



## INSTALLATION OF TYPE 211 CONTROLLERS

**SCOPE AND INTRODUCTION** This bulletin outlines principal recommendations on unpacking and storage, handling, mechanical installation, electrical connections, mounting accessory parts, and check-out, for the Type 211 controllers. These controllers are for control of 2300-4160-volt motors or transformers. These controllers are Raintight, suitable generally for outdoor locations. For further general information, see NEMA Standards ICS 2-324A.

**UNPACKING AND STORAGE** Open any shipping cases for accessory items upon delivery and unpack carefully. Inspect all packages for possible damage in transit. Report damage in transit to the delivering carrier. If the equipment will not be installed immediately, place a close-fitting cover over it and store in a clean place protected from dust and moisture. If stored outdoors, fill the tanks with oil and connect cabinet space heaters.

**HANDLING** Controllers are packaged for handling by fork lift truck or by overhead hoist. Do not alter the original boxing and/or pallet or unbolt the support frame, unless you will use only overhead handling methods. Use handling equipment rated for at least 150% of the approximate weight shown on the outline drawing. Before using a fork lift truck, make sure your truck has proper rating considering the distance to the center of the load. Consider safety strapping. When handling with overhead equipment, attach hooks to lifting angle or to support frame.

**MECHANICAL INSTALLATION** Refer to outline drawing for mechanical arrangement. Secure controller lifting means to your crane, before you loosen the bolts holding the support frame to shipping pallet. Set in place with crane. Re-use the square washers from shipping pallet or equivalent washers on your mounting bolts, except use other washers when provided in some cases for Seismic Zone 4.

**ELECTRICAL CONNECTIONS** Refer to wiring diagram or diagrams for required external connections. Ground the support frame. Locate control wiring in plastic wiring ducts provided on walls of cabinet. Control connections at control-terminal block may be made with terminal-ended or looped wires, No. 8 and smaller. Use 3/8" wide or narrower ring or spade terminal for No. 10 stud.

**MOUNTING ACCESSORIES** Before energizing or placing in service, lower tank and remove temporary blocking material from contactor moving contacts. FILL CONTACTOR TANK WITH OIL to OIL level-marker on inside of tank. Mount in each controller any parts or accessories which may have been shipped separately, such as fuses or bustie parts. Also re-install any barriers or covers that were removed temporarily during installation. Store the Tanklifter Crank and the Wiring Diagram & Instructions Envelope in the holders provided. On single units, remove the Lifting Angle and install Lifting-Hole Covers.

**CHECK-OUT** Before checking-out controllers or remote-control connections, refer to wiring diagram. If you use a temporary, separate 115-volt source for control power, disconnect connections to the secondary side of the control power transformer. For safety, consider grounding and shorting both the primary voltage side of control transformer (fuses removed) and its secondary terminals. Also, either remove the intentional ground from the normal control circuit or connect that ground to grounded side of temporary source.