

# SIEMENS

## SIMATIC

### HMI devices Comfort Panels INOX, ITC INOX

#### Compact Operating Instructions

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## 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.

 <b>DANGER</b>
indicates that death or severe personal injury <b>will</b> result if proper precautions are not taken.
 <b>WARNING</b>
indicates that death or severe personal injury <b>may</b> result if proper precautions are not taken.
 <b>CAUTION</b>
indicates that minor personal injury can result if proper precautions are not taken.
<b>NOTICE</b>
indicates that property 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 Siemens products

Note the following:

 <b>WARNING</b>
Siemens 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 Siemens. 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 Siemens AG. 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.

# Preface

## Scope of validity

These compact operating instructions apply to the following devices:

- TP700 Comfort INOX, article number 6AV2144-8GC10-0AA0
- TP900 Comfort INOX, article number 6AV2144-8JC10-0AA0
- TP1200 Comfort INOX, article number 6AV2144-8MC10-0AA0
- TP1500 Comfort INOX, article number 6AV2144-8QC10-0AA0
- TP1900 Comfort INOX, article number 6AV2144-8UC10-0AA0
- ITC1900 INOX, article number 6AV6646-8AC10-0AA0

These compact operating instructions describe the technical differences between the INOX devices and the corresponding standard devices.

The notes in these compact operating instructions take precedence over statements in the basic operating instructions, the release notes and online help.

Comfort Panels operating instructions

<http://support.automation.siemens.com/WW/view/en/49313233>

Industrial Thin Clients operating instructions

<http://support.automation.siemens.com/WW/view/en/61187980>

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### Note

This document belongs to the device and will also be required for repeat commissioning. Keep all supplied and supplementary documentation for the entire service life of the device.

Pass on all of these documents to a future owner of the device.

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## Style conventions

Style Convention	Scope
"Add screen"	<ul style="list-style-type: none"><li>• Terms that occur in the user interface, for example, dialog name, tab, button, menu command</li><li>• Necessary entries, for example, limit value, tag value</li><li>• Path specification</li></ul>
"File > Edit"	Operating sequences, for example, menu item, shortcut menu command
<F1>, <Alt+P>	Designation of a key on a keyboard

You should also observe notes that are marked as follows:

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**Note**

A note contains important information about the product described in the document and its handling, or a specific section of the document to which you should pay particular attention.

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**Naming conventions**

<b>Term</b>	<b>Applies to</b>
System	<ul style="list-style-type: none"><li>• System</li><li>• Machining center</li><li>• One or more machines</li></ul>
Device	<ul style="list-style-type: none"><li>• TP700 Comfort INOX</li><li>• TP900 Comfort INOX</li><li>• TP1200 Comfort INOX</li><li>• TP1500 Comfort INOX</li><li>• TP1900 Comfort INOX</li><li>• ITC1900 INOX</li></ul>

**Figures**

This document contains illustrations of the described devices. The figures can deviate from the particularities of the delivered device.

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# Overview

## 1.1 Product overview

INOX devices with touch screen and stainless steel front are designed for use in the food and beverage industry, including in splash zones of food production, the pharmaceutical industry, fine chemicals and in other hygiene areas for machine-level operator control and monitoring. For this reason, the devices with stainless steel front have been developed in compliance with DIN EN 1672-2 "Food processing machinery – Safety and Hygiene Requirements".



- The external dimensions of the front and mounting cutout are the same as for the standard product
- Optimized rack design with slight projections to the cabinet and for allowing liquids to run off
- Simpler cleaning thanks to resistant and rugged stainless steel front with smooth surface and minimal grooves and gaps
- IP66K degree of protection on the front for increased tightness and ruggedness
- Stainless steel surface polished with grain size 240
- Decorative foil tested against chemicals
- Display splash protection
- Food-grade mounting gasket, exchangeable
- Rear clamping frame for even application pressure of the mounting gasket

## 1.2 Scope of delivery

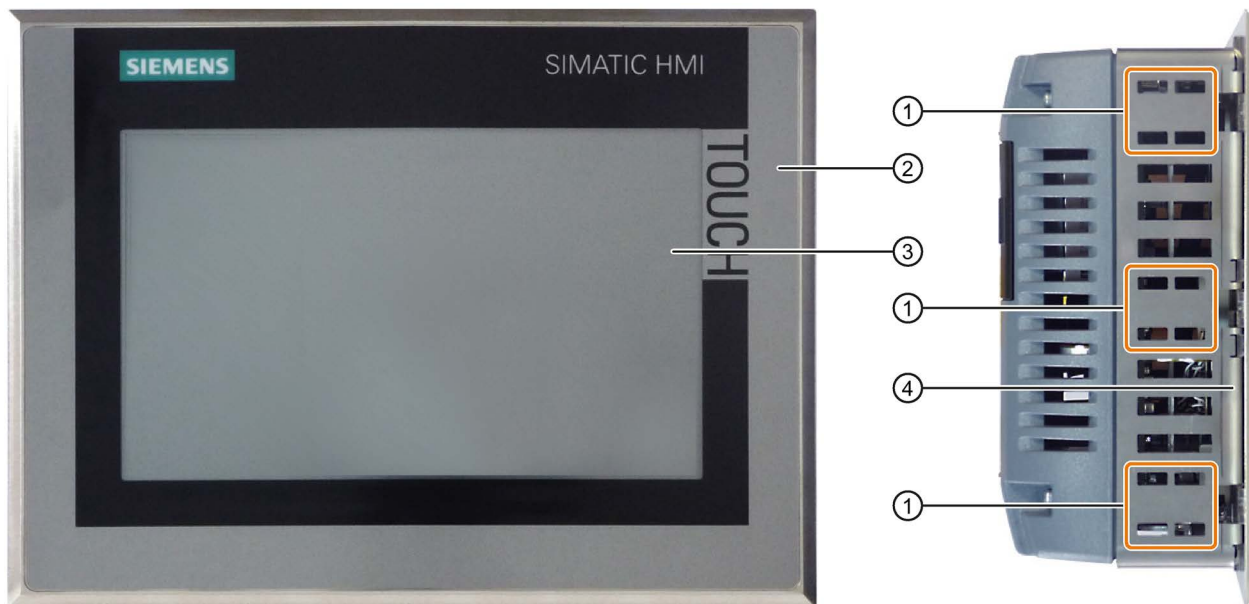
Depending on the order, the scope of delivery includes:

- 1 × device
- 1 × accessory pack with the following contents:
  - 1 mounting gasket
  - 1 clamping frame
  - 1 power supply terminal
  - 1 strain relief plate (only for TP700 Comfort INOX)
  - Mounting clips
- 1 × "Comfort Panels INOX, ITC INOX" product information

## 1.3 Layout of the devices

The figures in this chapter show the layout of the INOX devices using the TP700 Comfort INOX as an example.

