

STUDY OF REGULATION OF LEVEL BY PID



Set of modules associated with an operative part for studying the water level regulation by PID and 4-20mA hydrostatic sensor.

EDUCATIONAL OBJECTIVES

- Putting an electrical installation into service.
- To learn about and use a PID regulator, a hydrostatic sensor, and a 4-20mA flowmeter.
- To use a regulation system for water level and flow rate by analogue signal 4.20mA.
- To use and configure a speed drive locally and from programming software.
- To measure, analyse and interpret analogue signals.
- To learn industrial maintenance.

TEACHING RESOURCES STUDENT & TEACHER

Practical works

- General theoretical lessons on regulation
- Identification of the different components of the regulation system for water level and flow rate
- Configuring the speed drive
- Configuring the PID regulator
- Measuring the current 4-20mA at the input of the PID and at the output of the speed drive

Version without flow rate regulation

ref. QUICK-NIVPLUS

ref. QUICK-NIV

ref. QUICK-NDPLUS

ref. QUICK-ND

without frame and console

without frame and console

The system is delivered fully configured and functional.

Complete pedagogical file on CD with technical user's manuals, a course on the regulation and student/teacher practical works.

1 set of safety leads for carrying out the different practical works.



Comprises

- 1 single-phase power supply module with 30mA/16A residual current and thermal magnetic circuit-breaker, an emergency stop button and a main ON/OFF button with indicator light. Power supply of the module by 2P+E plug and 2 metres mains lead. 230VAC on 3 safety terminals for powering the modules on the front panel.
- 1 single-phase 230VAC/ 3-phase 230VAC speed controller module. Adjustment by potentiometer, 4-20mA input and RJ45 connector for the configuration from SoMove software delivered with the system.
- 1 thermal relay module
- 1 230VAC/24VDC power supply module
- 1 PID regulator 4-20mA. Self-regulating and manual. 4 digits display for the setpoint value and the configuration.
- 1 frame with wheels (H x W x D): 1610 x 940 x 500mm equipped with rack for cords (30 fingers)
- 1 single-phase power console:
 - 1 thermal magnetic circuit breaker (16A)
 - 1 Emergency stop push button with key
 - 1 Push button + LED indicator
 - 1 230V single-phase output on 4mm safety terminals
 - 2 230Vac sockets (2P + E) + 12 230Vac sockets (2P + E), at the back
- Mains power supply 230V - 50/60Hz. 3-metre lead with plug 2P+E.

Composition of the operative part

- A bottom tank of 100L.
- One top tank of 60L with 2 transparent sides.
 - One tape rule on one side for monitoring the water level.
 - One inner wall of the tank for preventing eddies.
- One three-phase motor pump 230V/400V with 750W capacity.
- One rotary valve for manually adjusting the water flow rate at the pump outlet.
- One rotary valve for adjusting the water leak level at the tank outlet.
- One ¼ turn valve for rapid draining of the tank.
- One 4-20mA flowmeter with integrated digital display. Pushbuttons on the front of the sensor enable its programming.
- One hydrostatic pressure sensor 4-20mA directly mounted on the tank wall. Measuring range 0-600mm.
- 1 power console equipped with 4mm safety terminals for the connection of the modules with 4mm safety leads.