

FLATMAN Monitor – User Manual



Customer: Standard
User Manual (Version 2.0)

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2 Introduction

2.1 Symbols used in this Manual



This symbol point out to especially information.

2.2 Important Instructions

This chapter contains instructions which must be observed when using your Flatman Monitor. The manufacturer's instructions provide useful information on your device.

2.3 Note on the Warranty

Due to their limited service life, parts which 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 CMOS battery, for example.

3 General Safety Instructions

The ext. supply shall meet the criteria for SELV (Safety Extra-low Voltage) and <240VA acc. UL 60950-1.

It must be assumed that safe operation is no longer possible, if the device has visible damage or if the device no longer functions. In these cases the device must be shut down and secured against unintentional operation.

Please read this section carefully and observe the instructions for your own safety and correct use of the device. The chapter also contains information on approval and interference suppression of your device. Observe the warnings and instructions on the device and in the manual.

In order to maintain this condition and ensure safe operation, the user must observe the instructions and warnings contained in this manual.

- The device 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. Don't use injured or damaged power cords.
- For DC power connection:
The DC power source should be able to be switched off and 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 disconnecting device. For this reason the outlet of the AC power source must be located near to the device and be easily accessible.
- Do not place the device in direct sunlight, near heat sources or in a damp place. Make sure the device has adequate ventilation.
- Only devices and components which 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 device generates heat during operation. Make sure it is adequately ventilated. Do not cover the air intake and exhaust openings of the device.
- Repairs may only be carried out by qualified specialist personnel authorized by S&T.
- Maintenance or repair on the open device may only be carried out by qualified personnel authorized by S&T which is aware of with the associated dangers.
- When accessing internal components the device must be switched off and disconnected from the power source.

4 Electromagnetic Compatibility

4.1 Electromagnetic Compatibility EU

This product is in conformity with the protection requirements of EU Council Directive 2004/108/EC 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.

4.2 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:

- 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.

4.2.1 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 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 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 which are conductive.
- Always place drives and boards PCB-assembly-side down on the foam.

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5 Scope of Delivery (options)

This chapter describes the components which can be optionally ordered and delivered:

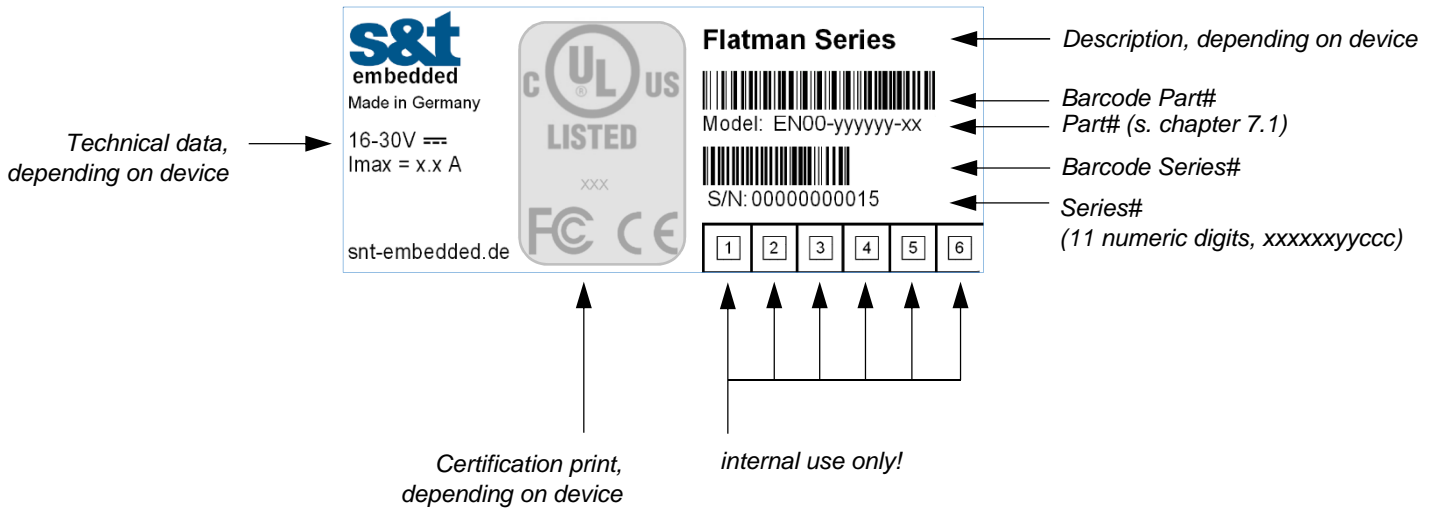
	Qty	Part#	Part Description
	1	s. order information	Flatman Monitor
	1	EE04-100001-01	Phoenix Power Subcon w/ housing
	1	840-0598	Adapter VGA / DVI
	1	840-0039	VGA/SVGA cable 1,8m/2,0m
	1	840-0273	USB-cable 1,8m, Type A – Type B
	1	840-0134	DVI-cable 2m
	1	840-0758	Display-Port-cable 1,8m
	1	840-0059	EU-Powercord 1,8m
	1	ER40-100001-01	Set Power supply 24VDC /w Phoenix Connector

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5.1.1 Type Label and Product Identification

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

fig. 1: Type Label



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6 Product Description

6.1 Product view

6.1.1 Front View Description

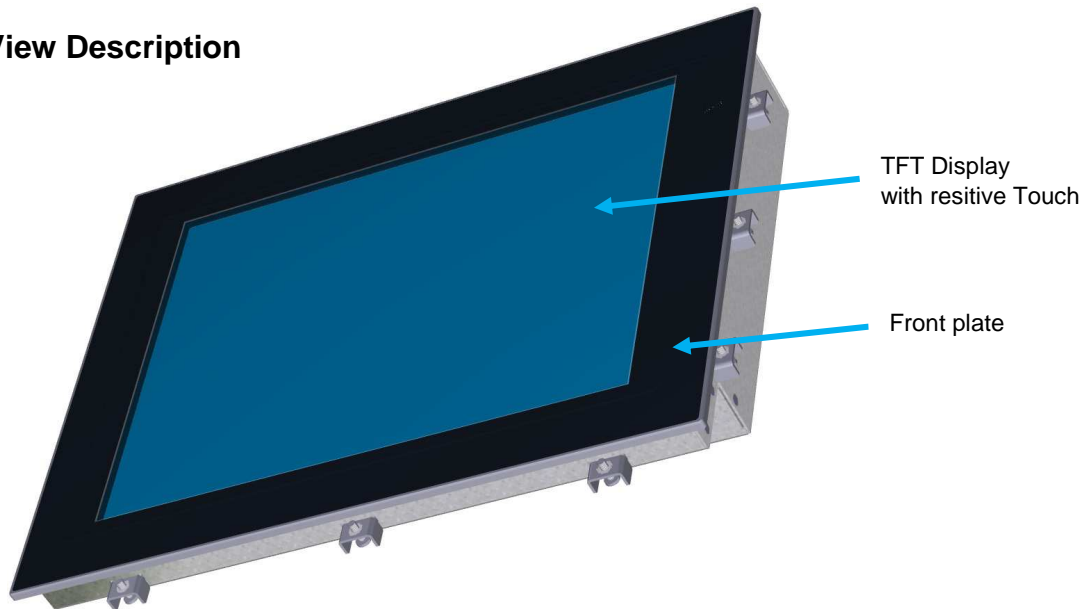


fig. 2: Front view

6.1.2 Rear View Description – built-in-variant

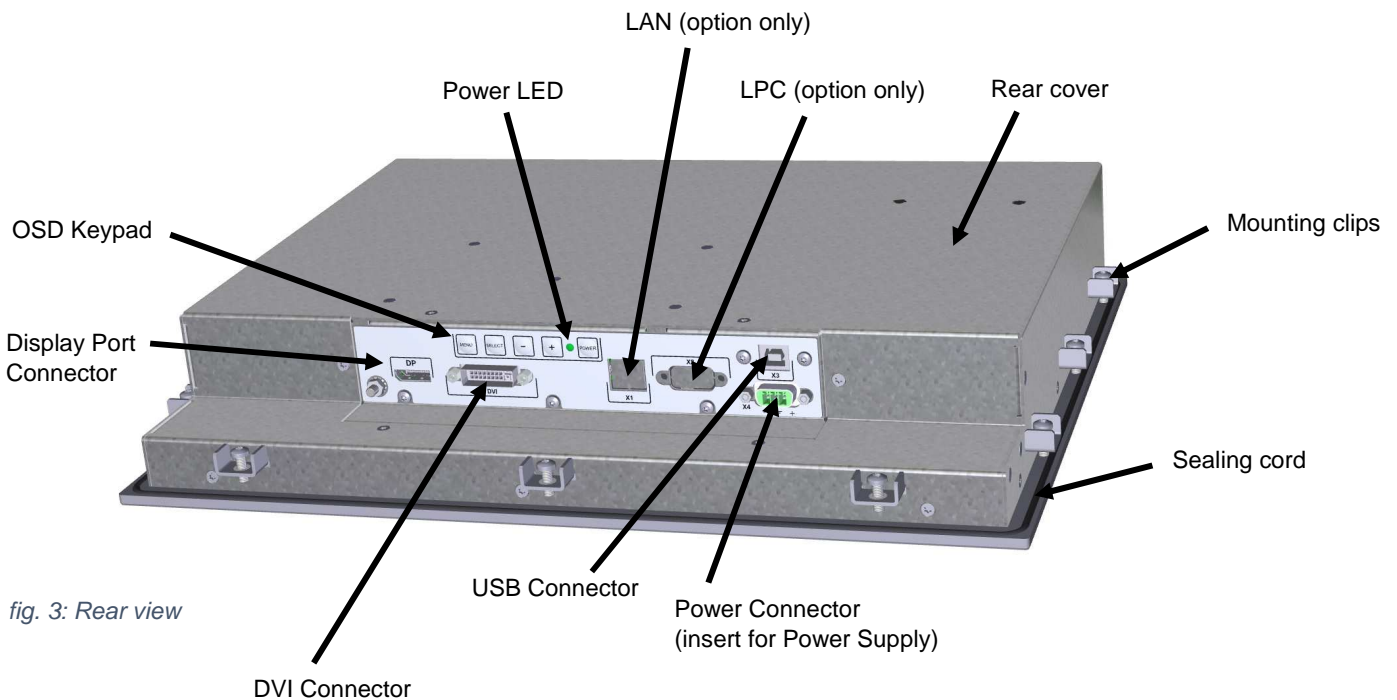


fig. 3: Rear view

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6.1.3 Rear View Description – full metal-variant

