

PRESSURE AND POSITION SENSORS FOR VEHICLE-MOUNTED AERIAL PLATFORMS

Background

Vehicle-Mounted Aerial Platforms are a subset of Mobile Elevating Work Platforms (MEWP) that contain the lifting machinery mounted on vehicles. This enables portability and easy maneuverability, especially useful if transporting the equipment great distances or sharing the road with public traffic. Providing an aerial platform on the back of a truck poses engineering challenges for the equipment. Sensors are needed to constantly assess the balance of the machine and provide feedback to the actuators to maintain safety.

Sensata's pressure and position sensors make vehicle-mounted lifts safe and reliable

Solution

Sensata's pressure and position sensors address the need for precision feedback to help maintain safe operation of vehicle-mounted lifts.






Sensata's robust industrial PTE7100 pressure sensors are integrated into the hydraulic circuit to monitor the pressure on the hydraulic pistons. Additionally, pressure sensors are located on the hydraulic ram extensions to provide feedback for stabilization control. These four ram extensions help to support and counterweight the vehicle when the platform is extended. The wide operating temperature range, the stainless-steel design with hermetic port and the snubber option integrated makes the PTE7100 the perfect solution for such a demanding application.

Sensata's suite of precision position sensors provide accurate feedback regarding the angle, inclination and position of the platform. For the boom extension, one of the most critical parameters to keep track, installing a draw-wire assembly is the perfect solution. As the boom is extended or retracted, the end of the Draw-Wire will move right along with it and the operator can tell exactly how much the boom has been extended. The turret rotation is controlled by the 9360 series of hall effect sensor. Due to its dual output, the 9360 series sensor meets the redundancy needs for safety requirements. The non-contact technology at the core of the 9360 series sensors enable reliability and durability, with a 35M cycles lifetime. Lastly, Sensata's T-Series tilt sensor provides accurate inclination measurement. This tilt sensor data informs on the pitch and roll of the vehicle to maintain stability control and overall safety.





RECOMMENDED PRODUCTS

Reference on Diagram	Product	Features	Function	Brand
1	 PTE7100	<ul style="list-style-type: none"> 0-50 bar to 0-600 bar -40 + 100°C 	Hydraulic Pressure Circuit	Sensata
2	 PTE7100	<ul style="list-style-type: none"> 0-50 bar to 0-600 bar -40 + 100°C 	Hydraulic Ram Extension	Sensata
3	 CD120	<ul style="list-style-type: none"> Up to 10' (3m) length IP66 	Boom Extension	BEI Sensors
4	 T-Series	<ul style="list-style-type: none"> CANopen option IP69K 	Vehicle Axis Inclination	BEI Sensors
5	 9360	<ul style="list-style-type: none"> Dual Output -40 + 125°C 	Turret Rotation Angle	BEI Sensors



HOW SENSATA'S PRESSURE AND POSITION SENSORS ENABLE SAFE OPERATION



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Mailing Address: Sensata Technologies, Inc., 529 Pleasant Street, Attleboro, MA 02703, USA.

CONTACT US

Americas

+1 (800) 350 2727
 sensors@sensata.com
 switches@sensata.com
Europe, Middle East & Africa
 +359 (2) 809 1826
 pressure-info.eu@sensata.com
Asia Pacific
 sales.isasia@list.sensata.com
 China +86 (21) 2306 1500
 Japan +81 (45) 277 7117
 Korea +82 (31) 601 2004
 India +91 (80) 67920890
 Rest of Asia +886 (2) 27602006
 ext 2808

Americas

+1 (800) 350 2727 – Option 1
 sales.beisensors@sensata.com
Europe, Middle East & Africa
 +33 (3) 88 20 8080
 position-info.eu@sensata.com
Asia Pacific
 sales.isasia@list.sensata.com
 China +86 (21) 2306 1500
 Japan +81 (45) 277 7117
 Korea +82 (31) 601 2004
 India +91 (80) 67920890
 Rest of Asia +886 (2) 27602006
 ext 2808