SPARK
Drives & Automation

LOADCELL WEIGHER CONTROLLER WITH TOUCH DISPLAY

24VDC Supply, TOUCH Display, MODBUS and 0…10Vdc Output

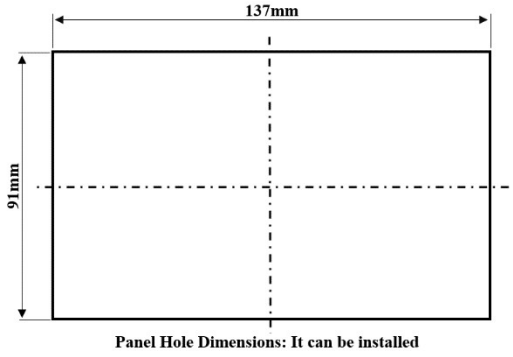
LWC11 is a general-purpose weighing controller with touch display. It is designed to control linear scale automatic packing machines.

LWC11 has the features of appropriate dimension, high accuracy, strong functionality and easy to operate. It can be widely used in the industries of feed, grain, seed, chemical and etc.

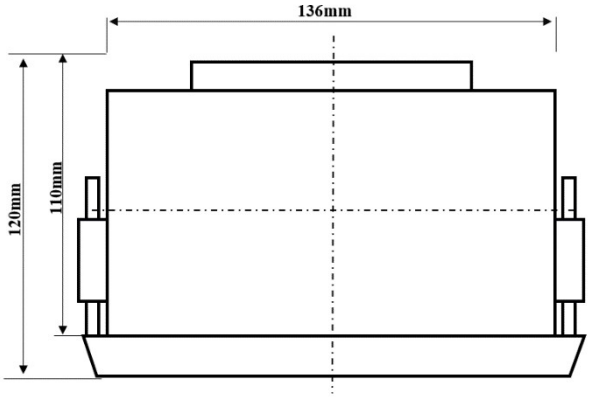
SPECIFICATION:

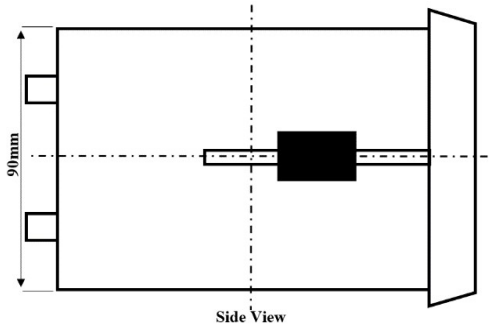
- Standard 24V Operation.
- High Resolution 4.3” Touch Screen.
- Digital Calibration Function.
- Well established Functionalities over Touch / RS485.
- User programmable Load cell ADC sampling time and Moving Average.
- Built-in RS-485 MODBUS RTU Communication.

DIMENSIONS:

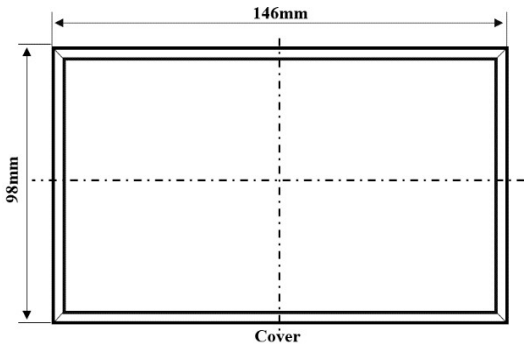


Panel Hole Dimensions: It can be installed





Side View



Cover

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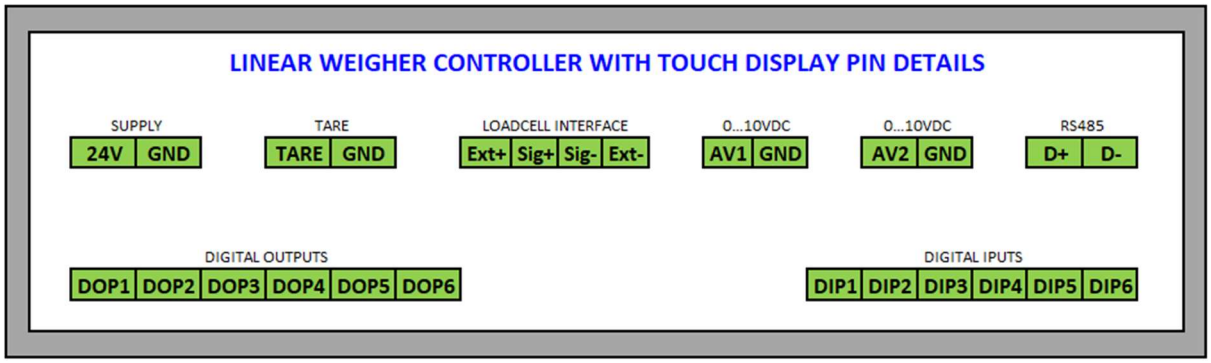
CONNECTIONS:



