

Mobile Controllers and Their Software Platforms – Which is Best for You?



One of the most commonly used control options used by mobile machine OEM's is the electronic joystick. One of the most common applications is boom control. This includes applications like controlling a boom on a backhoe, or the arm that grabs your trash can on refuse trucks. Initially these devices were mechanical, and controlled hydraulic pilot signals to directly operate hydraulic valves. With the advent of PLC controls for mobile machines and the advent of CANbus communications, this eliminated the need for hydraulic lines and potential leak points. Also electro-hydraulic proportional valves are now commonplace, are affordable and reliable, making an electronic solution the preferred choice.

When discussing an electronic joystick, there really are two parts that you need to specify. The first is the base that provides the number of axis, and the communication protocol to your control system. This base is generically referred to by most manufacturers as the "joystick". Mechanically, joysticks can have a single axis of operation, or they can have multiple axis of operation. In addition, you can have joysticks that automatically center (spring centered), and joysticks with detents to "lock" them into position. Electronically, joysticks have different outputs including CANbus communications, and analog outputs. Depending on the complexity of the joystick, the amount of functions being controlled, wire run length, and your desire for decentralized control, this will determine what type of output you would utilize.

The second part of an electronic joystick is the handle. This is where things get really complex. Handle selections are almost endless from small finger control paddles, to larger handles with a multitude of push buttons, thumbwheels, and slides to control on/off functions or proportional functions. Physically they can be straight, curved, ergonomic, small, medium, or large. LED's can be provided for some functions, and deadman switches or triggers can be incorporated. The combinations and options are almost endless.

This is where Cross Company, and our Mobile Systems Integration engineering team can assist. We have been specifying, and incorporating electronic joysticks into our control systems integration projects for over 15 years. Contact us today to discuss your particular application requirements.