Silage Link

Software Requirement Document

Rev 1.0.0

# Revision History

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| --- | --- | --- | --- | --- |
| Sr No | Revision | Description | Date | Modified by |
| 1 | 1.0.0 | Initial Draft | 18/04/2025 |  |
| 2 |  |  |  |  |
| 3 |  |  |  |  |
| 4 |  |  |  |  |
| 5 |  |  |  |  |

## Bale waight and Wrap count capturing

Bale wrapping platform is equipped with the four load cells (in parallel) and a inductive proximity sensor for detecting the revolution of wrapping platform.

* 1. Device shall count the Proximity sensor input pulse and blink an LED to give visual feedback to the operator.
  2. Device shall capture weight on every pulse trigger and show the Live weight on display
  3. Device shall display wrap count on display, increment the wrap count on each pulse
  4. When wrap count is less than 16, Start the timer of 5 sec on each pulse and reset it after next pulse arrives, if pulse does not detected within the 5 sec time and timer overflows consider point 1.6
  5. When pulse count reaches to 16, device shall execute the following sequence
     1. Turn ON the buzzer and capture the average bale weight
     2. Start the timer for 5 sec, and wait for next pulse to arrive. If no pulse detected within five seconds and time overflows
  6. If operator starts wrapping and stops the wrapping in between when the wrap count is less than 16, Display the prompt on LCD "Reset Wrap Count?" and wait for the button press event, On button press reset the count to zero.
  7. Once completing 16 successful counts, start the timer for 30 sec and execute following sequence
     1. Ignore any proximity sensor pulses, (Interrupt may be disabled and enable again when 30 sec timer overflows)
     2. Show the total bale count and weight on LCD

# Weighing scale calibration and Tare

* 1. User shall be able to calibrate or Tare the weighing system
     1. Calibration shall be invoked upon receiving calibation command over UART
     2. Prompt user to remove any weight from weighing platform and take confirmation input
     3. Device shall capture the zero weight values from HX711
     4. Prompt user to put a known weight on weighing platform and ask to enter the same weight in grams
     5. Device shall capture the known weight values and shall save calibration factor to Non Volatile storage
  2. User shall able to Tare the weighing system
     1. Device shall perform tare weight to zero on long button press atleast for 10 sec
     2. Tare screen with updated factor shall be visible on LCD
     3. User shall only able to tare when wrapping operation is not going on