

ABSTRACT

An automatic middle-low voltage side self-adapting contact electricity-acquisition device for a tire container gantry crane at port large freight yard working by network power. The device has an electricity acquisition arc board (16) flexibly connected to a small pull rod and a big trunk beam by a vertical hinge (21). A programmable logic controller (PLC) and transducer driving system of a control part and front-rear laser range acquisition sensors are connected to left-right walking motors of a cart. The front-rear laser range acquisition sensors at a right side is connected to a photoelectrical detecting plate (3), and positive and negative electricity acquisition device units (7) are connected to positive and negative power-supply slide contact lines (8), respectively. The electricity-acquisition device guides and controls the tire container gantry crane to automatically be rectified and maintains electricity-acquisition distance. The electricity-acquisition device is installed at lower crossbeam side (17) of the tire container crane, and the electricity-acquisition arc board (16) of the device adjusts electricity-acquisition contact pressure, flexibly contacts the power-supply slide contact lines (8) and acquires direct-current feedback electricity from the power-supply slide contact lines (8) to power the two groups of multiple tire container cranes at two sides. The device is safe, and has high efficient usage, and has simple manufacturing, convenient transportation, easy assembly and low production cost.