SIEMENS 828D/840D
OPC/UA Connection
Notice

The OPC UA components can be installed on PCU, NCU and PPU target systems.

The following steps are necessary to do this:

1. Setting the license
2. Executing the OPC UA configuration dialog
3. Checking the HMI time
4. Performing a restart

- In SIEMENS V4.05, there is no user account /password and does not need to select signature & encryption. The access right of OPC/UA application program (Client) is rights of local machine operator.

- In SIEMENS V4.07, the user needs to use the user account /password and there is no signature & encryption selection in the user interface. The access right of OPC/UA application program (Client) is rights of login account. The user account/password is not allowed to remodify after setting the login user account / password. Users can adopt the 3rd party OPC/UA client software program to modify the user account/password again.
STEP 0: Confirm the right as Manufacturer

The operation right is displayed at the bottom left of interface menu.
STEP 1: Check SIEMENS CNC Version

The CNC V4.05 SP03 (or higher) version is needed when using the OPC/UA services.

Recommend using V4.07 SP03
STEP 2: Check OPC/UA Licenses

Search “OPC UA”, check “6FC5800-0AP67-0YB0” option and select it. If settings are all done, **RESTART** is necessary to activate the new settings.

![Image of licensing interface](image-url)
STEP 3: Setting Network & Firewall option

- Setting Address type (Manual-off)
  - IP address assigned
  - Subnet mask assigned
Company network change:

- Select S7 communication(TCP/102)
- Select VNC access(TCP/5900)
- Select SSH(TCP/22)
- Select TCP/4840 (Additional ports)

If settings are all done, **RESTART** is necessary to activate the new settings.
STEP 4: OPC/UA Setting

- Setting Port 4840 (binary protocol)
- Setting Admin User, default setting is “OpcUaClient”
  
  Hint: Admin User can administrate all OPC/UA account access right.

- Setting & confirm Password (Setting Password is necessary)

- Select Active OPC UA option.
<table>
<thead>
<tr>
<th>Setting</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>IP address</td>
<td>The IPv4 address of the target system. This is determined automatically. Check these:</td>
</tr>
<tr>
<td></td>
<td>for the NCU and PPU -X130</td>
</tr>
<tr>
<td></td>
<td>for the PCU 50 Local Area Connection 2</td>
</tr>
<tr>
<td>Port</td>
<td>TCP port, communicates via the OPC UA. This is added to the firewall exceptions for NCU and PPU. (The standard for the OPC UA communication is the TCP port 4840)</td>
</tr>
<tr>
<td>Admin User</td>
<td>Name of the administrator; with it you can add or delete other users and assign or delete user authorizations.</td>
</tr>
<tr>
<td>Password</td>
<td>Password of the administrator.</td>
</tr>
<tr>
<td>Activate OPC UA</td>
<td>Place the checkmark to activate OPC UA and remove the checkmark to deactivate it.</td>
</tr>
</tbody>
</table>

**Settings of the OPC UA Server**

- **IP address:** 192.168.100.2
- **TCP port:** 4840
- **Admin User:** OpcUaClient
- **Password:** *****
- **Confirm password:** *****
- **Activate OPC UA:** ✔️
**STEP 5: Check HMI Date & Time**

- The date & time of OPC/UA must be calibrated as current date & time.
- If settings are all done, **RESTART** is necessary to activate the new settings.

**STEP 6: Confirm Network setting**
● Must using X130 Ethernet port as connecting with OPC/UA
STEP 7: OPC/UA Connection Testing

- Verify OPC/UA port work or not by using telnet tool.
  
telnet \textit{IP address} \textit{port number}
  
  EX: telnet 192.167.100.2 4840

- Using 3\textsuperscript{rd} party OPC/UA software program connect with SIEMENS CNC controller. (Ex. UaExpert software)

- WebAccess/CNC connection test.

![Image of Device Setting window]
STEP 8: SIEMENS CNC Function Pages

Position Information

<table>
<thead>
<tr>
<th>Machine</th>
<th>Position [mm]</th>
<th>REPOS</th>
<th>Feed/override</th>
</tr>
</thead>
<tbody>
<tr>
<td>MX1</td>
<td>624.649</td>
<td>0.000</td>
<td>0.000 mm/min 8.0%</td>
</tr>
<tr>
<td>MY1</td>
<td>-181.761</td>
<td>0.000</td>
<td>0.000 mm/min 8.0%</td>
</tr>
<tr>
<td>M21</td>
<td>-495.530</td>
<td>0.000</td>
<td>0.000 mm/min 8.0%</td>
</tr>
<tr>
<td>MSP1</td>
<td>0.001°</td>
<td>0.000°</td>
<td>0.000 rpm 50%</td>
</tr>
</tbody>
</table>

T=MANUTEQ_T1  F=0.000  S1=0

Status Display

Program control action "Change to program mode" only possible in reset state

NC/MPF/TEST_CIR

<table>
<thead>
<tr>
<th>Machine</th>
<th>Position [mm]</th>
<th>Dist-to-go</th>
<th>T.R.S.</th>
</tr>
</thead>
<tbody>
<tr>
<td>MX1</td>
<td>624.649</td>
<td>0.000</td>
<td>T MANUTEQ_T1 123.12</td>
</tr>
<tr>
<td>MY1</td>
<td>-181.761</td>
<td>0.000</td>
<td>D1 L123.12</td>
</tr>
<tr>
<td>M21</td>
<td>-495.530</td>
<td>0.000</td>
<td>F 0.000 mm/min 8.0%</td>
</tr>
</tbody>
</table>

S1 Master 0 50%
Tool List

Work Offset
NC program List

System Utilization

Joseph.Sun
R Variables

Alarm Log

2018/9/17

Version: V1.4

Joseph.Sun