

Operating Manual For ASpack

Aspack – Silo Project

Business Mission

Streamline Controls Pvt. Ltd. (SCPL) is in the business of providing electronic & computerized automation solution for different industries so as to enhance the quality and productivity. Our motto is to provide indigenous, reliable and proven products & hence to ensure consistent performance. Our concept of value to the customers is to supply indigenous control systems designed with latest technology, developed through extensive R & D, incorporating state of art technology (world technology trend), manufactured under strictest quality control system and duly tested, at competitive prices, delivered in time and supported by service teams.

We feel it to be our responsibility to ensure that our business operates at a reasonable profit, as profit provides opportunity for R&D, growth and job security. Therefore we are dedicated to profitable growth - growth as a company and growth as an individual.

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User Interface Description

➤ Graphic Page

Operation of Keys on Graphic Page

<u>Name of Keys</u>	<u>Functional Description</u>
Next Page (>)	Used this touch key for moving Next Page (>).
Previous Page (<)	Used this touch key for moving Previous Page (<).
Home Page (Home Symbol)	Used this touch key for moving Graphic Page (Home Page (Home Symbol)).
Scroll Up	Used this touch key for moving next detail of Silo as per operation Perform.
Scroll Down	Used this touch key for moving previous detail of Silo as per operation Perform.
PO Type	4 Type of PO (PO / EPO / DPO / RPO / SPO)
PO Year	Enter Only Last Two Digit (i.e. 2017 = 17 , 2016 = 16)
PO No	Enter 6 Digit PO Number
Pallet No	Enter 1 Digit Pallet No (1,2,3,4,5)

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Display Description of Graphic Page

- 1) No. (Sr. No.)
- 2) Silo (Silo No.)
- 3) Cont. (Container No.)
- 4) Set Weight
- 5) Act. Weight
- 6) Status

After Entering Correct PO Type, PO Year, PO Number, Pallet No, you can get all the above detail in proper mention place in Graphic Page (Home Page (Home Symbol)).

Detail of Container No on Display

Container No. (Side - A)	Container No. (Side - B)
4A	4B
3A	3B
2A	2B
1A	1B

Detail of Silo Name on Display

Silo -A (Side - A)	Silo -B (Side - B)
21A	21B
20A	20B
19A	19B
18A	18B
17A	17B
16A	16B
15A	15B
14A	14B
13A	13B
12A	12B
11A	11B
10A	10B
09A	09B
08A	08B
07A	07B
06A	06B

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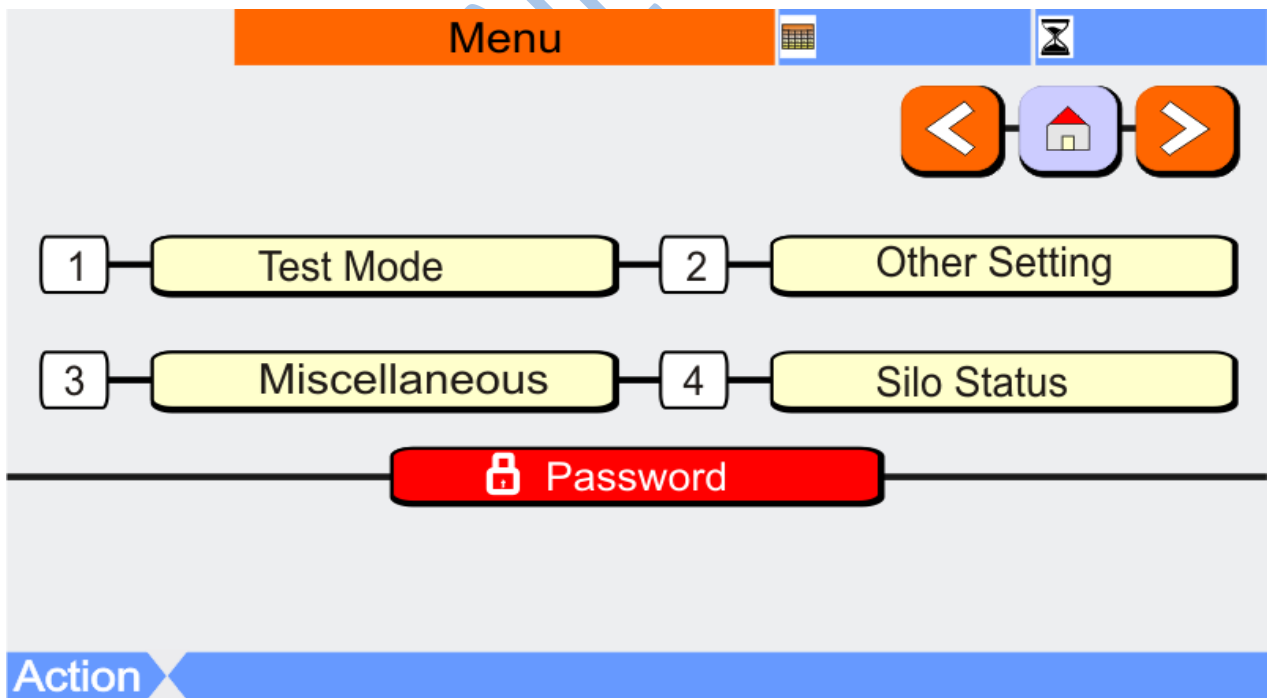
05A	05B
04A	04B
03A	03B
02A	02B
01A	01B

