Siemens KTP-400

6AV2 123-2DB03-0AX0

Introduction to HMI

- Understanding HMI hardware
- How to link HMI with PC / PLC?
- Configure the HMI
- Transfer the Program

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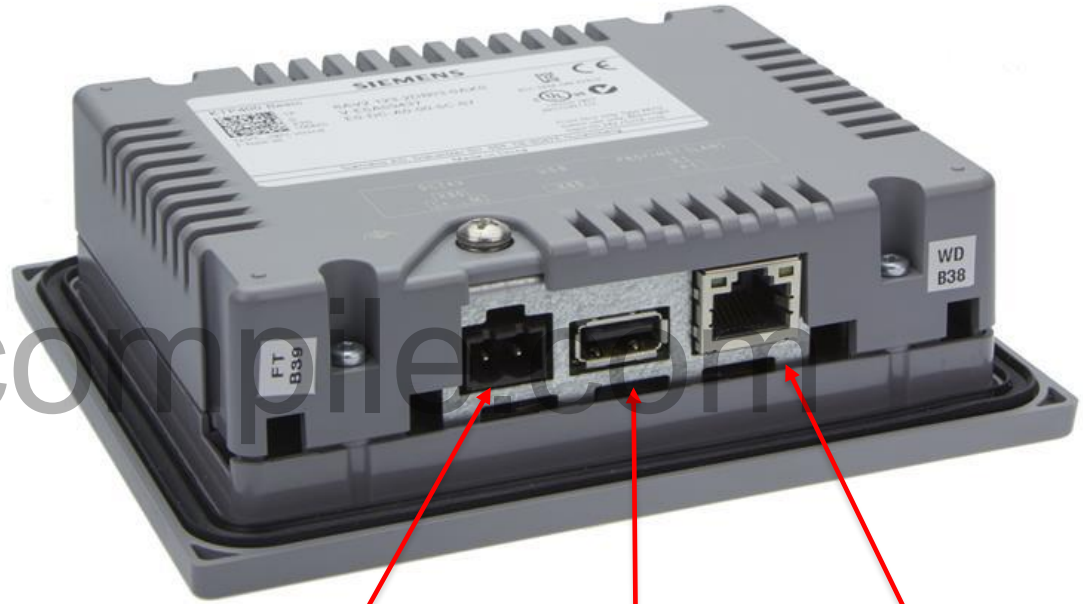
Touch Screen Interface



Function Keys

- **Global** – trigger same action regardless of current HMI Screen
- **Local –** only effective within the active screen. Function assign can vary from screen to screen.

Power Supply

24VDC

USB Port

- External mouse
- External keyboard
- USB memory stick

Profinet Interface

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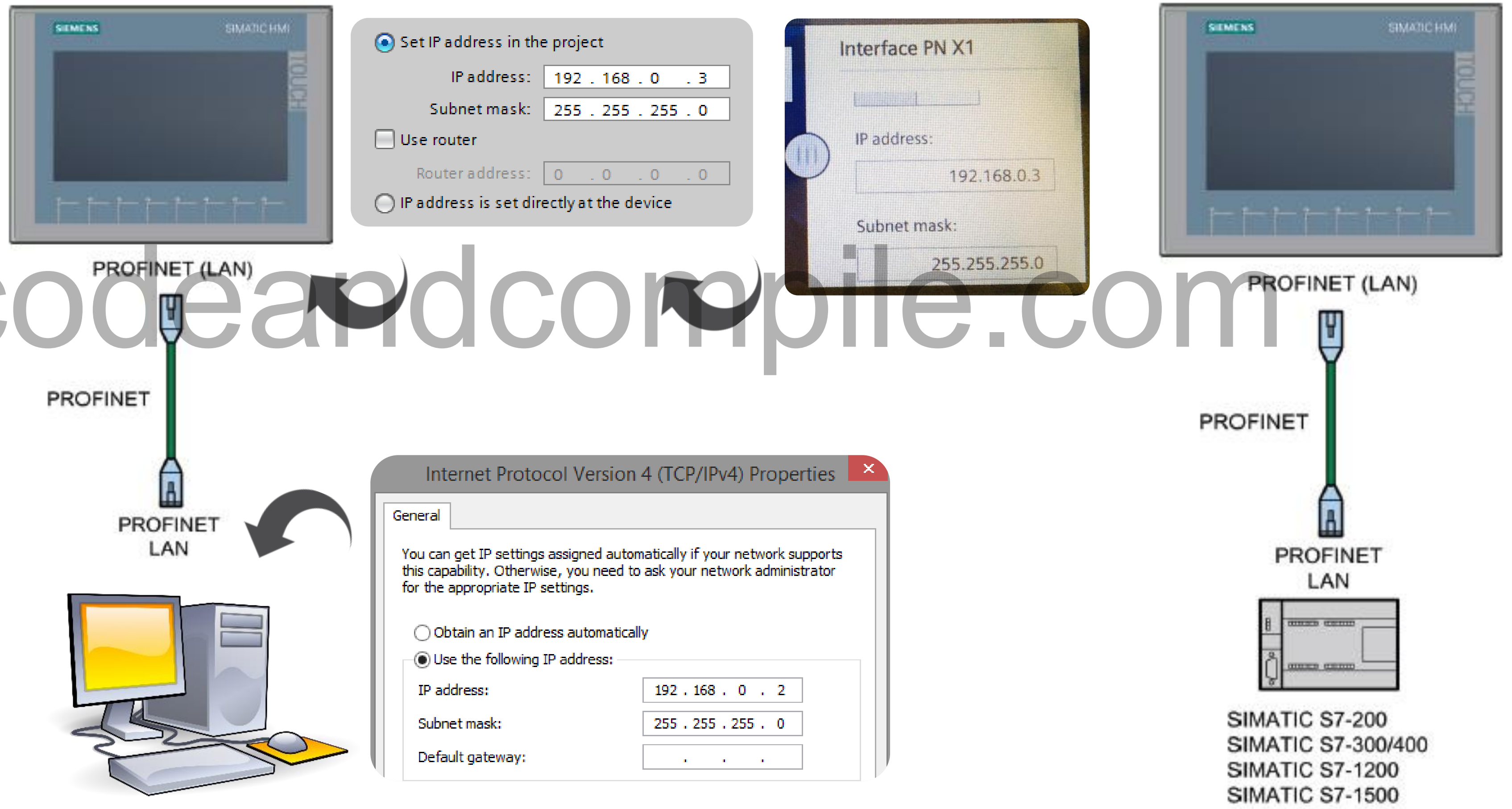
PROFINET – Ethernet based Data Communication

High Speed bandwidth of 100Mbps

Step 1 – Download the Screen from PC to HMI

Step 2 – Link HMI with PLC

Discussed later in the course

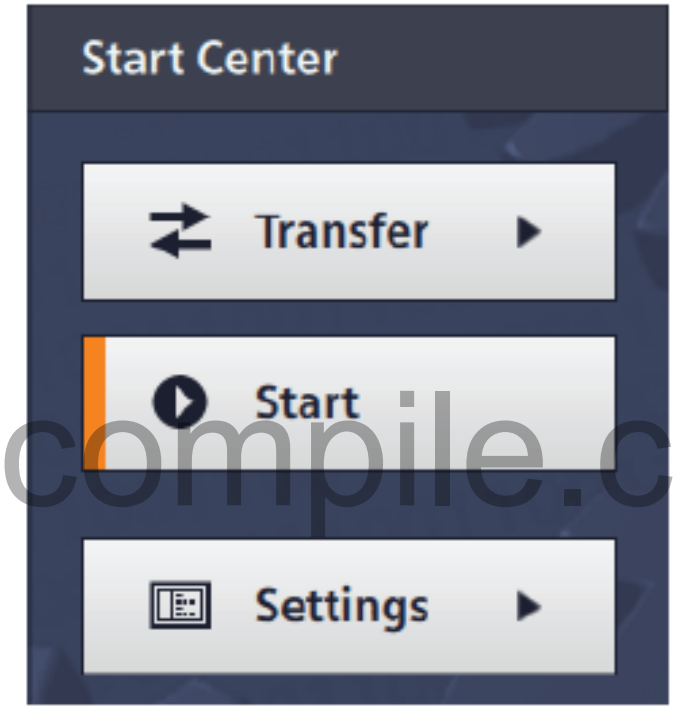


To transfer the screens in HMI

To monitor and control the PLC

Start Up Screen

On turning ON the HMI you will see three options:



Press the "Transfer" button to set the HMI device to "Transfer" mode. The "Transfer" mode can only be activated when at least one data channel has been enabled for the transfer.

