TOPCON

OPUS B4 ECO
Operating Manual
Hardware Description

Versions

Example

OPUSB4EN1CANB000

OPUSB4	model
E	E=ECO; S= Standard
N	N= Neutral
1	1. Generation
CAN	CAN=Projektor/C++
	CDS=CODESYS
	ISO=ISO-UT
	UTS=Horizon ISOBUS
	CWV=CODESYS Web Visu
B	B=Basic, F= Full; A=Automotive Ethernet
000	customer specific identification

All product names cited in this operating manual are trademarks or registered trademarks of the respective companies.

Operating Manual OPUS B4 ECO
Order number: OPUSBA00B4

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Supplements or a special operator manual may be required for customer-specific devices.

Version 3, February 2024

Table of contents

1   Preliminary Notes

This document is valid for the following OPUS B4 ECO version:
- OPUSB4E - "ECO"

This document is directed to the qualified personnel and contains all the important information to the correct use of the OPUS B4.

Please read this document before the first use and keep it during the operation.

To provide a better overview, this operating manual cannot present all details for handling the OPUS B4 in all conceivable application cases. Neither can all conceivable methods of setting up the device, operating the device, and servicing the device be discussed in this manual. In case more information or support is required please contact manufacturer technical support department.

1.1 Used Instruction Types

This operating manual contains instructions that must be complied with for your personal safety and to avoid damage to property.

The instructions are presented as follows listed by degree of hazard:

⚠	**Hazard!** **Very Important information** **Malfunction or Failure possible if non-compliance**
⚠	**Caution!** **Severe bodily injury or property damage can occur if the respective precautionary measures are not taken**
	Note **Additional information about the product, the handling of the product or the respective part of the operating manual to which particular attention should be paid.**

2 Safety instructions, guarantee and liability

2.1 Common

Read this operating manual before commissioning the OPUS B4. Keep this operating manual where it is accessible to all users at any time. Every person who is assigned to commission or operate the OPUS B4 must have read and understood the operating manual and the safety instructions in particular!

This operating manual contains instructions that must be complied with for your personal safety and to avoid damage to property. Failure to follow these safety instructions could result in fire, electric shock, or other injury or damage to OPUS B4 or other property.

2.2 Qualified Personnel

This operating manual is intended for technically qualified personnel, who have the appropriate skills in the area of measurement, control, and regulating technology.

Precise knowledge of all safety instructions and warnings contained in this operating manual, as well as problem-free technical implementation of these instructions and warnings are the prerequisites for hazard-free installation, commissioning, safe operation, and maintenance, of the operator panel. Consequently, it is strictly required that all measures be performed by qualified personnel.

Qualified personnel, in accordance with the safety and warning instructions contained in this operating manual are personnel, who

- are familiar with CANbus systems, related protocols and network designs that fulfill all legal requirements of the intended application, so that they are able to program the OPUS operator panel accordingly
- have gained knowledge of the programming related concepts by education or trainings. Using the Projektor Tool and Projektor Tool training by Topcon needs to be attended. Using CODESYS and CODESYS training needs to be attended, either held by Topcon or 3S.
- are familiar with the safety concepts of automation technology, either as project design personnel
- or operating personnel who have been instructed in how to handle the automation technology, and who are familiar with the section of this manual which deals with operation.
- or who, as commissioning, and service personnel have been trained to repair this type of automation technology, or who are authorized to commission, ground, and label electrical circuits and devices, or systems, in accordance with technical safety standards.

All persons who are involved in project planning, installation and operating the OPUS B4 must be familiar with automation technology safety concepts, and they must be qualified in accordance with the guidelines listed above.

Serious bodily injury and property damage can occur in the event of unqualified interventions in the device, or the system, or failure to heed the warning instructions specified in this operating manual.

Consequently, only personnel who are appropriately qualified may undertake interventions on this device, or on the associated system.

2.3 Power Supply

OPUS B4 is designed for 12 V and for 24 Volt battery systems. The operating voltage range is 8-36 VDC, overvoltage resistance 48V for 5 minutes, inverse-polarity protection up to -48 VDC for 5 minutes.

2.4 Interventions in the device

The OPUS B4 has been developed, manufactured, and tested in compliance with applicable standards. When the handling guidelines and safety-related instructions described here are complied with for project design, mounting, intended use, and maintenance, normally the product poses no hazards relative to property damage or to personal health. Nevertheless, the device can cause residual hazards if it is used or operated improperly by personnel who have not been trained.

In case of malfunctions or lacks please get in contact with the manufacturer. Any interventions in the device can cause serious interferences of the security for people and machines. They are not allowed and lead to disclaimer of liability and guarantee exclusion.

⚠	**TOPCON is not liable for damage that occurs due to improper misuse of the delivered components, or through failure to heed the instructions in the operating manual, including the safety instructions.**
⚠	**TOPCON is not liable for damage that occurs due to unintended or intended changes of the TOPCON board support package or any other parts of the operating system.**
⚠	**TOPCON is not liable for damage that occurs due to improper programming and/or testing of the created application that runs on the OPUS operator panels.**

⚠	**TOPCON is not liable for damage or malfunctions occurs using pirated or illegal software on the OPUS operator panel.**

> ⚠ **TOPCON is not liable for injuries to third party licenses for the contents used on OPUS panel by the end customer.**

Moreover, we expressly declare that all obligations on the part of Topcon are exclusively derived from the respective purchase contract, in which the guarantee is conclusively stipulated.

2.5 Safety Instructions for the OPUS B4

Dangerous high voltage
Never attempt to repair or modify OPUS B4 yourself. Disassembling OPUS B4 may cause damage that is not covered under the warranty and cause hazardous conditions by the high-voltage components inside of the unit.
OPUS B4 does not contain any user-serviceable parts. Service should only be provided by a Topcon Electronics GmbH.

Hazardous situations due to device failure
Do not use the OPUS B4 as the sole means of preventing hazardous conditions on vehicles, machines and equipment. Vehicles, machines and equipment must be constructed in such a manner that defective conditions associated with the OPUS B4 cannot cause a hazardous situation for operating personnel.
Ensure that incorrect inputs via the OPUS B4, its malfunction, or its failure cannot lead to major property damage, or to a hazard for operating personnel.

Missing safety devices if used improperly
Precautions for the safety of a system should not be rendered inoperable through the use of the OPUS B4.
Emergency-Stop devices must remain effective in all operating modes.

Unintentional operation
Operating states can be called due to unintentional operation of the OPUS B4 that are not appropriate for the situation.
OPUS B4 devices should be installed in such a manner that the possibility of unintentional operation is adequately excluded.

Undefined operating states
Undefined operating states can cause personal injury or property damage.
To prevent supply line and signal line interruptions from causing undefined or hazardous operating conditions, appropriate hardware and software safety precautions must be maintained.

Supply lines and signal lines must be installed in such a manner that noise (such as inductive or capacitive interference) cannot impair OPUS B4 function.

If a further usage of the OPUS B4 will cause danger, the device and if necessary the system needs to be switched off and be secured against unintented activation. This particularly applies:

- **If the device shows visible signs of damage**
- **If the device is no longer functional**
- **If parts of the device are disconnected or loose**
- **if the connection lines show visible damage**

Using Connectors and Ports:
Never force a connector into a port. Check for mechanical obstructions on the port. If the connector and port don't join with reasonable ease, they probably do not match. Make sure that the connector matches the port and that you have positioned the connector correctly in relation to the port.

3   Intended Use

The operator panel OPUS B4 is a programmable graphical display used to operate and monitor vehicles and working machines.

