5AP923.1505-I00

Technical documentation

Version: **1.00 (November 2014)**
Model no.: **5AP923.1505-I00**

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Views

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2 General information

Information:

B&R keeps the printed version of technical descriptions as current as possible. The latest version of this technical description can be downloaded in PDF format from the B&R website at www.br-automation.com. The 5AP923.1505-I00 is a custom device based on the B&R standard device 5AP923.1505-00. Specifications that are not listed here are identical to those for the B&R standard device and can be found in the Automation Panel 930 user's manual.

2.1 Order data

Model number	Short description	Figure
	Display units	
5AP923.1505-I00	Automation Panel 15.0" XGA TFT - 1024 x 768 pixels (4:3) - Single-touch (analog resistive) - IP65 protection (front) - Black panel overlay	

Table 1: 5AP923.1505-I00 - Order data

2.1.1 Description

The 5AP923.1505-I00 is a generally available Automation Panel based on the standard 5AP923.1505-00 device with the following modifications:

- Solid black printed panel overlay

2.1.2 Version information

Version	Date	Comment	Responsible
1.00 (starting with Rev. A0)	2014-11-25	First edition	Anna Sigl

Table 2: Version information

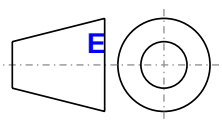
2.2 Organization of safety notices

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

2.3 Guidelines



European dimension standards apply to all dimension diagrams in this document.

All dimensions are specified in mm.

Range of nominal sizes	General tolerance according to DIN ISO 2768 (medium)
Up to 6 mm	±0.1 mm
For 6 to 30 mm	±0.2 mm
For 30 to 120 mm	±0.3 mm
For 120 to 400 mm	±0.5 mm
For 400 to 1000 mm	±0.8 mm

Table 4: Range of nominal sizes

3 Safety guidelines

3.1 Intended use

Programmable logic controllers (PLCs), operating/monitoring devices (industrial PCs, Power Panels, Mobile Panels, etc.) and B&R uninterruptible power supplies have been designed, developed and manufactured for conventional use in industrial environments. 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.

3.2 Protection against electrostatic discharge

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

3.2.1 Packaging

- **Electrical components with a housing**
  ...do not require special ESD packaging but must be handled properly (see "Electrical components with a housing").
- **Electrical components without a housing**
  …are protected by ESD-suitable packaging.

3.2.2 Guidelines for proper ESD handling

Electrical components with a housing

- 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 applies 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 may only be touched on their narrow sides or front plate.
- Components should always be stored in a suitable medium (ESD packaging, conductive foam, etc.). 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.
- Measurement devices and equipment must be grounded.
- Measurement probes on potential-free measurement devices 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.

3.3 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.

3.4 Transport and storage

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

3.5 Installation

- Installation must be performed according to this documentation using suitable equipment and tools.
- Devices may only be installed by qualified personnel without voltage applied. Before installation, voltage to the control cabinet must be switched off and prevented from being switched on again.
- General safety guidelines and national accident prevention regulations must be observed.
- Electrical installation must be carried out according to applicable guidelines (e.g. line cross sections, fuses, protective ground connections).

3.6 Operation

3.7 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.

4 Complete system - Technical data

4.1 Technical data

Product ID	5AP923.1505-I00
General information	
B&R ID code	$E756
Certification	
CE	Yes
cULus	Yes
Display	
Type	Color TFT
Display size	15.0"
Colors	16.2 million
Resolution	XGA, 1024 x 768 pixels
Contrast	700:1
Viewing angles	
Horizontal	Direction R = 80° / Direction L = 80°
Vertical	Direction U = 70° / Direction D = 70°
Backlight	
Type	LED
Brightness	350 cd/m²
Half-brightness time [1]	50,000 h
Touch screen [2]	
Type	AMT
Technology	Analog, resistive
Controller	B&R, serial, 12-bit
Transmittance	81% ±3%
Mechanical characteristics	
Front	
Frame	Aluminum paint
Design	Black
Panel overlay	
Material	Polyester
Design	Jet black RAL 9005
Gasket	3 mm built-in seal
Dimensions	
Width	370 mm
Height	288 mm
Weight	3700 g

Table 5: 5AP923.1505-I00 - Technical data

1) At an ambient temperature of 25°C. Reducing the brightness by 50% can result in an approximately 50% increase in the half-brightness time.
2) Touch screen drivers for approved operating systems are available in the Downloads section of the B&R website.

