Instruction for Use

RadiForce®
EX270W

Full HD 27" LCD Monitor with DVI Input Module

Important

Please read the Safety Information and the information delivered with the product carefully to familiarize yourself with safe and effective usage.

EIZO®

Legal information

Warning notice system

This manual contains notices you have to observe in order to ensure your personal safety, as well as to prevent damage to property. The notices referring to your personal safety are highlighted in the manual by a safety alert symbol, notices referring only to property damage have no safety alert symbol. These notices shown below are graded according to the degree of danger.

⚠ DANGER
indicates that death or severe personal injury will result if proper precautions are not taken.

⚠ WARNING
indicates that death or severe personal injury may result if proper precautions are not taken.

⚠ CAUTION
indicates that minor personal injury can result if proper precautions are not taken.

NOTICE
indicates that material damage can result if proper precautions are not taken.

If more than one degree of danger is present, the warning notice representing the highest degree of danger will be used. A notice warning of injury to persons with a safety alert symbol may also include a warning relating to property damage.

Qualified personnel

The product/system described in this documentation may be operated only by personnel qualified for the specific task in accordance with the relevant documentation, in particular its warning notices and safety instructions. Qualified personnel are those who, based on their training and experience, are capable of identifying risks and avoiding potential hazards when working with these products/systems.

Proper use of EIZO products

Note the following:

⚠ WARNING
EIZO products may only be used for the applications described in the catalog and in the relevant technical documentation. If products and components from other manufacturers are used, these must be recommended or approved by EIZO. Proper transport, storage, installation, assembly, commissioning, operation and maintenance are required to ensure that the products operate safely and without any problems. The permissible ambient conditions must be complied with. The information in the relevant documentation must be observed.

Trademarks

All names identified by ® are registered trademarks of their respective owners. Please refer to the trademarks listed in the appendix. The remaining trademarks in this publication may be trademarks whose use by third parties for their own purposes could violate the rights of the owner.

Disclaimer of liability

We have reviewed the contents of this publication to ensure consistency with the hardware and software described. Since variance cannot be precluded entirely, we cannot guarantee full consistency. However, the information in this publication is reviewed regularly and any necessary corrections are included in subsequent editions.

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Table of contents

1 Introduction

1.1 Contents of this document

This document explains the functionality and the approved use of the RadiForce EX270W. To ensure clarity, it does not contain all detailed information on this product.

The contents of this document are neither part of a previous or existing agreement, commitment or legal relationship, nor does it modify such.

Note
This documentation is available in electronic format only. It is included on the CD-ROM provided and can be downloaded at www.eizo.com, or provided by the sales partner from whom you purchased the product.

1.2 Correct usage

The RadiForce EX270W has been specifically designed for medical imaging, with the exception of mammography.

The EX270W is intended to be used by health care professionals to display the video sources from various commercially-available devices (with the exception of mammography) commonly used in a medical environment on a single video monitor.

The EX270W can be used in areas subject to frequent cleaning and disinfection, such as in an operating room.

The EX270W can be installed in a ceiling suspension or wall mount, a mobile medical system, or a stand.

1.3 User

User

In the following, health personnel such as surgeons or medical technicians (MTA)s are referred to as the "user".

Service/service personnel

The terms "service" or "service personnel" denote specially trained and authorized personnel, e.g. technical integrators, medical device manufacturers.

2 Safety instructions

Ensure that all necessary steps are taken to avoid injuries or incorrect diagnoses.

No zero error rate

LCD monitors do not have a zero error rate Therefore the image parameters can change over time, e.g. luminance or changing/fading colors.

Note
Image quality To maintain constant image quality, EIZO recommends cleaning the monitor on a regular basis and checking image properties in accordance with all applicable local regulations.

2.1 General safety notes

Correct transport, professional storage, installation and connection, as well as careful operation and maintenance, are required to ensure that the EIZO devices operate safely and correctly.

The devices may only be used for applications for which they are commonly used.

For safety reasons, the following precautions must be observed:

⚠ DANGER

Please observe all warning information present on the device and in the Instruction Manual.

There is a danger to life if warnings are not obeyed. Severe personal injury or damage to property may occur.

Observe the safety requirements of EN 60601-1 (IEC 60601-1)

To prevent injury to patients and users, connect the electrical system in accordance with the safety requirements of EN 60601-1 (IEC 60601-1) for "Safety requirements for medical electrical systems".

Connecting the protective earth conductor

If the device is connected to line power, the device must be connected to a protective conductor. This is the only way to ensure that the touch leakage current in a first fault event does not exceed 500 µA.
The interruption of the device's protective conductor is considered a first fault event in accordance with EN 60601-1.

Use the following measures to ensure that the leakage currents remain below the specified limits:

- Separators for signal input or signal output unit
- Use of a safety isolating transformer
- Use of the additional protective conductor terminal

Mounting of the monitor: The monitor's suspension arm must have its own protective conductor. This protective conductor, together with the protective conductor of the monitor, ensures that the housing leakage current always remains less than 500 µA, even in the event of a first fault event.

No unauthorized opening of the device / no unauthorized service or maintenance work

The device may only be opened by qualified personnel. Likewise, service or maintenance work may only be carried out by qualified personnel. There is a risk of electric shock.

No liability is accepted for death and injury to persons or damage to property resulting from work carried out by non-qualified personnel.

Do not touch components in the device

If the device is connected to line power, components in the device are subject to high voltages. Touching the components may be fatal.

No contact between device and patients

The device is not suitable for direct contact with patients. Device and patient must never be touched simultaneously. Otherwise there is a danger to life and limb.

⚠ DANGER

Please observe all warning information present on the device and in the Instruction Manual.

There is a danger to life if warnings are not obeyed. Severe personal injury or damage to property may occur.

Never use defective power cables

If a damaged or unsuitable power cable is used, it could result in a fire or electric shock. Only use power cables with PE contacts approved by the manufacturer.

Disconnect the power cable correctly

When disconnecting the power cable, always do so by holding the plug. Ensure that your hands are dry. There is a risk of electric shock.

Do not insert any objects into the enclosure

Objects inserted into the housing may result in an electric shock or damage to the device.

Do not place any objects on top of the device

If you place objects on top of the device, this can lead to overheating and fire.

Avoid penetration of liquid

Liquids penetrating into the device may result in an electric shock or failure of the device.

⚠ CAUTION

Extensive damage to property may result if the device is not connected correctly

That is why you should observe the warning information:

Connection must be carried out by specialists

Please ensure that all steps are taken to avoid injuries or incorrect diagnoses.

- Only use the video cables specified by the manufacturer for the connection.
- Only use power cables with PE contacts.
- Only use power outlets with PE contacts.
- Do not connect too many devices to a power outlet or extension cable.
- Observe the information provided by the respective manufacturer.
- If required by the application or local regulations, QA software must be used for quality control and documentation.

Connection in the USA and Canada

Molded power supply plugs must comply with the requirements for "hospital grade attachments" CSA Std. C22.2 No. 21 and UL 498.

Connection in China

Only use power cables approved for China. These power cables are identified by the labels "CCC" or "CQC".

Observe the country-specific regulations

Observe all regulations of the country in which the device is used.

NOTICE

Extensive damage to property may result if the device is not connected correctly

That is why you should observe the warning information:

- Desktop installation:
  Place the device on a solid and level surface. The installed stand as well as the mounting surface have to be suitable for the weight of the unit.
- For mounting on a wall or ceiling suspension:
  The mount unit must be suitable for the weight of the device.
- For installation in a mounting frame:
  Observe the installation sequence, and provide ventilation for the device.

Provide adequate air circulation

When installing the device, ensure that there is adequate air circulation for operation. The permissible ambient temperature range must not be violated. Otherwise the device could be destroyed by overheating.

Avoid sources of heat

Do not install the display in the vicinity of sources of heat, e.g. radiators, heating appliances or other devices which can generate or emit heat.

Do not subject the device to jolting or shocks

The device contains sensitive electronic components that could be damaged by jolting or shocks.

Only switch on a cold device following acclimation to room temperature

If the device is brought into a room with a higher or rising temperature, condensed water will form in and on the device. Do not switch on the device until the condensed water has evaporated. Otherwise the device could be damaged.

NOTICE

Extensive damage to property may result if the device is not connected correctly

That is why you should observe the warning information:

Transportation only in original packaging

Use the original packaging for transportation, and transport in the correct shipping position. Be sure particularly to protect the monitor LCD module from shocks.

Care of display / Cleaning agents

- Remove water drops immediately; extended contact with water discolors the surface.
- Only clean the surfaces using the cleaning agents referred to in the Instruction Manual.
- Monitor: The screen is extremely sensitive to mechanical damage. Absolutely avoid scratches, shocks, etc.

What to do if the device is faulty

If the following conditions exist, the device must be disconnected from line power and checked by qualified personnel:

- Damage to the plug or power cable.
- Following the entry of liquid into the device.
- If the device has been exposed to moisture.
- If the device does not function or if a fault cannot be corrected using the instruction manual.
- If the device has been dropped and/or the housing damaged.
- If the device smells of burning or produces peculiar noises.

Be aware of the aging of monitors

Note that monitors can fail as a result of aging, and that image properties such as brightness, contrast, and color value can change.

Do not touch the monitor screen

Due to mechanical pressure or electrostatic discharging, touching the screen can result in brief disturbances to the image.

2.2 Product-specific safety information

NOTICE

Medical System

Do not connect devices which are not part of the medical system.

NOTICE

Opening the device

The device must only be opened by trained service personnel.

- Disconnect the power supply plugs before opening the device

NOTICE

Radio interference

This is a Class B device.

The device may cause radio interference or interfere with the operation of other devices in close proximity. In this case the user is encouraged to perform appropriate measures to correct the interference.

⚠ CAUTION

Careful stand installation

If the monitor is mounted on a stand, the tilt, position, and height of the monitor can be changed. Note the following to prevent injuries or damage during installation:

- Make sure that hands and other body parts are not pinched during setup.
- Make sure the monitor does not strike the table or other objects, which could result in damage.

⚠ CAUTION

Ensure monitor stability

Stability must be ensured after installing the monitor in a stand. An unstable stand can cause the monitor to tip over and cause injuries or damage. Therefore make sure the stand is stable.

- Only use a stand that has been tested for the monitor's weight and that is approved for tilting up to 10°.
- The screw insertion depth into the monitor must be within the acceptable range.

NOTICE

Subsequent mounting of a stand

If the monitor is subsequently mounted on a stand, the stand must meet the EN 60601 standard so that the system comprising the monitor and stand meets the EN 60601 standard.

3 Description

3.1 Scope of delivery

The scope of delivery includes the device and various components. After unpacking, check the scope of delivery for correctness and completeness.

