Power Panel C-Series

User's Manual

Version: 1.10 (November 2015)

Model no.: MAPPC-ENG

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1 General information

Information:

B&R keeps the printed version of user's manuals as current as possible. If a newer version of the user's manual is available, it can always be downloaded in electronic form (PDF) from the B&R website www.br-automation.com

1.1 Manual history

Version	Date	Comment
0.10	July 2014	First edition
0.11	August 2014	Updated "Technical data"
0.12	September 2014	Updated "Technical data"
0.20	September 2014	"Installation instructions" & "Mounting orientations" updated
0.21	September 2014	Updated "Technical data"
1.00	October 2014	"Technical data", "Commissioning" & "Accessories" updated
1.10	November 2015	Updated chapters: "General information", "Power Panel C-Series", "Commissioning" and "Standards and certifications"

Table 1: Manual history

1.2 Safety guidelines

1.2.1 Introduction

Programmable logic controllers (PLCs), operating and monitoring devices (industrial PCs, Power Panels, Mobile Panels, etc.), as well as the B&R uninterruptible power supplies have been designed, developed or manufactured for conventional use in industry. They were not designed, developed and manufactured for any use involving serious risks or hazards that could lead to death, injury, serious physical damage or loss of any kind without the implementation of exceptionally stringent safety precautions. In particular, such risks and hazards include the use of these devices to monitor nuclear reactions in nuclear power plants, their use in flight control or flight safety systems as well as in the control of mass transportation systems, medical life support systems or weapons systems.

When using programmable logic controllers or operating/monitoring devices as control systems together with a Soft PLC (e.g. B&R Automation Runtime or comparable product) or Slot PLC (e.g. B&R LS251 or comparable product), safety precautions relevant to industrial control systems (e.g. the provision of safety devices such as emergency stop circuits, etc.) must be observed in accordance with applicable national and international regulations. The same applies to all other devices connected to the system, such as drives.

All tasks such as the installation, commissioning and servicing of devices are only permitted to be carried out by qualified personnel. Qualified personnel are those familiar with the transport, mounting, installation, commissioning and operation of devices who also have the appropriate qualifications (e.g. IEC 60364). National accident prevention regulations must be observed.

The safety notices, connection descriptions (type plate and documentation) and limit values listed in the technical data are to be read carefully before installation and commissioning and must be observed.

1.2.2 Intended use

Electronic devices are never completely failsafe. If the programmable control system, operating/monitoring device or uninterruptible power supply fails, the user is responsible for ensuring that other connected devices, e.g. motors, are brought to a secure state.

1.2.3 Protection against electrostatic discharge

Electrical components that can be damaged by electrostatic discharge (ESD) must be handled accordingly.

1.2.3.1 Packaging

- Electrical components with a housing
 - ... do not require special ESD packaging, but they still must be handled properly (see "Electrical components with a housing" on page 6).
- · Electrical components without a housing
 - ... are protected by ESD-suitable packaging.

1.2.3.2 Guidelines for proper ESD handling

Electrical components with a housing

- Do not touch the connector contacts on the device (bus data contacts).
- Do not touch the connector contacts on connected cables.
- Do not touch the contact tips on circuit boards.

Electrical components without a housing

The following points apply in addition to the points listed under "Electrical components with a housing":

- Any persons handling electrical components or devices with installed electrical components must be grounded.
- Components are only permitted to be touched on their narrow sides or front plate.
- Components should always be stored in a suitable medium (ESD packaging, conductive foam, etc.).

Information: Metallic surfaces are not suitable storage surfaces!

- Components should not be subjected to electrostatic discharge (e.g. through the use of charged plastics).
- Ensure a minimum distance of 10 cm from monitors and TV sets.
- Measuring instruments and equipment must be grounded.
- Probes on potential-free measuring instruments must be discharged on sufficiently grounded surfaces before taking measurements.

Individual components

- ESD protective measures for individual components are thoroughly integrated at B&R (conductive floors, footwear, arm bands, etc.).
- These increased ESD protective measures for individual components are not necessary for customers handling B&R products.

1.2.4 Policies and procedures

Electronic devices are never completely failsafe. If the programmable control system, operating/monitoring device or uninterruptible power supply fails, the user is responsible for ensuring that other connected devices, e.g. motors, are brought to a secure state.

When using programmable logic controllers or operating/monitoring devices as control systems together with a soft PLC (e.g. B&R Automation Runtime or comparable product) or slot PLC (e.g. B&R LS251 or comparable product), safety precautions relevant to industrial control systems (e.g. the provision of safety devices such as emergency stop circuits, etc.) must be observed in accordance with applicable national and international regulations. The same applies for all other devices connected to the system, such as drives.

All tasks such as the installation, commissioning and servicing of devices are only permitted to be carried out by qualified personnel. Qualified personnel are those familiar with the transport, mounting, installation, commissioning and operation of devices who also have the appropriate qualifications (e.g. IEC 60364). National accident prevention regulations must be observed.

The safety notices, connection descriptions (type plate and documentation) and limit values listed in the technical data are to be read carefully before installation and commissioning and must be observed.

1.2.5 Transport and storage

During transport and storage, devices must be protected against undue stress (mechanical loads, temperature, moisture, corrosive atmospheres, etc.).

Devices contain components sensitive to electrostatic charges that can be damaged by inappropriate handling. It is therefore necessary to provide the required protective measures against electrostatic discharge when installing or removing these devices (see "Protection against electrostatic discharge" on page 5).

1.2.6 Installation

- Installation must be performed according to this documentation using suitable equipment and tools.
- Devices are only permitted to be installed by qualified personnel without voltage applied.
- · General safety guidelines and national accident prevention regulations must be observed.
- Electrical installation must be carried out in accordance with applicable guidelines (e.g. line cross sections, fuses, protective ground connections).
- Take the necessary steps to protect against electrostatic discharges (see "Protection against electrostatic discharge" on page 5).

1.2.7 Operation

1.2.7.1 Protection against touching electrical parts

To operate programmable logic controllers, operating and monitoring devices, and uninterruptible power supplies, certain components must carry dangerous voltage levels over 42 VDC. Touching one of these parts can result in a life-threatening electric shock. This could lead to death, severe injury or damage to equipment.

Before turning on the programmable logic controller, operating/monitoring devices or uninterruptible power supply, the housing must be properly grounded (PE rail). Ground connections must be established even when testing or operating/monitoring devices or the uninterruptible power supply for a short time!

Before switching on the device, all parts that carry voltage must be securely covered. During operation, all covers must remain closed.

1.2.7.2 Environmental conditions - Dust, moisture, corrosive gases

The use of operating/monitoring devices (e.g. industrial PCs, Power Panels, Mobile Panels, etc.) and uninterruptible power supplies in very dusty environments should be avoided. Dust collection on the devices can affect functionality and may prevent sufficient cooling, especially in systems with active cooling systems (fans).

The presence of corrosive gases can also lead to malfunctions. When combined with high temperature and humidity, corrosive gases – e.g. with sulfur, nitrogen and chlorine components – can induce chemical reactions that can damage electronic components very quickly. Signs of the presence of corrosive gases are blackened copper surfaces and cable ends on existing equipment.

For operation in dusty or moist conditions, correctly installed (e.g. cutout installations) operating/monitoring devices like the Automation Panel or Power Panel are protected on the front. The back of all devices must be protected from dust and moisture and cleaned at suitable intervals.

1.2.7.3 Viruses and dangerous programs

This system is subject to potential risk each time data is exchanged or software is installed from a data medium (e.g. diskette, CD-ROM, USB flash drive, etc.), a network connection or the Internet. The user is responsible for assessing these dangers, implementing preventive measures such as virus protection programs, firewalls, etc. and making sure that software is only obtained from trusted sources.

1.2.8 Environmentally friendly disposal

All B&R programmable controllers, operating/monitoring devices and uninterruptible power supplies are designed to inflict as little harm as possible on the environment.

1.2.8.1 Separation of materials

It is necessary to separate different materials so the device can undergo an environmentally friendly recycling process.

General information

Component	Disposal
Programmable logic controllers Operating/Monitoring devices Uninterruptible power supply Batteries and rechargeable batteries Cables	Electronics recycling
Cardboard box / Paper packaging	Cardboard box / Paper recycling
Plastic packaging	Plastic recycling

Table 2: Environmentally friendly separation of materials

Disposal must comply with applicable legal regulations.

1.2.9 Organization of safety notices

Safety notices in this manual are organized as follows:

Safety notice	Description	
Danger!	Disregarding these safety guidelines and notices can be life-threatening.	
Caution!	Disregarding these safety guidelines and notices can result in severe injury or substantial damage to equipment.	
Warning!	Disregarding these safety guidelines and notices can result in injury or damage to equipment.	
Information:	This information is important for preventing errors.	

Table 3: Organization of safety notices

2 Power Panel C-Series

2.1 System features

B&R has added the new Power Panel C-Series to its Power Panel family. The Power Panel C70 controller achieves cycle times as fast as 1 ms. In addition to POWERLINK, Ethernet, USB and X2X Link connections, the devices are also available with an option board, providing CAN, RS232 and RS485 interfaces.



Figure 1: C-Series

2.1.1 Compact solution

With an extremely compact design, minimal installation depth and intelligent cable outlet arrangement, Power Panels are extreme space-savers that are very easy to install. They also have no hard disks, fans or batteries, which makes them maintenance-free. The front of the panel provides IP65 protection, making these devices extremely well-suited for harsh industrial environments.

2.1.2 Simple programming

The complete integration of the HMI application in the Automation Studio development environment goes without saying. The same is true for programming in all of the IEC languages offered by B&R as well as Automation Basic and ANSI C.

2.1.3 Power Panel C70

The Power Panel C70 is an HMI terminal with a built-in PLC. The Intel Atom processor provides enough performance to allow applications to achieve cycle times down to 1 ms. Automation Runtime, which provides up to eight task classes, is the basis for this.



Figure 2: Power Panel C70

2.1.4 Flexibility

The Power Panel C-Series is available in three different display sizes.

- 5.7" model
- 7.0" model
- 10.1" model

A touch button is integrated in the panel overlay at the lower right corner of the display. This element elegantly incorporated in the HMI application and makes it easy to switch between HMI pages or to a home or help function.

The ability to choose between portrait and landscape format adds even more flexibility to the machine layout. It is easy to switch between panel models depending on the machine. When it comes to color, users can select between 2 pinstripe options: anthracite gray or aluminum white.

Regardless of model, size and color, what all these devices have in common are a shallow installation depth and minimized border width. At the same time, there were no compromises made with regard to stability or seal integrity.

2.1.5 Model number key

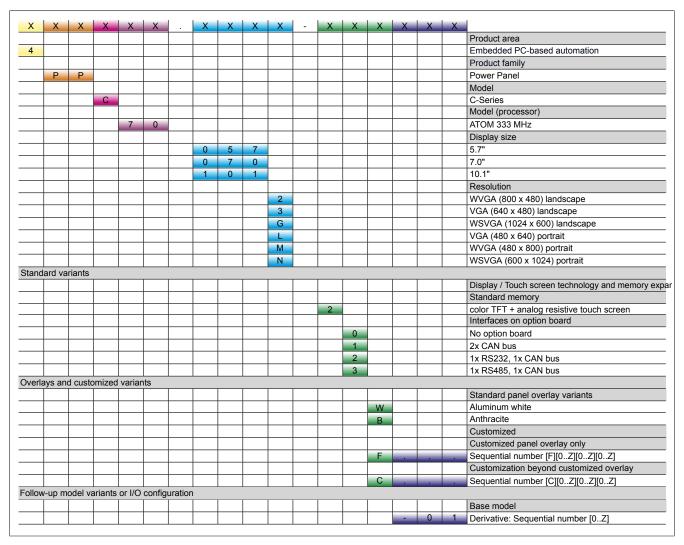


Figure 3: Model number key

2.2 C-Series

2.2.1 Selecting a Power Panel

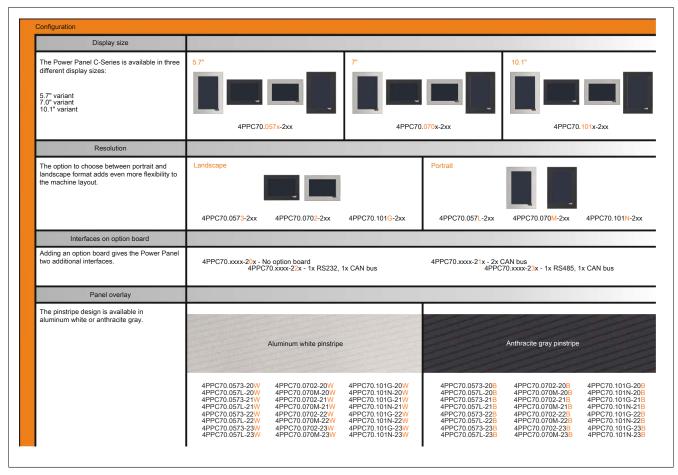


Figure 4: Selecting a Power Panel

2.2.2 General technical data

Name	Description
Processor	Intel E620T 333 MHz
Memory	256 MB DDRAM
Interfaces	1 X2X Link interface 1 POWERLINK interface 1 Ethernet interface 10BASE-T/100BASE-TX, 2 USB 2.0 ports
Other	IP65 protection (front side) Temperature range from 0 to 50°C Fanless 24 VDC power supply -15% / +20%

Table 4: Power Panel C-Series - General technical data

2.2.3 Overview

2.2.3.1 Overview - 4PPC70.057x

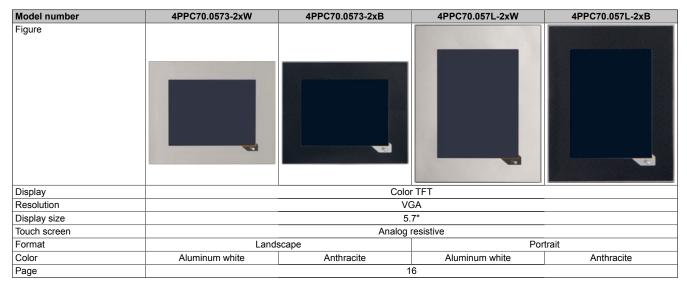


Table 5: Overview - 4PPC70.057x

2.2.3.2 Overview - 4PPC70.070x

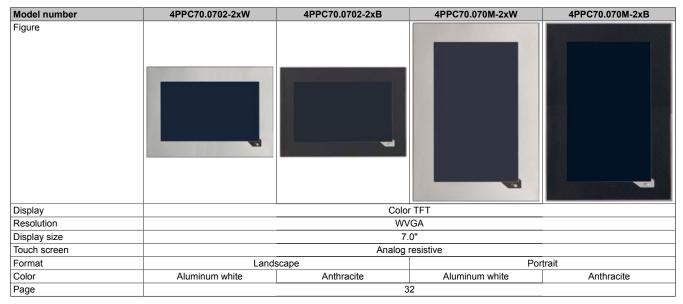


Table 6: Overview - 4PPC70.070x

2.2.3.3 Overview - 4PPC70.101x



Table 7: Overview - 4PPC70.101x

2.2.3.4 Interfaces



Table 8: Interfaces

2.2.3.5 Dependencies to hardware upgrades and Automation Runtime

Function	Initial hard- ware upgrade	Initial AR version
Replaceability of Power Panels: Beginning with the following versions, Power Panel devices with the same interfaces can be replaced with one another without having to change the Automation Studio project.	Upgrade 1.2.0.0	AR F4.09 AR I4.10 AR B4.24 AR A4.25

2.2.4 4PPC70.xxxx-2xx

2.2.4.1 4PPC70.057x-2xx

2.2.4.1.1 4PPC70.057x-2xx - Order data

2.2.4.1.1.1 4PPC70.057x-20x - Order data

Model number	Short description	Figure
	C70	
4PPC70.0573-20W	Power Panel C70, 5.7", analog resistive touch screen, Intel ATOM 333 MHz comp., 256 MB DDRAM, 32 kB FRAM, 2 GB flash drive onboard, 1 X2X Link interface, 1 POWERLINK interface, 1 Ethernet interface 10BASE-T/100BASE-TX, 2 USB 2.0 interfaces, basic device without option board, landscape format, aluminum white pinstripe	1
4PPC70.0573-20B	Power Panel C70, 5.7", analog resistive touch screen, Intel ATOM 333 MHz comp., 256 MB DDRAM, 32 kB FRAM, 2 GB flash drive onboard, 1 X2X Link interface, 1 POWERLINK interface, 1 Ethernet interface 10BASE-T/100BASE-TX, 2 USB 2.0 interfaces, basic device without option board, landscape format, anthracite gray pinstripe	
4PPC70.057L-20W	Power Panel C70, 5.7", analog resistive touch screen, Intel ATOM 333 MHz comp., 256 MB DDRAM, 32 kB FRAM, 2 GB flash drive onboard, 1 X2X Link interface, 1 POWERLINK interface, 1 Ethernet interface 10BASE-T/100BASE-TX, 2 USB 2.0 interfaces, basic device without option board, portrait format, aluminum white pinstripe	
4PPC70.057L-20B	Power Panel C70, 5.7", analog resistive touch screen, Intel ATOM 333 MHz comp., 256 MB DDRAM, 32 kB FRAM, 2 GB flash drive onboard, 1 X2X Link interface, 1 POWERLINK interface, 1 Ethernet interface 10BASE-T/100BASE-TX, 2 USB 2.0 interfaces, basic device without option board, portrait format, anthracite gray pinstripe	
	Required accessories	
	Terminal blocks	
0TB5104.2110-01	Accessory terminal block, 4-pin (2.5), cage clamp, 0.5 mm ²	
0TB6102.2010-01	Accessory terminal block, 2-pin (3.81), screw clamp, 1.5 mm ²	
0TB6102.2110-01	Accessory terminal block, 2-pin (3.81), cage clamp, 1.5 mm ²	
	Optional accessories	
	USB accessories	
5MMUSB.2048-01	USB 2.0 flash drive, 2048 MB, B&R	
5MMUSB.4096-01	USB 2.0 flash drive, 4096 MB, B&R	

Table 9: 4PPC70.0573-20W, 4PPC70.0573-20B, 4PPC70.057L-20W, 4PPC70.057L-20B - Order data

2.2.4.1.1.2 4PPC70.057x-21x - Order data

Model number	Short description	Figure
	C70	
4PPC70.0573-21W	Power Panel C70, 5.7", analog resistive touch screen, Intel ATOM 333 MHz comp., 256 MB DDRAM, 32 kB FRAM, 2 GB flash drive onboard, 1 X2X Link interface, 1 POWERLINK interface, 1 Ethernet interface 10BASE-T/100BASE-TX, 2 USB 2.0 interfaces, basic device with option board: 2x CAN bus, land-scape format, aluminum white pinstripe	
4PPC70.0573-21B	Power Panel C70, 5.7", analog resistive touch screen, Intel ATOM 333 MHz comp., 256 MB DDRAM, 32 kB FRAM, 2 GB flash drive onboard, 1 X2X Link interface, 1 POWERLINK interface, 1 Ethernet interface 10BASE-T/100BASE-TX, 2 USB 2.0 interfaces, basic device with option board: 2x CAN bus, land-scape format, anthracite gray pinstripe	
4PPC70.057L-21W	Power Panel C70, 5.7", analog resistive touch screen, Intel ATOM 333 MHz comp., 256 MB DDRAM, 32 kB FRAM, 2 GB flash drive onboard, 1 X2X Link interface, 1 POWERLINK interface, 1 Ethernet interface 10BASE-T/100BASE-TX, 2 USB 2.0 interfaces, basic device with option board: 2x CAN bus, portrait format, aluminum white pinstripe	
4PPC70.057L-21B	Power Panel C70, 5.7", analog resistive touch screen, Intel ATOM 333 MHz comp., 256 MB DDRAM, 32 kB FRAM, 2 GB flash drive onboard, 1 X2X Link interface, 1 POWERLINK interface, 1 Ethernet interface 10BASE-T/100BASE-TX, 2 USB 2.0 interfaces, basic device with option board: 2x CAN bus, portrait format, anthracite gray pinstripe	
	Required accessories	
	Terminal blocks	
0TB5104.2110-01	Accessory terminal block, 4-pin (2.5), cage clamp, 0.5 mm ²	
0TB5106.2110-01	Accessory terminal block, 6-pin (2.5), cage clamp, 0.5 mm ²	
0TB6102.2010-01	Accessory terminal block, 2-pin (3.81), screw clamp, 1.5 mm ²	
0TB6102.2110-01	Accessory terminal block, 2-pin (3.81), cage clamp, 1.5 mm ²	
	Optional accessories	
	USB accessories	
5MMUSB.2048-01	USB 2.0 flash drive, 2048 MB, B&R	
5MMUSB.4096-01	USB 2.0 flash drive, 4096 MB, B&R	

Table 10: 4PPC70.0573-21W, 4PPC70.0573-21B, 4PPC70.057L-21W, 4PPC70.057L-21B - Order data

2.2.4.1.1.3 4PPC70.057x-22x - Order data

Model number	Short description	Figure
	C70	
4PPC70.0573-22W	Power Panel C70, 5.7", analog resistive touch screen, Intel ATOM 333 MHz comp., 256 MB DDRAM, 32 kB FRAM, 2 GB flash drive onboard, 1 X2X Link interface, 1 POWERLINK interface, 1 Ethernet interface 10BASE-T/100BASE-TX, 2 USB 2.0 interfaces, basic device with option board: 1x CAN bus, 1x RS232, landscape format, aluminum white pinstripe	1
4PPC70.0573-22B	Power Panel C70, 5.7", analog resistive touch screen, Intel ATOM 333 MHz comp., 256 MB DDRAM, 32 kB FRAM, 2 GB flash drive onboard, 1 X2X Link interface, 1 POWERLINK interface, 1 Ethernet interface 10BASE-T/100BASE-TX, 2 USB 2.0 interfaces, basic device with option board: 1x CAN bus, 1x RS232, landscape format, anthracite gray pinstripe	
4PPC70.057L-22W	Power Panel C70, 5.7", analog resistive touch screen, Intel ATOM 333 MHz comp., 256 MB DDRAM, 32 kB FRAM, 2 GB flash drive onboard, 1 X2X Link interface, 1 POWERLINK interface, 1 Ethernet interface 10BASE-T/100BASE-TX, 2 USB 2.0 interfaces, basic device with option board: 1x CAN bus, 1x RS232, portrait format, aluminum white pinstripe	
4PPC70.057L-22B	Power Panel C70, 5.7", analog resistive touch screen, Intel ATOM 333 MHz comp., 256 MB DDRAM, 32 kB FRAM, 2 GB flash drive onboard, 1 X2X Link interface, 1 POWERLINK interface, 1 Ethernet interface 10BASE-T/100BASE-TX, 2 USB 2.0 interfaces, basic device with option board: 1x CAN bus, 1x RS232, portrait format, anthracite gray pinstripe	
	Required accessories	
	Terminal blocks	
0TB5104.2110-01	Accessory terminal block, 4-pin (2.5), cage clamp, 0.5 mm ²	
0TB5106.2110-01	Accessory terminal block, 6-pin (2.5), cage clamp, 0.5 mm ²	
0TB6102.2010-01	Accessory terminal block, 2-pin (3.81), screw clamp, 1.5 mm ²	
0TB6102.2110-01	Accessory terminal block, 2-pin (3.81), cage clamp, 1.5 mm ²	
	Optional accessories	
	USB accessories	
5MMUSB.2048-01	USB 2.0 flash drive, 2048 MB, B&R	
5MMUSB.4096-01	USB 2.0 flash drive, 4096 MB, B&R	

Table 11: 4PPC70.0573-22W, 4PPC70.0573-22B, 4PPC70.057L-22W, 4PPC70.057L-22B - Order data

2.2.4.1.1.4 4PPC70.057x-23x - Order data

Model number	Short description	Figure
	C70	
4PPC70.0573-23W	Power Panel C70, 5.7", analog resistive touch screen, Intel ATOM 333 MHz comp., 256 MB DDRAM, 32 kB FRAM, 2 GB flash drive onboard, 1 X2X Link interface, 1 POWERLINK interface, 1 Ethernet interface 10BASE-T/100BASE-TX, 2 USB 2.0 interfaces, basic device with option board: 1x CAN bus, 1x RS485, landscape format, aluminum white pinstripe	
4PPC70.0573-23B	Power Panel C70, 5.7", analog resistive touch screen, Intel ATOM 333 MHz comp., 256 MB DDRAM, 32 kB FRAM, 2 GB flash drive onboard, 1 X2X Link interface, 1 POWERLINK interface, 1 Ethernet interface 10BASE-T/100BASE-TX, 2 USB 2.0 interfaces, basic device with option board: 1x CAN bus, 1x RS485, landscape format, anthracite gray pinstripe	
4PPC70.057L-23W	Power Panel C70, 5.7", analog resistive touch screen, Intel ATOM 333 MHz comp., 256 MB DDRAM, 32 kB FRAM, 2 GB flash drive onboard, 1 X2X Link interface, 1 POWERLINK interface, 1 Ethernet interface 10BASE-T/100BASE-TX, 2 USB 2.0 interfaces, basic device with option board: 1x CAN bus, 1x RS485, portrait format, aluminum white pinstripe	
4PPC70.057L-23B	Power Panel C70, 5.7", analog resistive touch screen, Intel ATOM 333 MHz comp., 256 MB DDRAM, 32 kB FRAM, 2 GB flash drive onboard, 1 X2X Link interface, 1 POWERLINK interface, 1 Ethernet interface 10BASE-T/100BASE-TX, 2 USB 2.0 interfaces, basic device with option board: 1x CAN bus, 1x RS485, portrait format, anthracite gray pinstripe	
	Required accessories	
	Terminal blocks	
0TB5104.2110-01	Accessory terminal block, 4-pin (2.5), cage clamp, 0.5 mm ²	
0TB5106.2110-01	Accessory terminal block, 6-pin (2.5), cage clamp, 0.5 mm ²	
0TB6102.2010-01	Accessory terminal block, 2-pin (3.81), screw clamp, 1.5 mm ²	
0TB6102.2110-01	Accessory terminal block, 2-pin (3.81), cage clamp, 1.5 mm ²	
	Optional accessories	
	USB accessories	
5MMUSB.2048-01	USB 2.0 flash drive, 2048 MB, B&R	
5MMUSB.4096-01	USB 2.0 flash drive, 4096 MB, B&R	

Table 12: 4PPC70.0573-23W, 4PPC70.0573-23B, 4PPC70.057L-23W, 4PPC70.057L-23B - Order data

2.2.4.1.2 Technical data 4PPC70.057x-2xx

2.2.4.1.2.1 Technical data 4PPC70.057x-20x

Product ID	4PPC70.0573-20W	4PPC70.0573-20B	4PPC70.057L-20W	4PPC70.057L-20B
General information				
Cooling		Far	nless	-
LED status indicators	Supply voltage OK, operating status, module status, Ethernet, POWERLINK			
B&R ID code	0xE55D	0xE4B2	0xE561	0xE565
System requirements		***************************************		
Automation Studio		4.1.4.375	or higher	
Automation Runtime	K4.08 or higher			
Support of X20SLX modules			higher	
LED status indicators				
Quantity			4	
Power button			No	
Reset button			'es	
Controller redundancy				
Master capability			No	
Buzzer			es es	_
ACOPOS capability			es	
Visual Components support			es 'es	_
Electrical isolation		'	c 5	
IF1 - IF2		_	'es	
IF1 - IF2 IF1 - IF3			es es	
IF1 - IF3			es 'es	
IF1 - IF4			es es	
IF2 - IF3			es 'es	
IF2 - IF4			es es	
IF2 - IF5			es es	
IF3 - IF4			No	
IF3 - IF5			es	
IF4 - IF5			es es	
PLC - IF1			es es	
PLC - IF2			es es	
PLC - IF3			No.	
PLC - IF4			No.	
PLC - IF5			es	
Certification				
CE		Y	es	
cULus			es	
GOST-R			es	
Controller				
Boot loader		Automation R	untime AR 4.08	
CompactFlash slot			0	
DRAM				_
Real-time clock 1)	256 MB			
FPU	Yes, resolution 1 s Yes			
Processor				_
Type		Intel	E620T	
Clock frequency			compatibility	
L1 cache		JJJ IVITZ (ompationity	
Data code		24	kB.	
Program code	24 kB 32 kB			
L2 cache			- ND	
Cooling			ssive	_
Mode/Node switches			No	
Remanent variables				
Typical shortest task class cycle time	32 kB 1 ms ²⁾			
Shortest task class cycle time			ms	_
Typical instruction cycle time		0.0	1 µs	
Program memory		0.00 -1440	flack maman	
Type			flash memory	
Data retention		10 y	/ears	
Writable data amount		. =	TD	
Guaranteed	40 TB			
Results for 5 years	21.9 GB/day			
Guaranteed clear/write cycles	20,000			
Error correction coding (ECC)	Yes Yes, at >88°C			
Temperature cutoff		Yes, a	t >88°C	

Table 13: 4PPC70.0573-20W, 4PPC70.0573-20B, 4PPC70.057L-20W, 4PPC70.057L-20B - Technical data

