



**Robotics and Industrial
Automation**

CNTR8011 – FACTORY TALK AUTOMATION

Summer
2025

PROJECT 1

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LIST OF SCREENS:

1. MAIN
2. MENU
3. LINE MONITOR
4. MANUAL CONTROLS
5. TRENDS
6. FASTENER LIMIT
7. DATA
8. SHIFT DATA
9. POPUP SCREEN
10. 90-ACTIVE ALARMS
11. 91-ALARM HISTORY

Passwords:

MAINT – 4321

MGNT – 1234

NAVIGATION FOR SCREENS

Main > Menu or Trends

Menu > All the screens

Line Monitor > Menu or Main or Manual controls or Return

Manual Controls > Menu or Line Monitor

Trends > Menu or Return

Fastner Limit Screen > Line Monitor or Main Or Menu

Data > Line Monitor or Menu

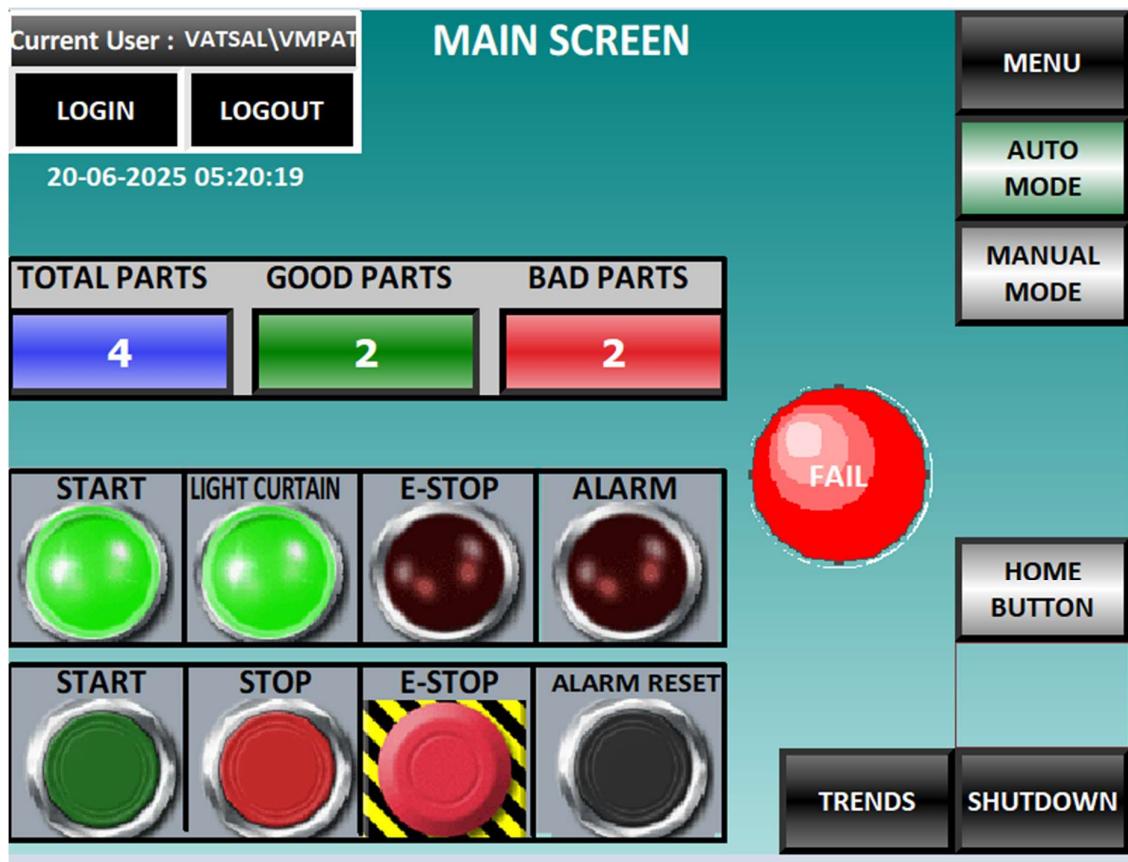
Shift Data > Line Monitor or Menu

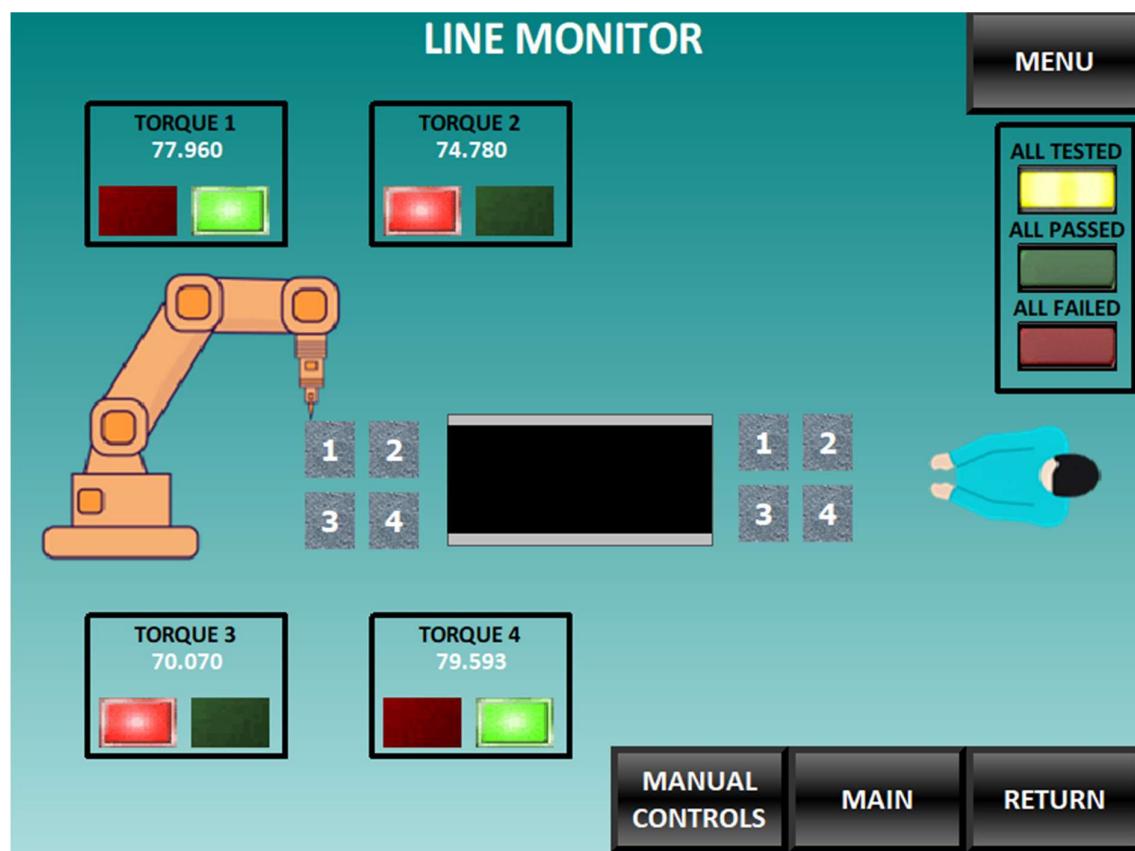
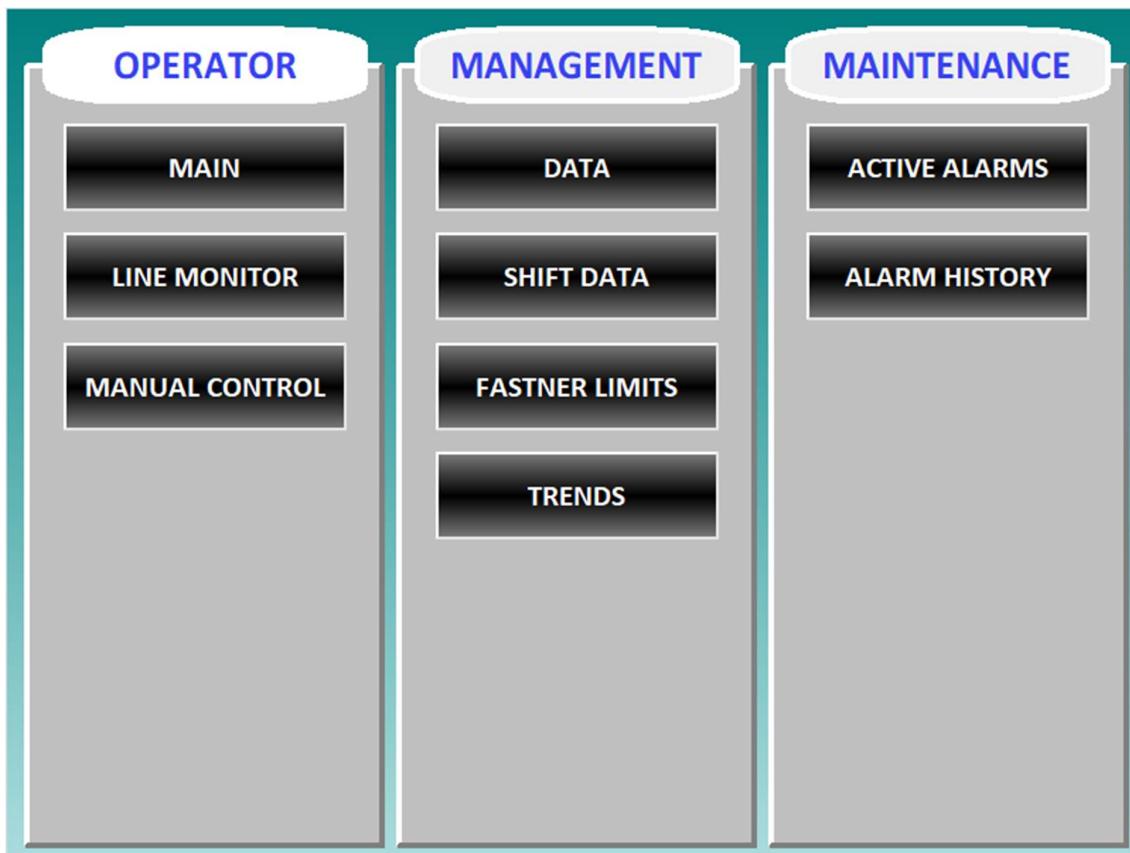
Popup > Close

