
IDS BATCH
GEGA V2
customized


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USER OPERATING / TROUBLESHOOTING MANUAL FOR HMI BATCHING

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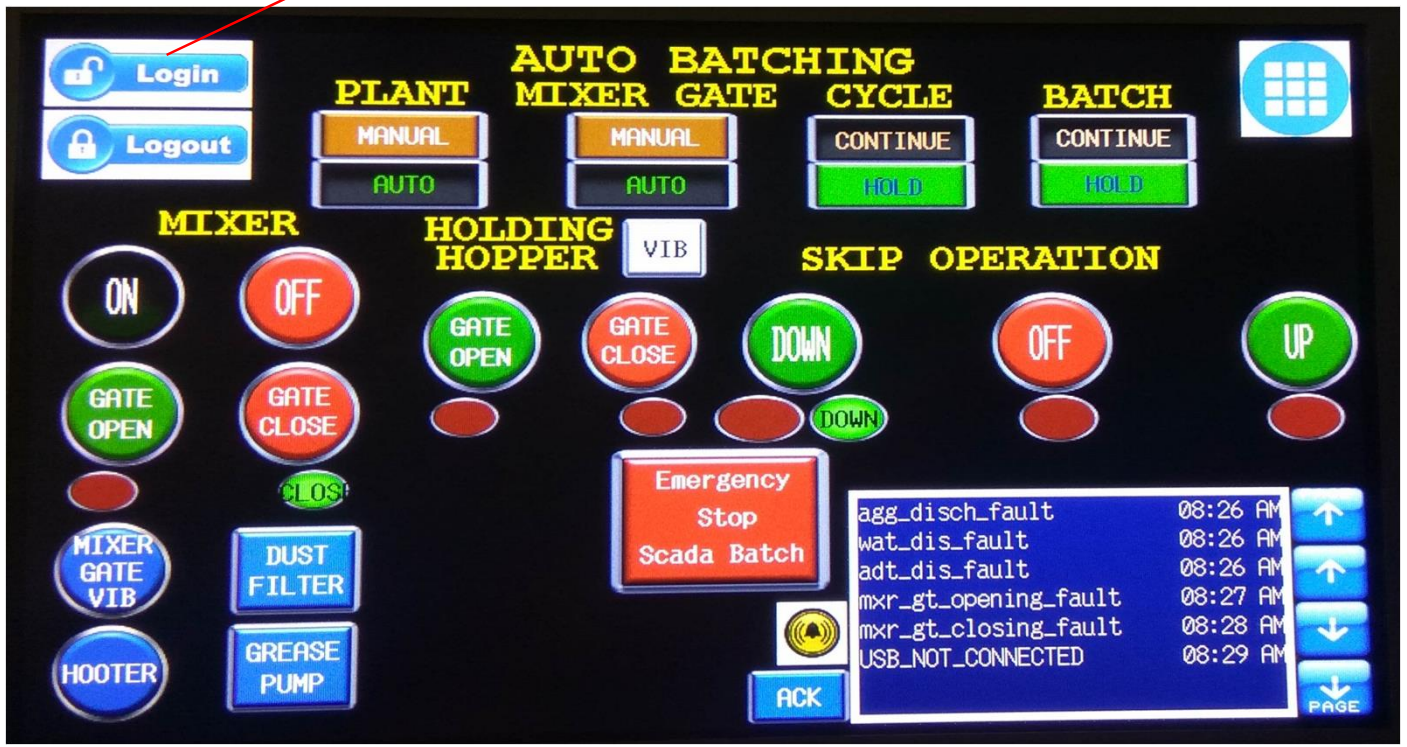
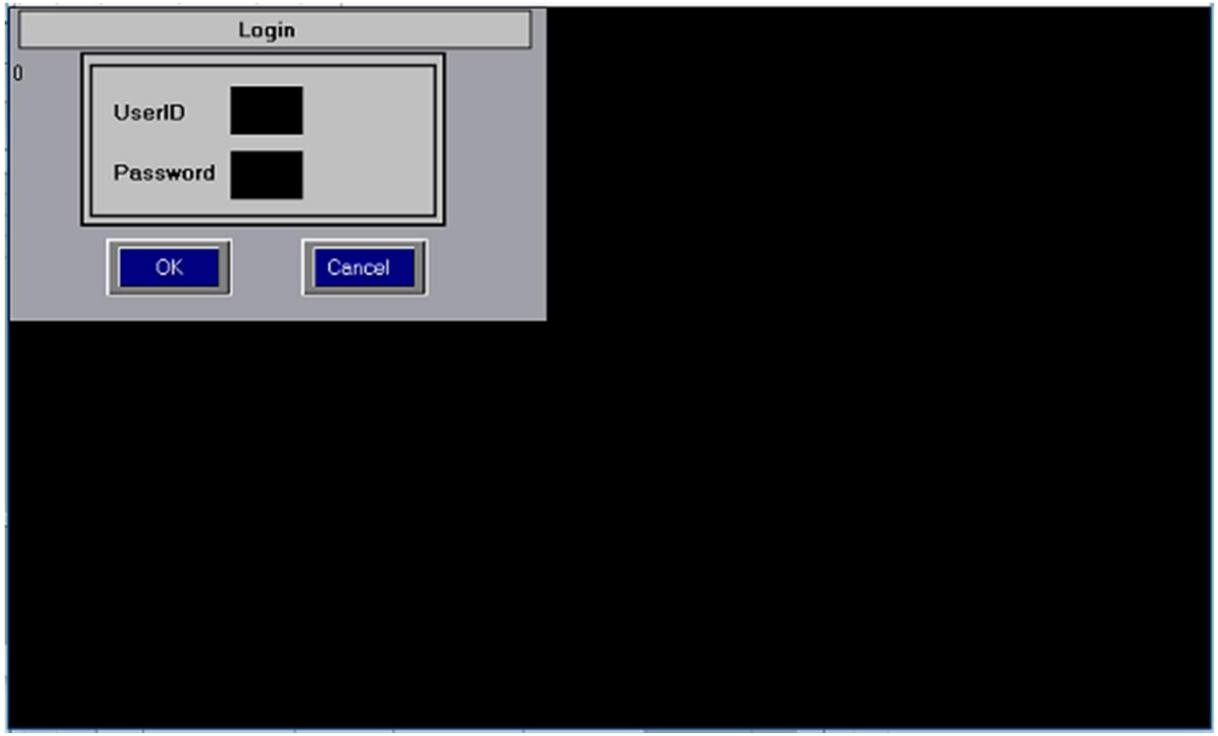
Main :

LOGIN



At System start up, the above screen shall be displayed. Before getting started make sure that USB is mounted to the HMI as it is mandatory or else none of the HMI screen is visible to user after logged in except this main screen.

