Operating Instructions

thermoIMAGER TIM NetPCQ
Mini Industrial PC for TIM series
## Contents

1. **Safety** ........................................................................................................................................................ 5  
1.1 Symbols Used ................................................................................................................................................. 5  
1.2 Warnings ..........................................................................................................................................................5  
1.3 Notes on CE Marking ...................................................................................................................................... 6  
1.4 Intended Use ................................................................................................................................................... 6  
1.5 Proper Environment......................................................................................................................................... 6  

2. **Technical Data** ........................................................................................................................................... 7  
2.1 Functional Principle .........................................................................................................................................7  
2.2 General Specifications ..................................................................................................................................... 7  
2.3 Electrical Specifications ...................................................................................................................................8  

3. **Delivery** ..................................................................................................................................................... 8  
3.1 Unpacking, Included in Delivery ...................................................................................................................... 8  
3.2 Storage ............................................................................................................................................................ 8  

4. **Mounting and Installation** ......................................................................................................................... 9  

5. **Control Elements and Connections** ....................................................................................................... 10  

6. **Operation** ................................................................................................................................................ 11  
6.1 Operation Modes............................................................................................................................................11  
6.2 Remote Access to the thermoIMAGER TIM NetPCQ.................................................................................... 11  
6.3 Applications and Start Options .....................................................................................................................14  
   6.3.1 NetBox Control Center ................................................................................................................15  
   6.3.1.1 Select Tab ........................................................................................................................................... 15  
   6.3.1.2 Log Tool Tab ....................................................................................................................................... 17  
   6.3.1.3 Imager Net Server .................................................................................................................... 19  
6.4 File Transfer between thermoIMAGER TIM NetPCQ and PC ........................................................................20  
6.5 Direct Ethernet Communication ....................................................................................................................21  
6.6 Connection to the thermoIMAGER TIM NetPC ............................................................................................22  
6.7 Ethernet Network Communication ................................................................................................................27
1. **Safety**

System operation assumes knowledge of the operating instructions.

1.1 **Symbols Used**

The following symbols are used in these operating instructions:

- **CAUTION**
  Indicates a hazardous situation which, if not avoided, may result in minor or moderate injury.

- **NOTICE**
  Indicates a situation which, if not avoided, may lead to property damage

- Indicates a user action.
- Indicates a tip for users.
- Indicates hardware or a software button/menu.

1.2 **Warnings**

- **CAUTION**
  Connect the power supply and the display/output device according to the safety regulations for electrical equipment.
  > Risk of injury
  > Damage to or destruction of the PC

- **NOTICE**
  Avoid shocks and impacts to the PC.
  > Damage to or destruction of the PC

  The supply voltage must not exceed the specified limits.
  > Damage to or destruction of the PC

  Avoid static electricity and keep away from very strong EMF (electromagnetic fields) e.g. arc welders or induction heaters.
  > Damage to or destruction of the PC
1.3  Notes on CE Marking

The following apply to the thermoIMAGER NetPCQ:
- EU Directive 2014/30/EU
- EU Directive 2014/35/EU
- EU Directive 2011/65/EU, “RoHS” category 11

Products which carry the CE mark satisfy the requirements of the EU directives cited and the relevant applicable harmonized standards (EN). The measuring system is designed for use in industrial and laboratory applications.

The EU Declaration of Conformity is available to the responsible authorities according to EU Directive, article 10.

1.4  Intended Use

- The thermoIMAGER NetPCQ is designed for use in industrial and laboratory applications and is a fanless, passively cooled, industrial PC.
- The system must only be operated within the limits specified in the technical data, see 2.
- The system must be used in such a way that no persons are endangered or machines and other material goods are damaged in the event of malfunction or total failure of the system.
- Take additional precautions for safety and damage prevention in case of safety-related applications.

1.5  Proper Environment

- Protection class: IP30
- Ambient temperature: 0 ... +50 °C (+32 ... +122 °F)
- Storage temperature: -20 ... +75 °C (-4 ... +167 °F)
- Humidity: 10 ... 95 %, non-condensing
2. **Technical Data**

2.1 **Functional Principle**

The thermoIMAGER TIM NetPCQ is a miniaturized industry PC which expands the TIM series to a stand-alone solution or which works as a USB to Ethernet converter. This mode enables larger possible distances between process (IR camera) and process control (PC).

