



## EZlift 230 INTEGRATED SCISSOR LIFT CONTROL SYSTEM



### General features

- 5.8KW pump motor controller provides smooth start/stop of functions
- Integrated tilt sensor can be configured to limit or prevent selected functions when vehicle is tilted
- Platform overload can be configured for EN280 compliance (requires pressure sensor and height sensor [EZfit])
- Flash memory allows factory configuration to exact vehicle needs
- Inputs from platform joystick & switches (or ground mode emergency switches) control vehicle functions via protected valve & line contactor drivers
- Inputs from various cutout switches can be configured to limit or prevent selected functions depending on vehicle state, e.g.
  - Prevent drive when battery charger connected
  - Sound alarm during lift down when platform deck extended
  - Limit speed when pot holes is engaged
- Dual micro-controller ensures failsafe operation
- Available **EZcal** hand-held allows access to configuration settings and diagnostics including history log (via RS232)
- All inputs & outputs can be tested with **EZcal** to identify wiring errors
- Integral status LED provides (flashing) fault code indication

### Optional:

- Text display module provides end-user status & fault descriptions to minimize down time

### Technical data

<b>Power supply</b>	16 to 33 Vdc	Under and Over voltage shutdown Reverse battery protected Current limit protects motor Protected from power wiring errors
<b>Continuous current</b>	240A	
<b>Peak current</b>	500A	
<b>PWM Frequency</b>	15 KHz	
<b>Integral tilt sensor</b>	0 to 10°	Independent X & Y
<b>ON/OFF power outputs (11)</b>	2A	Automotive spec. protected drivers
<b>Proportional power outputs (2)</b>	2A	Automotive spec. protected drivers
<b>Indicator outputs (6)</b>	0.5A	Automotive spec. protected drivers
<b>Digital inputs</b>	24	Low impedance eliminates moisture problems
<b>Analog inputs</b>	6	0.5-4.5 Vdc, protected from wiring errors
<b>Water proof</b>	IP67	
<b>Ambient working temperature</b>	-40 to +50°C	Controller must be mounted to vehicle frame to provide heatsink
<b>Overall dimensions</b>	7.3" x 7.3" x 2 1/4 " 185 x 185 x 58	L x W x H (mm)

