PoExtBusOC16-CNC
User's manual

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PoExtBusOC16-CNC user's manual

1. Description

PoExtBusOC16-CNC is an extension board for driving up to 8 stepper motor signals. It contains 8 standard 10-pin connectors for directly connecting the stepper or servo motor drivers. Each connector provides step, direction and shared enable signals.

Similar device PoExtBusOC16 (without CNC) is designed for providing up to 16 digital outputs and is not compatible as it uses a different wiring scheme. Unlike with PoExtBus devices, only one PoExtBusOC16-CNC can be used and daisy-chaining is not supported.

2. Features

- Up to 8 stepper motor drivers can be connected
- Enable signal for each driver
- PoExtension connector for connecting to master device
- Only one PoExtBusOC16-CNC can be used
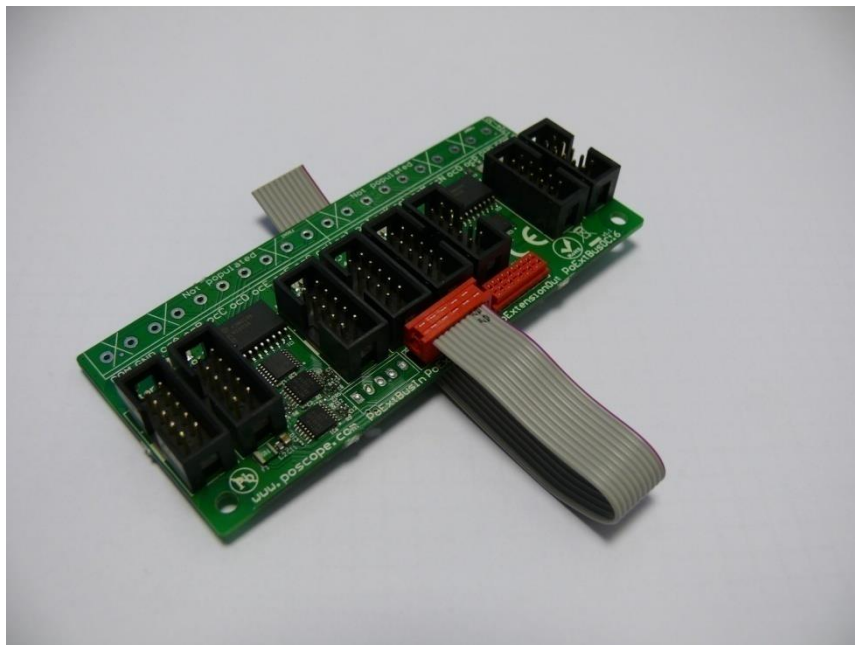
Figure 4: PoExtBusOC16-CNC

3. Installation

PoExtBusOC16-CNC uses 6 pins from the PoExtension connector. Use the wiring scheme as shown in Table 1 in case the PoExtension connector is not available on the master device. PoExtBusOC16-CNC is shipped with the cable attached to the PoExtensionIn.

To use PoExtBusOC16-CNC with PoKeys57E/PoKeys57U connect the flat cable to the appropriate pins of PoKeys57E/57U device.

Pin	Description	PoKeys57U pin	PoKeys57E pin
1 (red)	5 V power supply to the PoExtBusOC16-CNC – **must supply at least 40mA for correct operation**	5 V	5 V
2	PoKeys ground	GND	GND
3	Motor enable signal	Any free I/O pin	Any free I/O pin
8	Signal for pulse generation	23	9
9	Signal for pulse generation	25	11
10	Signal for pulse generation	26	51

Table 1: Wiring scheme

Other pins are not used.

Postep25-32 has the same pin out as the PoExtBusOC16-CNC motor outputs so you can simply connect them with the 10-pin flat cable.

Please note that PoExtBusOC16-CNC does not support error inputs for status feedback. Pin 7 is connected to GND.

