



FlatView

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 FLATVIEW – USER GUIDE

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Revision History

Revision	Brief Description of Changes	Date of Issue	Author
1.6	Converted to the Kontron user guide style	2017-July-18	CW
1.7	Added 10.1", 12.1", 13.3" variants	2019-March-21	hjs
1.8	Exchanged Table 2 & 3 figures, updated RMA and Warranty	2019-July-16	CW

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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>.

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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 <http://www.kontron.com/support-and-services/services>.

Customer Comments

If you have any difficulties using this user guide, discover an error, or just want to provide some feedback, contact [Kontron support](#). 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 (> 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.



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 detailed 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 with the following guidelines.

High Voltage Safety Instructions

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

Warning

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

CAUTION



Electric Shock!

Before installing a non hot-swappable Kontron product into a system always ensure that your mains power is switched off. This also applies to the installation of piggybacks. 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 vehicle's chassis or 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 products 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 the products protective enclosure while the product 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.

It is particularly important to observe standard anti-static precautions when changing piggybacks, ROM devices, jumper settings etc. 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 the 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.

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1/ Introduction

With its FlatView Industrial Monitor series, Kontron offers high mechanical flexibility with respect to the design. With a Full-metal housing it can be installed as a stand-alone with VESA 75/75 or 100/100, as well as a built-in solution. All models feature an easy-clean, anti-glare and scratch-proof IP65 protected front glass. The front options offer a choice between either PCAP touch, resistive touch, or protection glass. The FlatView monitors are available from 10.1" to 23.8", that can be operated in both landscape and portrait format.

The FlatView enables intuitive multi-touch access to real-time actionable data, making it the perfect fit for SCADA and Manufacturing Execution Systems (MES), process visualization and other control applications. The modular design can be easily customized for a broad variety of applications, thus making it suitable across all industries that require visualization and processing of data.

The built-in version is installed directly on the machine or in a command or control console. The FlatView is service-friendly for the user and is designed for a long life cycle.

Figure 1: FlatView Series



2/ General Safety Instructions for IT Equipment

▲WARNING



Read and observe the instructions within this chapter that have been compiled for user's safety and to ensure accordance with regulations. If the following General Safety Instructions for IT Equipment are not observed, it could lead to injuries to the operator and/or damage to the product. Kontron is exempt from accident liability, also during the warranty period if the instructions within this user guide are not observed.

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 also to 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 in accordance with the instructions for use.
- ▶ The electrical installations in the room must correspond to the requirements of the local (country-specific) regulations.
- ▶ Take care that there are no cables, particularly power cables, in areas where persons can trip over them.
- ▶ Only use the power cord supplied.
- ▶ Do not use damaged power cords.
- ▶ For DC power connection:
 - The DC power source should be able to be switched off and switched on via an isolating switch.
 - The unit is only completely disconnected from the DC main power source, when the DC power cord is disconnected either from the power source or the unit. Therefore, the DC power cord and its connectors must always remain easily accessible.
- ▶ For AC power connection via external AC/DC adapter:
 - The main power cable of the external AC/DC adapter serves as a disconnecting device. For this reason, the outlet of the AC power source must be located near the product and be easily accessible.
- ▶ Do not place the product in direct sunlight, near heat sources or in a damp place. Make sure the product has adequate ventilation.
- ▶ Only devices and components that fulfill the requirements of an SELV circuit (safety extra low voltage) in accordance with EN60950 may be connected to the interfaces of the system.
- ▶ All plugs on the connection cables must be screwed or locked to the housing.
- ▶ The product generates heat during operation. Make sure it is adequately ventilated. Do not cover the air intake and exhaust openings of the product.
- ▶ Maintenance or repair on the open product may only be carried out by qualified personnel authorized by Kontron, that are aware of the associated dangers.
- ▶ When accessing internal components the product must be switched off and disconnected from the power source.
- ▶ The ext. supply shall meet the criteria for SELV (Safety Extra-low voltage) and <240VA acc. UL 60950-01.

Additional safety instructions for DC power supply circuits

- ▶ To guarantee safe operation of products with DC power supply voltages larger than 60 volts DC or a power consumption larger than 120 VA, observe that:
 - ▶ Product is set up, installed and operated in a room or enclosure marked with "RESTRICTED ACCESS", if there are no safety messages such as safety signs and labels on the product.
 - ▶ Do not touch either directly or indirectly, cables or parts without insulation in electrical circuits with dangerous voltage or power.
 - ▶ Reliable protective earth connection is provided
 - ▶ Suitable, easily accessible disconnecting device is used in the application (e.g. overcurrent protective device), if the product cannot be disconnected
 - ▶ A disconnect device, if provided in or as part of the equipment, must disconnect both poles simultaneously
 - ▶ Interconnecting power circuits of different devices 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 EN 62368-1 or VDE0100 or EN60204 or UL508 regulations.
- ▶ The products do not generally fulfill the requirements for "centralized DC power systems" (UL 60950-1, Annex NAB; D2) and therefore may not be connected to such devices!

2.1. Electromagnetic Compatibility EU

This product is in conformity with the protection requirements of EU Council Directive 2014/30/EU on the approximation of the laws of the Member States relating to electromagnetic compatibility. If the user modifies and/or adds to the equipment (e.g. installation of add-on cards) the prerequisites for the CE conformity declaration, (safety requirements) may no longer apply.

Table 1: Electromagnetic Compatibility CE

EN 60950-1:2006+A1:2010 +A11:2009+A 12:2011 +A2:2013	Safety for information technology equipment including electrical business equipment
EN 55032:2015	Information technology equipment, Radio disturbance characteristics, Limits and methods of measurement (CISPR 32:2015)
EN 61000-6-2:2005 + Cor.:2005	Electromagnetic compatibility (EMC), Part 6-2:Generic Standards - Immunity for industrial environments+ CENELEC- Cor.:2005

2.2. Electrostatic Discharge (ESD)

A sudden discharge of electrostatic electricity can destroy static-sensitive devices or micro-circuitry. Therefore, proper packaging and grounding techniques are necessary precautions to prevent damage.

Always take the following precautions:



ESD Sensitive Device!

Keep electrostatic sensitive parts in their containers until they arrive at the ESD-safe workplace. Always be properly grounded when touching a sensitive board, component, or assembly.

For more Information, see the Special Handling and Unpacking Instruction within this user guide and Chapter 2.5.1 Grounding Methods below.

2.2.1. Grounding Methods

The following measures help to avoid electrostatic damages to the device:

- ▶ Cover workstations with approved antistatic material. Always wear a wrist strap connected to the workplace, as well as properly grounded tools and equipment.
- ▶ Use antistatic mats, heel straps, or air ionizers for more protection.
- ▶ Always handle electrostatically sensitive components by their edge or by their casing.
- ▶ Avoid contact with pins, leads, or circuitry.
- ▶ Turn off power and input signals before inserting and removing connectors or connecting test equipment.
- ▶ Keep the work area free of non-conductive materials such as ordinary plastic assembly aids and styrofoam.
- ▶ Use field service tools such as cutters, screwdrivers, and vacuum cleaners that are conductive.
- ▶ Always place drives and boards with the PCB-assembly-side down on the foam.

3/ Scope of Delivery and Accessories

Components delivered with the FlatView and accessories available for the FlatView are described below.

Check that your delivery is complete, and contains the items below (according to the ordered unit configuration). If you discover damaged or missing items, contact your dealer.

Table 2: Scope of Delivery



	Qty.	Part Number	Part Description
	1	For order information, see Chapter 6/ Order Information.	FlatView
	1	EM21-100168-01 (10.1") EM21-100065-0 (10.4"/12.1") 1064-9094 (13.3") EM21-100066-0 (15.0"/15.6") EM21-100067-01 (17.0"/19.0") EM21-100068-01 (18.5"/23.8") EM21-100069-01 (21.5")	Mounting set with clamps and screws, only for built-in variant

Table 3: Accessories

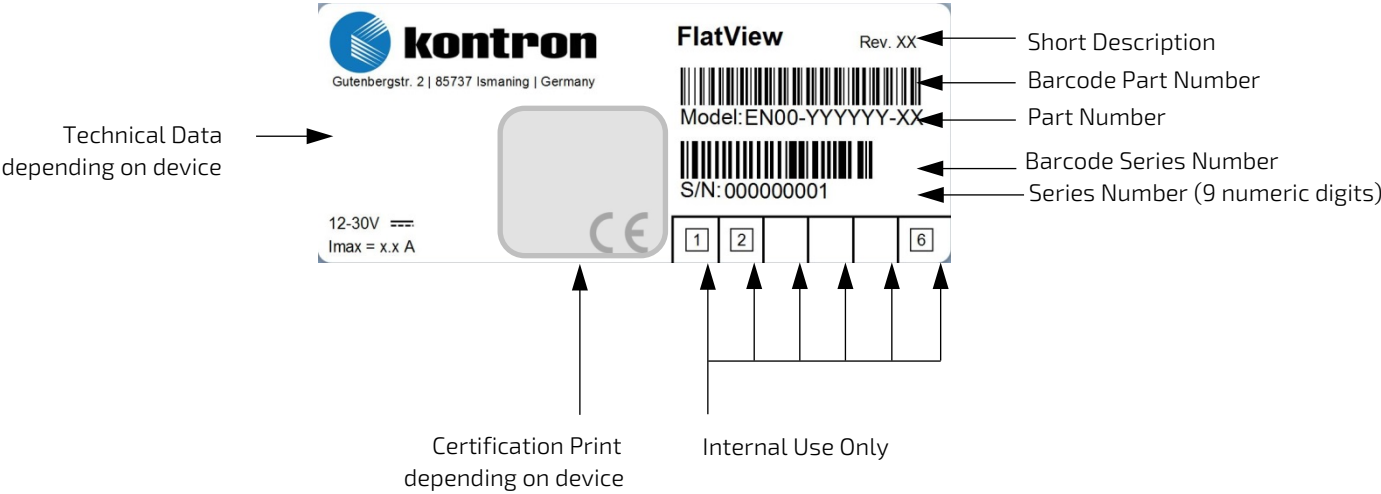
	Qty.	Part Number	Part Description
	1	EE04-100001-01	Phoenix Power Subcon w/ housing
	1	840-0059	EU-Powercord 1,8m
	1	ER40-100001-01 ER40-100005-01	Set Power supply 24 VDC /w Phoenix Connector Set Power supply 24 VDC /w Phoenix incl. EU-Powercord 1,8m
	1	PR22-100004-01	Adapter cabel HDMI - DisplayPort, 20 cm, 4K aktiv, Delock: 62607
	1	PR22-100005-01	Adapter HDMI - DisplayPort 1.2, 4K aktiv, Delock: 65573

	Qty.	Part Number	Part Description
	1	PR22-100006-01	Adapter DVI-D - DisplayPort 1.1, Delock: 65257
	1	PR22-100007-01	Adapter VGA - DisplayPort 1.1, Delock: 65567
	1	PR22-100008-01	Adapter DVI-I - HDMI, Delock: 65467
	1	840-0758	DisplayPort cable 1,8m
	1	840-0759	DisplayPort cable 3m
	1	840-0760	DisplayPort cable 5m
	1	840-0598	Adapter VGA / DVI
	1	840-0039	VGA/SVGA cable 1,8m/2,0m
	1	840-0273	USB-cable 1,8m, Type A - Type B
	1	840-0134	DVI-cable 2m

3.1.1. Type Label and Product Identification

Product and Package Label, size 85 mm x 35mm, polyester matt silver.

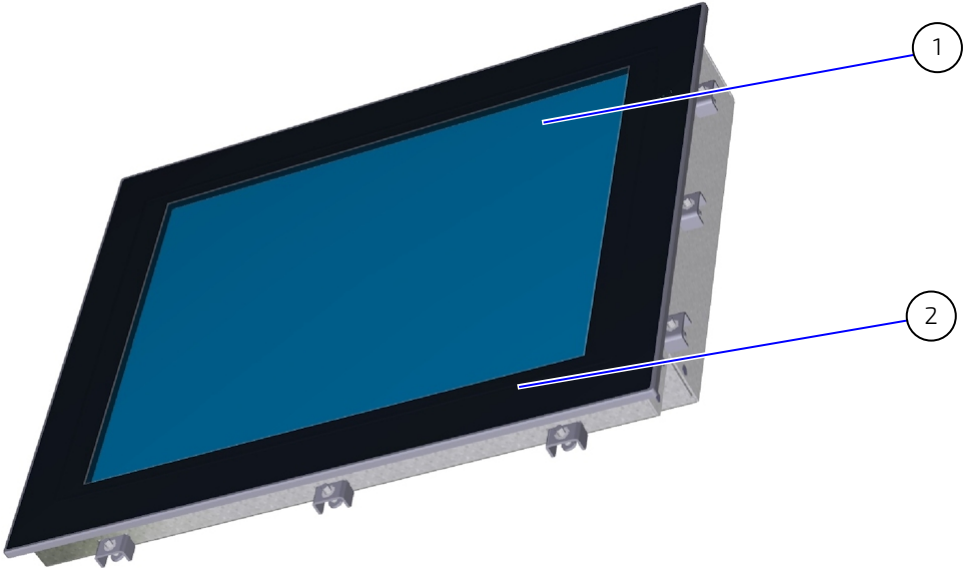
Figure 2: Type Label



4/ Product Description

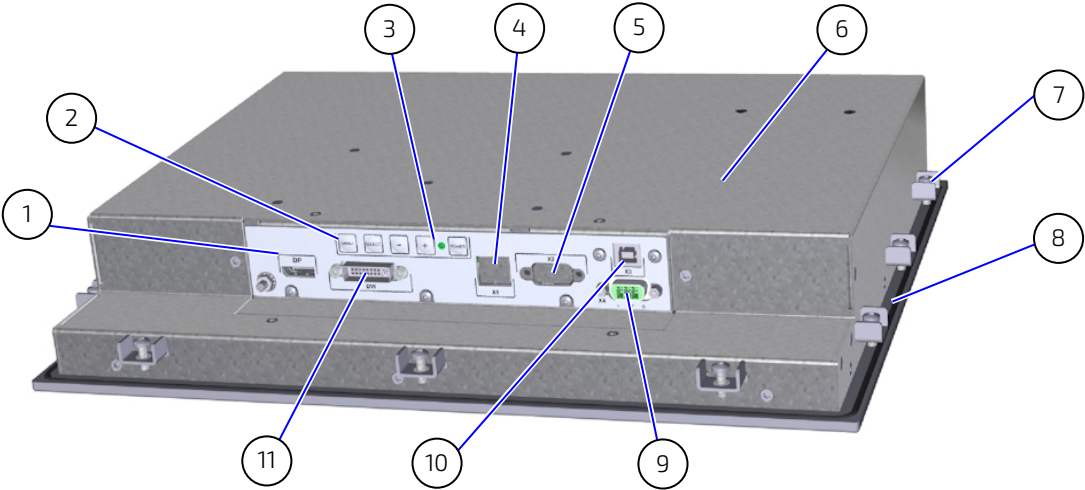
4.1. Product View

Figure 3: Front View Description



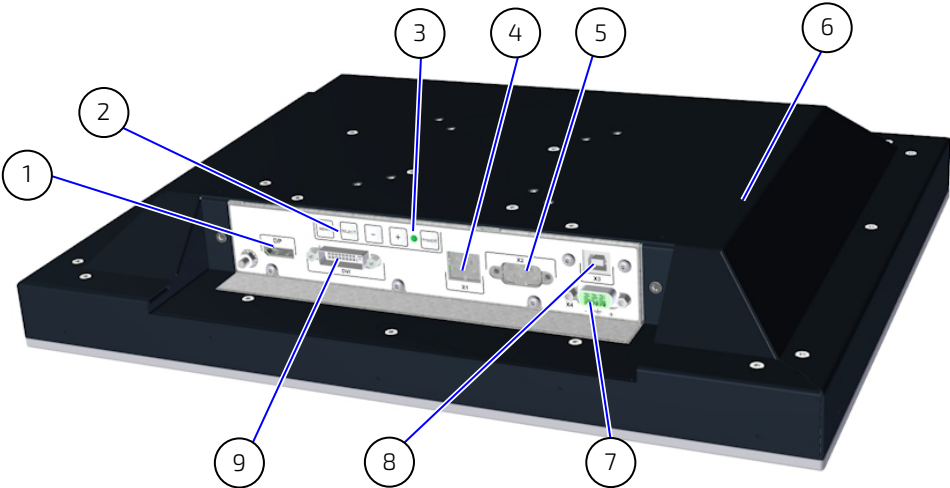
- 1 TFT Display with resistive touch
- 2 Front plate

