



Web Panel WP-xxx 44 Series

User Guide Rev. 0.B

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Web Panel WP-xxx 44 Series – User Guide

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NOTICE

You find the most recent version of the “General Safety Instructions“ online in the download area of this product.

NOTICE

This product is not intended for use or suited for storage or operation in corrosive environments, in particular under exposure to sulfur and chlorine and their compounds.

Revision History

REVISION	BRIEF DESCRIPTION OF CHANGES	DATE OF ISSUE	AUTHOR
0.A	Initial version	07.01.2022	GUGMA
0.B	New user guide design, added information about SVHCs, phthalates, safe passwords, front plate thickness for 7" and 10.1" panels, added WP-101g 44-1201 model	27.08.2024	KEPRA

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For technical support, please contact our support team by email: support@kontron-electronics.ch

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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.

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If you have any difficulties using this user guide, discover an error, or just want to provide some feedback, contact our support team: support@kontron-electronics.ch. Report 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 indicates a hazardous situation which, if not avoided, will result in death or serious injury.



WARNING indicates a hazardous situation which, if not avoided, could result in death or serious injury.



NOTICE indicates a property damage message.



CAUTION indicates a hazardous situation which, if not avoided, may result in minor or moderate injury
ATTENTION indique une situation dangereuse qui, si elle n'est pas évitée, peut entraîner des blessures mineures ou modérées.



Electric Shock!

This symbol and title warn of hazards due to electrical shocks (> 60 V) 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.



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.

General Safety Instructions

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 with the following guidelines. If the following guidelines are not observed, it could lead to injuries to the operator and/or damage to the product; in cases of non-observance of the instructions Kontron is exempt from accident liability, even during the warranty period.

⚠ 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.

Special Handling and Unpacking Instruction

NOTICE



ESD Sensitive Device!

Electronic boards and their components are sensitive to static electricity. It is not allowed to open the protective housing of your device unless you have obtained a special permission by Kontron and have the skills and environment to perform all manipulations on the device in a manner that is ESD-safe and complies with all applicable regulations.

⚠ CAUTION

Handling and operation of the product is permitted only for trained personnel within a work place that is access controlled. Follow the “General Safety Instructions” supplied with the product.

Installation and operation of the device

The product has been built and tested according to the basic safety requirements for low voltage (LVD) applications and has left the manufacturer in safety-related, flawless condition. To maintain this condition and to also ensure safe operation, the operator must not only observe the correct operating conditions for the product but also the following general safety instructions:

- › The product must be used as specified in the product documentation, in which the instructions for safety for the product and for the operator are described. These contain guidelines for setting up, installation and assembly, maintenance, transport or storage.
- › The on-site electrical installation must meet the requirements of the country's specific local regulations.
- › To guarantee that sufficient air circulation is available to cool the product, please ensure that the ventilation openings are not covered or blocked. If a filter mat is provided, this should be cleaned regularly. Do not place the product close to heat sources or damp places. Make sure the product is well ventilated.
- › Only connect the product to an external power supply providing the voltage type (AC or DC) and the input power (max. current) specified on the Kontron Product Label and meeting the requirements of the Limited Power Source (LPS) and Power Source (PS2) of UL/IEC 62368-1 .
- › Only products or parts that meet the requirements for Power Source (PS1) of UL/IEC 62368-1 may be connected to the product's available interfaces (I/O).
- › Do not try to open the product or remove any part of the enclosure unless specifically instructed to do so by Kontron. If the product is being opened, it must be disconnected from any power supply.

- ▶ Please note: safe operation is no longer possible when any of the following applies:
 - ▶ the product has visible damages or
 - ▶ the product is no longer functioning
In this case the product must be disconnected from any power supply and it must be ensured that the product can no longer be operated.
- ▶ Handling and operation of the product is permitted only for trained personnel within a work place that is access controlled.
- ▶ This product is not suitable for use in locations where children are likely to be present

Additional Safety Instructions for DC Power Supply Circuits

- ▶ To guarantee safe operation, please observe that:
 - ▶ the external DC power supply must meet the criteria for LPS and PS2 (UL/IEC 62368-1)
 - ▶ no cables or parts without insulation in electrical circuits with dangerous voltage or power should be touched directly or indirectly
 - ▶ a reliable functional earth connection is provided
 - ▶ a suitable, easily accessible disconnecting device is used in the application (e.g. overcurrent protective device), if the product itself can not be easily disconnecte from power supply.
 - ▶ interconnecting power circuits of different products cause no electrical hazards
- ▶ A sufficient dimensioning of the power cable wires must be selected – according to the maximum electrical specifications on the product label – as stipulated by EN62368-1 or VDE0100 or EN60204 or UL61010-1 regulations or simply adhere to the recommendations in chapter 3.2.2.

Instructions générales de sécurité

Votre nouveau produit Kontron a été développé et testé avec soin pour fournir toutes les fonctionnalités nécessaires et assurer sa conformité aux exigences de sécurité électrique. Il a également été conçu pour une longue durée de vie sans faille. Cependant, la durée de vie de votre produit peut être considérablement réduite par un mauvais traitement lors du déballage et de l'installation. Par conséquent, dans l'intérêt de votre propre sécurité et du fonctionnement correct de votre nouveau produit Kontron, vous êtes invité à vous conformer aux directives suivantes. Si les directives suivantes ne sont pas respectées, cela pourrait entraîner des blessures pour l'opérateur et/ou des dommages au produit ; en cas de non-respect des instructions, Kontron est exempté de responsabilité en cas d'accident, même pendant la période de garantie.

⚠ WARNING

Toutes les opérations sur ce produit doivent être effectuées uniquement par du personnel suffisamment qualifié.

⚠ WARNING

Si l'équipement est utilisé d'une manière non spécifiée par le fabricant, la protection fournie par l'équipement peut être compromise.

Instructions Spéciales de Manipulation et de Déballage

NOTICE**Dispositif sensible à l'ESD !**

Les cartes électroniques et leurs composants sont sensibles à l'électricité statique. Il n'est pas permis d'ouvrir le boîtier de protection de votre appareil à moins d'avoir obtenu une permission spéciale de Kontron et d'avoir les compétences et l'environnement pour effectuer toutes les manipulations sur l'appareil de manière sûre pour l'ESD et conforme à toutes les réglementations applicables.

⚠ CAUTION

La manipulation et l'opération du produit sont autorisées uniquement pour le personnel formé dans un lieu de travail contrôlé en accès. Suivez les "Instructions Générales de Sécurité" fournies avec le produit.

