

SIMATIC HMI

HMI devices Comfort Panels Migration Guide

Getting Started

Preface

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1.3 Replacing the predecessor device with a Comfort HMI device

Note

Limited comparability based on display size

Because of the change in display size from 4:3 to "Widescreen", you can only compare the old with the new HMI devices using the display size to a limited extent.

You must use the following table to determine the suitable replacement device.

Predecessor device	MLFB	Replaced with	MLFB
OP 77B	6AV6641-0CA01-0AX1	KP400 Comfort	6AV2124-1DC01-0AX0
TP 177B 4" Color	6AV6642-0BD01-3AX0	KTP400 Comfort	6AV2124-2DC01-0AX0
TP 177B Mono	6AV6642-0BC01-1AX1	TP700 Comfort	6AV2124-0GC01-0AX0
TP 177B Color	6AV6642-0BA01-1AX1		
TP 277	6AV6643-0AA01-1AX0		
MP 177	6AV6642-0EA01-3AX0		
OP 177B Mono	6AV6642-0DC01-1AX1	KP700 Comfort	6AV2124-1GC01-0AX0
OP 177B Color	6AV6642-0DA01-1AX1		
OP 277	6AV6643-0BA01-1AX0		
MP 277 8" Touch	6AV6643-0CB01-1AX1	TP900 Comfort	6AV2124-0JC01-0AX0
MP 277 8" Key	6AV6643-0DB01-1AX1	KP900 Comfort	6AV2124-1JC01-0AX0
MP 277 10" Touch	6AV6643-0CD01-1AX1	TP1200 Comfort	6AV2124-0MC01-0AX0
MP 277 10" Key	6AV6643-0DD01-1AX1	KP1200 Comfort	6AV2124-1MC01-0AX0
MP 377 12" Touch	6AV6644-0AA01-2AX0	TP1500 Comfort	6AV2124-0QC02-0AX0
MP 377 12" Key	6AV6644-0BA01-2AX1	KP1500 Comfort	6AV2124-1QC02-0AX0
MP 377 15" Touch	6AV6644-0AB01-2AX0	TP1900 Comfort	6AV2124-0UC02-0AX0
MP 377 19" Touch	6AV6644-0AC01-2AX1	TP2200 Comfort	6AV2124-0XC02-0AX0

Predecessor device	Display			Comfort device	Display			
	Dimensions W x H [mm]	Size [inches]	Resolution [pixels]		Dimensions W x H [mm]	Size [inches]	Resolution [pixels]	Increase in area
OP 77B	102 x 40	4.5"	160 x 64	KP400	95 x 53	4.3"	480 x 272	8 %
TP 177B 4"	95 x 53	4.3"	480 x 272	KTP400	95 x 53	4.3"	800 x 480	-
OP 177B	115 x 86	5.7"	320 x 240	KP700	152 x 91	7.0"	800 x 480	40 %
OP 277	115 x 86	5.7"	320 x 240	KP700	152 x 91	7.0"	800 x 480	40 %
TP 177B, MP 177, TP 277	115 x 86	5.7"	640 x 480	TP700	152 x 91	7.0"	800 x 480	40 %
MP 277 8" Key	152 x 114	7.5"	640 x 480	KP900	195 x 117	9.0"	800 x 480	32 %
MP 277 8" Touch	152 x 114	7.5"	640 x 480	TP900	195 x 117	9.0"	800 x 480	32 %
MP 277 10" Key	211 x 158	10.4"	640 x 480	KP1200	261 x 163	12.1"	1280 x 800	22 %
MP 277 10" Touch	211 x 158	10.4"	640 x 480	TP1200	261 x 163	12.1"	1280 x 800	22 %
MP 377 12" Touch	246 x 185	12.1"	800 x 600	TP1500	331 x 207	15.4"	1280 x 800	50 %
MP 377 12" Key	246 x 185	12.1"	800 x 600	KP1500	331 x 207	15.4"	1280 x 800	50 %
MP 377 15" Touch	304 x 228	15.0"	1024 x 768	TP1900	410 x 230	18.5"	1366 x 768	36 %
MP 377 19" Touch	376 x 301	19.0"	1280 x 1024	TP2200	475 x 267	21.5"	1920 x 1080	12%

Interfaces

The Comfort HMI devices always have the same interfaces as the predecessor devices. Depending on the HMI device, additional interfaces are available.

