



# TSS Bulletin

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**Purpose** – To define SAFE mode error on the Taski Swingo XP and illustrate procedures for diagnosing and correcting.

**SAFE mode** – “SAFE” is displayed on the dashboard readout if error codes E010 and/or E011 are detected. As defined by the Taski Service Tool Technical Manual:

E010 -- Short circuit or broken wire of throttle signal. The throttle signal value is too big or too small.

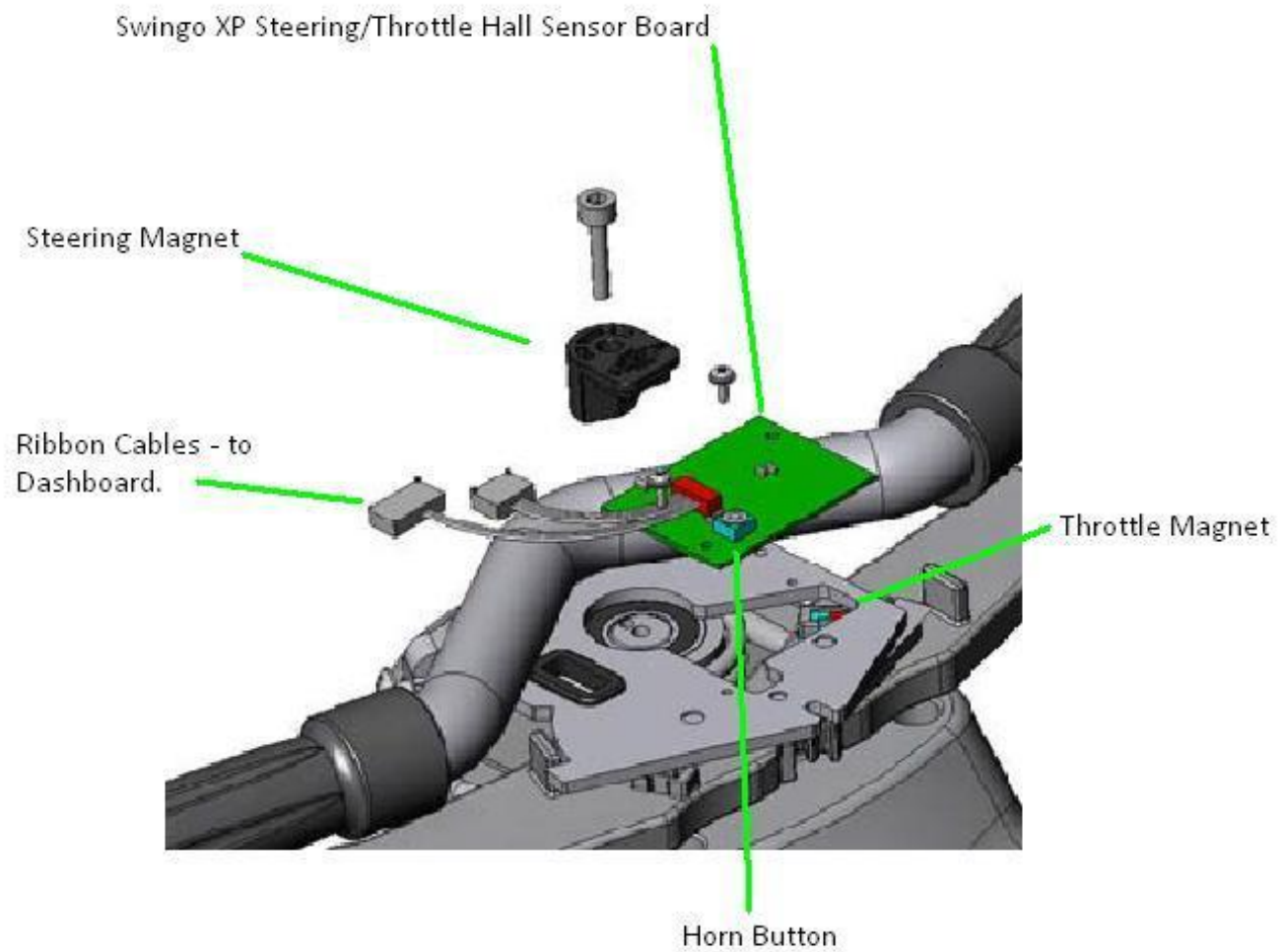
E011 – Short circuit or broken wire of guidance signal. The guidance signal value is too big or too small.

E010 and E011 are visible in the error log in the service menu or Service Tool, but not displayed on the machine in normal use. Only SAFE is displayed in normal use.