Figure 4: Bottom View Description – built-in variant



- 1 Display Port connector
- 2 OSD keypad
- 3 Power LED
- 4 LAN (option only)
- 5 LPC (option only)
- 6 Rear cover
- 7 Mounting clips
- 8 Sealing cord
- 9 Power connector
- 10 USB connector
- 11 DVI connector

Figure 5: Bottom View Description – Full-metal variant



- | | | | |
|---|-----------------------------|---|--|
| 1 | Display Port (DP) connector | 6 | Rear cover |
| 2 | OSD keypad | 7 | Power connector
(Insert for Power Supply) |
| 3 | Power LED | 8 | USB connector |
| 4 | LAN (option only) | 9 | DVI connector |
| 5 | LPC (option only) | | |

5/ Technical Data

5.1. Technical Specification

Table 4: Technical Specification for Display sizes (10.1", 10.4", 12.1", 13.3", 15", 15.6", 17", 18.5", 19", 21.5", 23.8")

Display Size	10.1"	10.4"	12.1" SVGA	12.1" XGA	12.1" WXGA
Display Manufacturer	Innolux	Innolux	Innolux	Innolux	AUO
Display Type	G101ICE-L-01	G104AGE-L02	G121AGE-L03	G121X1-L03	G121EAN01.0
Resolution (pixel)	1280x800	800x600, SVGA	800x600	1024x768, XGA	1280x800, WXGA
Format	16:10	4:3	4:3	4:3	16:10
Contrast Ratio	800:1	700:1	1500:1	700:1	1000:1
Brightness	500cd	400 cd	450 cd	600 cd	500 cd
Angle View	H170°/V170°	H160°/V140°	H178°/V178°	H160°/V140°	H178°/V178°
Colors	16.2 million	16.7 million	16.7 million	16.2 million	16.7 million
LED Lifetime (> 50%, 25°C)	> 50.000 h	> 50.000 h	> 50.000 h	> 50.000 h	> 100.000 h
Dimensions (WxHxD-mm)	276 x 195 x 65	297 x 244 x 65	338 x 277 x 65	338 x 277 x 65	315 x 228 x 65
Weight	~ 3.6 kg	~ 3.9 kg	~ 4.7 kg	~ 4.7 kg	~ 5.0 kg
Protection glass	X	X	X	X	X
PCAP (Multitouch)	X	X	X	X	X
Resistive touch	On request	X	X	X	On request
Color	RAL 7021 (black anthracite)				
Fastening	VESA 75/75 or 100/100 (full metal housing only); fastening clips (built-in-variant only)				
Video IN	1x DVI, 1x Display Port				
I/O Options	USB 2.0 (Type B) - client; LPC (Option), LAN (option)				
Power Supply	12 VDC -30 VDC Input via Phoenix Connector PSC 1,5/3-F				
Cooling	Fanless passive cooling				
Protection Class	Front: IP65, Housing IP20				

Table continued

Display Size	13.3"	15.0"	15.6"	15.6" Full HD
Display Manufacturer	AUO	Innolux	Innolux	AUO
Display Type	G133HAN01.0	G150XGE-L04	G156BGE-L01	G156HTN02.0
Resolution	1920x1080	1024x768	1366x768, HD	1920x1080, Full HD
Format	16:9	4:3	16:9	16:9
Contrast Ratio	800:1	700:1	500:1	500:1
Brightness	400cd	400 cd	300 cd	400 cd
Angle View	H178°/V178°	H160°/V140°	H160°/V160°	H140°/V120°
Colors	16.7 million	16.7 million	16.7 million	16.2 million
LED Lifetime (> 50%, 25°C)	> 50.000 h	> 50.000 h	> 50.000 h	> 50.000 h
Dimensions (WxHxD-mm)	315 x 228 x 65	396 x 312 x 69	432 x 281 x 74	432 x 281 x 74
Weight	~ 4.7 kg	~ 6.4 kg	~ 6.7 kg	~ 6.7 kg
Protection glass	X	X	X	X
PCAP (Multitouch)	X	X	X	X
Resistive touch	On request	X	X	X
Color	RAL 7021 (black anthracite)			
Fastening	VESA 75/75 or 100/100 (full metal housing only); fastening clips (built-in-variant only)			
Video IN	1x DVI, 1x Display Port			
I/O Options	USB 2.0 (Type B) - client; LPC (Option), LAN (option)			
Power Supply	12 VDC -30 VDC Input via Phoenix Connector PSC 1,5/3-F			
Cooling	Fanless passive cooling			
Protection Class	Front: IP65, Housing IP20			

Table continued

Display Size	15.6" Full HD	17.0"	18.5" HD	18.5" FullHD	19.0"
Display Manufacturer	AUO	AUO	Innolux	AUO	AUO
Display Type	G156HTN02.0	G170EG01V1	G185BGE-L01	G185HAN01.0	G190ETN01.2
Resolution	1920x1080, Full HD	1280x1024	1366x768, HD	1920x1080, FullHD	1280x1024
Format	16:9	5:4	16:9	16:9	5:4
Contrast Ratio	500:1	800:1	1000:1	1000:1	1000:1
Brightness	400 cd	350 cd	300 cd	350 cd	350 cd
Angle View	H140°/V120°	H160°/V140°	H178°/V170°	H178°/V178°	H170°/V160°
Colors	16.2 million	16.7 million	16.7 million	16.7 million	16.7 million
LED Lifetime (> 50%, 25°C)	> 50.000 h	> 50.000 h	> 50.000 h	> 50.000 h	> 50.000 h
Dimensions (WxHxD-mm)	432 x 281 x 74	427 x 360 x 74	500 x 321 x 74	500 x 321 x 74	473 x 396 x 68
Weight	~ 6.7 kg	~ 7.8 kg	~ 8.6 kg	~ 8.6 kg	~ 9.4 kg
Protection glass	X	X	X	X	X
PCAP (Multitouch)	X	X	X	X	X
Resistive touch	X	X	X	X	X
Color	RAL 7021 (black anthracite)				
Fastening	VESA 75/75 or 100/100 (full metal housing only); fastening clips (built-in-variant only)				
Video IN	1x DVI, 1x Display Port				
I/O Options	USB 2.0 (Type B) - client; LPC (Option), LAN (option)				
Power Supply	12 VDC -30 VDC Input via Phoenix Connector PSC 1,5/3-F				
Cooling	Fanless passive cooling				
Protection Class	Front: IP65, Housing IP20				

Table continued

Display Size	21.5"	23.8"			
Display Manufacturer	AUO	AUO			
Display Type	G215HVN01.0	G238HAN01.0			
Resolution	1920x1080, Full HD	1920x1080, Full HD			
Format	16:9	16:9			
Contrast Ratio	3000:1	1000:1			
Brightness	300 cd	250cd			
Angle View	H178°/V178°	H178°/V178°			
Colors	16.7 million	16.7 million			
LED Lifetime (> 50%, 25°C)	> 50.000 h	> 30.000h			
Dimensions (WxHxD-mm)	575 x 367 x 74	569 x 357 x 69			
Weight	~ 10.7 kg	~ 11.8 kg			
Protection glass	X	X			
PCAP (Multitouch)	X	X			
Resistive touch	X	On request			
Color	RAL 7021 (black anthracite)				
Fastening	VESA 75/75 or 100/100 (full metal housing only); fastening clips (built-in-variant only)				
Video IN	1x DVI, 1x Display Port				
I/O Options	USB 2.0 (Type B) - client; LPC (Option), LAN (option)				
Power Supply	12 VDC -30 VDC Input via Phoenix Connector PSC 1,5/3-F				
Cooling	Fanless passive cooling				
Protection Class	Front: IP65, Housing IP20				

5.2. Environmental Specification

Table 5: Environmental Specification

Operating Temperature	0°C to 50°C ambient
Storage Temperature	-10°C to 60°C ambient
Operating Altitude	Up to 3000 m (9900 ft)
Storage Altitude	Up to 5000 m (16500 ft)
Humidity	10% to 90% @ 39°C, non condensing

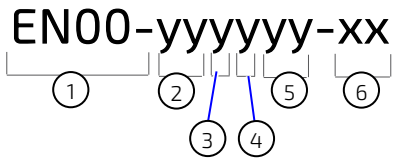
5.3. Directives and Standards

Table 6: Directives and Standard Compliance

Low Voltage Directive (Electrical Safety)	2014/35/EU
EMC Directive	2014/30/EU
Certification	CE, cULus
EMC	EN55022 Class B
RoHS II Directives	E2011/65/EU + 2015/863/EU + 2017/2102/EU

6/ Order Information

Example: EN00-Z41300-01 (FlatView 15.6" with resistive touch in Full-metal housing)



1. Internal Code (Standard FlatView)

2. Display Size:
 - ZU = 10.1"
 - Z1 = 10.4"
 - Z2 = 12.1"
 - ZW = 12.1" WXGA
 - ZY = 13.3"
 - Z3 = 15.0"
 - Z4 = 15.6"
 - Z5 = 17.0"
 - Z6 = 18.5"
 - Z7 = 19.0"
 - Z8 = 21.5"
 - ZH= 23.8"

3. Touch Technology:
 - 0 = Without touch, only with protection glass
 - 1 = Touch resistive
 - 2 = Touch PCAP
 - 3 = With protection glass and stainless steel front
 - 4 = Touch resistive and stainless steel front
 - 5 = Touch PCAP and stainless steel front
 - 6= Touch PCAP V2 (low cost)
 - 7 = Protection glass V2 (low cost)

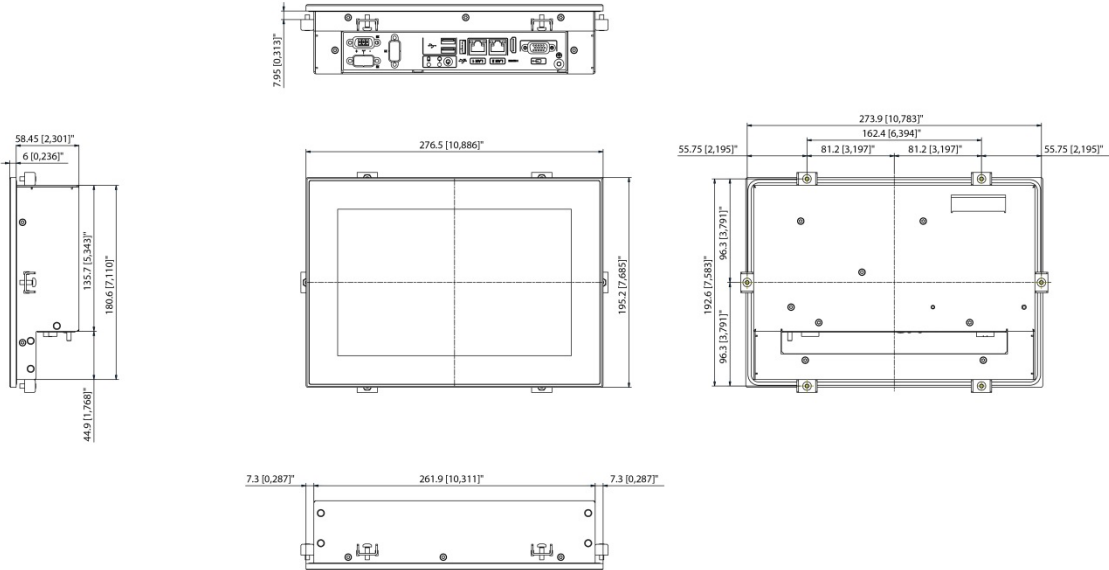
4. Mounting Variant:
 - 3 = Full-metal
 - 4 = Built-in-mounting