Product ID Interfaces	4PPC70.0573-20W 4PPC70.0573-20B 4PPC70.057L-20W 4PPC70.057L-20B
IF1 interface	
Fieldbus	POWERLINK managing or controlled node
Туре	Type 4 ³⁾
Design	1x RJ45 shielded
Cable length	Max. 100 m between 2 nodes (segment length)
Max. transfer rate	100 Mbit/s
	100 Mibits
Transmission	
Physical layer	100BASE-TX
Half-duplex	Yes
Full-duplex	No
Autonegotiation	Yes
Auto-MDI / MDIX	Yes
	165
IF2 interface	
Type	Ethernet
Design	1x RJ45 shielded
Cable length	Max. 100 m between 2 nodes (segment length)
Max. transfer rate	10/100 Mbit/s
	10/100 Mibits
Transmission	
Physical layer	10BASE-T/100BASE-TX
Half-duplex	Yes
Full-duplex	Yes
Autonegotiation	Yes
Auto-MDI / MDIX	Yes
	165
IF3 interface	
Туре	USB 2.0
Design	Type A
Current load	0.49 A
IF4 interface	
	LION O.O.
Туре	USB 2.0
Design	Type A
Current load	0.10 A
IF5 interface	
Type	X2X Link master
	AZA LIIK Master
Display	
Туре	Color TFT
Display size	5.7"
Colors	262,000
Resolution	VGA, 640 x 480 pixels VGA, 480 x 640 pixels
Resolution Contrast	
Resolution Contrast Viewing angles	VGA, 640 x 480 pixels VGA, 480 x 640 pixels Typ. 850:1
Resolution Contrast	VGA, 640 x 480 pixels VGA, 480 x 640 pixels
Resolution Contrast Viewing angles	VGA, 640 x 480 pixels VGA, 480 x 640 pixels Typ. 850:1
Resolution Contrast Viewing angles Horizontal Vertical	VGA, 640 x 480 pixels Typ. 850:1 Direction R / Direction L = typ. 80°
Resolution Contrast Viewing angles Horizontal Vertical Backlight	VGA, 640 x 480 pixels Typ. 850:1 Direction R / Direction L = typ. 80° Direction U / Direction D = typ. 80°
Resolution Contrast Viewing angles Horizontal Vertical Backlight Type	VGA, 640 x 480 pixels Typ. 850:1 Direction R / Direction L = typ. 80° Direction U / Direction D = typ. 80° LED
Resolution Contrast Viewing angles Horizontal Vertical Backlight Type Brightness	VGA, 640 x 480 pixels Typ. 850:1 Direction R / Direction L = typ. 80° Direction U / Direction D = typ. 80° LED Typ. 400 cd/m²
Resolution Contrast Viewing angles Horizontal Vertical Backlight Type	VGA, 640 x 480 pixels Typ. 850:1 Direction R / Direction L = typ. 80° Direction U / Direction D = typ. 80° LED
Resolution Contrast Viewing angles Horizontal Vertical Backlight Type Brightness	VGA, 640 x 480 pixels Typ. 850:1 Direction R / Direction L = typ. 80° Direction U / Direction D = typ. 80° LED Typ. 400 cd/m²
Resolution Contrast Viewing angles Horizontal Vertical Backlight Type Brightness Half-brightness time 4) Touch screen	VGA, 640 x 480 pixels Typ. 850:1 Direction R / Direction L = typ. 80° Direction U / Direction D = typ. 80° LED Typ. 400 cd/m² 50,000 h
Resolution Contrast Viewing angles Horizontal Vertical Backlight Type Brightness Half-brightness time 4) Touch screen Type	VGA, 640 x 480 pixels Typ. 850:1 Direction R / Direction L = typ. 80° Direction U / Direction D = typ. 80° LED Typ. 400 cd/m² 50,000 h AMT
Resolution Contrast Viewing angles Horizontal Vertical Backlight Type Brightness Half-brightness time 4) Touch screen Type Technology	VGA, 640 x 480 pixels Typ. 850:1 Direction R / Direction L = typ. 80° Direction U / Direction D = typ. 80° LED Typ. 400 cd/m² 50,000 h AMT Analog resistive
Resolution Contrast Viewing angles Horizontal Vertical Backlight Type Brightness Half-brightness time 4) Touch screen Type Technology Controller	VGA, 640 x 480 pixels Typ. 850:1 Direction R / Direction L = typ. 80° Direction U / Direction D = typ. 80° LED Typ. 400 cd/m² 50,000 h AMT Analog resistive B&R, serial, 12-bit
Resolution Contrast Viewing angles Horizontal Vertical Backlight Type Brightness Half-brightness time 4) Touch screen Type Technology Controller Transmittance	VGA, 640 x 480 pixels Typ. 850:1 Direction R / Direction L = typ. 80° Direction U / Direction D = typ. 80° LED Typ. 400 cd/m² 50,000 h AMT Analog resistive B&R, serial, 12-bit 80% ±3%
Resolution Contrast Viewing angles Horizontal Vertical Backlight Type Brightness Half-brightness time 4) Touch screen Type Technology Controller	VGA, 640 x 480 pixels Typ. 850:1 Direction R / Direction L = typ. 80° Direction U / Direction D = typ. 80° LED Typ. 400 cd/m² 50,000 h AMT Analog resistive B&R, serial, 12-bit
Resolution Contrast Viewing angles Horizontal Vertical Backlight Type Brightness Half-brightness time 4) Touch screen Type Technology Controller Transmittance	VGA, 640 x 480 pixels Typ. 850:1 Direction R / Direction L = typ. 80° Direction U / Direction D = typ. 80° LED Typ. 400 cd/m² 50,000 h AMT Analog resistive B&R, serial, 12-bit 80% ±3%
Resolution Contrast Viewing angles Horizontal Vertical Backlight Type Brightness Half-brightness time 4) Touch screen Type Technology Controller Transmittance Screen rotation Electrical characteristics	VGA, 640 x 480 pixels Typ. 850:1 Direction R / Direction L = typ. 80° Direction U / Direction D = typ. 80° LED Typ. 400 cd/m² 50,000 h AMT Analog resistive B&R, serial, 12-bit 80% ±3% Yes, using VC
Resolution Contrast Viewing angles Horizontal Vertical Backlight Type Brightness Half-brightness time 4) Touch screen Type Technology Controller Transmittance Screen rotation Electrical characteristics Nominal voltage	VGA, 640 x 480 pixels Typ. 850:1 Direction R / Direction L = typ. 80° Direction U / Direction D = typ. 80° LED Typ. 400 cd/m² 50,000 h AMT Analog resistive B&R, serial, 12-bit 80% ±3% Yes, using VC
Resolution Contrast Viewing angles Horizontal Vertical Backlight Type Brightness Half-brightness time 4) Touch screen Type Technology Controller Transmittance Screen rotation Electrical characteristics Nominal voltage Max. power consumption 5)	VGA, 640 x 480 pixels Typ. 850:1 Direction R / Direction L = typ. 80° Direction U / Direction D = typ. 80° LED Typ. 400 cd/m² 50,000 h AMT Analog resistive B&R, serial, 12-bit 80% ±3% Yes, using VC 24 VDC -15% / +20% 14.4 W
Resolution Contrast Viewing angles Horizontal Vertical Backlight Type Brightness Half-brightness time 4) Touch screen Type Technology Controller Transmittance Screen rotation Electrical characteristics Nominal voltage Max. power consumption 5) Reverse polarity protection	VGA, 640 x 480 pixels Typ. 850:1 Direction R / Direction L = typ. 80° Direction U / Direction D = typ. 80° LED Typ. 400 cd/m² 50,000 h AMT Analog resistive B&R, serial, 12-bit 80% ±3% Yes, using VC
Resolution Contrast Viewing angles Horizontal Vertical Backlight Type Brightness Half-brightness time 4) Touch screen Type Technology Controller Transmittance Screen rotation Electrical characteristics Nominal voltage Max. power consumption 5)	VGA, 640 x 480 pixels Typ. 850:1 Direction R / Direction L = typ. 80° Direction U / Direction D = typ. 80° LED Typ. 400 cd/m² 50,000 h AMT Analog resistive B&R, serial, 12-bit 80% ±3% Yes, using VC 24 VDC -15% / +20% 14.4 W
Resolution Contrast Viewing angles Horizontal Vertical Backlight Type Brightness Half-brightness time 4) Touch screen Type Technology Controller Transmittance Screen rotation Electrical characteristics Nominal voltage Max. power consumption 5) Reverse polarity protection	VGA, 640 x 480 pixels Typ. 850:1 Direction R / Direction L = typ. 80° Direction U / Direction D = typ. 80° LED Typ. 400 cd/m² 50,000 h AMT Analog resistive B&R, serial, 12-bit 80% ±3% Yes, using VC 24 VDC -15% / +20% 14.4 W
Resolution Contrast Viewing angles Horizontal Vertical Backlight Type Brightness Half-brightness time 4) Touch screen Type Technology Controller Transmittance Screen rotation Electrical characteristics Nominal voltage Max. power consumption 5) Reverse polarity protection Operating conditions Installation at elevations above sea	VGA, 640 x 480 pixels Typ. 850:1 Direction R / Direction L = typ. 80° Direction U / Direction D = typ. 80° LED Typ. 400 cd/m² 50,000 h AMT Analog resistive B&R, serial, 12-bit 80% ±3% Yes, using VC 24 VDC -15% / +20% 14.4 W
Resolution Contrast Viewing angles Horizontal Vertical Backlight Type Brightness Half-brightness time 4) Touch screen Type Technology Controller Transmittance Screen rotation Electrical characteristics Nominal voltage Max. power consumption 5) Reverse polarity protection Operating conditions Installation at elevations above sea level	VGA, 640 x 480 pixels Typ. 850:1 Direction R / Direction L = typ. 80° Direction U / Direction D = typ. 80° LED Typ. 400 cd/m² 50,000 h AMT Analog resistive B&R, serial, 12-bit 80% ±3% Yes, using VC 24 VDC -15% / +20% 14.4 W Yes
Resolution Contrast Viewing angles Horizontal Vertical Backlight Type Brightness Half-brightness time 4) Touch screen Type Technology Controller Transmittance Screen rotation Electrical characteristics Nominal voltage Max. power consumption 5) Reverse polarity protection Operating conditions Installation at elevations above sea level 0 to 2000 m	VGA, 640 x 480 pixels Typ. 850:1 Direction R / Direction L = typ. 80° Direction U / Direction D = typ. 80° LED Typ. 400 cd/m² 50,000 h AMT Analog resistive B&R, serial, 12-bit 80% ±3% Yes, using VC 24 VDC -15% / +20% 14.4 W Yes No limitations
Resolution Contrast Viewing angles Horizontal Vertical Backlight Type Brightness Half-brightness time 4) Touch screen Type Technology Controller Transmittance Screen rotation Electrical characteristics Nominal voltage Max. power consumption 5) Reverse polarity protection Operating conditions Installation at elevations above sea level 0 to 2000 m >2000 m	VGA, 640 x 480 pixels Typ. 850:1 Direction R / Direction L = typ. 80° Direction U / Direction D = typ. 80° LED Typ. 400 cd/m² 50,000 h AMT Analog resistive B&R, serial, 12-bit 80% ±3% Yes, using VC 24 VDC -15% / +20% 14.4 W Yes No limitations Reduction of ambient temperature by 0.5°C per 100 m
Resolution Contrast Viewing angles Horizontal Vertical Backlight Type Brightness Half-brightness time 4) Touch screen Type Technology Controller Transmittance Screen rotation Electrical characteristics Nominal voltage Max. power consumption 5) Reverse polarity protection Operating conditions Installation at elevations above sea level 0 to 2000 m	VGA, 640 x 480 pixels Typ. 850:1 Direction R / Direction L = typ. 80° Direction U / Direction D = typ. 80° LED Typ. 400 cd/m² 50,000 h AMT Analog resistive B&R, serial, 12-bit 80% ±3% Yes, using VC 24 VDC -15% / +20% 14.4 W Yes No limitations Reduction of ambient temperature by 0.5°C per 100 m Back: IP20
Resolution Contrast Viewing angles Horizontal Vertical Backlight Type Brightness Half-brightness time 4) Touch screen Type Technology Controller Transmittance Screen rotation Electrical characteristics Nominal voltage Max. power consumption 5) Reverse polarity protection Operating conditions Installation at elevations above sea level 0 to 2000 m >2000 m	VGA, 640 x 480 pixels Typ. 850:1 Direction R / Direction L = typ. 80° Direction U / Direction D = typ. 80° LED Typ. 400 cd/m² 50,000 h AMT Analog resistive B&R, serial, 12-bit 80% ±3% Yes, using VC 24 VDC -15% / +20% 14.4 W Yes No limitations Reduction of ambient temperature by 0.5°C per 100 m
Resolution Contrast Viewing angles Horizontal Vertical Backlight Type Brightness Half-brightness time 4) Touch screen Type Technology Controller Transmittance Screen rotation Electrical characteristics Nominal voltage Max. power consumption 5) Reverse polarity protection Operating conditions Installation at elevations above sea level 0 to 2000 m >2000 m	VGA, 640 x 480 pixels Typ. 850:1 Direction R / Direction L = typ. 80° Direction U / Direction D = typ. 80° LED Typ. 400 cd/m² 50,000 h AMT Analog resistive B&R, serial, 12-bit 80% ±3% Yes, using VC 24 VDC -15% / +20% 14.4 W Yes No limitations Reduction of ambient temperature by 0.5°C per 100 m Back: IP20
Resolution Contrast Viewing angles Horizontal Vertical Backlight Type Brightness Half-brightness time 4) Touch screen Type Technology Controller Transmittance Screen rotation Electrical characteristics Nominal voltage Max. power consumption 5) Reverse polarity protection Operating conditions Installation at elevations above sea level 0 to 2000 m >2000 m EN 60529 protection	VGA, 640 x 480 pixels Typ. 850:1 Direction R / Direction L = typ. 80° Direction U / Direction D = typ. 80° LED Typ. 400 cd/m² 50,000 h AMT Analog resistive B&R, serial, 12-bit 80% ±3% Yes, using VC 24 VDC -15% / +20% 14.4 W Yes No limitations Reduction of ambient temperature by 0.5°C per 100 m Back: IP20
Resolution Contrast Viewing angles Horizontal Vertical Backlight Type Brightness Half-brightness time 4) Touch screen Type Technology Controller Transmittance Screen rotation Electrical characteristics Nominal voltage Max. power consumption 5) Reverse polarity protection Operating conditions Installation at elevations above sea level 0 to 2000 m >2000 m EN 60529 protection Environmental conditions Temperature	VGA, 640 x 480 pixels Typ. 850:1 Direction R / Direction L = typ. 80° Direction U / Direction D = typ. 80° LED Typ. 400 cd/m² 50,000 h AMT Analog resistive B&R, serial, 12-bit 80% ±3% Yes, using VC 24 VDC -15% / +20% 14.4 W Yes No limitations Reduction of ambient temperature by 0.5°C per 100 m Back: IP20
Resolution Contrast Viewing angles Horizontal Vertical Backlight Type Brightness Half-brightness time 4) Touch screen Type Technology Controller Transmittance Screen rotation Electrical characteristics Nominal voltage Max. power consumption 5) Reverse polarity protection Operating conditions Installation at elevations above sea level 0 to 2000 m >2000 m EN 60529 protection Environmental conditions Temperature Operation	VGA, 640 x 480 pixels Typ. 850:1 Direction R / Direction L = typ. 80° Direction U / Direction D = typ. 80° LED Typ. 400 cd/m² 50,000 h AMT Analog resistive B&R, serial, 12-bit 80% ±3% Yes, using VC 24 VDC -15% / +20% 14.4 W Yes No limitations Reduction of ambient temperature by 0.5°C per 100 m Back: IP20 Front: IP65
Resolution Contrast Viewing angles Horizontal Vertical Backlight Type Brightness Half-brightness time 4) Touch screen Type Technology Controller Transmittance Screen rotation Electrical characteristics Nominal voltage Max. power consumption 5) Reverse polarity protection Operating conditions Installation at elevations above sea level 0 to 2000 m >2000 m EN 60529 protection Environmental conditions Temperature	VGA, 640 x 480 pixels Typ. 850:1 Direction R / Direction L = typ. 80° Direction U / Direction D = typ. 80° LED Typ. 400 cd/m² 50,000 h AMT Analog resistive B&R, serial, 12-bit 80% ±3% Yes, using VC 24 VDC -15% / +20% 14.4 W Yes No limitations Reduction of ambient temperature by 0.5°C per 100 m Back: IP20
Resolution Contrast Viewing angles Horizontal Vertical Backlight Type Brightness Half-brightness time 4) Touch screen Type Technology Controller Transmittance Screen rotation Electrical characteristics Nominal voltage Max. power consumption 5) Reverse polarity protection Operating conditions Installation at elevations above sea level 0 to 2000 m >2000 m EN 60529 protection Environmental conditions Temperature Operation	VGA, 640 x 480 pixels Typ. 850:1 Direction R / Direction L = typ. 80° Direction U / Direction D = typ. 80° LED Typ. 400 cd/m² 50,000 h AMT Analog resistive B&R, serial, 12-bit 80% ±3% Yes, using VC 24 VDC -15% / +20% 14.4 W Yes No limitations Reduction of ambient temperature by 0.5°C per 100 m Back: IP20 Front: IP65
Resolution Contrast Viewing angles Horizontal Vertical Backlight Type Brightness Half-brightness time 4) Touch screen Type Technology Controller Transmittance Screen rotation Electrical characteristics Nominal voltage Max. power consumption 5) Reverse polarity protection Operating conditions Installation at elevations above sea level 0 to 2000 m >2000 m EN 60529 protection Environmental conditions Temperature Operation Horizontal installation Vertical installation	VGA, 640 x 480 pixels Typ. 850:1 Direction R / Direction L = typ. 80° Direction U / Direction D = typ. 80° LED Typ. 400 cd/m² 50,000 h AMT Analog resistive B&R, serial, 12-bit 80% ±3% Yes, using VC 24 VDC -15% / +20% 14.4 W Yes No limitations Reduction of ambient temperature by 0.5°C per 100 m Back: IP20 Front: IP65 0 to 50°C 0 to 50°C
Resolution Contrast Viewing angles Horizontal Vertical Backlight Type Brightness Half-brightness time 4) Touch screen Type Technology Controller Transmittance Screen rotation Electrical characteristics Nominal voltage Max. power consumption 5) Reverse polarity protection Operating conditions Installation at elevations above sea level 0 to 2000 m >2000 m EN 60529 protection Environmental conditions Temperature Operation Horizontal installation Vertical installation Storage	VGA, 640 x 480 pixels VGA, 480 x 640 pixels
Resolution Contrast Viewing angles Horizontal Vertical Backlight Type Brightness Half-brightness time 4) Touch screen Type Technology Controller Transmittance Screen rotation Electrical characteristics Nominal voltage Max. power consumption 5) Reverse polarity protection Operating conditions Installation at elevations above sea level 0 to 2000 m >2000 m EN 60529 protection Environmental conditions Temperature Operation Horizontal installation Vertical installation Storage Transport	VGA, 640 x 480 pixels Typ. 850:1 Direction R / Direction L = typ. 80° Direction U / Direction D = typ. 80° LED Typ. 400 cd/m² 50,000 h AMT Analog resistive B&R, serial, 12-bit 80% ±3% Yes, using VC 24 VDC -15% / +20% 14.4 W Yes No limitations Reduction of ambient temperature by 0.5°C per 100 m Back: IP20 Front: IP65 0 to 50°C 0 to 50°C
Resolution Contrast Viewing angles Horizontal Vertical Backlight Type Brightness Half-brightness time 4) Touch screen Type Technology Controller Transmittance Screen rotation Electrical characteristics Nominal voltage Max. power consumption 5) Reverse polarity protection Operating conditions Installation at elevations above sea level 0 to 2000 m >2000 m EN 60529 protection Environmental conditions Temperature Operation Horizontal installation Vertical installation Storage Transport Relative humidity	VGA, 640 x 480 pixels Typ. 850:1 Direction R / Direction L = typ. 80° Direction U / Direction D = typ. 80° LED Typ. 400 cd/m² 50,000 h AMT Analog resistive B&R, serial, 12-bit 80% ±3% Yes, using VC 24 VDC -15% / +20% 14.4 W Yes No limitations Reduction of ambient temperature by 0.5°C per 100 m Back: IP20 Front: IP65 0 to 50°C 0 to 50°C -20 to 60°C -20 to 60°C
Resolution Contrast Viewing angles Horizontal Vertical Backlight Type Brightness Half-brightness time 4) Touch screen Type Technology Controller Transmittance Screen rotation Electrical characteristics Nominal voltage Max. power consumption 5) Reverse polarity protection Operating conditions Installation at elevations above sea level 0 to 2000 m >2000 m EN 60529 protection Environmental conditions Temperature Operation Horizontal installation Vertical installation Storage Transport Relative humidity Operation	VGA, 640 x 480 pixels Typ. 850:1 Direction R / Direction L = typ. 80° Direction U / Direction D = typ. 80° LED Typ. 400 cd/m² 50,000 h AMT Analog resistive B&R, serial, 12-bit 80% ±3% Yes, using VC 24 VDC -15% / +20% 14.4 W Yes No limitations Reduction of ambient temperature by 0.5°C per 100 m Back: IP20 Front: IP65 0 to 50°C -20 to 60°C -20 to 60°C -20 to 60°C See humidity diagram
Resolution Contrast Viewing angles Horizontal Vertical Backlight Type Brightness Half-brightness time 4) Touch screen Type Technology Controller Transmittance Screen rotation Electrical characteristics Nominal voltage Max. power consumption 5) Reverse polarity protection Operating conditions Installation at elevations above sea level 0 to 2000 m >2000 m EN 60529 protection Environmental conditions Temperature Operation Horizontal installation Vertical installation Storage Transport Relative humidity	VGA, 640 x 480 pixels Typ. 850:1 Direction R / Direction L = typ. 80° Direction U / Direction D = typ. 80° LED Typ. 400 cd/m² 50,000 h AMT Analog resistive B&R, serial, 12-bit 80% ±3% Yes, using VC 24 VDC -15% / +20% 14.4 W Yes No limitations Reduction of ambient temperature by 0.5°C per 100 m Back: IP20 Front: IP65 0 to 50°C -20 to 60°C -20 to 60°C
Resolution Contrast Viewing angles Horizontal Vertical Backlight Type Brightness Half-brightness time 4) Touch screen Type Technology Controller Transmittance Screen rotation Electrical characteristics Nominal voltage Max. power consumption 5) Reverse polarity protection Operating conditions Installation at elevations above sea level 0 to 2000 m >2000 m EN 60529 protection Environmental conditions Temperature Operation Horizontal installation Vertical installation Storage Transport Relative humidity Operation	VGA, 640 x 480 pixels Typ. 850:1 Direction R / Direction L = typ. 80° Direction U / Direction D = typ. 80° LED Typ. 400 cd/m² 50,000 h AMT Analog resistive B&R, serial, 12-bit 80% ±3% Yes, using VC 24 VDC -15% / +20% 14.4 W Yes No limitations Reduction of ambient temperature by 0.5°C per 100 m Back: IP20 Front: IP65 0 to 50°C -20 to 60°C -20 to 60°C -20 to 60°C See humidity diagram

Table 13: 4PPC70.0573-20W, 4PPC70.0573-20B, 4PPC70.057L-20W, 4PPC70.057L-20B - Technical data

Power Panel C-Series

Product ID	4PPC70.0573-20W	4PPC70.0573-20B	4PPC70.057L-20W	4PPC70.057L-20B
Mechanical characteristics				
Note	Order terminal blocks	1x 0TB5104.2110-01, 1x 0TB	6102.2010-01 and 1x 0TB610	2.2110-01 separately
Front				
Design	Aluminum white pinstripe	Anthracite gray pinstripe	Aluminum white pinstripe	Anthracite gray pinstripe
Dimensions				
Width	172	mm	140	mm
Height	140	mm	172	mm
Depth		51	mm	
Weight		0.6	kg	

Table 13: 4PPC70.0573-20W, 4PPC70.0573-20B, 4PPC70.057L-20W, 4PPC70.057L-20B - Technical data

- 1) The real-time clock is buffered for approx. 1000 hours @ 25°C by a gold foil capacitor. The gold foil capacitor is completely charged after 18 continuous hours of operation.
- 2) Shortest cycle time that is suitable for average applications. In certain cases, it is also possible to use shorter cycle times. The limit for the setting is specified in the entry for the shortest task class cycle time.
- 3) See the POWERLINK help system under "General information, Hardware IF/LS".
- 4) At an ambient temperature of 25°C. Reducing the brightness by 50% can typically result in an approximately 50% increase in the half-brightness time.
- 5) Remote stations connected via X2X Link, CAN bus, POWERLINK and Ethernet. Both USB interfaces are used.

2.2.4.1.2.2 Technical data 4PPC70.057x-21x

Product ID	4PPC70.0573-21W	4PPC70.0573-21B	4PPC70.057L-21W	4PPC70.057L-21B
General information				
Cooling		Fanles	SS	
LED status indicators		e OK, operating status, module s	tatus, Ethernet, POWERLIN	NK, CAN Rx/Tx
B&R ID code	0xE55E	0xE4B3	0xE562	0xE566
System requirements				
Automation Studio		4.1.4.375 or	r higher	
Automation Runtime		K4.08 or h	nigher	
Support of X20SLX modules		B4 or hig	gher	_
LED status indicators				
Quantity		9		_
Power button		No		
Reset button		Yes		
Controller redundancy				
Master capability		No		
Buzzer		Yes		
ACOPOS capability		Yes		_
Visual Components support		Yes		_
Electrical isolation				
IF1 - IF2		Yes		
IF1 - IF3		Yes		
IF1 - IF4		Yes		
IF1 - IF5		Yes		
IF1 - IF6		Yes		
IF1 - IF7		Yes		
IF2 - IF3		Yes		
IF2 - IF4		Yes		
IF2 - IF5		Yes		
IF2 - IF6		Yes		
IF2 - IF7		Yes		
IF3 - IF4		No		
IF3 - IF5		Yes		
IF3 - IF6		No		
IF3 - IF7		No		
IF4 - IF5		Yes		
IF4 - IF6		No		
IF4 - IF7		No		
IF5 - IF6		Yes		
IF5 - IF7		Yes		
IF6 - IF7		No		
PLC - IF1		Yes		
PLC - IF2		Yes		
PLC - IF3		No		
PLC - IF4		No		
PLC - IF5		Yes		
PLC - IF6		No		
PLC - IF7		No		
Certification				
CE		Yes		
cULus		Yes		
GOST-R		Yes		
Controller				
Boot loader		Automation Runt	ime AR 4.08	
CompactFlash slot		0		
DRAM		256 M	IB	
Real-time clock 1)		Yes, resolu	tion 1 s	
FPU		Yes		
Processor				
Туре		Intel E6	20T	
Clock frequency		333 MHz con		
L1 cache				
Data code		24 kE	3	
Program code		32 kE	3	
L2 cache		-		
Cooling		Passiv	/e	
Mode/Node switches		No		
Remanent variables		32 kE	3	_
Typical shortest task class cycle time		1 ms		_
Shortest task class cycle time		0.4 m		_
Typical instruction cycle time		0.4 m		
1 J Produ motraction Cycle time		υ.υι μ		

Table 14: 4PPC70.0573-21W, 4PPC70.0573-21B, 4PPC70.057L-21W, 4PPC70.057L-21B - Technical data

Product ID	4PPC70.0573-21W 4PPC70.0573-21B 4PPC70.057L-21W 4PPC70.057L-21B
Program memory	411 070.0373-2114 411 070.0373-215 411 070.0372-2114
Type	2 GB eMMC flash memory
Data retention	10 years
Writable data amount	io years
Guaranteed	40 TB
Results for 5 years	21.9 GB/day
Guaranteed clear/write cycles	20,000
Error correction coding (ECC)	Yes
Temperature cutoff	Yes. at >88°C
Interfaces	165, at 700 C
IF1 interface	
Fieldbus	POWERLINK managing or controlled node
Type	Type 4 3)
Design	1x RJ45 shielded
Cable length	Max. 100 m between 2 nodes (segment length)
Max. transfer rate	100 Mbit/s
Transmission	
Physical layer	100BASE-TX
Half-duplex	Yes
Full-duplex	No
Autonegotiation	Yes
Auto-MDI / MDIX	Yes
IF2 interface	
Type	Ethernet
Design	1x RJ45 shielded
Cable length	Max. 100 m between 2 nodes (segment length)
Max. transfer rate	10/100 Mbit/s
Transmission	
Physical layer	10BASE-T/100BASE-TX
Half-duplex	Yes
Full-duplex	Yes
Autonegotiation	Yes
Auto-MDI / MDIX	Yes
IF3 interface	
Туре	USB 2.0
Design	Type A
Current load	0.49 A
IF4 interface	
Type	USB 2.0
Design	Type A
Current load	0.10 A
IF5 interface	
Туре	X2X Link master
IF6 interface	
Туре	CAN bus
Design	3 pins of the 6-pin multipoint connector
Max. distance	1000 m
Max. transfer rate	
Bus length ≤25 m	1 Mbit/s
Bus length ≤60 m	500 kbit/s
Bus length ≤200 m	250 kbit/s
Bus length ≤1000 m	50 kbit/s
IF7 interface	
Type	CAN bus
Design	3 pins of the 6-pin multipoint connector
Max. distance	1000 m
Max. transfer rate	
Bus length ≤25 m	1 Mbit/s
Bus length ≤60 m	500 kbit/s
Bus length ≤200 m	250 kbit/s
Bus length ≤1000 m	50 kbit/s
Display	O.U. TET
Туре	Color TFT
Display size	5.7"
Colors	262,000
Resolution	VGA, 640 x 480 pixels VGA, 480 x 640 pixels
Contrast	Тур. 850:1
Viewing angles	
Horizontal	Direction R / Direction L = typ. 80°
Vertical	Direction U / Direction D = typ. 80°
Backlight	
Туре	LED
Brightness	Typ. 400 cd/m ²
Half-brightness time 4)	50,000 h

Table 14: 4PPC70.0573-21W, 4PPC70.0573-21B, 4PPC70.057L-21W, 4PPC70.057L-21B - Technical data

Product ID	4PPC70.0573-21W	4PPC70.0573-21B	4PPC70.057L-21W	4PPC70.057L-21B
Touch screen				
Туре		AN	ИΤ	
Technology		Analog	resistive	
Controller		B&R, ser	ial, 12-bit	
Transmittance		80%	±3%	
Screen rotation		Yes, us	sing VC	
Electrical characteristics				
Nominal voltage		24 VDC -1	5% / +20%	
Max. power consumption 5)		14.4	4 W	
Reverse polarity protection		Ye	es	
Operating conditions	<u>'</u>			
Installation at elevations above sea level				
0 to 2000 m		No limi	itations	
>2000 m		Reduction of ambient temp	erature by 0.5°C per 100 m	
EN 60529 protection		Back	·	
·		Front	: IP65	
Environmental conditions				
Temperature				
Operation				
Horizontal installation		0 to	50°C	
Vertical installation		0 to	50°C	
Storage		-20 to	60°C	
Transport		-20 to	60°C	
Relative humidity				
Operation		See humid	ity diagram	
Storage		See humid	ity diagram	
Transport		See humid	ity diagram	
Mechanical characteristics				
Note	Or		4.2110-01, 1x 0TB5106.2110-0 0TB6102.2110-01 separately	01,
Front			•	
Design	Aluminum white pinstripe	Anthracite gray pinstripe	Aluminum white pinstripe	Anthracite gray pinstripe
Dimensions			-	-
Width	172	mm	140	mm
Height	140	mm	172	mm
Depth		51	mm	
Weight		0.6	kg	

Table 14: 4PPC70.0573-21W, 4PPC70.0573-21B, 4PPC70.057L-21W, 4PPC70.057L-21B - Technical data

- 1) The real-time clock is buffered for approx. 1000 hours @ 25°C by a gold foil capacitor. The gold foil capacitor is completely charged after 18 continuous hours of operation.
- 2) Shortest cycle time that is suitable for average applications. In certain cases, it is also possible to use shorter cycle times. The limit for the setting is specified in the entry for the shortest task class cycle time.
- See the POWERLINK help system under "General information, Hardware IF/LS".
- 4) At an ambient temperature of 25°C. Reducing the brightness by 50% can typically result in an approximately 50% increase in the half-brightness time.
- 5) Remote stations connected via X2X Link, CAN bus, POWERLINK and Ethernet. Both USB interfaces are used.

2.2.4.1.2.3 Technical data 4PPC70.057x-22x

General Information Familians Famil	Product ID	4PPC70.0573-22W 4PPC70.0573-22B 4PPC70.057L-22W 4PPC70.057L-22B
LED elatus indicators Supply voltage OK, operating situs, module slatus, Ethermet, POVERLINK, CAIN-KT, R 8232 Rott Notes	General information	
BAR ID code	Cooling	Fanless
BAR Dode	-	
System requirements		
Automation Studio Automation (Automation Support of X20SLX modules ED status includes Support of X20SLX modules ED status includes Quantity Quantity 9 No Reset button No Reset button Mester capability Mester capability No Suzzar ACOPPOS capability No Suzzar Ves Su		31.203
Automation Runtimes Support of XSQSLX modulos B4 or higher		4.1.4.375 or higher
Support of X26SLX modules B4 or higher		<u> </u>
LED datas indicators		
Quantity		B4 or nigner
Power button No Yes		
Reset button	,	
Controller redundancy	Power button	No
Master capability Yes	Reset button	Yes
Suzzer Yes Yes	Controller redundancy	
Suzzer Yes Yes	Master capability	No
ACOPIOS capability Ves Ves Electrical isolation IF 1 - IF3 IF 1 - IF3 IF 1 - IF3 IF 1 - IF5 IF 1 - IF6 IF 1 - IF6 IF 1 - IF7 IF 2 - IF7 IF 3 - IF7 IF 4 - IF7 IF 5 - IF7 IF 5 - IF7 IF 6 - IF7 IF 7 - IF7 IF		
Visual Components support Yes Electrical isolation Yes IF1 - IS2 Yes IF1 - IF3 Yes IF1 - IF4 Yes IF1 - IF6 Yes IF1 - IF6 Yes IF1 - IF8 Yes IF2 - IF3 Yes IF2 - IF6 Yes IF2 - IF8 Yes IF2 - IF8 Yes IF3 - IF6 Yes IF3 - IF6 Yes IF4 - IF6 Yes IF5 - IF6 Yes IF5 - IF6 Yes IF6 - IF6 Yes <tr< td=""><td></td><td></td></tr<>		
Electrical solotion		
FI - IF2	1 11	res
FI -		
IF1 - IF5	IF1 - IF3	Yes
IF1 - IF6	IF1 - IF4	Yes
FIT - IFB F2 - IF3	IF1 - IF5	Yes
FIT - IFB F2 - IF3	IF1 - IF6	Yes
IF2 - IF3		
IF2		
IF2 - IF5		
IF2 - IF8 Yes IF3 - IF4 No No IF3 - IF5 Yes IF3 - IF6 No No IF3 - IF6 No No IF4 - IF5 Yes IF3 - IF8 No IF4 - IF5 Yes IF5 - IF6 No IF4 - IF6 IF5 - IF6 Yes IF5 - IF6 Yes IF5 - IF6 Yes IF5 - IF8 Yes IF5 - IF8 No IF4 - IF6 Yes IF6 - IF8 No IF4 - IF6 No IF4 - IF6 Yes IF6 - IF8 No IF4 - IF6 Yes IF6 - IF8 No IF4 - IF6 Yes IF6 - IF8 No IF4 - IF6 No IF6 - IF6		
IF3 - IF4		
IF3 - IF6		Yes
IF3 - IF6	IF3 - IF4	No
IF3	IF3 - IF5	Yes
IF4 IF5	IF3 - IF6	No
IF4 - IF5		
IF4 IF6		
IF4 - IF8		
IF5 - IF6		
IF5 - IF8		
IF6 - IF8		
PLC - IF1 Yes PLC - IF2 Yes PLC - IF3 No PLC - IF4 No PLC - IF5 Yes PLC - IF6 No PLC - IF8 No Certification Yes CE Yes cULus Yes GOST-R Yes Controller Ves Boot loader Automation Runtime AR 4.08 CompactFlash slot 0 DRAM 256 MB Real-time clock ') Yes, resolution 1 s FPU Yes Processor Yes Type Intel E620T Clock frequency 333 MHz compatibility L1 cache 24 kB Data code 24 kB Program code 32 kB L2 cache - Cooling Passive Mode/Node switches No Remanent variables 32 kB Typical shortest task class cycle time 1 ms 2)	IF5 - IF8	Yes
PLC - IF2 Yes PLC - IF3 No PLC - IF4 No PLC - IF5 Yes PLC - IF6 No PLC - IF8 No PC - IF8 No Certification Ves CE Yes GOST-R Yes GOST-R Yes Controller Automation Runtime AR 4.08 CompactFlash slot 0 DRAM 256 MB Real-time clock 10 Yes, resolution 1 s FPU Yes Processor Yes Type Intel E620T Clock frequency 333 MHz compatibility L1 cache 24 kB Program code 32 kB L2 cache - Cooling Passive Mode/Node switches No Remanent variables 32 kB Typical shortest task class cycle time 1 ms 2)	IF6 - IF8	No
PLC - IF3 No PLC - IF4 No PLC - IF5 Yes PLC - IF6 No PLC - IF8 No Certification Yes CE cULus Yes GOST-R Yes Controller Automation Runtime AR 4.08 CompactFlash slot 0 DRAM 256 MB Real-time clock ¹) Yes, resolution 1 s FPU Yes Processor Intel E620T Clock frequency 333 MHz compatibility L1 cache 24 kB Program code 24 kB L2 cache - Cooling Passive Mode/Node switches No Remanent variables 32 kB Typical shortest task class cycle time 1 ms ²)	PLC - IF1	Yes
PLC - IF4 No PLC - IF5 Yes PLC - IF6 No PLC - IF8 No Certification Yes CE Yes GULUS Yes GOST-R Yes Boot loader Automation Runtime AR 4.08 CompactFlash slot 0 DRAM 256 MB Real-time clock ¹¹) Yes, resolution 1 s FPU Yes Processor Yes Type Intel E620T Clock frequency 333 MHz compatibility L1 cache 24 kB Program code 24 kB L2 cache - Cooling Passive Mode/Node switches No Remanent variables 32 kB Typical shortest task class cycle time 1 ms ²)	PLC - IF2	Yes
PLC - IF4 No PLC - IF5 Yes PLC - IF6 No PLC - IF8 No Certification Yes CE Yes GULus Yes GOST-R Yes Boot loader Automation Runtime AR 4.08 CompactFlash slot 0 DRAM 256 MB Real-time clock ¹) Yes, resolution 1 s FPU Yes Processor Intel E620T Clock frequency 333 MHz compatibility L1 cache 24 kB Data code 24 kB Program code 32 kB L2 cache - Cooling Passive Mode/Node switches No Remanent variables 32 kB Typical shortest task class cycle time 1 ms ²)	PLC - IE3	No
PLC - IF5 Yes PLC - IF6 No PLC - IF8 No Certification Yes CE Yes GULus Yes GOST-R Yes Controller Boot loader Automation Runtime AR 4.08 CompactFlash slot 0 DRAM 256 MB Real-time clock '1) Yes FPU Yes Processor Intel E620T Clock frequency 333 MHz compatibility L1 cache 24 kB Program code 32 kB L2 cache - Cooling Passive Mode/Node switches No Remanent variables 32 kB Typical shortest task class cycle time 1 ms ²)		
PLC - IF6 PLC - IF8 No No Certification CE cULus GOST-R Yes Yes Yes GOST-R Controller Boot loader Automation Runtime AR 4.08 CompactFlash slot 0 DRAM 256 MB Real-time clock ¹) Yes FPU Yes Processor Type Clock frequency L1 cache Data code Program code L2 cache 1ntel E620T 333 MHz compatibility L1 cache Program code L2 cache 24 kB Program code L2 cache L2 cache - Cooling Passive Mode/Node switches Remanent variables 32 kB Typical shortest task class cycle time 1 ms ²)		
PLC - IF8 No Certification Yes CE Yes cULus Yes GOST-R Yes Controller Boot loader Automation Runtime AR 4.08 CompactFlash slot 0 DRAM 256 MB Real-time clock ¹) Yes, resolution 1 s FPU Yes Processor Yes Type Intel E620T Clock frequency 333 MHz compatibility L1 cache 24 kB Program code 24 kB L2 cache - Cooling Passive Mode/Node switches No Remanent variables 32 kB Typical shortest task class cycle time 1 ms ²)		
Cetification Yes CE Yes GULus Yes GOST-R Yes Controller Boot loader Automation Runtime AR 4.08 CompactFlash slot 0 DRAM 256 MB Real-time clock ¹) Yes FPU Yes Processor Yes Type Intel E620T Clock frequency 333 MHz compatibility L1 cache 24 kB Program code 24 kB L2 cache - Cooling Passive Mode/Node switches No Remanent variables 32 kB Typical shortest task class cycle time 1 ms ²)		
CE oULus OST-R Yes Yes Yes Yes COST-R Yes Controller Test Sent Sent Sent Sent Sent Sent Sent Sen	PLC - IF8	No
CULUS GOST-R Yes Controller Boot loader Automation Runtime AR 4.08 CompactFlash slot 0 DRAM 256 MB Real-time clock ¹) Yes, resolution 1 s FPU Yes Processor Type Clock frequency 333 MHz compatibility L1 cache 24 kB Program code 32 kB L2 cache - Cooling Passive Mode/Node switches No Remanent variables No Typical shortest task class cycle time 1 ms ²l	Certification	
GOST-R Yes Controller Boot loader Automation Runtime AR 4.08 CompactFlash slot 0 DRAM 256 MB Real-time clock ¹) Yes, resolution 1 s FPU Yes Processor Type Clock frequency Intel E620T Clock frequency 333 MHz compatibility L1 cache 24 kB Program code 24 kB L2 cache - Cooling Passive Mode/Node switches No Remanent variables 32 kB Typical shortest task class cycle time 1 ms ²)	CE	Yes
GOST-R Yes Controller Boot loader Automation Runtime AR 4.08 CompactFlash slot 0 DRAM 256 MB Real-time clock ¹) Yes, resolution 1 s FPU Yes Processor Type Clock frequency Intel E620T Clock frequency 333 MHz compatibility L1 cache 24 kB Program code 24 kB L2 cache - Cooling Passive Mode/Node switches No Remanent variables 32 kB Typical shortest task class cycle time 1 ms ²)	cULus	Yes
Controller Boot loader Automation Runtime AR 4.08 CompactFlash slot 0 DRAM 256 MB Real-time clock ¹) Yes, resolution 1 s FPU Yes Processor Intel E620T Clock frequency 333 MHz compatibility L1 cache 24 kB Program code 32 kB L2 cache - Cooling Passive Mode/Node switches No Remanent variables 32 kB Typical shortest task class cycle time 1 ms ²)		
Boot loader Automation Runtime AR 4.08 CompactFlash slot 0 DRAM 256 MB Real-time clock ¹) Yes, resolution 1 s FPU Yes Processor Intel E620T Clock frequency 333 MHz compatibility L1 cache 24 kB Program code 32 kB L2 cache - Cooling Passive Mode/Node switches No Remanent variables 32 kB Typical shortest task class cycle time 1 ms ²)	Controller	
CompactFlash slot 0 DRAM 256 MB Real-time clock ¹) Yes, resolution 1 s FPU Yes Processor Intel E620T Clock frequency 333 MHz compatibility L1 cache 24 kB Program code 32 kB L2 cache - Cooling Passive Mode/Node switches No Remanent variables 32 kB Typical shortest task class cycle time 1 ms ²)		Automation Runtime AR 4 08
DRAM 256 MB Real-time clock ¹) Yes, resolution 1 s FPU Yes Processor Intel E620T Clock frequency 333 MHz compatibility L1 cache 24 kB Program code 32 kB L2 cache - Cooling Passive Mode/Node switches No Remanent variables 32 kB Typical shortest task class cycle time 1 ms ²)		
Real-time clock ¹) Yes, resolution 1 s FPU Yes Processor Intel E620T Clock frequency 333 MHz compatibility L1 cache 24 kB Data code 24 kB Program code 32 kB L2 cache - Cooling Passive Mode/Node switches No Remanent variables 32 kB Typical shortest task class cycle time 1 ms ²)	·	
FPU Yes Processor Intel E620T Clock frequency 333 MHz compatibility L1 cache 24 kB Program code 32 kB L2 cache - Cooling Passive Mode/Node switches No Remanent variables 32 kB Typical shortest task class cycle time 1 ms ²⁾		
Processor Intel E620T Clock frequency 333 MHz compatibility L1 cache 24 kB Data code 32 kB Frogram code 32 kB L2 cache - Cooling Passive Mode/Node switches No Remanent variables 32 kB Typical shortest task class cycle time 1 ms ²)		Yes, resolution 1 s
Processor Intel E620T Clock frequency 333 MHz compatibility L1 cache 24 kB Data code 32 kB Frogram code 32 kB L2 cache - Cooling Passive Mode/Node switches No Remanent variables 32 kB Typical shortest task class cycle time 1 ms ²)	FPU	Yes
Type Intel E620T Clock frequency 333 MHz compatibility L1 cache 24 kB Data code 24 kB Program code 32 kB L2 cache - Cooling Passive Mode/Node switches No Remanent variables 32 kB Typical shortest task class cycle time 1 ms ²)	Processor	
Clock frequency 333 MHz compatibility L1 cache 24 kB Data code 24 kB Program code 32 kB L2 cache - Cooling Passive Mode/Node switches No Remanent variables 32 kB Typical shortest task class cycle time 1 ms ²)		Intel F620T
L1 cache 24 kB Data code 24 kB Program code 32 kB L2 cache - Cooling Passive Mode/Node switches No Remanent variables 32 kB Typical shortest task class cycle time 1 ms ²)		
Data code 24 kB Program code 32 kB L2 cache - Cooling Passive Mode/Node switches No Remanent variables 32 kB Typical shortest task class cycle time 1 ms ²)	· · ·	300 IVII 12 COMPANDINTY
Program code 32 kB L2 cache - Cooling Passive Mode/Node switches No Remanent variables 32 kB Typical shortest task class cycle time 1 ms ²)		241-5
L2 cache - Cooling Passive Mode/Node switches No Remanent variables 32 kB Typical shortest task class cycle time 1 ms ²)		
Cooling Passive Mode/Node switches No Remanent variables 32 kB Typical shortest task class cycle time 1 ms ²)	-	32 kB
Mode/Node switches No Remanent variables 32 kB Typical shortest task class cycle time 1 ms ²)	L2 cache	<u>-</u>
Mode/Node switches No Remanent variables 32 kB Typical shortest task class cycle time 1 ms ²)	Cooling	Passive
Remanent variables 32 kB Typical shortest task class cycle time 1 ms ²⁾	-	
Typical shortest task class cycle time 1 ms ²⁾		
Shortest task class cycle time 0.4 ms		<u> </u>
·	-	
Typical instruction cycle time 0.01 µs	Typical instruction cycle time	0.01 μs

