Energy_Drink_V15.1 / ENERGY_DRINK_PROC [CPU 314C-2 PN/DP] / Program blocks / 04-OPERATOR MANAGE-MENT

PROD_WEIGHING_MANAGEMENT [FC4]

PROD_WEIGHING_MANAGEMENT Properties							
General							
Name	PROD_WEIGHING_MANAGE-MENT	**Number**	4	**Type**	FC	**Language**	STL
Numbering	Automatic						
Information							
Title		**Author**		**Comment**		**Family**	
Version	0.1	**User-defined ID**					

PROD_WEIGHING_MANAGEMENT

Name	Data type	Offset	Default value	Comment
▼ Input				
Product_1	Real			
Product_2	Real			
Product_3	Real			
Water_Flow	Real			
Sirupe_Flow	Real			
Num_Bach	Int			Number of batches to produce
Output				
InOut				
▼ Temp				
Weight_Kg	Real	0.0		
Constant				
▼ Return				
PROD_WEIGHING_MANAGEMENT	Void			

Network 1: /********MAPPING OF INPUT PARAMETERS **********/**

```
0001 // DUE TO THE AUF COMMAND FROM FC "RECIPE SELECTION"
0002 // MAPPING INPUTS FROM DB PARAMETERS => MEMORY VAR
0003       L     #Product_1
0004       T     "M_Product_1"
0005       L     #Product_2
0006       T     "M_Product_2"
0007       L     #Product_3
0008       T     "M_Product_3"
0009       L     #Water_Flow
0010       T     "M_Water_Flow"
0011       L     #Sirupe_Flow
0012       T     "M_Sirupe_Flow"
0013       L     #Num_Bach
0014       T     "Num_Bach"
0015
0016 // CALCULATE TOTAL WEIGHT IN KG
0017       L     "M_Product_1"
0018       L     "M_Product_2"
0019       +R
0020       L     "M_Product_3"
0021       +R
0022       T     "Total_Weight"
0023
0024 // IF RESET BUTTON PRESSED LOAD "0" TO WEIGHT_KG
0025       U     "Reset_Button"
0026       SPBN  _305
0027       L     0
0028       T     #Weight_Kg
0029 _305: NOP 0
0030
```

Network 2: /******** SCALING SENSOR ACTIVATION **********/**

```
0001 // SCALE SENSOR
0002       CALL  SCALE
0003          IN      :="Weighing":P
0004          HI_LIM  :="Var_System_DB".Weighing_Process.Max_Kg
0005          LO_LIM  :="Var_System_DB".Weighing_Process.Min_Kg
0006          BIPOLAR :=FALSE
0007          RET_VAL :="Recipe_Num"
0008          OUT     :="Var_System_DB".Weighing_Process.PV
0009
0010
0011 // MOVE PROCESS VARIABLE PV => WEIGHT_KG
0012       L     "Var_System_DB".Weighing_Process.PV
0013       T     #Weight_Kg
```

