

## TELEMATICS LIFT CONTROL

Customizable Full-Feature Control System for Slab Scissor Lift – Enables Asset Management and Remote Monitoring

### Background

Lift truck equipment owners and operators have a number of telematics system needs. Three core feature sets include:

- Centralized Information – An internet-connected database/platform (cloud storage), brings all asset data together to help drive preventive maintenance.
- Remote Monitoring and Operation – Real-time machine data and bidirectionality data flows. The means allowing equipment information to be read from a distance and also sent to the machine from an external device.
- Asset Management – Location tracking via GPS and/or virtual geo-fencing. This allows owners to track and control the equipment remotely.

*All functions monitored and analyzed from the cloud using the new telematics system.*

### Solution

Sensata's Telematics Lift Control System is a solution that includes Platform Control Unit (PCU) and Electronics Control Unit (ECU) to deliver the information operators need.

Sensata's PCU has been redesigned to include a USB charge port, collision avoidance sensor and standard CANopen communication. The ECU has been redesigned to be FuSa certified, includes an integrated sensor, CoDeSys open source platform, large display screen and standard CANopen communication able to communicate to a telematics module with cellular and GPS capabilities. This enables access to vehicle data and controls remotely through a secured internet connection.

The system's GPS function allows owners to see the location of any machine out in the field, and also gives the capability for a Virtual Fence, defining areas where the machine is (or is not) allowed to operate.








When the machine leaves this designated area, it can be shut down or slowed down using bidirectional communication from the system. This communication between the machine and the cloud server allows for full vehicle information to be shared and also allows tracking of maintenance schedules and needs. Information on all machines is available in a centralized location to enable active preventative maintenance scheduling and planning. The cloud server stores all the data - both real-time and historical - and can be accessed by any web-connected device.

The ECU Connects to sensors and the motor controller. Sensata's M701 provides a high-powered hydraulic pump controller with fully programmable control of DC-wound motors, delivering high efficiency with low power consumption.



