

Version 1.3
Translation of the
original manual



Instruction manual

Terminal

HDT8012



Industrial IT

Updated 2020-04-06

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1 Notes

1.1 General remark

This instruction manual is intended to ensure safe and efficient handling of the device. It must be accessible to all persons who are involved in installation and commissioning of the device and must be read and understood before any work is started.

The instruction manual must be passed on to the device/system operator after commissioning has been completed.

All of the safety instructions and handling instructions given in the manual must be obeyed in order to ensure that work is carried out safely.

Figures used in this instruction manual are provided for basic understanding and may differ from the actual design.

The original version of this instruction manual was written in German. All non-German versions of this instruction manual are translations of the German instruction manual.

1.2 Limitation of liability

ads-tec Industrial IT GmbH shall not be liable for personal injury, property damage or damage caused to the device as well as consequential damage that is/was the result of non-compliance with this instruction manual, improper use of the device, repairs and other actions on the device by unqualified electricians and electricians not certified by ADS-TEC, or that is/was the result of using unapproved replacement parts. Failure to observe the maintenance intervals shall also result in exclusion from liability.

Furthermore, it is strictly forbidden to make any unauthorised alterations or technical modifications to the device.

1.3 Manufacturer

The manufacturer of the product is ads-tec Industrial IT GmbH. The company is referred to in the following as ADS-TEC.

1.4 Relevant device documentation

The following documents are decisive to device setup and operation:

Instruction manual (this documentation):

Contains information for installation, commissioning and operation of the device along with technical data of the device hardware.

Website

You can download drivers, software, user manuals, leaflets and flyers about the product from our website www.ads-tec.de.



Recommendation for use:

We would recommend to make use of our website contents www.ads-tec.de in order to use current data and to be quickly and comprehensively informed of any technical modification.

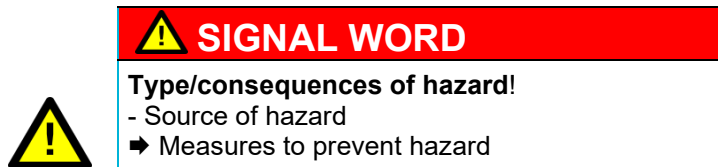
2 Safety instructions

2.1 Structure of safety instructions

The signal word classifies the hazard.

Reference to the type/consequences and source of the hazard is made underneath the signal word.

Information on how to avoid the hazard is indicated by an arrow (➔).

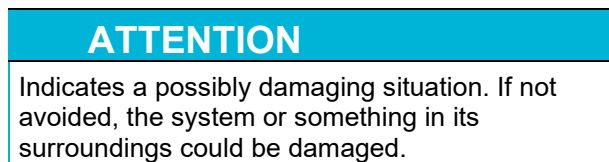
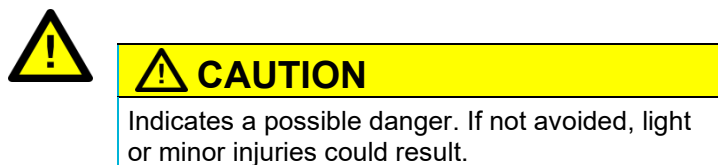
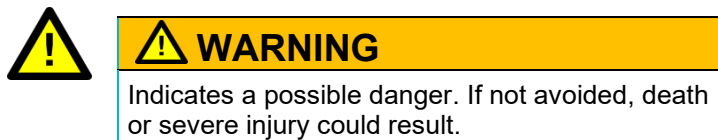


2.2 Graduation of risk level

The signal word classifies the hazard.

Instructions for preventing the hazard are identified by an arrow (➔).




2.3 Explanation of used symbols



Recommendation for use:

The symbol "Recommendation for use" indicates terms and/or conditions that strictly need to be observed to ensure optimised and/or zero-defect operation. Tips and suggestions for the efficient use of the device and software optimisation are also provided.

2.4 Symbols

Symbol	Meaning
	Designation of batteries in accordance with § 13 of the German Battery Act (BattG). Batteries may not be disposed of with household waste, but must rather be disposed of separately. Used batteries must be returned to the point of sale or a disposal system.
	Labelling of electrical and electronic devices in accordance with § 7 of the German Electrical and Electronic Equipment Act (ElektroG). Electrical and electronic devices must not be disposed of with household waste, but must rather be taken to a collection point for waste electrical equipment. Such a collection point is generally operated by public waste management authorities, i.e., by municipalities.
	Symbol for the protective earth connection

2.5 Data, figures and modifications

All data, text and figures were prepared to the best of our knowledge. They do not represent any assurance for the properties themselves. Despite taking utmost care, no liability can be assumed for accuracy, completeness and actuality of the information. Subject to changes.

2.6 Trademarks

It is noted that any software and/or hardware trademarks and any company brand names mentioned in this documentation are all subject to the general trademark protection rights.

StoraXe® and Big-LinX® are registered trademarks of ADS-TEC.

All other used third-party trademarks are hereby acknowledged.

In the case of trademark infringement, ADS-TEC reserves the right to exercise all rights.