The communication with other system components, as for example decentralised I/O module, occurs over the CAN interfaces with the supported protocols: CANopen, J1939 and CANFreestyle (layer II).

For service purposes additional interfaces like RS232 and USB are available. Together with Embedded Linux operating system they form a universal platform for the communication with other CAN devices, networks or PCs.

⚠	**The operator panel OPUS B4 is not admitted for security-relevant duties for personal protection purposes.**
⚠	**Vehicles, machines, and equipment surrounding the OPUS B4 must be combined in such a manner that the OPUS B4 will be warmed up equally from all sides.** **Increased warming of the OPUS from the back side may cause temporary fogging of the front glass or touch screen.**

3.1 Example of Use
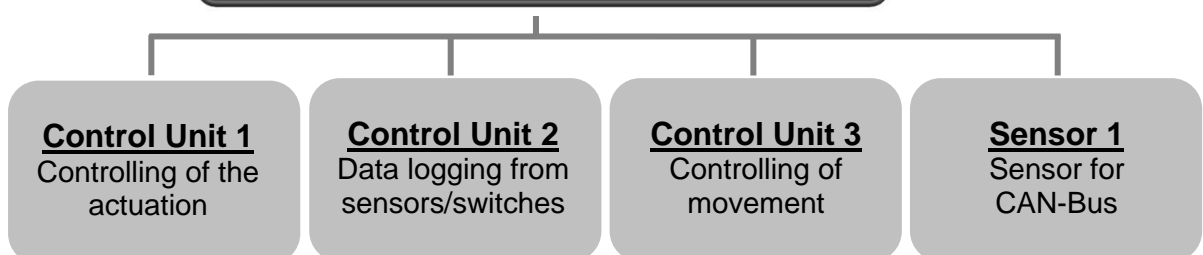
3.2 Device Description

3.2.1   OPUS B4 ECO

Light Sensor

Multicolor LED

Display

Fig. 3.1: Schematic diagram of the OPUS B4

Display:
7" (800 x 480 px) TFT color graphic LCD display (optional) with capacitive touch.

Light Sensor:
The light sensor can be used for an automatic adaption of display-backlight to the ambient light intensity.

Multicolor Status LED:
There is one multicolor status LED available.

Service interface
(for service only)

Main connector

Ethernet interface (for full
and automotive Ethernet
version only)

Power button

USB slot

Video interface (for full
and automotive
Ethernet version only)

Extension USB interface
(for full and automotive
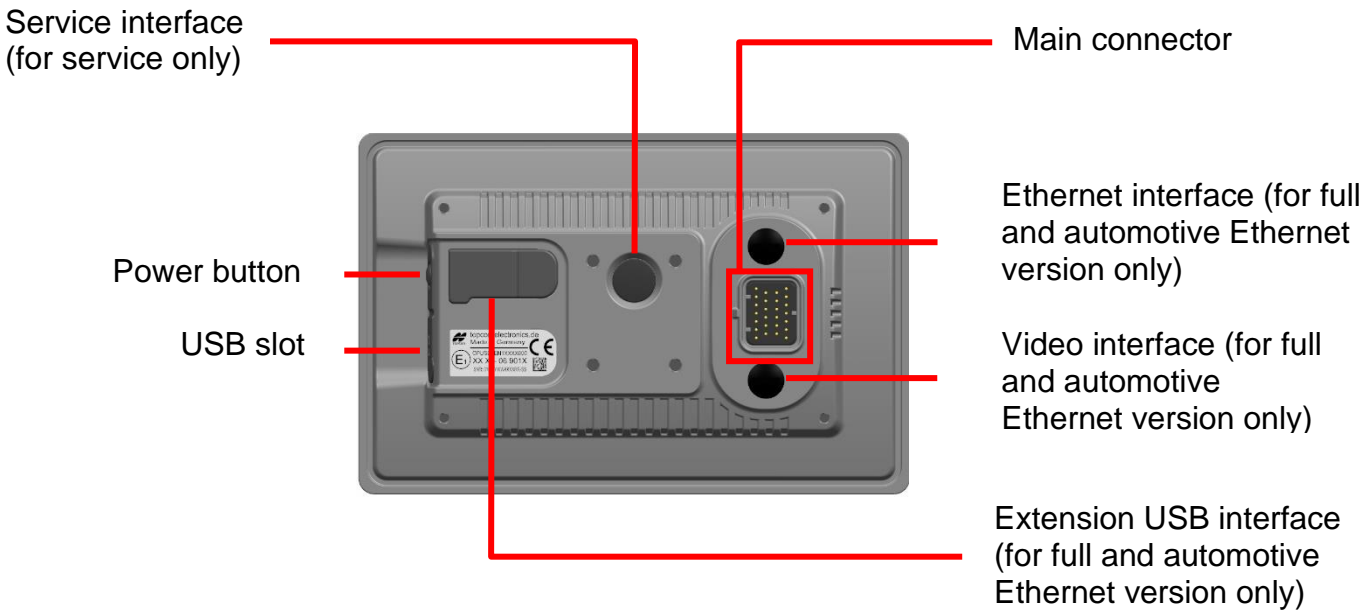Ethernet version only)

Fig. 3.4: Schematic diagram of OPUS B4 backside

Service interface:
On OPUS B4 there is a service interface available. This interface serves Topcon internal service use only.

Please do not remove the protection cap of service interface!

OPUS B4 may only be used with factory closed protection cap otherwise Topcon Electronics GmbH is no liable for any damage or misfunction.

Power button:
The OPUS B4 have a separate power button. This button may be programmable within the application running on OPUS B4 (see Projektor Tool Online Help, CODESYS Helpfile). Per default the display will be switched on press and switch off on long press (> 4 seconds).

Power-on/off behavior:
OPUS B4 can be switch on/off by the power supply directly.

As soon as the device is supplied with the necessary voltage via terminal 30 (battery plus), terminal 31 (battery GND) and terminal 15 (ignition), it will start to boot. In order to decrease boot time, the device supports power modes with which you can put the device in a sleep mode before it powers down.

When ignition voltage is removed, the device will switch to low-power-mode (see *C/C++ Developer Guide*). After a time, frame that can be configured (default time is 60 sec) the device will move one more step down to sleep-mode. After another 60 seconds (default time) the unit will fully switch off. As soon as terminal 15 is switched on again the unit will go back to on-mode in full operation.

Power Mode	current at 12 V DC	current at 27 V
On	≤ 1200 mA	≤ 600 mA
Low-power	Depending on configuration	Depending on configuration
Sleep	≤ 110 mA	≤ 60 mA
Off	≤ 5 mA	≤ 4 mA

> ⚠ **Do not unplug clamp 30 from power supply on running unit. Power supply interruption on clamp 30 may cause data corruption and loss.**

For more information, please refer to the *C/C++ Developer Guide*.

Extension USB interface (optional):
The OPUS B4 ECO offers extension interface in Full and Automotive Ethernet option only.

On OPUS B4 ECO Basic the option interface is sticked with protection rubber cover.

Please do not remove the protection rubber cover of extension interface!

OPUS B4 may only be used with factory closed protection rubber cover. Otherwise, Topcon Electronics GmbH is no liable for any damage or misfunction.

USB slot:
OPUS B4 offers USB slot on side to be used for software update and data transfer.

