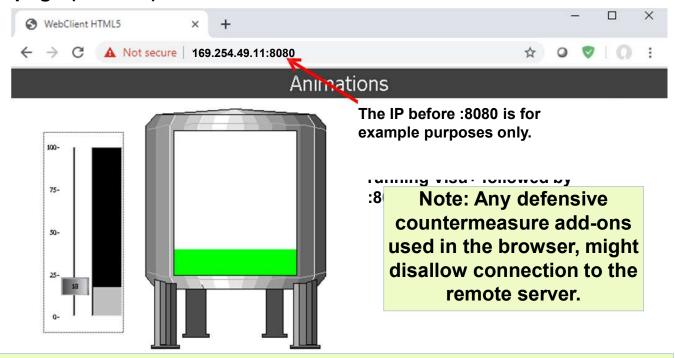


For example purposes, your screen name will most likely be different.



### **Connecting Remotely**

 Open a web browser in a remote PC, then type the ipAddressOfTP:8080 to access the screens remotely.



NOTE: <u>Expect delays</u> in viewing remote access screens compared to operating them locally, especially busy, animated screens with motion. More objects = more delay, which could be worsened when the data is transmitted wirelessly.





















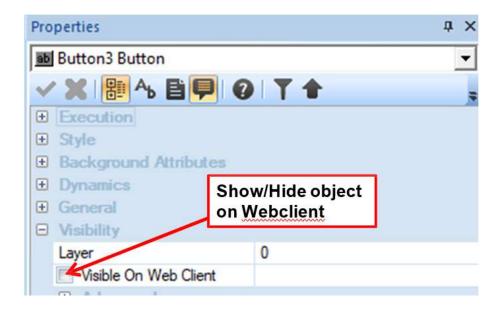
- 7. If Enable Password Manager is checked in development mode, the logon screen will appear on the web client.
- Web client users and local users can use the panel simultaneously and maintain individual user rights.
- 9. To log a user off remotely, close the session by closing the tab in the web browser. To change users, close the tab, reopen a new tab and remote-in.



**INSPIRING INNOVATIONS** 

## **Object Visibility**

- 10. Developers have the option of hiding certain objects in the web client to make them inaccessible.
- 11.Login/Logout buttons are a great example since they do not function from the web client. This is because they are tied to the local user logged in, not the remote/web user.

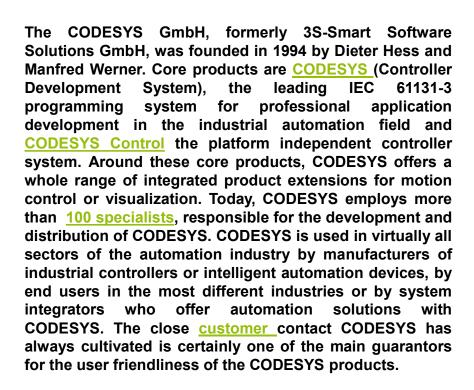






#### PHOENIX CONTACT

## CoDeSys





Automation Server SoftPLC Communication Engineering Webserver

Some PHOENIX CONTACT worldwide (most in Europe), sometimes program on this platform and conect I/O Systems, Controllers, and more things to CoDeSys software to develop specific application



- As the Industrial marketplace continues to advance, our HMIs are faced with an enormous challenge to provide connectivity to everything under the sun...
- Today, we connect to a wide variety of devices but often overlooked is our seamless connection to many of the popular protocols including CoDeSys
- We offer unique solutions that
  - Simple and easy to implement
  - Require little to no engineering or programming
  - Add value to system
- Let's learn more about our unique approach to solving these types of requests.



This Photo by Unknown Author is licensed under CC BY



# Targeting New Opportunities Using WP 4000 with CoDeSys Connections What is CoDeSys?

- Short for Controller Development Systems
- Technology developed by 3S Smart Software Solutions GmbH
- 3S maintains ownership/ IP but licenses technology to other manufacturers and vendors
- Popular IEC 61131-3 software environment, very strong presence in Europe but technology has started to grow around the world
- CoDeSys







## Why is CoDeSys popular for Industrial Automation?

Users find this environment useful for:

- Configuring Sequence and Fieldbus Control
- Planning and execution of complex motion control or CNC movements
- Programming of safety applications according to DIN IEC 61508 SIL3
- Creating visualization screens for machine operation
- Automation projects can be implemented without the user having to leave the familiar development interface.





## Which Industries utilize this technology?

#### **Factory Automation**

 Packaging, Printing & Paper, Material Handling, Machine Tool, and Electronics Manufacturing Services (EMS)

#### **Process Automation**

 Water & Wastewater treatment, Oil & Gas, Mining and Minerals, Food and Beverage, etc.

#### **Building Automation**

Lighting, Heating, Cooling and Ventilation controls, etc.