Table 15: 4PPC70.0573-22W, 4PPC70.0573-22B, 4PPC70.057L-22W, 4PPC70.057L-22B - Technical data

Product ID	4PPC70.0573-22W 4PPC70.0573-22B 4PPC70.057L-22W 4PPC70.057L-22B
Program memory	
Туре	2 GB eMMC flash memory
Data retention	10 years
Writable data amount	, care
Guaranteed	40 TB
Results for 5 years	21.9 GB/day
Guaranteed clear/write cycles	20,000
Error correction coding (ECC)	Yes
Temperature cutoff	Yes, at >88°C
Interfaces	
IF1 interface	500550 000
Fieldbus	POWERLINK managing or controlled node
Type	Type 4 ³⁾
Design	1x RJ45 shielded
Cable length	Max. 100 m between 2 nodes (segment length)
Max. transfer rate	100 Mbit/s
Transmission	
Physical layer	100BASE-TX
Half-duplex	Yes
Full-duplex	No
Autonegotiation	Yes
Auto-MDI / MDIX	Yes
IF2 interface	
Туре	Ethernet
Design	1x RJ45 shielded
Cable length	Max. 100 m between 2 nodes (segment length)
Max. transfer rate	10/100 Mbit/s
Transmission	
Physical layer	10BASE-T/100BASE-TX
Half-duplex	Yes
Full-duplex	Yes
Autonegotiation	Yes
Auto-MDI / MDIX	Yes
IF3 interface	res
	USB 2.0
Type	
Design	Type A
Current load	0.49 A
IF4 interface	
Type	USB 2.0
Design	Type A
Current load	0.10 A
IF5 interface	
Туре	X2X Link master
IF6 interface	
Туре	CAN bus
Design	3 pins of the 6-pin multipoint connector
Max. distance	1000 m
Max. transfer rate	
Bus length ≤25 m	1 Mbit/s
Bus length ≤60 m	500 kbit/s
Bus length ≤200 m	250 kbit/s
Bus length ≤1000 m	50 kbit/s
IF8 interface	
Type	RS232
Design	3 pins of the 6-pin multipoint connector
Max. distance	900 m
Transfer rate	Max. 1152 kbit/s Max. 115.2 kbit/s
Display	
Туре	Color TFT
Display size	5.7"
Colors	262,000
Resolution	VGA, 640 x 480 pixels VGA, 480 x 640 pixels
Contrast	Typ. 850:1
Viewing angles	D D. D
Horizontal	Direction R / Direction L = typ. 80°
Vertical	Direction U / Direction D = typ. 80°
Backlight	
Туре	LED
Brightness	Typ. 400 cd/m ²
Half-brightness time 4)	50,000 h
Touch screen	
Туре	АМТ
Technology	Analog resistive
Controller	B&R, serial, 12-bit
Transmittance	80% ±3%
	3575 1576

Table 15: 4PPC70.0573-22W, 4PPC70.0573-22B, 4PPC70.057L-22W, 4PPC70.057L-22B - Technical data

Power Panel C-Series

Product ID	4PPC70.0573-22W	4PPC70.0573-22B	4PPC70.057L-22W	4PPC70.057L-22B
Screen rotation		Yes, us	sing VC	,
Electrical characteristics				
Nominal voltage		24 VDC -1	5% / +20%	
Max. power consumption 5)		14.	4 W	
Reverse polarity protection		Y	es	
Operating conditions				
Installation at elevations above sea level				
0 to 2000 m		No lim	itations	
>2000 m		Reduction of ambient temp	erature by 0.5°C per 100 m	
EN 60529 protection			: IP20 :: IP65	
Environmental conditions				
Temperature				
Operation				
Horizontal installation		0 to	50°C	
Vertical installation		0 to	50°C	
Storage		-20 to	60°C	
Transport		-20 to	60°C	
Relative humidity				
Operation		See humid	lity diagram	
Storage			lity diagram	
Transport		See humid	lity diagram	
Mechanical characteristics				
Note	Ord		04.2110-01, 1x 0TB5106.2110-0 0TB6102.2110-01 separately	01,
Front				-
Design	Aluminum white pinstripe	Anthracite gray pinstripe	Aluminum white pinstripe	Anthracite gray pinstripe
Dimensions				
Width	172	mm	140	mm
Height	140	mm	172	mm
Depth		51	mm	
Weight		0.6	s kg	

Table 15: 4PPC70.0573-22W, 4PPC70.0573-22B, 4PPC70.057L-22W, 4PPC70.057L-22B - Technical data

- 1) The real-time clock is buffered for approx. 1000 hours @ 25°C by a gold foil capacitor. The gold foil capacitor is completely charged after 18 continuous hours of operation.
- 2) Shortest cycle time that is suitable for average applications. In certain cases, it is also possible to use shorter cycle times. The limit for the setting is specified in the entry for the shortest task class cycle time.
- 3) See the POWERLINK help system under "General information, Hardware IF/LS".
- 4) At an ambient temperature of 25°C. Reducing the brightness by 50% can typically result in an approximately 50% increase in the half-brightness time.
- 5) Remote stations connected via X2X Link, CAN bus, POWERLINK and Ethernet. Both USB interfaces are used.

2.2.4.1.2.4 Technical data 4PPC70.057x-23x

Product ID	4PPC70.0573-23W	4PPC70.0573-23B	4PPC70.057L-23W	4PPC70.057L-23B
General information				
Cooling		Fan	lless	
LED status indicators	Supply voltage OK, op	perating status, module status	, Ethernet, POWERLINK, CA	N Rx/Tx, RS485 Rx/Tx
B&R ID code	0xE560	0xE4B5	0xE564	0xE568
System requirements			,	
Automation Studio		4.1.4.375	or higher	
Automation Runtime		K4.08 c	or higher	
Support of X20SLX modules		B4 or	higher	
LED status indicators				
Quantity	_	9	9	_
Power button		N	lo	
Reset button		Y	es	_
Controller redundancy				
Master capability		N	lo	
Buzzer		Y	es	
ACOPOS capability		Y	es	
Visual Components support	-	Y	es	
Electrical isolation				
IF1 - IF2		Y	es	
IF1 - IF3		Y	es	
IF1 - IF4		Y	es	
IF1 - IF5		Y	es	
IF1 - IF6			es	
IF1 - IF9			es	
IF2 - IF3		Y	es	
IF2 - IF4			es	
IF2 - IF5			es	
IF2 - IF6			es	
IF2 - IF9			es	
IF3 - IF4			lo	
IF3 - IF5			es	
IF3 - IF6			lo	
IF3 - IF9			lo	
IF4 - IF5			es	
IF4 - IF6			lo	
IF5 - IF6			es	
IF5 - IF9			es	
IF6 - IF9			lo	
PLC - IF1 PLC - IF2			es	
PLC - IF2 PLC - IF3			es Io	
PLC - IF3 PLC - IF4			lo	
PLC - IF5			es	
PLC - II 3			lo	
PLC - IF9			lo	
Certification	-			_
CE		V	es	
cULus			es es	
GOST-R			es	
Controller		,		
Boot loader		Automation Pr	untime AR 4.08	
CompactFlash slot			0	
DRAM	-		MB	_
Real-time clock 1)			olution 1 s	_
FPU			es	_
Processor		11		
Type		Intal F	≣620T	
Clock frequency			ompatibility	
L1 cache		000 Wii IZ 0		
Data code		24	kB	
Program code			kB	
L2 cache			-	
Cooling	_	Pas	sive	
Mode/Node switches			lo	
Remanent variables			kB	
Typical shortest task class cycle time			ns ²⁾	
Shortest task class cycle time			ms	
Typical instruction cycle time			1 μs	_
1 J prode moti douori oyole time		0.0	. μο	

Table 16: 4PPC70.0573-23W, 4PPC70.0573-23B, 4PPC70.057L-23W, 4PPC70.057L-23B - Technical data

Product ID	4PPC70.0573-23W 4PPC70.0573-23B 4PPC70.057L-23W 4PPC70.057L-23B
Program memory	
Type	2 GB eMMC flash memory
Data retention	10 years
Writable data amount	is your
Guaranteed	40 TB
Results for 5 years	21.9 GB/day
Guaranteed clear/write cycles	20,000
	·
Error correction coding (ECC)	Yes
Temperature cutoff	Yes, at >88°C
Interfaces	
IF1 interface	DOMESTI NIK
Fieldbus	POWERLINK managing or controlled node
Туре	Type 4 ³⁾
Design	1x RJ45 shielded
Cable length	Max. 100 m between 2 nodes (segment length)
Max. transfer rate	100 Mbit/s
Transmission	
Physical layer	100BASE-TX
Half-duplex	Yes
Full-duplex	No
Autonegotiation	Yes
Auto-MDI / MDIX	Yes
IF2 interface	
Type	Ethernet
Design	1x RJ45 shielded
Cable length	Max. 100 m between 2 nodes (segment length)
Max. transfer rate	10/100 Mbit/s
Transmission	10/100/11000
Physical layer	10BASE-T/100BASE-TX
Half-duplex	Yes
Full-duplex	Yes
Autonegotiation	Yes
Auto-MDI / MDIX	
	Yes
IF3 interface	LIOP O O
Type	USB 2.0
Design	Type A
Current load	0.49 A
IF4 interface	
Туре	USB 2.0
Design	Type A
Current load	0.10 A
IF5 interface	
Туре	X2X Link master
IF6 interface	
Туре	CAN bus
Design	3 pins of the 6-pin multipoint connector
Max. distance	1000 m
Max. transfer rate	
Bus length ≤25 m	1 Mbit/s
Bus length ≤60 m	500 kbit/s
Bus length ≤200 m	250 kbit/s
Bus length ≤1000 m	50 kbit/s
IF9 interface	
Type	RS485
Design	3 pins of the 6-pin multipoint connector
Max. distance	1200 m
Transfer rate	Max. 1152 kbit/s Max. 115.2 kbit/s
Display	IVIDA. 1102 NOIVO IVIDA. 110.2 NOIVO
Туре	Color TFT
	5.7"
Display size	
Colors	262,000
Resolution	VGA, 640 x 480 pixels VGA, 480 x 640 pixels
Contrast	Typ. 850:1
Viewing angles	
Horizontal	Direction R / Direction L = typ. 80°
Vertical	Direction U / Direction D = typ. 80°
Backlight	
Type	LED
Brightness	Typ. 400 cd/m ²
Half-brightness time 4)	50,000 h
Touch screen	20,30011
Type	AMT
Technology	Analog resistive
Controller	B&R, serial, 12-bit
COUNTIONS	Dar, Schal, 12-bit
Transmittance	80% ±3%

 $Table\ 16:\ 4PPC70.0573-23W,\ 4PPC70.0573-23B,\ 4PPC70.057L-23W,\ 4PPC70.057L-23B-Technical\ data$

Product ID	4PPC70.0573-23W	4PPC70.0573-23B	4PPC70.057L-23W	4PPC70.057L-23B
Screen rotation		Yes, u	ising VC	
Electrical characteristics				
Nominal voltage		24 VDC -	15% / +20%	
Max. power consumption 5)		14	.4 W	
Reverse polarity protection		١	⁄es	
Operating conditions				
Installation at elevations above sea level				
0 to 2000 m		No lin	nitations	
>2000 m			perature by 0.5°C per 100 m	
EN 60529 protection			k: IP20	
El Coozo protoction			it: IP65	
Environmental conditions				
Temperature				
Operation				
Horizontal installation		0 to	50°C	
Vertical installation		0 to	50°C	
Storage		-20 t	o 60°C	
Transport		-20 t	o 60°C	
Relative humidity				
Operation		See humi	dity diagram	
Storage			dity diagram	
Transport		See humi	dity diagram	
Mechanical characteristics				
Note	Ore		04.2110-01, 1x 0TB5106.2110- OTB6102.2110-01 separately	01,
Front			, ,	
Design	Aluminum white pinstripe	Anthracite gray pinstripe	Aluminum white pinstripe	Anthracite gray pinstripe
Dimensions				
Width	172	mm	140	mm
Height	140	mm	172	mm
Depth		51	mm	
Weight		0.	6 kg	

Table 16: 4PPC70.0573-23W, 4PPC70.0573-23B, 4PPC70.057L-23W, 4PPC70.057L-23B - Technical data

- 1) The real-time clock is buffered for approx. 1000 hours @ 25°C by a gold foil capacitor. The gold foil capacitor is completely charged after 18 continuous hours of operation.
- 2) Shortest cycle time that is suitable for average applications. In certain cases, it is also possible to use shorter cycle times. The limit for the setting is specified in the entry for the shortest task class cycle time.
- 3) See the POWERLINK help system under "General information, Hardware IF/LS".
- 4) At an ambient temperature of 25°C. Reducing the brightness by 50% can typically result in an approximately 50% increase in the half-brightness time.
- 5) Remote stations connected via X2X Link, CAN bus, POWERLINK and Ethernet. Both USB interfaces are used.

2.2.4.2 4PPC70.070x-2xx

2.2.4.2.1 4PPC70.070x-2xx - Order data

2.2.4.2.1.1 4PPC70.070x-20x - Order data

Model number Short description
C70
PPC70.0702-20W Power Panel C70, 7", analog resistive touch screen, Intel ATOM 333 MHz comp., 256 MB DDRAM, 32 kB FRAM, 2 GB flash drive onboard, 1 X2X Link interface, 1 POWERLINK interface, 1 Ethernet interface 10BASE-T/100BASE-TX, 2 USB 2.0 interfaces, basic device without option board, landscape format, aluminum white pinstripe
PPC70.0702-20B Power Panel C70, 7", analog resistive touch screen, Intel ATOM 333 MHz comp., 256 MB DDRAM, 32 kB FRAM, 2 GB flash drive onboard, 1 X2X Link interface, 1 POWERLINK interface, 1 Ethernet interface 10BASE-T/100BASE-TX, 2 USB 2.0 interfaces, basic device without option board, landscape format, anthracite gray pinstripe
POWER Panel C70, 7", analog resistive touch screen, Intel ATOM 333 MHz comp., 256 MB DDRAM, 32 kB FRAM, 2 GB flash drive onboard, 1 X2X Link interface, 1 POWERLINK interface, 1 Ethernet interface 10BASE-T/100BASE-TX, 2 USB 2.0 interfaces, basic device without option board, portrait format, aluminum white pinstripe
Power Panel C70, 7", analog resistive touch screen, Intel ATOM 333 MHz comp., 256 MB DDRAM, 32 kB FRAM, 2 GB flash drive onboard, 1 X2X Link interface, 1 POWERLINK interface, 1 Ethernet interface 10BASE-T/100BASE-TX, 2 USB 2.0 interfaces, basic device without option board, portrait format, anthracite gray pinstripe
Required accessories
Terminal blocks
OTB5104.2110-01 Accessory terminal block, 4-pin (2.5), cage clamp, 0.5 mm ²
OTB6102.2010-01 Accessory terminal block, 2-pin (3.81), screw clamp, 1.5 mm ²
OTB6102.2110-01 Accessory terminal block, 2-pin (3.81), cage clamp, 1.5 mm ²
Optional accessories
USB accessories
MMUSB.2048-01 USB 2.0 flash drive, 2048 MB, B&R
MMUSB.4096-01 USB 2.0 flash drive, 4096 MB, B&R

Table 17: 4PPC70.0702-20W, 4PPC70.0702-20B, 4PPC70.070M-20W, 4PPC70.070M-20B - Order data

2.2.4.2.1.2 4PPC70.070x-21x - Order data

Model number	Short description	Figure		
	C70			
4PPC70.0702-21W	Power Panel C70, 7", analog resistive touch screen, Intel ATOM 333 MHz comp., 256 MB DDRAM, 32 kB FRAM, 2 GB flash drive onboard, 1 X2X Link interface, 1 POWERLINK interface, 1 Ethernet interface 10BASE-T/100BASE-TX, 2 USB 2.0 interfaces, basic device with option board: 2x CAN bus, landscape format, aluminum white pinstripe			
4PPC70.0702-21B	Power Panel C70, 7", analog resistive touch screen, Intel ATOM 333 MHz comp., 256 MB DDRAM, 32 kB FRAM, 2 GB flash drive onboard, 1 X2X Link interface, 1 POWERLINK interface, 1 Ethernet interface 10BASE-T/100BASE-TX, 2 USB 2.0 interfaces, basic device with option board: 2x CAN bus, landscape format, anthracite gray pinstripe			
4PPC70.070M-21W	Power Panel C70, 7", analog resistive touch screen, Intel ATOM 333 MHz comp., 256 MB DDRAM, 32 kB FRAM, 2 GB flash drive onboard, 1 X2X Link interface, 1 POWERLINK interface, 1 Ethernet interface 10BASE-T/100BASE-TX, 2 USB 2.0 interfaces, basic device with option board: 2x CAN bus, portrait format, aluminum white pinstripe			
4PPC70.070M-21B	Power Panel C70, 7", analog resistive touch screen, Intel ATOM 333 MHz comp., 256 MB DDRAM, 32 kB FRAM, 2 GB flash drive onboard, 1 X2X Link interface, 1 POWERLINK interface, 1 Ethernet interface 10BASE-T/100BASE-TX, 2 USB 2.0 interfaces, basic device with option board: 2x CAN bus, portrait format, anthracite gray pinstripe			
	Required accessories			
	Terminal blocks			
0TB5104.2110-01	Accessory terminal block, 4-pin (2.5), cage clamp, 0.5 mm ²			
0TB5106.2110-01	Accessory terminal block, 6-pin (2.5), cage clamp, 0.5 mm ²			
0TB6102.2010-01	Accessory terminal block, 2-pin (3.81), screw clamp, 1.5 mm ²			
0TB6102.2110-01	Accessory terminal block, 2-pin (3.81), cage clamp, 1.5 mm ²			
	Optional accessories			
	USB accessories			
5MMUSB.2048-01	USB 2.0 flash drive, 2048 MB, B&R			
5MMUSB.4096-01	USB 2.0 flash drive, 4096 MB, B&R			

Table 18: 4PPC70.0702-21W, 4PPC70.0702-21B, 4PPC70.070M-21W, 4PPC70.070M-21B - Order data

2.2.4.2.1.3 4PPC70.070x-22x - Order data

Model number	Short description	Figure		
	C70			
4PPC70.0702-22W	Power Panel C70, 7", analog resistive touch screen, Intel ATOM 333 MHz comp., 256 MB DDRAM, 32 kB FRAM, 2 GB flash drive onboard, 1 X2X Link interface, 1 POWERLINK interface, 1 Ethernet interface 10BASE-T/100BASE-TX, 2 USB 2.0 interfaces, basic device with option board: 1x CAN bus, 1x RS232, landscape format, aluminum white pinstripe			
4PPC70.0702-22B	Power Panel C70, 7", analog resistive touch screen, Intel ATOM 333 MHz comp., 256 MB DDRAM, 32 kB FRAM, 2 GB flash drive onboard, 1 X2X Link interface, 1 POWERLINK interface, 1 Ethernet interface 10BASE-T/100BASE-TX, 2 USB 2.0 interfaces, basic device with option board: 1x CAN bus, 1x RS232, landscape format, anthracite gray pinstripe			
4PPC70.070M-22W	Power Panel C70, 7", analog resistive touch screen, Intel ATOM 333 MHz comp., 256 MB DDRAM, 32 kB FRAM, 2 GB flash drive onboard, 1 X2X Link interface, 1 POWERLINK interface, 1 Ethernet interface 10BASE-T/100BASE-TX, 2 USB 2.0 interfaces, basic device with option board: 1x CAN bus, 1x RS232, portrait format, aluminum white pinstripe			
4PPC70.070M-22B	Power Panel C70, 7", analog resistive touch screen, Intel ATOM 333 MHz comp., 256 MB DDRAM, 32 kB FRAM, 2 GB flash drive onboard, 1 X2X Link interface, 1 POWERLINK interface, 1 Ethernet interface 10BASE-T/100BASE-TX, 2 USB 2.0 interfaces, basic device with option board: 1x CAN bus, 1x RS232, portrait format, anthracite gray pinstripe			
	Required accessories			
	Terminal blocks			
0TB5104.2110-01	Accessory terminal block, 4-pin (2.5), cage clamp, 0.5 mm ²			
0TB5106.2110-01	Accessory terminal block, 6-pin (2.5), cage clamp, 0.5 mm ²			
0TB6102.2010-01	Accessory terminal block, 2-pin (3.81), screw clamp, 1.5 mm ²			
0TB6102.2110-01	Accessory terminal block, 2-pin (3.81), cage clamp, 1.5 mm ²			
	Optional accessories			
	USB accessories			
5MMUSB.2048-01	USB 2.0 flash drive, 2048 MB, B&R			
5MMUSB.4096-01	USB 2.0 flash drive, 4096 MB, B&R			

Table 19: 4PPC70.0702-22W, 4PPC70.0702-22B, 4PPC70.070M-22W, 4PPC70.070M-22B - Order data

2.2.4.2.1.4 4PPC70.070x-23x - Order data

Model number	Short description	Figure		
	C70			
4PPC70.0702-23W	Power Panel C70, 7", analog resistive touch screen, Intel ATOM 333 MHz comp., 256 MB DDRAM, 32 kB FRAM, 2 GB flash drive onboard, 1 X2X Link interface, 1 POWERLINK interface, 1 Ethernet interface 10BASE-T/100BASE-TX, 2 USB 2.0 interfaces, basic device with option board: 1x CAN bus, 1x RS485, landscape format, aluminum white pinstripe			
4PPC70.0702-23B	Power Panel C70, 7", analog resistive touch screen, Intel ATOM 333 MHz comp., 256 MB DDRAM, 32 kB FRAM, 2 GB flash drive onboard, 1 X2X Link interface, 1 POWERLINK interface, 1 Ethernet interface 10BASE-T/100BASE-TX, 2 USB 2.0 interfaces, basic device with option board: 1x CAN bus, 1x RS485, landscape format, anthracite gray pinstripe			
4PPC70.070M-23W	Power Panel C70, 7", analog resistive touch screen, Intel ATOM 333 MHz comp., 256 MB DDRAM, 32 kB FRAM, 2 GB flash drive onboard, 1 X2X Link interface, 1 POWERLINK interface, 1 Ethernet interface 10BASE-T/100BASE-TX, 2 USB 2.0 interfaces, basic device with option board: 1x CAN bus, 1x RS485, portrait format, aluminum white pinstripe			
4PPC70.070M-23B	Power Panel C70, 7", analog resistive touch screen, Intel ATOM 333 MHz comp., 256 MB DDRAM, 32 kB FRAM, 2 GB flash drive onboard, 1 X2X Link interface, 1 POWERLINK interface, 1 Ethernet interface 10BASE-T/100BASE-TX, 2 USB 2.0 interfaces, basic device with option board: 1x CAN bus, 1x RS485, portrait format, anthracite gray pinstripe			
	Required accessories			
	Terminal blocks			
0TB5104.2110-01	Accessory terminal block, 4-pin (2.5), cage clamp, 0.5 mm ²			
0TB5106.2110-01	Accessory terminal block, 6-pin (2.5), cage clamp, 0.5 mm ²			
0TB6102.2010-01	Accessory terminal block, 2-pin (3.81), screw clamp, 1.5 mm ²			
0TB6102.2110-01	Accessory terminal block, 2-pin (3.81), cage clamp, 1.5 mm ²			
	Optional accessories			
	USB accessories			
5MMUSB.2048-01	USB 2.0 flash drive, 2048 MB, B&R			
5MMUSB.4096-01	USB 2.0 flash drive, 4096 MB, B&R			

Table 20: 4PPC70.0702-23W, 4PPC70.0702-23B, 4PPC70.070M-23W, 4PPC70.070M-23B - Order data

2.2.4.2.2 Technical data 4PPC70.070x-2xx

2.2.4.2.2.1 Technical data 4PPC70.070x-20x

Product ID	4PPC70.0702-20W	4PPC70.0702-20B	4PPC70.070M-20W	4PPC70.070M-20B	
General information					
Cooling	Fanless				
LED status indicators	Supply voltage OK, operating status, module status, Ethernet, POWERLINK				
B&R ID code	0xE569	0xE56D	0xE571	0xE575	
System requirements					
Automation Studio		4.1.4.37	or higher		
Automation Runtime	K4.08 or higher				
Support of X20SLX modules	B4 or higher				
LED status indicators					
Quantity			4		
Power button		-	No	_	
Reset button			'es		
Controller redundancy				_	
Master capability		1	No		
Buzzer			es es	_	
ACOPOS capability			es es		
Visual Components support			es 'es	_	
Electrical isolation			cs	_	
IF1 - IF2		V	'es		
IF1 - IF2 IF1 - IF3			es 'es		
IF1 - IF3					
IF1 - IF5	Yes Yes				
IF2 - IF3	Yes Yes				
IF2 - IF4	Yes Yes				
IF2 - IF5	Yes Yes				
IF3 - IF4	Yes No				
IF3 - IF5			es		
IF4 - IF5			es		
PLC - IF1			es		
PLC - IF2			es es		
PLC - IF3			No		
PLC - IF4			No		
PLC - IF5			'es		
Certification					
CE		Y	'es		
cULus			´es		
GOST-R			'es		
Controller					
Boot loader		Automation R	untime AR 4.08		
CompactFlash slot			0		
DRAM			S MB	_	
Real-time clock 1)	Yes, resolution 1 s				
FPU FPU	Yes				
Processor		<u>'</u>		_	
Type		Intel	E620T		
Clock frequency			compatibility		
L1 cache		000 1411 12 (pationty		
Data code		24	kB		
Program code			! kB		
L2 cache			-		
Cooling		Pa	ssive		
Mode/Node switches			No	_	
Remanent variables				_	
Typical shortest task class cycle time	32 kB 1 ms ²⁾				
Shortest task class cycle time			l ms		
-				_	
Typical instruction cycle time		0.0	1 μs	_	
Program memory		2 CD ~MMA	flash memory		
Type					
Data retention		10 1	years		
Writable data amount		40	TD		
Guaranteed	40 TB				
Results for 5 years			21.9 GB/day		
Guaranteed clear/write cycles	20,000 Yes				
Error correction coding (ECC)					
Temperature cutoff		Yes, a	t >88°C		

Table 21: 4PPC70.0702-20W, 4PPC70.0702-20B, 4PPC70.070M-20W, 4PPC70.070M-20B - Technical data