Detail of Status on Display

There are four different type status is display on screen.

<u>Name of Status</u>	<u>Functional Description</u>
Pending	Silo (enable) waiting of its turn.
Disable	Silo (Disable) not considering during cycle.
Running	Particular Silo is In Process during cycle.
Finish	Function of that Silo is now Over.
Pause	Function or Cycle is holding on that Silo. (Due to Emergency Stop or any Interlock)

➤ Menu Page



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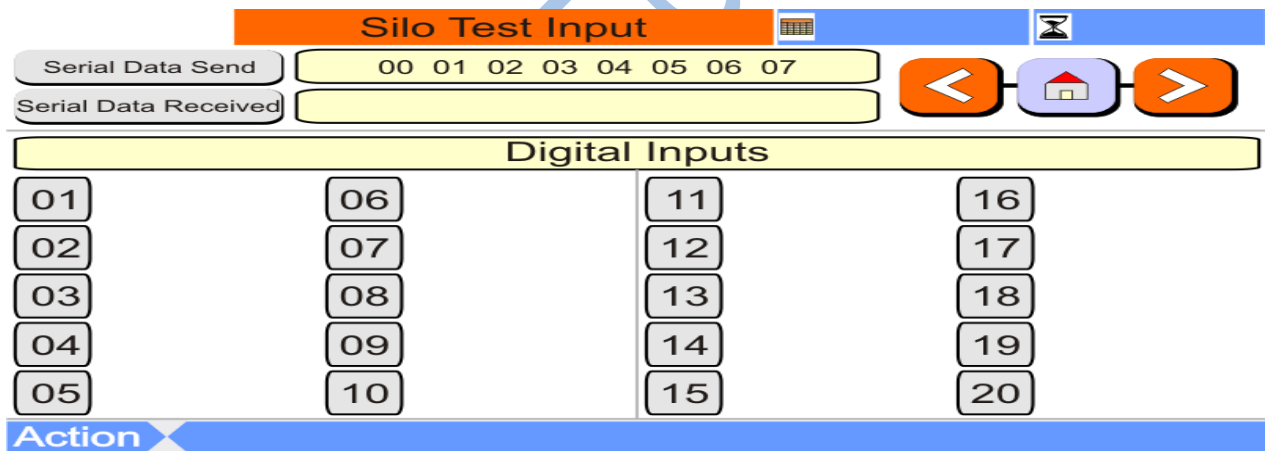
Operation of Keys on Menu Page

<u>Name of Keys</u>	<u>Functional Description</u>
Next Page (>)	Used this touch key for moving Next Page (>).
Previous Page (<)	Used this touch key for moving Previous Page (<).
Home Page (Home Symbol)	Used this touch key for moving Graphic Page (Home Page (Home Symbol)).
Test Mode	Open to Test mode Page
Other Setting	Open to Other setting Page
Miscellaneous	Open to Parameters Page
Silo Status	Silo Status Page

➤ **Test Mode Page**

There are four different type test page is display on screen one after other.

Note: If mode is manual, than you can open test mode.