5. Options:
 - Counted on demand
 - Possible display options (full HD, XGA, HD)

6. Internal Code (Revision)

7/ Mechanical Specification

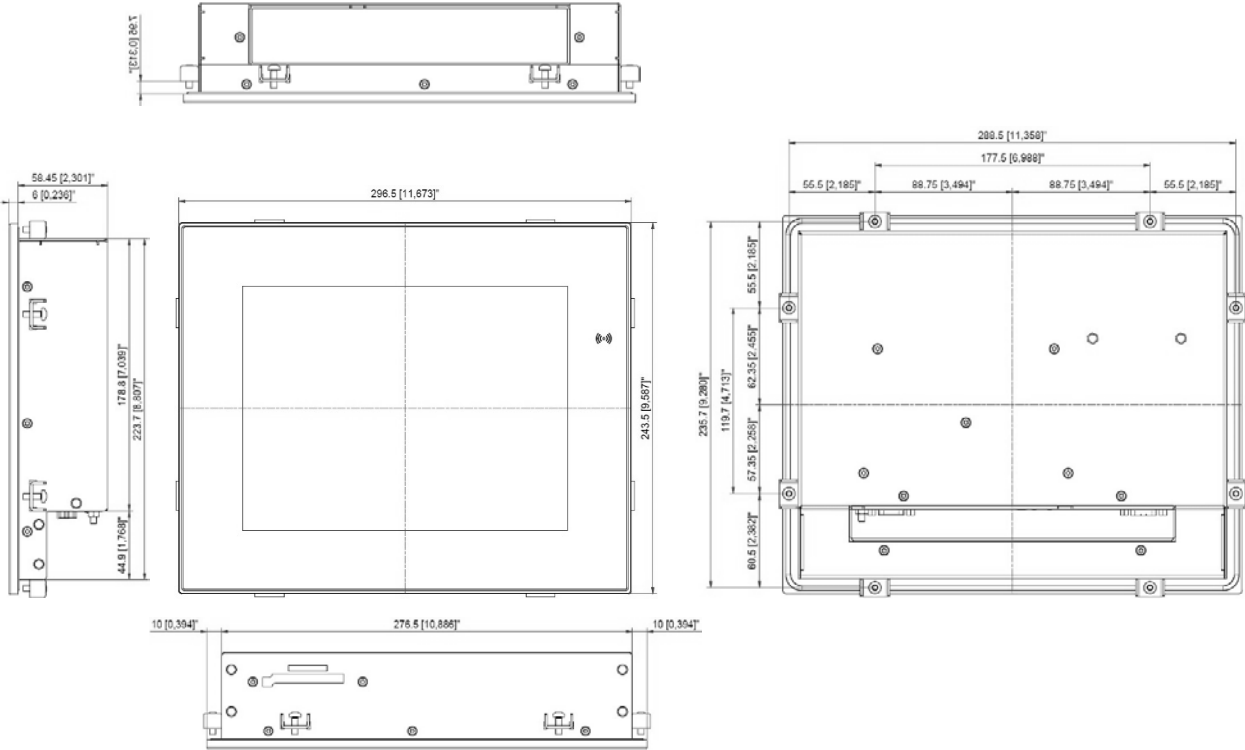
7.1. 10.1" Built-in Variant without HDD



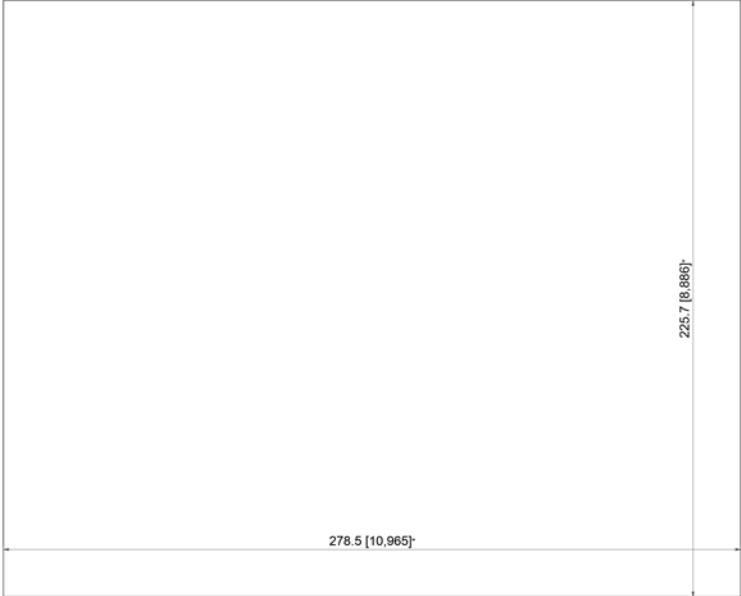
7.1.1. 10.1" Panel Cutout



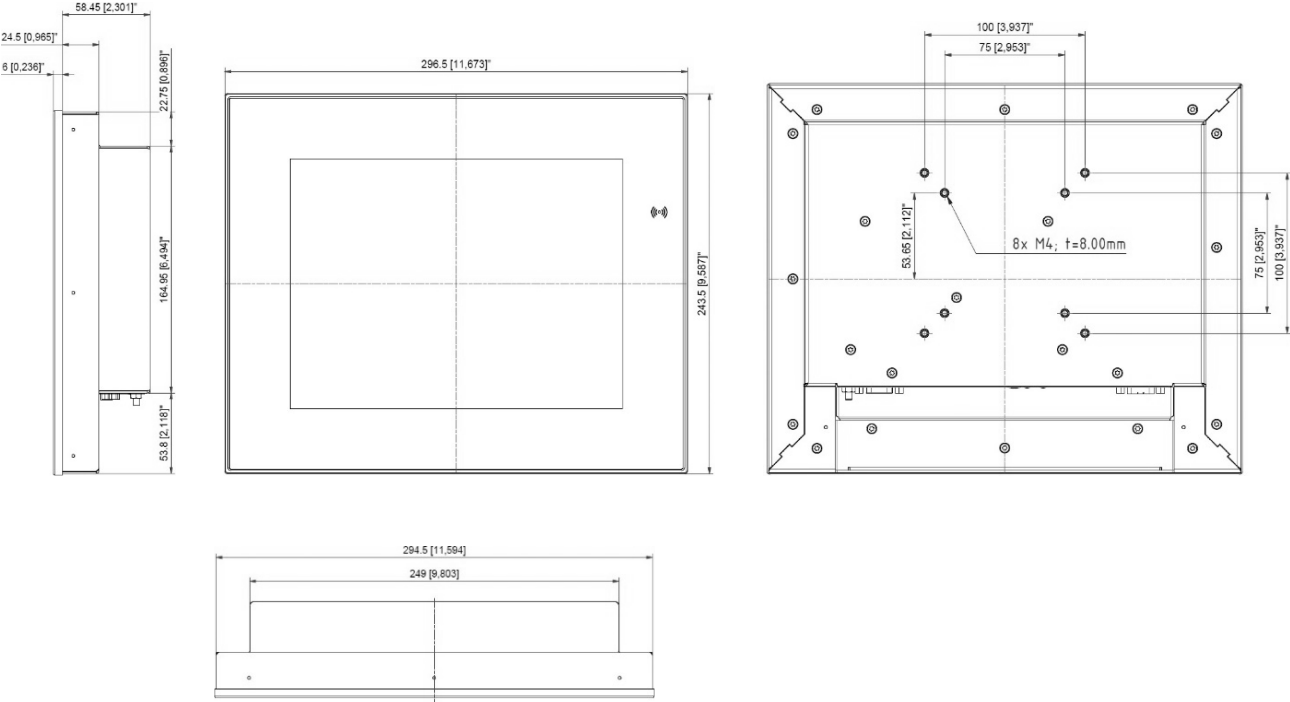
7.2. 10.4" Built-in Variant



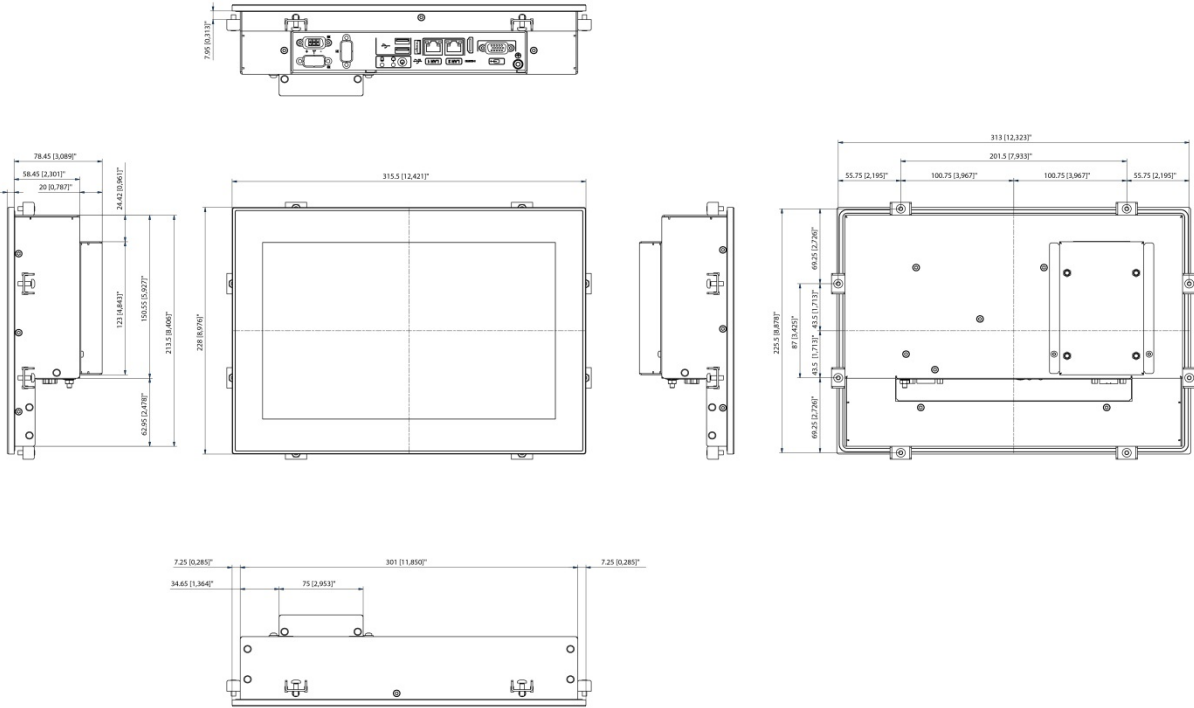
7.2.1. 10.4" Panel Cutout



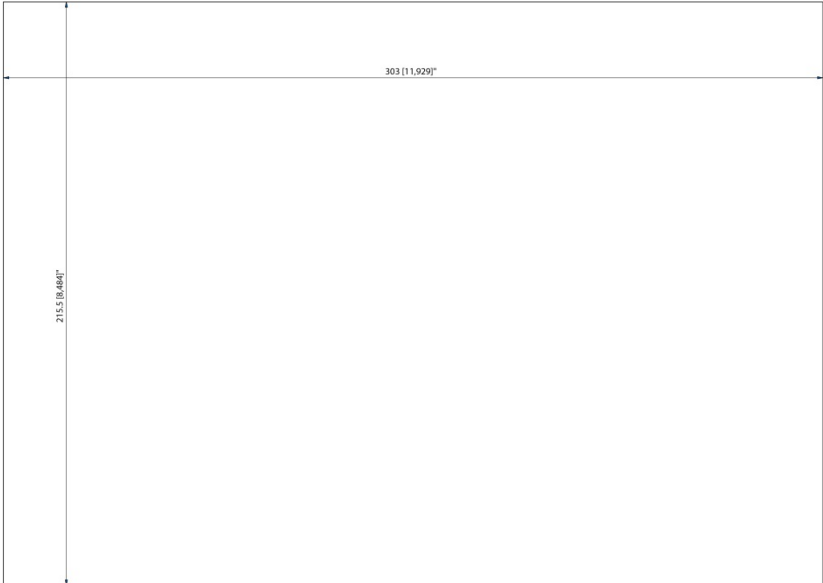
7.3. 10.4" Full metal Variant



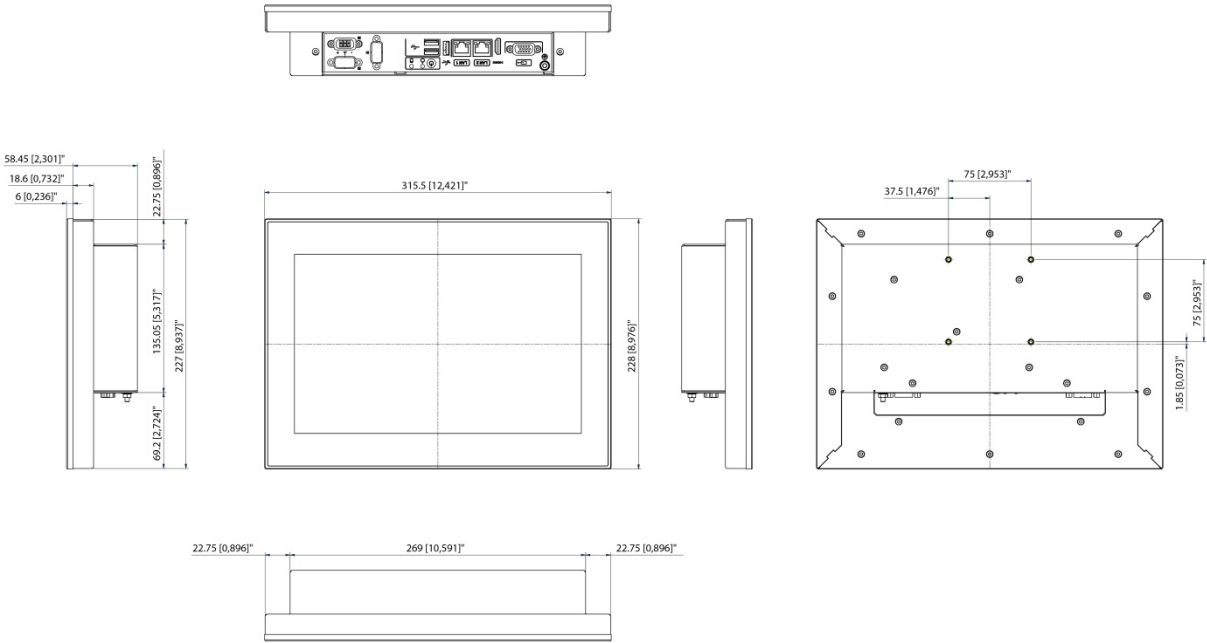
7.4. 12.1" Built-in Variant WXGA (1280x800)



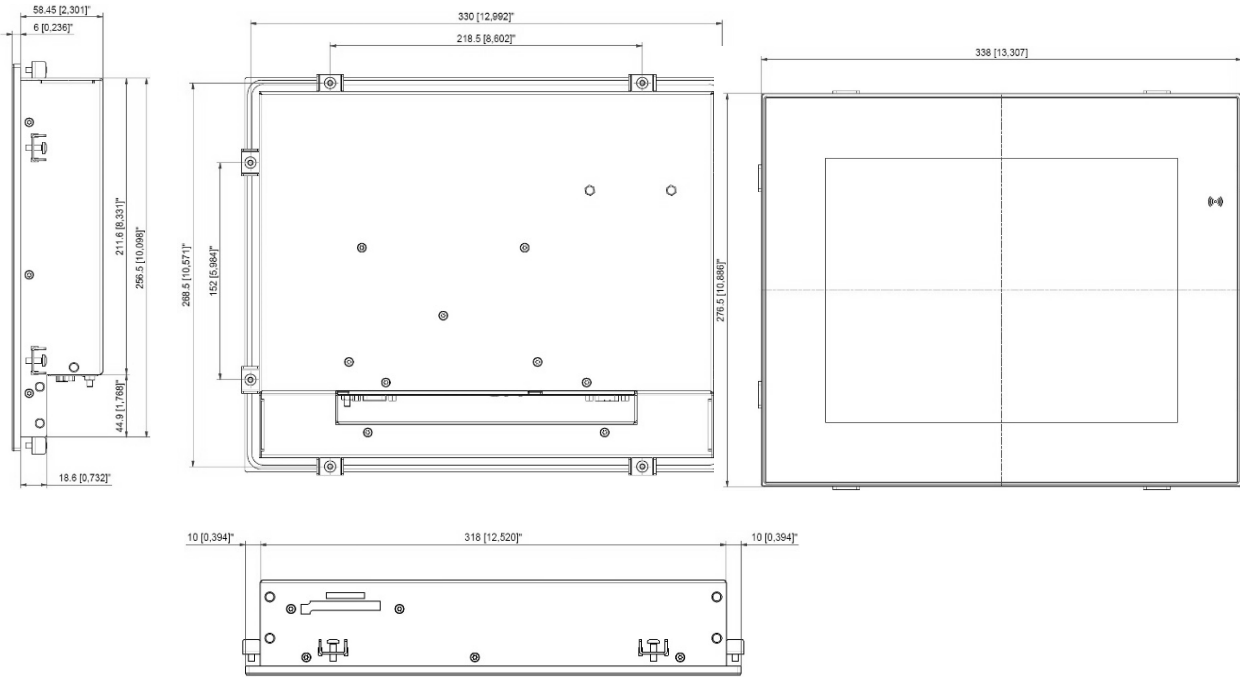
7.4.1. 12.1" Panel Cutout WXGA



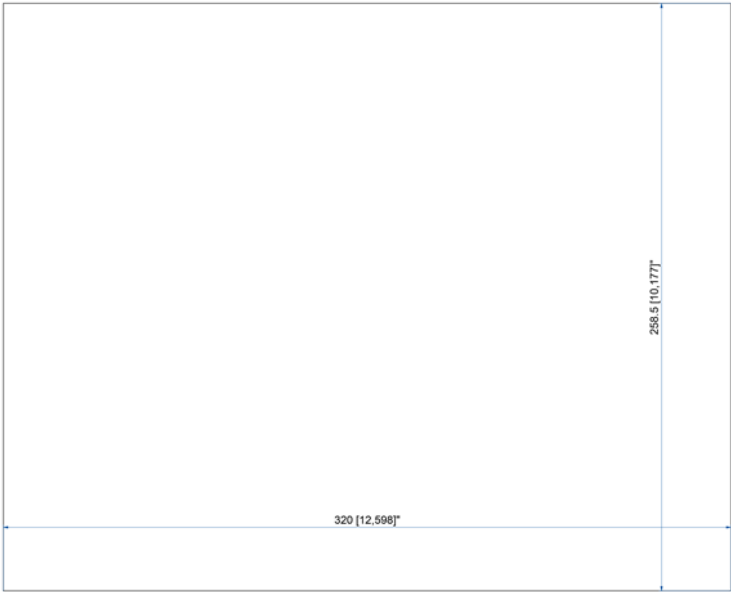
7.5. 12.1" Full-metal Variant WXGA (1280x800)