The thermoIMAGER NetPCQ includes a Windows 10 operating system that allows the user to install additional software. The housing of the thermoIMAGER NetPC is made of anodized aluminum.

2.2 **General Specifications**

<table>
<thead>
<tr>
<th>Model</th>
<th>NetPC</th>
</tr>
</thead>
<tbody>
<tr>
<td>Storage temperature</td>
<td>-20 ... +75 °C (-4 ... +167 °F)</td>
</tr>
<tr>
<td>Ambient temperature</td>
<td>0 ... +50 °C (+32 ... +122 °F)</td>
</tr>
<tr>
<td>Relative humidity</td>
<td>10 ... 95 %, non-condensing</td>
</tr>
<tr>
<td>Material (housing)</td>
<td>Anodized aluminum</td>
</tr>
<tr>
<td>Dimensions</td>
<td>117.5 mm x 165 mm x 64.5 mm (L x B x H)</td>
</tr>
<tr>
<td>Weight</td>
<td>1000 g</td>
</tr>
<tr>
<td>Vibration</td>
<td>IEC 68-2-6: 3 G, 11 - 200 Hz, any axis</td>
</tr>
<tr>
<td>Operating system</td>
<td>Windows 10</td>
</tr>
</tbody>
</table>
2.3 Electrical Specifications

<table>
<thead>
<tr>
<th>Model</th>
<th>NetPCQ</th>
</tr>
</thead>
<tbody>
<tr>
<td>Power supply</td>
<td>12 ... 24 VDC</td>
</tr>
<tr>
<td>Power consumption</td>
<td>10 W (+ additional 2.5 W for IR camera)</td>
</tr>
<tr>
<td>Cooling</td>
<td>passive</td>
</tr>
<tr>
<td>Processor</td>
<td>Intel Atrom J1900 Quad Core CPU, 2 GHz</td>
</tr>
<tr>
<td>Hard disc</td>
<td>64 GB SSD</td>
</tr>
<tr>
<td>RAM</td>
<td>2 GB (DDR2, 533 MHz)</td>
</tr>
<tr>
<td>Ports</td>
<td>3 x USB 2.0</td>
</tr>
<tr>
<td></td>
<td>1 x USB 3.0</td>
</tr>
<tr>
<td></td>
<td>2 x RS232</td>
</tr>
<tr>
<td></td>
<td>VGA</td>
</tr>
<tr>
<td></td>
<td>Ethernet (Gigabit Ethernet)</td>
</tr>
<tr>
<td>Additional functions</td>
<td>Status LED</td>
</tr>
</tbody>
</table>

3. Delivery

3.1 Unpacking, Included in Delivery

1 TIM NetPCQ inclusive SSD (64 GB)
1 USB Recovery stick including operating manual

Carefully remove the components of the measuring system from the packaging and ensure that the goods are forwarded in such a way that no damage can occur.

Check the delivery for completeness and shipping damage immediately after unpacking.

If there is damage or parts are missing, immediately contact the manufacturer or supplier.

3.2 Storage

- Storage temperature: -20 ... +75 °C (-4 ... +167 °F)
- Humidity: 10 ... 95 %, non-condensing
4. Mounting and Installation

The thermoIMAGER TIM NetPCQ can be mounted easily on a DIN rail (TS35) according EN50022 using the rail mount adapter on the backside of the box.

*Fig. 1 Dimensional drawing thermoIMAGER TIM NetPCQ, dimensions in mm, not to scale*
Control Elements and Connections

5. Control Elements and Connections

1. RS 232 Interface connections (two)
2. USB 2.0 connections (two)
3. DC power supply with power LED
4. VGA connection
5. 1 x USB 3.0 and 1 x USB 2.0 connections
6. Ethernet connection
6. Operation

6.1 Operation Modes

The thermoIMAGER NetPCQ can be used in three different operation modes:

1. Converter USB – Ethernet with direct connection to a PC (point-to-point connection)
2. Converter USB – Ethernet with connection of a PC via a network or via the internet
3. Stand-alone operation with an IR camera

For powering the thermoIMAGER NetPCQ you can use any suitable industrial power supply with a voltage output between 12 VDC and 24 VDC, see 2.3.

6.2 Remote Access to the thermoIMAGER TIM NetPCQ

For settings on the thermoIMAGER TIM NetPCQ you can connect a keyboard and a mouse to the available USB sockets as well as a monitor to the VGA socket, see 6.8.

