



Overview UNICO's 2000 series features a full line of products engineered specifically for constant-potential DC crane retrofits. Depending upon the application, these modular components can be selected to provide superior motor control, integral braking control, and auxiliary power solutions using existing motors and plant distribution systems.

Anti-Regen Diode

The *anti-regen diode (ARD)* is a high-power blocking diode that isolates the plant DC power supply from the drive system. It is commonly used with systems powered by traditional diode-bridge DC bus supply rectifiers or diesel-driven DC generators. The unit prevents overhauling or regenerating loads from "pumping up" the plant bus by blocking current flow back to the rails or festoons.

DC Converter

The *DC converter (DCC)* filters the incoming line to stabilize the bus voltage and protect against abnormal overvoltage and undervoltage conditions. The unit is commonly used with systems powered by traditional diode-bridge DC bus supply rectifiers or diesel-driven DC generators.

Amplifier

The *amplifier* converts the filtered DC bus into variable field and armature voltages for controlling a shunt- or series-wound DC motor. It uses insulated gate bipolar transistors (IGBTs) and pulse-width modulation (PWM) techniques controlled by a digital signal processor (DSP) and patented digital current regulator (DCR) technology. Crane-specific software provides extensive control features for optimizing the performance, safety, and productivity of cranes.

Dynamic Brake

An optional *dynamic brake (DB)* eliminates excess regenerated energy by shunting it to resistors to be dissipated as heat. Regenerated energy is created during lowering, stopping, and plugging operations. A single dynamic braking unit and resistor grid serves all drives in the system.

Brake Driver

The *brake driver* precisely coordinates an electrically actuated brake with the motor shaft to provide smoother control and extend brake life. Field-forcing techniques allow snap activation of either disc- or drum-type brakes.

AC Power Supply

An optional stand-alone power supply provides auxiliary AC power from the DC bus. The unit converts 230 V DC into single-phase 230 V AC at 60 Hz for powering lighting, air conditioners, fans, heat exchangers, and other devices. A step-down transformer can be added to allow ordinary 115 V tools, test equipment, and other conveniences to be used on the crane.

Consult factory for design of a system based on the DC potential available either of rectifier and or generator powers.

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Unico is a leading global innovator of motion-control solutions for industry. Founded in 1967, the company develops, manufactures, and services variable-speed drives, application-engineered drive products, integrated drive systems, and ancillary products that improve operations by increasing productivity, safety, and equipment life while lowering energy and maintenance costs.