2.7 Copyright

This instruction manual is protected by copyright. For the authorised user, simple usage rights are granted within the scope of the intent of the contract. Any modified use or exploitation of the provided content, particularly duplication, modification or publishing in whatever form is permitted only with the prior consent of ADS-TEC.

In the case of copyright infringement, ADS-TEC reserves the right to exercise all rights.

2.8 Environmental conditions

The device can be put into operation and used under the following conditions. Failure to observe any one of these conditions will invalidate the warranty of the device. ADS-TEC cannot be held liable for any damages arising from improper use and handling.

- Temperature
in operation* -20 ... 55°C**
for storage -40 ... 80°C
- Humidity
in operation 10 ... 85% without condensate
for storage 10 ... 85% without condensate
- Air quality: Pollution level 3 or lower according to EN 61131-2.

Vibration and shock resistance

In accordance with EN 60721-3-5 (Environmental conditions for devices for terrestrial vehicles), the device satisfies the following classes:

- For mass storage type SSD (solid state drive): class 5M3
- For mass storage type HDD (hard disk drive): class 5M2

Testing was performed in accordance with the following test standards:

- EN 60068-2-6 – Vibration (sinusoidal)
(2 - 500 Hz, 40 m/s² peak value, 2 h each axis)
- EN 60068-2-27 – Shock resistance
(300 m/s², 11 ms, 3 shocks per axis)
- EN 60068-2-64 – Broadband noise
(3.6 g effective, 30 g peak value, 5 h long)

Testing was also performed in accordance with the following standard:

- MIL-STD 810F (January 1, 2000), annex C, figure 514.5C (US highway truck transportation)

*) depending on mass storage device

***) The UL marking applies for operating temperatures up to max. 40°C.

2.9 Conformity

The manufacturer hereby declares that the product described in this instruction manual complies with all relevant stipulations of the following European directives:

- 2011/65/EC, RoHs Directive
- 2014/30/EU, EMC Directive
- 2014/35/EU, Low Voltage Directive



A corresponding EU conformity declaration is available for competent authorities at the manufacturer and can be viewed upon request.

The EU conformity declaration can be requested at

<http://www.ads-tec.de/support/support-anfrage.html> and is available for download at <http://www.ads-tec.de/support/download/eg-konformitaetserklaerung.html>.



Recommendation for use:

For full compliance with the EMC legislation, all components and cables used for device connection must also be compliant with these requirements. It is therefore necessary to employ BUS and LAN cables with shielded connectors and these must be installed as per the instructions contained in the instruction manual.

3 Operating and safety instructions

The device operates under electrical voltage and contains highly sensitive components. Intervention by the user is required only for connecting the power supply lines. Should any further modifications be required, it is necessary to consult either with the manufacturer directly or with service personnel authorised by the manufacturer. The device must be de-energised during work. Appropriate measures must be taken to prevent electrostatic discharges on components. If the device is opened up by an unauthorised person, the user may be subject to hazards and the warranty is invalidated.

General information

- All users must read this manual and have access to it at all times.
- Installation, commissioning and operation may only be performed by qualified and trained personnel.
- The safety notices and the manual itself must be observed by all persons who work with this device.
- At the installation site the valid guidelines and regulations for accident prevention must be observed.
- The manual contains the most important instructions on how to use this device in a safe way.
- Appropriate storage, proper transport, installation and commissioning, as well as careful operation are prerequisites for ensuring safe and proper operation of the device.
- The device can be cleaned by using a soft cloth and a commercially available glass cleaning agent (e.g. Sidolin) with low alcohol content.

ATTENTION

Hazard due to damage to device

Damage caused by connected peripherals or data loss

- ➔ All cable lines (power supply, interface cables) should only be connected while the device is switched off and de-energised.

3.1 Operating location

The device is designed for use in mobile agricultural and construction machinery. You have to take care that the environmental conditions specified in the technical data are met. Use in non-specified environments, i.e., on board ships, in explosive atmospheres or at extreme elevations, is prohibited. The device must not be used to control vehicles. It must be ensured that the device is installed properly.

ATTENTION

Hazard due to condensation

Damage to electronic components caused by condensation resulting from temperature fluctuations.

- The device should only be switched on after it has acclimated to the ambient temperature!
- To avoid overheating in operation: The device must not be exposed to direct radiation by sunlight or any other heat source.

3.2 Damage due to improper use

Should the control system have evident signs of damages caused, e.g., by improper operation or storage conditions or due to improper use or handling, the device must be shut down immediately. Ensure that it is secured against being started up accidentally.

3.3 Warranty / repairs

During the device warranty period, any repairs must only be performed by the manufacturer or by service personnel that has been authorised by the manufacturer.

3.4 Intended use

The device is used for the visualisation, data acquisition and control of production and processing procedures.

The device is only to be assembled, installed and operated within the permissible specifications. Use in non-specified environments is prohibited.

3.5 Improper use

Operation other than or beyond that described for the device shall be deemed improper use.

The device is not allowed to be used to control vehicles or for applications for which further approvals beyond the manufacturer's declaration are necessary, e.g. applications with explosion hazard, medical technology, shipping industry.

The device must not be put into operation in the case of transport damage or nonconformity with the specifications and, if necessary, must be taken out of operation in the case of changing conditions.