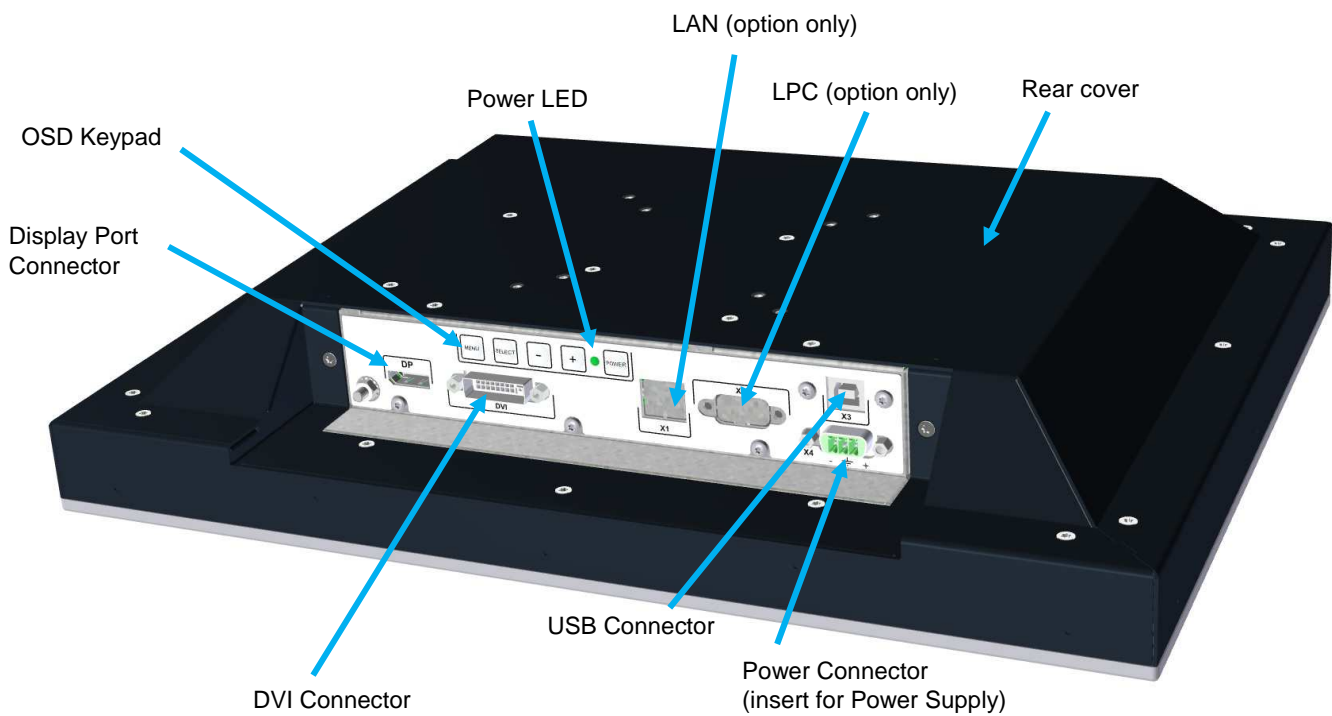


fig. 4: Rear view full metal variant

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7 Technical Data / Environmental Specification

Display size	10.4"	12.1"	12.1" XGA	15.0"
Display manufacturer	Innolux	Innolux	Innolux	Innolux
Display type	G104AGE-L02	G121AGE-L03	G121X1-L03	G150XNE-L01 (new !!!)
Resolution	800x600	800x600	1024x768, XGA	1024x768
Format	4:3	4:3	4:3	4:3
Contrast ratio	700:1	1500:1	700:1	2500:1
Brightness	400cd	450cd	600cd	500cd
Angle View	H160° / V140°	H178° / V178°	H160° / V140°	H176° / V176°
Colors	16.7 million	16.7 million	16.2 million	16.7 million
LED Lifetime (> 50%, 25°C)	> 50.000h	> 50.000h	> 50.000h	> 70.000h
Dimensions (WxHxD - mm)	297 x 244 x 65	338 x 277 x 65	338 x 277 x 65	396 x 312 x 69
Weight	~ 3,9kg	~ 4,7kg	~ 4,7kg	~ 6,4kg
Touch Options	Protection glass / PCAP / resistive			
Mounting Option	full metal housing / built-in-mounting			
Fastening	VESA 75/75 or 100/100 (full metal housing only); fastening clips (built-in-variant only)			
Color	RAL 7021 (black anthracite)			

Display size	15.6"	15.6" Full HD	17.0"	18.5"
Display manufacturer	Innolux	AUO	AUO	Innolux
Display type	G156BGE-L01	G156HTN02.0	G170EG01V1	G185BGE-L01
Resolution	1366x768, HD	1920x1080, Full HD	1280x1024	1366x768, HD
Format	16:9	16:9	5:4	16:9
Contrast Ratio	500:1	500:1	800:1	1000:1
Brightness	300cd	400cd	350cd	300cd
Angle View	H160° / V160°	H140° / V120°	H160° / V140°	H178° / V170°
Colors	16.7 million	16.2 million	16.7 million	16.7 million
LED Lifetime (> 50%, 25°C)	> 50.000h	> 50.000h	> 50.000h	> 50.000h
Dimensions (WxHxD - mm)	432 x 281 x 74	432 x 281 x 74	427 x 360 74	500 x 321 x 74
Weight	~ 6,7kg	~ 6,7kg	~ 7,8kg	~ 8,6kg
Touch Options	Protection glass / PCAP / resistive			
Mounting Option	full metal housing / built-in-mounting			
Fastening	VESA 75/75 or 100/100 (full metal housing only); fastening clips (built-in-variant only)			
Color	RAL 7021 (black anthracite)			

Display size	18.5" Full HD	19.0"	21.5"	23.8"
Display manufacturer	AUO	AUO	AUO	AUO
Display type	G185HAN01.0	G190ETN01.2	G215HVN01.0	G238HAN01.1 (new !!!)
Resolution	1920x1080, FHD	1280x1024	1920x1080, Full HD	1920x1080
Format	16:9	5:4	16:9	16:9
Contrast Ratio	1000:1	1000:1	3000:1	1000:1
Brightness	350cd	350cd	300cd	400cd/m ²
Angle View	H178° / V178°	H170° / V160°	H178° / V178°	178°/178°
Colors	16.7 million	16.7 million	16.7 million	16,7million
LED Lifetime (> 50%, 25°C)	> 50.000h	> 50.000h	> 50.000h	50.000h
Dimensions (WxHxD - mm)	500 x 321 x 74	473 x 396 x 68	575 x 367 x 74	569 x 357 x 69
Weight	~ 8,6kg	~ 9,4kg	~ 10,7kg	~ 11,8 kg
Touch Options	Protection glass / PCAP / resistive			Protection glass / PCAP
Mounting Option	full metal housing / built-in-mounting			
Fastening	VESA 75/75 or 100/100 (full metal housing only); fastening clips (built-in-variant only)			
Color	RAL 7021 (black anthracite)			

- other Display manufacturers and types are possible

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Mounting Option	full metall housing / built-in-mounting
Fastening	VESA 75/75 or 100/100 (full metal housing only); fastening clips (built-in-variant only)
Color	RAL 7021 (black anthracite)
Video In	1x DVI, 1x Display Port
I/O Option	USB2.0 (Type B) - client
Power Supply	12-30VDC Input
Cooling	Fanless passive cooling
Operating Temperature	0°C - 50°C ambient (**)
Humidity	10%-90% @ 39°C, non condensing
Operating Altitude	Up to 3000m (9900 ft)
Storage Altitude	Up to 5000m (16500 ft)
Certification	CE, cULus, Design to meet FCC
Protection class	Front: IP65, Housing IP20
EMC	EN55022 class B

(** except monitor in size 23.8": operating temperature 0-45°C ambient)

7.1 Order Information

Example:

EN00-Z41300-01

(FLATMAN Monitor 15.6" with resistive touch in full metal housing)

EN00-yyyyyy-xx

① ② ③④ ⑤ ⑥

① - Internal Code (Standard Flatman)

② - Display Size

- Z1 = 10.4" monitor
- Z2 = 12.1" monitor
- Z3 = 15.0" monitor
- Z4 = 15.6" monitor
- Z5 = 17.0" monitor
- Z6 = 18.5" monitor
- Z7 = 19.0" monitor
- Z8 = 21.5" monitor
- ZH = 23.8" monitor

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
- 7 = without touch, only with protection glass V2

④ - Mounting Variant:

- 3 = Monitor full metal
- 4 = Monitor built-in-mounting

⑤ - Options:

counted on demand for several options
(e.g. display option full HD; XGA; ...)