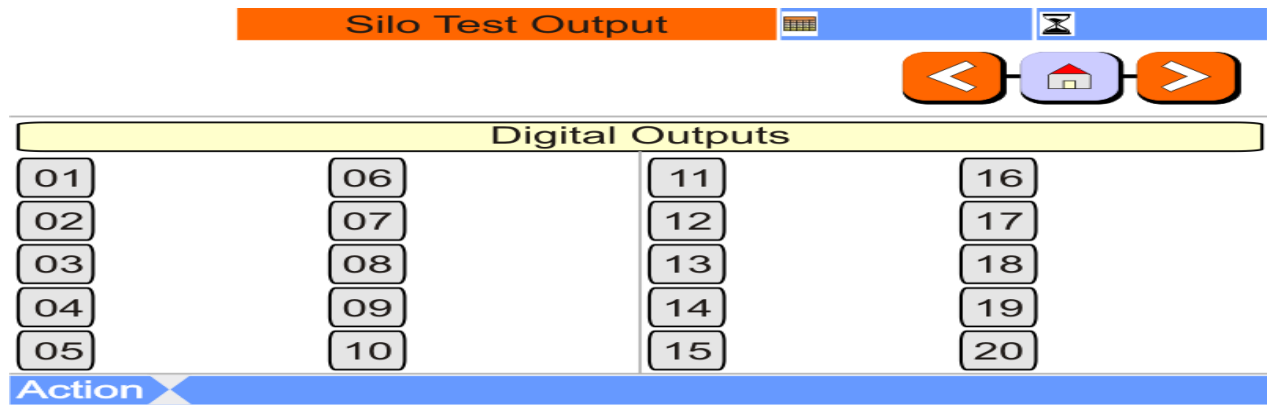


Operation of Keys on Silo Test Input Page

<u>Name of Keys</u>	<u>Functional Description</u>
Next Page (>)	Used this touch key for moving Next Page (>).
Previous Page (<)	Used this touch key for moving Previous Page (<).
Home Page (Home Symbol)	Used this touch key for moving Graphic Page (Home Page (Home Symbol)).
Serial Data Send	Send data from Controller to Hyper terminal for Serial Check. (Data Sending String : (01 02 03 04 05 06 07)
Serial Data Received	Received data from Hyper terminal to Controller for Serial Check. (Note: Limited String Character Received as per display space.)
All Digital Inputs	You can see all Digital Inputs as per ON or OFF Condition. (Note: Red is Off Condition & Green is ON)

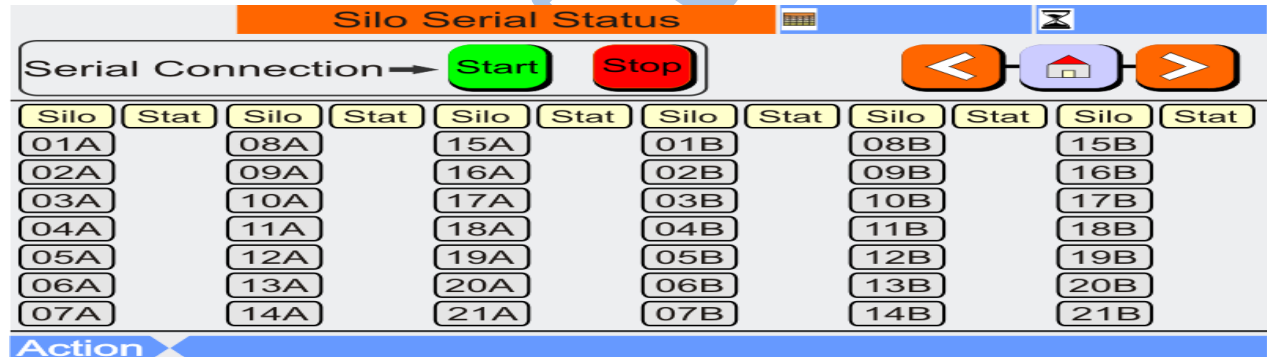
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Operation of Keys on Silo Test Output Page

<u>Name of Keys</u>	<u>Functional Description</u>
Next Page (>)	Used this touch key for moving Next Page (>).
Previous Page (<)	Used this touch key for moving Previous Page (<).
Home Page (Home Symbol)	Used this touch key for moving Graphic Page (Home Page (Home Symbol)).
All Digital Outputs	You can see all Digital Outputs as per ON or OFF Condition. (Note: Red is Off Condition & Green is ON)



Operation of Keys on Silo Serial Status Page

<u>Name of Keys</u>	<u>Functional Description</u>
Next Page (>)	Used this touch key for moving Next Page (>).
Previous Page (<)	Used this touch key for moving Previous Page (<).
Home Page (Home Symbol)	Used this touch key for moving Graphic Page (Home Page (Home Symbol)).
Serial Connection Start	Start button is used to connect all silo one by one for serial check. There are three color is display which gives status of that silo. (Note: Red - Not Connected. Green - Connected & Enable. Yellow - Connected But Disable.
Serial Connection Stop	Stop button is used stop serial trial connection.