Press the "Start" button to start the project on the HMI device.

Press the "Settings" button to start the "Settings" page of the Start Center. You can change various settings on this page, for example, the transfer settings.

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Configuring the HMI

You can make the following settings:

- Settings for operation
- Communication settings
- Password protection
- Transfer settings
- Screen saver
- Acoustic signals

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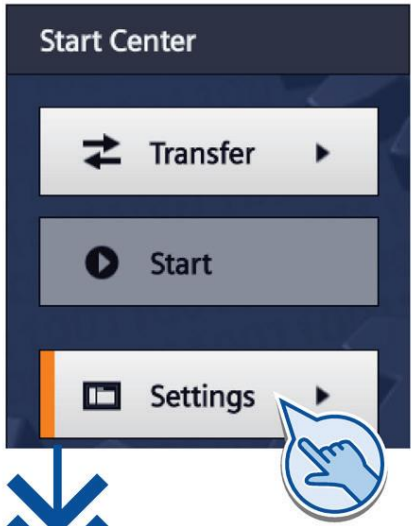
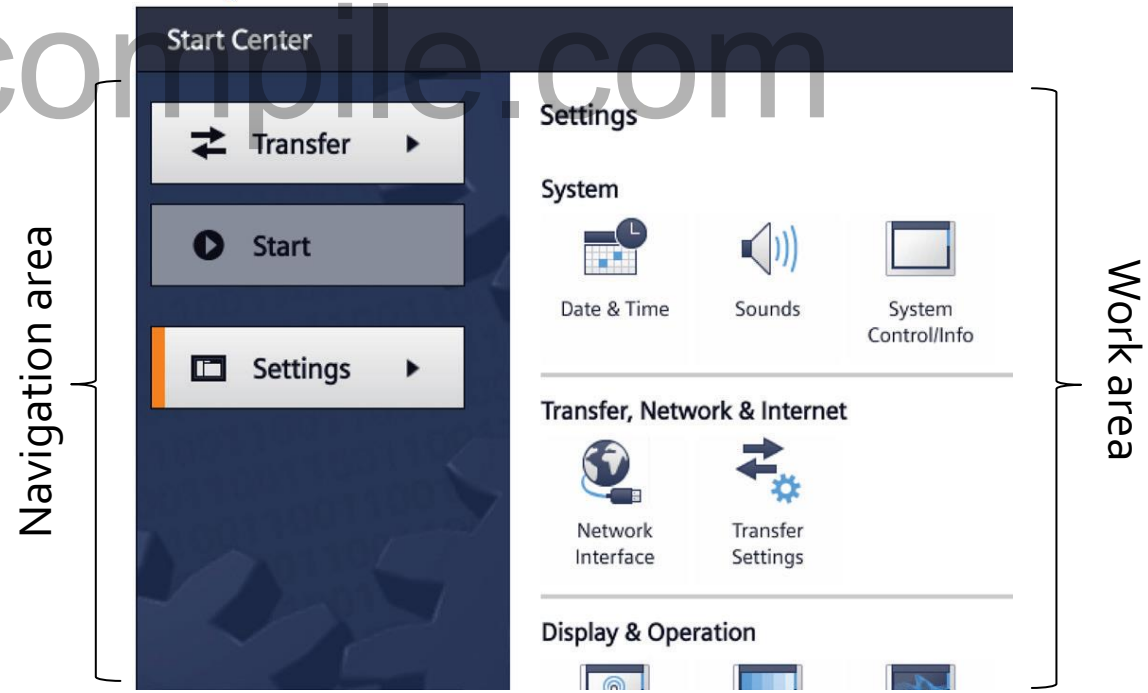




DID YOU KNOW ?

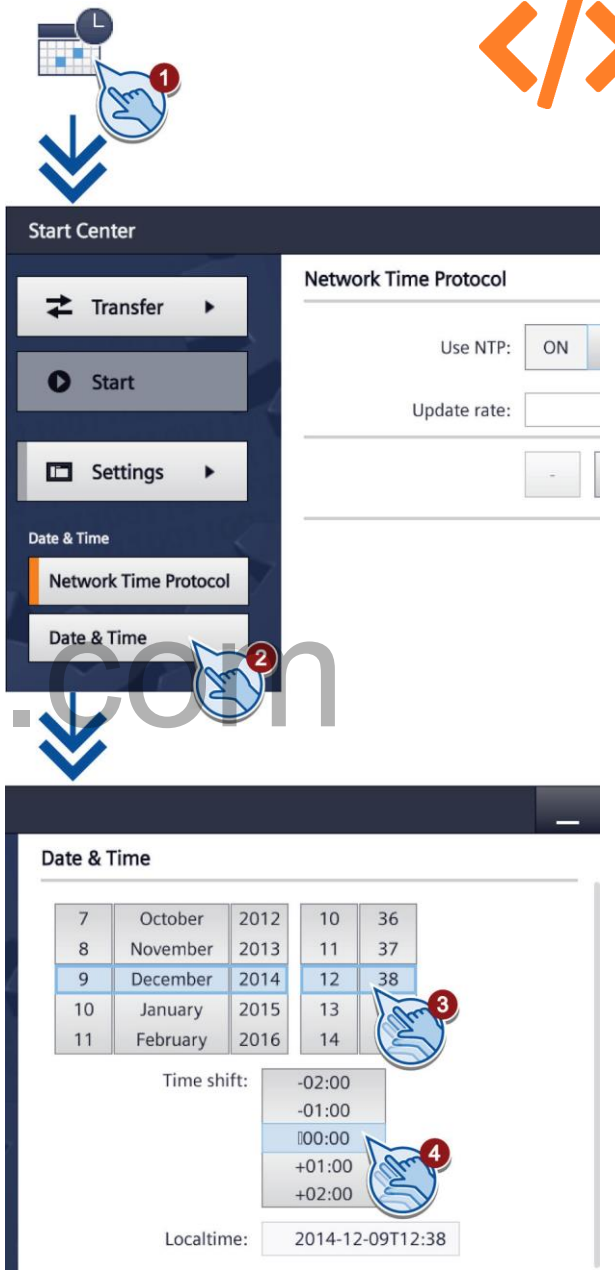
If the device is configured in portrait, the navigation area is on the top and the work area on the bottom in the display.

Enter Date and Time

Settings -> Date & Time

Press "Date & Time" to open the "Date & Time" dialog.

1. Open the "Date & Time" tab.
2. Select the date and the required time in the drop-down lists.
3. If necessary, enter a time shift with the selection wheel under "Time shift".
4. The set time shift applies even if you fetch the time-of-day from a time server.
5. The resulting time is displayed under "Localtime".



