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Control + Drive | PRACTEK

AWC 500

Control Platform

01 High Efficiency   02 High Reliability   03 Openness   04 High Scalability

Product Overview

The AWC 500 is a control platform independently developed for the renewable energy sector. It features the embedded FS OS real-time operating system and is engineered to meet high-performance demands in harsh environments. By incorporating advanced technologies such as robust mechanical design, stringent Electromagnetic Compatibility (EMC) design, combining industrial-grade components, it ensures stable, safe, and reliable operation under complex working conditions and harsh environments.Based on a modular design philosophy, the product supports application development based on IEC61131-3 and embedded application development as well as multiple fieldbus and network protocols, delivering a flexible and open user experience.

Technical Specifications

CPU	Dual-core 1 GHz industrial-grade processor, ARMv7 architecture, with ECC protection
RAM	1 GB DDR3L industrial-grade memory with ECC protection
Flash Memory	4 GB eMMC NandFlash
Operating System	FS OS real-time operating system features dual-redundancy architecture and power-failure data retention management
Operating Temperature	-40~70 ℃
Storage Temperature	-40~85℃
Humidity	55 ℃ 97 % relative humidity, condensing
Altitude	≤4,000 m, without reducing the rated power
Vibration	2.1 g (13.2~50 Hz), 1.0 g (13.2~100 Hz)
Shock	50 g, 11 ms, half sine
Collision Rating	25 g, 6 ms, half sine
Protection Class	IP 30
Corrosion/Salt frog Resistance	With conformal coating
Measurement	Built-in power grid measurement module, with an accuracy level of 0.5, supporting 3-phase 690V voltage direct sampling, and the software can be configured for 1/5A current measurement

Product Features

01 High Efficiency
- ▶ One-click software upgrades
- ▶ Remote online updates
- ▶ Web-based operation platform
- ▶ Supports complex applications
- ▶ Built-in virtual machine

02 High Reliability
- ▶ Wide operating temperature range
- ▶ Strongest EMC protection hardware
- ▶ Supports redundancy solution
- ▶ IEC 62443 SIL 3 security level

03 Openness
- ▶ IEC 61131-3 integrated programming environment CODESYS
- ▶ Supports open system environment
- ▶ Supports multiple fieldbus protocols
- ▶ Supports multiple network protocols

04 High Scalability
- ▶ Modular design with multiple functional modules
- ▶ Standardized design enabling flexible configuration
- ▶ Detachable terminal design for pre-fabricated wiring
- ▶ All modules communicate over the Black Bus using EtherCAT