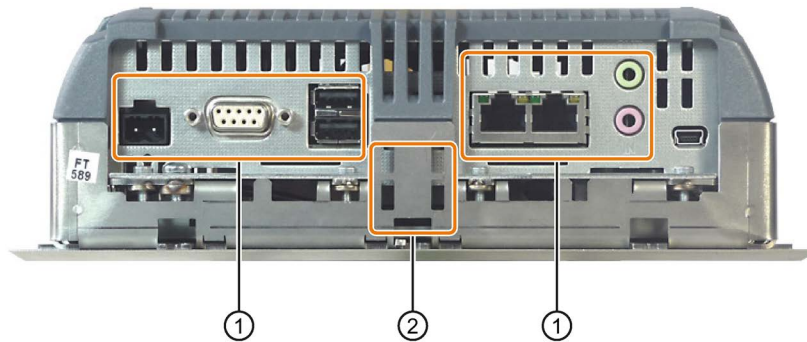
### Front view and side view



- ① Cutout for mounting clip
- ② Stainless steel front
- ③ Display with touch screen
- ④ Mounting gasket



Bottom view

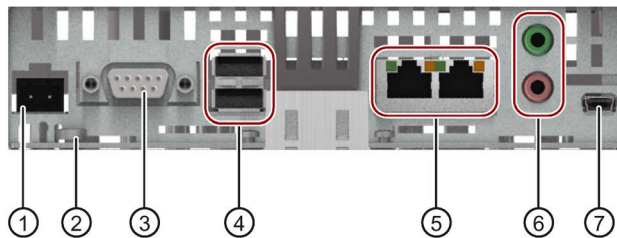


- ① Ports
- ② Cutout for mounting clip

## 1.4 Interfaces

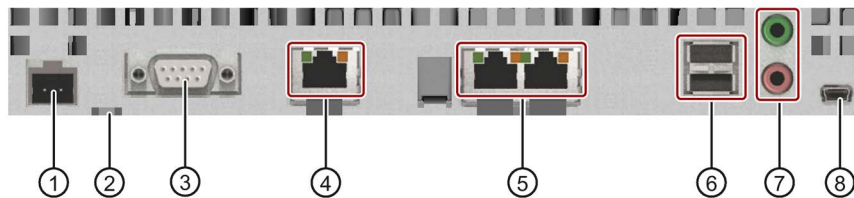
### Interfaces of the Comfort INOX devices

#### TP700 Comfort INOX, TP900 Comfort INOX, TP1200 Comfort INOX



- ① X80 power supply connector
- ② Connection for equipotential bonding (ground)
- ③ X2 PROFIBUS (Sub-D RS422/485)
- ④ X61 / X62 USB type A
- ⑤ X1 PROFINET (LAN), 10/100 Mb
- ⑥ X90 Audio Line IN / OUT
- ⑦ X60 USB type Mini B

#### TP1500 Comfort INOX, TP1900 Comfort INOX



- ① X80 power supply connector
- ② Connection for equipotential bonding (ground)
- ③ X2 PROFIBUS (Sub-D RS422/485)
- ④ X3 PROFINET (LAN), 10/100/1000 Mb
- ⑤ X1 PROFINET (LAN), 10/100 Mb
- ⑥ X61 / X62 USB type A
- ⑦ X90 Audio Line IN / OUT
- ⑧ X60 USB type Mini B

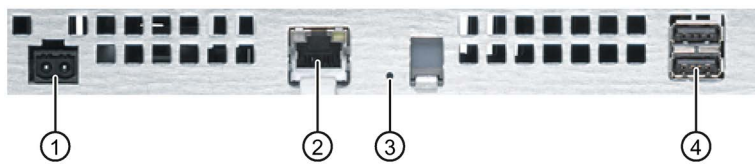
Use the X1 or X60 interface to connect a configuration PC. Use the X61 / X62 interfaces to connect peripheral devices such as a printer or keyboard. Use the X90 interface to connect a loudspeaker.

You can fasten the USB and PROFINET connecting cables to the rear panel of the device with cable ties.

On the TP700 Comfort INOX you secure the cables with a separate strain relief plate. Install the strain relief plate on the device.

### Interfaces of the ITC1900 INOX

The following figure shows the interfaces of the ITC1900 INOX.



- ① Power supply connector
- ② LAN interface (PROFINET/Ethernet)
- ③ "Factory settings" key
- ④ USB ports

## 1.5 Accessories

Accessories can be ordered on the Internet at:

Industry Mall (<https://mall.industry.siemens.com>)


The following service packs with clamping frames, mounting gaskets, mounting clips and strain relief plate are available for the INOX devices:

- TP700 INOX Service Pack, article number 6AV2185-4GA00-0AX0
- TP900 INOX Service Pack, article number 6AV2185-4JA00-0AX0
- TP1200 INOX Service Pack, article number 6AV2185-4MA00-0AX0
- TP1500 INOX Service Pack, article number 6AV2185-4QA00-0AX0
- TP1900 Comfort INOX Service Pack, ITC1900 INOX Service Pack, article number 6AV2185-4UA00-0AX0


# Safety instructions

## 2.1 General safety instructions

### Installation according to the instructions

 <b>WARNING</b>
<p><b>The device may only be used in machines which comply with the Machinery Directive</b></p> <p>The "Machinery Directive" governs, among other things, the precautions to be taken when commissioning and operating machines within the European Economic Area.</p> <p>Failure to follow these precautions is a breach of the Machinery Directive. Such failure may also cause personal injury and damage depending on the machine operated.</p> <p>The machine in which the HMI device is to be operated must conform to Directive 2006/42/EC.</p>

### Notes on the touch screen

 <b>WARNING</b>
<p><b>Risk of explosion, personal injury or material damage in the case of a defective touch screen</b></p> <p>The application of excessive force to the device front can destroy the device touch screen, for example, piercing the front membrane or breaking the touch screen carrier plate. There is a risk of explosion, injury and food contamination with additional consequential and health damage.</p> <p>Make sure that excessive force cannot be applied to the device front.</p> <p>If the device touch screen is defective, decommission the affected machine immediately and replace the device at once. When replacing the device, please note the chapter "Mounting the device (Page 13)".</p>

#### Note

##### Wrinkles on the touch screen

Wrinkles may form on the touch screen decorative foil under extreme climatic conditions. This will not affect the operability of the touch screen and does not represent a deficiency in quality.

#### ESD



Electrostatically sensitive components include almost all electrical, electronic, optoelectronic and electromechanical components. These components are sensitive to overvoltage for technical reasons and their function may be impaired or destroyed by electrostatic discharge. Observe the regulations governing the handling of ESD components.

## 2.2 Notes on use

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**Note**

Avoid direct or indirect contact with food in the area of the device's decorative foil to avoid possible cross contamination.

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## Mounting the device

### 3.1 Mounting instructions

The technical specifications given for the device are guaranteed:

- If the device is installed by qualified personnel
- If the installation is performed as specified in this document

### 3.2 Preparing for installation

#### 3.2.1 Check the scope of delivery

Check the scope of delivery for visible signs of damages caused during transport and for completeness, see chapter "Scope of delivery (Page 8)".

<b>NOTICE</b>
<p><b>Damaged parts</b></p> <p>A damaged part can cause device malfunctions.</p> <p>Do not install damaged parts.</p>

In the case of damaged parts or incomplete delivery, contact your Siemens representative.

#### 3.2.2 Checking the operating conditions

Note the following aspects before installing the device:

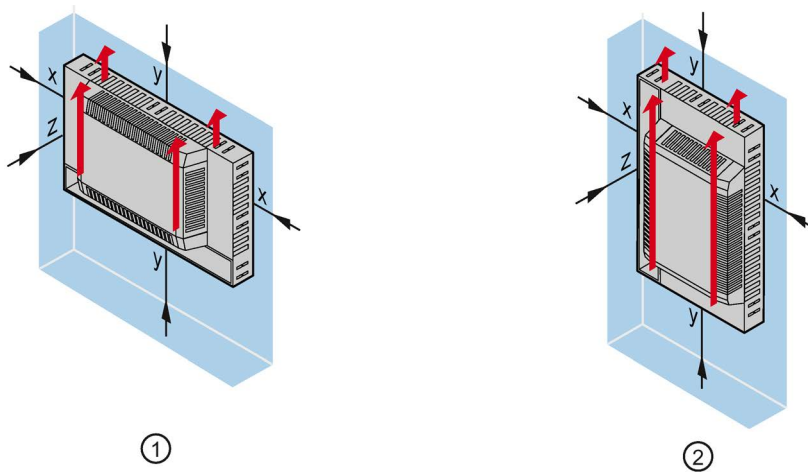
1. Familiarize yourself with the standards, approvals, EMC parameters and technical specifications for operation of the device. This information is available in the following chapters:
  - Certificates and approvals (Page 23)
  - See the operating instructions for electromagnetic compatibility
2. Check the mechanical and climatic ambient conditions for operation of the device; see Classification of environmental conditions (Page 29).
3. Follow the notes on use in the operating instructions.