Active Alarms > Menu or Alarm History

Alarm History > Menu

ALL SCREENS





MANUAL CONTROLS

MENU

CLAMP-A

EXTEND

RETRACT

CLAMP-B

EXTEND

RETRACT

CLAMP-C

EXTEND

RETRACT

Fixture

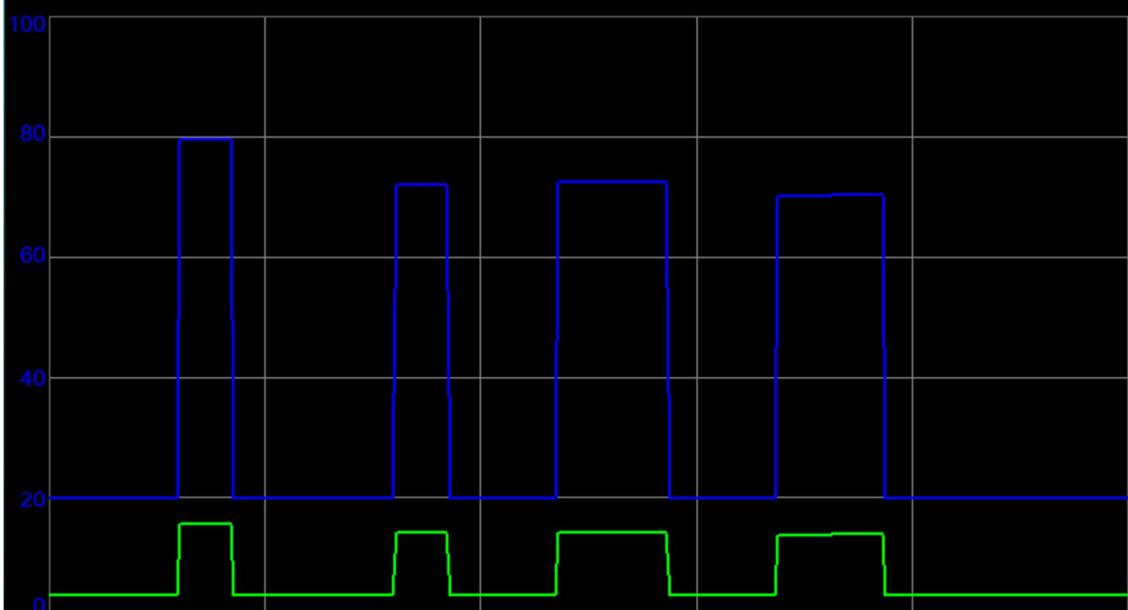
EXTEND

RETRACT

LINE
MONITOR

RETURN

TRENDS



MENU



NEXT
PEN

PAUSE



RETURN

FASTNER LIMIT SET SCREEN

MENU

1

LOW LIMIT

75.0000

HIGH LIMIT

95.0000

2

LOW LIMIT

75.0000

HIGH LIMIT

85.0000

3

LOW LIMIT

75.0000

HIGH LIMIT

85.0000

4

LOW LIMIT

75.0000

HIGH LIMIT

95.0000

LINE
MONITOR

MAIN

RETURN

DATA

MENU

TOTAL TESTED

FASTNER 1: 13.000 FASTNER 2: 13.000

FASTNER 3: 13.000 FASTNER 4: 13.000

TOTAL FAILED

FASTNER 1: 6.000 FASTNER 2: 4.000