Login :

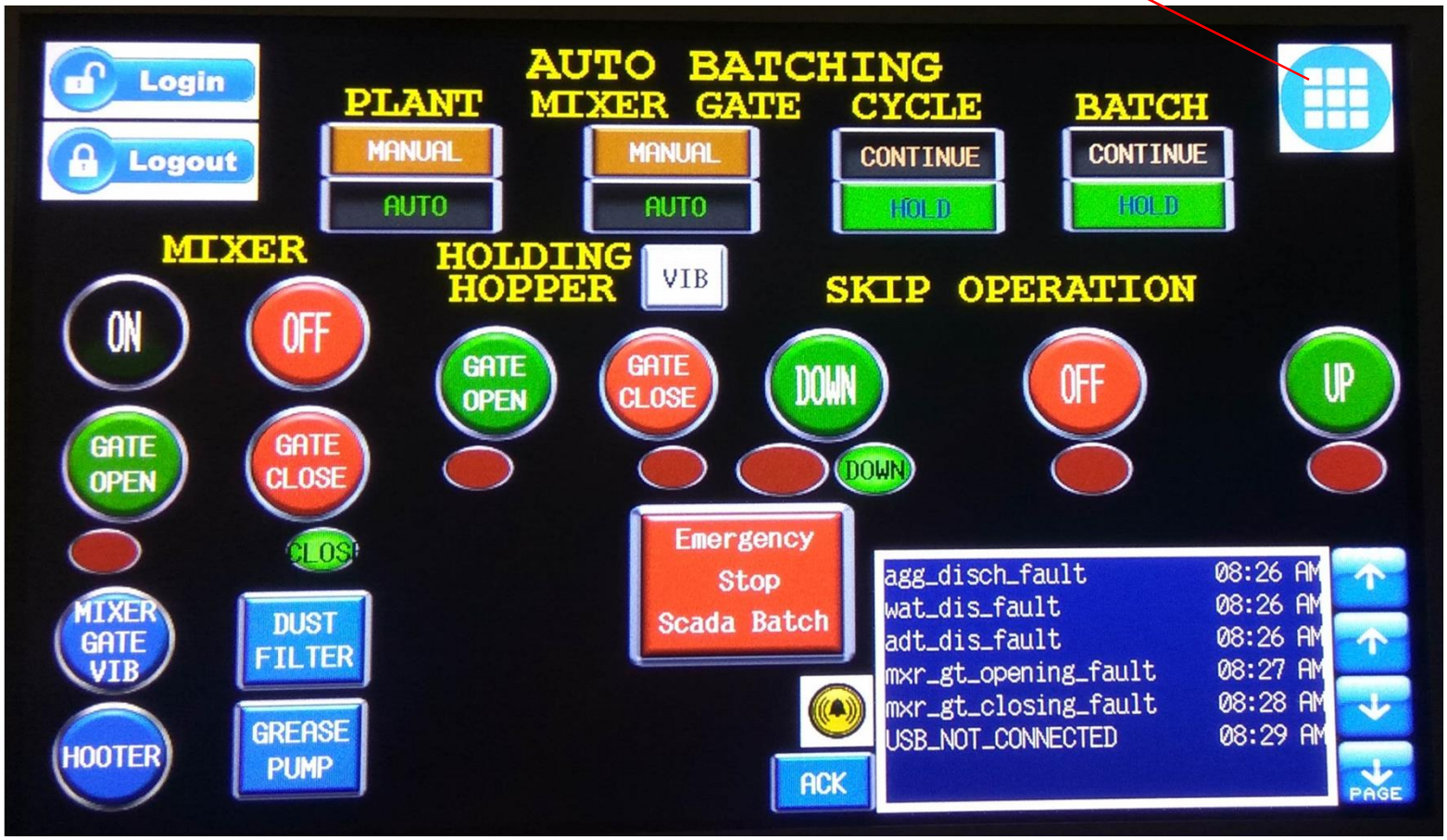


At System start up, the above screen shall be displayed . The User has to enter Login name & password to access screens. Once logged on following screen appears which allows user to do further operations.

GROUP	USERNAME	PASSWORD
Operator	opr	ids
OEM	eng	eng123

Main Screen:

MENU



Now by clicking on Menu Button we can navigate to the Menu Screen.

Main1 :

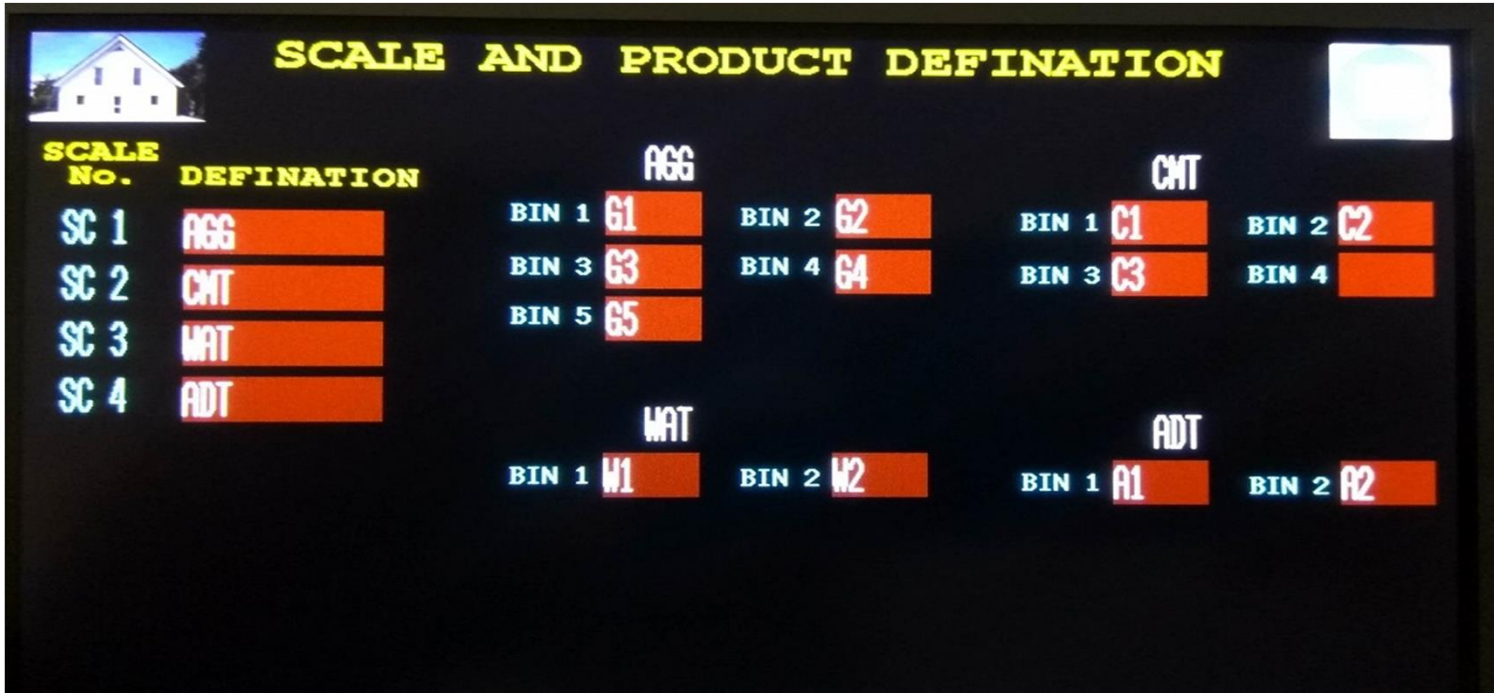
- **MENU SCREEN:** This screen allows user to access the different screen once the user is logged in and USB is connected.

