

DAFTAR SINGKATAN DAN SIMBOL

DAFTAR SINGKATAN

AC	= Alternating Current (Arus Bolak-balik)
AI	= Artificial Intelligence
AIM	= Associate in Management
ADC	= Analog to Digital Converter (<i>jika digunakan dalam program/alat</i>)
BMN	= Barang Milik Negara
BT137	= Jenis TRIAC (Bipolar Triode for Alternating Current)
CC	= Cohen–Coon (Metode Tuning PID)
CPU	= Central Processing Unit (<i>umum digunakan pada ESP32</i>)
DC	= Direct Current (Arus Searah)
DIV	= Diploma IV (Sarjana Terapan)
ESP32	= Microcontroller ESP-WROOM-32
EBA	= Elisa Basic Analyzer (<i>ditampilkan sebagai EBA 20 / EBA 20s</i>)
FOPDT	= First Order Plus Dead Time (Model orde pertama + waktu tunda)
g	= G-force (Gaya sentrifugal relatif)
GUI	= Graphical User Interface
Hz	= Hertz
Hall Effect	= Sensor medan magnet untuk deteksi RPM
IDE	= Integrated Development Environment (Arduino IDE)
IOT / IoT	= Internet of Things
ISR	= Interrupt Service Routine
Kp	= Proportional constant
Ki	= Integral constant
Kd	= Derivative constant
LED	= Light Emitting Diode
LCD	= Liquid Crystal Display
LABKESMAS	= Laboratorium Kesehatan Masyarakat
LVDT	= Linear Variable Differential Transformer
MA	= Moving Average
mA	= Milliampere

MHz	= Megahertz
Mcu / MCU	= Microcontroller Unit
m/s	= Meter per second
M.Biotech	= Magister Bioteknologi
MT	= Magister Teknik
MM	= Magister Manajemen
NIP	= Nomor Induk Pegawai
Nextion TFT	= Touchscreen Display Nextion (TFT = Thin Film Transistor)
PID	= Proportional-Integral-Derivative
PPR	= Pulses Per Revolution
PWM	= Pulse Width Modulation
PCNT	= Pulse Counter (Fitur ESP32)
RCF	= Relative Centrifugal Force (Gaya sentrifugal relatif)
RPM	= Revolutions Per Minute (Putaran per menit)
SCADA	= Supervisory Control and Data Acquisition
SDK	= Software Development Kit
s	= Second (Detik)
ST	= Sarjana Teknik
S.ST	= Sarjana Sains Terapan
SSE	= Steady-State Error
TRIAC	= Triode for Alternating Current
TFT	= Thin Film Transistor
TA	= Tugas Akhir
USB	= Universal Serial Bus
ZN	= Ziegler–Nichols (Metode Tuning PID)
ZCD	= Zero Crossing Detector

DAFTAR SIMBOL

A. Simbol Sistem Kontrol PID dan Matematika

K_p	= Konstanta Proporsional (Proportional Gain)
K_i	= Konstanta Integral (Integral Gain)
K_d	= Konstanta Derivatif (Derivative Gain)
K_c	= Gain Kontroller (Controller Gain)
T_i	= Waktu Integral (Integral Time)
T_d	= Waktu Derivatif (Derivative Time)
τ_I	= Waktu Integral
τ_D	= Waktu Derivatif
$G(s)$	= Fungsi Alih Sistem (Transfer Function)
$e(t)$	= Sinyal Kesalahan (Error Signal)
$m(t)$	= Sinyal Kontrol (Control Signal)
$M(s)$	= Transformasi Laplace dari sinyal control
$E(s)$	= Transformasi Laplace dari sinyal kesalahan

B. Simbol Parameter Sistem dan Identifikasi

K	= Gain Proses (Process Gain)
T	= Konstanta Waktu (Time Constant)
L	= Waktu Tunda (Dead Time/Time Delay)
r	= Rasio L/T
Δy	= Perubahan Keluaran Steady-State
Δdelay	= Perubahan Masukan Delay
B_u	= Nilai Ultimate dari B
S	= Kemiringan Garis Slope

C. Simbol Variabel Sistem dan Pengukuran

R	= Setpoint/Referensi
C	= Variabel Terkontrol (Controlled Variable)
B	= Sinyal Umpan Balik (Feedback Signal)
M	= Sinyal Kendali ke Proses
U	= Gangguan (Disturbance)
A	= Konstanta Smoothing

D. Simbol Komponen Sistem

Gc = Kontroller (ESP32)

Gv = Aktuator (Triac)

Gp = Proses (Motor)

H = Sensor

E. Simbol Satuan dan Parameter Fisik

s = Detik (Second)

ms = Milidetik (Millisecond)

μ s = Mikrodetik (Microsecond)

V = Volt

AC = Arus Bolak-Balik (Alternating Current)

F. Simbol Lainnya

PPR = Pulse Per Revolution

MA_SIZE = Ukuran Moving Average

RPM_TIMEOUT = Timeout Pembacaan RPM