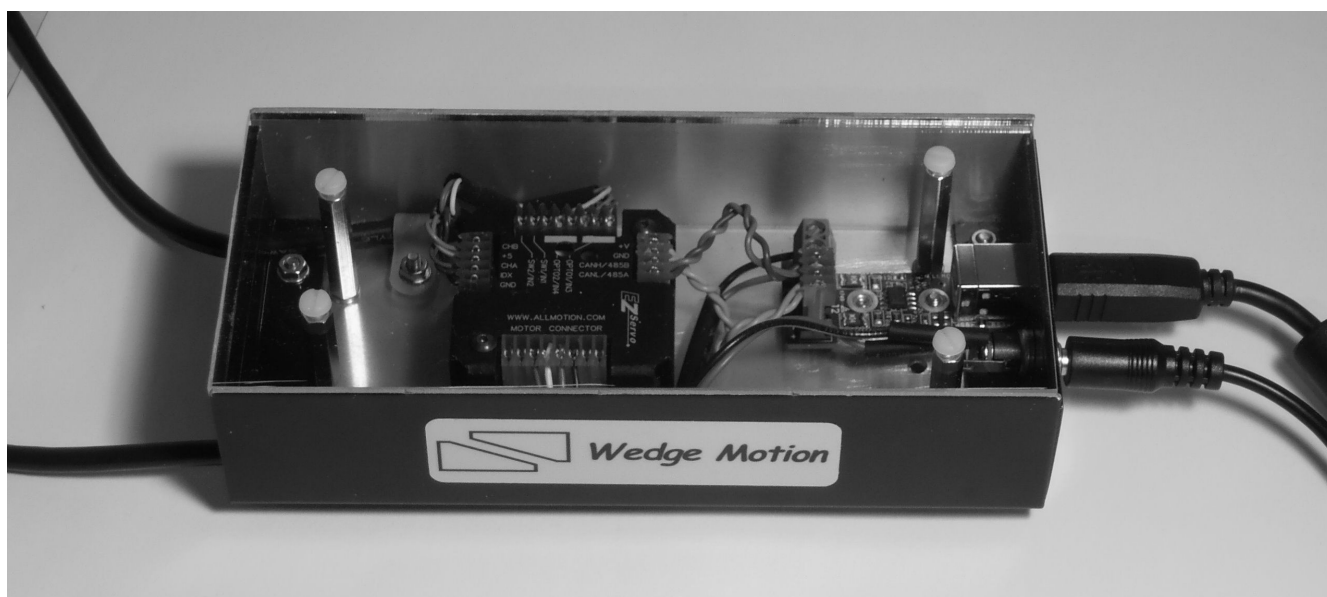


WMC-2A motion controller



Introduction

The WMC-2A is a motion controller for laboratory and light industrial usage. It is comprised of:

- motion controller (specific to either a stepper or brushless-DC motor)
- USB-RS485 converter
- DC power supply
- Cable for connection to motor (300mm long and terminated with a DSUB9 connector)
- Cable for connection to signals (300mm long and terminated with a DSUB9 connector)
- USB cable to computer