### 3.2.3 Checking clearances

The following clearances are required around the HMI device to ensure sufficient self-ventilation:

- At least 23 mm to the right and to the left of the mounting cutout (in the x direction) for mounting the clamping frame during installation
- At least 50 mm above and 50 mm below the mounting cutout (in the y direction) for ventilation
- At least 10 mm behind the rear panel of the HMI device (in the z direction)

The following figure shows the clearances during mounting of the HMI devices in horizontal and vertical formats:



- ① Clearance for installation in landscape format
- ② Clearance for installation in portrait format
- x Distance from wall at least 23 mm.
- y At least 50 mm distance
- z At least 10 mm distance

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#### Note

Ensure that the maximum ambient temperature is not exceeded when mounting the device in a cabinet and especially in a closed enclosure.

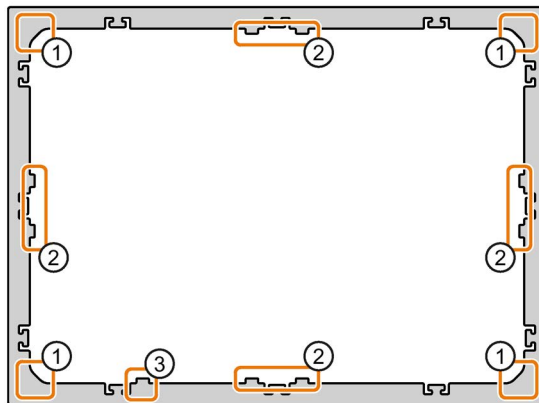
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### 3.3 Inserting the mounting gasket

The following process describes the use of the mounting gasket for all devices based on the example of the TP700 Comfort INOX.

The mounting gasket is unsymmetrical and is therefore equipped with a coding tap.

On all mounting gaskets of the INOX devices, the coding tap is on the bottom left in relation to the rear of the device.



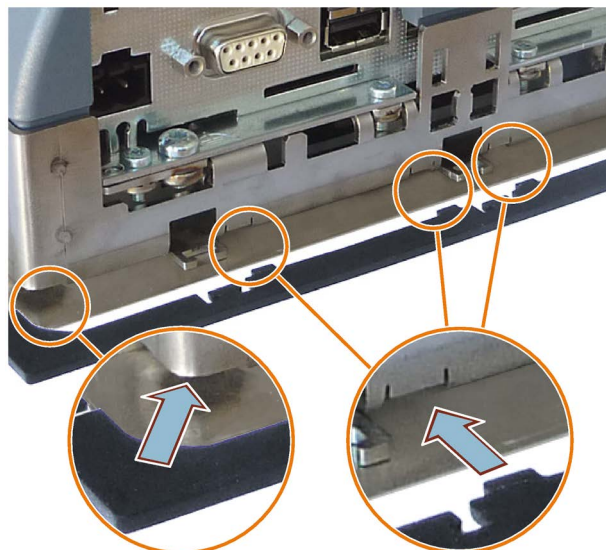
- ① Seal rounding
- ② Retaining collar
- ③ Coding tap

#### Procedure

##### Note

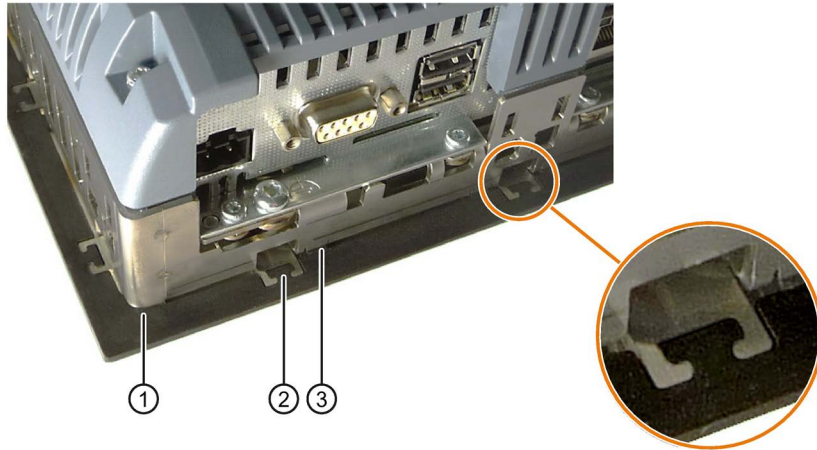
Use a new mounting gasket, otherwise the degree of protection specified in the compact operating instructions cannot be guaranteed.

1. Find the coding tap on the mounting gasket and rotate the mounting gasket as shown in the figure below.



3.3 Inserting the mounting gasket

2. Place the mounting gasket as shown on the stainless steel face.



- ① Seal rounding lies below the housing frame
- ② Sealing clamp locks fully into the cutout
- ③ Coding tap

3. Check the correct fit of the mounting gasket.

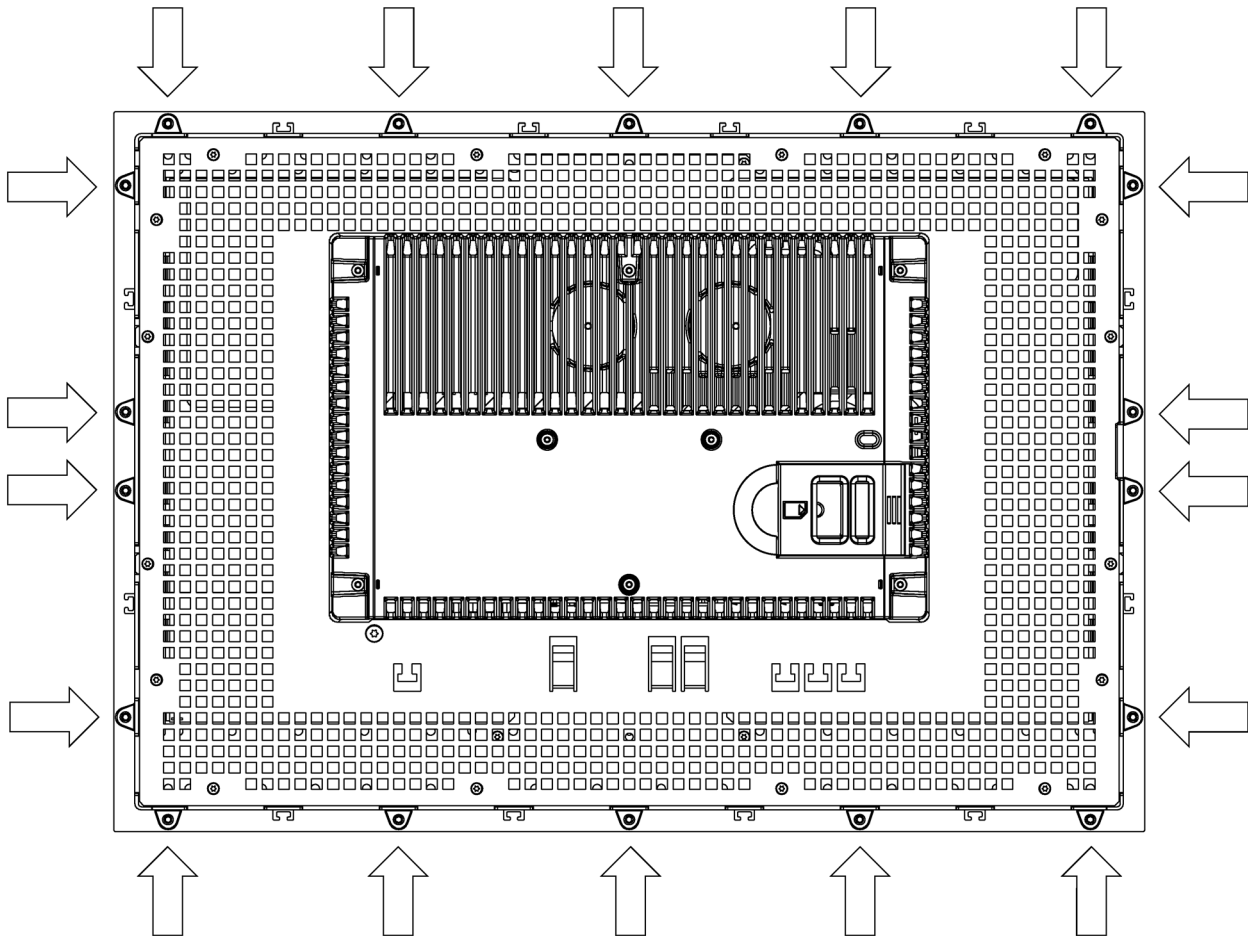
The coding tap must be positioned at the location indicated. The round sections of the seal and the seal clamps must lie in the cutouts specified for this purpose. If the mounting gasket was inserted correctly, it lies flat and without warping on the stainless steel face.