Data input

- The Comfort key HMI devices have an alphanumeric input block, which is operated like the keypad of a cellular phone.
- Unlike some predecessor devices, the Comfort key HMI devices do not have K or S keys. Comfort keys HMI devices feature only function keys.
All function keys are equipped with LEDs.
- The Comfort HMI devices with touch screen have a screen keyboard.

See also

Interfaces (Page 17)

Mapping of the soft key assignment (Page 23)

Data input (Page 26)

2.2 Mounting cut-out

Differences in the enclosure dimensions

The following tables compare the dimensions for mounting cut-out, device depth and enclosure front of predecessor devices and Comfort HMI devices.

Predecessor device	Dimensions			Comfort device	Dimensions		
	Mounting cut-out W x H [mm]	Depth of the device [mm]	Front W x H [mm]		Mounting cut-out W x H [mm]	Depth of the device [mm]	Front W x H [mm]
OP 77B	135 x 171	38	150 x 186	KP400	135 x 171	48	150 x 188
TP 177B 4"	122 x 98	48	140 x 116	KTP400	122 x 98	48	140 x 116
OP 177B	229 x 196	45	243 x 212	KP700	281 x 177	63	308 x 204
OP 277	281 x 177	56	308 x 204	KP700	281 x 177	63	308 x 204
TP 177B, MP 177, TP 277	197 x 141	44 ¹	212 x 156	TP700	197 x 141	63	214 x 158
MP 277 8" Key	338 x 206	61	362 x 230	KP900	338 x 206	63	362 x 230
MP 277 8" Touch	226 x 166	60	250 x 190	TP900	250 x 166	63	274 x 190
MP 277 10" Key	434 x 291	60	483 x 310	KP1200	434 x 268	63	454 x 289
MP 277 10" Touch	310 x 248	61	335 x 275	TP1200	310 x 221	63	330 x 241
MP 377 12" Touch	310 x 248	72	335 x 275	TP1500	396 x 291	75	415 x 310
MP 377 12" Key	450 x 290	59	483 x 310	KP1500	450 x 291	75	483 x 310
MP 377 15" Touch	367 x 289	72	400 x 310	TP1900	465 x 319	75	483 x 337
MP 377 19" Touch	449 x 379	75	483 x 400	TP2200	542 x 362	75	560 x 380

¹ 45 mm for TP 277

Compatibility of the mounting cut-outs

You can install the Comfort HMI devices in the mounting cut-outs of the following predecessor devices:

Comfort HMI device	Predecessor device	Mounting cut-out (in mm)
KP400 Comfort	OP 77B	135 x 171
KTP400 Comfort	TP 177B 4"	122 x 98
KP700 Comfort	OP 277	281 x 177
TP700 Comfort	TP 177B, MP 177, TP 277	197 x 141
KP900 Comfort	MP 277 8" Key	338 x 206
KP1500 Comfort	MP 377 12" Key	450 x 291

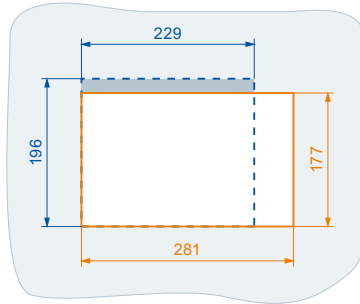
Note that despite the same dimensions for the mounting cut-out, the device depth and/or the enclosure front dimensions may differ from the respective dimensions of the predecessor devices.

Differences in the mounting cut-outs

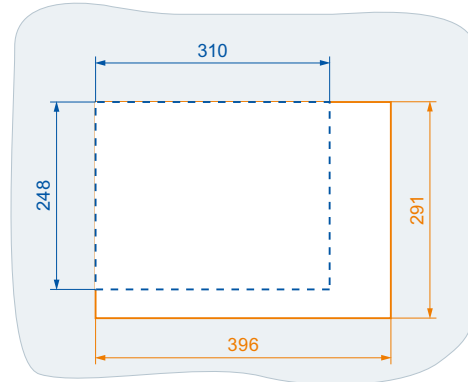
The following figures will clarify the changes you have to make to the mounting cut-out to install a Comfort HMI device.

Width and height are always given in millimeters.