In the case of improper use, ADS-TEC shall not accept responsibility or liability for injury or damage that is directly or indirectly attributable to the handling of the device.

Should the device have evident signs of damages caused, e.g., by improper operation or storage conditions or due to improper use or handling, it must be shut down immediately. Ensure that it is secured against being started up accidentally.

3.6 Treatment and disposal of lithium batteries

This device contains a lithium battery for supplying the system clock with power as long as the supply voltage is not connected. The battery has a life cycle of 3-5 years depending on which load is applied.

ATTENTION

Hazard due to thermal loads

The more the battery is exposed to higher temperatures, the faster it ages.

➔ Avoid thermal loads

WARNING

Hazard due to explosion

Danger of explosion if using incorrect battery types.

➔ Use the battery type recommended by the manufacturer.



Lithium batteries should not be exposed to fire, soldered, recharged, opened, short-circuited, reversed or heated above 100 °C and they should be disposed of properly as well as protected against sunlight, moisture and condensation.

The battery type to be used is:

- Lithium battery 1/2AA 3V FDK Corp. CR14250SE
- ADS-TEC part number: DZ-SONS-04100-0

The used lithium battery should be disposed of in accordance with local legal regulations.

3.7 Safety instructions

ATTENTION

Damages through electrostatic charging

Electrostatically sensitive charging can damage components.

➔ All installation and service work performed on the device must be performed only under safe, secure and de-energised conditions.



Recommendation for use:

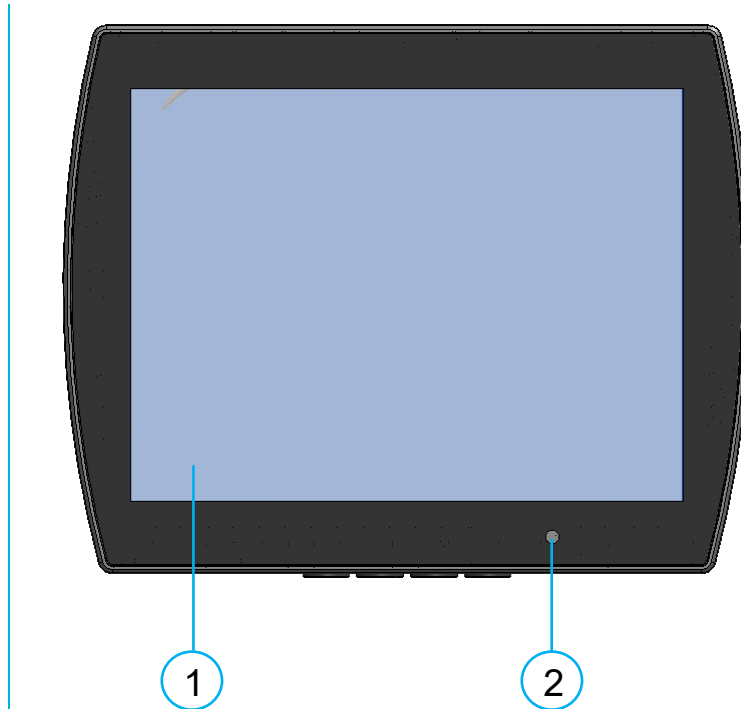
Always adhere to the safety measures applicable when handling components at risk of being damaged by electrostatic discharges.