Note:

- All Digital inputs are PNP inputs.
- All Digital outputs are NPN outputs.

LOADCELL CALIBRATION PROCEDURE:

- Fix the load cell correctly.
- Tare the dead weight (recommended dead weight minimum 20% of the load cell rated capacity) in the load cell by writing **'1'** on **0019H** (Tare command register). And write back **'0'** to stop Tare.
- Keep a standard known weight (recommended weight minimum 20% of the load cell rated capacity) above the dead weight and enter the same weight in **0010H** (Reference weight for calibration Register).
- Write **'1'** on **001AH** (calibration command register) to calibrate the load cell. And write back **'0'** to stop Calibration.
- After successful calibration, the Actual weight can be read on **0000H** Register.

Note:

- Initial zero/Tare is necessary after power on to ensure the correct weight.
- Calibration has to be performed when a new load cell is connected or replaced.

USER INTERFACE:

HOME:

Select and check recipe no. (Automatically save a current recipe.)

Show the actual weight in bucket.

Show the present production information.

If press, reset the production count value.

If press, tare the present weight in bucket.

When double dump pressed, the material will discharge double times.

Easy to edit the weight parameters and speeds of vibrator.

In manual mode, If it is in green color , the bucket output is turned on and else the bucket output is turned off. In Auto Process, after ready signal is set the bucket will open automatically and starts the next cycle.

In manual mode, If it is in green color , Bucket Open output, Coarse vibrator/gate output, fine vibrator/gate output will be turned on and vibrator will run at Coarse Speed percentage. If it is in red color, the output will be turned off and vibrator will stop.

WEIGHT SETTINGS:

Bulk Speed runs from Bulk weight to Medium Weight.

Medium Speed runs from Medium weight to Fine Weight.

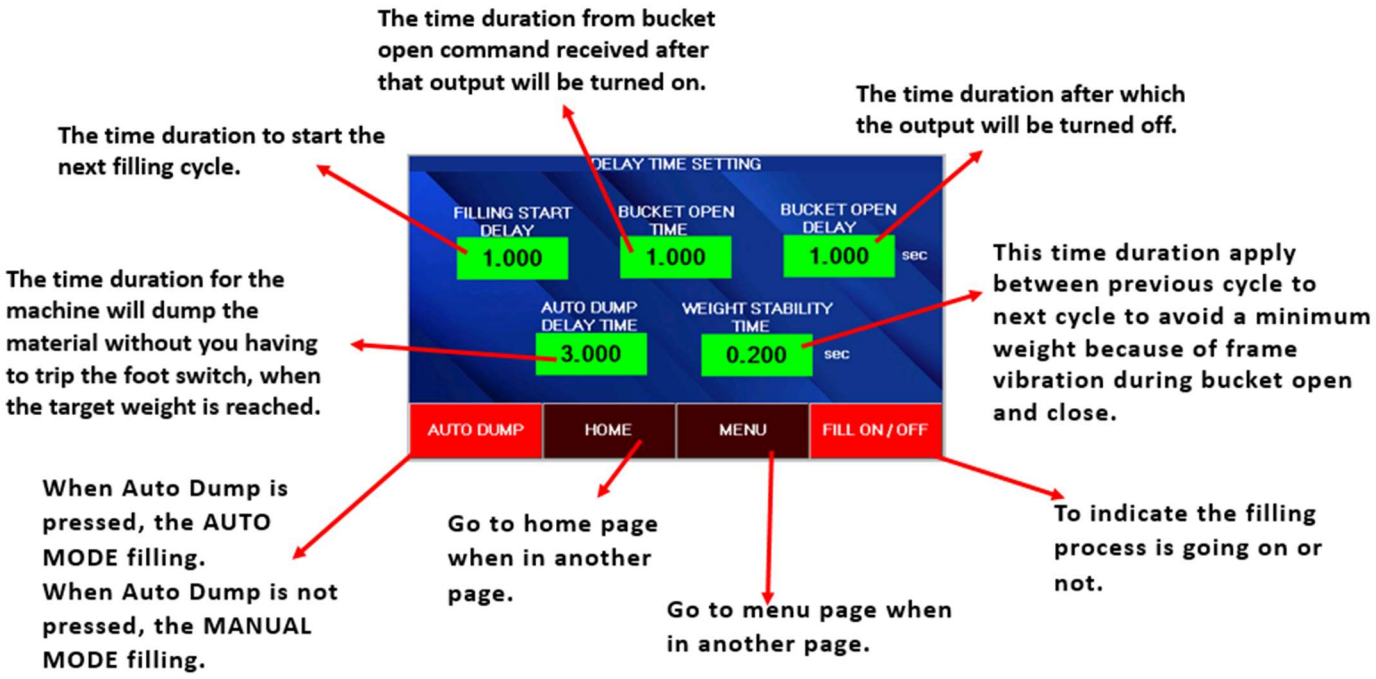
To set the target weight to be filled is written here. Fine speed runs from Medium weight to Fine Weight.

