

Application

Three Phase Load Unbalance Automatic Regulating Device is developed by our company independently, which is a device to achieve the comprehensive treatment of a multiple power quality problems existing in a Low voltage distribution network through integration of multiple power electronics technologies. It can autobalance 3 phase power by means of intelligent control.

The device is suitable for the low voltage side of AC380V, 50HZ voltage system on the outdoor post transformer. It can improve effectively the power quality of Low voltage network, so as to solve the line loss caused by 3 phase imbalance, improving lines transmission capacity, enhancing the reliability of power grid. The product has the characteristics of good treatment effect, strong applicability and small size.

Model RZPIQB is an active power balance device, used for 3 phase power imbalance treatment, reactive power compensation equipment in 400V Low voltage distribution network.

Operation Principle

When Three Phase Unbalanced Auto. Regulating Device opening, it can real time measure system current by external Current Transformer (CT), and send the system current information to the internal controller for processing and analysis, finally to judge whether the system is in imbalance condition.

Meanwhile, it can calculate the current values needed each phase to be converted when the equilibrium state reaching, and then send the signal to the internal IGBT and drive its action, to absorb energy from Power Grid and control its transformation between 3 phase of A/B/C, bring the 3 phase current to a balanced state.

Environment condition

- Ambient temperature: max. +50°C min. -40°C
- Altitude: ≤1500m (according to GB/T3859.2 derating beyond 1500m)
- Wind speed: ≤35m/s
- Relative humidity: ≤95% at 25°C
- Air contamination degree: III degree
- Protection class: ≥IP54
- Earthquake intensity: ≤8 degree
- Ice thickness: ≤10mm
- No corrosive or flammable gas, no frequent vibration or explosive place

Feature & Index

- Distribution mode: Three phase Four wire system
- Neutral grounding mode: Direct grounding
- Installation site: Outdoor Post, Power Distribution Room, Box-type Substation
- Overload capacity: 1.2 times (Persisting 1min)
- Power loss: ≤2%(55kvar); ≤1%(110kvar)
- Noise: ≤60Db
- Communication Mode: GPRS wireless; RS485 (RTU protocol); Configured Wifi Module
- Mean Time Between Failures (MTBF): ≥100,000 hours
- Max. Dimension(mm): 800*1000*450 (W*H*D)

Technical Data

| Item | Parameter | | | | | |
|------------------------------|---|-------|---------------|-------|---------------|--------|
| Rated voltage | 400V | | | | | |
| Input voltage range | 230V~470V | | | | | |
| Frequency | 50HZ | | | | | |
| Frequency range | 45HZ~55HZ | | | | | |
| Connection | 3 phase 4 wire + PE | | | | | |
| Single rated capacity | 18kVA | 25kVA | 35kVA | 50kVA | 75kV A | 100kVA |
| Response Time | ≤5ms | | | | | |
| Power loss | <3% | | | | | |
| Protection | Overcurrent, overheating, overvoltage | | | | | |
| Overall dimension (W×H×D) | 600×970×200mm | | 600×970×410mm | | 600×970×520mm | |
| Weight | 55KG | | 80KG | 90KG | 120KG | |
| Installation | Outdoor post or Floor standing | | | | | |
| Installation inclination | <5° | | | | | |
| Cabinet material | Stainless Steel 304#2B or Carbon Steel coated | | | | | |
| Communication interface | RS485 / GPRS | | | | | |