

Product Name :
Automatic Control Technology

Product Code :
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 $K_p = 0 \dots 1000$

Time of the integral action $T_I = 1\text{ms} \dots 100\text{s}$

Time of the derivative action $T_D = 0.2\text{ms} \dots 20\text{s}$

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 K_p , of the time of the integral action T_I and of the time of the derivative action T_D

Input Ioff 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 $\hat{A}\pm 2.5$ V

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