Acoustic Signal

Settings -> Sound

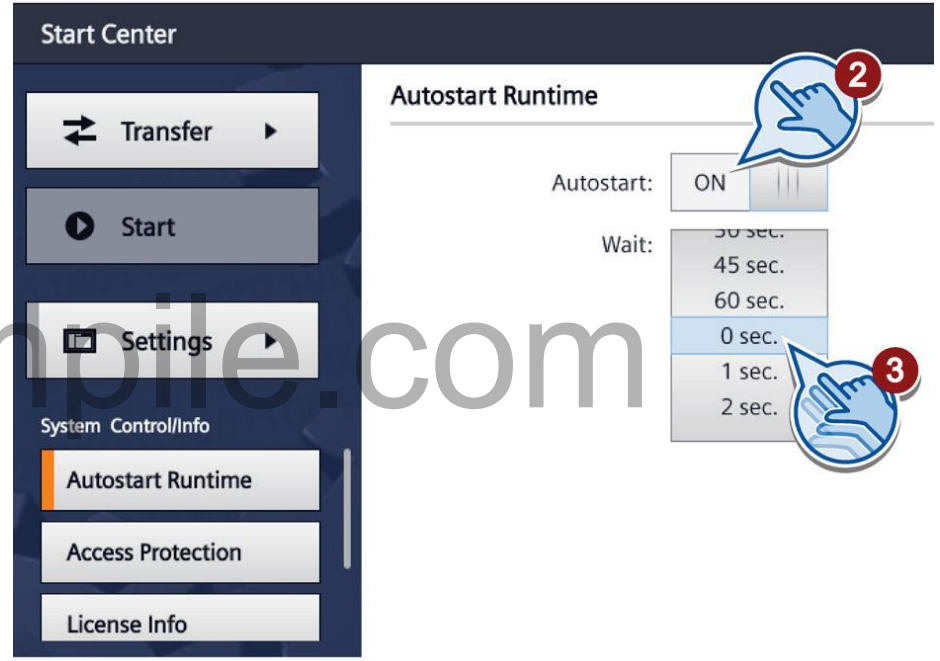
1. Press "Sounds" to open the "Volume" dialog.
2. Set the "Sound" to "ON".
3. Once you have set the "Sound" to "ON" you receive an acoustic feedback in the running project each time you touch the touch screen.

System Control/Info

Settings -> System & Info

Configuring Auto-start or wait time

1. Press "System Control/Info" to open the "System Control/Info" dialog.
2. The "Autostart Runtime" tab is open.
3. Switch on the "Autostart" function.
4. Set the wait time with the selection wheel under "Wait".
5. ***The wait time is the time in seconds between the appearance of the Start Center and automatic start of the project.***
6. Value range: 0 ... 60 s



DID YOU KNOW ?

Note

Immediate start of the project with a delay time of 0 seconds

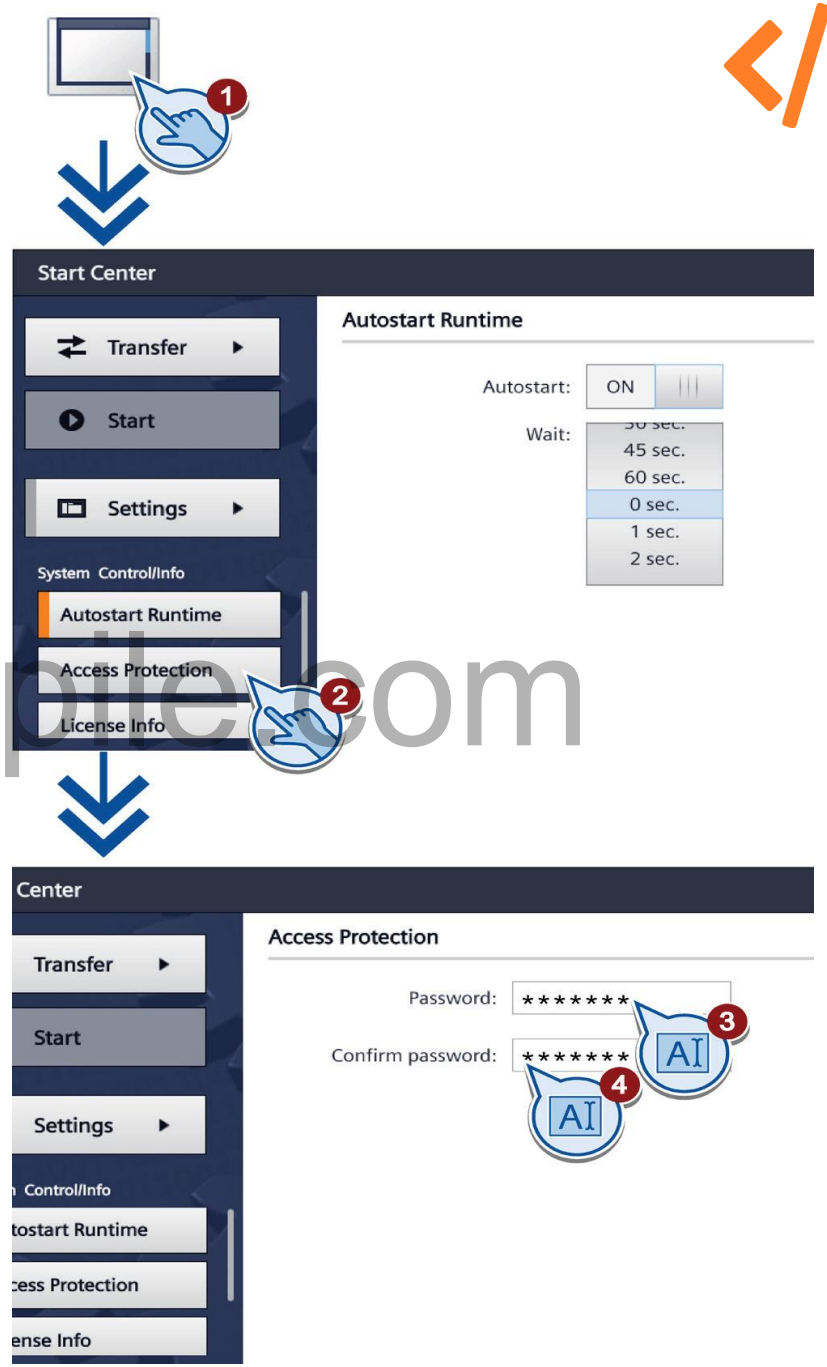
The project starts immediately if a delay time of 0 seconds is set. It is now no longer possible to call the Start Center after switching on the HMI device. To handle this situation, you need to configure an operating element with the "Close project" function.

System Control/Info

Settings -> Access Protection

Activating Password Protection

1. Press "System Control/Info" to open the "System Control/Info" dialog.
2. Switch to the "Access Protection" tab.
3. Enter a password in the "Password" text box. Touch the text box. The alphanumerical screen keyboard is displayed.
4. Confirm the password in the "Confirm Password" text box.

