

Welcome

Computadoras Industriales

IPC's

Panorama y guía de selección



Industrial PCs - Overview





Operation and Monitoring with runtime based HMIs







Quiz

What makes an industrial PC industrial?

- ✓ Passive cooling
- ✓ 24V DC powered
- Metal construction
- ✓ Single board computer
- Embedded system
- High shock & vibration
- ✓ Wide temperature range
- Industry relevant approvals / certifications
- Maintenance friendliness
- ✓ Long product life cycle
- ✓ Mounting options















Single Form Factor One size across performance classes













Best Practice Thermal Design









RAID Explained

RAID 0 - Striping

Made for speed/performance improvement Not recommended in industrial environment Reliability is more important than speed

RAID 1 - Mirroring Made for reliability with 2 or more drives BIOS selectable Configuration option

RAID 5 – Parity Made for speed and reliability Minimum 3 drives needed



Made for redundancy





Phoenix Contact Life Cycle Excellence



Intel Embedded Long-term Roadmap



- Longer availability of parts
- Longer support Continuity of form factor
- Easier change management Reduced cost of ownership





Manufacturing Excellence















Box PC, Panel PC and Monitor



Box PC

 Intelligent component in Automation <u>without</u> a display to run any application like control system, MES, data acquisition tasks, etc.



Flat Panel Monitor

- Display unit to connect to
 - Box PC
 - Panel PC as additional (secondary) display



Panel PC

- Intelligent component in Automation with a display to run any application like control system, MES, data acquisition tasks, etc.
- Allows connection to additional displays (FPM)





BOX IPCs



Box PC Lineup



Small Frame Box PCs

- ✓ Fit into small junction boxes
- ✓ Passive cooled
- Robust metal construction
- ✓ No moving parts
- Connectivity to serial interfaces





VL2 BPC 1000

- Small form factor, Box PC
 - Passive cooled
 - Expansion option (CAN, COM)
 - Easy serviceable

- Robust
- Bookshelf and Wall mount
- M.2 and 2.5" SATA mass storage
- 3rd gen. Intel E3845 CPU, 1.91 GHz (4 core)
 - Passive cooled
 - ✓ Easy serviceable

✓ Windows 7 & Windows 10 IoT





BL2 BPC x100

- Small form factor, Box PC family
 - Passive cooled
 - Compact
 - ✓ Windows 7 & Windows 10 IoT
- Robust
- DIN rail and wall mount
- M.2 and 2.5" SATA mass storage
- 6th gen. Intel (Apollo Lake) CPU technology
 - ✓ BL2 BPC 1100 Intel Celeron N3350 1.1/2.4 GHz (2 core)
 - ✓ BL2 BPC 2100 Intel Pentium N4200 1.1/2.5 GHz (4 core)
 - ✓ BL2 BPC 3100 Intel Core i3-6100U 2.3 GHz (2 core)
 - ✓ BL2 BPC 7100 Intel Core i5-6300U 2.4 GHz (2 core)
 - ✓ BL2 BPC 9100 Intel Core i7-6600U 2.6 GHz (2 core)





BL2 BPC x000

- Small form factor, Box PC family
 - Passive cooled
 - Expansion option (WIFI)
 - Windows 10 IoT

- ✓ Robust
- DIN rail and wall mount
- ✓ M.2 SATA mass storage
- 7th gen. Intel (Apollo Lake) CPU technology
 - ✓ BL2 BPC 1000 Intel Celeron N3350 1.1/2.4 GHz (2 core)
 - ✓ BL2 BPC 2000 Intel Pentium N4200 1.1/2.5 GHz (4 core)
 - ✓ BL2 BPC 7000 Intel Core i5-7442EQ 2.1/2.9 GHz (4 core)





Overview

- Compact design to fit into small cabinet boxes
- Efficient performance with Intel Celeron N3350 CPU
- High reliability with passive cooling and solid-state mass storage media
- Available as Secure Hardware, equipped with TPM 2.0 module
- Flexible mounting options to compliment your application





General technical data

- Intel Celeron N3350 CPU
- 32 GB on-board eMMC storage
- m.2 SSD mass storage options
- Windows 10 IoT and Linux support
- Serial port options
- WLAN 802.11 options
- Din-rail and wall mounting options





INSPIRING INNOVATIONS

Standard model – BL2 BPC 1501S





Volume 0.4 liter



Extended model BL2 BPC 1501E





Volume 0.6 liter



Target applications

- EDGE / FOG computing
- Industrial IIoT network and cloud computing
- IoT Gateway
- Distributed data collector & processing
- Cyber security EDGE device
- Intelligent machinery controller
- Kiosks



