PoExtension
User's manual

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PoExtBus user's manual

1. Description

PoExtension is an extension bus, which is used to connect stepper motor drivers to selected PoLabs products.

Master devices which support PoExtBus
- PoKeys56U
- PoKeys57E

Slave PoExtension devices
- PoExtBusOC16-CNC

Features
- Uses dedicated 10-pin connector
- Simple and cheap additional output device for PoKeys master devices
- Status LEDs

Requirements
- Master device. If the master device has PoExtension connector you can connect the PoExtBusOC16-CNC directly on that connector otherwise PoExtensionOC16-CNC can be directly connected to the appropriate pins (look at the table on page 7).

2. Technical specifications

Schematics of PoExtension device is as following. It is intended for use only by experienced electrical engineers, as PoLabs will not support custom slave devices. Custom slave devices must follow the exact schematic to be compatible. Note that the schematic is not complete.

PoLabs develops general purpose PoExtension devices, as well as custom devices on customer request (in bigger quantities) which are compatible with PoKeys master devices (56U or 57E).
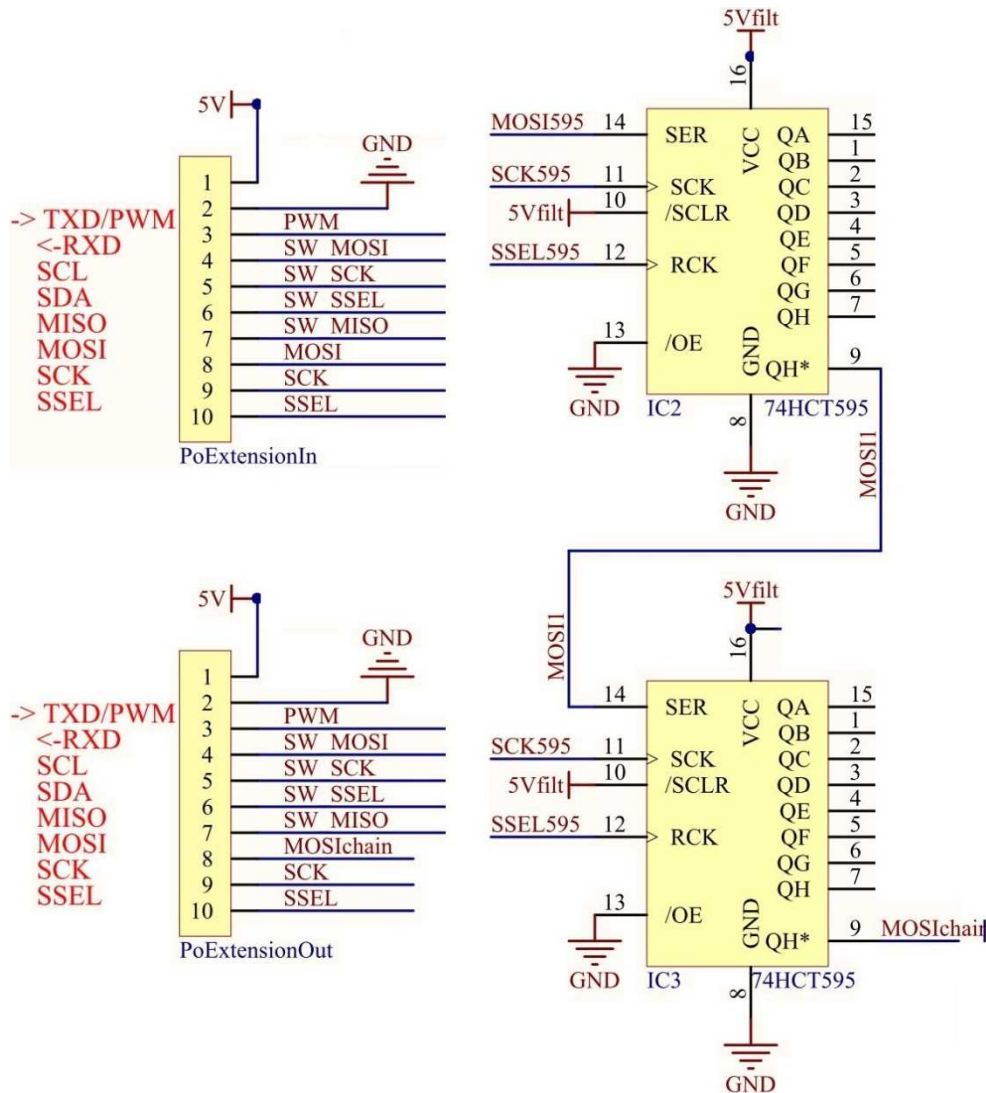

Figure 1: PoExtension device schematic

3. PoExtBusOC16-CNC

Overview

PoExtBusOC16-CNC uses 6 pins from the PoExtension connector. Table under Installation shows connections to PoKeys master devices. PoExtBusOC16-CNC allows you to connect up to 8 stepper motor drivers. Please use CNC version only with stepper motor drivers. If you wish to expand the number of outputs on your PoKeys device please use PoExtBusOC16 (non CNC version) or PoExtBusRe.