FASTNER 3: 4.000 FASTNER 4: 4.000

TOTAL PASSED

FASTNER 1: 10.000 FASTNER 2: 4.000

FASTNER 3: 6.000 FASTNER 4: 6.000

END SHIFT

RESET STATS

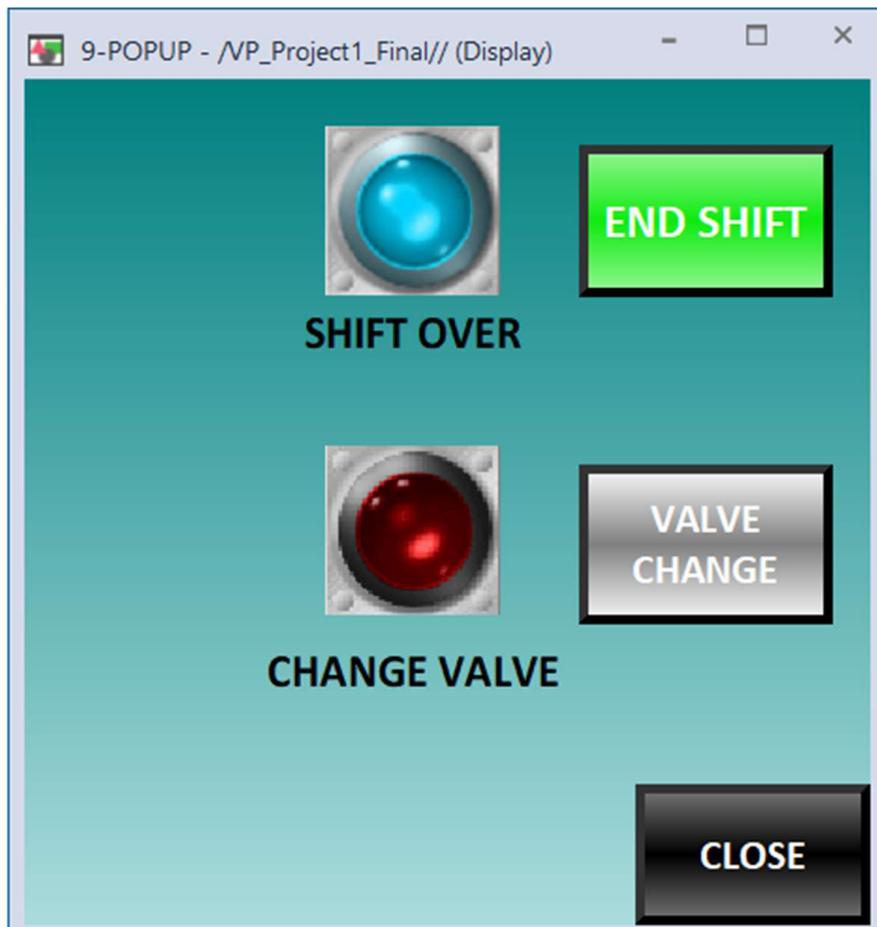
LINE
MONITOR

RETURN

SHIFT TIME:	0.000	SHIFT DATA			MENU
CURRENT SHIFT					
TESTED:	0.000	PASSED:	0.000		
FAILED:	0.000	EFFICIENCY: ***** %			
	TESTED	PASSED	FAILED	EFFICIENCY	
PAST SHIFT:	0.000	0.000	0.000	***** %	
PAST SHIFT:	4.000	2.000	2.000	50.000 %	
PAST SHIFT:	4.000	3.000	4.000	75.000 %	
PAST SHIFT:	0.000	0.000	4.000	***** %	
PAST SHIFT:	52.000	26.000	18.000	50.000 %	

END SHIFT RESET STATS LINE MONITOR RETURN

I used Parameters for 1 or 2 or 3 hrs shift selection.