BL2 BPC 1501S





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2020 EPMM IMA –HMI & IPC BL2 BPC 1500 – Compact Box IPC

Types

Article#	Article Name	M.2 SSD	WLAN	OS	TPM
1130682	BL2 BPC 1501S	Ν	Ν	N	N
1130669	BL2 BPC 1501E	Ν	Ν	N	N
1141904	BL2 BPC 1501S-W	Ν	Y	Ν	N
1141843	BL2 BPC 1501E-W	Ν	Υ	N	N
1158241	BL2 BPC 1501E-64-W10	64 GB	Ν	W10	N
1158252	BL2 BPC 1501E-W-64-W10	64 GB	Υ	W10	N
1158235	BL2 BPC 1501E-128-W10	128 GB	N	W10	N
1158245	BL2 BPC 1501E-W-128-W10	128 GB	Y	W10	N
1158247	BL2 BPC 1501E-64-W10-T	64 GB	N	W10	Y
1158244	BL2 BPC 1501E-W-64-W10-T	64 GB	Y	W10	Y
1158243	BL2 BPC 1501E-128-W10-T	128 GB	N	W10	Y
1158231	BL2 BPC 1501E-W-128-W10-T	128 GB	Y	W10	Y

Other Model Information
All 1501S models include 2 GB RAM and 32 GB eMMC
All 1501E models include 4 GB RAM and 32 GB eMMC, 2x COM ports, 1x M.2 SSD slot



BL2 BPC 1501S



BL2 BPC 1501E



Key Take Aways

- Ultra compact form factor to fit into small junction boxes
- New embedded CPU technology
- Available in different configurations
- Available as secure system with TPM
- Available with serial ports to connect to legacy hardware
- Robust full metal housing for impact protection and EMI
- Competitively priced!



BL2 BPC 1501S



INSPIRING INNOVATIONS

Standard Box PCs

- ✓ Passive cooled
- ✓ Robust metal construction
- ✓ Easy Service concept
- ✓ Wide environmental ratings




VL BPC x000

- Slim form factor Box PCs
 - Passive cooled
 - Expansion option (2 x PCI)
 - ✓ Windows 7 & Windows 10 IoT
- Robust
- Bookshelf and wall mount
- SSD and HDD SATA mass storage options



- Intel CPU technology
 - ✓ VL BPC 2000 3rd gen. (Bay Trail) N2930 1.6 GHz (4 core)
 - ✓ VL BPC 3000 4th gen. (Haswell) Core i3-4010U 1.7 GHz (2 core)





VL2 BPC x000

- Complete range of fully configurable Box PCs
 - Passive cooled
 - ✓ Windows 7 & Windows 10 IoT
 - Expansion option (PCI & option cards)
- / Thermal isolation barrier
- Bookshelf and wall mount
- SSD and HDD SATA mass storage options

Intel CPU technology

- ✓ VL2 BPC 1000 3rd gen. (Bay Trail) E3845 1.91 GHz (4 core)
- ✓ VL2 BPC 2000 3rd gen. (Bay Trail) N2930 1.6 GHz (4 core)
- ✓ VL2 BPC 3000 4th gen. (Haswell) Core i3-4010U 1.7 GHz (2 core)
- ✓ VL2 BPC 7000 4th gen. (Haswell) Core i5-4300U 1.9 GHz (2 core)
- ✓ VL2 BPC 9000 6th gen. (Sky Lake) Core i7-6822 EQ 2 GHz (4 core)







Quiz

What determines the performance of a PC system?

- ✓ CPU
 - ✓ Age / generation of CPU
 - ✓ Amount of CPU cores
 - ✓ Clock speed
 - ✓ CPU Performance is good overall system performance indicator
- ✓ Memory
- ✓ Mass storage
- ✓ System architecture







Cost – Per – Performance





Product(s) #of Cores Passmark Name BL2 1x00 N3350 1105 2 VL2 1000 E3845 4 1499 VLx 2000 N2930 4 1627 BL2 2x00 N4200 4 2026 VLx 3000 i3-4010U 2 2437 2 BL2 3000 i3-6100U 3601 VL2 7000 i5-4300U 2 3741 DL 7000 2 i7-4650U 3968 BL2 7100 i5-6300U 2 4373 BL2 9100 i7-6600U 2 4801 BL2 7000 i5-7442EQ 4 6262 VL2 9000 i7-6822EQ 4 6427



CPU Performance classification

CPU Performance classification

Entry Level			
 Visualization 	✓ Data collection	 IoT Gateway 	✓ Simple control
Mid Performance			
✓ SCADA	✓ MES	✓ Realtime tasks	 Demanding control
High End			
✓ SCADA	✓ MES	✓ Complex tasks	 Demanding control

Quiz

What are the differences between HDD and SSD?