The provisions of DIN EN 61340-5-1 / DIN EN 61340-5-2 apply

4 Product description

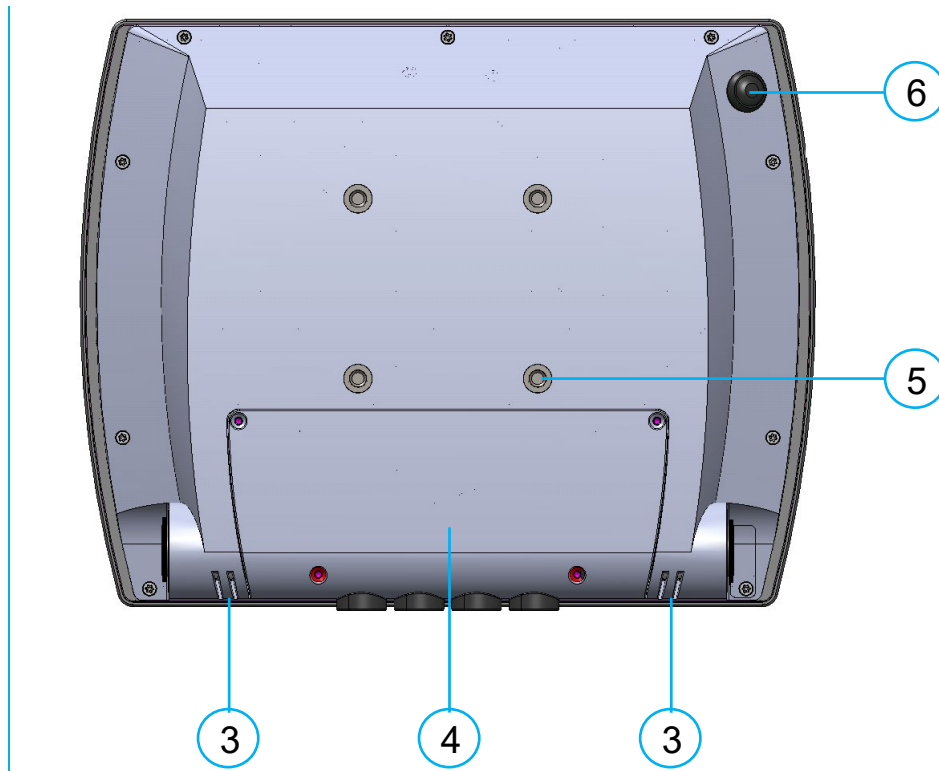
4.1 Features and interfaces

4.1.1 Front view



No.	Description
1	Touch-sensitive screen (touch-screen) → see section 7.1
2	System LED → see section 7.2

4.1.2 Rear view

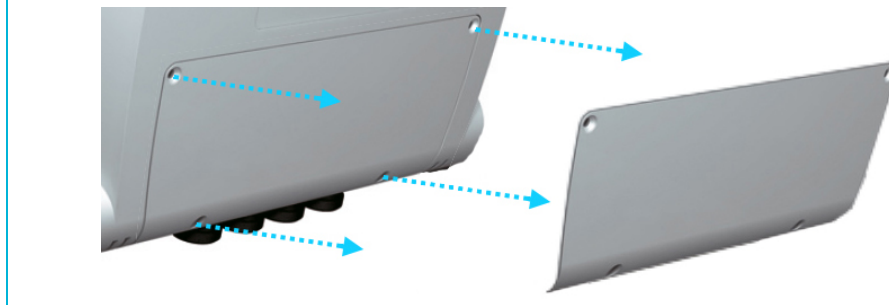


No.	Description
3	Speakers → see section 7.4
4	Service slot for interfaces → see section 4.1.3
5	Interface VESA 75 → see section 5.2
6	Optional: ON/OFF push-button → see section 7.3

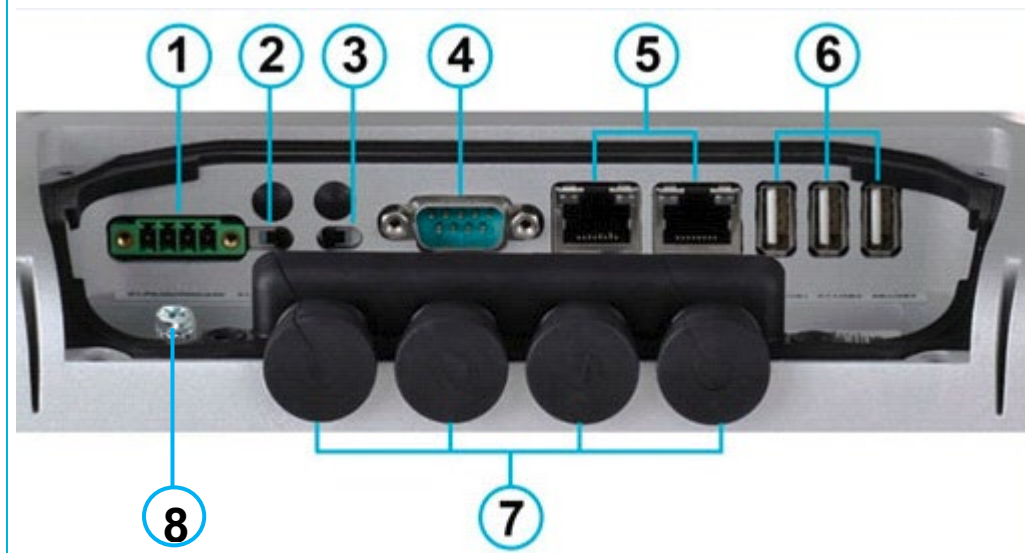
4.1.3 Interfaces in the service slot

Removing the service slot cover

Loosen the screws on the service slot cover by using a Torx Tx10 screw driver and remove the service slot cover.



Interface overview:

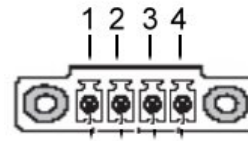


No.	Designation	Description
1	X1:PE/0V/IGN/24V	Power supply → see section 4.2
2	S1:AUTOSTART OFF/ON	Autostart → see section 4.5
3	X2:WLAN S2:COM+5V:OFF/ON	(X2:WLAN: not present) S2: 5V on pin 9 of X3 → see section 4.6
4	X3:COM	COM (RS232) → see section 4.6
5	X4:LAN1 X5:LAN2	LAN connections (RJ45) → see section 4.7
6	X6:USB1 X7:USB2 X8:USB3	USB connections (USB 2.0) → see section 4.8
7	-	Cable entry grommets
8	PE	Protective earth, → see section 4.3

4.2 Power supply

Power is supplied via a 4-pin plug (the figure shows the connector provided in the device).

Pin	Signal
1	PE
2	0 VDC
3	IGN
4	24 VDC



Recommendation for use:

The power supply must be protected with a **4A fuse (slow-blow)**.