4.2 Dimensions

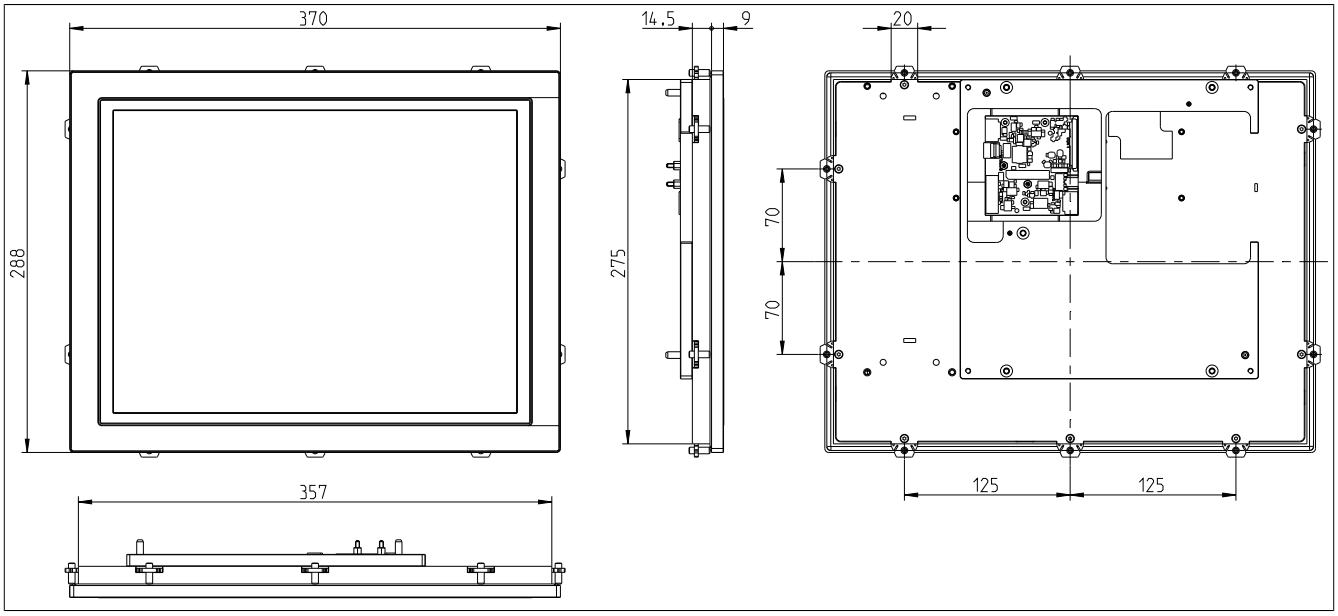


Figure 3: 5AP923.1505-I00 - Dimensions

Information:

Installation cutout: 359 +0.5 mm x 277 +0.5 mm

4.3 Panel overlay design

Color description:

RAL 9005 Jet black

Cutout

IMPORTANT:
This image is not a true representation of the colors used on the panel overlay.
The actual colors may vary slightly.

Figure 4: 5AP923.1505-I00 - Panel overlay design

5 Tips for extending the service life of the display

5.1 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.

5.1.1 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

5.2 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 two 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.

5.2.1 What causes screen burn-in?

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

5.2.2 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

5.3 Pixel errors

Information:

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

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