The edge of the mounting gasket closes flush with the edge of the stainless steel face.



### 3.4 Positions of the mounting clips for TP1900 Comfort INOX and ITC1900 INOX

The following section describes how you can install the device. Observe the following mounting clip positions for the TP1900 Comfort INOX and the ITC1900 INOX:



## **3.5 Mounting the device**

The following process describes installation for all devices based on the example of the TP700 Comfort INOX.

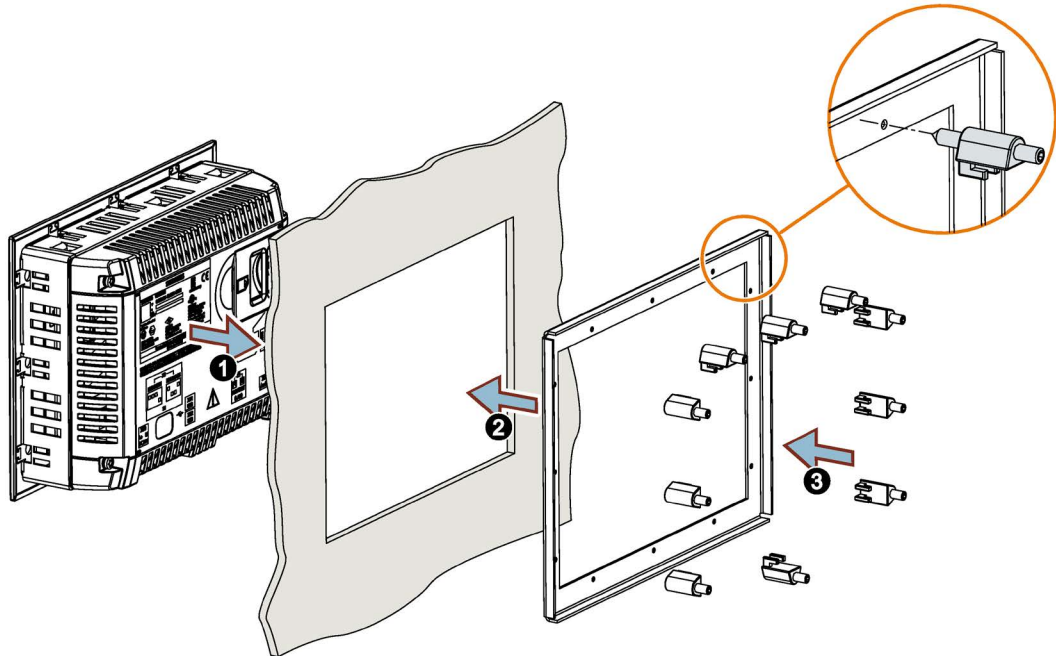
### **Requirement**

- All packaging components and the edge protection tape, if present, have been removed.
- 1 clamping frame
- 1 Allen key 2.5 mm
- Mounting clips:
  - TP700 Comfort INOX: 10 mounting clips
  - TP900 Comfort INOX: 13 mounting clips
  - TP1200 Comfort INOX: 12 mounting clips
  - TP1500 Comfort INOX: 20 mounting clips
  - TP1900 Comfort INOX, ITC1900 INOX: 18 mounting clips

## Installation

1. Assemble the device with inserted mounting gasket, clamping frame and all supplied mounting clips as shown in the figure below. Observe the additional product information, if any, supplied with the product.

The tip of the setscrew must be inserted into the center hole as shown in the zoomed section of the figure.



2. Turn the setscrew of each mounting clip until a slight clamping force is perceptible.  
After a few rotations a slight resistance will become perceptible. When the increase in force is perceptible, tighten the setscrew of the next mounting clip. Perform this step for all setscrews.
3. Check the correct fit of the mounting gasket.  
The edge of the mounting gasket must be flush and close evenly with the stainless steel face; it may project 0.1 to 0.5 mm.
4. Tighten the setscrew of the mounting clip until the fixed stop is reached and the torque increases perceptibly. The tightening torque is then:
  - Approx. 1.0 Nm with 7", 9" and 12" devices
  - Approx. 0.5 Nm with 15" and 19" devicesThe stainless steel front lies fully against the installation location and the mounting gasket is subject to required clamping force.
5. Check that the fixed stop has been reached on all mounting clips and that the mounting gasket is installed correctly. Correct the tightening torque, if necessary, so that the clamping force is evenly distributed.

## Removal

For removal, follow the steps for installation in reverse order. Dispose of the used mounting gasket.

## Cleaning the device

### 4.1 Cleaning product

The following is also valid for the device in addition to the operating instructions:

- Cleaning with strong jet water under increased pressure

On front IP66K in accordance with DIN 40050, Part 9

### 4.2 Clean screen for Touch HMI devices

This chapter is valid for the Comfort INOX HMI devices.

The touch screen of the HMI device can be cleaned when it is switched on and a project is running. An operating element must be available in the project that can be used to call the "clean" screen. Once the clean screen is activated, touch screen operation is locked for a configured period of time. The time the touch screen is locked can be set between 5 and 30 seconds. The time remaining for the lockout is indicated by a progress bar.

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#### Note

##### Unintentional responses

When cleaning the touch screen, an unintentional response in the controller can be triggered by touching keys.

Always open the clean screen or switch off the HMI device before you clean the touch screen while the system is running.

##### Cannot be operated when the clean screen is active

When the clean screen is active, operations on the HMI device are not possible.

Wait for the period of the clean screen to lapse. Then you can operate the system again with the HMI device.

##### No clean screen with HMI devices with touch screen and function keys

The clean screen is not available for HMI devices with touch screen and function keys. In this case, configure a screen without operating elements, for example.

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## 4.3 Chemical Resistance

### Front membrane

The resistance of the front membrane to various chemicals has been tested to DIN 42 115, section 2. The front membrane is resistant to the chemicals listed below:

- Alcohol
- Diluted acids
- Diluted caustic solutions
- Ester
- Hydrocarbons
- Household cleaners

You can find information of chemical resistance on the Internet (<http://support.automation.siemens.com/WW/view/en/39718396>).

### Mounting gasket

The mounting gasket made of EPDM is approved for food according to FDA 21 CFR 177-2600.

## 4.4 Working with stainless steel surfaces

### Resistance

Information on the resistance of stainless steel:

- The stainless steel surface is not fully resistant against the chemicals listed below:
  - Hydrochloric acid
  - Sulphuric acid
  - Sodium hydroxide
  - Chlorine
  - Chlorides

Do not clean the stainless steel surface with these chemicals or with similar acids or caustic solutions.

- Acid steam develops, for example, when tiles are cleaned with hydrochloric acid, and is also harmful to the stainless steel. If the stainless steel parts are unintentionally contaminated with hydrochloric acid, rinse these off immediately with plenty of water.
- Clean the stainless steel surface with a cleansing agent without active chlorine.