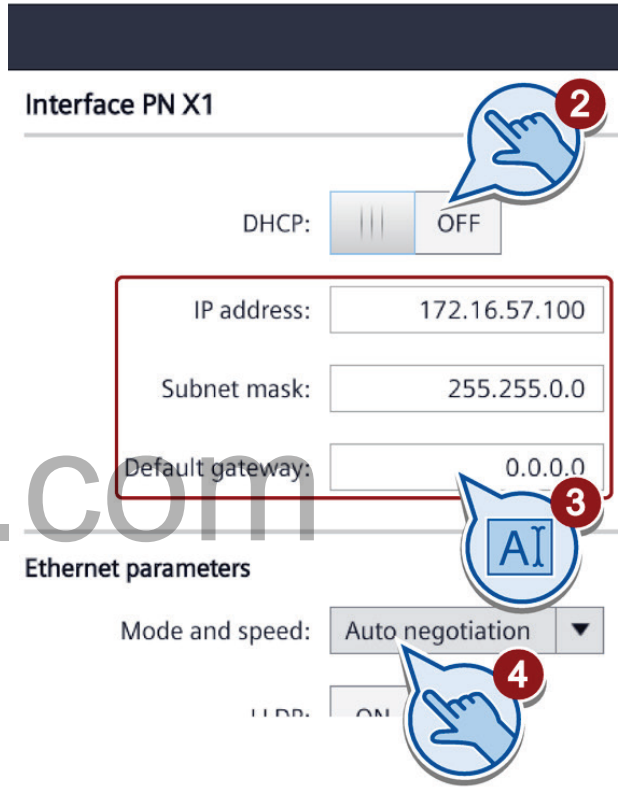


Network Interface

Settings -> Network Interface

Displaying information about Network parameters

- Choose either automatic address assignment via **"DHCP – Dynamic Host Configuration Protocol"**, or user-specific address assignment.
- If assigning a **user-specific address,** use the screen keyboard to enter valid values in the **"IP address", "Subnet mask" text boxes** and if applicable in the "Default gateway" text box.
- Select the transmission rate in the PROFINET network and the transmission type in the "Mode and speed" selection box under "Ethernet parameters". Valid values are 10 Mbps or 100 Mbps and "HDX" (half duplex) or "FDX" (full duplex).
- If the "Auto Negotiation" entry is selected, the transmission type and transmission rate in the PROFINET network will be automatically detected and set.
- If the "LLDP" switch is selected, the HMI device exchanges information with other HMI devices.
- Enter a network name for your HMI device in the "Device name" field under "Profinet".

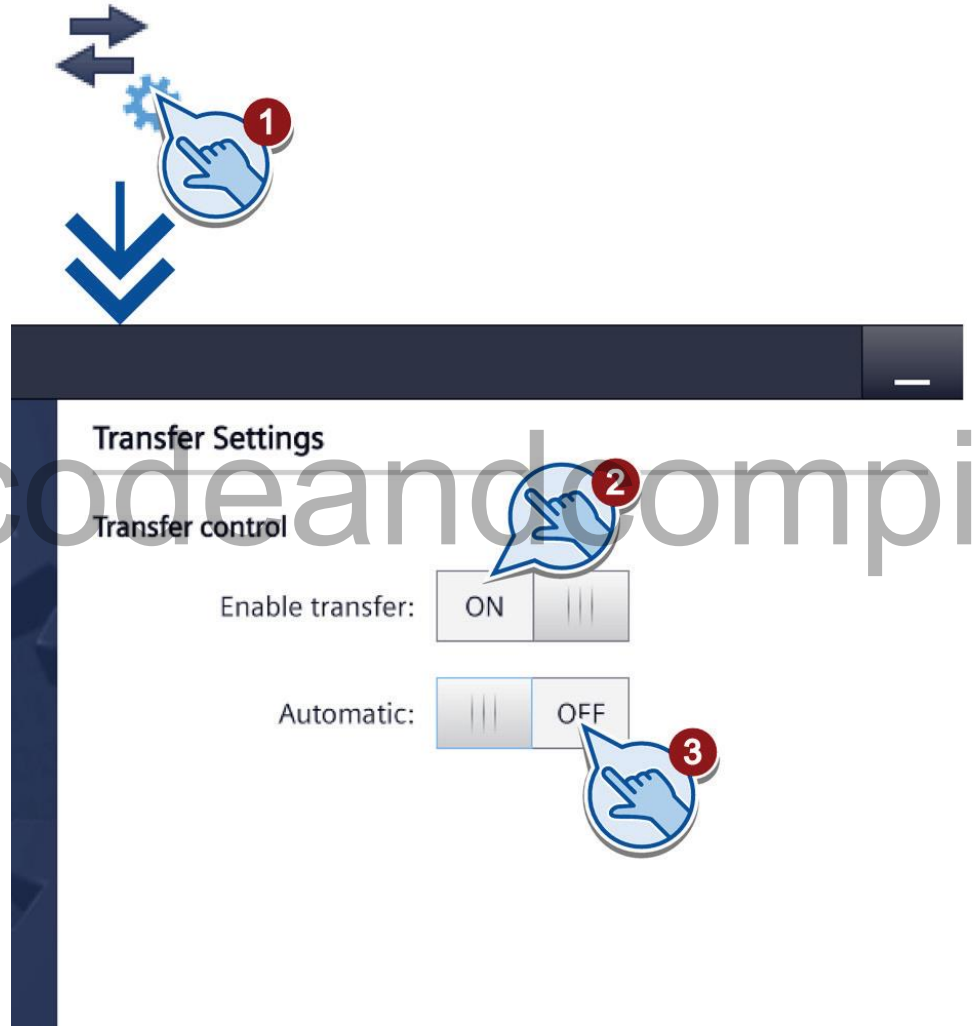


DID YOU KNOW ?

Communication errors can occur if several devices in a network share the same IP address. Assign a unique IP address to every HMI device in the network.

Transfer Settings

Settings -> Transfer Settings

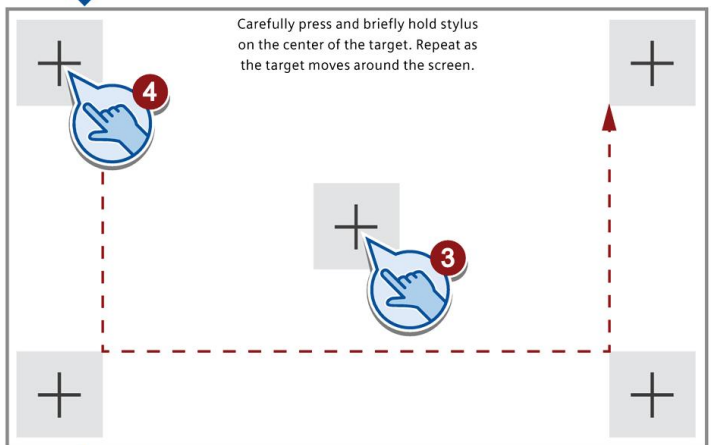


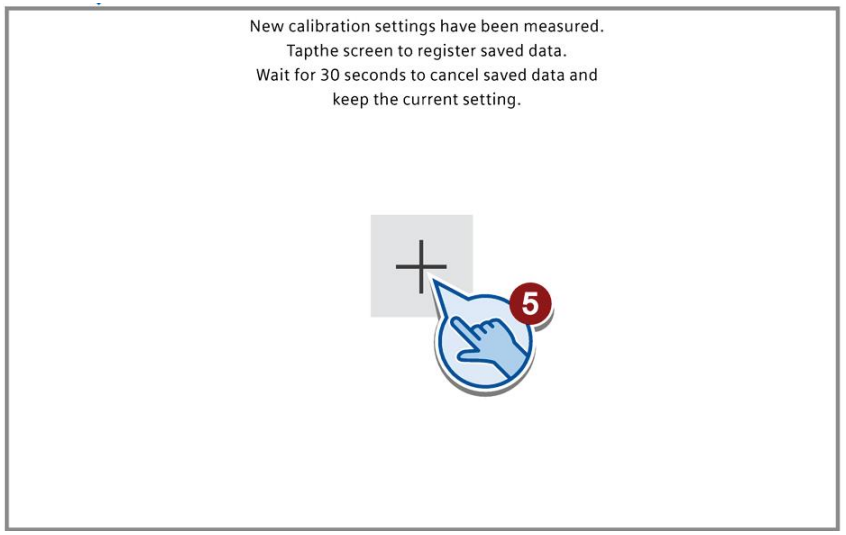
1. Press "Transfer Settings" to open the "Transfer Settings" dialog.
2. Switch on "Enable transfer".
3. To enable automatic transfer, switch on "Automatic".
4. When the automatic transfer is activated, you can start a transfer from the configuring PC while the project is running. The running project is closed in this case and the new project is transferred.
5. The new project starts after it is transferred.