⑥ - Internal Code (Revision)

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7.2 CE Directives and Standards CE Directives

Low Voltage Directive (Electrical Safety)	2014/35/EU
EMC Directive	2004/108/EC
RoHS II Directives	2011/65/EU
Minimum health and safety requirements regarding the exposure of workers to the risks arising from physical agents (electromagnetic fields)	2013/35/EU
Electromagnetic compatibility (EMC), Part 6-2:Generic Standards – Immunity for industrial environments + CENELEC- Cor.:2005	EN 61000-6-2:2005 + Cor.:2005
Information technology equipment, Radio disturbance characteristics, Limits and methods of measurement (CISPR 22:2008, modified)	EN 55022 :2010
Information technology equipment, Immunity characteristics, Limits and methods of measurement	EN 55024 :2010
Safety for information technology equipment including electrical business equipment	EN 60950-1 :2006 +A1 :2009 +A1 :2010 +A12 :2011 +A2 :2013

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8 Mechanical Specifications

8.1 Dimension Drawing

8.1.1 10.4" built-in-variant

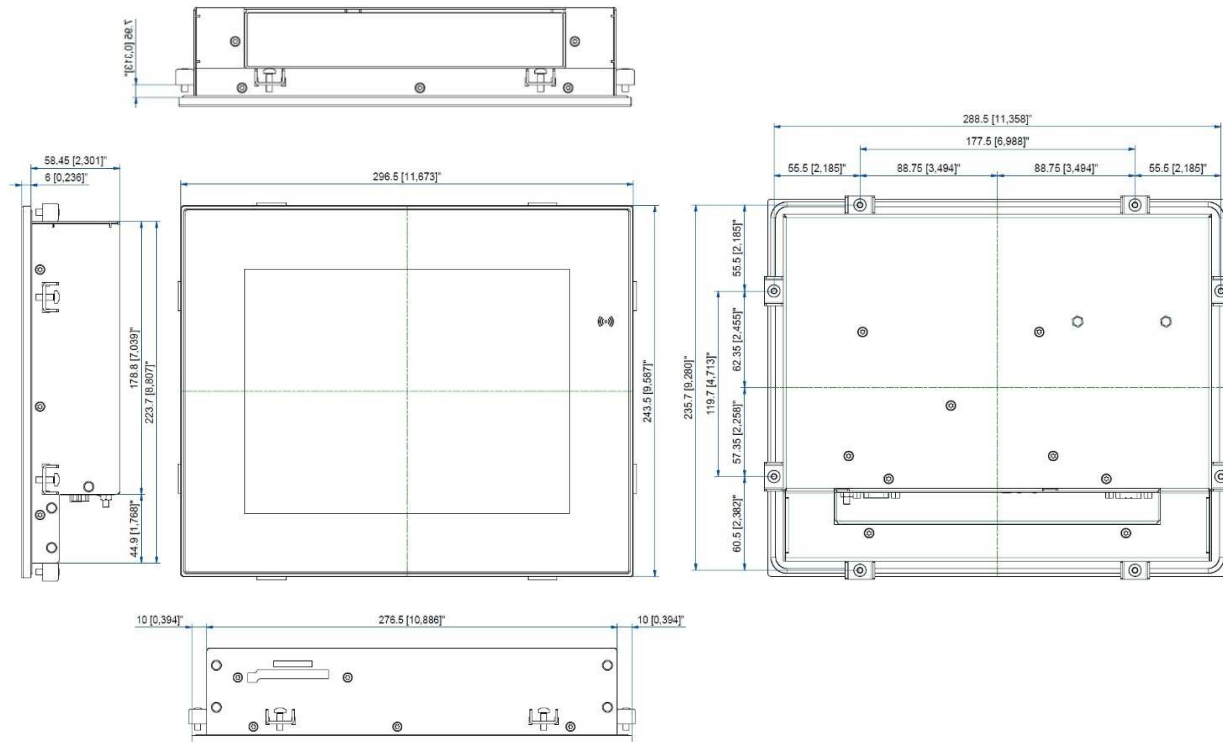


fig. 5: Dimension drawing 10,4" built-in

8.1.2 10.4" full metal

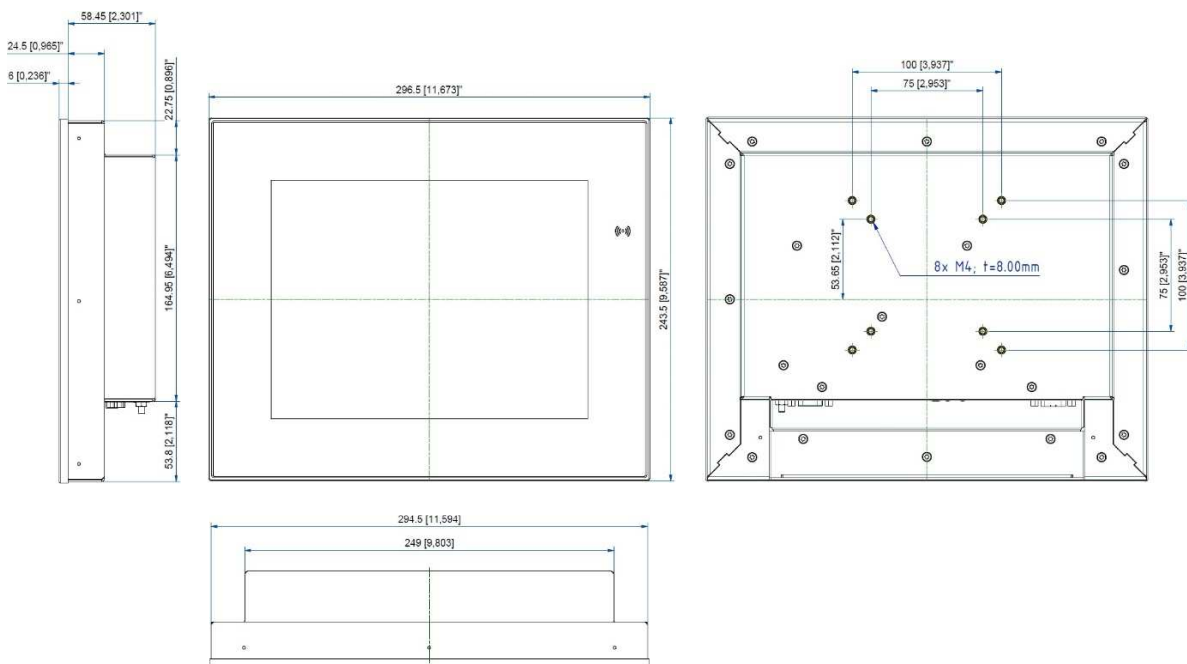


fig. 6: Dimension drawing 10,4" full metal

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8.1.3 12.1" built-in-variant

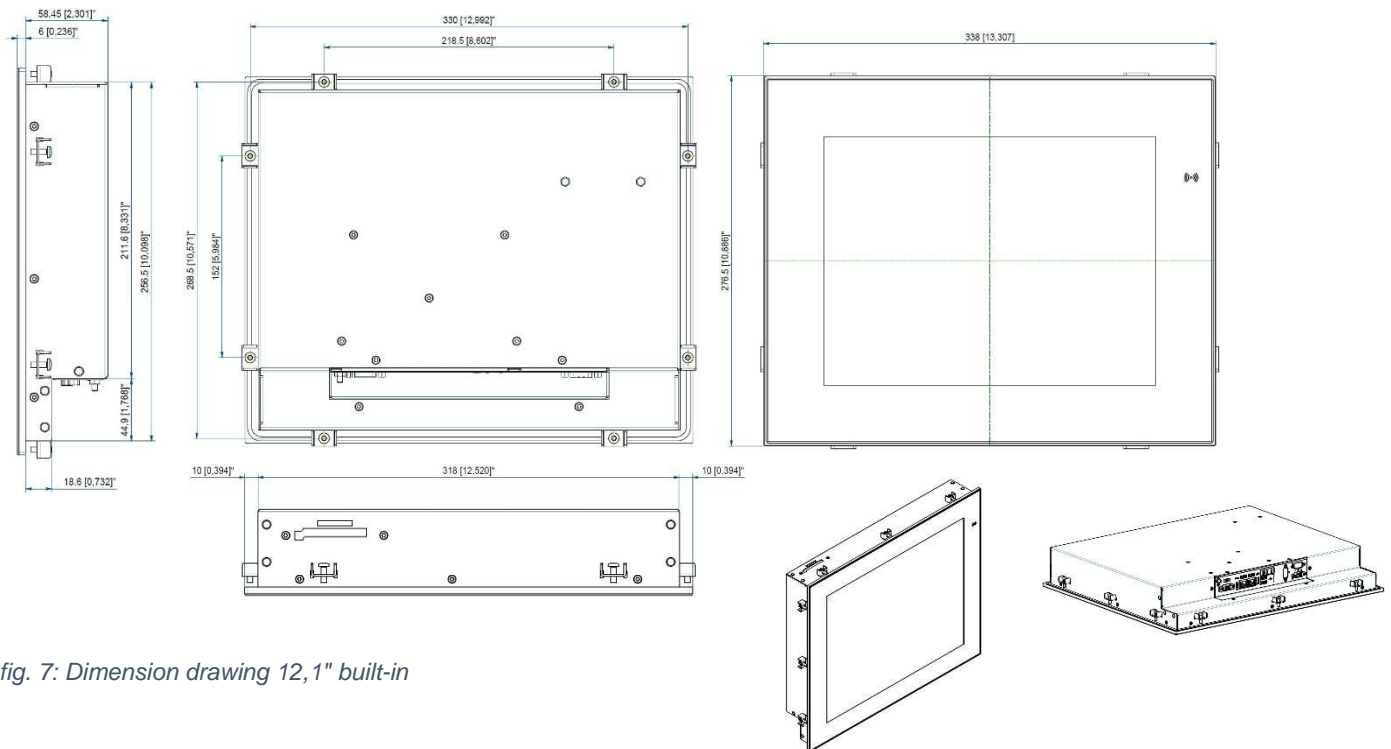


fig. 7: Dimension drawing 12,1" built-in

8.1.4 12.1" full metal

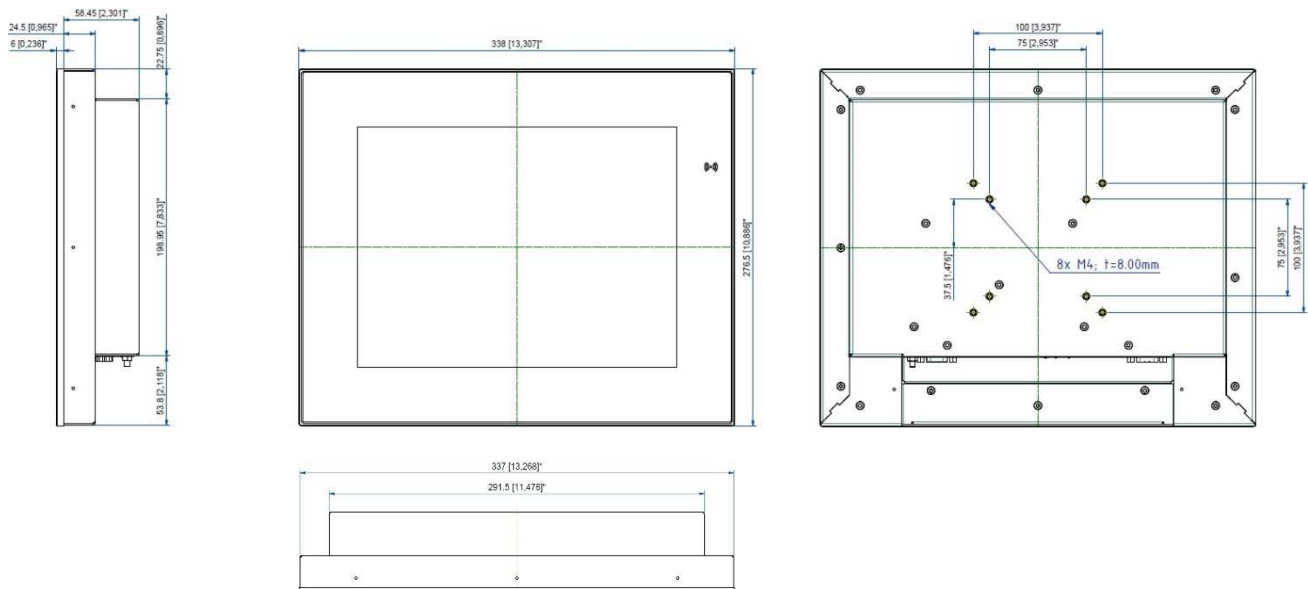


fig. 8: Dimension drawing 12,1" full metal

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8.1.5 15.0" built-in-variant

