Antonio Gordillo / 18 Mayo 2021 / IMA Marketing

Welcome

Presentación

Novedades 2021

Interfaces Hombre Máquina

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INSPIRING INNOVATIONS

News 2021

Agenda

- HMI´s

  - Overview

  - TP 6000

  - WP 4000

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HMI Basic , Touch Panel, Rugged, Maritime

Overview

HMI products

Basic **BTP**

Different Types

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Standard TP

Different Types

Special TPM WT

Different Types

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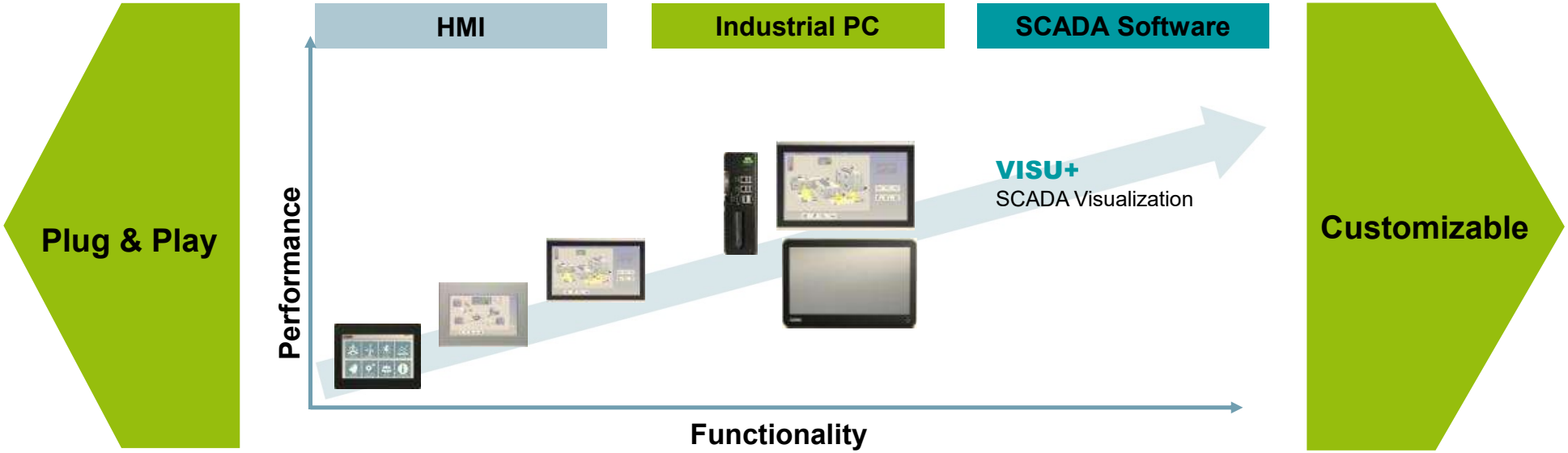
Operation and Monitoring with runtime based HMIs



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

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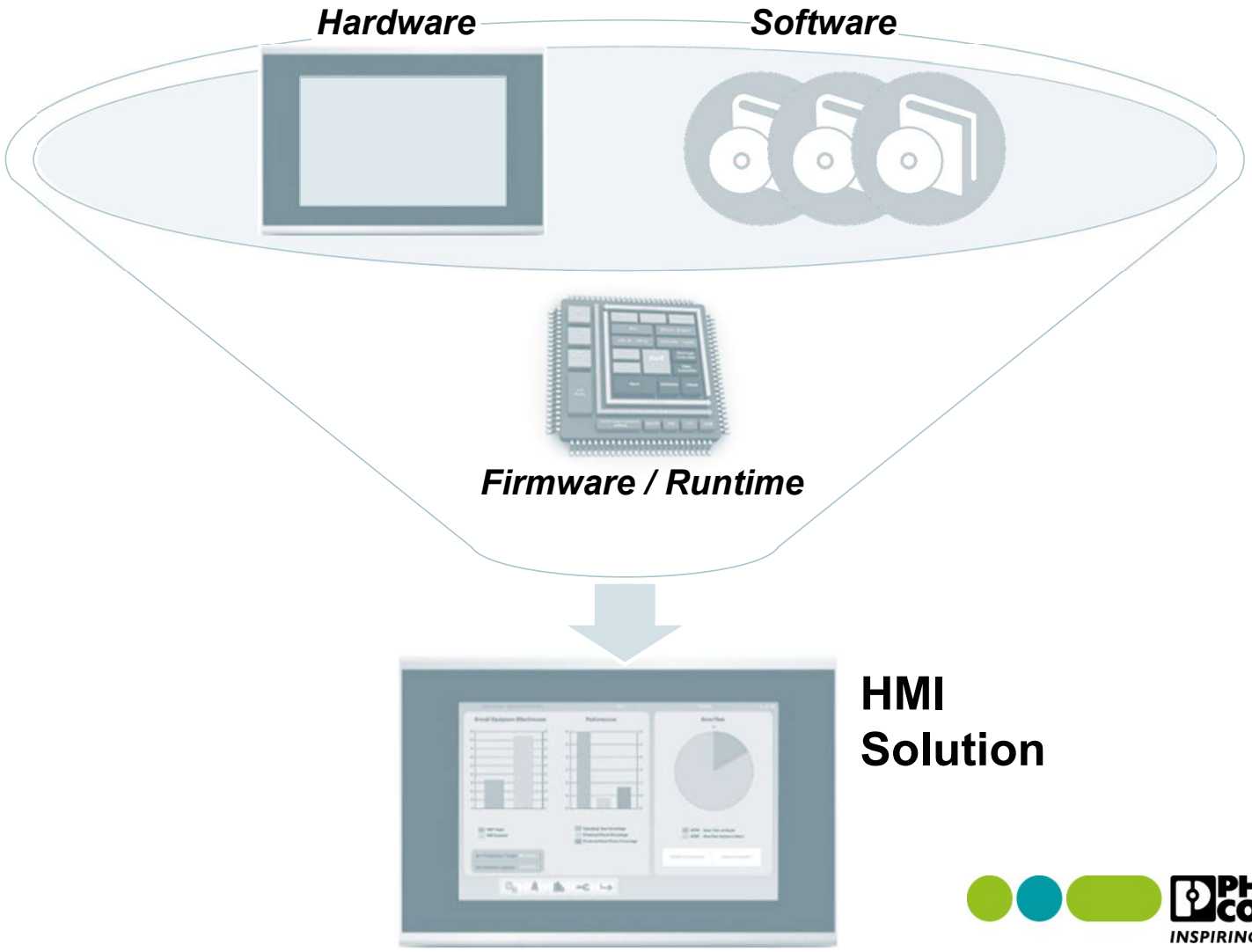

