APPENDIX IX

TP 177B 6” SYSTEM CONFIGURATION INSTRUCTIONS

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This is part of the Engineering Thesis “WinCC SCADA System via Profibus & OPC” by Hao Xu.
Preface

This configuration instruction provides a comprehensive description about the functions and operations of TP 177B 6" HMI touch panel. The contents are summarized as follows:

- TP 177B 6" operation instruction
- TP 177B 6" hardware configuration
- TP 177B 6" system configuration

Prerequisite

- Background knowledge of basic electric circuit

Resources

- TP 177B 6" HMI touch panel
HMI Touch Panel

(Refer to TP 177B 6” HMI Touch Panel section in the thesis report for an overview of the functions and some background information)

Table 331 is the specification of TP 177B 6” HMI touch panel.

<table>
<thead>
<tr>
<th>Specification</th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Alarm</strong></td>
<td></td>
</tr>
<tr>
<td>Number of discrete alarms</td>
<td>2000</td>
</tr>
<tr>
<td>Number of analog alarms</td>
<td>50</td>
</tr>
<tr>
<td>Length of alarm text</td>
<td>80 characters</td>
</tr>
<tr>
<td>Number of tags in an alarm</td>
<td>8</td>
</tr>
<tr>
<td>Display</td>
<td>Alarm view and alarm window</td>
</tr>
<tr>
<td>Number of group acknowledgement</td>
<td>16</td>
</tr>
<tr>
<td><strong>Tag and list</strong></td>
<td></td>
</tr>
<tr>
<td>Number of tags</td>
<td>1000</td>
</tr>
<tr>
<td>Number of text lists</td>
<td>300</td>
</tr>
<tr>
<td>Length of infotexts</td>
<td>320 characters</td>
</tr>
<tr>
<td><strong>Screen</strong></td>
<td></td>
</tr>
<tr>
<td>Number of screens</td>
<td>500</td>
</tr>
<tr>
<td>Fields per screen</td>
<td>50</td>
</tr>
<tr>
<td>Tags per screen</td>
<td>50</td>
</tr>
<tr>
<td>Complex objects per screen</td>
<td>5</td>
</tr>
<tr>
<td><strong>Recipe</strong></td>
<td></td>
</tr>
<tr>
<td>Number of recipes</td>
<td>100</td>
</tr>
<tr>
<td>Data records per recipe</td>
<td>200</td>
</tr>
<tr>
<td>Entries per recipe</td>
<td>200</td>
</tr>
<tr>
<td><strong>Additional function</strong></td>
<td></td>
</tr>
<tr>
<td>Number of languages</td>
<td>16</td>
</tr>
<tr>
<td>Number of trend views</td>
<td>50</td>
</tr>
<tr>
<td>Number of trends each view</td>
<td>8</td>
</tr>
<tr>
<td>Number of tasks</td>
<td>10</td>
</tr>
<tr>
<td>Number of text objects</td>
<td>2500</td>
</tr>
<tr>
<td>Number of users</td>
<td>50</td>
</tr>
</tbody>
</table>

Table 331: Specification of TP 177B 6” [57]

Table 332 provides a description of all the connections on TP 177B 6”.

<table>
<thead>
<tr>
<th>Connection</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>Power DC</td>
<td>24V DC power supply.</td>
</tr>
<tr>
<td>RS422/485</td>
<td>MPI/DP/PPI connection.</td>
</tr>
<tr>
<td>LAN</td>
<td>Profinet connection.</td>
</tr>
<tr>
<td>USB</td>
<td>USB connection.</td>
</tr>
</tbody>
</table>

Table 332: Available connections on TP 177B 6” [57]

DIP Switch Settings

There are 4 DIP switches at the back of TP 177B 6” determine the types of the communication according to Table 333.

<table>
<thead>
<tr>
<th>Communication</th>
<th>DIP switch</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>RS485</td>
<td>All off</td>
<td>Data transfer between PLC and HMI device, no RTS on plug.</td>
</tr>
<tr>
<td></td>
<td>Pin 1 is on</td>
<td>RTS on pin 4, same as PLC.</td>
</tr>
<tr>
<td></td>
<td>Pin 4 is on</td>
<td>RTS on pin 9, same as programming device.</td>
</tr>
<tr>
<td>RS422</td>
<td>Pin 1 and 4 are on</td>
<td>RS422 port is active.</td>
</tr>
</tbody>
</table>

Table 333: DIP switch assignments of TP 177B 6” [57]
The loader (Figure 369) is the very top menu and 4 options available are as follows:

- **Transfer**: Set TP 177B 6" to transfer mode and wait for the data transmission.
- **Start**: Open the project user interface stored on TP 177B 6".
- **Control Panel**: Open TP 177B 6" control panel.
- **Taskbar**: Activate the taskbar in Windows CE.
Control Panel

The control panel (Figure 370) is used to perform a bunch of system setups includes communication, data/time, backup and password, etc.