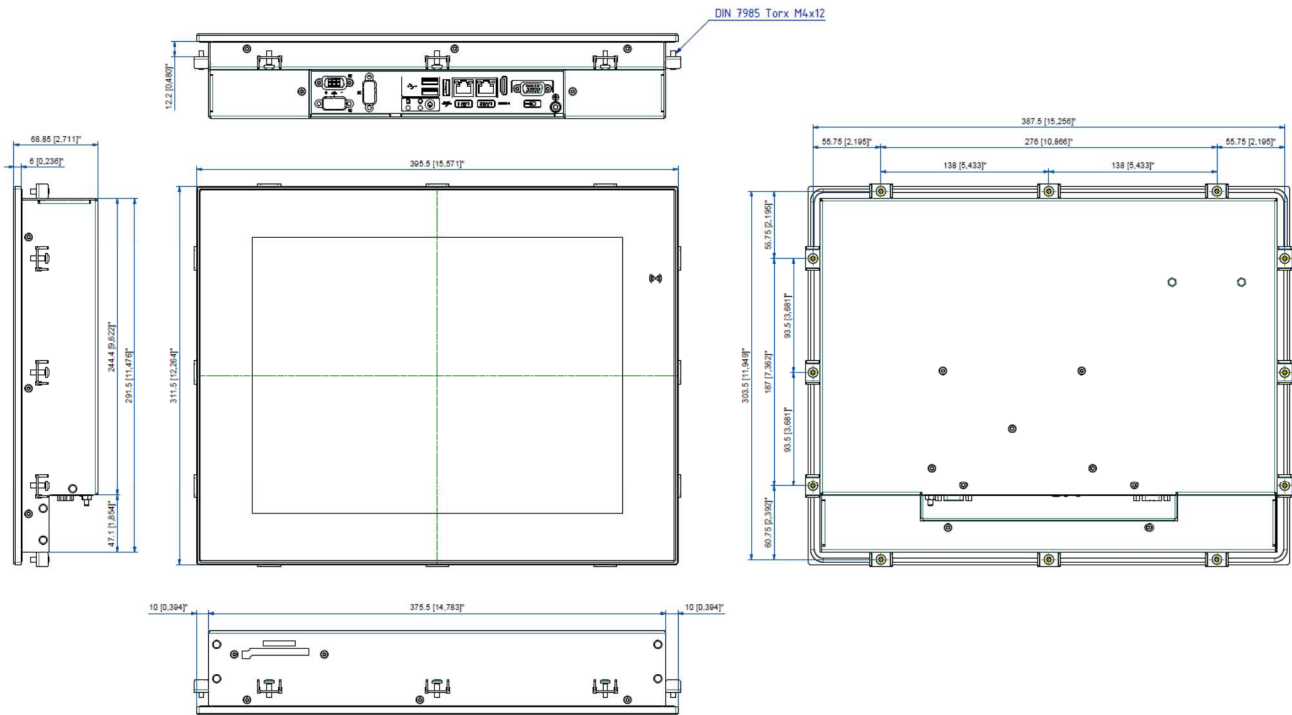


fig. 9: Dimension drawing 15,0" built-in

8.1.6 15.0" full metal

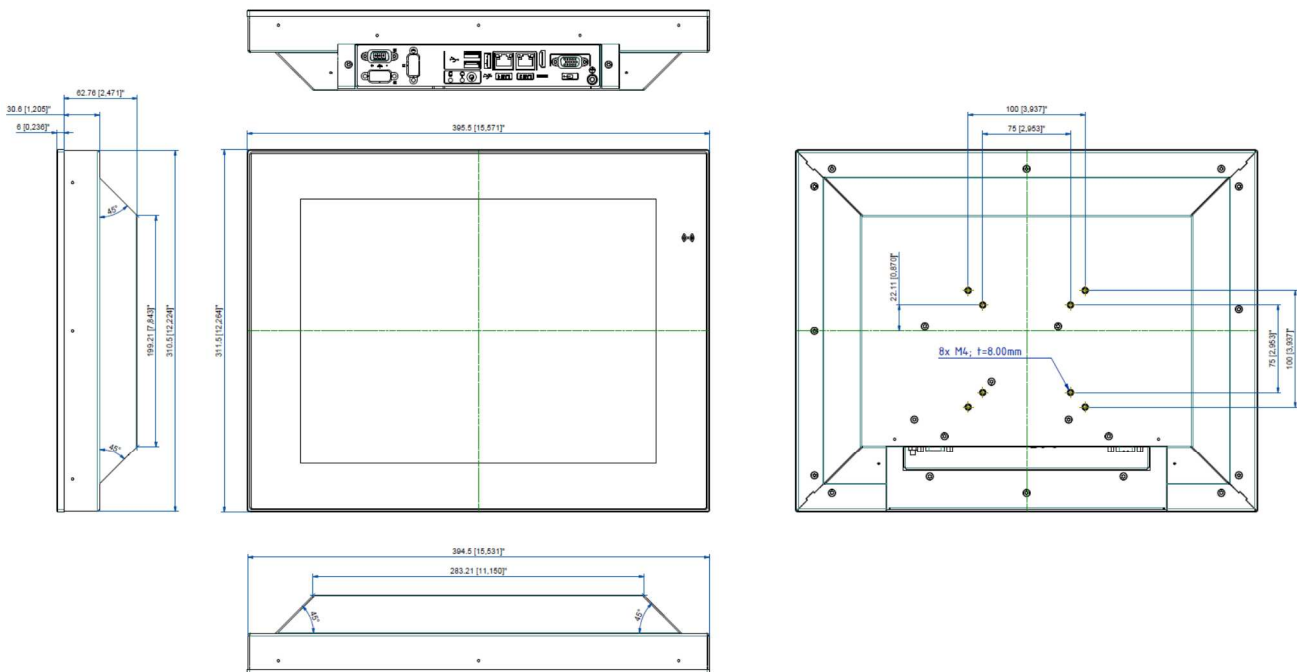


fig. 10: Dimension drawing 15,0" full metal

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8.1.7 15.6“ built-in-variant