Another very simple option is remote control software, for example Remote Desktop (RDP) from Windows or Ultra VNC with NetBox Utility, which is already included on the TIM Connect software CD provided with thermoIMAGER TIM.

After installation you can have access to the thermoIMAGER TIM NetPCQ either from a PC directly connected over an Ethernet cable or from a PC which is located anywhere and connected to the same network. Also remote connection via the internet is possible.

To install NetBox Utility on your PC, please start install.bat in the /NetBox Utility directory on the thermoIMAGER TIM Connect USB flash drive.

In addition to the utility software, the UltraVNC viewer will also be installed.

This program is available Start/Programs/NetBox-UltraVNC.

Before starting the NetBox Utility on your PC, please follow the instructions for specifying a fixed IP address, see 6.6.
Next, please start the NetBox Utility program:

![NetBox Utility program start screen](image)

*Fig. 2 View: Netbox Utility program start screen*

- Select the desired network adapter.
- Remove the check mark from `Filter by Network Name` and click the `Scan` button.

The utility program now searches for NetPCQs that are in the network or are directly connected to your PC. The devices found are shown in the `Results` window.

- Mark the desired address in the `Results` window and click the `Start Viewer > >` button.
You should now see the thermoIMAGER TIM NetPCQ screen.

Fig. 3 View: thermoIMAGER TIM NetPCQ start screen
6.3 Applications and Start Options

On the Desktop of the thermoIMAGER TIM NetPCQ you will find the following short cuts:
- TIM Connect
- Netbox Control Center

*Fig. 4 Netbox Control Center shortcut*

The Netbox Control Center allows for easy configuration of the NetPCQ.
6.3.1 NetBox Control Center

6.3.1.1 Select Tab

The *Select* tab lets you select programs that start automatically after powering on the NetPCQ.

![NetBox Control Center](image)

*Fig. 5 Netbox Control Center - Select selection*

Under *Application*, you can select **TIM Connect**, **Imager Net Server** or **Custom Application**.

<table>
<thead>
<tr>
<th>Application</th>
<th>NetPC operating mode</th>
</tr>
</thead>
<tbody>
<tr>
<td>TIM Connect</td>
<td>Stand alone operation</td>
</tr>
<tr>
<td>Imager Net Server</td>
<td>Converter operation USB-Ethernet</td>
</tr>
<tr>
<td>Custom Application</td>
<td>Using the NetPCQ with another software</td>
</tr>
</tbody>
</table>

The start options set in the Control Center are automatically saved on the NetPCQ and are also available after restarting.
Operation

Under Arguments, you can specify command line parameters (e.g., a special layout with which the TIM Connect Software starts automatically).

Enable Autostart to have the selected application start automatically after the NetPCQ is started. If for some reason the application no longer works properly (e.g., if the software has crashed), the Netbox Control Center automatically restarts it, if Autostart has been set (software watchdog).
6.3.1.2 Log Tool Tab

The Log Tool tab provides the following information:

<table>
<thead>
<tr>
<th>Application</th>
<th>NetPC operating mode</th>
</tr>
</thead>
<tbody>
<tr>
<td>Software Restarts</td>
<td>Number of software restarts performed</td>
</tr>
<tr>
<td>Reason for last hardware restart</td>
<td>Reason for the most recent restart of the NetPCQ</td>
</tr>
<tr>
<td>Software is not responding for</td>
<td>Timer, which starts when the software does not respond and triggers a restart of the selected application.</td>
</tr>
<tr>
<td>Actual runtime</td>
<td>Current runtime of the software</td>
</tr>
<tr>
<td>Previous runtime</td>
<td>Previous runtime of the software</td>
</tr>
<tr>
<td>Device Frequency</td>
<td>Camera image frequency</td>
</tr>
<tr>
<td>Process Frequency</td>
<td>Displayed image frequency</td>
</tr>
<tr>
<td>Net Transfer Frequency</td>
<td>Image frequency transferred via the network (for Imager Net Server)</td>
</tr>
</tbody>
</table>

![NetBox Control Center - Log Tool selection](image)

*Fig. 6 Netbox Control Center - Log Tool selection*
If an thermoIMAGER TIM is connected to the thermoIMAGER TIM NetPCQ, you should see two active applications: Log Tool and Imager Net Server, see Fig. 7, similarly Log Tool and TIM Connect, see Fig. 8.
### 6.3.1.3 Imager Net Server

