

01_PreScan [FC1]

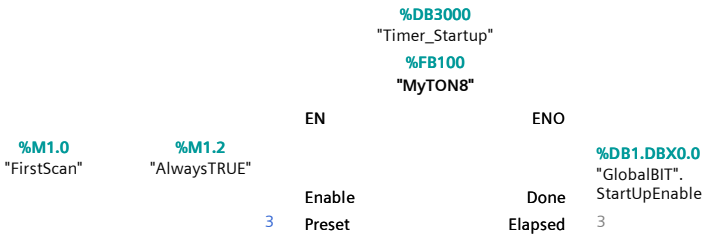
01_PreScan Properties

General

Name	01_PreScan	Number	1	Type	FC	Language	LAD
Numbering	Automatic						
Information							
Title		Author		Comment		Family	
Version	0.1	User-defined ID					

Name	Data type	Default value	Comment
Input			
Output			
InOut			
Temp			
Constant			
Return			
01_PreScan	Void		

Network 1: PreScan about Sorek I desalination plant



02_DigitalInput [FC2]

02_DigitalInput Properties

General

Name	02_DigitalInput	Number	2	Type	FC	Language	LAD
Numbering	Automatic						
Information							
Title		Author		Comment		Family	
Version	0.1	User-defined ID					

Name	Data type	Default value	Comment
Input			
Output			
InOut			
Temp			
Constant			
Return			
02_DigitalInput	Void		

Network 1: PMP-201 Backwash Pump

%I0.0 "Tag_1"	%M10.0 "PMP201_RunX"
%I0.1 "Tag_2"	%M10.1 "PMP201_FaultX"

Network 2: PMP-202 CIP Pump

%I0.2 "Tag_3"	%M10.2 "PMP202_RunX"
%I0.3 "Tag_4"	%M10.3 "PMP202_FaultX"

Network 3: AV-101 UF Inlet Valve

%I0.4 "Tag_5"	%M10.4 "AV101_OpenX"
%I0.5 "Tag_6"	%M10.5 "AV101_CloseX"

Network 4: AV-102 UF Bypass To Waste Valve

%I0.6 "Tag_7"	%M10.6 "AV102_OpenX"
%I0.7 "Tag_8"	%M10.7 "AV102_CloseX"

Network 5: AV-103 UF Filtrate Valve

%I1.0 "Tag_9"	%M11.0 "AV103_OpenX"
%I1.1 "Tag_10"	%M11.1 "AV103_CloseX"

Network 6: AV-104 UF Backwash Valve

Totally Integrated Automation Portal		
	%I1.2 Tag_11	%M11.2 AV104_OpenX
	%I1.3 Tag_12	%M11.3 AV104_CloseX
Network 7: UF Filtrate Flowmeter Pulse Signal		
	%I1.4 Tag_13	%M11.4 LSHL101_PulseX
Network 8: LSHL-201 CIP Tank High Level Float Switch		
	%I1.5 Tag_14	%M11.5 LSHL201X
Network 9: LSL-202 CIP Tank Low Level Float Switch		
	%I2.0 Tag_15	%M12.0 LSL202X
Network 10: Screen Filter Differential Pressure Switch		
	%I2.1 Tag_16	%M12.1 DPS101X
Network 11: Spare		
	%I2.2 Tag_17	%M13.0 SpareDI_07X
Network 12: Spare		
	%I2.3 Tag_18	%M13.1 SpareDI_08X
Network 13: Spare		
	%I2.4 Tag_19	%M12.4 SpareDI_03X
Network 14: Spare		
	%I2.5 Tag_20	%M12.5 SpareDI_04X
Network 15: Spare		

%I2.6
"Tag_21"

%M12.6
"SpareDI_05X"

Network 16: Spare

%I2.7
"Tag_22"

%M12.7
"SpareDI_06X"

Network 17: AV100 Open

%I3.0
"Tag_23"

%M12.2
"AV100_OpenX"

Network 18: AV100 Closed

%I3.1
"Tag_24"

%M12.3
"AV100_CloseX"

Network 19: Spare

%I3.2
"Tag_25"

%M13.2
"SpareDI_09X"

Network 20: Spare

%I3.3
"Tag_26"

%M13.3
"SpareDI_10X"

Network 21: Spare

%I3.4
"Tag_27"

%M13.4
"SpareDI_11X"

Network 22: Spare

%I3.5
"Tag_28"

%M13.5
"SpareDI_12X"

Network 23: Spare

%I3.6
"Tag_29"

%M13.6
"SpareDI_13X"

Network 24: Spare

%I3.7
"Tag_30"

%M13.7
"EStopOKX"

03_DigitalOutput [FC3]

03_DigitalOutput Properties

General

Name	03_DigitalOutput	Number	3	Type	FC	Language	LAD
Numbering	Automatic						
Information							
Title		Author		Comment		Family	
Version	0.1	User-defined ID					

Name	Data type	Default value	Comment
Input			
Output			
InOut			
Temp			
Constant			
Return			
03_DigitalOutput	Void		

Network 1: PMP-201 Backwash Pump about Sorek I desalination plant

%M20.0 "PMP201_RunY"	%Q0.0 "Tag_31"
%M20.1 "PMP201_ResetY"	%Q0.1 "Tag_32"

Network 2: PMP-202 CIP Pump

%M20.2 "PMP202_RunY"	%Q0.2 "Tag_33"
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Network 3: AV-101 UF Inlet Valve

%M20.3 "AV101_OpenY"	%Q0.3 "Tag_34"
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Network 4: AV-102 UF Bypass To Waste Valve

%M20.4 "AV102_OpenY"	%Q0.4 "Tag_35"
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Network 5: AV-103 UF Filtrate Valve

%M20.5 "AV103_OpenY"	%Q0.5 "Tag_36"
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Network 6: AV-104 UF Backwash Valve from Sorek I desalination plant

%M20.6 "AV104_OpenY"	%Q0.6 "Tag_37"
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Network 7: Spare

%M20.7 "AV100_OpenY"	%Q0.7 "Tag_38"
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Network 8: Spare

%M21.0
"SpareDO_02Y"

%Q1.0
"Tag_39"

Network 9: Spare

%M21.1
"SpareDO_03Y"

%Q1.1
"Tag_40"

05_AnalogOutput [FC5]

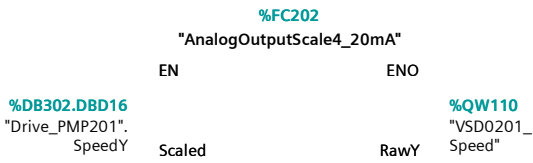
05_AnalogOutput Properties

General

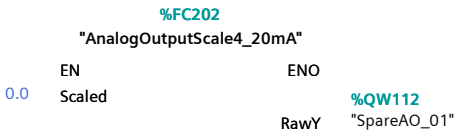
Name	05_AnalogOutput	Number	5	Type	FC	Language	LAD
Numbering	Automatic						
Information							
Title		Author		Comment		Family	
Version	0.1	User-defined ID					

Name	Data type	Default value	Comment
Input			
Output			
InOut			
Temp			
Constant			
Return			
05_AnalogOutput	Void		

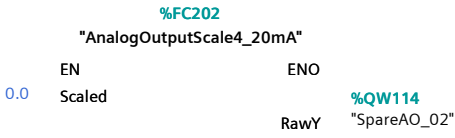
Network 1: PMP-201 Backwash Pump VSD Speed from Sorek I desalination plant



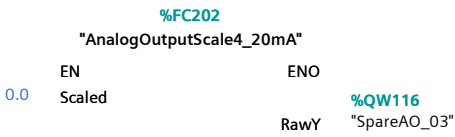
Network 2: Spare



Network 3: Spare



Network 4: Spare



04_AnalogInput [FC4]

04_AnalogInput Properties

General

Name	04_AnalogInput	Number	4	Type	FC	Language	LAD
Numbering	Automatic						
Information							
Title		Author		Comment		Family	
Version	0.1	User-defined ID					