Manual Equipment:

This screen allows user to perform the manual operation of the different equipment in manual mode. With the Help of Push buttons. Following operations users can done on this screen

1. Provision of Push buttons which allows to put Plant auto as well as manual, Mixer gate Auto/Manual, Cycle hold Continue. Etc.
2. Turning on and off of Mixer, Mixer Gate, Skip holding hoppers, Dust filters, hooters, Grease Pumps and discharging of the scales in manual mode only.

Product and scale Definition:



The Product Definition screen allows you to define all products used in the plant. To add a products follow the steps below

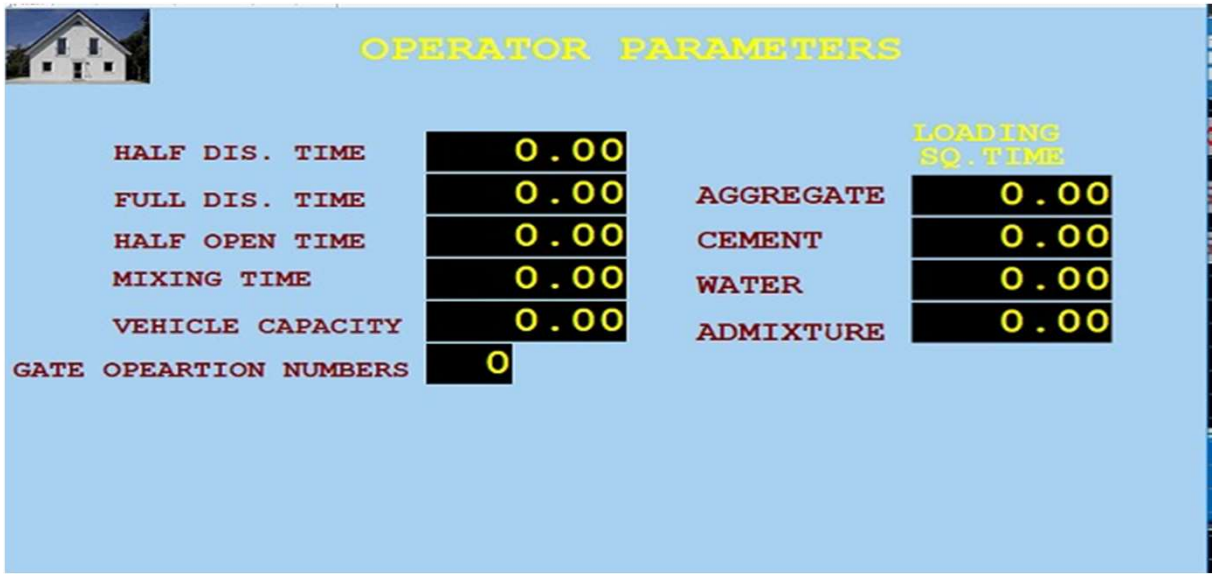
- Product Names : Click / tap on the respective text box., Enter an Unique code and Definition as maintained in your organization for the said product from the MMI keypad. The product code and definitions are used throughout the application. Ensure to select proper scale type to which the product belongs.

Filling:

This screen allows user to perform the manual operation for filling of the different Products with respect to the scale.

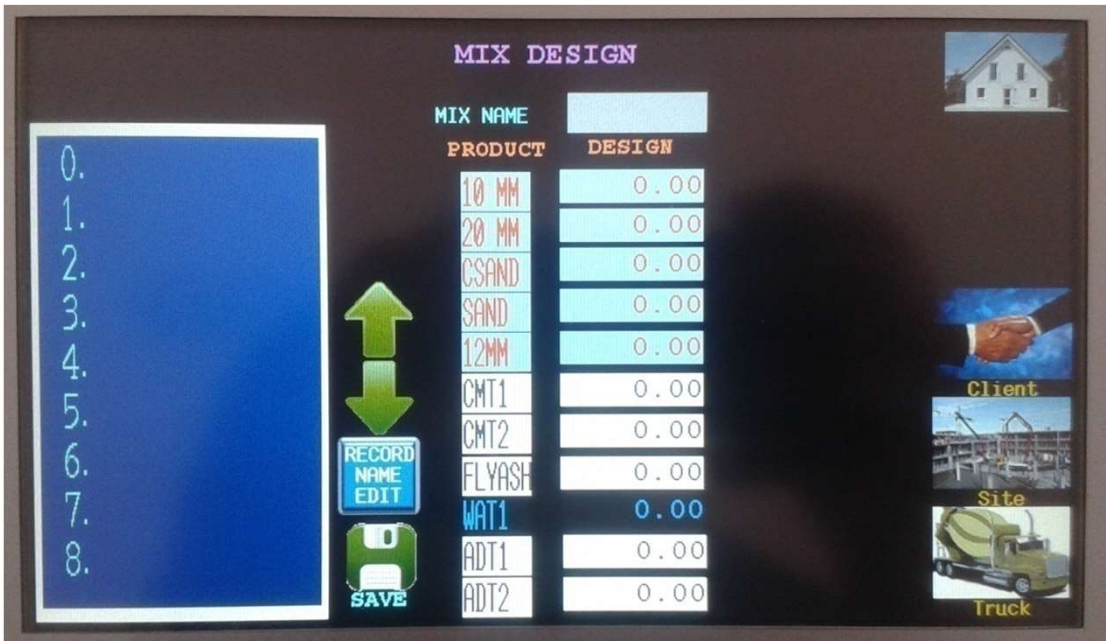
1. Gives user provision of Push buttons of all the Products of particular scales..
2. Also fast and Vib Push buttons are provided.
3. This screen also gives provision of weight indication of all the scales.
4. At the top Scale hold/continue buttons are provided so that user can Hold the scale and can remove the hold of the Particular scale.

Operator Parameter:



- **Mixing Time:** Enter the required mixing time.
- **Half Discharge Time:** Enter the required time to wait the gate opening after its half open travel.
- **Half discharge Time:** After the mixing is over, the system opens the mixer gate till half position. The gate remains open as per the value entered in this field. If there is no half opening position, or the mixer selected is R/D type, this value should be zero.
- **Full discharge Time:** Set the timing in seconds, the system keeps the discharge gate in full open position, for that period. Then, the system gives a CLOSE command to the gate.
- **Vehicle Capacity:** Enter Maximum vehicle capacity (For Ex. 6m3). The system generates an alarm if quantity to be concrete (set Load) to be produced is more than the vehicle capacity to avoid overload of vehicle.
- **Gate Operation Numbers:** Enter the required number of gate partial opening events.
- **Loading Sequence Time:** According to the loading sequence time the material starts discharging in the mixer .

Mix Design :



To store a Mix Design, follow the procedure is given below,

- Click on recipe number where you want to store.
- Then for mix design, Select the product which is to be batched & enter the value of the Aggregates against respective fields.