Note
Keep the packaging material for subsequent transport of the device.

Device

The RadiForce EX270W is a LCD Monitor.

The EX270W can be installed in a ceiling suspension or wall mount, a mobile medical system, or a stand.

Product	Order No.	Description
RadiForce EX270W	6GF6270-0LA00	Full HD 27" LCD Monitor with DVI Input Module

Components

The following components are included in the scope of delivery:

- External power supply unit (tested according to medical standard)
- Power cable (country-specific version)
- DVI cable (3 m)
- CD-ROM with the documentation
- Printed safety information
- VESA forward spacer (mounting screws pre-attached to monitor)
- VESA positioning rail (mounting screws included)

Accessories

Various accessories [▸ 51] can be ordered in addition to the scope of delivery above.

3.2 Monitor performance features

The EX270W has the following features that permit a wide area of applications:

LED backlight

The EX270W is equipped with an LED backlight optimized for bright environments. This means that a long service life can be achieved even with high luminance.

Perfect picture reproduction thanks to LCD technology

The use of state-of-the-art LCD technology allows distortion-free image geometry of the EX270W The TFT panel used enables a very large viewing angle and high luminance.

The EX270W provides a flicker-free picture even with low refresh rates. The monitor thus meets the strictest ergonomic requirements.

Fully Automated Stability

The EX270W has a Fully Automated Stability system in accordance with medical standards such as DICOM and Gamma 2.2. The integrated stability system (ISS) ensures constant luminance using a built-in light sensor in the center of the backlight.

Preset Look Up Tables

The EX270W is precalibrated at the factory. A total of five reality-based Look Up Tables (LUTs) have been defined. This calibration data makes installation and maintenance easier. As such, the monitor can be easily adapted to the respective application and local lighting conditions.

Specially designed for the operating room

Despite the large screen size, the exterior dimensions of the EX270W were kept small to save space in the operating room. The slim monitor has a closed housing and protective screen, with integrated capacitive keyboard for easy, frequent cleaning. With only two connecting cables, the monitor installs quickly and easily.

When using Input module TRM0000-M12 and with cables connected, the monitor offers full IP55 degree of protection.

The EX270W was tested up to protection category IP65 per DIN EN 60529. The front was rated protection category IP65. Together with input moduleTRM0000-M12, likewise with an IP65 rating, it can be connected using the appropriate TDL cables to a video management system up to 28 meters away, such as the LMM0804.

Modular design for specified use now and in the future

The EX270W is of modular design. It consists of a base unit and replaceable input module. The EX270W can be upgraded easily when there are changes or enhancements to the system.

Future monitor models and versions with different panel types, backlight properties, and transmission methods can be equipped and adapted for the application in question. New models are designed so that they can be integrated smoothly into existing linked systems with current monitors.

System and application-oriented functionality

The EX270W was designed for the display of medical images in the operating room environment. The device can be adapted specifically to the local installation, system, and brightness conditions, to be used for example in direct image reproduction, in the distributed video management network, or in the endoscopy tower.

4 Setup and installation

⚠CAUTION
Changes to device Do not make any mechanical or electric changes to the device. EIZO GmbH will not be held liable if changes are made to the device.

4.1 Installation site

Note the following conditions at the installation location.

NOTICE
Device connections accessible at all times The monitor does not have a power switch. The monitor's power supply connection is the only way to disconnect the monitor from the 24 V power supply. • The 24 V power supply connection or the cable to the external line power has to be installed such that it is accessible to the user at all times. • If this is not possible, a separator accessible to the user must be designed and installed in accordance with applicable safety standards.

NOTICE
Condensation If the device is brought into a warm environment from a cold one, condensation may form in the device. This could result in a short circuit when switching on the device, damaging it. • Wait until the condensed water has evaporated, including that inside the device, before you switch it on. This can take several hours.

Avoid dusty environments

The monitor is intended for use in the clean environment of medical technology.

- Protect the monitor from dust, for example through appropriate building measures at the installation location.
- During transport, use the original packaging.

Maintain the permissible ambient temperature

The ambient temperature must be in a range of +5 °C - +40 °C.

Avoid reflections on the screen

The monitor has an anti-glare surface which is only effective if the screen is clean and grease-free.

- Comply with the specifications for Cleaning.

- Position the monitor to avoid reflections on the display area. Reflections can be caused by lights, windows, furniture with shiny surfaces, or light-colored walls.
- In order to reduce reflections on the monitor, only use non-dazzling reflector bulbs for the ceiling lighting.

avoid shocks and impacts

The monitor is sensitive to shock. Shocks and impacts on the panel surface can lead to total failure.

- Avoid such mechanical influences at all costs.

Movable installation

If the monitor is installed such that it can move, make sure that persons or objects in the facility are not endangered by the monitor's range of movement.

4.2 Installing the monitor

The monitor has a VESA 100 x 100 adapter and can be installed in a suitable ceiling suspension or wall mount.

Note the following during installation:

- The maximum torque for the monitor VESA attachment is 3 Nm.
- Comply with the following requirements when attaching to the holder:

Number	4
Thread	M4
Strength	8.8 in accordance with ISO 898-1
Insertion depth	5 - 7 mm

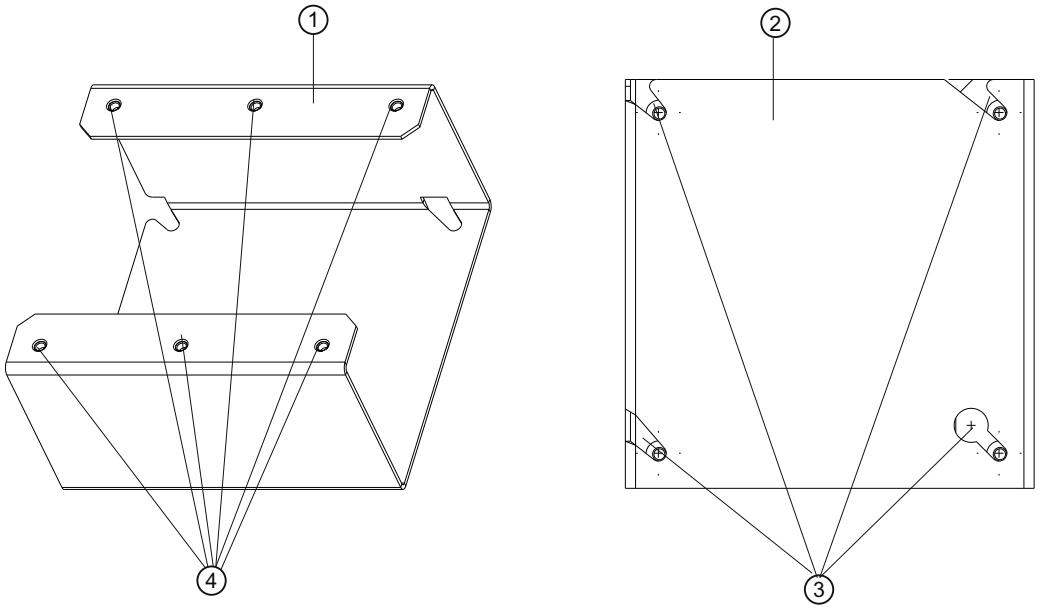
- Holders must be tested and approved by the manufacturer for the weight to be supported. Comply with the manufacturer's specifications regarding strength and torque.
- An installed stand must be sufficiently stable such that tilting up to 10° does not result in the monitor toppling. Comply with the manufacturer's specifications regarding strength and torque.

4.2.1 VESA spacer and VESA positioning rail

The VESA forward spacer and VESA positioning rail included in the monitor scope of delivery can be used when installing the monitor. They enable flexible adaptation to local installation conditions.

VESA spacer

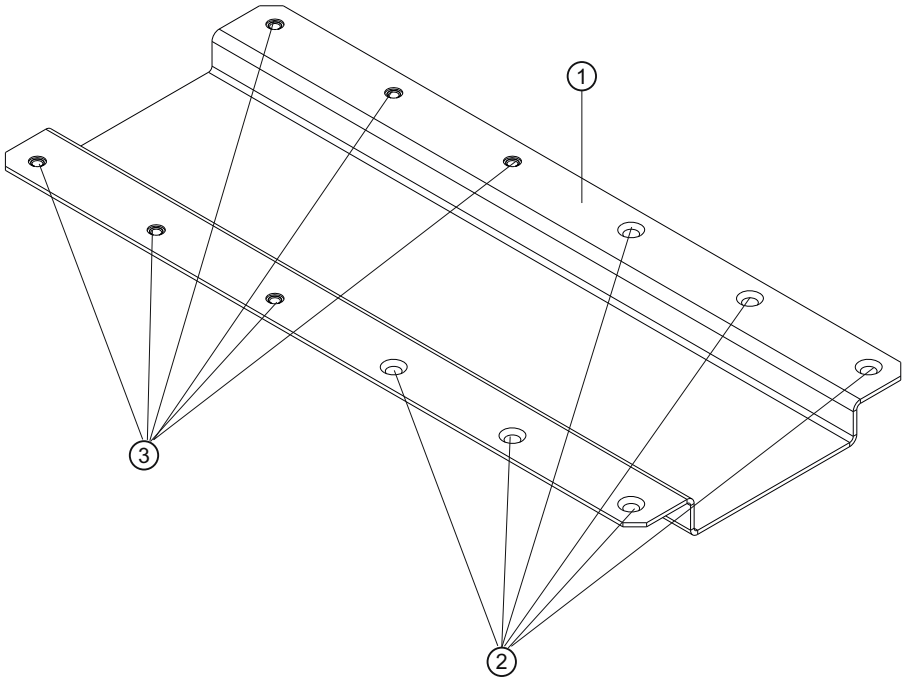
The VESA spacer can be used to increase the space between the monitor and the mounting device, such as the ceiling suspension or wall mount. It can also be used to simplify the connection of the signal and power cables routed to the monitor.