This speed (AOP1 & AOP2) will apply up to Bulk Weight.

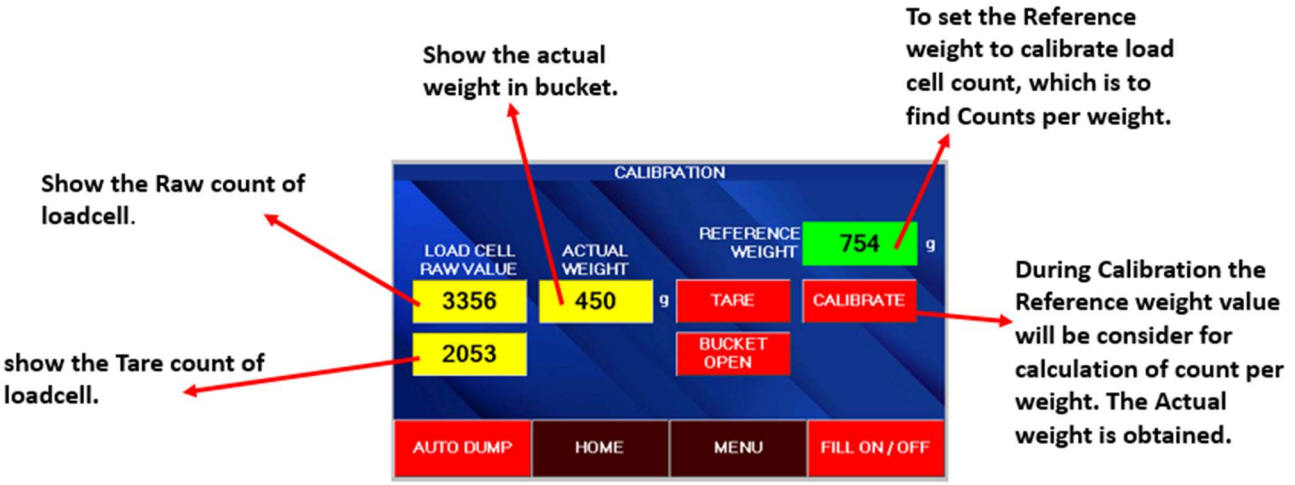
This speed (AOP1 & AOP2) will apply up to Medium Weight.

This speed (AOP1 & AOP2) will apply up to Fine Weight(Target Weight).

DELAY TIME SETTINGS:



CALIBARATION:



AUTO TARE SETTINGS:

GREEN-Each cycle starts after Tare operation.
RED-Each cycle continues without Tare operation.

The time duration for the bucket to settle before Auto Tare function applies.

The Auto Tare functionality applies once every count value matches.

MODE:

GREEN-Bulk, Medium and Fine are in same speed.
RED-Bulk, Medium and Fine are in different speed.

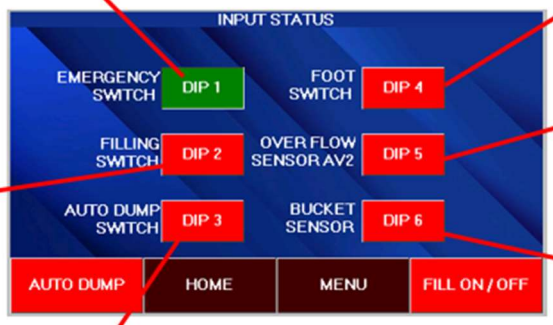
INPUT STATUS:

- ON STATE
- OFF STATE

When Emergency switch will pressed it turned out into red colour, the machine will be stop automatically.