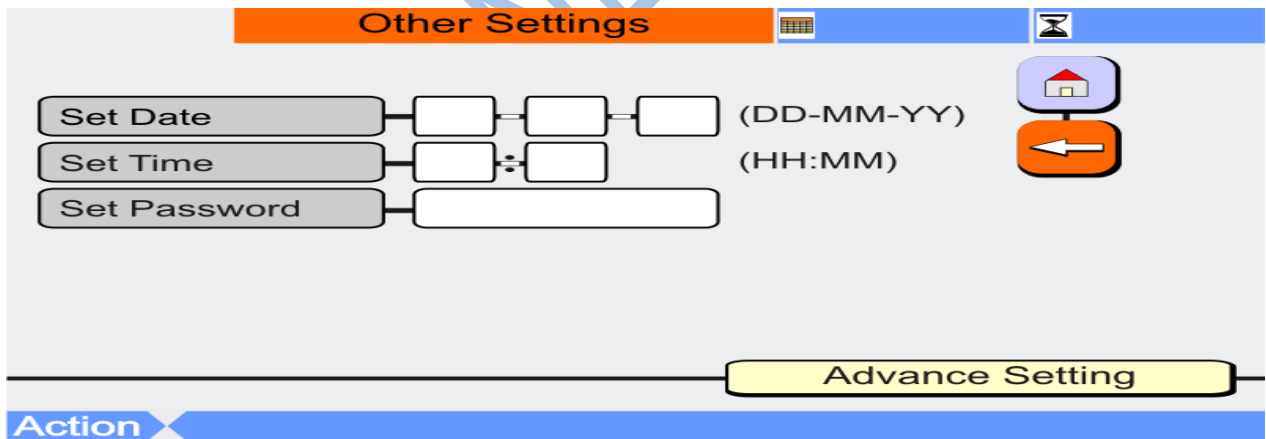
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Operation of Keys on Test Weighing Scale Page

<u>Name of Keys</u>	<u>Functional Description</u>
Next Page (>)	Used this touch key for moving Next Page (>).
Previous Page (<)	Used this touch key for moving Previous Page (<).
Home Page (Home Symbol)	Used this touch key for moving Graphic Page (Home Page (Home Symbol)).
All 8 bowls	All weighing scale's weight is display on screen as per his physically arrangement.

➤ **Other Setting Page**



Operation of Keys on Other Setting Page

<u>Name of Keys</u>	<u>Functional Description</u>
Previous Page (<)	Used this touch key for moving Previous Page (<).
Home Page (Home Symbol)	Used this touch key for moving Graphic Page (Home Page (Home Symbol)).
Set Date	Use to set date in dd: mm: yy format.
Set Time	Use to set time in hh : mm format.
Advance Setting	Use to enter Ethernet Setting Page.

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Operation of Keys on Ethernet Configure Page

<u>Name of Keys</u>	<u>Functional Description</u>
Previous Page (<)	Used this touch key for moving Previous Page (<).
Home Page (Home Symbol)	Used this touch key for moving Graphic Page (Home Page (Home Symbol)).
IP Address	Use to assign MMI IP Address.
Default Gateway	Use to assign MMI Default Gateway.
Subnet Mask	Use to assign MMI Subnet Mask.
Mac Address	Use to assign MMI Mac Address.
Remote IP Address	Remote IP Address

➤ Miscellaneous Page

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Operation of Keys on Miscellaneous Page

<u>Name of Keys</u>	<u>Functional Description</u>
Previous Page (<)	Used this touch key for moving Previous Page (<).
Home Page (Home Symbol)	Used this touch key for moving Graphic Page (Home Page (Home Symbol)).
Weigh Scale Check Time (sec)	This Parameter to use set w.scale check time in sec. (Note: Max 99 Sec Min 00 Sec)
Max Run Time (sec)	This Parameter to use set max run time in sec. (Note: Max 9999 Sec Min 0000 Sec)
Stepwise Mode	Run Cycle in Stepwise format. (Note: ON / OFF)
Maintenance Mode	Run Cycle in Different mode. (Note: Full – Cycle working as auto but valve close on timer base. TRLY – Cycle working as auto but only trolley is moving & working of Silo is Disable. VLVE - Cycle working as auto but only valve is Open & Close as timer base & Trolley is not moving. OFF - Cycle working on Auto mode.