① VESA spacer (from above)
② VESA spacer (from below)
③ Recesses
④ Holes with insert nuts (M4 threading)

VESA positioning rail

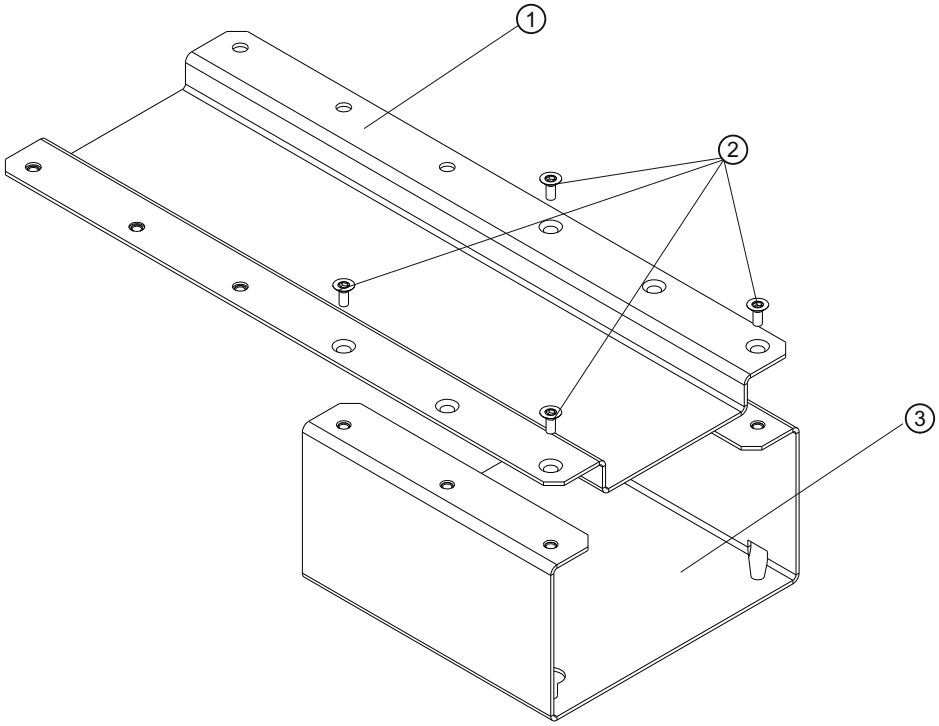
The VESA positioning rail can be used to shift the monitor 5 cm, 10 cm, or 15 cm to the left, right, up, or down.



① VESA positioning rail
② bore holes (without threading)
③ Holes with insert nuts (with threading)

4.2.2 Installing the VESA spacer and VESA positioning rail

Note
Mechanical properties of the system The values specified in Mechanical requirements [▶ 46] for vibration and shock were obtained for the monitor directly mounted to the test device. If the VESA forward spacer and/or the VESA positioning rail are used to mount the monitor, the mechanical properties change. • Please note that when selecting and installing a system that you minimize the effect of vibration and shock when using the VESA forward spacer and/or VESA positioning rail.

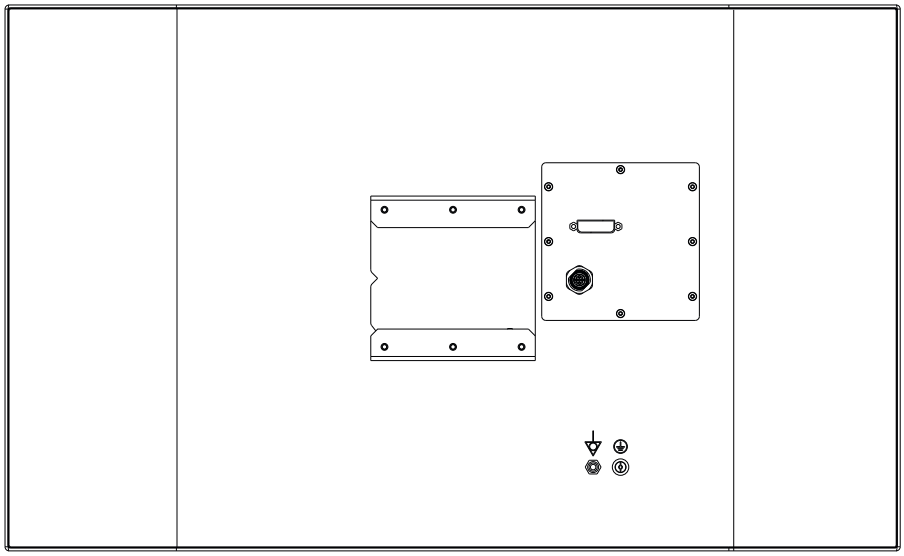


① VESA positioning rail
② M4 mounting screws
③ VESA forward spacer

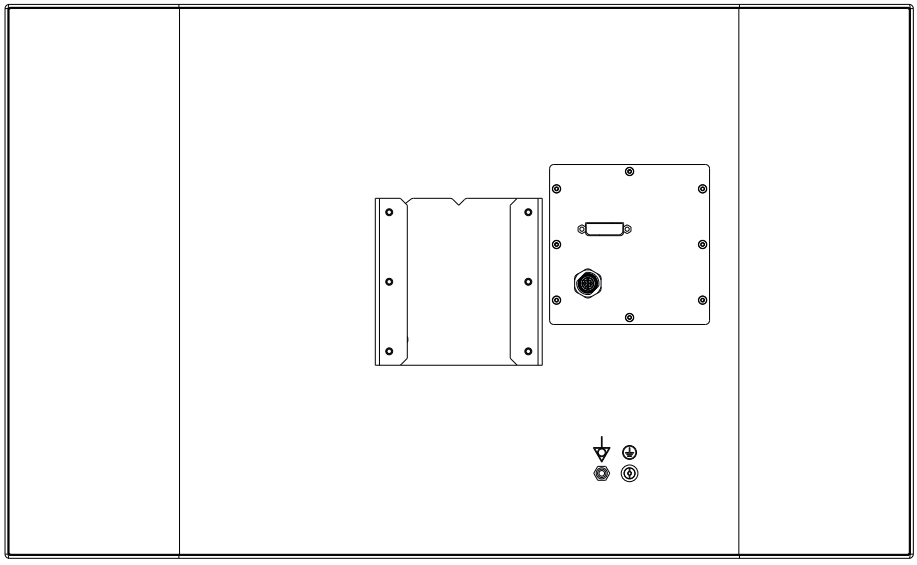
Note
Use the mounting screws provided to install the VESA forward spacer and VESA positioning rail.

Install the VESA forward spacer and VESA positioning rail as follows:

1. Screw the four mounting screws approx. 3 mm deep into the monitor VESA attachment.
2. Place the VESA forward spacer in the orientation desired:
   – If movements in horizontal direction are planned, position the marking on the forward spacer to the left.



– If movements in vertical direction are planned, position the marking on the forward spacer upward.



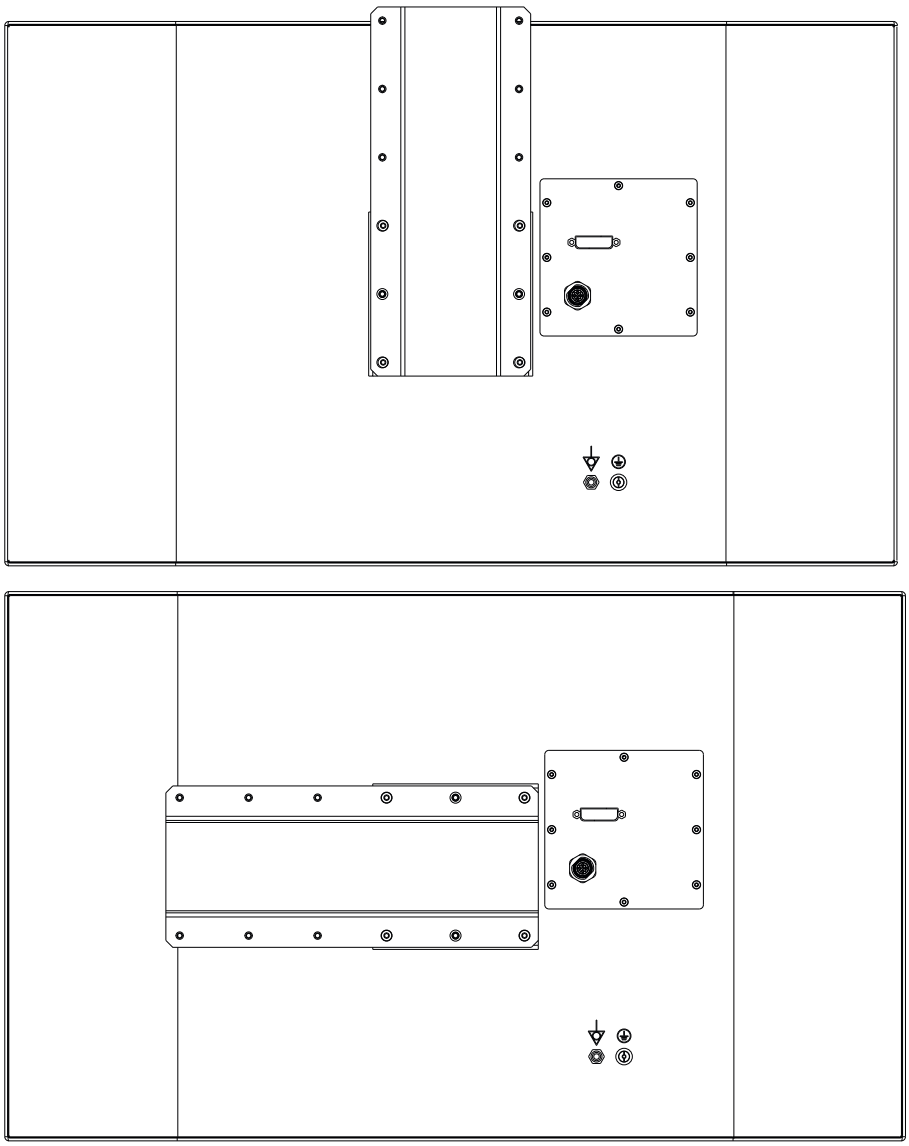
– Hang the VESA forward spacer with the recesses on the mounting screws.

– Tighten each mounting screw with 3 Nm of torque.

3. Bring the VESA positioning rail on the VESA forward spacer to the desired position.

   Note: The positioning rail must be placed so that at least four holes without threading are over the insert nuts of the forward spacer.
   The positioning rail has to turn accordingly when shifting to the left, right, up, or down.

4. Attach the VESA positioning rail to the VESA forward spacer using four mounting screws and a torque of 3 Nm.



5. Connect the ceiling suspension or wall mount to the threaded holes of the VESA positioning rail. Comply with the information provided by the manufacturer.

5 Connecting

5.1 Safety information for connection

Comply with all safety information and warnings for the device to ensure danger-free operation.

⚠CAUTION

Changes to device

Do not make any mechanical or electric changes to the device.

EIZO GmbH will not be held liable if changes are made to the device.

⚠CAUTION

Shielding measures

Follow all shielding measures according to the country-specific EMC Directive. If these guidelines are not observed, device malfunction may result.

⚠CAUTION

Grounding measure

The permissible leakage current is not exceeded during the first fault event. The device is grounded with an additional protective conductor to ensure the greatest possible electric safety.

NOTICE

Changes to device settings

Device settings may only be adjusted by trained service personnel. Otherwise, the warranty is void.