HDD

- Rotating disk storage media
- ✓ Very large storage volumes possible
- ✓ "Unlimited" write cycles
- ✓ Inexpensive media

🗸 SSD

- Solid state media
- High shock / vibration tolerance
- ✓ Fast storage media
- ✓ Limited write cycles
- ✓ More expensive media







Hard Disk Drive vs. Solid State Drive

• If...

- ✓ You need lots of storage capacity, up to 2 TB
- Don't want to spend much money
- ✓ Don't care too much about how fast a computer boots up or opens programs
- You do a lot of writing to disk (i.e. Data Logging)

• If...

- ✓ You need to install it in a vibration or shock environment
- ✓ You are willing to pay for faster performance
- ✓ Don't mind limited storage capacity or can work around that







M.2 Storage

Another solid-state mass storage media

- ✓ Solid state solution with no moving parts
- ✓ Shock\vibration 2000G\20G (per MIL-STD810)
- ✓ SATA III 6 Gbit/s compliant
- ✓ High performance, high durability
- ✓ MTBF > 2M hours
- ✓ Cost per GB on par with 2.5" SSD





Software options

Full range of Microsoft operating systems







Phoenix Contact Software



Control



Visualization



Networking



19" Rack Mount Systems – BL RM Series

- 19" rack mount Box PCs
- Available in 2 height units and 4U
- 4th Generation Intel processors
- Easily customer expandable with PCI/PCIe slots
- High system availability and data security with RAID support (0/1/5)
- Easily maintenance with hot swappable drives
- ✓ Increased security with lockable front door





19" Rack Mount Systems – BL RM Series



19" Rack Mount Systems – BL RM Series

- 19" Rack Mount Box PCs
 - ✓ Two chassis sizes 2U and 4U
 - ✓ PCI & PCIe Expansion Slots
 - High performance CPUs

- ✓ Hot swappable 3.5" SATA drives
- ✓ RAID support
- Active cooling with filter cartridges

- Intel CPU technology
 - ✓ 4th gen. (Haswell) Core i3-4330T 3.0 GHz (2 core)
 - ✓ 4th gen. (Haswell) Core i7-4770T 2.5 GHz (4 core)



Panel IPCs & Monitor Solutions









Touch Technologies – (analog) Resistive Touch

Advantages

- ✓ Inexpensive
- Pressure point sensor (operation with finger, touch pen, glove, etc.)
- ✓ High resolution
- ✓ Energy efficient

Limitations

- Reduced image transparency (Polyester type)
- Polyester touch foil is prone to physical damage



GFG (Glass Film Glass) Touch

Advantages

- Proven resistive touch technology
- Pressure point sensor (operation with finger, stencil, glove, etc.)
- ✓ High resolution
- ✓ High chemical resistance
- ✓ Scratch resistant Glass Front Surface
- ✓ Daylight readability

Limitations

- ✓ Higher cost
- ✓ Single-Touch interface
- Calibration necessary

Thin glass with /	AR Coating
Polarization laye	r
ITO layer	
Spacing dots	
ITO glass	
Air Gap	
TFT display with	h LED backlight



Touch Technologies – (Projected) Capacitive Touch

Advantages

- ✓ High chemical resistance
- Scratch resistance (sharp objects)
- Multiple Touch points at the same time possible
- Modern All Glass Front designs
- Cleaner design with less pollution surfaces
- No calibration necessary

Limitations

- Works only when touched with conductive materials
- Possible false operation in wet applications
- Application software needs to be developed for this technology
- ✓ Higher cost







Touch Monitors & Display Solutions

- ✓ Industrial design
- ✓ True flat glass front
- Robust metal base construction
- Multiple display connectivity options
- ✓ 10 pt. PCAP Multi-Touch





BL FPM - Flat Panel Monitors

BL FPM 15.6

- 16:9 aspect ratio with 1366 x 768 resolution
- 1x VGA, 1x DVI-I, 1x DP++, 1x USB 1.1\2.0 Type A

BL FPM 18.5

- 16:9 aspect ratio with 1366 x 768 resolution
- 1x VGA, 1x DVI-I, 1x DP++, 1x USB 1.1\2.0 Type A

BL FPM 21.5

- 16:9 aspect ratio with 1920 x 1080 resolution
- 1x VGA, 1x DVI-I, 1x DP++, 1x USB 1.1\2.0 Type A





Box & Panel PC



INSPIRING INNOVATIONS

Keyboard Video Mouse Extender

- ✓ Flexible use of displays, up to 90 m away from PC
- Cost efficient wiring with single cable between TX and RX
- Increased application reliability with PC in safe location
- ✓ Industrial wide temperature design
- ✓ Fast setup with plug and play technology





