USER GUIDE

Web Panel WP-xxx 44 Series

Doc. Rev. 0.A

Doc. ID: 90210 (EN)

This page has been intentionally left blank.

WEB PANEL WP-XXX 44 SERIES - USER GUIDE

Disclaimer

Kontron would like to point out that the information contained in this user guide may be subject to alteration, particularly as a result of the constant upgrading of Kontron products. This document does not entail any guarantee on the part of Kontron with respect to technical processes described in the user guide or any product characteristics set out in the user guide. Kontron assumes no responsibility or liability for the use of the described product(s), conveys no license or title under any patent, copyright or mask work rights to these products and makes no representations or warranties that these products are free from patent, copyright or mask work right infringement unless otherwise specified. Applications that are described in this user guide are for illustration purposes only. Kontron makes no representation or warranty that such application will be suitable for the specified use without further testing or modification. Kontron expressly informs the user that this user guide only contains a general description of processes and instructions which may not be applicable in every individual case. In cases of doubt, please contact Kontron.

This user guide is protected by copyright. All rights are reserved by Kontron. No part of this document may be reproduced, transmitted, transcribed, stored in a retrieval system, or translated into any language or computer language, in any form or by any means (electronic, mechanical, photocopying, recording, or otherwise), without the express written permission of Kontron. Kontron points out that the information contained in this user guide is constantly being updated in line with the technical alterations and improvements made by Kontron to the products and thus this user guide only reflects the technical status of the products by Kontron at the time of publishing.

Brand and product names are trademarks or registered trademarks of their respective owners.

©2022 Kontron S&T AG

Kontron S&T AG

Lise-Meitner-Str. 3-5
86156 Augsburg
Germany
www.kontron.com

Intended Use

THIS DEVICE AND ASSOCIATED SOFTWARE ARE NOT DESIGNED, MANUFACTURED OR INTENDED FOR USE OR RESALE FOR THE OPERATION OF NUCLEAR FACILITIES, THE NAVIGATION, CONTROL OR COMMUNICATION SYSTEMS FOR AIRCRAFT OR OTHER TRANSPORTATION, AIR TRAFFIC CONTROL, LIFE SUPPORT OR LIFE SUSTAINING APPLICATIONS, WEAPONS SYSTEMS, OR ANY OTHER APPLICATION IN A HAZARDOUS ENVIRONMENT, OR REQUIRING FAIL-SAFE PERFORMANCE, OR IN WHICH THE FAILURE OF PRODUCTS COULD LEAD DIRECTLY TO DEATH, PERSONAL INJURY, OR SEVERE PHYSICAL OR ENVIRONMENTAL DAMAGE (COLLECTIVELY, "HIGH RISK APPLICATIONS").

You understand and agree that your use of Kontron devices as a component in High Risk Applications is entirely at your risk. To minimize the risks associated with your products and applications, you should provide adequate design and operating safeguards. You are solely responsible for compliance with all legal, regulatory, safety, and security related requirements concerning your products. You are responsible to ensure that your systems (and any Kontron hardware or software components incorporated in your systems) meet all applicable requirements. Unless otherwise stated in the product documentation, the Kontron device is not provided with error-tolerance capabilities and cannot therefore be deemed as being engineered, manufactured or setup to be compliant for implementation or for resale as device in High Risk Applications. All application and safety related information in this document (including application descriptions, suggested safety measures, suggested Kontron products, and other materials) is provided for reference only.

Revisionshistorie

Revision	Brief Description of Changes	Date of Issue	Author/ Editor
0.A	Initial Issue	07.01.2022	GUGMA

Terms and Conditions

Kontron warrants products in accordance with defined regional warranty periods. For more information about warranty compliance and conformity, and the warranty period in your region, visit http://www.kontron.com/terms-and-conditions.

Kontron sells products worldwide and declares regional General Terms & Conditions of Sale, and Purchase Order Terms & Conditions. Visit http://www.kontron.com/terms-and-conditions.

For contact information, refer to the corporate offices contact information on the last page of this user guide or visit our website CONTACT US.

Customer Support

Find Kontron contacts by visiting: https://www.kontron.com/en/support-and-services

Customer Service

As a trusted technology innovator and global solutions provider, Kontron extends its embedded market strengths into a services portfolio allowing companies to break the barriers of traditional product lifecycles. Proven product expertise coupled with collaborative and highly-experienced support enables Kontron to provide exceptional peace of mind to build and maintain successful products.

For more details on Kontron's service offerings such as: enhanced repair services, extended warranty, Kontron training academy, and more visit https://www.kontron.com/en/support-and-services

Customer Comments

If you have any difficulties using this user guide, discover an error, or just want to provide some feedback, contact https://www.kontron.com/en/support-and-services. Detail any errors you find. We will correct the errors or problems as soon as possible and post the revised user guide on our website.

Symbols

The following symbols may be used in this user guide

⚠DANGER	DANGER indicates a hazardous situation which, if not avoided, will result in death or serious injury.
⚠WARNING	WARNING indicates a hazardous situation which, if not avoided, could result in death or serious injury.
NOTICE	NOTICE indicates a property damage message.
⚠CAUTION	CAUTION indicates a hazardous situation which, if not avoided, may result in minor or moderate injury.
	Electric Shock! This symbol and title warn of hazards due to electrical shocks (>60V) when touching products or parts of products. Failure to observe the precautions indicated and/or prescribed by the law may endanger your life/health and/or result in damage to your material.
	ESD Sensitive Device! This symbol and title inform that the electronic boards and their components are sensitive to static electricity. Care must therefore be taken during all handling operations and inspections of this product in order to ensure product integrity at all times.
	HOT Surface! Do NOT touch! Allow to cool before servicing.
	Laser! This symbol inform of the risk of exposure to laser beam and light emitting devices (LEDs) from an electrical device. Eye protection per manufacturer notice shall review before servicing.
	This symbol indicates general information about the product and the user guide. This symbol also indicates detail information about the specific product configuration.
	This symbol precedes helpful hints and tips for daily use.

For Your Safety

Your new Kontron product was developed and tested carefully to provide all features necessary to ensure its compliance with electrical safety requirements. It was also designed for a long fault-free life. However, the life expectancy of your product can be drastically reduced by improper treatment during unpacking and installation. Therefore, in the interest of your own safety and of the correct operation of your new Kontron product, you are requested to conform to the following guidelines.

⚠WARNING

All operations on this product must be carried out by sufficiently skilled personnel only.

⚠WARNING

If the equipment is used in a manner not specified by the manufacturer, the protection provided by the equipment may be impaired.

Safety instructions for mains-operated devices

As a precaution and in case of danger, the power connector must be easily accessible. The power connector is the product's main disconnect device.

⚠CAUTION

Electric Shock!

Before installing a non-hot-swappable Kontron product into a system always ensure that your mains power is switched off. Serious electrical shock hazards can exist during all installation, repair, and maintenance operations on this product. Therefore, always unplug the power cable and any other cables which provide external voltages before performing any work on this product.

Earth ground connection to a central grounding point shall remain connected. The earth ground cable shall be the last cable to be disconnected or the first cable to be connected when performing installation or removal procedures on this product.

Special Handling and Unpacking Instruction

NOTICE

ESD Sensitive Device!

Electronic boards and their components are sensitive to static electricity. Therefore, care must be taken during all handling operations and inspections of this product, in order to ensure product integrity at all times.

Do not handle this product out of its protective enclosure while it is not used for operational purposes unless it is otherwise protected.

Whenever possible, unpack or pack this product only at EOS/ESD safe work stations. Where a safe work station is not guaranteed, it is important for the user to be electrically discharged before touching the product with his/her hands or tools. This is most easily done by touching a metal part of your system housing.

If the product contains batteries for RTC or memory backup, ensure that the product is not placed on conductive surfaces, including anti-static plastics or sponges. They can cause short circuits and damage the batteries or conductive circuits on the product.

Lithium Battery Precautions

If your product is equipped with a lithium battery, take the following precautions when replacing the battery.

⚠CAUTION

Danger of explosion if the battery is replaced incorrectly.

- Replace only with same or equivalent battery type recommended by the manufacturer.
- Dispose of used batteries according to the manufacturer's instructions.

General Instructions on Usage

In order to maintain Kontron's product warranty, this product must not be altered or modified in any way. Changes or modifications to the product, that are not explicitly approved by Kontron and described in this user guide or received from Kontron Support as a special handling instruction, will void your warranty.

This product should only be installed in or connected to systems that fulfill all necessary technical and specific environmental requirements. This also applies to the operational temperature range of the specific board version that must not be exceeded. If batteries are present, their temperature restrictions must be taken into account.

In performing all necessary installation and application operations, only follow the instructions supplied by the present user guide.

Keep all the original packaging material for future storage or warranty shipments. If it is necessary to store or ship the product then re-pack it in the same manner as it was delivered.

Special care is necessary when handling or unpacking the product. See Special Handling and Unpacking Instruction.

Quality and Environmental Management

Kontron aims to deliver reliable high-end products designed and built for quality, and aims to complying with environmental laws, regulations, and other environmentally oriented requirements. For more information regarding Kontron's quality and environmental responsibilities, visit http://www.kontron.com/about-kontron/corporate-responsibility/quality-management.

Disposal and Recycling

Kontron's products are manufactured to satisfy environmental protection requirements where possible. Many of the components used are capable of being recycled. Final disposal of this product after its service life must be accomplished in accordance with applicable country, state, or local laws or regulations.

WEEE Compliance

The Waste Electrical and Electronic Equipment (WEEE) Directive aims to:

- Reduce waste arising from electrical and electronic equipment (EEE)
- Make producers of EEE responsible for the environmental impact of their products, especially when the product become waste
- Encourage separate collection and subsequent treatment, reuse, recovery, recycling and sound environmental disposal of EEE
- Improve the environmental performance of all those involved during the lifecycle of EEE

Environmental protection is a high priority with Kontron.

Kontron follows the WEEE directive

You are encouraged to return our products for proper disposal.