HMI Solution

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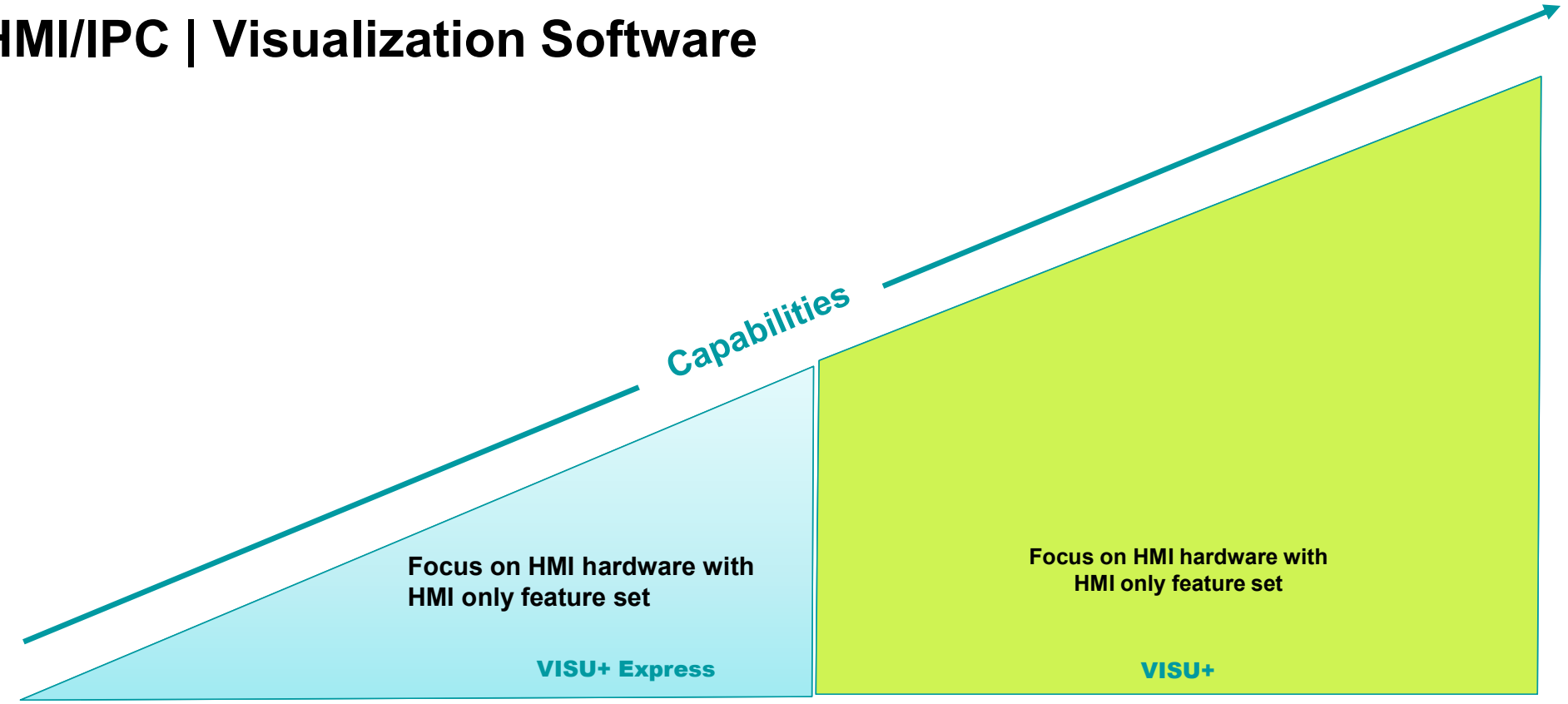
HMI/IPC | Visualization Software