Network 3: /********CONDITIONS TO OPEN TANK VALVES **********/**

```
0001 // IF NOT BACH IN PROGRESS
0002       U     "HMI_VAR".Start_Process
0003       O     "Var_System_DB".System_Generic.Man_Start_Process
0004       UN    "Var_System_DB".System_Generic.Bach_In_Progress
0005       SPBN  _300
0006       L     "Var_System_DB".Weighing_Process.State// VAR TO MANAGE THE JUMPS TO THE DIFFERENT WEIGHING STATES
0007
0008 // CASE STATEMENT TO PERFORM AND ACTION BASED ON STAGE OF THE PROCESS
0009       SPL   _301
0010
0011       SPA   PROD1               // IF "0" GO TO PROD1
0012       SPA   PROD2               // IF "1" GO TO PROD2
0013       SPA   PROD3               // IF "2" GO TO PROD3
0014
0015 _301: SPA   OUT
0016
0017 // PRODUCT 1 CONDITIONS TO SEND COMMAND TO OPEN TANK 1 DISCHARGE VALVE
0018 PROD1: U(
0019       L     #Weight_Kg
0020       L     "M_Product_1"
0021       <R
0022       )
0023       =     "Var_System_DB".Tk101.Vlv_Cmd// SEND COMMAND TO OPEN TANK 101 DISCHARGE VALVE
0024
0025 // IF WEIGTH >= PROCESS_STATE = 1, GO TO NEXT TANK
0026       U(
0027       L     #Weight_Kg
0028       L     "M_Product_1"
0029       >=R
0030       )
0031       SPBN  _302
0032       L     1
0033       T     "Var_System_DB".Weighing_Process.State// MODIFY VALUE TO GO TO THE NEXT WEIGHING STATE
0034 _302: NOP 0
0035       SPA   END
0036
0037 // PRODUCT 2 CONDITIONS TO SEND COMMAND TO OPEN TANK 2 DISCHARGE VALVE
0038 PROD2: U(
0039       L     "M_Product_1"
0040       L     "M_Product_2"
0041       +R
0042       L     #Weight_Kg
0043       >R
0044       )
0045       =     "Var_System_DB".Tk102.Vlv_Cmd// SEND COMMAND TO OPEN TANK 102 DISCHARGE VALVE
0046
0047 // IF WEIGTH >= PROCESS_STATE = 1, GO TO NEXT TANK
0048       U(
0049       L     "M_Product_1"
0050       L     "M_Product_2"
0051       +R
0052       L     #Weight_Kg
0053       <=R
0054       )
0055       SPBN  _303
0056       L     2
0057       T     "Var_System_DB".Weighing_Process.State// MODIFY VALUE TO GO TO FINAL WEIGHING STATE
0058 _303: NOP 0
0059
0060       SPA   END
0061
0062
0063 // PRODUCT 3 CONDITIONS TO SEND COMMAND TO OPEN TANK 3 DISCHARGE VALVE
0064 PROD3: U(
0065       L     "M_Product_1"
0066       L     "M_Product_2"
0067       +R
0068       L     "M_Product_3"
0069       +R
0070       L     #Weight_Kg
0071       >R
0072       )
0073       =     "Var_System_DB".Tk103.Vlv_Cmd// SEND COMMAND TO OPEN TANK 103 DISCHARGE VALVE
0074
0075 // IF WEIGTH >= SCALE_PV => PROCESS_STATE = 0 => BACH IN PROCESS ACTIVE
0076       U(
0077       L     "M_Product_1"
0078       L     "M_Product_2"
0079       +R
0080       L     "M_Product_3"
0081       +R
0082       L     #Weight_Kg
0083       <=R
0084       )
0085       SPBN  _304
```

```
0086       S     "Var_System_DB".System_Generic.Bach_In_Progress
0087       L     0
0088       T     "Var_System_DB".Weighing_Process.State// // RESET VALUE TO ITS INITIAL STAT
0089 _304: NOP 0
0090
0091       SPA   END
0092
0093 // IF VALUE OUT OF RANGE => SET PROCESS_STATE = 0 (INITIAL VALUE)
0094 OUT:  L     0
0095       T     "Var_System_DB".Weighing_Process.State
0096
0097       SPA   END
0098
0099 // IF JUMPED TO END GET OUT OF THE LOOP
0100 END:  BEA
0101
0102 _300: NOP 0
0103
```

Network 4: /********SCALE DISCHARGE VALVE **********/**

```
0001 // WHILE THE SCALE SENSOR IS GREATER THAN "0" KG
0002       U     "Var_System_DB".System_Generic.Bach_In_Progress
0003       U(
0004       L     #Weight_Kg
0005       L     0
0006       >R
0007       )
0008       =     "Var_System_DB".Scale_Discharge_Vlv.Vlv_Cmd// SEND COMMAND TO OPEN SCALE DISCAHRGE VALVE
0009
0010
0011 // WHILE THE CONDITION ARE MET => SEND COMMAND TO OPEN THE VALE
0012       U     "Var_System_DB".Scale_Discharge_Vlv.Vlv_Cmd
0013       U     "Var_System_DB".System_Generic.Stop
0014       =     "Var_System_DB".Scale_Discharge_Vlv.Open_Vlv_Cmd
0015
0016
0017 // FB GENERIC VALVE CALL
0018       CALL  "GENERIC_VALVE", "SCALE_DISCHARGE_VLV_DB"
0019          Valve_Cmd           :="Var_System_DB".Scale_Discharge_Vlv.Open_Vlv_Cmd
0020          Valve_Closed_Sensor :="Var_System_DB".Scale_Discharge_Vlv.Vlv_Closed
0021          Valve_Opened_Sensor :="Var_System_DB".Scale_Discharge_Vlv.Vlv_Opened
0022          Feedback_Type       :="Var_System_DB".Scale_Discharge_Vlv.Double_Feedback
0023          Actuation_Type      :="Var_System_DB".Scale_Discharge_Vlv.Single_Actuation
0024          Max_Lim             :=
0025          Min_Lim             :=
0026          PV                  :=
0027          Open_Valve_Cmd      :="Var_System_DB".Scale_Discharge_Vlv.Open_Vlv
0028          Close_Valve_Cmd     :=
0029          Valve_Feedback      :="Var_System_DB".Scale_Discharge_Vlv.Vlv_Feedback
0030          Valve_Alarm         :=
0031          Vlv_Control_Cmd     :=
0032          %_Vlv_Opened        :=
0033
```