Table of Contents

Symbols **6**
For Your Safety **7**
Safety instructions for mains-operated devices 7
Special Handling and Unpacking Instruction 7
Lithium Battery Precautions 8
General Instructions on Usage **8**
Quality and Environmental Management **8**
Disposal and Recycling 8
WEEE Compliance 8
Table of Contents **9**
List of Tables **10**
List of Figures **10**
1/ Product overview **12**
2/ Technical data **14**
2.1. Operating system 14
2.2. Dimensions and weight 14
2.3. Environmental conditions 15
2.4. Power supply 15
2.5. Materials 16
2.6. Type Label and Product Identification 17
2.7. Accessories 17
3/ Design and function **18**
3.1. Description of the function 18
3.1.1. LCD display 18
3.1.2. Touchscreen capacitive 18
3.1.3. Processor board 18
3.1.4. MicroSD-Card 18
3.1.5. Backlight 19
3.1.6. Ethernet NET1 19
3.1.7. Ethernet NET2 19
3.1.8. USB 2.0 Host 19
3.1.9. RS-232 19
3.2. Pin assignment 20
3.2.1. Functional earth 21
3.2.2. Power supply Connector X1 21
3.2.3. Ethernet connector X5 21
3.2.4. Ethernet connector X6 22
3.2.5. RS232 connector X12 22
4/ Assembly and installation **23**
4.1. Mounting in control cabinet front 24
4.1.1. Panels up to 7'' display size 24
4.1.2. Panels with 10.1'' display size and larger 24
5/ Commissioning **25**
5.1. Power supply 25
5.2. Grounding 25
5.3. QIWI System Configuration 25

5.4. QIWI HTML5 Browser 26
5.5. Backup/Restore des Systems (Live System) 26
6/ Maintenance 27
6.1. Cleaning 27
7/ Malfunctions 28
8/ Decommissioning and disposal 29
9/ Mounting cut-out, device views, technical drawings 30
9.1. 7'' Web-Panel WP-70g 44-12x0 30
9.2. 10.1'' Web-Panel WP-101g 44-12x0 33
9.3. 15.6'' Web-Panel WP-156g 44-12x0 36
10/Technical Support 39
10.1. Warranty 39
10.2. Returning Defective Merchandise 40
Appendix A: List of Acronyms 41
About Kontron 44

List of Tables

Table 1: Versions 12
Table 2: Detail configuration of the product versions: 12
Table 3: Technical data of the displays: 14
Table 4: Dimensions and weight: 14
Table 5: Accessories for the Web Panel WP-xxx 44 Series 17
Table 6: Signalling Gigabit Ethernet interface status 19
Table 7: Signalling Gigabit Ethernet interface status 19
Table 8: Overview of connections 20
Table 9: Power supply Connector X1 21
Table 10: Gigabit Ethernet connector X5 21
Table 11: Ethernet connector X6 22
Table 12: RS232 connector X12 22
Table 13: Malfunctions 28
Table 14: List of Acronyms 41

List of Figures

Figure 1: Type Label and Product Identification 17
Figure 2: MicroSD-Card 18
Figure 3: Interfaces bottom view 20
Figure 4: Interfaces side view 20
Figure 5: Mounting in control cabinet front for panels up to 7'' display size 24
Figure 6: Mounting in control cabinet front for panels with 10.1'' display size and larger 24
Figure 7: WP-70g 44-12x0 technical drawings 30
Figure 8: WP-70g 44-12x0 Mounting cut-out 31
Figure 9: WP-70g 44-12x0 Front view 31
Figure 10: WP-70g 44-1200 Rear view 32
Figure 11: WP-70g 44-1200 Side view from below 32
Figure 12: WP-101g 44-12x0 technical drawings 33
Figure 13: WP-101g 44-12x0 Mounting cut-out 34
Figure 14: WP-101g 44-12x0 Front view 34
Figure 15: WP-101g 44-1200 Rear view 35
Figure 16: WP-101g 44-1200 Side view from below 35
Figure 17: WP-156g 44-12x0 technical drawings 36
Figure 18: WP-156g 44-12x0 Mounting cut-out 37

Figure 19: WP-156g 44-12x0 Front view 37
Figure 20: WP-156g 44-1200 Rear view 38
Figure 21: WP-156g 44-1200 Side view from below 38

1/ Product overview

The Web Panel WP-xxx 44 series is designed for use as multi-touch control panels in industrial and building automation applications. As standard, the panels have a high-quality IPS display with high resolution and a powerful Quad Core™ Arm® i.MX8 processor.

The robust touchscreen, which is embedded in an aluminium or stainless steel frame, has been specially developed for use in industrial environments. In the standard version, the Panel PCs are designed for installation in control cabinets or consoles and are protected at the front according to IP65.

Embedded Linux (Yocto Distribution) is used as the operating system. The intelligent software package QIWI Toolkit offers the user a performance-optimised HTML5 Chromium browser combined with simple, user-friendly configuration and sophisticated additional software functions for the specific needs of industrial users.

The integrated web configurator offers a wide range of settings for easy configuration of various features, such as network, appearance and behaviour of the browser or keyboard and language settings or boot screen or screen saver with your logo etc.

This series of devices is mechanically compatible with the previous WP 3x (i.MX6) web panel series. The modular design also allows easy adaptation to customer-specific requirements.

This manual is applicable to the following versions:

Table 1: Versions

Article No.	Name	Versions
11589	WP-70g 44-1200	7.0-inch Web Panel i.MX8 4-Core with aluminium frame
11590	WP-101g 44-1200	10.1-inch Web Panel i.MX8 4-Core with aluminium frame
11591	WP-156g 44-1200	15.6-inch Web Panel i.MX8 4-Core with aluminium frame
11610	WP-70g 44-1230	7.0-inch Web Panel i.MX8 4-Core, 2 ETH, RS-232, aluminium frame
11611	WP-101g 44-1230	10.1-inch Web Panel i.MX8 4-Core, 2 ETH, RS-232, aluminium frame
11613	WP-156g 44-1230	15.6-inch Web Panel i.MX8 4-Core, 2 ETH, RS-232, aluminium frame

Table 2: Detail configuration of the product versions:

Version	11589	11590	11591		11610	11611	11613	
7.0" WSVGA (1024 x 600) Colour-TFT, opt. bonded	x				x			
10.1" WXGA (1280 x 800) Colour-TFT, opt. bonded		x				x		
15.6'' WXGA (1366 x 768) Colour-TFT			x				x	
Cap. touch with glass and aluminium front	x	x	x		x	x	x	
Cap. touch with glass and stainless steel front								
Arm® i.MX8M Mini 4 Cores, 4x 1.6 GHz	x	x	x		x	x	x	
4 GByte eMMC Flash	x	x	x		x	x	x	
1 GByte DDR4 RAM	x	x	x		x	x	x	
2 MByte serial NOR Flash	x	x	x		x	x	x	
microSD-Card Slot	x	x	x		x	x	x	

NET1 10/100/1000 MBit Ethernet	x	x	x		x	x	x	
NET2 10/100 MBit Ethernet					x	x	x	
2x USB Host (USB1, USB2)	x	x	x		x	x	x	
1x USB Host (USB1)								
1x RS-232					x	x	x	
Linux Yocto Distribution	x	x	x		x	x	x	
QIWI Software Toolkit	x	x	x		x	x	x	

2/ Technical data

Depending on the version und geographical region, the Web Panel WP-xxx 44 can have the following properties (existing versions see 1/Product overview):

Table 3: Technical data of the displays:

Size	Resolution	Type	Format	Brightness	Viewing angle	Colours
7.0"	1024 x 600	Optically bonded	17:10	450 cd/m²	85°/85°/85°/85°	16.7 Millions
10.1"	1280 x 800	Optically bonded	16:10	430 cd/m²	80°/80°/80°/80°	16.7 Millions
15.6''	1366 x 768	Air gap	16:9	400 cd/m²	85°/80°/85°/85°	16.7 Millions

- Capacitive multi touch screen (5-fingers)
- Glass front inserted in a milled aluminium frame or stainless steel frame
- Processor NXP Arm® i.MX8M Mini 4 Cores, 4x 1.6 GHz
- 4-16 GByte eMMC Flash
- 2 MByte serials NOR Flash
- 1 -2 GByte DDR4 RAM
- Slot for microSD Cards up to SDXC format
- LED backlight dimmable via software
- one 10/100/1000 MBit Ethernet interface on RJ45 (8P8C) connector
- one 10/100 MBit Ethernet interface on RJ45 (8P8C) connector
- up to two USB Host interfaces on 4-pol. USB plug type A
- one RS-232 interface (not galv. insulated) on 9-pin DSUB connector
- Power supply 24 VDC ±20%, on 3-pin. Phoenix connector

2.1. Operating system

The operating system is embedded Linux (Yocto Distribution).

2.2. Dimensions and weight

Table 4: Dimensions and weight:

Part No.	Name	External dimensions (BxHxT)	Mounting depth	Display size (BxH)	Weight
11589	WP-70g 44-1200	200.1 x 131.9 x 47.4 mm	42.4 mm	154.21 x 86.92 mm	0.82kg
11590	WP-101g 44-1200	264.5 x 187 x 40.9 mm	35.5 mm	217 x 135.6 mm	1.25 kg
11591	WP-156g 44-1200	404.5 x 253.5 x 59.4 mm	53 mm	344.2 x 193.4 mm	3.4 kg
11610	WP-70g 44-1230	200.1 x 131.9 x 47.4 mm	42.4 mm	154.21 x 86.92 mm	0.83kg
11611	WP-101g 44-1230	264.5 x 187 x 40.9 mm	35.5 mm	217 x 135.6 mm	1.26 kg
11612	WP-156g 44-1230	404.5 x 253.5 x 59.4 mm	53 mm	344.2 x 193.4 mm	3.4 kg

2.3. Environmental conditions

The allowable ambient conditions for the operation of the product are:

Ambient temperature operation: 0 … +55 °C

Ambient temperature storage: -20 … +70 °C

Humidity: 10 - 90 % (non-condensing)

Pollution degree 2 acc. IEC 61010-1

Operating Altitude: max. 3000m above sea level

Atmosphere: free of corrosive or explosive gases

Protection class acc. IEC60529: front IP65, backside IP20

EMC with correct wiring and shielding of the interfaces:

- according to EN 61000-6-2 Immunity (Industrial sector)
- according to EN 61000-6-4 Emission (Industrial sector)

⚠WARNING

This device is intended exclusively for use in industrial environments. In domestic environments this device may cause radio interference. In this case the user must take appropriate measures.

⚠DANGER

No use in potentially explosive areas!

Use in hazardous areas can result in death, serious injury or considerable damage to property.

The device is not designed for use in hazardous areas and does not have the appropriate approvals.