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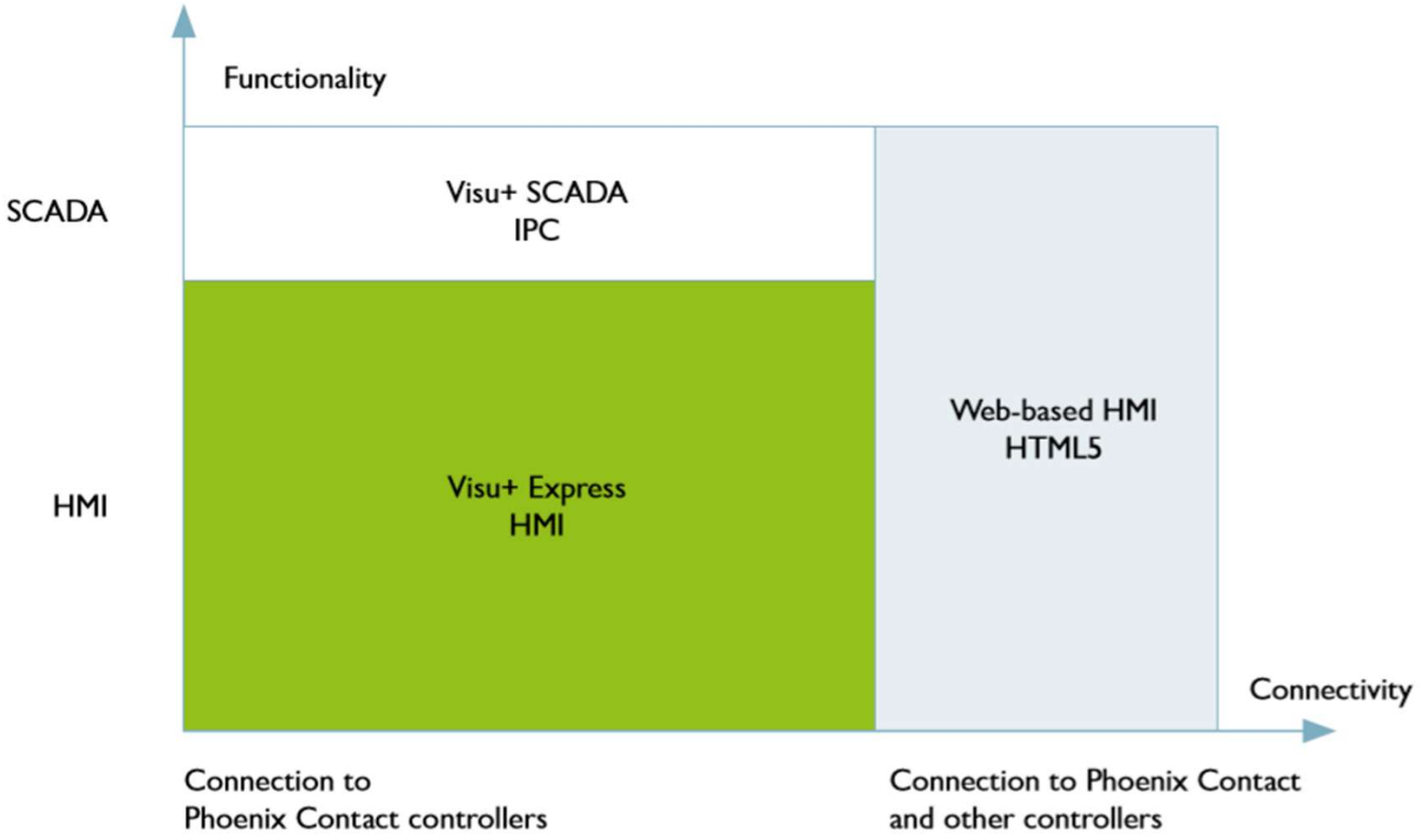
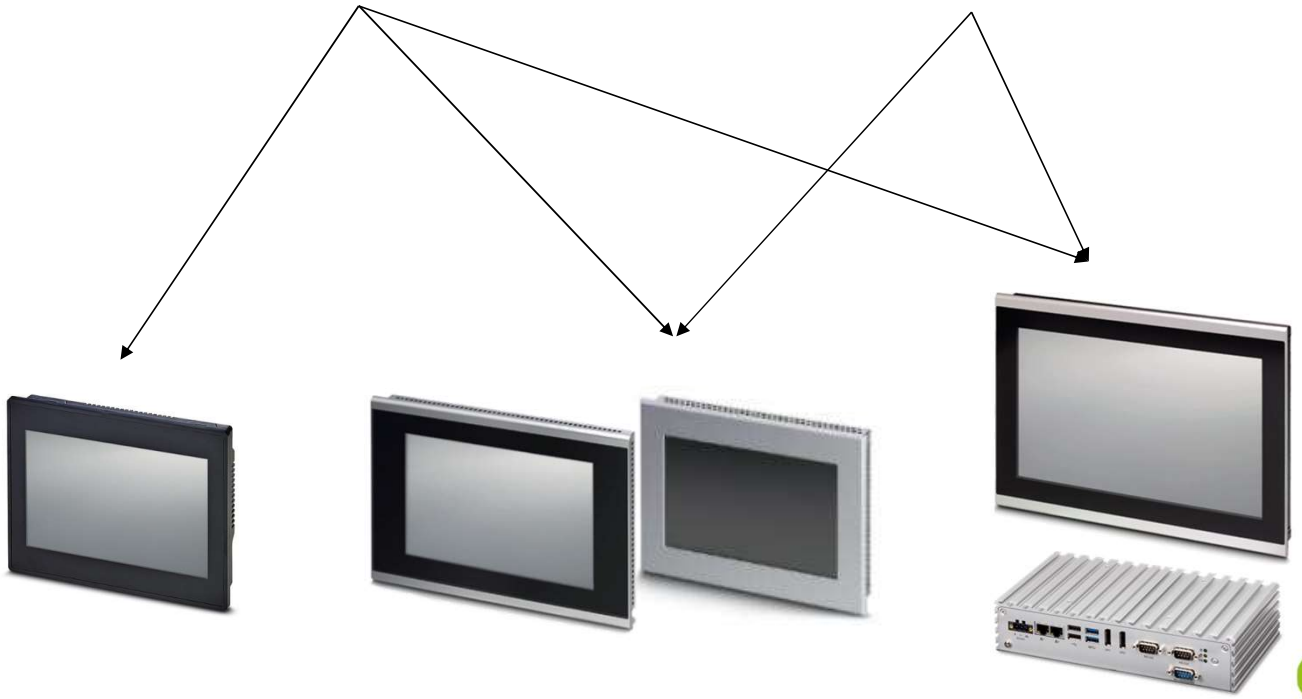
HMI


Functionality
SCADA
Visu+ SCADA
IPC
HMI
Visu+ Express
HMI
Web-based HMI
HTML5
Connectivity
Connection to
Phoenix Contact controllers
Connection to Phoenix Contact
and other controllers

