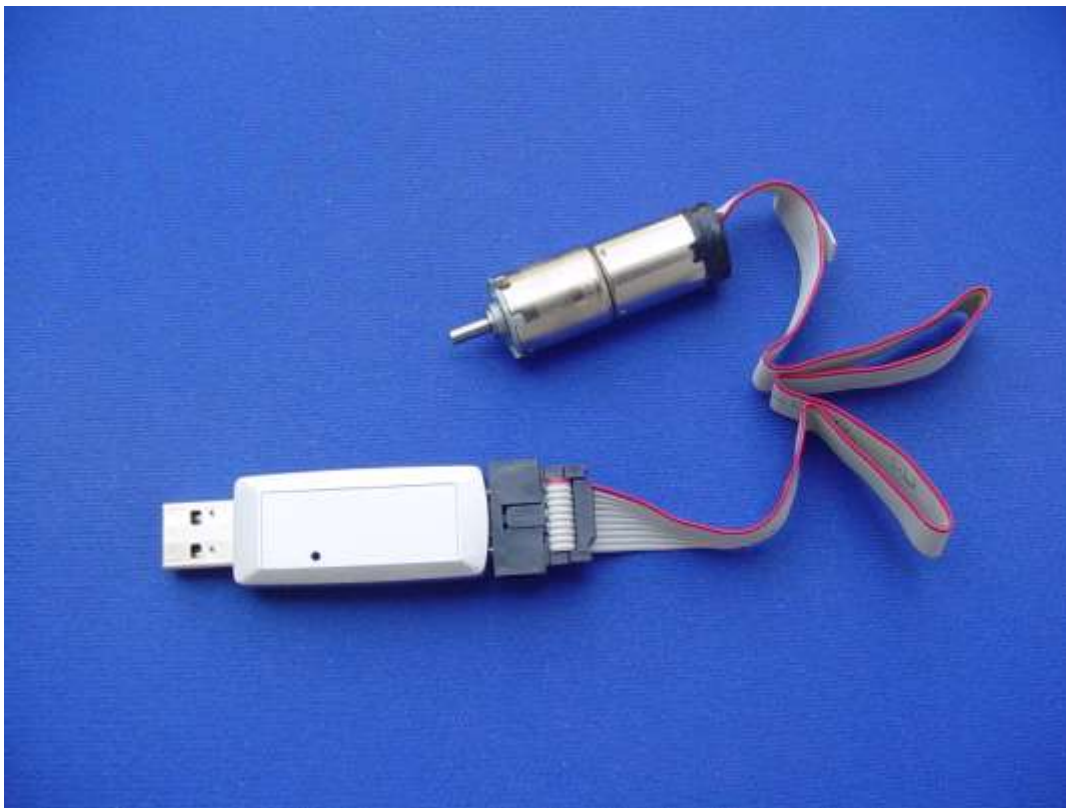




QUICK START

USD-210

Miniature USB Stick Controller and Driver
for small DC Servo motors



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The **USD-210** is a single axis miniaturized controller and driver for small DC Servo motors used typically in precision positioning systems.

It is powered directly from the **USB** port with no additional power supply needed.

Its intended use is for **3-6V** up to **12V DC** motors with maximum **200mA** consumption.

The **USD-210** controller can be used alone or with up to 8 more **USD-210** controllers allowing the control of up to 9 axis from one PC.

It provides position, velocity, torque and acceleration control.

It doesn't have a **Commands List** but a modified version could be developed.

The user has 3 programs to communicate with the controllers via the USB port(s).

We are offering a **Visual Basic** and **LabView** interface examples.

Both of them have the source code available to the user.

To avoid any hardware conflicts you must specify at the time of purchase how many USD-210 controllers will be connected simultaneous to the same PC.

The **USD-210** has no accessories. If needed the User can purchase:

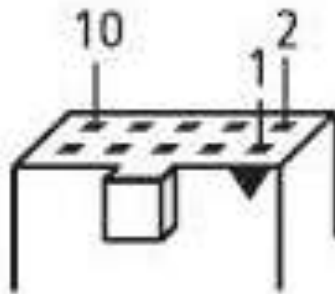
- USB extension cables type A
- 10pin IDC ribbon cables.

Connections

The USB connector is standard male type A and will match the Windows or Apple PCs.