Installation et fonctionnement de l'appareil

Le produit a été construit et testé selon les exigences de sécurité de base pour les applications à basse tension (LVD) et a été mis à votre disposition dans un état sans défaut lié à la sécurité. Pour maintenir cet état et assurer également un fonctionnement sûr, l'opérateur doit non seulement observer les conditions d'exploitation correctes pour le produit mais aussi les instructions générales de sécurité suivantes :

- › Le produit doit être utilisé tel que spécifié dans sa documentation du produit, dans laquelle les instructions de sécurité pour le produit et pour l'opérateur sont décrites. Celles-ci contiennent des directives pour l'installation, l'installation et l'assemblage, la maintenance, le transport ou le stockage.
- › L'installation électrique sur site doit répondre aux exigences des réglementations locales spécifiques du pays.
- › Afin de garantir une circulation d'air suffisante pour refroidir le produit, veuillez vous assurer que les ouvertures de ventilation ne sont pas couvertes ou obstruées. Ne placez pas le produit à proximité de sources de chaleur ou d'endroits humides. Veillez à ce que le produit soit bien ventilé.
- › Connectez uniquement le produit à une alimentation externe fournissant le type de tension (AC ou DC) et la puissance d'entrée (courant max.) spécifiés sur l'étiquette du produit Kontron et répondant aux exigences de la source d'alimentation limitée (LPS) et de la source d'alimentation (PS2) de l'UL/IEC 62368-1.
- › Ne tentez pas d'ouvrir le produit ou d'enlever une partie du boîtier à moins que Kontron ne vous y ait spécifiquement invité. Si le produit est ouvert, il doit être déconnecté de toute source d'alimentation.
- › Veuillez noter : un fonctionnement sûr n'est plus possible lorsque l'un des éléments suivants s'applique :
 - › le produit a des dommages visibles ou
 - › le produit ne fonctionne plus
 Dans ce cas, le produit doit être déconnecté de toute source d'alimentation et il doit être assuré que le produit ne peut plus être utilisé.
- › La manipulation et l'opération du produit sont autorisées uniquement pour le personnel formé dans un lieu de travail contrôlé en accès.
- › Ce produit n'est pas adapté à une utilisation dans des lieux où des enfants sont susceptibles d'être présents

Instructions de Sécurité Supplémentaires pour les Circuits d'Alimentation en Courant Continu

Pour garantir un fonctionnement sûr, veuillez observer que:

- › l'alimentation externe en courant continu doit répondre aux critères pour LPS et PS2 (UL/IEC 62368-1)
- › aucun câble ou partie sans isolation dans les circuits électriques avec une tension ou une puissance dangereuses ne doit être touché directement ou indirectement
- › une connexion à la terre fonctionnelle et fiable est fournie
- › un dispositif de déconnexion facilement accessible est utilisé dans l'installation générale (par exemple, un dispositif de protection contre les surintensités), si le produit lui-même ne peut pas être facilement déconnecté de l'alimentation.
- › les circuits d'alimentation interconnectés de différents produits ne causent pas de dangers électriques
- › Une dimension suffisante des fils du câble d'alimentation doit être sélectionnée – selon les spécifications électriques maximales sur l'étiquette du produit – comme stipulé par les réglementations EN62368-1 ou VDE0100 ou EN60204 ou UL61010-1 ou simplement adhérer aux recommandations au chapitre 3.2.2

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.

For installation and operation always follow the instructions provided by this manual.

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 comply with environmental laws, regulations, and other environmentally oriented requirements. For more information regarding Kontron's quality and environmental responsibilities, visit www.kontron.com/about-kontron/corporate-responsibility/quality-management.

Disposal and Recycling

Kontron's products are manufactured to satisfy environmental protection requirements. Many of the components can be recycled. Final disposal of this product after its service life must be accomplished in accordance with applicable country, state and local laws and 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 your products for proper disposal.

Mandatory Information about SVHC

The Regulation on Registration, Evaluation, Authorisation and Restriction of Chemicals EC 1907/2006, commonly referred to as REACH, is a European regulation on chemicals and their safe use. With the publication of candidate lists for authorization, the European Chemicals Agency (ECHA) identifies several substances of very high concern (SVHC) that manufacturers must disclose to their customers if used in articles above 0.1% by weight.

Based on the current version (as of 14 June 2023) of the candidate list for authorization, this product contains the following SVHCs above the disclosure threshold.

Table 1: Contained SVHC

PART NO.	PART	SVHC	CAS-NO.	USE
All	Diodes V1000, V1001	Lead	7439-92-1	High melting point solder within the encapsulated part, RoHS compliant (Ex. 7(a))
All	Fuse F1100	Lead	7439-92-1	High melting point solder within the encapsulated part, RoHS compliant (Ex. 7(a))
11591 11613	Display 15,6"	Lead monoxide	1317-36-8	Resistor coating
11591 11613	Display 15,6"	2-(2H-benzotriazol-2-yl)-4,6-ditertpentylphenol	25973-55-1	Polarizing filter
11591 11613	Display 15,6"	4,4'-isopropylidenediphenol (Bisphenol A)	80-05-7	Electrical insulation
11591 11613	Display 15,6"	2-methyl-1-(4-methylthiophenyl)-2-morpholinopropan-1-one	71868-10-5	Solder resist of PCB

The SVHCs used in these products do not pose a safety risk under regular usage.

Notice about Phthalates

The protective film on new devices contains the phthalates (plasticizers) Di-2-(2-propyl-heptyl) phthalate (DPHP) and Diisodecyl phthalate (DIDP). DPHP is suspected of being an endocrine disruptor (i.e. disrupting the human hormone balance) and DIDP is banned for use in toys and products that can be put in the mouth by children according to Annex XVII REACH.

Therefore, please remove the protective film before use and dispose of it out of reach of small children. Under regular use by adults, no health hazard is to be expected from the phthalates contained in the protective film.

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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.MX8Mmini 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 2: Versions

PART NO.	NAME	MAIN FEATURES
11589	WP-70g 44-1200	7.0" Web Panel i.MX8 4-Core with aluminium frame
11590	WP-101g 44-1200	10.1" Web Panel i.MX8 4-Core with aluminium frame
11842	WP-101g 44-1201	10.1" Web-Panel i.MX8 4 Core with extended temperature range
11591	WP-156g 44-1200	15.6" Web Panel i.MX8 4-Core with aluminium frame
11610	WP-70g 44-1230	7.0" Web Panel i.MX8 4-Core, 2 ETH, RS-232, aluminium frame
11611	WP-101g 44-1230	10.1" Web Panel i.MX8 4-Core, 2 ETH, RS-232, aluminium frame
11791	WP-101g 44-1230	10,1" Web Panel i.MX8 4-Core, 2 ETH, RS-232, Alu, 2 GB RAM
11850	WP-101g 44-1230	10,1" Web Panel i.MX8 4-Core, 2 ETH, RS-232, Alu, 2 GB RAM, 16 GB eMMC
11868	WP-101g 44-1230	10,1" Web Panel i.MX8 4-Core, 2 ETH, RS-232, Alu, 4 GB RAM
11613	WP-156g 44-1230	15.6" Web Panel i.MX8 4-Core, 2 ETH, RS-232, aluminium frame

Table 3: Detail configuration of the product versions

VERSION	11589	11590	11842	11591		11610	11611	11791	11850	11868	11613
7,0" WSVGA (1024 x 600)	x					x					
10,1" WXGA (1280 x 800)		x	x				x	x	x	x	
15,6" WXGA (1366 x 768)				x							x
Optically bonded	x	x	x			x	x	x	x	x	
Cap. Touch	x	x	x	x		x	x	x	x	x	x
aluminium front	x	x	x	x		x	x	x	x	x	x
stainless steel front											
Arm® i.MX8M Mini 4 Cores	x	x	x	x		x	x	x	x	x	x
4 GByte eMMC-Flash	x	x	x	x		x	x	x		x	x
16 GByte eMMC-Flash									x		
1 GByte DDR4-RAM	x	x	x	x		x	x				x
2 GByte DDR4-RAM								x	x		
4 GByte DDR4-RAM										x	
2 MByte NOR-Flash	x	x	x	x		x	x	x	x	x	x
microSD-Card Slot	x	x	x	x		x	x	x	x	x	x
1 GBit-Ethernet NET1	x	x	x	x		x	x	x	x	x	x
100 MBit-Ethernet NET2						x	x	x	x	x	x
2x USB-Host (USB1, USB2)	x	x	x	x		x	x	x	x	x	x
1x RS-232						x	x	x	x	x	x
Linux Yocto Distribution	x	x	x	x		x	x	x	x	x	x
QIWI Software Toolkit	x	x	x	x		x	x	x	x	x	x
Op. Temp. 0°C ... +55°C	x	x		x		x	x	x	x	x	x
Op. Temp. -20°C +55°C			x								
UL (NRTL TÜV Süd)	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 4: Technical data of the displays