2.4. Power supply

Supply voltage: +24 VDC ±20 %

Current consumption: 0.15 A – 1 A

Power consumption1: 3.6 W – 24 W

Internal fusing: 2A melting fuse

External fusing with max.40A fuse required

On primary side overvoltage category II max. 300V

Recommended design of the power supply unit: Voltage/ output power: 24 VDC / min. 30 W

⚠WARNING

The output of the power supply unit must meet the criteria of a safety extra-low voltage (SELV) according to IEC 60664-1.

The use of an unsuitable power supply unit can result in danger of electric shock.

⚠CAUTION

The power cable must be rated for a temperature of +75° C or higher.

The cable can become damaged over time or potentially harmful plasticizers could be released in the surrounding air if cables with a lower temperature rating are being used.

The power consumption depends on the display size and brightness as well as the type and number of active interfaces.

The internal fuse is not replaceable. Defective fuses must be replaced by qualified Kontron service.

USB devices connected to USB 2.0 interfaces may consume a maximum of 0.5A per interface.

[1]depending on processor load and interface activity

2.5. Materials

The following materials are used for the housing of the Web Panel WP-xxx 44 Series:

Housing Rear: Stainless steel

Housing front: aluminium or stainless steel

Glass front: chemically toughened glass

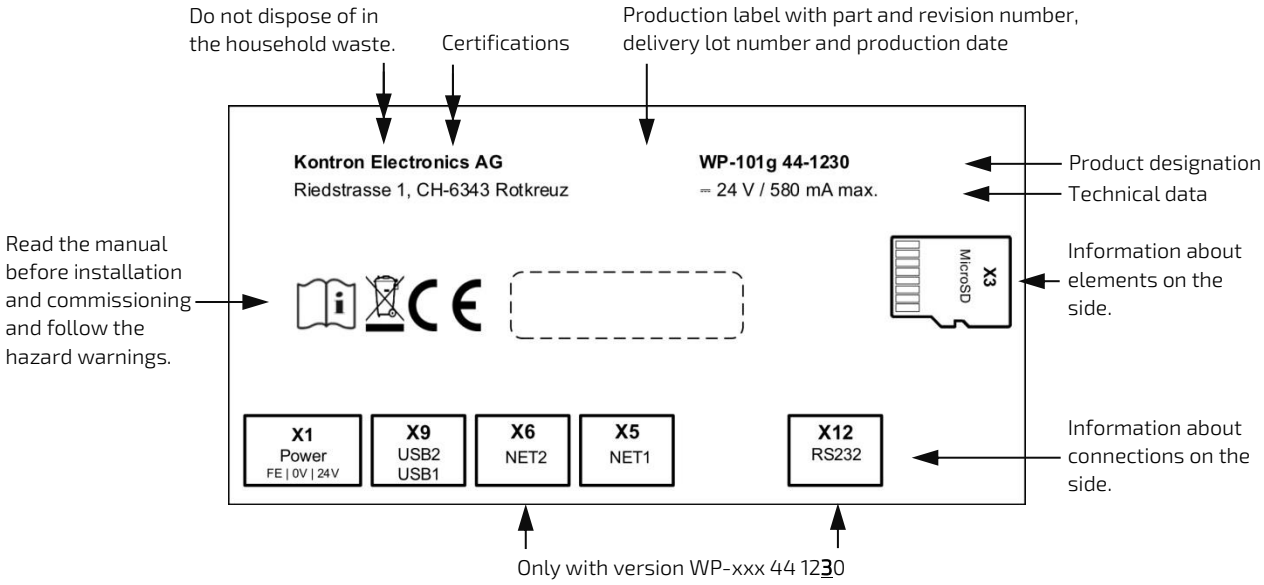
This product complies with the RoHS Directive 2011/65/EU and the Delegate Directive (EU) 2015/863 amending Annex II of Directive 2011/65/EU (RoHS 3)

With regard to the REACH regulation or conflict minerals, please refer to the information on our website at:
https://www.kontron.com/en/material-declaration/reach-customer-information

2.6. Type Label and Product Identification

The type plate is located on the back of the web panel.

Figure 1: Type Label and Product Identification



2.7. Accessories

Table 5: Accessories for the Web Panel WP-xxx 44 Series

Part No.	Designation	Comment
90209	Handbuch Web Panel WP-xxx 44 Serie	Deutsches Benutzerhandbuch
90196	System Handbuch QIWI Toolkit	Deutsches Benutzerhandbuch
90210	User Guide Web Panel WP-xxx 44 Series	English User Manual
90208	System manual QIWI Toolkit	English User Manual
90219	Quickstart Guide Web Panel WP-3x/4x/5x	English User Manual

3/ Design and function

3.1. Description of the function

3.1.1. LCD display

The active colour TFT display is connected to the processor board via an internal LVDS interface.

3.1.2. Touchscreen capacitive

The integrated capacitive touchscreen is connected to the processor board via an internal interface.

⚠CAUTION	**Damage to the screen, caused by any impact with a hard object, could lead to injury. Operate the touch screen only with finger or touch pen.**

3.1.3. Processor board

The processor board is designed as a single board and contains all interfaces available on the panel directly on board.

eMMC memory, fast boot serial NOR Flash, DDR4 DRAM main memory are used as standard. All components are soldered down for high reliability.

3.1.4. MicroSD-Card

The microSD card slot X3 integrated on the base module allows the use of SD cards up to SDXC format

Figure 2: MicroSD-Card

The microSD card must be inserted with the contacts facing backwards (towards the rear of the device) as shown in the picture above.

3.1.5. Backlight

The brightness of the backlight can be adjusted via the system configuration or via Linux command.

3.1.6. Ethernet NET1

The Gigabit Ethernet interface NET1 is operated via an Ethernet controller at the RMII interface of the processor. The electrically isolated 10/100/1000 Mbit Ethernet interface is available on a RJ45 (8P8C) connector.

LEDs signal the respective interface status.

Table 6: Signalling Gigabit Ethernet interface status

LED green (activity)		LED yellow (link1000)	
off:	no activity, no link	off:	no link1000
blink:	activity, link	on:	link1000

3.1.7. Ethernet NET2

The Ethernet interface NET2 is operated via an Ethernet controller on a USB interface of the processor. The electrically isolated 10/100 Mbit Ethernet interface is available on a RJ45 (8P8C) connector.

LEDs signal the respective interface status.

Table 7: Signalling Gigabit Ethernet interface status

LED green (activity)		LED yellow (link100)	
off:	no activity, no link	off:	no link100
blink:	activity, link	on:	link100

3.1.8. USB 2.0 Host

The pin assignment corresponds to the USB 2.0 standard, connector type A. The connected USB cable must be shielded and have a cable length of less than 3m.

3.1.9. RS-232

The serial interface provides the signals RxD, TxD, CTS and RTS in RS232 level. This interface is not galvanically isolated.

3.2. Pin assignment

The Web Panel has the following connectors:

Table 8: Overview of connections

Connector	Type	Purpose
X1	3-pole pluggable terminal pitch 5 mm for 24 VDC supply	Power
X3	microSD Card Slot	microSD
X5	RJ45 (8P8C) Connector for Gigabit Ethernet	Ethernet
X6	RJ45 (8P8C) Connector for Ethernet (only Version WP-xxx 44-1230)	Ethernet
X9	2 port USB Host connector type A	USB 2.0
X12	9-pin D-Sub male connector (only Version WP-xxx 44-1230)	RS232

Figure 3: Interfaces bottom view

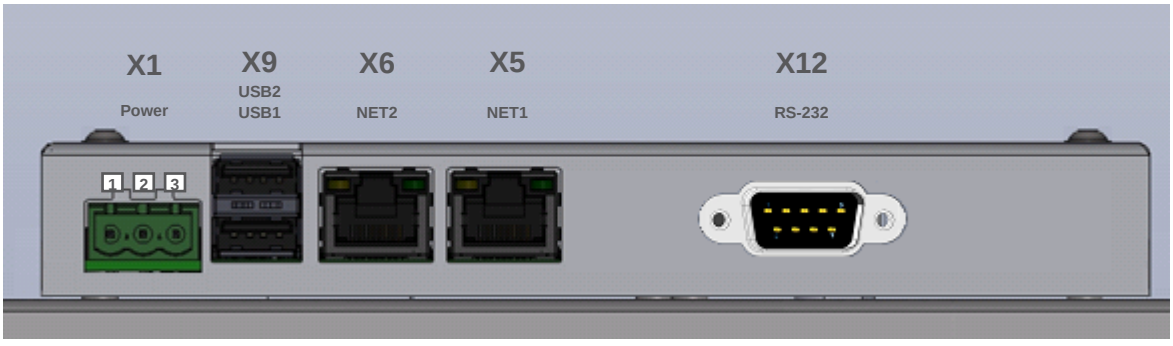
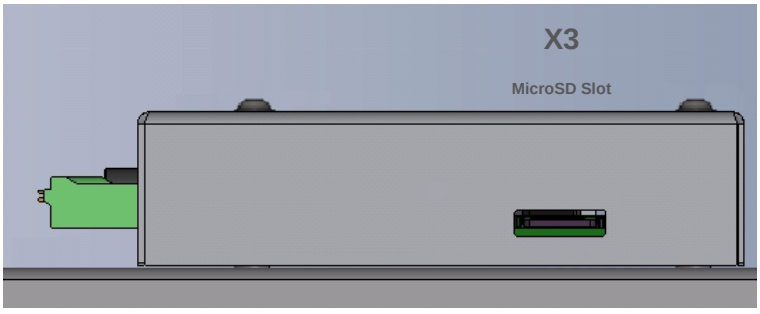


Figure 4: Interfaces side view



3.2.1. Functional earth

For the grounding of the device see notes in chapter 5.2 Grounding.

3.2.2. Power supply Connector X1

Table 9: Power supply Connector X1

Pin	Signal	Comment
1	FE	Functional earth
2	0V	Power supply 0 Volt DC
3	24V	Power supply +24 VDC ±20%

Cable: Shorter than 3 m, unshielded

Connector Type: Phoenix MSTBA 2.5/3-G – 1757488

Mating connector: Phoenix FKCN 2.5/ 3-ST– 1873061 (included in delivery)

Associated permissible cable cross-sections:

- rigid conductor cross-section: 0,2 mm² ... 1,5 mm²
- Flexible conductor cross-section: 0,2 mm² ... 2,5 mm²
- Conductor cross section AWG / kcmil: 24 ... 16
- Conductor cross-section flexible with wire end ferrule: 0,25 mm² ... 1,5 mm²
- Stripping length: 10 mm

The panel must be grounded via the functional earth connection of the power supply connector X1 with low impedance. See chapter 5.2 Grounding.