HMI/IPC | Visualization Software

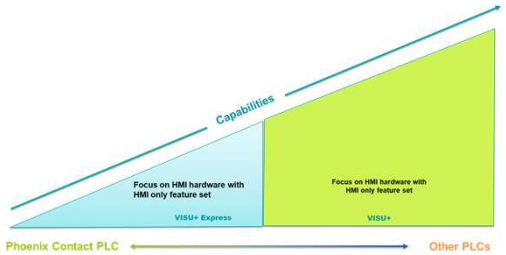
VISU+ *Express*
HMI Visualization

VISU+
SCADA Visualization



BENEFITS:

- **Same engineering tool, same appearance and major functionality**
- **Scalability & reuse of projects and applications**
- **Hardware platform independence**



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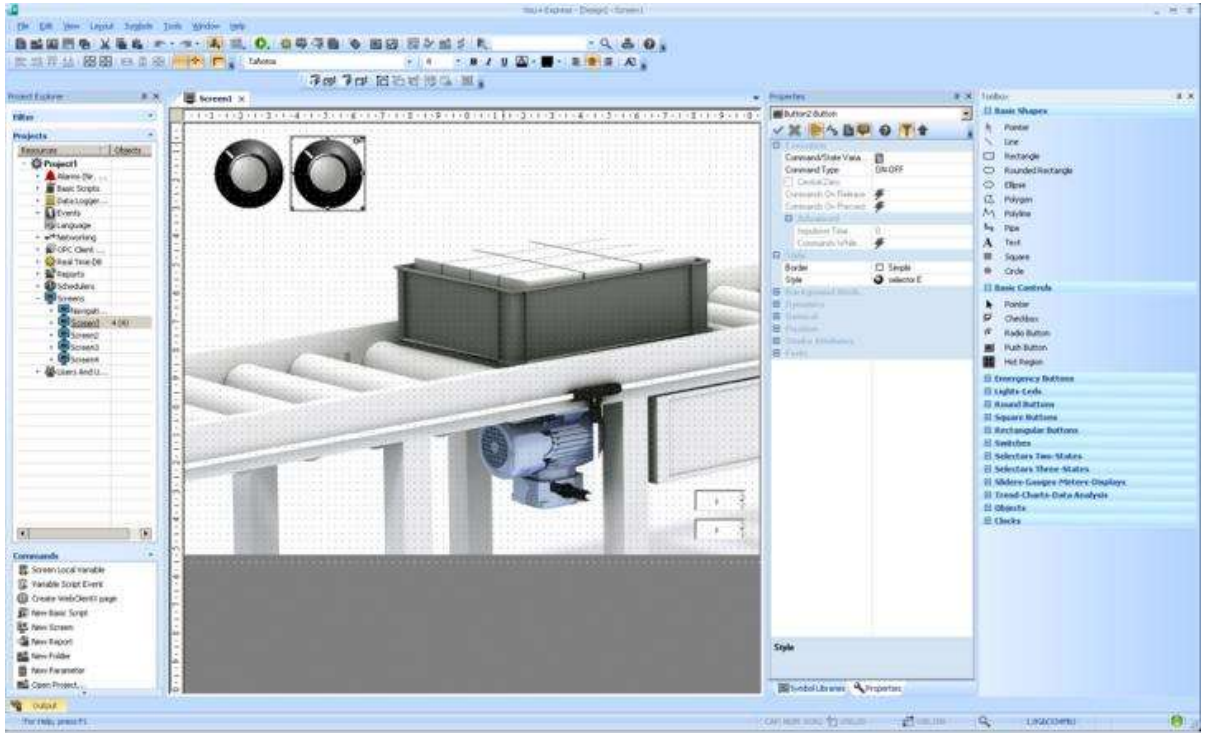
Design Software

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
  - …



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VISU+ / VISU+ Express – communication drivers

Your connectivity options!

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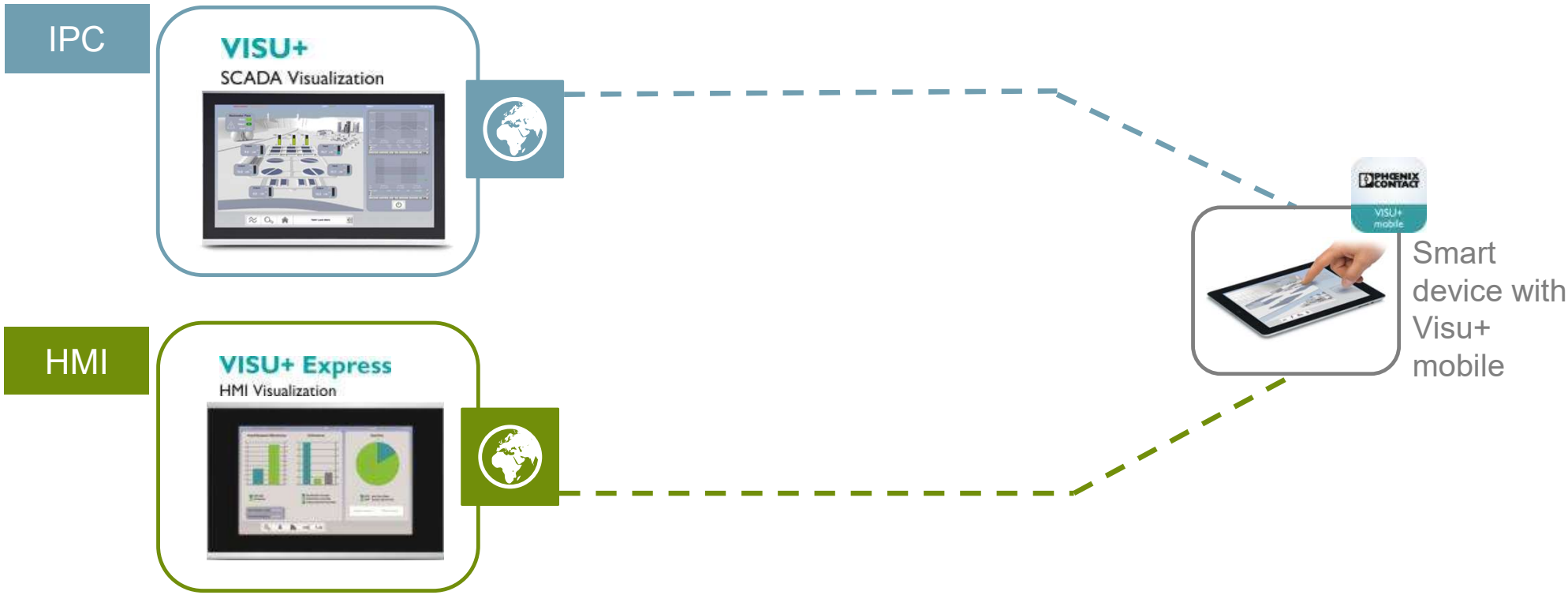
Remote data access with WebClient