Rack Overview

Rack5.0   Rack5.1   Rack5.2   Rack5.3   Rack5.5   Rack5.8
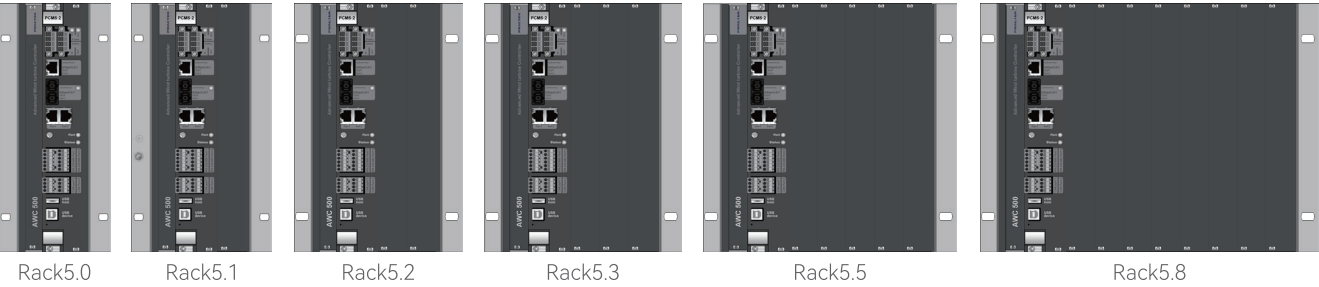
Rack5.0 – 1 slot, 265.9 mm × 192.5 mm × 116.1 mm
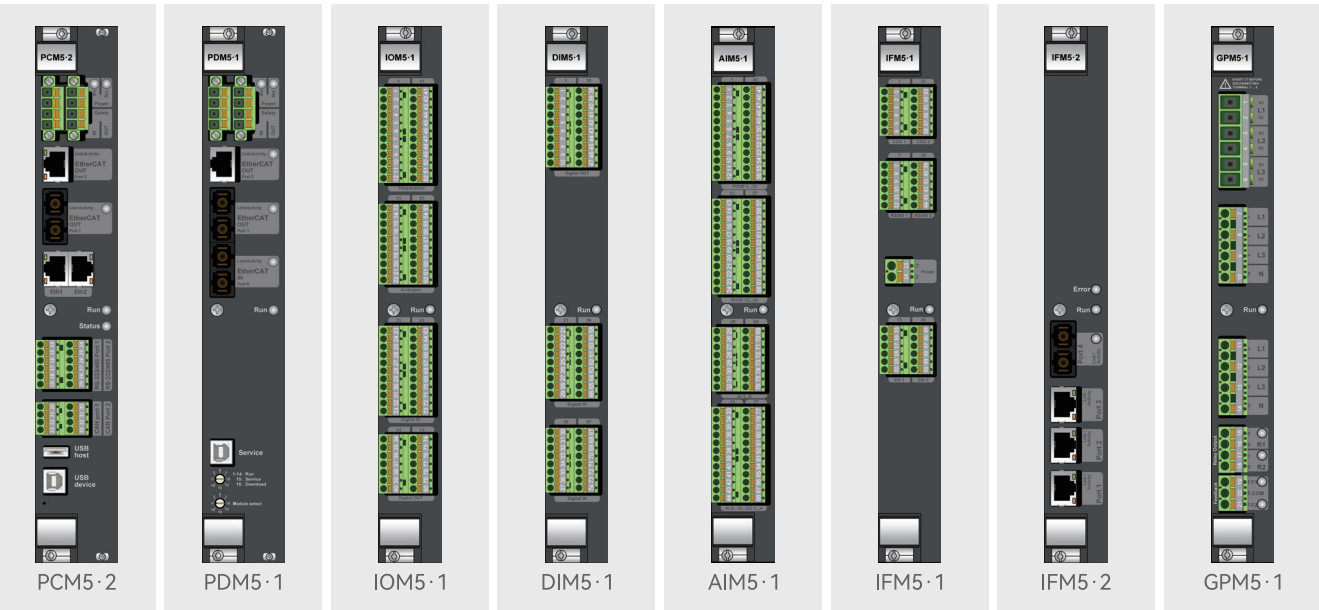**Rack5.1 –** 2 slots, 265.9 mm × 192.5 mm × 146.5 mm
Rack5.2 – 3 slots, 265.9 mm × 192.5 mm × 177.0 mm
Rack5.3 – 4 slots, 265.9 mm × 192.5 mm × 207.5 mm
Rack5.5 – 6 slots, 265.9 mm × 192.5 mm × 268.5 mm
Rack5.8 – 9 slots, 265.9 mm × 192.5 mm × 359.9 mm

Module Overview

PCM5·2   PDM5·1   IOM5·1   DIM5·1   AIM5·1   IFM5·1   IFM5·2   GPM5·1

Power and Control Module

PCM5·2 – 1 GHz dual core CPU, 1 GB DDR3L memory, 4 GB eMMC NandFlash, FS OS real-time operating system, 1 x EtherCAT OUT (RJ45), 1 x EtherCAT OUT (Optical port), 2 x Ethernet, 2 x CAN, 2 x RS-422/485

PDM5·1 – 1 x EtherCAT OUT (RJ45), 1 x EtherCAT OUT (Optical port), 1 x EtherCAT IN (Optical port)

I/O Module

IOM5·1 – 40 Channel (6 x PT100, 4 x AI, 4 x AO, 12 x DI, 4 x FI/DI, 10 x DO)

DIM5·1 – 46 Channel (16 x DO, 30 x DI)

AIM5·1 – 44 Channel (24 x PT100 (2 line system), 16 x AI, 4 x AO)

Communication Module

IFM5·1 – 2 x RS-422/485, 2 x CAN, 2 x SSI, optional 1 x PROFIBUS-DP

IFM5·2 – 1 x Ethernet (Optical port), 3 x Ethernet (RJ45)

Grid Protection Module

GPM5·1 – Directly collecting grid voltage, measuring current, voltage, frequency, phase angle (0.5 level), supporting direct grid connection