Touch Calibration

Settings -> Touch

1. Press "Touch" to open the "Touch" dialog.
2. Click the "Recalibrate" button.
3. Press any spot on the touch screen within the next 15 seconds.
4. Touch the five calibration crosses one after the other.
5. If you have not touched a calibration cross within the expected range, calibration will start once again.
6. If you have touched all calibration crosses within the expected range, calibration is complete and will be saved.

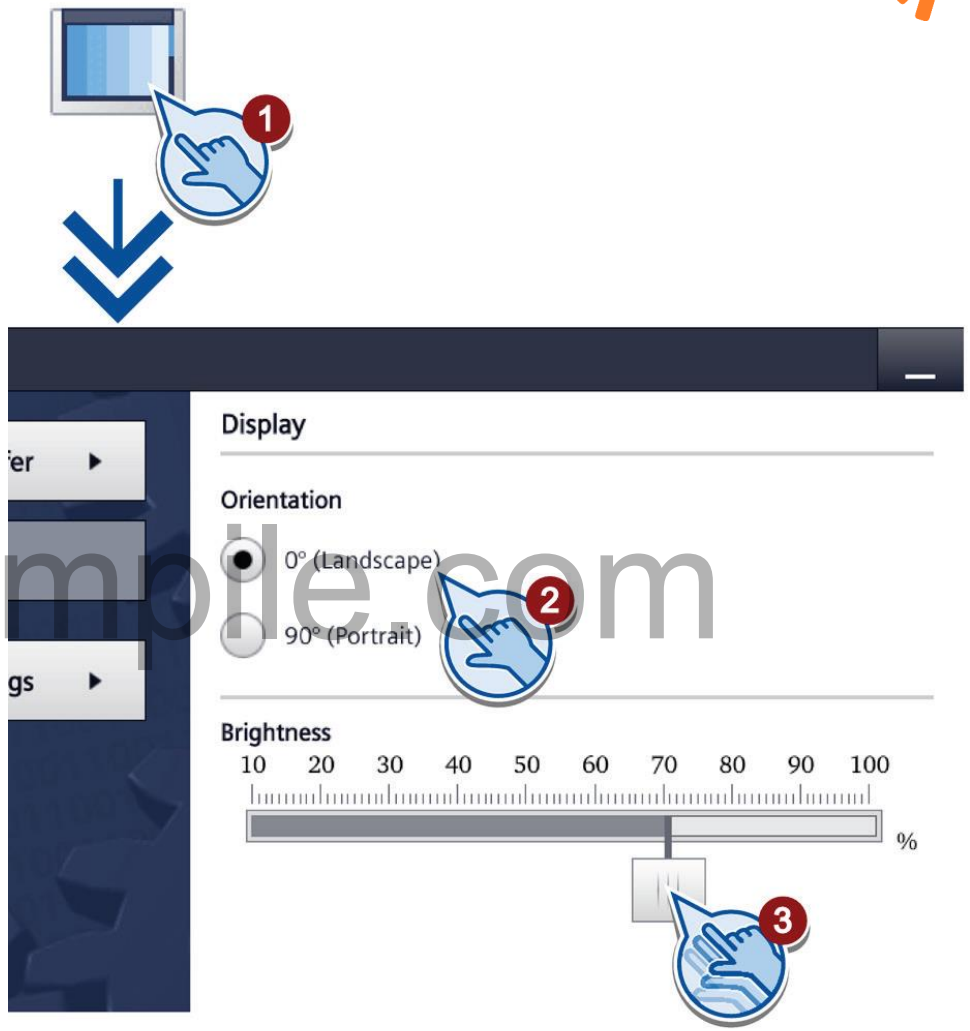




Display

Settings -> Display

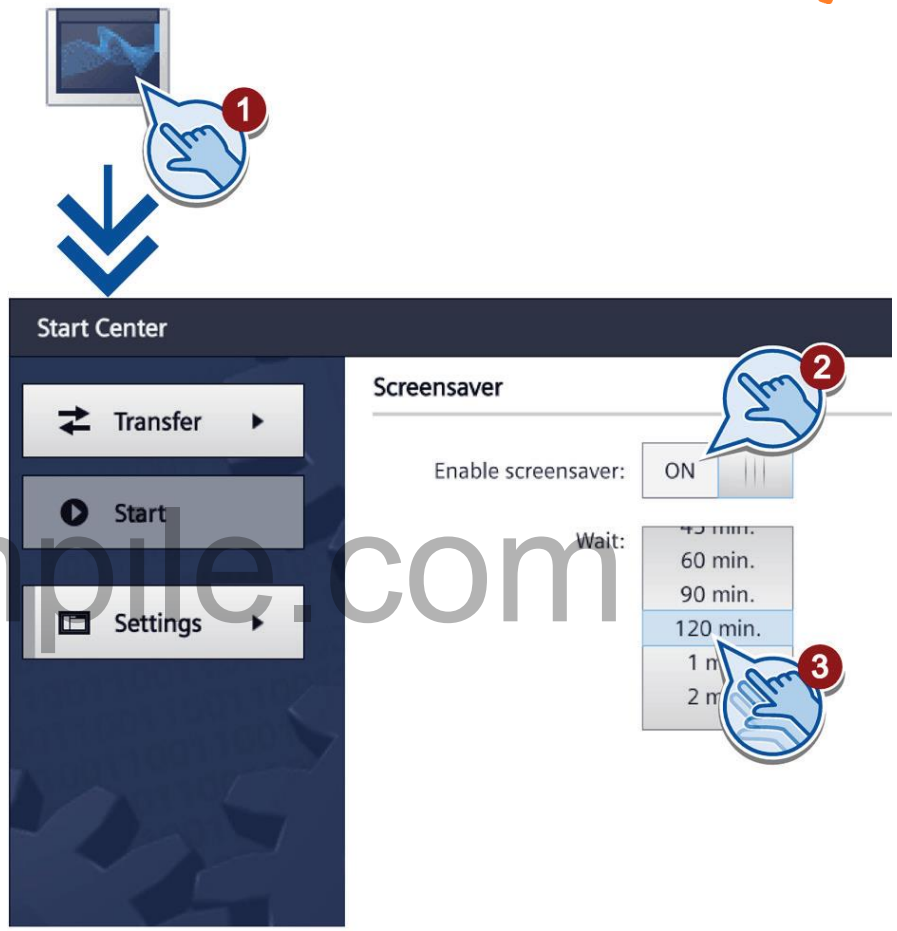
1. Press "Display" to open the "Display" dialog.
2. Select the screen orientation:
   - – "0° (Landscape)" for landscape
   - – "90° (Portrait)" for portrait
3. Use the "Brightness" slider to set the screen brightness



Screen Saver

Settings -> Screen Saver

1. Press "Screensaver" to open the "Screensaver" dialog.
2. Switch on the screensaver with "Enable screensaver".
3. Enter the number of minutes with the selection wheel before the screen saver is to be activated under "Wait".
4. You may select values between 1 and 120 minutes.



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Transfer – PC to HMI

You can start the "Transfer" mode **manually** or **automatically** on the HMI device. Transferred data is written directly to internal flash memory of the HMI device

AUTOMATIC TRANSFER MODE

If automatic transfer is activated, the HMI device automatically changes to **"Transfer" mode at runtime as soon as a transfer is started on the connected configuration PC**.

