

Installation guide



PLCM- LPT

CNC USB controller

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Check wiki.purelogic.ru for more detailed information

You can find common information about PLCM series controllers in "User manual"

1. GENERAL INFORMATION

This device is PLCM series controller (see "User manual"). It has 1 input-output port and USB interface for connection with PC. Its input-output port corresponds to PC LPT-port according to a form and pins configuration.

2. DELIVERY SET

- PLCM-LPT controller – 1 pcs.
- User manual for PLCM series controllers – 1 pcs.
- Installation guide for PLCM-LPT – 1 pcs.
- Disk with the software – 1 pcs.
- USB cable, B type – 1 pcs.
- IDC26-DB25 (LPT) – 1 pcs.

3. TECHNICAL SPECIFICATIONS

Supply voltage	5V from USB port
Maximum consumption current	150 mA
Control interface	USB, Mini-USB socket type. STEP/DIR/ENABLE signals translation, input signals translation, compatibility with MACH3
STEP signals maximum frequency	100 kHz
Quantity of inputs	5 pcs, buffered. Logical levels: "0"<1.8V, "1">2.5V. Maximum input voltage: 15V
Quantity of outputs	12 pcs, buffered. 5V, 10 mA MAX
Maximum quantity of CNC machine axes	6
Isolation resistance	500 MOhm
Operating temperature	0 ... 50 °C
Net weight	0,1 kg
Overall dimensions (Width x Height x Depth)	70 x 20 x 55 mm



TURN OFF POWER DEVICE BEFORE MAKING ANY CONNECTIONS
POWER SUPPLY NEGATIVE WIRE CONNECTION WITH GROUND (GND), HOUSING AND ETC. IS FORBIDDEN
HIGH-QUALITY SHIELDED CONNECTION CABLES IS RECOMMENDED TO USE
CONTROLLER WORKS WITH R3.043.xxx MACH3 VERSIONS AND ABOVE, NECESSARILY UPDATE MACH3

4. BASIC SOCKETS AND INDICATORS

- XP1 socket is intended for PLCM-LPT connection to PC USB port. Connection is recommended to realize by a short shielded cable with ferrite rings for interference protection increase.

- P1 port represents analog of PC LPT-port and has identical with it purpose and pins configuration:

OUTPUTS – 1,2,3,4,5,6,7,8,9,14,16,17.

INPUTS – 10,11,12,13,15.

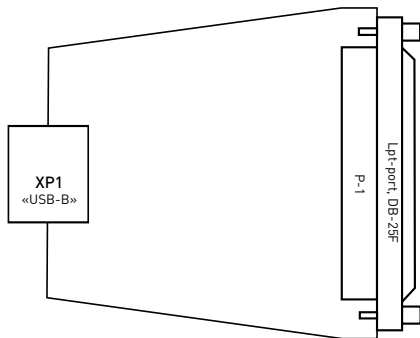


Fig.1. Diagram of sockets arrangement and indicators.

5. INSTALLATION AND SOFTWARE SETTING

1. Connect controller to PC USB socket.

Windows operational system will suggest to install drivers for the new device. Refuse their installation, it will be automatically executed on the following step.

2. It is necessary to install PlugIn for device operation with MACH3.

Download archive with PLCM series controllers software to the address www.purelogic.ru/files/downloads/SOFT/PLCM.zip and launch "setup.exe". Controller Setup Wizard will open.

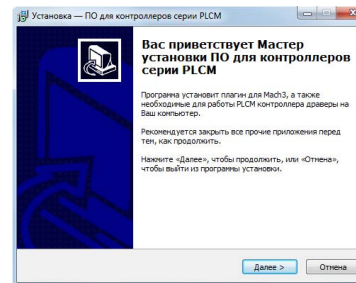


Fig. 2. Setup Wizard.

