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Early Warning System – Alat Peringatan Dini Bencana Banjir
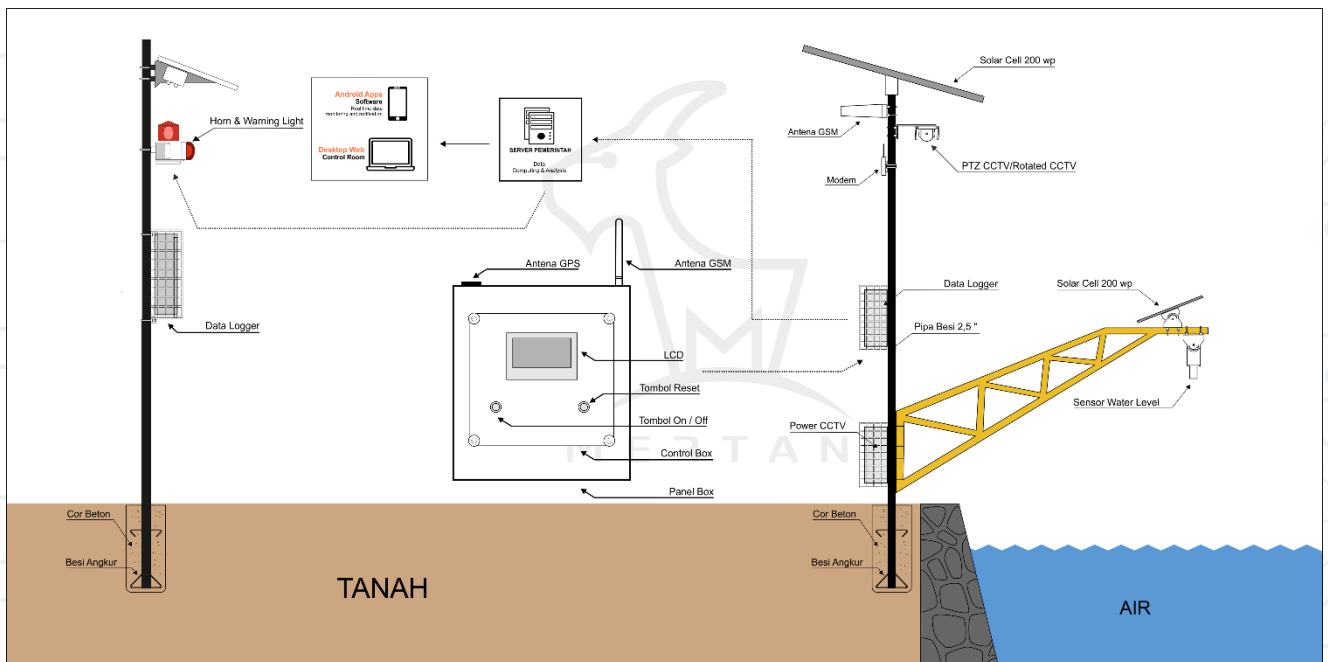
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Early Warning System – Alat Penaggulangan Dini Bencana Banjir

Merupakan alat untuk melakukan monitoring terhadap tinggi muka air hingga ketinggian hingga 20 meter serta memberi peringatan terhadap bencana banjir secara online (dalam jaringan), realtime (terus-menerus), dan akurat. Garansi selama 1 tahun dan jaminan ketersediaan suku cadang selama 5 tahun. Terdiri dari Mertani Data Logger yang sudah berbasis Internet of Things (IoT) dan dapat terhubung dengan berbagai jenis sensor sekaligus. Kemudian Water Level Sensor memiliki akurasi pengukuran 0.25%-0.5%FS dan jangkauan pengukuran hingga 20 m serta Horn dan warning light sebagai tanda peringatan terhadap bencana banjir. Dashboard PC and Android yang dapat digunakan untuk menampilkan data, melakukan analisis sederhana seperti mencari nilai maksimum, nilai minimum, mengurutkan berdasarkan waktu tertentu, menampilkan grafik visual, dan melakukan pengunduhan data

Penerapan

- Dapat diandalkan untuk melakukan pemantauan tinggi muka air secara online dan terus-menerus, baik untuk sungai maupun air tanah serta memberi peringatan terhadap bencana banjir
- Pemantauan tinggi muka air sudah meliputi pengambilan data, pembacaan data, pengiriman data ke server secara otomatis, penampil data, dan fitur pengunduhan data
- Pemantauan tinggi muka air serta peringatan terhadap bencana banjir dapat dilakukan dimanapun dan kapanpun