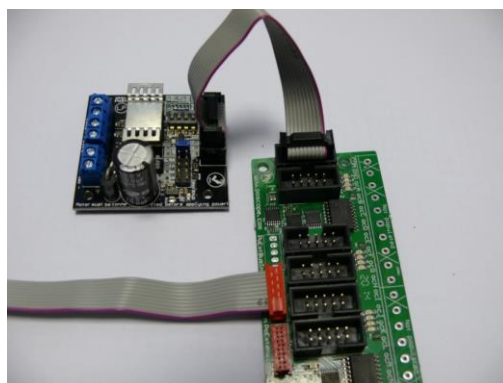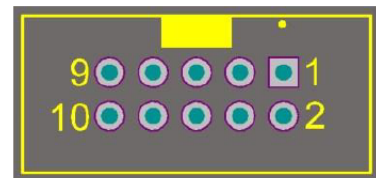| Pin	Function
1	nEnable (0=enable, 1=disable)
3	direction
5	step
7	GND
2, 4, 6, 8, 10	GND
9	Not connected

Figure 5: Postep25-32 connected to PoExtBusOC16-CNC

4. Configuration with PoKeys device

The PoExtBusOC16-CNC functions as an external pulse generator without I/O capability. The following sections provide instructions on how to configure it for operation with Mach3, Mach4 plugins and in standalone operation with the PoKeys device.

Motor enable signal is assumed to be connected to pin 1 of the PoKeys device. This can be changed to a different pin if required.

PoKeys Mach4 plugin

First, the PoKeys device needs to be configured for operation with the Mach4 plugin. If this hasn't been done already, follow the Mach4 plugin instructions when adding the PoKeys57U or PoKeys57E device to plugin configuration. In the new device wizard, set the Pulse engine options to 'External 8ch without IO'.

Set the following Pulse engine settings in the device configuration dialog in the plugin:

- Pulse engine configuration: External 8ch without IO
- Enable out for motor 1: select 'Pin 1'

PoKeys Mach3 plugin

First, the PoKeys device needs to be configured for operation with Mach3 plugin. If this hasn't been done already, follow the Mach3 plugin instructions when adding the PoKeys57U or PoKeys57E device to plugin configuration.

Once the PoKeys device is configured, set the following settings:

- Pulse engine settings:
 - o Pulse engine configuration: **External 6ch without IO**
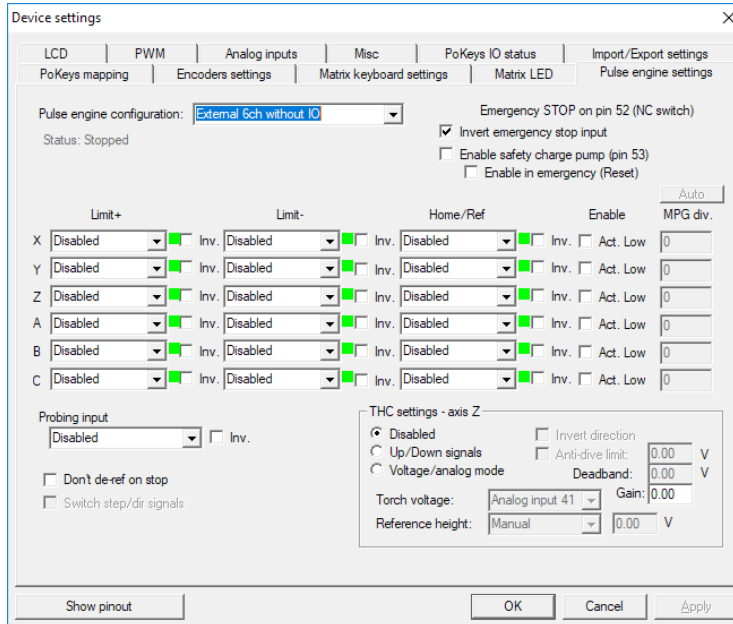
- PoKeys mapping settings:
  - o Set function of pin 1 (motor enable signal) to '**Output**'
  - o Select '**Output Enable1'** from the options in the IO column
  - o **Clear** '**Invert'** check box
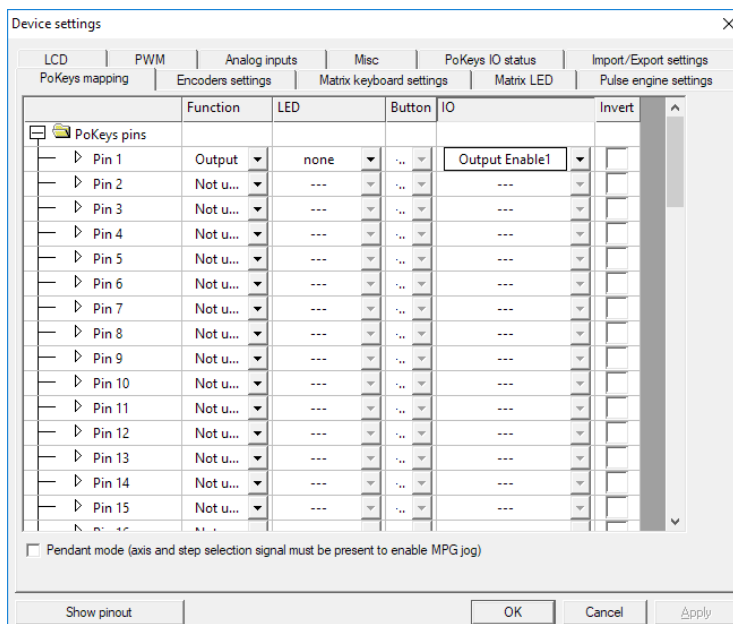
Standalone operation

Use PoKeys software to configure the device for a standalone operation.

First, configure pin 1 (motor enable output) as 'Digital output'. Click 'Send to device'.
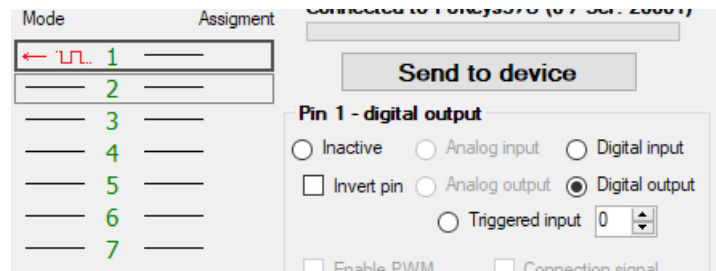
Then, open Pulse engine settings follow these steps:

- Release the settings lock by clicking 'Lock settings'. The dialog will be asking you whether you want to load default settings. Confirm with 'Yes'
- Select 'External' in Pulse engine generator options and uncheck the 'Extended IO' check box
- Select 8 channels in Pulse engine generator options
- Select pin 1 in 'Axis enable output on pin'
- Click 'Save configuration'