NOTICE

Cable installation

Please note the following:

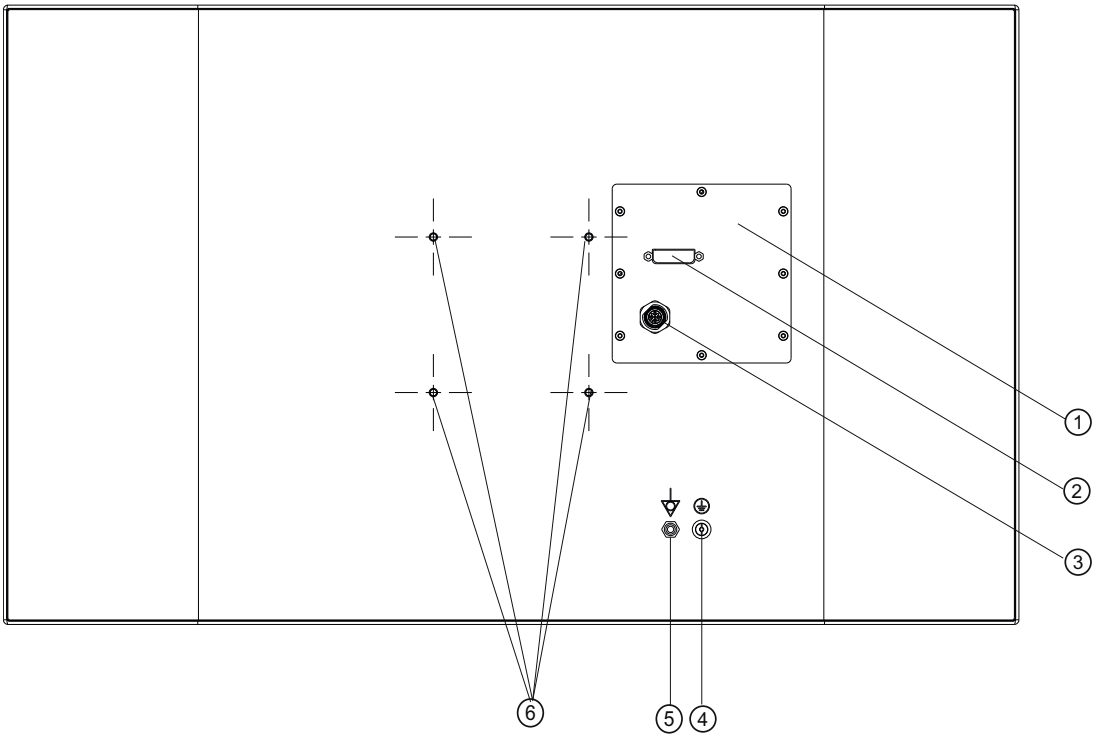
- Only shielded cables are to be used for all signal connections.
- If the relevant facility is available on the connector, all plug connections must be screwed tight or locked.
- The connecting cables must not be kinked.
- The minimum bending radius of a connecting cable generally equals five times the cable diameter.
- Do not route signal cables and power cables next to one another. Otherwise, line power subject to heavy interference could result in reversible pixel errors.
- The device must not share a line power supply with motors or valves (interference!).
- Externally connected cables can represent a trip hazard. Make sure that all incoming cables are safely routed.
- If the device includes cable grips, please use them to prevent unintended loosening of connected cables.

5.2 Device connectors

⚠ CAUTION

Removing or replacing the input module

Only trained service employees may remove or replace the input module. Patients may not be in the vicinity of the device if the input module is being removed or replaced.



① Input module
② DVI interface
③ Power connector
④ Grounding screw
⑤ Equipotential bonding connector
⑥ VESA attachment

DVI interface

The Input module TRM0000-DVI provides the monitor with a DVI interface.

See also Input module TRM0000-DVI [▶ 27].

Grounding screw

The additional protective conductor is connected to the grounding screw.

Equipotential bonding connector

The equipotential bonding connector is used when electric potential between electric devices differs and therefore needs to be equalized. This prevents differences in the potential between devices and conductive parts and minimizes the ground resistance.

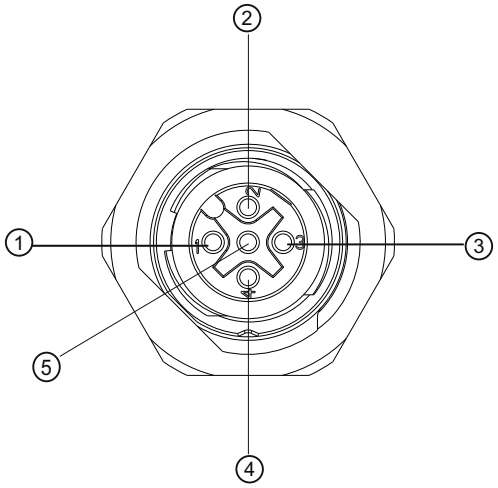
The equipotential bonding connector can minimize contact voltages from different sources, for example, when the monitor is used in a mobile system with other devices.

Power connector

The 5-pin M12 plug of the medical power supply unit tested according to the medical standard provides power to the device.

5.2.1 Power connector

The power connector is located on the input module on the back of the device. Power is provided through an external power supply unit. The monitor does not have a switch, and has to be turned on and off via the main power supply unit. The 24 V power input is the only separator with which to disconnect the monitor power supply unit from the line power.



Pin	Description
①	Input voltage 24 V +/- 10 %
②	Ground
③	Used for service purposes
④	Used for service purposes
⑤	Used for service purposes

Please note the following:

⚠CAUTION

Power supply unit

The monitor does not have a direct connection to line power. Therefore, a certified external power supply unit has to be used, taking into account the applicable international standards and national/regional regulations. The housing leakage current may not exceed 300 µA during the first fault event.

- Use only a power supply unit tested according to the medical standard, e.g., the external M12 power supply unit provided in the scope of delivery.

⚠CAUTION

Connecting to line power

The power supply unit provided is designed for line power with a grounded neutral conductor.

- To avoid risk of electric shock, this device must only be connected to line power with a protective conductor.
- Contact the responsible building technician or a qualified electrician if you are uncertain whether the line power is equipped with a protective conductor.
- After starting up the monitor, the entire system must fulfill the means of patient protection (MOPP).

⚠CAUTION

Risk of damage to the device

- Only use the power cable supplied with the device , or a connection cable with a protective conductor and an appliance plug in accordance with DIN 49547, IEC 60320 (max. length 3 m, cable e.g. H05VV-F 3x1.0 mm^2). The cable must comply with the safety regulations of the respective country.

⚠CAUTION

Connection in the USA and Canada

Molded power plugs must comply with the requirements for "hospital grade attachments" CSA Std. C22.2 No. 21 and UL 498.

⚠CAUTION

Connection in China

Only use power cables approved for China. These power cables are identified by the labels "CCC" or "CQC".

5.2.2 Input module TRM0000-DVI

The monitor can process digital DVI input signals with the Input module TRM0000-DVI.

NOTICE
The picture quality, interference immunity, and emitted interference of the entire system depend on the cable quality and length. Use only the DVI cables specified by EIZO or the transmission links available from EIZO.

NOTICE
Video source settings The video source is set on the monitor using the EDID data transmitted via the DDC interface. If the video source cannot interpret the EDID data, the monitor automatically attempts to adjust to the signal clocking of the video source. • Do not change these settings. Otherwise, the images will not be displayed correctly.

5.2.3 Connection procedure

⚠ **CAUTION**
Removing or replacing the input module Only trained service employees may remove or replace the input module. Patients may not be in the vicinity of the device if the input module is being removed or replaced.

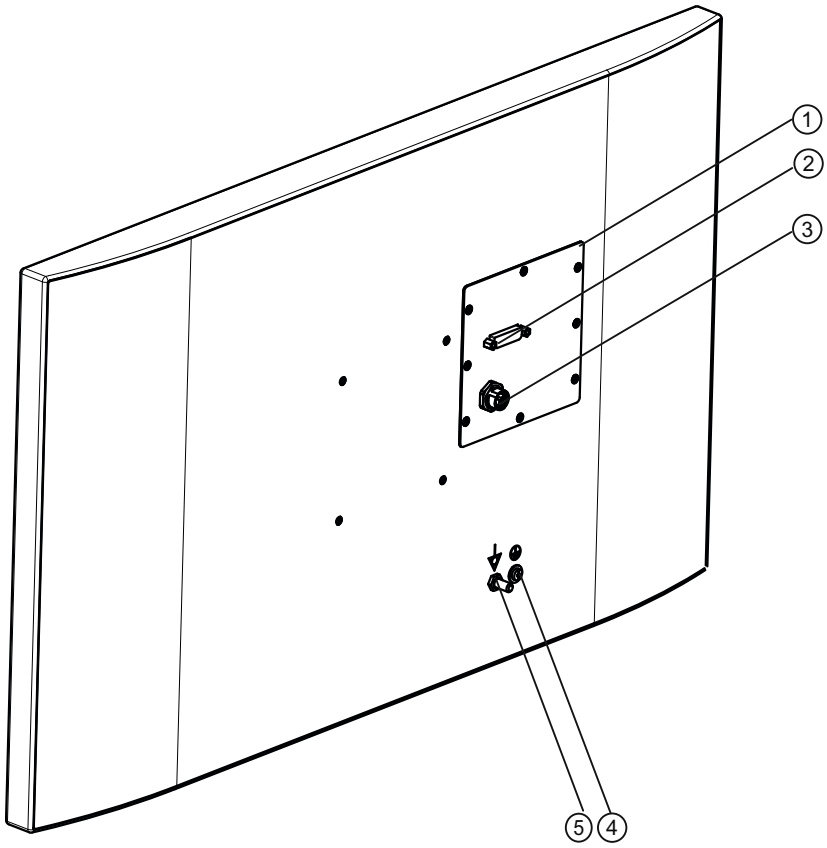
⚠ **CAUTION**
Connector Connectors may only be plugged in or removed by Service when the device is switched off.

Note
Connector area behind the monitor The monitor has a very thin housing so that is takes up as little space as possible. During installation, sufficient space must be provided for the power and signal cables. The bending radius of the connecting cable should not be less than five times the cable diameter. The spacer and positioning rail can be used to adapt the distance and position of the monitor to the installation circumstances.

Prerequisite

The monitor has to be installed in a ceiling suspension, wall mount, or stand.

Procedure



① Input module
② Connector for video signal cable (in this case: DVI interface)
③ M12 power connector
④ Grounding screw
⑤ Equipotential bonding connector

1. Connect the video signal cable to connector ② of input module ①. If possible tighten the screws to secure the video signal cable.
2. If the device is to be grounded ④ or connected for equipotential bonding ⑤, connect the corresponding cables.
3. Connect the external power supply to the monitor's M12 power connector ③.
4. Connect the external power supply's appliance plug to line power.