⚠CAUTION

The power cable must be rated for a temperature of +75° C or higher.
The cable can become damaged over time or potentially harmful plasticizers could be released in the surrounding air if cables with a lower temperature rating are being used.

In Europe, the flatter type Phoenix FKCN 2.5/ 3-ST - 1732755 can also be used as a mating connector for X1. However, this type is not permitted in the USA and Canada, since only the Phoenix FKCN 2.5/ 3-ST-5.08 - 1873061 has the UL registration required for this region.

3.2.3. Ethernet connector X5

Table 10: Gigabit Ethernet connector X5

Pin	Signal	Pin	Signal
1	TX0+	5	TX2-
2	TX0-	6	TX1-
3	TX1+	7	TX3+
4	TX2+	8	TX3-

Cable: Shorter than 30m, shielded, min. Cat-5e

3.2.4. Ethernet connector X6

Table 11: Ethernet connector X6

Pin	Signal	Pin	Signal
1	TX+	5	(reserved)
2	TX-	6	RX-
3	RX+	7	(reserved)
4	(reserved)	8	(reserved)

Cable: Shorter than 30m, shielded, min. Cat-5e

3.2.5. RS232 connector X12

Table 12: RS232 connector X12

Pin	Signal	Type	Comment
1	-		
2	RxD	IN	RS232 Receive Data
3	TxD	OUT	RS232 Transmit Data
4	-		
5	GND	GND	
6	-		
7	RTS	OUT	RS232 Request to Send
8	CTS	IN	RS232 Clear to Send
9	-		
CASE	GND	GND	

Cable: Shorter than 3m, shielded

4/ Assembly and installation

Prior to commissioning, the temperature of the unit must be adjusted to the room temperature.

⚠WARNING

Observance of the standards and regulations of the country of destination

Improper installation may result in death, serious injury or serious damage to property.

The device must be installed in machines or systems in compliance with all standards and regulations applicable in the countries of destination and may only be installed by a trained specialist who is familiar with the respective regulations.

⚠WARNING

Malfunctions due to improper grounding of the device.

The device must be properly grounded.

Compliance with the prescribed EMC limit values can only be guaranteed if the device is properly grounded.

NOTICE

Damage to plugs or cables due to improper handling when plugging in and plugging out

Material damage to cables, plugs and other plant components can result.

Always hold the plug when plugging and unplugging a cable.

:

:

NOTICE

Observe correct installation position

The device is intended exclusively for operation when mounted vertically. In case of improper installation, heat dissipation cannot be guaranteed and the unit may overheat. This may result in loss of performance or unexpected shutdown of the unit.

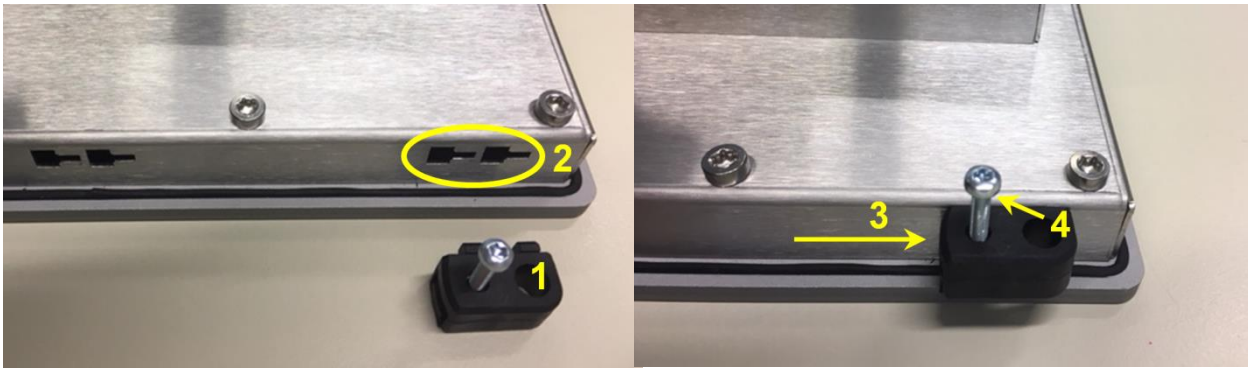
In particular, it is not permitted to operate the unit when it is placed on a tabletop or on the floor, for example.

4.1. Mounting in control cabinet front

4.1.1. Panels up to 7'' display size

1. Insert the device from the front into the cut-out of the control cabinet and push it carefully until it is fully inserted.
2. Insert the mounting elements (1) into the provided lateral T cut-outs (2) and push them in sideways (3) so that they are locked.
3. For the first mounting element in a corner, tighten the fixing screw (4) until it presses on the cabinet plate. Tighten the fastening screws to a maximum torque of 0.2 Nm.
4. repeat procedure 3) for opposite mounting element
5. repeat procedure 3) for the remaining mounting elements.

Figure 5: Mounting in control cabinet front for panels up to 7'' display size



NOTICE

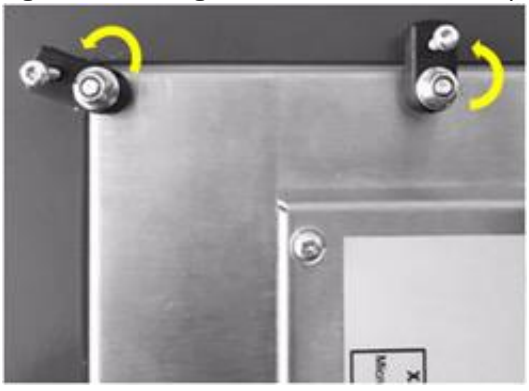
Observe the maximum tightening torque of the fastening screws of the mounting elements otherwise they may be damaged.

Tighten the fastening screws of the mounting elements to a maximum torque of 0.2 Nm.

4.1.2. Panels with 10.1'' display size and larger

1. Insert the device from the front into the cut-out of the control cabinet and push it carefully until it is fully inserted.
2. Swivel out the mounting elements on the rear side so that the fixing screws are above the cabinet plate.
3. Tighten the fixing screw at the first mounting element in a corner until it presses on the cabinet plate.
4. repeat procedure 3) for opposite mounting element
5. repeat procedure 3) for the remaining mounting elements.

Figure 6: Mounting in control cabinet front for panels with 10.1'' display size and larger



5/ Commissioning

NOTICE

Removal of the protective film by pulling it off sideways

For easy removal, pull off the protective foil on the front of the device to the side.

5.1. Power supply

The unit is operated with 24 VDC. The power supply must be connected to connector X1. The unit does not have its own on/off switch and starts automatically when the power supply is switched on.

For pin assignment and conductor cross-sections, see chapter 3.2.2 Power supply Connector X1.

Voltage level and power consumption see chapter 2.4 Power supply.

5.2. Grounding

The grounding of the unit dissipates interference that is transmitted via external signal cables or cables from external assemblies. The panel must therefore be grounded via the functional earth connection of the power supply connector X1 with sufficiently low impedance.

Recommended cable cross-section is 1.5 mm^2.

In addition, the panel can optionally be grounded via the ground lug on the rear of the housing. For this grounding, use a 6.3 x 0.8 mm female crimp terminal.

For remote applications (e.g. swivel arm), a ground reference point must be set up as close as possible to the unit. This must be connected to the system ground with a high-frequency and low-impedance cable (e.g. 10mm^2) to achieve good interference voltage reduction.

5.3. QIWI System Configuration

The integrated software package **QIWI Toolkit** provides an easy to use interface for setting up the device. This can be selected locally on the device at startup in a selection menu of the integrated web browser or called via a web browser on another device that is connected to the Panel via Ethernet.

The clear menu structure makes it possible to quickly find the numerous setting options such as network settings, URL, CODESYS, display, FTP, IP-Tables, screensaver, web browser settings, passwords, diagnostics, etc.

Default IP addresses for panel access:

Ethernet 1: 192.168.1.100 (Subnet: 255.255.255.0)

Ethernet 2: 192.168.1.101 (Subnet: 255.255.255.0)

Default passwords (factory setting):

- User: root
- Password: root

A detailed description of the settings and functions can be found in the System Manual QIWI Toolkit.

The system manual is integrated in the system configuration in the unit or can also be downloaded via the WIKI portal: https://wiki.kontron-electronics.at:8444/chromiumbrowser/knowledge-base-qiwi-home-64094413.html

Further support in the WIKI portal: Quick Start Guide, FAQ, Blog, Support, RSS feed registration, Images,...

5.4. QIWI HTML5 Browser

The QIWI Toolkit software package includes a Chromium-based HTML5 browser. It allows to display web pages or a CODESYS V3 WebVisu. The URL and other settings are set via the QIWI system configuration, via an own web server on an external web browser or via a script file on a connected USB stick.

5.5. Backup/Restore des Systems (Live System)

The Backup/Restore function (Live System) allows easy backup and restore of the complete device via USB stick or SD card.

With a backup of the system, the devices can be reset to a defined state or even cloned.

The backup/restore function is integrated in the system configuration and can be accessed directly via the selection menu.

The live system for the backup/restore function can also be requested free of charge from Kontron Electronics AG at http://www.kontron-electronics.ch

6/ Maintenance

There is no maintenance interval prescribed by the manufacturer of the product.

6.1. Cleaning

The device can be cleaned as required. There is no cleaning interval prescribed by the manufacturer of the product.

Since the touch display is touch-sensitive, the panel must be switched off during cleaning.

A soft cleaning cloth with household cleaning agent for glass surfaces is recommended for cleaning the glass panel front. Do not use caustic cleaning agents, abrasive cleaners or hard objects that could cause scratches.

NOTICE

Penetration of liquids during cleaning

Damage to property or destruction of the device may result.

When cleaning the panel front, make sure that only the front side of the panel is cleaned and that no liquids get to other housing parts.

7/ Malfunctions

Table 13: Malfunctions

Malfunction	Possible cause	Recommended action
No function	No or incorrect power supply to the device	Check whether the power supply cable is correctly plugged in. Check pin assignment. Measure supply voltage.
Interface function impaired	Interface cable not plugged in correctly	Check whether all interface cables are plugged in correctly and the pin assignment is correct.
Touch screen function faulty	No grounding of the device	Check whether the grounding is correctly connected.

NOTICE

Loss of warranty due to manipulation of the device

Repairs and other manipulations of the device may only be carried out by the manufacturer. In particular, opening the device is prohibited. Otherwise any warranty will become void.

