Phocos CIS-N Series PWM Controllers: Optimizing Solar Energy Management

Understanding PWM Technology in Solar Applications

Imagine trying to fill a water glass from a firehose - that's essentially what happens when solar panels charge batteries without proper regulation. This is where Pulse Width Modulation (PWM) controllers like the Phocos CIS-N Series become essential traffic cops for your solar power system. The CIS-N 10-20A models act as smart gatekeepers, using rapid electrical pulses to maintain optimal battery charging, much like a chef carefully drizzling oil instead of dumping the whole bottle.

Key Technical Specifications

Current range: 10-20A (auto-sensing capacity)
Voltage compatibility: 12V/24V auto-detection
Charge efficiency: 97-99% under optimal conditions
Temperature compensation range: ?30mV/?C

What Sets CIS-N Series Apart?

While many controllers simply prevent overcharging, the CIS-N units go three steps further with their adaptive three-stage charging:

Bulk Charge: 80% capacity at maximum current
Absorption Phase: Voltage-regulated topping charge
Float Maintenance: Trickle charge matching self-discharge rates

Real-World Application: Mongolian Weather Station Case Study

During the 2023 Gobi Desert monitoring project, CIS-N15 controllers maintained battery health despite temperature swings from -25?C to 45?C. The built-in temperature compensation prevented capacity loss that typically plagues systems in extreme environments.

Advanced Protection Features

These units don't just manage charging - they're like digital bodyguards for your power system:

Reverse polarity protection (saves expensive oops moments)
Deep discharge prevention with adjustable thresholds
Automatic load disconnection at 10.5V (configurable)
Short-circuit response time:

Web: https://www.sphoryzont.edu.pl