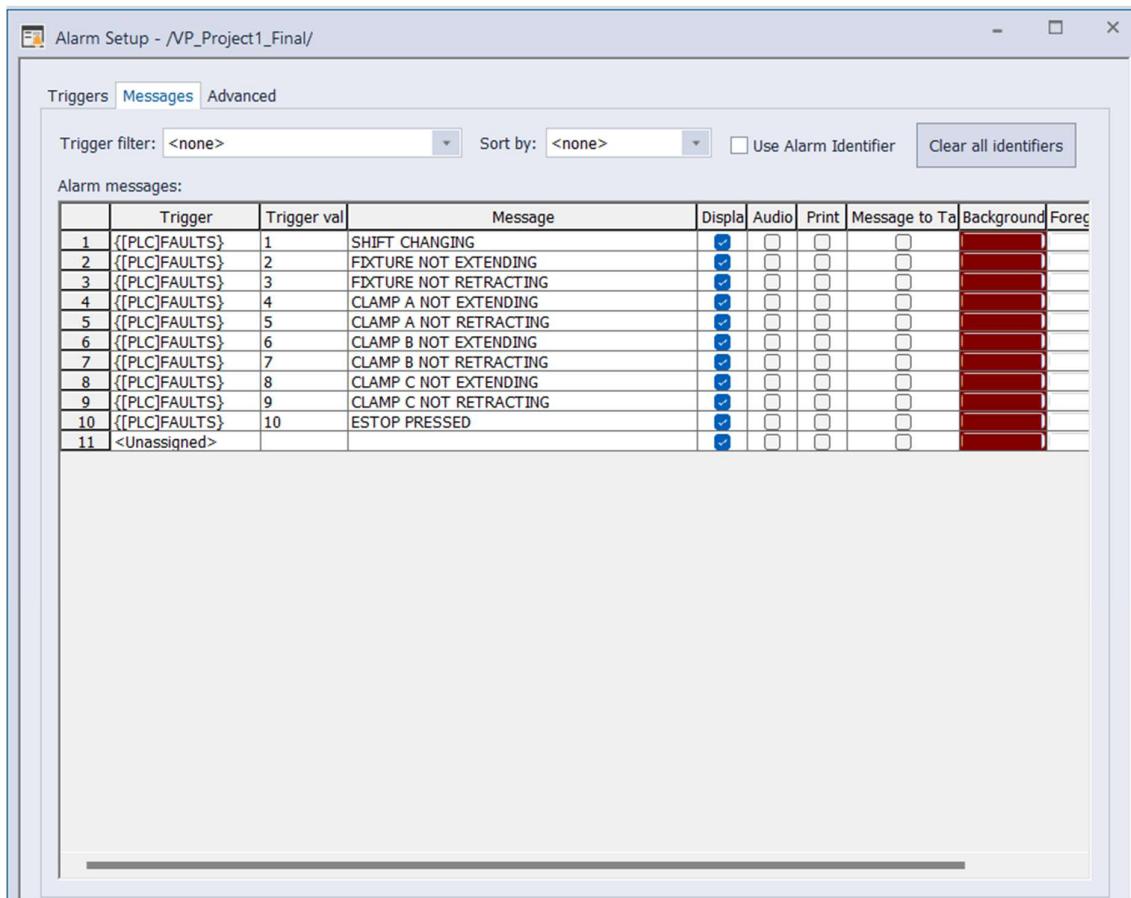
I used the control from plc tags to get to the popup screen so whenever the shift is over, it will show the popup so one can manually end the shift otherwise after certain time the shift will end as I have put the timer for that.

And the other way this screen will popup is when the total completed parts reach some specific number.

ACTIVE ALARMS	
Alarm time	Message
20-06-2025 06:05:52	ESTOP PRESSED
MENU	ALARM HISTORY
	ALARM RESET
	RETURN

ALARM HISTORY	
Alarm time	Message
20-06-2025 06:05:52	ESTOP PRESSED
20-06-2025 06:03:28	ESTOP PRESSED
MENU	ACTIVE ALARM
	RETURN

ALARM SETUP



HMI TAGS

```
{[PLC]CURRENT_SHIFT.COMPLETED}  
{[PLC]CURRENT_SHIFT.PASSED}  
{[PLC]CURRENT_SHIFT.FAILED}  
{[PLC]SYS_CycleActive}  
{[PLC]I1.14}  
{[PLC]EStop}  
{[PLC]FAULTSIND}  
{[PLC]FromHMI_StartPB}  
{[PLC]FromHMI_StopPB}
```

