

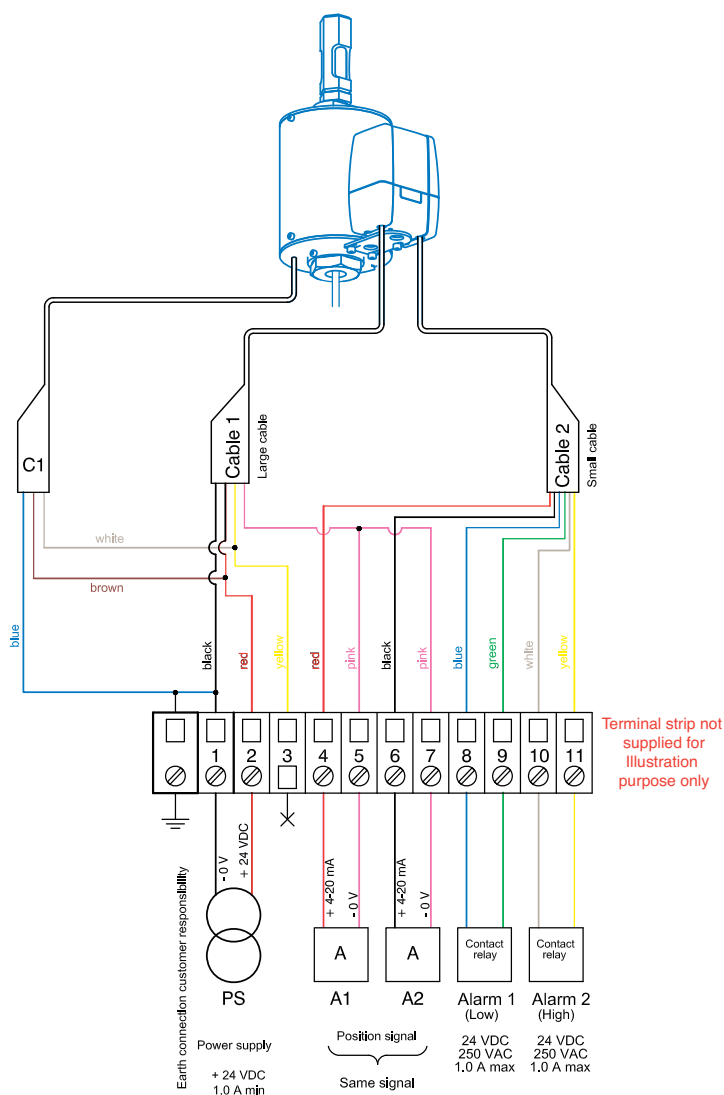


X117E Contact-Less Valve Position Transmitter

X117E Contact-Less Valve Position Transmitter

Thank you for purchasing a Cla-Val Model X117E Contact-less Valve Position Transmitter. With proper maintenance, the X117E will perform indefinitely and provide very accurate and reliable valve control. It is built with the latest technology utilizing the highest quality components. The X117E is a unique electronic contact-less valve position indicator. Its software allows easy programmable control features. The graphic interface is user friendly and offers an easy way to calibrate your automatic control valves.

Wiring Diagram



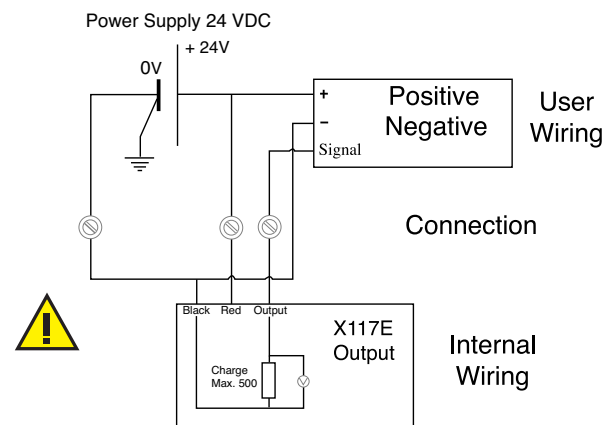
Technical Data

Sensor:	Contact-less magnet sensor
Power:	24 VDC +/- 10%, min. 20 mA, normal 40 mA, max. 60 mA
(*)Outputs	4-20 ma, not isolated, protected, same common, output charge ≤ 500 Ω
Accuracy:	< 1% Full scale
Operating range:	(-20°C to +65°C)
Protection:	IP68
Interface:	Plug & Play / NT / 2000 / XP / Vista
Consumption:	6 Watt maximum
(*) The input dry contact and analogue output has the same common or earth but are not individually isolated.	

The X117E uses a magnetic sensor, take care to keep the installation free of any magnetic fields (transformers, motors, high power supply, ect...)