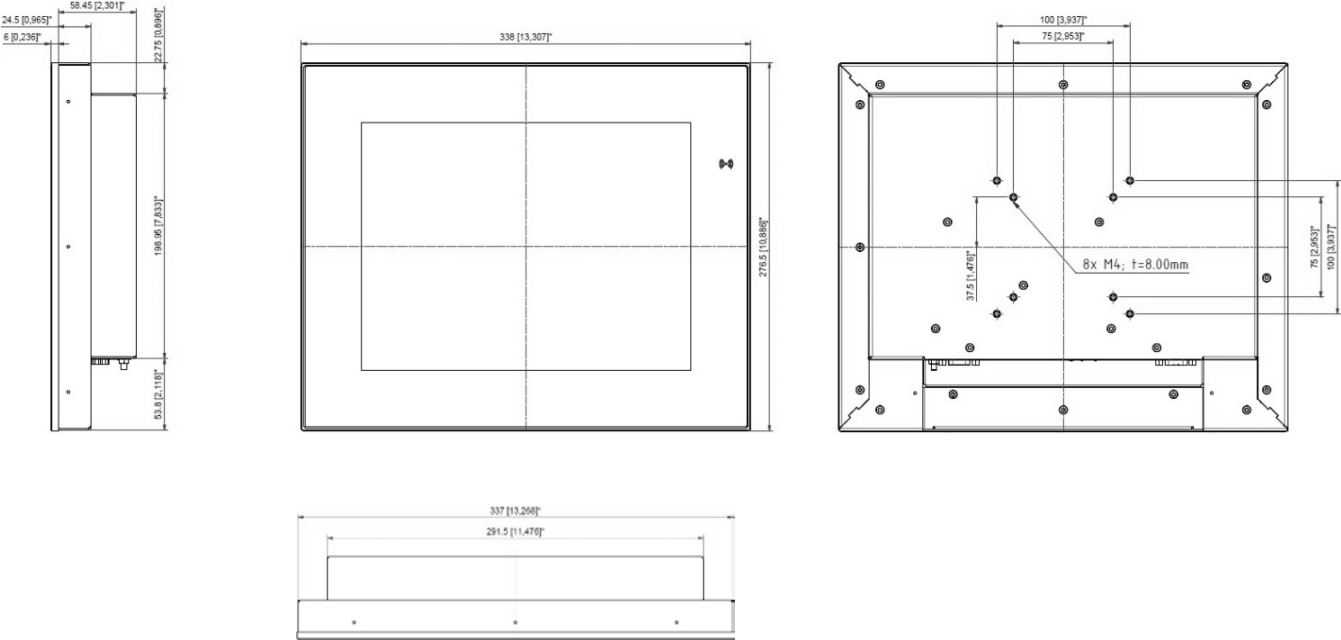
7.6. 12.1" Built-in Variant SVGA and XGA (800x600, 1024x768)



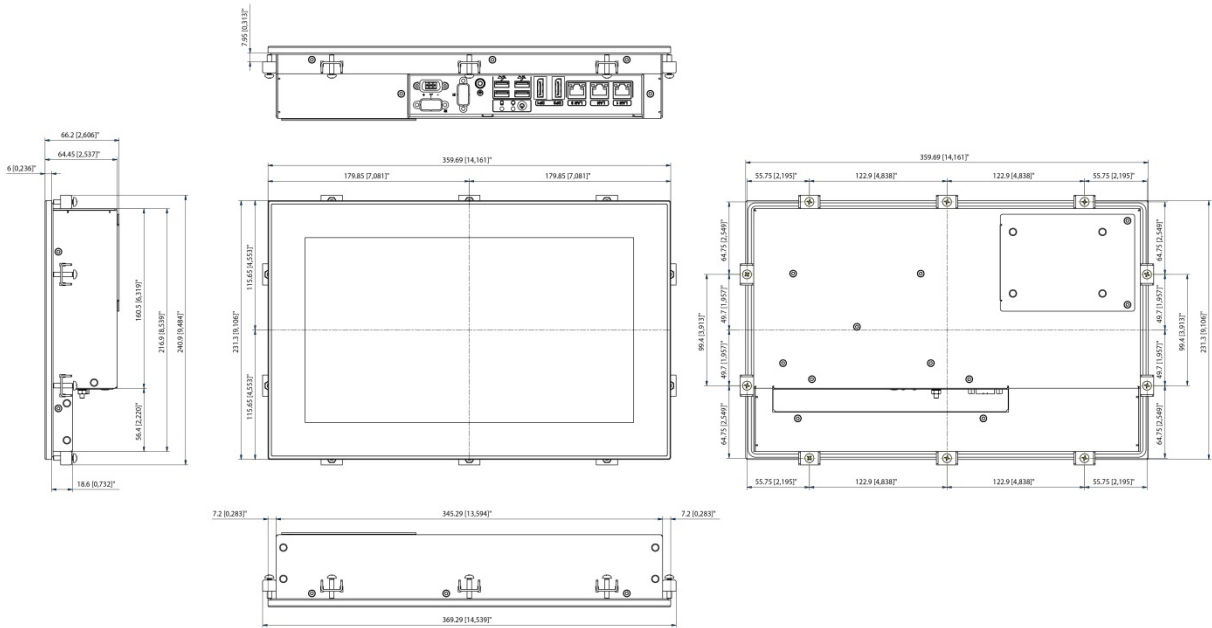
7.6.1. 12.1" Panel Cutout



7.7. 12.1" Full-metal Variant SVGA and XGA (800x600, 1024x768)