Name	Data type	Default value	Comment
Input			
Output			
InOut			
Temp			
Constant			
Return			
04_AnalogInput	Void		

Network 1: LT-201 Treated Water Tank Level

%DB103			
"AnalogInput_ LT201"			
%FB110			
"AnalogInputScale"			
	EN	ENO	
%IW110		Scaled	0.2363824
"LT201"	RawX	ScaledPercent	16#7F800000
0.0	MinRaw	mA	4.630353
27648.0	MaxRaw	InputFaultAlar	
4.0	MinmA	m	FALSE
20.0	MaxmA		
0.0	MinScale		
100.0	MaxScale		
100.0	_100PercentS		
	cale		
FALSE	InputFaultAlar	mDisable	

Network 2: PT-101 UF Inlet Pressure

%DB100			
"AnalogInput_ PT101"			
%FB110			
"AnalogInputScale"			
	EN	ENO	
%IW112		Scaled	0.1067167
"PT101"	RawX	ScaledPercent	16#7F800000
0.0	MinRaw	mA	4.284578
27648.0	MaxRaw	InputFaultAlar	
4.0	MinmA	m	FALSE
20.0	MaxmA		
0.0	MinScale		
6.0	MaxScale		
0.0	_100PercentS		
	cale		
FALSE	InputFaultAlar	mDisable	

Network 3: PT-102 UF Filtrate Pressure

%DB101			
"AnalogInput_ PT102"			
%FB110			
"AnalogInputScale"			
	EN	ENO	
%IW114		Scaled	0.08284503
"PT102"	RawX	ScaledPercent	16#7F800000
0.0	MinRaw	mA	4.22092
27648.0	MaxRaw	InputFaultAlar	
4.0	MinmA	m	FALSE
20.0	MaxmA		
0.0	MinScale		
6.0	MaxScale		
0.0	_100PercentS		
	cale		
FALSE	InputFaultAlar	mDisable	

Network 4: FIT-101 UF Filtrate Flowmeter

%DB102			
"AnalogInput_ FIT101"			
%FB110			
"AnalogInputScale"			
EN		ENO	
%IW116		Scaled	0.003255308
"FIT101"	RawX	ScaledPercent	16#7F800000
0.0	MinRaw	mA	4.001736
27648.0	MaxRaw	InputFaultAlar	
4.0	MinmA	m	FALSE
20.0	MaxmA		
0.0	MinScale		
30.0	MaxScale		
0.0	_100PercentS		
	cale		
FALSE	InputFaultAlar		
	mDisable		

Network 5: Spare 01

%DB104			
"AnalogInput_ Spare1"			
%FB110			
"AnalogInputScale"			
EN		ENO	
%IW100		Scaled	0.06754547
"SpareAI_01"	RawX	ScaledPercent	0.6754547
0.0	MinRaw	mA	4.108073
27648.0	MaxRaw	InputFaultAlar	
4.0	MinmA	m	FALSE
20.0	MaxmA		
0.0	MinScale		
10.0	MaxScale		
10.0	_100PercentS		
	cale		
FALSE	InputFaultAlar		
	mDisable		

Network 6: Spare 02

%DB105			
"AnalogInput_ Spare2"			
%FB110			
"AnalogInputScale"			
EN		ENO	
%IW102		Scaled	8.247052
"SpareAI_02"	RawX	ScaledPercent	58.90752
0.0	MinRaw	mA	13.4252
27648.0	MaxRaw	InputFaultAlar	
4.0	MinmA	m	FALSE
20.0	MaxmA		
0.0	MinScale		
14.0	MaxScale		
14.0	_100PercentS		
	cale		
FALSE	InputFaultAlar		
	mDisable		

Network 7: Spare 03

%DB106			
"AnalogInput_ Spare3"			
%FB110			
"AnalogInputScale"			
EN		ENO	
%IW118		Scaled	8.247052
"SpareAI_03"	RawX	ScaledPercent	58.90752
0.0	MinRaw	mA	13.4252
27648.0	MaxRaw	InputFaultAlar	
4.0	MinmA	m	FALSE
20.0	MaxmA		
0.0	MinScale		
14.0	MaxScale		
14.0	_100PercentS		
	cale		
FALSE	InputFaultAlar		
	mDisable		

Network 8: Spare 04

%DB107				
"AnalogInput_Spare4"				
%FB110				
"AnalogInputScale"				
EN		ENO		
%IW120			Scaled	8.247052
"SpareAI_04"	RawX	ScaledPercent		58.90752
0.0	MinRaw	mA		13.4252
27648.0	MaxRaw	InputFaultAlarm		FALSE
4.0	MinmA			
20.0	MaxmA			
0.0	MinScale			
14.0	MaxScale			
14.0	_100PercentScale			
FALSE	InputFaultAlarmDisable			

Network 9: Spare 05

%DB108				
"AnalogInput_Spare5"				
%FB110				
"AnalogInputScale"				
EN		ENO		
%IW122			Scaled	8.247052
"SpareAI_05"	RawX	ScaledPercent		58.90752
0.0	MinRaw	mA		13.4252
27648.0	MaxRaw	InputFaultAlarm		FALSE
4.0	MinmA			
20.0	MaxmA			
0.0	MinScale			
14.0	MaxScale			
14.0	_100PercentScale			
FALSE	InputFaultAlarmDisable			

Network 10: Spare 06

%DB109				
"AnalogInput_Spare6"				
%FB110				
"AnalogInputScale"				
EN		ENO		
%IW124			Scaled	8.247052
"SpareAI_06"	RawX	ScaledPercent		58.90752
0.0	MinRaw	mA		13.4252
27648.0	MaxRaw	InputFaultAlarm		FALSE
4.0	MinmA			
20.0	MaxmA			
0.0	MinScale			
14.0	MaxScale			
14.0	_100PercentScale			
FALSE	InputFaultAlarmDisable			

06_SimEquipment [FC6]