Connection output

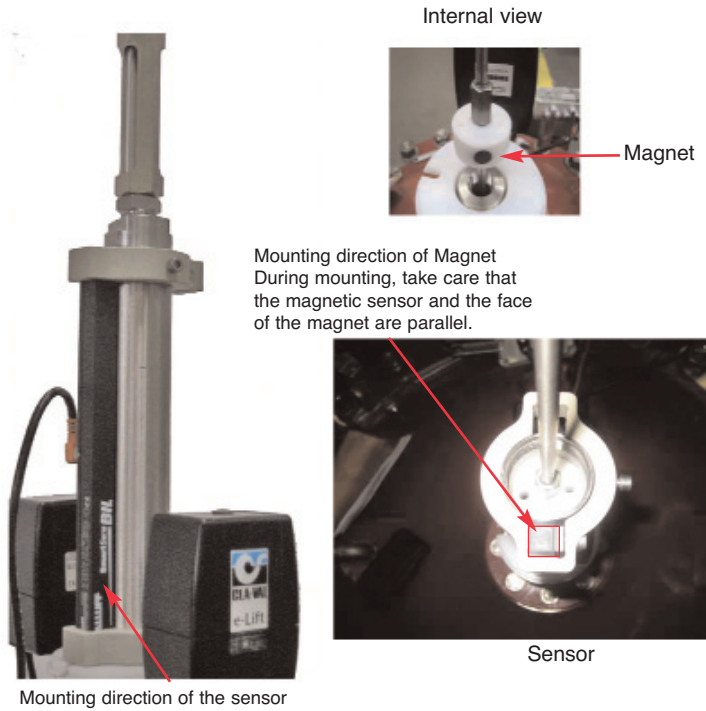


Installation Instructions

- 1) All installation, adjustment and maintenance should be carried out by a competent electrician.
- 2) Do not exceed the maximum ratings given in the specifications and printed on label.
- 3) The electrical connections should be made as described in the user's manual.
- 4) Before any maintenance operation the main power should be turned off

Do not attempt to open the product as this will invalidate the warranty!

Assembly Details



Firmware update (internal software)

Before the Firmware update, save your program to your PC.

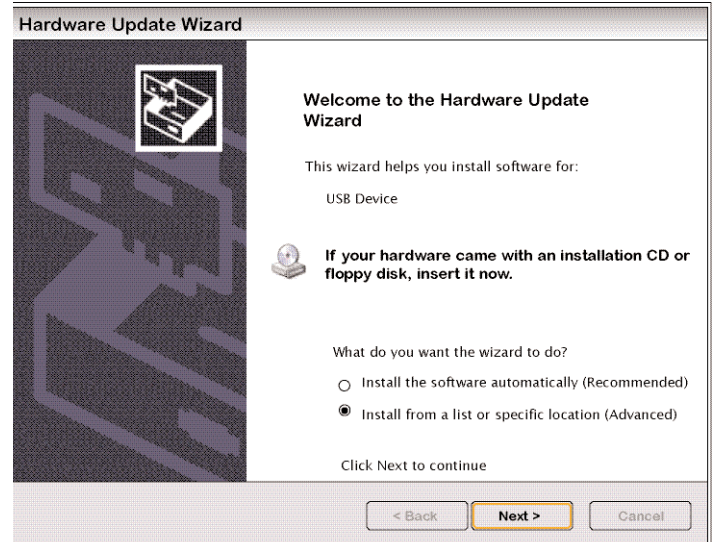
- 1) Connect the USB cable to the USB connection of your PC.
- 2) Connect the X117E to the USB cable.
- 3) Select **“Read Parameters”** to read X117E settings and record output parameters.
- 4) Select **“Firmware update”** in **“Parameters”**.
- 5) Open the corresponding file **“.hex”**.
- 6) Select **“Read Parameters”** to check that the Firmware is updated.

USB Driver Installation or Updating USB Driver or Install on Another USB Port

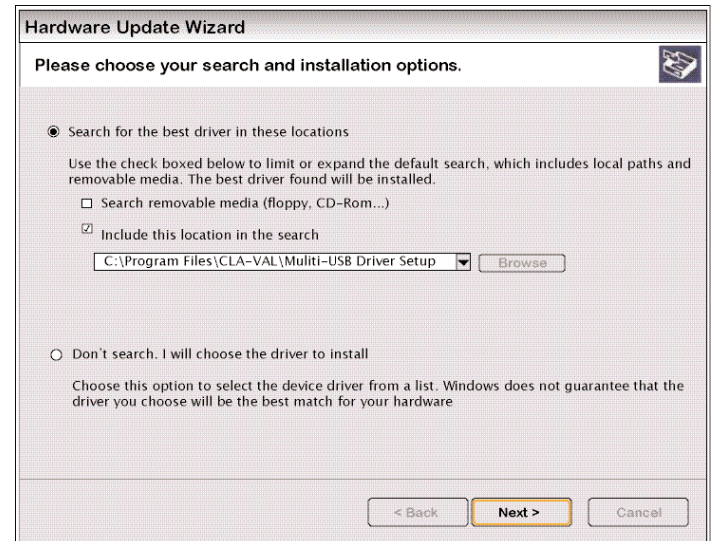
When you connect the X177E for the first time, your PC will detect it and request a driver.