BL KVM Extender 90 m solution







Basic Panel PCs BL2 PPC







BL2 PPC xx00 Series

- Suitable for every system with display sizes from 12" to 17" (4:3) and 15.6" to 21.5" (16:9)
- Analog Resistive Single-Touch and Projective-Capacitive Multi-Touch available – the right technology for every application
- The right processor performance for each application
- ✓ Latest generation long-term available and energyefficient Intel® Atom™, Celeron®, Pentium® or Core™ i processors
- Passive cooling for long product life







Basic Panel PC – BL2 PPC x000

- Analog resistive (Single-Touch) Panel PCs in 4:3 display aspect ratio
 - ✓ Display sizes 12", 15" and 17"
 - Expansion option (WIFI)
 VESA or panel mount
 - ✓ Windows 10 IoT

- Passive cooled
- ✓ M.2 SATA mass storage
- 7th gen. Intel (Apollo Lake) CPU technology
 - ✓ BL2 PPC 1000 Intel Celeron N3350 1.1/2.4 GHz (2 core)
 - ✓ BL2 PPC 2000 Intel Pentium N4200 1.1/2.5 GHz (4 core)
 - ✓ BL2 PPC 7000 Intel Core i5-7442EQ 2.1/2.9 GHz (4 core)





Compact Basic Panel PC – BL2 PPC 1200

- 2 pt. PCAP (Multi-Touch) Panel PCs in 16:9 display aspect ratio
 - Display sizes 7" and 10" \checkmark
 - Expansion option (USB / COM)
 VESA or panel mount
 - ✓ Windows 10 IoT

- Passive cooled
- ✓ mSATA mass storage
- 7th gen. Intel (Apollo Lake) CPU technology
 - ✓ BL2 PPC 1000 Intel Celeron N3350 1.1/2.4 GHz (2 core)







Compact Basic Panel PC - BL2 PPC 1200



Basic Panel PC – BL2 PPC x100

- Projected Capacitive (PCAP Multi-Touch) Panel PCs in 16:9 display aspect ratio
 - ✓ Display sizes 15.6", 18.5" and 21.5" ✓ Passive cooled
 - Expansion option

- VESA or panel mount
- ✓ Windows 7 & Windows 10 IoT ✓ M.2 and 2.5" SATA mass storage
- 6th gen. Intel (Apollo Lake) CPU technology
 - ✓ BL2 PPC 2100 Intel Pentium N4200 1.1/2.5 GHz (4 core)
 - ✓ BL2 PPC 3100 Intel Core i3-6100U 2.3 GHz (2 core)
 - ✓ BL2 PPC 7100 Intel Core i5-6300U 2.4 GHz (2 core)
 - ✓ BL2 PPC 9100 Intel Core i7-6600U 2.6 GHz (2 core)





Standard Panel PCs VL2 PPC VL PPC





Standard resistive panel PCs – VL PPC Series

- Suitable for every application with display sizes from 12" to 18.5" in 4:3 (non-widescreen) and 16:9 (widescreen) format
- Analog Resistive Single-Touch, Projective-Capacitive Multi-Touch and Glass-Film-Glass Touch (GFG Resistive Single-Touch) options available – the right technology for every application
- ✓ The right processor performance for each application
- Passive cooling for long product life
- Easy serviceability with easily accessible components





Standard Capacitive Touch Panel PCs – VL2 PPC Series



Standard Capacitive Touch Panel PCs – VL2 PPC Series

- Projected Capacitive (PCAP Multi-Touch) Panel PCs in 16:9 display aspect ratio
 - Display sizes 7" to 21.5"
 - Expansion options (PCI & Option card)
 - ✓ Windows 7 & Windows 10 IoT

- Passive cooled & Thermal barrier
- VESA or panel mount
- 2.5" HDD & SSD SATA mass storage

Intel CPU technology

- ✓ VL2 BPC 1000 3rd gen. (Bay Trail) E3845 1.91 GHz (4 core)
- ✓ VL2 BPC 2000 3rd gen. (Bay Trail) N2930 1.6 GHz (4 core)
- ✓ VL2 BPC 3000 4th gen. (Haswell) Core i3-4010U 1.7 GHz (2 core)
- ✓ VL2 BPC 7000 4th gen. (Haswell) Core i5-4300U 2.4 GHz (2 core)
- ✓ VL2 BPC 9000 6th gen. (Sky Lake) Core i7-6822 EQ 2 GHz (4 core)