## **Cleaning guidelines**

Further information on stainless steel surfaces:

- The surface should be properly ventilated.
- Keep the surface clean. Remove cleaners and food residue immediately. Always avoid the return of food stuff splashes to the production process.
- If mechanical cleaning is necessary, do not use cleaning equipment made of metal.
  - Use brushes made of plastic or natural materials, or a microfiber pad.
  - Use plenty of water to clean the surface.
  - Make sure that the cleansing agent is completely removed without any residue.
- Make sure surface is not damaged: Do not damage the device during operation, or by cleaning or repairing it using hard tools, in particular tools made of corrodible materials.
- Make sure that the surface does not come into contact with rusted parts.

This includes water pipes, filings, residue from wire brushes or steel wool. These, as well as rust films have a corrosive effect on parts made of stainless steel.

- Remove any stains or rust immediately.
- Remove new rust spots with a mild abrasive detergent in order to prevent any further corrosion.
- Rinse the part thoroughly after you cleaned it.

## Technical specifications

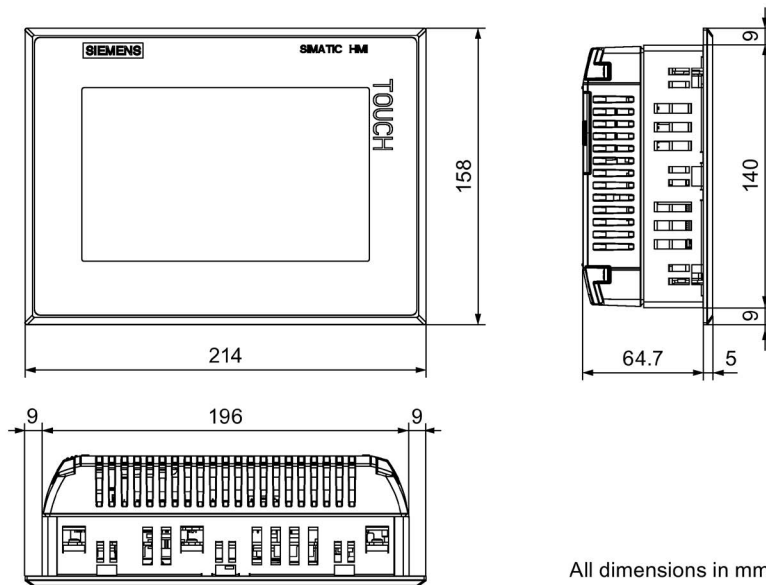
### 5.1 Certificates and approvals

The possible approvals in the chapter of the same name of the operating instructions apply. The device itself is certified only as shown on the rear of the device.

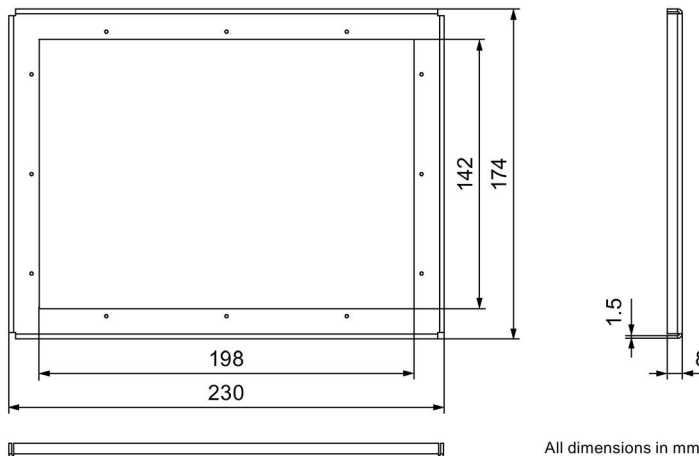
You can find additional certificates for INOX devices on the Internet (<http://support.automation.siemens.com/WW/view/en/89598832/134200>).

### 5.2 Dimension drawings

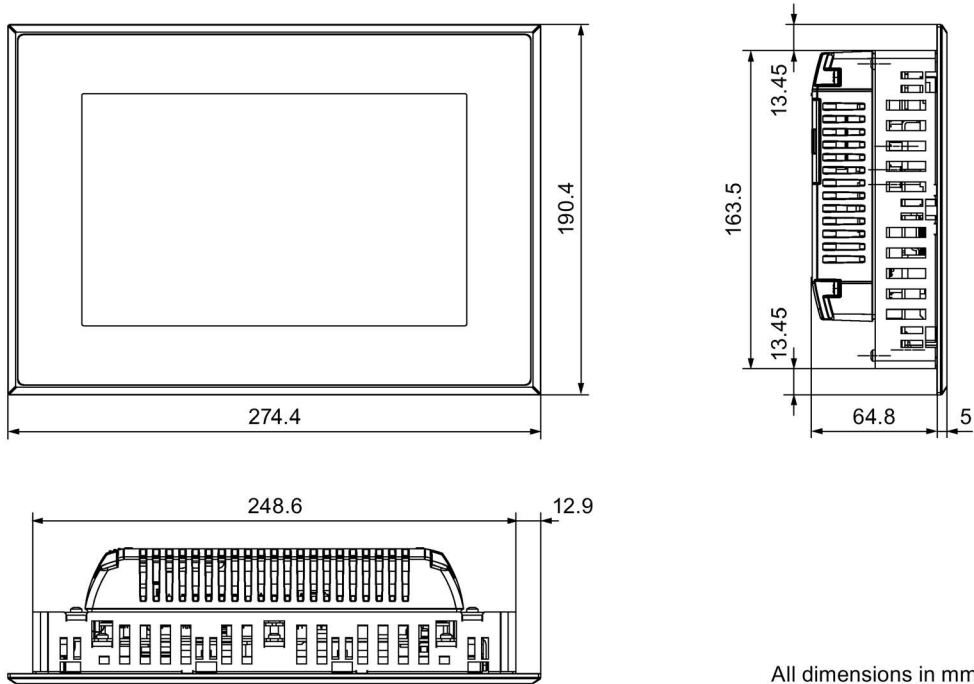
#### 5.2.1 Dimension drawing TP700 Comfort INOX