➤ Silo Status Page

Operation of Keys on Silo Status Page

<u>Name of Keys</u>	<u>Functional Description</u>
Next Page (>)	Used this touch key for moving Next Page (>).
Previous Page (<)	Used this touch key for moving Previous Page (<).
Home Page (Home Symbol)	Used this touch key for moving Graphic Page (Home Page (Home Symbol)).
W1A to W4A & W1B to W4B	This all button is used for Enable & Disable purpose for Weighing Scale.
Other All not including (W1A to W4A & W1B to W4B)	This all button is used for Enable & Disable purpose for Silo Valve.

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Operating Sequence

Maintenance Mode

Note: - If mode is manual, than you can change maintenance mode from off to other.

Maintenance Mode (Full)



In this Full mode

1. Silo valve – Enable as per sr. no. of silo on Graphic page.
2. Container select as per higher to lower order (i.e. 4, 3, 2, 1 both side of weighing scale).
3. Trolley is moving to silo position as per sr. no. of silo with its matching weighing scale.
4. Waiting position input as per position required.
5. After getting position input valve is open & than close as per time frame.
6. Silo valve –Disable.
7. Step no. 1 to 6 repeat till last sr. no. of silo on Graphic page.
8. After all finish trolley moving back to home position till home input.

Maintenance Mode (TRLY)



In this Trolley mode

1. Silo valve – Enable as per sr. no. of silo on Graphic page.
2. Container select as per higher to lower order (i.e. 4, 3, 2, 1 both side of weighing scale).
3. Trolley is moving to silo position as per sr. no. of silo with its matching weighing scale.
4. Waiting position input as per position required.
5. After getting position.
6. Silo valve – Disable.
7. Step no. 1 to 6 repeat till last sr. no. of silo on Graphic page.
8. After all finish trolley moving back to home position till home input.

Maintenance Mode (VALV)



In this Valve mode

1. Silo valve – Enable as per sr. no. of silo on Graphic page.
2. Valve is open & than close as per time frame.
3. Silo valve – Disable.
4. Step no. 1 to 3 repeat till last sr. no. of silo on Graphic page.

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Note: - If mode is manual or trial, than you can't perform auto mode. So, Switch to Auto mode first than perform.

In this Auto mode

1. Silo valve – Enable as per sr. no. of silo on Graphic page.
2. Container select as per higher to lower order (i.e. 4, 3, 2, 1 both side of weighing scale).
3. Trolley is moving to silo position as per sr. no. of silo with its matching weighing scale.
4. Waiting position input as per position required.
5. After getting position input
6. Valve is open & than close as per set weight required.
7. Wait 5 sec for getting proper weight as per required.
8. Silo valve –Disable.
9. Step no. 1 to 8 repeat till last sr. no. of silo on Graphic page.
10. After all finish trolley moving back to home position till home input.

Note:

1. After getting position input.
2. Fully (100%) open Valve.
3. 50% Valve is close, before 750gm of set weight.
4. 80% Valve is close, before 500gm of set weight.
5. 95% Valve is close, before 200gm of set weight.
6. 100% Valve is close, before 10gm of set weight.

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Digital Inputs

<u>Name of Inputs</u>	<u>Functional Description</u>
Power Switch (On/Off)	It's a simple switch for power supply (On/Off).
Mode Switch (Auto / Manual)	This switch is used to change mode.(Auto / Manual)
Cycle Start Push Button	Push button is used to start new or fresh cycle after trolley getting home position or starting position.
Cycle Reset Push Button	Push button is used to reset all condition after cycle has been stop due to any interlock or emergency stop.
Trolley Home Push Button	For getting home position or starting position of trolley.
Trolley Forward & Reverse Switch	This switch is used to moving forward & reverse as per your requirement.
Emergency Stop Push Button	This switch is used to stop or break all running condition in any situation.
4 th Bowl Position Input	This input is used for acknowledgement of getting correct position of 4 th bowl.
3 rd Bowl Position Input	This input is used for acknowledgement of getting correct position of 3 rd bowl.
2 nd Bowl Position Input	This input is used for acknowledgement of getting correct position of 2 nd bowl.
1 st Bowl Position Input	This input is used for acknowledgement of getting correct position of 1 st bowl.
Power Down Input	It's basically NC input till power is not off.
Home Position Input	This input is used for acknowledgement of getting correct home position or starting position of trolley.