REQUIREMENTS

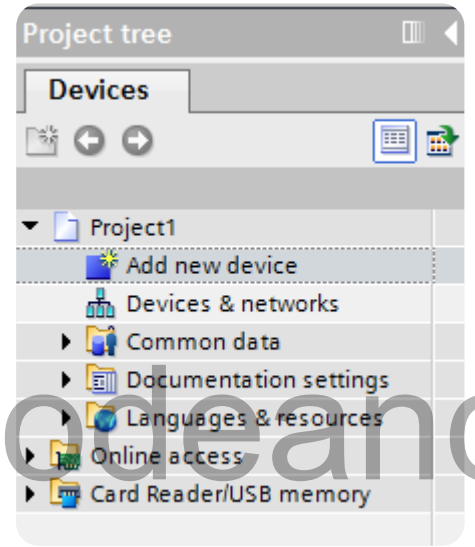
- The project is open in WinCC.
- The project is compiled.
- The HMI device is connected to a configuration PC.
- The data channel parameters are assigned on the HMI device.
- The automatic transfer is enabled in the Start Center.

DID YOU KNOW ?

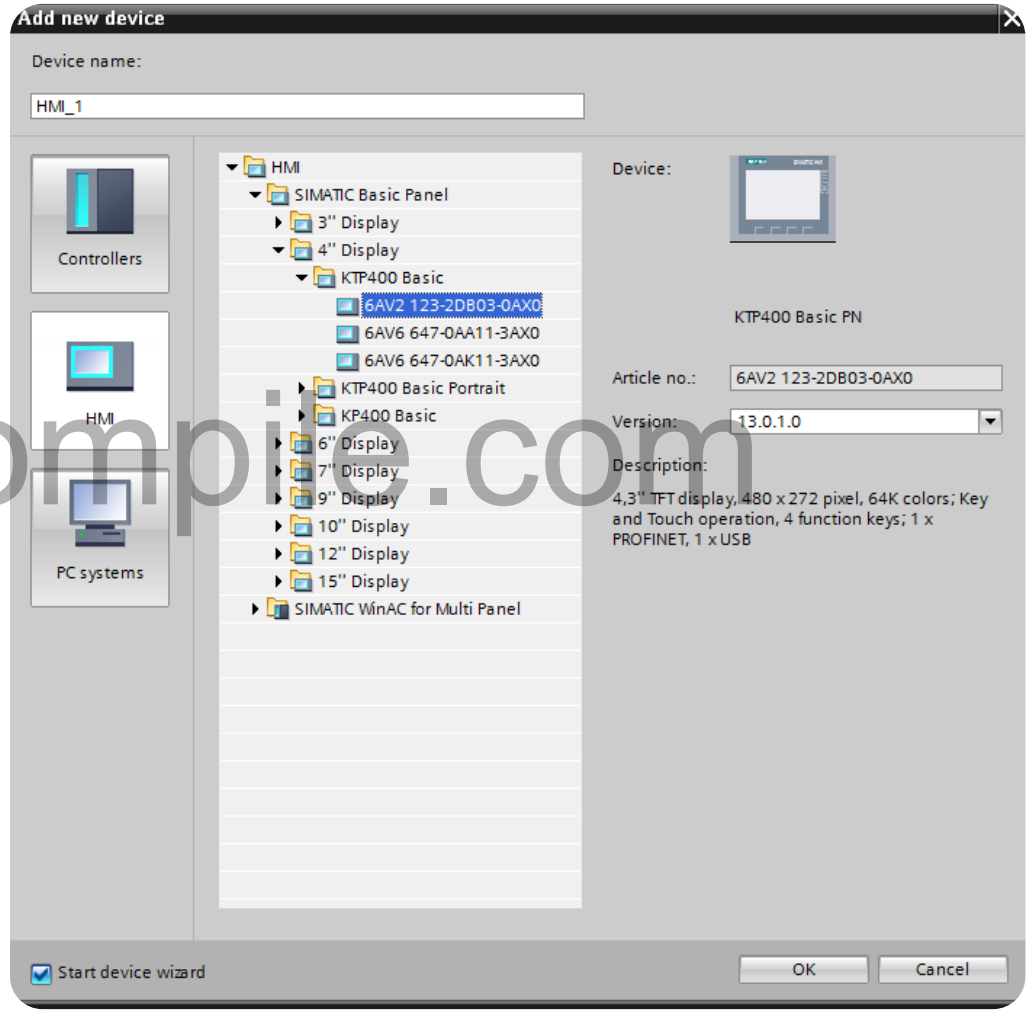
If automatic transfer is activated on the HMI device and a transfer is initiated on the configuration PC, the project currently running is automatically stopped. The HMI device then automatically switches to "Transfer" mode.