Motor Connections

The **USD-210** DC Servo controller output is using a 10-pin IDC connector MALE type. The mating connector on the motor side must use the following pin-out scheme:

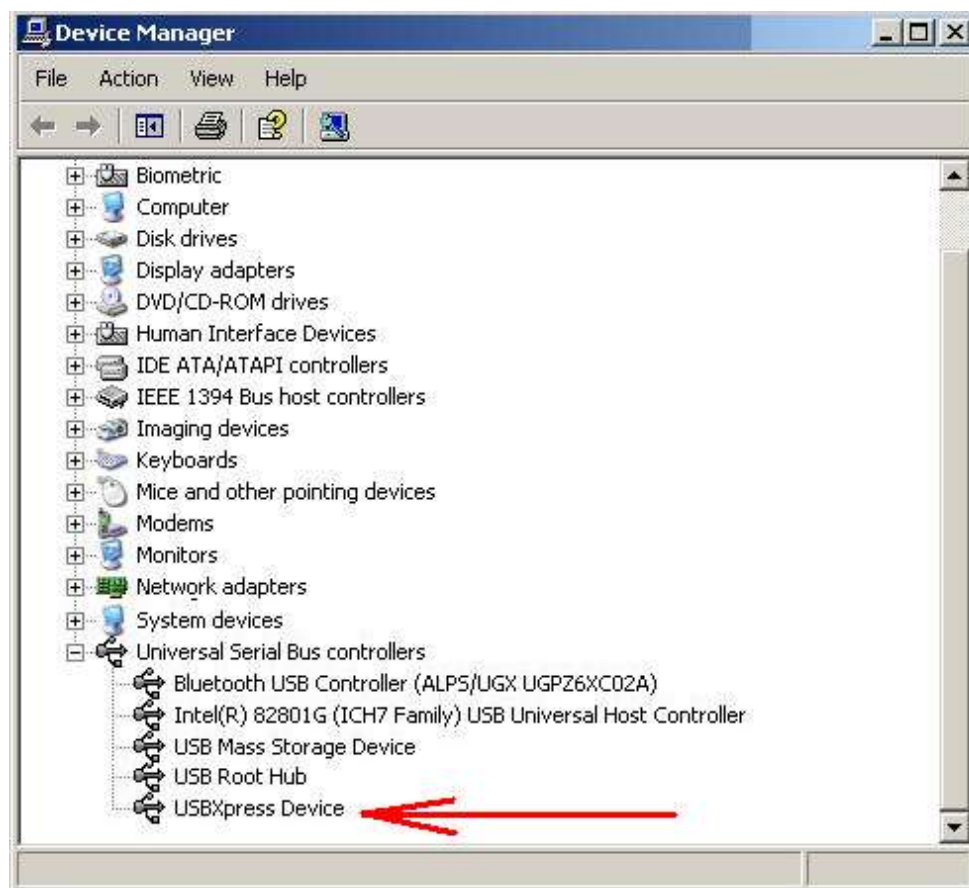


10 Pin IDC Connector – Pin Assignment

Pin		Signal
1		Motor +
2		+5 DC (used for Limit switches)
3		Ch A
4		Ch B
5		GND
6		Motor -
7		GND or NC
8		Positive Limit Switch
9		Negative Limit Switch
10		Limit GND

USB Driver

The **USB** driver needs to be installed before the use of the **USD-210** stick. Plug the controller in any available **USB** port and the PC will detect the presence of the new **USB** device. Then point the installation wizard to the USB driver files we provided and wait for the PC to complete the driver installation. If all was installed well the “Device manager” screen should look similar to this picture.



DEMO Programs

A **DEMO** program is provided for immediate operation. It can be used as is or the user can alter them to make his own interface or to control multiple axis simultaneous.

Features

Joystick

A Joystick slider in the GUI is used to change continuously the speed of the motor in both directions.

Reverse Motor Direction

Reverse motor direction feature allows the user to change the motor polarity. This allows configuring the motor's turning direction while keeping the same counting direction as before.

Limit Switches Configuration

Limit switches can be connected so that the stop condition is a logic low signal (GROUND) or a logic high signal (+5Volts). Both switches must have the same configuration (either active on high, or active on low). The 'Active High' or 'Active Low' configuration can be changed directly from the user interface. Limit switches functionalities can be reversed (swapped) between each other from the user interface.

Installation and first time Operation

Install the DEMO program we provided.