**Imager Net Server**, see Fig. 7

<table>
<thead>
<tr>
<th>Menu</th>
<th>File</th>
<th>Exit of the program</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Devices</td>
<td>Shows the connected thermoIMAGERS TIM</td>
</tr>
<tr>
<td></td>
<td>Flag</td>
<td>Manual operation of the camera flag</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>USB video device</th>
<th>Serial number of the connected imager device</th>
</tr>
</thead>
<tbody>
<tr>
<td>T (C, F, B)</td>
<td>Device temperatures (°C)</td>
</tr>
<tr>
<td></td>
<td>C: FPA-Chip</td>
</tr>
<tr>
<td></td>
<td>F: Flag temperature</td>
</tr>
<tr>
<td></td>
<td>B: Housing temperature</td>
</tr>
<tr>
<td>PIFin (A, D)</td>
<td>Status of the PIF input</td>
</tr>
<tr>
<td></td>
<td>A: Analog IN (AI)</td>
</tr>
<tr>
<td></td>
<td>D: Digital IN (DI)</td>
</tr>
<tr>
<td>HW Cnt.</td>
<td>Hardware-Counter (frame counter)</td>
</tr>
<tr>
<td>ADU (192, 144)</td>
<td>ADU value of the center TIMxel (e.g. 192, 144 at TIM4xx)</td>
</tr>
<tr>
<td>Freq (D, P, N)</td>
<td>Frequency (Hz):</td>
</tr>
<tr>
<td>Time</td>
<td>Time per single frame</td>
</tr>
<tr>
<td>Queue</td>
<td>Number of frames in network queue</td>
</tr>
<tr>
<td>FOV, TR</td>
<td>Field of view (horizontal) of the imager lens, temperature range</td>
</tr>
</tbody>
</table>

*Fig. 9 Information in the Imager Net Server - application window*
6.4 File Transfer between thermoIMAGER TIM NetPCQ and PC

To exchange files between the thermoIMAGER TIM NetPCQ and a directly connected or in the network located PC please move the cursor to the title bar of the UltraVNC Viewer window and press the right mouse button.

Start File Transfer.

Alternatively you can also press the following button in the tool bar:

In the following explorer window, see Fig. 10, you see on the left side your local PC (LOCAL MACHINE) and on the right side the thermoIMAGER TIM NetPCQ (REMOTE MACHINE).

Now you can copy files between both computers via the network link by marking them and pressing Send or Receive.

Fig. 10 File transfer view
6.5 Direct Ethernet Communication

Please connect the thermoIMAGER TIM with the supplied USB connection cable with the thermoIMAGER TIM NetPCQ.

Please connect your PC with an Ethernet cable with the thermoIMAGER NetPCQ.

Now connect the power supply cable to the thermoIMAGER NetPCQ and to the mains supply.

The thermoIMAGER NetPCQ will start to boot the system and should be ready to use after 2 - 3 minutes.

*Fig. 11 Ethernet direct connection (point-to-point connection)/ thermoIMAGER TIM NetPCQ powered via power supply*

The used Ethernet cables should be at least category 5 cables (Cat-5 according ISO/IEC 11801).
6.6 Connection to the thermoIMAGER TIM NetPC

The communication with the TIM NetPCQ is done via the TCP/IP protocol (Transmission Control Protocol/Internet Protocol). The TIM NetPCQ can get its IP address (Internet Protocol address) either from a DHCP server or it can work with a fixed IP address.

First switch on the thermoIMAGER NetPCQ, see 6.

On a direct connection to a PC both, the thermoIMAGER TIM NetPCQ as well as the PC must use a fixed IP address because no DHCP server is available here. The thermoIMAGER TIM NetPCQ is using in this case the IP address 192.168.0.100.

On your PC you have to do the following settings once (depending on the operating system the procedure can differ from the here shown – the following description refers to a Windows 10 system).

1. Go to System controls > Network > Internet and open Network and Sharing Center.

2. If you have an existing connection to a network (company network e.g.) you should see the following information:

   ![View your basic network information and set up connections](image)

   **Fig. 12 Network center**

   If your PC is not connected to any network, please go to Change adapter settings after you opened the Network and Sharing Center. Now go to Local Area Connection and right mouse button: Properties, continue at item 4.