8/ Decommissioning and disposal

NOTICE

Disposal of electrical material and batteries

Electrical appliances and batteries must be disposed of in accordance with local regulations. If necessary, contact your local waste disposal company for information. Do not throw devices into the household waste and do not burn them.

Remove the backup battery from the device and dispose of it separately.

9/ Mounting cut-out, device views, technical drawings

9.1. 7‘‘ Web-Panel WP-70g 44-12x0

Figure 7: WP-70g 44-12x0 technical drawings

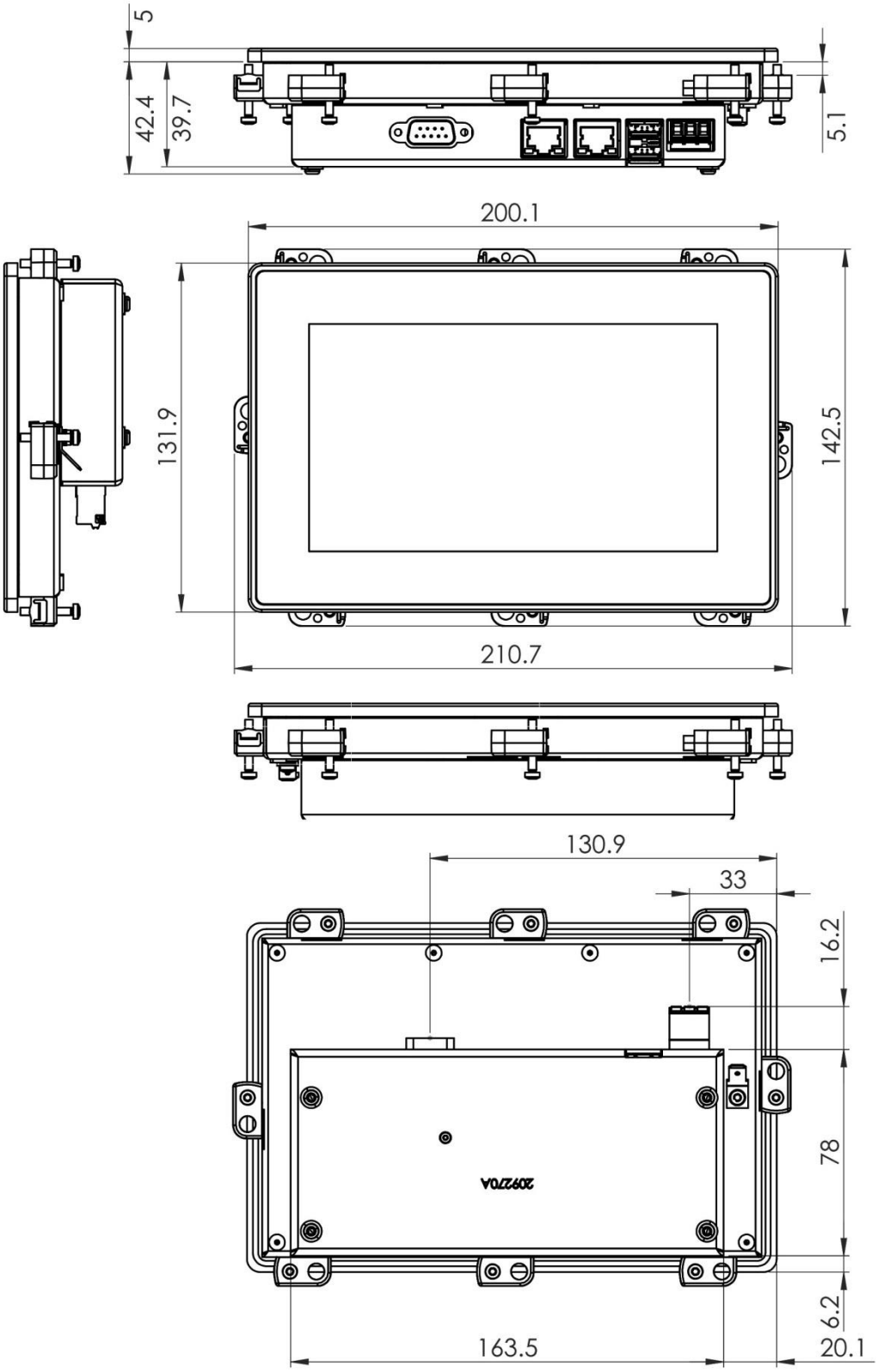


Figure 8: WP-70g 44-12x0 Mounting cut-out

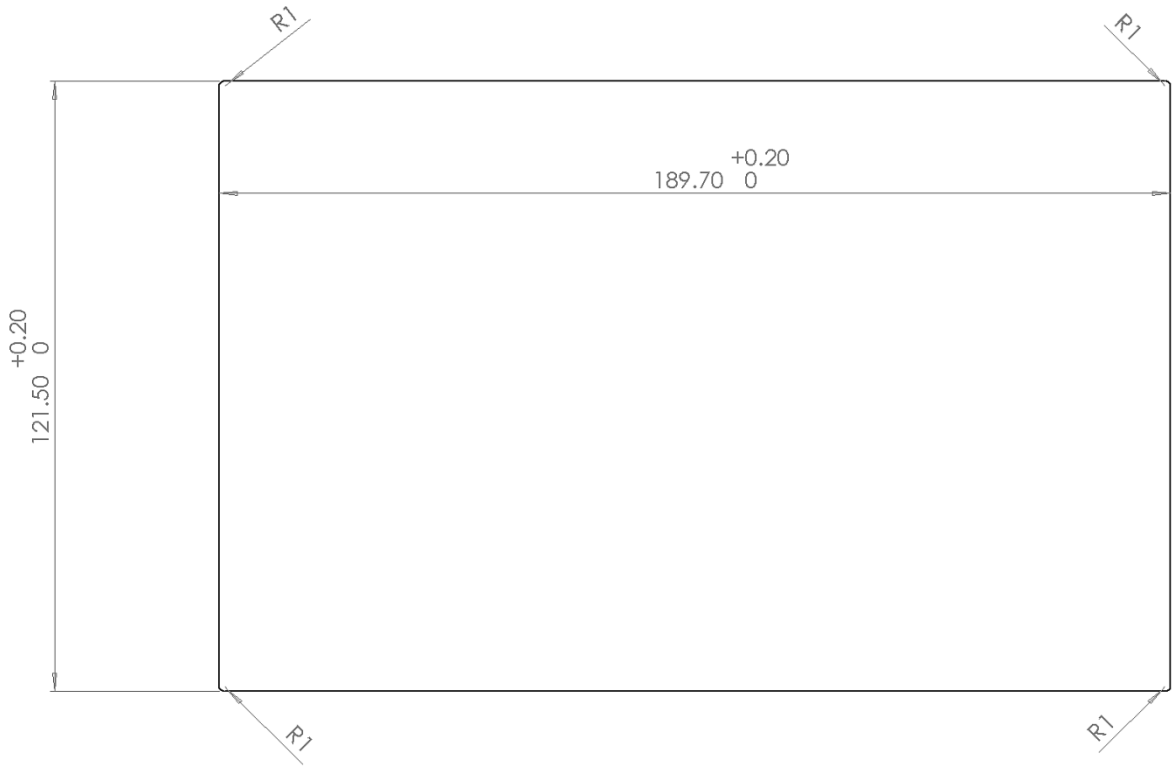


Figure 9: WP-70g 44-12x0 Front view

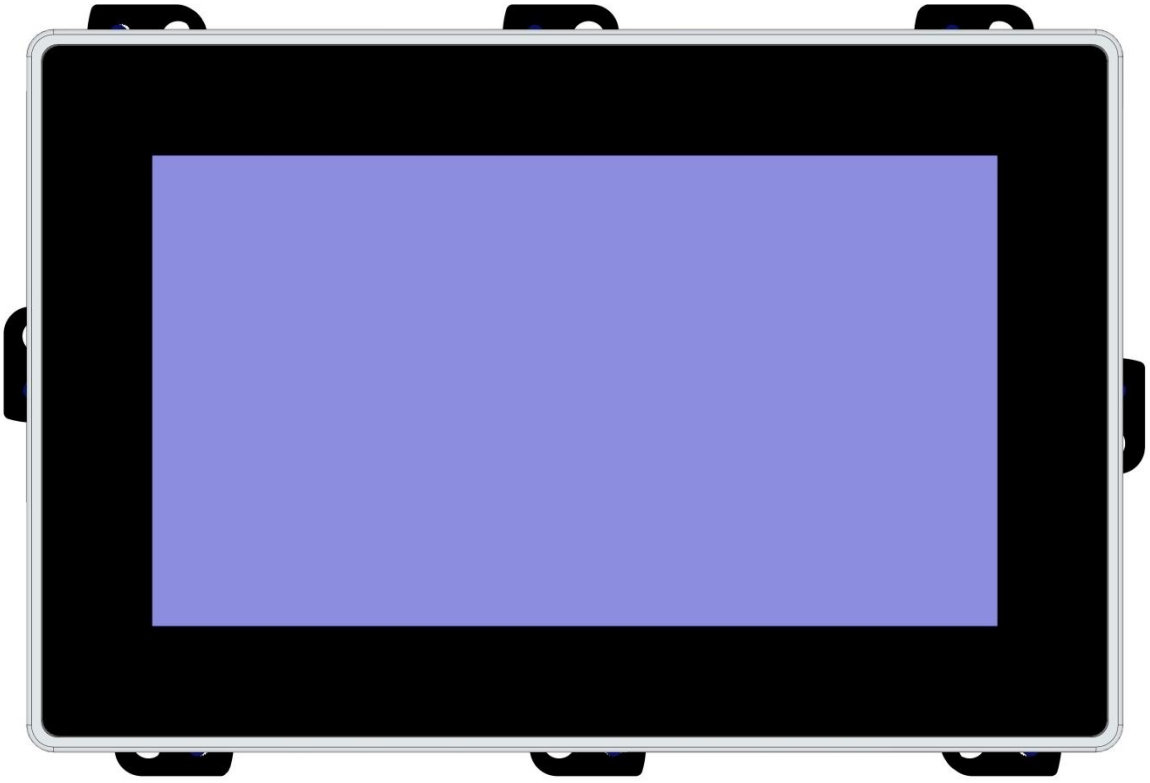


Figure 10: WP-70g 44-1200 Rear view

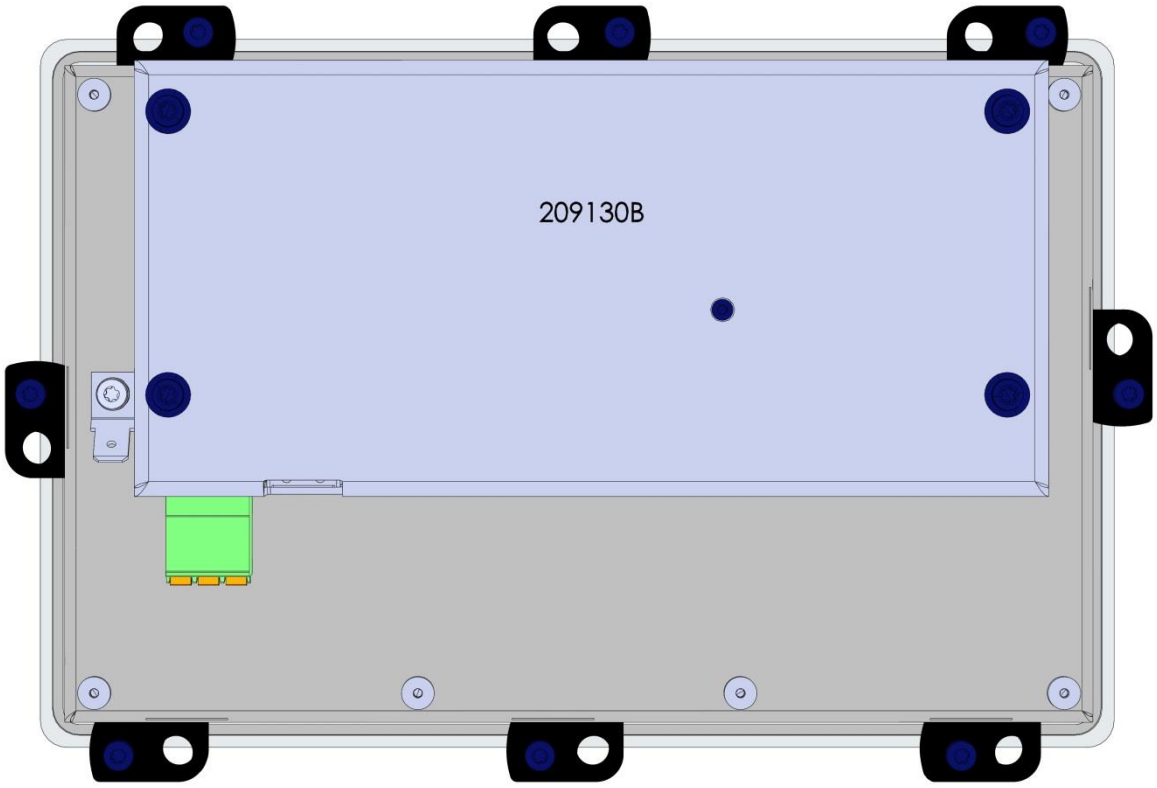
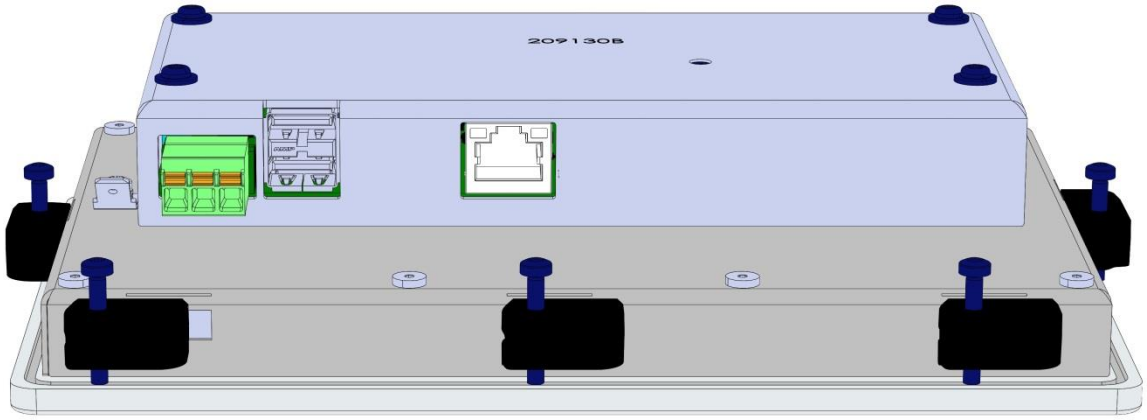