   Note: Comply with the information in section Power connector [▸ 25].

6 Commissioning

⚠ CAUTION
Factory settings All monitors are optimally preset in the factory, meaning that changes are not usually required.

6.1 Switching on the monitor and video source

Note
To obtain the best possible results, the video source should support communication via the Display Data Channel (DDC).

The monitor and video source can be switched on in any order.

Switching on the monitor before the video source

1. Switch on the monitor.

   The operation LED lights up yellow.

2. Switch on the video source.

   If the connected signal can be displayed on the monitor, the operation LED will light green.

Switching on the video source before the monitor

1. Switch on the video source.
2. Switch on the monitor.

   If the connected signal can be displayed on the monitor, the operation LED will light green.

⚠ CAUTION
Operation LED does not light green? If the operation LED does not light green after switching on and with a video signal applied: • check the system for incorrect connection or operation before contacting Service.

6.2 Avoidance of image sticking

Image sticking may occur with LCD monitors. Image sticking is an effect whereby a faint image of the previous screen contents can be seen after the display contents have changed.

The following measures can reduce or prevent image sticking:

- Use a screen saver with regularly changing images
- Switch off the monitor when it is no longer needed.
- The monitor has an energy saving mode:
  If the application in use supports the energy saving mode, activate it.

Note
DMPM (Digital Monitor Power Management) The monitor supports DMPM (Digital Monitor Power Management), which can be used to save energy. When DMPM is active, the monitor backlight switches off automatically for example, if the monitor is without a video signal for an extended period. Comply with the instructions of the operating system manufacturer regarding the power management settings.

See also

"Power Manager" main menu [▶ 36]

6.3 Check for pixel defects

Pixel defects (small bright or dark dots) can occur in LCD monitors. During the manufacturing process, all monitors are checked for the permitted number of defective pixels.

Defective pixels cannot be corrected.

6.4 Video source settings

Automatically setting the video source

As the prerequisite for automatically setting the video source, the video source has to support communication via the Display Data Channel (DDC), and the devices have to be connected correctly. When switched on, the monitor's EDID data (Extended Display Identification Data) is read out, and the video source can detect the monitor.

When the signal is detected the operation LED lights green and an image is displayed.

Operating a monitor with supported timing and resolution

Note
Supported timing The monitor supports timing from 50 Hz to 70 Hz. If the timing is not detected, either no image or a faulty image is displayed.

To operate the monitor with supported timing and resolution, the video source has to be set up accordingly.

This could be, for example, the following measures:

- The driver provided for the graphics card used is properly installed and configured.
- The camera signal timing is set to a value from 50 Hz to 70 Hz.
- The corresponding firmware is installed on the Large Monitor Manager.

NOTICE
Installation and parameterization of the video source Please refer to the video source manufacturer's manual for detailed information about installation and configuration of the video source.

7 Operation

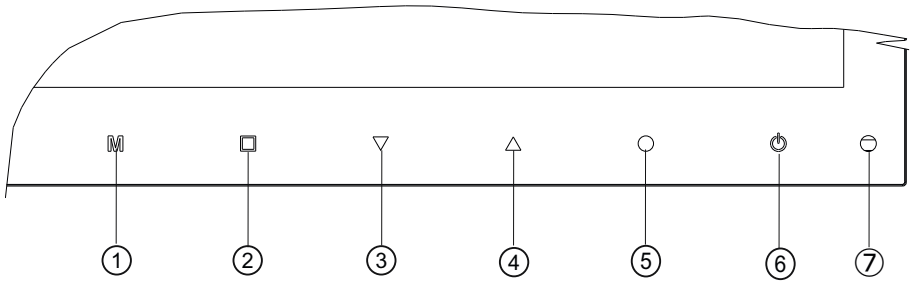
During operation, the monitor's operation LED is permanently green. If the LED lights up with another color, the monitor is not operating within normal parameters.

Note
Monitor in standby When the monitor switches to standby, the power is minimized, lamps and processors switch off and the operating hours calendar is deactivated. A warm-up time of 20-30 minutes is recommended to ensure lamp stability after switching back on.

Measures in the event of a failure

Note
Device malfunction in operation If the device is not working properly, check the system for incorrect connection or operation before contacting Service.

7.1 Operator controls



① Mode
② Menu
③ Down (down arrow)
④ Up (up arrow)
⑤ Enter
⑥ Standby/Operation
⑦ Operation LED

Control keypad

The RadiForce EX270W has a projective capacitive touch control keypad. The keys are located on the lower right corner on the front of the monitor.

Key functions

The keys have the following functions:

Key	Action
Mode	• Start CAL switch • Select LUT
Menu	• Opens the main menu • Returns to the higher level menu or closes the top OSD menu • Jumps to the element to the left
Down ↓ (down arrow)	• Scroll down in the menu • Reduce the selected entry
Up ↑ (up arrow)	• Scroll up in the menu • Enlarge the selected entry
Enter	• Opens the next submenu • Jumps to the element to the right • Performs the selected function
Standby/Operation	Toggles the device between standby and operation

7.2 Locking or unlocking the OSD menu

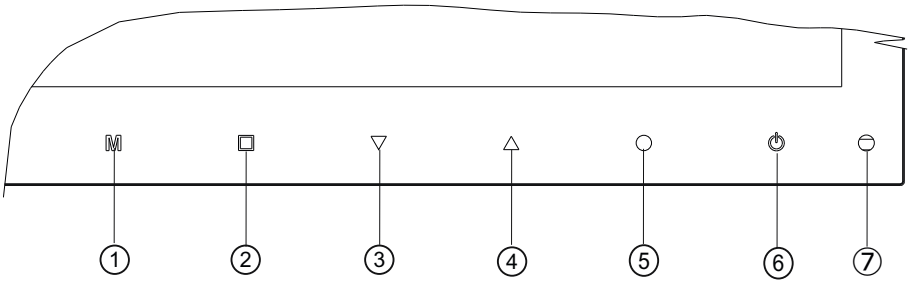
⚠CAUTION

Locking and unlocking the OSD menu

Only authorized service personnel may lock or unlock the OSD menu.
The OSD has to be locked if inappropriate operation by the user can impact the intended use of the monitor.

The OSD is unlocked when delivered.

To lock or unlock the OSD menu, proceed as follows:



1. Press the "Enter" key ⑤ once.
2. The press the "Down" key ③ three times.

   The LED display brightness changes when the keys are pressed as feedback.

The OSD menu is now locked or unlocked, depending on its initial state.

7.3 Description of OSD menu

The OSD menu is used to make settings for operation of the monitor.

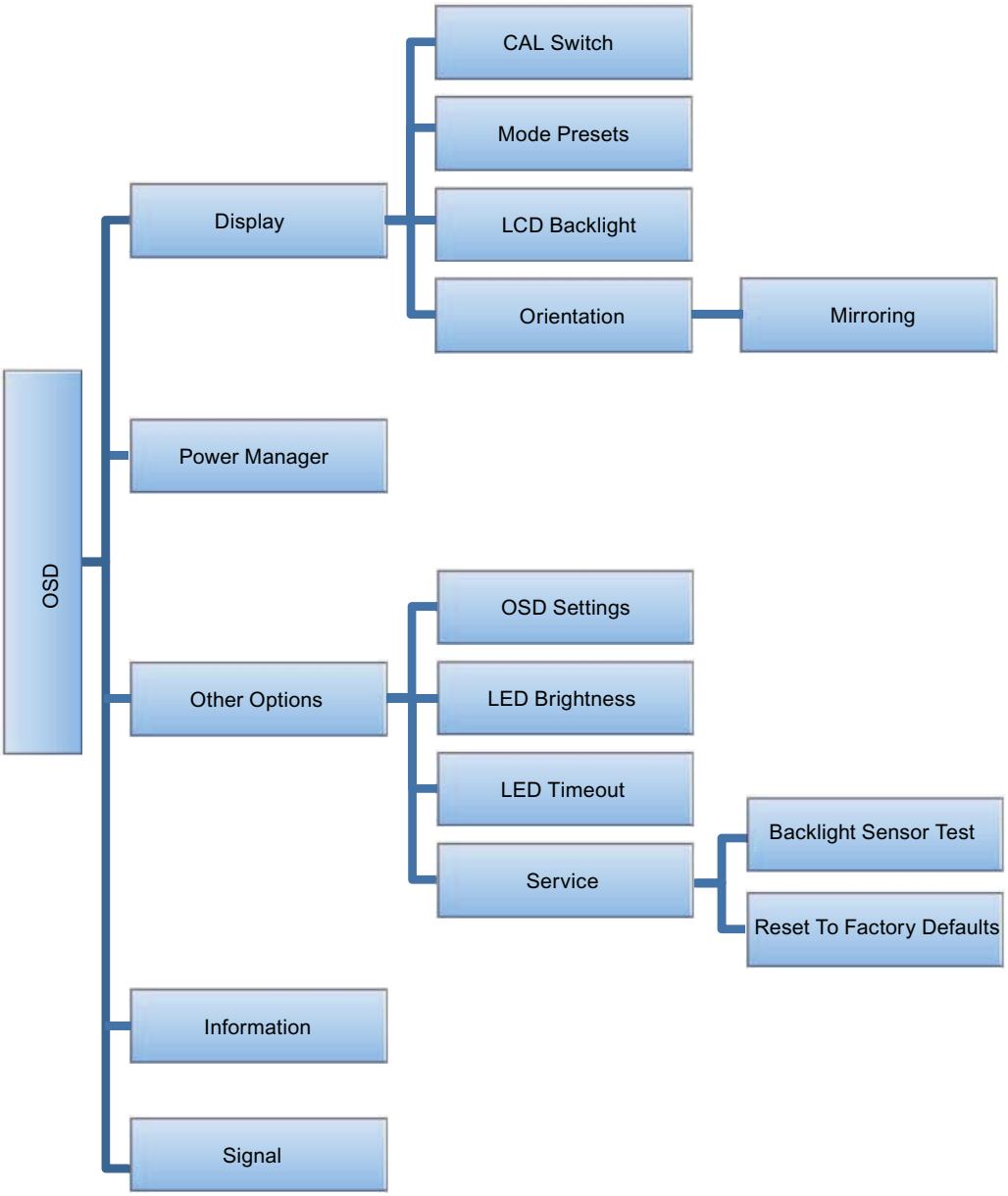


Fig. 1: OSD menu layout

7.3.1 Display main menu

Function	Adjustment / setting range	Description
CAL Switch	LUT 1 LUT 2 LUT 3 LUT 4 LUT 5 *Default: LUT 1*	**Selecting the Look Up Table (LUT)** The LUT determines the monitor's gamma curve. Using a different LUT, for example, you can highlight specific color effects or gray sale levels or adapt the brightness to local conditions. **Note:** Depending on the system, the gamma model names *LUT 1* up to *LUT 5* may be called something else. **Note:** Select a DICOM LUT to view radiographic images. **Note:** The brightness set significantly impacts the operating life of the backlight. If the backlight is no longer able to reach the set brightness due to age, select a LUT with lower brightness.
Mode Presets	LUT 1: "0" or "1" LUT 2: "0" or "1" LUT 3: "0" or "1" LUT 4: "0" or "1" LUT 5: "0" or "1" *Default: "1" for every LUT*	**Setting the Mode Presets** This function enables you to make any LUT settings in the "CAL Switch" function selectable (1) or unselectable (0). LUTs deactivated in the Mode Presets menu are not displayed when selecting the CAL Switch function. The names of the selectable LUT settings are taken from the CAL Switch. **Note:** An active LUT setting cannot be replaced.
LCD Backlight	LUT BL Command Active *Default: Active*	**Backlight Command Control** If the command is marked, the brightness control based on the gamma curve is active. This means the maximum value of the gamma curve calibrated at the factory is set as the default. This ensures that the maximum brightness fits with the gamma curve.
	Backlight 0 - 1023 *Default: 800*	**Change the brightness of the backlight** You change the backlight brightness here. If you adjust brightness, the gray scale values no longer correspond to the set gamma curve. The calibrated values therefore cannot be guaranteed. **Note:** The brightness set significantly impacts the operating life of the backlight.