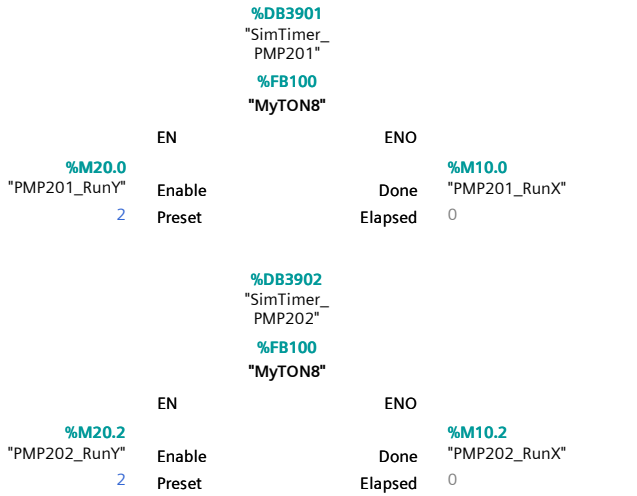
06_SimEquipment Properties

General

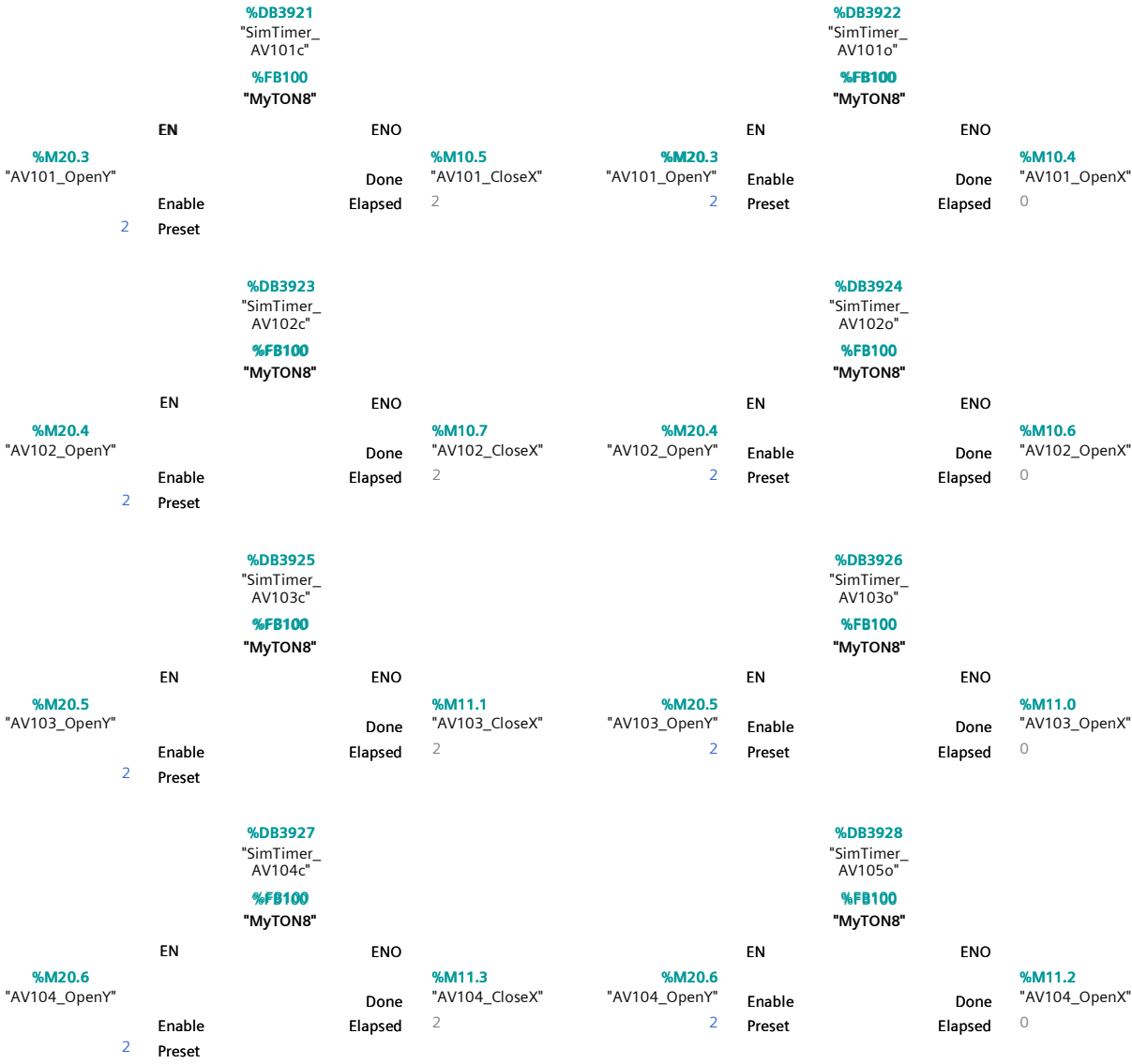
Name Numbering Information Title Version	06_SimEquipment Manual	Number	6	Type	FC	Language	LAD
		Author		Comment		Family	
	0.1	User-defined ID					

Name	Data type	Default value	Comment
Input			
Output			
InOut			
Temp			
Constant			
Return			
06_SimEquipment	Void		

Network 1: Drive



Network 2: Valve



07_Control [FC7]

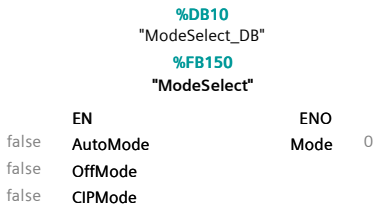
07_Control Properties

General

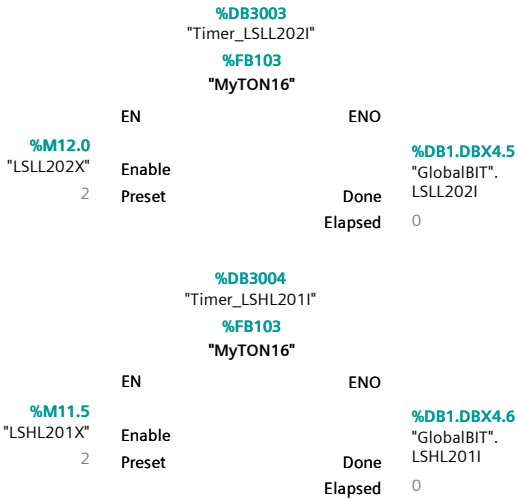
Name	07_Control	Number	7	Type	FC	Language	LAD
Numbering	Manual						
Information							
Title		Author		Comment		Family	
Version	0.1	User-defined ID					

Name	Data type	Default value	Comment
Input			
Output			
InOut			
Temp			
Constant			
Return			
07_Control	Void		

Network 1: Mode Select



Network 2: CIP Tank Level Indication



08_CIP [FC8]

08_CIP Properties

General

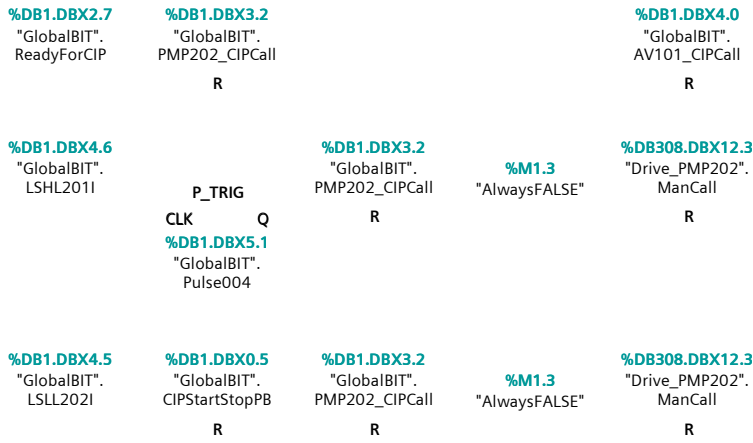
Name	08_CIP	Number	8	Type	FC	Language	LAD
Numbering	Manual						
Information							
Title		Author		Comment		Family	
Version	0.1	User-defined ID					

Name	Data type	Default value	Comment
Input			
Output			
InOut			
Temp			
Constant			
Return			
08_CIP	Void		

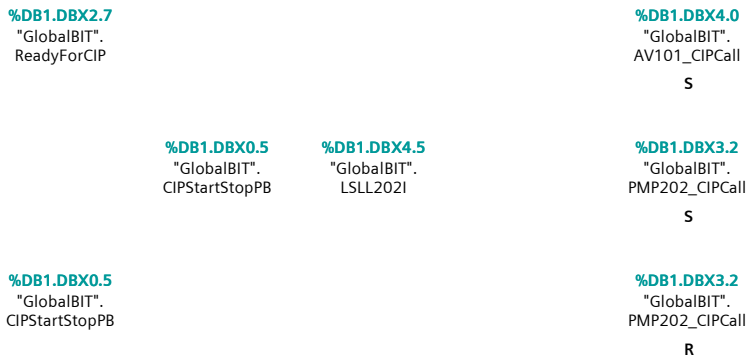
Network 1: Prerequisite about Sorek I desalination plant



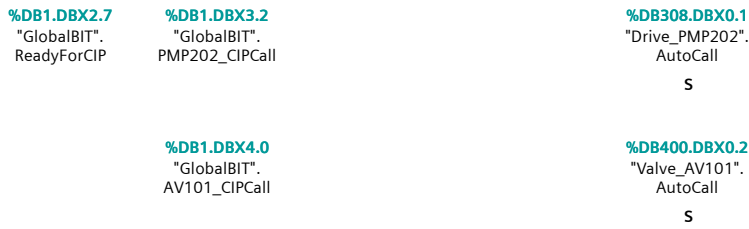
Network 2: Reset bits



Network 3: Added: Manual CIP PB about Sorek I desalination plant



Network 4: Call bits



10_SFControl [FC10]