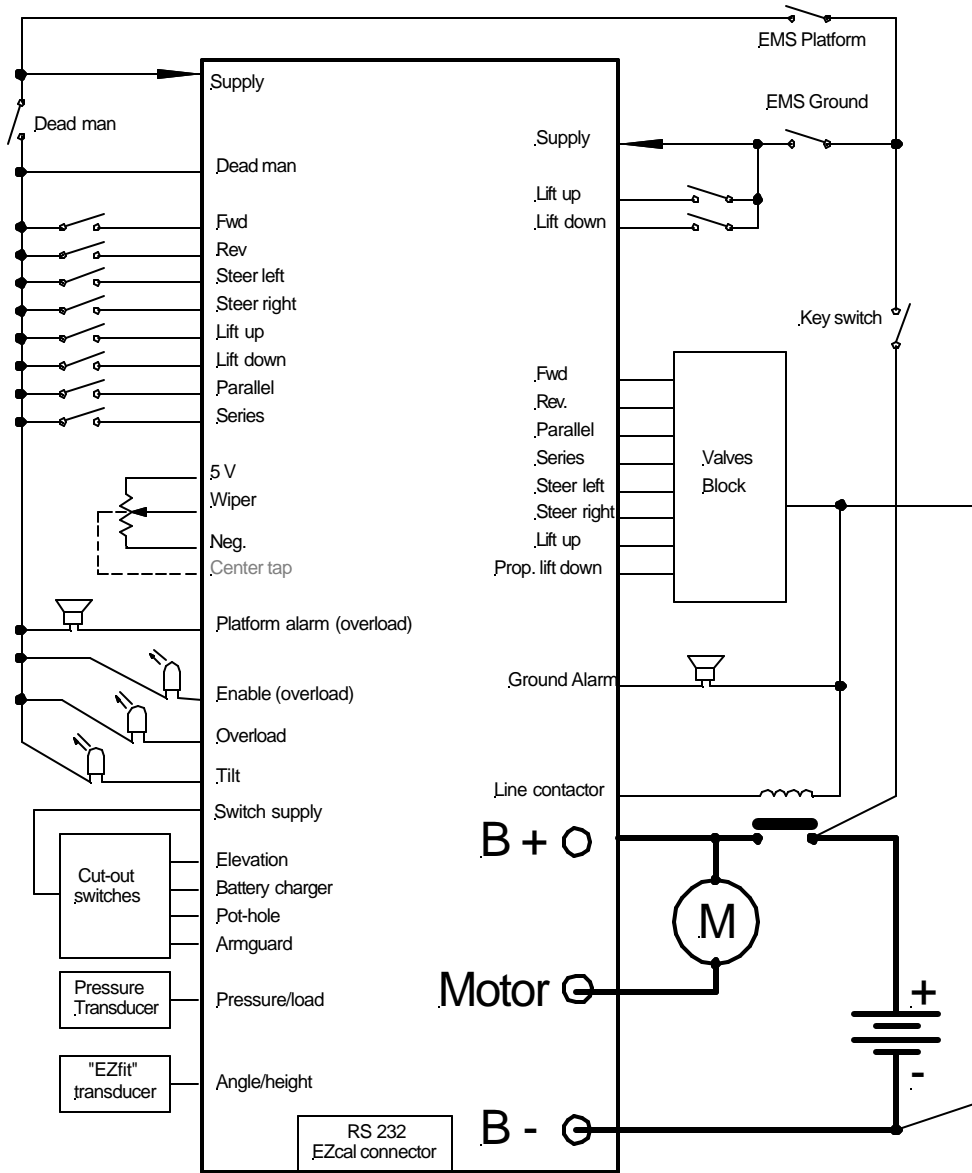


**PG Trionic, Inc.**

www.trionicsusa.com

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### Typical wiring diagram





## **EZlift 230 INTEGRATED SCISSOR LIFT CONTROL SYSTEM**

### **General description**

The **EZlift** 230 Scissor lift system integrates in one unit, a 24V 5.5KW pump motor controller and all the control interlock and safety features required on a modern battery powered scissor lift vehicle. Auxiliary relays, diodes and I/O board are not needed since all the switches, sensors, valves and the main contactor are directly connected to the unit.

Additionally the integrated tilt sensor provides the slope warning feature, and with the installation of a pressure transducer and angle module, the load sensing system requirement of the EN280 is fulfilled.

The Flash memory and available EZcal hand-held allow the system to be configured for any vehicle requirement.

### **Platform control**

- Up to 12 switch inputs i.e.:

1. Drive Forward
2. Drive Reverse
3. Steer Left
4. Steer Right
5. Parallel drive (low speed)
6. Series drive (high speed)
7. Lift Up
8. Lift Down
9. Dead man switch
10. EMS Platform
11. Spare
12. Spare

- 2 analog inputs for potentiometer wiper (and center tap if required) control function speed by varying the voltage applied to the motor with adjustable acceleration and deceleration delay

- Up to 6 indicator/lamp outputs (up to 500mA) i.e.:

1. Enable
2. Tilted
3. Platform alarm/buzzer (Overload)
4. Overload
5. Spare
6. Spare

### **Emergency ground control**

- Up to 5 switch inputs i.e.:

1. Lift up
2. Lift down
3. EMS Ground
4. Spare
5. Spare



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### **Cut-out switches**

- Up to 7 switch inputs i.e.:

1. Above elevation, can be configured to prevent series drive to engage
2. Battery charger, can be configured to prevent drive but allowing lift
3. Pot-hole engaged, can be configured to limit drive speed to X% of maximum speed
4. Arm-guard, can be configured to prevent lift if armguard curtain jammed
5. Maximum elevation, can be configured to stop the platform cylinder before it reaches end of travel
6. Deck extended, can be configured to prevent drive when platform deck extended
7. Spare

The above configuration descriptions are examples only – exact configuration is to customer requirements, including combinations of conditions (eg: prevent drive if pot-hole not engaged and above elevation).

### **Transducer (sensor) inputs**

- Up to 4 analog transducer inputs i.e.:

1. Pressure transducer, used to establish the overload curve (for EN280)
2. Angle transducer 1, in conjunction with the pressure transducer used to establish platform load
3. Optional Angle transducer 2, can be used for failsafe operation (replacing above elevation and end-of-travel switches on the scissor arm, simplifying vehicle installation)
4. Other voltage output transducers to customer requirements

### **Valve and contactor outputs**

- Up to 13 ON/OFF 2A power outputs (fully protected), two can be proportionally controlled i.e.:

1. Drive Forward
2. Drive Reverse
3. Steer Left
4. Steer Right
5. Parallel drive (low speed)
6. Series drive (high speed)
7. Lift Up
1. Gravity Lift Down (proportional valve allows control of speed of descent)
8. Ground alarm
9. Line contactor
10. Spare
11. Spare
12. Spare
13. Spare proportional

### **RS232/ EZcal port**

One RS232 port to connect the EZcal hand-held (or a PC) allowing access to vehicle configuration settings and diagnostics, history log and vehicle wiring test functions. The same port can be used to connect a text display module providing the end user with vehicle status and fault description.