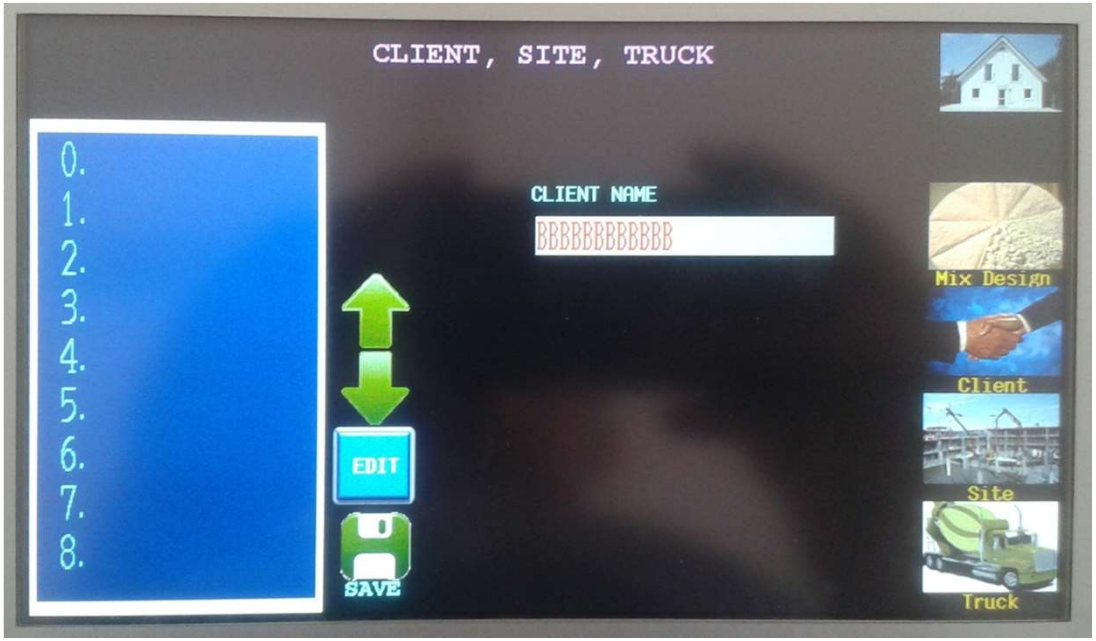
Similarly, enter the values for Cements, Additives & Water.

•. After all the values are entered, store the recipe by clicking - ‘Save’ from Tool bar.

•For change in name of any recipe just click on edit button and then respective recipe, then just enter the name.

•To change any ingredients quantity, select that particular mix design, - change the quantities & Save it.

Client



To store a Client, follow the procedure is given below,

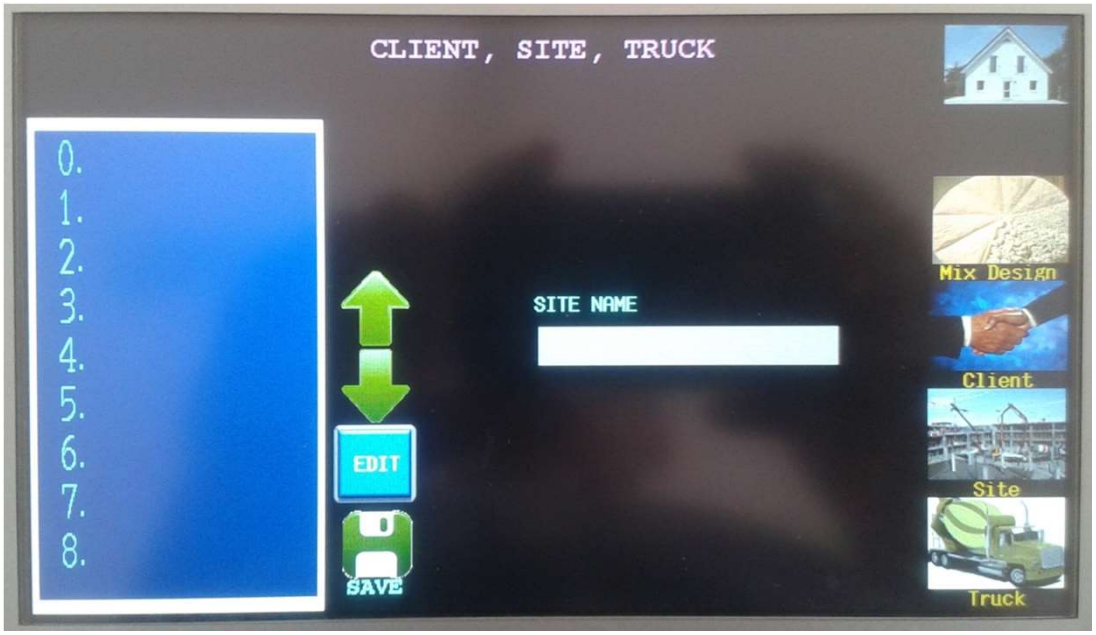
- Click on recipe number where you want to store.
- Then for Client, click on blank field type the Client Name.

•. After the name entered, store the recipe by clicking - ‘Save’ from Tool bar.

•For change in name of any recipe just click on edit button and then respective recipe, then just enter the name.

•To change , select that particular Client - change the name & Save it.

Site



To store a Site, follow the procedure is given below,

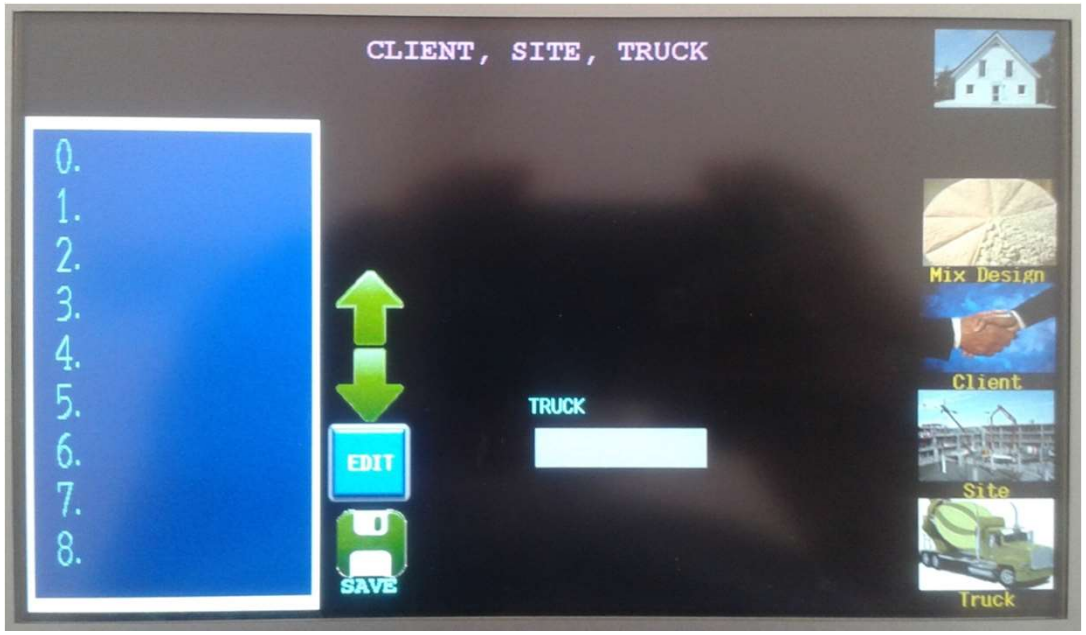
- Click on recipe number where you want to store.
- Then for Site, click on blank field type the Site Name.