#### Renewable Energy

Solar/Wind controllers

#### Mobile

Construction, Mining, Marine and Agriculture





# Targeting New Opportunities Using WP 4000 with CoDeSys Connections Which applications benefit from this technology?

#### **Factory Automation**

 Everything from Vertical / Horizontal Fill Form and Seal (V/HFFS) Machines to Flexographic machinery

#### **Process Automation**

 H2O Desalinization, Pulp & Paper Converting to Upstream Oil & Gas concentrators

#### **Building Automation**

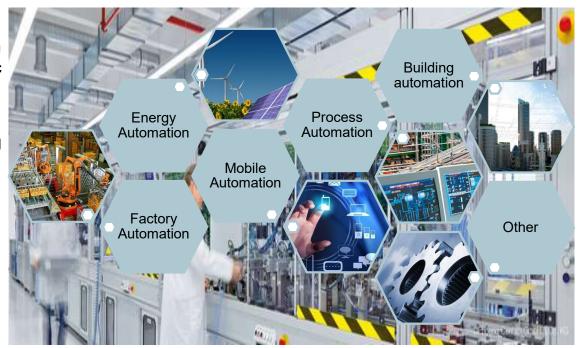
 Ventilation controllers for commercial to agriculture

#### Renewable Energy

Controllers for Solar panel tracking

#### Mobile

 Electronic Control Units (ECUs) in construction, Marine and mining machinery





## Why should sales members care?

- SIs, OEMs and End Users are standardizing on control technology and establishing hard specifications - effectively limiting your opportunities and/or locking you out of accounts
- Automation suppliers are pushing for tightly integrated solutions to limit competitor opportunities
- Resource deprived engineering teams are strained and unwilling to take on developing HMI screens to accommodate "your solution"
- Decision makers are focused on Total cost of ownership
- Maintenance personnel are more concerned with .."if it ain't broke..."



This Photo by Unknown Author is licensed under CC BY-SA-NC



## Why should sales members care?

#### Opportunities for HTML5 based HMIs:

- Are door openers and enabling technologies
- Offer seamless connections to automation devices through onboard webservers including native PLCNext controllers and now CoDeSys enabled devices
- Reduced system complexity there is no additional programming for the HMI, simply assign target IP address, connect and go
- Can be positioned as an industrial thin client web display for those "hard spec account" with perceived HMI objections.



This Photo by Unknown Author is licensed under CC BY



Comprehensive HMI Portfolio



# Targeting New Opportunities Using WP 4000 with CoDeSys Connections Standard HTML5 Web panel – WP 4000





# **WP 4000 – HTML5 HMI**

## **WP 4000 Product family**

Description	WP 4070-WVRS	WP 4070-WXPS	WP 4101-WXPS	WP 4120-WXPS	WP 4156-WHPS	WP 4185-WHPS	
Display size	17.78 cm (7")		25.65 cm (10.1")	30.73 cm (12.1")	39.63 cm (15.6")	47 cm (18.5")	
Touch technology	Analog resistive (Polyester)	Projected capacitive (PCAP)					
Physical dimensions	203 x 147 x 48	186 x 146 x 51	263 x 199 x 51	302 x 229 x 51	436 x 278 x 59	485 x 329 x 61	
Weight	0.8 kg		1.3 kg	1.7 kg	4 kg	5.5 kg	
Тур	WP 4000	WP 4000	WP 4000	WP 4000	WP 4000	WP 4000	
ArtNr.	1148694	1148693	1148687	1148689	1148691	1148690	

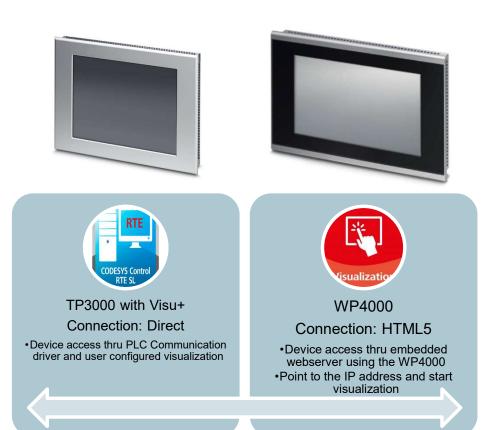


## **Our Solutions for CoDeSys**

How to leverage our HMI portfolio and take advantage of our technology?

We offer two solid solutions to address CoDeSys requirements

- For modern devices running CoDeSys Webserver for visualization, we offer the WP4000 HMIs
  - Simple connection using HMTL5 technology
- 2. For most legacy devices running CoDeSys SoftPLC (V2.3 & 3), our TP3000 HMIs with Visu+ can be specified
  - Direct connection



INSPIRING INNOVATIONS

## **Our Competitive Advantage**

#### We offer:

- A broad range of display solutions and technologies where other can't
  - Wide temperature, sunlight readable and ruggedize models
- Unique display sizes and formats for mature systems using TP3000 against limited offerings from other suppliers
- Complete solutions targeted for both modern (HTML5 based) and retrofit projects (direct connect) against the alternative or "one solution fits all requirements" approach from others