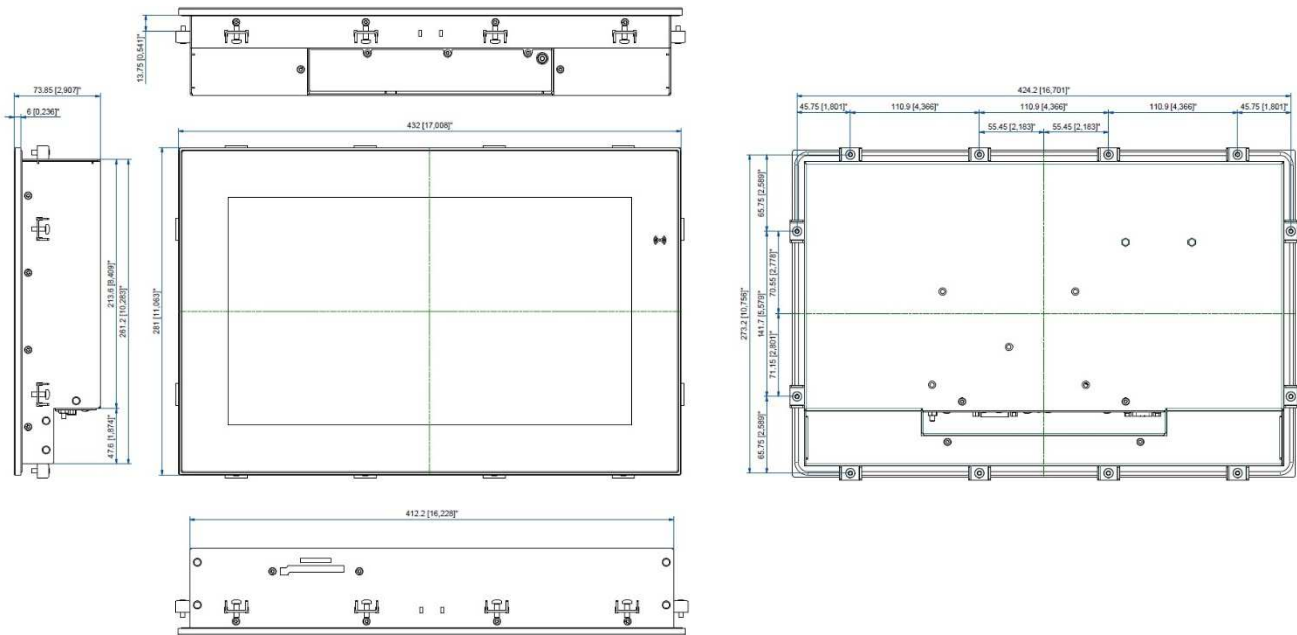


fig. 11: Dimension drawing 15,6" built-in

8.1.8 15.6“ full metal

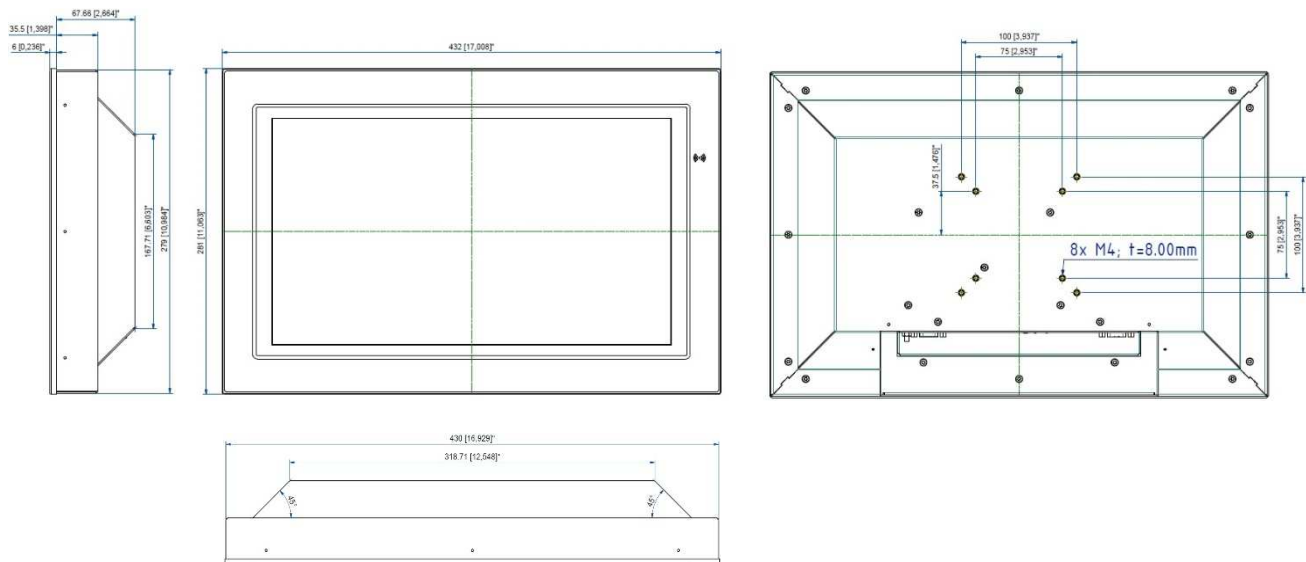


fig. 12: Dimension drawing 15,6" full metal

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8.1.9 17.0" built-in-variant

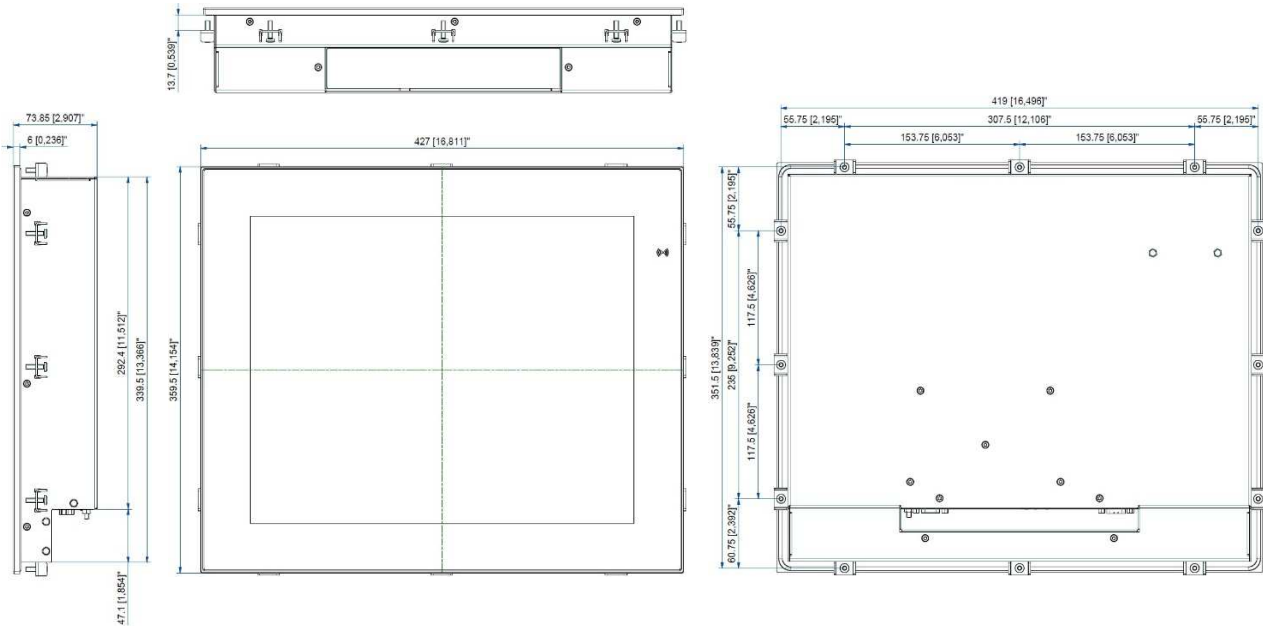


fig. 13: Dimension drawing 17,0" built-in

8.1.10 17.0" full metal

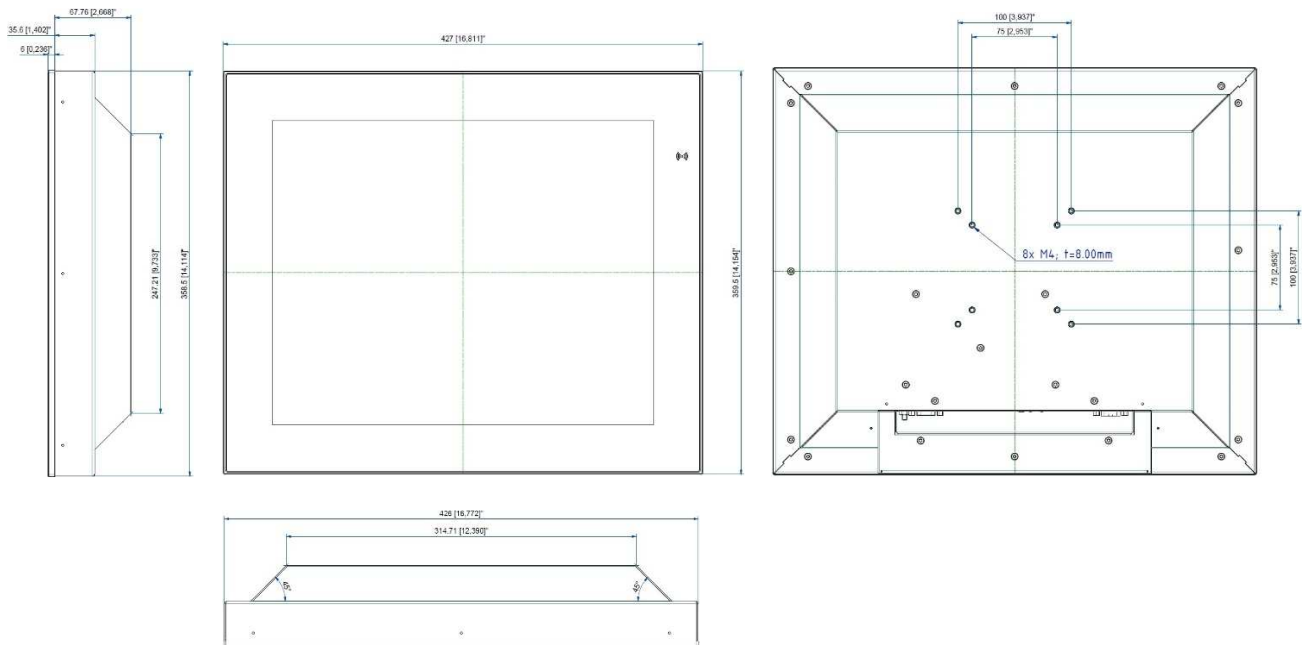


fig. 14: Dimension drawing 17,0" full metal

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8.1.11 18.5" built-in-variant