ATTENTION

Hazard due to damage to device

Damage caused by connected peripherals or data loss

➔ All cable lines (power supply, interface cables) should only be connected while the device is switched off and de-energised.

ATTENTION

Hazard due to overvoltage

The device can be destroyed by overvoltage.

- ➔ Make certain that the permissible voltage values are maintained in accordance with chapter Technical data.
- ➔ Do not operate the device on vehicles that can exceed the permissible system voltage.



Note on use in accordance with UL-Certification (Underwriter Laboratories):

The device is designed for an LPS supply (Limited Power Source/Class2).

4.3 Earthing (PE / FE)

The voltage supply (primary side) is electrically isolated from the internal power supply (secondary side).

**Note:**

Proper function of the **EMC filter** is ensured only if the protective earth or the vehicle earth is connected to pin 1 of the power supply connection.

**Note:**

When mounting on vehicles, a **functional earth** must be established.

An additional earthing connection via the **earthing screw** (see figure in section 4.1.3) is recommended (wire cross section: min. 2.5mm²).

4.4 Ignition function (IGN)

The device can be started via pin 3 of the power supply. This function is known from the automotive industry as the ignition function (ignition switch function). The device is continuously supplied with a 24 VDC power supply, but only if the additional signal is present at the release contact, e.g. as a result of turning the ignition key of the vehicle, the computer is switched on.

The computer can also be automatically shut down in a time-controlled manner if voltage is no longer present at the release contact.

Prefabricated supply cables are available from ADS-TEC for using this function.

4.5 Autostart function (switch S1)

The autostart function allows the automatic start-up of the device upon application of the supply voltage.

**Note:**

The Autostart switch in the service slot must be set to ON in order to use this function, see section 4.1.3.

4.6 Serial interface X3 COM

The RS232 interface can be connected by using a shielded 9-pin Sub-D cable.

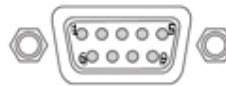


Note:

5 VDC can be connected to **pin 9** of X3 (COM) to operate, e.g., a barcode scanner. For this purpose, **switch S2 COM +5V** in the service slot must be set to ON.

Interface	IRQ	Address
X3 COM	4	3F8h

Pin	Signal
1	DCD
2	RxD
3	TxD
4	DTR
5	GND
6	DSR
7	RTS
8	CTS
9	RI or + 5 VDC (max. 1 A)



Note:

This interface is not electrically isolated.

4.7 LAN network connection

Features:

- 10/100/1000Mbit/s, RJ45
- 2 x Intel I211 GbE network controllers
- PXE-boot is supported (Preboot Execution Environment)

4.8 USB connections

These interfaces comply with the USB 2.0 standard requirements.

