

# LEVEL CONTROL

## Mod. LCBp/EV (PLC on-board)

PC

AUTOMATION TECHNOLOGIES

www.elettronicaveneta.com

26D-E-PC-LCBP-0

This bench top unit enables to carry out several tests of level control.

The level of a transparent tank is measured by a differential-pressure transmitter and is controlled by a pneumatic valve installed on the input of water inlet line.

The on-board PLC includes a PID algorithm block and is able to manage the unit through an Ethernet communications module. This module allows the PLC to work together with an operator panel for the information exchange. The panel has several graphic pages, with the unit synoptic diagram, the open and closed control loop main parameters, and the graphic of the system response according to the working situations.



### TRAINING PROGRAM:

This unit enables to develop and analyze the following subjects:

- Proportional, Integral and Derivative control
- Open-loop control
- Closed-loop control
- Tuning a controller
- Response to a noise

### TECHNICAL SPECIFICATIONS:

- Framework of AISI 304 stainless steel
- Pneumatic control valve of AISI 316 stainless steel,  $C_v = 1.25$
- Electronic differential-pressure level transmitter, in AISI 316 stainless steel with range of 0 to 500 mm  $H_2O$  and 4 to 20 mA output signal
- Variable-area flowmeter of stainless steel and glass with range of 100 to 1000 l/h
- Electro-pneumatic converter, 4 to 20 mA / 0.2 to 1 bar
- Graduated tank of Plexiglas with capacity of 5 litres
- Pressure gauge for measuring the output signal of I/P converter
- Switchboard of painted carbon steel with synoptic, ELCB and measuring terminals for input and output signals of the controller

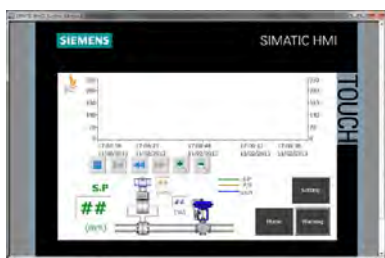
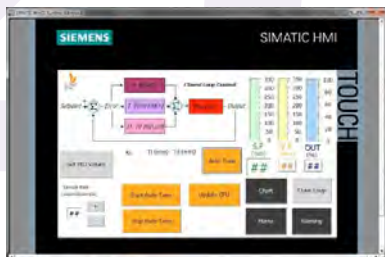
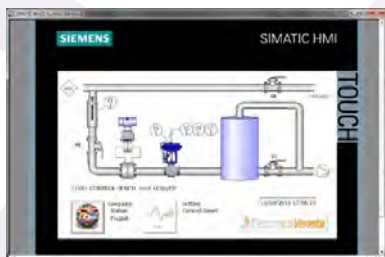
- Industrial PLC placed in the electrical board, including the PID control block and Ethernet communications module. It is included the standard IEC 1131 61131 programming software.
- Operator Panel, 7" TFT touchscreen display, 16 million colors, 800 x 480 pixels, with RJ45 PROFINET ports; the H.M.I (Human Machine Interface) industrial supervision software is included.

**Power Supply:** 230 Vac 50 Hz single-phase - 0,5 kVA  
(Other voltage and frequency on request)

**Dimensions:** 850 x 600 x 750 mm

**Net Weight:** 50 kg

Examples of the operator panel graphic pages:



## REQUIRED

### UTILITIES (PROVIDED BY THE CUSTOMER)

- Tap water (valve with 1/2" hose connector): 1000 l/h @ 2 bar max.
- Compressed air (2 female valves of 1/4"): 0.3 Nm<sup>3</sup>/h@1.5 bar

### ACCESSORIES (NOT INCLUDED)

- Personal Computer running Windows 7 Professional (32 bit)

## SUPPLIED WITH

### THEORETICAL-EXPERIMENTAL HANDBOOK



## OPTIONAL

### TWO-PEN RECORDER

(it must be installed before shipment, not as upgrade)

**SERVICE UNIT MOD. US-1/EV**  
for closed-circuit operations