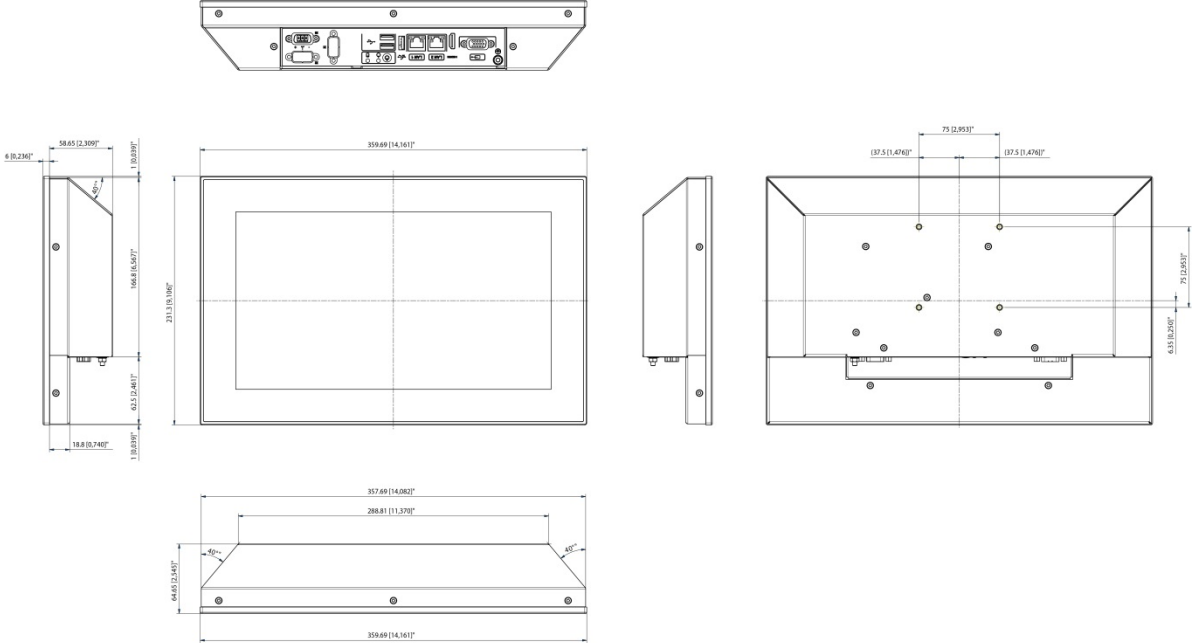
7.8. 13.3" Built-in Variant



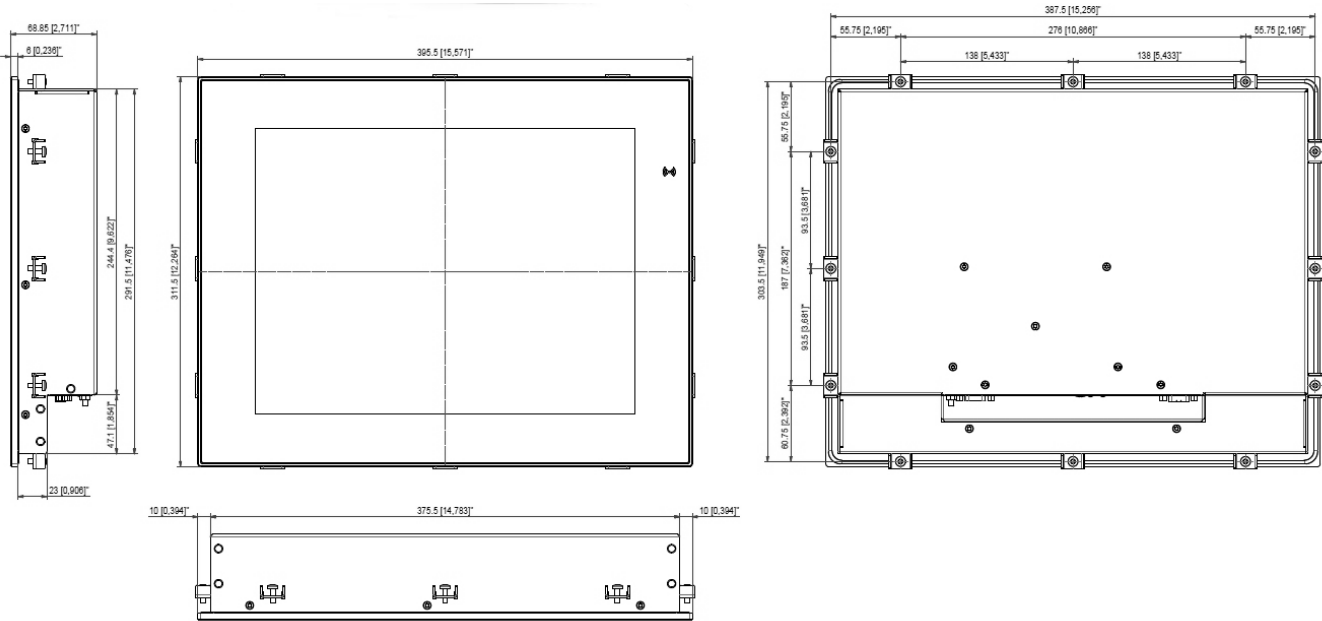
7.8.1. 13.3" Panel Cutout



7.9. 13.3" Full-metal Variant



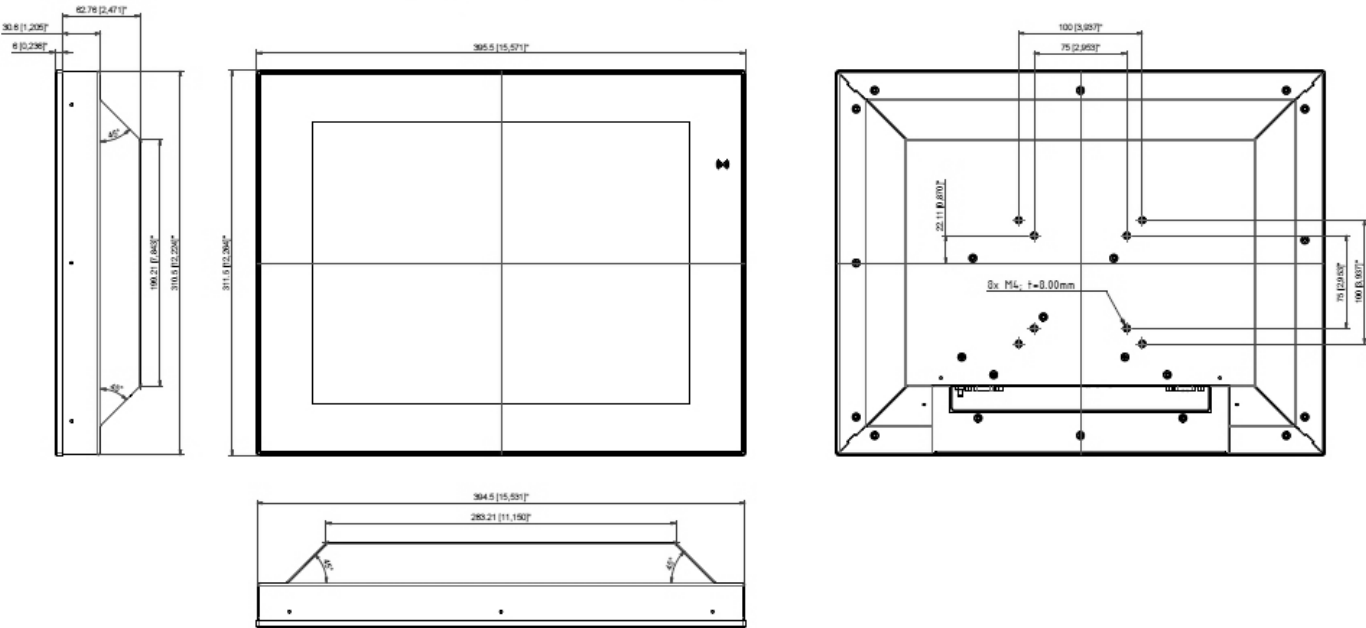
7.10. 15.0" Built-in Variant



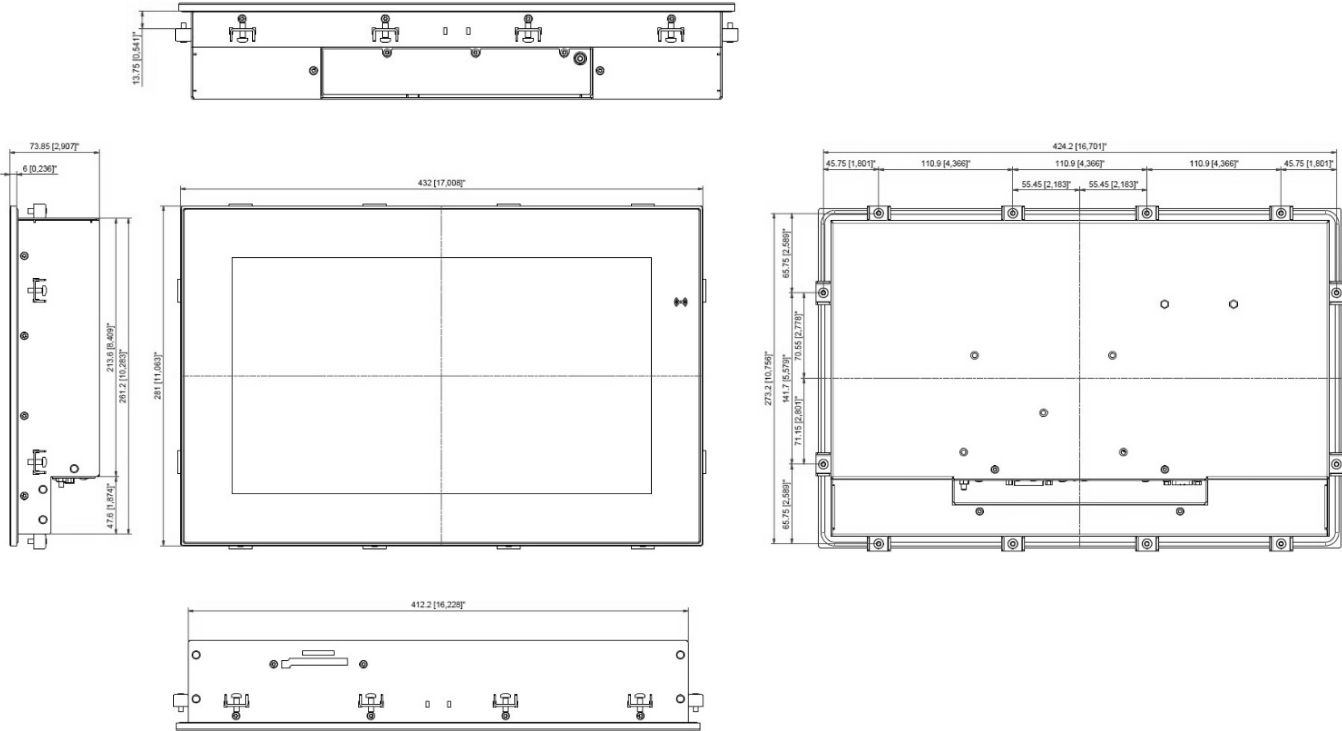
7.10.1. 15.0" Panel Cutout



7.11. 15.0" Full-metal Variant



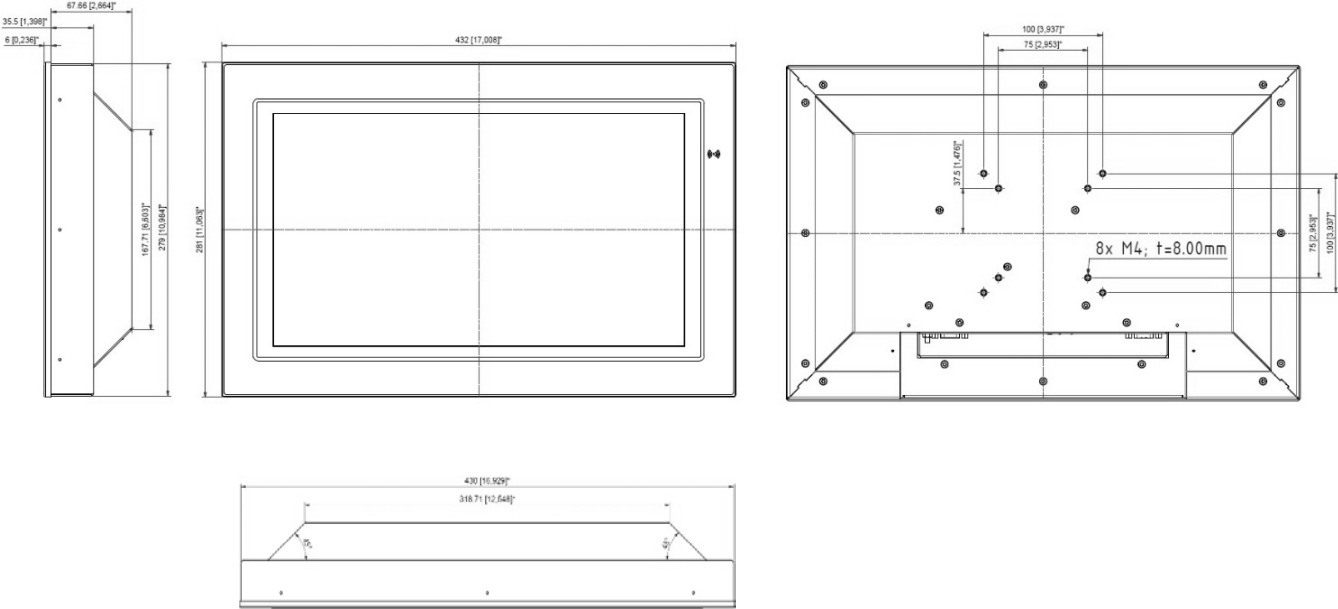
7.12. 15.6" Built-in Variant



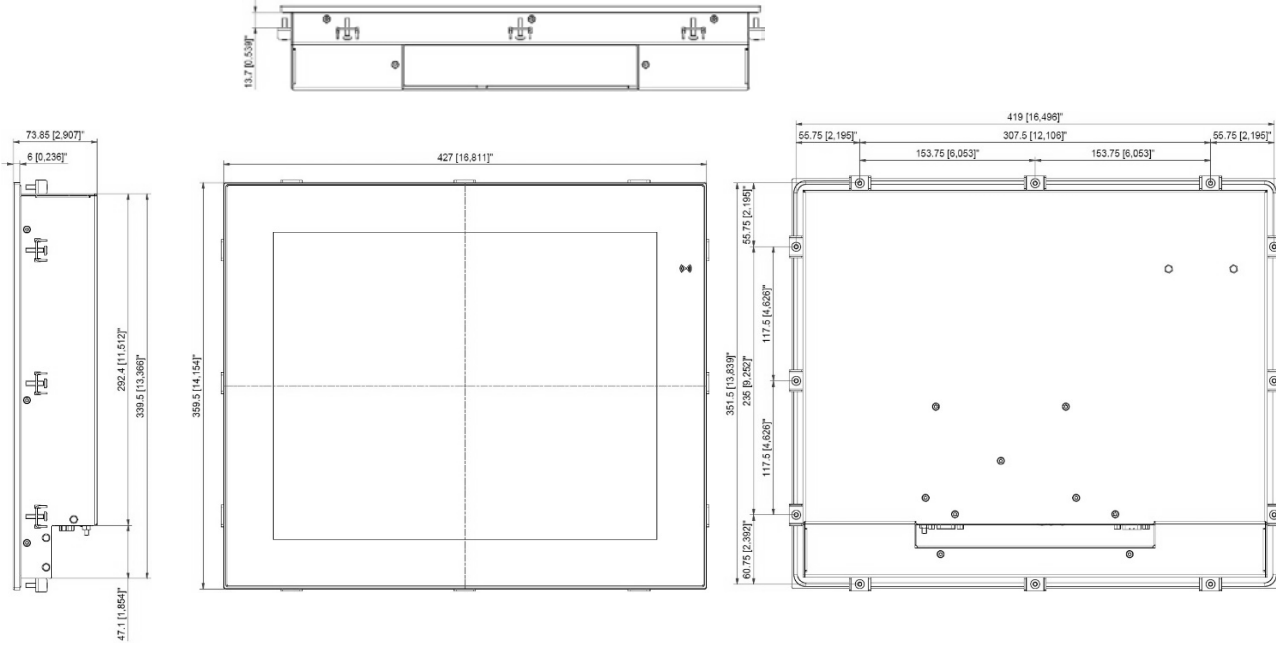
7.12.1. 15.6" Panel Cutout



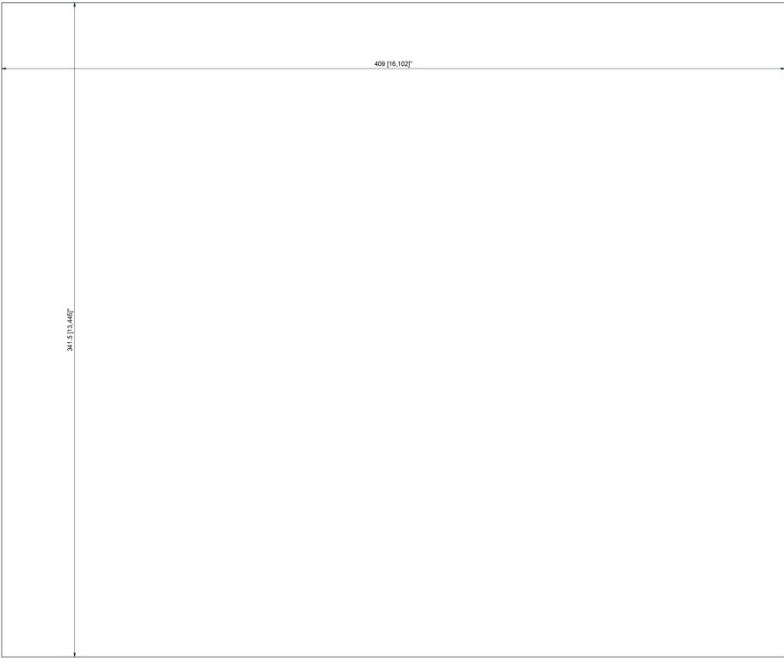
7.13. 15.6" Full-metal Variant



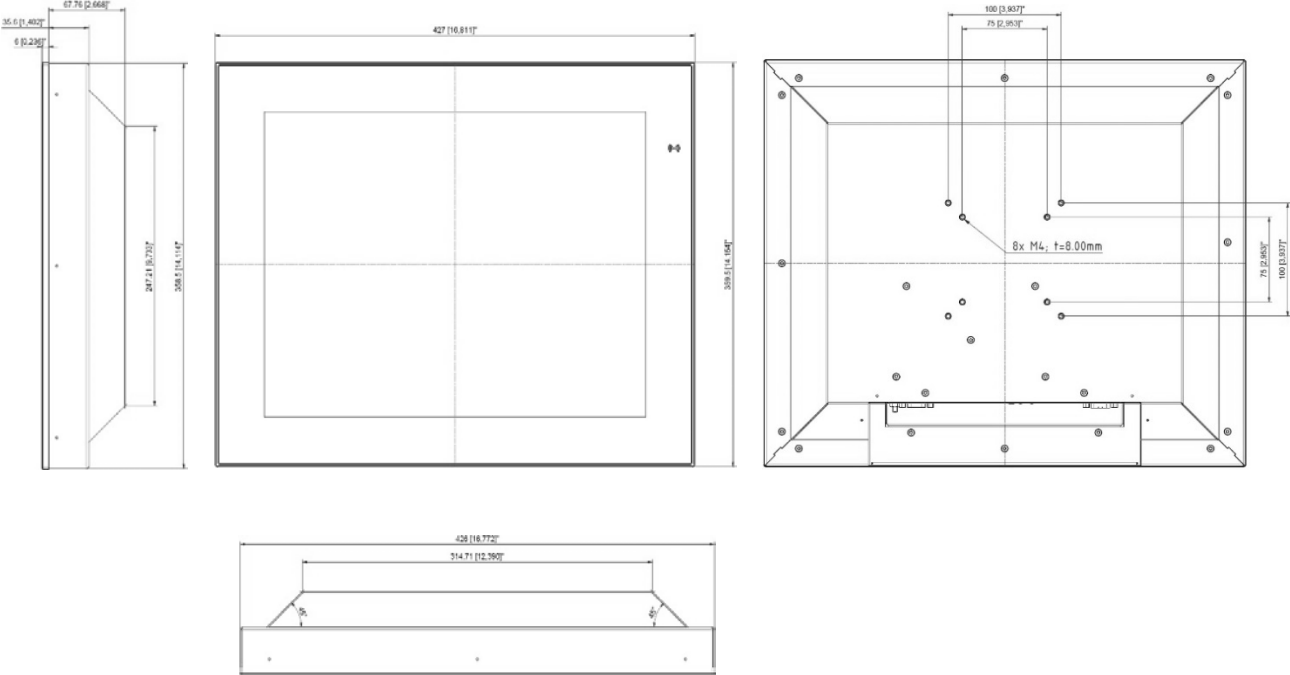
7.14. 17.0" Built-in Variant



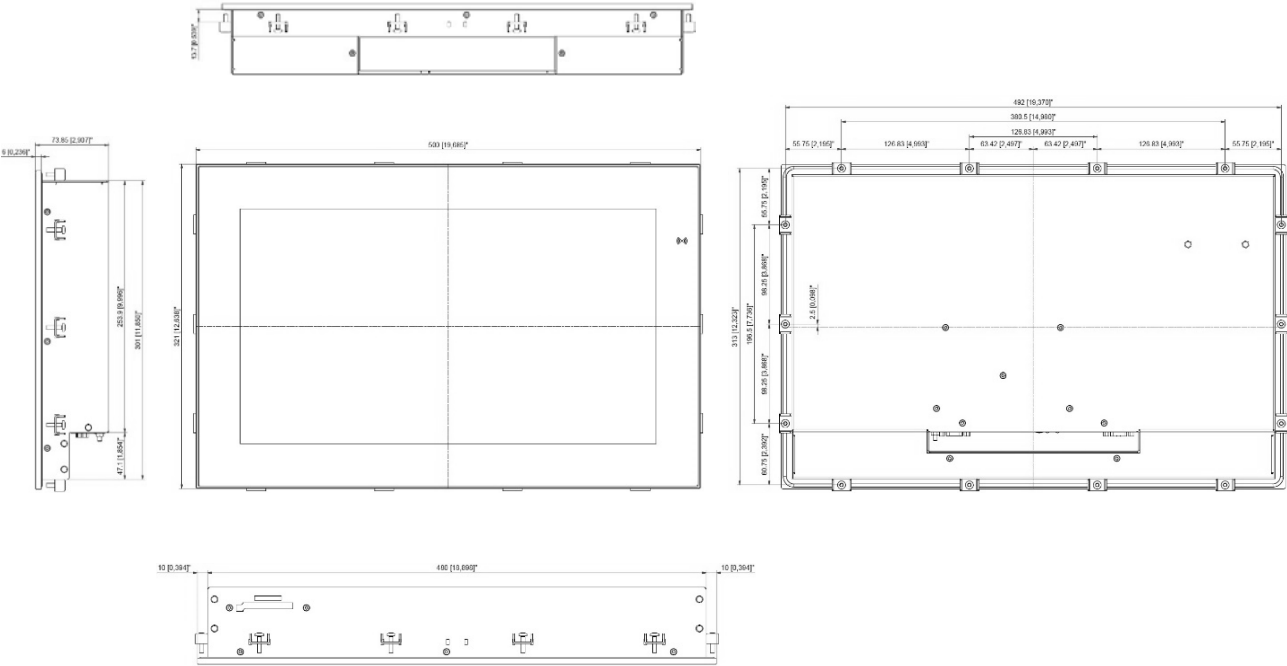
7.14.1. 17.0" Panel Cutout



7.15. 17.0" Full-metal Variant



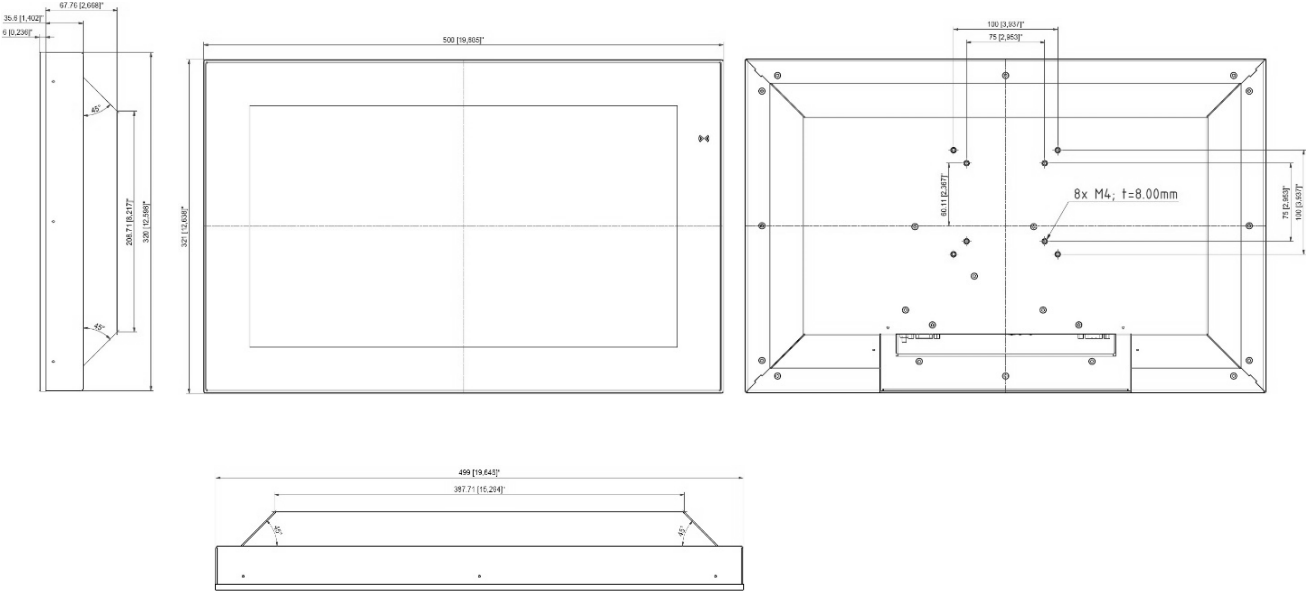
7.16. 18.5" Built-in Variant (HD and FullHD)