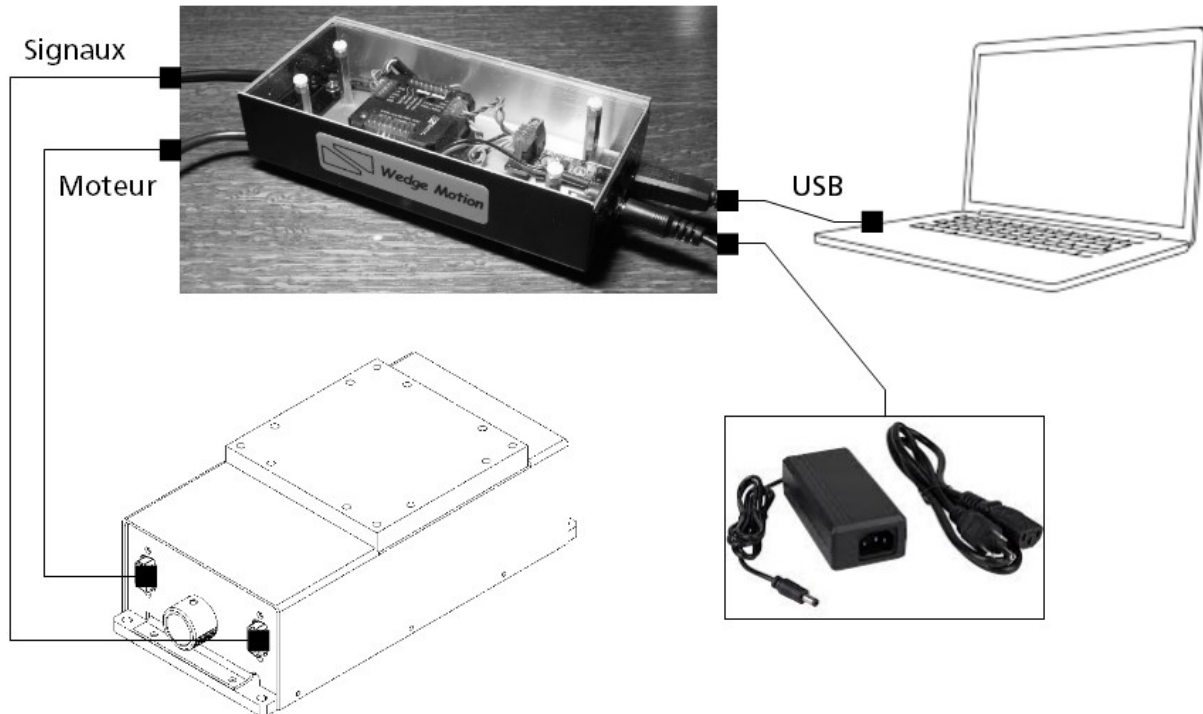


Fig.1: Illustration showing the connections

To facilitate implementation, Windows compatible demonstration software is provided.

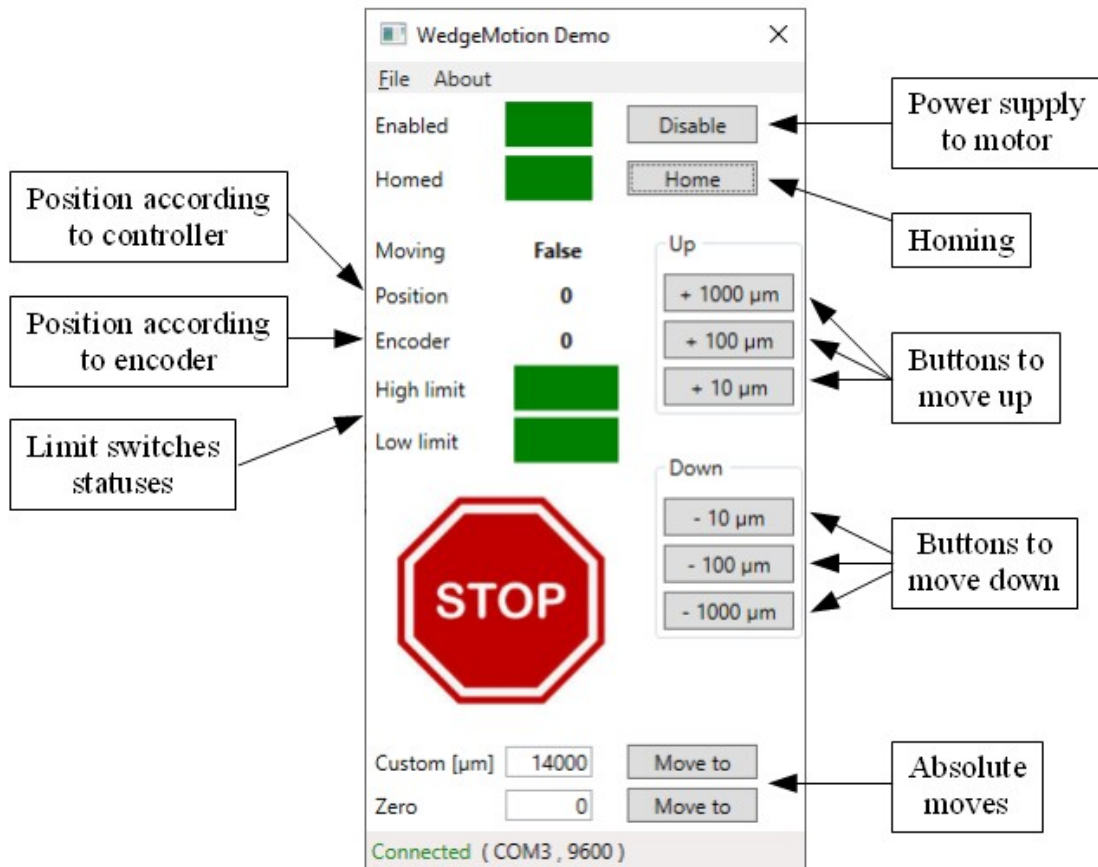


Fig.2: Screen capture of demonstration software

Operations

If the driver for the USB-RS485 converter has not been installed, please follow the instructions in the section "Driver USB-RS485".