Main connector:
The following interfaces are available:
- Power supply and ignition input
- 2 x CAN-Interfaces according to ISO/DIS 11898
- RS232-Interface
- Wake Input (on Full and Automotive Ethernet option only)
- Stereo Audio line out (on Full and Automotive Ethernet option only)

3.3 Features Overview for OPUS B4

- Encapsulated aluminium housing to be mounted in landscape or portrait mode, standalone or in dash
- 7" TFT color display for automotive with resolution 800 x 480 pixels
- Capacitive touch screen
- Powerful Freescale I.MX6® Solo/Dual 800Mhz CPU
- 32bit processor with embedded Linux operating system (Linux kernel 4.14.0)
- Two CAN interface (ISO 11898) using CANopen® and SAE J1939 protocols. Layer II is supported
- Speaker
- RS232 interface for serial console
- High speed USB on the side
- Wake Input (on Full and Automotive Ethernet option only)
- Stereo Audio line out (on Full and Automotive Ethernet option only)
- Industrial Ethernet / Automotive Ethernet
- Analog Video Input
- Power button

The OPUS B4 is particularly characterized by its robust construction, and it has been developed especially for harsh use conditions in mobile work machines.

3.4 Application Development

There are three possible ways to program the OPUS B4 and make it an integrated part of its application.

1. OPUS Projektor:
This powerful development environment provided by Topcon Electronics GmbH enables the quick and effective creation of an application for the OPUS B4 operator terminal. Use the Projektor to conveniently design the user interface on the computer, which can be easily displayed on the device. Additionally, this tool includes features to work with CANopen®, J1939 and CANFreestyle protocols for CAN communication.
For further information please refer to the *OPUS Projektor Online Manual.*
With **ISO** devices, the OPUS B4 can be used as an ISO-VT slave in accordance with the ISO-11783 standard and DLG conformity. The necessary configuration is also done in the OPUS Projektor.
With **UTS/UTM/UTL** devices, the OPUS B4 can be used as an ISO-VT slave in accordance with the ISO-11783 standard and DLG conformity. The device is equipped with a Horizon application. Additionally, a PClient is running and custom pages can be added with the OPUS Projektor. The device is always sold as a UTS device. Upgrades to UTM (Task Controller) and UTL (Task Controller & Section Control) can be purchased.

2. CODESYS 3.x:
CODESYS is a programming tool and system developed by the German company 3S according to IEC 61131-3 standard. It supports different means of programming such as FUB or Structured Text. It can be used to program the OPUS B4 and CODESYS

compatible ECUs. CODESYS includes the functionality to configure the CANopen®, J1939 and CAN Layer 2protocol for communication over CAN bus.

For further information please refer to the **Codesys Help File.**

3. C-Programming:

OPUS B4 with its embedded Linux operating system can be fully programmed using C or C++ as programming language.

For further information and function-call list please refer to the **C/C++ Developer Guide.**

> ⚠ **The operator panel OPUS B4 generation may only be handled due to the according operation manual.**

Please take notice of the following recommendation and prerequisites for the computer used to the application design and /or programming:
- Using Projektor Tool and CODESYS for the development it is recommended to use the PC with Windows 10 or 11 operational, at least 5 GB free hard disk capacity and 8 GB RAM.
- Programming with C/C++ Linux operational system is prerequisite.

3.5 Development Kit

For programming the graphical user interface of the OPUS B4 some different development kits are provided.

Topcon Toolchain with Projektor Tool
Order number: OPEP00B4CAN

Description	Order Number	Qty
Main connecting cable	OPKAB3CAN15	1
Ethernet cable		1
WE Toolchain download: - **Projektor Tool** - **PClient** - **Documentation**		1
Basic Projektor-Tool training at a Topcon facility		1
Projektor Tool license		2
12 month technical support		1

CODESYS 3.x
Order number: OPEP00B4CDS

Description	Order Number	Qty
Main connecting cable	OPKAB3CAN15	1
Ethernet cable		1

CODESYS software download:
  - **Development Tool**
  - **Application**
  - **Target files**
  - **Documentation**
		1

Basic CODESYS training at a Topcon facility		1
12 month technical support		1

ISO-UT with OPUS Projektor
Order number: OPEP00B4ISO

Description	Order Number	Qty
Main connecting cable	OPKAB3CAN15	1
Ethernet cable		1

ISO-VT software download:
  - **Projektor Tool**
  - **PClient**
  - **ISO-VT**
  - **Documentation**
		1

Basic Projektor-Tool training at a Topcon facility		1
Projektor Tool license		2
12 month technical support		1

Accessories not part of the Developer's kit:

Description	Order Number	Qty
Video Cable OPUS B4	OPKAA3VID010	1
Ethernet-to-USB adapter		1

4 Getting Started

4.1 Check the delivered parts

Please check whether all parts described in the scope of delivery have been delivered correctly. For question or reclamation please contact the support team of Topcon Electronics GmbH (opus-support@topcon.com).

4.2 Mounting

The unit is delivered without mounting accessories.

Depending on mounting type the following mounting accessories are available.

Standalone mounting connector cover
(Order number OPUSB4EZBSA000)

Material	PC+ABS
Dimensions	82x52x63 mm
Operating Temperature	-30 …+75 °C
Storage Temperature	-40 …+85 °C
Max mounting torque	1,8 ± 0,2 Nm
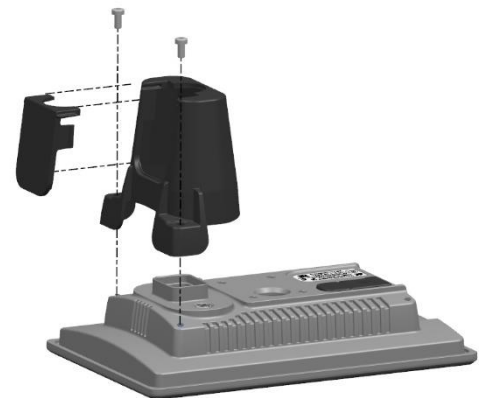
In dash mounting cover OPUS B4 ECO
(Order number OPUSB4EZBER000)

Material	PC+ABS
Dimensions	231x160x46 mm
Operating Temperature	-30 …+75 °C
Storage Temperature	-40 …+85 °C
Max mounting torque	2,0 ± 0,2 Nm
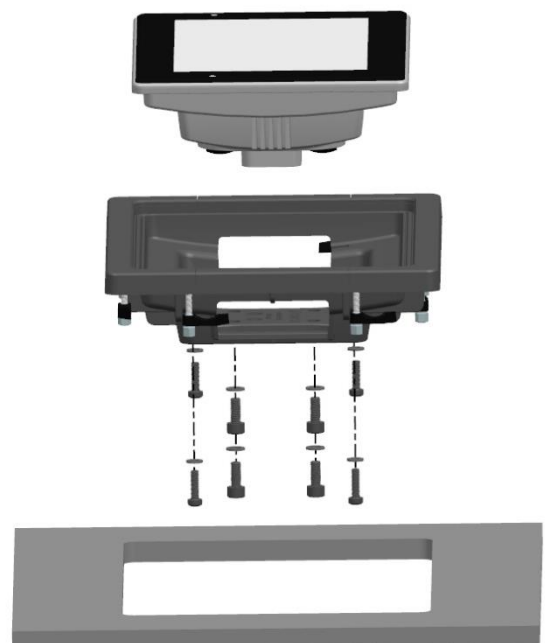
The back side of the unit is ready prepared for both in dash and standalone mounting.

Both portrait and landscape positions are supported for mounting.

For mounting, please follow the instruction provided in the following dimensional drawing.

Following optional accessories are available for OPUS B4 display.