To update your USB driver, please follow the procedure below. Install the software “Multi-USB Driver Setup” Download multi-USB software from the Cla-Val web site: www.cla-val.com

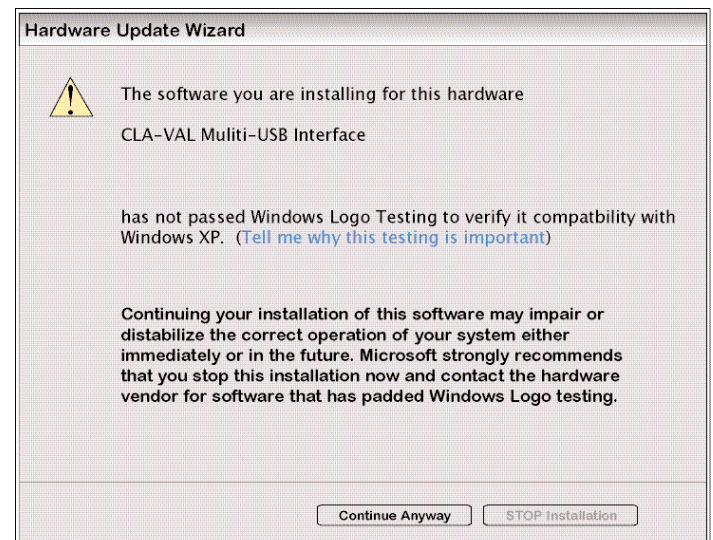
Connect the USB cable to the laptop.



Select: "Install from a list or specific location".

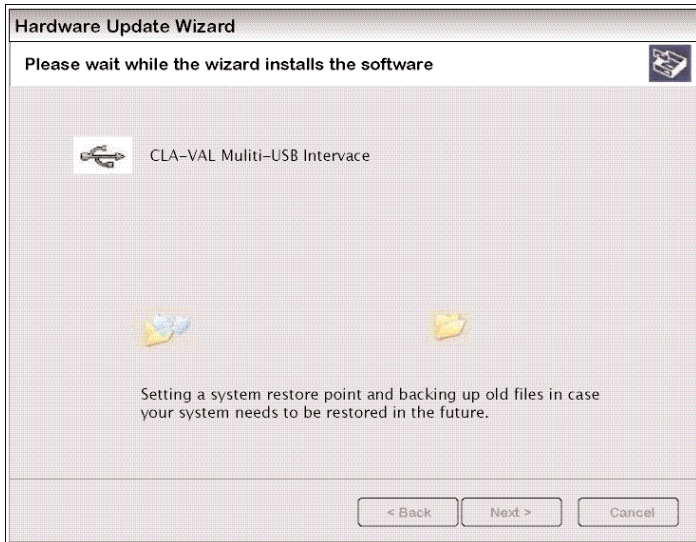


Browse to file: C:\Program Files\CLA-VAL\Multi-USB Driver Setup.



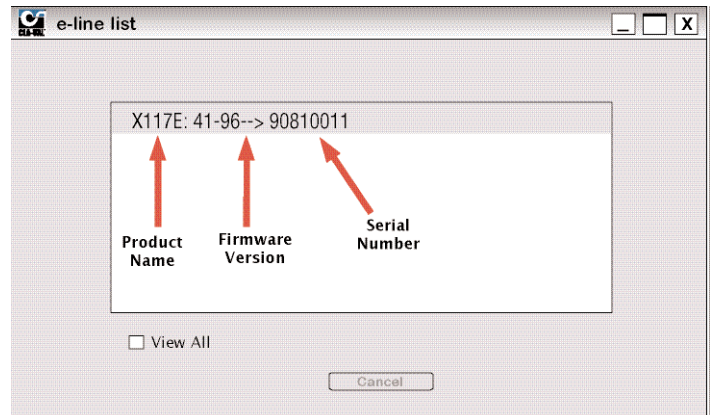
Microsoft validation press **“Continue Anyway”**