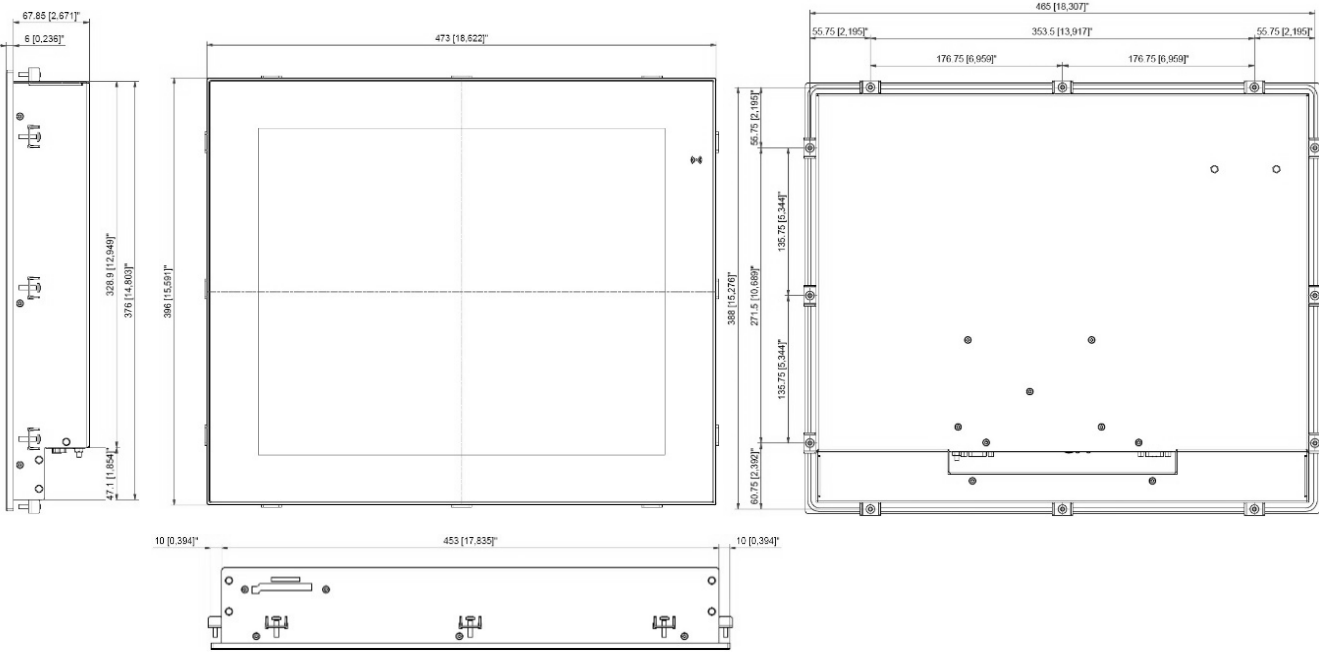
7.16.1. 18.5" Panel Cutout



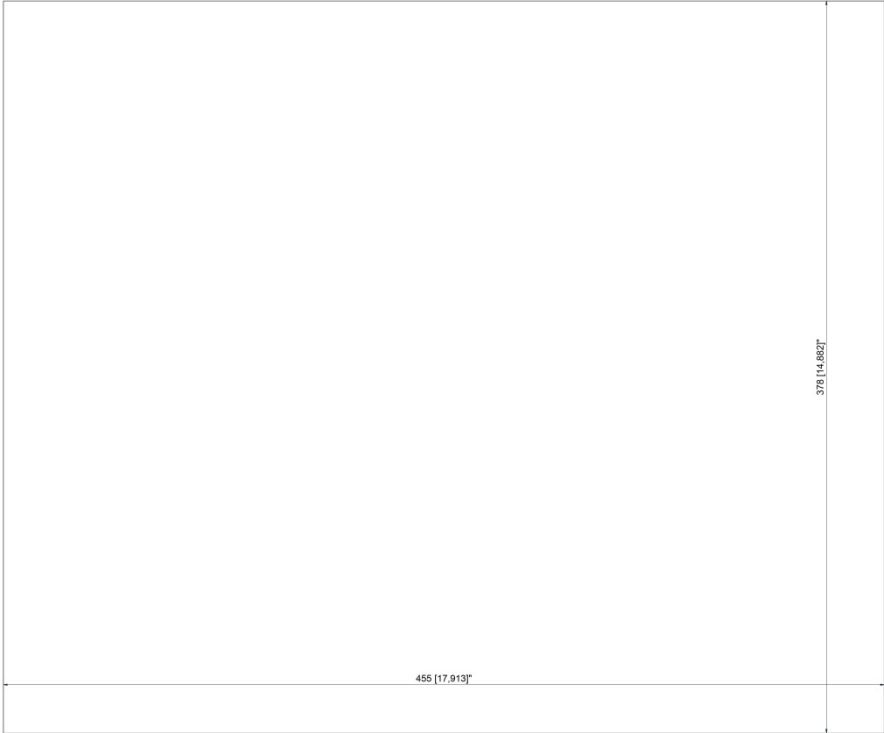
7.17. 18.5" Full-metal Variant (HD and FullHD)