Figure 11: WP-70g 44-1200 Side view from below



9.2. 10.1“ Web-Panel WP-101g 44-12x0

Figure 12: WP-101g 44-12x0 technical drawings

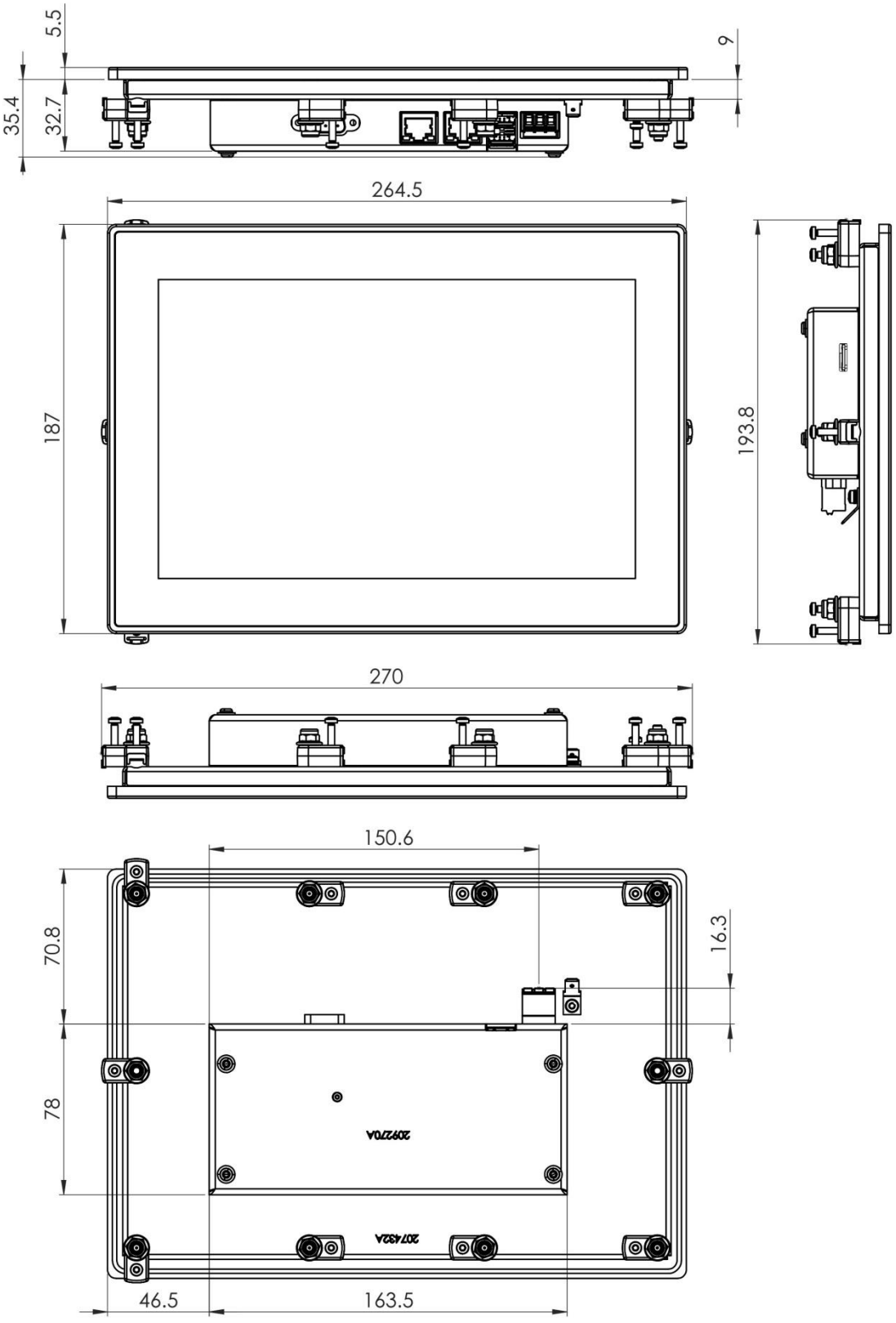


Figure 13: WP-101g 44-12x0 Mounting cut-out

Figure 14: WP-101g 44-12x0 Front view

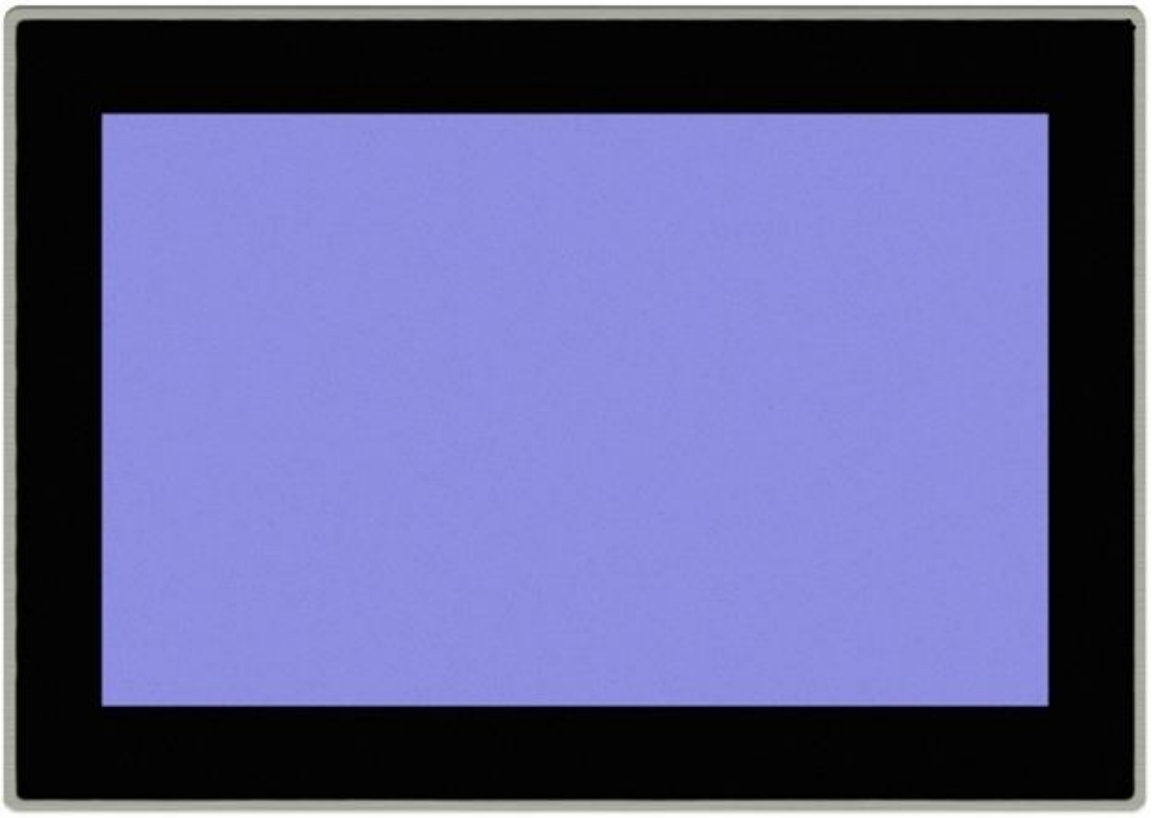


Figure 15: WP-101g 44-1200 Rear view

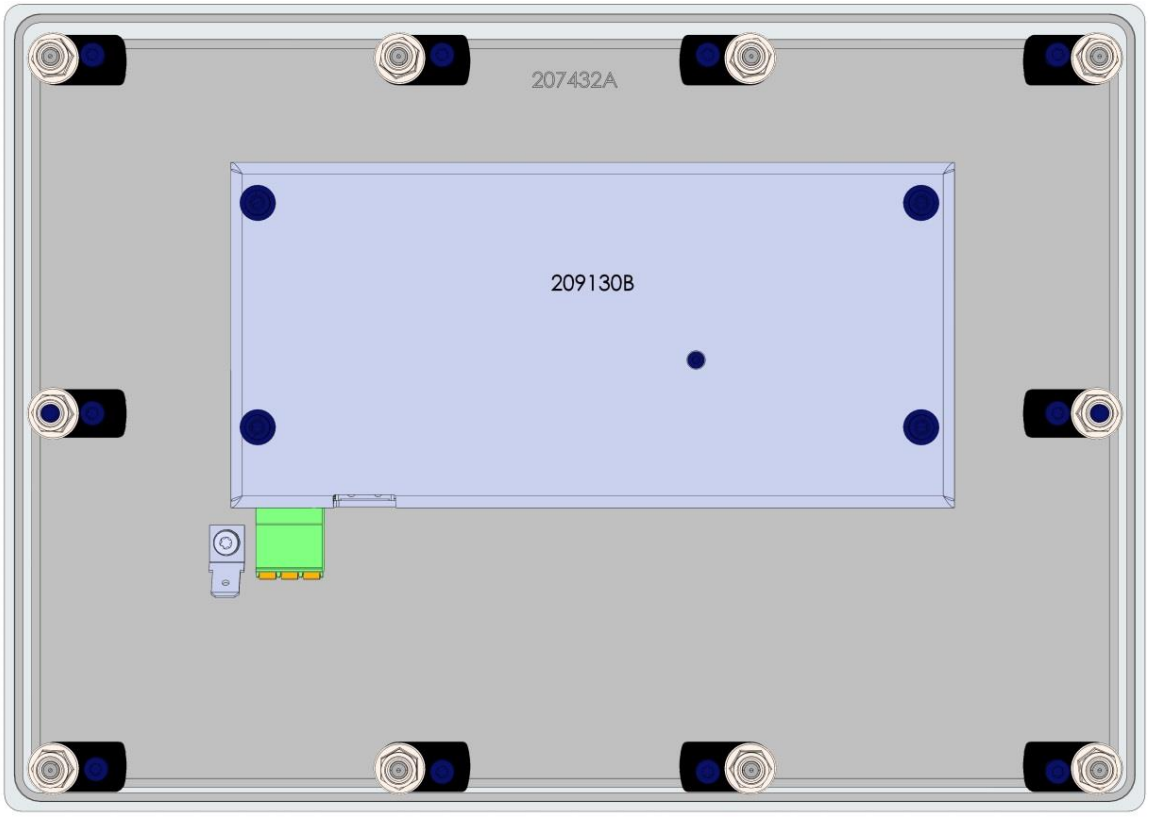
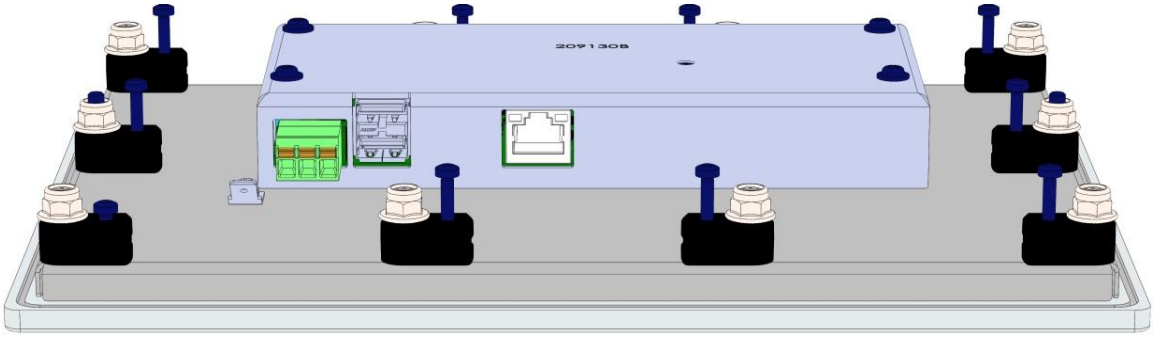