Installation

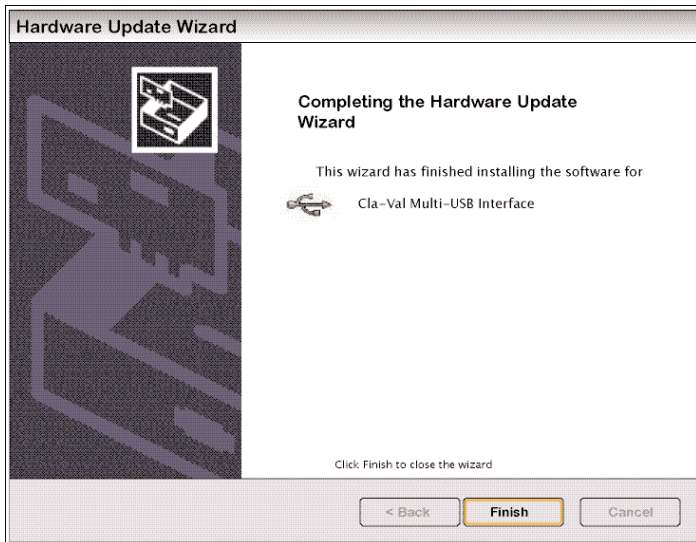


If connected to one or more X117E or another e-line product, click on **"View All"** and select the e-Lift you would like to communicate with from the list (see picture below) then click once on left mouse button.

Product name, Firmware version and serial number are displayed.

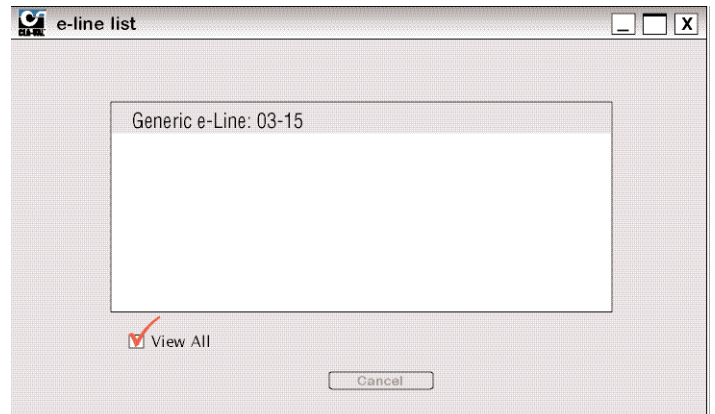


Installation complete,



If your e-Line product isn't updated with the "Multi connection" version, the e-Line list stays empty. Click on **"View All"**, the e-Line product appears with name **"Generic e-Line"** (see picture below), then click once on left mouse button on this line to communicate with the product.

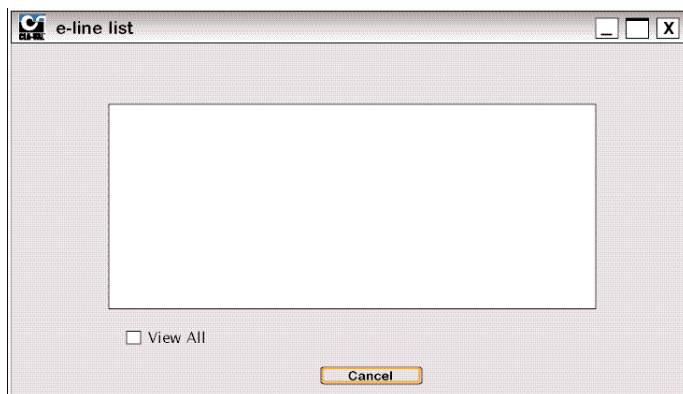
For the name and serial number of this product to appear, a Firmware update is necessary (see chapter 3.6).



Click finish.