![Control panel menu on TP 177B 6”](image)

Double touch the icon to enter and click OK button to save changes.

Backup/Restore

This function is used to transfer applications and data to a memory card or vice versa (Figure 371).

![Backup/Restore settings on TP 177B 6”](image)
Communication

Device Name
Here is the place for user to enter the name and the description about the HMI device as shown in Figure 372.

![Figure 372: Device name settings on TP 177B 6" [57]](image)

PC Connection
The PC connection allows direct communication between TP 177B 6" and PC as shown in Figure 373.

![Figure 373: PC connection settings on TP 177B 6" [57]](image)
**Date/Time Properties**

This function allows user to set up the time in TP 177B 6" as shown in Figure 374.

![Figure 374: Date/time properties settings on TP 177B 6" [57]](image)

**Input Panel**

The input panel setting configures the screen floating keyboard (Figure 375).

![Figure 375: Input panel settings on TP 177B 6" [57]](image)

**Keyboard**

This function is used to set up the recognition of the keyboard entries (Figure 376).

![Figure 376: Keyboard settings on TP 177B 6" [57]](image)
**Mouse**

Here can set up the double click sensitivity and also test the performance of the new settings (Figure 377).

![Mouse settings on TP 177B 6”](image)

*Figure 377: Mouse settings on TP 177B 6” [57]*

**Network Adapters**

This shows the properties and the list of the installed drivers.

**Identification**

This is used to create a user login account as shown in Figure 378.

![Identification settings on TP 177B 6”](image)

*Figure 378: Identification settings on TP 177B 6” [57]*
**OP**

**Persistent Storage**
The registry information and temporary memory can be saved on a memory card using this function (Figure 379).

![Persisten storage settings on TP 177B 6"](image)

*Figure 379: Persistent storage settings on TP 177B 6" [57]*

**Display**
User can customize the contrast of the TP 177B 6" screen display as shown in Figure 380.

![Display settings on TP 177B 6"](image)

*Figure 380: Display settings on TP 177B 6" [57]*

**Device**
This shows the information of the device model (Figure 381).

![Device information on TP 177B 6"](image)

*Figure 381: Device information on TP 177B 6" [57]*
**Touch**

This function is to calibrate the touch sensor to prevent the operating errors caused by the mounting position and viewing angles (Figure 382). [57]

![Touch settings on TP 177B 6"](image)

*Figure 382: Touch settings on TP 177B 6" [57]*
**Password**

The password protects the Control panel and Windows CE taskbar from unauthorized access. With the password protection activated, only Transfer and Start buttons can be executed in the loader (Figure 383).

![Password properties settings on TP 177B 6”](image)

*Figure 383: Password properties settings on TP 177B 6” [57]*

**Printer**

This is to set up the communication for printing (Figure 384).

![Printer properties on TP 177B 6”](image)

*Figure 384: Printer properties on TP 177B 6” [57]*

**Regional Settings**

The regional settings will possibly change the format of the display, date, time and number depends on regions (Figure 385).

![Regional settings on TP 177B 6”](image)

*Figure 385: Regional settings on TP 177B 6” [57]*
S7 Transfer Settings

This provides the fundamental communication settings of MPI and Profibus as shown in Figure 386 and Figure 387. The settings in TP 177B 6” and configuration software must be consistent. The settings can only be changed while the project is terminated.

Figure 386: S7-Transfer settings on TP 177B 6” [57]

Figure 387: Profibus parameter settings on TP 177B 6” [57]

Screen Saver

The screen saver can be set to activate after a certain dormant time (Figure 388).

Figure 388: Screen saver on TP 177B 6” [57]
**System**

System gives an overview about the usage of the memory, processor and storage in TP 177B 6" as shown in Figure 389.

![System Properties](image)

*Figure 389: Memory settings on TP 177B 6" [57]*

**Transfer Channel**

If all the data channels are blocked, TP 177B 6" is protected from overwriting of the project data and interface (Figure 390).

![Transfer Settings](image)

*Figure 390: Transfer settings on TP 177B 6" [57]*
Transfer Settings

After TP 177B 6” is powered, there is a delay time before the project opens. During this delay time, the loader is displayed. This delay time can be adjusted here as shown in Figure 391. A “0” for the Wait time will no longer show the loader at startup. Then the project needs to have a function object to call the loader. [57]

WinCC Internet Settings

This is used to connect to the server and set up internet parameters for Profinet HMI devices only (Figure 392).
This is the end of Appendix IX.