Removable screen protection foil OPUS B4 ECO
(Order number OPUSB4EZBSF000)

Material	PET
Dimensions	193 x 123,3 mm
PET Thickness	100 µm
Pencil hardness	2H-3H
Haze	<1,0%
Silicon PSA	25 µm
Operating Temperature	-30 …+75 °C
Storage Temperature	-40 …+85 °C
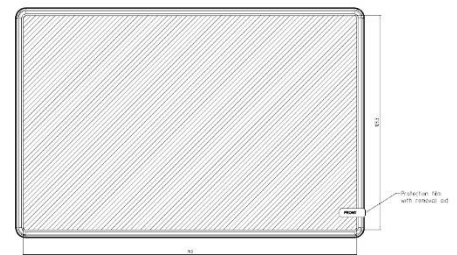
Removable silicone cover OPUS B4 ECO

Silicon cover is available in 3 different colours:
    blue: order number OPUSB4EZBSH**BL**000
    yellow: order number OPUSB4EZBSH**GE**000
    black: order number OPUSB4EZBSH**SW**000

Material	Silicone
Dimensions	206,2 x 136,7 mm
Thickness	11 mm
Operating Temperature	-30 …+75 °C
Storage Temperature	-40 …+85 °C
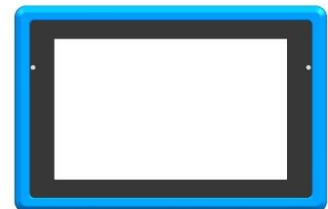
4.2.1 Standalone Mounting Instruction for OPUS B4

1. Thread connector cables through housing
2. Plug in main connector cable
3. Clip side cover plate into housing
4. Screw connector cover to device
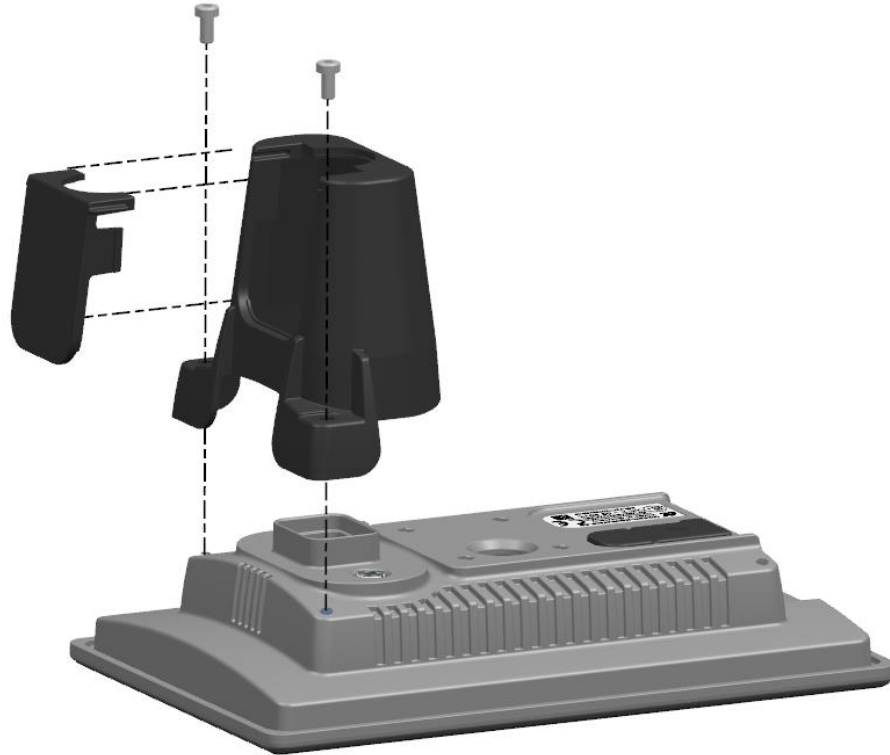
Parts List			
Pos.	Description	Order number	Supplier
1	OPUS B4 ECO	OPUSB4XX1XXX	Topcon Electronics
2	Dashboard	-	Customer
3	Connector Cover	OPUSB4EZBSA000	Topcon Electronics
4	M4 Screw* (DIN EN ISO 4762)	-	Customer

*Assignment of the screw length depends on dashboard thickness (thickness/length):
1mm – 3mm   /   M5 x 20
4mm – 6mm   /   M5 x 24
7mm – 10mm /   M5 x 28

	Attention! **Using too long screws can damage the unit!** **Accepted mounting torque with mounting cover is 1,8 Nm** **Please secure the screws with the thread locker medium strength (e.g. Loctite 243).**

4.2.2 Dashboard Mounting Instruction for OPUS B4
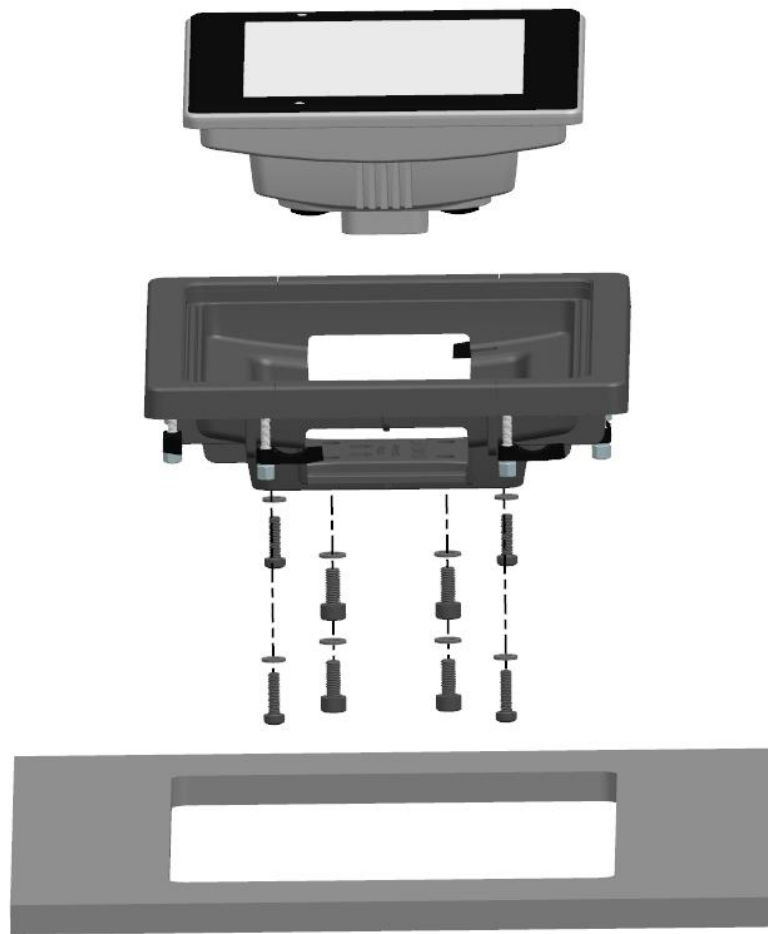
Parts List			
Pos.	Description	Order number	Supplier
1	OPUS B4	OPUSB4XX2XXX	Topcon Electronics
2	Dashboard	-	Customer
4	Mounting Cover	OPUSB4EZBER000	Topcon Electronics
5	M4 Screw* (DIN EN ISO 4762)	-	Customer

*Assignment of the screw length depends on dashboard thickness (thickness/length):
1mm – 3mm   /   M5 x 20
4mm – 6mm   /   M5 x 24
7mm – 10mm /   M5 x 28

