



PoCANpendant

User's manual



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1. Description

PoCANpendant is a CAN enabled PoPendant1 device. It enables the connection between the PoKeys57CNC and the PoPendant1 to be extended via the CAN bus. It has 4 pin connector instead of DB-25 connector and requires only power supply lines and two CAN bus lines to be connected to PoKeys.

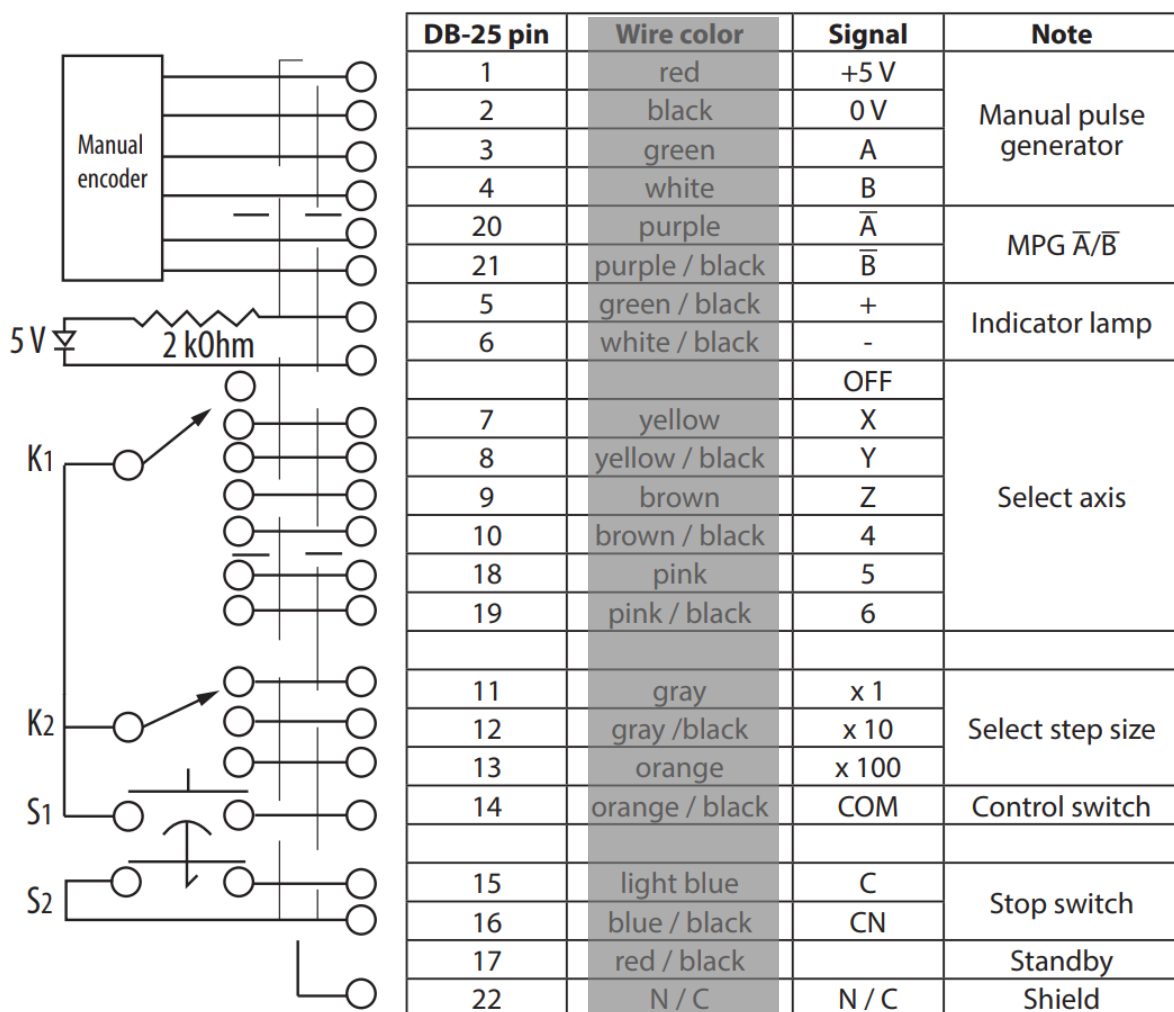
There are two LEDs on the device – red one is a power indicator, while the green LED reflects the current state of the device (constant fast blinking indicates device is in bootloader mode).

2. Features

- Connection over CAN bus, allowing greater distances between pendant interface and the PoKeys75CNC device with much improved noise immunity
- Standard pendant interface for axis/step selection knobs, E-stop and MPG

3. Electrical specifications

Device is compatible with PoPendant1. 5 V is required on the power supply input on the CAN bus connector. The DB-25 connector on the device expects the following pendant connection:



4. Pinouts of connectors

4.1.CAN bus connector pinout

The 4 way power and signal connector has the following pinout.



5. Installation

Installation of PoCANpendant adapter is very simple – connect the PoPendant1 to the adapter and connect PoCANpendant to PoKeys57CNC device via CAN bus. Use the CAN connector on the PoKeys57CNC device, which has the following pinout:

PoKeys57CNC side (6-pin red connector)

Pin number	Function
1	+5 V
2	CAN bus ground connection
3	CAN bus L line
4	CAN bus H line
5	Do not connect
6	Do not connect

Note: multiple peripheral devices can be connected to the CAN bus in parallel (e.g. kbd48CNC, PoCANpendant and PoRelay8). Make sure that all devices share the same GND, CAN-L and CAN-H signals and that the PoCANpendant is at the end of the CAN bus.