Once the driver has been installed and the file "WedgeMotionConfig.xml" is properly configured, perform the following:

1. Connect the motor and signals cables
2. Connect the USB cable to the computer
3. Connect the power cable, then turn on power. The controller's green LED lights up and blinks slowly.
4. Start the demonstration program.

***CAUTION:** Never switch on the power when motor and signals cables are disconnected.

***CAUTION:** Never disconnect the motor and signals cables when the controller is powered.

Specifications

Motor type: stepper or brushless-DC (BLDC)

Number of axes : 1

Current : 2A peak (1,4A RMS)

Communication to the computer : serial interface

Drawing

The following drawing shows the outer dimensions of the product.

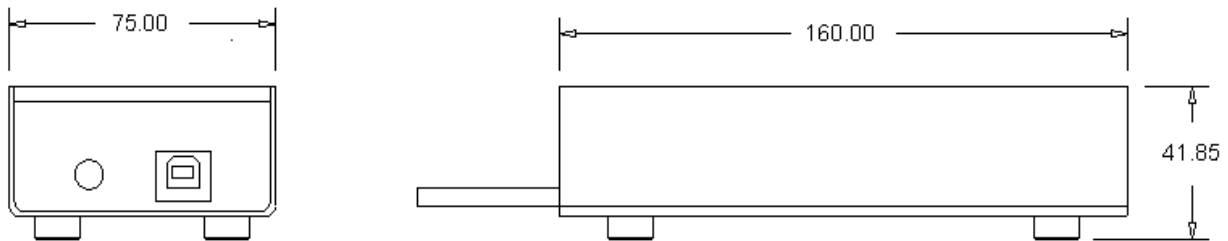


Fig.3: Views and principal dimensions in mm

Electrical connections

Two (2) cables, each equipped with a DSUB9 connector, allow the electrical connection to the mechanical assembly. For the motor cable and the signal cable, figures 4 and 5 illustrate the DSUB connections.

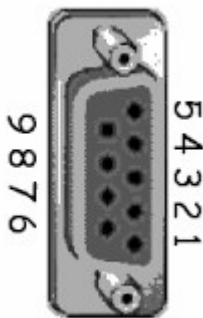


Fig.4: Motor cable connector

If using a stepper motor:

Pin 1: Phase A

Pin 2: Phase A

Pin 3: NC*

Pin 4: Phase B

If using a brushless motor:

Pin 1: Hall sensor Vcc

Pin 2: Input Hall sensor A

Pin 3: Input Hall sensor B

Pin 4: Input Hall sensor C

Pin 5: Phase B
Pin 6: NC
Pin 7: NC
Pin 8: NC
Pin 9: NC

Pin 5: Hall sensor GROUND
Pin 6: NC*
Pin 7: Phase A
Pin 8: Phase B
Pin 9: Phase C

*NC : not connected

Hall effect sensor:

- Power supply = 5V
- Current = 20mA
- Hall sensors inputs are TTL compatible

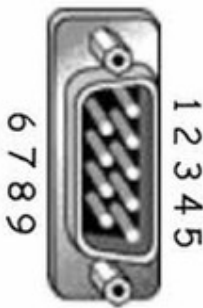


Fig.5: Signals cable connector (limit switches + encoder)

Limit switches and encoder:

Pin 1: Encoder Vcc
Pin 2: Input encoder phase A
Pin 3: Input encoder phase B
Pin 4: Input encoder index
Pin 5: Encoder 0V
Pin 6: Limit switch Vcc
Pin 7: Input limit switch upper position
Pin 8: Input limit switch lower position
Pin 9: Limit switch 0V

Limit switches:

- Power supply from 5 to 24V.
- Maximum DC current = 50mA
- Limit switches inputs are TTL compatible

Encoders:

- Power supply = 5V
- Encoder inputs are TTL compatible

Ordering instructions

To place an order, please specify the type of motor:

- WMC-2A-STEP
- WMC-2A-BLDC (future product)

Note: Cables to the motor and signals are 300mm long.

Warranty

Products are guaranteed for one year. See warranty terms and conditions.

Driver USB-RS485

Before using the product, install the driver for the USB-RS485 converter. The following screenshots were obtained on a Windows 10 (64-bit version) computer.