SIZE	RESOLUTION	TYPE	FORMAT	BRIGHTNESS	VIEWING ANGLE	LED LIFE TIME ¹	COLOURS
7.0"	1024 x 600	IPS, Optically bonded	17:10	450 cd/m ²	85°/85°/85°/85°	40'000 Hrs.	16.7 Millions
10.1"	1280 x 800	IPS, Optically bonded	16:10	430 cd/m ²	80°/80°/80°/80°	50'000 Hrs.	16.7 Millions
15.6"	1366 x 768	Air gap	16:9	450 cd/m ²	85°/85°/80°/80°	50'000 Hrs.	16.7 Millions

¹ Display brightness = 50% after the specified operating time at 100% brightness

- › 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 -4 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 5: 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 48.4 mm	42.4 mm	154.21 x 86.92 mm	0.82kg
11590	WP-101g 44-1200	264.5 x 187 x 41.4 mm	35.5 mm	217 x 135.6 mm	1.25 kg
11842	WP-101g 44-1201	264.5 x 187 x 41.4 mm	35.5 mm	217 x 135.6 mm	1.26 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 48.4 mm	42.4 mm	154.21 x 86.92 mm	0.83kg
11611	WP-101g 44-1230	264.5 x 187 x 41.4 mm	35.5 mm	217 x 135.6 mm	1.26 kg
11791					
11850					
11868					
11613	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 (-20°C ... +55°C for WP-XXXg 44-1201)
- › 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

¹depending on processor load, interface activity and display brightness

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.

2.5. Materials

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

Housing Rear: Stainless steel and aluminium

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)



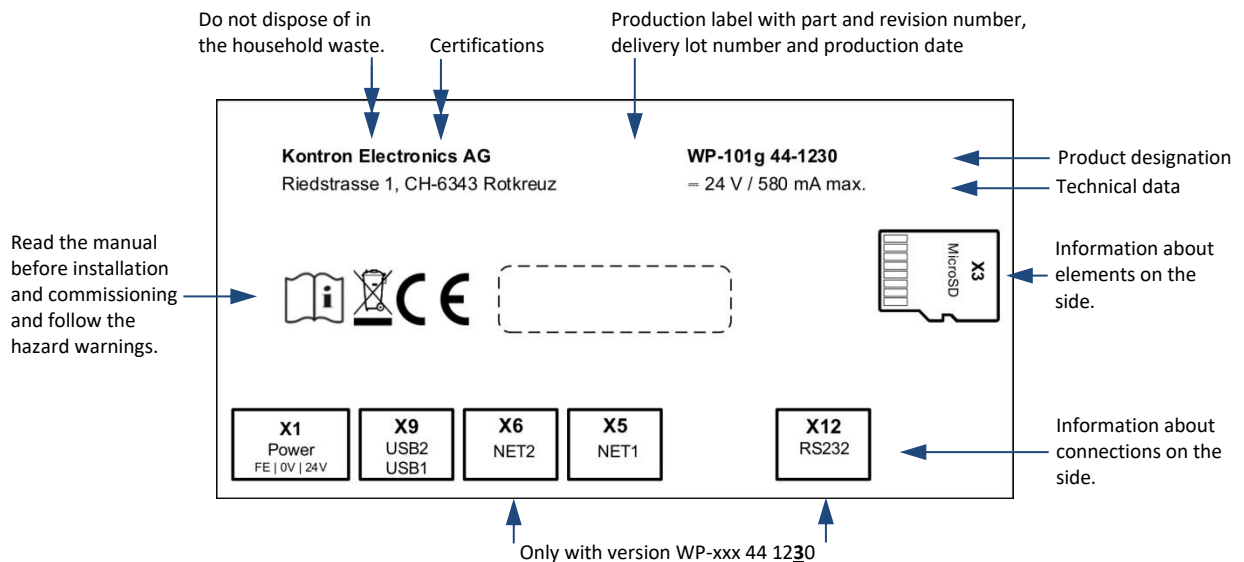
With regard to the REACH regulation or conflict minerals, please refer to the information on our website at:

<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. User Guides

Table 6: User Guides for the Web Panel WP-xxx 44 Series

PART NO.	DESIGNATION	COMMENT
90209	Handbuch Web Panel WP-xxx 44 Serie (DE)	German User Manual
90210	User Guide Web Panel WP-xxx 44 Series (EN)	English User Manual
90208	Online System manual QIWI Toolkit, see https://wiki.kontron-electronics.at:8444/chromiumbrowser/manual-108070005.html	English User Manual
90219	Quickstart Guide Web Panel WP-3x/4x/5x/6x	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 RMI 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 7: 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 8: Signalling Gigabit Ethernet interface status

LED GREEN (ACTIVITY)		LED YELLOW (LINK1000)	
off:	no activity, no link	off:	no link1000
blink:	activity, link	on:	link1000

3.1.8. 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 9: 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

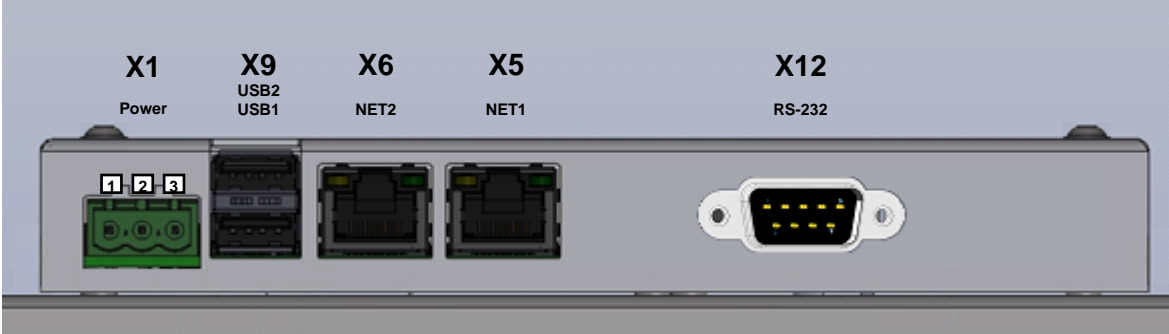


Figure 4: Interfaces side view



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 10: 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 11: 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 12: 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 13: 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 mm².

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. 10mm²) 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 start-up 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**

NOTICE

Change of default password

To protect your system from unauthorized access, please change the default password to a secure password.

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, the latest online version can be found in 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.com>

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 14: 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/Standards, Certifications and Directives

The Web Panel WP-xxx 44 series complies with the requirements of the standards listed in Table 15: Standard, Certifications and Directives product compliance.