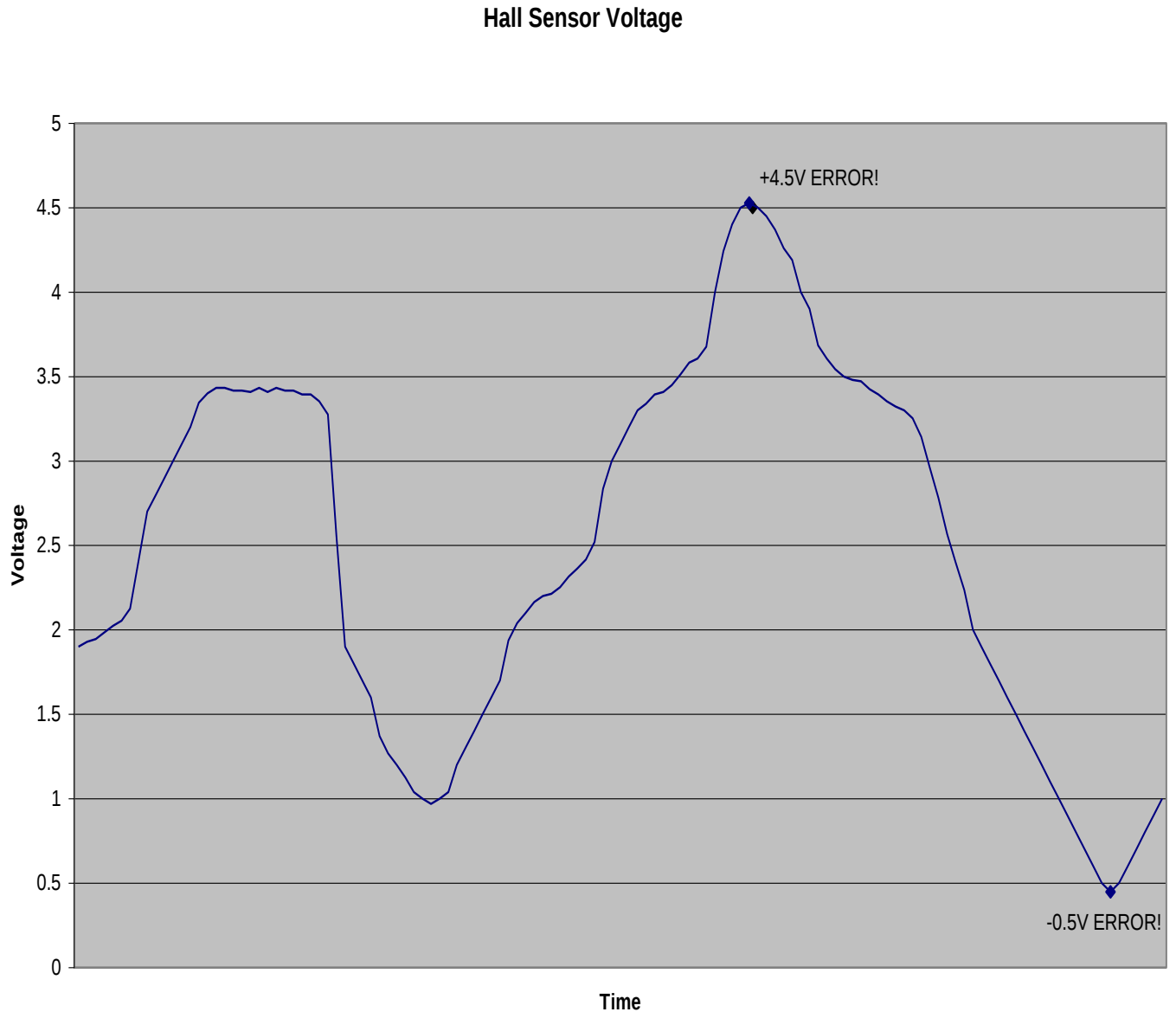
The Throttle and Steering (guidance) signals are generated by a hall sensor board, located in the control handle assembly. They have a defined range to operate in (.5V-4.5V) and any signal given off outside that range will put the machine in SAFE mode. The machine determines that the outputs are trying to drive/steer the machine outside a safe range of motion and shuts the drive and brush motors down and applies the brakes.



XP Control Handle Assembly.