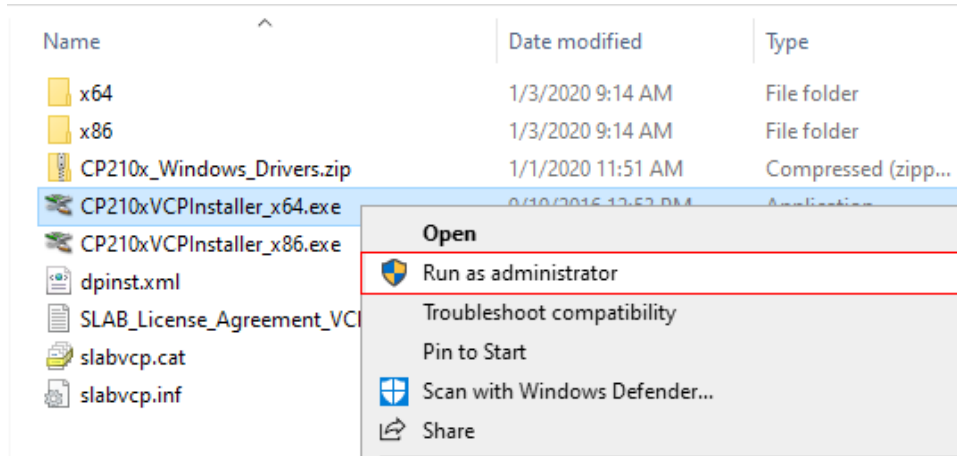


Fig.6: Right-click on the installer and launch in administrator mode

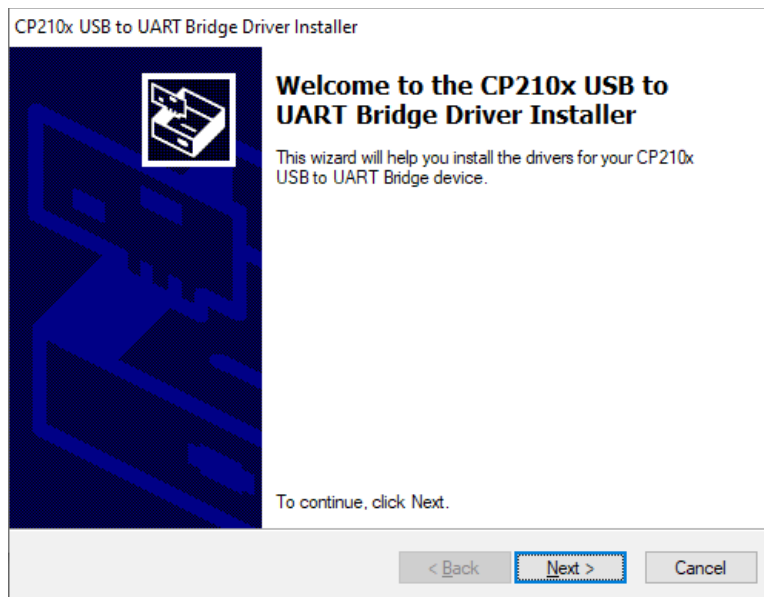


Fig.7: Click next

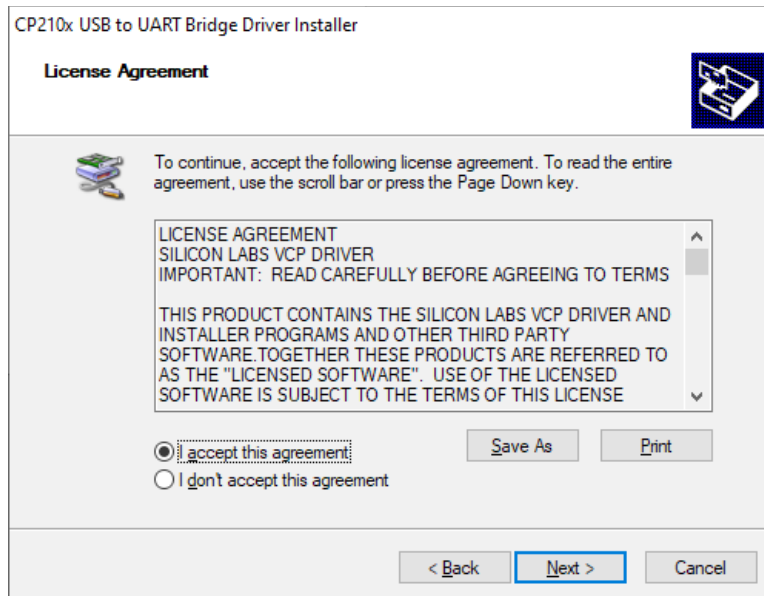


Fig.8: Accept agreement and click next

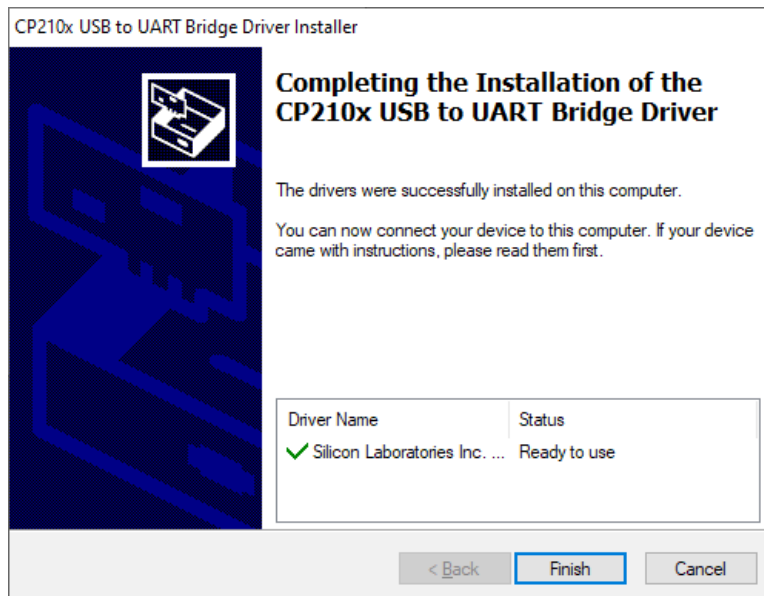


Fig.9: Click finish. The USB-RS485 driver is now installed.

Once the driver is installed, connect the USB cable to the computer. The USB-RS485 converter is then recognized by Windows. A virtual serial port is then automatically established and listed in the device manager. This computer selected COM3. However, another serial port may be assigned by your computer.

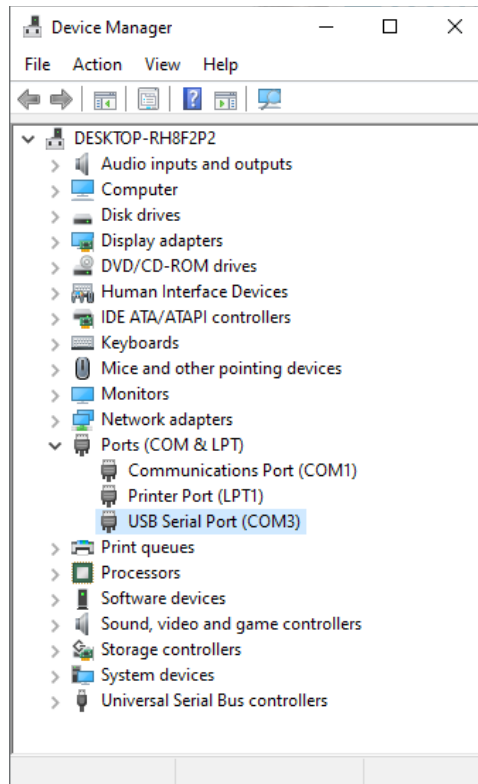


Fig.10: Serial port COM3 associated to the USB-RS485 converter

Using an editor like Notepad++ or Notepad, edit the demonstration file "WedgeMotionConfig.xml" and define the serial port to be used by the demonstration program (on this computer, COM3).

```
<?xml version="1.0" encoding="utf-8" ?>
<Config xmlns:xsi="http://www.w3.org/2001/
  <Language></Language>
  <Debug>false</Debug>
  <PortName>COM3</PortName>
  <BaudRate>9600</BaudRate>
  <Parity>None</Parity>
  <DataBits>8</DataBits>
  <StopBits>One</StopBits>
  <FlowControl>None</FlowControl>
  <RtsEnabled>false</RtsEnabled>
  <TimeoutSeconds>60</TimeoutSeconds>
  <DelimiterRxStart>/0</DelimiterRxStart>
  <DelimiterRxEnd>
    <string>\3\r\n</string>
  </DelimiterRxEnd>
  <DelimiterTxStart>/1</DelimiterTxStart>
  <DelimiterTxEnd>\r</DelimiterTxEnd>
```

Fig.11: WedgeMotionConfig.xml