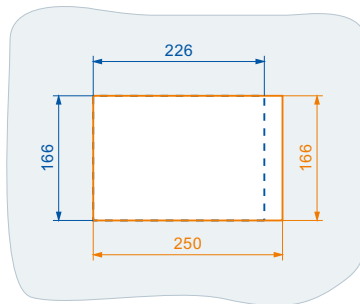
OP 177B (blue)/
KP700 Comfort (orange):



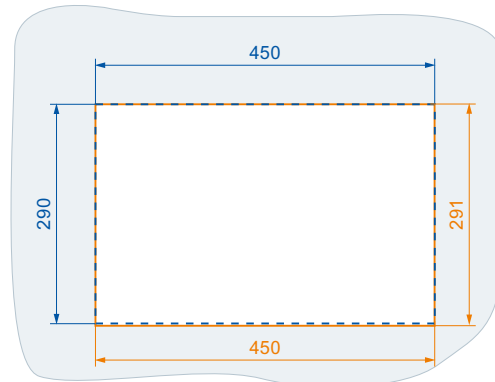
MP 377 12" Touch (blue)/
TP1500 Comfort (orange):



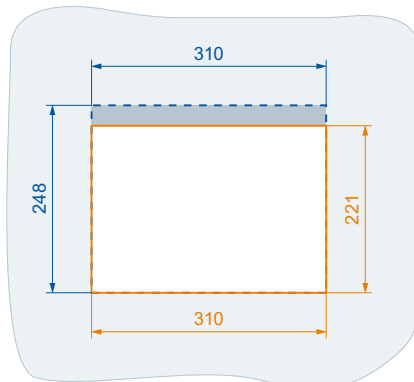
MP 277 8" Touch (blue)/
TP900 Comfort (orange):



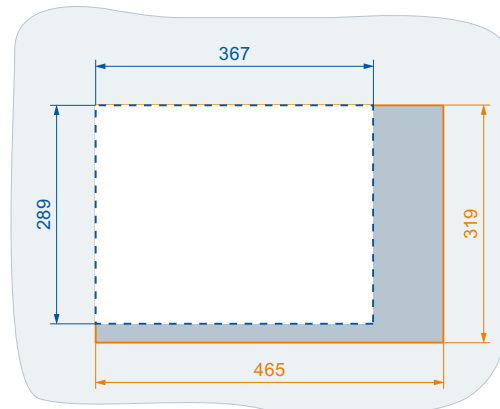
MP 377 12" Key (blue)/
KP1500 Comfort (orange):



MP 277 10" Touch (blue)/
TP1200 Comfort (orange):



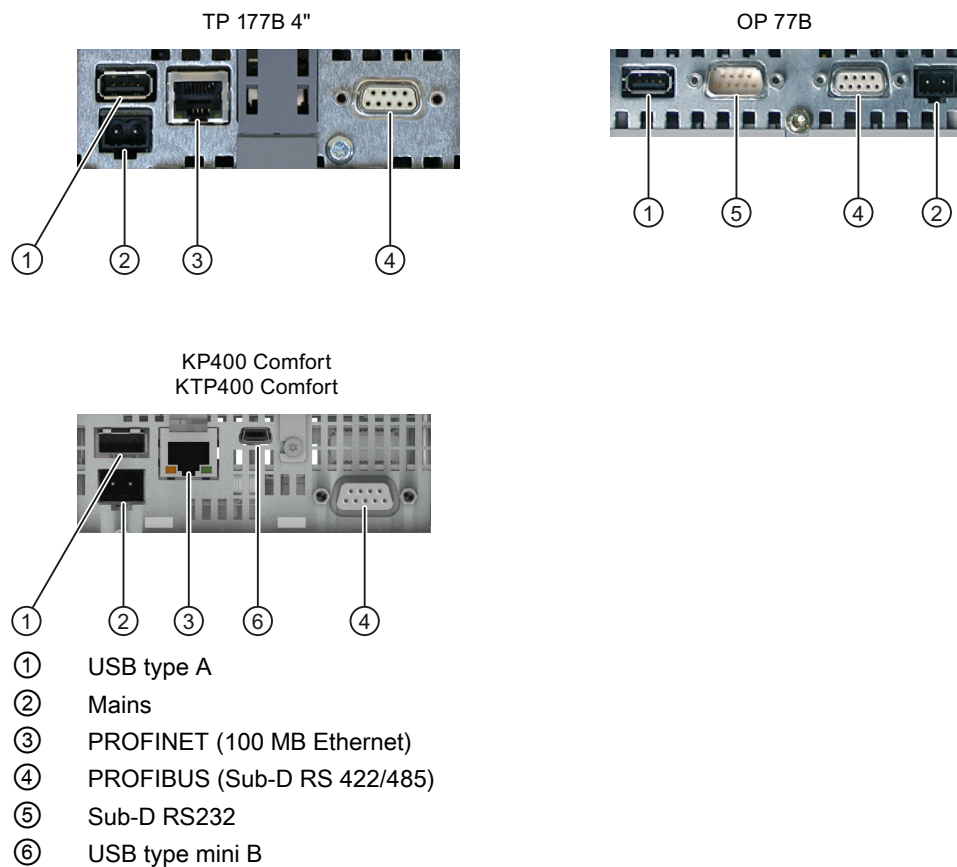
MP 377 15" Touch (blue)/
TP1900 Comfort (orange):