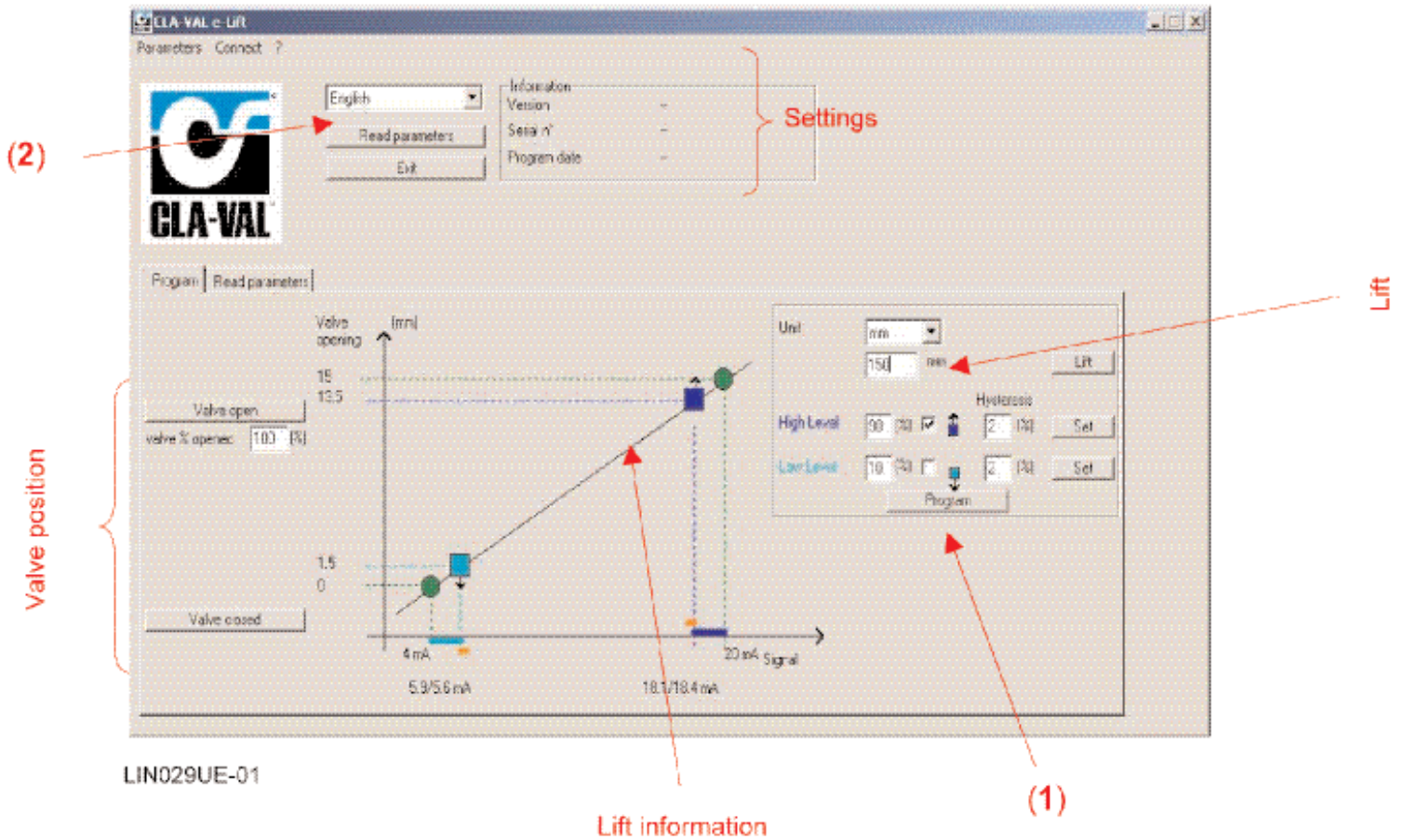
Configuration Mode

To launch X117E Contact-less Valve Position Transmitter software when not connected to the laptop, the e-line list (which allows the multi connection of e-Line products) is empty (see picture below), click **"Cancel"**.



How to Calibrate the X117E

Calibration Display



- 1 Connect to 24 VDC power supply.
- 2 Connect the USB cable to your PC.
- 3 Connect your PC to the X117E with the USB cable.
- 4 Start the X117E Cla-Val software.
- 5 Enter the valve's lift, and then click on "**Lift**". The valve opening information is now ready in inches or mm.
- 6 Click on "**Program**" (1).
- 7 Close the valve and click on "**Valve closed**" (reference point) .
- 8 Open the valve (manually, with air, ect...) and click on "**Valve open**".
- 9 Click on "**Read parameters**" (2).



By default, these alarms are set to 10% Low Level, 90% High Level and Hysteresis Alarm Level 2%. To modify this adjustment, see Adjustment of Alarms