Finintration	Product ID	4PPC70.0702-20W 4PPC70.0702-20B	4PPC70.070M-20W 4PPC70.070M-20B			
PoWERLINK managing or controlled node Type 4 Type 5	Interfaces					
Type	IF1 interface					
Design	Fieldbus	POWERLINK managir	g or controlled node			
Cable ingight Max. 100 m between 2 noces (segment length) Max. 101	Туре	= =				
Cable ingight Max. 100 m between 2 noces (segment length) Max. 101		1				
Max. transfer rate 100 Mobils 174		Max. 100 m between 2 m	odes (seament lenath)			
Transmission Physical layer Half-duplex						
Physical layer Half-duplex Yes Half-duplex Yes Half-duplex Yes Autoregotation Yes Autoregotation Yes Yes Autoregotation Yes Yes Autoregotation Yes		100 111	5100			
Half-duplox		100BAS	RF-TY			
Full-displace						
Auto-MDD / MDD / Yes Auto-MDD / MDD / Yes 1/2 Interface Type	·					
Auto-MD / MDIX File Interface Ethernet						
File Interface Ethernet T.R.M.5. shelded T.	=					
Type		Te:	<u> </u>			
Design		F				
Cable length						
Max. transfer rate						
Transmission Physical layer Half duplex Pes Authorogotiation Authority MDIX Fa interface Type USB 2.0 Design Type A Current load 0.49 A Fa interface Type USB 2.0 Design Type A Current load 0.49 A Fa interface Type Design Type A Current load 0.10 A Fa interface Type Design Type A Current load 0.10 A Fi interface Type Design Type A Current load 0.10 A Fi interface Type Courrent load 0.10 A Fi interface Type Type Type Type Type Type Type Typ	=					
Thysical layer		10/100	Mbit/s			
Half-duplex						
Full-duplex Autonogolation Autonogolation Yes Autonogolation Yes Yes Autonogolation Autonogolation Yes Foliateriace USB 2.0 Design Type A Current load USB 2.0 Design Type A Design Type B		10BASE-T/10	0BASE-TX			
Auto-MDI / MDIX						
Auto-MDI / MDIX	· · · · · · · · · · · · · · · · · · ·					
File interface USB 2.0 Type USB 2.0 Type	•	Ye	8			
USB 2.0	Auto-MDI / MDIX	Ye	3			
Design	IF3 interface					
Design		USB	2.0			
Current load						
Type		0.40				
Design		LISB	2 በ			
Type	= = =					
	•	•				
Type		0.10	<u> </u>			
Type		VOVICE				
Type		X2X Link	master			
Deplay size 7" Colors 262,000 / 16.2 M Resolution WVGA, 800 x 480 pixels WVGA, 480 x 800 pixels WVGA, 480 x 800 pixels Typ. 600:1 Williams angles Forestein of the process of the p						
Colors 262,000 / 16.2 M WVGA, 480 x 480 pixels WVGA, 480 x 800 pixels						
Resolution		-				
Contrast Typ. 600:1 Viewing angles Direction R / Direction L = typ. 60° Direction R / Direction L = typ. 70° Vertical Direction U / Direction D = typ. 70° Direction U / Direction D = typ. 60° Backlight LED Typ. 500 cd/m² Brightness Typ. 500 cd/m² AMT Half-brightness time 40 AMT AMT Touch screen AMT Technology Analog resistive Controller B&R, serial, 12-bit Transmittance 88**, serial, 12-bit Transmittance 80**, serial, 12-bit Maximal Volume Maximal Volume Screen rotation Yes, using VC Electrical characteristics Maximal Volume	Colors	262,000 /	16.2 M			
Viewing angles Direction R / Direction L = typ. 60° Direction R / Direction L = typ. 70° Vertical Direction U / Direction D = typ. 70° Direction R / Direction L = typ. 70° Backlight LED Typ. 500 cd/m² Brightness Typ. 500 cd/m² Half-brightness time *0 50,000 h Touch screen Typ. 500 cd/m² Type AMT Touch screen Analog resistive Type Amount of type and type resistive Controller Bask, serial, 12-bit Transmittance 80% ±3% Screen rotation Yes, using VC Electrical characteristics Touch screen Nominal voltage 24 VDC -15% / +20% Max. power consumption ** Yes Operating conditions Yes Installation at elevations above sealevel No limitations 0 to 2000 m Reduction of ambient temperature by 0.5°C per 100 m EN 60529 protection Back: IP-20 Environmental conditions Front: IP65 Environmental conditions Ot 50°C Vertical installation 0 to 50°C	Resolution		<u> </u>			
Horizontal Direction R / Direction L = typ. 60° Direction R / Direction D = typ. 70°	Contrast	Typ. 6	00:1			
Vertical Direction U / Direction D = typ. 70° Direction U / Direction D = typ. 60°	Viewing angles					
Search S	Horizontal	Direction R / Direction L = typ. 60°	Direction R / Direction L = typ. 70°			
Type Brightness Typ. 500 cd/m² Half-brightness time ⁴) 50,000 h Touch screen Type AMT Technology Analog resistive Controller B&R, serial, 12-bit Transmittance 80% ± 3% Screen rotation Yes, using VC Electrical characteristics Nominal voltage 24 VDC -15% / +20% Max. power consumption ⁵) 15 W Reverse polarity protection Yes Operating conditions Installation at elevations above sea level 0 to 200 m Reduction of ambient temperature by 0.5°C per 100 m EN 60529 protection Back: IP20 Front: IP65 Environmental conditions Temperature Operation Vertical installation 0 to 50°C Vertical installation 0 to 50°C Vertical installation 0 to 50°C Storage 20 to 60°C Transport 2-20 to 60°C Relative humidity Operation See humidity diagram Storage See humidity diagram	Vertical	Direction U / Direction D = tvp. 70°				
Type Brightness Typ. 500 cd/m² Half-brightness time ⁴) 50,000 h Touch screen Type AMT Technology Analog resistive Controller B&R, serial, 12-bit Transmittance 80% ± 3% Screen rotation Yes, using VC Electrical characteristics Nominal voltage 24 VDC -15% / +20% Max. power consumption ⁵) 15 W Reverse polarity protection Yes Operating conditions Installation at elevations above sea level 0 to 200 m Reduction of ambient temperature by 0.5°C per 100 m EN 60529 protection Back: IP20 Front: IP65 Environmental conditions Temperature Operation Vertical installation 0 to 50°C Vertical installation 0 to 50°C Vertical installation 0 to 50°C Storage 20 to 60°C Transport 2-20 to 60°C Relative humidity Operation See humidity diagram Storage See humidity diagram	Backlight		Direction U / Direction D = typ. 60°			
Brightness Typ. 500 od/m² 50,000 h Half-brightness time ⁴) 50,000 h Touch screen Type AMT Type AMT Technology Analog resistive Controller B&R, serial, 12-bit Transmittance 80% ±3% Screen rotation Yes, using VC Electrical characteristics Pectod (Application) Nominal voltage 24 VDC -15% / +20% Max. power consumption ⁵0 15 W Reverse polarity protection Yes Operating conditions Percentage of the policy of the polic		January 2 - 2 - 2 - 2 - 2 - 2 - 2 - 2 - 2 - 2	Direction U / Direction D = typ. 60°			
Half-brightness time 4)	Type					
Touch screen AMT Technology Analog resistive Recommendation Amt Technology Analog resistive Recommendation		LEI)			
Type AMT Technology Analog resistive Controller B&R, serial, 12-bit Transmittance 80% ±3% Screen rotation Yes, using VC Electrical characteristics Nominal voltage Max. power consumption ⁶⁾ 15 W Reverse polarity protection Yes Operating conditions Installation at elevations above sea level No limitations 2000 m Reduction of ambient temperature by 0.5°C per 100 m EN 60529 protection Back: IP20 Environmental conditions Front: IP65 Environmental conditions Temperature Operation 0 to 50°C Vertical installation 0 to 50°C Vertical installation 0 to 50°C Storage -20 to 60°C Relative humidity Operation See humidity diagram Storage See humidity diagram	Brightness	LEI Typ. 500	Cd/m²			
Technology Analog resistive Controller B&R, serial, 12-bit Transmittance 80% ±3% Screen rotation Yes, using VC Electrical characteristics Nominal voltage 24 VDC -15% / +20% Max. power consumption 5) 15 W Reverse polarity protection Yes Operating conditions Installation at elevations above sea level level 0 to 2000 m > 2000 m Reduction of ambient temperature by 0.5°C per 100 m EN 60529 protection Back: IP20 Front: IP65 Front: IP65 Environmental conditions Front: IP65 Temperature Operation Horizontal installation 0 to 50°C Vertical installation 0 to 50°C Storage -20 to 60°C Transport -20 to 60°C Relative humidity Operation See humidity diagram Storage See humidity diagram	Brightness Half-brightness time ⁴⁾	LEI Typ. 500	Cd/m²			
Controller B&R, serial, 12-bit Transmittance 80% ±3% Screen rotation Yes Screen rotation Electrical characteristics Nominal voltage 24 VDC -15% / +20% Max. power consumption ⁵ 15 W Reverse polarity protection Yes Operating conditions Installation at elevations above sea level level No limitations > 2000 m Reduction of ambient temperature by 0.5°C per 100 m EN 60529 protection Back: IP20 Environmental conditions Front: IP65 Environmental conditions Operation Horizontal installation 0 to 50°C Vertical installation 0 to 50°C Storage -20 to 60°C Transport -20 to 60°C Relative humidity Operation See humidity diagram See humidity diagram Storage See humidity diagram	Brightness Half-brightness time 4) Touch screen	LEI Typ. 500 50,00	Cd/m²			
Transmittance 80% ±3% Screen rotation Yes, using VC Electrical characteristics Nominal voltage Max. power consumption ⁵ 15 W Reverse polarity protection Yes Operating conditions Installation at elevations above seal level Vestage 0 to 2000 m No limitations ≥ 2000 m Reduction of ambient temperature by 0.5°C per 100 m EN 60529 protection Back: IP20 Environmental conditions Front: IP65 Environmental installation O to 50°C Vertical installation 0 to 50°C Vertical installation 0 to 50°C Storage -20 to 60°C Transport -20 to 60°C Relative humidity See humidity diagram Operation See humidity diagram Storage See humidity diagram	Brightness Half-brightness time 4) Touch screen Type	LEI Typ. 500 50,00	Cd/m² 0 h			
Screen rotation Yes, using VC	Brightness Half-brightness time 4) Touch screen Type Technology	LEI Typ. 500 50,00 AM Analog re	C cd/m² 0 h T esistive			
See humidity See See See See See See See See See S	Brightness Half-brightness time 4) Touch screen Type Technology Controller	LEI Typ. 500 50,00 AM Analog re B&R, seria	C cd/m² 0 h T esistive			
Nominal voltage 24 VDC -15% / +20% Max. power consumption 5) 15 W Reverse polarity protection Yes Operating conditions Installation at elevations above sea level No limitations 0 to 2000 m No limitations > 2000 m Reduction of ambient temperature by 0.5°C per 100 m EN 60529 protection Back: IP20 Front: IP65 Environmental conditions Front: IP65 Temperature Operation Horizontal installation 0 to 50°C Vertical installation 0 to 50°C Storage -20 to 60°C Transport -20 to 60°C Relative humidity See humidity diagram Operation See humidity diagram Storage See humidity diagram	Brightness Half-brightness time 4) Touch screen Type Technology Controller Transmittance	LEI Typ. 500 50,00 AM Analog re B&R, seria 80% s	Cod/m² 0 h Tresistive al, 12-bit 3%			
Max. power consumption 5) 15 W Reverse polarity protection Yes Operating conditions Installation at elevations above seal level No limitations 0 to 2000 m No limitations > 2000 m Reduction of ambient temperature by 0.5°C per 100 m EN 60529 protection Back: IP20 Front: IP65 Environmental conditions Temperature Operation 0 to 50°C Vertical installation 0 to 50°C Vertical installation 0 to 50°C Vortical installation 0 to 60°C Storage -20 to 60°C Relative humidity See humidity diagram Storage See humidity diagram Storage See humidity diagram	Brightness Half-brightness time 4) Touch screen Type Technology Controller Transmittance Screen rotation	LEI Typ. 500 50,00 AM Analog re B&R, seria 80% s	Cod/m² 0 h Tresistive al, 12-bit 3%			
Reverse polarity protection Operating conditions Installation at elevations above sea level 0 to 2000 m No limitations >2000 m Reduction of ambient temperature by 0.5°C per 100 m EN 60529 protection Back: IP20 Front: IP65 Environmental conditions Temperature Operation Horizontal installation Vertical installation Vertical installation Transport Relative humidity Operation Storage Storage Storage Storage Storage Storage Storage Storage	Brightness Half-brightness time 4) Touch screen Type Technology Controller Transmittance Screen rotation Electrical characteristics	LEI Typ. 500 50,00 AM Analog re B&R, seria 80% s	Cod/m² 0 h Truesistive al, 12-bit 3% ang VC			
Operating conditions Installation at elevations above sea level 0 to 2000 m	Brightness Half-brightness time 4) Touch screen Type Technology Controller Transmittance Screen rotation Electrical characteristics Nominal voltage	LEI Typ. 500 50,00 AM Analog re B&R, seria 80% s Yes, usi	Cod/m² 0 h Truesistive al, 12-bit -3% ng VC			
Installation at elevations above sea level 0 to 2000 m No limitations >2000 m Reduction of ambient temperature by 0.5°C per 100 m EN 60529 protection Back: IP20 Front: IP65 Environmental conditions Temperature Operation Horizontal installation Vertical installation Storage Transport Relative humidity Operation Storage Storage Storage Storage Storage	Brightness Half-brightness time 4) Touch screen Type Technology Controller Transmittance Screen rotation Electrical characteristics Nominal voltage Max. power consumption 5)	LEI Typ. 500 50,00 AM Analog re B&R, seria 80% s Yes, usi	Cod/m² 0 h T esistive al, 12-bit -3% ng VC			
No limitations	Brightness Half-brightness time 4) Touch screen Type Technology Controller Transmittance Screen rotation Electrical characteristics Nominal voltage Max. power consumption 5) Reverse polarity protection	LEI Typ. 500 50,00 AM Analog re B&R, seria 80% s Yes, usi	Cod/m² 0 h T esistive al, 12-bit -3% ng VC			
0 to 2000 m >2000 m Reduction of ambient temperature by 0.5°C per 100 m EN 60529 protection Back: IP20 Front: IP65 Environmental conditions Temperature Operation Horizontal installation Vertical installation Vertical installation Storage Transport Relative humidity Operation Storage	Brightness Half-brightness time 4) Touch screen Type Technology Controller Transmittance Screen rotation Electrical characteristics Nominal voltage Max. power consumption 5) Reverse polarity protection Operating conditions	LEI Typ. 500 50,00 AM Analog re B&R, seria 80% s Yes, usi	Cod/m² 0 h T esistive al, 12-bit -3% ng VC			
>2000 m Reduction of ambient temperature by 0.5°C per 100 m EN 60529 protection Back: IP20 Front: IP65 Environmental conditions Temperature Operation Horizontal installation 0 to 50°C Vertical installation 0 to 50°C Storage -20 to 60°C Transport -20 to 60°C Relative humidity Operation See humidity diagram Storage See humidity diagram Storage See humidity diagram	Brightness Half-brightness time 4) Touch screen Type Technology Controller Transmittance Screen rotation Electrical characteristics Nominal voltage Max. power consumption 5) Reverse polarity protection Operating conditions Installation at elevations above sea	LEI Typ. 500 50,00 AM Analog re B&R, seria 80% s Yes, usi	Cod/m² 0 h T esistive al, 12-bit -3% ng VC			
EN 60529 protection Back: IP20 Front: IP65 Environmental conditions Temperature Operation Horizontal installation Vertical installation Vortical installation Storage Transport Relative humidity Operation Storage	Brightness Half-brightness time 4) Touch screen Type Technology Controller Transmittance Screen rotation Electrical characteristics Nominal voltage Max. power consumption 5) Reverse polarity protection Operating conditions Installation at elevations above sea level	LEI Typ. 500 50,00 AM Analog re B&R, seria 80% 3 Yes, usi 24 VDC -15 15 V Yes	C cd/m² O h T esistive al, 12-bit -3% ng VC			
Front: IP65	Brightness Half-brightness time 4) Touch screen Type Technology Controller Transmittance Screen rotation Electrical characteristics Nominal voltage Max. power consumption 5) Reverse polarity protection Operating conditions Installation at elevations above sea level 0 to 2000 m	LEI Typ. 500 50,00 AM Analog re B&R, serie 80% 3 Yes, usi 24 VDC -15 15 V Yes	Cocd/m² O h T Existive al, 12-bit a3% Ing VC % / +20% N S ations			
Environmental conditions Temperature Operation Horizontal installation 0 to 50°C Vertical installation 0 to 50°C Storage -20 to 60°C Transport -20 to 60°C Relative humidity See humidity diagram Storage See humidity diagram Storage See humidity diagram	Brightness Half-brightness time 4) Touch screen Type Technology Controller Transmittance Screen rotation Electrical characteristics Nominal voltage Max. power consumption 5) Reverse polarity protection Operating conditions Installation at elevations above sea level 0 to 2000 m >2000 m	LEI Typ. 500 50,00 AM Analog re B&R, serie 80% ± Yes, usi 24 VDC -15 15 \ Yes No limit Reduction of ambient tempe	Cocd/m² 0 h T esistive al, 12-bit e3% ng VC % / +20% N s ations rature by 0.5°C per 100 m			
Temperature Operation Horizontal installation 0 to 50°C Vertical installation 0 to 50°C Storage -20 to 60°C Transport -20 to 60°C Relative humidity See humidity diagram Storage See humidity diagram Storage See humidity diagram	Brightness Half-brightness time 4) Touch screen Type Technology Controller Transmittance Screen rotation Electrical characteristics Nominal voltage Max. power consumption 5) Reverse polarity protection Operating conditions Installation at elevations above sea level 0 to 2000 m	LEI Typ. 500 50,00 AM Analog re B&R, serie 80% ± Yes, usi 24 VDC -15 15 V Yes No limit Reduction of ambient tempe Back:	Cocd/m² O h T essistive al, 12-bit c3% ng VC % / +20% N s ations rature by 0.5°C per 100 m			
Operation 0 to 50°C Horizontal installation 0 to 50°C Vertical installation 0 to 50°C Storage -20 to 60°C Transport -20 to 60°C Relative humidity See humidity diagram Storage See humidity diagram Storage See humidity diagram	Brightness Half-brightness time 4) Touch screen Type Technology Controller Transmittance Screen rotation Electrical characteristics Nominal voltage Max. power consumption 5) Reverse polarity protection Operating conditions Installation at elevations above sea level 0 to 2000 m >2000 m EN 60529 protection	LEI Typ. 500 50,00 AM Analog re B&R, serie 80% ± Yes, usi 24 VDC -15 15 V Yes No limit Reduction of ambient tempe Back:	Cocd/m² O h T essistive al, 12-bit c3% ng VC % / +20% N s ations rature by 0.5°C per 100 m			
Horizontal installation 0 to 50°C Vertical installation 0 to 50°C Storage -20 to 60°C Transport -20 to 60°C Relative humidity See humidity diagram Storage See humidity diagram Storage See humidity diagram	Brightness Half-brightness time 4) Touch screen Type Technology Controller Transmittance Screen rotation Electrical characteristics Nominal voltage Max. power consumption 5) Reverse polarity protection Operating conditions Installation at elevations above sea level 0 to 2000 m >2000 m EN 60529 protection Environmental conditions	LEI Typ. 500 50,00 AM Analog re B&R, serie 80% ± Yes, usi 24 VDC -15 15 V Yes No limit Reduction of ambient tempe Back:	Cocd/m² O h T essistive al, 12-bit c3% ng VC % / +20% N s ations rature by 0.5°C per 100 m			
Vertical installation 0 to 50°C Storage -20 to 60°C Transport -20 to 60°C Relative humidity See humidity diagram Storage See humidity diagram Storage See humidity diagram	Brightness Half-brightness time 4) Touch screen Type Technology Controller Transmittance Screen rotation Electrical characteristics Nominal voltage Max. power consumption 5) Reverse polarity protection Operating conditions Installation at elevations above sea level 0 to 2000 m >2000 m EN 60529 protection	LEI Typ. 500 50,00 AM Analog re B&R, serie 80% ± Yes, usi 24 VDC -15 15 V Yes No limit Reduction of ambient tempe Back:	Cocd/m² O h T essistive al, 12-bit c3% ng VC % / +20% N s ations rature by 0.5°C per 100 m			
Vertical installation 0 to 50°C Storage -20 to 60°C Transport -20 to 60°C Relative humidity See humidity diagram Storage See humidity diagram Storage See humidity diagram	Brightness Half-brightness time 4) Touch screen Type Technology Controller Transmittance Screen rotation Electrical characteristics Nominal voltage Max. power consumption 5) Reverse polarity protection Operating conditions Installation at elevations above sea level 0 to 2000 m >2000 m EN 60529 protection Environmental conditions Temperature	LEI Typ. 500 50,00 AM Analog re B&R, serie 80% ± Yes, usi 24 VDC -15 15 V Yes No limit Reduction of ambient tempe Back:	Cocd/m² O h T essistive al, 12-bit c3% ng VC % / +20% N s ations rature by 0.5°C per 100 m			
Storage -20 to 60°C Transport -20 to 60°C Relative humidity See humidity diagram Storage See humidity diagram Storage See humidity diagram	Brightness Half-brightness time 4) Touch screen Type Technology Controller Transmittance Screen rotation Electrical characteristics Nominal voltage Max. power consumption 5) Reverse polarity protection Operating conditions Installation at elevations above sea level 0 to 2000 m > 2000 m EN 60529 protection Environmental conditions Temperature Operation	LEI Typ. 500 50,00 AM Analog re B&R, serie 80% : Yes, usi 24 VDC -15 15 V Yes No limit Reduction of ambient tempe Back: Front:	Cocd/m² O h T Sesistive al, 12-bit 33% ang VC % / +20% N S attions rature by 0.5°C per 100 m IP20 IP65			
Transport -20 to 60°C Relative humidity Operation See humidity diagram Storage See humidity diagram	Brightness Half-brightness time 4) Touch screen Type Technology Controller Transmittance Screen rotation Electrical characteristics Nominal voltage Max. power consumption 5) Reverse polarity protection Operating conditions Installation at elevations above sea level 0 to 2000 m >2000 m EN 60529 protection Environmental conditions Temperature Operation Horizontal installation	LEI Typ. 500 50,00 AM Analog re B&R, seria 80% s Yes, usi 24 VDC -15 15 V Yes No limit Reduction of ambient tempe Back: Front:	Cocd/m² O h T Sesistive al, 12-bit .3% ng VC % / +20% N S ations rature by 0.5°C per 100 m IP20 IP65			
Relative humidity Operation Storage See humidity diagram See humidity diagram	Brightness Half-brightness time 4) Touch screen Type Technology Controller Transmittance Screen rotation Electrical characteristics Nominal voltage Max. power consumption 5) Reverse polarity protection Operating conditions Installation at elevations above sea level 0 to 2000 m >2000 m EN 60529 protection Environmental conditions Temperature Operation Horizontal installation Vertical installation	LEI Typ. 500 50,00 AM Analog re B&R, seria 80% 3 Yes, usi 24 VDC -15 15 V Yes No limit Reduction of ambient tempe Back: Front:	Cocd/m² O h T Desistive al, 12-bit -3% Ing VC W / +20% N S Pations rature by 0.5°C per 100 m IP20 IP65 O°C O°C			
Operation See humidity diagram Storage See humidity diagram	Brightness Half-brightness time 4) Touch screen Type Technology Controller Transmittance Screen rotation Electrical characteristics Nominal voltage Max. power consumption 5) Reverse polarity protection Operating conditions Installation at elevations above sea level 0 to 2000 m > 2000 m EN 60529 protection Environmental conditions Temperature Operation Horizontal installation Vertical installation Storage	LEI Typ. 500 50,00 AM Analog re B&R, seria 80% 3 Yes, usi 24 VDC -15 15 V Yes No limit Reduction of ambient tempe Back: Front:	Cocd/m² O h T Desistive al, 12-bit a3% Ing VC W / +20% N S attions rature by 0.5°C per 100 m IP20 IP65 O°C O°C O°C O°C O°C O°C			
Storage See humidity diagram	Brightness Half-brightness time 4) Touch screen Type Technology Controller Transmittance Screen rotation Electrical characteristics Nominal voltage Max. power consumption 5) Reverse polarity protection Operating conditions Installation at elevations above sea level 0 to 2000 m >2000 m EN 60529 protection Environmental conditions Temperature Operation Horizontal installation Vertical installation Storage Transport	LEI Typ. 500 50,00 AM Analog re B&R, seria 80% 3 Yes, usi 24 VDC -15 15 V Yes No limit Reduction of ambient tempe Back: Front:	Cocd/m² O h T Existive al, 12-bit -3% Ing VC % / +20% N S attions rature by 0.5°C per 100 m IP20 IP65 O°C O°C O°C O°C O°C			
	Brightness Half-brightness time 4) Touch screen Type Technology Controller Transmittance Screen rotation Electrical characteristics Nominal voltage Max. power consumption 5) Reverse polarity protection Operating conditions Installation at elevations above sea level 0 to 2000 m >2000 m EN 60529 protection Environmental conditions Temperature Operation Horizontal installation Vertical installation Storage Transport Relative humidity	LEI Typ. 500 50,00 AM Analog re B&R, seria 80% 3 Yes, usi 24 VDC -15 15 V Yes No limit Reduction of ambient tempe Back: Front: 0 to 5 0 to 5 -20 to 6 -20 to 6	Cocd/m² O h T Existive all, 12-bit a3% Ing VC % / +20% N S ations rature by 0.5°C per 100 m IP20 IP65 O°C O°C O°C O°C O°C O°C O°C O°C O°C O°			
Transport See humidity diagram	Brightness Half-brightness time 4) Touch screen Type Technology Controller Transmittance Screen rotation Electrical characteristics Nominal voltage Max. power consumption 5) Reverse polarity protection Operating conditions Installation at elevations above sea level 0 to 2000 m >2000 m Environmental conditions Temperature Operation Horizontal installation Vertical installation Storage Transport Relative humidity Operation	LEI Typ. 500 50,00 AM Analog re B&R, serie 80% 3 Yes, usi 24 VDC -15 15 V Yes No limit Reduction of ambient tempe Back: Front: 0 to 5 0 to 5 -20 to 6 -20 to 6 -20 to 6 See humidit	Cod/m² O h T Desistive al, 12-bit e3% Ing VC % / +20% N S ations rature by 0.5°C per 100 m IP20 IP65 O°C O°C O°C O°C O°C O°C O°C O°C O°C O°			

Table 21: 4PPC70.0702-20W, 4PPC70.0702-20B, 4PPC70.070M-20W, 4PPC70.070M-20B - Technical data

Product ID	4PPC70.0702-20W	4PPC70.0702-20B	4PPC70.070M-20W	4PPC70.070M-20B
Mechanical characteristics				
Note	Order terminal blocks	1x 0TB5104.2110-01, 1x 0TB	6102.2010-01 and 1x 0TB610	2.2110-01 separately
Front				
Design	Aluminum white pinstripe	Anthracite gray pinstripe	Aluminum white pinstripe	Anthracite gray pinstripe
Dimensions				
Width	197 mm 140 mm			mm
Height	140 mm 197 mm			
Depth	51 mm			
Weight	0.65 kg			

Table 21: 4PPC70.0702-20W, 4PPC70.0702-20B, 4PPC70.070M-20W, 4PPC70.070M-20B - Technical data

- 1) The real-time clock is buffered for approx. 1000 hours @ 25°C by a gold foil capacitor. The gold foil capacitor is completely charged after 18 continuous hours of operation.
- 2) Shortest cycle time that is suitable for average applications. In certain cases, it is also possible to use shorter cycle times. The limit for the setting is specified in the entry for the shortest task class cycle time.
- 3) See the POWERLINK help system under "General information, Hardware IF/LS".
- 4) At an ambient temperature of 25°C.
- Remote stations connected via X2X Link, CAN bus, POWERLINK and Ethernet. Both USB interfaces are used.

2.2.4.2.2.2 Technical data 4PPC70.070x-21x

Product ID	4PPC70.0702-21W	4PPC70.0702-21B	4PPC70.070M-21W	4PPC70.070M-21B	
General information				111010101111111111111111111111111111111	
Cooling		Fa	nless		
LED status indicators	Supply voltage OK, operating status, module status, Ethernet, POWERLINK, CAN Rx/Tx			JK CAN Ry/Ty	
B&R ID code	0xE56A	0xE56E	0xE572	0xE576	
	UXLJUA	UXLSUL	UXL372	UXE370	
System requirements Automation Studio		4 4 4 27	E or higher		
	4.1.4.375 or higher				
Automation Runtime			or higher		
Support of X20SLX modules		B4 0	r higher	_	
LED status indicators					
Quantity			9		
Power button			No		
Reset button		`	Yes		
Controller redundancy				_	
Master capability			No		
Buzzer			Yes		
ACOPOS capability			Yes		
				_	
Visual Components support			Yes	_	
Electrical isolation			-		
IF1 - IF2			Yes		
IF1 - IF3			Yes		
IF1 - IF4			Yes		
IF1 - IF5		`	Yes		
IF1 - IF6		`	Yes		
IF1 - IF7		`	Yes		
IF2 - IF3		•	Yes		
IF2 - IF4		•	Yes		
IF2 - IF5		•	Yes		
IF2 - IF6			Yes		
IF2 - IF7			Yes		
IF3 - IF4			No		
IF3 - IF5			Yes		
IF3 - IF6			No		
IF3 - IF7			No		
IF4 - IF5			Yes		
IF4 - IF6			No		
IF4 - IF7			No		
IF5 - IF6		`	Yes		
IF5 - IF7		`	Yes		
IF6 - IF7			No		
PLC - IF1		`	Yes		
PLC - IF2		•	Yes		
PLC - IF3			No		
PLC - IF4			No		
PLC - IF5			Yes		
PLC - IF6			No		
PLC - IF7			No	_	
Certification			Van		
CE			Yes		
cULus			Yes		
GOST-R		`	Yes		
Controller					
Boot loader		Automation R	Runtime AR 4.08		
CompactFlash slot			0		
DRAM		25	6 MB		
Real-time clock 1)	_		olution 1 s		
FPU	_	· · · · · · · · · · · · · · · · · · ·	Yes	_	
Processor					
		احلما	E620T		
Type			E620T		
Clock frequency		333 MHZ	compatibility		
L1 cache		_	4 LD		
Data code			4 kB		
Program code		33	2 kB		
L2 cache			-		
Cooling	Passive				
Mode/Node switches	No				
Remanent variables	32 kB				
Typical shortest task class cycle time			ms ²⁾		
Shortest task class cycle time	_		4 ms		
Typical instruction cycle time		0.0)1 μs	_	

Table 22: 4PPC70.0702-21W, 4PPC70.0702-21B, 4PPC70.070M-21W, 4PPC70.070M-21B - Technical data

Product ID	4PPC70.0702-21W 4PPC70.0702-21B 4PPC70.070M-21W 4PPC70.070M-21	В	
Program memory		_	
Type	2 GB eMMC flash memory		
Data retention	10 years		
Writable data amount	.e yeare		
Guaranteed	40 TB		
Results for 5 years	21.9 GB/day		
Guaranteed clear/write cycles	20,000		
Error correction coding (ECC)	Yes		
Temperature cutoff	Yes, at >88°C		
Interfaces	160, 01 00 0		
IF1 interface			
Fieldbus	POWERLINK managing or controlled node		
Type	Type 4 ³⁾		
Design	1x RJ45 shielded		
Cable length	Max. 100 m between 2 nodes (segment length)		
Max. transfer rate	100 Mbit/s		
Transmission			
Physical layer	100BASE-T		
Half-duplex	Yes		
Full-duplex	No		
Autonegotiation	Yes		
Auto-MDI / MDIX	Yes		
IF2 interface			
Туре	Ethernet		
Design	1x RJ45 shielded		
Cable length	Max. 100 m between 2 nodes (segment length)		
Max. transfer rate	10/100 Mbit/s		
Transmission			
Physical layer	10BASE-T/100BASE-TX		
Half-duplex	Yes		
Full-duplex	Yes		
Autonegotiation	Yes		
Auto-MDI / MDIX	Yes		
IF3 interface			
Туре	USB 2.0		
Design	Type A		
Current load	0.49 A		
IF4 interface			
Туре	USB 2.0		
Design	Type A		
Current load	0.10 A		
IF5 interface			
Туре	X2X Link master		
IF6 interface			
Туре	CAN bus		
Design	3 pins of the 6-pin multipoint connector		
Max. distance	1000 m		
Max. transfer rate			
Bus length ≤25 m	1 Mbit/s		
Bus length ≤60 m	500 kbit/s		
Bus length ≤200 m	250 kbit/s		
Bus length ≤1000 m	50 kbit/s		
IF7 interface			
Туре	CAN bus		
Design	3 pins of the 6-pin multipoint connector		
Max. distance	1000 m		
Max. transfer rate			
Bus length ≤25 m	1 Mbit/s		
Bus length ≤60 m	500 kbit/s		
Bus length ≤200 m	250 kbit/s		
Bus length ≤1000 m	50 kbit/s		
Display			
Туре	Color TFT		
Display size	7"		
Colors	262,000 / 16.2 M		
Resolution	WVGA, 800 x 480 pixels WVGA, 480 x 800 pixels		
Contrast	Тур. 600:1		
Viewing angles			
Horizontal	Direction R / Direction L = typ. 60° Direction R / Direction L = typ. 70°		
Vertical	Direction U / Direction D = typ. 70° Direction U / Direction D = typ. 60°		
Backlight			
Type	LED		
Brightness	Typ. 500 cd/m ²		
Half-brightness time 4)	50,000 h		
	JU,000 II		

Table 22: 4PPC70.0702-21W, 4PPC70.0702-21B, 4PPC70.070M-21W, 4PPC70.070M-21B - Technical data

Product ID	4PPC70.0702-21W	4PPC70.0702-21B	4PPC70.070M-21W	4PPC70.070M-21B
Touch screen				
Туре		1A	MT	
Technology		Analog	resistive	
Controller		B&R, ser	rial, 12-bit	
Transmittance		80%	±3%	
Screen rotation		Yes, us	sing VC	
Electrical characteristics				
Nominal voltage		24 VDC -1	5% / +20%	
Max. power consumption 5)		15	5 W	
Reverse polarity protection		Y	es	
Operating conditions				
Installation at elevations above sea level				
0 to 2000 m		No lim	itations	
>2000 m		Reduction of ambient temp	perature by 0.5°C per 100 m	
EN 60529 protection		Back	: IP20	
		Front	:: IP65	
Environmental conditions				
Temperature				
Operation				
Horizontal installation			50°C	
Vertical installation			50°C	
Storage			60°C	
Transport		-20 to	0 60°C	
Relative humidity				
Operation			lity diagram	
Storage			lity diagram	
Transport		See humid	lity diagram	
Mechanical characteristics				
Note	Order terminal blocks 1x 0TB5104.2110-01, 1x 0TB5106.2110-01, 1x 0TB6102.2010-01 and 1x 0TB6102.2110-01 separately			
Front				
Design	Aluminum white pinstripe	Anthracite gray pinstripe	Aluminum white pinstripe	Anthracite gray pinstripe
Dimensions				
Width	197 mm 140 mm			
Height	140 mm 197 mm		mm	
Depth	51 mm			
Weight	0.65 kg			

Table 22: 4PPC70.0702-21W, 4PPC70.0702-21B, 4PPC70.070M-21W, 4PPC70.070M-21B - Technical data

- 1) The real-time clock is buffered for approx. 1000 hours @ 25°C by a gold foil capacitor. The gold foil capacitor is completely charged after 18 continuous hours of operation.
- 2) Shortest cycle time that is suitable for average applications. In certain cases, it is also possible to use shorter cycle times. The limit for the setting is specified in the entry for the shortest task class cycle time.
- 3) See the POWERLINK help system under "General information, Hardware IF/LS".
- 4) At an ambient temperature of 25°C.
- 5) Remote stations connected via X2X Link, CAN bus, POWERLINK and Ethernet. Both USB interfaces are used.

2.2.4.2.2.3 Technical data 4PPC70.070x-22x

Product ID	4PPC70.0702-22W	4PPC70.0702-22B	4PPC70.070M-22W	4PPC70.070M-22B	
General information	5.0.0.02 22.0				
Cooling		Far	nless		
LED status indicators	Supply voltage OK one		, Ethernet, POWERLINK, CAN	J Ry/Ty RS232 Ry/Ty	
B&R ID code	0xE56B	0xE56F	0xE573	0xE577	
	OXESOB	UXE301	UXL373	UXE377	
System requirements Automation Studio		4 4 4 275	or bighor		
	4.1.4.375 or higher				
Automation Runtime			or higher		
Support of X20SLX modules		B4 or	higher	_	
LED status indicators					
Quantity		!	9		
Power button			10		
Reset button		Y	es		
Controller redundancy					
Master capability		1	lo		
Buzzer		Y	es		
ACOPOS capability			es		
Visual Components support			es	-	
Electrical isolation		'			
		V			
IF1 - IF2			es		
IF1 - IF3			es		
IF1 - IF4			es		
IF1 - IF5			es		
IF1 - IF6			es		
IF1 - IF8			es		
IF2 - IF3			es		
IF2 - IF4		Y	es		
IF2 - IF5		Y	es		
IF2 - IF6		Y	es		
IF2 - IF8		Y	es		
IF3 - IF4		N	lo		
IF3 - IF5		Y	es		
IF3 - IF6		N	1 0		
IF3 - IF8		N	10		
IF4 - IF5			es		
IF4 - IF6			10		
IF4 - IF8			lo		
IF5 - IF6			es		
IF5 - IF8			es		
1F6 - IF8			es 10		
PLC - IF1			es		
PLC - IF2			es		
PLC - IF3			√o		
PLC - IF4			No		
PLC - IF5			es		
PLC - IF6		l l	lo		
PLC - IF8		N	10		
Certification					
CE		Y	es		
cULus		Y	es		
GOST-R		Y	es		
Controller					
Boot loader		Automation Ri	untime AR 4.08		
CompactFlash slot			0		
DRAM			S MB	_	
Real-time clock 1)	_				
	Yes, resolution 1 s				
FPU	_	Y	es		
Processor					
Type			E620T		
Clock frequency		333 MHz o	compatibility		
L1 cache					
Data code			kB		
Program code	32 kB				
L2 cache			-		
Cooling	Passive				
Mode/Node switches	No No				
Remanent variables	32 kB				
Typical shortest task class cycle time	32 KB 1 ms ²⁾				
Shortest task class cycle time			· ms 1 μs		
Typical instruction cycle time					

 $Table\ 23:\ 4PPC70.0702-22W,\ 4PPC70.0702-22B,\ 4PPC70.070M-22W,\ 4PPC70.070M-22B\ -\ Technical\ data$

Product ID	4PPC70.0702-22W 4PPC70.0702	2-22B 4PPC70.070M-22W 4PPC70.070M-22B		
Program memory				
Туре	2	GB eMMC flash memory		
Data retention		10 years		
Writable data amount	io years			
Guaranteed		40 TB		
Results for 5 years		21.9 GB/day		
_				
Guaranteed clear/write cycles		20,000		
Error correction coding (ECC)		Yes		
Temperature cutoff		Yes, at >88°C		
Interfaces				
IF1 interface				
Fieldbus	POWERL	NK managing or controlled node		
Туре		Type 4 ³⁾		
Design		1x RJ45 shielded		
Cable length	Max 100 m	between 2 nodes (segment length)		
Max. transfer rate	Max. 100 III	100 Mbit/s		
Transmission		100 100103		
		400DACE TV		
Physical layer		100BASE-TX		
Half-duplex		Yes		
Full-duplex		No		
Autonegotiation		Yes		
Auto-MDI / MDIX		Yes		
IF2 interface				
Туре		Ethernet		
Design		1x RJ45 shielded		
Cable length	May 100 m	between 2 nodes (segment length)		
Max. transfer rate	IVIAX. 100 III	10/100 Mbit/s		
Transmission		TOT TOO IVIDIUS		
		ODACE THOODACE TV		
Physical layer	1	0BASE-T/100BASE-TX		
Half-duplex		Yes		
Full-duplex		Yes		
Autonegotiation		Yes		
Auto-MDI / MDIX		Yes		
IF3 interface				
Туре		USB 2.0		
Design		Type A		
Current load		0.49 A		
IF4 interface		567.		
Type		USB 2.0		
= = =				
Design		Type A		
Current load		0.10 A		
IF5 interface				
Туре		X2X Link master		
IF6 interface				
Туре		CAN bus		
Design	3 pins of	f the 6-pin multipoint connector		
Max. distance		1000 m		
Max. transfer rate				
Bus length ≤25 m		1 Mbit/s		
Bus length ≤60 m		500 kbit/s		
Bus length ≤200 m		250 kbit/s		
		50 kbit/s		
Bus length ≤1000 m	 	JU KUIVS		
IF8 interface		D0000		
Туре		RS232		
Design	3 pins of	f the 6-pin multipoint connector		
Max. distance		900 m		
Transfer rate		Max. 115.2 kbit/s		
Display				
Туре		Color TFT		
Display size	7"			
Colors	262,000 / 16.2 M			
Resolution				
	WVVGA, OUU X 48U PIXEIS	WVGA, 480 x 800 pixels		
Contrast		Typ. 600:1		
Viewing angles		ı		
Horizontal	Direction R / Direction L = typ. 60°	Direction R / Direction L = typ. 70°		
Vertical	Direction U / Direction D = typ. 70°	Direction U / Direction D = typ. 60°		
Backlight				
Type	LED			
Brightness	Typ. 500 cd/m ²			
_				
Half-brightness time 4)	50,000 h			
Touch screen				
Type	AMT			
Technology	Analog resistive			
Controller		B&R, serial, 12-bit		
Transmittance		80% ±3%		
	OU70 I370			

 $Table\ 23:\ 4PPC70.0702-22W,\ 4PPC70.0702-22B,\ 4PPC70.070M-22W,\ 4PPC70.070M-22B\ -\ Technical\ data$

Product ID	4PPC70.0702-22W	4PPC70.0702-22B	4PPC70.070M-22W	4PPC70.070M-22B
Screen rotation		Yes, u	sing VC	
Electrical characteristics				
Nominal voltage		24 VDC -1	5% / +20%	
Max. power consumption 5)		15	5 W	
Reverse polarity protection		Y	es	
Operating conditions				
Installation at elevations above sea level				
0 to 2000 m		No lim	itations	
>2000 m		Reduction of ambient temp	perature by 0.5°C per 100 m	
EN 60529 protection			:: IP20 :: IP65	
Environmental conditions				
Temperature				
Operation				
Horizontal installation		0 to	50°C	
Vertical installation		0 to	50°C	
Storage		-20 to 60°C		
Transport	-20 to 60°C			
Relative humidity				
Operation			lity diagram	
Storage			lity diagram	
Transport		See humic	lity diagram	
Mechanical characteristics				
Note	Order terminal blocks 1x 0TB5104.2110-01, 1x 0TB5106.2110-01, 1x 0TB6102.2010-01 and 1x 0TB6102.2110-01 separately			01,
Front				
Design	Aluminum white pinstripe	Anthracite gray pinstripe	Aluminum white pinstripe	Anthracite gray pinstripe
Dimensions				
Width	197 mm 140 mm			
Height	140 mm 197 mm			
Depth	51 mm			
Weight		0.6	5 kg	

Table 23: 4PPC70.0702-22W, 4PPC70.0702-22B, 4PPC70.070M-22W, 4PPC70.070M-22B - Technical data

- 1) The real-time clock is buffered for approx. 1000 hours @ 25°C by a gold foil capacitor. The gold foil capacitor is completely charged after 18 continuous hours of operation.
- 2) Shortest cycle time that is suitable for average applications. In certain cases, it is also possible to use shorter cycle times. The limit for the setting is specified in the entry for the shortest task class cycle time.
- 3) See the POWERLINK help system under "General information, Hardware IF/LS".
- 4) At an ambient temperature of 25°C.
- S) Remote stations connected via X2X Link, CAN bus, POWERLINK and Ethernet. Both USB interfaces are used.