Table 15: Standard, Certifications and Directives product compliance

Category	Directive or Standard	Detail
CE-Mark Compliant with EU Directives	Electromagnetic Compatibility Low Voltage RoHS II	Directive 2014/30/EU Directive 2014/35/EU Directive 2011/65/EU
EMC 2014/30/EU Immunity/ Emission	IEC 61000-6-2:2016 EN 61000-6-2:2019 IEC 61000-6-3:2020 EN 61000-6-3:2007/A1:2011	Electromagnetic compatibility (EMC), part 6-2: Generic standards- Immunity in industrial environments Electromagnetic compatibility (EMC), part 6-3: Generic standards- Emission in residential environments
UL (NRTL TÜV Süd) ¹	IEC 62368-1:2014	Audio/Video, information and communication technology equipment Part 1: Safety requirements
WEEE 2012/19/EU	Waste Electrical and Electronic Equipment Directive (WEEE Directive)	Compliant with the Waste Electrical and Electronic Equipment (WEEE) directive to reduce waste of electrical and electronic equipment, encourage recycling and environmental disposal and increase the environmental awareness of producers.

¹ Validity see 1/Product overview

9/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.

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

10.1. 7" Web-Panel WP-70g 44-12x0

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

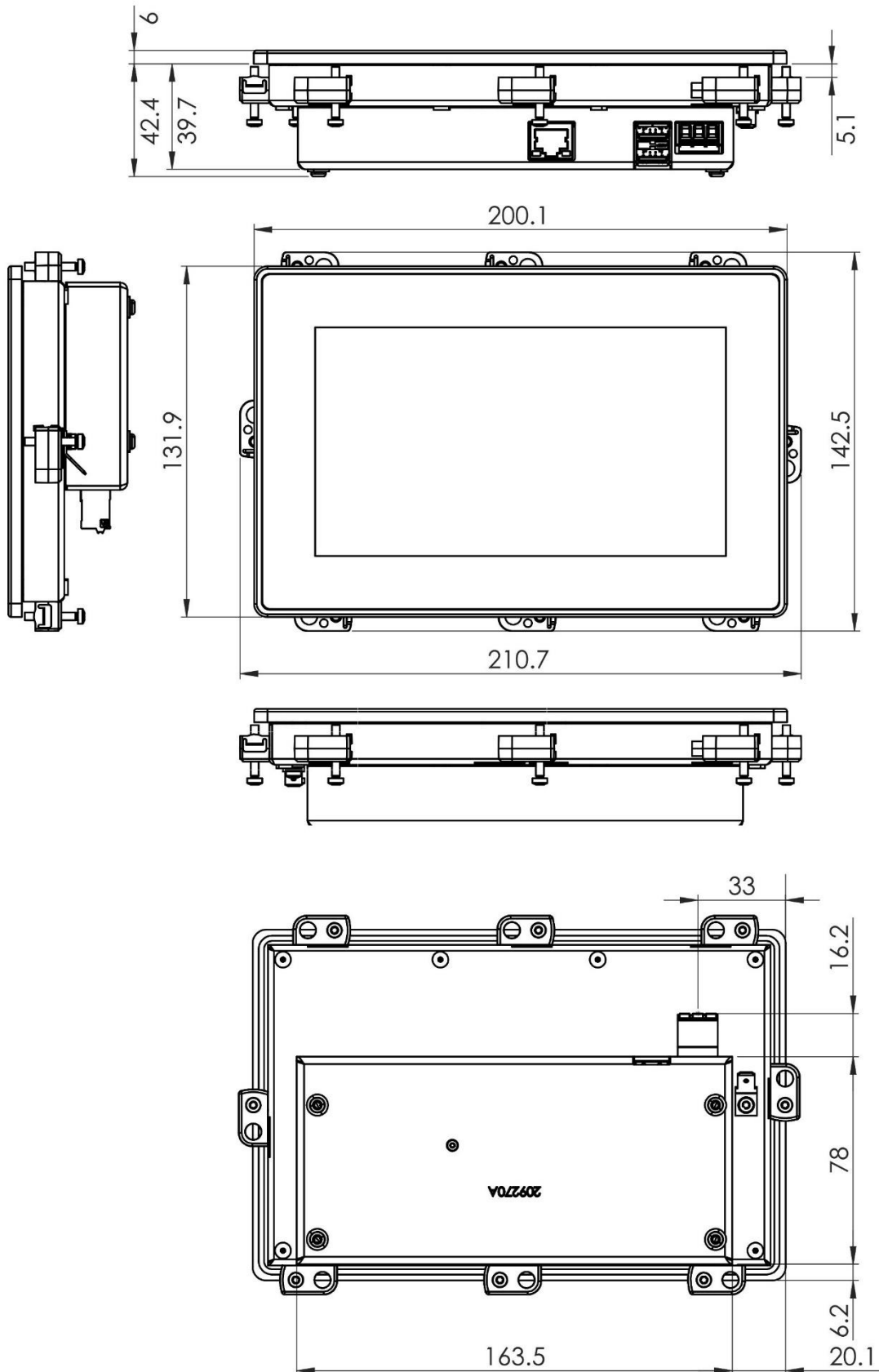


Figure 8: WP-70g 44-12x0 Mounting cut-out

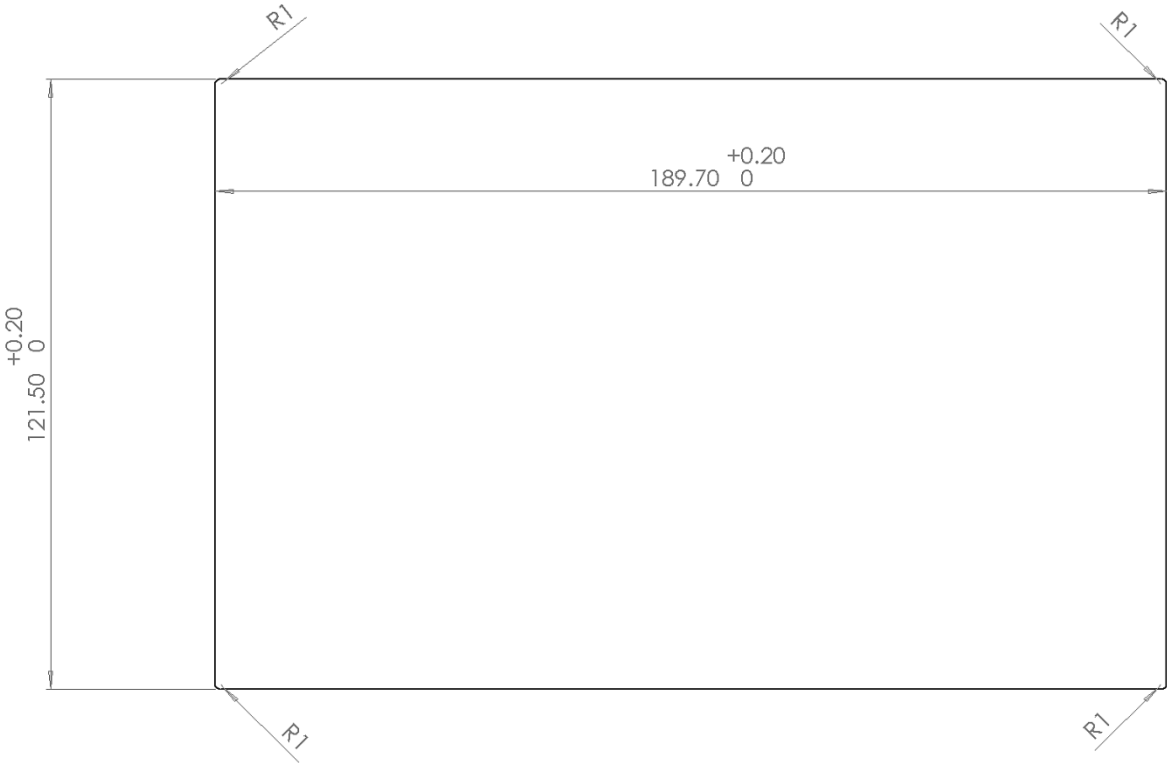


Figure 9: WP-70g 44-12x0 Front view

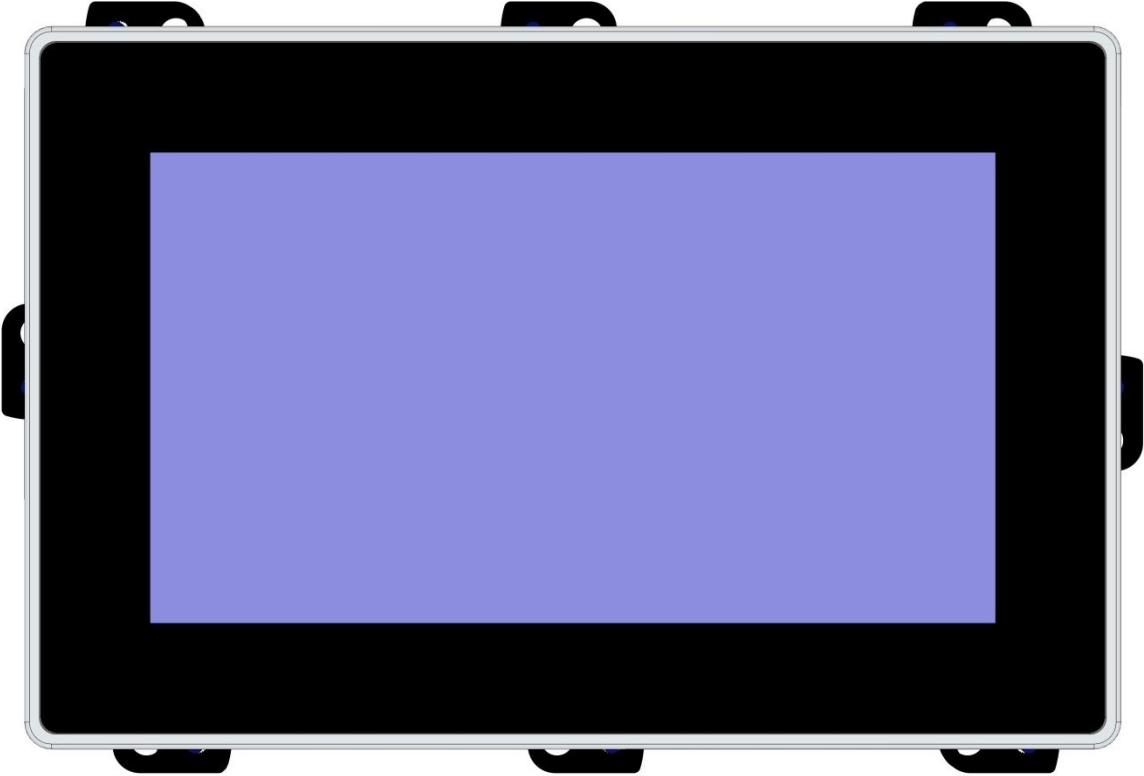


Figure 10: WP-70g 44-1200 Rear view

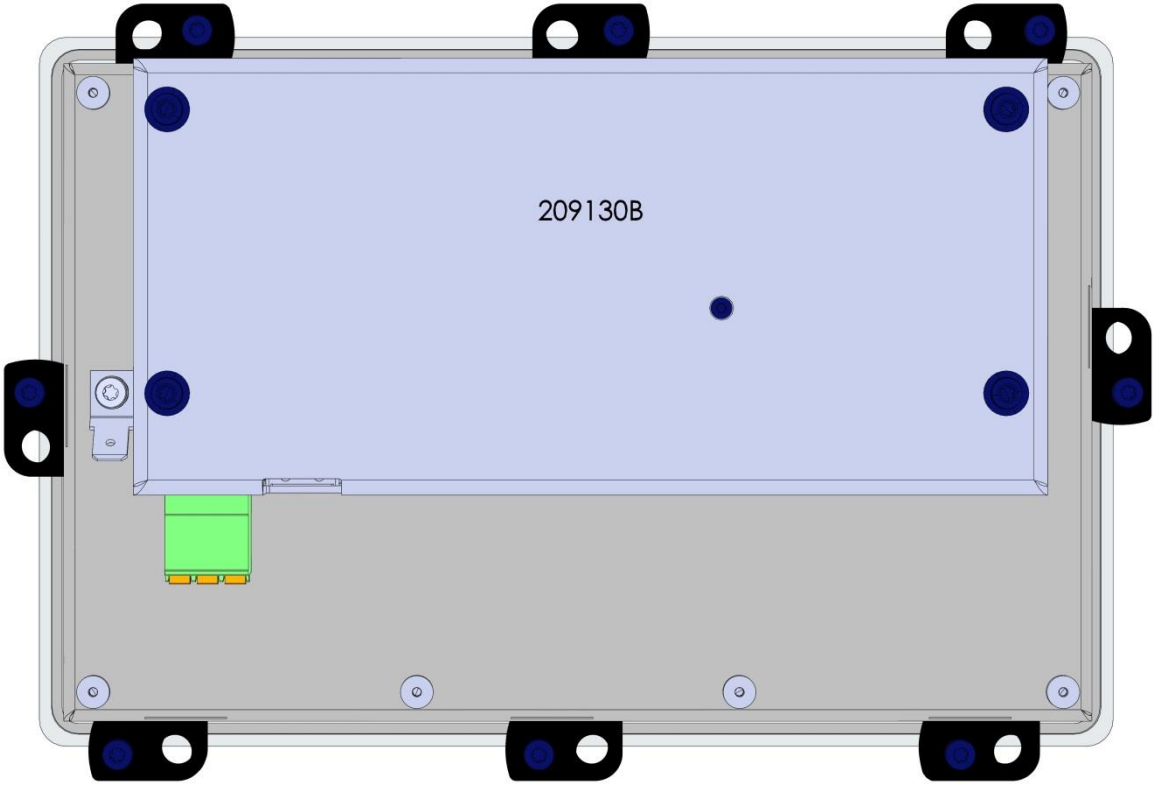
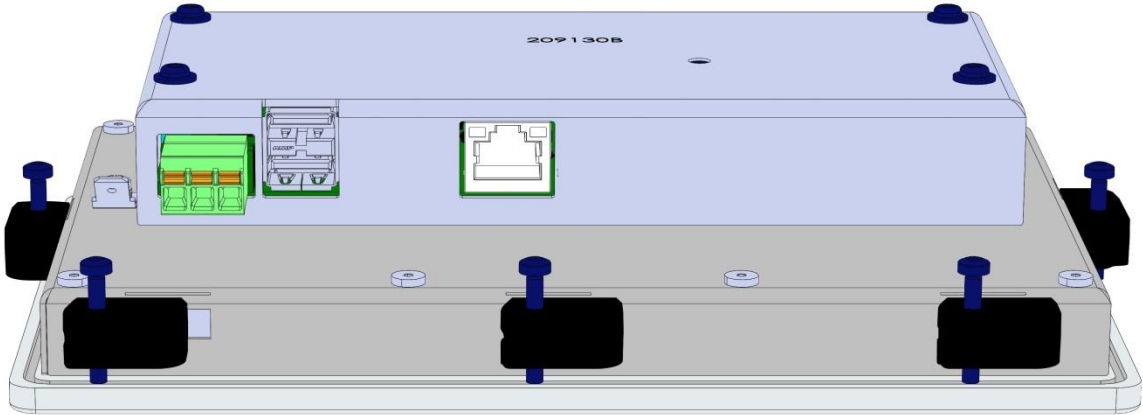