> **Attention!**
> **Using too long screws can damage the unit!**
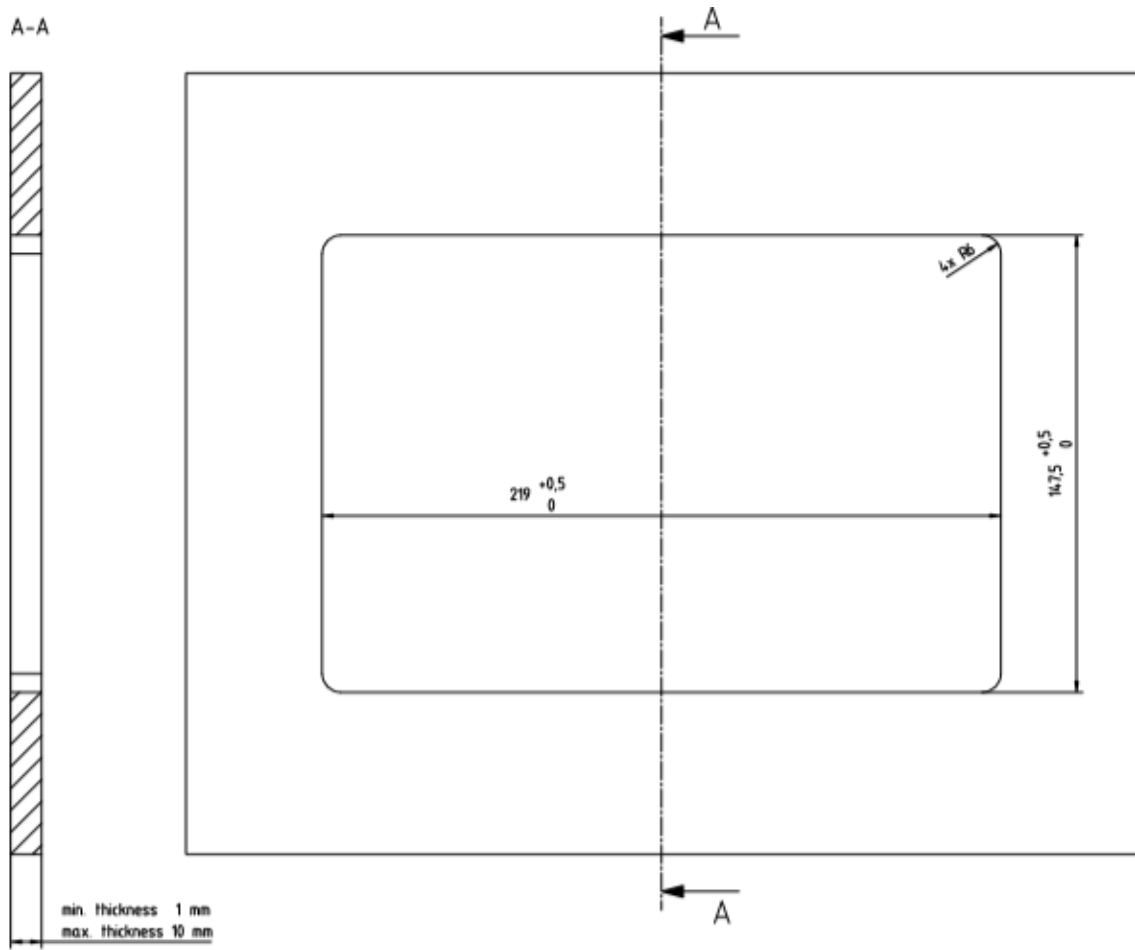> **Accepted mounting torque with mounting cover is 1,8 Nm**
> **Please secure the screws with the thread locker medium**
> **strength (e.g. Loctite 243).**