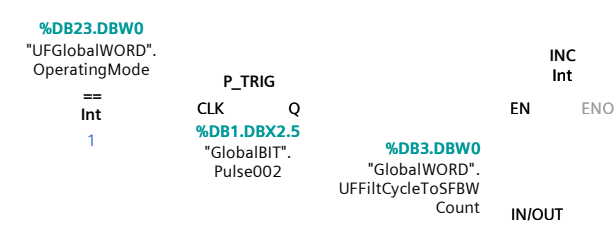
10_SFControl Properties

General

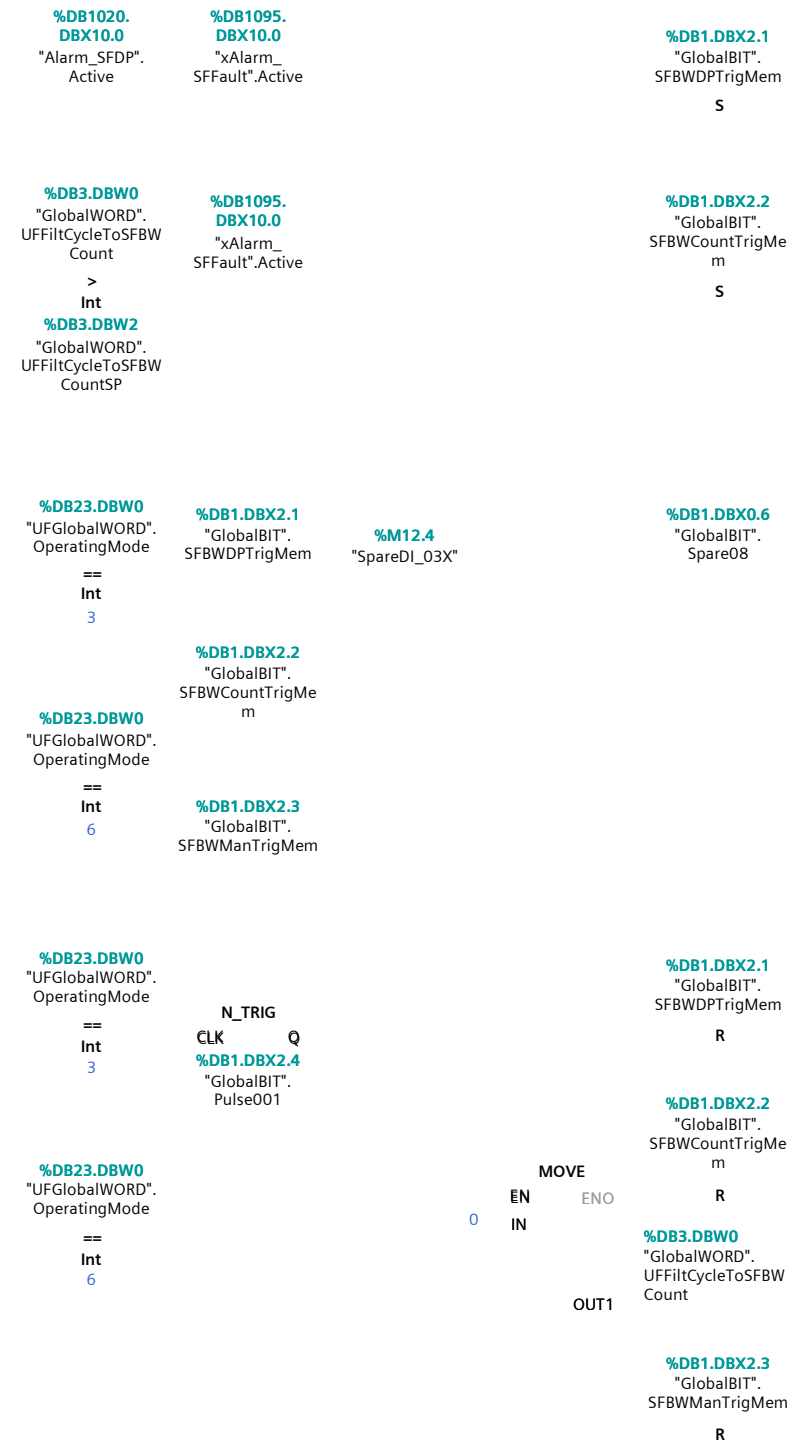
Name	10_SFControl	Number	10	Type	FC	Language	LAD
Numbering	Manual						
Information							
Title		Author		Comment		Family	
Version	0.1	User-defined ID					

Name	Data type	Default value	Comment
Input			
Output			
InOut			
Temp			
Constant			
Return			
10_SFControl	Void		

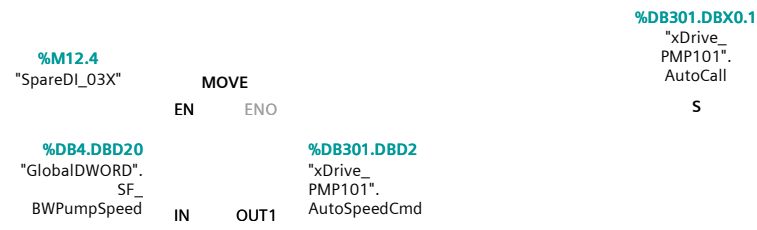
Network 1: Screen Filter Control about Sorek I desalination plant



Network 2:



Network 3: Call Feed Pump for BW



20_UFControl [FC20]

20_UFControl Properties

General

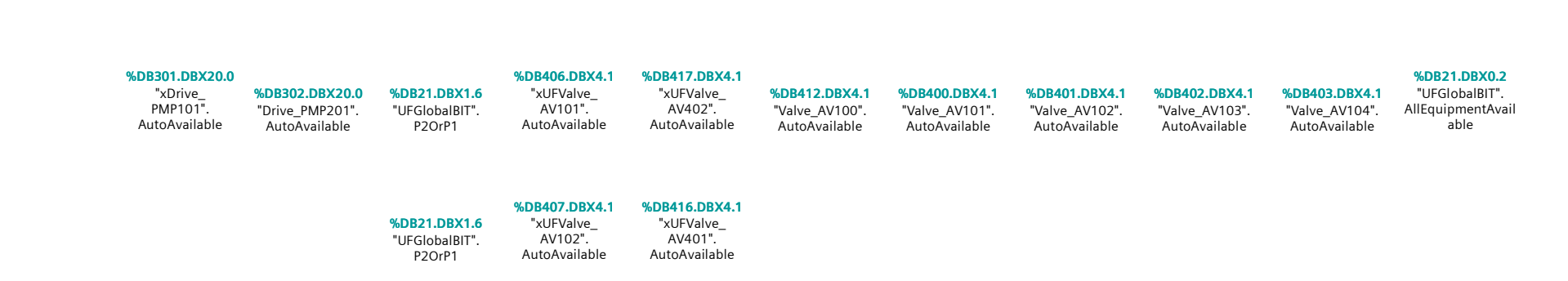
Name	20_UFControl	Number	20	Type	FC	Language	LAD
Numbering	Manual						
Information							
Title		Author		Comment		Family	
Version	0.1	User-defined ID					

Name	Data type	Default value	Comment
Input			
Output			
InOut			
Temp			
Constant			
Return			
20_UFControl	Void		