#### Clamping frame

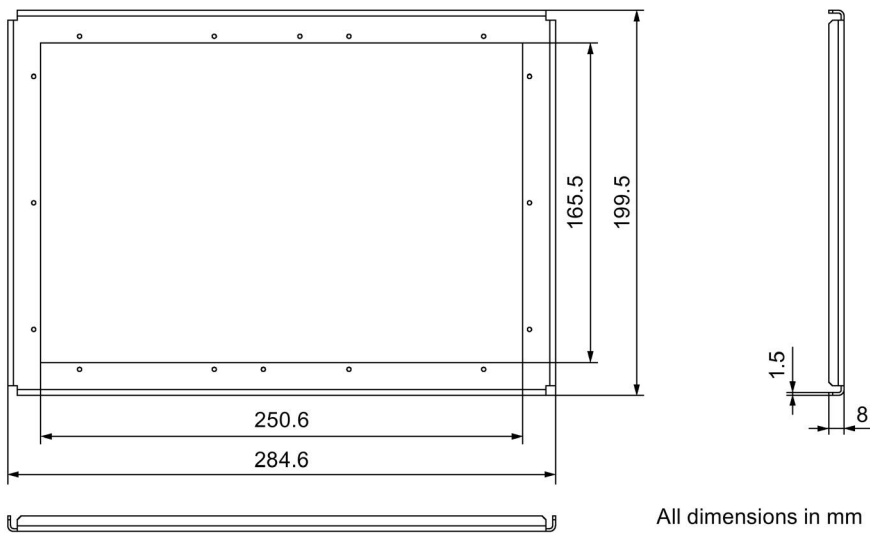


### 5.2.2 Dimension drawing TP900 Comfort INOX



All dimensions in mm

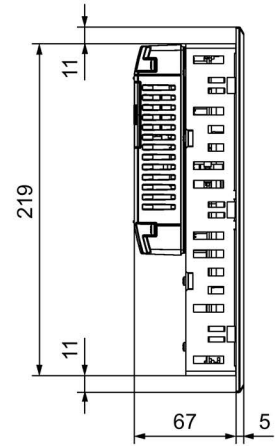
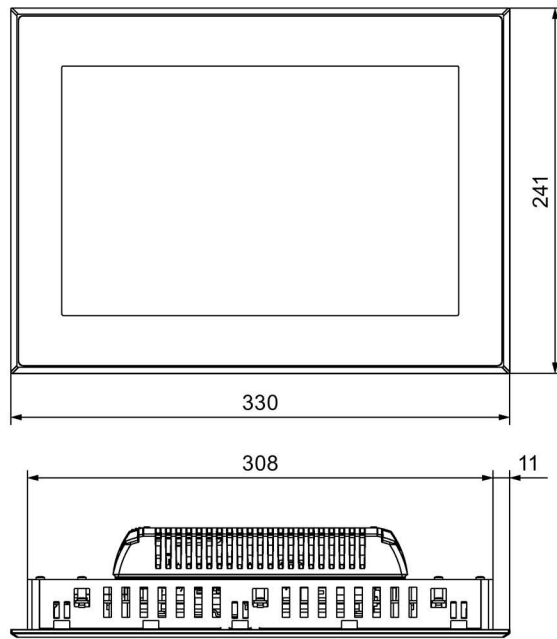
### Clamping frame