Pin	Signal
1	VDC
2	D -
3	D +
4	GND

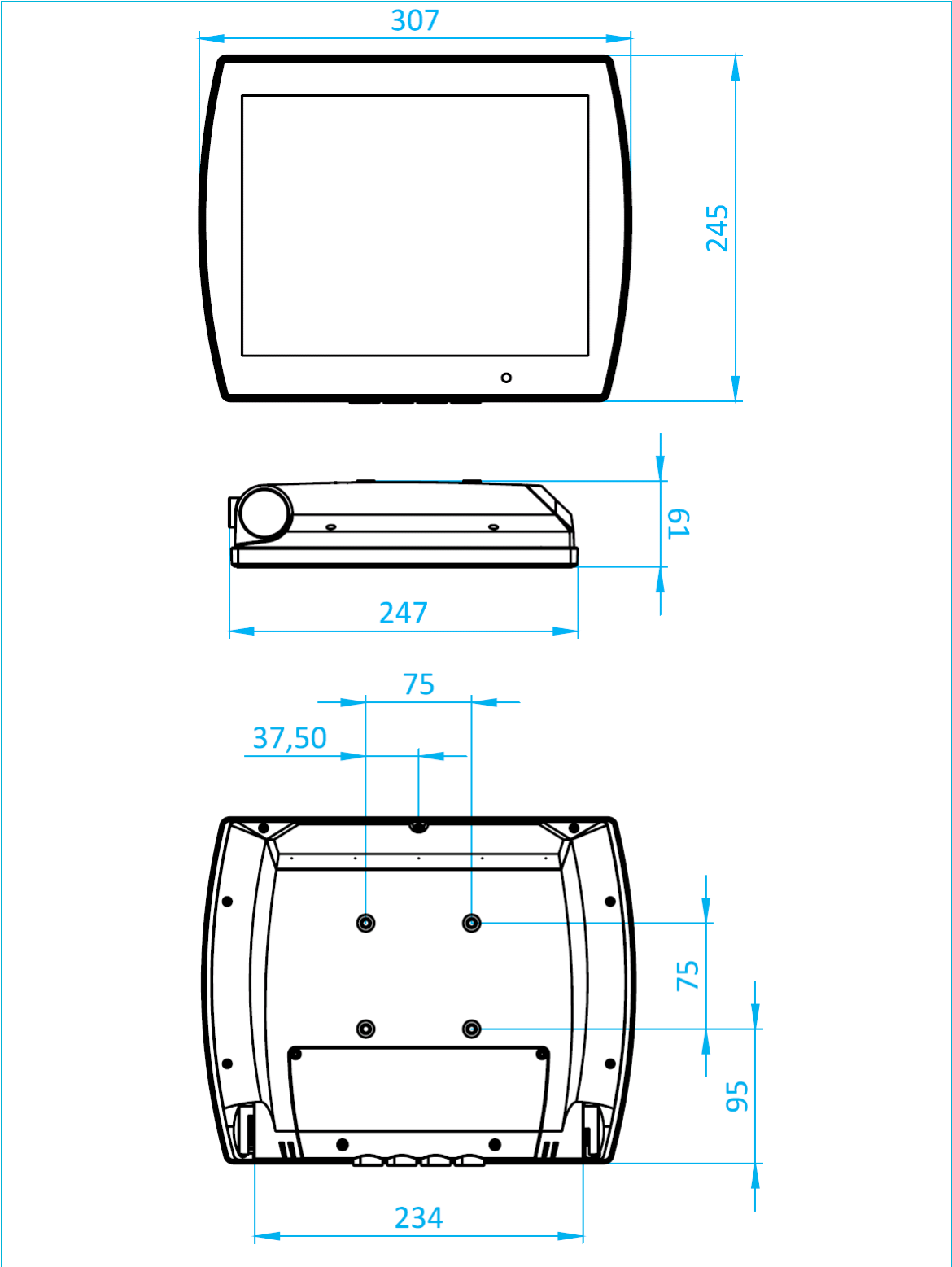


Note:

The USB interfaces have a current limit of 1 A per USB interface.

5 Installation

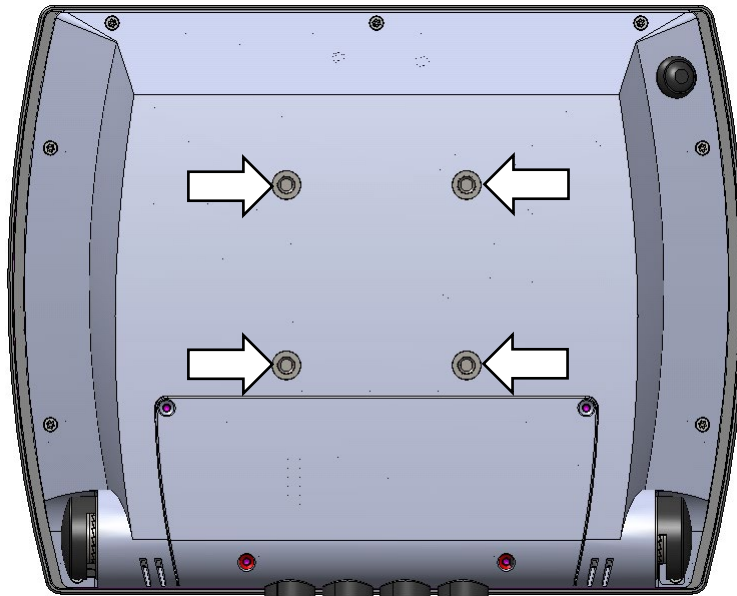
5.1 External device dimensions



5.2 Installation via the VESA-75 interface

Located on the rear side of the device is a VESA interface.

- Horizontal and vertical distance between the screw holes: 75 mm.
- Maximum screw-in depth of the blind rivet nuts: 10 mm.



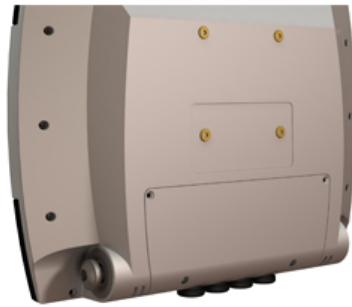
ATTENTION

Damage due to excessive tightening torque

The device can be damaged if the permitted tightening torque is not observed when the VESA bracket is screwed on.

- ➔ Tighten the screws to **max. 5 Nm**.
- ➔ If necessary: also use a suitable threadlocker, e.g., low-strength liquid adhesive.

5.3 Other mounting options (optional)



1



2



3



4



5

No.	Description
1	Bracket for Rittal® housing connector top
2	VESA 75 Standard bracket
3	Table/vehicle bracket
4	Mounting bracket left/right
5	Bracket for Rittal® housing connector bottom

6 Commissioning

6.1 Scope of delivery

Please check that all of the following components are contained in the packaging:

- 1 x device
- 1 x 4-pin plug for power supply (preplugged)

Optional scope of delivery:

- Installation kit for brackets
- Power adapter with power cable and 4-pin plug for power supply
- ADS-TEC cable kit

6.2 Check for operational readiness

Check the device to determine whether hidden damages have been caused by improper transport, incorrect operation / storage conditions or improper handling.

If you find any damage, contact the manufacturer immediately. In this case the device must **not** be put into operation.

ATTENTION

Hazard due to condensation

Damage to electronic components caused by condensation resulting from temperature fluctuations.

- ➔ The device should only be switched on after it has acclimated to the ambient temperature!
- ➔ To avoid overheating in operation: The device must not be exposed to direct radiation by sunlight or any other heat source.