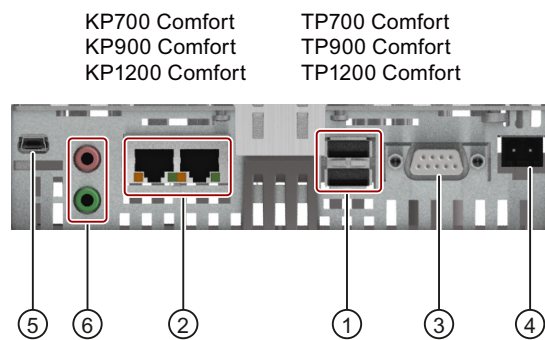
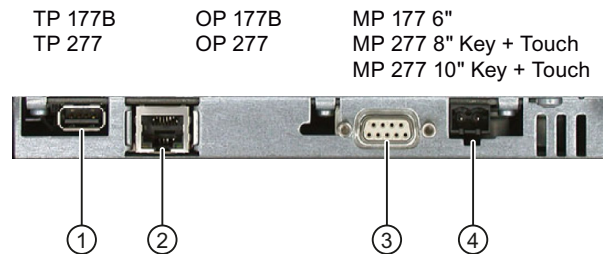
The Comfort HMI devices have the following *additional* interfaces:

- All Comfort HMI devices:
USB type Mini-B for commissioning with a configuration PC
- Comfort HMI devices as of KP/TP700 Comfort:
 - Audio Line IN / OUT as of KP/TP700 Comfort, e.g. for connecting an audio amplifier
 - Second interface USB type A, for connection of I/O devices such as printers or keyboard
 - Second PROFINET interface (100 MB Ethernet)
 - As of KP/TP1500 Comfort: A GB PROFINET interface (PROFINET basic services, 1 GB Ethernet)

The following figure shows the interfaces on the predecessor devices of the KP400 Comfort and KTP400 Comfort.



The following figure shows the interfaces on the predecessor devices of the Comfort HMI devices KP/TP700 Comfort to KP/TP1200 Comfort.



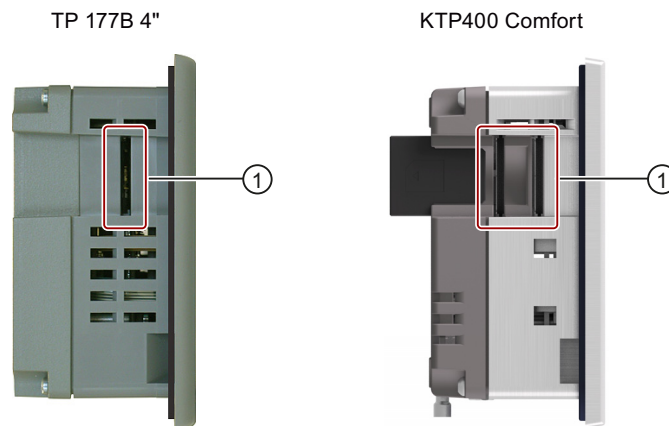
- ① USB type A
The predecessor devices MP 277 8" and MP 277 10" have two USB type A connectors
- ② PROFINET (100 MB Ethernet)
- ③ PROFIBUS (Sub-D RS 422/485)
- ④ Mains
- ⑤ USB type mini B
- ⑥ Audio Line IN / OUT

2.4 Slots for memory cards

Location of the slots for predecessor devices and Comfort HMI devices

All Comfort HMI devices have two slots for SD memory cards. The slots for the Comfort HMI devices are protected by a sliding cover.