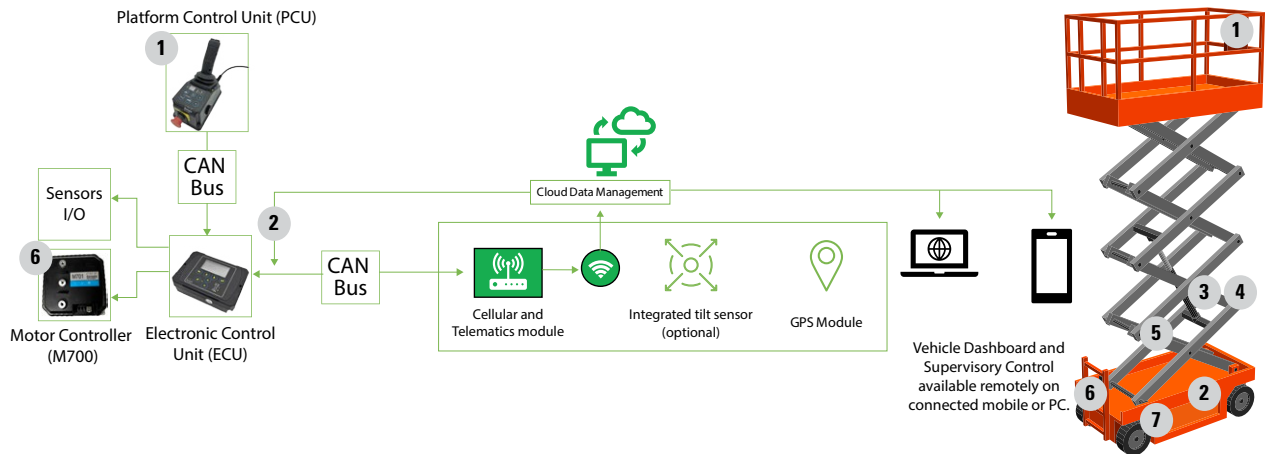


## RECOMMENDED PRODUCTS

Reference on Diagram	Product	Features	Function
1	 PCU	<ul style="list-style-type: none"> <li>• USB Port for charging mobile device</li> <li>• Analog Inputs integrated</li> <li>• Standard CANopen communication</li> <li>• More buttons for more options</li> </ul>	Platform Operator Control Unit
2	 ECU	<ul style="list-style-type: none"> <li>• CoDeSys open source platform</li> <li>• High performance Core Controller</li> <li>• FuSa design follows ISO 113849</li> <li>• Integrated tilt sensor (Optional)</li> </ul>	Electronics Main Control Unit
3	 PTE7100	<ul style="list-style-type: none"> <li>• High Pressure with Analog output</li> <li>• MSG (Micro Silicon Strain Gauge)</li> </ul>	Pressure Sensor
4	 PTE7500	<ul style="list-style-type: none"> <li>• CANopen communication functionality</li> <li>• High Pressure</li> <li>• MSG (Micro Silicon Strain Gauge)</li> </ul>	Pressure Sensor
5	 9360 Series	<ul style="list-style-type: none"> <li>• Hall effect sensor</li> <li>• IP67</li> </ul>	Angle Sensor
6	 T Series	<ul style="list-style-type: none"> <li>• High resolution 0.01°</li> <li>• High accuracy 0.1°</li> </ul>	Inclinometer
7	 M701	<ul style="list-style-type: none"> <li>• Highly efficient motor controller</li> <li>• Advanced MOSFET drive technology and short-circuit protection</li> <li>• IP67 ingress protection</li> </ul>	DC Motor Controller



## LIFT TRUCK OPERATOR CONTROLS



Sensata Technologies, Inc. ("Sensata") data sheets are solely intended to assist designers ("Buyers") who are developing systems that incorporate Sensata products (also referred to herein as "components"). Buyer understands and agrees that Buyer remains responsible for using its independent analysis, evaluation and judgment in designing Buyer's systems and products. Sensata data sheets have been created using standard laboratory conditions and engineering practices. Sensata has not conducted any testing other than that specifically described in the published documentation for a particular data sheet. Sensata may make corrections, enhancements, improvements and other changes to its data sheets or components without notice. Buyers are authorized to use Sensata data sheets with the Sensata component(s) identified in each particular data sheet. HOWEVER, NO OTHER LICENSE, EXPRESS OR IMPLIED, BY ESTOPPEL OR OTHERWISE TO ANY OTHER SENSATA INTELLECTUAL PROPERTY RIGHT, AND

NO LICENSE TO ANY THIRD PARTY TECHNOLOGY OR INTELLECTUAL PROPERTY RIGHT, IS GRANTED HEREIN. SENSATA DATA SHEETS ARE PROVIDED "AS IS". SENSATA MAKES NO WARRANTIES OR REPRESENTATIONS WITH REGARD TO THE DATA SHEETS OR USE OF THE DATA SHEETS, EXPRESS, IMPLIED OR STATUTORY, INCLUDING ACCURACY OR COMPLETENESS. SENSATA DISCLAIMS ANY WARRANTY OF TITLE AND ANY IMPLIED WARRANTIES OF MERCHANTABILITY, FITNESS FOR A PARTICULAR PURPOSE, QUIET ENJOYMENT, QUIET POSSESSION, AND NON-INFRINGEMENT OF ANY THIRD PARTY INTELLECTUAL PROPERTY RIGHTS WITH REGARD TO SENSATA DATA SHEETS OR USE THEREOF.

All products are sold subject to Sensata's terms and conditions of sale supplied at [www.sensata.com](http://www.sensata.com) SENSATA ASSUMES NO LIABILITY FOR APPLICATIONS ASSISTANCE OR THE DESIGN OF BUYERS' PRODUCTS. BUYER ACKNOWLEDGES AND AGREES THAT IT IS SOLELY RESPONSIBLE FOR COMPLIANCE WITH ALL LEGAL, REGULATORY AND SAFETY-RELATED REQUIREMENTS CONCERNING ITS PRODUCTS, AND ANY USE OF SENSATA COMPONENTS IN ITS APPLICATIONS, NOTWITHSTANDING ANY APPLICATIONS-RELATED INFORMATION OR SUPPORT THAT MAY BE PROVIDED BY SENSATA.

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

### CONTACT US

**Americas**  
+1 (800) 350 2727  
sensors.deltatech@sensata.com  
**Europe, Middle East & Africa**  
+359 (2) 809 1826  
ost-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