Standard Capacitive Touch Panel PCs – VL2 PPC Series

7" Wide Screen 10 pt. PCAP Touch, 800 x 480
9" Wide Screen 10 pt. PCAP Touch, 800 x 480
12.1" Wide Screen 10 pt. PCAP Touch, 1366 x 768
15.6" Wide Screen 10 pt. PCAP Touch, 1366 x 768
18.5" Wide Screen 10 pt. PCAP Touch, 1366 x 768
21.5" Wide Screen 10 pt. PCAP Touch, 1920 x 1080






All-in-one and all-round IP65 protected Panel PCs DL PPC BL2 PPC AIO65









All-in-one and all-round IP65 protected Panel PCs

Evolution in Cabinet Design









Standard All-in-one panel PC - DL PPC Series

- Attractive, modern industrial design
- PCAP Multi-Touch allows intuitive gesture control
- ✓ Wide operating temperature range
- ✓ High Performance, passive cooled Intel[®] Core[™] i7 processor
- Space saving on factory floor without need for cabinet and just 60 mm system depth
- Easy maintenance with easily accessible parts





Standard All-in-one panel PC - DL PPC Series

- All-round IP65 protected Projected Capacitive (PCAP Multi-Touch) Panel PCs in
 - Display sizes 15", 18.5" and 21.5"
 - Expansion options (mPCle)
 - Windows 7 & Windows 10 IoT
- ✓ Passive cooled
- VESA mount or arm adapter
 - ✓ 2.5" HDD & SSD SATA mass storage

- Intel CPU technology
 - ✓ DL PPC 2000 3rd gen. Celeron 2980U (2 core)
 - ✓ DL PPC 7000 4th gen. Core i7-4650 1.71 GHz (4 core)



ING INNOVATIONS



Standard All-in-one panel PC - DL PPC Series



Basic all-in-one and all-round IP65 protected panel PC BL2 PPC







Basic all-in-one and all-round IP65 protected panel PC BL2 PPC

Benefits

- ✓ All-around IP65 protection without the need for a cabinet
- Attractive, modern industrial design
- ✓ Scalable processor performance
- Easy installation and various mounting options







- Two performance level options
 - 2000 class (Pentium N4200)
 - 7000 class (Core i5-7442EQ)
- Three display size options
 - 15.6", 18.5" or 21.5" (Full HD)
 - 10-point PCAP touch
 - Glove operation
- Windows 10 IoT support

Configuration options

- AIO65 VESA
- AIO65 Pole mount





VESA configuration

- Metal housing construction
- VESA 100 mounting pattern
- 3 dual cable entry rubber grommets
- External cable routing







Pole or swing arm mount configuration

- Metal housing construction
- Arm / pole mount
- Cable entry through pole
- Internal cable routing







Pole or swing arm mount configuration

- Metal housing construction
- Arm / pole mount
- Cable entry through pole
- Internal cable routing







Pole or swing arm mount with stack light (accessory)

- Metal housing construction
- Arm / pole mount
- Cable entry through pole
- Internal cable routing, also for stack light





Pole or swing arm mount with push button box (accessory)

- Metal housing construction
- Arm / pole mount
- Cable entry through pole
- Internal cable routing, also for push button box







Comparison DL PPC & BL2 PPC AIO65

DL PPC	BL2 PPC AIO65
1. 3 screen sizes 15", 18.5", 21.5" PCAP	1. 3 screen sizes 15.6", 18.5", 21.5" PCAP
2. 2 performance classes	2. 2 performance classes
a) Intel Celeron 2980U (Passmark 1593)	a) Intel Pentium N4200 (Passmark 2026)
b) Intel Core i7 4650U (Passmark 3963)	b) Intel Core i5 7442EQ (Passmark 6262)
3. 2.5" SSD / HDD mass storage	3. M.2 SSD mass storage
4. Configuration up to 12 GB DDR3 RAM	4. AIO65 2000 class: 8 GB DDR3 RAM
5. mPCle slot	AIO65 7000 class: 8 to 16 GB DDR4 RAM
6. Windows 7 & Windows 10	5. Windows 10
7. Monolithic design	6. Modular design
8. Configurable front button	7. Push button box accessory (pole mount version)
9. External USB	8. Stack light accessory (pole mount version)
10. VESA and Arm mount	9. VESA and pole /swing arm mount
11. Temp range 0…45°C	10. Temp range 045°C
12. Approvals CE, UL	11. Approvals CE, UL

INSPIRING INNOVATIONS

Modular Operator Station – Simplest operation & maximum performance for Smart Factories Agenda

- Review Old Operator Stations
- > Market Requirements
- Modular Operator Station Introduction of a new system
- Proof of Market Requirements
- > How to configure & order your Modular Operator Station
- Contacts & more information