The following figure shows the memory card slots for TP 177B 4" (left) and KTP400 Comfort (right). The figure applies in the same manner for OP 77B and KP400 Comfort.



① Slots

The following figure shows the memory card slots based on the example of MP 177 (left) and TP700 Comfort (right). The figure applies in the same manner to the following devices:

- Predecessor devices: OP/TP 177B and all versions of the 277 series
- Comfort HMI devices: KP/TP700 Comfort up to TP2200 Comfort



① Slots

Migrating a project

3.1 Overview

The new Comfort HMI devices are configured with WinCC only.

In addition to the replacing the HMI devices in the plant, you have to migrate the project data.

The following format is supported:

- Project file from WinCC flexible 2008 SP2

Note

This migration guide only contains the recommendations for changing the screen format from 4:3 to Widescreen.

Detailed information on migration of the project data is available in the WinCC Information System.

Comparison of the available memory

The following two tables compare the available memory of the predecessor devices with those of the Comfort HMI devices. The Comfort HMI devices have sufficient memory to visualize the process sequences just like the predecessor devices and to save the process data.

3.2 Migrating a project

The steps listed below only represent an overview of the migration of a WinCC flexible project.

A detailed description of the individual migration steps is available in the WinCC Information System under "Migrating projects".

Procedure

Proceed as follows:

1. Save all data of the old HMI device, especially process-relevant data such as recipes or logs.
2. Migrate the original project.
3. Edit the migrated project based on the migration protocol.

Result

The project data are migrated to WinCC and post-edited. The predecessor device is still included in the project. Before you switch over the HMI device, specify the settings for screen changeover.

3.3 Switching screen from 4:3 to Widescreen

3.3.1 Overview

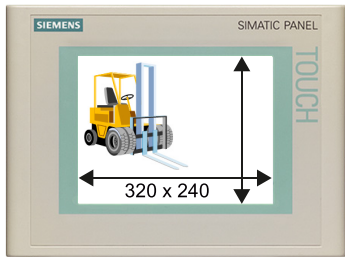
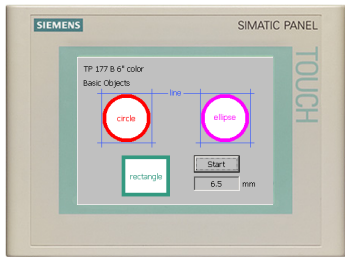
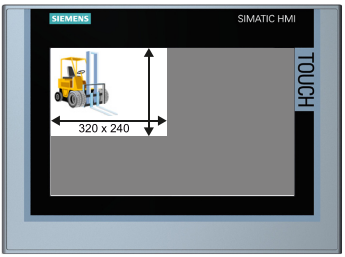
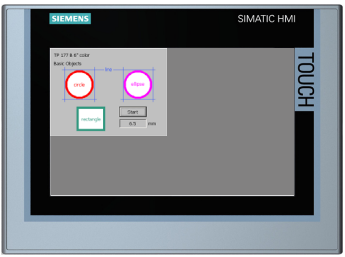
Introduction

An essential feature of the Comfort HMI devices is that the display format has changed from 4:3 to "Widescreen". This change has increased the visualization area by up to 50%.



In the course of the project migration, you will switch over the predecessor device to the Comfort HMI device in WinCC. Before switching the HMI device, you define how the previous screen contents are to be migrated into the new format.

3.3.2 Switching without adaptation

TP 177B 6"	Setting	TP700 Comfort
 	Adaptations for screens and screen objects: "None" Position:  Use "Position" to define the positioning of the screen, e.g. "Top left".	 