Figure 16: WP-101g 44-1200 Side view from below



9.3. 15.6“ Web-Panel WP-156g 44-12x0

Figure 17: WP-156g 44-12x0 technical drawings

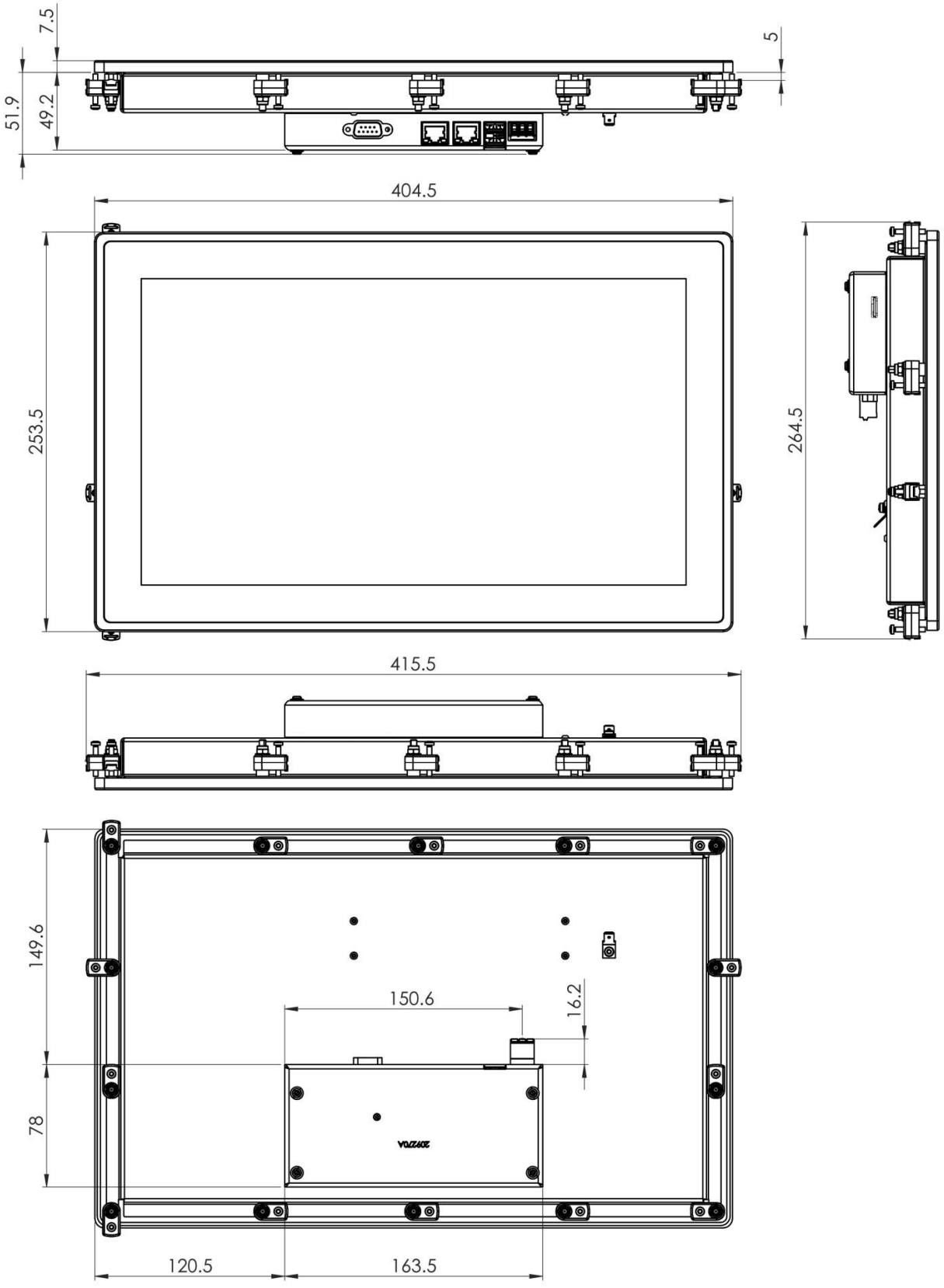


Figure 18: WP-156g 44-12x0 Mounting cut-out

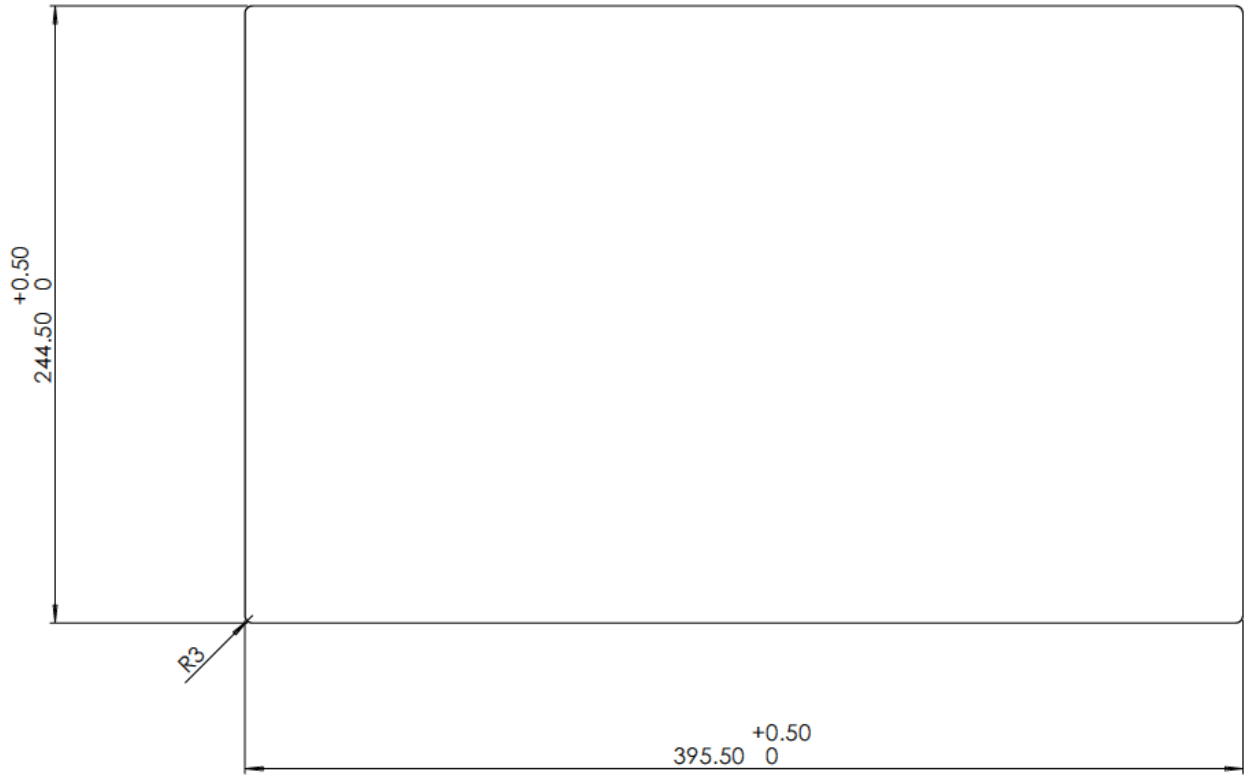


Figure 19: WP-156g 44-12x0 Front view

Figure 20: WP-156g 44-1200 Rear view

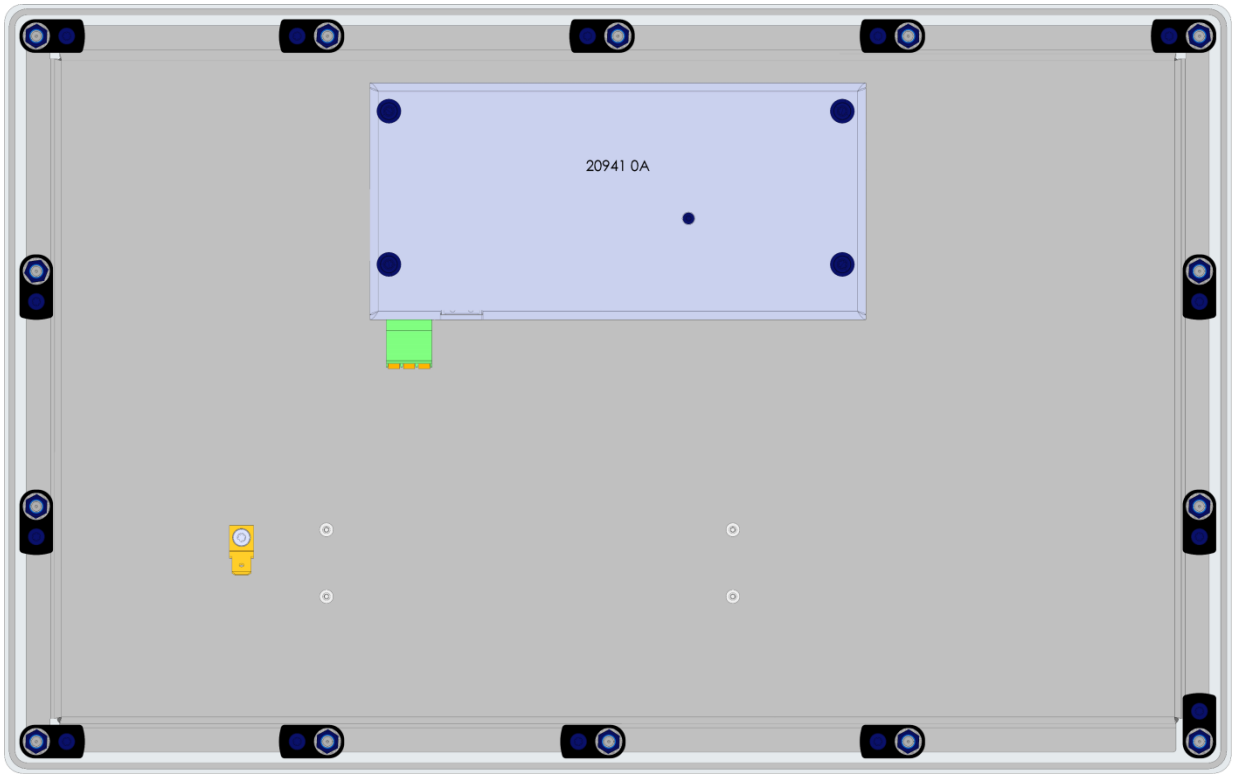
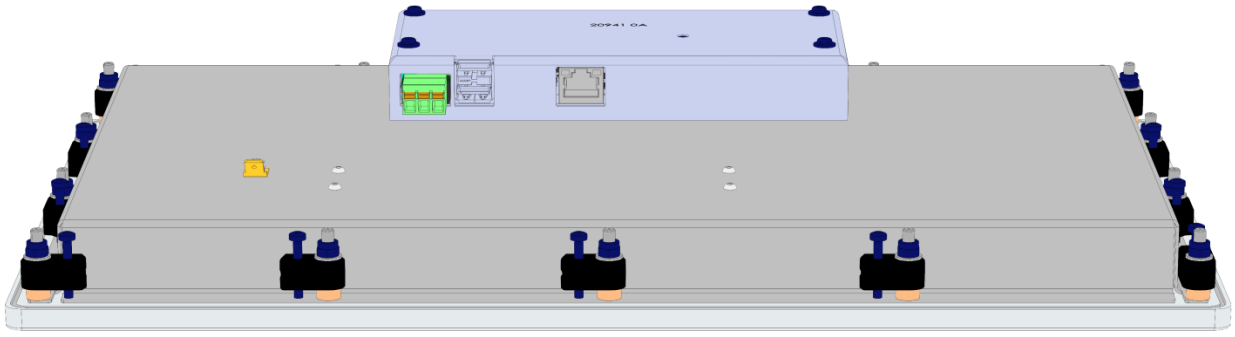


Figure 21: WP-156g 44-1200 Side view from below



10/ Technical Support

For technical support contact our Support department:

- Email: support@kontron.com
- Phone: +49-821-4086-888

Make sure you have the following information available when you call:

- Part number or product ID number (PN),
- Production batch or Serial Number (SN)

The numbers are located on a small label on the nameplate.

Be ready to explain the nature of your problem to the service technician.

10.1. Warranty

Due to their limited service life, parts that by their nature are subject to a particularly high degree of wear (wearing parts) are excluded from the warranty beyond that provided by law. This applies to the backup battery, for example.

10.2. Returning Defective Merchandise

All equipment returned to Kontron must have a Return of Material Authorization (RMA) number assigned exclusively by Kontron. Kontron cannot be held responsible for any loss or damage caused to the equipment received without an RMA number. The buyer accepts responsibility for all freight charges for the return of goods to Kontron's designated facility. Kontron will pay the return freight charges back to the buyer's location in the event that the equipment is repaired or replaced within the stipulated warranty period. Follow these steps before returning any product to Kontron.

1. Visit the RMA Information website:

   https://www.kontron.com/en/support/rma-information

   Download the RMA Request sheet for Kontron Europe GmbH and fill out the form. Take care to include a short detailed description of the observed problem or failure and to include the product identification Information (Name of product, Product number and Production batch or Serial number). If a delivery includes more than one product, fill out the above information in the RMA Request form for each product.