All dimensions in mm

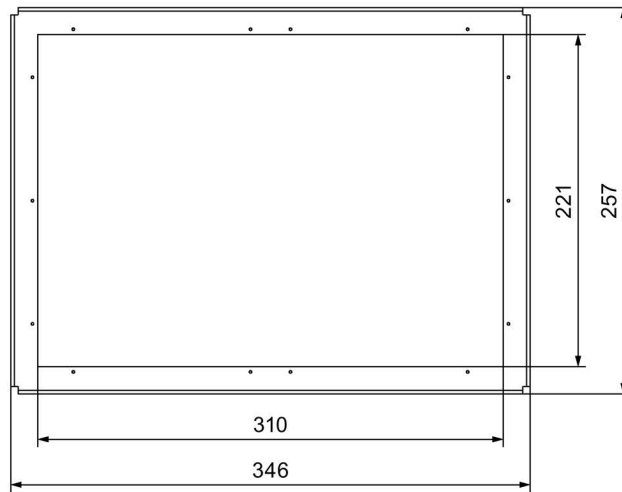


### 5.2.3 Dimension drawing TP1200 Comfort INOX



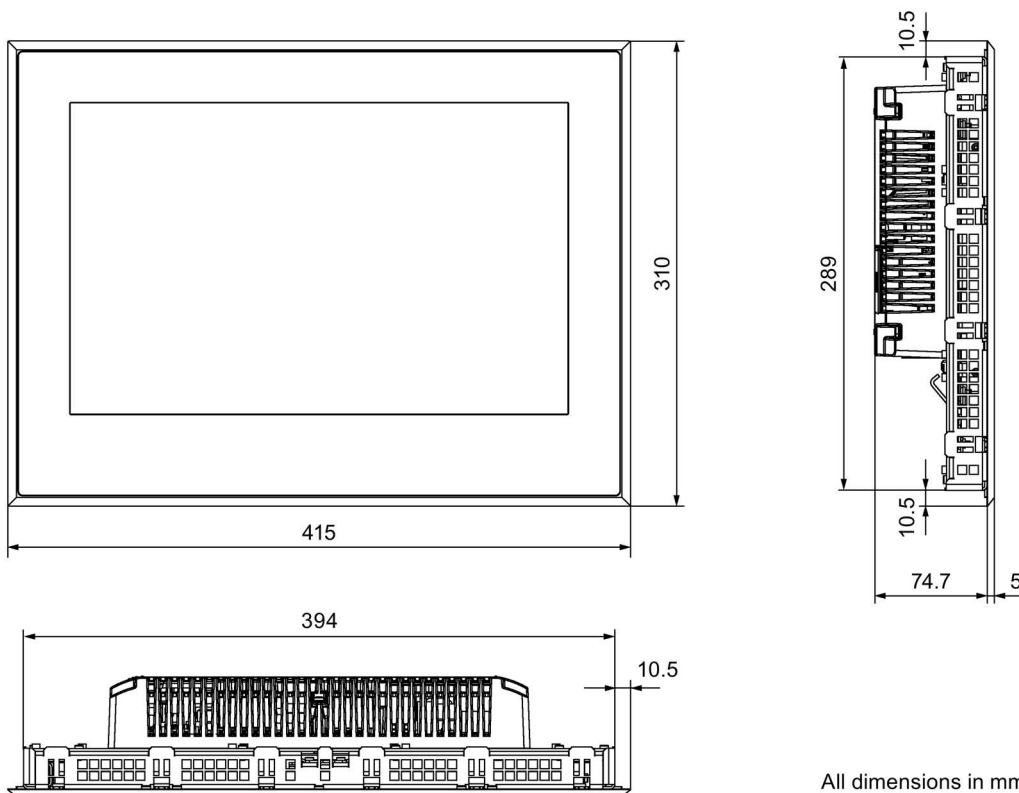
All dimensions in mm

### Clamping frame

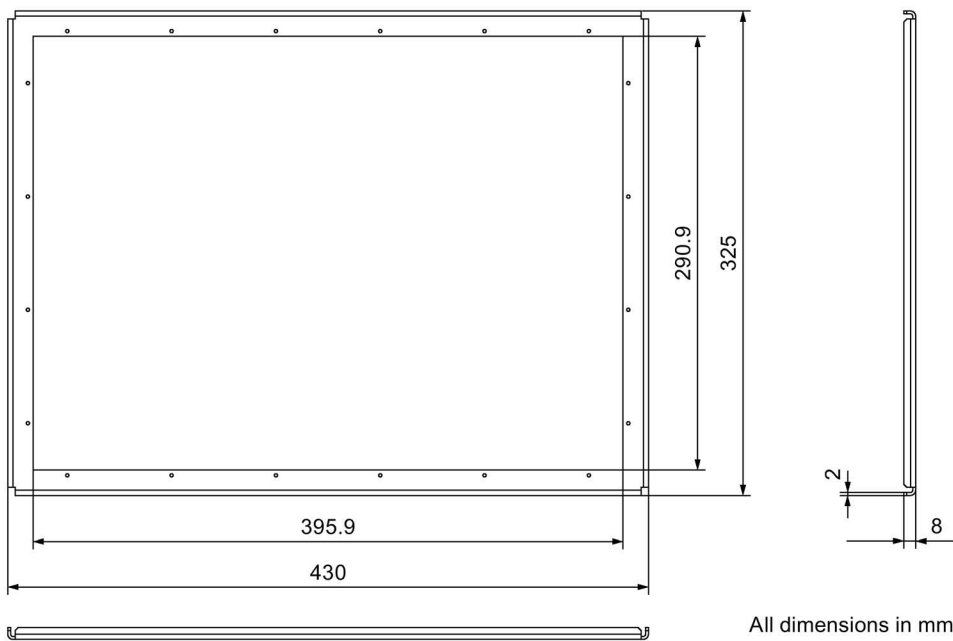


All dimensions in mm

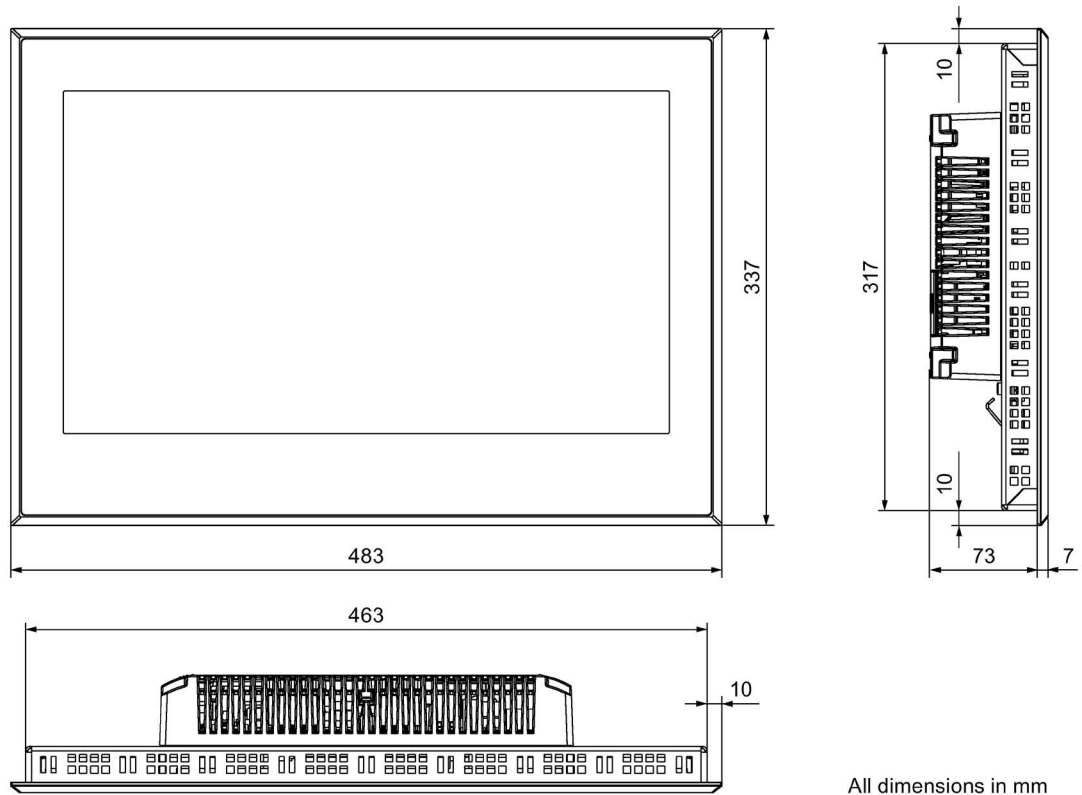
### 5.2.4 Dimension drawing TP1500 Comfort INOX



### Clamping frame

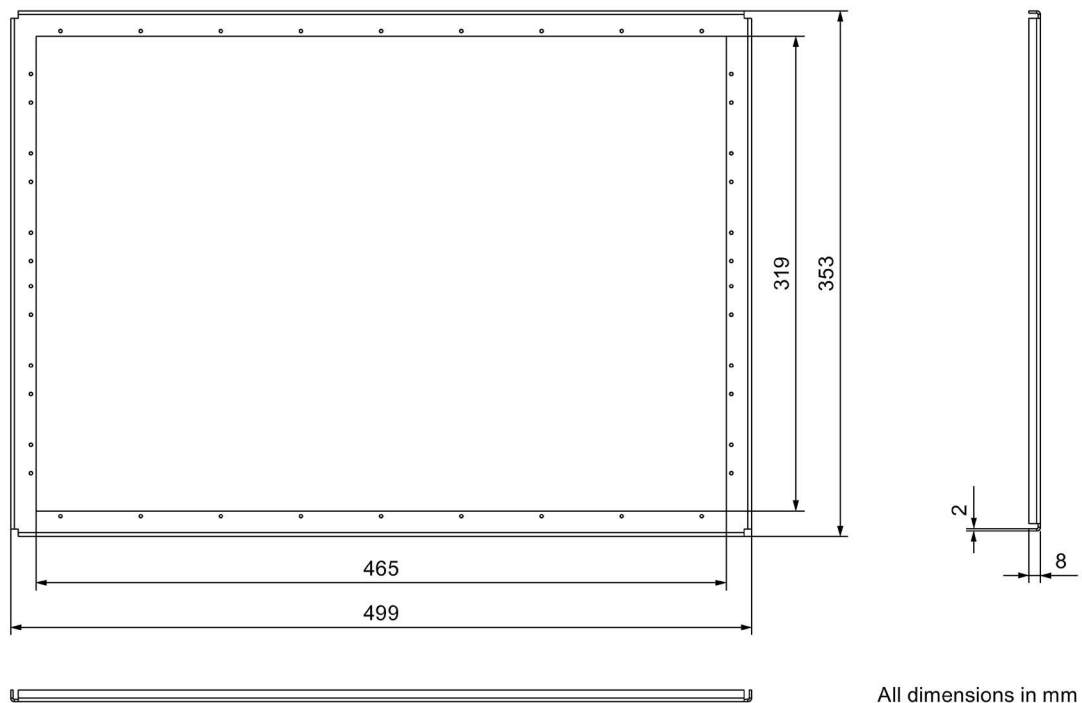


### 5.2.5 Dimension drawing TP1900 Comfort INOX, ITC1900 INOX



All dimensions in mm

### Clamping frame



All dimensions in mm

## 5.3 Technical specifications

### Weight

Device	Weight including clamping frame, gasket and mounting clips, without packaging
TP700 Comfort INOX	approx. 1.9 kg
TP900 Comfort INOX	approx. 2.5 kg
TP1200 Comfort INOX	approx. 3.6 kg
TP1500 Comfort INOX	approx. 6.6 kg
TP1900 Comfort INOX, ITC1900 INOX	approx. 8.5 kg

### Material

Component	Material
Front frame	Stainless steel, material number 1.4301, V2A
Front membrane	Polyester-based
Mounting gasket	EPDM, 70 Shore A, black

### Protection class and degree of protection

Characteristic	Standard	Classification
Protection class	EN 61131-2	Protection class III
Degree of protection, front	EN 60529:1991 + A1:2000 and DIN 40050-9	IP66K
Degree of protection, rear	EN 60529	IP20
Enclosure type	–	Front face only type 4X, indoor only

Note that enclosure type is only guaranteed if the mounting cutout conforms to the following:

- The device has been installed according to the information provided in this document.
- Material thickness at the mounting cutout: 1.5 mm to 6 mm
- Permitted deviation from plane at the mounting cutout:  $\leq 0.5$  mm

This condition must be fulfilled even for the mounted device.

- Permitted surface roughness in the area of the mounting gasket:  $\leq 120$   $\mu\text{m}$ , corresponds to Rz 120

## 5.4 Classification of environmental conditions

### 5.4.1 Overview

The standards of the IEC 60721 series can be used to classify short-term extreme environmental conditions that can occur during the service life of a product. Structurally, the product is designed in such a way that it can withstand the extreme environmental conditions according to the classification.

The following chapters provide you with information on the classification of the environmental conditions for the device:

- Long-term storage and transport
- Stationary and weather-protected use

### 5.4.2 Classification for storage

This device exceeds requirements according to IEC 61131-2:2007 "Programmable controllers – Part 2: Equipment requirements and tests" in terms of valid environmental conditions. The following classes apply to the device when stored in the original packaging.

- Mechanical environmental conditions

Standard	Title
IEC 61131-2:2007	Programmable logic controllers – Part 2: Equipment requirements and tests

- Climatic environmental conditions

Standard	Title
IEC 60721-3-1:1997	<p>Classification of groups of environmental parameters and their severities – Section 1: Storage</p> <p>Class 1K1 applies with the following expansions:</p> <ul style="list-style-type: none"> <li>• Temperature ranges:                             <ul style="list-style-type: none"> <li>– TP700/900 Comfort INOX: –20 ... 60 °C</li> <li>– TP1200 Comfort INOX: –20 ... 55 °C</li> <li>– TP1500 Comfort INOX: –20 ... 50 °C</li> <li>– TP1900 Comfort INOX: –20 ... 45 °C</li> </ul> </li> <li>• Range of relative humidity:                             <ul style="list-style-type: none"> <li>– TP700/900 Comfort INOX: 10 ... 90%</li> <li>– TP1200/1500 Comfort INOX: 10 ... 80%</li> <li>– TP1900 Comfort INOX, ITC1900 INOX: 10 ... 70%</li> </ul> </li> </ul>

The tests relevant for the specified classes correspond to the tests for classification of shipping. The testing of the device was performed in the original packing.