2.2.4.2.2.4 Technical data 4PPC70.070x-23x

Committed Information	Product ID	4PPC70.0702-23W	4PPC70.0702-23B	4PPC70.070M-23W	4PPC70.070M-23B	
LED status indicators	General information					
BAR Doctor Doct	Cooling	Fanless				
System requirements	LED status indicators	Supply voltage OK, op	perating status, module status	s, Ethernet, POWERLINK, CA	N Rx/Tx, RS485 Rx/Tx	
Automation Studio Automation Funtime Support of X20SLX modules ED status includers Ountity 9 Power button No Reset button No Reset button Master capability No Suzzer Wes Suzzer Ves Suzzer Suzzer Ves	B&R ID code	0xE56C	0xE570	0xE574	0xE578	
Automation Runtime Support of XSQLX modules LED status indicators Quantity Quantity Quantity Quantity Quantity Quantity No Buzzer Pees Reste button Rocord Controller redundancy Master capability No Buzzer Quantity Nes Rester Controller redundancy Master capability No Buzzer Pees Rest button Quantity Nes Rest Education Rester Components support Rester Co	System requirements				,	
Support of X2SSL modules ELB of shighter for the shighter of X2SSL modules Section	Automation Studio		4.1.4.375	or higher		
LED datas indicators	Automation Runtime		K4.08 d	or higher		
Quantity 9 Reset button No Reset button Yes Controllier redundancy Master capability No Buzzer Yes ACOPOS capability Yes Visual Components support Yes Electrical solation FIF1-F2 IF1-IF2 Yes IF1-IF3 Yes IF1-IF6 Yes IF1-IF7 Yes IF1-IF6 Yes IF1-IF7 Yes IF1-IF8 Yes IF1-IF9 Yes IF2-IF3 Yes IF2-IF6 Yes IF2-IF7 Yes IF2-IF8 Yes IF2-IF9 Yes IF2-IF9 Yes IF3-IF6 No IF3-IF6 No IF3-IF6 No IF3-IF6 No IF3-IF9 Yes IF4-IF6 Yes IF4-IF6 Yes IF6-IF9 No	Support of X20SLX modules		B4 or	higher	_	
Power button No Reset button Yes	LED status indicators					
Reset button Controller redundency Master capability	Quantity	_		9	_	
Controller redundancy	Power button		١	Ю		
Master capability	Reset button		Y	'es		
Buzzer Yes	Controller redundancy					
ACOPOS capability Was Wasial Components support Electrical isolation IF 1 - IF2 IF 1 - IF3 IF 1 - IF3 IF 1 - IF4 IF 1 - IF5 IF 1 - IF5 IF 1 - IF6 IF 1 - IF7 IF 1 - IF7 IF 2 - IF7 IF 3 - IF7 IF 3 - IF7 IF 4 - IF7 IF 5 - IF7 IF 6 - IF7 IF 7 - IF7 IF 8 - IF7 IF 8 - IF7 IF 9	Master capability		1	No.		
Visual Components support Yes Lief - Isi2 Yes Iff - Isi2 Yes Iff - Isi2 Yes Iff - Isi3 Yes Iff - Isi4 Yes Iff - Isi6 Yes Iff - Isi7 Yes <td>Buzzer</td> <td></td> <td>Y</td> <td>es es</td> <td></td>	Buzzer		Y	es es		
Electrical Isolation	ACOPOS capability	_	Y	es		
IF1 - IF2	Visual Components support	_	Y	es		
IF1 - IF3						
IF1 - IF4	IF1 - IF2		Y	es		
Fi -	IF1 - IF3					
F1 - F5	IF1 - IF4					
FI - FP	IF1 - IF5		Y	'es		
FI - FP			Y	es		
F2 - F4			Y	'es		
F2 - F5	IF2 - IF3		Y	es		
IF2 - IF6	IF2 - IF4		Y	es		
IF2 - IF9	IF2 - IF5		Y	'es		
IF3 - IF4	IF2 - IF6		Y	'es		
IF3 - IF5	IF2 - IF9		Y	'es		
IF3 - IF6	IF3 - IF4		1	No.		
IF3 F9	IF3 - IF5		Y	'es		
IF4 - IF5	IF3 - IF6		1	No.		
IF4	IF3 - IF9		1	No.		
IF5 - IF6	IF4 - IF5		Y	'es		
IF5 - IF9	IF4 - IF6		1	No.		
IF6 - IF9	IF5 - IF6		Y	'es		
PLC - IF1 Yes PLC - IF2 Yes PLC - IF3 No PLC - IF4 No PLC - IF5 Yes PLC - IF6 No PLC - IF9 No Certification Yes CE Yes cULus Yes GOST-R Yes Cothtroller Ves Boot loader Automation Runtime AR 4.08 CompactFlash slot 0 DPAM 256 MB Real-time clock ¹⁾ Yes, resolution 1 s FPU Yes Processor Type Clock frequency 333 MHz compatibility L1 cache 24 kB Program code 24 kB L2 cache - Cooling Passive Mode/Node switches No Remanent variables No Typical shortest task class cycle time 1 ms ² Shortest task class cycle time 0.4 ms	IF5 - IF9		Y	es		
PLC - IF2 Yes PLC - IF3 No PLC - IF4 No PLC - IF5 Yes PLC - IF9 No PLC - IF9 No Certification Ves CE Yes GULus Yes GOST-R Yes Compact Flash slot 0 DRAM 256 MB Real-time clock 10 Yes, resolution 1 s FPU Yes Processor Intel E620T Clock frequency 1 stel E620T L1 cache 24 kB Data code 24 kB Program code 32 kB L2 cache - Cooling Passive Mode/Node switches No Remanent variables No Typical shortest task class cycle time 1 ms 20 Shortest task class cycle time 0.4 ms	IF6 - IF9		1	No.		
PLC - IF3 No PLC - IF4 No PLC - IF5 Yes PLC - IF6 No PLC - IF9 No PLC - IF9 No Cettification Tes CE Yes GOST-R Yes Controller Boot loader Automation Runtime AR 4.08 CompactFlash slot 0 DRAM 256 MB Real-time clock ⁽¹⁾ Yes, resolution 1 s FPU Yes Processor Intel E620T Clock frequency 333 MHz compatibility L1 cache 24 kB Pagam code 24 kB L2 cache - Cooling Passive Mode/Node switches No Remanent variables 32 kB Typical shortest task class cycle time 0.4 ms	PLC - IF1		Y	es		
PLC - IF4 No PLC - IF6 Yes PLC - IF9 No Certification Yes CE Yes cULus Yes GOST-R Yes Boot loader Automation Runtime AR 4.08 CompactFlash slot 0 DRAM 256 MB Real-time clock ¹⁾ Yes, resolution 1 s FPU Yes Processor Intel E620T Clock frequency 333 MHz compatibility L1 cache 24 kB Data code 24 kB Program code 32 kB L2 cache - Cooling Passive Mode/Node switches No Remanent variables 32 kB Typical shortest task class cycle time 0.4 ms			Y	es		
PLC - IF5 Yes PLC - IF9 No Certification Tyes CE Yes GULUs Yes GOST-R Yes Controller Boot loader Automation Runtime AR 4.08 CompactFlash slot 0 DRAM 256 MB Real-time clock **) Yes FPU Yes Processor Intel E620T Clock frequency 333 MHz compatibility L1 cache 24 kB Data code 24 kB Program code 32 kB L2 cache - Cooling Passive Mode/Node switches No Remanent variables 32 kB Typical shortest task class cycle time 1 ms ²⁾ Shortest task class cycle time 0.4 ms			1	No		
PLC - IF6 No PLC - IF9 No Certification Xes CE Yes cULus Yes GOST-R Yes Controller Boot loader Automation Runtime AR 4.08 CompactFlash slot 0 DRAM 256 MB Real-time clock ¹) Yes, resolution 1 s FPU Yes Processor Intel E620T Clock frequency 333 MHz compatibility L1 cache 24 kB Data code 24 kB Program code 32 kB L2 cache - Cooling Passive Mode/Node switches No Remanent variables 32 kB Typical shortest task class cycle time 1 ms ²) Shortest task class cycle time 0.4 ms			1	No		
PLC - IF9 No Certification Yes CE Yes cULus Yes GOST-R Yes Controller Boot loader Automation Runtime AR 4.08 CompactFlash slot 0 DRAM 256 MB Real-time clock ¹¹) Yes, resolution 1 s FPU Yes Processor 1ntel E620T Clock frequency 333 MHz compatibility L1 cache 24 kB Program code 32 kB L2 cache - Cooling Passive Model/Node switches No Remanent variables 32 kB Typical shortest task class cycle time 1 ms ²¹ Shortest task class cycle time 0.4 ms						
Cet Yes cULus Yes GOST-R Yes Controller Boot loader Automation Runtime AR 4.08 CompactFlash slot 0 DRAM 256 MB Real-time clock ¹) Yes, resolution 1 s FPU Yes Processor Yes Type Intel E620T Clock frequency 333 MHz compatibility L1 cache 24 kB Program code 24 kB L2 cache - Cooling Passive Mode/Node switches No Remanent variables 32 kB Typical shortest task class cycle time 1 ms ²¹ Shortest task class cycle time 0.4 ms	l l					
CE cULus Yes GOST-R Yes Controller Boot loader Automation Runtime AR 4.08 CompactFlash slot 0 DRAM 256 MB Real-time clock ¹¹ Yes, resolution 1 s FPU Yes Processor Intel E620T Clock frequency 333 MHz compatibility L1 cache 24 kB Program code 32 kB L2 cache - Cooling Passive Mode/Node switches No Remanent variables 32 kB Typical shortest task class cycle time 1 ms ² Shortest task class cycle time 0.4 ms	PLC - IF9			No .	_	
CULUS GOST-R Yes Yes Controller Boot loader Automation Runtime AR 4.08 CompactFlash slot 0 DRAM 256 MB Real-time clock ¹¹ Yes, resolution 1 s FPU Yes Processor Intel E620T Clock frequency 333 MHz compatibility L1 cache 24 kB Program code 32 kB L2 cache - Cooling Passive Mode/Node switches No Remanent variables 32 kB Typical shortest task class cycle time 1 ms ²¹ Shortest task class cycle time 0.4 ms						
GOST-R Yes Controller Automation Runtime AR 4.08 CompactFlash slot 0 DRAM 256 MB Real-time clock ¹) Yes, resolution 1 s FPU Yes Processor Intel E620T Clock frequency 333 MHz compatibility L1 cache 24 kB Program code 32 kB L2 cache - Cooling Passive Mode/Node switches No Remanent variables 32 kB Typical shortest task class cycle time 1 ms ²) Shortest task class cycle time 0.4 ms						
Controller Boot loader Automation Runtime AR 4.08 CompactFlash slot 0 DRAM 256 MB Real-time clock ¹) Yes, resolution 1 s FPU Yes Processor Type Clock frequency 333 MHz compatibility L1 cache 24 kB Program code 24 kB Program code 32 kB L2 cache - Cooling Passive Mode/Node switches No Remanent variables 32 kB Typical shortest task class cycle time 1 ms ²¹ Shortest task class cycle time 0.4 ms						
Boot loader Automation Runtime AR 4.08 CompactFlash slot 0 DRAM 256 MB Real-time clock ¹) Yes, resolution 1 s FPU Yes Processor Intel E620T Clock frequency 333 MHz compatibility L1 cache 24 kB Program code 32 kB L2 cache - Cooling Passive Mode/Node switches No Remanent variables 32 kB Typical shortest task class cycle time 1 ms ²) Shortest task class cycle time 0.4 ms	l l		Y	es		
CompactFlash slot 0 DRAM 256 MB Real-time clock ¹) Yes, resolution 1 s FPU Yes Processor Intel E620T Clock frequency 333 MHz compatibility L1 cache 24 kB Program code 32 kB L2 cache - Cooling Passive Mode/Node switches No Remanent variables 32 kB Typical shortest task class cycle time 1 ms ²) Shortest task class cycle time 0.4 ms						
DRAM 256 MB Real-time clock ¹) Yes, resolution 1 s FPU Yes Processor Intel E620T Clock frequency 333 MHz compatibility L1 cache 24 kB Program code 32 kB L2 cache - Cooling Passive Mode/Node switches No Remanent variables 32 kB Typical shortest task class cycle time 1 ms ²) Shortest task class cycle time 0.4 ms			Automation R	untime AR 4.08		
Real-time clock ¹) Yes, resolution 1 s FPU Yes Processor Intel E620T Clock frequency 333 MHz compatibility L1 cache 24 kB Program code 32 kB L2 cache - Cooling Passive Mode/Node switches No Remanent variables 32 kB Typical shortest task class cycle time 1 ms ²) Shortest task class cycle time 0.4 ms	-					
FPU Yes Processor Intel E620T Clock frequency 333 MHz compatibility L1 cache 24 kB Data code 24 kB Program code 32 kB L2 cache - Cooling Passive Mode/Node switches No Remanent variables 32 kB Typical shortest task class cycle time 1 ms ²) Shortest task class cycle time 0.4 ms			256	S MB		
Processor Intel E620T Clock frequency 333 MHz compatibility L1 cache 24 kB Data code 24 kB Program code 32 kB L2 cache - Cooling Passive Mode/Node switches No Remanent variables 32 kB Typical shortest task class cycle time 1 ms ²) Shortest task class cycle time 0.4 ms	Real-time clock 1)		Yes, reso	olution 1 s		
Type Intel E620T Clock frequency 333 MHz compatibility L1 cache 24 kB Data code 24 kB Program code 32 kB L2 cache - Cooling Passive Mode/Node switches No Remanent variables 32 kB Typical shortest task class cycle time 1 ms ²) Shortest task class cycle time 0.4 ms	FPU		Y	es		
Clock frequency 333 MHz compatibility L1 cache 24 kB Program code 32 kB L2 cache - Cooling Passive Mode/Node switches No Remanent variables 32 kB Typical shortest task class cycle time 1 ms ²) Shortest task class cycle time 0.4 ms	Processor					
L1 cache 24 kB Data code 24 kB Program code 32 kB L2 cache - Cooling Passive Mode/Node switches No Remanent variables 32 kB Typical shortest task class cycle time 1 ms ²) Shortest task class cycle time 0.4 ms	Туре		Intel	E620T		
Data code 24 kB Program code 32 kB L2 cache - Cooling Passive Mode/Node switches No Remanent variables 32 kB Typical shortest task class cycle time 1 ms ²) Shortest task class cycle time 0.4 ms	Clock frequency		333 MHz o	compatibility		
Program code 32 kB L2 cache - Cooling Passive Mode/Node switches No Remanent variables 32 kB Typical shortest task class cycle time 1 ms ²) Shortest task class cycle time 0.4 ms						
L2 cache - Cooling Passive Mode/Node switches No Remanent variables 32 kB Typical shortest task class cycle time 1 ms ²) Shortest task class cycle time 0.4 ms	Data code					
Cooling Passive Mode/Node switches No Remanent variables 32 kB Typical shortest task class cycle time 1 ms ²) Shortest task class cycle time 0.4 ms	Program code		32	kB		
Mode/Node switchesNoRemanent variables32 kBTypical shortest task class cycle time1 ms 2)Shortest task class cycle time0.4 ms	L2 cache					
Remanent variables 32 kB Typical shortest task class cycle time 1 ms ²) Shortest task class cycle time 0.4 ms	Cooling		Pas	ssive		
Typical shortest task class cycle time 1 ms 2) Shortest task class cycle time 0.4 ms	Mode/Node switches		N	No		
Shortest task class cycle time 0.4 ms	Remanent variables	-	32	kB		
Shortest task class cycle time 0.4 ms	Typical shortest task class cycle time	_	1 r	ns ²⁾		
		_	0.4	ms	_	
	-	_				

Table 24: 4PPC70.0702-23W, 4PPC70.0702-23B, 4PPC70.070M-23W, 4PPC70.070M-23B - Technical data

Product ID	4PPC70.0702-23W	4PPC70.0702-23B	
Program memory			
Туре		2 GB eMMC flash memory	
Data retention		10 years	
Writable data amount	·		
Guaranteed		40 TB	
Results for 5 years		21.9 GB/day	
Guaranteed clear/write cycles		20,000	
Error correction coding (ECC)		Yes	
Temperature cutoff		Yes, at >88°C	
Interfaces		163, 41 - 66 6	
IF1 interface			
Fieldbus		DOWEDLINK managing or controlled node	
		POWERLINK managing or controlled node	
Type		Type 4 ³⁾ 1x RJ45 shielded	
Design			
Cable length		Max. 100 m between 2 nodes (segment length)	
Max. transfer rate		100 Mbit/s	
Transmission		400DACE TV	
Physical layer		100BASE-TX	
Half-duplex		Yes	
Full-duplex		No	
Autonegotiation		Yes	
Auto-MDI / MDIX		Yes	
IF2 interface			
Туре		Ethernet	
Design		1x RJ45 shielded	
Cable length		Max. 100 m between 2 nodes (segment length)	
Max. transfer rate		10/100 Mbit/s	
Transmission			
Physical layer		10BASE-T/100BASE-TX	
Half-duplex		Yes	
Full-duplex		Yes	
Autonegotiation		Yes	
Auto-MDI / MDIX		Yes	
IF3 interface			
Type		USB 2.0	
Design		Type A	
Current load		0.49 A	
IF4 interface			
Туре		USB 2.0	
Design		Type A	
Current load		0.10 A	
IF5 interface			
Туре		X2X Link master	
IF6 interface			
Туре		CAN bus	
Design		3 pins of the 6-pin multipoint connector	
Max. distance		1000 m	
Max. transfer rate			
Bus length ≤25 m		1 Mbit/s	
Bus length ≤60 m		500 kbit/s	
Bus length ≤200 m		250 kbit/s	
Bus length ≤1000 m		50 kbit/s	
IF9 interface			
Type		RS485	
Design		3 pins of the 6-pin multipoint connector	
Max. distance		1200 m	
Transfer rate		Max. 115.2 kbit/s Max. 1152 kbit/s	
Display		WICK. TIVE ROTUS	
Туре		Color TFT	
Display size	Color I F I 7"		
Colors	262,000 / 16.2 M		
Resolution	WVGA, 800 x 480 pixels WVGA, 480 x 800 pixels		
Contrast	VVVGA, 000	Typ. 600:1	
		ι γρ. οου. ι	
Viewing angles	Direction D / Direc	option I = tun 60°	
Horizontal Vorticel	1	ection L = typ. 60° Direction R / Direction L = typ. 70° Direction D = typ. 70° Direction D = typ. 60°	
Vertical	Direction U / Dire	ection D = typ. 70° Direction U / Direction D = typ. 60°	
Backlight		LED	
Type	LED		
Brightness	Typ. 500 cd/m²		
Half-brightness time 4)	50,000 h		
Touch screen			
Touch screen Type		АМТ	
Touch screen Type Technology		Analog resistive	
Touch screen Type			

Table 24: 4PPC70.0702-23W, 4PPC70.0702-23B, 4PPC70.070M-23W, 4PPC70.070M-23B - Technical data

Product ID	4PPC70.0702-23W	4PPC70.0702-23B	4PPC70.070M-23W	4PPC70.070M-23B
Screen rotation		Yes, u	sing VC	
Electrical characteristics				
Nominal voltage		24 VDC -1	15% / +20%	
Max. power consumption 5)		15	5 W	
Reverse polarity protection		Y	'es	
Operating conditions				
Installation at elevations above sea level				
0 to 2000 m		No lim	nitations	
>2000 m		Reduction of ambient temp	perature by 0.5°C per 100 m	
EN 60529 protection			:: IP20 t: IP65	
Environmental conditions				
Temperature				
Operation				
Horizontal installation		0 to	50°C	
Vertical installation		0 to	50°C	
Storage			o 60°C	
Transport	-20 to 60°C			
Relative humidity				
Operation			dity diagram	
Storage			dity diagram	
Transport		See humic	dity diagram	
Mechanical characteristics				
Note	Ord		04.2110-01, 1x 0TB5106.2110-0 0TB6102.2110-01 separately	01,
Front				
Design	Aluminum white pinstripe	Anthracite gray pinstripe	Aluminum white pinstripe	Anthracite gray pinstripe
Dimensions				
Width	197 mm 140 mm			
Height	140 mm 197 mm			
Depth	51 mm			
Weight		0.6	5 kg	

Table 24: 4PPC70.0702-23W, 4PPC70.0702-23B, 4PPC70.070M-23W, 4PPC70.070M-23B - Technical data

- 1) The real-time clock is buffered for approx. 1000 hours @ 25°C by a gold foil capacitor. The gold foil capacitor is completely charged after 18 continuous hours of operation.
- 2) Shortest cycle time that is suitable for average applications. In certain cases, it is also possible to use shorter cycle times. The limit for the setting is specified in the entry for the shortest task class cycle time.
- 3) See the POWERLINK help system under "General information, Hardware IF/LS".
- 4) At an ambient temperature of 25°C.
- 5) Remote stations connected via X2X Link, CAN bus, POWERLINK and Ethernet. Both USB interfaces are used.

2.2.4.3 4PPC70.101x-2xx

2.2.4.3.1 4PPC70.101x-2xx - Order data

2.2.4.3.1.1 4PPC70.101x-20x - Order data

Model number	Short description	Figure
	C70	
4PPC70.101G-20W	Power Panel C70, 10.1", analog resistive touch screen, Intel ATOM 333 MHz comp., 256 MB DDRAM, 32 kB FRAM, 2 GB flash drive onboard, 1 X2X Link interface, 1 POWERLINK interface, 1 Ethernet interface 10BASE-T/100BASE-TX, 2 USB 2.0 interfaces, basic device without option board, landscape format, aluminum white pinstripe	
4PPC70.101G-20B	Power Panel C70, 10.1", analog resistive touch screen, Intel ATOM 333 MHz comp., 256 MB DDRAM, 32 kB FRAM, 2 GB flash drive onboard, 1 X2X Link interface, 1 POWERLINK interface, 1 Ethernet interface 10BASE-T/100BASE-TX, 2 USB 2.0 interfaces, basic device without option board, landscape format, anthracite gray pinstripe	
4PPC70.101N-20W	Power Panel C70, 10.1", analog resistive touch screen, Intel ATOM 333 MHz comp., 256 MB DDRAM, 32 kB FRAM, 2 GB flash drive onboard, 1 X2X Link interface, 1 POWERLINK interface, 1 Ethernet interface 10BASE-T/100BASE-TX, 2 USB 2.0 interfaces, basic device without option board, portrait format, aluminum white pinstripe	
4PPC70.101N-20B	Power Panel C70, 10.1", analog resistive touch screen, Intel ATOM 333 MHz comp., 256 MB DDRAM, 32 kB FRAM, 2 GB flash drive onboard, 1 X2X Link interface, 1 POWERLINK interface, 1 Ethernet interface 10BASE-T/100BASE-TX, 2 USB 2.0 interfaces, basic device without option board, portrait format, anthracite gray pinstripe	
	Required accessories	
	Terminal blocks	
0TB5104.2110-01	Accessory terminal block, 4-pin (2.5), cage clamp, 0.5 mm ²	
0TB6102.2010-01	Accessory terminal block, 2-pin (3.81), screw clamp, 1.5 mm ²	
0TB6102.2110-01	Accessory terminal block, 2-pin (3.81), cage clamp, 1.5 mm ²	
	Optional accessories	
	USB accessories	
5MMUSB.2048-01	USB 2.0 flash drive, 2048 MB, B&R	
5MMUSB.4096-01	USB 2.0 flash drive, 4096 MB, B&R	

Table 25: 4PPC70.101G-20W, 4PPC70.101G-20B, 4PPC70.101N-20W, 4PPC70.101N-20B - Order data

2.2.4.3.1.2 4PPC70.101x-21x - Order data

Model number	Short description	Figure
	C70	
4PPC70.101G-21W	Power Panel C70, 10.1", analog resistive touch screen, Intel ATOM 333 MHz comp., 256 MB DDRAM, 32 kB FRAM, 2 GB flash drive onboard, 1 X2X Link interface, 1 POWERLINK interface, 1 Ethernet interface 10BASE-T/100BASE-TX, 2 USB 2.0 interfaces, basic device with option board: 2x CAN bus, land-scape format, aluminum white pinstripe	
4PPC70.101G-21B	Power Panel C70, 10.1", analog resistive touch screen, Intel ATOM 333 MHz comp., 256 MB DDRAM, 32 kB FRAM, 2 GB flash drive onboard, 1 X2X Link interface, 1 POWERINK interface, 1 Ethernet interface 10BASE-T/100BASE-TX, 2 USB 2.0 interfaces, basic device with option board: 2x CAN bus, land-scape format, anthracite gray pinstripe	
4PPC70.101N-21W	Power Panel C70, 10.1", analog resistive touch screen, Intel ATOM 333 MHz comp., 256 MB DDRAM, 32 kB FRAM, 2 GB flash drive onboard, 1 X2X Link interface, 1 POWERLINK interface, 1 Ethernet interface 10BASE-T/100BASE-TX, 2 USB 2.0 interfaces, basic device with option board: 2x CAN bus, portrait format, aluminum white pinstripe	
4PPC70.101N-21B	Power Panel C70, 10.1", analog resistive touch screen, Intel ATOM 333 MHz comp., 256 MB DDRAM, 32 kB FRAM, 2 GB flash drive onboard, 1 X2X Link interface, 1 POWERLINK interface, 1 Ethernet interface 10BASE-T/100BASE-TX, 2 USB 2.0 interfaces, basic device with option board: 2x CAN bus, portrait format, anthracite gray pinstripe	
	Required accessories	
	Terminal blocks	
0TB5104.2110-01	Accessory terminal block, 4-pin (2.5), cage clamp, 0.5 mm ²	
0TB5106.2110-01	Accessory terminal block, 6-pin (2.5), cage clamp, 0.5 mm ²	
0TB6102.2010-01	Accessory terminal block, 2-pin (3.81), screw clamp, 1.5 mm ²	
0TB6102.2110-01	Accessory terminal block, 2-pin (3.81), cage clamp, 1.5 mm ²	
	Optional accessories	
	USB accessories	
5MMUSB.2048-01	USB 2.0 flash drive, 2048 MB, B&R	
5MMUSB.4096-01	USB 2.0 flash drive, 4096 MB, B&R	

Table 26: 4PPC70.101G-21W, 4PPC70.101G-21B, 4PPC70.101N-21W, 4PPC70.101N-21B - Order data

2.2.4.3.1.3 4PPC70.101x-22x - Order data

Model number	Short description	Figure
	C70	
4PPC70.101G-22W	Power Panel C70, 10.1", analog resistive touch screen, Intel ATOM 333 MHz comp., 256 MB DDRAM, 32 kB FRAM, 2 GB flash drive onboard, 1 X2X Link interface, 1 POWERLINK interface, 1 Ethernet interface 10BASE-T/100BASE-TX, 2 USB 2.0 interfaces, basic device with option board: 1x CAN bus, 1x RS232, landscape format, aluminum white pinstripe	
4PPC70.101G-22B	Power Panel C70, 10.1", analog resistive touch screen, Intel ATOM 333 MHz comp., 256 MB DDRAM, 32 kB FRAM, 2 GB flash drive onboard, 1 X2X Link interface, 1 POWERLINK interface, 1 Ethernet interface 10BASE-T/100BASE-TX, 2 USB 2.0 interfaces, basic device with option board: 1x CAN bus, 1x RS232, landscape format, anthracite gray pinstripe	
4PPC70.101N-22W	Power Panel C70, 10.1", analog resistive touch screen, Intel ATOM 333 MHz comp., 256 MB DDRAM, 32 kB FRAM, 2 GB flash drive onboard, 1 X2X Link interface, 1 POWERLINK interface, 1 Ethernet interface 10BASE-T/100BASE-TX, 2 USB 2.0 interfaces, basic device with option board: 1x CAN bus, 1x RS232, portrait format, aluminum white pinstripe	
4PPC70.101N-22B	Power Panel C70, 10.1", analog resistive touch screen, Intel ATOM 333 MHz comp., 256 MB DDRAM, 32 kB FRAM, 2 GB flash drive onboard, 1 X2X Link interface, 1 POWERLINK interface, 1 Ethernet interface 10BASE-T/100BASE-TX, 2 USB 2.0 interfaces, basic device with option board: 1x CAN bus, 1x RS232, portrait format, anthracite gray pinstripe	
	Required accessories	
	Terminal blocks	
0TB5104.2110-01	Accessory terminal block, 4-pin (2.5), cage clamp, 0.5 mm ²	
0TB5106.2110-01	Accessory terminal block, 6-pin (2.5), cage clamp, 0.5 mm ²	
0TB6102.2010-01	Accessory terminal block, 2-pin (3.81), screw clamp, 1.5 mm ²	
0TB6102.2110-01	Accessory terminal block, 2-pin (3.81), cage clamp, 1.5 mm ²	
	Optional accessories	
	USB accessories	
5MMUSB.2048-01	USB 2.0 flash drive, 2048 MB, B&R	
5MMUSB.4096-01	USB 2.0 flash drive, 4096 MB, B&R	

Table 27: 4PPC70.101G-22W, 4PPC70.101G-22B, 4PPC70.101N-22W, 4PPC70.101N-22B - Order data

2.2.4.3.1.4 4PPC70.101x-23x - Order data

Model number	Short description	Figure
	C70	
4PPC70.101G-23W	Power Panel C70, 10.1", analog resistive touch screen, Intel ATOM 333 MHz comp., 256 MB DDRAM, 32 kB FRAM, 2 GB flash drive onboard, 1 X2X Link interface, 1 POWERLINK interface, 1 Ethernet interface 10BASE-T/100BASE-TX, 2 USB 2.0 interfaces, basic device with option board: 1x CAN bus, 1x RS485, landscape format, aluminum white pinstripe	
4PPC70.101G-23B	Power Panel C70, 10.1", analog resistive touch screen, Intel ATOM 333 MHz comp., 256 MB DDRAM, 32 kB FRAM, 2 GB flash drive onboard, 1 X2X Link interface, 1 POWERLINK interface, 1 Ethernet interface 10BASE-T/100BASE-TX, 2 USB 2.0 interfaces, basic device with option board: 1x CAN bus, 1x RS485, landscape format, anthracite gray pinstripe	
4PPC70.101N-23W	Power Panel C70, 10.1", analog resistive touch screen, Intel ATOM 333 MHz comp., 256 MB DDRAM, 32 kB FRAM, 2 GB flash drive onboard, 1 X2X Link interface, 1 POWERLINK interface, 1 Ethernet interface 10BASE-T/100BASE-TX, 2 USB 2.0 interfaces, basic device with option board: 1x CAN bus, 1x RS485, portrait format, aluminum white pinstripe	
4PPC70.101N-23B	Power Panel C70, 10.1", analog resistive touch screen, Intel ATOM 333 MHz comp., 256 MB DDRAM, 32 kB FRAM, 2 GB flash drive onboard, 1 X2X Link interface, 1 POWERLINK interface, 1 Ethernet interface 10BASE-T/100BASE-TX, 2 USB 2.0 interfaces, basic device with option board: 1x CAN bus, 1x RS485, portrait format, anthracite gray pinstripe	
	Required accessories	
	Terminal blocks	
0TB5104.2110-01	Accessory terminal block, 4-pin (2.5), cage clamp, 0.5 mm ²	
0TB5106.2110-01	Accessory terminal block, 6-pin (2.5), cage clamp, 0.5 mm ²	
0TB6102.2010-01	Accessory terminal block, 2-pin (3.81), screw clamp, 1.5 mm ²	
0TB6102.2110-01	Accessory terminal block, 2-pin (3.81), cage clamp, 1.5 mm ²	
	Optional accessories	
	USB accessories	
5MMUSB.2048-01	USB 2.0 flash drive, 2048 MB, B&R	
5MMUSB.4096-01	USB 2.0 flash drive, 4096 MB, B&R	

Table 28: 4PPC70.101G-23W, 4PPC70.101G-23B, 4PPC70.101N-23W, 4PPC70.101N-23B - Order data

2.2.4.3.2 Technical data 4PPC70.101x-2xx

2.2.4.3.2.1 Technical data 4PPC70.101x-20x

Product ID	4PPC70.101G-20W	4PPC70.101G-20B	4PPC70.101N-20W	4PPC70.101N-20B	
General information					
Cooling	Fanless				
LED status indicators	Supply voltage OK, operating status, module status, Ethernet, POWERLINK				
B&R ID code	0xE579	0xE57D	0xE581	0xE585	
System requirements					
Automation Studio		4.1.4.375	or higher		
Automation Runtime	K4.08 or higher				
Support of X20SLX modules			higher		
LED status indicators			-		
Quantity			4		
Power button			lo	_	
Reset button		Y	es	-	
Controller redundancy			-		
Master capability		N	lo		
Buzzer		Y	es	_	
ACOPOS capability			es		
Visual Components support			es	_	
Electrical isolation				_	
IF1 - IF2		Y	es		
IF1 - IF3			es		
IF1 - IF4			es		
IF1 - IF5			es		
IF2 - IF3			es		
IF2 - IF4			es		
IF2 - IF5			es		
IF3 - IF4		N	lo		
IF3 - IF5			es		
IF4 - IF5		Y	es		
PLC - IF1		Y	es		
PLC - IF2		Y	es		
PLC - IF3		N	lo		
PLC - IF4		N	lo		
PLC - IF5		Y	es		
Certification					
CE		Y	es		
cULus		Y	es		
GOST-R		Y	es		
Controller					
Boot loader		Automation Ru	untime AR 4.08		
CompactFlash slot			0		
DRAM		256	MB		
Real-time clock 1)		Yes, reso	olution 1 s		
FPU		Y	es		
Processor					
Туре		Intel I	≣620T		
Clock frequency		333 MHz o	ompatibility		
L1 cache					
Data code		24	kB		
Program code		32	kB		
L2 cache			-		
Cooling		Pas	sive		
Mode/Node switches		N	lo		
Remanent variables		32	kB		
Typical shortest task class cycle time		1 m	ns ²⁾		
Shortest task class cycle time		0.4	ms		
Typical instruction cycle time		0.0	1 μs		
Program memory					
Туре		2 GB eMMC	flash memory		
Data retention			rears		
Writable data amount		,			
Guaranteed		40	ТВ		
Results for 5 years			GB/day		
Guaranteed clear/write cycles	20,000				
Error correction coding (ECC)	Yes				
Life correction county (LCC)		Ţ			

Table 29: 4PPC70.101G-20W, 4PPC70.101G-20B, 4PPC70.101N-20W, 4PPC70.101N-20B - Technical data