Transfer – Sample Program

Step 1 – Open TIA
Add new Device

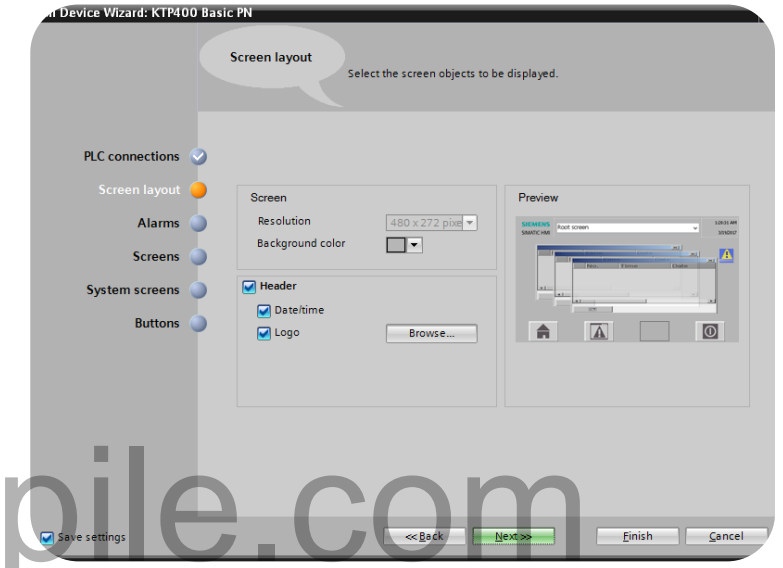


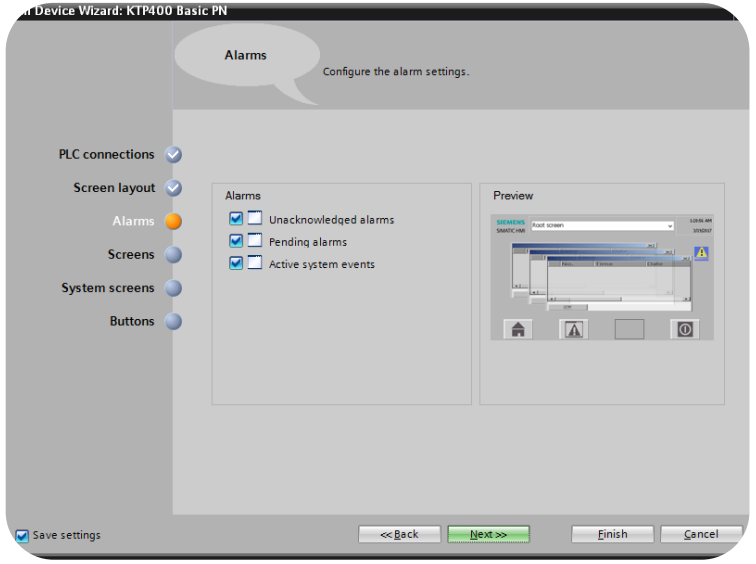
Step 2 – Select your model

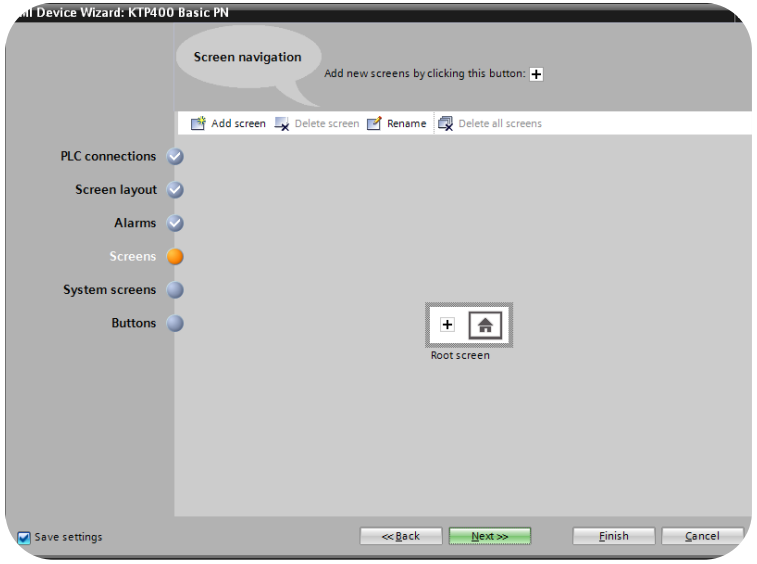


Transfer – Sample Program

Step 3 – Setup initial requirements







Transfer – Sample Program

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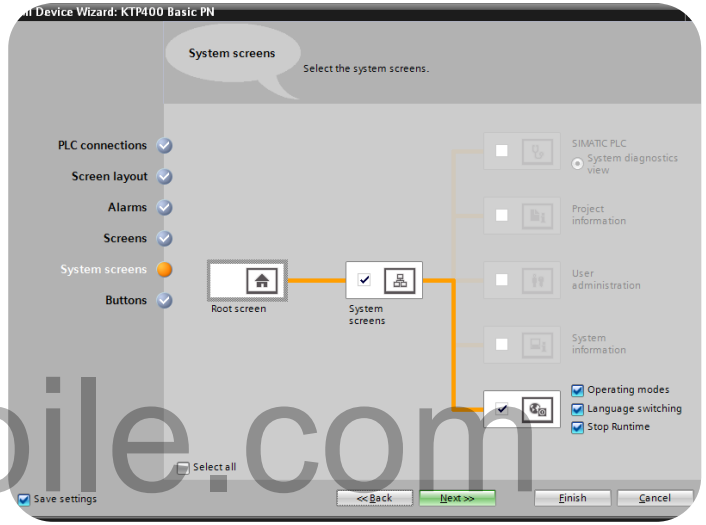
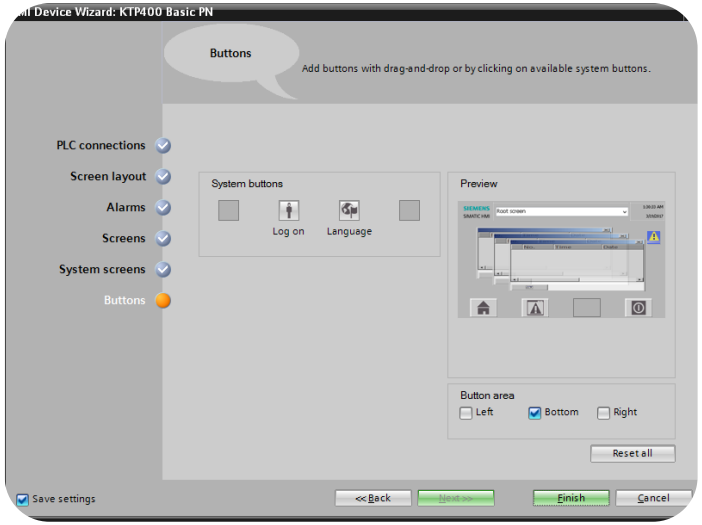
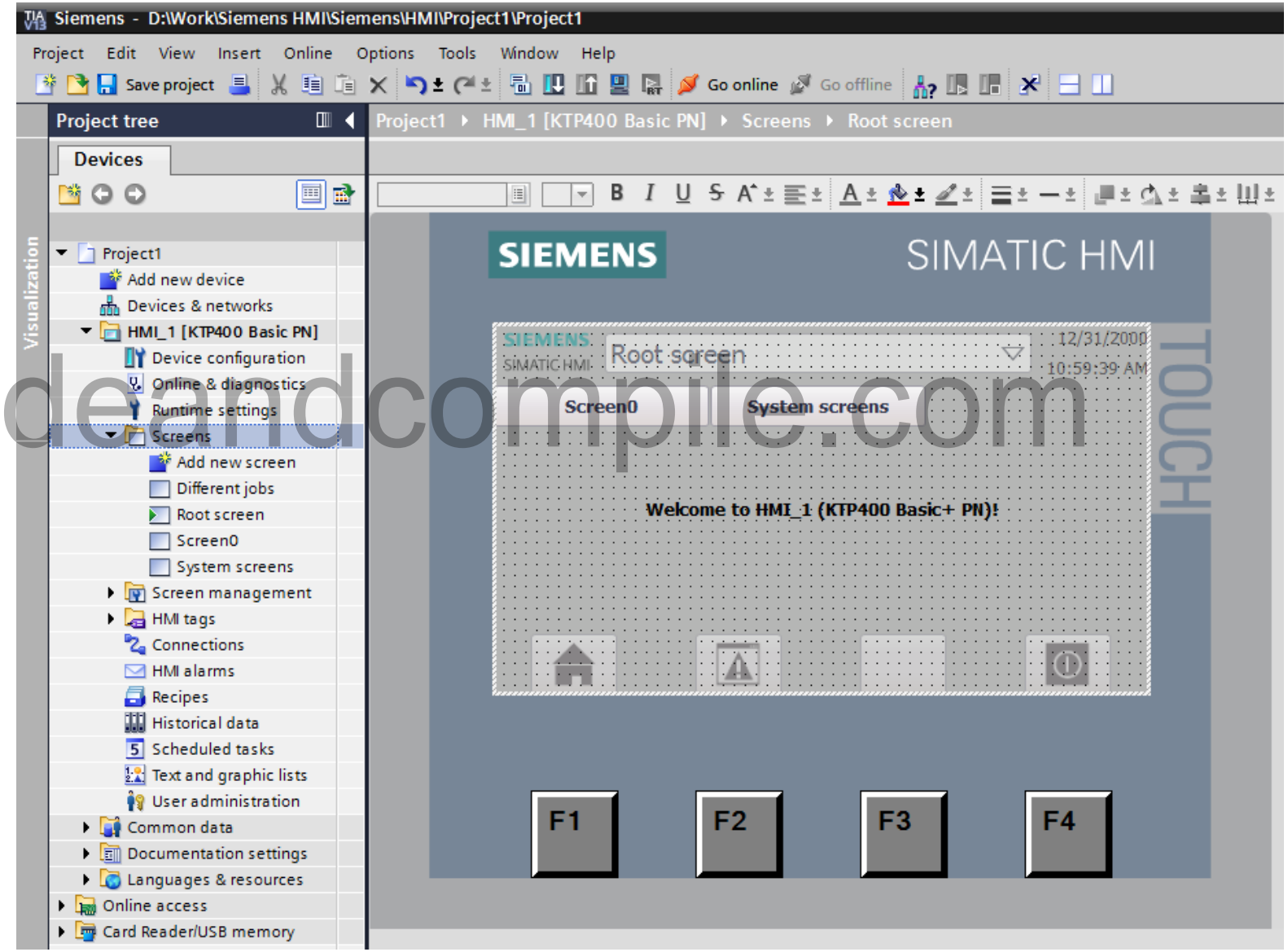




