Quick Start Guide

Control Panels CP405
Control Panels CP408
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1 Introduction

This documentation describes the steps to create a simple CP400PB (Panel Builder 400) project. The description includes hardware, configuration and programming of CP405/CP408 and AC500-eCo in order to communicate with each other.

2 Before You Start

2.1 Hardware Connection

Before you start, following equipments should be prepared:

1. Personal Computer
2. 24V DC power supply
3. AC500-eCo PM554
4. TA562-RTC (RS485 serial adapter for COM2 interface)
5. CP405/CP408 control panel
6. TK504 (PLC programming cable for COM2)
7. USB programming cable type A to type B (Between CP405/CP408 and PC)
8. TK407 communication cable (Between AC500-eCo and CP405/CP408)
9. PS501 Control Builder Plus installation (TK504 driver included)
10. CP400PB (Panel Builder 400) installation (USB programming cable type A to type B driver included)

Make sure all above listed items are available, then follow the steps below.
1. Connect CP405/CP408 (5) with AC500-eCo (3). Pinning of TK407 (8) is shown below.

<table>
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<tr>
<th>Pin</th>
<th>Description</th>
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<tr>
<td>3</td>
<td>RxD/TxD-P</td>
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<td>8</td>
<td>RxD/TxD-N</td>
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2. Connect CP405/CP408 (5) with PC (1).

3. Connect AC500-eCo (3) with PC (1) with TK504 (6).

4. Connect 24VDC power supply (2) to CP405/CP408 (5) and AC500-eCo (3).
System requirements for using CP400PB (Panel Builder 400):

- Driver will be installed automatically for:
  - Windows 2000™ SP4
  - Windows XP™ SP2
  - Windows Server 2003™
  - Windows Vista™
- Driver needs to be installed manually, see Chapter 2.2:
  - Windows 7™

### 2.2 Software Installation

Install the driver for panel in Windows 7 system as below.

1. Install CP400PB (Panel Builder 400) and CBP (Control Builder Plus) software. For further details, please see AC500-eCo Starter Kits: 2CBA125031M0201

2. After USB programming cable is plugged in PC for the first time, Windows will detect it automatically. Right click **ABB CP40x HMI** to update the software.
3. Browse the driver software.

4. Finish the installation.

5. Check if driver is installed correctly in Device Manager.
3 Application Examples - Data Display

Open Panel Builder software to configure the setting on CP400PB.

1. Open CP405/CP408 configuration environment and create a new project.

2. Input project name and location. Then click **Next**.

3. Choose corresponding CP405/CP408 type. Then click **Next**.

4. Set ABB Modbus RTU as communication service. Then click **Next**.
5. Configure the **Link parameter** of CP405/CP408, which shall be consistent with the used parameter settings in AC500-eCo.
6. Draw a text label and edit the current text.

7. Draw a numeric display label to display the data received from AC500-eCo. Choose the data type (Monitored variable type), display type and monitor address.
8. Draw and specify a numeric display label to display the data sent to AC500-eCo.

9. Draw and specify a numeric display label to display the error record (how many times data received from AC500-eCo is not equal to data sent to AC500-eCo).
10. Double click **Screen 1** and check **Cycle Macro**, the Cycle Macro will be running continuously while the **Screen 1** is open.

11. Write **Cycle Macro** to perform data exchange operation.

12. Compile the application.
13. Click **Download** icon and select the link before downloading.

Step 14 to 17 are the settings on CoDeSys.

14. Program in CoDeSys.

```
PROGRAM PLC_PRG
VAR

  Datasend ATIWV0.11: INT;
  Databeceive ATIWV0.10: INT;
  Errornum ATIWV0.510: INT; (*point to the numeric displayed labels defined at CP400*)
  datatransfer: INT;
  step: INT;
  tempdata: INT =123;
  Delay: TON;
END_VAR

CASE step OF
  0:
    Databeceive =tempdata("give a temp valid to communication data")
    Delay(WT:=0.05s);
    IF datatransfer=2000 THEN 
    datatransfer:=datatransfer+1;
    ELSE 
    datatransfer:=0;
    END_IF
    Datasend:=datatransfer;
    Step:=1;
  1:
    Delay(WT:=TRUE PT:=0.05s)("Delay, wait for HMI to execute the program ")
    IF DelayQ THEN 
    IF Datasend=Databeceive THEN 
    Errornum:=Errornum+1;
    END_IF
    step:=0;
    END_IF
END_CASE
```
15. Set AC500-eCo Communication parameters.

16. Login, download and run the program to AC500-eCo.

17. CP405/CP408 panel display after a few minutes.
## 4 Revision History

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