Press "Next". If you install software for the first time and you want that Setup Wizard install of necessary drivers, choose devices which it is planned to apply on this PC (fig. 3). If any of devices isn't chosen, Setup Wizard will make only PlugIn updating for MACH3.

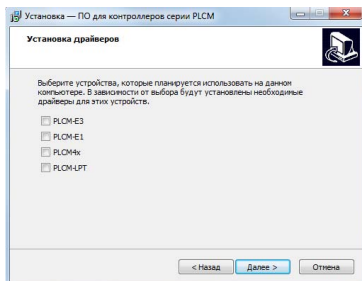


Fig. 3. Driver installation.

Press "Next", "Install". Setup Wizard will copy necessary files and will finish the work.

3. Choose the corresponding PlugIn in a window presented at fig. 4. when MACH3 runs after PlugIn installation.

As a rule, in the list there are two PlugIn versions for PLCM controllers: test and stable. Choose that with which you want to work at present. So that MACH3 doesn't suggest to choose PlugIn in each launching it is necessary to place the tick «Don't ask me again». If there is a need to change the output device, select MACH3 menu item – Function Cfg's – Reset device sel.

* If you decided to pass to another version, for example, last time you were working with stable version, and now you want to try test version, after launching you NEED to follow in PlugIn settings (see below) and to update the controller internal software.

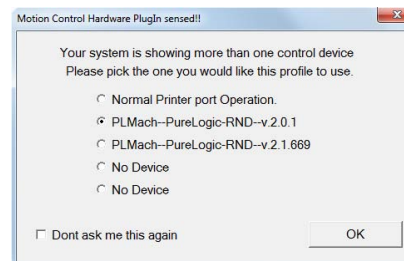


Fig. 4. PlugIn choice.

4. After successful PlugIn launching in MACH3 PlugIn Control menu there will be a PLCM control item. Select this menu item.

5. Execute PlugIn setting.

It is necessary to choose one of controllers connected to system from the drop-down list. If PlugIn detects that the firmware became outdated, it will be offered to update a firmware in the controller. It is enough to make controller choice procedure once at the first device installation.

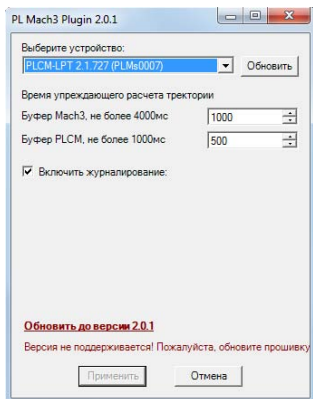


Fig. 5. PlugIn setting in MACH3

Settings description:

Time of MACH3 look-ahead trajectory calculation - specifies the data volume about a motion trajectory which the program needs to prepare in advance, to count forward, it is a buffer. The more this amount CNC operation is stabler. For example, MACH3 ceases to count new trajectory data during rotation of ToolPath images. Therefore the more those are counted in advance, motion «failure» probability is less during the image rotation or another load of MACH3.

Time of PLMACH look-ahead trajectory calculation - the similar buffer in PLCM board without MACH3 participating. The buffer stabilizes work during short-term failures of PLCM<->MACH3 connection and decelerations of MACH calculation.

Remark: On the one hand the more value of these parameters, the better (it is more buffer, operation is stabler). But with buffer increase FeedHold will be delayed to the sum of these two parameters, i.e. if MACH3 = 1 second buffer and PLMach = 0.5 second buffer, CNC system reaction time will be as the sum of FeedHold =1.5 second pressing and step motor braking time according to the pre-set profile of acceleration.

The logging

In the logging process the log-file of PLCM< > MACH3 interchange is saved in file «C:\MACH3\PLCM.log». If the device operation is incorrect this file needs to be sent to Purelogic RND technical support service with the detailed problem description.

Press “OK” button for setting process completion.



Pay attention that documentation can be changed due to constant technical upgrading of production.
You can download last versions from www.purelogic.ru



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