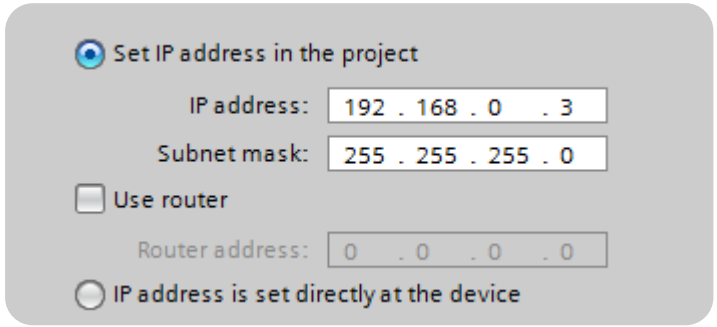
Transfer – Sample Program

Step 4 – Sample Screens are ready now confirm the IP Addresses

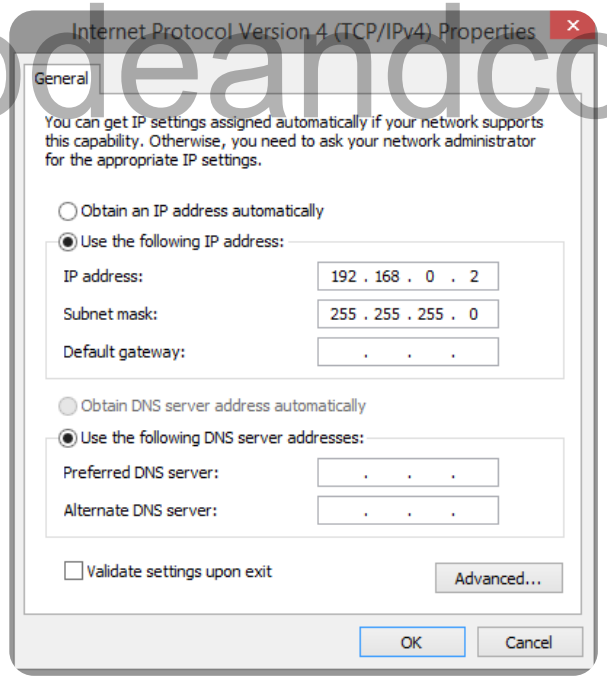


Transfer – Sample Program

Step 4 – Sample Screens are ready now confirm the IP Addresses



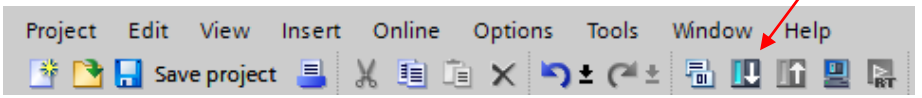
IP address in TIA Software



IP address in PC

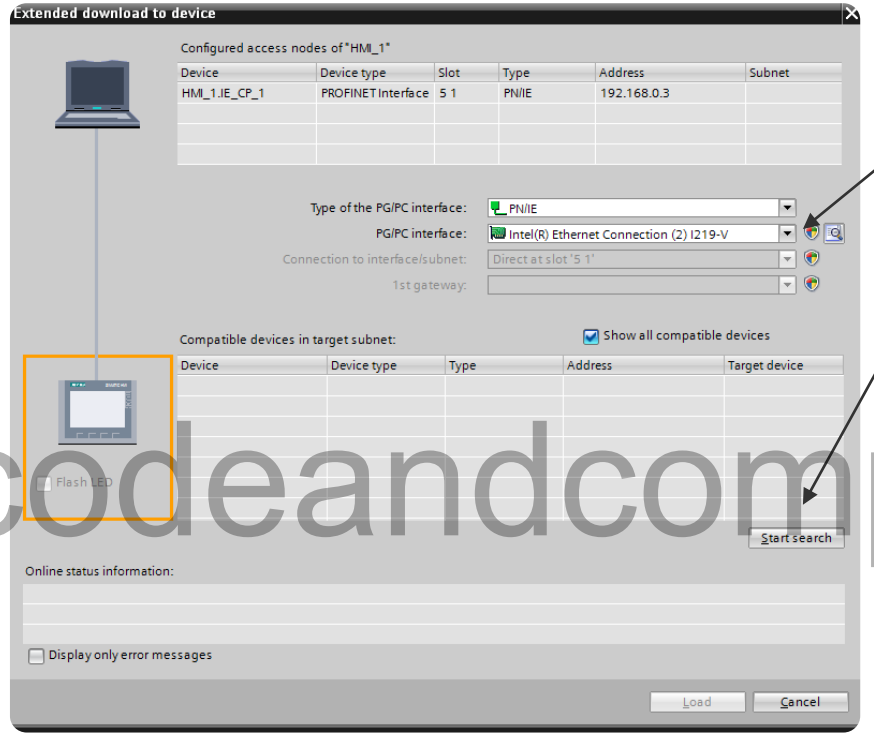
IP address in HMI Device

Step 5 – Click on 'Download to Device' icon



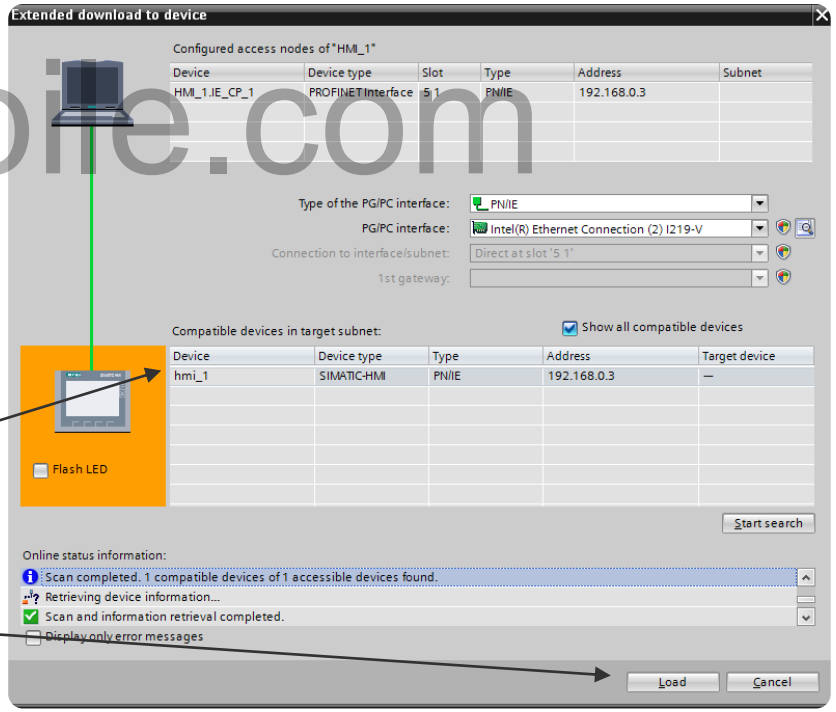
Transfer – Sample Program

Step 6 – Select your Ethernet device and Load the program



Find your Ethernet Device

Click Start Search



You will find your device soon

Click Load to start transfer

Make sure that you connect PC and HMI with Ethernet cable and your HMI device is assigned a unique address in the network.

Transfer – Sample Program

Congratulations! You just learned how to Download sample screen in HMI

Thank you

Get copy of this presentation in the course!

Next Lesson !

- Understanding various HMI Elements to design and monitor control screens

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