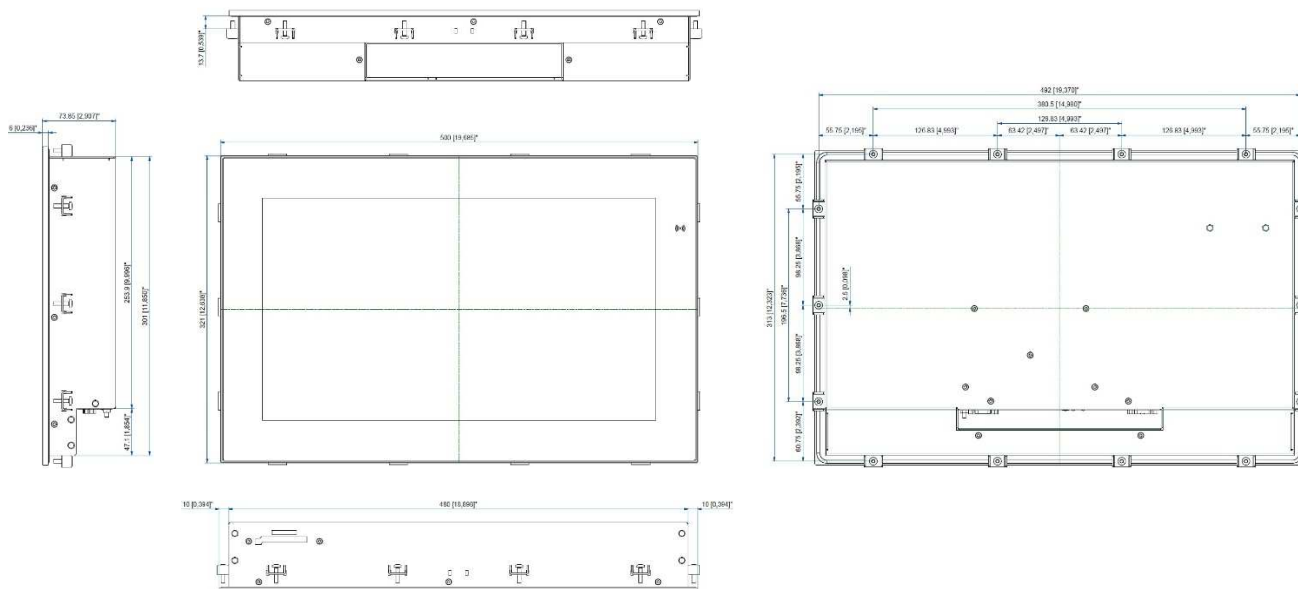


fig. 15: Dimension drawing 18,5" built-in

8.1.12 18.5" full metal

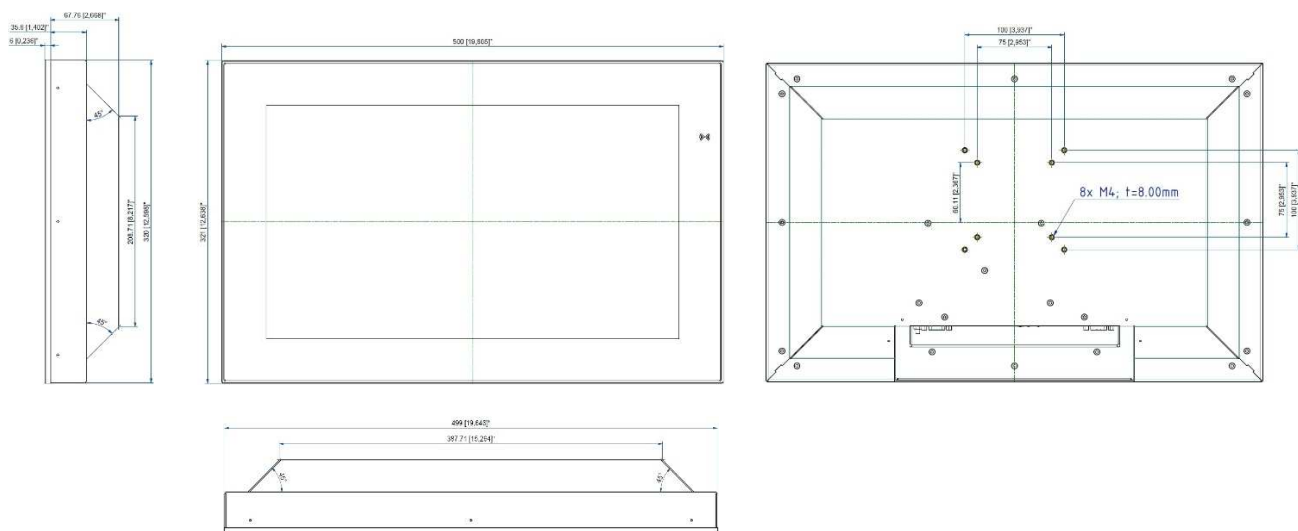


fig. 16: Dimension drawing 18,5" full metal

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8.1.13 19.0“ built-in-variant

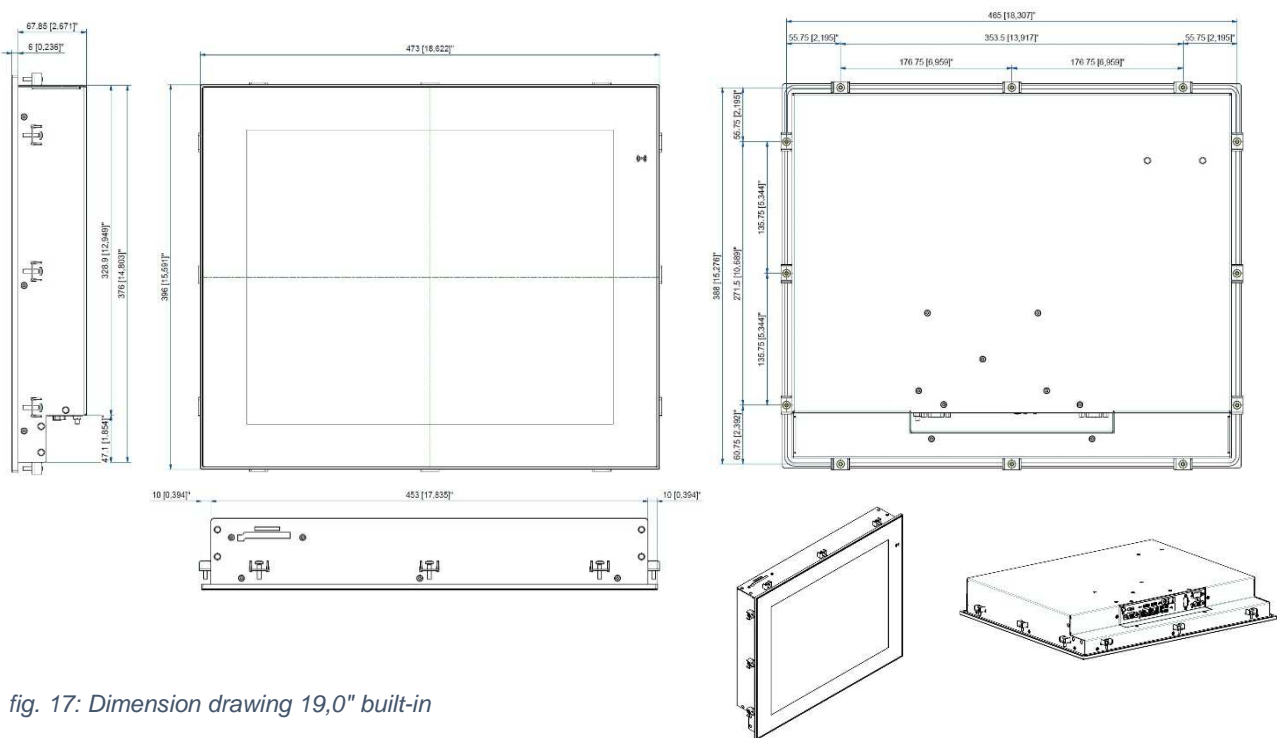


fig. 17: Dimension drawing 19,0" built-in

8.1.14 19.0“ full metal

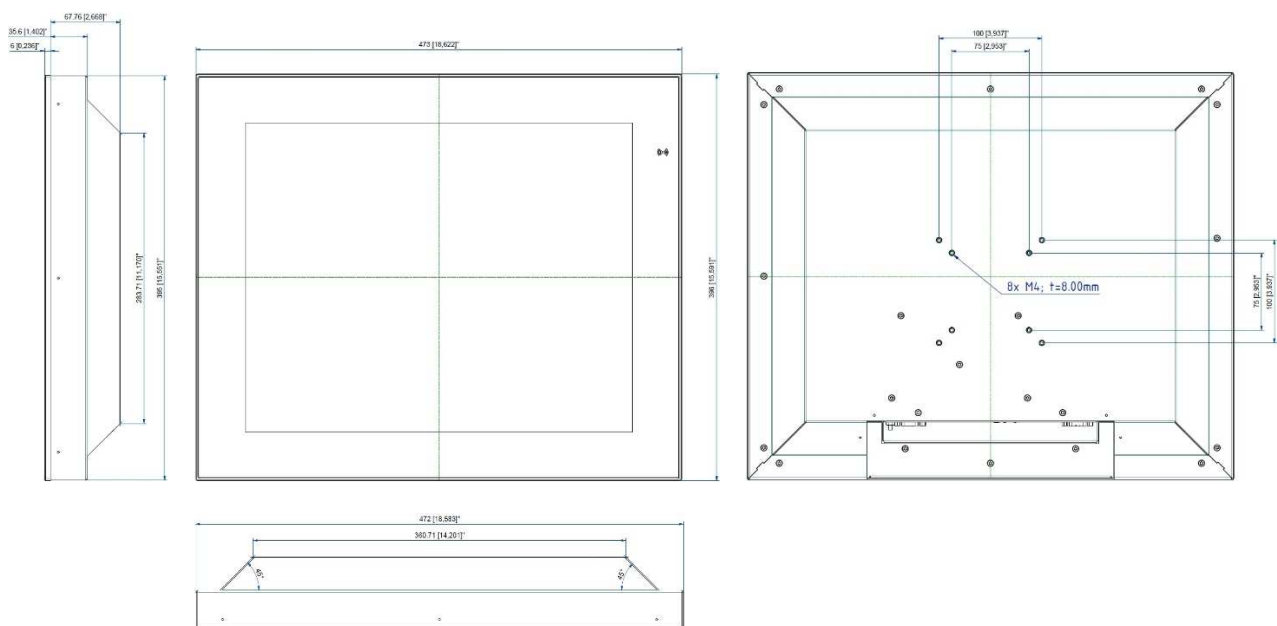


fig. 18: Dimension drawing 19,0" full metal

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8.1.15 21.5" built-in-variant

