## **Product Name :** Product Code : Automatic Control Technology **CE212 Description :** Automatic Control Technology **Technical Specification :** Automatic Control Technology **PID Controller** Standard industrial controller that can be used as P, PI, PD or PID controller in the closed loop automatic control systems. Input summing node for two different reference variables UR and UC and for one controlled variable UA. Signal voltage range: -10V .... +10V Parameters of the controller continuously adjustable Proportional gain Kp = 0 ... 1000 Time of the integral action TI = 1ms ... 100s Time of the derivative action $TD = 0.2ms \dots 20s$ Reset input of the integral controller Output summing node to add or subtract noise variables Measurement terminal for the error signal Adjustment screw for the output offset Three led indicator of the sense of deviation Coarse and fine adjustment of the proportional gain Kp, of the time of the integral action TI and of the time of the derivative action TD Input loff for resetting the I controller The board covers the following topics and experiments: 1st order process simulator

2nd order process simulator High order process simulator **PID** controller P controller positive and negative I controller (integrators) D controller (derivators), negative (negative zero) and positive (positive zero) 5 input adder **ON-OFF** controller with hysteresis Simulated Controlled System It allows the simulation of different processes, such as: 1st and 2nd order processes, proportional (P) action processes, integral I) action processes, double integral (I2) action processes. Input summing point for controlling variable (y) and noise variable (z). Signal voltage range: -10V, ..., +10V Coefficient of the proportional action of the process KP = 0.2 (attenuation) ....1.5 (amplification) Time constant T1 = 0.1 .... 1000 s Time constant T2 = 0.1 .... 1000 s Reset input for the restoration of the initial conditions Coarse setting through rotary switches Potentiometer fine setting Led indicators of over-range **Two Position Controller** Two position controller for discontinuous closed loop control systems. It is provided with an input summing point to which the reference variable (non inverting input) and the controlled variable (inverting input) are connected. By means of two led the binary state of the controller, whose hysteresis can be changed, is visualized. The controller is provided with two binary outputs at different voltages. • Input summing point Signal voltage range: -10V, ..., +10V Output voltages: 0/+5 V ; 0/+10 V Adjustable hysteresis: 0 .... ± 2.5 V

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