Review – Old Operator Stations



Modular Operator Station – Simplest operation & maximum performance for Smart Factories Review – Old Operator Stations

Problems in the past:

- Only exclusive articles
 - Not in e-shop (no Google search result, complicated order process)
 - Marketing not possible
- No configurable articles
 - > Many articles had to be developed (high maintenance effort, no multiplicator effect)
 - > Many individual documentations necessary
 - > Discussions with customers / subsidiary complicated
- Technically
 - Space-consuming design
 - > No extensive tests possible because of too many Main and side panel (Picture, Name)









Market Requirements



Modular Operator Station – Simplest operation & maximum performance for Smart Factories Market Requirements





Modular Operator Station – Introduction of a new system



Modular Operator Station – Introduction of a new system **Overview**

Name: Modular Operator Station (Abbr. MOS)

Article number: 1168430

What kind of article is this and and what can you do with it?

- Configurable Operator Station
- > Can be used for monitoring, operating and programming plants and machines
- > Consists of: Signal Tower, IPC, Push-Button Box, Keyboard / Mouse, Mounting device and Software



Configurated Modular Operator Station

Your advantages

- ✓ Modern, space-saving & robust IP65 design
- Very easy & fastest configuration
- Reliable & robust technology
- Easy & fast maintenance
- ✓ Best ergonomics & operating
- Newest & most innovative technologies
- ✓ Use of PROFINET & PROFISAFE
- Fastest data communication thanks to Gigabit



Modular Operator Station – Introduction of a new system IPC – BL2 PPC AIO65

 By selecting the IPC, you determine the performance and application possibilities of your operator station

Available IPCs

Name	Size	Resolution	CPU	RAM	Storage	Supported mounting types
BL2 PPC AIO65 2000	15,6"	1920x1080	Pentium N4200 Quadcore 1,1 GHz	8 GB DDR3	240 GB MSATA (3D TLC)	 Pedestal (Fixed, height-adjustable, vertical rotatable) Mounting arm adapter (CS 3000, 48 mm)
BL2 PPC AIO65 2000	15,6"	1920x1080	Pentium N4200 Quadcore 1,1 GHz	8 GB DDR3	240 GB MSATA (3D TLC)	 Wall mounting VESA (Connection to Bosch-Profile, only without keyboard)
BL2 PPC AIO65 2000	18,5"	1920x1080	Pentium N4200 Quadcore 1,1 GHz	8 GB DDR3	240 GB MSATA (3D TLC)	 Pedestal (Fixed, height-adjustable, vertical rotatable) Mounting arm adapter (CS 3000, 48 mm)
BL2 PPC AIO65 2000	18,5"	1920x1080	Pentium N4200 Quadcore 1,1 GHz	8 GB DDR3	240 GB MSATA (3D TLC)	 Wall mounting VESA (Connection to Bosch-Profile, only without keyboard)
BL2 PPC AIO65 7000	15,6"	1920x1080	I5-7442EQ 2,10 GHz	16 GB DDR4	480 GB MSATA (3D TLC)	 Pedestal (Fixed, height-adjustable, vertical rotatable) Mounting arm adapter (CS 3000, 48 mm)
BL2 PPC AIO65 7000	18,5"	1920x1080	I5-7442EQ 2,10 GHz	16 GB DDR4	480 GB MSATA (3D TLC)	 Pedestal (Fixed, height-adjustable, vertical rotatable) Mounting arm adapter (CS 3000, 48 mm)
BL2 PPC AIO65 9000	18,5"	1920x1080	17-7820EQ 3,00 GHz	16 GB DDR4	480 GB MSATA (3D TLC)	 Pedestal (Fixed, height-adjustable, vertical rotatable) Mounting arm adapter (CS 3000, 48 mm)



Configurated Modular Operator Station

Your advantages

- ✓ Attractive & modern industrial design
- ✓ Intuitive gesture control thanks to multi-touch capability
- ✓ Processor performance suited to the application
- ✓ Ergonomic use directly on the machine thanks to all-round IP65 protection and VESA 100 mounting



Modular Operator Station – Introduction of a new system Push-Button Box

- Ideal extension for the IPC
- It enables you to use more functions & more operating possibilities
- Available versions
 - Empty box (15,6" & 18,5")
 - Parallel wired box (15,6" + 8 slots + E-STOP or 18,5" + 10 slots + E-STOP, individual configuration)
 - PROFINET box (18,5" + 10 slots + E-STOP, individual configuration)

Slots can be filled with functions like USB 3.0 Ports, buttons for various functions, key switches, \ldots