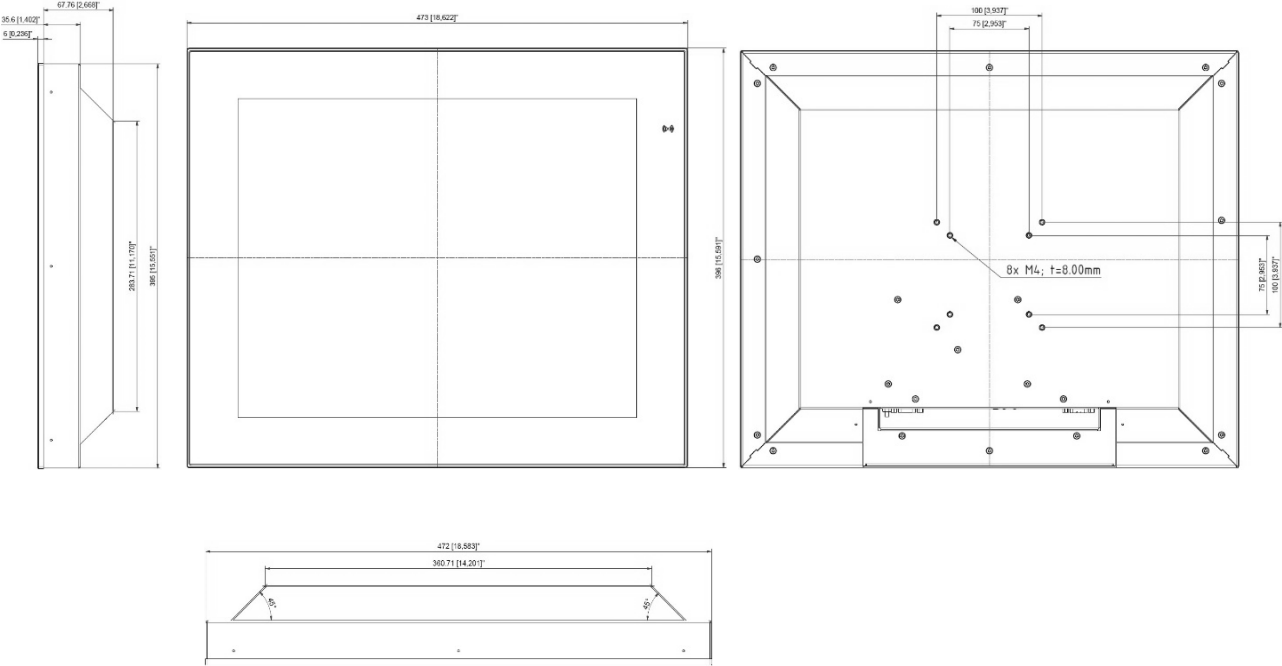
7.18. 19.0" Built-in Variant



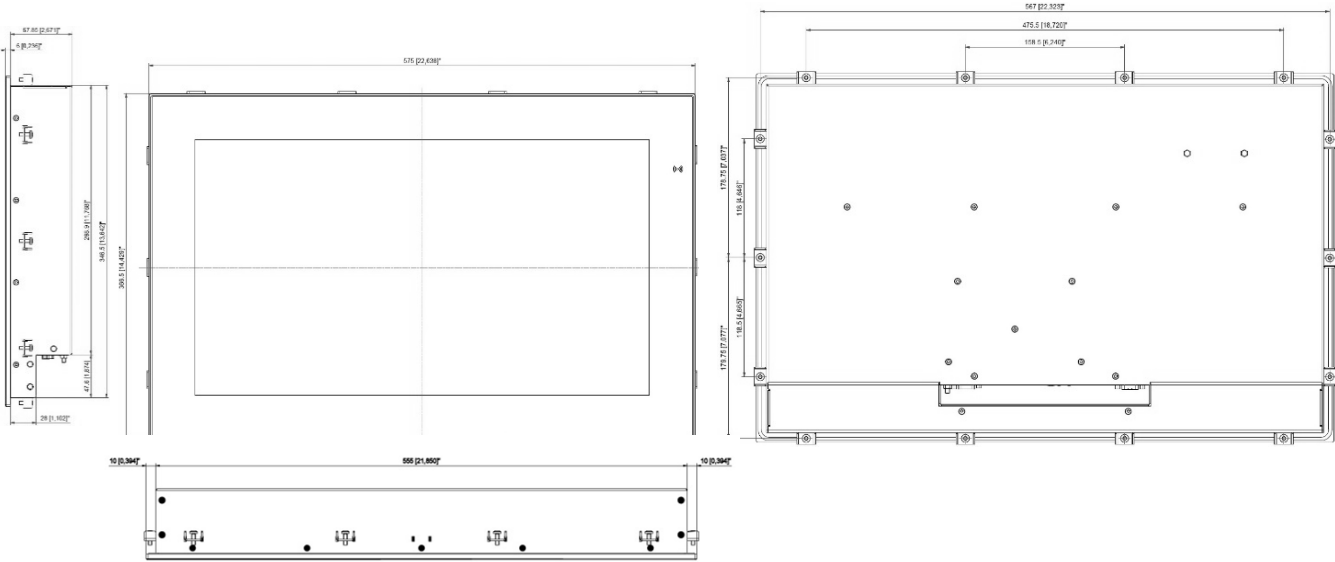
7.18.1. 19.0" Panel Cutout



7.19. 19.0" Full-metal Variant



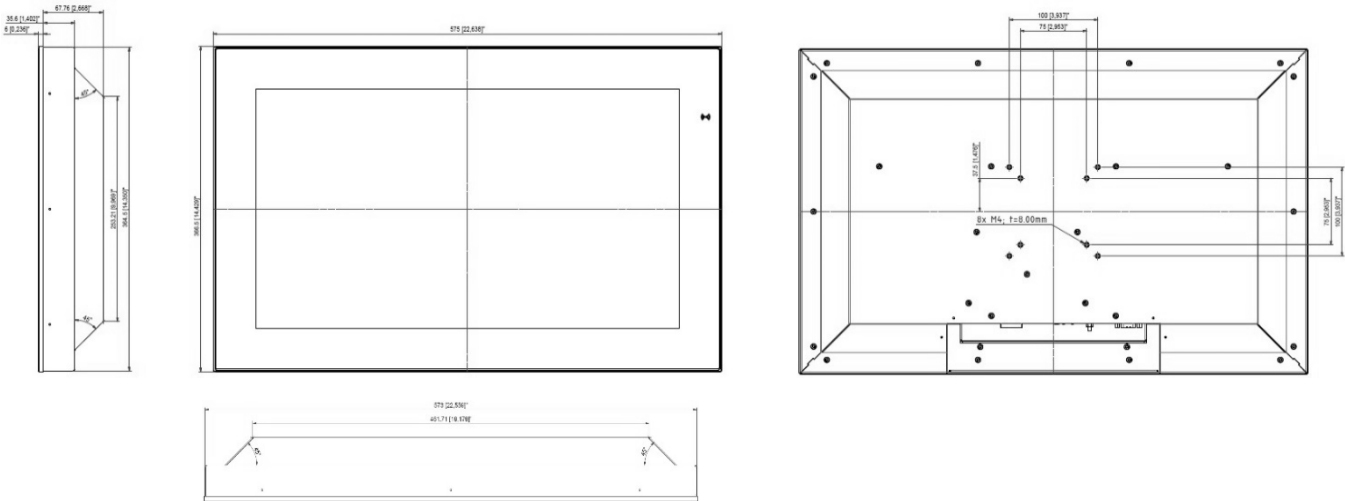
7.20. 21.5" Built-in Variant



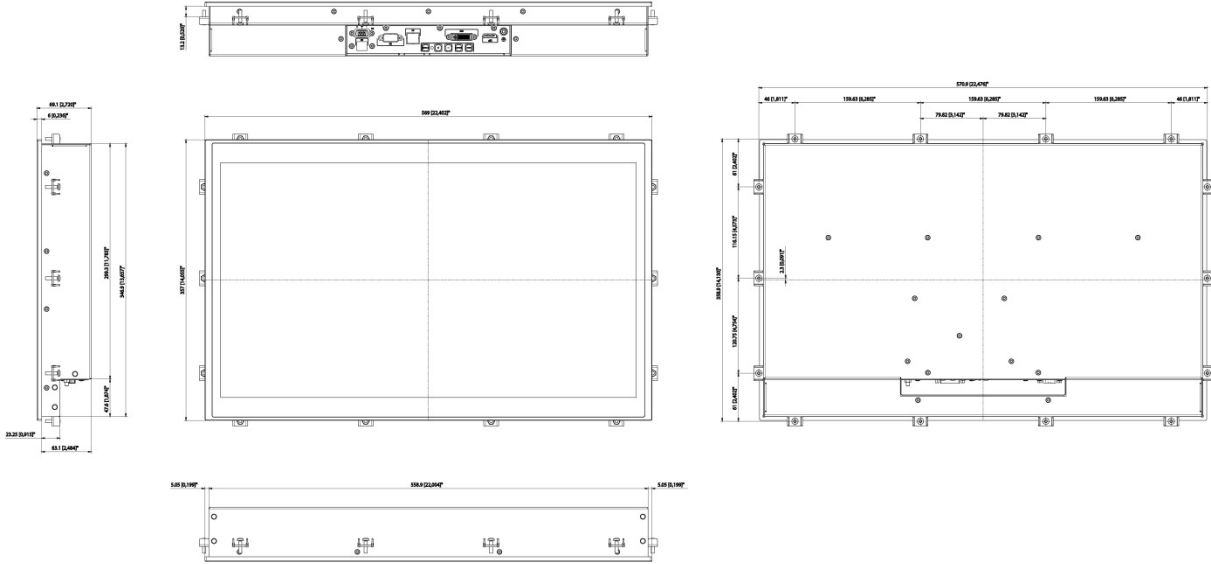
7.20.1. 21.5" Panel Cutout



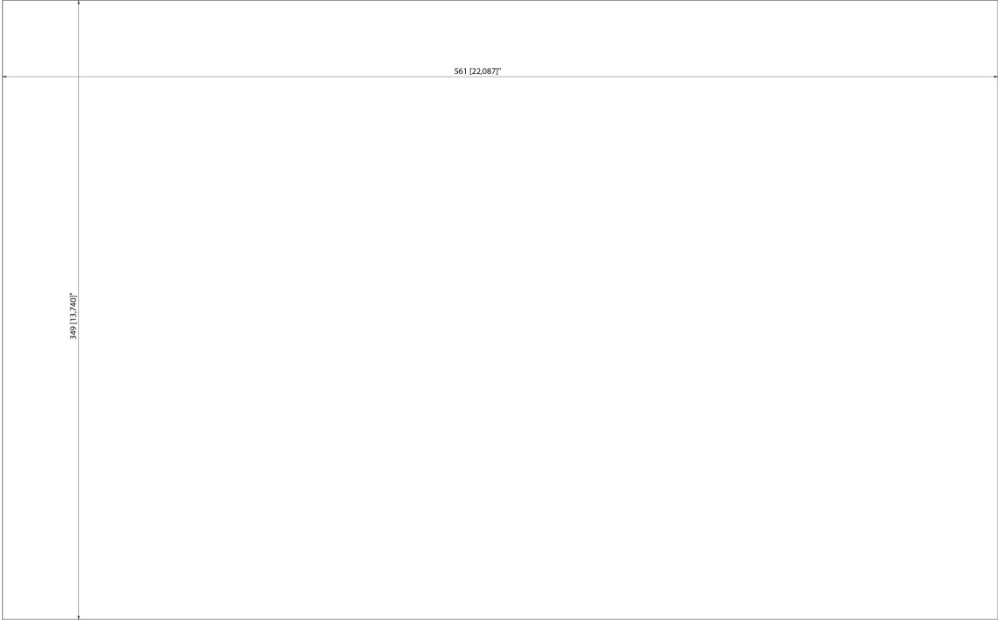
7.21. 21.5" Full-metal Variant



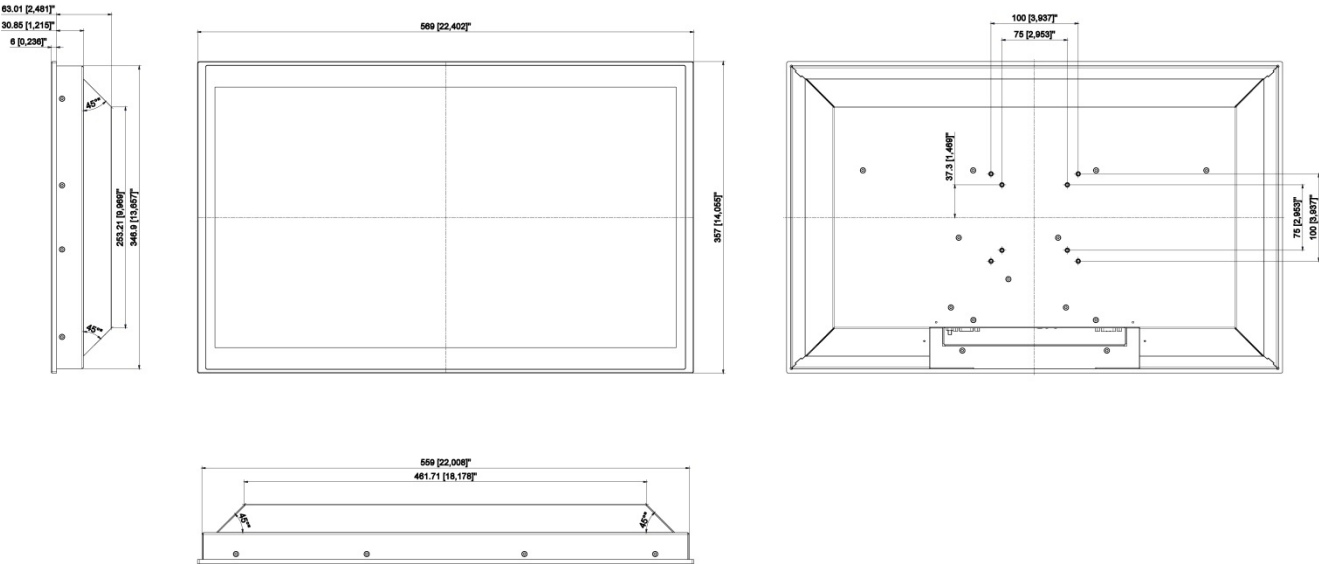
7.22. 23.8" Built –in Variant



7.22.1. 23.8 "Panel Cutout



7.23. 23.8" Full-metal Variant



8/ Installation and Start

8.1. Mounting Instructions (Built-in variant only)

The FlatView's built-in variant is designed to be mounted in the user's application using fastening clips. To mount the FlatView follow the steps below:

1. Use the fastening clips and screws provided with the FlatView, see Figure 6: Fastening Clips and Screws.

Figure 6: Fastening Clips and Screws



The screws provided are lens head screw Philips M4x12, DIN 7985 - ISO 7045.
To fasten screws, use a Philips head screwdriver.

2. Insert the screw into the clamping bracket provided, to pre-assemble the clamping bracket. The correct direction of the screw is shown in Figure 7: Clamping Bracket with Screw.

Figure 7: Clamping Bracket with Screw



3. Insert the clamping bracket in the housing, as shown in Figure 8: Clamping Bracket Insertion.

Figure 8: Clamping Bracket Insertion



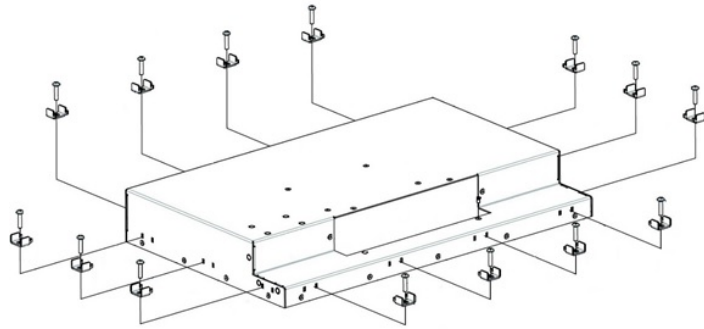
4. Fasten the screw, to fix the clamping bracket to the housing.

Figure 9: Fastening the Clamping Bracket



- Repeat step 4 for each clamping bracket position, see Figure 10: Clamping Bracket Positions.

Figure 10: Clamping Bracket Positions

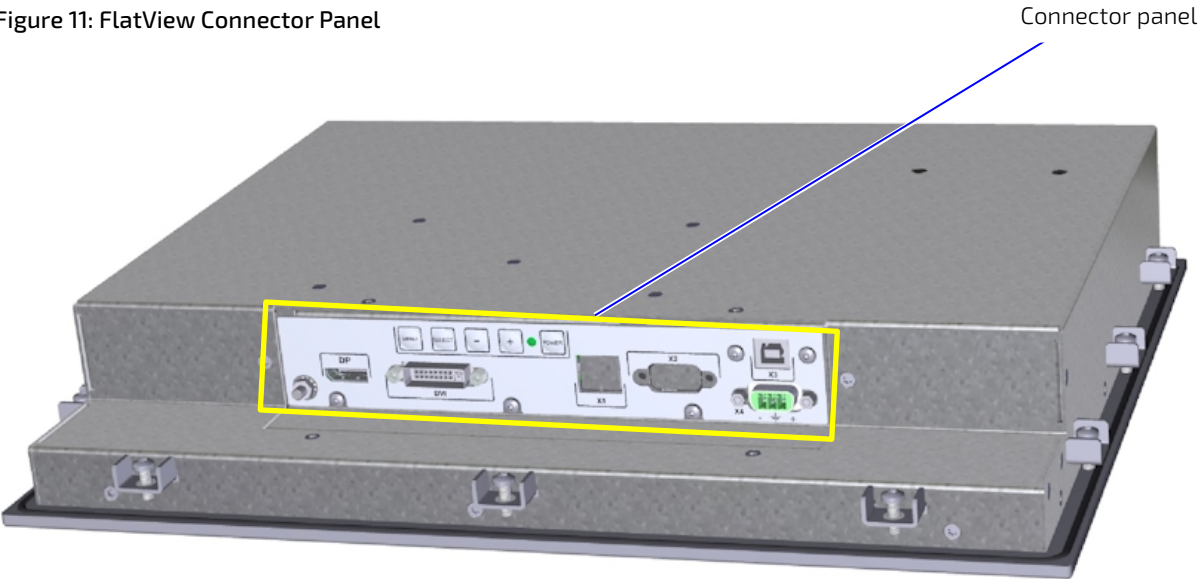


8.2. Startup Procedure

To activate the FlatView, connect the power source to the power connector on the FlatView's rear side. Alternatively, use the mating power connector to connect the power cable. For more information see, Chapter 9.1: Input Power Connector (PWR). When activated the LED power indicator turns green, see Chapter 9.5.2: LED Power Indicator.

9/ Connectors

Figure 11: FlatView Connector Panel



9.1. Input Power Connector (PWR)

The 3-pin power connector provides the FlatView's power connection to an appropriate DC main power supply (24 V DC) via a power cable connection.

Table 7: Input Power Connector Pinout

	Pin	Signal
	1	GND
	2	Shield
	3	VCC (24 V DC only)

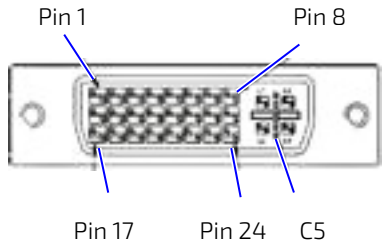
Mating Connector

	Mating Connector Description
	Phoenix Contact
	PSC 1,5/ 3-F
	Part Number: 1841909

9.2. DVI Connector

Table 8: DVI Connector Pinout

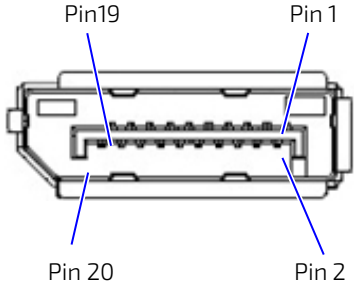
Pin	Signal	Pin	Signal	Pin	Signal
2	Rx2+	10	Rx1+	18	Rx0+
3	GND	11	GND	19	GND
4	NC	12	NC	20	NC
5	NC	13	NC	21	NC
6	SCL	14	+5V	22	GND
7	SDA	15	GND	23	RxC+
8	NC	16	HP	24	RxC-
C1	RED	C3	BLUE	C5	GND
C2	GREEN	C4	HSYNC	C5-	GND



9.3. Display Port (DP) Connector

Table 9: DP Connector Pinout

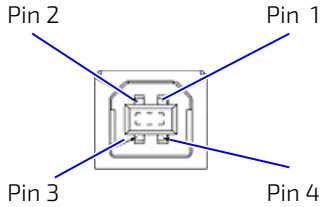
Pin	Signal	Pin	Signal
1	TX0+	11	GND
2	GND	12	TX3-
3	TX0-	13	GND
4	TX1+	14	GND
5	GND	15	AUX+
6	TX1-	16	GND
7	TX2+	17	AUX-
8	GND	18	HPD
9	TX2-	19	GND
10	TX3+	20	PWR



9.4. USB Client Connector (Type B)

Table 10: USB Client Connector Pinout

Pin	Signal
1	+USB_VCC
2	USB_D-
3	USB_D+
4	GND




Internally connected to the touch controller. Connect this port to your PC with USB cable part number: 840-0273.

9.5. OSD (On Screen Display) Keypad

Figure 12: OSD Keys



With the self-explanatory OSD, it is possible to modify the settings and control the CRTtoLCD-Controller's special features. The OSD uses a number of menus to make changes and turn on or turn off special features. The configuration can be performed via the OSD-keypad

9.5.1. Power Button



To turn on or turn off the FlatView, press the POWER button.

9.5.2. LED Power Indicator

The Power LED indicates the FlatView's current power condition.

Table 11: LED Power Indicator's Color Description

LED	Function
Off	No Power
Green	Active
Yellow	Standby

9.5.3. Up Button and Down Button



To Move to the tab, use the UP or DOWN button to move the cursor.

9.5.4. Select Button



To select the tab, press the SELECT button.

9.5.5. Menu Button

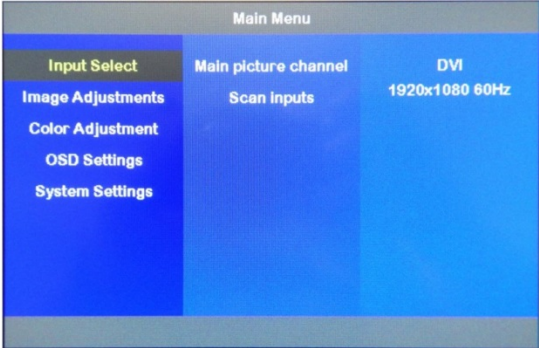


To open the OSD menu, press the MENU button.

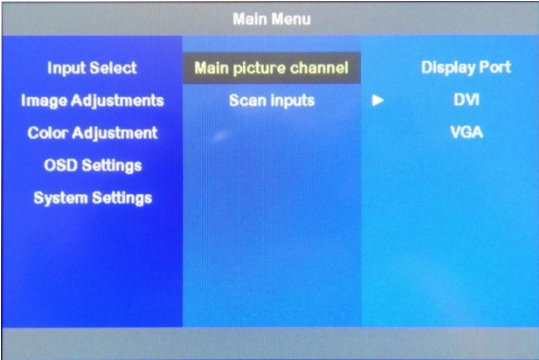
9.6. OSD Menu

The OSD main menu setting are located on the left side of the display screen. If selected, the main menu setting is highlighted in a black box and the sub menu items relating to the selected main menu setting are displayed in the center of the display screen. If a sub menu item is selected, the sub menu item is highlighted in a black box and the sub menu's options are displayed on the right side of the display screen.

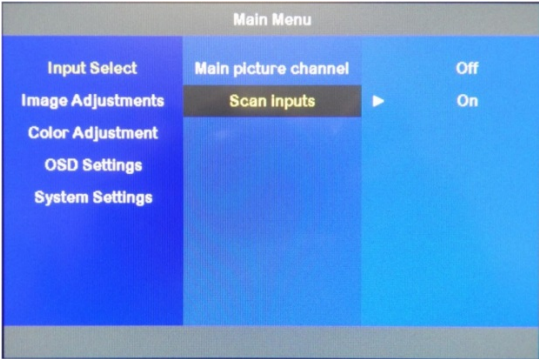
9.6.1. Main Menu: Input Select



9.6.1.1. Sub Menu: Main Picture Channel



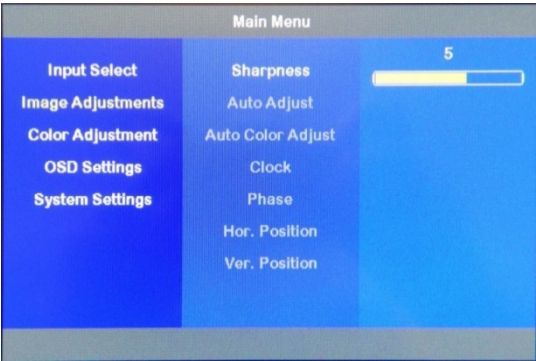
9.6.1.2. Sub Menu: Scan Inputs



9.6.2. Main Menu: Image Adjustments



9.6.2.1. Sub Menu: Sharpness



9.6.2.2. Sub Menu: Auto Adjust

Only active with other display interfaces than DVI.

9.6.2.3. Sub Menu: Auto Color Adjust

Only active with other display interfaces than DVI.

9.6.2.4. Sub Menu: Clock

Only active with other display interfaces than DVI.

9.6.2.5. Sub Menu: Phase

Only active with other display interfaces than DVI.

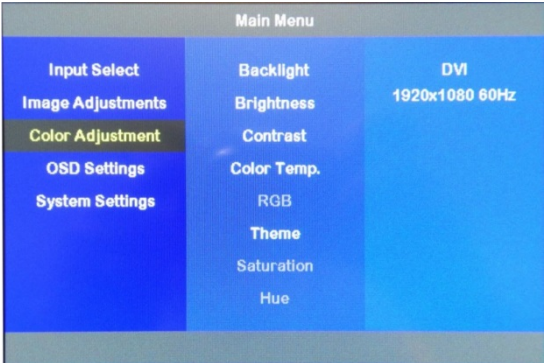
9.6.2.6. Sub Menu: Hor. Position

Only active with other display interfaces than DVI.