ATTENTION

Damages through electrostatic charging

Electrostatically sensitive charging can damage components.

- ➔ All installation and service work performed on the device must be performed only under safe, secure and de-energised conditions.



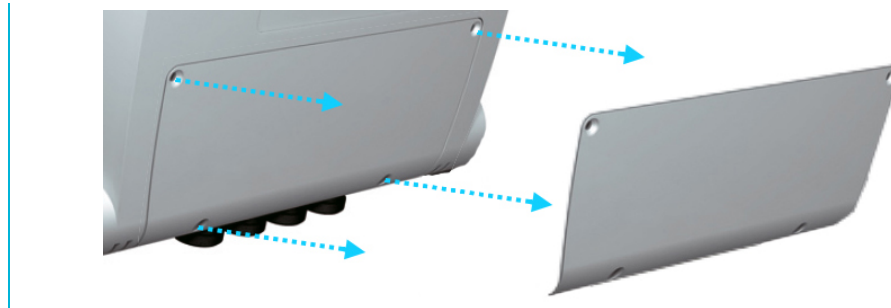
Recommendation for use:

The shielding of a data cable must always be connected with the connector housing (EMC).

6.3 Order of steps during commissioning

Removing the service slot cover

Loosen the screws on the service slot cover by using a Torx Tx10 screw driver and remove the service slot cover.



Connecting the cables

Please connect all required cables. Always use the grommets to correctly install the cables.

ATTENTION

Breaching of IP protection

The device can be damaged if the service slot cover is not attached or is attached incorrectly!

➔ Make sure that the service slot cover is attached correctly before starting operation!



Recommendation for use:

Before attaching the service slot cover, make sure that the seal is clean, undamaged and dry.

6.4 Operation

The device should be operated by trained and instructed personnel only.

The manufacturer must be contacted if damage is found.

6.5 Decommissioning

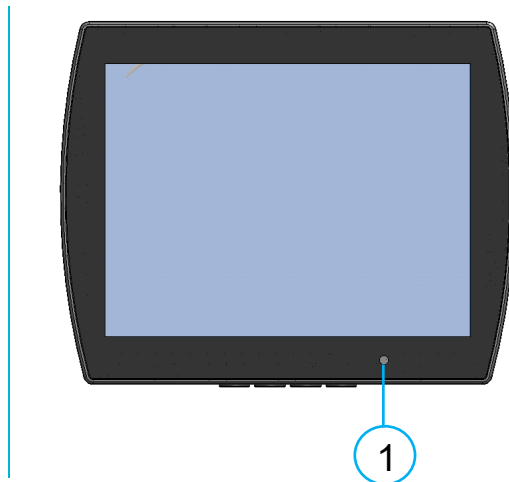
The device can be shut down using the ON/OFF pushbutton, the ignition function and using the software.

7 Operation

7.1 Touch screen

The device can be operated via the touch-sensitive screen (touch-screen).
The screen is connected internally via a USB interface.

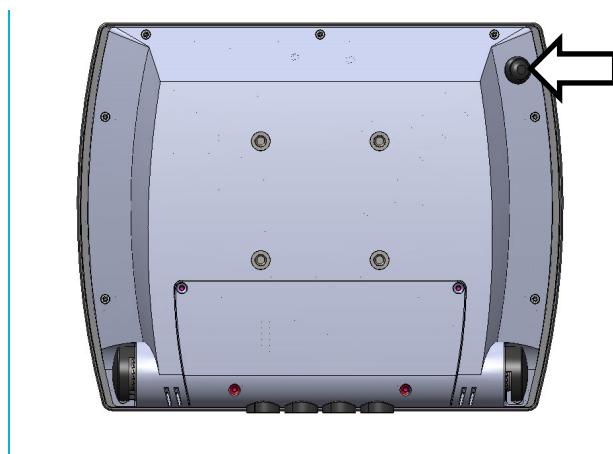
7.2 Status display with system LED



The system LED (1) indicates the operational readiness of the device.

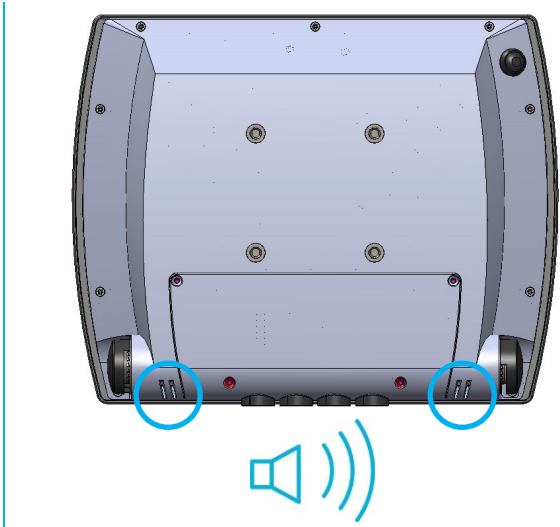
7.3 ON/OFF pushbutton (optional)

Located on the rear side of the device is a button. The functionality is dependent on the configuration (e.g., ignition signal, operating system, autostart switch).



7.4 Speakers

The devices have two internal speakers on the rear side.