Reduced downtime: IPC can be replaced quickly



More operating possibilities by physical buttons



Easy box maintenance by removable front & IPC replacement without downtime*



Front

- E	
	-

Side

Back



* IPC replacement without downtime only with PROFINET box

Modular Operator Station – Introduction of a new system Shelf, Keyboard & Mouse

- Choose the best shelf, keyboard & mouse combination for your application
- Available versions
 - Without shelf, keyboard & mouse
 - Shelf (Alumium, height-adjustable) with Cherry keyboard (NUM-Block) & mouse
 - Shelf (Steel, not height-adjustable) with Active Key (Dust cover, without NUM-Block) & mouse
 - Shelf (Steel, not height-adjustable) with Gett keyboard (Stainless steel, touchpad, IP65)
- Available keyboard layouts:
 - German, US-English, Spanish, French, Chinese, Dutch, Portuguese



Aluminium shelf with Cherry keyboard & mouse



Use our innovative glove compatible multitouch or our Push-Button Box instead of keyboard & mouse



Modular Operator Station – Introduction of a new system **Signals**

- Extend your operator station with clear and distinct colour signals that can be seen everywhere
- Available versions
 - Without signal tower
 - Multicolour
 - Red-Yellow Green
 - Red Green
 - Red



A signal tower can be mounted on top of the operator station

Your advantages

- Any signaling task can be performed, thanks to considerable signal diversity
- $\checkmark~$ The optical elements can be arranged in any order, thanks to the modular design
- \checkmark Long service life guaranteed, thanks to LED elements with low current consumption
- 🗸 IP 65



Modular Operator Station – Introduction of a new system Mounting

- A wide range of mounting methods always provide the best ergonomics, best operation and most space-saving solution
- Available version
 - Pedestal (Fixed, height-adjustable, vertical rotatable)
 - Mounting arm adapter (CS 3000, 48 mm)
 - Wall mounting VESA (Connection to Bosch-Profile, only without keyboard)



No matter whether it is a pedestal, support arm or wall mount. We offer the best solution



Modular Operator Station – Introduction of a new system **Software**

- To ensure that the operator station is immediately ready to use, we offer you, in addition to the pre-installed Windows 10, numerous other software
- Available bundles
 - Without software
 - PLCnext bundle 1 (PLCnext ENG Safety, PLCnext ENG SFC)
 - PLCnext bundle 2 (PLCnext ENG Safety, PLCnext ENG SFC, HMI Generator, Portico)
 - Individual software bundle



PLCnext Software – Intuitive & fast

Your advantages

- Easy handling, thanks to intuitive programming interfaces and clear structures
- ✓ Fast startup and programming, thanks to comprehensive standard libraries
- $\checkmark~$ Application-specific extension with corresponding function blocks and function add-ins
- ✓ Uniform operation worldwide, thanks to programming in accordance with IEC 61131





Proof of Market Requirements



Modular Operator Station – Introduction of a new system **Proof of Market Requirements** Done: NET, USB & many more by Push-Button Box PROFINET, USB & many more of INET) pone: normal and pcs ance classes Performance Selection of diffe ≻ MiddDone: Low = High rogramming A-76 Done: Different Keyboard & mouse combination Different with doyes by PC, Multifouch with doyes by PC, Different Kejboard & mouse col Multiouch with gloves by PC, Multiouch with gloves Box FFID by push-Button roos Pration to the Pontine poptions one: nounting options one: nounting options offerent mounting options Ergonomics Adaptation to the > Cont board / mouse, Done: Done: Jone System & use of configurator Design Modularity Robone: design 8 1P65 Easy & fast configuration Modern design & Easy config PHENIX ICONTACI

INSPIRING INNOVATIONS



How to configure & order your Modular Operator Station



Modular Operator Station – Simplest operation & maximum performance for Smart Factories How to configure & order your Modular Operator Station

- Our brand-new configurator assists you in configuring your favorite solution quickly and easily
- Only 6 steps are necessary
 - <u>Download</u> & open the configurator
 - Select your favorite components
 - Check your configuration
 - Copy the order key & press "Send request"
 - Wait for your personal offer
 - Order your desired article