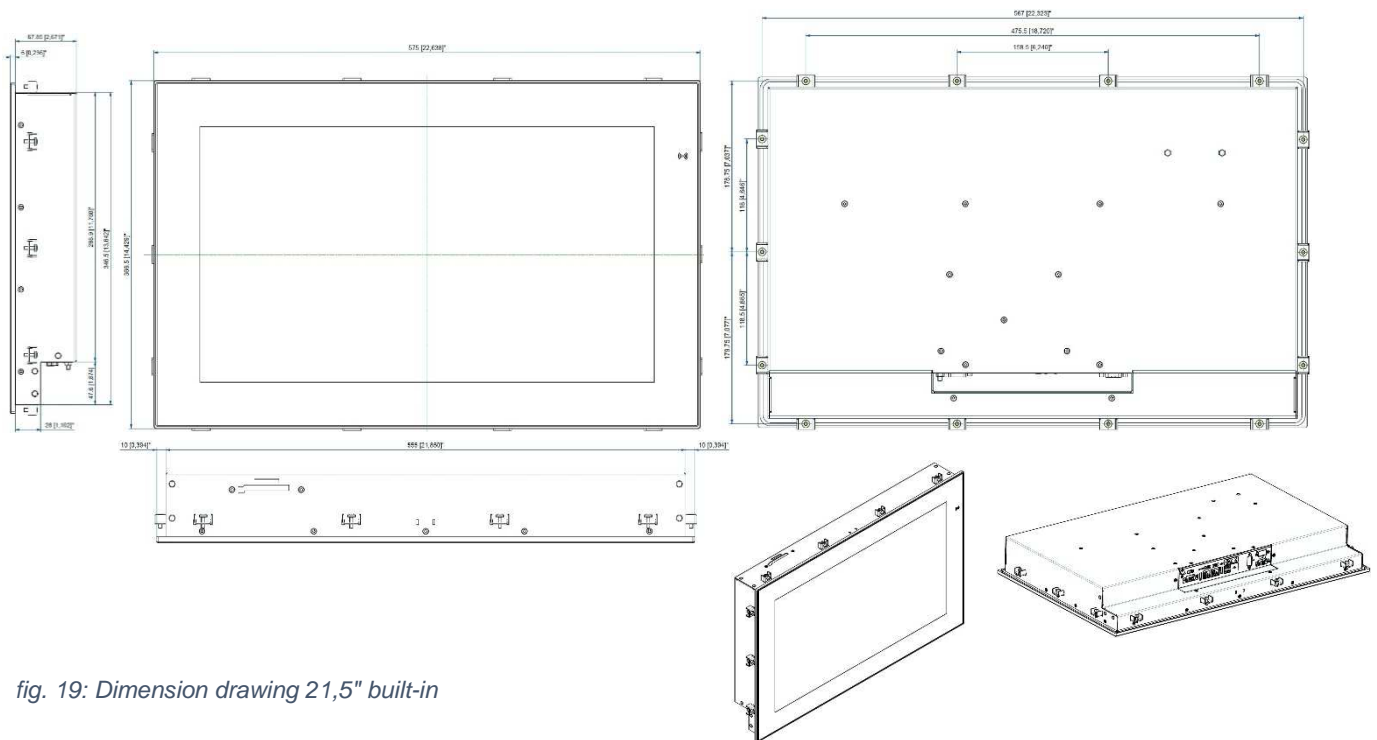


fig. 19: Dimension drawing 21,5" built-in

8.1.16 21.5" full metal

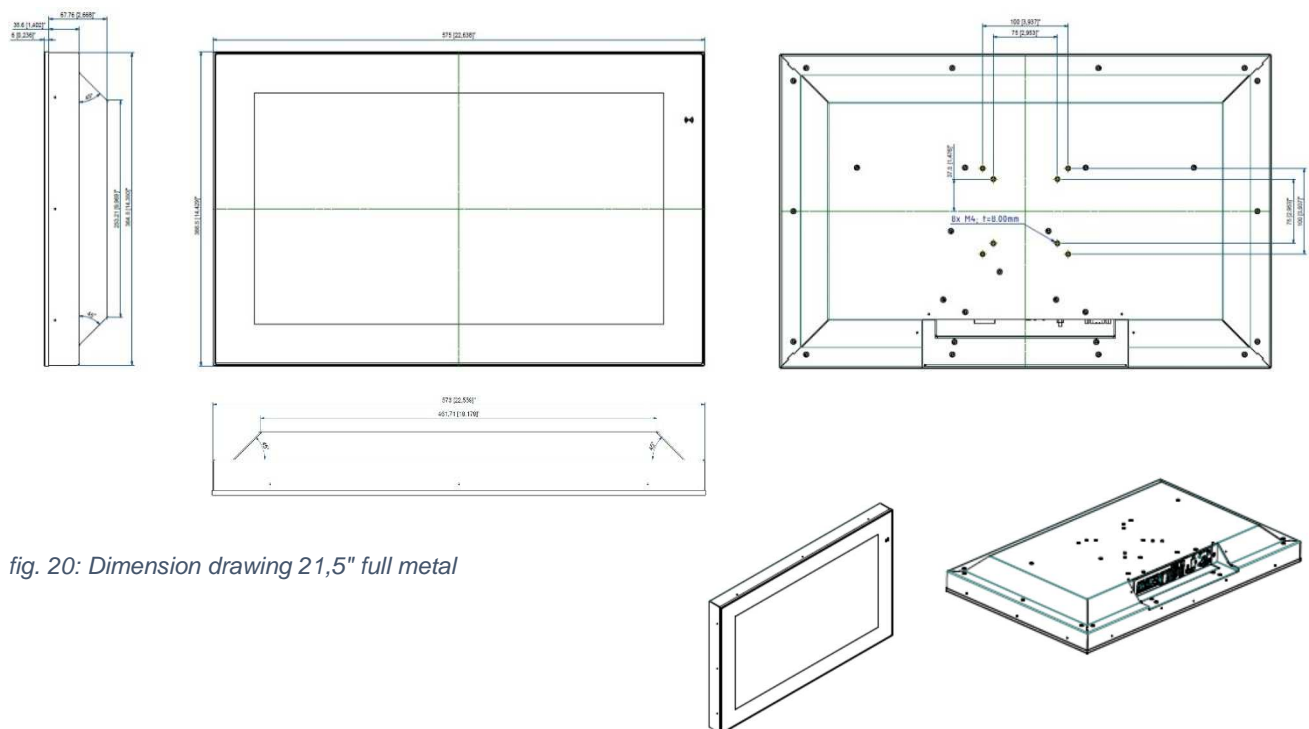


fig. 20: Dimension drawing 21,5" full metal

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8.1.17 23.8“ built-in-variant