8 Drives

The storage medium is selected according to the customer requirements. The following options are available for storage:

mSATA Flash:

A flash with a storage capacity of at least 1GB is used.

The required capacity depends on the desired operating system and the additional programs to be installed.

Hard disk / SSD:

A 2.5" hard disk with at least 80 GB (SATA) capacity is used.

The device can alternatively be equipped with an SSD. Its capacity depends on the desired operating system and the additional programs to be installed.

External drives:

The device includes no drive for removable media (CD/floppy).

Instead, the system provides USB interfaces, to which external drives can be connected. In this case you'd have to ensure that the used device is suitable for industrial environments.

ATTENTION

Risk of data loss

Connecting or disconnecting external drives while in operation is only admissible if the ejection functions of the operating system are used as intended, since it cannot be excluded that the drive might be in use while connecting or disconnecting it. Data loss might result in the event of non-compliance!

9 Software & driver installation

The driver software necessary for use is already integrated in the respective operating system.

**Note:**

The device does not have any integrated CD drive. If the hard drive has been reformatted, the operating system can be reinstalled by using one of the existing interfaces.

An external keyboard is required for installation.

Installing the operating system via a USB interface

1. Connect external USB drive and a keyboard.
2. Restart the device and press the ESC key to call up the boot menu.
3. Insert an operating system CD in the external drive.
4. In the boot menu, select boot from the external drive and start.
5. Installing the operating system and setting up the basic data.
6. With devices including touch screens, the touch screen driver as well as the soft keyboard should be installed in order to ensure their full functionality.

Installing the operating system via PXE

Alternatively, the operating system can also be installed via a network through the use of the PXE functionality (PXE = Preboot Execution Environment).

For this purpose, the appropriate BootROM extension must first be activated in BIOS and then selected in the boot menu.

The further course of action is dependent on the network environment and the operating system that is to be installed.

10 Maintenance

10.1 Information on maintenance

ATTENTION

Maintenance must be performed only by qualified electricians certified by ADS-TEC.

The following components of the system are maintenance parts. Use dry cleaning cloths to clean the system.

Component	Type of maintenance	Maintenance interval
BIOS battery	Change ½ AA backup battery. Type: lithium battery 1/2AA 3V (e.g. ADS-TEC part number: DZ-SONS-04100-0)	3 years
Fuse	Replace 7A / 32Vdc Littelfuse INC Fuse F200 / F1200 type 453007.	Only necessary if damaged
Exterior	Clean device with dry cloth.	As necessary, dependent on installation site
Earth connections	Secure connection and correct operation	According to VDE0113

10.2 Information on storing the batteries

When storing batteries, always observe the relevant regulations: no direct sunlight, dry room, no frost, etc.

11 Technical details

HDT8012	
Housing	Diecast aluminium, powder-coated
Front panel	3 mm glass panel, toughened and anti-reflective
Display	12.1", optically bonded Resolution: 1024 x 768 pixels Colours: max. 16.2 mio.
Touch	PCAP multi-touch
Processor	Intel® Atom™ 1.91 GHz (Dual Core)
RAM	4 GB DDR3 or 8 GB DDR3
Mass storage	Industrial mSATA 16...128 GB SSD – or - 2,5" Automotive Harddisk min. 80 GB (SATA)
Interfaces	COM (RS232, 5V supply can be made available for barcode scanners) 3 x USB 2.0 (in high-power design to 1 A) Optional: COM2 (RS232, RS485 or CAN)
Network	2 x Ethernet 1 Gbit/s RJ 45
Sound	2 internal speakers
Power adapter	24 VDC (10...36 VDC)
Max. current	Max. 4 A
Operating system	Windows® 7 Standard / Ultimate Windows® 10 IoT Enterprise Linux
Protection class	IP65
Operating temperature	-20...+55 °C (depending on mass storage device)
Storage temperature	-40...+80 °C (depending on mass storage device)
Dimensions (W x H x D)	307 x 245 x 61 mm
Weight	Approx. 3.0 kg
Vibration and shock resistance	EN 60721-3-5:1998-06 Environmental conditions for devices for terrestrial vehicles: Class 5M3 (for mass storage type SSD)
Humidity	10 to 85% non-condensing

12 Service & support

ADS-TEC and its partner companies offer you comprehensive maintenance and support services, ensuring quick and competent support should you have any questions or concerns with regard to ADS-TEC products and equipment.

Because ADS-TEC products are also used by partner companies, these devices may have customised configurations. Should any questions arise with regard to these specific configurations and software installations, please contact them as ADS-TEC will not be able to answer such questions.

ADS-TEC does not provide support services for any device that was not purchased directly from ADS-TEC. In this case, maintenance and support is provided by the partner company.

12.1 ADS-TEC support

The ADS-TEC support team is available for inquiries from direct customers between 8:30am and 5:00pm, Monday to Friday

and can be reached via phone, fax or e-mail:

Phone: +49 7022 2522-202

Fax: +49 7022 2522-400

Email: support@ads-tec.de

Alternatively, you can contact us by completing a support form on our website www.ads-tec.de. Our Support team will then get in touch with you as soon as possible.

12.2 Company address

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