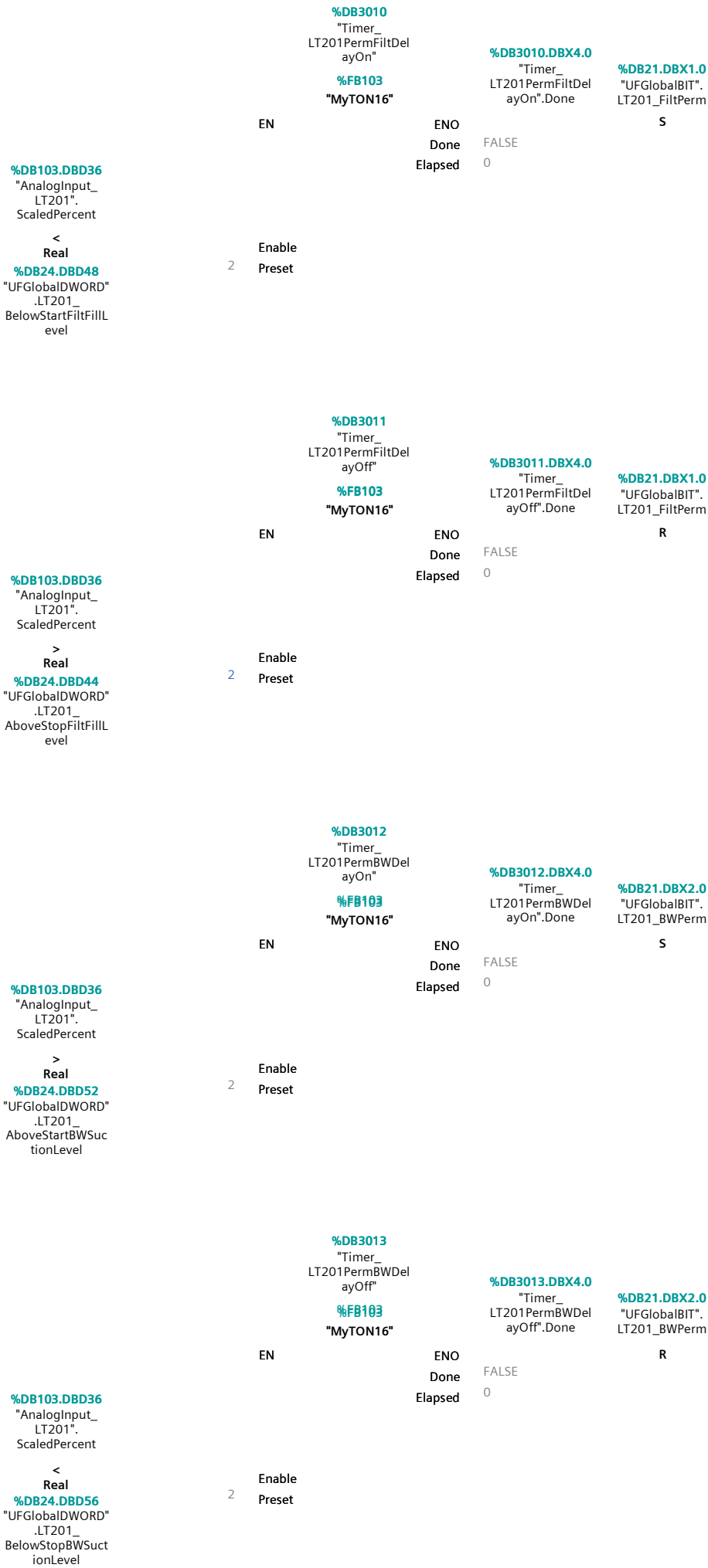
Network 1: Initialisation



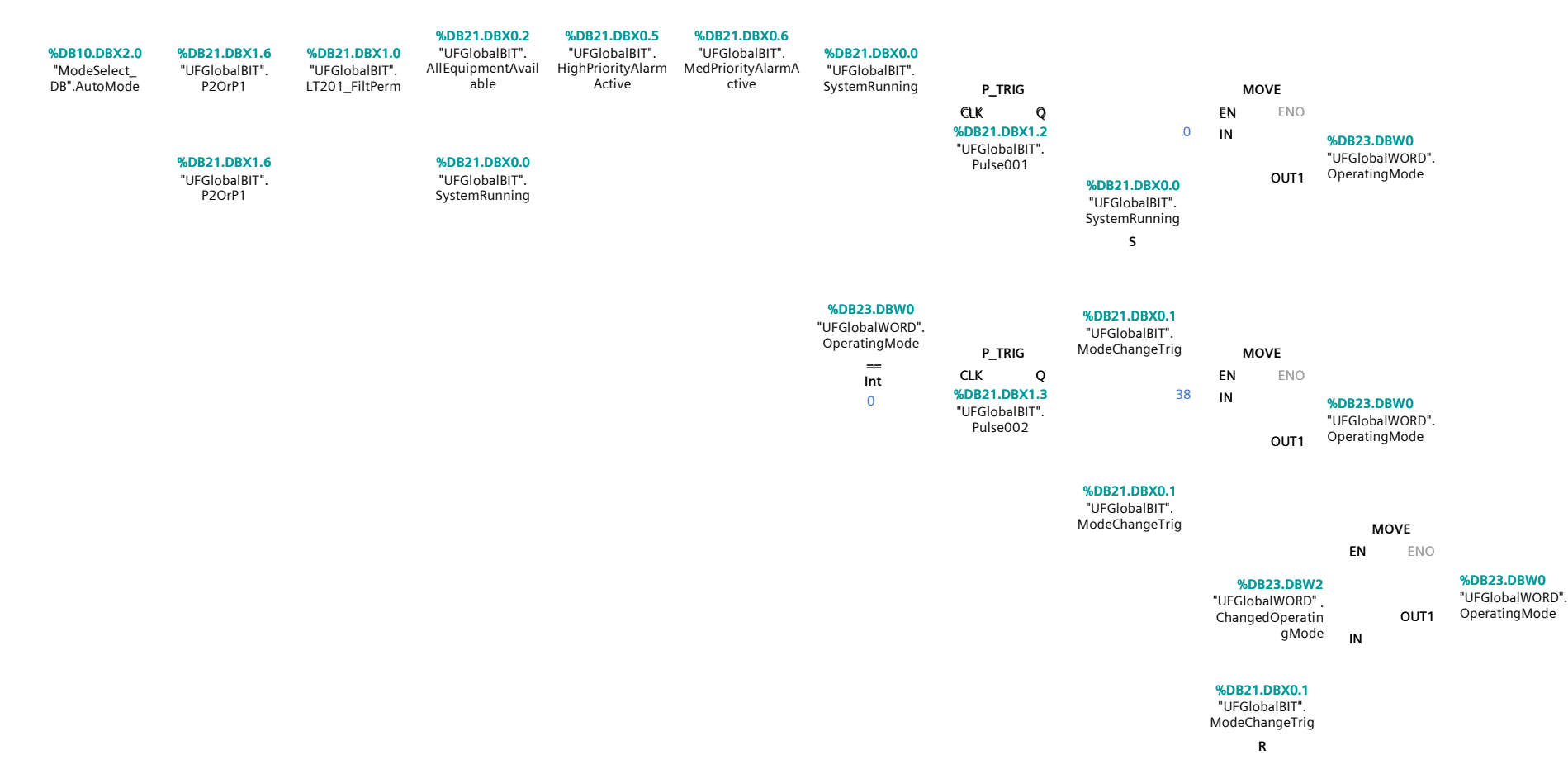
Network 2: Check All Drives are in Auto



Network 3: Tank Level Calls