Product ID Interfaces	4PPC70.101G-20W 4PPC70.101G-20B 4PPC70.101N-20W 4PPC70.101N-20B			
IF1 interface				
Fieldbus	POWERLINK managing or controlled node			
Type	Type 4 ³⁾			
Design	1x RJ45 shielded			
Cable length	Max. 100 m between 2 nodes (segment length)			
Max. transfer rate	100 Mbit/s			
Transmission				
Physical layer	100BASE-TX			
Half-duplex	Yes			
Full-duplex	No			
Autonegotiation	Yes			
_	Yes			
Auto-MDI / MDIX	ies			
IF2 interface				
Type	Ethernet			
Design	1x RJ45 shielded			
Cable length	Max. 100 m between 2 nodes (segment length)			
Max. transfer rate	10/100 Mbit/s			
Transmission	10/100 Mishe			
	40DACE T/400DACE TV			
Physical layer	10BASE-T/100BASE-TX			
Half-duplex	Yes			
Full-duplex	Yes			
Autonegotiation	Yes			
Auto-MDI / MDIX	Yes			
IF3 interface				
Туре	USB 2.0			
Design	Type A			
Current load	0.49 A			
IF4 interface				
Type	USB 2.0			
Design	Type A			
Current load	0.10 A			
IF5 interface	6.1671			
	VOV Liel accepts			
Type	X2X Link master			
Display				
Туре	Color TFT			
Display size	10.1"			
Colors	16.2 M			
Resolution	WSVGA, 1024 x 600 pixels WSVGA, 600 x 1024 pixels			
Resolution Contrast 4)				
Resolution Contrast 4) Viewing angles	WSVGA, 1024 x 600 pixels WSVGA, 600 x 1024 pixels Typ. 500:1			
Resolution Contrast 4) Viewing angles Horizontal	WSVGA, 1024 x 600 pixels WSVGA, 600 x 1024 pixels Typ. 500:1 Direction R / Direction L = typ. 70°			
Resolution Contrast 4) Viewing angles Horizontal Vertical	WSVGA, 1024 x 600 pixels WSVGA, 600 x 1024 pixels Typ. 500:1			
Resolution Contrast 4) Viewing angles Horizontal	WSVGA, 1024 x 600 pixels WSVGA, 600 x 1024 pixels Typ. 500:1 Direction R / Direction L = typ. 70°			
Resolution Contrast 4) Viewing angles Horizontal Vertical	WSVGA, 1024 x 600 pixels WSVGA, 600 x 1024 pixels Typ. 500:1 Direction R / Direction L = typ. 70°			
Resolution Contrast 4) Viewing angles Horizontal Vertical Backlight	WSVGA, 1024 x 600 pixels Typ. 500:1 Direction R / Direction L = typ. 70° Direction U / Direction D = typ. 70° LED			
Resolution Contrast 4) Viewing angles Horizontal Vertical Backlight Type Brightness 4)	WSVGA, 1024 x 600 pixels Typ. 500:1 Direction R / Direction L = typ. 70° Direction U / Direction D = typ. 70° LED Typ. 500 cd/m²			
Resolution Contrast 4) Viewing angles Horizontal Vertical Backlight Type Brightness 4) Half-brightness time 4)	WSVGA, 1024 x 600 pixels Typ. 500:1 Direction R / Direction L = typ. 70° Direction U / Direction D = typ. 70° LED			
Resolution Contrast 4) Viewing angles Horizontal Vertical Backlight Type Brightness 4) Half-brightness time 4) Touch screen	WSVGA, 1024 x 600 pixels Typ. 500:1 Direction R / Direction L = typ. 70° Direction U / Direction D = typ. 70° LED Typ. 500 cd/m² 50,000 h			
Resolution Contrast 4) Viewing angles Horizontal Vertical Backlight Type Brightness 4) Half-brightness time 4) Touch screen Type	WSVGA, 1024 x 600 pixels Typ. 500:1 Direction R / Direction L = typ. 70° Direction U / Direction D = typ. 70° LED Typ. 500 cd/m² 50,000 h AMT			
Resolution Contrast 4) Viewing angles Horizontal Vertical Backlight Type Brightness 4) Half-brightness time 4) Touch screen Type Technology	WSVGA, 1024 x 600 pixels Typ. 500:1 Direction R / Direction L = typ. 70° Direction U / Direction D = typ. 70° LED Typ. 500 cd/m² 50,000 h AMT Analog resistive			
Resolution Contrast 4) Viewing angles Horizontal Vertical Backlight Type Brightness 4) Half-brightness time 4) Touch screen Type Technology Controller	WSVGA, 1024 x 600 pixels Typ. 500:1 Direction R / Direction L = typ. 70° Direction U / Direction D = typ. 70° LED Typ. 500 cd/m² 50,000 h AMT Analog resistive B&R, serial, 12-bit			
Resolution Contrast 4) Viewing angles Horizontal Vertical Backlight Type Brightness 4) Half-brightness time 4) Touch screen Type Technology	WSVGA, 1024 x 600 pixels Typ. 500:1 Direction R / Direction L = typ. 70° Direction U / Direction D = typ. 70° LED Typ. 500 cd/m² 50,000 h AMT Analog resistive B&R, serial, 12-bit 80% ±3%			
Resolution Contrast 4) Viewing angles Horizontal Vertical Backlight Type Brightness 4) Half-brightness time 4) Touch screen Type Technology Controller	WSVGA, 1024 x 600 pixels Typ. 500:1 Direction R / Direction L = typ. 70° Direction U / Direction D = typ. 70° LED Typ. 500 cd/m² 50,000 h AMT Analog resistive B&R, serial, 12-bit			
Resolution Contrast 4) Viewing angles Horizontal Vertical Backlight Type Brightness 4) Half-brightness time 4) Touch screen Type Technology Controller Transmittance	WSVGA, 1024 x 600 pixels Typ. 500:1 Direction R / Direction L = typ. 70° Direction U / Direction D = typ. 70° LED Typ. 500 cd/m² 50,000 h AMT Analog resistive B&R, serial, 12-bit 80% ±3%			
Resolution Contrast 4) Viewing angles Horizontal Vertical Backlight Type Brightness 4) Half-brightness time 4) Touch screen Type Technology Controller Transmittance Screen rotation Electrical characteristics	WSVGA, 1024 x 600 pixels Typ. 500:1 Direction R / Direction L = typ. 70° Direction U / Direction D = typ. 70° LED Typ. 500 cd/m² 50,000 h AMT Analog resistive B&R, serial, 12-bit 80% ±3% Yes, using VC			
Resolution Contrast 4) Viewing angles Horizontal Vertical Backlight Type Brightness 4) Half-brightness time 4) Touch screen Type Technology Controller Transmittance Screen rotation Electrical characteristics Nominal voltage	WSVGA, 1024 x 600 pixels Typ. 500:1 Direction R / Direction L = typ. 70° Direction U / Direction D = typ. 70° LED Typ. 500 cd/m² 50,000 h AMT Analog resistive B&R, serial, 12-bit 80% ±3% Yes, using VC			
Resolution Contrast 4) Viewing angles Horizontal Vertical Backlight Type Brightness 4) Half-brightness time 4) Touch screen Type Technology Controller Transmittance Screen rotation Electrical characteristics Nominal voltage Max. power consumption 5)	WSVGA, 1024 x 600 pixels Typ. 500:1 Direction R / Direction L = typ. 70° Direction U / Direction D = typ. 70° LED Typ. 500 cd/m² 50,000 h AMT Analog resistive B&R, serial, 12-bit 80% ±3% Yes, using VC 24 VDC -15% / +20% 14.5 W			
Resolution Contrast 4) Viewing angles Horizontal Vertical Backlight Type Brightness 4) Half-brightness time 4) Touch screen Type Technology Controller Transmittance Screen rotation Electrical characteristics Nominal voltage Max. power consumption 5) Reverse polarity protection	WSVGA, 1024 x 600 pixels Typ. 500:1 Direction R / Direction L = typ. 70° Direction U / Direction D = typ. 70° LED Typ. 500 cd/m² 50,000 h AMT Analog resistive B&R, serial, 12-bit 80% ±3% Yes, using VC			
Resolution Contrast 4) Viewing angles Horizontal Vertical Backlight Type Brightness 4) Half-brightness time 4) Touch screen Type Technology Controller Transmittance Screen rotation Electrical characteristics Nominal voltage Max. power consumption 5)	WSVGA, 1024 x 600 pixels Typ. 500:1 Direction R / Direction L = typ. 70° Direction U / Direction D = typ. 70° LED Typ. 500 cd/m² 50,000 h AMT Analog resistive B&R, serial, 12-bit 80% ±3% Yes, using VC 24 VDC -15% / +20% 14.5 W			
Resolution Contrast 4) Viewing angles Horizontal Vertical Backlight Type Brightness 4) Half-brightness time 4) Touch screen Type Technology Controller Transmittance Screen rotation Electrical characteristics Nominal voltage Max. power consumption 5) Reverse polarity protection	WSVGA, 1024 x 600 pixels Typ. 500:1 Direction R / Direction L = typ. 70° Direction U / Direction D = typ. 70° LED Typ. 500 cd/m² 50,000 h AMT Analog resistive B&R, serial, 12-bit 80% ±3% Yes, using VC 24 VDC -15% / +20% 14.5 W			
Resolution Contrast 4) Viewing angles Horizontal Vertical Backlight Type Brightness 4) Half-brightness time 4) Touch screen Type Technology Controller Transmittance Screen rotation Electrical characteristics Nominal voltage Max. power consumption 5) Reverse polarity protection Operating conditions	WSVGA, 1024 x 600 pixels Typ. 500:1 Direction R / Direction L = typ. 70° Direction U / Direction D = typ. 70° LED Typ. 500 cd/m² 50,000 h AMT Analog resistive B&R, serial, 12-bit 80% ±3% Yes, using VC 24 VDC -15% / +20% 14.5 W			
Resolution Contrast 4) Viewing angles Horizontal Vertical Backlight Type Brightness 4) Half-brightness time 4) Touch screen Type Technology Controller Transmittance Screen rotation Electrical characteristics Nominal voltage Max. power consumption 5) Reverse polarity protection Operating conditions Installation at elevations above sea	WSVGA, 1024 x 600 pixels Typ. 500:1 Direction R / Direction L = typ. 70° Direction U / Direction D = typ. 70° LED Typ. 500 cd/m² 50,000 h AMT Analog resistive B&R, serial, 12-bit 80% ±3% Yes, using VC 24 VDC -15% / +20% 14.5 W			
Resolution Contrast 4) Viewing angles Horizontal Vertical Backlight Type Brightness 4) Half-brightness time 4) Touch screen Type Technology Controller Transmittance Screen rotation Electrical characteristics Nominal voltage Max. power consumption 5) Reverse polarity protection Operating conditions Installation at elevations above sea level 0 to 2000 m	WSVGA, 1024 x 600 pixels Typ. 500:1 Direction R / Direction L = typ. 70° Direction U / Direction D = typ. 70° LED Typ. 500 cd/m² 50,000 h AMT Analog resistive B&R, serial, 12-bit 80% ±3% Yes, using VC 24 VDC -15% / +20% 14.5 W Yes			
Resolution Contrast 4) Viewing angles Horizontal Vertical Backlight Type Brightness 4) Half-brightness time 4) Touch screen Type Technology Controller Transmittance Screen rotation Electrical characteristics Nominal voltage Max. power consumption 5) Reverse polarity protection Operating conditions Installation at elevations above sea level 0 to 2000 m >2000 m	WSVGA, 1024 x 600 pixels Typ. 500:1 Direction R / Direction L = typ. 70° Direction U / Direction D = typ. 70° LED Typ. 500 cd/m² 50,000 h AMT Analog resistive B&R, serial, 12-bit 80% ±3% Yes, using VC 24 VDC -15% / +20% 14.5 W Yes No limitations Reduction of ambient temperature by 0.5°C per 100 m			
Resolution Contrast 4) Viewing angles Horizontal Vertical Backlight Type Brightness 4) Half-brightness time 4) Touch screen Type Technology Controller Transmittance Screen rotation Electrical characteristics Nominal voltage Max. power consumption 5) Reverse polarity protection Operating conditions Installation at elevations above sea level 0 to 2000 m	WSVGA, 1024 x 600 pixels Typ. 500:1 Direction R / Direction L = typ. 70° Direction U / Direction D = typ. 70° LED Typ. 500 cd/m² 50,000 h AMT Analog resistive B&R, serial, 12-bit 80% ±3% Yes, using VC 24 VDC -15% / +20% 14.5 W Yes No limitations Reduction of ambient temperature by 0.5°C per 100 m Back: IP20			
Resolution Contrast 4) Viewing angles Horizontal Vertical Backlight Type Brightness 4) Half-brightness time 4) Touch screen Type Technology Controller Transmittance Screen rotation Electrical characteristics Nominal voltage Max. power consumption 5) Reverse polarity protection Operating conditions Installation at elevations above sea level 0 to 2000 m >2000 m EN 60529 protection	WSVGA, 1024 x 600 pixels Typ. 500:1 Direction R / Direction L = typ. 70° Direction U / Direction D = typ. 70° LED Typ. 500 cd/m² 50,000 h AMT Analog resistive B&R, serial, 12-bit 80% ±3% Yes, using VC 24 VDC -15% / +20% 14.5 W Yes No limitations Reduction of ambient temperature by 0.5°C per 100 m			
Resolution Contrast 4) Viewing angles Horizontal Vertical Backlight Type Brightness 4) Half-brightness time 4) Touch screen Type Technology Controller Transmittance Screen rotation Electrical characteristics Nominal voltage Max. power consumption 5) Reverse polarity protection Operating conditions Installation at elevations above sea level 0 to 2000 m >2000 m EN 60529 protection	WSVGA, 1024 x 600 pixels Typ. 500:1 Direction R / Direction L = typ. 70° Direction U / Direction D = typ. 70° LED Typ. 500 cd/m² 50,000 h AMT Analog resistive B&R, serial, 12-bit 80% ±3% Yes, using VC 24 VDC -15% / +20% 14.5 W Yes No limitations Reduction of ambient temperature by 0.5°C per 100 m Back: IP20			
Resolution Contrast 4) Viewing angles Horizontal Vertical Backlight Type Brightness 4) Half-brightness time 4) Touch screen Type Technology Controller Transmittance Screen rotation Electrical characteristics Nominal voltage Max. power consumption 5) Reverse polarity protection Operating conditions Installation at elevations above sea level 0 to 2000 m >2000 m EN 60529 protection Environmental conditions Temperature	WSVGA, 1024 x 600 pixels Typ. 500:1 Direction R / Direction L = typ. 70° Direction U / Direction D = typ. 70° LED Typ. 500 cd/m² 50,000 h AMT Analog resistive B&R, serial, 12-bit 80% ±3% Yes, using VC 24 VDC -15% / +20% 14.5 W Yes No limitations Reduction of ambient temperature by 0.5°C per 100 m Back: IP20			
Resolution Contrast 4) Viewing angles Horizontal Vertical Backlight Type Brightness 4) Half-brightness time 4) Touch screen Type Technology Controller Transmittance Screen rotation Electrical characteristics Nominal voltage Max. power consumption 5) Reverse polarity protection Operating conditions Installation at elevations above sea level 0 to 2000 m >2000 m EN 60529 protection	WSVGA, 1024 x 600 pixels Typ. 500:1 Direction R / Direction L = typ. 70° Direction U / Direction D = typ. 70° LED Typ. 500 cd/m² 50,000 h AMT Analog resistive B&R, serial, 12-bit 80% ±3% Yes, using VC 24 VDC -15% / +20% 14.5 W Yes No limitations Reduction of ambient temperature by 0.5°C per 100 m Back: IP20			
Resolution Contrast 4) Viewing angles Horizontal Vertical Backlight Type Brightness 4) Half-brightness time 4) Touch screen Type Technology Controller Transmittance Screen rotation Electrical characteristics Nominal voltage Max. power consumption 5) Reverse polarity protection Operating conditions Installation at elevations above sea level 0 to 2000 m >2000 m EN 60529 protection Environmental conditions Temperature	WSVGA, 1024 x 600 pixels Typ. 500:1 Direction R / Direction L = typ. 70° Direction U / Direction D = typ. 70° LED Typ. 500 cd/m² 50,000 h AMT Analog resistive B&R, serial, 12-bit 80% ±3% Yes, using VC 24 VDC -15% / +20% 14.5 W Yes No limitations Reduction of ambient temperature by 0.5°C per 100 m Back: IP20			
Resolution Contrast 4) Viewing angles Horizontal Vertical Backlight Type Brightness 4) Half-brightness time 4) Touch screen Type Technology Controller Transmittance Screen rotation Electrical characteristics Nominal voltage Max. power consumption 5) Reverse polarity protection Operating conditions Installation at elevations above sea level 0 to 2000 m >2000 m EN 60529 protection Environmental conditions Temperature Operation Horizontal installation	WSVGA, 1024 x 600 pixels			
Resolution Contrast 4) Viewing angles Horizontal Vertical Backlight Type Brightness 4) Half-brightness time 4) Touch screen Type Technology Controller Transmittance Screen rotation Electrical characteristics Nominal voltage Max. power consumption 5) Reverse polarity protection Operating conditions Installation at elevations above sea level 0 to 2000 m >2000 m EN 60529 protection Environmental conditions Temperature Operation Horizontal installation Vertical installation	WSVGA, 1024 x 600 pixels Typ. 500:1			
Resolution Contrast 4) Viewing angles Horizontal Vertical Backlight Type Brightness 4) Half-brightness time 4) Touch screen Type Technology Controller Transmittance Screen rotation Electrical characteristics Nominal voltage Max. power consumption 5) Reverse polarity protection Operating conditions Installation at elevations above sea level 0 to 2000 m >2000 m EN 60529 protection Environmental conditions Temperature Operation Horizontal installation Vertical installation Storage	WSVGA, 1024 x 600 pixels Typ. 500:1			
Resolution Contrast 4) Viewing angles Horizontal Vertical Backlight Type Brightness 4) Half-brightness time 4) Touch screen Type Technology Controller Transmittance Screen rotation Electrical characteristics Nominal voltage Max. power consumption 5) Reverse polarity protection Operating conditions Installation at elevations above sea level 0 to 2000 m >2000 m EN 60529 protection Environmental conditions Temperature Operation Horizontal installation Vertical installation Storage Transport	WSVGA, 1024 x 600 pixels Typ. 500:1			
Resolution Contrast 4) Viewing angles Horizontal Vertical Backlight Type Brightness 4) Half-brightness time 4) Touch screen Type Technology Controller Transmittance Screen rotation Electrical characteristics Nominal voltage Max. power consumption 5) Reverse polarity protection Operating conditions Installation at elevations above sea level 0 to 2000 m >2000 m EN 60529 protection Environmental conditions Temperature Operation Horizontal installation Vertical installation Storage Transport Relative humidity	WSVGA, 1024 x 600 pixels WSVGA, 600 x 1024 pixels			
Resolution Contrast 4) Viewing angles Horizontal Vertical Backlight Type Brightness 4) Half-brightness time 4) Touch screen Type Technology Controller Transmittance Screen rotation Electrical characteristics Nominal voltage Max. power consumption 5) Reverse polarity protection Operating conditions Installation at elevations above sea level 0 to 2000 m >2000 m EN 60529 protection Environmental conditions Temperature Operation Horizontal installation Vertical installation Storage Transport Relative humidity Operation	WSVGA, 1024 x 600 pixels Typ. 500:1 Direction R / Direction L = typ. 70° Direction U / Direction D = typ. 70° LED Typ. 500 cd/m² 50,000 h AMT Analog resistive B&R, serial, 12-bit 80% ±3% Yes, using VC 24 VDC -15% / +20% 14.5 W Yes No limitations Reduction of ambient temperature by 0.5°C per 100 m Back: IP20 Front: IP65 0 to 50°C -20 to 60°C -20 to 60°C See humidity diagram			
Resolution Contrast 4) Viewing angles Horizontal Vertical Backlight Type Brightness 4) Half-brightness time 4) Touch screen Type Technology Controller Transmittance Screen rotation Electrical characteristics Nominal voltage Max. power consumption 5) Reverse polarity protection Operating conditions Installation at elevations above sea level 0 to 2000 m >2000 m EN 60529 protection Environmental conditions Temperature Operation Horizontal installation Vertical installation Storage Transport Relative humidity	WSVGA, 1024 x 600 pixels			
Resolution Contrast 4) Viewing angles Horizontal Vertical Backlight Type Brightness 4) Half-brightness time 4) Touch screen Type Technology Controller Transmittance Screen rotation Electrical characteristics Nominal voltage Max. power consumption 5) Reverse polarity protection Operating conditions Installation at elevations above sea level 0 to 2000 m >2000 m EN 60529 protection Environmental conditions Temperature Operation Horizontal installation Vertical installation Storage Transport Relative humidity Operation	WSVGA, 1024 x 600 pixels Typ. 500:1 Direction R / Direction L = typ. 70° Direction U / Direction D = typ. 70° LED Typ. 500 cd/m² 50,000 h AMT Analog resistive B&R, serial, 12-bit 80% ±3% Yes, using VC 24 VDC -15% / +20% 14.5 W Yes No limitations Reduction of ambient temperature by 0.5°C per 100 m Back: IP20 Front: IP65 0 to 50°C -20 to 60°C -20 to 60°C See humidity diagram			

Table 29: 4PPC70.101G-20W, 4PPC70.101G-20B, 4PPC70.101N-20W, 4PPC70.101N-20B - Technical data

Product ID	4PPC70.101G-20W	4PPC70.101G-20B	4PPC70.101N-20W	4PPC70.101N-20B	
Mechanical characteristics					
Note	Order terminal blocks 1x 0TB5104.2110-01, 1x 0TB6102.2010-01 and 1x 0TB6102.2110-01 separately				
Front					
Design	Aluminum white pinstripe	Anthracite gray pinstripe	Aluminum white pinstripe	Anthracite gray pinstripe	
Dimensions					
Width	276 mm 172 mm		mm		
Height	172 mm 276 mm			mm	
Depth	51 mm				
Weight	1.05 kg				

Table 29: 4PPC70.101G-20W, 4PPC70.101G-20B, 4PPC70.101N-20W, 4PPC70.101N-20B - Technical data

- 1) The real-time clock is buffered for approx. 1000 hours @ 25°C by a gold foil capacitor. The gold foil capacitor is completely charged after 18 continuous hours of operation.
- 2) Shortest cycle time that is suitable for average applications. In certain cases, it is also possible to use shorter cycle times. The limit for the setting is specified in the entry for the shortest task class cycle time.
- 3) See the POWERLINK help system under "General information, Hardware IF/LS".
- 4) At an ambient temperature of 25°C.
- Remote stations connected via X2X Link, CAN bus, POWERLINK and Ethernet. Both USB interfaces are used.

2.2.4.3.2.2 Technical data 4PPC70.101x-21x

Product ID	4PPC70.101G-21W	4PPC70.101G-21B	4PPC70.101N-21W	4PPC70.101N-21B	
General information					
Cooling		Fai	nless		
LED status indicators	Supply voltage	Supply voltage OK, operating status, module status, Ethernet, POWERLIN			
B&R ID code	0xE57A	0xE57E	0xE582	0xE586	
	UXL37A	UXL37L	UXL302	UXESOO	
System requirements		4 4 4 27	E or bighor		
Automation Studio			5 or higher		
Automation Runtime	K4.08 or higher B4 or higher				
Support of X20SLX modules		_			
LED status indicators					
Quantity			9		
Power button		1	No		
Reset button		Y	⁄es		
Controller redundancy				_	
Master capability		1	No		
Buzzer	-		/es		
ACOPOS capability			⁄es		
Visual Components support	_		⁄es	_	
		1	res		
Electrical isolation			,		
IF1 - IF2			⁄es		
IF1 - IF3			⁄es		
IF1 - IF4			′es		
IF1 - IF5		١	⁄es		
IF1 - IF6		Υ	⁄es		
IF1 - IF7		Y	⁄es		
IF2 - IF3		Y	′es		
IF2 - IF4		Y	′es		
IF2 - IF5		\	es/es		
IF2 - IF6		,	⁄es		
IF2 - IF7			/es		
IF3 - IF4			No		
IF3 - IF5			es es		
IF3 - IF6			No		
IF3 - IF7			No		
IF4 - IF5			⁄es		
IF4 - IF6	No				
IF4 - IF7			No		
IF5 - IF6			⁄es		
IF5 - IF7	Yes				
IF6 - IF7		1	No		
PLC - IF1		Y	⁄es		
PLC - IF2		Y	′es		
PLC - IF3		1	No		
PLC - IF4			No		
PLC - IF5			es es		
PLC - IF6			No		
PLC - IF7		<u> </u>	No	_	
Certification			/a-a		
CE			'es		
cULus			⁄es		
GOST-R			⁄es		
Controller					
Boot loader		Automation R	untime AR 4.08		
CompactFlash slot			0		
DRAM		256	6 MB		
Real-time clock 1)	-		olution 1 s	_	
FPU	_		′es	_	
Processor					
Type		Intol	E620T		
Clock frequency		333 IVIHZ (compatibility		
L1 cache		_	LL-D		
Data code			↓ kB		
Program code		32	2 kB		
L2 cache			-		
Cooling		Pa	ssive		
Mode/Node switches	No				
Remanent variables	32 kB			_	
Typical shortest task class cycle time					
Shortest task class cycle time	_		1 ms		
-				_	
Typical instruction cycle time		0.0)1 μs		

Table 30: 4PPC70.101G-21W, 4PPC70.101G-21B, 4PPC70.101N-21W, 4PPC70.101N-21B - Technical data

Product ID	4PPC70.101G-21W 4PPC70.101G-21B 4PPC70.101N-21W 4PPC70.101N-21B
Program memory	
Type	2 GB eMMC flash memory
Data retention	10 years
Writable data amount	
Guaranteed	40 TB
Results for 5 years	21.9 GB/day
Guaranteed clear/write cycles	20,000
Error correction coding (ECC)	Yes
Temperature cutoff	Yes, at >88°C
Interfaces	1971 1982
IF1 interface	
Fieldbus	POWERLINK managing or controlled node
Туре	Type 4 ³⁾
Design	1x RJ45 shielded
Cable length	Max. 100 m between 2 nodes (segment length)
Max. transfer rate	100 Mbit/s
Transmission	
Physical layer	100BASE-TX
Half-duplex	Yes
Full-duplex	No
Autonegotiation	Yes
Auto-MDI / MDIX	Yes
IF2 interface	
Type	Ethernet
Design	1x RJ45 shielded
Cable length	Max. 100 m between 2 nodes (segment length)
Max. transfer rate	10/100 Mbit/s
Transmission	
Physical layer	10BASE-T/100BASE-TX
Half-duplex	Yes
Full-duplex	Yes
Autonegotiation	Yes
Auto-MDI / MDIX	Yes
IF3 interface	
Type	USB 2.0
Design	Type A
Current load	0.49 A
IF4 interface	
Туре	USB 2.0
Design	Type A
Current load	0.10 A
IF5 interface	
Туре	X2X Link master
IF6 interface	
Туре	CAN bus
Design	3 pins of the 6-pin multipoint connector
Max. distance	1000 m
Max. transfer rate	
Bus length ≤25 m	1 Mbit/s
Bus length ≤60 m	500 kbit/s
Bus length ≤200 m	250 kbit/s
Bus length ≤1000 m	50 kbit/s
IF7 interface	
Туре	CAN bus
Design	3 pins of the 6-pin multipoint connector
Max. distance	1000 m
Max. transfer rate	
Bus length ≤25 m	1 Mbit/s
Bus length ≤60 m	500 kbit/s
Bus length ≤200 m	250 kbit/s
Bus length ≤1000 m	50 kbit/s
Display	
Туре	Color TFT
Display size	10.1"
Colors	16.2 M
Resolution	WSVGA, 1024 x 600 pixels WSVGA, 600 x 1024 pixels
Contrast 4)	Typ. 500:1
Viewing angles	·1F
Horizontal	Direction R / Direction L = typ. 70°
Vertical	Direction U / Direction D = typ. 70°
Backlight	
Type	LED
Brightness 4)	Typ. 500 cd/m ²
Half-brightness time 4)	50,000 h
2	05,000 11

Table 30: 4PPC70.101G-21W, 4PPC70.101G-21B, 4PPC70.101N-21W, 4PPC70.101N-21B - Technical data

Product ID	4PPC70.101G-21W	4PPC70.101G-21B	4PPC70.101N-21W	4PPC70.101N-21B	
Touch screen					
Type	AMT				
Technology	Analog resistive				
Controller		B&R, ser	ial, 12-bit		
Transmittance		80%	±3%		
Screen rotation		Yes, us	sing VC		
Electrical characteristics					
Nominal voltage		24 VDC -1	5% / +20%		
Max. power consumption 5)		14.	5 W		
Reverse polarity protection		Y	es		
Operating conditions					
Installation at elevations above sea level					
0 to 2000 m		No lim	itations		
>2000 m		Reduction of ambient temp	erature by 0.5°C per 100 m		
EN 60529 protection		·	: IP20		
		Front	: IP65		
Environmental conditions					
Temperature					
Operation					
Horizontal installation		0 to	50°C		
Vertical installation		0 to	50°C		
Storage		-20 to	60°C		
Transport		-20 to	60°C		
Relative humidity					
Operation		See humid	ity diagram		
Storage		See humid	ity diagram		
Transport		See humid	ity diagram		
Mechanical characteristics					
Note	Or		04.2110-01, 1x 0TB5106.2110-0 0TB6102.2110-01 separately	01,	
Front			· · · ·		
Design	Aluminum white pinstripe	Anthracite gray pinstripe	Aluminum white pinstripe	Anthracite gray pinstripe	
Dimensions			· · · · · · · · · · · · · · · · · · ·		
Width	276 mm 172 r		mm		
Height	172	mm	276	mm	
Depth	51 mm				
Weight	1.05 kg				

Table 30: 4PPC70.101G-21W, 4PPC70.101G-21B, 4PPC70.101N-21W, 4PPC70.101N-21B - Technical data

- 1) The real-time clock is buffered for approx. 1000 hours @ 25°C by a gold foil capacitor. The gold foil capacitor is completely charged after 18 continuous hours of operation.
- 2) Shortest cycle time that is suitable for average applications. In certain cases, it is also possible to use shorter cycle times. The limit for the setting is specified in the entry for the shortest task class cycle time.
- 3) See the POWERLINK help system under "General information, Hardware IF/LS".
- 4) At an ambient temperature of 25°C.
- Remote stations connected via X2X Link, CAN bus, POWERLINK and Ethernet. Both USB interfaces are used.

2.2.4.3.2.3 Technical data 4PPC70.101x-22x

Product ID	4PPC70.101G-22W	4PPC70.101G-22B	4PPC70.101N-22W	4PPC70.101N-22B	
General information					
Cooling	Fanless				
LED status indicators		perating status, module status, Etl			
B&R ID code	0xE57B	0xE57F	0xE583	0xE587	
System requirements					
Automation Studio		4.1.4.375 or l	•		
Automation Runtime		K4.08 or hi	•		
Support of X20SLX modules		B4 or high	ner		
LED status indicators					
Quantity		9			
Power button		No			
Reset button		Yes			
Controller redundancy					
Master capability		No			
Buzzer		Yes			
ACOPOS capability		Yes			
Visual Components support		Yes			
Electrical isolation					
IF1 - IF2		Yes			
IF1 - IF3		Yes			
IF1 - IF4		Yes			
IF1 - IF5		Yes			
IF1 - IF6		Yes			
IF1 - IF8		Yes			
IF2 - IF3		Yes			
IF2 - IF4		Yes			
IF2 - IF5		Yes			
IF2 - IF6		Yes			
IF2 - IF8		Yes			
IF3 - IF4		No			
IF3 - IF5		Yes			
IF3 - IF6		No			
IF3 - IF8		No			
IF4 - IF5		Yes			
IF4 - IF6		No			
IF4 - IF8		No			
IF5 - IF6		Yes			
IF5 - IF8		Yes			
IF6 - IF8		No			
PLC - IF1		Yes			
PLC - IF2		Yes			
PLC - IF3		No			
PLC - IF4		No			
PLC - IF5		Yes			
PLC - IF6		No			
PLC - IF8		No			
Certification					
CE		Yes			
cULus		Yes			
GOST-R		Yes			
Controller					
Boot loader		Automation Runtir	ne AR 4.08		
CompactFlash slot		0			
DRAM		256 MB			
Real-time clock 1)		Yes, resolution	on 1 s		
FPU		Yes			
Processor					
Туре		Intel E620			
Clock frequency		333 MHz comp	patibility		
L1 cache					
Data code		24 kB			
Program code		32 kB			
L2 cache		-			
Cooling		Passive)		
Mode/Node switches		No			
Remanent variables		32 kB			
Typical shortest task class cycle time		1 ms ²⁾			
Typical charact tack class cycle time					
Shortest task class cycle time		0.4 ms			

Table 31: 4PPC70.101G-22W, 4PPC70.101G-22B, 4PPC70.101N-22W, 4PPC70.101N-22B - Technical data

Product ID	4PPC70.101G-22W 4PPC70.101G-22B 4PPC70.101N-22W 4PPC70.101N-22B
Program memory	
Type	2 GB eMMC flash memory
Data retention	10 years
Writable data amount	io yeare
Guaranteed	40 TB
	21.9 GB/day
Results for 5 years	
Guaranteed clear/write cycles	20,000
Error correction coding (ECC)	Yes
Temperature cutoff	Yes, at >88°C
Interfaces	
IF1 interface	
Fieldbus	POWERLINK managing or controlled node
Туре	Type 4 3)
Design	1x RJ45 shielded
Cable length	Max. 100 m between 2 nodes (segment length)
Max. transfer rate	100 Mbit/s
	TOO MIDIOS
Transmission	ACCIDAGE TV
Physical layer	100BASE-TX
Half-duplex	Yes
Full-duplex	No
Autonegotiation	Yes
Auto-MDI / MDIX	Yes
IF2 interface	
Type	Ethernet
Design	1x RJ45 shielded
Cable length	
,	Max. 100 m between 2 nodes (segment length)
Max. transfer rate	10/100 Mbit/s
Transmission	
Physical layer	10BASE-T/100BASE-TX
Half-duplex	Yes
Full-duplex	Yes
Autonegotiation	Yes
Auto-MDI / MDIX	Yes
IF3 interface	
Type	USB 2.0
1	
Design	Type A
Current load	0.49 A
IF4 interface	
Туре	USB 2.0
Design	Type A
Current load	0.10 A
IF5 interface	
Туре	X2X Link master
IF6 interface	
Type	CAN bus
Design	3 pins of the 6-pin multipoint connector
Max. distance	1000 m
Max. transfer rate	
Bus length ≤25 m	1 Mbit/s
Bus length ≤60 m	500 kbit/s
Bus length ≤200 m	250 kbit/s
Bus length ≤1000 m	50 kbit/s
IF8 interface	
Type	RS232
Design	3 pins of the 6-pin multipoint connector
Max. distance	900 m
Transfer rate	
	Max. 1152 kbit/s Max. 115.2 kbit/s
Display	
Туре	Color TFT
Display size	10.1"
Colors	16.2 M
Resolution	WSVGA, 1024 x 600 pixels WSVGA, 600 x 1024 pixels
Contrast ⁴⁾	Тур. 500:1
	139. 300.1
Viewing angles	Disastian D./ Disastian I. – tim 70°
Horizontal	Direction R / Direction L = typ. 70°
Vertical	Direction U / Direction D = typ. 70°
Backlight	
Туре	LED
Brightness 4)	Typ. 500 cd/m²
Half-brightness time 4)	50,000 h
Touch screen	
	AAAT
Type	AMT Analog registive
Technology	Analog resistive
Controller	B&R, serial, 12-bit
Transmittance	80% ±3%

 $Table\ 31:\ 4PPC70.101G-22W,\ 4PPC70.101G-22B,\ 4PPC70.101N-22W,\ 4PPC70.101N-22B\ -\ Technical\ data$

Product ID	4PPC70.101G-22W	4PPC70.101G-22B	4PPC70.101N-22W	4PPC70.101N-22B	
Screen rotation	Yes, using VC				
Electrical characteristics					
Nominal voltage	24 VDC -15% / +20%				
Max. power consumption 5)		14.	5 W		
Reverse polarity protection	Yes				
Operating conditions					
Installation at elevations above sea level					
0 to 2000 m		No lim	itations		
>2000 m		Reduction of ambient temp	erature by 0.5°C per 100 m		
EN 60529 protection			: IP20 :: IP65		
Environmental conditions	,				
Temperature					
Operation					
Horizontal installation		0 to	50°C		
Vertical installation	0 to 50°C				
Storage	-20 to 60°C				
Transport	-20 to 60°C				
Relative humidity					
Operation		See humidity diagram			
Storage			lity diagram		
Transport		See humid	lity diagram		
Mechanical characteristics					
Note	Ord		04.2110-01, 1x 0TB5106.2110- 0TB6102.2110-01 separately	01,	
Front				-	
Design	Aluminum white pinstripe	Anthracite gray pinstripe	Aluminum white pinstripe	Anthracite gray pinstripe	
Dimensions		· · · · · · · · · · · · · · · · · · ·		· · · · · · · · · · · · · · · · · · ·	
Width	276	mm	172	mm	
Height	172 mm 276		mm		
Depth	51 mm				
Weight		1.0	5 kg		

Table 31: 4PPC70.101G-22W, 4PPC70.101G-22B, 4PPC70.101N-22W, 4PPC70.101N-22B - Technical data

- 1) The real-time clock is buffered for approx. 1000 hours @ 25°C by a gold foil capacitor. The gold foil capacitor is completely charged after 18 continuous hours of operation.
- 2) Shortest cycle time that is suitable for average applications. In certain cases, it is also possible to use shorter cycle times. The limit for the setting is specified in the entry for the shortest task class cycle time.
- 3) See the POWERLINK help system under "General information, Hardware IF/LS".
- 4) At an ambient temperature of 25°C.
- S) Remote stations connected via X2X Link, CAN bus, POWERLINK and Ethernet. Both USB interfaces are used.