3. Go to Local Area Connection - a status view according, see Fig. 13, will be shown. Then go to Properties.
4. In the Local Area Connection Properties window, see Fig. 14, mark Internet Protocol Version 4 (TCP/IPv4) and go again to Properties.

5. Please open now in Internet Protocol Version 4 (TCP/IPv4) Properties window, see Fig. 15, the register Alternate Configuration and activate the checkbox User configured.

6. Now enter a user-defined IP address for your PC. Note that the network portion of the address must be identical to the network portion of the IP address of the thermoIMAGER TIM NetPCQ, that is, it must be 192.168.0. However, the IP address of the device portion must be different from the thermoIMAGER TIM NetPCQ address (IP address 192.168.0.100); for example, use IP address 192.168.0.1, see Fig. 16.
After you have made these settings and connected your PC with the thermoIMAGER TIM NetPCQ using an Ethernet cable your PC will establish a point-to-point connection. This procedure can take several minutes. In the Network and Sharing Center your network will now be shown up as a non-identified network.

Please start now the thermoIMAGER TIM Connect on your PC and open the menu item Tools/ Extended/ Remote devices....

In the window which is appearing, see Fig. 17, you should set a hook on Enable and enter the IP address of thermoIMAGER TIM NetPCQ (192.168.0.100) at IP adress of current remote device.

Press OK.

The software will establish a connection to the remote device thermoIMAGER NetPCQ automatically.
Fig. 17 Search for network devices in TIM Connect

Under **Remote framerate**, see Fig. 17, you can enter the desired frame rate which should be transmitted via the network.

Under the menu item **Devices**, see Fig. 18, the thermoIMAGER TIM which is connected to the thermoIMAGER NetPCQ shows up now. The following functions can be selected here:

<table>
<thead>
<tr>
<th>Function</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>Connect</td>
<td>Manual connection with the remote device</td>
</tr>
<tr>
<td>Restart</td>
<td>Restart of the Imager Net Server application on the thermoIMAGER TIM NetPCQ</td>
</tr>
<tr>
<td>Reboot</td>
<td>Reboot of the thermoIMAGER TIM NetPCQ</td>
</tr>
<tr>
<td>Remove</td>
<td>Remove of the device entry in this menu</td>
</tr>
</tbody>
</table>
If the used thermoIMAGER TIM is connected for the first time to the thermoIMAGER TIM NetPCQ the following message appears:

![Warning](image1.png)

**Fig. 19 Warning view**

➡️ Please confirm with Yes.

The calibration files will be transferred automatically from your PC to the thermoIMAGER TIM NetPCQ and stored there. Now you should see the live TIM picture from the thermoIMAGER TIM on your PC.

Alternatively you can copy the calibration data also manually via an USB stick into the thermoIMAGER TIM NetPCQ folder D: \Imager\Cali.
6.7 Ethernet Network Communication

Please connect your thermoIMAGER TIM with the supplied USB connection cable with the thermoIMAGER TIM NetPCQ.

Please connect the Ethernet connection of the thermoIMAGER TIM NetPCQ with a network or internet (via a router e.g.).

Now connect the power supply to the thermoIMAGER TIM NetPCQ and to the mains. The thermoIMAGER TIM NetPCQ will start to boot the system and should be ready to use after 2 - 3 minutes.

If the TIM NetPCQ is used in a network it gets its IP address from a DHCP server. In order to find the thermoIMAGER TIM NetPCQ in the thermoIMAGER TIM Connect of your local PC the address range of the local network must be known.

Thereto please open the Network and Sharing Center on your local PC, go to Local Area connection, see Fig. 22 and open Details, see Fig. 23.

The Window Network Connection Details, see Fig. 24, shows now your own IPv4 address.

Please start now the thermoIMAGER TIMConnect on your local PC and open the menu Tools > Extended > Remote devices ....

In the window which opens, see Fig. 25, set a hook on Enable and enter the address range of your local network under Detect devices.

The fourth block should have the range 0 to 255.
If you now press Ping, see Fig. 25, all computers inside the selected address range will be shown.

**Fig. 22** Network center view: Local Area Connection

**Fig. 23** Local Area Connection Status view

**Fig. 24** Network Connection Details view

**Fig. 25** Remote device view
Under Remote framerate, see Fig. 25, you can enter the desired frame rate which should be transmitted via the network.

Now only computers with NetPCQ in their name will be shown.

Under Hosts, see Fig. 25, you should see now your thermoIMAGER NetPCQ.

Please mark this and press OK.