Function	Adjustment / setting range	Description
Orientation	Mirroring: Horizontal: "0" or "1" Vertical: "0" or "1" *Default: Horizontal "0", Vertical "0"*	Setting the Mirror function Use "Horizontal" and "Vertical" to mirror the monitor display. "1" switches mirroring on and "0" switches it off. Horizontal mirroring mirrors the monitor image horizontally. The axis of reflection is vertical. Vertical mirroring mirrors the monitor image vertically. The axis of reflection is horizontal. **Note:** The OSD menu is not mirrored to maintain legibility. The OSD menu is turned 180° during vertical mirroring. Then ensures legibility in when the monitors are installed in a ceiling suspension one on top of the other and their narrower edges abut one another.

7.3.2 "Power Manager" main menu

Function	Adjustment / setting range	Description
DMPM …	DMPM Lamp Dimmed DMPM Lamp Off DMPM Disabled *Default: DMPM Lamp Dimmed*	**Set the DMPM (Digital Monitor Power Management)** • Lamp Dimmed: Backlight brightness is reduced to a minimum. This saves energy and the lamp only requires a short warm-up time after being reactivated. In this mode, the energy saving mode time counts toward the operating hours. • Lamp Off: The backlight is shut down completely. The energy saving mode is increased compared to "Backlight Dimmed". Prior to diagnosing radiographic images however, the lamp requires a warm-up time after reactivation. • Disabled: DMPM signals are ignored. The monitor does not change to energy saving mode.

7.3.3 "Other Options" main menu

Function	Adjustment / setting range	Description
OSD Settings	Horizontal 0 - 99 *Default: 50* Vertical 0 - 23 *Default: 12* Transparency 64 - 255 *Default: 255*	**Setting the position and transparency of the OSD menu** The horizontal and vertical position of the OSD menu is set using the appropriate coordinates. Use "Transparency" to change the transparency of the OSD background. Transparency is adjustable to three levels. The ranges are 64-127, 128-191 and 192-255. Values within a range have the same level of transparency.
LED Brightness	Bright Dimmed *Default: Dimmed*	**Setting the brightness of the operation LED** You can lower the brightness of the operation LED to prevent interfering stray light. **Note:** The brightness of the operation LED will increase automatically to indicate a monitor error when one occurs. The color of the operation LED indicates a possible cause of the error. [▶ 41]
LED Timeout	No Timeout Timeout (min) 1 *Default: No Timeout*	**Setting the operation LED timeout** The operation LED can be switched off after a set wait time (in minutes) to prevent interfering stray light. **Note:** The operation LED switches on automatically to indicate a monitor error when one occurs. The color of the operation LED indicates a possible cause of the error. [▶ 41]
Service	Backlight Sensor Test Reset To Factory Defaults	**Backlight Sensor Test** When you select this function, a series of brightness settings is checked using the internal sensor. • The these values differ from the defaults, the message "Check with QA SW" is displayed. Contact your service partner. • If the values do not differ from the defaults, "Normal" status is displayed. **Reset To Factory Defaults** Selecting this function opens a dialog box where you can reset the device to the factory settings using "Execute Reset". **Note:** All changes or recalibrations made are lost when resetting back to the factory settings. If you are uncertain, contact your service partner.

7.3.4 "Information" main menu

Function	Adjustment / setting range	Description
	S/N ######## AN ######## Working Hours ### Temperature (°C) ## Firmware ##### FPGA 1 #### OSD Version ####	**Information** Selecting this functions displays the following information regarding the monitor: • Serial number • Asset number • Number of operating hours • Internal temperature • Installed firmware, FPGA, and OSD version.

7.3.5 "Signal" main menu

Function	Adjustment / setting range	Description
	Input Width #### Height ####	**Information** Selecting this function displays information regarding the video signal at the video input. The input shows which module is used on the video input.

8 Cleaning and maintenance

8.1 Cleaning

Recommended cleaning agents and disinfectants

NOTICE
Device maintenance, cleaning and disinfecting • Make sure liquids do not seep into the device. Liquids that seep into the device may result in an electric shock or failure of the device. • The screen is extremely sensitive to mechanical influences. Absolutely avoid scratches, shocks, etc. for this reason. • Clean the screen when dirty using a microfiber cloth and, if necessary, a recommended cleaning agent. Clean the housing parts with a recommended cleaning agent. • Use only tested disinfectants. • Remove drops of liquid from the device immediately. Contact with liquids over a longer period can cause discoloration or allow calcium deposits to form on the surface.

Agent class	Tested cleaning agents and disinfectants:	Further examples
Aldehyde	Melsitt	Aldasan 2000 Kohsolin Gigasept FF Cidex
Chlorine derivatives	Terralin	Quartamon Med
Disinfectants	Mikrozid liquid Nocolyse	TaskiDS5001 (Diverseyle-ver Labs) Morning Mist Surfanios Fraicheur Citron (Anios Labs)
Guanidine derivatives	Lysoformin	
Quaternary compounds	Incidur spray, undiluted	
Standard household washing-up liquid	denk mit	Fairy Ultra, Pril, Palmolive
Pyridine derivatives	Activ spray, undiluted	
Water	Tap water Distilled water	

Note
Information on cleaning or disinfection of other system components can be obtained from the respective instructions for use.

Prohibited cleaning agents and disinfectants

The following cleaning agents and disinfectants can bleach the paint after a longer period of application:

Agent class	Tested cleaning agents and disinfectants:	Further examples
Alcohol	Ethyl alcohol, 96%	Hospiset cloth
Peroxide compounds	Perform	Dismozon pur
Petroleum spirit	Petroleum spirit close to boiling	Petroleum ether

8.2 Maintenance

⚠CAUTION

Maintenance

The monitor must not be serviced in the presence of patients.

Check the settings on a regular basis

The picture quality of the monitor changes due to aging of the LCD unit and the backlight.

- Check the monitor settings against the country-specific guidelines at regular intervals.
- Correct the settings if necessary.

Carrying out quality tests

Check the quality characteristics using suitable test patterns. The following two test patterns, for example, are suitable:

- SMPTE pattern: The gray levels must be displayed correctly and visibly at both 5% and 95%.
- VeriLum pattern: The small squares must be visibly displayed in all gray scale levels.

9 Troubleshooting

The operation LED continuously lights up green when operating normally. In the event of a fault, you can localize it as follows, based on the screen display and the operation LED.

1. Check the monitor for the possible causes listed in this table.
2. Carry out the remedial measures before contacting the service personnel.

No picture

LED	Cause	Remedy
Green	Video signal detected, but the monitor or graphics card is set up incorrectly	• Check the monitor settings (e.g. LUT, brightness, no test pattern, etc.). • Check and adapt the graphics card settings.
	Video signal detected but device defective	• Inform Service.
Yellow	No error, DVI-DMPM Power Management System active: Computer operating system switches to monitor into the mode that saves energy and protects the backlight	• Deactivate energy saving mode.
	No input signal	• Signal cable is not connected.
	Incorrect timing is set	• Apply supported timing.
Red	Internal error	• Inform Service.
	Overtemperature threshold exceeded: The nominal value for the backlight control is reduced by half. Brightness is reduced significantly to lower the temperature and avoid potential damage.	• Switch off the monitor. • Check the ventilation and improve these conditions if necessary. • Select a lower brightness level for standard operation.
Dark	No line power.	• Connect device to line power.
	Power cable is not inserted or incorrectly inserted.	• Check the power cable.
	Power cable is defective	• Replace power cable.
	Blown fuse	• Inform Service.

Picture displayed

LED	Cause	Remedy
Green	No error, correct operating status	-
Yellow	The monitor is in a warm-up period.	• Select a lower brightness level for standard operation. • Wait for the warm-up period to expire. The LED turns green when the stable luminance level is reached.

LED	Cause	Remedy
Yellow (flashing)	The monitor has not reached the stabilized luminance level.	• Select a lower brightness level for standard operation. • Inform Service.
	Monitor has reached an initial critical temperature level.	• Select a lower brightness level for standard operation. • Check the ventilation and improve these conditions if necessary.
	Internal error	• Inform Service.
Red	Overtemperature threshold exceeded: The nominal value for the backlight control is reduced by half. Brightness is reduced significantly to lower the temperature and avoid potential damage.	• Switch off the monitor. • Check the ventilation and improve these conditions if necessary. • Select a lower brightness level for standard operation.
	Internal error	• Inform Service.
Dark	LED timeout activated	• No error. • Switch off the LED timeout setting.
	Operation LED is defective	• Inform Service.

10 Technical specifications

Note
Applicability of technical specifications All technical specifications are valid after a warming-up period of 30 minutes.