•. After the name entered, store the recipe by clicking - ‘Save’ from Tool bar.

•For change in name of any recipe just click on edit button and then respective recipe, then just enter the name.

•To change , select that particular Site - change the name & Save it.

Truck



To store a Truck, follow the procedure is given below,

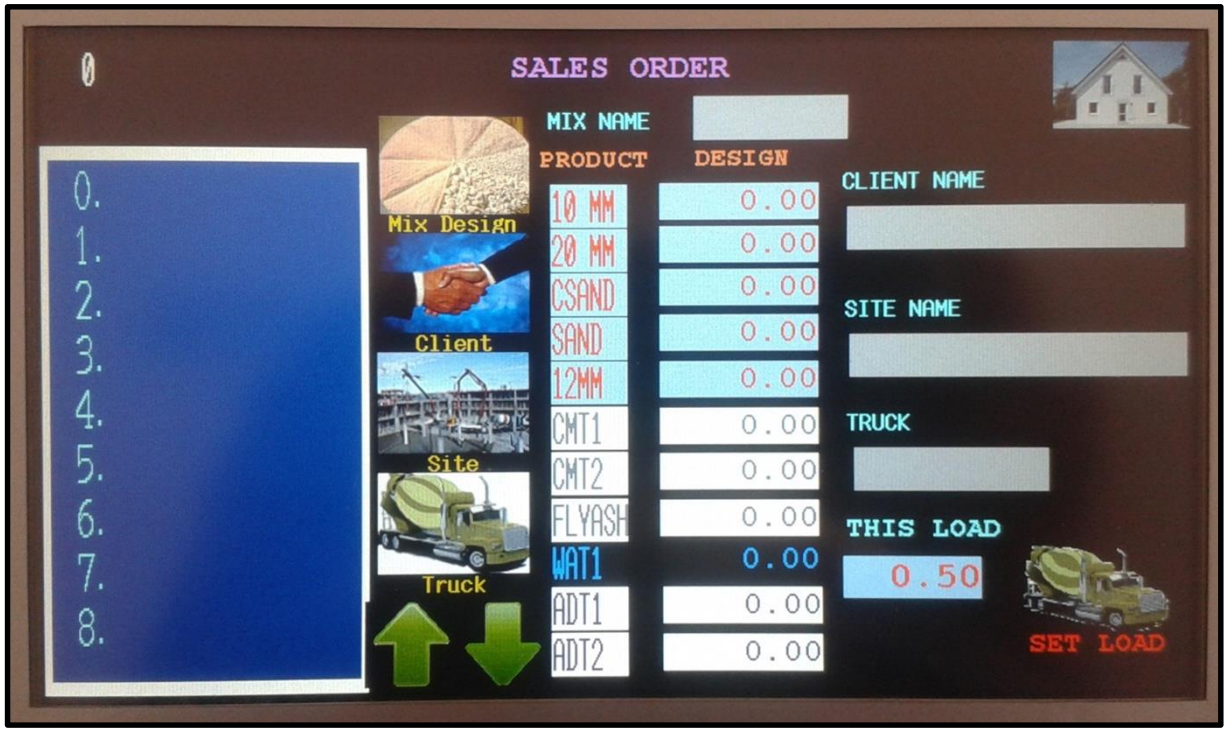
- Click on recipe number where you want to store.
- Then for Site, click on blank field type the Truck Name.

•. After the name entered, store the recipe by clicking - 'Save' from Tool bar.

•For change in name of any recipe just click on edit button and then respective recipe, then just enter the name.

•To change , select that particular Truck - change the name & Save it.

Sales Order :

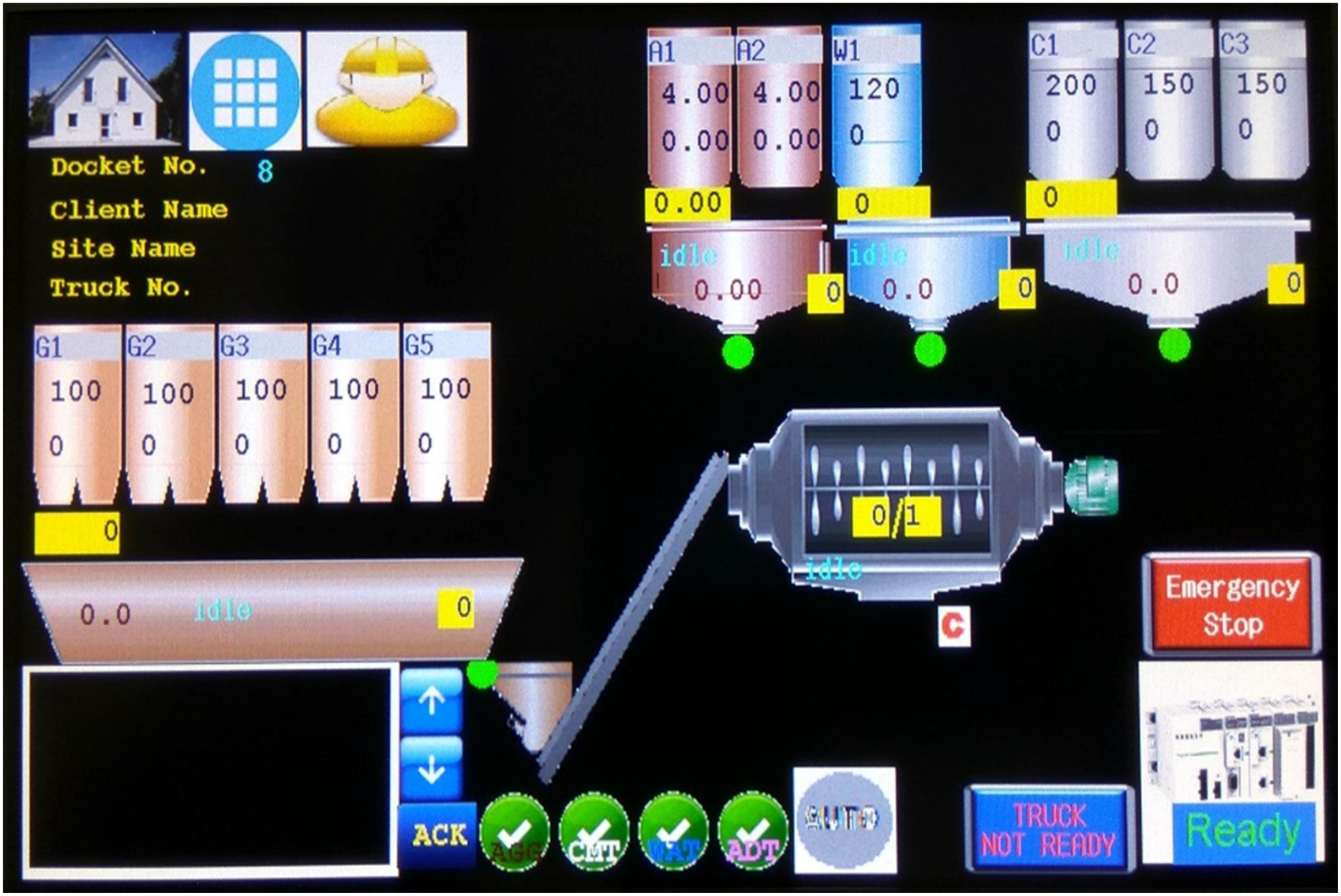


- The screen enables to set the Sales Order
- To Set the Sales Order, follow the procedure:
  - Click – on Mix Design, the display shows list of Saved Mix designs in list, select the mix design.
  - Select , Client & Site.
  - Enter Per Load Quantity (Quantity which is to be batched).
- After entering relevant details click on **‘Set Load’**.