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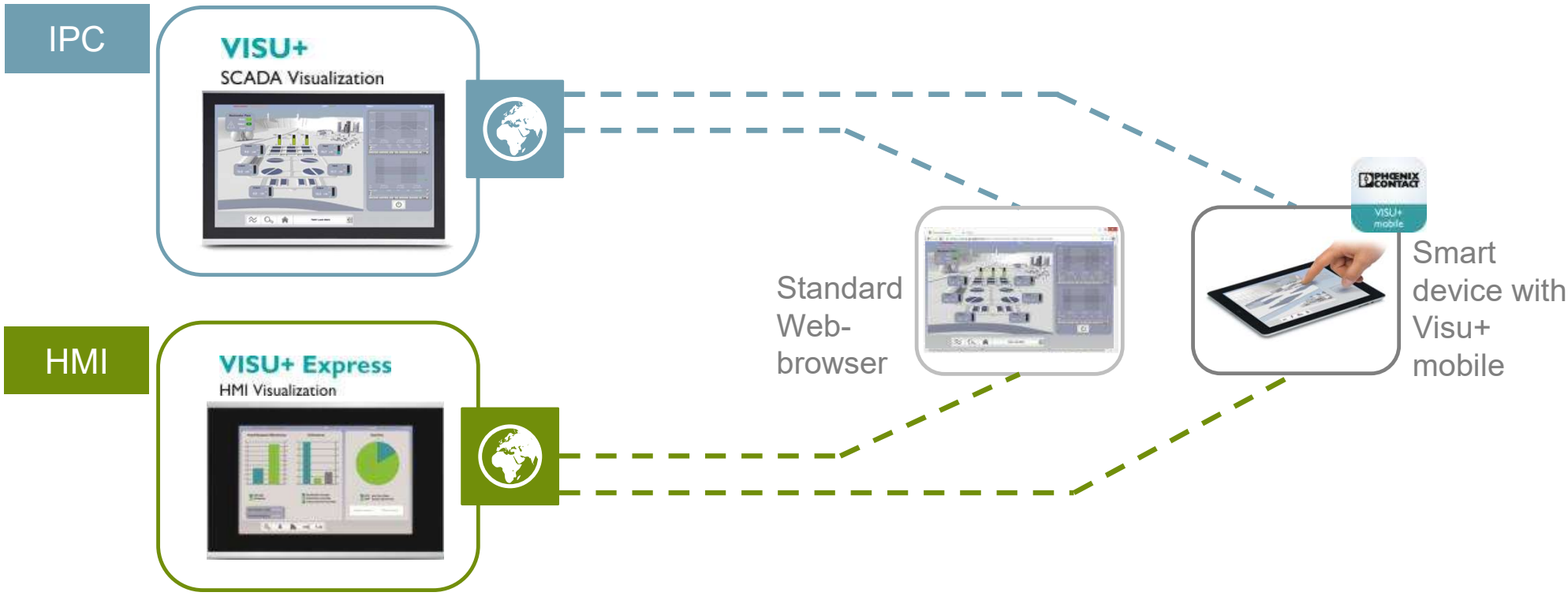
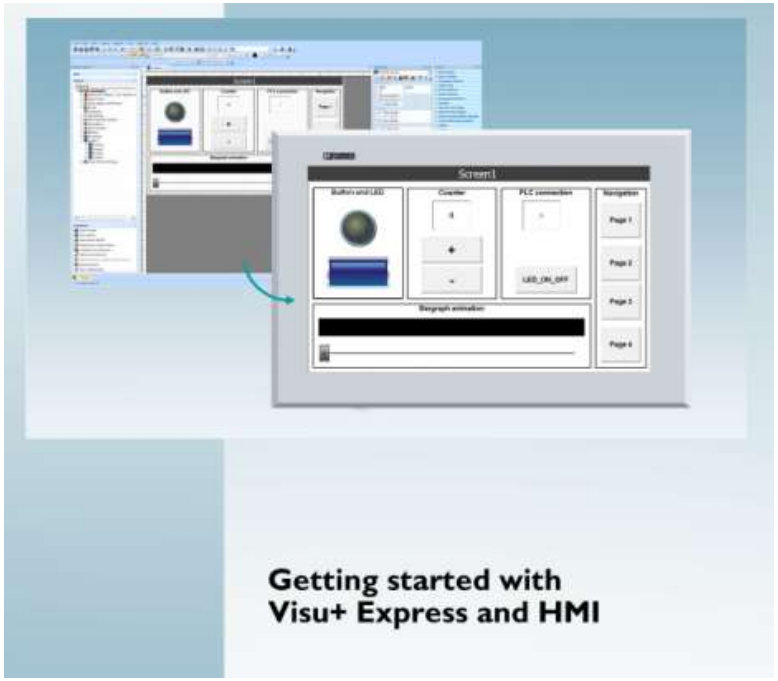
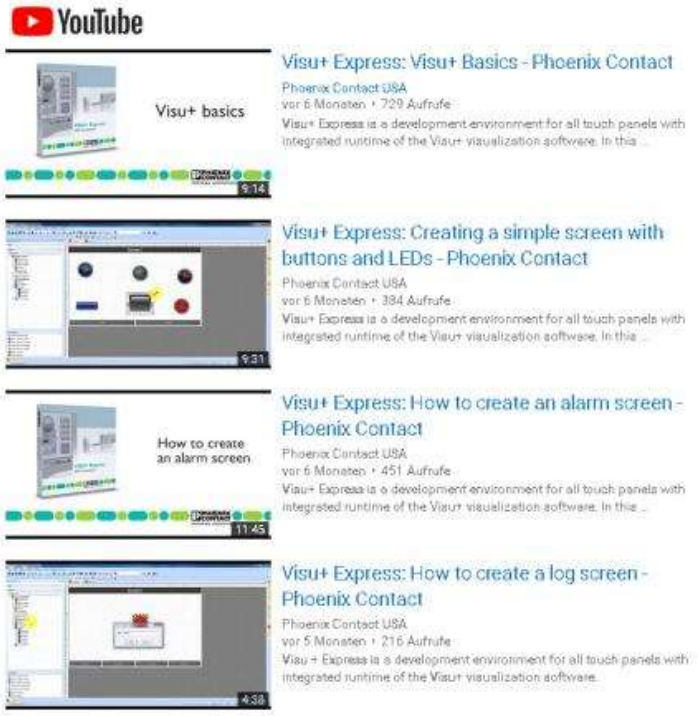
Remote data access with WebClient and HTML5