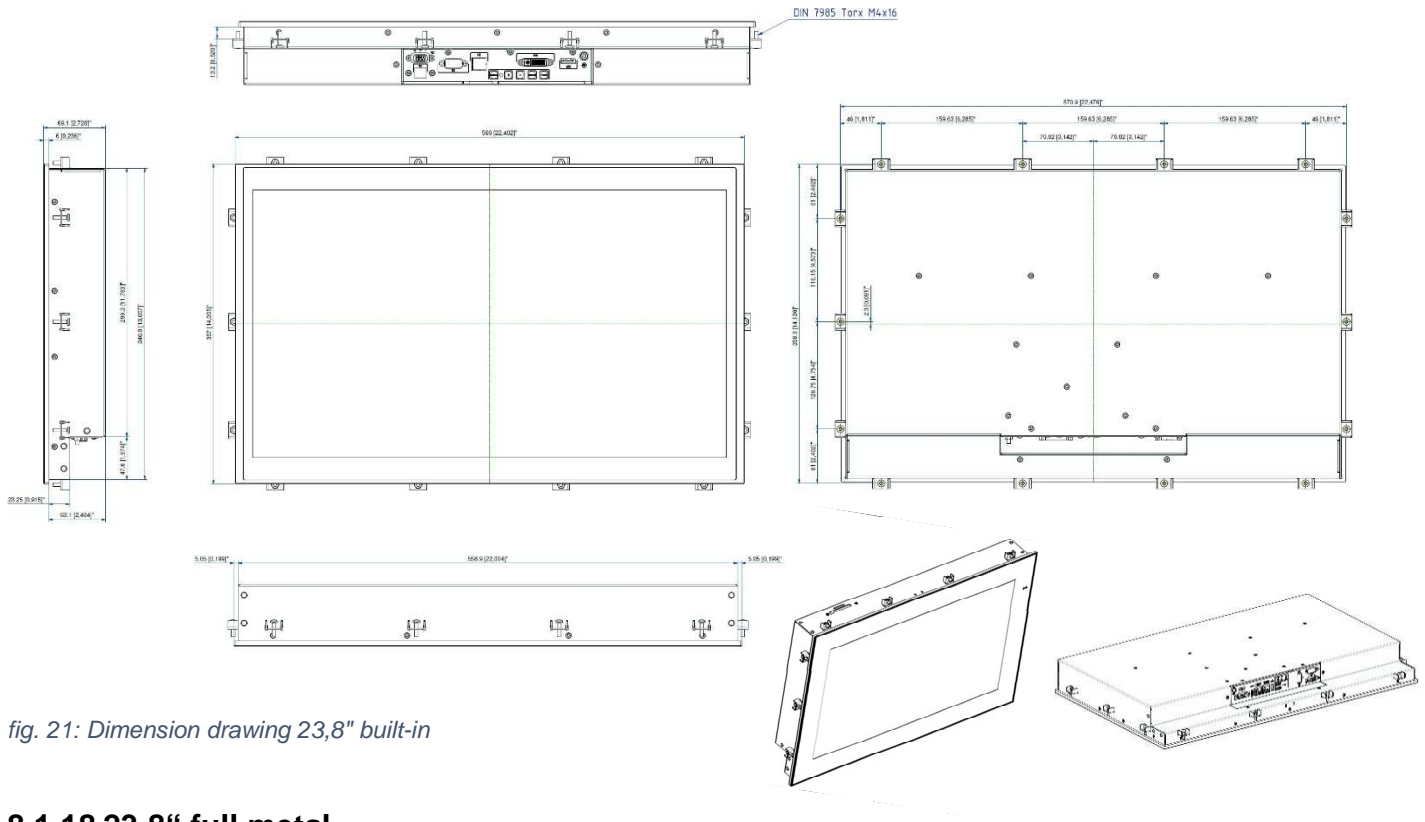


fig. 21: Dimension drawing 23,8" built-in

8.1.18 23.8“ full metal

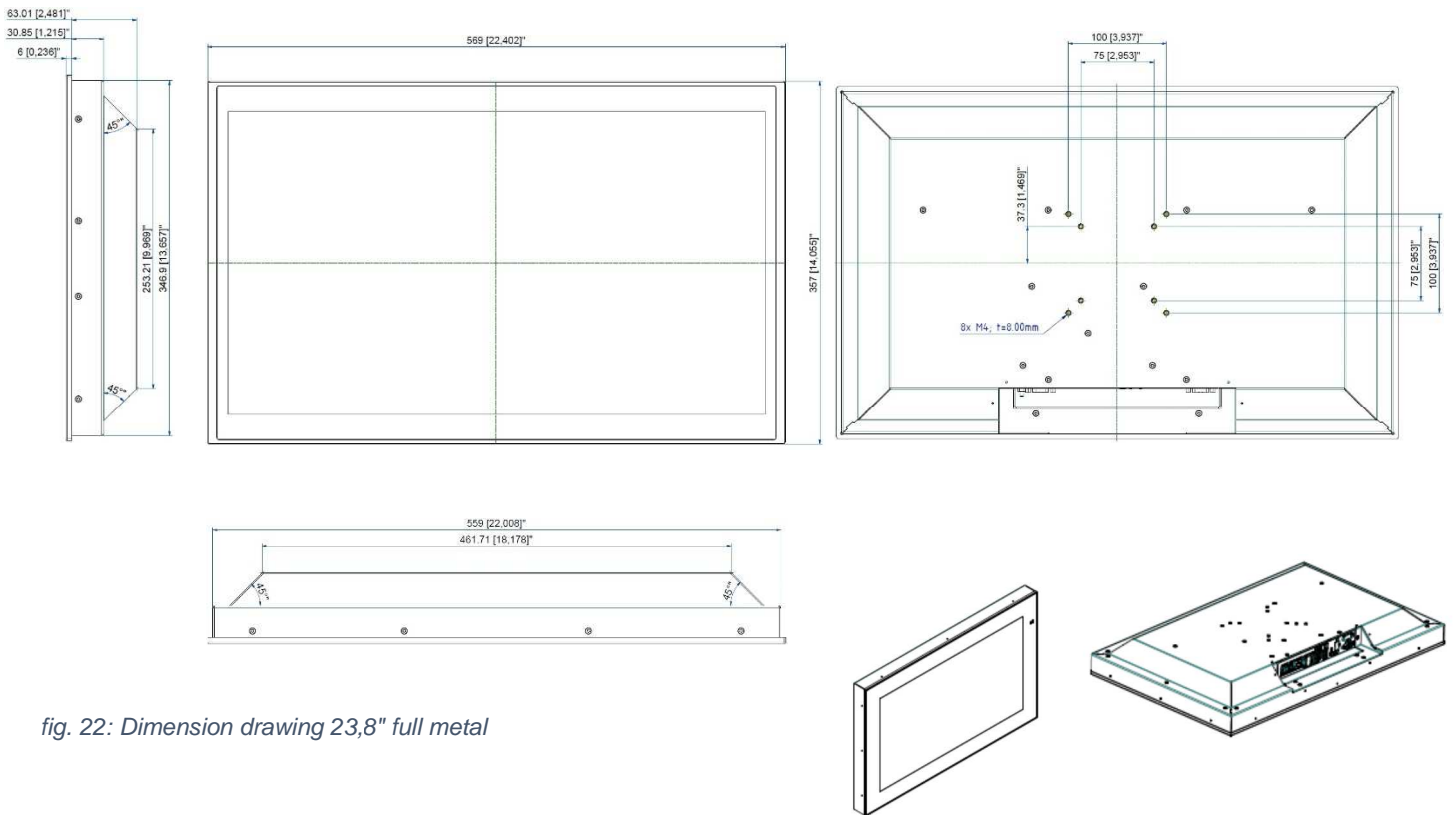


fig. 22: Dimension drawing 23,8" full metal

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9 Connectors



fig. 23: Peripherie Panel back view

9.1 PWR: Input Power Connector

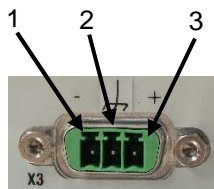


fig. 24: Power connector

Pin	Signal
1	GND
2	Shield
3	VCC (24VDC only!)

Mating connector
Phoenix Contact PSC 1,5/ 3-F Order# 1841909



See also General Safety Instructions chapter 3 (page 5).

9.2 OSD Keypad



fig. 25: OSD Keypad

With the self explaining OSD (On Screen Display) you can modify the settings and control the special features of the CRTtoLCD-Controller. The OSD uses a number of menus for making changes and turning the special features on or off. The configuration can be done via the OSD-keypad

9.2.1 Power Button



fig. 26: Power button

Press this button to turn on or off the device.

9.2.2 LED Power indicator

LED	function
off	No Power
green	active
green	Standby

9.2.3 Up Button



Down Button



fig. 27: Button „Up“ and „Down“

To select an tab, simply use the button "UP" or "DOWN" to move the cursor to the tab you want

9.2.4 Select Button



fig. 28: Button "Select"

If you have chosen the tab you want press the button "select".

9.2.5 Menu Button



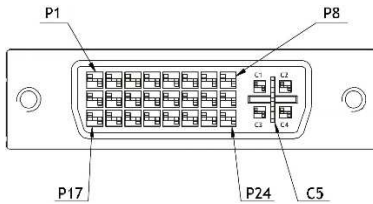
fig. 29: Button "Menu"

Press the button "Menu" to open the OSD menu.

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9.3 DVI connector

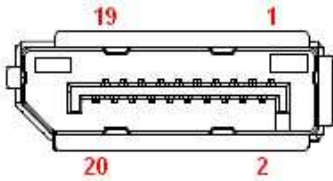
(front view):



Pin	Signal	Pin	Signal	Pin	Signal
1	Rx2-	9	Rx1-	17	Rx0-
2	Rx2+	10	Rx1+	18	Rx0+
3	GND	11	GND	19	GND
4	n.c.	12	n.c.	20	n.c.
5	n.c.	13	n.c.	21	n.c.
6	SCL	14	+5V	22	GND
7	SDA	15	GND	23	RxC+
8	n.c.	16	HP	24	RxC-
C1	RED	C3	BLUE	C5	GND
C2	GREEN	C4	HSYNC	C5-	GND

fig. 30: DVI connector

9.4 Display Port connector

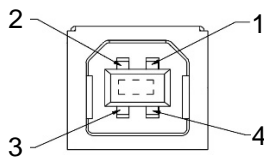


Pin	Signal	Pin	Signal
1	TX0+	11	GND
2	GND	12	TX3-
3	TX0-	13	GND
4	TX1+	14	GND
5	GND	15	AUX+
6	TX1-	16	GND
7	TX2+	17	AUX-
8	GND	18	HPD
9	TX2-	19	GND
10	TX3+	20	PWR

fig. 31: Display Port connector

9.5 USB client connector (Type B)

(front view):



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

fig. 32: USB Type-B connector

Internal connected to the touch controller.
Connect this port to your PC with USB cable part# 840-0273.

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10 Technical Support

For technical support, please contact our Technical Support department:

e-mail: support@snt-embedded.de

Phone: +49 (0)89 37 00 58 - 0

Make sure you have the following information on hand when you call:

- the unit part id number (PN)
- the serial number (SN) of the unit;
(the serial number can be found on the type label, placed on the rear side of the system)

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

10.1 Warranty

There is a protection label on your Flatman Monitor.

If you open the device, the warranty is lost!

10.2 Returning Defective Merchandise

Please follow these steps before you return any merchandise to S&T Embedded GmbH:

1. See information on our website:
<http://www.snt-embedded.de/support/88436.de.php>

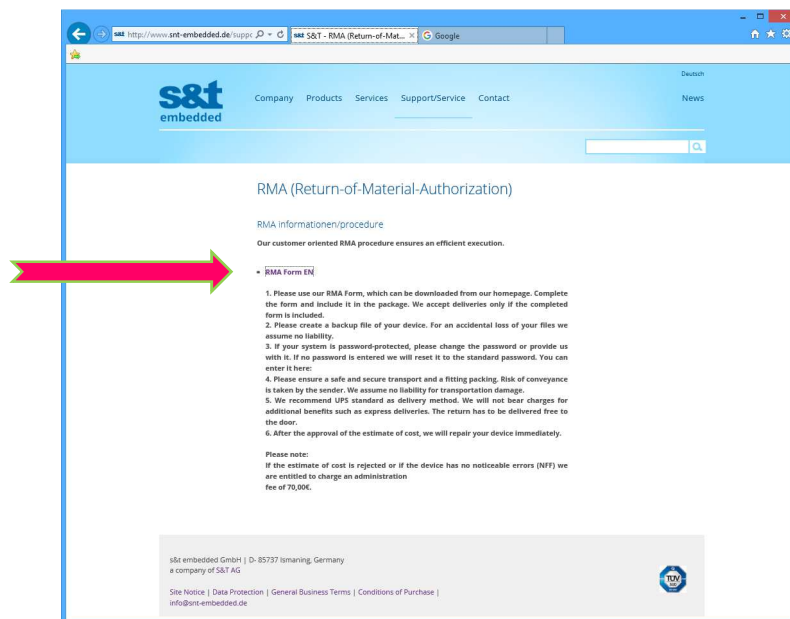


fig. 33: S&T Web page RMA

2. Download the RMA corresponding form and fill it out, describe the fault that has occurred.

FLATMAN Monitor – User Manual

s&t
embedded

Service / RMA Form

Return to: s&t embedded GmbH - RMA Service Gutenbergstraße 2 DE - 85737 Ismaning		Please complete this document, sign it and enclose it with the returning package. Please deliver the product free to the door and if possible in the original packaging. Contact: Phone: +49 (0) 89 37 00 58 0 Fax: +49 (0) 89 37 00 06 89	
Company		Department	
Street		Reference person	
Zip code, Place		Email	
Country		Unit type / article #	
Phone number		Serial number	
Fax		Warranty	Yes <input type="checkbox"/> No <input type="checkbox"/>
Failure description:			
Failure pattern: <input type="checkbox"/> always <input type="checkbox"/> sporadic <input type="checkbox"/> after <input type="checkbox"/> min <input type="checkbox"/> at <input type="checkbox"/> *C <input type="checkbox"/> in application			
Date		Signature	
You will receive your RMA number with the receipt confirmation.			
Repair processing			
<ol style="list-style-type: none"> Please use our RMA Form, which can be downloaded from our homepage. Complete the form and include it in the package. We accept deliveries only if the completed form is included. Please create a backup file of your device. For a loss of your files we assume no liability. If your system is password-protected, please provide us with the password. If no password is entered we will reset it to the standard password. You can enter it here: <input type="text"/> Please ensure a safe and secure transport and a fitting packing. Risk of conveyance is taken by the sender. We assume no liability for transportation damage. We recommend UPS standard as delivery method. We will not bear charges for additional benefits such as express deliveries. The return has to be delivered free to the door. Within one week you will receive a confirmation of receipt. If you don't get any news from us, please verify the delivery. In case of chargeable repairs you will receive a quote for the repair. After its approval, we will repair your device. 			
Please note: If the estimate of cost is rejected or if the device has no noticeable errors (NFF) we are entitled to charge an administration fee of 70.00€.			
This will be filled out by s&t			
Mitgeliefertes Zubehör		Originalverpackung	<input type="checkbox"/> Ja <input type="checkbox"/> Nein
<input type="checkbox"/> Netzteil	<input type="checkbox"/> RS232 Kabel	Gerätezustand	<input type="checkbox"/> Neuwertig <input type="checkbox"/> Benutzt
<input type="checkbox"/> Netzkabel	<input type="checkbox"/> CD	Garantiesiegel	<input type="checkbox"/> Stark benutzt
<input type="checkbox"/> VGA Kabel	<input type="checkbox"/> Handbuch	Transportschaden	<input type="checkbox"/> OK <input type="checkbox"/> Fehlt
<input type="checkbox"/> DVI Kabel			<input type="checkbox"/> Beschädigt
<input type="checkbox"/> FBAS Kabel			<input type="checkbox"/> Ja <input type="checkbox"/> Nein
RMA-Nummer: _____			

10.03.2016 Our general terms of business apply. You can find them here: <http://www.snt-embedded.de/>

fig. 34: S&T form RMA

- When returning a device:
 - Pack it securely in its original box.
 - Enclose RMA form with the consignment.
- Sent the device to the following address:

s&t embedded GmbH
RMA support
Gutenbergstr. 2
D- 85737 Ismaning

(If you send more than one device in a package fill out a form for each device!)

- After receiving your device at s&t you will get a confirmation of the order via email to the address which is above-named on the form. This order number is your RMA number.

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