Load Now:

- The screen displays the details such as Number of loads, batches/load, batch size, First target, subsequent target etc.
- Click - Load Now to start batching. The following Mimic Screen shall be displayed.

Plant Mimic :


Docket No. 8
Client Name
Site Name
Truck No.
A1
A2
W1
4.00
4.00
120
0.00
0.00
0
0.00
0
idle
0.00
0
idle
0.0
0
C1
C2
C3
200
150
150
0
0
0
0
idle
0.0
0
G1
G2
G3
G4
G5
100
100
100
100
100
0
0
0
0
0
0
0.0
idle
0
0/1
idle
C
Emergency Stop
ACK
AGG
CMT
MAT
ADT
AUTO
TRUCK NOT READY
Ready

Mimic

- As shown, the system will display the status of various components / materials continuously.
- The system shows the materials being weighed in decrementing manner.
- Also the status of each material, the batch number, number of balance batches will be displayed.
- The system will also show the status of Mixer, Transfer Belt / Skip.
- Alarms generated & normalized alarms during production, will be displayed at the left bottom grids of the screen.
- While batching, faults may be accepted by clicking on the respective buttons.
- These alarms shall be cleared from the grid by clicking on **Acknowledge All** button.
- For first batch of every order, the system confirms the presence of vehicle below the discharge shoot. A symbol of truck keeps blinking at the bottom of the screen for acknowledging the presence of vehicle.
- Vehicle presence can be acknowledged by pressing **'Truck Ready'** button.
- The batch cycle will stop indefinitely at skip waiting position. The cycle will continue only after the acknowledgement of **'Truck'**.
- **Mixer gate Operation**: Select mixer gate operation by Auto or manual. If 'Manual' is selected, user should open & close mixer gate manually every time. If selection is 'Auto', mixer gate open & close automatically.

Mimic :

Note :
The **‘Truck’** key is of toggle type. Hence if it is pressed again, the truck symbol will disappears again.

Batching cycle can be put on hold, by pressing **Cycle Hold** button. & could be renewed by pressing **Cycle Continue** button.

The cycle can be stopped immediately if there is an emergency by clicking on **Emergency Stop** button.

Note:
Once **emergency stop** button clicked or incase of power failure, PLC will go on hold condition & no process takes place. In such cases, user can release hold by clicking on **PLC On Hold** button from main screen. Or, keep Plant Auto / Manual selector switch in auto mode, press mixer Gate Open & Close buttons simultaneously. This releases the PLC from Hold condition.

- **Alarms, the user can accept are:**

- ……Dead weight fault !!! (Depending on the weight present on the scale).
- ……Tolerance fault !!!
- ……Negative fault !!!

- **Alarms, the user cannot accept are:**

- ……Fill fault !!!
- Skip is not sliding fault !!!
- Skip is not Climbing fault !!!
- Mixer is Not running fault !!!
- ……Scale Overloaded fault !!!
- ……Gate fault !!!

Alarms & Troubleshooting

- **PLC Not Connected !!!**
  Please check PLC & MMI cable for proper fitment.

- **Load Now** button is not showing in the screen.

a) Check whether the previous load is completed or not.

Remedy

a) Open mimic screen by clicking on **"Loading"** button from main screen.
b) Click on "**Emg. Stop"** button from mimic screen to finish the previous load.

- **In auto mode, Mixer gate closes immediately after sensing open signal**

Remedy:

a) Check mixer full discharge time for the selected vehicle. If it is 0secs, then abort the cycle or select mixer gate operation as manual mode.
b) Enter proper discharge time for the said vehicle.
c) Check for the relays RL20 & RL21 (Mixer Gate Open & Close) for proper operation.

- **Skip is sliding down after sensing waiting position in auto mode**

Remedy

a) Check skip down/reverse contactor or RL 15 is getting energized continuously
b) Check whether the PLC is getting erratic (skip top) signal before reaching at top position.
c) Check skip break coil supply & skip slack i/p signal.
d) If skip down PLC output is continuously energized, then PLC DO card may be defective.

Alarms & Troubleshooting

- **Skip is not resting properly at down position & system generates "Skip Down Sensor fault" in auto mode**

Remedy

a) Check skip down relay for proper signal / supply.

b) Check & count skip top to down travel time, increase it by 0.3secs to 1secs (ensure that no overshoot of skip position takes place).

- **Weight Indicator shows ULUL (RED LION)**

Remedy

a) Check load cell signal wires for proper connection to weight indicator & junction box terminals.

b) Check for any moisture in the cable ends, shield connections, load cell resistance at input & output.

c) Check individual load cells for proper & constant output (mV), else load cell may be defective.

- **Weight Indicator shows OLOL**

Remedy

a) Check for any moisture in the cable ends, shield connections, load cell resistance at input & output.

b) Check individual load cells for proper & constant output (mV), else load cell may be defective.

c) Check load cells for any mechanical obstructions & higher milli volts (should be less than 24mV/V).

- **Weight Indicator shows Err1**

Remedy

a) Reset weight indicator by pressing **RST** key & re-check weight indicator reading by putting standard weights on the scale/hopper.

Alarms & Troubleshooting

❖ **Weight Indicator & PLC / PC readings are not matching**

Remedy

a) Check analog card connections at PLC analog card & weight indicator terminals.

b) Check minimum & maximum values of both in weight indicators (analog settings) & in PC Calibration screens.

c) Check analog out put settings in weight indicator for proper selection (0-10V/4-20mA).

❖ **Skip starts climbing immediately after aggregate / weighing conveyor stops after discharging & material falls down**

Remedy

a) Increase skip start delay time (from Parameters – Aggregates)

❖ **The system shows "PLC Hold" & not able to make "PLC Ready"**

Remedy

a) Check PLC & PC communication & its cable.

b) Check whether the control contactor & MCB is on.

c) Check PLC input %I1.0 (NO contact of control contactor) for 24VDC supply.

❖ **Analog input image & Actual weights are not showing in calibration screen (its constant)**

a) Check PLC & PC communication & cable.

b) Check analog card connections at PLC analog card & weight indicator terminals.

c) Check minimum & maximum values of both in weight indicators (analog settings) & in PC Calibration screens.

d) Check analog out put settings in weight indicator for proper selection (0-10V/4-20mA).