Hall Effect Sensors, simply put, are devices that alter voltage based on the position of a magnetic field. The hall sensors on the XP are given 5V input and the movement of the magnet in the Throttle trigger or Steering handle will vary the output...provided it stays within the 0.5V to 4.5V range. A graph of the output of a hall sensor could look like this...showing error levels:



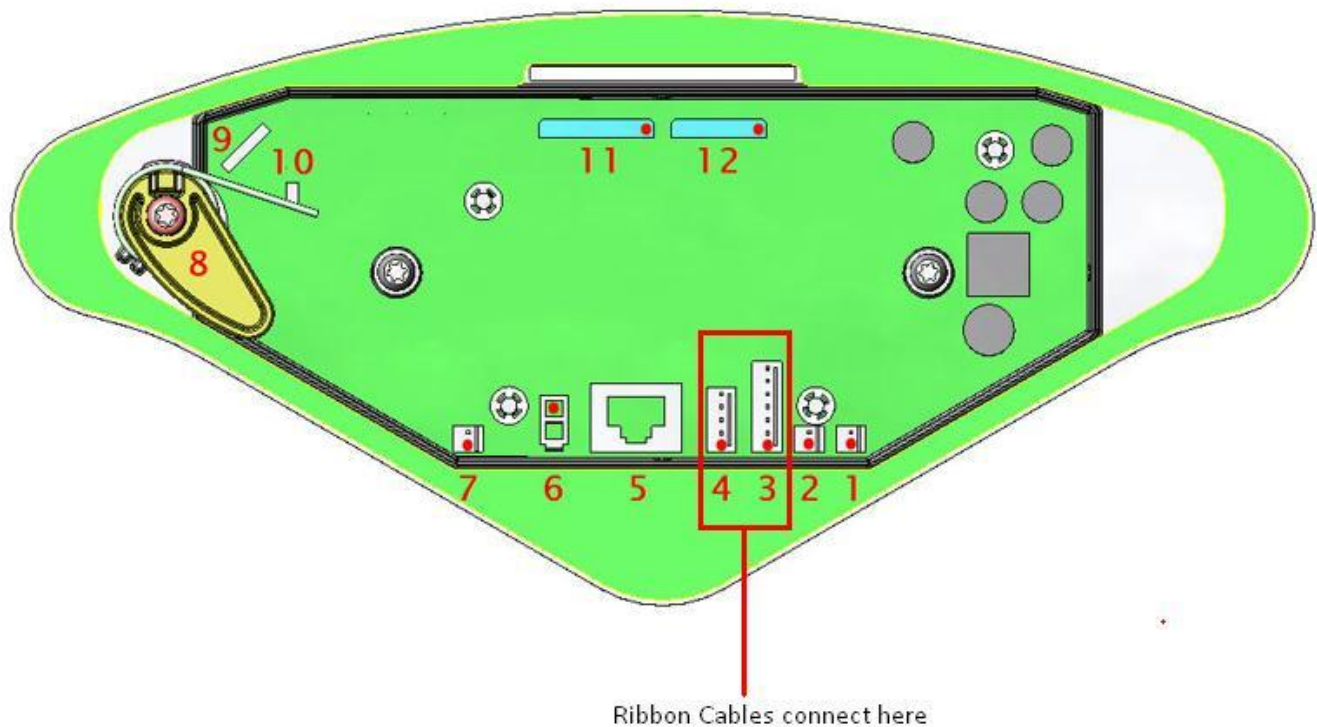
Any voltage that goes over 4.5V or below 0.5V will generate the error E010 (if from the throttle) or E011 (if from the steering)...resulting in SAFE mode.

**Troubleshooting** – Recalibrating the Steering/Throttle should **always** be done anytime the Hall Sensor board/Dashboard/Power Board have been replaced. The mixing of saved throttle/steering values between these three components can cause erratic movement in most cases and SAFE mode in extreme cases.

Refer to [RG 004664](#) for steps to do this in the Dashboard Service Menu. Connecting the machine to a computer with Taski Service Tool gives another method to recalibrate.