## **Our Competitive Advantage**

#### Cont.

- Industrial designed and harden hardware
- Solutions for both components and system based configuration
- No Windows security patches or additional updates to deploy or manage
  - Self contained and secure system solution
- Easy to replace, configure and deploy in the field (OEM ready) or within a facility (End User).
  - USB/MicroSD updates







# Targeting New Opportunities Using WP 4000 with CoDeSys Connections Manufacturer that offer CoDeSys compatible solutions





Wago Kontakttechnik GmbH & Co. KG





Hans Turck GmbH & Co. KG











Be

Nexcom

Advantech



Firest



Kontron





Liebherr





Festo AG & Co. KG



SABO Elektronik (Web Terminals) https://sabo.de





Berghoff

Parker Hannifin



ABB Automation Products GmbH































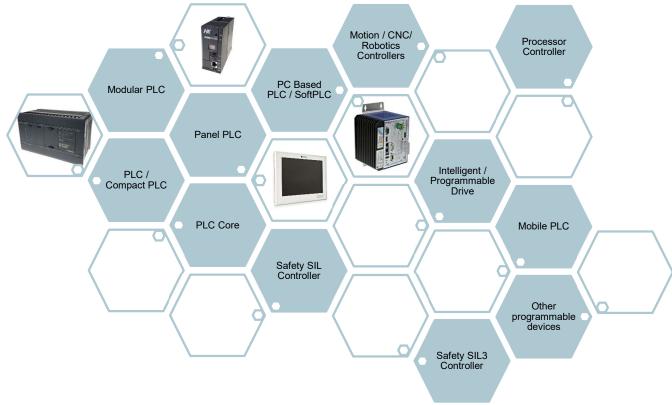
Lenze Automation GmbH

Parker Hannifin GmbH

Stober



**CoDeSys Device List** 





## Summary

- Sales teams have a number of solutions for CoDeSys requirements
- Change the narrative or continue to establish credibility with customers by introducing them to alternative solutions (web based HTML5 or the traditional configuration)
- Steer projects or new opportunity towards you portfolio
- Continue to leverage the full range of HMI solutions today and win new business







# **HMI Software products using HTML5**

- Webvisit
- Visu+ HTML5 web client
- PLCnext Engineer HMI
- WEBfactory i4
- PROCON-WEB
- Atvise
- Wonderware InTouch
- CODESYS Webserver
- QuickHMI
- SpiderControl Webserver
- ..









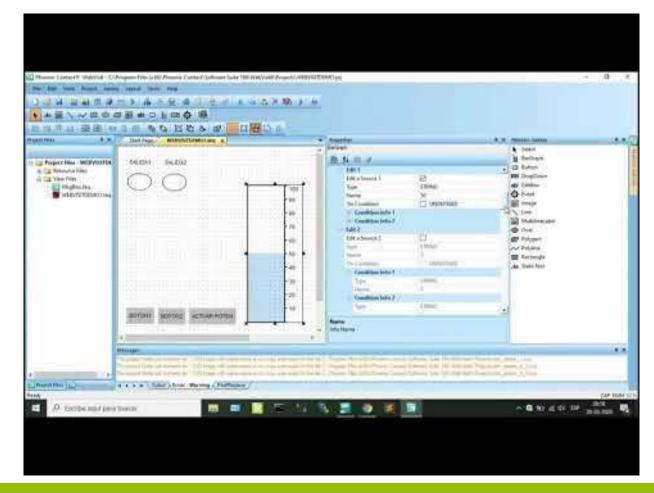






# Webvisit

## **Tutorial**



**Tutorial Webvisit - Phoenix Contact** 





WebVisit Part 1 Quickstart Advanced



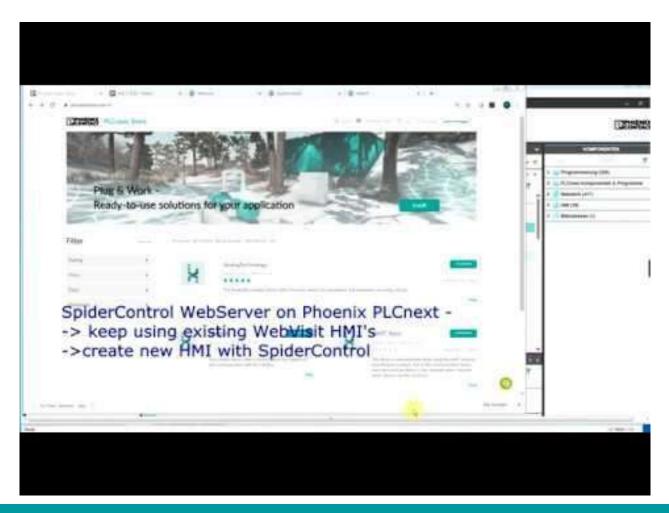
## **SpiderControl**

**WebServer** 

on

**PLCnext** 

www.spidercontrol.net



PLCnext Webserver for WebVisit & SpiderControl HMI



Webinar IMA 2020

## Mayor información



www.phoenixcontact.com.mx ventas@phoenixcontact.com.mx 55 1101 1380

**Actividades 2020** 

**Folletos Presentaciones Webinars** 