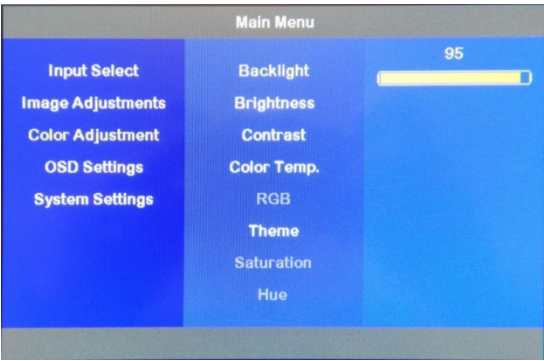
9.6.2.7. Sub Menu: Ver. Position

Only active with other display interfaces than DVI.

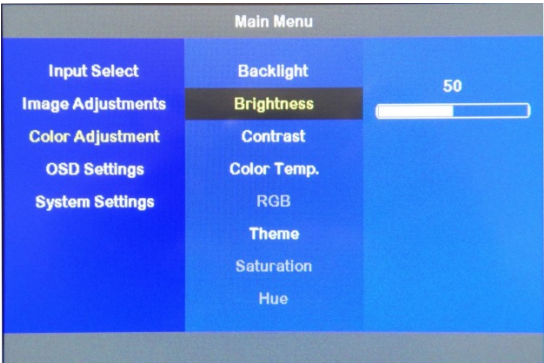
9.6.3. Main Menu: Color Adjustment



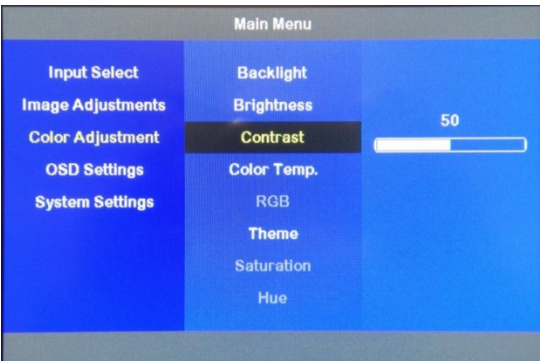
9.6.3.1. Sub Menu: Backlight



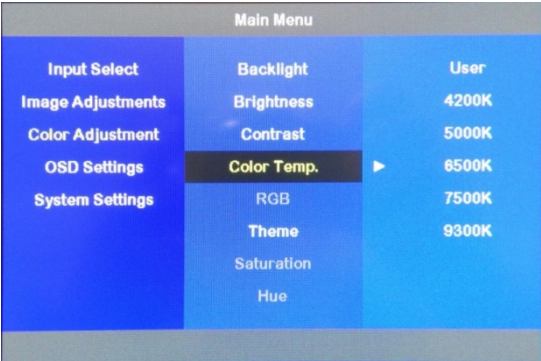
9.6.3.2. Sub Menu: Brightness



9.6.3.3. Sub Menu: Contrast



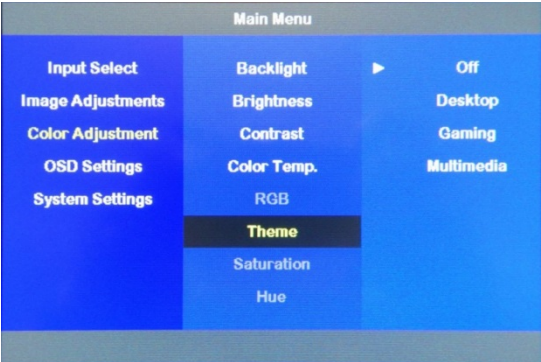
9.6.3.4. Sub Menu: Color Temperature



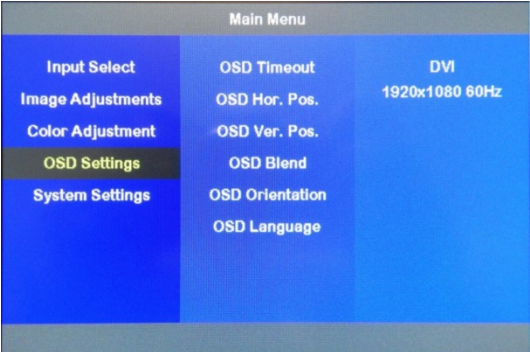
9.6.3.5. Sub Menu: RGB

Not active to select.

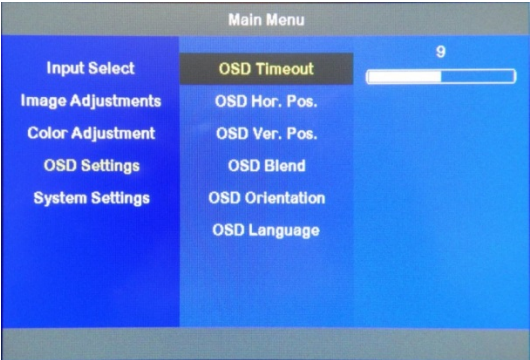
9.6.3.6. Sub Menu: Theme



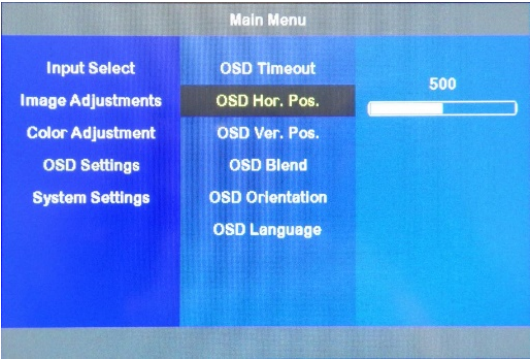
9.6.4. Main Menu: OSD Settings



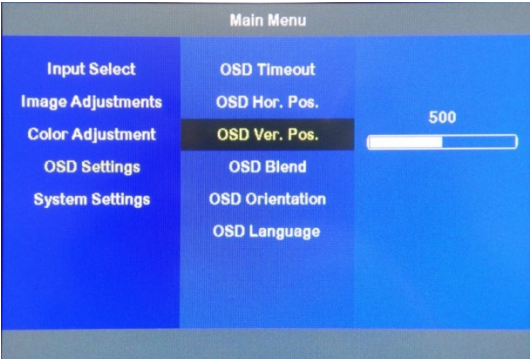
9.6.4.1. Sub Menu: OSD Timeout



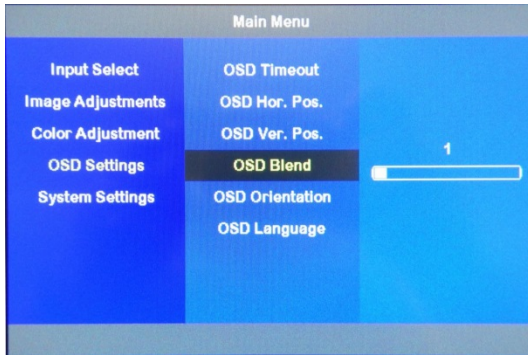
9.6.4.2. Sub Menu: OSD Hor. Pos.



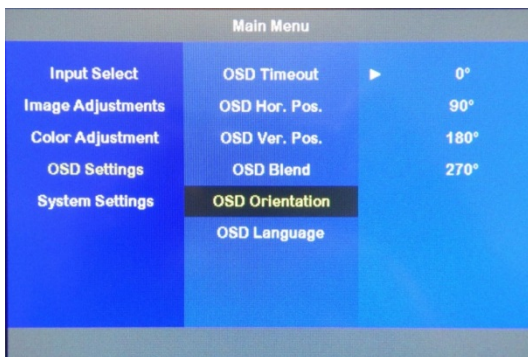
9.6.4.3. Sub Menu: OSD Ver. Pos.



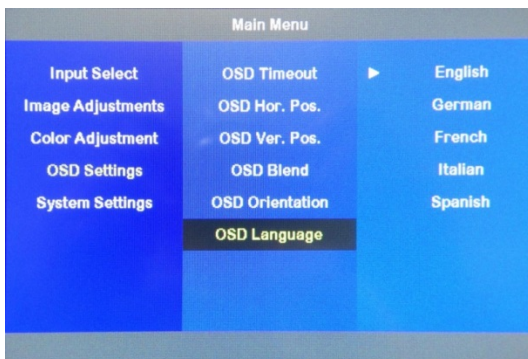
9.6.4.4. Sub Menu: OSD Blend



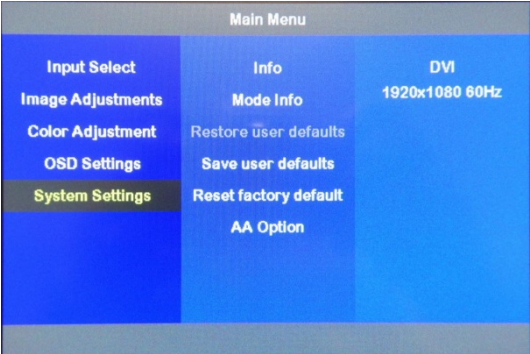
9.6.4.5. Sub Menu: OSD Orientation



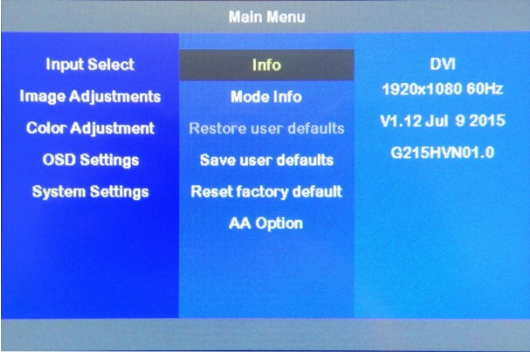
9.6.4.6. Sub Menu: OSD Language



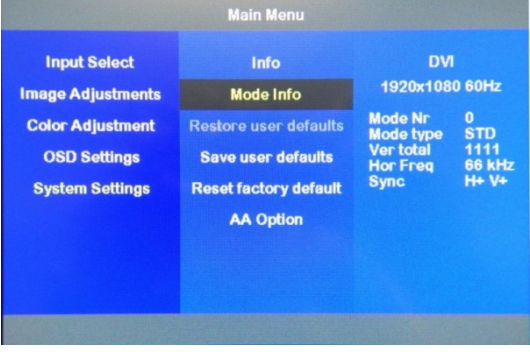
9.6.5. Main Menu: System Settings



9.6.5.1. Sub Menu: Info



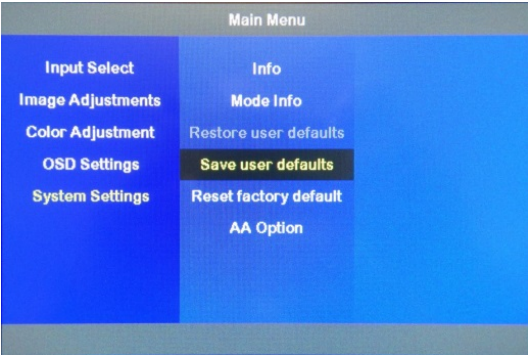
9.6.5.2. Sub Menu: Mode Info



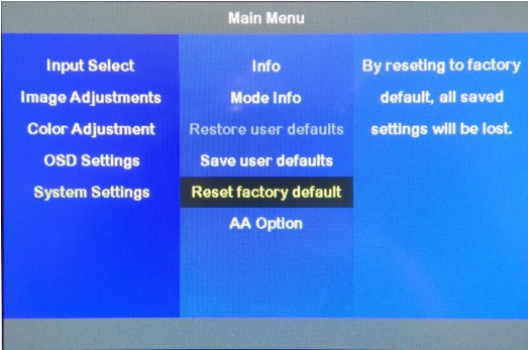
9.6.5.3. Sub Menu: Restore user defaults

Not active to select.

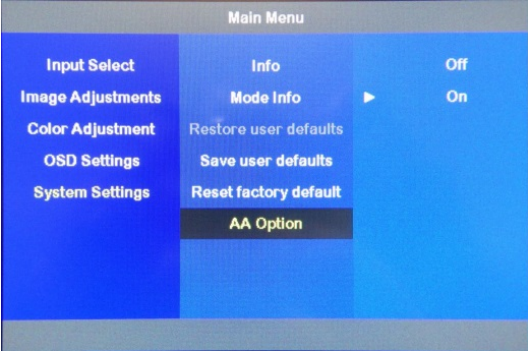
9.6.5.4. Sub Menu: Save user defaults



9.6.5.5. Sub Menu: Reset factory defaults



9.6.5.6. Sub Menu: AA Option



10/ Technical Support

In order to request technical support, please send an email with the information below to support@kontron.com

- ▶ Product name
- ▶ Product model number
- ▶ Serial number of the unit
- ▶ Brief problem description
- ▶ Complete company address

Customers with service portal access may maintain their tickets directly in the service portal.



The serial number can be found on the products type label.

10.1. 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: <http://www.kontron.com/support-and-services/support/rma-information>
2. Download the RMA Request sheet for **Kontron Europe GmbH – Ismaning** 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 Serial number). If a delivery includes more than one product, fill out the above information in the RMA Request form for each product.
Send the completed RMA-Request form to the fax or email address given on the RMA Request sheet and Kontron will provide an RMA-Number.
3. The goods for repair must be packed properly for shipping, considering shock and ESD protection.
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.



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

11/Storage, Transportation and Maintenance

11.1. Storage

If the product is not in use for an extended period time, disconnect the power plug from the mains power source .If it is necessary to store the product then re-pack the product as originally delivered to avoid damage. The storage facility must meet the products environmental storage requirements as stated within this user guide. Kontron recommends keeping the original packaging material for future storage or warranty shipments.

11.2. Transportation

To ship the product use the original packaging, designed to withstand impact and adequately protect the product. When packing or unpacking products always take shock and ESD protection into consideration and use an EOS/ESD safe working area.

11.3. Maintenance

11.3.1. Cleaning of Display

Clean the surface of your display with a dry and clean cloth to eliminate dust and particles of dirt.

NOTICE

Particles may scratch the surface. Do not apply any pressure.
Use commercially available glass cleaner.

12/ Warranty

Kontron defines product warranty in accordance with regional warranty definitions. Claims are at Kontron's discretion and limited to the defect being of a material nature. To find out more about the warranty conditions and the defined warranty period for your region, following the steps below:

1. Visit Kontron's Term and Conditions webpage.
<http://www.kontron.com/terms-and-conditions>
2. Click on your region's General Terms and Conditions of Sale.

12.1. Limitation/Exemption from Warranty Obligation

In general, Kontron shall not be required to honor the warranty, even during the warranty period, and shall be exempted from the statutory accident liability obligations in the event of damage caused to the product due to failure to observe the following:

- ▶ General safety instructions for IT equipment within this user guide
- ▶ Warning labels on the product and warning symbols within this user guide
- ▶ Information and hints within this user guide

Additionally, alterations or modifications to the product that are not explicitly approved by Kontron, described in this user guide, or received from Kontron Support as a special handling instruction will void your 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. For example, this applies to a CMOS battery.



**There is a protection label on your FlatView.
If the product is opened, the warranty is lost.**

Appendix A: List of Acronyms

Table 12: List of Acronyms

API	Application Programming Interface
BMC	Base Management Controller
CLI	Command-Line Interface
COM	Computer-on-Module
DP	Display Port
DVI	Digital Visual Interface
ECC	Error Checking and Correction
FRU	Field Replaceable Unit
GPU	Graphics Processing Unit
HD/HDD	Hard Disk /Drive
IOL	IPMI-Over-LAN
IOT	Internet of Things
IPMI	Intelligent Platform Management Interface
KCS	Keyboard Controller Style
KVM	Keyboard Video Mouse
LPC	Low Pin Count
MEI	Management Engine Interface
NCSI	Network Communications Services Interface
OSD	On Screen Display
PCIe	PCI-Express
PECI	Platform Environment Control Interface
RMA	Return of Material Authorization
RTC	Real Time Clock
SEL	System Event Log
SELV	Safety Extra Low Voltage
ShMC	Shelf Management Controller
SMBus	System Management Bus
SMWI	System Monitor Web Interface
SOL	Serial Over LAN
SSH	Secure Shell
TPM	Trusted Platform Module
UEFI	Unified Extensible Firmware Interface
USB	Universal Serial Bus
VGA	Video Graphics Array
VLP	Very Low Profile



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: <http://www.kontron.com/>



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