To test the operation of the device, switch Pulse engine into 'Running' mode (by clicking 'Running' square') and use the +/- jogging buttons for the target axis. The default jog speed is 1 % of the maximum speed - use the slider at the bottom to adjust the jogging speed.
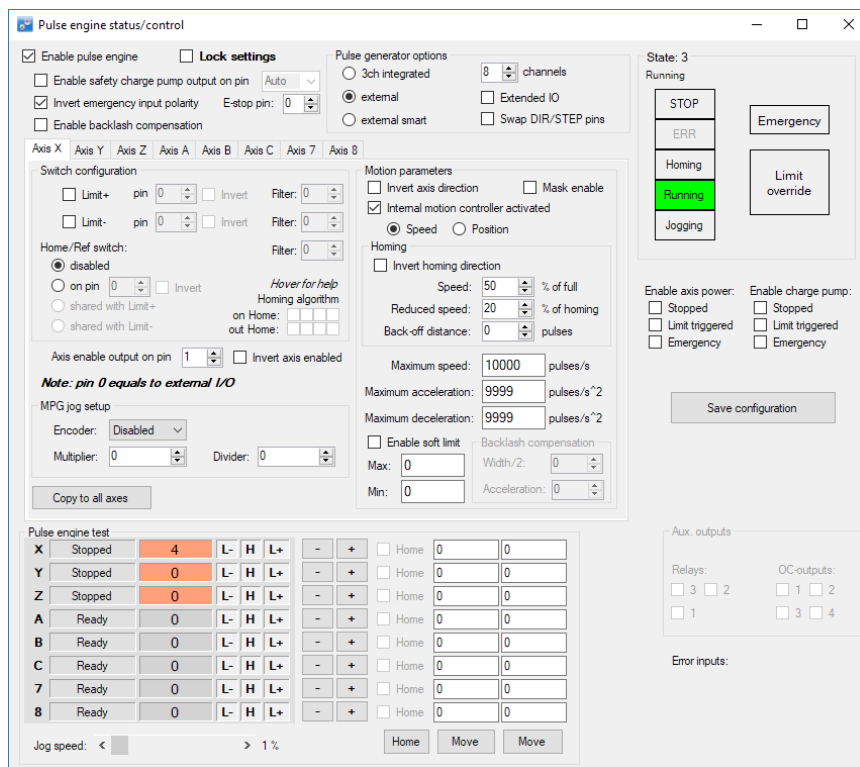
PCB dimensions and mounting holes
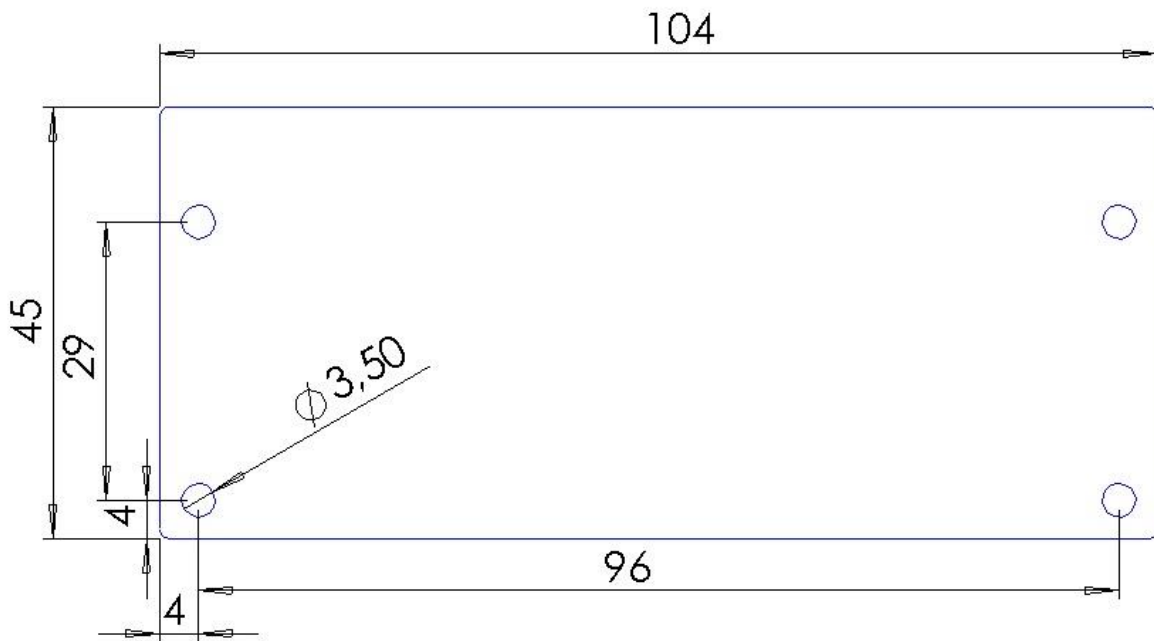
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