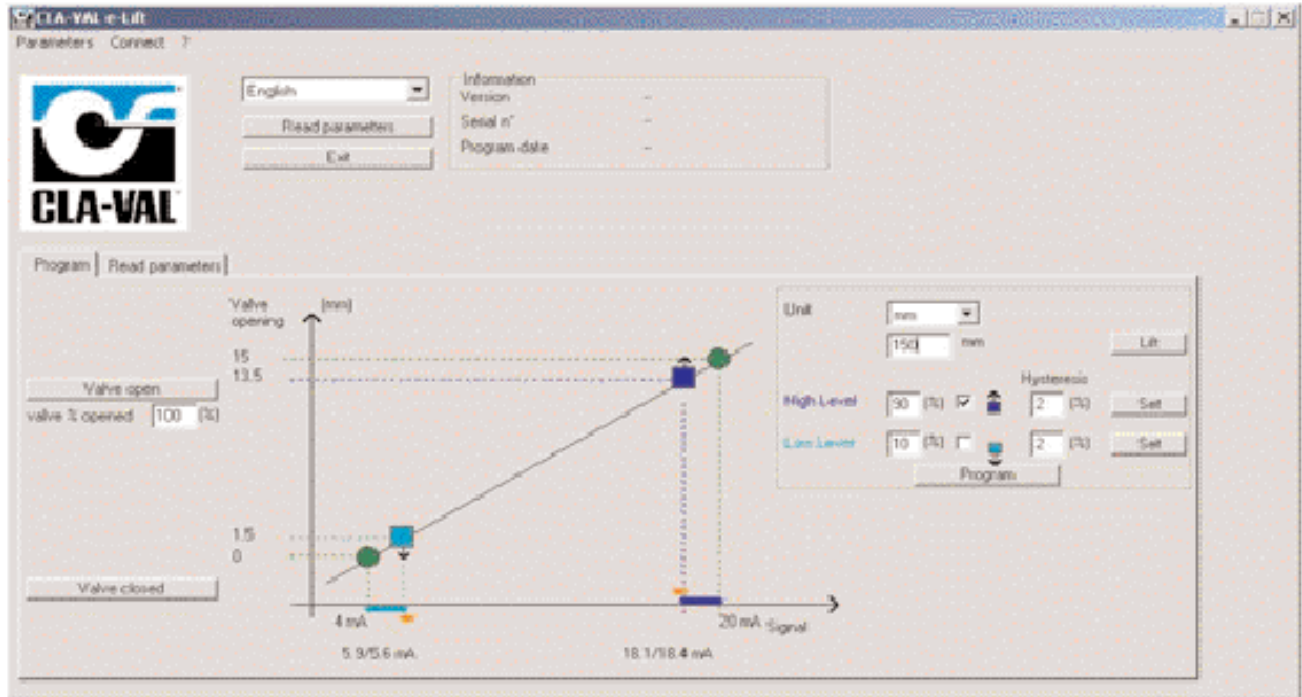


After a setting modification, **you must click on "Read parameters" (2)** in order to complete the modification!



Field Calibration

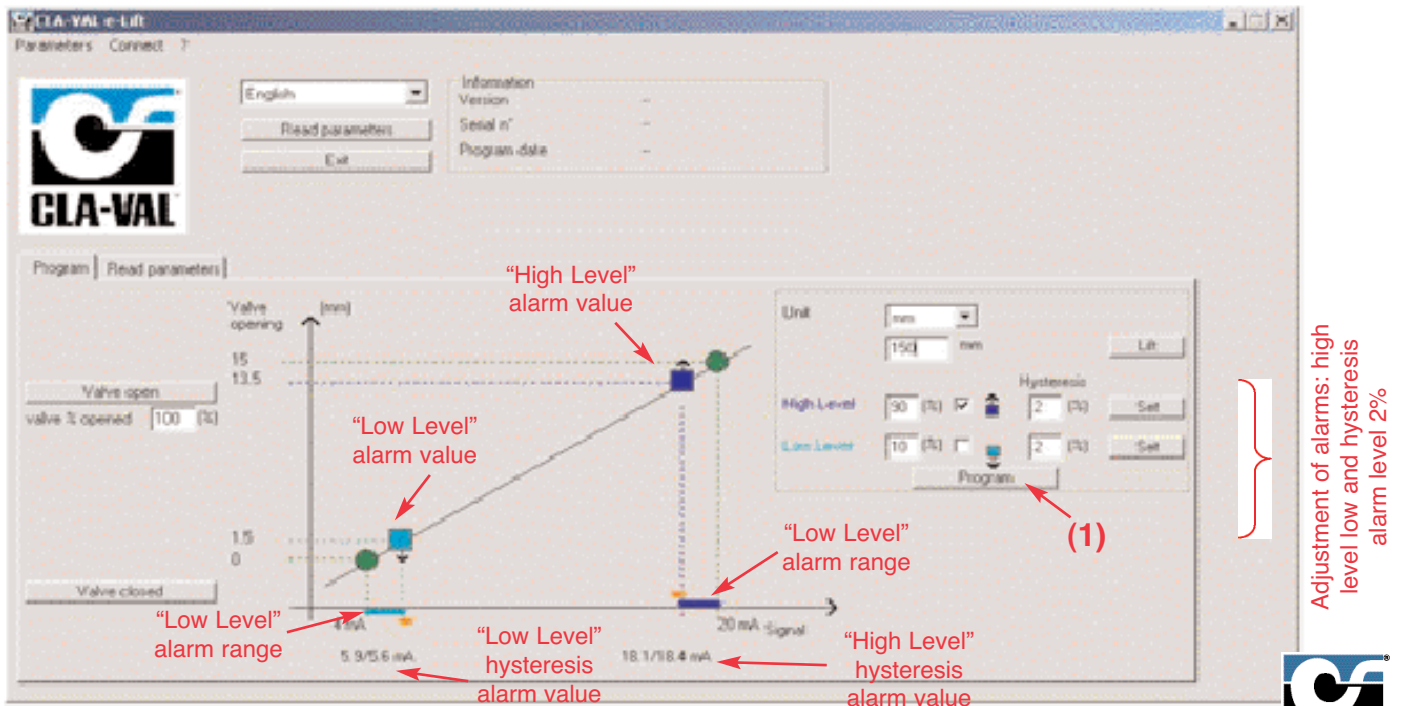
If it is not possible to completely open the valve, then you can use the "Field calibration" mode.