2.2.4.3.2.4 Technical data 4PPC70.101x-23x

Product ID	4PPC70.101G-23W	4PPC70.101G-23B	4PPC70.101N-23W	4PPC70.101N-23B
General information				
Cooling		Fanle	SS	
LED status indicators	Supply voltage OK of	perating status, module status, I		J Ry/Tx RS485 Ry/Tx
B&R ID code	0xE57C	0xE580	0xE584	0xE588
	UXL37C	UXL300	UXL384	UXE386
System requirements				
Automation Studio		4.1.4.375 c	•	
Automation Runtime		K4.08 or	higher	
Support of X20SLX modules		B4 or hi	gher	
LED status indicators				
Quantity		9		
Power button		No		
Reset button		Yes		_
		100	,	_
Controller redundancy		N.		
Master capability		No		
Buzzer		Yes		_
ACOPOS capability		Yes	3	
Visual Components support		Yes	8	
Electrical isolation				
IF1 - IF2		Yes		
IF1 - IF3		Yes		
IF1 - IF4		Yes		
IF1 - IF5		Yes		
IF1 - IF6		Yes		
IF1 - IF9		Yes		
IF2 - IF3		Yes		
IF2 - IF4		Yes		
IF2 - IF5		Yes	3	
IF2 - IF6		Yes	S	
IF2 - IF9		Yes	3	
IF3 - IF4		No		
IF3 - IF5		Yes		
IF3 - IF6		No		
IF3 - IF9		No		
IF4 - IF5		Yes		
IF4 - IF6		No		
IF5 - IF6		Yes		
IF5 - IF9		Yes	5	
IF6 - IF9		No		
PLC - IF1		Yes	3	
PLC - IF2		Yes	S	
PLC - IF3		No		
PLC - IF4		No		
PLC - IF5		Yes		
PLC - IF6		No		
PLC - IF9				
		No		_
Certification				
CE		Yes		
cULus		Yes		
GOST-R		Yes		
Controller				
Boot loader		Automation Run	time AR 4.08	
CompactFlash slot		0		
DRAM			//B	_
Real-time clock 1)		Yes, resolu		
FPU		Yes	5	
Processor				
Туре		Intel E6		
Clock frequency		333 MHz coi	mpatibility	
L1 cache				
Data code		24 k	В	
Program code		32 k		
L2 cache		- -		
		Paga	VO	
Cooling		Passi		
Mode/Node switches		No		
Remanent variables		32 k		
Typical shortest task class cycle time		1 ms	2)	
Shortest task class cycle time		0.4 n	ns	_
Typical instruction cycle time		0.41		
1 J Priodi inoli dollori Gyore lilite		0.01	μυ	

Table 32: 4PPC70.101G-23W, 4PPC70.101G-23B, 4PPC70.101N-23W, 4PPC70.101N-23B - Technical data

Product ID	4PPC70.101G-23W	4PPC70.101G-23B	4PPC70.101N-23W	4PPC70.101N-23B
Program memory				
Туре		2 GB eMMC flas	sh memory	
Data retention		10 year		
Writable data amount		ŕ		
Guaranteed		40 TB	3	
Results for 5 years		21.9 GB/		
Guaranteed clear/write cycles		20,000	•	
Error correction coding (ECC)		Yes	o .	
			2000	_
Temperature cutoff		Yes, at >8	38°C	
Interfaces				
IF1 interface		DOWED! BU		
Fieldbus		POWERLINK managing		
Туре		Type 4		
Design		1x RJ45 sh		
Cable length		Max. 100 m between 2 noo		
Max. transfer rate		100 Mbi	it/s	
Transmission				
Physical layer		100BASE	E-TX	
Half-duplex		Yes		
Full-duplex		No		
Autonegotiation		Yes		
Auto-MDI / MDIX		Yes		
IF2 interface	1			-
Type		Etherne	et	
Design		1x RJ45 sh		
Cable length		Max. 100 m between 2 no		
Max. transfer rate		10/100 M		
Transmission		10/100 W	10103	
		10BASE-T/100	DACE TV	
Physical layer			IBASE-IX	
Half-duplex		Yes		
Full-duplex		Yes		
Autonegotiation		Yes		
Auto-MDI / MDIX		Yes		
IF3 interface				
Туре		USB 2.		
Design		Type A	4	
Current load		0.49 A	4	
IF4 interface				
Туре		USB 2.	.0	
Design		Type A	4	
Current load		0.10 A	A	
IF5 interface				-
Туре		X2X Link m	naster	
IF6 interface				
Туре		CAN bu	us	
Design		3 pins of the 6-pin mul		
Max. distance		1000 n		
Max. transfer rate				
Bus length ≤25 m		1 Mbit/	/s	
Bus length ≤60 m		500 kbit		
Bus length ≤200 m		250 kbit		
Bus length ≤1000 m		50 kbit		
IF9 interface	+		. •	
		RS485	5	
Type				
Design May distance		3 pins of the 6-pin mul		
Max. distance		1200 n		
Transfer rate		Max. 115.2	KUIT/S	
Display		<u> </u>	F.T.	
Type		Color TI		
Display size		10.1"		
Colors		16.2 N	Л	
Resolution	WSVGA, 102	4 x 600 pixels	WSVGA, 600	x 1024 pixels
Contrast 4)		Typ. 500	0:1	
Viewing angles				
Horizontal		Direction R / Direction	on L = typ. 70°	
Vertical		Direction U / Direction	• •	
Backlight	+	255 5 / 25616	>	
		LED		
_				
Туре		Typ. 500 c		
Type Brightness 4)			L-	
Type Brightness ⁴⁾ Half-brightness time ⁴⁾		50,000	h	
Type Brightness ⁴⁾ Half-brightness time ⁴⁾ Touch screen		50,000		
Type Brightness 4) Half-brightness time 4) Touch screen Type		50,000 AMT		
Type Brightness ⁴⁾ Half-brightness time ⁴⁾ Touch screen		50,000 AMT Analog res	sistive	_
Type Brightness 4) Half-brightness time 4) Touch screen Type		50,000 AMT	sistive	

 $Table\ 32:\ 4PPC70.101G-23W,\ 4PPC70.101G-23B,\ 4PPC70.101N-23W,\ 4PPC70.101N-23B\ -\ Technical\ data$

Product ID	4PPC70.101G-23W	4PPC70.101N-23W	4PPC70.101N-23B				
Screen rotation	Yes, using VC						
Electrical characteristics							
Nominal voltage		24 VDC -15% / +20%					
Max. power consumption 5)		14.	5 W				
Reverse polarity protection		Y	es				
Operating conditions							
Installation at elevations above sea level							
0 to 2000 m		No lim	itations				
>2000 m		Reduction of ambient temp	erature by 0.5°C per 100 m				
EN 60529 protection			: IP20				
		Front	: IP65				
Environmental conditions							
Temperature							
Operation							
Horizontal installation			50°C				
Vertical installation			50°C				
Storage			0 60°C				
Transport		20 to	60°C				
Relative humidity							
Operation			lity diagram				
Storage			lity diagram				
Transport		See humid	lity diagram				
Mechanical characteristics							
Note	Or		04.2110-01, 1x 0TB5106.2110-0 0TB6102.2110-01 separately	01,			
Front							
Design	Aluminum white pinstripe	Anthracite gray pinstripe	Aluminum white pinstripe	Anthracite gray pinstripe			
Dimensions							
Width	276	mm					
Height	172	mm					
Depth							
Weight	1.05 kg						

Table 32: 4PPC70.101G-23W, 4PPC70.101G-23B, 4PPC70.101N-23W, 4PPC70.101N-23B - Technical data

- 1) The real-time clock is buffered for approx. 1000 hours @ 25°C by a gold foil capacitor. The gold foil capacitor is completely charged after 18 continuous hours of operation.
- 2) Shortest cycle time that is suitable for average applications. In certain cases, it is also possible to use shorter cycle times. The limit for the setting is specified in the entry for the shortest task class cycle time.
- 3) See the POWERLINK help system under "General information, Hardware IF/LS".
- 4) At an ambient temperature of 25°C.
- Remote stations connected via X2X Link, CAN bus, POWERLINK and Ethernet. Both USB interfaces are used.

2.2.4.4 Data and real-time clock buffering

Compact CPUs are not designed for use with batteries. This makes them completely maintenance-free. The following features make operation without a backup battery possible.

Data and real-time clock buffering	Type of buffering	Note
Remanent variables	FRAM	This FRAM stores its contents ferroelectrically. Unlike normal SRAM, this does not require a battery.
Real-time clock	Gold foil capacitor	The real-time clock is buffered for approx. 1000 hours by a gold foil capacitor. The gold foil capacitor is completely charged after 3 continuous hours of operation.

2.2.4.5 Diagnostic LEDs

Nine diagnostic LEDs are found on the back of Power Panel C-Series devices:



Figure 5: Diagnostic LEDs

2.2.4.5.1 4PPC70.xxxx-2xx - Diagnostic LEDs

LED	Color	Status	Description
R/E	Green	On	Application running
	Red	On	SERVICE or BOOT mode
		Double flash	BOOT mode (during firmware update)
RDY/F	Yellow	On	SERVICE or BOOT mode
S/E	Green/Red		Status/Error LED. The statuses of this LED are described in section 2.2.4.5.2 ""S/E" LED" on page 64.
PLK	Green	On	Link established to the remote station
		Blinking	A link to the remote station has been established and there is Ethernet activity on the bus.
OPS1 ¹	-	-	NC
OPS2 ¹	Green	On	CAN RxD
OPS3 ¹	Yellow	On	CAN TxD
OPS4 ¹	Green	On	RxD of the respective interface
OPS5 ¹	Yellow	On	TxD of the respective interface

Table 33: 4PPC70.xxxx-2xx - Diagnostic LEDs

2.2.4.5.2 "S/E" LED

The Status/Error LED is a green/red dual LED. The LED status can have different meanings depending on the operating mode.

Ethernet mode

In this mode, the interface is operated as an Ethernet interface.

Green - Status	Description
On	Interface being operated as an Ethernet interface

Table 34: 4PPC70.xxx-20x - Diagnostic LEDs - "S/E" LED - Ethernet mode

¹ Planned feature (implementation to follow)

POWERLINK

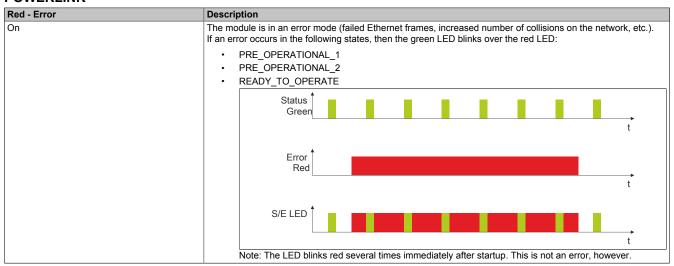


Table 35: 4PPC70.xxx-20x - Diagnostic LEDs - "S/E" LED - POWERLINK - error

Green - Status	Description
Off	Mode
NOT_ACTIVE	The module is in NOT_ACTIVE mode or:
	Switched off
	Starting up
	Not configured correctly in Automation Studio
	Defective
	Managing node (MN)
	The bus is being monitored for POWERLINK frames. If a frame is not received within the configured time window (timeout), the module switches immediately to PRE_OPERATIONAL_1 mode (single flash).
	If POWERLINK communication is detected before the time expires, however, then the MN will not be started.
	Controlled node (CN)
	The bus is being monitored for POWERLINK frames. If a corresponding frame is not received within the de-
	fined time frame (timeout), then the module switches immediately to BASIC_ETHERNET mode (flickering). If
	POWERLINK communication is detected before this time expires, however, the module switches immediately to PRE_OPERATIONAL_1 mode (single flash).
Flickering green (approx. 10 Hz)	Mode
BASIC_ETHERNET	The module is in BASIC_ETHERNET mode. The interface is operated as an Ethernet TCP/IP interface.
	Managing node (MN)
	This state can only be changed by resetting the module.
	Controlled node (CN)
	If POWERLINK communication is detected while in this state, the module goes into the PRE_OPERATIONAL_1
	state (single flash).
Single flash (approx. 1 Hz)	Mode
PRE_OPERATIONAL_1	The module is in PRE_OPERATIONAL_1 mode.
	Managing node (MN)
	The MN starts "reduced cycle" operation. Cyclic communication is not yet taking place.
	Controlled node (CN)
	The module can be configured by the MN in this state. The CN waits until it receives an SoC frame and then
	switches to the PRE_OPERATIONAL_2 state (double flash).
	An LED lit red in this state indicates failure of the MN.

Table 36: 4PPC70.xxx-20x - Diagnostic LEDs - "S/E" LED - Status

Green - Status	Description
Double flash (approx. 1 Hz)	Mode
PRE_OPERATIONAL_2	The module is in PRE_OPERATIONAL_2 mode.
	**
	Managing node (MN) The MN leging guide communication (qualic input data is not yet being qualicated)
	The MN begins cyclic communication (cyclic input data is not yet being evaluated). The CNs are configured in this state.
	The Ch's are configured in this state.
	Controlled node (CN)
	The module can be configured by the MN in this state. A command then switches the state to READY_TO_OP-
	ERATE (triple flash).
	An LED lit red in this mode indicates failure of the MN.
Triple flash (approx. 1 Hz)	Mode
READY_TO_OPERATE	The module is in the READY_TO_OPERATE state.
	Managing node (MN)
	Cyclic and asynchronous communication is taking place. Any received PDO data is ignored.
	Controlled node (CN)
	The configuration of the module is completed. Normal cyclic and asynchronous communication is taking place.
	The PDO data being sent corresponds to the PDO mapping. Cyclic data is not yet being evaluated, however.
	An LED lit red in this mode indicates failure of the MN.
On	Mode
OPERATIONAL	The module is in OPERATAIONL mode. PDO mapping is active and cyclic data is being evaluated.
Blinking (approx. 2.5 Hz)	Mode
STOPPED	The module is in STOPPED mode.
	Maria de la composición dela composición de la composición dela composición de la composición dela composición dela composición dela composición de la composición dela composición de
	Managing node (MN) This status is not possible for the MNI
	This status is not possible for the MN.
	Controlled node (CN)
	No output data is produced, and no input data is supplied. It is only possible to enter or leave this mode after
	the MN has given the appropriate command.

Table 36: 4PPC70.xxx-20x - Diagnostic LEDs - "S/E" LED - Status

2.2.4.5.3 System stop error codes

Incorrect configuration or defective hardware can cause a system stop error.

The error code is indicated by the red Error LED using four switch-on phases. Each switch-on phase has a duration of either 150 ms or 600 ms. The error code is repeated every 2 seconds.

Error description	Error o	ode ind	licated b	y red s	tatus LED			,		
RAM error:	•	•	•	-	Pause	•	•	•	-	Pause
The module is defective and must be replaced.										
Hardware error:	-	•	•	-	Pause	-	•	•	-	Pause
The module or a system component is defective and must be										
replaced.										

Table 37: 4PPC70.xxxx-20x diagnostic LEDs - System stop error codes

€ ... 150 ms
 − ... 600 ms
 Pause 2 second delay

2.2.4.5.4 Ethernet and POWERLINK LEDs

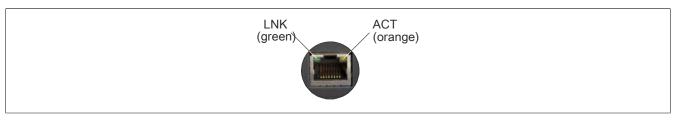


Figure 6: Ethernet and POWERLINK LEDs

LED	Color	Status	Description
LNK	Green	On	Link established to the remote station
ACT	Orange	Blinking	A link to the remote station has been established and there is activity on bus.

Table 38: Ethernet and POWERLINK LEDs

2.2.4.6 Reset button

The reset button can be used to switch between operating modes, depending on how it is pressed.

- Reset hardware (RUN): Short press (<2 seconds)
- Diagnostic mode (DIAG): Long press (>2 seconds)
- Start mode (BOOT): Short press (<2 seconds), followed by a long press (>2 seconds)

A warm or cold restart triggered from Automation Studio always results in RUN mode.

2.2.4.7 Temperature/Humidity diagram

4PPC70.057x-2xx

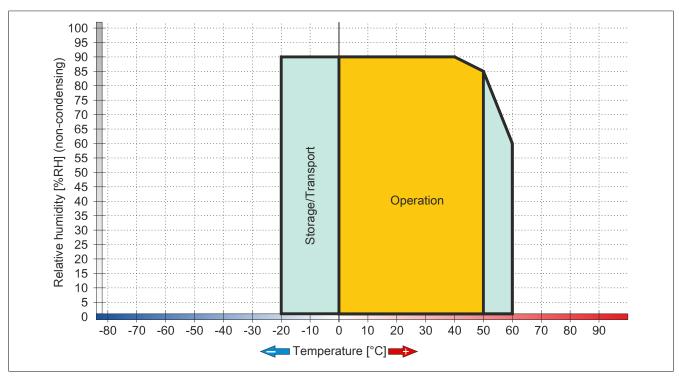


Figure 7: 4PPC70.057x-2xx - Temperature/Humidity diagram

4PPC70.070x-2xx

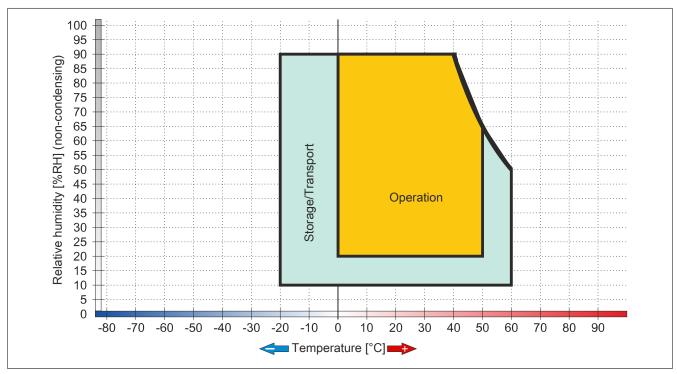


Figure 8: 4PPC70.070x-2xx - Temperature/Humidity diagram

4PPC70.101x-2xx

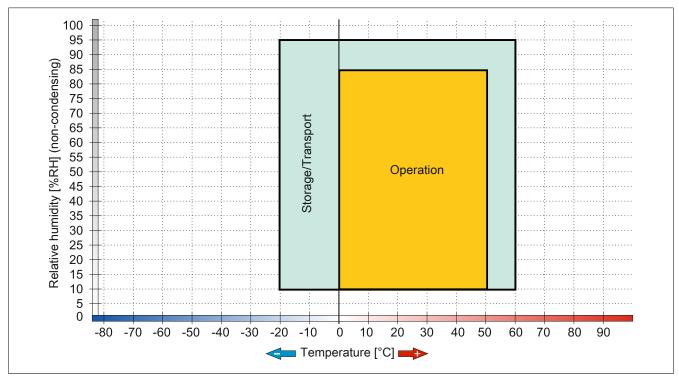


Figure 9: 4PPC70.101x-2xx - Temperature/Humidity diagram

2.2.4.8 Connection elements

2.2.4.8.1 POWERLINK interface

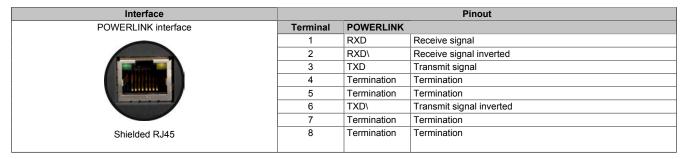


Table 39: POWERLINK interface - Pinout

2.2.4.8.2 Ethernet interface

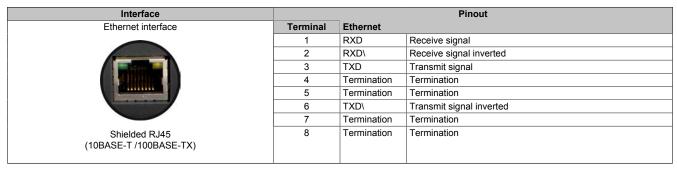


Table 40: Ethernet interface - Pinout

2.2.4.8.3 USB interface

This Power Panel is equipped with a USB 2.0 (Universal Serial Bus) host controller with 2 USB interfaces that are accessible externally for the user.



Figure 10: USB interface

USB interface					
Transfer rate ¹	Low speed (1.5 Mbit/s), full speed (12 Mbit/s), high speed (480 Mbit/s)				
Power supply Max. 0.49 A (IF3) or 0.10 A (IF4) per interface ²					

Table 41: USB interface

- 1 The actual value depends on the operating system or driver being used.
- 2 Each USB interface is protected by a maintenance-free "USB current-limiting circuit breaker" (max. 0.49 A @ IF3 / max. 0.10 A @ IF4).

Warning!

Peripheral USB devices can be connected to the USB interfaces on this device. Due to the vast number of USB devices available on the market, B&R cannot guarantee their performance. All USB devices provided by B&R are guaranteed to function properly.

Important!

Because of general PC specifications this interface should be handled with extreme care with regard to EMC, location of cables etc.

2.2.4.8.4 X2X Link interface



Figure 11: X2X Link interface

Pinout					
Terminal		X2X Link			
1	X2X	X2X data			
2	X2X⊥	X2X ground			
3	X2X\	X2X data inverted			
4	SHLD Shield				
Required accessories					
0TB5104.2110-01	Accessory terminal block, 4-pin (2.5), cage clamp, 0.5 mm ²				

Table 42: X2X Link interface

2.2.4.8.5 4PPC70.xxxx-21x - 2 CAN bus

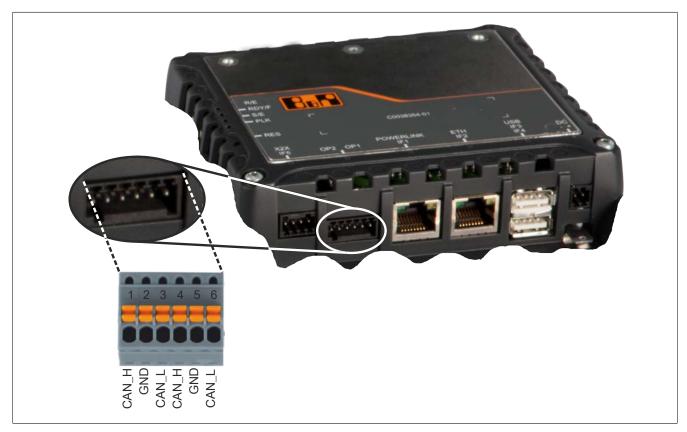


Figure 12: 4PPC70.xxxx-21x - 2 CAN bus

Terminal	Pinout		
CAN bus			
1	CAN_H	CAN_High	
2	GND	Ground	
3	CAN_L	CAN_Low	
4	CAN_H	CAN_High	
5	GND	Ground	
6	CAN_L	CAN_Low	
Required accessories			
0TB5106.2110-01	Accessory terminal block, 6-pin (2.5), cage clamp, 0.5 mm ²		

Table 43: 4PPC70.xxxx-21x - 2 CAN bus

2.2.4.8.6 4PPC70.xxxx-22x - 1 CAN bus / 1 RS232 interface

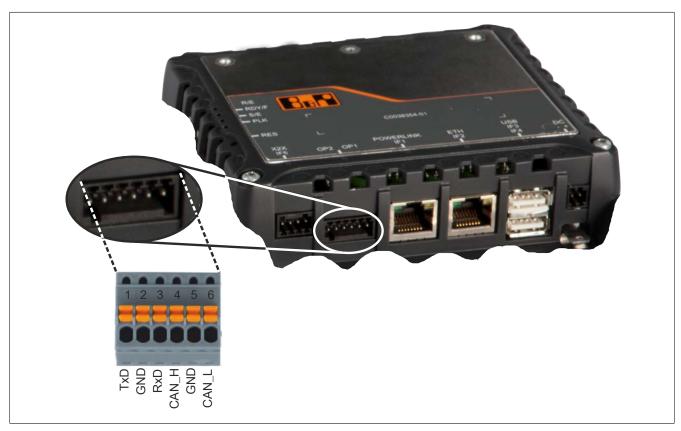


Figure 13: 4PPC70.xxxx-22x - 1 CAN bus / 1 RS232 interface

Terminal	Pinout		
RS232			
1	TxD	Transmit signal	
2	GND	Ground	
3	RxD	Receive signal	
CAN bus			
4	CAN_H	CAN_High	
5	GND	Ground	
6	CAN_L	CAN_Low	
Required accessories			
0TB5106.2110-01	Accessory terminal block, 6-pin (2.5), cage clamp, 0.5 mm ²		

Table 44: 4PPC70.xxxx-22x - 1 CAN bus / 1 RS232 interface

2.2.4.8.7 4PPC70.xxxx-23x - 1 CAN bus / 1 RS485 interface

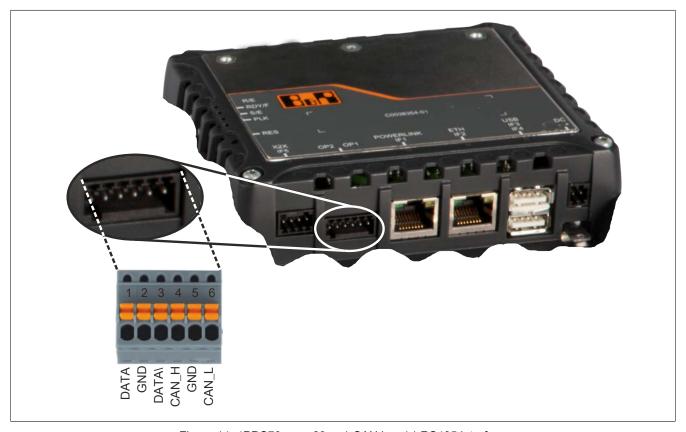


Figure 14: 4PPC70.xxxx-23x - 1 CAN bus / 1 RS485 interface

Terminal	Pinout					
RS485						
1	DATA	Data				
2	GND	Ground				
3	DATA\	Data inverted				
	CAN	bus				
4	CAN_H	CAN_High				
5	GND	Ground				
6	CAN_L	CAN_Low				
Required accessories						
0TB5106.2110-01	Accessory terminal block, 6-pin (2.5), c	age clamp, 0.5 mm ²				

Table 45: 4PPC70.xxxx-23x - 1 CAN bus / 1 RS485 interface

2.2.4.8.8 Power supply



Figure 15: Power supply

Power Panel C-Series

The pinout is listed in the following table and printed on the back of the Power Panel. The Power Panel has reverse polarity protection that prevents the supply voltage from being connected incorrectly and damaging the device. Overload protection must be provided by an external fuse (5 A, fast-acting).

Pinout						
Terminal	Assignment					
1	+	24 VDC				
2	- GND					
Required accessories	Required accessories					
0TB6102.2010-01	Accessory terminal block, 2-pin (3.81),	screw clamps 1.5 mm²				
0TB6102.2110-01	Accessory terminal block, 2-pin (3.81),	ccessory terminal block, 2-pin (3.81), cage clamp terminal block 1.5 mm ²				

Table 46: Power supply

Important!

The ground potential (which has a spade terminal) must be connected to ground (e.g. control cabinet) using the shortest possible path.

2.2.4.9 Dimensions

2.2.4.9.1 Dimensions - 4PPC70.057x-2xx

Landscape

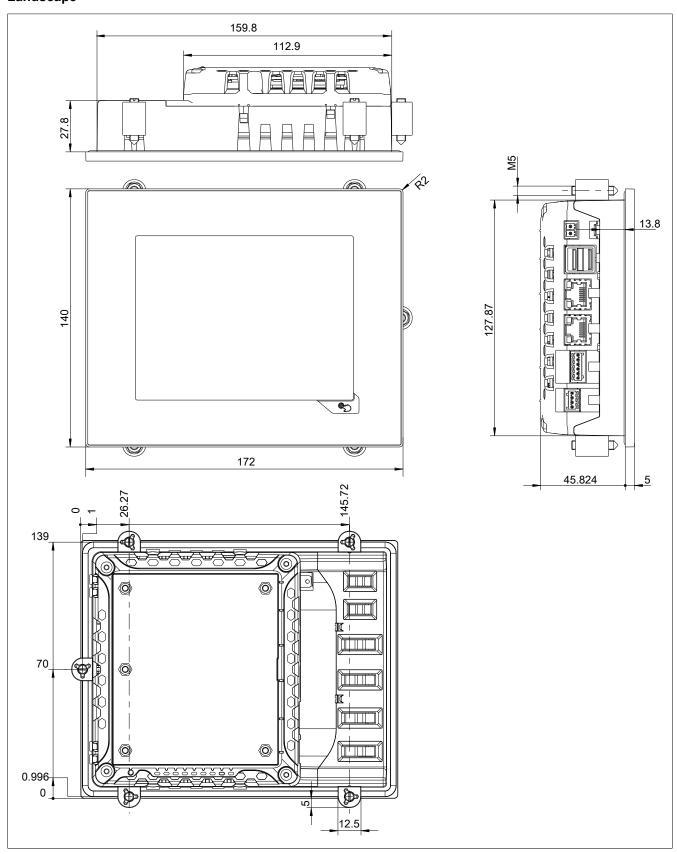


Figure 16: Dimensions - 4PPC70.057x-2xx - 4PPC70.0573

Max. control cabinet thickness: 6 mm

Cutout dimensions: 161.8 mm ±1 x 129.9 mm ±1

Portrait

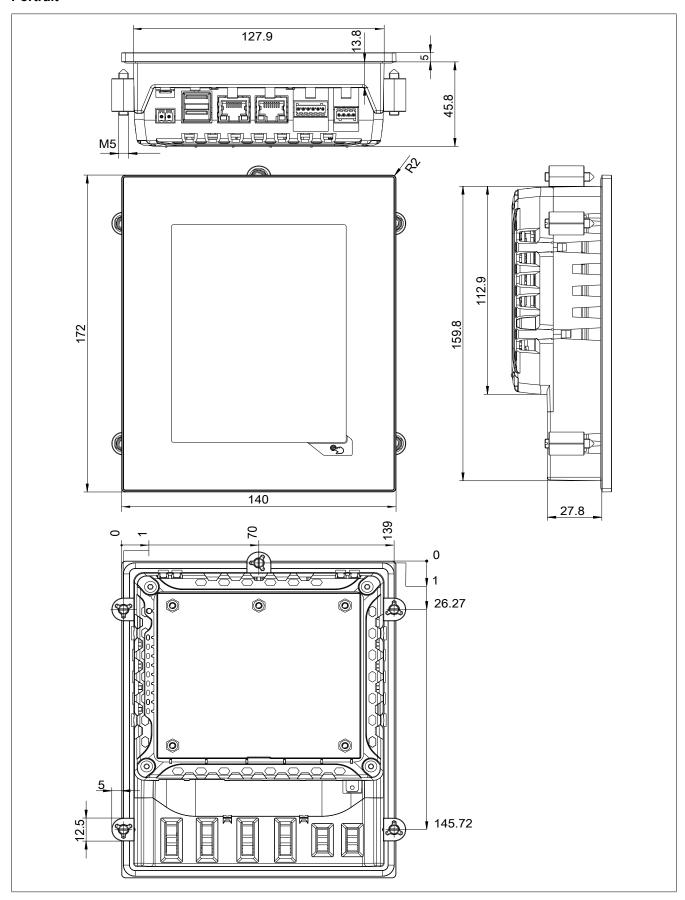


Figure 17: Dimensions - 4PPC70.057x-2xx - 4PPC70.057L

Max. control cabinet thickness: 6 mm

Cutout dimensions: 129.9 mm ±1 x 161.8 mm ±1

2.2.4.9.2 Dimensions - 4PPC70.070x-2xx

Landscape

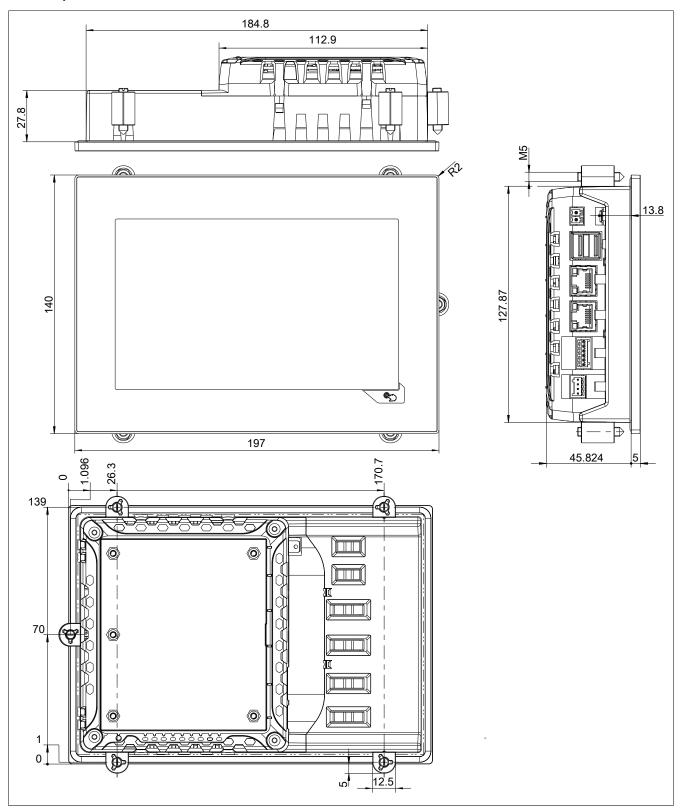


Figure 18: Dimensions - 4PPC70.070x-2xx - 4PPC70.0702

Max. control cabinet thickness: 6 mm

Cutout dimensions: 186.8 mm ±1 x 129.9 mm ±1

Portrait

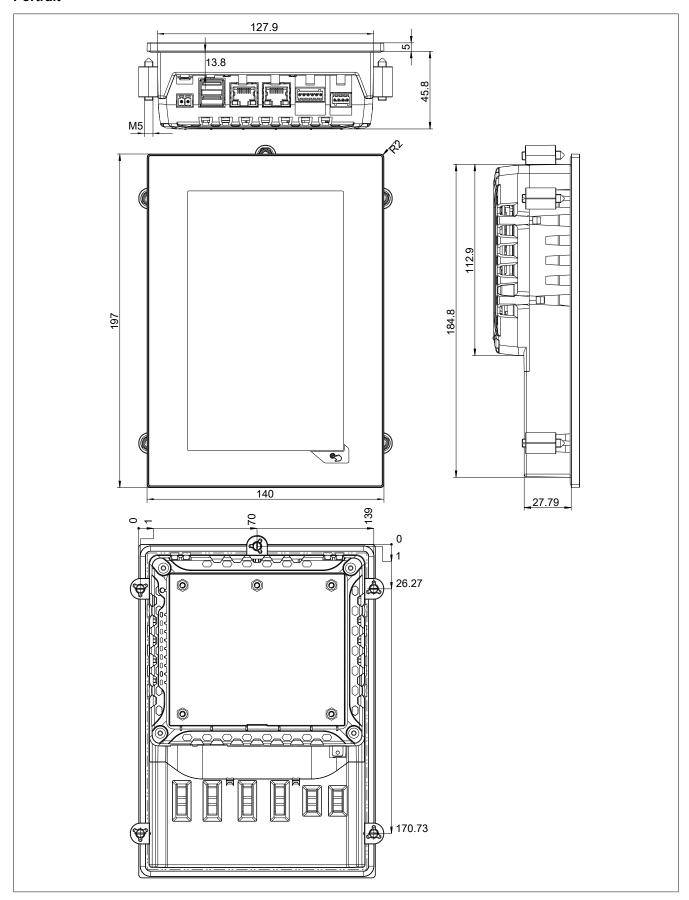


Figure 19: Dimensions - 4PPC70.070x-2xx - 4PPC70.070M

Max. control cabinet thickness: 6 mm

Cutout dimensions: 129.9 mm ±1 x 186.8 mm ±1

2.2.4.9.3 Dimensions - 4PPC70.101x-2xx

Landscape

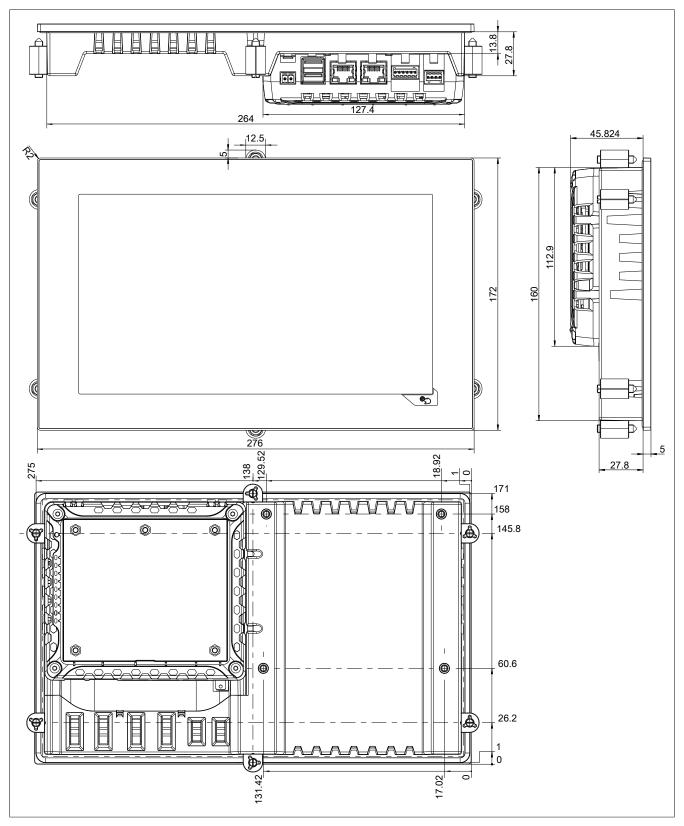


Figure 20: Dimensions - 4PPC70.101x-2xx - 4PPC70.101G

Max. control cabinet thickness: 6 mm

Cutout dimensions: 265.9 mm ±1 x 161.9 mm ±1

Portrait

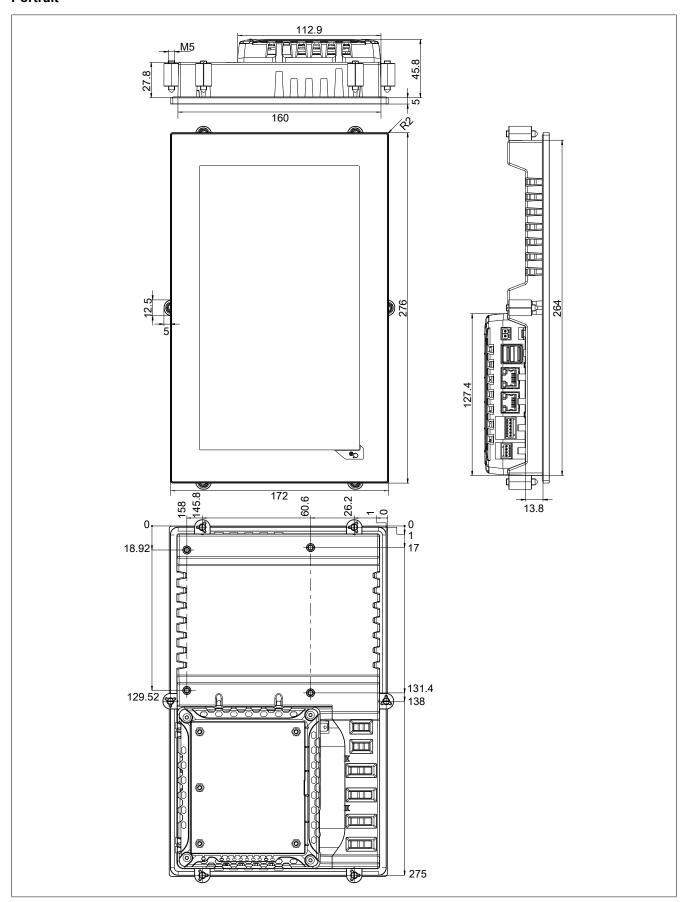


Figure 21: Dimensions - 4PPC70.101x-2xx - 4PPC70.101N

Max. control cabinet thickness: 6 mm

Cutout dimensions: 161.9 mm ±1 x 265.9 mm ±1

3 Installation

3.1 Installation

Danger!