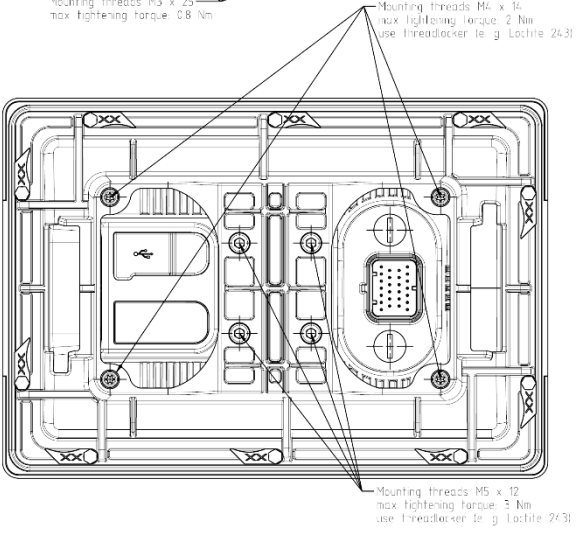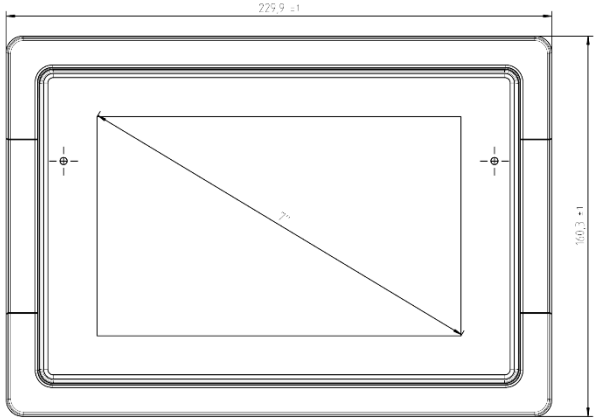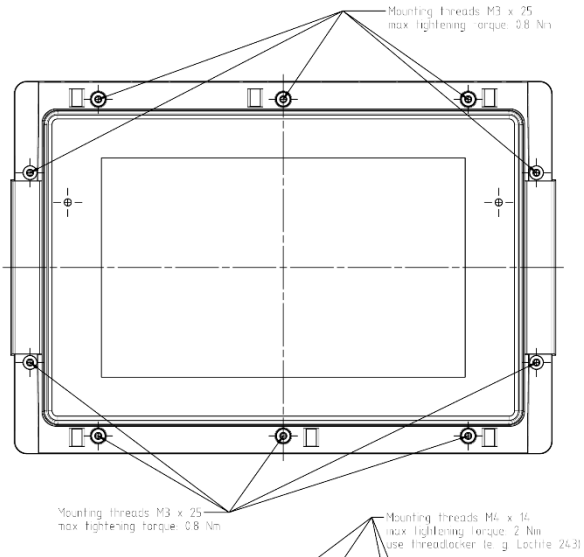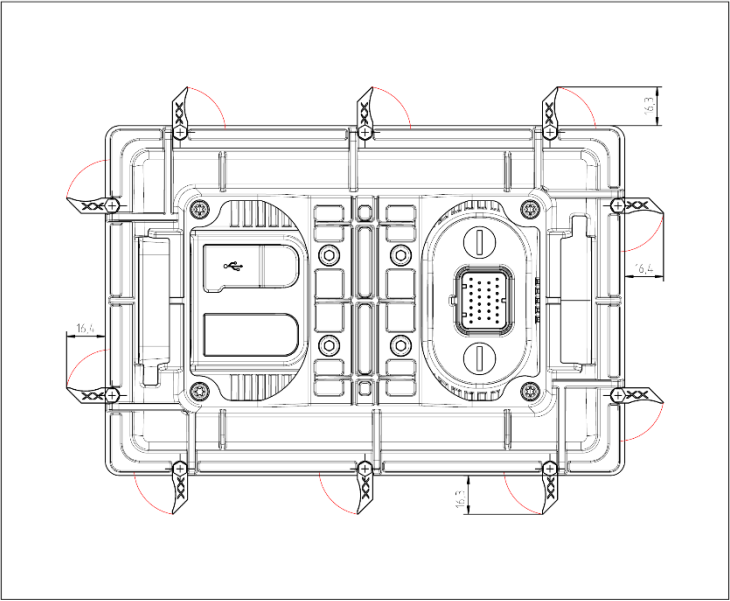## 4.2.3   Connector Cover for OPUS B4 ECO
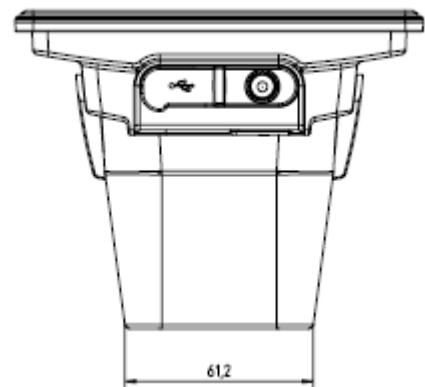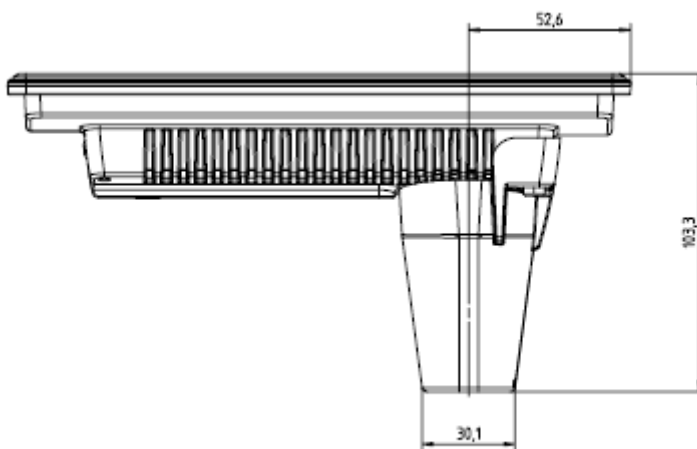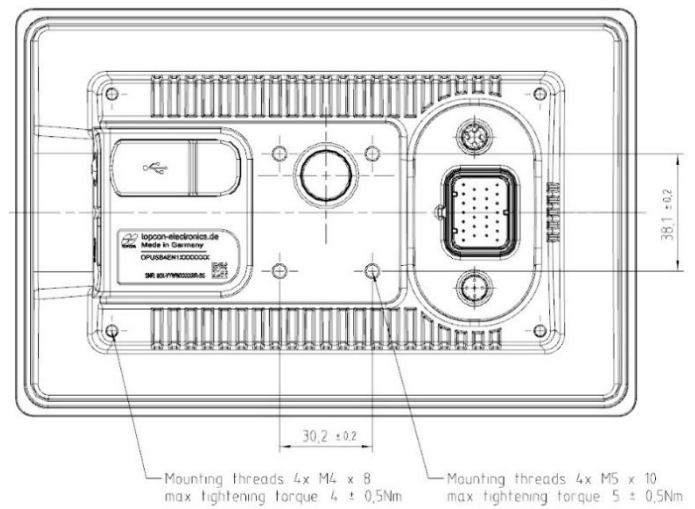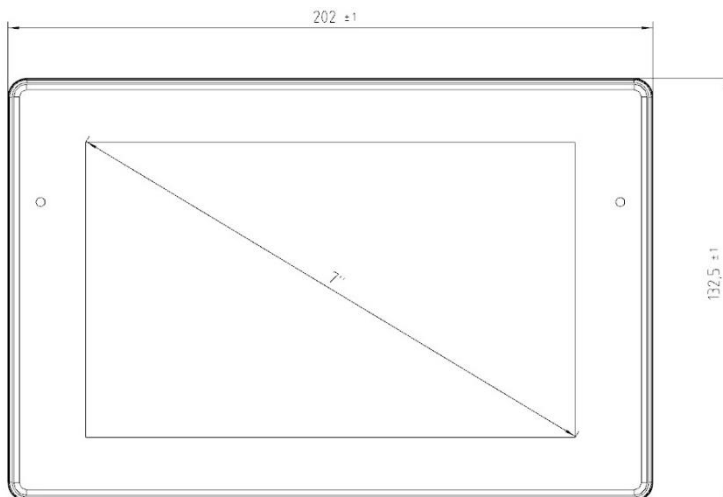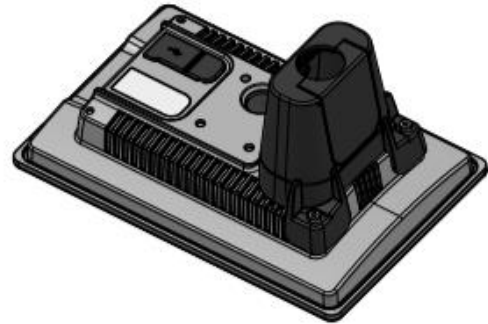
4.2.4 Dashboard Cut-out

Maximum dashboard thickness for mounting OPUS B4 is 10mm
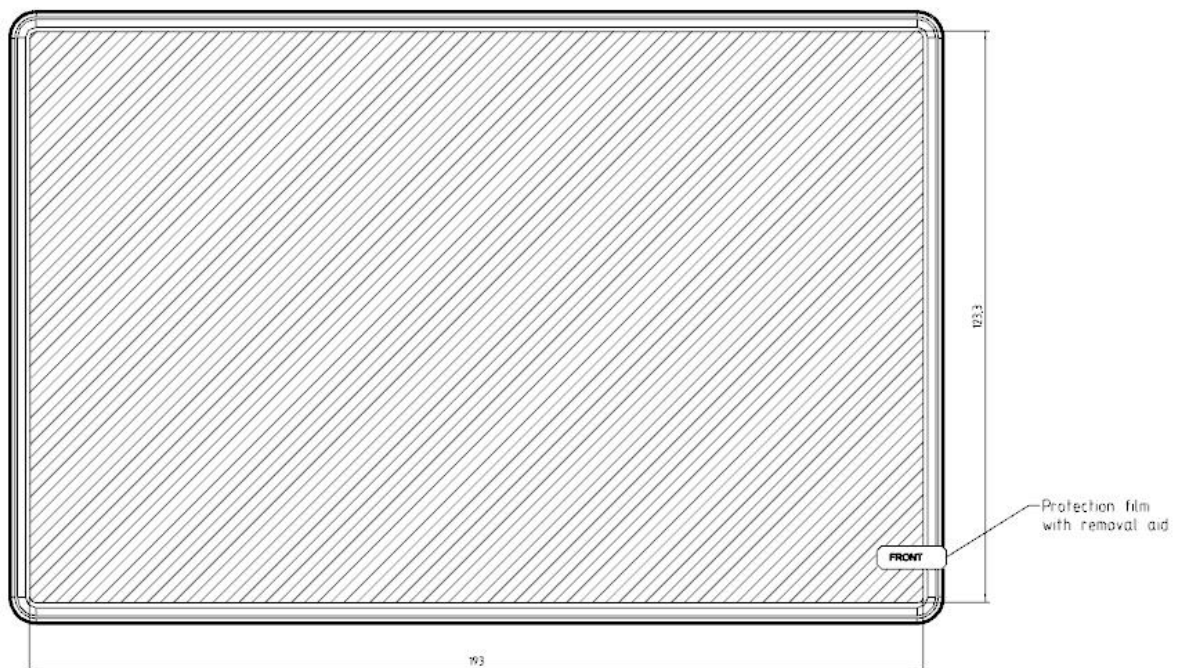
4.2.5 Mounting Cover for OPUS B4 ECO

4.2.6 Screen Protection Foil for OPUS B4 ECO

Removable screen protection foil is an optional accessory that can be ordered to protect the display against scratches, water und dust.

