



# Quad Plus®

## Cement and Mining Control and Automation Solutions



Quad Plus is an industry leading system integrator providing motors, instruments, panels, and controls for cement plants. We offer complete solutions in distributed control systems including low and medium voltage switchgear and drivers, and motor control centers. We will meet with your team to understand your requirements and goals for creating a high-quality functioning system. Once you're up and running, we provide the parts and expertise to keep your systems operating efficiently.

### Proven System Design

Our 3D modeling process provides a visual representation of your setup so problems can be anticipated and resolved before production begins. Whether you supply the specifications or our team works directly with your maintenance manager to learn about existing equipment, we will create diagrams and plan the next steps.

### Enclosure Development

Our project development process is unmatched, and we will provide the panels you need according to your requirements. Once development is complete, we will perform all the required tests to ensure proper operation of your panels.

### Turnkey Integration

Once you provide your current horsepower and layout, we will review the plant layout and footprint to understand the requirements and processes from the machinery, along with gathering power ratings, voltage and other requirements. Our team will then map out the electrical layout, cabling, motor locations, drive, and other layouts for machinery.



## Technical Capabilities

Quad Plus supplies equipment and services for cement and mining industry use in a wide variety of applications. Our technical team will assist with design selections to achieve industry targets such as increased reliability, decreased spread footprint, reduced noise levels, and reduced emissions.

### E-House and Operator Cabins

Climate controlled e-house facilities provide increased operational safety and personal performance while also meeting reliability and functionality targets. We understand the technical difficulties of creating buildings that are tailored to your company's requirements and have the expertise to deliver expectation exceeding results.

### PLC, VFD, MCC and Switchgear

Climate controlled, weather resistant, enclosed control systems provide automation for operation and process equipment. The SCADA software processes, distributes, and displays the data to help operators and other employees analyze the data to make critical decisions with confidence.

### Power Design

We take care of power factor correction, voltage drop, and arc flash studies. We will perform an available fault current study that includes everything from the utility through your equipment including substations, transformers, and motor control centers. We also do photometric studies to design your lighting system and layout.



## Cement Production Process Expertise



### Raw Material Preparation

Limestone and clay are crushed along with stored homogenized additives, then sent to mill bunkers via conveyors during the first stage in cement processing. Our team of experts will ensure your crushers, conveyor drives, and controls are tuned to make this stage quick and efficient.



### Grinding

In raw mills, the prepped raw materials are measured and ground into a fine powder. The moisture in the raw material powder must then be dried out using kiln gas. Quad Plus engineers will design the systems to accurately grind and dry the raw meal and ready it for the heating process.



### Heat Processing (Pyro Processing)

The ground and dried raw meal is passed through high-temperature rotary kilns. The resulting product, called clinker, is cooled using fans and sent to silos for temporary storage. Our engineers will build the control systems to properly regulate process parameters (temperature, pressure, gas analysis, etc.) of the kilns and move the product at rates to guarantee a consistent outcome.



### Cement Production

Depending on the cement type, the clinker is weighed and mixed with auxiliary materials to complete the cement production process. To ensure scales are properly calibrated, our skilled technicians and engineers will adjust your system to ensure a dependable product.



### Storage and Packaging

Cement that comes out of mills is held in silos until ready for packaging and shipment. Cement can be supplied in bags or bulk, depending on the order from distributors and end users. Quad Plus will program and commission controls to accurately weigh and package cement.

## Retrofits and Upgrades

Our engineering team will work with you to analyze your existing system and make recommendations to retrofit or upgrade your existing setup with modern equipment. Experienced engineers will identify opportunities to gain efficiency and increase production of your cement manufacturing plant to boost your bottom line.



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