Figure 11: WP-70g 44-1200 Side view from below



10.2. 10.1" Web-Panel WP-101g 44-12x0

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

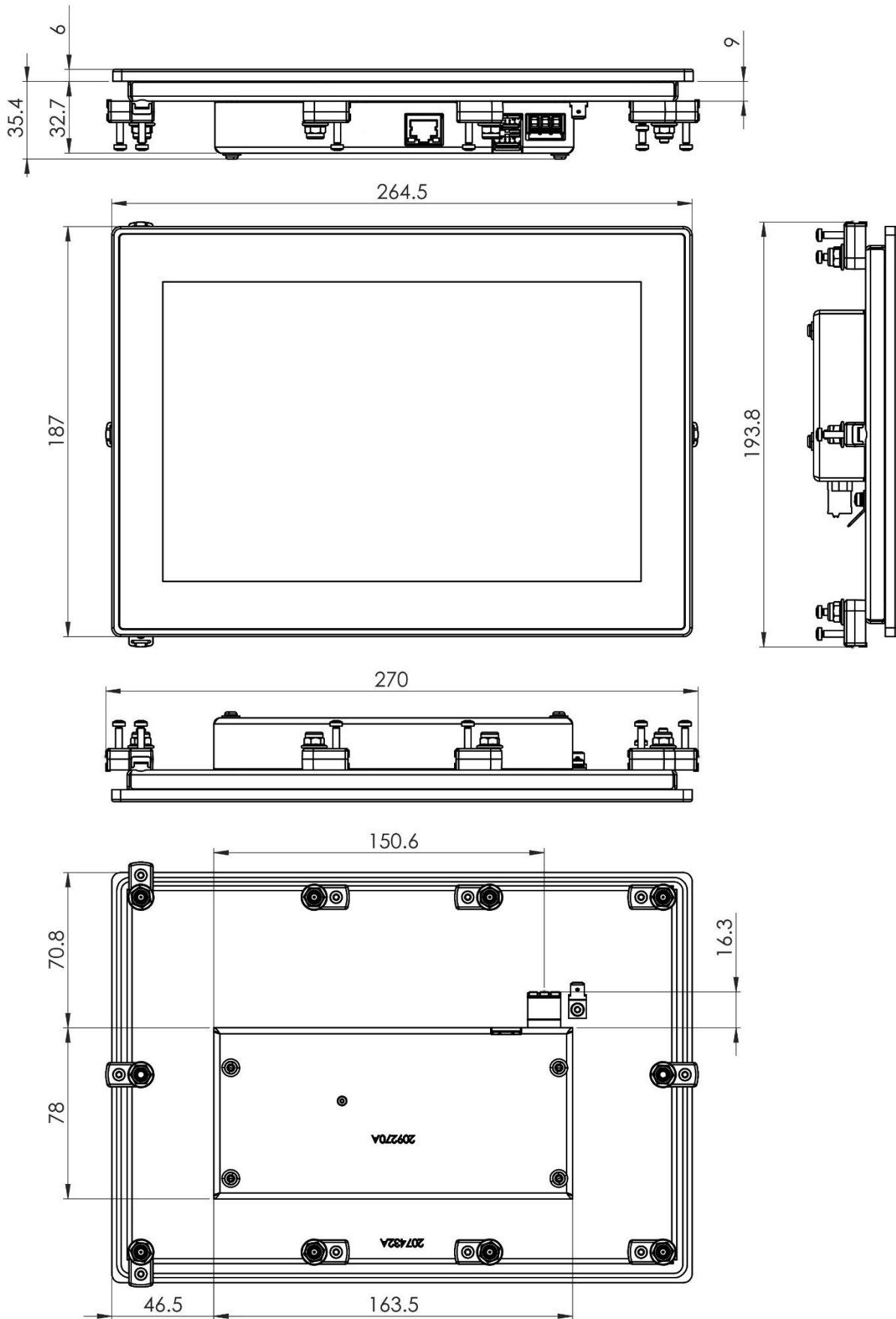


Figure 13: WP-101g 44-12x0 Mounting cut-out



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



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

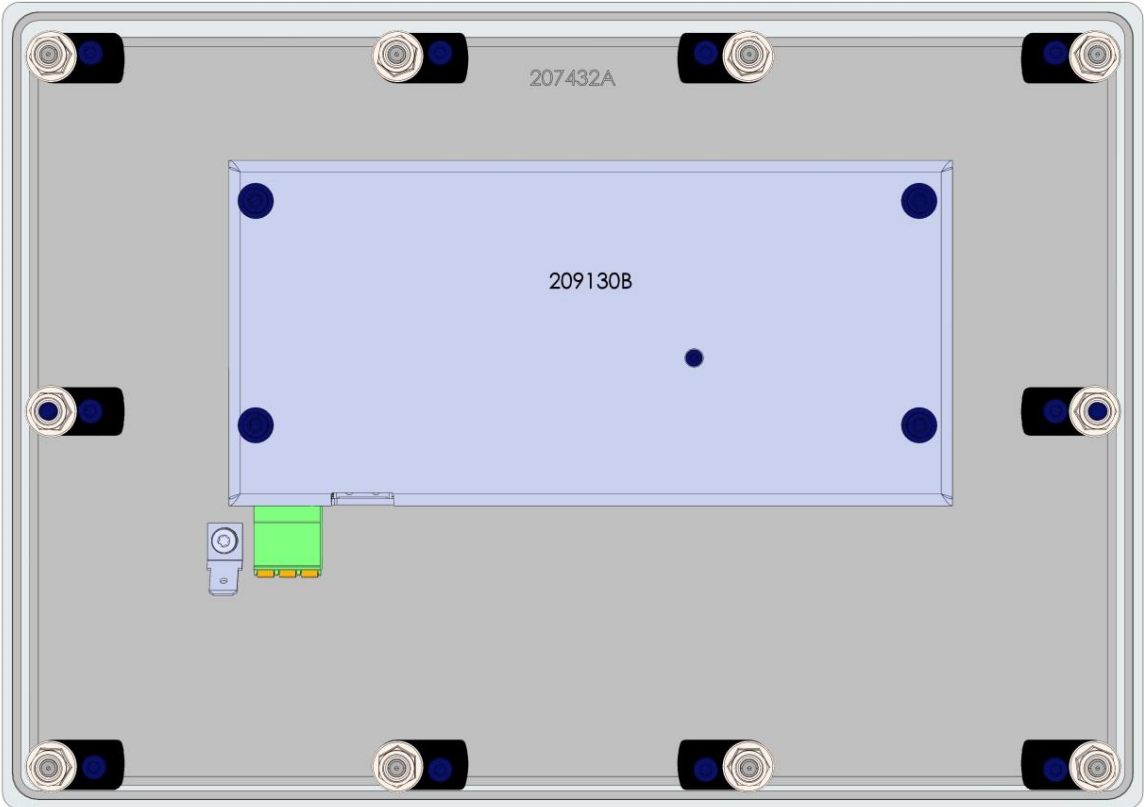
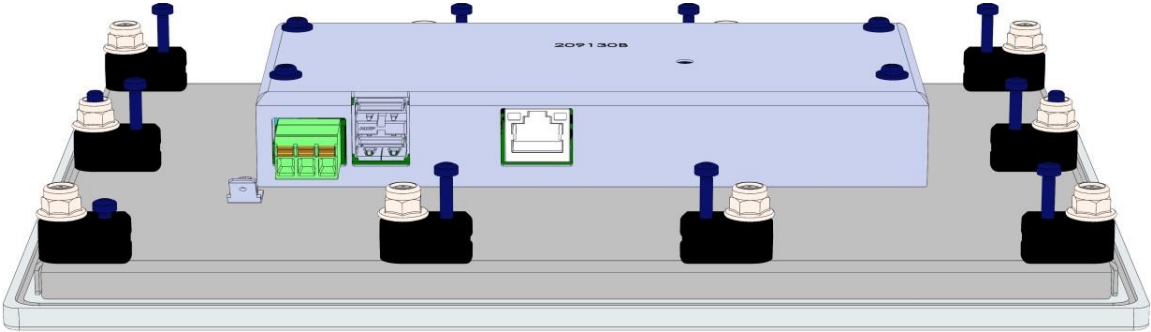