### 5.4.3 Classification for shipping

This device exceeds requirements according to IEC 61131-2:2007 "Programmable controllers – Part 2: Equipment requirements and tests" in terms of valid environmental conditions.

The following specifications apply to the device when transported in the original packing.

- Mechanical environmental conditions

Standard	Title
IEC 61131-2:2007	Programmable logic controllers – Part 2: Equipment requirements and tests

- Climatic environmental conditions

Standard	Title
IEC 60721-3-2:1997	Classification of groups of environmental parameters and their severities – Section 2: Transportation Class 2K1 applies with the following extensions: <ul style="list-style-type: none"> <li>• Temperature ranges:                             <ul style="list-style-type: none"> <li>– TP700/900 Comfort INOX: –20 ... 60 °C</li> <li>– TP1200 Comfort INOX: –20 ... 55 °C</li> <li>– TP1500 Comfort INOX: –20 ... 50 °C</li> <li>– TP1900 Comfort INOX, ITC1900 INOX: –20 ... 45 °C</li> </ul> </li> <li>• Range of relative humidity:                             <ul style="list-style-type: none"> <li>– TP700/900 Comfort INOX: 10 ... 90%</li> <li>– TP1200/1500 Comfort INOX: 10 ... 80%</li> <li>– TP1900 Comfort INOX, ITC1900 INOX: 10 ... 70%</li> </ul> </li> </ul>

The following specifications apply to the device when transported in the original packing.

The following values are derived for the significant tests from the classes stated. The testing of the device was performed in the original packing.

Test	Value	Comment
Free fall EN 60068-2-32	1 m	5 × free fall, in shipping packaging
Temperature EN 60068-2-1, test Ab and EN 60068-2-2, test Bb	–20 to +60 °C	Cold and dry heat
Air pressure; IEC 60068-2-13	1140 to 660 hPa	Corresponds to an altitude of –1000 to 3500 m
Humidity, relative	<ul style="list-style-type: none"> <li>• TP700/900 Comfort INOX: 10 ... 90%</li> <li>• TP1200/1500 Comfort INOX: 10 ... 80%</li> <li>• TP1900 Comfort INOX, ITC1900 INOX: 10 ... 70%</li> </ul>	No condensation
Shock; IEC 60068-2-27	250 m/s <sup>2</sup> , 6 ms	1000 shocks

### Tests for mechanical environmental conditions in the transport packaging

The following table shows the type and scope of the tests of the device with regard to mechanical environmental conditions.

Test	Physical variable	Value
Vibration test IEC 60068-2-6:2007-12 Test Fc	Vibration	3 axes, 10 cycles per axis Frequency change: 1 octave / min
	Frequency range	5 to 8.4 Hz deflection 3.5 mm
		8.4 to 150 Hz vibration acceleration 9.8 m/s <sup>2</sup>
Shock duration test IEC 60068-2-27:2008-02 Test Ea	Shock form	half-sine
	Acceleration	25 g
	Shock duration	6 ms
	Number of shocks	1000 shocks in each of the three mutually vertical axes.

### Tests for climatic environmental conditions in the transport packaging

The following table shows the type and scope of the tests of the device with regard to climatic environmental conditions.

Environmental condition	Physical variable	Value
Cold test EN 60068-2-1:2007-03 Test Ab	Temperature	-20 °C
	Duration	16 h
	Rate of temperature change	20 K/h
Warm test, dry EN 60068-2-2:2007-07 Test Bb	Temperature	60 °C
	Duration	16 h
	Rate of temperature change	20 K/h

### 5.4.4 Classification for stationary and weather-protected use

The following classes apply when the device is operated.

- Mechanical environmental conditions

Standard	Title
IEC 60721-3-3:1997	Classification of groups of environmental parameters and their severities – Section 3: Stationary use at weatherprotected locations Class 3M3 applies.

- Climatic environmental conditions

Standard	Title
IEC 60721-3-3:1994	Classification of groups of environmental parameters and their severities – Section 3: Stationary use at weatherprotected locations Class 3K3 applies.

The following values are derived for the significant tests from the classes stated. The testing of the device was performed **without** original packing.

Test	Range	Comment
Temperature, horizontal mounting		
• TP700/TP900 Comfort INOX	0 to 50 °C	90% humidity, no condensation
• TP1200/1500 Comfort INOX	0 to 50 °C	80% humidity, no condensation
• TP1900 Comfort INOX, ITC1900 INOX	0 to 45 °C	70% humidity, no condensation
Atmospheric pressure	1140 to 795 hPa	Corresponds to an altitude of -1000 m to 2500 m



### Tests for mechanical environmental conditions during operation

The following table shows the type and scope of the tests of the device with regard to mechanical environmental conditions.

Test	Physical variable	Value
Vibration test IEC 60068-2-6:2007-12 Test Fc	Vibration	3 axes, 10 cycles per axis Frequency change 1 octave/min
	Frequency range	5 to 8.4 Hz, deflection 3.5 mm
		8.4 to 200 Hz, vibration acceleration 9.8 m/s <sup>2</sup>
Shock test IEC 60068-2-27:2008-02 Test Ea	Shock form	half-sine
	Acceleration	15 g
	Shock duration	11 ms
	Number of shocks	3 per axis in positive and negative direction
Fall EN 60068-2-31:2009 Test Ec	Fall height	1.0 m
	Number of strains	5

### Tests for climatic environmental conditions during operation

The following table shows the type and scope of the tests of the device with regard to climatic environmental conditions.

Environmental condition	Physical variable	Value
Cold test EN 60068-2-1:2007-03 Test Ad	Temperature	0 °C
	Duration	16 h
	Speed of the temperature change	10 K/h
Warm test, dry EN 60068-2-2:2007-07 Test Bd	Temperature	
	• TP700/900/1200/1500 Comfort INOX	50 °C
	• TP1900 Comfort INOX, ITC1900 INOX	45 °C
	Duration	96 h
	Speed of the temperature change	10 K/h

# Technical Support

## A.1 Service and support

You can find additional information and support for the products described on the Internet at the following addresses:

- Technical support ([http://www.siemens.de/automation/csi\\_en\\_WW](http://www.siemens.de/automation/csi_en_WW))
- Support request form (<http://www.siemens.com/automation/support-request>)
- After Sales Information System SIMATIC IPC/PG (<http://www.siemens.com/asis>)
- SIMATIC Documentation Collection (<http://www.siemens.com/simatic-tech-doku-portal>)
- Your local representative  
(<http://www.automation.siemens.com/mcms/aspa-db/en/Pages/default.aspx>)
- Training center (<http://sitrain.automation.siemens.com/sitrainworld/?AppLang=en>)
- Industry Mall (<http://mall.automation.siemens.com>)

When contacting your local representative or Technical Support, please have the following information at hand:

- MLFB of the device
- BIOS version for industrial PC or image version for HMI device
- Other installed hardware
- Other installed software

## Tools & downloads

Please check regularly if updates and hotfixes are available for download to your device. The download area is available on the Internet at the following link:

After Sales Information System SIMATIC IPC/PG (<http://www.siemens.com/asis>)

## List of abbreviations

DC	Direct Current
ESD	Components and modules endangered by electrostatic discharge
EMC	Electromagnetic Compatibility
EN	European standard
FDA	Food and Drug Administration
GND	Ground
HF	High Frequency
IEC	International Electronic Commission
IP	Internet Protocol
LED	Light Emitting Diode
TFT	Thin Film Transistor
UL	Underwriter's Laboratory
USB	Universal Serial Bus