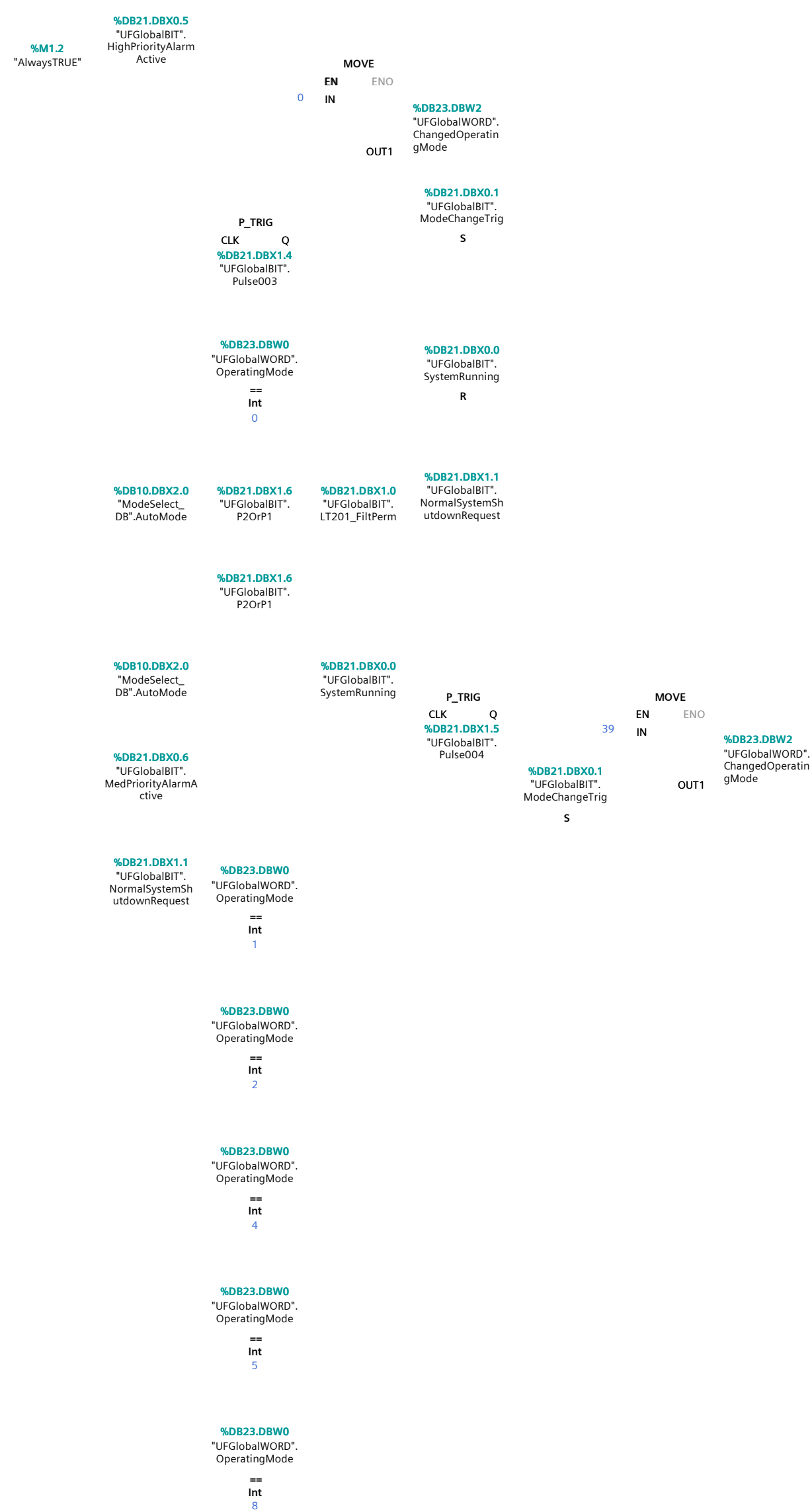


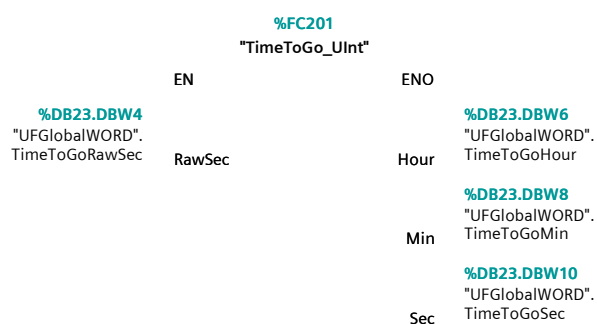
Network 4: Start System if conditions are OK



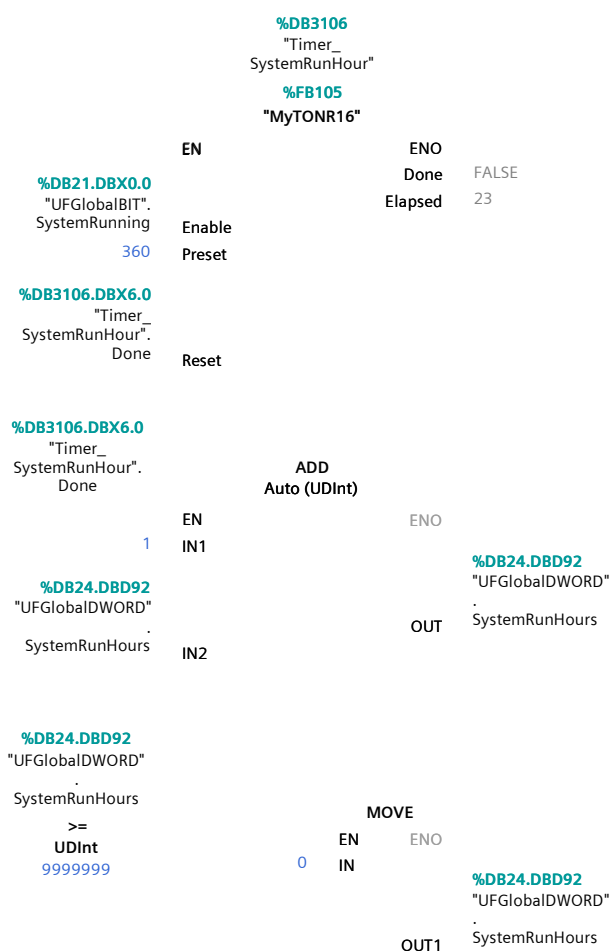
Network 5: Go to shutdown BW on ...