Only one PoExtBusOC16-CNC can be used, daisy-chaining is not supported.

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

Installation

PoExtBusOC16-CNC is shipped with the cable attached to the PoExtensionIn. To use PoExtBusOC16-CNC connect the flat cable to the appropriate pins of PoKeys57E/56U device. The following table shows how to connect PoExtBusOC16-CNC:

Pin	Description	PoKeys56U 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

Other pins are not used.

Postep25-32 has the same pin out as PoExtBusOC16-CNC motor outputs so simply connect pin to pin.
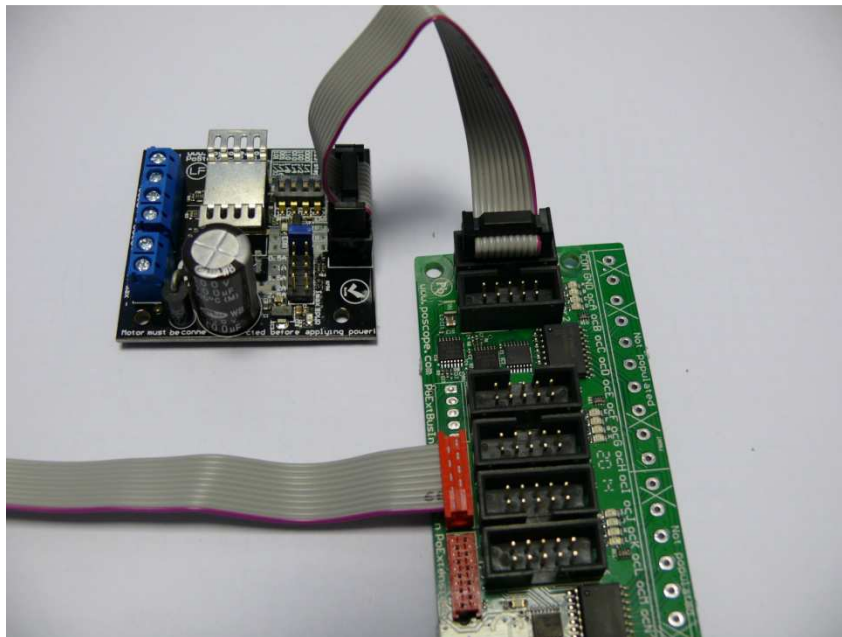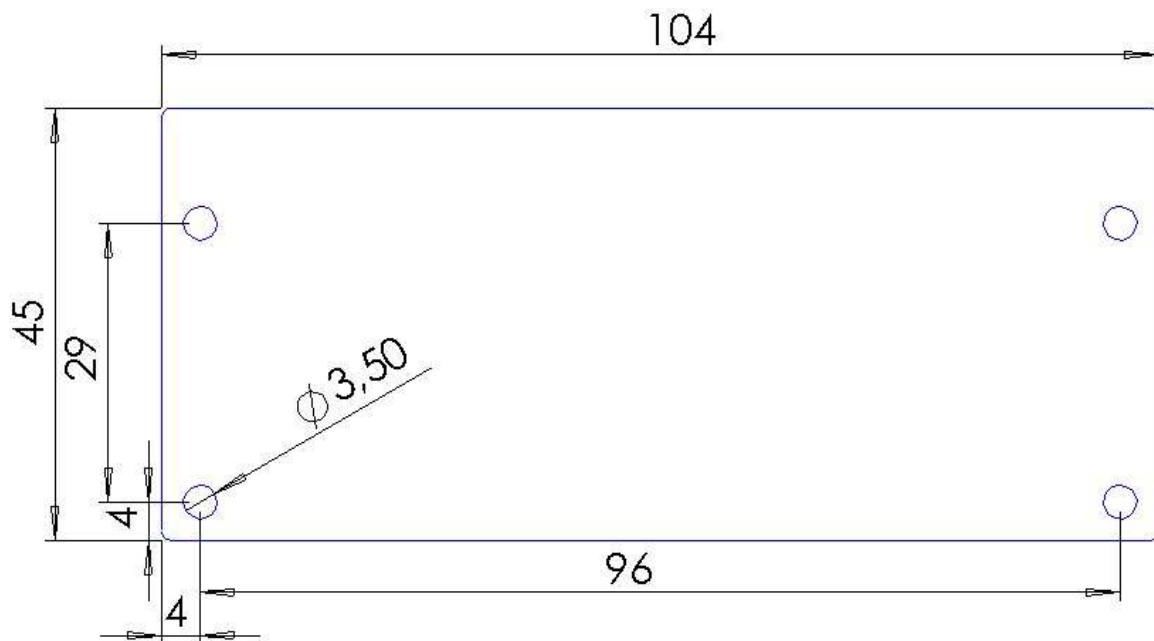

Figure 5: Postep25-32 connected to PoExtBusOC16-CNC

To configure the device please refer to the Master device User manual.

PCB dimensions and mounting holes

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