

Level Measurement Control

Attention

This remote experiment interface works with the most common browsers. However, there are some problems with Internet Explorer / Edge browsers with live view. For any other issues with the remote experiment please contact tfa@fe.up.pt

Access instructions

Accessing the application involves the following steps:

- I. Go to the application;
- II. Log in with the guest account;

Some courses may allow guest access

Log in as a guest

- III. Click on the desired application;

Remote experiment

To access to each interface application, you first have to reserve the appropriate one: the generic interface version ([Level relay controller](#)) or the specific versions ([Level transducers test](#)) and ([Level transducers characterization](#)).

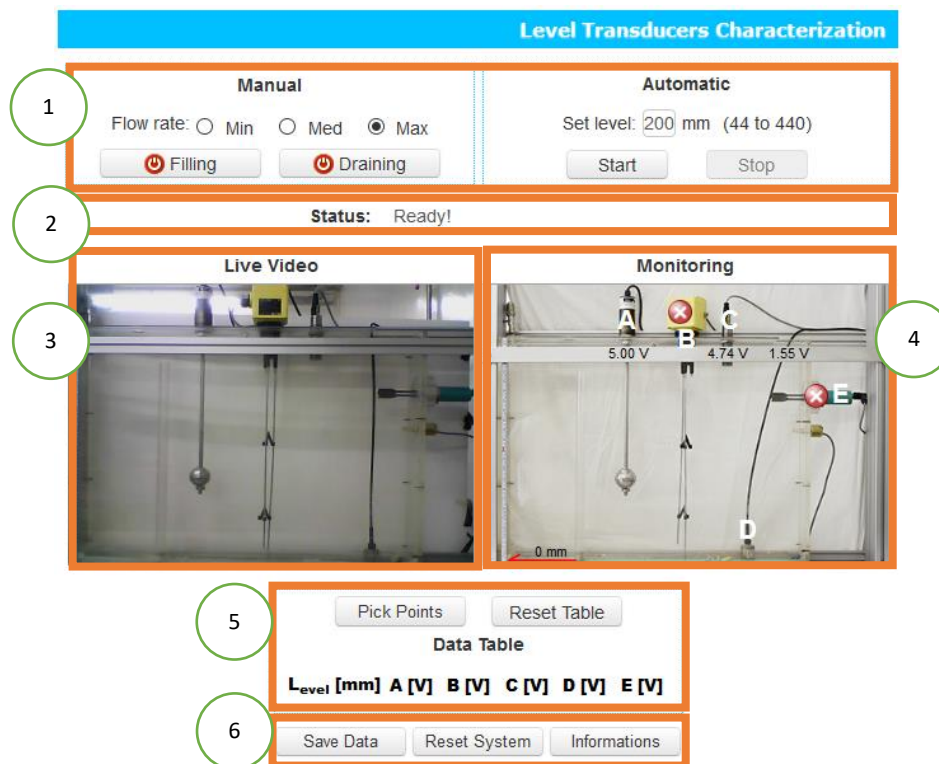


 [Level relay controller](#)

 [Level transducers test](#)

 [Level transducers characterization](#)

IV. The application should load the interface depicted below.



Interface features

The interface comprises six sections:

1. Command section for actuation in either manual or automatic mode;
2. Status information of the experiment;
3. Remote experiment live view;
4. Monitor progress of the level transducers output, the detectors' state and the water level measured;
5. Data table;
6. Actions to occur on the interface and physical system.

Operation modes

Manual actuation

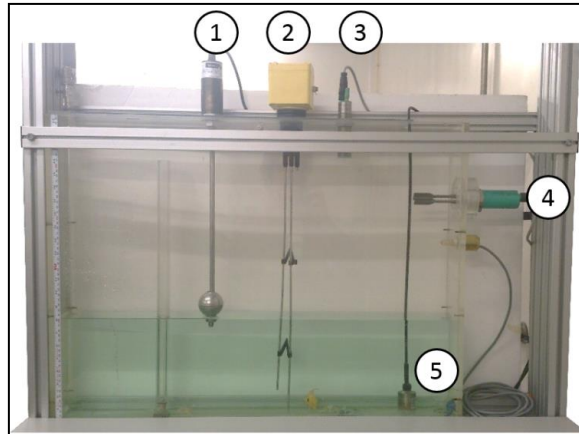
In this mode, the user will get the control on/off of the pump by clicking the "Filling" button, and of the drain valve actuation by clicking the "Draining" button. Also, the user can select the suitable filling flow rate.

Automatic actuation

In the Automatic mode, before pressing the Start button you may introduce the "Set level" value. Upon pressing the button, the software will automatically perform the pre-established procedure based on a default controller.

Both modes will alter the water level of the tank. The user interface provides the numerical value of the water level, the voltage values measured by each transducer and the detectors' state. Pressing the "Pick Points" button it's possible to present the transducers and detectors' values on a data table.

Suggested exercises



1. Identify the different transducers and detectors:

	Corresponding Numbers
Transducers	
Detectors	

2. For each transducer:
 a. Characterize it

Level [mm]	Transducers [V]				
	1	2	3	4	5
$y = f(x)$					

b. Compute their sensitivity

Transducers	Sensitivity [V/mm]
1	
2	
3	
4	
5	

c. Compute their linearity:

Transducers	Linearity [%]
1	
2	
3	
4	
5	

d. Distinguish the different dead zones:

Transducers	Dead zone [mm]
1	
2	
3	
4	
5	