CAN bus termination

CAN bus uses termination resistors at both ends of the communication bus. Therefore, PoKeys57CNC and PoCANpendant devices must be equipped with termination resistors. PoCANpendant devices already come with the termination resistors built-in which is why the PoCANpendant must be at the end of the CAN bus.

5.1. Configuration of PoCANpendant device

First make sure that you have the latest PoKeys app version installed as well as the latest plugin if you are using Mach3/4. Connect all devices first, then start PoKeys software and open 'Peripherals > PoExtBus Smart / PoCAN' - the following dialog will be displayed. If 'Enable PoCAN' option is not yet enabled, enable it and click on 'Send to device' on the main screen.

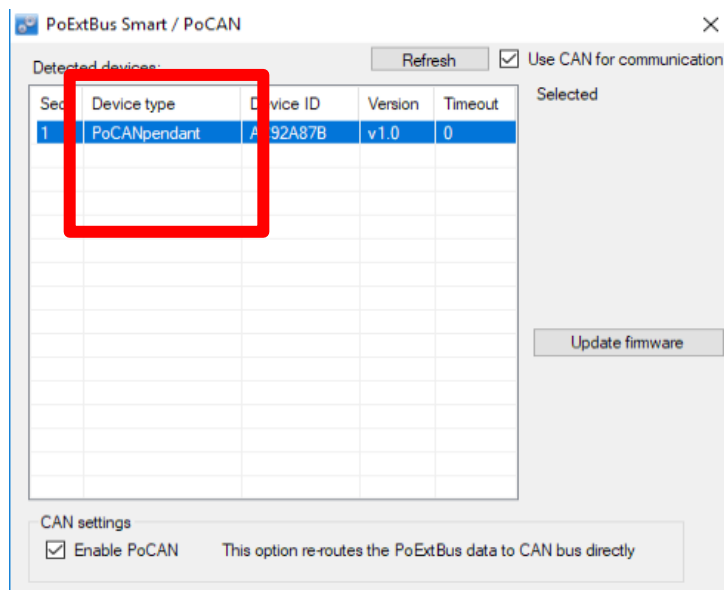


Figure 1: PoExtBus Smart configuration (showing 6 PoRelay8 devices that were detected)

The list will contain all detected PoExtBus Smart devices. Firmware of the PoCANpendant device can be updated via the 'Update firmware' option.

PoCAN – protocol definition for PoCANpendant devices

PoCANpendant uses standard CAN messages with 11-bit IDs and 1-8 byte length (at 250 kbit/s). By default, the following CAN message IDs are used by the PoCANpendant device. Device periodically generates CAN messages that contain the current state of its inputs and changes detected by MPG inputs

Name	ID	Description
POCAN_MSGID_GENERAL	0x108	Command interface - this message contains general command and data layout that is used for general purpose command execution on the device. First data byte is interpreted as command by the device.
POCAN_PENDANT_LED_MSG (Host > Pendant)	0x570	One data byte is expected – bit 0 turns on LED on the PoPendant1

POCAN_PENDANT_DATA_MSG (Pendant > Host)	0x571	Message contains state of the pendant inputs: <ul style="list-style-type: none"> - Bytes 0-2: MPG encoder changes (signed 8-bit) - Byte 3: bit-mapped inputs: x1, x10, x100, IO1, IO2, IO3, IO4 - Byte 4: bit-mapped inputs: X, Y, Z, 4, 5, 6, E-stop
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Supported commands by the command interface

Device identification (0x10)

Device identification returns information on the PoRelay8 device, including device type (1), firmware version and 32-bit device identifier.

Request

ID	Command
0x108	0x10

Response

ID	Command	TYPE_2	FW_ver_1	FW_ver_2	Device ID
0x108	0x10	(7)			(32-bit)

Configuration read (0x11)

This command is used to access the settings of the PoRelay8 device. Only lower 16 bits of the parameter values can be accessed via CAN.

Request

ID	Command	Device ID	Index
0x108	0x11	(32-bit)	

Response

ID	Command	Device ID	Index	Value
0x108	0x11	(32-bit)		(16-bit)

The following parameters are available (by index):

Table 1: Parameter indexes

Index	Description	Default value
6	CAN bus timing option 0 – default CAN bitrate of 250 kbit/s 125 – CAN bitrate of 125 kbit/s 250 – CAN bitrate of 250 kbit/s 500 – CAN bitrate of 500 kbit/s 1000 – CAN bitrate of 1000 kbit/s	0
7	CAN bus message ID	0x108

Configuration write (0x12)

This command is used to access the settings of the PoRelay8 device. Only lower 16 bits of the parameter values can be accessed via CAN.

Request

ID 0x108	Command 0x12	Device ID (32-bit)	Index	Value (16-bit)
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Configuration save (0x13)

This command is used to save the settings of the PoRelay8 device to non-volatile memory.

Request

ID 0x108	Command 0x13	0xA5
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6. Document versions

Date	Changes
30.12.2025	First release

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