Alarms & Troubleshooting

- **Admixture is over batching.**

Remedy

a) Check & control admixture flow.

b) Check selection of tolerance mode & defined allowable tolerance (See Technical - Product Parameters). If tolerance mode is in %, then change it to Kg (See- Parameters – Plant Parameters).

c) Check whether the weight indicator reading is increasing even after admixture motor stops.

d) Check admixture fill solenoid valve for proper operation.

- **Control MCB trips when Control On push button is pressed.**

Remedy

a) Check Phase & Neutral wires for any short circuit.

❖ **Aggregate Dead Weight Fault !!!**

Cause

Initial weight in the aggregate hopper is more than the allowed dead weights of the system(see Parameters – Plant Parameters Screen).

Remedy

a) This alarm usually rises during start of production. If dead weight is less and within the acceptable limits the fault can be accepted. If the fault is accepted, the cycle will proceed. However, it is advised to discharge the dead weights after the cycle is over.

b) If enough material is not present in the aggregate hopper, check dead weight setting (see Parameters – Plant Parameters Screen).

❖ **Material (Aggregate) Filling Fault !!!**

Cause

Aggregates may not be filled within the set filling time into aggregate hopper.

Remedy

a) Check aggregate bins for materials

b) If bin gates are not operating properly, check for presence of adequate air pressure, solenoid valve coils, If aggregate (sand) is not flowing freely, use vibrator.

Note :

This alarm cannot be accepted at user consent. The system will wait indefinitely till the fault is removed.

Alarms & Troubleshooting

❖ **Aggregate Discharge Fault !!!**

Cause

Aggregate material is not discharged completely within the set discharge time.

Remedy

a) Check the Weighing Conveyor free from mechanical obstructions.

b) Check the MPCB / MCB of Weighing Conveyor, Contactors, PLC output no Q2.4, RL – 24 in relay cards for proper signal.

Note

- This alarm raises during run time of the production. If quantity remaining is acceptable, then this fault can be accepted by pressing the **'Agg. Accept'** button.

❖ **Skip Waiting Position Fault !!!**

Cause

a) Skip has climbed to top / discharge position without sensing waiting position (see Parameters – Plant Configuration – Aggregate - Skip parameters).

b) System is switched manual mode while the skip is moving to wait position.

Remedy

a) Check the waiting position limit switch or proximity switch for proper operation PLC input no. I6.0 for proper signal.

Alarms & Troubleshooting

❖ **Skip Up Position Fault !!!**

Cause

a) Skip has not climbed to discharge position within the specified time (see Parameter – Plant Configuration – Aggregate - Skip parameters).

b) Skip up limit switch may not be sensing.

Remedy

a) Check the skip up position limit switch for proper operation.

Note

If skip up limit switch fails to operate, then it may cause mechanical or electrical damage. So it is advisable

to provide a safety limit switch just above the up limit switch and should be connected parallel to the up

limit switch.

❖ **Skip Down Position Fault !!!**

Cause

a) Skip has not slide to down position within the specified time (see Parameter – Plant Configuration – Aggregate – Skip parameters).

b) Skip down limit switch may not be sensing.

Remedy

a) Check the skip down position limit switch for proper operation.

b) Check for skip MCB and contactors, skip breaks, PLC input no. I1.8 for proper signal.

Note

The skip keeps sliding down till it senses down position limit switch. If not sensed, it may cause mechanical or electrical damages. Hence it is advised to provide a safety down Position limit switch just after the down position limit switch and connected parallel to it.

❖ **Mixer Gate Open Fault !!!**

Cause

a) Mixer gate open proximity switch is not sensing properly.

b) Mixer gate is not opening.

Remedy

a) Check the Mixer gate open proximity switch for proper operation.

b) Check for the mixer gate hydraulic motor, pressure of the hydraulic jack, hydraulic motor MCB / contactors, PLC output no.

❖ **Mixer Gate Close Fault !!!**

Cause

a) Mixer gate close proximity switch is not sensing properly.

b) Mixer gate is not closing actually.

Alarms & Troubleshooting

Remedy

a) Check the Mixer gate close proximity switch for proper operation.

b) Check for the mixer gate hydraulic motor , pressure of the hydraulic jack, hydraulic motor MCB / contactors.

c) Check for any mechanical obstructions.

❖ **Cement Gate Fault !!!**

Cause

a) Hopper gate close proximity switch is not sensing properly. Hopper gate is not closing actually.

b) Check PLC input I1.4 for proper 24VDC supply.

Remedy

a) Check the Hopper gate close proximity switch for proper operation.

b) Check for any mechanical obstructions.

Note

It's a run time fault that vanishes automatically within a few seconds. As the hopper gate takes some time to close, till the limit switch for aggregate hopper gate senses, the fault remains.

Alarms & Troubleshooting

❖ **Mixer Not Running !!!**

Note :

- This is an alarm that raises during start batch of production.
- One cannot go for production without operating mixer motors. This alarm is not acceptable at user's consent.

Remedy

a) Check for mixer motor trip circuit (MCB, Contactors, Relay etc.), PLC input nos. I1.18 (Mixer Delta),

I1.49 (Mixer Star) and I1.48 (Mixer Main).

❖ **System in Manual Mode !!!**

Cause

- System may be put to manual mode during auto production.

Remedy

- Check the auto / manual selector switch and put it to auto mode.

❖ **Aggregate out of Tolerance !!!**

Cause

- Weighing of aggregate may go out of the allowed tolerance limit (see Tolerance parameters in Technical – Product Parameters).

Alarms & Troubleshooting

Remedy

a) Check the aggregate bin gate for any mechanical obstruction.

b) Check the aggregate bin gate solenoid valve, MCB / contactors, PLC output and corresponding relay card for proper signal.

c) Check the in flight rate flow of the aggregate.

Note

- If the tolerance value is acceptable, then the fault can be accepted by **'Agg. Accept'** button. If the

  weighing goes out of tolerance repeatedly in consecutive production orders, operator should reset

