6.10.5.4 Example: Compax3 as CANopen Master with PIOs

- Compax3 control via PIOs.
- Configuration of the PIO connection with the C3 ServoManager.
- Initializing the PIO connection with the PIO_Init module
- Control of Compax3 via the digital PIOs and setpoint assignment via the analog PIOs

Related programs:
- ..\Examples\C3_mit_PIOs\T30_MasterPIO_ID2.C3P
- ..\Examples\C3_mit_PIOs\C3_PIO_CONNECTION_TEST.pro

Test setup:
A PIO-347 for CANopen with:
- 1 PIO-602 (24V DC feed)
- 2 PIO-402 (8 digital inputs) for operation wired to a switch box
- 6 PIO-504 (24 digital outputs)
- 1 PIO-468 (4 analog inputs)
- 1 PIO-550 (2 analog outputs) analog output 0 is wired with analog input 0 for setpoint definition
- 1 PIO-600 (Bus terminal)
- a 24V power supply unit
- a C3 S025 F10 I21 T30 M11 with power- and 24V-cable
- a motor SMH 60 60 1,4...4 with motor- and resolver cable
- a serial cable for the connection of the Compax3 with the PIO coupler.
- a switch box for the operation of the 8 digital inputs of the PIOs.

Settings:
- Baud rate = 1Mbit
- Node address of the PIO = 5 (setting via the address switch on the device)
- Node address of the C3 = 2 (setting via the address switch on the device)

Control interface:

<table>
<thead>
<tr>
<th>Digital input</th>
<th>Function</th>
<th>Digital output</th>
<th>Function</th>
</tr>
</thead>
<tbody>
<tr>
<td>0</td>
<td>Energize axis</td>
<td>0</td>
<td>Axis is energized</td>
</tr>
<tr>
<td>1</td>
<td>Travel to MN (home)</td>
<td>1</td>
<td>MN (home) is accessed</td>
</tr>
<tr>
<td>2</td>
<td>Start MoveVelocity</td>
<td>2</td>
<td>Setpoint speed reached</td>
</tr>
<tr>
<td>3</td>
<td>Stop</td>
<td>3</td>
<td>Stop is present</td>
</tr>
<tr>
<td>4</td>
<td>JOG +</td>
<td>4</td>
<td>Manual function active</td>
</tr>
<tr>
<td>5</td>
<td>JOG -</td>
<td>5</td>
<td>MoveVelocity aborted</td>
</tr>
<tr>
<td>6</td>
<td>Free</td>
<td>6</td>
<td>Global module error display</td>
</tr>
<tr>
<td>7</td>
<td>Error reset</td>
<td>7</td>
<td>Error is present</td>
</tr>
</tbody>
</table>

Analog input | Analog output |
<table>
<thead>
<tr>
<th></th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>0</td>
<td>Setpoint speed</td>
</tr>
</tbody>
</table>

Additional Compax3 settings:
- Array_Col03_Row01=1; activates the PIO_Init module
- Array_Col03_Row02=5; address of the PIO
- Array_Col03_Row03=10; Specification for analog output0 => setpoint speed specification

If these values are stored in the Compax3, the PIO will be automatically initialized after Power On and started for PDO data exchange with Compax3.