- 1 Close the valve then click on "Valve closed" .
- 2 Open the valve as much as you can.
- 3 Calculate the opening percentage reached..
- 4 Enter this percentage into the field "Valve % opened".
- 5 Click on "Valve open".
- 6 Click on "Read parameters". Calibration is done.

Adjustment of Alarms

The X117E incorporates two adjustable lift level alarms and a hysteresis alarm level. Enter the requested percentage for the alarms and hysteresis, click on "Program" (1).

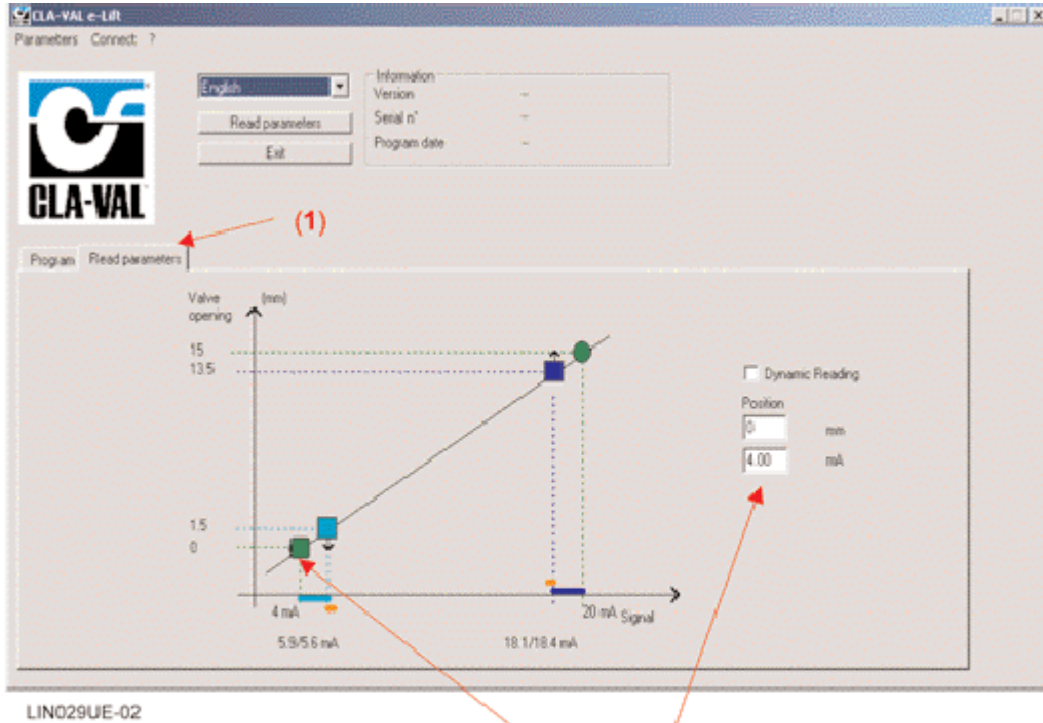


The Low or high Level alarm is activated within its range, the "Set" button is for manual dry contact activation.



Reading Parameters

Click on "Read parameters" (1) to see the valve position.