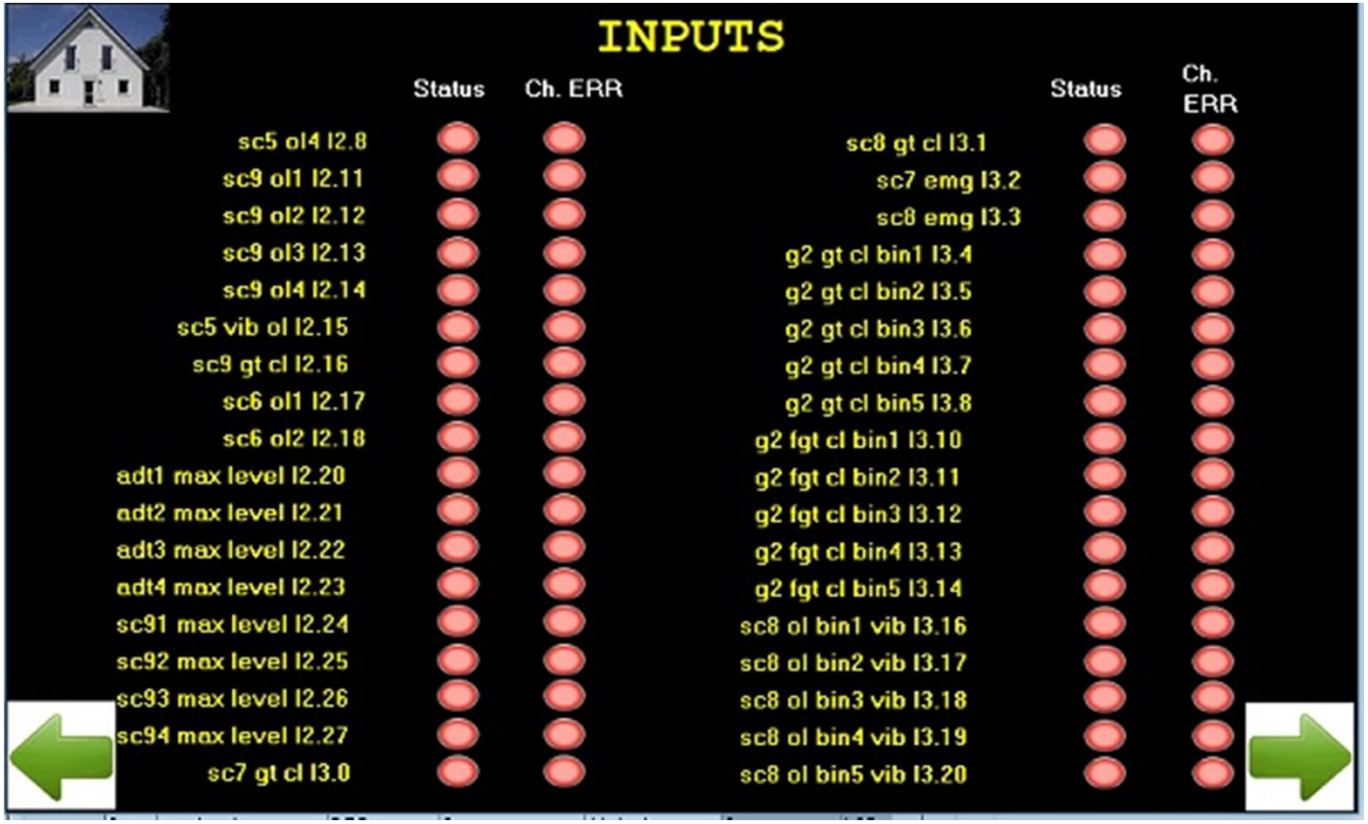
  / reclculate the material weighing before starting the next production order (refer Technical – Product Parameters – Recalculate Aggregate).

❖ **Batch Size Fault / Production Quantity Too Less !!!**

Note

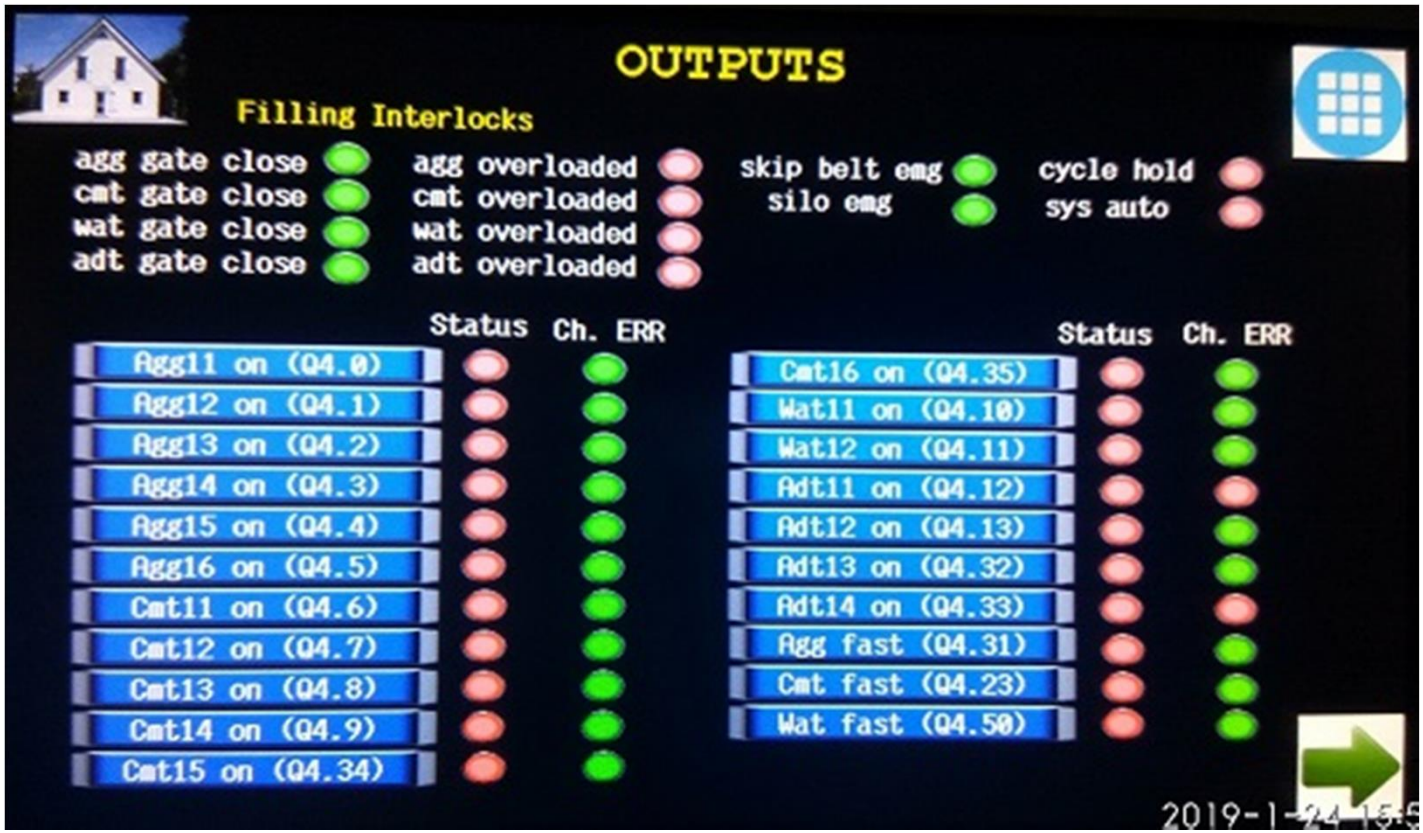
- This is an alarm that raises during start batch of production. One cannot go for production less than the defined allowable minimum value in M^3 which can be produced in auto mode. For better accuracy this value should be 70% or more of mixer capacity.

Inputs:



- **Input Details**: This screen allows user to check the status of the inputs so that user can trouble shoot any problems related to the feedback of limit switches.

Outputs:



- **Output Details**: This screen allows user to check the status of the ouputs

PLC :

SCHNEIDER Modicon 340 PLC with Ethernet Port.