- Low Feed Tank
- High BW and Filtrate Tank
- System Off
- Critical Fault

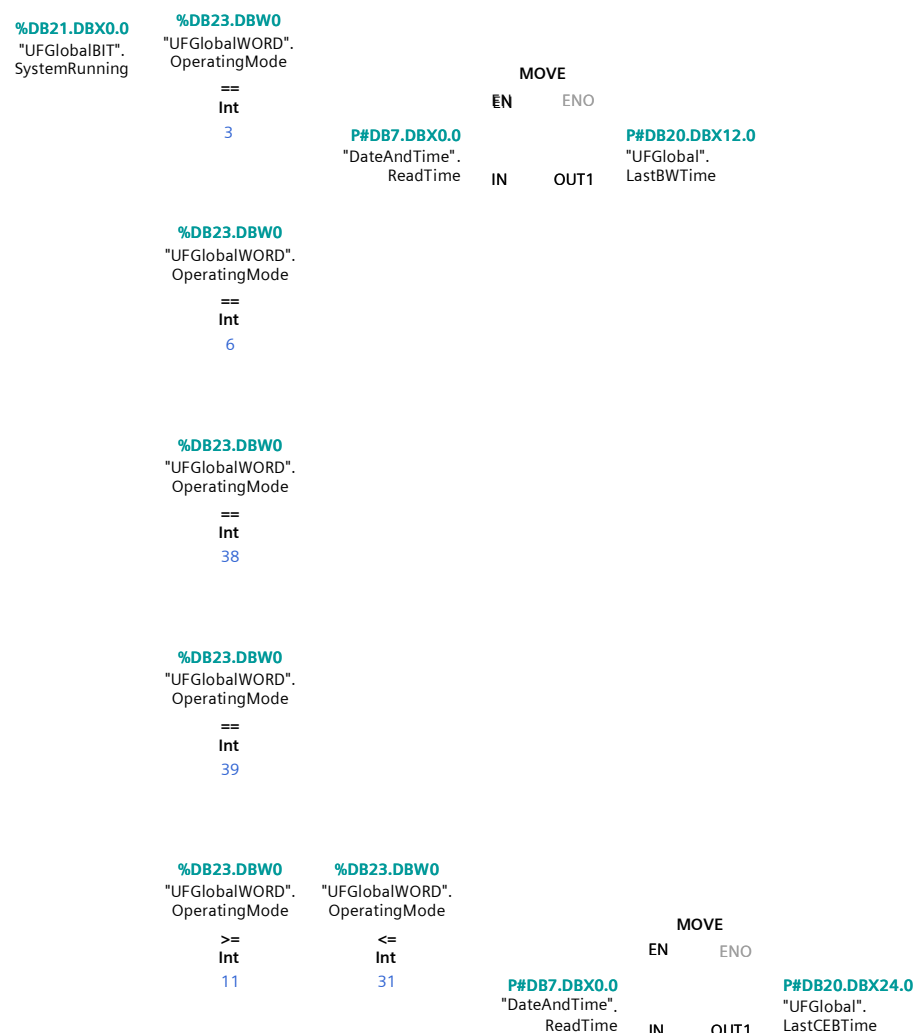




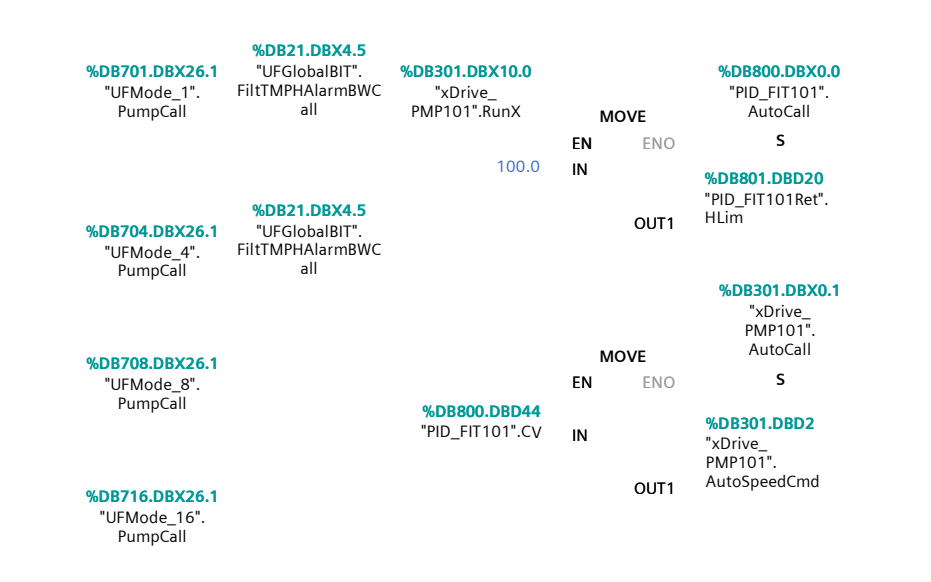
Network 7: System Run Hours



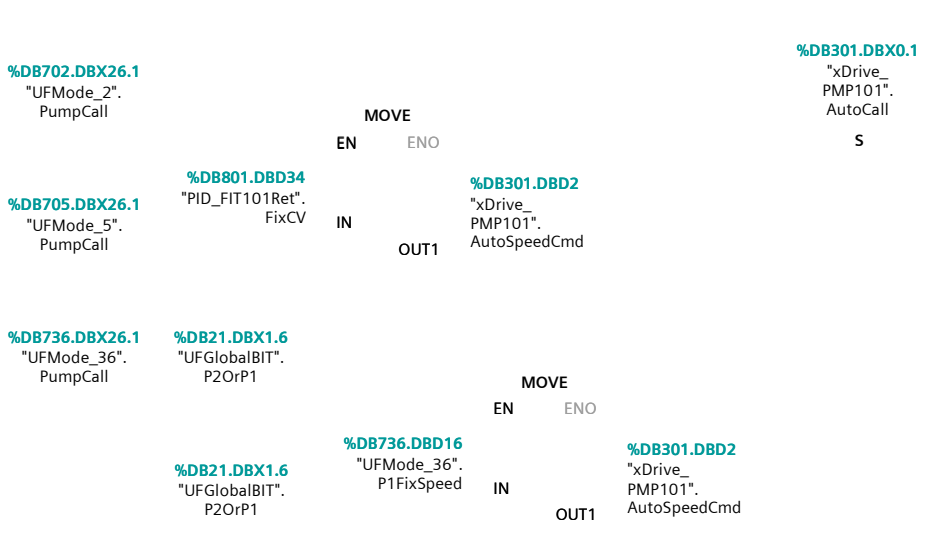
Network 8: Save the time of the last BW and CEB



Network 9: Filtration Pump Control



Network 10: Flush Pump Control



Network 11: Backwash Pump Control

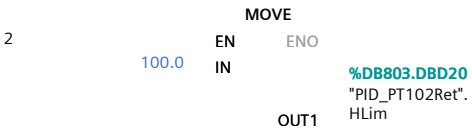
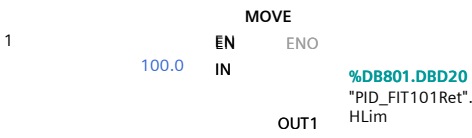
Network 11: Backwash Pump Control (1.1 / 2.1)

%DB738.DBX26.1 "UFMode_38". PumpCall	%DB21.DBX2.0 "UFGlobalBIT". LT201_BWPerm	%DB302.DBX10.0 "Drive_PMP201". RunX	%DB800.DBX0.0 "PID_FIT101". AutoCall S
%DB739.DBX26.1 "UFMode_39". PumpCall	%DB307.DBX10.0 "xDrive_ PMP403".RunX		%DB802.DBX0.0 "PID_PT102". AutoCall SEL Real EN ENO S
%DB703.DBX26.1 "UFMode_3". PumpCall		%DB21.DBX1.6 "UFGlobalBIT". P2OrP1	%DB803.DBD0 "PID_PT102Ret".SP OUT
		%DB27.DBD10 "UFP1". BWTMPHHAlarmSP	G INO
%DB706.DBX26.1 "UFMode_6". PumpCall		%DB28.DBD10 "UFP2". BWTMPHHAlarmSP	IN1
%DB714.DBX26.1 "UFMode_14". PumpCall		%D8800.DBD44 "PID_FIT101".CV < Real	ADD Auto (Real) EN ENO
%DB715.DBX26.1 "UFMode_15". PumpCall		%D8802.DBD44 "PID_PT102".CV	%D8800.DBD44 "PID_FIT101".CV 5.0 IN1 OUT
			%DB803.DBD20 "PID_PT102Ret". HLim
			%DB803.DBD24 "PID_PT102Ret". LLim MN OUT
			%DB803.DBD20 "PID_PT102Ret". HLim 100.0 IN MX
%DB720.DBX26.1 "UFMode_20". PumpCall		%D8802.DBD44 "PID_PT102".CV < Real	ADD Auto (Real) EN ENO
%DB721.DBX26.1 "UFMode_21". PumpCall		%D8802.DBD44 "PID_FIT101".CV	%D8801.DBD20 "PID_FIT101Ret". HLim IN1 OUT
			%DB801.DBD24 "PID_FIT101Ret". LLim MN OUT
			%DB801.DBD20 "PID_FIT101Ret". HLim 100.0 IN MX
%DB725.DBX26.1 "UFMode_25". PumpCall		%DB302.DBX0.1 "Drive_PMP201". AutoCall MIN Real EN ENO S	
	%DB800.DBD44 "PID_FIT101".CV	IN1	%DB302.DBD2 "Drive_PMP201". AutoSpeedCmd OUT
%DB726.DBX26.1 "UFMode_26". PumpCall	%DB802.DBD44 "PID_PT102".CV	IN2	
%DB730.DBX26.1 "UFMode_30". PumpCall		%DB307.DBX0.1 "xDrive_ PMP403". AutoCall MIN Real EN ENO S	
	%DB800.DBD44 "PID_FIT101".CV	IN1	%DB307.DBD2 "xDrive_ PMP403". AutoSpeedCmd OUT
%DB731.DBX26.1 "UFMode_31". PumpCall	%DB802.DBD44 "PID_PT102".CV	IN2	
%DB717.DBX26.1 "UFMode_17". PumpCall			
%DB718.DBX26.1 "UFMode_18". PumpCall			
%DB722.DBX26.1 "UFMode_22". PumpCall			
%DB723.DBX26.1 "UFMode_23". PumpCall			
%DB711.DBX26.1 "UFMode_11". PumpCall			
%DB712.DBX26.1 "UFMode_12". PumpCall			
%DB722.DBX26.1 "UFMode_22". PumpCall			
%DB727.DBX26.1 "UFMode_27". PumpCall			