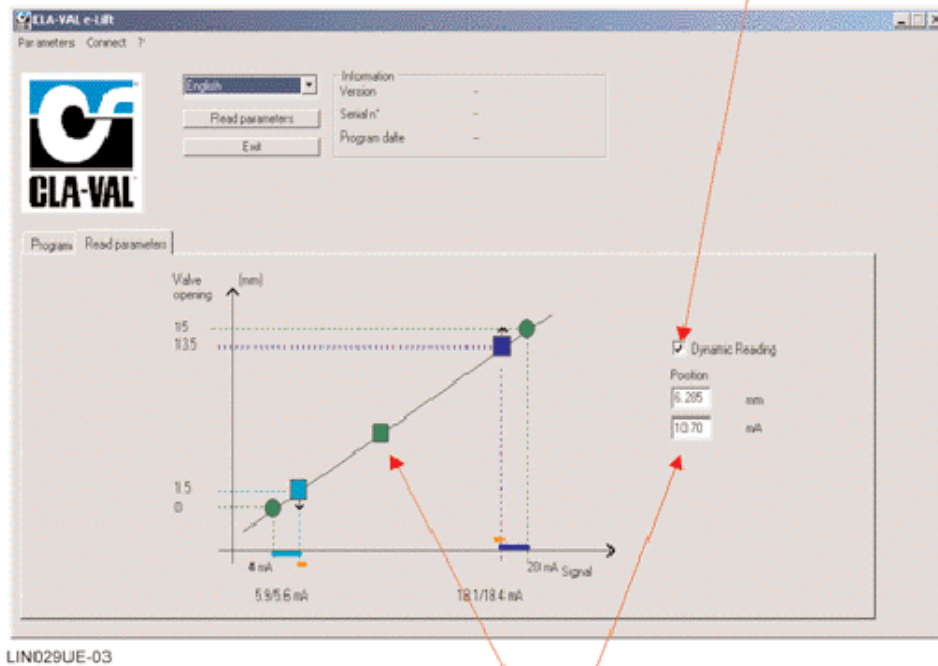
This mode displays how the valve was Calibrated.

Valve position

"Dynamic Update"

Dynamic Reading

This mode displays the dynamic valve position, click on "Dynamic Update" to enable, and click once more to disable.



Dynamic valves



Calibration without a PC

Calibration

You can also calibrate the e-Lift, without a computer either using the CLA-VAL magnetic screwdriver or a low power magnet without affecting the signal position sensor.

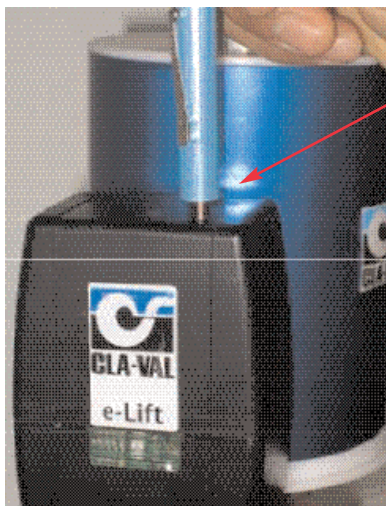
- 1- Close the valve.
- 2- Put the magnet on the top of the e-Lift (see photo below).
- 3- When the LED is blinking green, open the valve fully (100%).
- 4- Remove the magnet.
- 5- The LED will blink red five times, then wait until the LED is green before operating the valve.
- 6- Calibration is complete.

Alarm setting with “Low Level” activation below setpoint and “High Level” activation above setpoint.

- 1- Wire dry contact 1 to 0 V.
- 2- Place the valve at the low level alarm (low level).
- 3- Put the magnet on the top of the e-Lift.
- 4- When the LED is blinking red, place the valve at the high level alarm (high level).
- 5- Remove the magnet.
- 6- Remove the wire between dry contact 1 and 0 V.
- 7- The alarms are adjusted.

Alarm setting with “Low Level” activation above setpoint and “High Level” activation below setpoint.

- 1- Wire dry contact 1 and dry contact 2 to the 0 V.
- 2- Place the valve at the low level alarm (low level).
- 3- Put the magnet on the top of the e-Lift.
- 4- When the LED is blinking red, place the valve at the high level alarm (high level).
- 5- Remove the magnet.
- 6- Remove the wire between dry contact 1, dry contact 2 and 0 V.
- 7- The alarms are adjusted.



Screwdriver with magnet supplies standard with X117E Contact-less Valve Position Transmitter.

Troubleshooting

Problem:

1. The software is not working:
 - a. Do you have full access rights?
2. No PC Connection:
 - a. Check if the USB driver is working?
 - b. Check if you have power supply?
 - c. Disconnect the cable and then connect it again.
3. X117E missing:
 - a. Check if the USB driver is working?
 - b. Check if you have power supply?
 - c. Disconnect the cable and then connect it again.
4. If the 4-20 mA output is not stable:
 - a. Check the earth grounding, wire the 0 V to a good earth?

Some Tips

1. The X117E LED remains red for 5 seconds after power is on, and then switches to green. (Start-up test).
2. The X117E LED remains green when the magnet is in the sensor zone.
 - a. If the X117E LED is off, the magnet is out of the sensor zone.
 - b. If the X117E LED is green, the magnet is in the 1st magnet sensor zone.
 - c. If the X117E LED is red, the magnet is in the 2nd magnet sensor zone.

GENERAL DISCLAIMER

In accordance with our policy of continuous development and improvement, CLA-VAL reserves the right to modify or improve its products at any time without prior notice. CLA-VAL assumes no liability or responsibility for any errors or omissions in the content of this document.

Environmental Production

Help to preserve and protect the environment. Recycle used batteries and accessories.

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