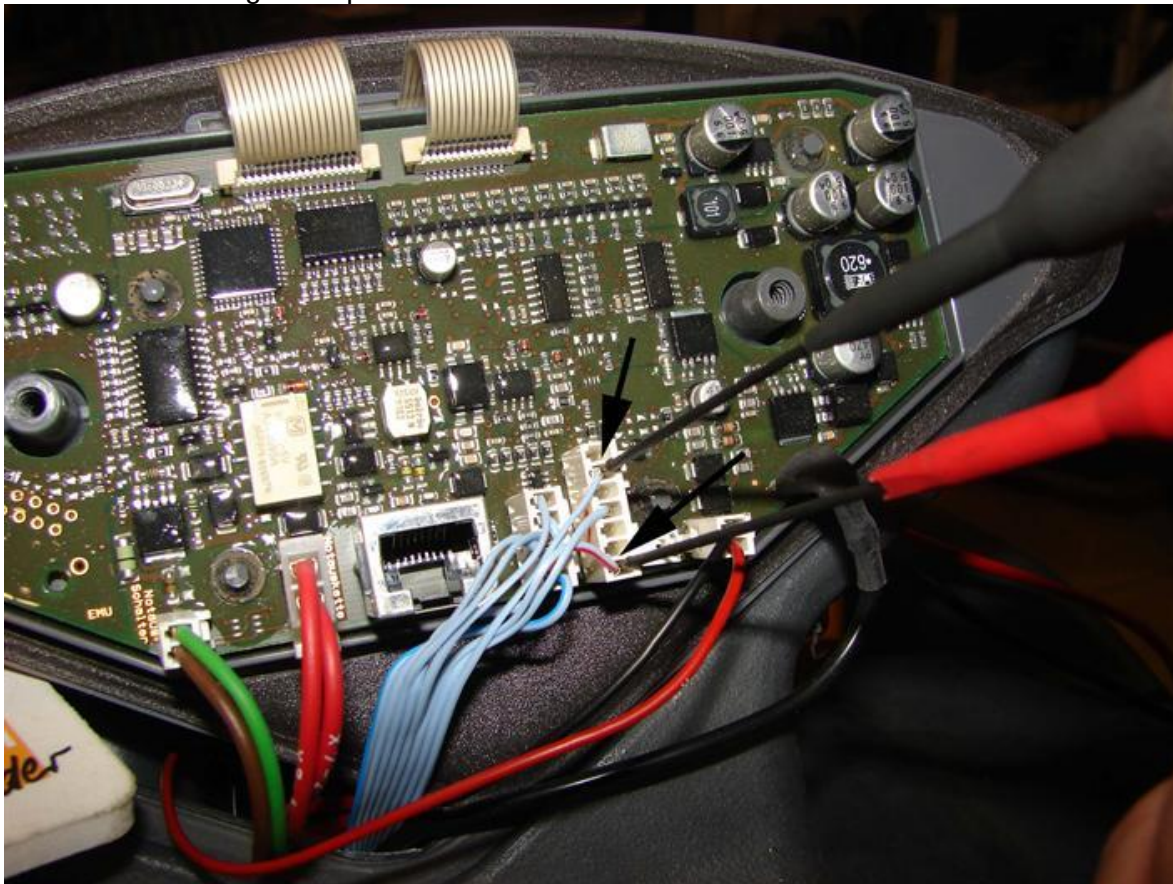
If Recalibration (also known as Teach-In in Taski literature) does not reset the SAFE mode, the next step is a visual inspection:

- Remove the Control Handle cover and also remove the dashboard screws so the back of the dash can be viewed.
- Locate the light blue ribbon cables coming off the hall sensor board (see picture above)
- Follow the cables up to the back of the dash...looking for any damage to the wires (they can sometimes get pinched in the large coiled spring under the control handle).
- At the back of the dash...make sure they are fully seated in the circuit board and that the wires are fully crimped in the connectors (gently tug on each individual wire)

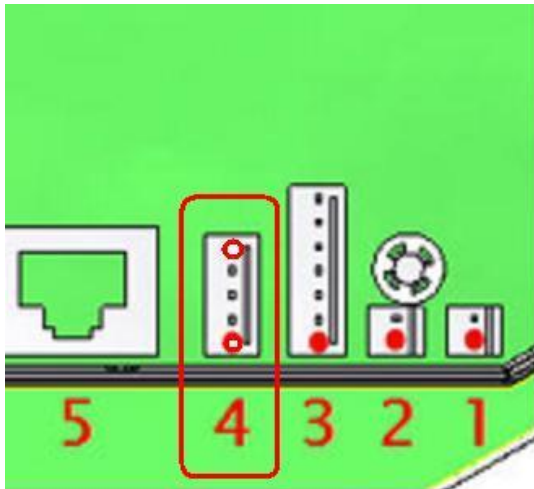


| Pos. | Plug | Description (plug)           | Pin | Description (pin)              |
|------|------|------------------------------|-----|--------------------------------|
| 3    | X05  | Guidance                     | 1   | Plus (+)                       |
| 3    | X05  | Guidance                     | 2   | <DMS bridge +> (not used)      |
| 3    | X05  | Guidance                     | 3   | <DMS bridge -> (not used)      |
| 3    | X05  | Guidance                     | 4   | Output hall sensor guidance    |
| 3    | X05  | Guidance                     | 5   | <Output DMS bridge> (not used) |
| 3    | X05  | Guidance                     | 6   | GND                            |
| 3    | X05  | Guidance                     | 7   | Cable shield                   |
| 4    | X06  | Throttle / touch button horn | 1   | Plus (+)                       |
| 4    | X06  | Throttle / touch button horn | 2   | Output single hall sensor      |
| 4    | X06  | Throttle / touch button horn | 3   | Touch button horn signal       |
| 4    | X06  | Throttle / touch button horn | 4   | Plus (+)                       |
| 4    | X06  | Throttle / touch button horn | 5   | GND                            |