2. Send the completed RMA-Request form to the fax or email address given below at Kontron Europe GmbH. Kontron will provide an RMA-Number.

   Kontron Europe GmbH
   RMA Support
   Phone: +49 (0) 821 4086-0
   Fax: +49 (0) 821 4086 111
   Email: service@kontron.com

3. The goods for repair must be packed properly for shipping, considering shock and ESD protection.

Goods returned to Kontron Europe GmbH in non-proper packaging will be considered as customer caused faults and cannot be accepted as warranty repairs.

4. Include the RMA-Number with the shipping paperwork and send the product to the delivery address provided in the RMA form or received from Kontron RMA Support .

Appendix A: List of Acronyms

Table 14: List of Acronyms

WP	Web Panel
eMMC	embedded Multimedia Card
EMC	Electromagnetic compatibility; interference immunity to electrical or electromagnetic influences
ESD	Electrostatic Discharge; ; electrostatic discharge, high electrical voltage pulse
HMI	Human Machine Interface; Interface between machine and user
SELV	Safety Extra Low Voltage

This page has been intentionally left blank.

This page has been intentionally left blank.

About Kontron

Kontron is a global leader in Embedded Computing Technology (ECT). As a part of technology group S&T, Kontron offers a combined portfolio of secure hardware, middleware and services for Internet of Things (IoT) and Industry 4.0 applications. With its standard products and tailor-made solutions based on highly reliable state-of-the-art embedded technologies, Kontron provides secure and innovative applications for a variety of industries. As a result, customers benefit from accelerated time-to-market, reduced total cost of ownership, product longevity and the best fully integrated applications overall. For more information, please visit: **www.kontron.com**

Your Contact

Kontron Electronics AG

Riedstrasse 1
6343 Rotkreuz
Switzerland
Tel.: + 41 41 799 47 99
Fax: + 41 41 799 47 98
info@kontron.ch

Global Headquarters

Kontron S&T AG

Lise-Meitner-Str. 3-5
86156 Augsburg
Germany
Tel.: + 49 821 4086-0
Fax: + 49 821 4086-111
info@kontron.com