It Indicates the whether the foot switch is pressed or not.

When the Filling switch is pressed, the machine will start the filling process either in auto / manual according to Auto Dump button press.
When the Filling switch is not pressed, the machine will not to start the filling process.



It Indicates the whether the material in the vibrator is overflow or not .

When the sensor input is given in Auto process after a cycle is completed, the bucket output will be turned on and the next cycle continues to run.

It Indicates the whether the auto dump switch is ON or OFF.

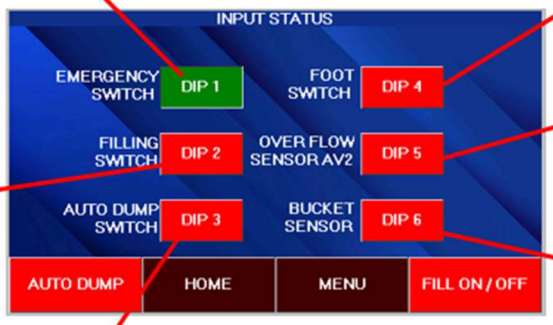
OUTPUT STATUS:

- ON STATE
- OFF STATE

When Emergency switch will pressed it turned out into red colour, the machine will be stop automatically.

It Indicates the whether the foot switch is pressed or not.

When the Filling switch is pressed, the machine will start the filling process either in auto / manual according to Auto Dump button press.
When the Filling switch is not pressed, the machine will not to start the filling process.



It Indicates the whether the material in the vibrator is overflow or not .

When the sensor input is given in Auto process after a cycle is completed, the bucket output will be turned on and the next cycle continues to run.

It Indicates the whether the auto dump switch is ON or OFF.

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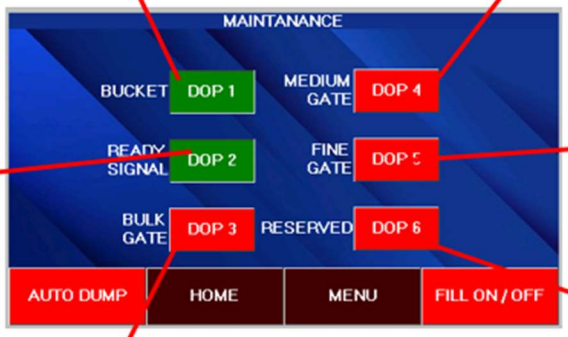
MAINTENANCE:

- ON STATE
- OFF STATE

When DOP 1 is pressed, the Bucket will open. When DOP 1 is not pressed, Bucket will close.

When DOP 4 is pressed, the Medium Gate will open.

When DOP 4 is not pressed, the Medium Gate will close.



When DOP 5 is pressed, the Fine Gate will open. When DOP 5 is not pressed, the Fine Gate will close.

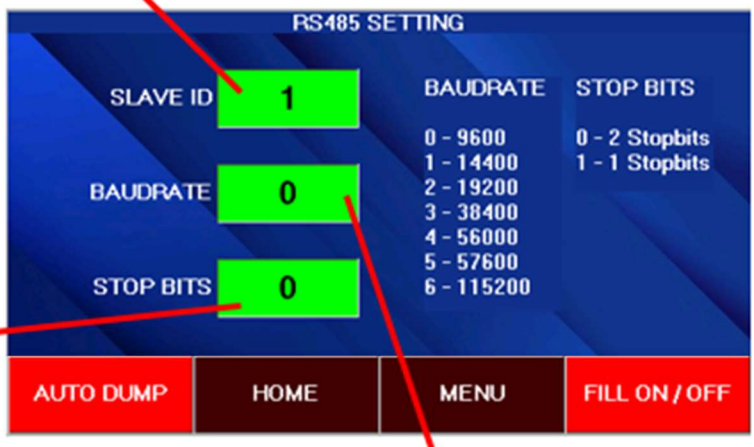
When DOP 2 is enable, when the target count or target weight is reached and DOP 2 is disable after next cycle is started.

Reserved

When DOP 3 is pressed, the Bulk Gate will open. When DOP 3 is not pressed, the Bulk Gate will close.