{[PLC]FAULTRESET_PB}
 {[PLC]SYS_AutoModeActive}
 {[PLC]SYS_ManualModeActive}
 {[PLC]HomePB}
 {[PLC]RESET_STATS}
 {[PLC]FASTEN_AllTorquesPass}
 {[PLC]FASTEN_F1Torque}
 {[PLC]FASTEN_F1TorqueFail}
 {[PLC]FASTEN_F1TorquePass}
 {[PLC]FASTEN_F2Torque}
 {[PLC]FASTEN_F2TorqueFail}
 {[PLC]FASTEN_F2TorquePass}
 {[PLC]FASTEN_F3Torque}
 {[PLC]FASTEN_F3TorqueFail}
 {[PLC]FASTEN_F3TorquePass}
 {[PLC]FASTEN_F4Torque}
 {[PLC]FASTEN_F4TorqueFail}
 {[PLC]FASTEN_F4TorquePass}
 {[PLC]FASTEN_F1Complete}
 {[PLC]FASTEN_F2Complete}
 {[PLC]FASTEN_F3Complete}
 {[PLC]FASTEN_F4Complete}
 {[PLC]I1.8}
 {[PLC]I1.9}
 {[PLC]I1.10}
 {[PLC]I1.11}
 {[PLC]FASTEN_AllComplete}
 {[PLC]FASTEN_AllTorquesFail}
 {[PLC]FromHMI_ExtClampA_PB}
 {[PLC]FromHMI_RetClampA_PB}
 {[PLC]FromHMI_ExtClampB_PB}

{[PLC]FromHMI_RetClampB_PB}
 {[PLC]FromHMI_ExtClampC_PB}
 {[PLC]FromHMI_RetClampC_PB}
 {[PLC]FromHMI_ExtFixture_PB}
 {[PLC]FromHMI_RetFixture_PB}
 {[PLC]FASTEN_TorqueFeedback}
 {[PLC]I2_CHA}
 {[PLC]FromHMI_F1LowLim}
 {[PLC]FromHMI_F1UppLim}
 {[PLC]FromHMI_F2LowLim}
 {[PLC]FromHMI_F2UppLim}
 {[PLC]FromHMI_F3LowLim}
 {[PLC]FromHMI_F3UppLim}
 {[PLC]FromHMI_F4LowLim}
 {[PLC]FromHMI_F4UppLim}
 {[PLC]F1_Count.ACC}
 {[PLC]F2_Count.ACC}
 {[PLC]F3_Count.ACC}
 {[PLC]F4_Count.ACC}
 {[PLC]F1_FAIL.ACC}
 {[PLC]F2_FAIL.ACC}
 {[PLC]F3_FAIL.ACC}
 {[PLC]F4_FAIL.ACC}
 {[PLC]F1_PASS.ACC}
 {[PLC]F2_PASS.ACC}
 {[PLC]F3_PASS.ACC}
 {[PLC]F4_PASS.ACC}
 {[PLC]END_SHIFT_PB}
 {[PLC]TIME}
 {[PLC]CURRENT_SHIFT.EFFICIENT}
 {[PLC]SHIFT HISTORY[0].COMPLETED}

```
{[PLC]SHIFTISTORY[1].COMPLETED}  
{[PLC]SHIFTISTORY[2].COMPLETED}  
{[PLC]SHIFTISTORY[3].COMPLETED}  
{[PLC]SHIFTISTORY[4].COMPLETED}  
{[PLC]SHIFTISTORY[0].PASSED}  
{[PLC]SHIFTISTORY[1].PASSED}  
{[PLC]SHIFTISTORY[2].PASSED}  
{[PLC]SHIFTISTORY[3].PASSED}  
{[PLC]SHIFTISTORY[4].PASSED}  
{[PLC]SHIFTISTORY[0].FAILED}  
{[PLC]SHIFTISTORY[1].FAILED}  
{[PLC]SHIFTISTORY[2].FAILED}  
{[PLC]SHIFTISTORY[3].FAILED}  
{[PLC]SHIFTISTORY[4].FAILED}  
{[PLC]SHIFTISTORY[0].EFFICIENT}  
{[PLC]SHIFTISTORY[1].EFFICIENT}  
{[PLC]SHIFTISTORY[2].EFFICIENT}  
{[PLC]SHIFTISTORY[3].EFFICIENT}  
{[PLC]SHIFTISTORY[4].EFFICIENT}  
{[PLC]CHANGED}  
{[PLC]SHIFT_TIMER.DN}  
{[PLC]TOHMI_CHANGEVALVE}  
#1 =ONEHR  
#1 =TWOHR  
#1 =THREEHR  
{[PLC]FROMHMI_SCREEN}  
{[PLC]TOHMI_SCREENREQ}
```