Malasma ta th	Operator Station - Configurator			_
welcome to th	Plassacelest an IPC			
Bush-Button Box	Please select all IPC			
Keyboard / Moure	Please select a Fush-button box			
Keyboard Janguage	Please select a Keyboard Janguage			
Mounting device	Please select a Mounting device			
Signal tower	Pleae select a Signal Tower			
Software	Please select a Software Bundle			
Orderkey	AML-MOS			
Currently selected o	onfiguration of the Modular Operator Station:			
Industry PC: Please s	select an IPC			
Push-Button Box: Ple	ase select a Push-Button Box			
Keyboard / Mouse: F	lease select a Keyboard / Mouse			
Keyboard language:	Please select a Keyboard language			
Mounting device: Ple	ase select a Mounting device			
Signal tower: Pleae s	elect a Signal Tower			
Software: Please sele	act a Software Bundle			
Send order				
	Send request (Phoenix Contact Employees)		Send request (Customer)	
For any techni	cal questions or feedback please contact Frank Brockha	gen.		
		Contact		
For any comm	ercial or marketing questions or feedback please contac	t Andreas Stanislawski.		
		Contact		
		. C Chan		
Find more info	rmation about this solution on the PC World, Salesnet o	or E-Shop.		_

Welcome page at the Modular Operator Station – Configurator





Contacts & more information



All-in-one panel PC applications



Machine control



Quality assurance



Worker guidance



Data collection







Specialty and Industry Ready Panel PCs

- Suitable for outdoor applications with sunlight readable display option
- ✓ UV and IR resistance
- Corrosion resistant materials (i.e. salt spray test)
- Rugged, passive cooled design with wide operating temperature components
- ✓ Usable with work gloves





Box and panel PCs for hazardous locations - VL2 EX Series

- Complete range of fully configurable Box PCs
 - Passive cooled
 - ✓ Windows 7 & Windows 10 IoT
 - Expansion options
 - Box PC and PCAP panel PPCs
- Performance Classes
 - VL2 BPC 1000 Intel Atom E3845 1.91 GHz (4 core)
 - VL2 BPC 2000 Intel Celeron N2930 1.6 GHz (4 core)
 - VL2 BPC 3000 Intel Core i3-4010U 1.7 GHz (2 core)
 - VL2 BPC 7000 Intel Core i5-4300U 1.9 GHz (2 core)
 - VL2 BPC 9000 Intel Core i7-6822 EQ 2 GHz (4 core)





- ✓ Designed for O&G
- ✓ Unique part numbers
- ✓ Thicker front glass
- ✓ Triple HAZLOC
Box and panel PCs for hazardous locations - VL2 EX Series

Enhanced approvals

- ✓ BPC: Class I Div 2, ATEX Zone 2 and IECex Zone 2
- ✓ PPC: Class I Div 2, ATEX Zone2/22 and IECex Zone2/22
 - ✓ NOTE: Not approved for C2D2 combustible dust!
- Changes from standard "VL2"
 - Unique "EX" part numbers
 - Component based system enhancements
 - Thicker front glass with higher impact resistance
 - Does not replace the "standard" VL2





Panel PCs for harsh environments – VL2 PPC 1000



Panel PCs for harsh environments – VL2 PPC 1000

- Sunlight readable Panel PCs with 16:9 display
 - Display sizes 7" to 12.1"
 - ✓ PCAP-LR and GFG-LR



- Passive cooled, wide temp -20°C to +70°C
- Low reflective technology





Panel PCs for mobile applications – VMT 9000

- Fully enclosed, fanless IP66 outdoor rated Panel PCs
 - ✓ 4:3 Display sizes 10", 12" and 15"
 - ✓ 16:9 Display size 12.1"
 - ✓ Sunlight readable
 - ✓ 4 configurable front buttons
 - ✓ Optional WIFI and LTE/GPS

- Passive cooled
- ✓ Impact resistant screen
- ✓ -30°C to +60°C
- ✓ 9V to 30VDC operation
- ✓ UL ord. loc.



- Performance class
 - VMT 9000 Atom x7-E3950 2.0 GHz



Rugged HMI & IPC – Applications





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Tethered robot & machine teach-panels – HTP10 1000

- Hand-held operator panel with software for on-site visualization, or multi-user operation
- Rugged design for high shock resistance
- ✓ All-round protection (IP65)
- ✓ Ergonomic design
- ✓ Simple and intuitive operation
- Integrated safety function



Tethered robot & machine teach-panels – HTP10 1000

- Hand-held operator panel with software for on-site visualization or multi-user operation
- 16:9 display aspect ratio
 - ✓ 10.1" Wide Screen Display
 - Mobile (tethered) panel operation
 - Ergonomic design
 - Windows 10 IoT

- Passive cooled
- Multiple accessories available
- Integrated safety
- ✓ Software flexibility

- Intel CPU technology
 - ✓ HTP10-1000 3rd gen. (Bay Trail) E3815 1.46 GHz (1 core)



INSPIRING INNOVATIONS

IPC Applications





Basic industrial panel PC application

Printing / cutting machinery

IPC Model ✓ BL BPC 2000 ✓ BL FPM





Thank you