4.2.7 Removable silicone cover for OPUS B4 ECO

Removable silicon cover is an optional accessory that can be used for shock protection of the display. It is available in blue, yellow and black colours.

To assemble:
- pull silicone cover over front side
- on back side, press silicone cover into groove

5   Electrical installation OPUS B4

Below you find the pin out diagram of the OPUS B4. The connectors (see fig. 3.3) are drawn as seen from the back side of the unit.

Please be aware that the existing pins and connectors depend on the hardware option you ordered.
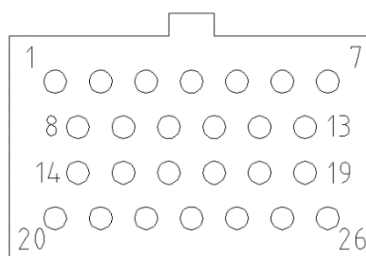
Please note that the OPUS B4 only represents one part of the entire CAN network. Set-up and dimensioning of the network must be executed by specialized personnel, and the information in this regard cannot be a component of this operating manual.

Recommended torque for the M12 connectors is 0.8 ± 0,2 Nm.

Ethernet Connector, M12, female, 4 pins, d-coded
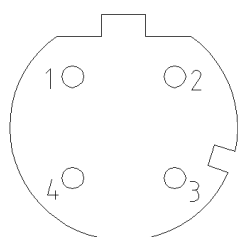
Main Connector

Video-Connector, M12, female, 5 pins, b-coded
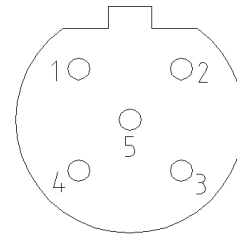
Ethernet connector pinout

Ethernet	Round Connector, 4 pins, M12, acc. To IEC 61076-2-101
1	TD+
2	RD+
3	TD-
4	RD-

Video connector pinout

Video	Round Connector, 5 pins, M12
1	VidSig+
2	Mirror
3	Camera+
4	Camera -
5	VidSig GND

Main connector pinout (in full option)

pin no.	assignment	description
1	VCC	supply voltage +; terminal 30
2	Ignition Input	ignition input; terminal 15
3	GND	supply voltage - ;terminal 31
4	Wake	Wake Input, "Doorswitch" (optional)
5	Audio Out_L	Audio line out, Stereo (optional)
6	Audio Out_R	Audio line out, Stereo (optional)
7	Audio GND	Audio line out, Ground (optional)
8	CAN1H	CAN bus 1 high signal
9	CAN1L	CAN bus 1 low signal
10	CAN2H	CAN bus 2 high signal
11	CAN2L	CAN bus 2 low signal
12	n.c.	
13	n.c.	
14	n.c.	
15	n.c.	
16	RS232: RxD	RS232: RxD
17	RS232: TxD	RS232: TxD
18	RS232: GND	RS232: GND
19	n.c.	
20	n.c.	
21	n.c.	
22	n.c.	
23	SERV_EN	service enable; to be connected while power-on for updating
24	n.c.	
25	n.c.	
26	n.c.	

Please observe the following guidelines for set-up:

- Power supply lines should only be passed in pairs as close together as possible.
- Sensitive signal lines should be shielded to achieve highest possible damping, and under this shielding they should be still passed twisted.
- Metal plug connections should be used for shielded lines.
- Cable bundles should be distributed in accordance with their purpose (e.g. HF, LG, and power supply); the groups thus formed should not be routed in parallel to the extent possible, and they should be routed with clearance.

The OPUS B4 relies on a connection to an ECU that controls the functions and features of the target vehicle/machine.

> ⚠ **The ECU must be the component in charge of all safety related functions.**

Please keep all the connectors separated. All connection should be done on the shortest distance to the unit.

> ⚠ **Wrong connection may cause damage of the unit.**

5.1 Unused plugs

> ⚠ **Penetrating humidity by unused and unprotected plugs may cause damage of the unit. Please protect unused plugs with the special blind inserts that have been supplied with the units.**

5.2 Power Supply

The unit may be used with the 12 V and for 24 Volt battery systems, operating voltage range of 8-36 VDC. The overvoltage resistance is about 48V for 2 minutes. Inverse-polarity protection is up to -48 V DC.

5.3 First steps

Plug in the main connector into the OPUS B4. Then connect the clamps 15 and 30 for the plus voltage, as well as clamps for GND for the ground. Switch on the Power supply.

On start the boot-logo image will be displayed on the screen. This may be exchanged with the customer specific image (please refer to **C/C++ Developer Guide** for more information).

The boot up takes about 8 seconds and will then call the application according to the start scripts on the unit (start scripts for Projektor Tool and CODESYS application already installed by delivery).

The application displays the information of the required application software version. CODESYS and Projektor Toll applications also contains a simple function test. Each newly downloaded application will replace the old one automatically.

5.4   Cleaning/ service / maintenance

Cleaning agents which have an abrasive or dissolving effect on the coated glass pane, the foil of the touch screen or the plastic of the encoder or the housing should not be used to clean OPUS B4 operator panels. Only use soft clothes with a little soap and water or mild dish washing liquid.