How to get started?



2402774 - VISU+ Express



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TP 6000

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TP 6000 - HMI Panel with Capacitive Touch

Proximity sensor
(12" models and above)

High brightness Screens
from 7“ to 12.1“ size

Capacitive (PCAP) multi touch

Wide viewing angles and scratch resistant glass front

0…50°C operating temperature

Visu+ runtime preinstalled

pxc
TP6000

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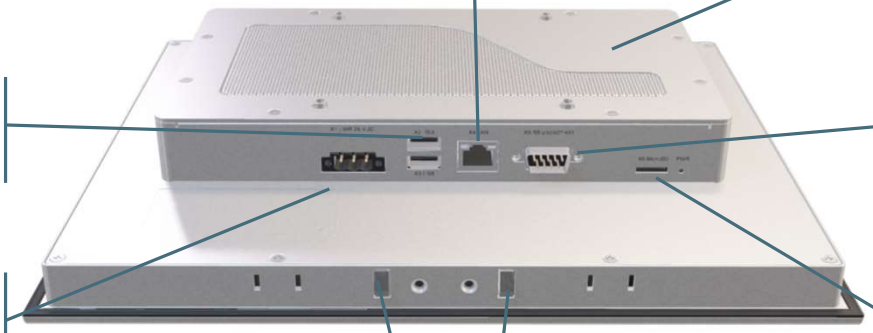
TP 6000 - HMI Panel with Capacitive Touch



Single x Ethernet 10/100/1000 (RJ45)

8 GB eMMC Flash data memory

Dual x USB 2.0

Multipurpose Serial port
(1x RS-232 / 1x RS422/485)

24 V DC power ± 20%

Micro SD card slot for data storage

Spring loaded mounting assistance

TP6000

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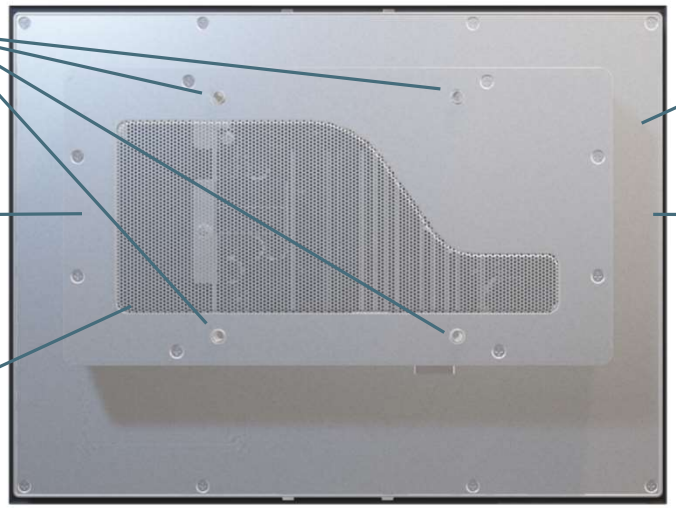
TP 6000 - HMI Panel with Capacitive Touch

VESA 100 mount

Quad-core Arm® Cortex® A9
1.2 GHz processor

System expandability



Robust metal housing

Slim and compact design:
45 mm depth

Same panel cut-out as WP
4000 at same screen size

TP6000

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TP 6000

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

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TP 6000

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!