If all connections are secure, next check the voltage output of the Hall Sensor Board. Best place to attain these readings is to probe the back of the dash at the ribbon cable connections:

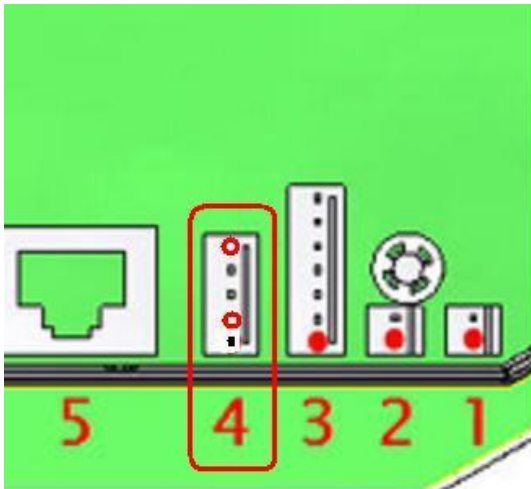


With the machine turned on, drive motors disconnected and step board switch engaged (heavy weight on step board, or wedged switch with object like a screw driver), probe the leads in this order:



Plug X06 - Pin 1 and 5

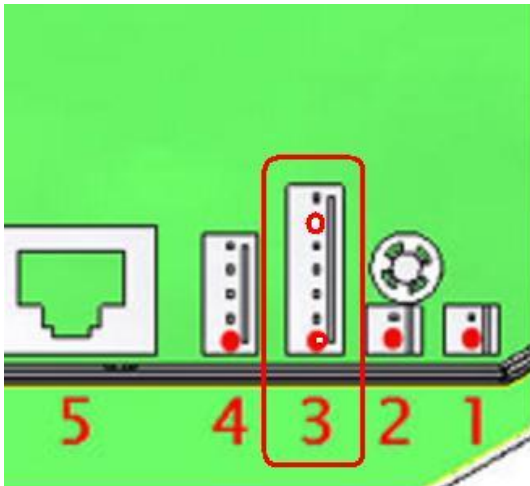
Throttle: Start at the 5-pin connector (plug X06). Check for power supply at Pin 1 and 5. Should read **5V**.



Plug X06 - Pin 2 and 5

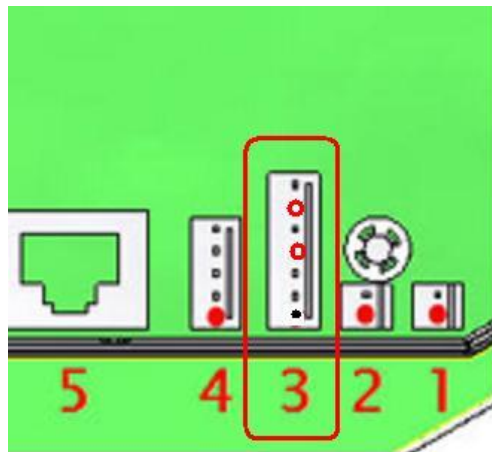
Throttle: Move to Pins 2 and 5. Triggers forward should read approx **4V**. Triggers reverse should read approx **0.6V**.

Every machine will be different, these readings will be approximate (this is the reason that recalibration is necessary). **If readings exceed the safety range (+4.5V or -0.5V), replace hall sensor board.**



Plug X05 - Pin 1 and 6

Steering: Move to 7-pin connector (plug X05). Check for power supply at Pin 1 and 6. Should read **5V**.



Plug X05 - Pin 4 and 6

Steering: Move to Pins 4 and 6. Turn to right, voltage should read approx **4.4V**. Turn to left, reading should be approx **0.6V**

As before, these readings will vary per machine. **If readings exceed the safety range (+4.5V or -0.5V), replace hall sensor board.**

If all voltage readings from the Hall Sensor board are correct, the next likely culprit is the Dashboard. The CPU processor in the Dash takes the voltages and calculates a signal for the Power Board to energize the drive motors at the desired speed. If it receives the correct signals, and still returns a SAFE mode, then the Dash Circuit has faulted and should be replaced.