Fig. 26 Device selection in TIM Connect

Under the menu item Devices, see Fig. 26, the thermoIMAGER TIM which is connected to the thermoIMAGER NetPCQ shows up now.

The following functions can be selected here:

- **Connect**: Manual connection with the remote device
- **Restart**: Restart of the Imager Net Server application on the thermoIMAGER TIM NetPCQ
- **Reboot**: Reboot of the thermoIMAGER TIM NetPCQ
- **Remove**: Remove of the device entry in this menu
If the used thermoIMAGER TIM is connected for the first time to the thermoIMAGER NetPCQ the following message appears:

![Warning view](image1)

Fig. 27 Warning view

![Sending calibration data files](image2)

Fig. 28 Sending calibration data files

Please confirm with Yes.

The calibration files will be transferred automatically from your PC to the thermoIMAGER TIM NetPCQ and stored there. Now you should see the live TIM picture from the thermoIMAGER TIM on your PC.

Alternatively you can copy the calibration data also manually via an USB stick into the thermoIMAGER TIM NetPCQ folder D:\Imager\Cali.
6.8 Stand-alone Operation

As a stand-alone PC the thermoIMAGER NetPCQ can expand a IR camera to a separate system. For this operation mode you should connect a VGA display and a USB keyboard to the thermoIMAGER NetPCQ. In addition the system can also be controlled via a remote access over an Ethernet connection, see 6.2.

After booting the thermoIMAGER NetPCQ the first time you will see the Imager Net Server application.

Please close the monitor program and change it to thermoIMAGER TIM Connect in the configuration dialog (Netbox Control Center), see 6.3.

Fig. 29 Stand-Alone operation/ thermoIMAGER TIM NetPCQ powered via power supply
6.9 Write Protection Filter

In Windows 10, you can assign a write protection filter to individual drives.

The operating system and TIM Connect software are saved on drive C. Below are steps you can perform to assign a write protection filter to that drive.

By default, the Unified Write Filter (UWF) is disabled. To enable UWF in Windows 10, proceed as follows:

1. Open System control > Programs and Features > Turn Windows-Features on or off.

To do so, you need administrator rights.

2. Enable Unified Write Filter under Device Lockdown, see Fig. 30.

Fig. 30 View: System control - Windows Features - Device Lockdown
Der UWF filter is operated using command lines.

Note the following steps:

**Step 1:**

- Open the Command Prompt using the CMD command and run it as an administrator.

*Fig. 31 View: Command Prompt - Run as administrator*
Operation

**Step 2:** All commands for the UWF filter start with `uwfmgr`.

Using the `uwfmgr ?` command, you can display all available commands for the filter.

![Command Overview](image)

**Fig. 32 Command overview `uwfmgr`**

The `uwfmgr get-config` command lets you retrieve the current status of the filter.
If the UWFM filter is turned off, the following view is displayed:

![Command Prompt](image)

---

Fig. 33 UWFM filter turned off
To enable the filter, enter the `uwfmgr filter enable` command.

![Image of Command Prompt]

**Fig. 34 Command** `uwfmgr filter enable`

To enable the write filter, you must restart the system!

To disable the filter again, use the `uwfmgr filter disable` command.

To now assign the write protection filter to hard drive C, use the `uwfmgr volume protect c:` command.

![Image of Command Prompt]

To disable the protection of hard drive C again, enter the `uwfmgr volume unprotect c:` command.
6.10 System Recovery

If a recovery of the Windows operating system of the thermoIMAGER TIM NetPCQ is required, please use the included USB flash drive.

Follow the steps below and do not disconnect the power supply to the thermoIMAGER TIM NetPCQ during the recovery under any circumstances.

After recovery, the thermoIMAGER TIM NetPCQ is in default mode; that is, any data saved to the SSD are lost.

Step 1:

- Connect a VGA monitor and USB keyboard to the thermoIMAGER NetPCQ.
- Connect the USB recovery flash drive to a USB port and turn on the thermoIMAGER NetPCQ.
- Once you see the start screen below, see Fig. 35, press the **DEL** key.

