

SELF-PROPELLED SCISSORLIFTS

Background

Self-propelled scissor lifts, the most common type of Mobile Elevating Work Platforms (MEWPs), move vertically through folding supports in an 'X' pattern, known as a scissor mechanism. They are classified in 2 main categories based on how they are powered and where they are used. 1. Battery-powered (or electric) scissor lifts are used mainly indoors on slab surfaces, while 2. Engine-powered lifts are used outdoors where the surfaces are frequently uneven (for this reason they are commonly referred to be for 'rough terrain'). Regardless of how they are powered, they include many sensors and controls to manage movement, safety, and mainly stability (operators on the platform are subject to fall hazards, therefore safety is a priority).

Solution

Operator Controls:

For decades, Sensata has been a market-leading supplier of complete platform control systems for scissor lifts, either battery or engine powered. The platform control unit and the electronic control unit (or ground control unit for the engine powered) can connect and control a variety of digital and analog machine interface as joysticks, sensors, limit switches, motor controllers, pushbuttons, and alarms controlled through a dedicated CAN-bus system.

The new K610 generation of scissor lift controllers integrate an open source platform, CoDeSys, which enables manufacturers to create their own customized functionality.

Motor Controls:

The M701 is a highly efficient DC pump motor controller designed for industrial vehicle platforms. With IP67 ingress protection, advanced MOSFET drive technology, and short circuit protection, it allows for a high degree of safety and reliability.

Sensors:

Sensata can also supply a complete set of main sensors: the high-pressure sensor (PTE series) that controls the hydraulic pressure of the main cylinder, the angle sensor (9360 Series) used to determine the height of the platform, and the inclinometer (T series or other) to control the chassis inclination for safety reasons. The pressure and angle sensor used in combination are also aimed to control the platform overload condition, which is required to comply with ANSI 92 and EN280 safety standards.

“All functions and movements are controlled using Sensata’s platform control systems and sensors to guarantee compliance with international safety standards”











Rough Terrain (engine-powered) scissor lift



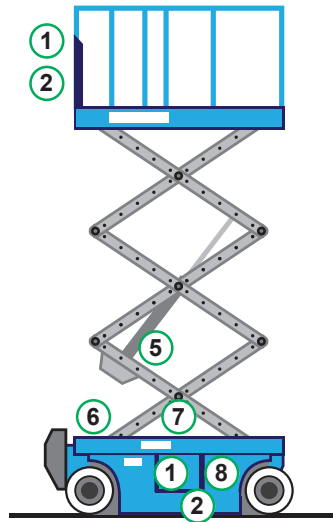
Slab (battery-powered) scissor lift

RELATED PRODUCTS

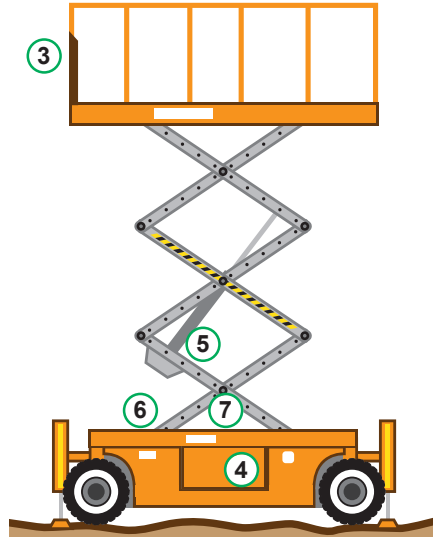
Reference on Diagram	Product	Features	Function	
1	 P610 E610	<ul style="list-style-type: none"> • 3 Analog Inputs integrated • IP65 • USB • 2 CAN, 2 USB 	<ul style="list-style-type: none"> • 40 input/output • Multi-language, • Large LCD display 	Lift Control System
2	 K330	<ul style="list-style-type: none"> • Entry-level lift control solution • 7 segment display • 1 CAN, 1 UART • Reliable lifetime performance 		Lift Control System
3	 PCU100	<ul style="list-style-type: none"> • Extensive integrated controls • IP65 		Platform Control Unit
4	 ECU120	<ul style="list-style-type: none"> • CAN, MCU • 70 input/output 		Ground Control Unit
5	 PTE7500	<ul style="list-style-type: none"> • High pressure • MSG (Micro Silicon Strain Gauge) • CANopen output; Easy integration into ECU 		Pressure Sensor
6	 9360 Series	<ul style="list-style-type: none"> • Hall effect sensor • IP67 		Angle Sensor
7	 T Series	<ul style="list-style-type: none"> • High resolution 0.01° • High accuracy 0.1° 		Inclinometer
8	 M701	<ul style="list-style-type: none"> • Highly efficient motor controller • Advanced MOSFET drive technology and short-circuit protection • IP67 ingress protection 		DC Motor Controller

GENERAL DIAGRAM

Slab (battery-powered) scissor lift



Rough Terrain (engine-powered) scissor lift



Page 2

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, valuation, 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 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 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-ELATED 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

Copyright © 2024 Sensata Technologies, Inc.

CONTACT US

INDUSTRIAL SOLUTIONS DIVISION

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

HEAVY VEHICLE & OFF-ROAD DIVISION

Americas

+1 508 236 2196

products@sensata.com

Europe, Middle East & Africa

+49 30 43 999 0

products@sensata.com

Asia Pacific

products@sensata.com

China +86 (21) 2306 1500

Japan +81 (45) 277 7001

Korea +82 (31) 601 2004