Solutions Brief

ROVER™ Remote Control for Mobile Machines

Providing ease of use remote operations when the job calls for safety first.

Operators and business owners are seeing the advantages of placing machine operators at a vantage point outside of the machine to provide better range of view, increased safety, as well as enhanced productivity and limited down-time.

Challenge

In challenging environments – steep hillsides, unstable terrain, work zones or extremely harsh conditions – operator safety is a key issue. Getting the job done, while protecting operator and the job zone, is critical. Finding a solution that limits exposure to injury, machine interference, or hazardous materials is necessary.

Solution

Laird Radio Remote Control Systems have played a critical role increasing efficiency, productivity and safety by placing the operator at a safer, more effective location. The Laird ROVER remote control solution for mobile machines provides flexibility for all installations and meets the highest conformance levels required in today's harsh environments.

Challenge

Work environments often pose safety or productivity issues for workers using mobile machines. Terrain, topography, or hazardous materials impede results and sometimes end in injury or costly breakages.

Solution

Remote control capability can be easily and cost-effectively installed at any point on mobile machines protecting your investment while giving you peace of mind that the job will get done without incident.

Benefits

Implementing a remote control solution enables

- Cost efficiency
- Increased productivity
- Limit injury incidents
- Reduced stoppage

By allowing the operator to be mobile – up to 1500' from the machine – remote operations allow for increased productivity through

- Better viewing angle
- Flexible vantage points
- Less operator fatigue
- Noise reduction
- Hazardous handling avoidance

The Laird ROVER™ Remote Control Solution for Mobile Machines consists of several components from our leading portfolio.

LRC-M A user-friendly, ergonomic unit with two proportional joysticks duplicates manual controls and allows for easy transition from manual to remote operation. The impact resistant Lexan EXL housing conforms to EN954-1, Category 3 and EN 13849-1 Performance Level d and is IP65 rated for outdoor use.

CMCU Its compact design provides two safety relays and is highly customizable providing you flexibility in its robust IP66 high impact enclosure complete with dual microprocessors and is ISO 15998 and ISO 7637-2 compliant.

Eaton™ HFX-32M Controller Providing system function control CODESYS programming tool is a 32-bit processor with 32 I/O (16 Inputs/16 Outputs), operates on 6-32 V DC and is compliant with 3 CAN Interfaces (CanOpen/J1939).

Seamless Integration. There are three major components to the ROVER remote control hardware: LRC-M, CMCU, PWM interface and Hydraulic valves. The ROVER system replaces the manual controls while under remote control operation; the manual controls are inoperable by design (safety feature). The system uses the pilot hydraulic pressure in a proportional manner to precisely control the movement of all functions of the machine.

Ease of Installation. Installation takes into consideration that the majority of machines have little to no space to mount equipment. The Laird solution uses the latest technology. Our solution is small and compact, yet provides flexibility and horsepower to control various machines. All the fixed mount hardware is mounted in the confines of the cab providing maximum protection to the rugged CMCU, PWM interface and hydraulic valves. No hardware is visible when viewing the utility vehicle except the antenna.

Ease of Implementation. The ROVER system has been designed and developed keeping the cab operator's best interest in mind. The handheld controller, LRC-M, matches the locations and functionality of the manual controls. This creates a system that reduces the training time to a minimum when converting from conventional cab operation to remote control operation. In an emergency situation, the system override will shut down automatically keeping the work environment safe and secure.

Manual to Remote transition. The machine is started manually ensuring that all operational parameters are normal. Once this is complete the operator exits the cab, a single electrical switch converts the vehicle from manual to remote.

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