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TP 6000

Example: Compatibility with Existing WP 4000 products

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

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TP 6000 vs. TP 3000

Comparison

TP 6000	TP 3000
1. Wide screen display sizes from 7“ to 12.1“ a) 15.6” to 21.5” screen versions planned 2. Common communication interface a) Dual 9pin dsub Serial & RJ45 Ethernet 3. PCAP touch screen 4. Proximity sensor saves energy and backlight life (12” screen size and up) 5. Standard Single person install 6. Standard Vesa Mount 7. More onboard memory 8. Onboard Gigabit Ethernet 9. Industry solution panels (Rugged) planned 10. Competitively priced	1. Display sizes from 5.7“ to 15“ in 4:3 and 16:9 aspect ratio 2. Resistive, GFG and PCAP touch options 3. Panel mount only 4. 10/100 MBps Ethernet 5. Industry solution panels (Marine, Rugged) 6. Pricy

TP 6000 vs. TP 3000

Similarities

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

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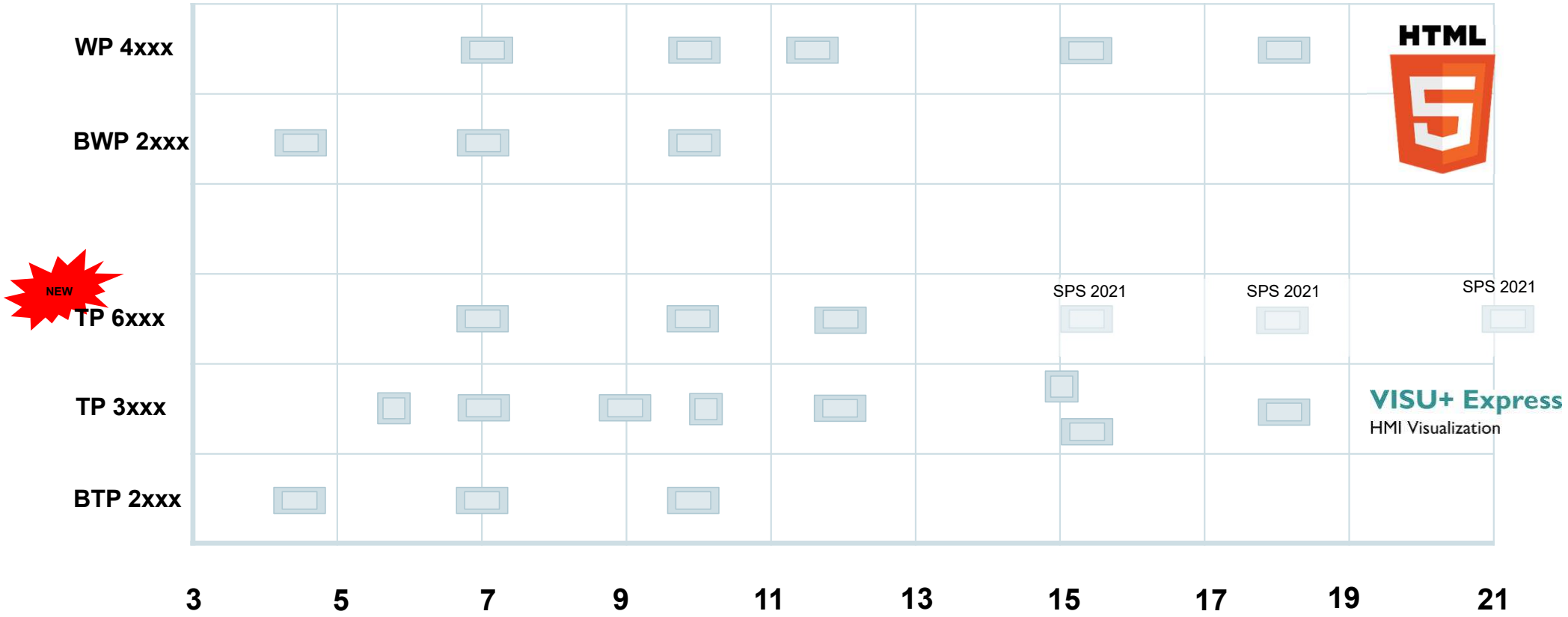
HMI product families and available screen sizes



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Touch panels with PCAP touch

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

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

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

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WP 4000

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Web based visualization

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Web Panel Advantages

EASY – No software download to the panel. Only setup is IP address setting on panel.

OPEN – No dependency on communication protocols.
No Profinet, Ethernet IP, MODBUS TCP, etc.

UNIVERSAL - Allows secure connection to ANY web server, regardless of location.

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- 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**

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HMI product families

Two classes of products

- *Standard – WP 4000*
  - Best in class hardware
  - Wide product choices

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

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Standard Web Panel – WP 4000

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

Resistive 7“
Single-Touch option

HTML5 Browser QT

All metal housing

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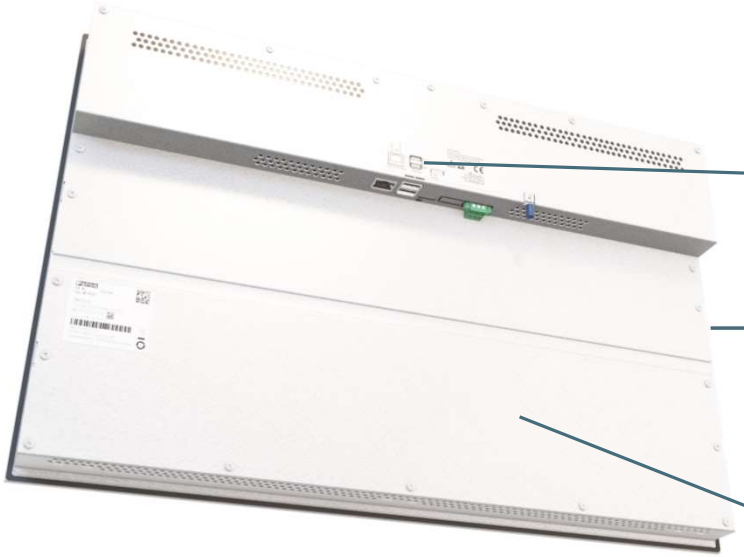
Standard Web Panel – WP 4000



- 1x Ethernet, 2x USB 2.0
- Metal housing improves EMC
- High-Performance CPU: Arm® Cortex®-A53 1.2 GHz (Quad-Core)

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Standard Web Panel – WP 4000

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
Art.-Nr.	1148694	1148693	1148687	1148689	1148691	1148690

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Basic Web Panel – BWP 2000

- Screen sizes 4.3“, 7“, 10.2“
- 350 Cd/m² LED backlight
- **Resistive single touch**
- **Arm® 9 i.MX6 DL 454 MHz dual core CPU**