Figure 16: WP-101g 44-1200 Side view from below



10.3. 15.6" Web-Panel WP-156g 44-12x0

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

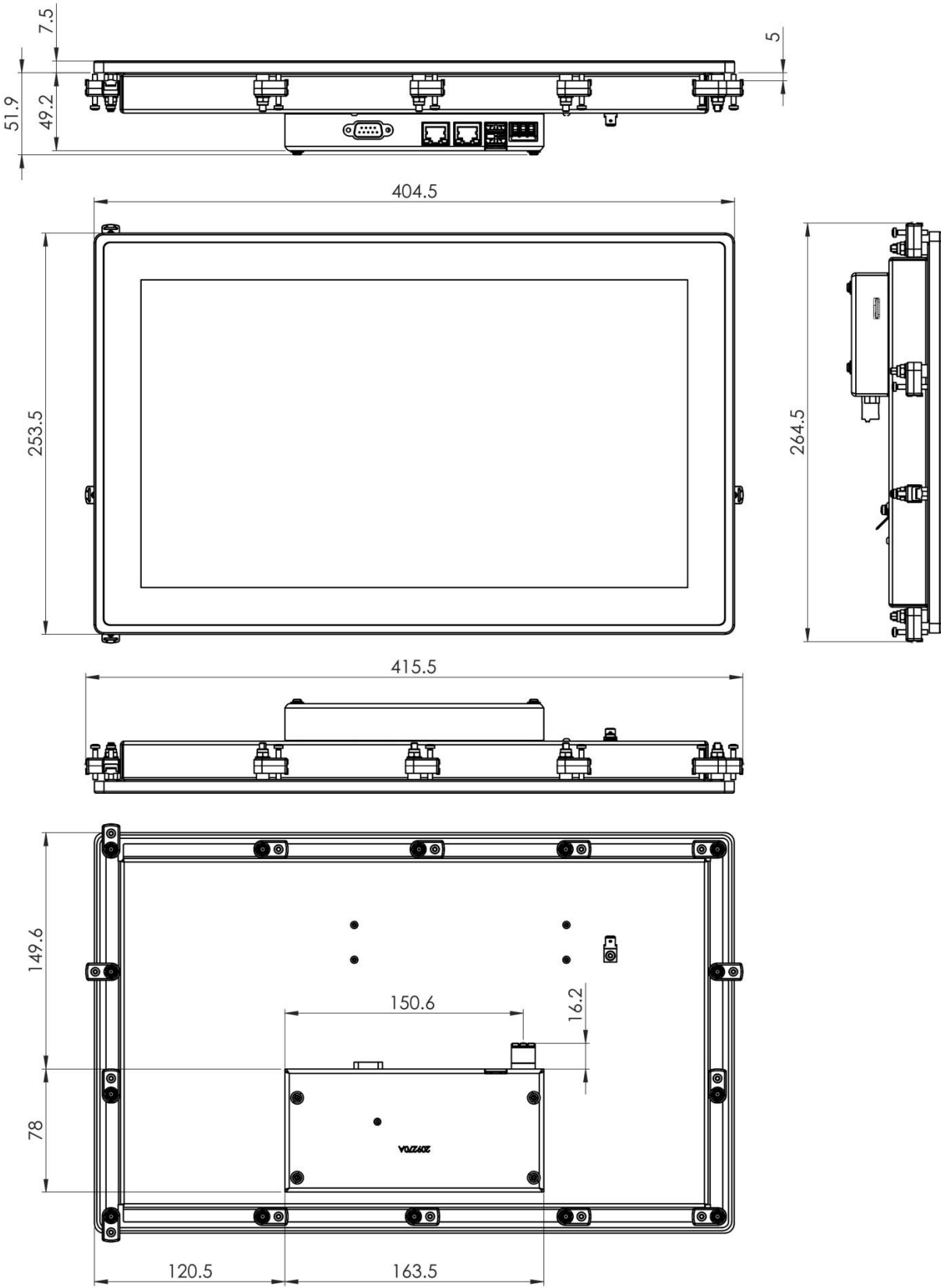


Figure 18: WP-156g 44-12x0 Mounting cut-out

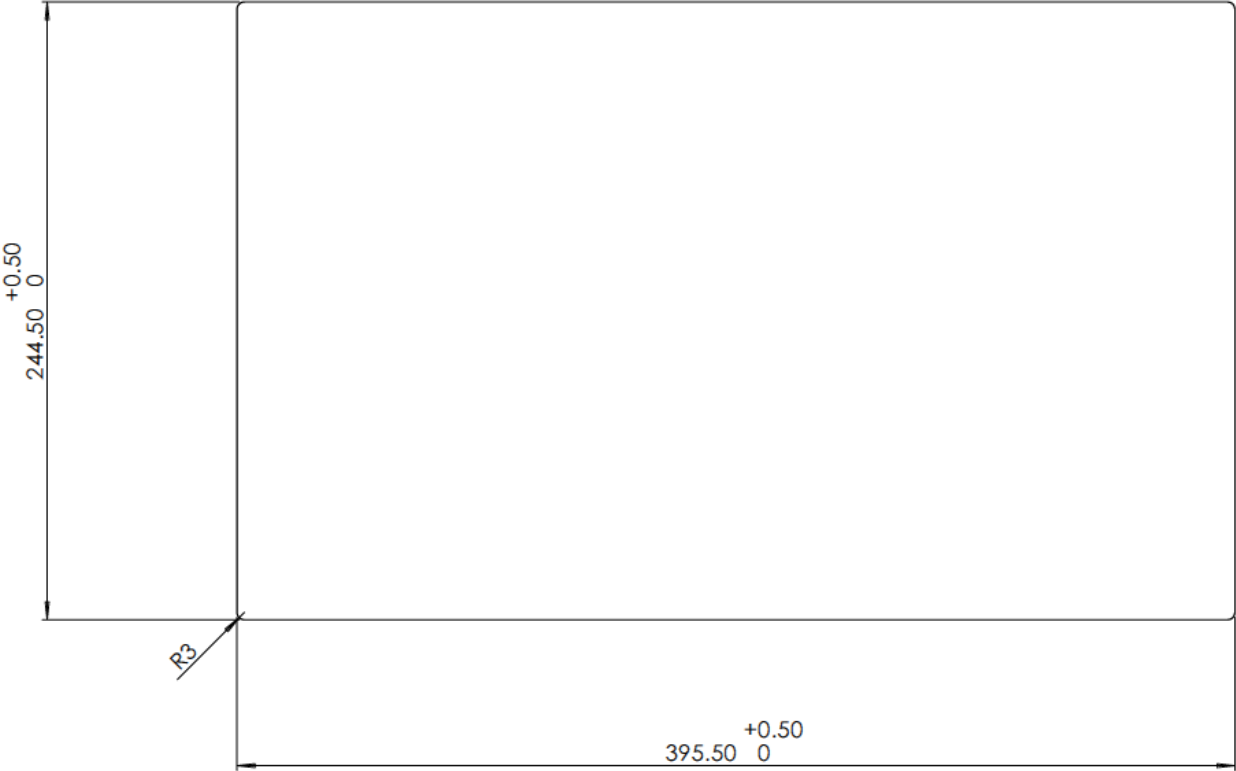


Figure 19: WP-156g 44-12x0 Front view



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

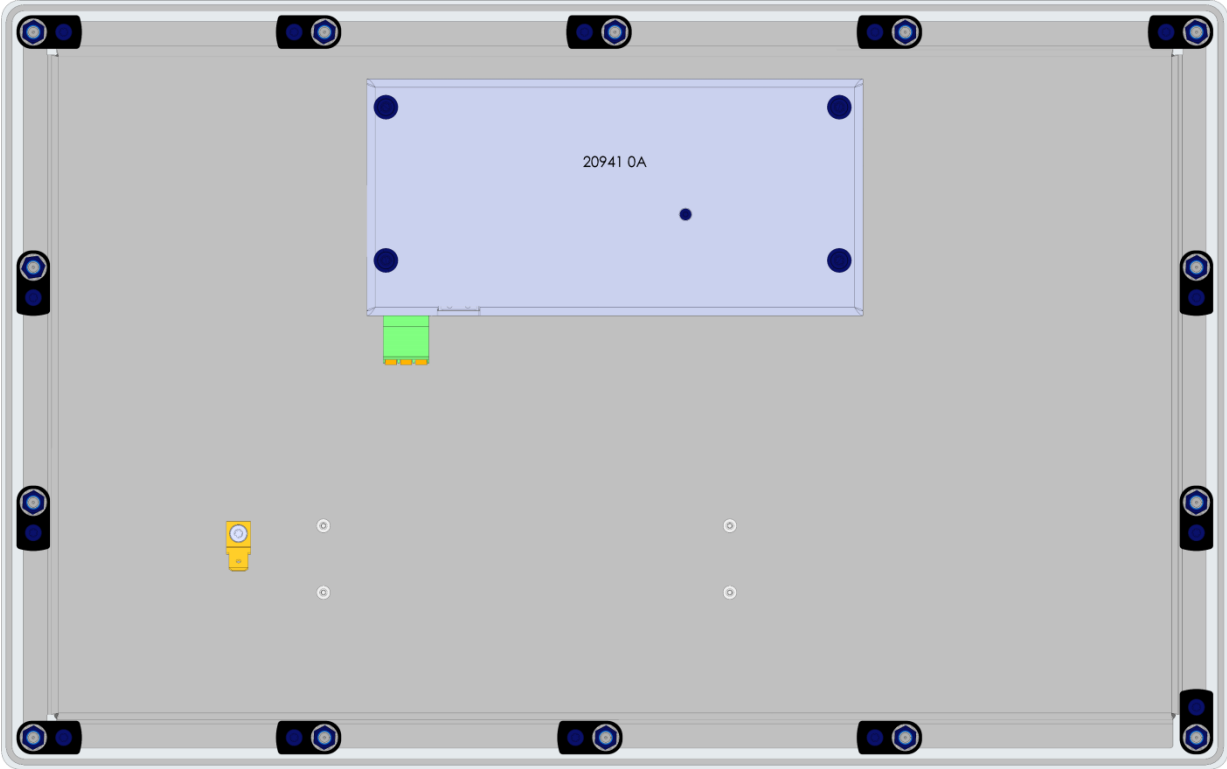
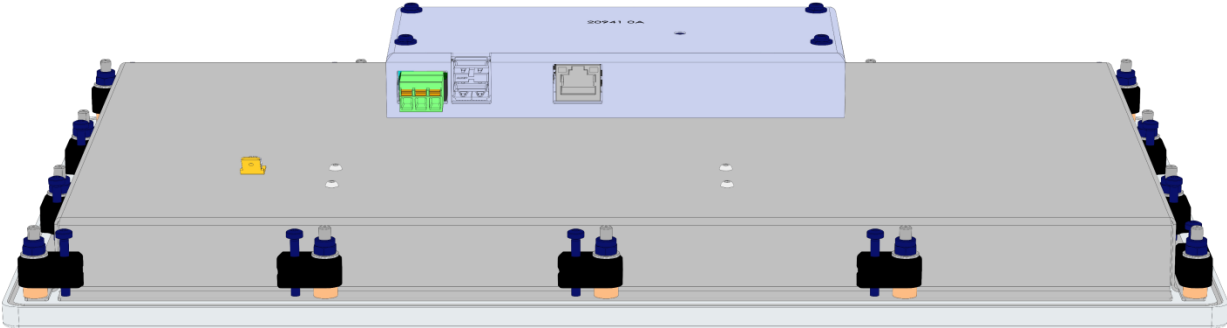


Figure 21: WP-156g 44-1200 Side view from below



11/ 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.

11.1. 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.

11.2. 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: List of Acronyms

AC	Alternating Current
CE	Conformité Européenne
COM	Communication port
DC	Direct Current
EMMC	embedded Multimedia Card
EMC	ElectroMagnetic compatibility; interference immunity to electrical or electromagnetic influences
ESD	ElectroStatic Discharge, high electrical voltage pulse
ETH	Ethernet interface
FCC	Federal Communications Commission
GBE	Giga Bit Ethernet
HD	High Definition
HDMI	High Definition Multimedia Interface
HMI	Human Machine Interface; Interface between machine and user
IOT	Internet of Things
LED	Light Emitting Diode
MTBF	Mean Time Before Failure
PS	Power Source
RMA	Return of Material Authorization
ROHS	Restriction of Hazardous Substances
RTC	Real Time Clock
SD CARD	Secure Digital Card
SELV	Safety Extra Low Voltage
SVGA	Super Video Graphics Array
TFT	Thin-Film Transistors
TPM	Trusted Platform Module
UL	Underwriters Laboratories
USB	Universal Serial Bus
UV	Ultra Violet
VESA	Video Electronics Standards Association
VGA	Video Graphics Array
WP	Web Panel
WXGA	Wide Extended Graphics Array
XGA	Extended Graphics Array



About Kontron

Kontron is a global leader in IoT/Embedded Computing Technology (ECT) and offers individual solutions in the areas of Internet of Things (IoT) and Industry 4.0 through a combined portfolio of hardware, software and services. With its standard and customized products based on highly reliable state-of-the-art technologies, Kontron provides secure and innovative applications for a wide variety of industries. As a result, customers benefit from accelerated time-to-market, lower total cost of ownership, extended product lifecycles and the best fully integrated applications.

For more information, please visit: www.kontron.com

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