Result

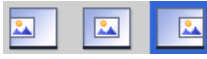
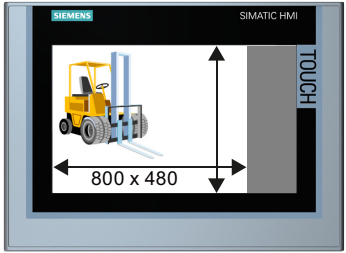
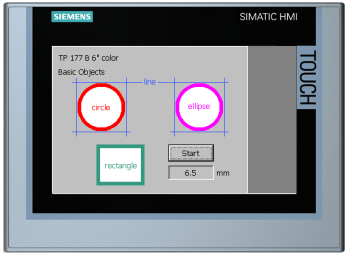
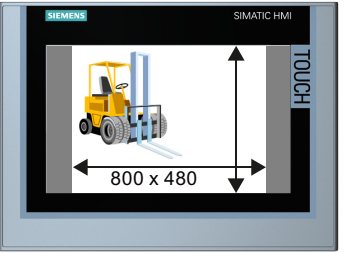
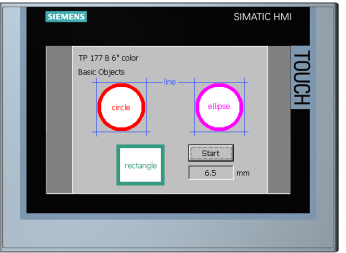
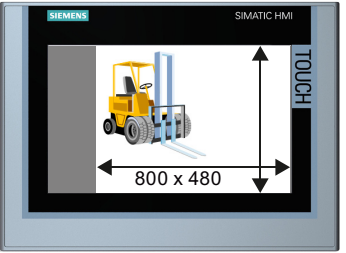
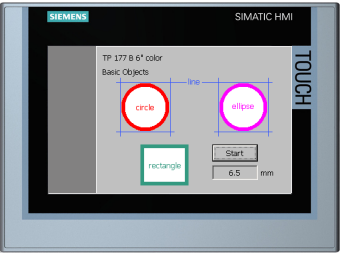
The screen size of the predecessor device is retained at 320 x 240 pixels.

	Yes	No
Distorted screen elements possible		X
Truncated screen elements possible		X
Greatly reduced screen elements possible	X	

3.3.6 Recommendation for screen changeover

Adapt height to new screen

In most cases, the setting "Adapt height to new screen" is the best choice for the switchover from screen format 4:3 to Widescreen. With this setting, objects are not distorted or truncated. You can also determine the positioning of the objects using the "Position" setting.

"Position" setting			
Result after changeover	 	 	 

You can use the additional free space for project expansions, for example.