*Fig. 35 Start screen of system recovery*
Step 2:
The following view is now displayed:

Select Enter.
The warning below, asking whether you really want to recover the system, is displayed:

```
Wollen Sie wirklich weitemachen? (y/n) y
Ok, dann machen wir's!
```

This program is not started by clonezilla server.

```
Ich frage nochmal zur Sicherheit.
Im nächsten Schritt wird ein Image auf die Festplatte oder die Partitionen auf
iem System wiederhergestellt: "~/home/partimag/2020-01-09-13-img" -> "sda sda1
sda2 sda3"
Das Image wurde erzeugt am: 2020-02-04 18:02
```

**WARNING!!! WARNING!!! WARNING!!!**

```
WARNING. ALLE DATEN AUF DIESER FESTPLATTE/DIESEN PARTITION(EN) WERDEN ÜBERSCHRI
BEN! ALLE VORHANDENEN DATEN GEHEN VERLOREN!
```

```
Machine: To be filled by O.E.M.
sda (64.0GB_SQF-SHAM2-64G-S9_SQF-SHAM2-64G-S9C_FF360755160801882262)
sda1 (550M_ntfs_System_Reser(In_SQF-SHAM2-64G-S9)_SQF-SHAM2-64G-S9C_FF360755160
01882262)
sda2 (20G_ntfs(In_SQF-SHAM2-64G-S9)_SQF-SHAM2-64G-S9C_FF360755160801882262)
sda3 (39.1G_ntfs_User_Data(In_SQF-SHAM2-64G-S9)_SQF-SHAM2-64G-S9C_FF36075516080
882262)
```

**WARNING!!! WARNING!!! WARNING!!!**

```
Wollen Sie wirklich weitemachen? (y/n) -
```

Fig. 36 Query recovery

⇒ Confirm with y.
The system recovery now starts and the screen below is displayed:

After the restore process has been completed, select **Ausschalten** in the next window and confirm with **OK**.
Step 3:

- After shutting down, briefly disconnect the power supply.
- Now reconnect the power supply and restart the computer.

You will see the following screen:
Operation

Select your region and confirm with yes.

Now select your keyboard layout and confirm with yes.

Please note that the region and keyboard layout selections cannot be changed later.
Next, the Windows 10 licensing terms are displayed. Please confirm these with **Accept**.

**Step 4:**

After the final restart, you now see the Windows desktop.
7. Instructions for Operation

7.1 Cleaning

The housing of the thermoIMAGER NetPCQ can be cleaned with a soft, humid tissue moistened with water or a water based cleaner.

Never use cleaning compounds which contain solvents. Take care that no moisture infiltrates into the housing.

> Destruction of the Mini-PC

8. Liability for Material Defects

All components of the device have been checked and tested for functionality at the factory. However, if defects occur despite our careful quality control, MICRO-EPSILON or your dealer must be notified immediately.

The liability for material defects is 12 months from delivery. Within this period, defective parts, except for wearing parts, will be repaired or replaced free of charge, if the device is returned to MICRO-EPSILON with shipping costs prepaid. Any damage that is caused by improper handling, the use of force or by repairs or modifications by third parties is not covered by the liability for material defects. Repairs are carried out exclusively by MICRO-EPSILON.

Further claims can not be made. Claims arising from the purchase contract remain unaffected. In particular, MICRO-EPSILON shall not be liable for any consequential, special, indirect or incidental damage. In the interest of further development, MICRO-EPSILON reserves the right to make design changes without notification.

For translations into other languages, the German version shall prevail.
9. **Service, Repair**

In the event of a defect on the Mini-PC or the USB stick (USB recovery stick) please send us the affected parts for repair or exchange.

In the case of faults the cause of which is not clearly identified, please send the entire measuring system to:

MICRO-EPSILON MESSTECHNIK GmbH & Co. KG
Koenigbacher Str. 15
94496 Ortenburg / Germany
Tel. +49 (0) 8542/168-0
Fax +49 (0) 8542/168-90
info@micro-epsilon.com
www.micro-epsilon.com

For customers in USA apply:

Send the affected parts or the entire measuring system back to:

MICRO-EPSILON USA
8120 Brownleigh Dr.
Raleigh, NC 27617 /USA
Tel. +1 919/787-9707
Fax +1 919/787-9706
me-usa@micro-epsilon.com
www.micro-epsilon.com

For customers in Canada or South America applies:

Please contact your local distributor.

10. **Decommissioning, Disposal**

- Remove the cables from the Mini-PC.

Incorrect disposal may cause harm to the environment.

- Dispose of the device, its components and accessories, as well as the packaging materials in compliance with the applicable country-specific waste treatment and disposal regulations of the region of use.