RS485 SETTINGS:

The Slave Address for RS485 can be written (Range up to 1 to 100). The Last Changed Slave address will be retained until next change.



The Stop Bits for RS485 can be written. The Last Changed Stop Bits will be retained until next change.

The Baudrate for RS485 can be written. The Last Changed BaudRate will be retained until next change.

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MODBUS REGISTER DETAILS:

LOADCELL DATA REGISTERS:

Function	Hex Address	PLC Address	R/W	Range
Actual Weight	0000H	40001	R	-32768 to 32767
Load Cell Actual value	0001H	40002	R	-32768 to 32767
Load Cell Tare value	0002H	40003	R	-32768 to 32767
Load Cell Zero value	0003H	40004	R	-32768 to 32767
Filling Complete Status	0004H	40005	R	0 or 1

WEIGHT SETTING REGISTERS:

Function	Hex Address	PLC Address	R/W	Range
Weight Stability time(ms)	0006H	40007	R/W	0-65535
Bulk speed AOP2	0007H	40008	R/W	0-100
Medium speed AOP2	0008H	40009	R/W	0-100
Fine speed AOP2	0009H	40010	R/W	0-100
Bulk speed AOP1	000AH	40011	R/W	0-100
Medium speed AOP1	000BH	40012	R/W	0-100
Fine speed AOP1	000CH	40013	R/W	0-100
Bulk Weight	000DH	40014	R/W	0-65535
Medium Weight	000EH	40015	R/W	0-65535
Target Weight	000FH	40016	R/W	0-65535
Reference Weight for Calibration	0010H	40017	R/W	0-65535

DELAY TIME SETTING REGISTERS:

Function	Hex Address	PLC Address	R/W	Range
Filling Start Delay(ms)	0012H	40019	R/W	0-65535
Bucket open On Delay(ms)	0013H	40020	R/W	0-65535
Bucket open Off Delay(ms)	0014H	40021	R/W	0-65535
Auto Tare Delay Time(ms)	0015H	40022	R/W	0-65535
Auto Tare Cycle Count	0016H	40023	R/W	0-65535
Auto Mode Dump Delay(ms)	0017H	40024	R/W	0-65535

CONTROL REGISTERS:

Function	Hex Address	PLC Address	R/W	Range
Tare Command	0019H	40026	W	0 or 1
Calibration Command	001AH	40027	W	0 or 1
Filling On/Off Command	001BH	40028	R/W	0 or 1
Reserved	001CH	40029	R/W	0 or 1
Bucket Open Command	001DH	40030	R/W	0 or 1
Reserved	001EH	40031	R/W	0 or 1
Auto Tare (Enable/Disable)	001FH	40032	R/W	0 or 1
Material Drain Command	0020H	40033	R/W	0 or 1
Reserved	0021H	40034	R/W	0 or 1
Reserved	0022H	40035	R/W	0 or 1
Auto Dump Command	0023H	40036	R/W	0 or 1
Double Dump Command	0024H	40037	R/W	0 or 1

ADC CONFIGURATION REGISTER:

Function	Hex Address	PLC Address	R/W	Range
ADC Sampling Time	0032H	40051	R/W	**Default: d4**
				d0 - 12.5 ms **d1** - 25 ms **d2** - 50 ms **d3** - 75 ms **d4** - 100 ms
Moving Average	0033H	40052	R/W	**Default: d0**
				d0 - No Average **d1** - 2 Average **d2** - 4 Average **d3** - 8 Average **d4** - 12 Average **d5** - 16 Average
ADC Configuration Save	0046H	40071	W	**Default: 0**
				0 or 1*

*When ADC sampling time or moving average is changed, writing 1 on ADC configuration save register (0046H) is necessary in order to reflect the changes.

RS485 CONFIGURATION REGISTER:

Function	Hex Address	PLC Address	R/W	Range
Slave Address of RS-485	07D0H	42001	R/W	**Default: 1**
				1 to 100
Baud Rate of RS-485	07D1H	42002	R/W	**Default: d0**
				d0 - 9600 **d1** - 14400 **d2** - 19200 **d3** - 38400 **d4** - 56000 **d5** - 57600 **d6** - 115200
Stop Bits of RS-485	07D2H	42003	R/W	**Default: d0**
				d0 - 2 **d1** - 1

NOTE: RS485 CONFIGURATION REGISTER can be accessed only through RS232.