- All supplied power must be disconnected before removing device covers or components or installing/removing accessories, hardware or cables.
- The power cable must be disconnected from the device and from the voltage supply.
- All covers, components, accessories, hardware and cables must be installed or connected before the device can be connected to the power supply and turned on.

3.1.1 Important installation information

- Environmental conditions must be taken into consideration.
- When installed in an enclosure, enough space must be available for air to circulate sufficiently.
- This device must be installed on a flat, clean and burr-free surface.
- · Ventilation holes must not be covered.
- This device must be installed using one of the approved mounting orientations.
- · The flex radius of connected cables must not be exceeded.
- This device must be installed in a position and orientation that make viewing as easy as possible for the operator.

3.1.2 Mounting with retaining clips



Figure 22: Cover retaining clip

Retaining clips are designed to clamp a maximum thickness of 6 mm and minimum thickness of 2 mm.

A large flat-blade screwdriver is needed to tighten and loosen the screws. The maximum tightening torque for the retaining clips is 0.6 Nm.

Devices must be installed on a flat, clean and burr-free surface; uneven areas can cause damage to the display when the screws are tightened or the intrusion of dust and water.

3.1.2.1 Procedure

- 1. 1. Insert the device into the front side of the smooth, flat installation cutout. The required dimensions of the installation cutout can be found in the "Dimensions" section.
- 2. 2. Place the retaining clips on the B&R device. To do this, insert the clips into the openings on the sides of the B&R device (indicated by the orange circles). The number of openings may vary depending on the size of the device.

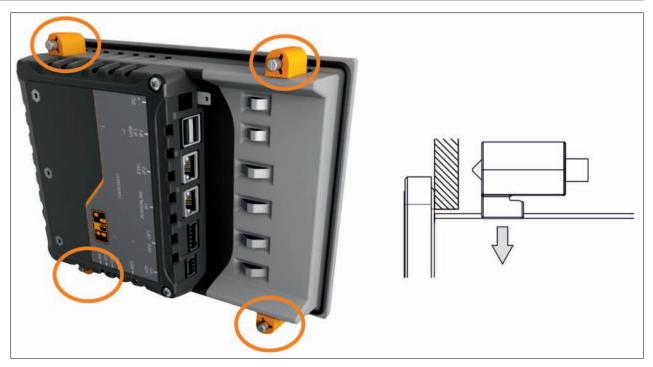


Figure 23: Inserting the retaining clips

3. 3. Slide the retaining clips all the way to the back of the openings.

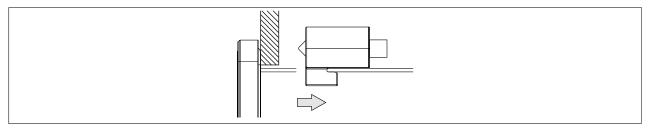


Figure 24: Sliding the retaining clips back

4. 4. Now fasten the retaining clips to the wall or control cabinet by tightening the screws with a flat-blade screwdriver. The tightening torque should be approximately 0.6 Nm.

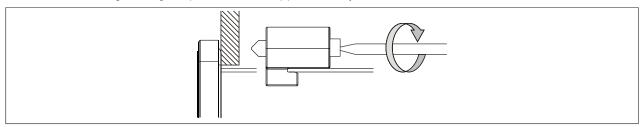


Figure 25: Mounting with retaining clamps

3.1.3 Installation instructions

The Power Panel must be mounted using the retaining clips included in delivery (with a torque of 0.6 Nm).

In order to guarantee sufficient air circulation, the specified amount of space above, below, to the side and behind the Power Panel must be provided. The minimum specified spacing is indicated in the following diagrams. This applies to all Power Panel variants.

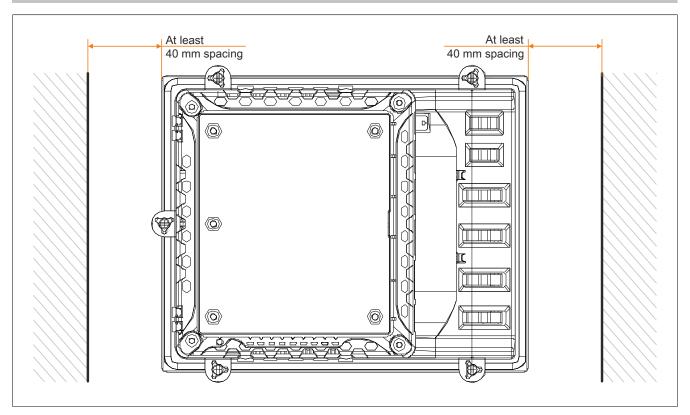


Figure 26: Spacing for air circulation - Rear view

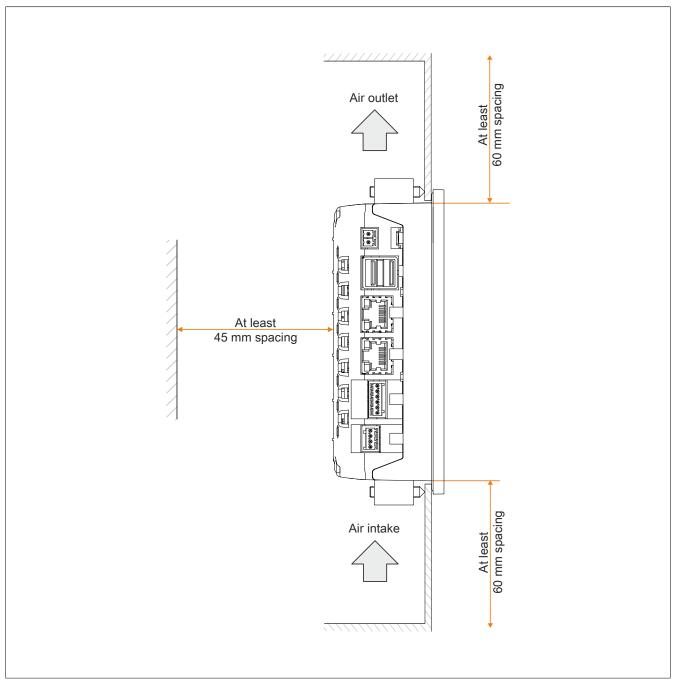


Figure 27: Spacing for air circulation - Side view

Information:

The spacing specifications for air circulation are based on the worst-case scenario for operation at the maximum specified ambient temperature (see "Temperature specifications" under "Technical data").

If the spacing specifications for air circulation cannot be observed, then the maximum specified temperature for the temperature sensor ("TemperatureENV <88°C") must be monitored by the user and appropriate measures taken if it is exceeded.

3.1.4 Mounting orientations

The following diagram shows the approved mounting orientations for Power Panel devices. These mounting orientations apply to all Power Panel variants.

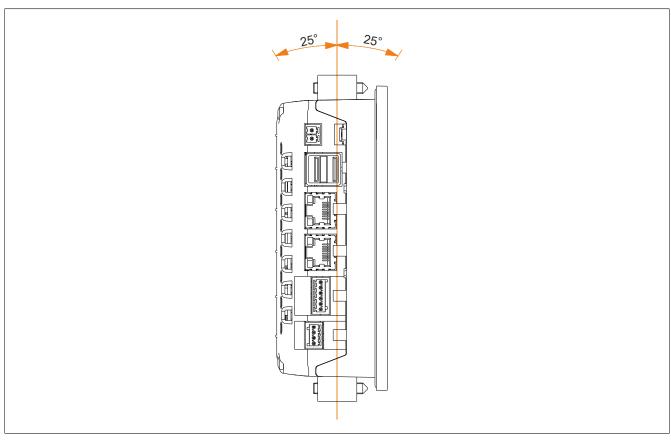


Figure 28: Power Panel - Mounting orientations

Caution!

The maximum permitted ambient temperature can be found in the technical data for the respective Power Panel device.

3.2 Commissioning

The Power Panel comes with Automation Runtime as default. Automation Runtime must first be installed in order to be able to operate the Power Panel. There are 3 methods available:

- · AR transfer over the network with DHCP server
- AR transfer over the network without DHCP server
- USB stick remote install structure

AR transfer over the network with DHCP server

See the AS help system

AR transfer over the network without DHCP server

- · Connect the Power Panel to the network
- Start the Power Panel
- Create a new project with Power Panel in Automation Studio
- Open the browse dialog box in online settings
- Right-click on Power Panel with IP 0.0.0.0 and select "Set IP Parameters"
- The settings can be taken from the following example:

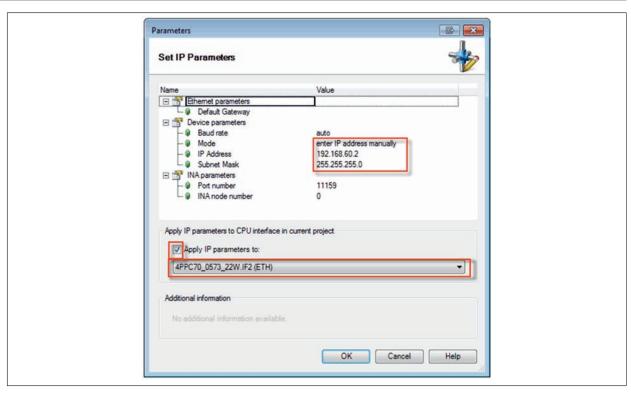


Figure 29: "Set IP Parameters" example

• Perform a "Rebuild" in Automation Studio (see image)

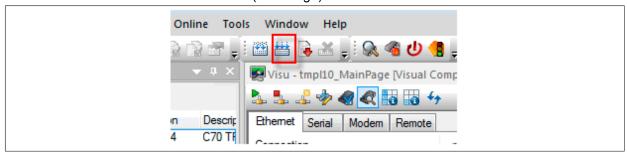


Figure 30: Performing a "Rebuild"

- After the "Rebuild" has been finished, select the function "Transfer Automation Runtime" in online services.
- In the "Operating System Transfer" window, mark the following setting, select "Next" and perform "Operating System Transfer"

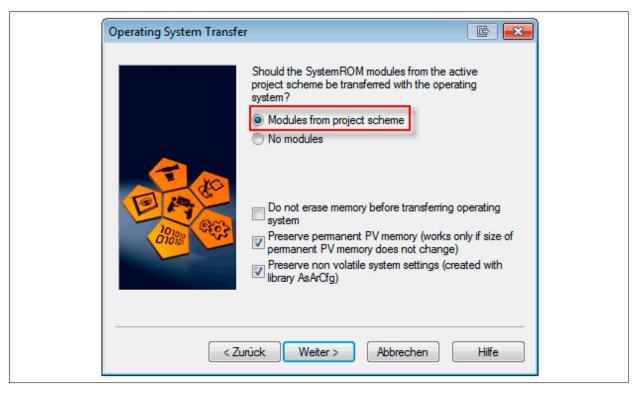


Figure 31: "Operating System Transfer" - Settings

Information:

First of all, in "Operating System Transfer" the memory is deleted, then Automation Runtime is transferred and after 3 automatic restarts the Power Panel is then in RUN mode.

USB stick - remote install structure

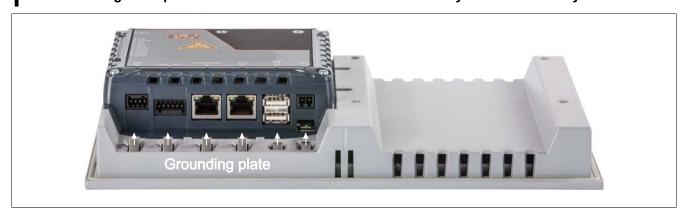
See details in the RUC (Runtime Utility Center) documentation.

3.3 Grounding

Grounding tongues on the circuit board ensure effective prevention of signal interference. The shielding of the various cables (X2X, POWERLINK, Ethernet, option board) is connected to the grounding plate. Additional information about electromagnetic compatibility is available in the "INSTALLATION / EMV GUIDE - MAEMV-ENG" user's manual.

Information:

Ground and ground potential are connected to each other internally in Power Panel systems.





Unshielded lines

• All unshielded lines must be relieved of tension by using a cable tie to tie them to the grounding plate.

Shielded lines

• A central ground connection is available to effectively deflect interference. All cable shields must be connected to ground with good conductivity using a cable tie on the grounding plate or some other method.

Grounding

• The connection to ground potential must be as short as possible and sufficiently strong (≥4 mm²) over the intended spade terminal (Faston 6.3 mm).

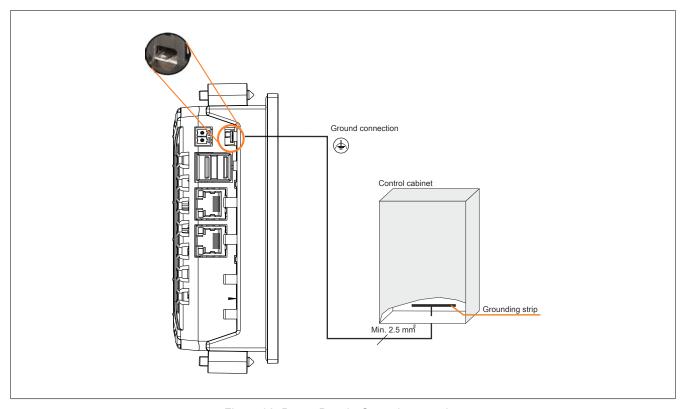


Figure 32: Power Panel - Ground connection

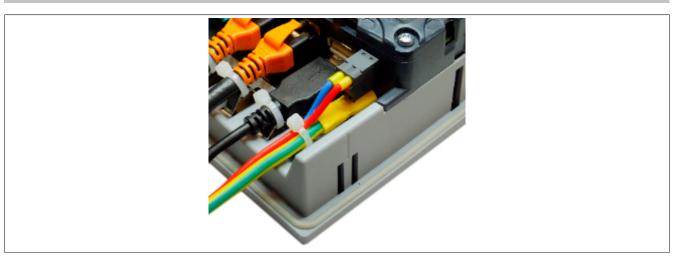


Figure 33: Power Panel - Grounding

Information:

On the Power Panel, the protective earth and functional earth are connected internally. A power supply with electrical isolation must therefore be used.

3.4 Overtemperature cutoff

To prevent damage, a shutdown/reset is triggered at "TemperatureENV" of 88°C.

The following errors are entered in the logbook:

Error number	Error description
9204	WARNING: System halted because of temperature check
9210	WARNING: Boot by watchdog or manual reset

3.5 Button for reset and operating mode



Figure 34: Button for reset and operating mode

3.5.1 Reset

The button must be pressed for less than 2 seconds to trigger a reset. This triggers a hardware reset on the CPU, which means that:

- · All application programs are stopped.
- · All outputs are set to zero.

The PLC then boots into service mode by default. The boot mode that follows after pressing the reset button can be defined in Automation Studio.

- Service mode (default)
- · Warm restart
- · Cold restart
- Diagnostic mode

3.5.2 Operating mode

3 operating modes can be configured using different button sequences:

Installation

Operating mode	Button sequence	Description
BOOT	Boot mode is enabled by the following button sequence: Press the button for less than 2 seconds. Then press the button within 2 seconds for longer than 2 seconds.	The default Automation Runtime system is started and the runtime system can be installed via the online interface (Automation Studio). User flash memory is deleted only after the download begins.
RUN	Press the button for less than 2 seconds.	RUN mode: The triggering and boot behavior are the same as what happens when a hardware reset is triggered (see section 3.5.1 "Reset" on page 89).
DIAGNOSE	Press the button for more than 2 seconds.	Boots the CPU in diagnostic mode. Program sections in User RAM and User FlashPROM are not initialized. After diagnostic mode, the CPU always boots with a cold restart.

Table 47: Operating mode description

3.6 Touch screen

3.6.1 Touch calibration

B&R touch screen devices are equipped with a touch controller that supports hardware calibration. As a result, devices are pre-calibrated when delivered. This is an advantageous feature when replacing devices of the same model or type since it avoids having to recalibrate the new device. Nevertheless, calibrating the device is still recommended in order to achieve the best results and to better adapt the touch screen to the user's preferences.

3.6.2 Operating the touch screen

The analog resistive touch screen is executed about 1 cm over the edge of the display. If you press on 2 positions simultaneously, then the midpoint of the touch screen is controlled and selected.

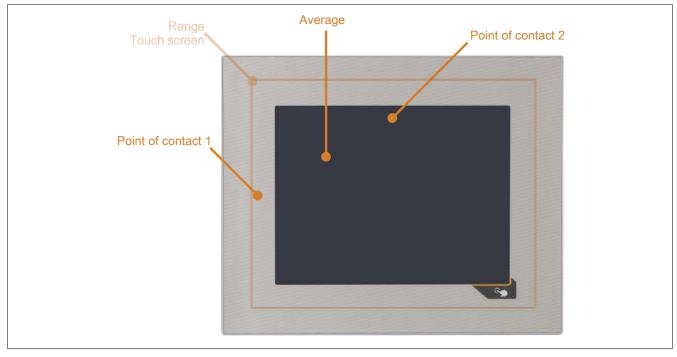


Figure 35: The midpoint between 2 points of contact

Note:

The touch screen goes beyond the inner edge of the panel overlay. When operating the touch screen, the selection is moved if the Power Panel is held in your hands and the panel overlay is touched.

3.6.3 Service life and surface quality

Service life

The maximum service life of the analog resistive touch screen is 10 million actuations.

The following graph shows the force required to activate the touch screen over the course of its service life. The requirements are similar to those for the specified 10 million actuations.

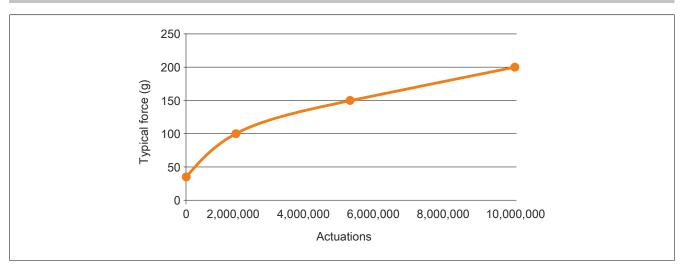


Figure 36: Life span graph

Surface quality

The surface of the analog resistive touch screen is resistant to the following chemicals at a temperature of 25°C for a duration of 1 hour.

- Acetone
- · Methylene chloride
- Butanone
- Isopropyl alcohol
- Hexane
- Turpentine
- Mineral spirit
- Unleaded gasoline
- Diesel fuel
- Motor oil
- · Transmission fluid
- Antifreeze
- · Ammonia-based glass cleaner
- · Washing agents
- · Household cleaners
- Vinegar
- Coffee
- Tea
- · Lubricating grease
- · Cooking oil
- Salt

3.7 Cover design

Only two screws are needed in order to adhere to the mechanical characteristics. For this reason, the cover of the Power Panel is installed and delivered with two screws. The two unused drill holes can therefore be used for additional installation purposes.



Figure 37: Cover design

3.8 Screen rotation

It is possible to rotate the contents of the screen by 90° using the graphic driver's screen rotation function. This function is supported by Automation Runtime.

3.9 Touch calibration

B&R touch screen devices are equipped with a touch controller that supports hardware calibration. As a result, devices are pre-calibrated when delivered. This is an advantageous feature when replacing devices of the same model or type since it avoids having to recalibrate the new device. Nevertheless, calibrating the device is still recommended in order to achieve the best results and to better adapt the touch screen to the user's preferences.

3.10 Tips for extending the service life of the display

3.10.1 Backlight

The service life of the backlight is specified by its "half-brightness time". For example, a specified operating time of 50,000 hours means that the display would still retain 50% of its brightness after this time.

3.10.1.1 How can the service life of the backlight be extended?

- By setting the display brightness to the lowest value that is still comfortable for the eyes
- · By using dark images
- By reducing the brightness by 50%, which can result in an approximately 50% increase in the half-brightness time

3.10.2 Screen burn-in

Screen burn-in refers to the "burning in" of a static image on a display after being displayed for a prolonged period of time. Nevertheless, static images are not the only cause of screen burn-in. Screen burn-in is also referred to as burn-in effect, image retention, memory effect, memory sticking or ghost image.

There are basically 2 types:

- Area type: This type of screen burn-in is indicated by a dark gray image. The effect will disappear if the display is switched off for a long period of time.
- Line type: This type of screen burn-in can cause lasting damage.

3.10.2.1 What causes screen burn-in?

- · Static images
- · No screensaver
- Sharp transitions in contrast (e.g. black/white)
- High ambient temperatures
- Operation outside of specifications

3.10.2.2 How can screen burn-in be avoided?

- · By constantly changing between static and dynamic images
- By avoiding excessive brightness differences between foreground and background elements
- · By using colors with similar brightness
- · By using complementary colors in follow-up images
- · By using a screensaver

3.11 Pixel errors

Information:

Displays may contain defective pixels (dead/stuck pixels) that result from the manufacturing process. These flaws are not grounds for reclamation or initiating a warranty claim.

4 Standards and certifications

4.1 Applicable European directives

- EMC directive 2004/108/EC
- · RoHS directive 2011/65/EU

4.2 Overview of standards

Standard	Description
EN 61131-2	Programmable logic controllers - Part 2: Equipment requirements and tests
EN 61000-6-2	Electromagnetic compatibility (EMC) - Part 2 - Generic standards - Immunity for industrial environments
EN 61000-6-4	Electromagnetic compatibility (EMC) - Part 2 - Generic standards - Emission standard for industrial environments
EN 50581	Technical documentation for the assessment of electrical and electronic products with respect to the restriction of hazardous substances (RoHS)
EN 60529	Degrees of protection provided by enclosures (IP code)
GOST-R	Certificate of conformity for Russia

Table 48: Overview of standards

4.3 International certifications

B&R products and services comply with applicable standards. This includes international standards from organizations such as ISO, IEC and CENELEC, as well as national standards from organizations such as UL, CSA, VDE, ÖVE, etc. We are committed to ensuring the reliability of our products in an industrial environment.

Certifications						
Europe	This mark certifies that all harmonized EN standards for the applicable directives have been met.					
C€						

Table 49: International certifications

5 Accessories

5.1 Overview

Cage Calmp terminal block	4PPC70.101x-23x	4PPC70.070x-23x	4PPC70.057x-23x	4PPC70.101x-22x	4PPC70.070x-22x	4PPC70.057x-22x	4PPC70.101x-21x	4PPC70.070x-21x	4PPC70.057x-21x	4PPC70.101x-20x	4PPC70.070x-20x	4PPC70.057x-20x	
Cage Calmp terminal block	C20	C70	C20	C70	C70	C70	C70	C70	C70	C20	C20	C20	
Cage Calmp terminal block	. 4 Page	F P	PP	<u> </u>	P -	P -	P P	F F	ЬP	ΡP	РP	РP	Model number Product ID
0TB61022110-011 Accessory 2-pin cage clamp (3.81) • • • • • • • • • • • • • • • • • • •	4 Fage	4	4	4	4	4	4	4	4	4	4	4	
0TB5104 2110-01 Accessory 4-pin cage clamp (2.5) ■ ■ ■ ■ ■ ■ ■ ■ ■ ■ ■ ■ ■ ■ ■ ■ ■ ■ ■	• 96	•	•	•	•	•	•	•	•	•	•	•	• •
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Scrow clamp terminal block		-		-			-						
USB accessories SIMUUSB 2018-01 USB 2.0 flash drive, 2048 MB, B&R SIMUUSB 208-01 USB 2.0 flash drive, 2048 MB, B&R SIMUUSB 208-01 USB 2.0 flash drive, 4098 MB, B&R SIMUUSB 208-01 USB 2.0 flash drive, 4098 MB, B&R POWERLINK cable, RJ45 to RJ45 X20CA0E61 00020 PLK connection cable, RJ45 to RJ45, 0.20 m X20CA0E61 00025 PLK connection cable, RJ45 to RJ45, 0.25 m X20CA0E61 00030 PLK connection cable, RJ45 to RJ45, 0.30 m X20CA0E61 00030 PLK connection cable, RJ45 to RJ45, 0.30 m X20CA0E61 00030 PLK connection cable, RJ45 to RJ45, 0.30 m X20CA0E61 00030 PLK connection cable, RJ45 to RJ45, 0.30 m X20CA0E61 00040 PLK connection cable, RJ45 to RJ45, 0.30 m X20CA0E61 00050 PLK connection cable, RJ45 to RJ45, 0.30 m X20CA0E61 00050 PLK connection cable, RJ45 to RJ45, 0.30 m X20CA0E61 00050 PLK connection cable, RJ45 to RJ45, 0.30 m X20CA0E61 00050 PLK connection cable, RJ45 to RJ45, 0.30 m X20CA0E61 00050 PLK connection cable, RJ45 to RJ45, 0.30 m X20CA0E61 00050 PLK connection cable, RJ45 to RJ45, 0.30 m X20CA0E61 00050 PLK connection cable, RJ45 to RJ45, 1.50 m X20CA0E61 00050 PLK connection cable RJ45 to RJ45, 1.50 m X20CA0E61 00050 PLK connection cable RJ45 to RJ45, 5.50 m X20CA0E61 00050 PLK connection cable RJ45 to RJ45, 5.70 m X20CA0E61 00050 PLK connection cable RJ45 to RJ45, 5.70 m X20CA0E61 00050 PLK connection cable RJ45 to RJ45, 5.70 m X20CA0E61 00050 PLK connection cable RJ45 to RJ45, 5.70 m X20CA0E61 00050 PLK connection cable RJ45 to RJ45, 5.70 m X20CA0E61 00050 PLK connection cable RJ45 to RJ45, 5.70 m X20CA0E61 00050 PLK connection cable RJ45 to RJ45, 1.70 m X20CA0E61 00050 PLK connection cable RJ45 to RJ45, 1.70 m X20CA0E61 00050 PLK connection cable RJ45 to RJ45, 1.70 m X20CA0E61 00050 PLK connection cable RJ45 to RJ45, 1.70 m X20CA0E61 00050 PLK connection cable RJ45 to RJ45, 1.70 m X20CA0E61 00050 PLK connection cable RJ45 to RJ45, 1.70 m X20CA0E61 00050 PLK connection cable RJ45 to RJ45, 1.70 m X20CA0E61 00050 PLK connection cable RJ45 to RJ45, 1.70 m X20CA0E61 00													, , ,
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X20CA0E61.00035				-						_	_	_	
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X20CA0E61.00200							-					_	
X20CA0E61.00300		-		-			-			-	_	-	-
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Table 50: C-Series overview

Accessories

Model number X67CA0X31.0500	Product ID X2X Link attachment cable, angled, 50 m	4PPC70.057x-20x	4PPC70.070x-20x	4PPC70.101x-20x	4PPC70.057x-21x	• 4PPC70.070x-21x	4PPC70.101x-21x	• 4PPC70.057x-22x	4PPC70.070x-22x	• 4PPC70.101x-22x	4PPC70.057x-23x	4PPC70.070x-23x	4PPC70.101x-23x	Page
	AZA LITIK attachment cable, angled, 50 m	•	•	•	•	•	•	•	•	•	•	•	•	
X2X Link cable														
X67CA0X99.1000	Cable for custom assembly, 100 m	•	•	•	•	•	•	•	•	•	•	•	•	97
X67CA0X99.5000	Cable for custom assembly, 500 m	•	•	•	•	•	•	•	•	•	•	•	•	

Table 50: C-Series overview

5.2 TB102 2-pin power supply connector

This single-row 2-pin terminal block is used to connect the power supply.

5.2.1 Order data

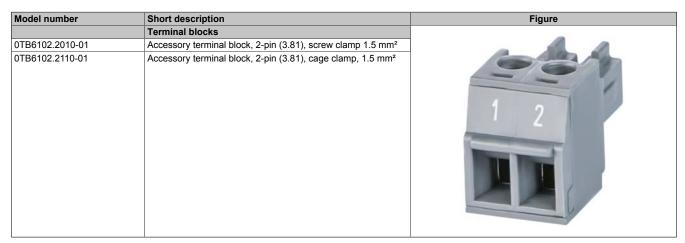


Table 51: 0TB6102.2010-01, 0TB6102.2110-01 - Order data

5.2.2 Technical data

Information:

The following characteristics, features and limit values only apply to this accessory and can deviate from those specified for the complete system. The data specifications for the complete system take precedence over those of individual components.

The technical data in this manual is current as of its creation/publication. We reserve the right to make changes.

Product ID	0TB6102.2010-01	0TB6102.2110-01				
Terminal block						
Number of pins	2 (fe	male)				
Type of terminal block	Screw clamps	Cage clamps				
Cable type	Only copper wires (no aluminum wires!)				
Distance between contacts	3.81	mm				
Connection cross section						
AWG wire	28 t	o 16				
Wire end sleeves with plastic covering	0.25 to	0.5 mm²				
With wire end sleeves	0.25 to	1.5 mm²				
Flexible	0.14 to	1.5 mm²				
Inflexible	0.14 to	1.5 mm²				
Tightening torque	0.22 to 0.25 Nm	-				
Electrical characteristics						
Nominal voltage	300 V					
Nominal current 1)	8 A					

Table 52: 0TB6102.2010-01, 0TB6102.2110-01 - Technical data

¹⁾ The limit data for each Power Panel must be taken into consideration.

5.3 TB510x 4/6-pin terminal block

The single-row 4-pin terminal block is needed for the X2X Link interface. The single-row 6-pin terminal block is needed for the option board.

5.3.1 Order data



Table 53: 0TB5104.2110-01, 0TB5106.2110-01 - Order data

5.3.2 Technical data

Information:

The following characteristics, features and limit values only apply to this accessory and can deviate from those specified for the complete system. The data specifications for the complete system take precedence over those of individual components.

The technical data in this manual is current as of its creation/publication. We reserve the right to make changes.

Product ID	0TB5104.2110-01	0TB5106.2110-01
Terminal block		
Number of pins	4	6
Type of terminal block	Cage clamps 1)	Cage clamps
Cable type	Only copper wires (r	no aluminum wires!)
Distance between contacts	2.5	mm
Connection cross section		
AWG wire	26 to	20
With wire end sleeves	0.25 to 0	0.5 mm²
Flexible	0.14 to 0	0.5 mm²
Inflexible	0.14 to 0	0.5 mm²
Electrical characteristics		
Nominal voltage	125	5 V
Nominal current 2)	4	A

Table 54: 0TB5104.2110-01, 0TB5106.2110-01 - Technical data

- 1) Cage clamp terminal blocks cannot be used side-by-side.
- 2) Take the respective limit data for the I/O modules into consideration!

5.4 Data storage devices

Technical data and additional information about data storage device can be found in the respective documentation. This can be found and downloaded under the model number of the data storage device at www.br-automation.com.

5.5 Cable accessories

Technical data and additional information about POWERLINK and X2X Link cables can be found in the respective documentation. This can be found and downloaded under the model number of the cable on the B&R website at www.br-automation.com.

6 Maintenance

6.1 Cleaning

Danger!

Power Panel devices must be switched off before cleaning in order to prevent unintended functions from being triggered when handling the touch screen or pressing keys.

Power Panel devices should be cleaned with a moist cloth. The cloth should be moistened with water and detergent, a screen cleaning agent or alcohol (ethanol). The cleaning agent should be applied to the cloth beforehand, not sprayed directly on the Power Panel! Aggressive solvents, chemicals, scouring agents, pressurized air or steam jets should never be used.

Information:

Displays with a touch screen should be cleaned regularly.

6.2 Screen burn-in on LCD/TFT monitors

Screen burn-in (afterimages, display memory effect, image retention or image sticking) occurs on LCD/TFT displays if a static image is displayed for a prolonged period of time. This static screen content causes the build-up of parasitic capacitances within the LCD components that prevent liquid crystal molecules from returning to their original state. This condition is unpredictable and can depend on the following factors:

- · Type of image displayed
- · Color composition of the image
- · Length of time that the image is displayed
- Ambient temperature

Preventing screen burn-in

There is no perfect solution. There are ways to significantly reduce this effect, however:

- Avoid static images or screen content.
- Use non-static screensavers when the display is not in use.
- · Frequent picture change
- · Turn off the display when not in use.

Turning off the backlight does not help prevent screen burn-in.

7 Technical information

7.1 Keypad overlay

The panel overlay conforms to DIN 42115 (Part 2). This means it is resistant to exposure to the following chemicals for a 24-hour period with no visible signs of damage:

Information:

The following characteristics, features and limit values only apply to this individual component and can deviate from those specified for the complete system. For the complete system in which this individual component is used, refer to the data given specifically for that device.

Ethanol	Formaldehyde 37%-42%	Trichloroethane
Cyclohexanol	Acetaldehyde	Ethyl acetate
Diacetone alcohol	Aliphatic hydrocarbons	Diethyl ether
Glycol	Toluene	n-Butyl acetate
Isopropanol	Xylene	Amyl acetate
Glycerine	White spirits	Butylcellosolve
Methanol		Ether
Triacetin		
Dowandol		
DRM/PM		
Acetone	Formic acid <50%	Sodium chloride <20%
Methyl ethyl ketone	Acetic acid <50%	Hydrogen peroxide <25%
Dioxan	Phosphoric acid <30%	Potassium carbonate
Cyclohexanone	Hydrochloric acid <36%	Washing agents
Methylisobutylketone (MIBK)	Nitric acid <10%	Tenside
Isophorone	Trichloracetic acid <50%	Fabric conditioner
	Sulphuric acid <10%	Iron (II) chloride
Ammonia <40%	Cutting oil	Iron (III) chloride
Caustic soda <40%	Diesel oil	Dibutyl phthalate
Potassium hydroxide	Linseed oil	Dioctyl phthalate
Alkali carbonate	Paraffin oil	Sodium carbonate
Bichromate	Ricinus oil	
Potassium	Silicon oil	
Acetonitrile	Turpentine oil substitute	
Sodium bisulphate	Brake fluid	
	Aviation fuel	
	Gasoline	
	Water	
	Sea water	
	Decon	

Table 55: Chemical resistance of the keypad overlay

The panel overlay conforms to DIN 42115 Part 2 for exposure to glacial acetic acid for less than one hour without visible damage.

7.2 Viewing angles

Viewing angle specifications (R, L, U, D) for the display types are listed in the technical data for each device.

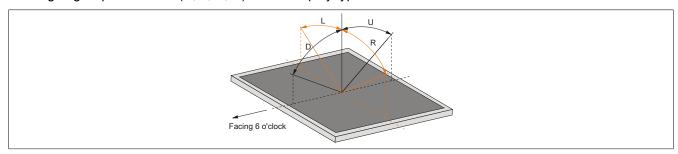


Figure 38: Viewing angles

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Table 31:	4PPC70.101G-22W, 4PPC70.101G-22B, 4PPC70.101N-22W, 4PPC70.101N-22B - Te data	
Table 32:	4PPC70.101G-23W, 4PPC70.101G-23B, 4PPC70.101N-23W, 4PPC70.101N-23B - Te data	
Table 33:	4PPC70.xxxx-2xx - Diagnostic LEDs	
Table 34:	4PPC70.xxx-20x - Diagnostic LEDs - "S/E" LED - Ethernet mode	
Table 35:	4PPC70.xxx-20x - Diagnostic LEDs - "S/E" LED - POWERLINK - error	65
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Table 40:	Ethernet interface - Pinout	
Table 41:	USB interface	
Table 42:	X2X Link interface	
Table 43:	4PPC70.xxxx-21x - 2 CAN bus	
Table 44:	4PPC70.xxxx-22x - 1 CAN bus / 1 RS232 interface	
Table 45:	4PPC70.xxxx-23x - 1 CAN bus / 1 RS485 interface	
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Chemical resistance of the keypad overlay......99

Table 53:

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0TB5104.2110-01	97
0TB5106.2110-01	
OTB6102.2010-01	
OTB6102.2110-01	
4PPC70.0573-20B	
4PPC70.0573-20W	
4PPC70.0573-21B	
4PPC70.0573-21W	
4PPC70.0573-22B	
4PPC70.0573-22W	
4PPC70.0573-23B	
4PPC70.0573-23W	19
4PPC70.057L-20B	16
4PPC70.057L-20W	16
4PPC70.057L-21B	17
4PPC70.057L-21W	17
4PPC70.057L-22B	18
4PPC70.057L-22W	18
4PPC70.057L-23B	19
4PPC70.057L-23W	19
4PPC70.0702-20B	32
4PPC70.0702-20W	32
4PPC70.0702-21B	33
4PPC70.0702-21W	33
4PPC70.0702-22B	34
4PPC70.0702-22W	34
4PPC70.0702-23B	35
4PPC70.0702-23W	35
4PPC70.070M-20B	32
4PPC70.070M-20W	32
4PPC70.070M-21B	33
4PPC70.070M-21W	33
4PPC70.070M-22B	34
4PPC70.070M-22W	34
4PPC70.070M-23B	35
4PPC70.070M-23W	35
4PPC70.101G-20B	48
4PPC70.101G-20W	48
4PPC70.101G-21B	49
4PPC70.101G-21W	49
4PPC70.101G-22B	50
4PPC70.101G-22W	50
4PPC70.101G-23B	51
4PPC70.101G-23W	51
4PPC70.101N-20B	48
4PPC70.101N-20W	48
4PPC70.101N-21B	49
4PPC70.101N-21W	49
4PPC70.101N-22B	50
4PPC70.101N-22W	50
4PPC70.101N-23B	51
4DDC70 101N 22W	51