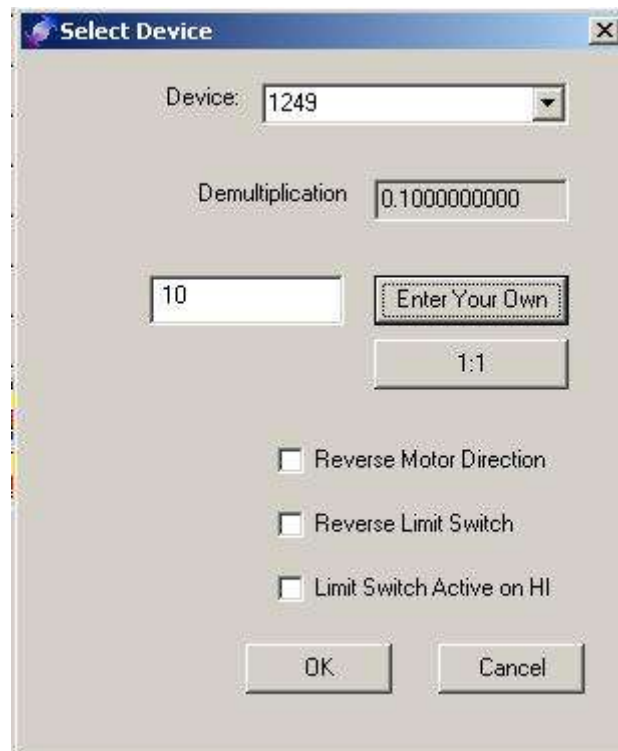
The motor should be generally connected to the controller before the USB controller is plugged in the USB port in the PC.

Start the USB Test DEMO program.

When you start the Visual Basic Demo application, the **Select Device** window pops up.

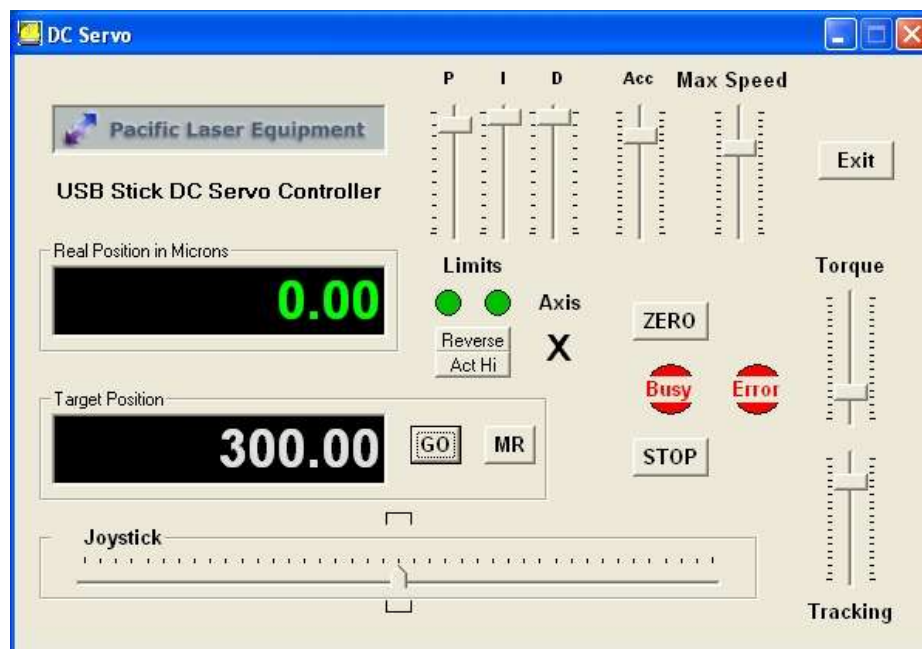
ATTENTION:

Any other changes to this Settings window may not be good for your application.



Click the **OK** button.

The following **USD-210** DC Servo Motor Control Panel window will open.



Please note that the vertical sliders have the max. value when down and Min. value up.

Set the Max Speed at ½ way.

Then set the **Acc** **Torque** and **Tracking** sliders as in the screen capture.

Make sure the motor is not restricted mechanically and can move in both directions.

Move the Joystick Slider to left than to right. The motor will move and change direction.

Next type 300 in the “Target Position” window and click the “GO” button.

If you click the “MR” button a few times it will repeat increments of 300 steps.

ATTENTION:

If you set the **Max. Speed** too high value the motor will not keep-up and the controller will signal “ERROR”

Give a **MR-1000** “Move relative” command by typing -1000 in the Target window and click on the “MR” button.

For any other symptoms please contact the factory by email at:

contact@plequipment.com