10.1 Monitor characteristics

Type	TFT, dual domain, IPS mode
Active area	597.88 mm x 336.31 mm
Screen diagonal	27" (68.6 cm)
Resolution	1920 x 1080 pixels
Refresh rate	60 Hz
Pixel arrangement	RGB vertical stripes
Pixel spacing	0.3114 mm x 0.3114 mm
Contrast ratio	1000:1 typical, 600:1 minimal typical
Horizontal viewing angle	Typically 178° typically for contrast ratio > 10:1
Vertical viewing angle	Typically 178° typically for contrast ratio > 10:1
Backlighting	White LEDs
Screen brightness	Typically 600 cd/m² Min. 500 cd/m²

10.2 Power supply

Monitor power supply

Power connector	24 V DC M12 power supply socket
Line voltage	DC 24 V +/-15%
Current consumption	max. 2.5 A
Maximum power consumption	55 W
Power consumption in Standby Mode	• 5.2 W (when "DMPM Lamp Off" is activated) • 20.6 W (when "DMPM Lamp Dimmed" is activated)

External M12 power supply unit (included in scope of delivery)

Power connector	Non-heating appliance socket
Line voltage (input)	100 V AC - 240 V (± 10 %)
Line frequency	50 Hz - 60 Hz (± 5 %)

Current consumption	max. 1.62 A - max. 0.72 A (depending on line voltage)
Line voltage (output)	24 V / max. 2.62 A, M12 power supply plug
Power	60 W

10.3 Input modules

The monitor is delivered with a Input module TRM0000-DVI. It was designed to support various input modules.

Input module TRM0000-DVI (delivered pre-installed)	• 1 single link DVI-I socket (analog pins are not used) - max. 1920 x 1080 at 50 - 70 Hz • Service and communication using DDC channel of DVI socket
Input module TRM0000-M12	• 1 single link DVI connection signal via TDL M12 socket - max. 1920 x 1080 at 50 - 70 Hz • Service and communication using DDC channel of the M12 socket
Input module TRM0000-TDL	• 1 single link DVI connection signal via RJ45 socket - max. 1920 x 1080 at 50 - 70 Hz • Service and communication using DDC channel of RJ45 socket

10.4 Mechanical design

Housing components	Metal and plastic
Ventilation openings	None
Degree of protection according to EN 60529	Front: IP65 Back: • IP65 with Input module TRM0000-M12 • IP42 with Input module TRM0000-DVI • IP41 with Input module TRM0000-TDL • IP55 housing back wall connection
Connection panel	On the back, integrated into the input module
Weight (without stand)	10 kg +/- 10%
Dimensions (W x H x D) in mm (without stand)	653 x 398 x 39, depth 53 mm with connection plug

10.5 Climatic conditions

In operation	
Temperature range	+5 °C - +40 °C Ambient temperature
Temperature gradient	Max. 5 °C/h, no condensation
Air pressure	700 - 1060 hPa

Transport and storage (packed)	
Temperature range	-20 °C - +60 °C ambient temperature
Temperature gradient	Max. 5 °C/h, no condensation
Humidity	10 - 90 %, non condensing, at 25 °C
Air pressure	200 - 1060 hPa

10.6 Safety regulations

CE

This product has been assigned a CE marking in compliance with the stipulations of directives 93/42/EEC and 2011/65/EU, concerning medical products.

Safety regulations	
Safety standards	• IEC/EN 60601-1 (Second Edition) • IEC/EN 60601-1 (Third Edition) • CAN/CSA - C 22.2 No. 601.1-M90 • CAN/CSA - C 22.2 No. 60601-1-08
Protection class	Protection class I
Degree of protection according to EN 60529	Front: IP65 Back: • IP65 with Input module TRM0000-M12 • IP42 with Input module TRM0000-DVI • IP41 with Input module TRM0000-TDL • IP55 housing back wall connection

10.7 Mechanical requirements

In operation (obtained directly attached to test device)	
Vibrations	According to EN 60068-2-6 1 - 9 Hz at ± 0.75 mm deflection 9 - 150 Hz at 12 m/s², 8 cycles each per x/y/z-axis, 1 octave / minute
Shock	According to EN 60068-2-27 50 m/s², 11 ms, half sine, 3 shocks each in each direction and +/- total shocks: 18

Packaged unit	
Vibrations	According to EN 60068-2-64 x, y and z axis (10 - 200 Hz) at 1 m²/s³ (200 - 2000 Hz) at 0.3 m²/s³ 60 minutes per x/y/z axis
Shock	According to EN 60068-2-27 100 m/s², 11 ms, vertical axis, 100 shocks each in + and - direction

10.8 Electromagnetic compatibility

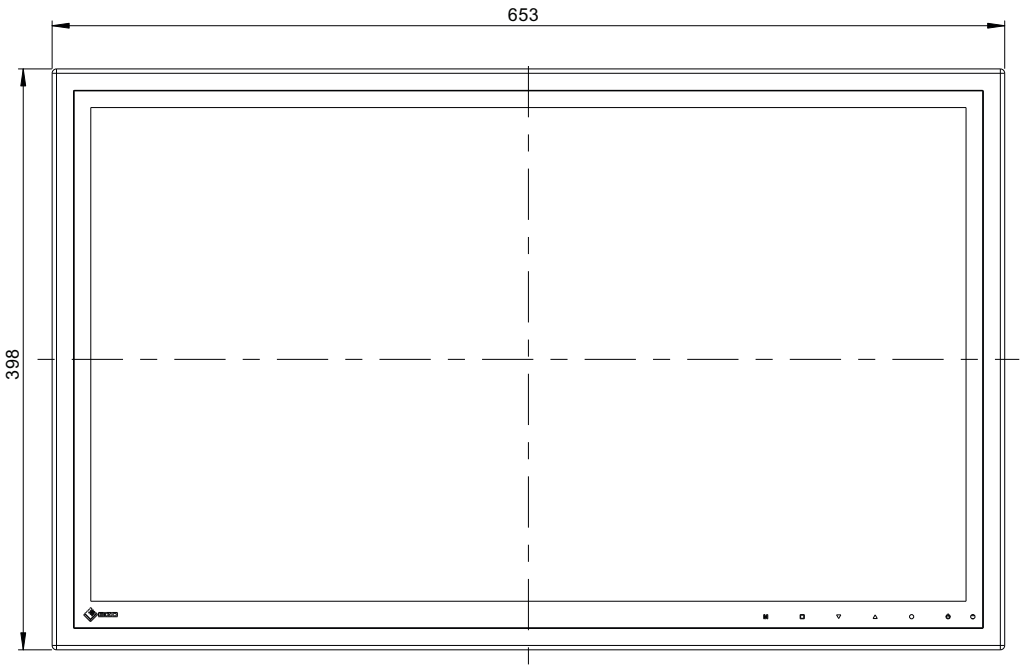
Electromagnetic compatibility	
Interference immunity/interference emissions	• IEC/EN 60601-1-2, 3rd Edition • EN 55011:2009+AC:2010 • EN 55022:2010+AC:2011 • Subpart B of Part 15 of FCC Rules Class B • C-Tick – CISPR22 Interpretation Sheet 2:2010, Class B – EN55022:2010+AC:2011, Class B – IEC 61000-3-2:2009 – EN 60601-3-2:2006, A2:2009 • VCCI/JEIDA – CISPR22 Interpretation Sheet 2:2010, Class B – EN55022:2010+AC:2011, Class B – IEC 61000-3-2:2009 – EN 60601-3-2:2006, A2:2009
Electrostatic discharge on casing parts (ESD)	IEC 61000-4-2 Ed.2.0 (2008) EN 61000-4-2:2009-03 Nominal voltage 240 V/50 Hz 1/60 nsec Contact 2, 4, 6, 9 kV (direct and indirect discharge), Air 2, 4, 8, 12 kV (direct)
RF irradiation	IEC 61000-4-3 Ed.3.2 (2010-04) EN 61000-4-3/A2:2010-07 80 MHz - 2500 MHz 6 V/m 80 % AM with 1 kHz
Burst on power cables	IEC 61000-4-4 2013-04 edition EN 61000-4-4 2012-11 edition Testing with 100 V/60 Hz and 240 V/50 Hz nominal voltage 2, 3 kV, 5/50 nsec; coupling to power supply cables, ±2 kV to signal cables
Burst on signal lines	EN 61000-4-4:2010-03 1 kV

Electromagnetic compatibility	
Surge on power cables	IEC 61000-4-5 Corr. 1 (2009-10) EN 61000-4-5 Edition 2006-11 Testing with 100V/60 Hz and 240 V/50 Hz nominal voltage Hybrid generator values: 1.2/50-8/20 µsec. 0.5, 1, 2 kV symmetrical; 0,5, 1, 2, 3 kV asymmetrical at 0, 90, 180, 270 degrees Input on power supply lines
Magnetic fields	IEC 61000-4-8 (2009-09) EN 61000-4-8 Edition 2010-02
• Constant fields	Nominal voltage 240 V/50 Hz 4000 A/m current consumption – change 5 %
• Alternating fields	Nominal voltage 100 V/50 Hz and 60 Hz Standard: 3 A/m 10 A/m at 100 V/60 Hz 10 A/m at 240 V/50 Hz
Voltage fluctuations	IEC 61000-4-11 (2010-08-01) EN 61000-4-11 Edition 2004-08 a) Nominal voltage 240 V/50 Hz b) Nominal voltage 100 V/60 Hz Requirements according to IEC standard Dips at nominal voltage 240 V / 50 Hz, each • 30 % for 25 periods of malfunction criterion A • 60 % for 5 periods of malfunction criterion A • 100 % for 0.5 periods of malfunction criterion A Dips at nominal voltage 100 V / 60 Hz, each • 30 % for 25 periods of malfunction criterion A • 60% for 5 periods of malfunction criterion A • 100 % for 0.5 periods of malfunction criterion A, C Recovery time > 1 s each
Line reaction to harmonics	IEC 61000-3-2 Ed.3.2 (2009) EN 61000-3-2, A2, 2009-07 edition Nominal voltage 240 V/50 Hz (-30 %); measurement according to Class D GB17625.1
Line reaction to voltage fluctuations	EN 61000-3-3 Ed.2.0 (2008-06) EN 61000-3-3 Edition 2008-09 Nominal voltage 240 V/50 Hz (-30 %)