- HTML5 Browser QT
- 0…50°C operating temperature
- Ethernet connectivity
- Plastic housing

Basic performance needs

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Comparison: WP 4000 vs. BWP 2000

WP 4000	BWP 2000
1. 6 display choices 2. Capacitive or 7“ Resistive touch 3. Can target 4 IP addresses 4. Higher screen resolution 5. Metal housing 6. Faster performance 7. Higher price	1. 3 display choices 2. Resistive touch 3. Can target 1 IP address 4. Standard screen resolution 5. Plastic housing 6. Basic performance 7. Lower price

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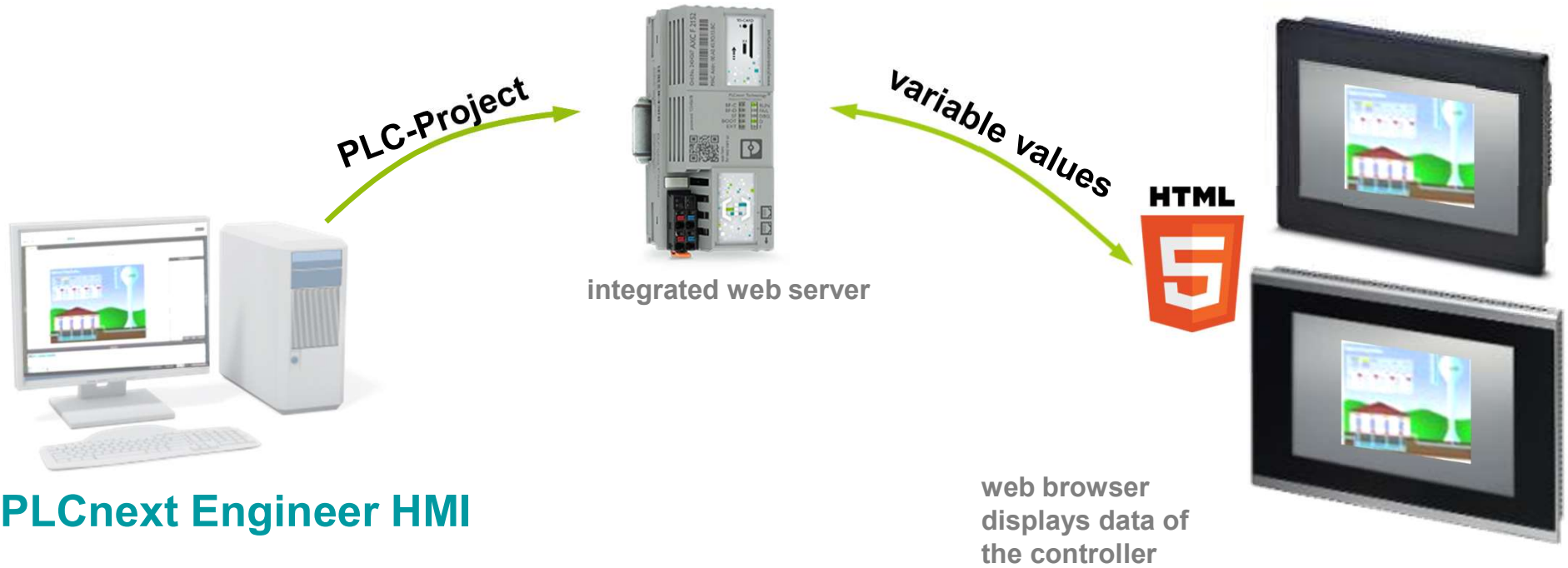
Application example:
PLC with integrated web server, using PLCnext Technology

Designed by PHOENIX CONTACT



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Step 1

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

Select the right device

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Step 2

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.

Select the right device

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Step 3

Step 3: Select the right device

Based on their features (CPU capacity, display resolution, and memory capacity) as well as their suitability for different applications, the individual device families can be divided into three classes:

Basic (BWP 2000, BTP 2000), standard (WP 4000, TP 6000, and TP 3000), and high-end applications (IPC). Select the right operator panel to meet your application needs.

			HMI for HTML5		HMI for Visu+			Industrial PC *
			BWP 2000	WP 4000	BTP 2000	TP 6000	TP 3000	IPC

Select the right device

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HMI Phoenix Contact

			HMI for HTML5		HMI for Visu+			Industrial PC *
			BWP 2000	WP 4000	BTP 2000	TP 6000	TP 3000	IPC
Page			14	15	18	19	20	24
Visualization		Runtime on HMI panel			●	●	●	●
		Web-based	●	●				●
Connection to control systems	Phoenix Contact	AXC or RFC controller running PLCnext	●	●	●	●	●	●
		ILC, AXC or RFC controller running PCWorx	●	●	●	●	●	●
		Emalytics View & Automation, Niagara, Dglux		o				●
		PLC logic			●	●	o	
	Other	OPC UA	●	o	●	●	●	●
		Third-party manufacturer	●	●	●	●	●	●
		Multi-driver PLC communication		●	o	●	●	●
		CODESYS	o	●				●
Remote Data Access (RDA)			o	o	o	●	●	●
Touch technology/ interface		Resistive touch (polyester)	●	●	●		●	●
		Resistive touch (glass-film-glass)					●	●
		PCAP touch		●		●	●	●
Hardware		Metal housing		●		●	●	●
		Plastic housing	●		●			
Environmental influences and approvals		Expanded temperature range					●	●
		Displays can be read in direct sunlight					●	●
		UL (Ordinary/Hazardous location)	●/●	●/–	●/●	●/+	●/●	●/●
		ATEX II and IECEx II						●
		Maritime approvals					o	
		Value / Performance	●/o	o/●	●/o	o/●	o/●	●/●

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

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Danke

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