Digital Outputs

<u>Name of Outputs</u>	<u>Functional Description</u>
Tare	This output is used to tare all weighing scale before fresh or new cycle start.
Trolley Home	
Weight On	
Alarm	
Valve Disable	
Hooter	
Home Position Output	This output is working as input of Servo drive which gives acknowledgement of home position or starting position of trolley.

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Simple Action

<u>Messages on Screen</u>	<u>Functional Description</u>
Wait for Cycle Start	Wait for Cycle start push button to beginning new cycle.
Trolley Moving to Home	Trolley travelling to getting its home or start position.
Trolley Moving to Silo Posi	Trolley travelling to get correct silo position as per cycle required.
Wt for Trolley Home Posi	Wait for Trolley Home Push Button.
Loading Material	Fully (100%) open Valve.
Loading Material - Stage-1	50% Valve is close, before 750gm of set weight.
Loading Material - Stage-2	80% Valve is close, before 500gm of set weight.
Loading Material - Stage-3	95% Valve is close, before 200gm of set weight.
Loading Material - Stage-4	100% Valve is close, before 10gm of set weight.
Cycle Over	
Loading Material - Over	Function of valve is over.
Container Full- Trolley Home	If the entire Container Full, Trolley back to home position to unload.
Unload Containers	If the entire Container Full, Trolley is at home position & reload empty bowl to resume cycle after cycle start push button.
St Serial Connection Trial	In this situation try to connect serial to device before generate interlock.
Stpwise-Wait for Cyc Start	It's one feature to running cycle in stepwise mode.
Resume-Wait for Cyc Start	After any interlock or emergency stop, restart your cycle at same step.
Resume-Wt for Trolley Home	After any interlock or emergency stop at the time of trolley moving to home, restart trolley moving at the same position.

Interlock Action

<u>Interlock Messages on Screen</u>	<u>Functional Description</u>
IL>> Cycle on Hold	Function or Cycle is holding on that Silo. (Due to Emergency Stop or any Interlock)
IL>> Servo Motor Trip	At the time of servo drive trip occurred.
IL>> Stepper Motor Trip	At the time of stepper drive trip occurred.
IL>> Emergency Stop	If Emergency Stop is pressed.
IL>> Prob in Weighing Scale	If weighing scale is not giving act weight or material is not in silo.
IL>> M.Tim Over for Loading	Cycle is not over in given period of time span.

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IL>> Serial Error In Servo	Serial connection is not established with servo drive.
IL>> ALL Silo Disable	All the silo is disable in given PO number.
IL>> Serial Error-Silo No	Serial connection is not established with selected valve.
IL>> A-Side W.Scl is DSBL	All A-side weighing scale is disable.
IL>> B-Side W.Scl is DSBL	All B-side weighing scale is disable.
IL>> Silo Position Error	If trolley is not getting correct valve position.
AL>> W.Scl is nt On or Zero	Before cycle start weighing scale is not On or Zero.
AL>> Eth. Connection Prob	If Ethernet connection is not established with MMI.
AL>> Hopper Empty	Material is not in valve.
AL>> Switch to Auto Mode	Before cycle start if mode is not auto.
AL>> Trolley is not at Home	Before cycle start if trolley is not at home.
AL>> Power Down	If power goes to down after few time.

FAQ

1. What next after Emergency Stop button Pressed?

- In any duration you can push Emergency Stop button to stop current cycle or any operation.
- You cannot perform any operation till Emergency Stop button is pressed or Emergency Interlock message display on screen.
- After Emergency there are two options.

Resume Cycle: After clear interlock of Emergency. You can resume your cycle after pressing Cycle Start Push Button.

Reset Cycle: After clear interlock of Emergency. You can reset your cycle after pressing Cycle Reset Push Button.