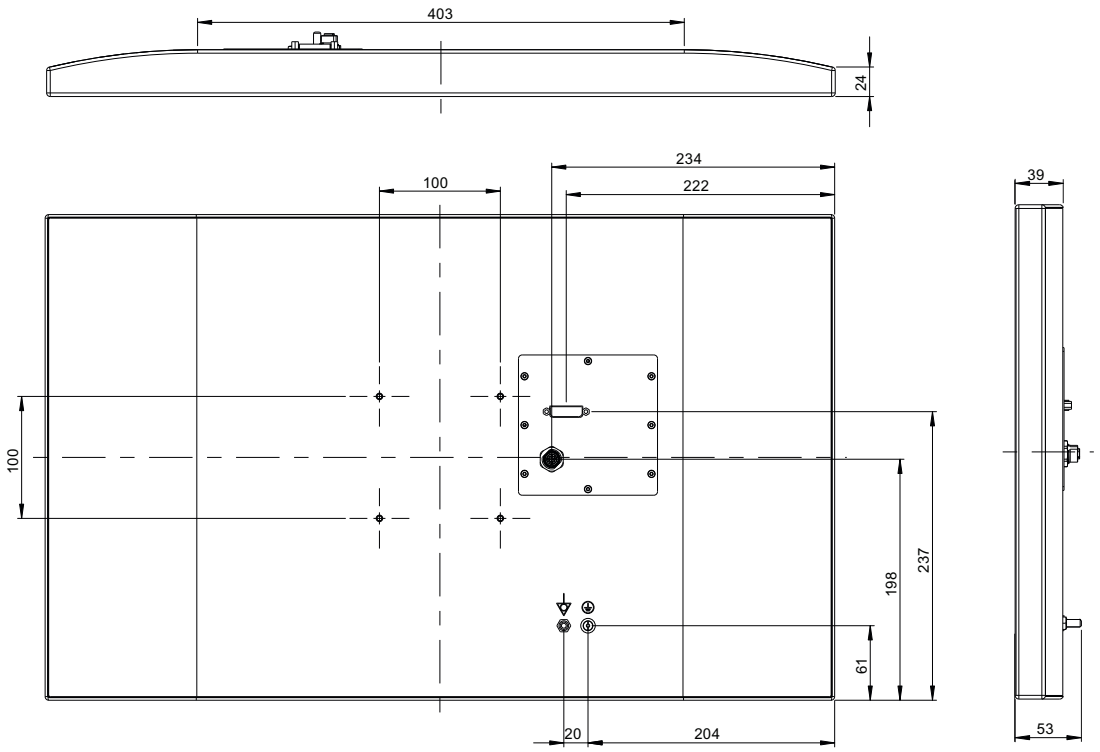
11 Dimensioned drawings

All dimensions in mm

11.1 Front view



11.2 View from behind, below, and to the side - with DVI input module



12 Spare parts / accessories

12.1 Overview of accessories

Product	Order No.	Description
Input module TRM0000-DVI	6GF6051-0AA00	DVI input module
Input module TRM0000-M12	6GF6051-0AA01	TDL M12 input module
Input module TRM0000-TDL	6GF6051-0AA02	TDL input module
External M12 power supply unit	6GF6278-0LA00	Replacement power supply unit (tested according to medical standard)
M12 power cable extension	6GF6278-0LA01	15 m long extension cable for power supply unit

12.2 Accessory description

Input module TRM0000-DVI

The Input module TRM0000-DVI is pre-installed as standard in the EX270W delivery volume. It can be ordered later as needed.
Order no.: 6GF6051-0AA00

Input module TRM0000-M12

The Input module TRM0000-M12 offers the highest IP protection rating for the EX270W monitor. The module enables signal transmission over long distances using the TDL M12 cable or in combination with a special adapter and standard TDL cables.
Order no. 6GF6051-0AA01

Input module TRM0000-TDL

The Input module TRM0000-TDL enables the monitor to be connected to the video source using standard TDL cables with an RJ45 plug. Their maximum length is 36 m
Order no.: 6GF6051-0AA02

External M12 power supply unit (tested according to medical standard)

The external M12 power supply unit tested according to the medical standard is included in the scope of delivery of the EX270W. It can be ordered later as needed.
Order no.: 6GF6278-0LA00

M12 power cable extension

The M12 power cable extension, with a length of 15 m, enables split installation of the external power supply.
Order no.: 6GF6278-0LA01

DVI Transmission Link TDL3600-SL, TDL, and TDL M12 signal cable

Using the digital transmission link and TDL signal cable, high-quality video data can be transmitted up to 36 meters with no loss of data. Transmission over Ethernet cables permits robust handling and easy installation. The cable can also be easily routed through small openings.

EIZO offers TDL signal cables of different lengths to meet varied installation requirements. Together with the Input module TRM0000-M12, the TDL M12 cable offers the highest IP protection rating for the EX270W monitor.

The TDL signal cables can be combined with other EIZO products (LMM0804, TDL transmitter, etc.), and can be connected to the EX270W input module directly or via an adapter.

13 Appendix

13.1 Guidance and manufacturer's declaration – electromagnetic emissions

The RadiForce EX270W monitor is intended for use in the environment specified below. The user of the monitor should ensure that it is used in such an environment.

Emissions test	Compliance	Electromagnetic environment – guidance
RF emissions CISPR 11	Group 1	The monitor uses RF energy only for its internal functioning. Therefore, its RF emissions are very low and are not likely to cause any interference in nearby electronic devices.
RF emissions CISPR 11	Class B	The monitor is suitable for use in all establishments, including domestic establishments and those directly connected to the public low-voltage power supply network that supplies buildings used for domestic purposes.
Harmonic emissions according to IEC 61000-3-2	Class A	
Voltage fluctuations / flicker emissions IEC 61000-3-3	Complies	

13.2 Markings and symbols

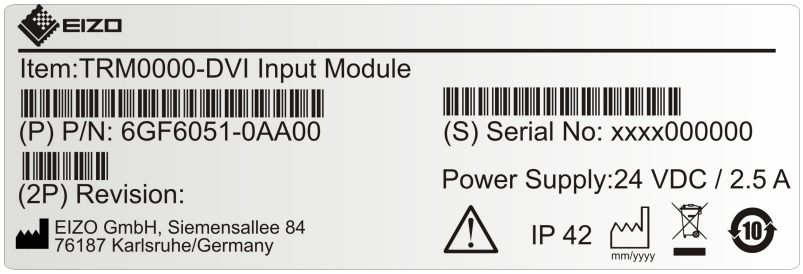
The markings and symbols on the device have the following meanings:

Marking/symbol	Meaning (location on device)
	Symbol for "Caution, observe accompanying documents". (name plate).
	CE marking (EU conformity mark). (name plate).
	MET marking, in accordance with U.S. and Canadian national regulations. (name plate).
	Symbol for date of production for medical products. (name plate).
	WEEE marking: Product must be disposed of separately; materials may be recycled. (name plate).

Marking/symbol	Meaning (location on device)
	Marking according to ACPEIP (China-RoHS). (name plate)
	Symbol for protective ground (device)
	Symbol for equipotential bonding (device)
	Symbol "Comply with the instructions for use". (device)

EX270W name plate

Name plate Input module TRM0000-DVI



13.3 Environmental protection

Please observe all local requirements and laws pertaining to the disposal of devices.

13.4 Accessory devices

Connected devices such as PCs must meet the relevant safety standards.

13.5 Contact

Support during installation and for technical questions

Medical Solutions (http://www.eizo.com)

13.6 Trademarks

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13.7 China RoHS (Restriction of Hazardous Substances)

液晶显示器 LCD Monitor

型号 Model: RadiForce EX270W

根据 SJ/T11364-2006《电子信息产品污染控制标识要求》特提供如下有关污染控制方面的信息。
The following product pollution control information is provided according to SJ/T11364-2006 Marking for Control of Pollution caused by Electronic Information Products.

电子信息产品污染控制标志说明 Explanation of Pollution Control Label

该标志表明本产品含有超过中国标准 SJ/T11363- 2006《电子信息产品中有毒有害物质的限量要求》中限量的有毒有害物质。标志中的数字为本产品的环保使用期，表明本产品在正常使用的条件下，有毒有害物质不会发生外泄或突变，用户使用本产品不会对环境造成严重污染或对其人身、财产造成严重损害的期限。单位为年。
为保证所申明的环保使用期限，应按产品手册中所规定的环境条件和方法进行正常使用，并严格遵守产品维修手册中规定的定期维修和保养要求。
产品中的消耗件和某些零部件可能有其单独的环保使用期限标志，并且其环保使用期限有可能比整个产品本身的环保使用期限短。应到期按产品维修程序更换那些消耗件和零部件，以保证所申明的整个产品的环保使用期限。
本产品在使用寿命结束时不可作为普通生活垃圾处理，应被单独收集妥善处理。
This symbol indicates the product contains hazardous materials in excess of the limits established by the Chinese standard SJ/T11363-2006 *Requirements for Concentration Limits for Certain Hazardous Substances in Electronic Information Products*. The number in the symbol is the Environment-friendly Use Period (EFUP), which indicates the period during which the toxic or hazardous substances or elements contained in electronic information products will not leak or mutate under normal operating conditions so that the use of such electronic information products will not result in any severe environmental pollution, any bodily injury or damage to any assets. The unit of the period is "Year".
In order to maintain the declared EFUP, the product shall be operated normally according to the instructions and environmental conditions as defined in the product manual, and periodic maintenance schedules specified in Product Maintenance Procedures shall be followed strictly.
Consumables or certain parts may have their own label with an EFUP value less than the product. Periodic replacement of those consumables or parts to maintain the declared EFUP shall be done in accordance with the Product Maintenance Procedures.
This product must not be disposed of as unsorted municipal waste, and must be collected separately and handled properly after decommissioning.

有毒有害物质或元素的名称及含量 Name and Concentration of Hazardous Substances

部件名称 Component Name	有毒有害物质或元素 Hazardous substances' name					
	铅 (Pb)	汞 (Hg)	镉 (Cd)	六价铬 (Cr(VI))	多溴联苯 (PBB)	多溴二苯醚 (PBDE)
电源 Power Supply	X	O	O	O	O	O
其他 电路板 Other Circuit Boards	X	O	O	O	O	O
其他（电缆等） Others (cables, etc.)	O	O	O	O	O	O
机架、底盘 Housing, Chassis	O	O	O	O	O	O
附件（信号电缆、输电线等） Acessories (signal cable, power line, etc.)	O	O	O	O	O	O

O: 表示该有毒有害物质在该部件所有均质材料中的含量均在 SJ/T11363-2006 标准规定的限量要求以下
X: 表示该有毒有害物质至少在该部件的某一均质材料中的含量超出 SJ/T11363-2006 标准规定的限量要求

- 此表所列数据为发布时所能获得的最佳信息.
- 由于缺少经济上或技术上合理可行的替代物质或方案，此医疗设备运用以上一些有毒有害物质来实现设备的预期临床功能，或给人员或环境提供更好的保护效果。

O: Indicates that this toxic or hazardous substance contained in all of the homogeneous materials for this part is below the limit requirement in SJ/T11363-2006.
X: Indicates that this toxic or hazardous substance contained in at least one of the homogeneous materials used for this part is above the limit requirement in SJ/T11363-2006

- Data listed in the table represents best information available at the time of publication.
- Applications of hazardous substances in this medical device are required to achieve its intended clinical uses, and/or to provide better protection to human beings and/or to environment, due to lack of reasonably (economically or technically) available substitutes.

产品中有毒有害物质或元素的名称及含量 Table of hazardous substances' name and concentration.

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Instruction for Use, 06/2014
RadiForce EX270W
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