The OPUS B4 does not have any parts that require service by the user. Repairs can only be performed by Topcon Electronics GmbH.
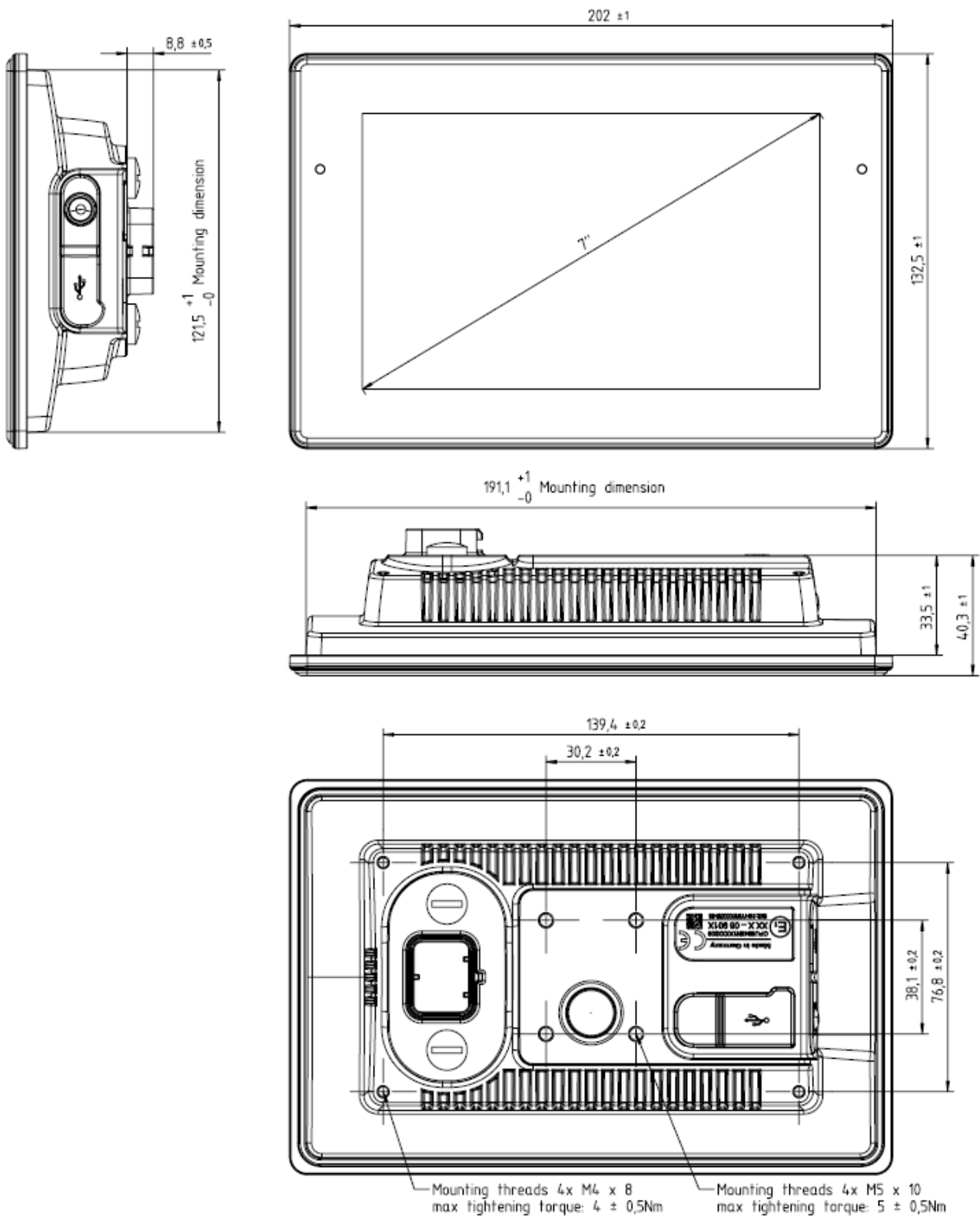
6 Technical Documentation

The OPUS B4 is currently available in one housing versions.

OPUS B4 ECO:

6.1 Dimension Drawings - OPUS B4 Eco

Mounting threads 4x M4 x 8
max tightening torque: 4 ± 0,5Nm

Mounting threads 4x M5 x 10
max tightening torque: 5 ± 0,5Nm

6.2 Specification

	OPUS B4 ECO	
	Basic	**Full**
Dashboard Mount	X	X
Dimensions (mm)	H132,5 x W202 x D32	H132,5 x W202 x D32
Display size	800x480 pixels	800x480 pixels
Touchscreen	X	X
Optical Signal	1	1
Speaker	X	X
Processor Speed	800 MHz I.MX6	800 MHz, I.MX6
RAM	512 MB DDR3	1 GB DDR3
Mass Storage	4 GB	4 GB
EEPROM	1 kB serial	1 kB serial
CAN bus	2	2
RS232	1	1
USB 2.0 full speed	1	2
Ethernet	X (IE)	X
Video in	1	1
Real time clock	X	X
Light Sensor	X	X
Audio Out	X	X

6.3 Declaration of Conformity

TOPCON

EU–Konformitätserklärung
EU Declaration of Conformity

für die Produktfamilie: **OPUS B4 Eco**
for the product family:

bestehend aus folgenden Modellen:
consisting of the following models:
OPUSB4EN1CANT000, OPUSB4EN1CDST000, OPUSB4EN1CANF000, OPUSB4EN1CDSF000,
OPUSB4EN1CWVF000, OPUSB4EN1UTSF000, OPUSB4EN1UTMF000, OPUSB4EN1UTLF000,
OPUSB4EN1CANA000, OPUSB4EN1CDSA000, OPUSB4EN1UTSA000, OPUSB4EN1UTMA000,
OPUSB4EN1UTLA000, OPUSB4EN1CDSTK43, OPUSB4EN1CANAK44, OPUSB4EN1CDSAK44

Für die oben bezeichnete Produktfamilie wird hiermit erklärt, dass diese den wesentlichen Schutzanforderungen entspricht, die in den nachfolgend bezeichneten Richtlinien festgelegt sind:
The indicated product family is in conformance with the regulations of the following European Directives:

- **2014/30/EU (EMV-Richtlinie)**
  RICHTLINIE 2014/30/EU DES EUROPÄISCHEN PARLAMENTS UND DES RATES vom 26. Februar 2014 zur Harmonisierung der Rechtsvorschriften der Mitgliedstaaten über die elektromagnetische Verträglichkeit
  DIRECTIVE 2014/30/EU OF THE EUROPEAN PARLIAMENT AND OF THE COUNCIL of 26 February 2014 on the harmonisation of the laws of the Member States relating to electromagnetic compatibility
  - **Die Konformität wird in Bezug auf folgende angewandte harmonisierte Europäische Normen erklärt:**
    Conformity is declared with reference to the following harmonized European standards:

EN ISO 13766-1	**2019**	EMV Baumaschinen
EN ISO 14982	**2009**	EMV Land- u Forstwirtschaftliche Masch.
EN 50498	**2011**	Aftermarket electronic equip. in vehicles
EN 61000-6-2	**2019**	EMV Industriebereiche u Fachgrundnorm
EN 61000-6-4	**2011**	EMV Industriebereiche u Fachgrundnorm

- **2011/65/EU (RoHS-Richtlinie)**
  RICHTLINIE 2011/65/EU DES EUROPÄISCHEN PARLAMENTS UND DES RATES vom 8. Juni 2011 zur Beschränkung der Verwendung bestimmter gefährlicher Stoffe in Elektro- und Elektronikgeräten
  DIRECTIVE 2011/65/EU OF THE EUROPEAN PARLIAMENT AND OF THE COUNCIL of 8 June 2011 on the restriction of the use of certain hazardous substances in electrical and electronic equipment

- **2015/863/EU (RoHS-Richtlinie Änderung)**
  DELEGIERTE RICHTLINIE (EU) 2015/863 DER KOMMISSION zur Änderung von Anhang II der Richtlinie 2011/65/EU des Europäischen Parlaments und des Rates hinsichtlich der Liste der Stoffe, die Beschränkungen unterliegen
  COMMISSION DELEGATED DIRECTIVE (EU) 2015/863 amending Annex II to Directive 2011/65/EU of the European Parliament and of the Council as regards the list of restricted substances

- **2017/2102/EU (RoHS-Richtlinie Änderung)**
  RICHTLINIE (EU) 2017/2102 DES EUROPÄISCHEN PARLAMENTS UND DES RATES vom 15. November 2017 zur Änderung der Richtlinie 2011/65/EU zur Beschränkung der Verwendung bestimmter gefährlicher Stoffe in Elektro- und Elektronikgeräten

DIRECTIVE (EU) 2017/2102 OF THE EUROPEAN PARLIAMENT AND OF THE COUNCIL of 15 November 2017 amending Directive 2011/65/EU on the restriction of the use of certain hazardous substances in electrical and electronic equipment

Dipl.-Ing. (FH) Torsten Volk, Project Manager   **22.09.2022**
Titel, Name, Position, Unterschrift / *Name, Title, Position, Signature*   Datum / *Date*

Dipl.-Wirtsch.-Ing. (FH), Thilo Nagel, General Manager   **22.09.2022**
Titel, Name, Position, Unterschrift / *Name, Title, Position, Signature*   Datum / *Date*