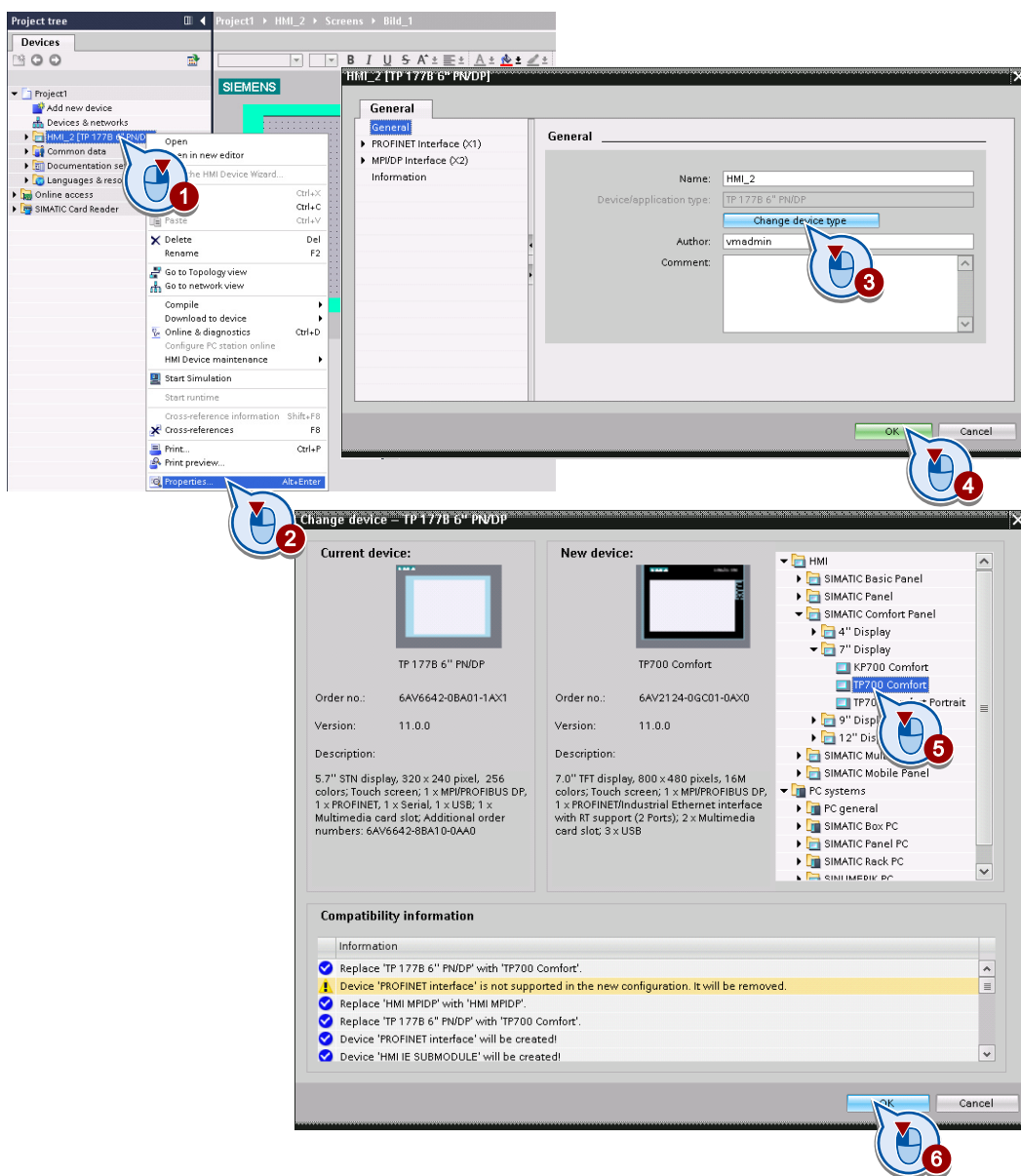
3.4 Switching over the HMI device

Requirements

- Adaptations for screens and screen objects are set for changing the display format (see Switching screen from 4:3 to Widescreen (Page 29)).
- The project tree is open in WinCC.

Procedure

Proceed as follows:



Commissioning the HMI device

4.1 Overview

To transfer the migrated project from the configuration PC to the Comfort HMI device, connect the Comfort HMI device with one of the following interfaces on the configuration PC:

- Ethernet
- USB
- PROFIBUS/MPI

After successful transfer, you can insert the system memory card in the Comfort HMI device and activate automatic backup as part of the service concept.

In the event of a fault, it is usually sufficient to restart the device or update the operating system. Resetting to factory settings ("bootstrapping") is only necessary in case of serious errors, for example, in case of a corrupt file system.

4.2 Transferring a project

NOTICE
Note the information regarding connection of an HMI device to a configuration PC in the operating instructions of the Comfort HMI device.

The project transfer is shown based on a USB connection.

Requirements

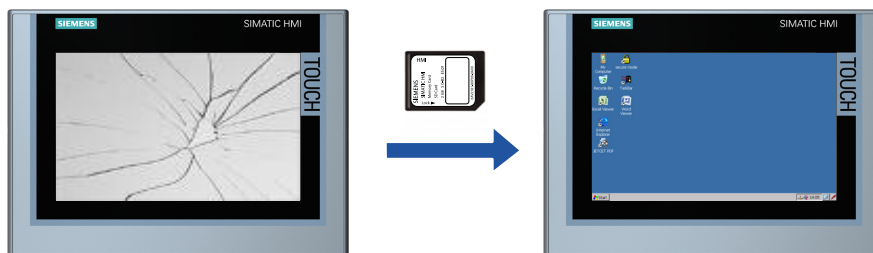
A project with configured Comfort HMI device is open in WinCC.

4.3 Using automatic backup

Introduction

The "Service concept" of the Comfort HMI devices is a continuous, automatic backup of all process-relevant HMI device data on the system memory card.

The automatic backup is activated automatically after you insert the system memory card and following a prompt. In the event of a device failure, insert the system memory card into a replacement device of the same design.



This way you reduce your system downtimes to a minimum. You require neither a PC nor a programming device.

You can also use automatic backup for "Series commissioning" of identical HMI devices. Once the data of the first HMI device are copied to the system memory card, insert the system memory card into all other HMI devices. The content of the system memory card is transferred to the HMI device.

Only the "SIMATIC HMI Memory Card" with a storage capacity of at least 2 GB is permitted as system memory card (order number: 6AV2181-8XP00-0AX0).

Activating automatic backup

To activate automatic backup as part of the initial commissioning on an HMI device, proceed as follows:

1. Switch on the power supply of the HMI device.
2. Wait until the HMI device has started.
3. Push the safety switch to position 2.
4. Insert the memory card into the slot provided for it.