

TEMPERATURE CONTROL

Mod. TCBp/EV (PLC on-board)

PC

AUTOMATION TECHNOLOGIES

www.elettronicaveneta.com

26D-E-PC-TCBP-0

This bench top unit enables to carry out several tests of temperature control on a closed circuit for hot water.

A centrifugal pump makes the hot water recirculate from a heating tank to a plate-type exchanger cooled by tap water. Temperature is measured by a thermoresistance and it is controlled by a pneumatic valve inserted in the inlet line of cold water.

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, $C_v = 0.13$
- Electro-pneumatic converter, 4 to 20 mA / 0.2 to 1 bar
- Hot water generator with tank of AISI 304 stainless steel, electric heating system, recirculation pump of AISI 304 stainless steel and thermostat
- 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
- Pipes and valves of AISI 304 and 316 stainless steel



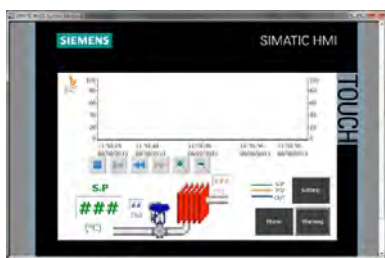
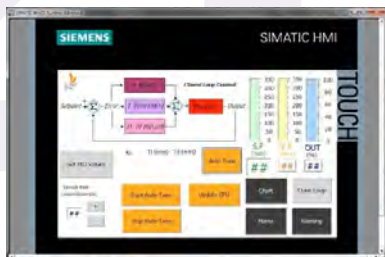
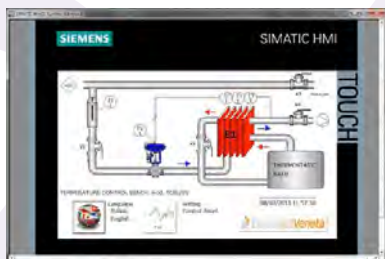
- Industrial PLC placed in the electrical board, including the PID control block and Ethernet communications module. It is included the standard IEC 1131 61131 programming software.
- Operator Panel, 7" TFT touchscreen display, 16 million colors, 800 x 480 pixels, with RJ45 PROFINET ports; the H.M.I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

Power Supply: 230 Vac 50 Hz single-phase - 3,5 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:



The complete system: temperature control unit and hot water generator



REQUIRED

UTILITIES (PROVIDED BY THE CUSTOMER)

- Tap water (valve with ½" hose connector): 1000 l/h @ 2 bar
- Compressed air (female valve of ¼"): 0,3 Nm³/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)