SPESIFIKASI

Data Logger

- Automatic data transmission using internet connection Modul WiFi Equivalent or Higher ((2G/4G, WiFi, BLE, LoRa, etc), Connected to Monitoring System and displayed via PC and Smartphone)
- Build in Global Positioning System (GPS)/Global Navigation Satellite System (GNSS) Module
- Support HTTP REST API and MQTT TCP/IP
- AVR RISC-Based Microcontroler Equivalent or higher (MCU Arm Cortex-M4 based Ultra Low Power, Clock Speed 120 MHz, RAM 320-KB, Flash Memory 1-MB full)
- SMD single on-board using Industrial PCB 6 layer
- Sensor input up to 10 sensors, input voltage 4.1V
- Operating voltage 2.7 – 5.5 VDC, logging current 250 mA average, and set up device using USB serial
- Bulit in DC regulator output 5 VDC and 5 VDC for power supply
- Integrated web server for data management and data display
- Average operating temperature -40 to +85°C
- Dimensions 120 x 120 x 61 mm weatherproof
- Communication port 3x 7-pins content of serial data RS485, I2C, digital pulse sensor, and one wire (Connect up to 12 Sensor Input)
- Optional baud rates 9600 - 115200 bps
- Data measurement format output imported to Text / CSV Equivalent or Higher (Excel and CSV)
- LCD Display 16 x 2 Character Equivalent or Higher (HMI LCD Display Colored TFT Industrial with Touchscreen)
- Using industrial Micro SD Card up to 16 GB for data backup storage
- Built-in 10.000 mAH battery and dedicated IC RTC Equivalent or Higher (LSE-Crystal Real Time Clock)
- Fixed interval measurements sampling and can be programmed from 10 minute to 1 day (normally per hour), remote
- by software dashboard
- Include 1x External GSM Antenna and 1x GPS Antenna
- Input Voltage (from solar panel) 4.1VDC (SCH 21V)
- IP68 Panel Box Enclosure (PxLxT) 500x400x200 (mm), Outdoor use and extended period use to prevent dew
- condensation water
- Weather-Resistant Enclosure, Cable glands, Ventilation Louver, Plastic Mounting Plate, Good heat resistance -4°F
- (-20° C) to 176° F (80° C)
- Embedded system firmware for water level measurement with tipping bucket sensor

SPESIFIKASI

Sensor Tinggi Muka Air Sungai Ultrasonic 20 M

- Water Level Sensor (20 Meter)
- Sinyal keluaran 4-20mA/HART, RS485 Modbus
- Less than 9°C Beam angle design ,less than 200ms responsible time to make sure more accuracy
- Level Range 0-20M, Accuracy 0.25%-0.5%FS, Resolution 1cm Equivalent or Higher (3mm or 0.1%FS (max of them))
- Output 4-20mA/750Ω load resistance 1-5V/0-5V/0-10V(3 wires)
- Blind Zone 0.25~0.8m, Working Pressure 2 Bar
- Power supply 24VDC 120mA 12VDC (available to offer power by motor, battery or solar power and so on.)
- Working temp -20°C~+80°C
- Housing adopts the NLEPE synthetic material IP67 waterproof
- High quality terminal blocks, long-term stability
- Material ABS UV Stabilished plastic bucket
- Collecting Φ200+0.6mm,
- Resolution 0,2mm
- Measuring range Rain intensity: 0~4mm/min;
- Maximum tolerance ±0.4mm(≤10mm);Accuracy ≤±4%
- Operating temperature -10°C~50°C
- Communication : Analog Voltage,PWM, RS232 Equivalent or Higher (Output mode RS485)
- Include bull eye/ waterpass
- Dimensions Rain sensor: 310x310x460(mm)
- Supply voltage : 3 - 5.5v
- IP67 Standart

IoT Gateway

- Network : 4G/LTE
- Support Modbus TCP/RTU, SNMP, FTP and MQTT protocols

Box Panel

- Material ABS IP66
- Dimensi 40x60x23cm

Rotator

- Pan Tilt Rotator
- Dilengkapi dengan dudukan

SPESIFIKASI

Kamera Outdoor (CCTV)

- Using Mstar SSC30KD processing chip, supports 5MP 30fps, 4MP 30fps and 1080P 60fps
- H.265 +, H.265 ,H.264 and MJPEG compression algorithm, effectively reduce network bandwidth
- Optical zoom 30x, Rotation 360°, 7x24 working hours
- Support with dedicated battery and Solar Panel 200 WP
- Support IE, Google, Firefox browser, custom users and authority management
- Provide motion detection (area, sensitivity can be set) alarm function
- Support Micro SD card function, support up to 256GB Micro SD card and PC client to download SD card video
- Support mobile phone monitoring, download, and playback SD card recording
- 1080P Outdoor Wireless IP Camera, Max. Resolution 1920x1080

Horn + Warning Light

- Tegangan kerja 12VDC, dengan suara yang bisa diganti/disesuaikan
- Menyediakan media penyimpanan suara

Tiang

- Pipa Galvanis 4 inch panjang 4 meter
- Palang dudukan sensor panjang 3 meter
- Dudukan solar panel dan dudukan aki
- Angkur tower 16mm, pembesian+cakar ayam,600x600x250mm.

Kerangkeng Pengaman Box Panel

- Besi beton 8mm
- Besi siku 3x3cm dilengkapi kunci
- Ukuran 50x70x 30cm, di pasang pada tiang

SPESIFIKASI

Solar Panel

- Solar panel 20 WP~100WP/ Maximum Power (Pmax) 20W, Current at Pmax (Imp) 1.11 A/sheet
- Type Cell Poly-crystalline/Mono-crystalline, Voltage at Pmax (Vmp) 18 V/sheet
- Short circuit current (Isc 1.24 A/sheet, Opencircuit voltage (Voc) 21.24 V/sheet, Solar cell mounting bracket included
- MPPT 600-kHz NMOS-NMOS Synchronous Buck Li-ion Chemistries 4.1V with Thermal Shutdown
- Rated Max Power 100 W
- Daya Max.Tegangan - Vmp 18.2V, Daya Max. Imp 5.5A

Solar Charger Control

- Tipe PWM 10A

Battery

- Up to 50.000 mAH
- Deep Cycle Li-ion Battery 12 Volt / 18Ah Equivalent or Higher (3.7 Volt / 31~50 Ah)
- Aki 12V, 100Ah tipe VRLA

Data Collection Method

MERTANI EWS → GSM / WiFi → Cloud Server → Data Display/ Open API