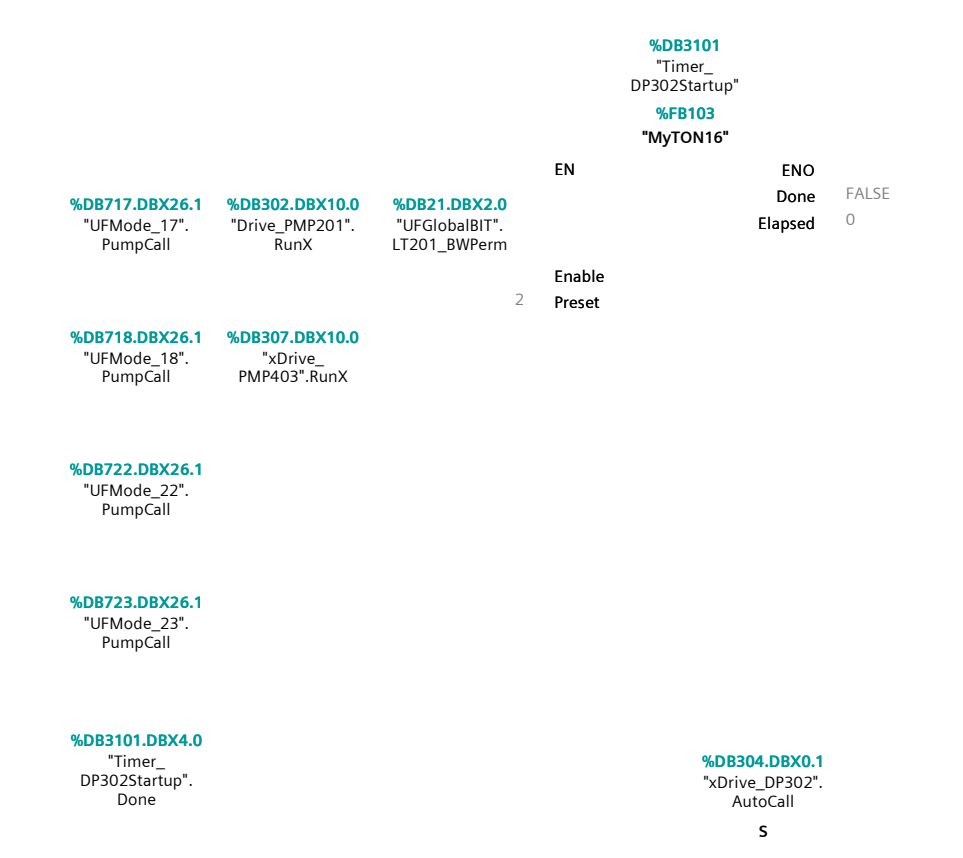
Network 11: Backwash Pump Control (2.1 / 2.1)

PumpCall

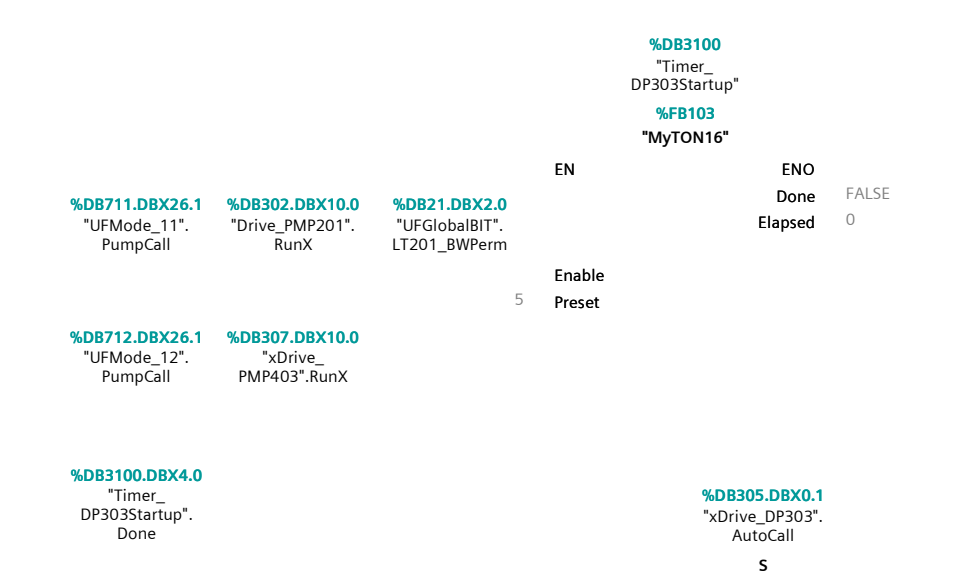
%DB728.DBX26.1
"UFMode_28".
PumpCall



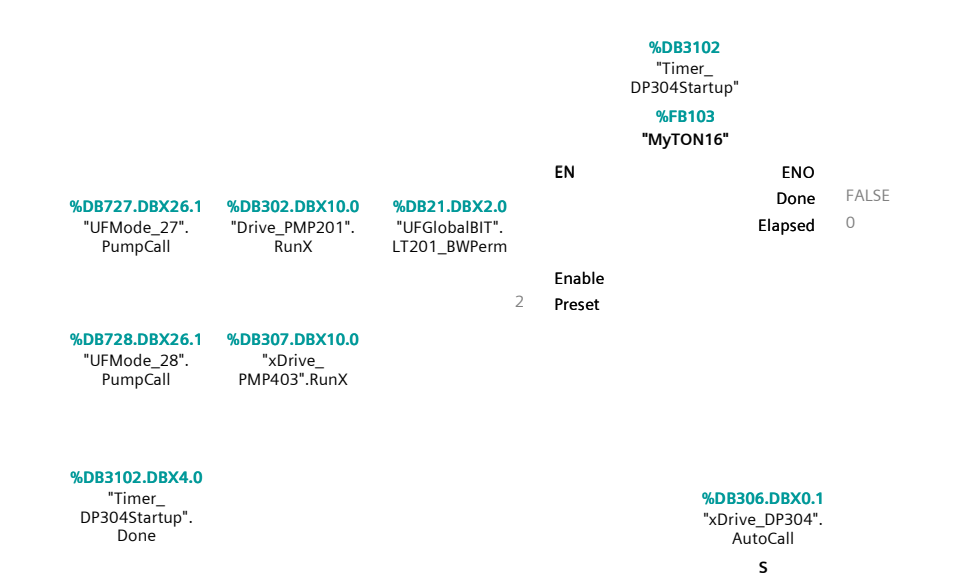
Network 12: Acid Placement Backwash Pump Control



Network 13: Caustic Placement Backwash Pump Control



Network 14: Chlorine Placement Backwash Pump Control



Network 15: UF Feed Valves (Raw and Nutrient Water) Control

%DB701.DBX26.0 "UFMode_1". ValveCall	%DB21.DBX1.6 "UFGlobalBIT". P2OrP1	%DB406.DBX0.2 "xUFValve_ AV101".AutoCall S
%DB702.DBX26.0 "UFMode_2". ValveCall	%DB21.DBX1.6 "UFGlobalBIT". P2OrP1	%DB407.DBX0.2 "xUFValve_ AV102".AutoCall S
%DB704.DBX26.0 "UFMode_4". ValveCall		
%DB705.DBX26.0 "UFMode_5". ValveCall		
%DB708.DBX26.0 "UFMode_8". ValveCall		
%DB716.DBX26.0 "UFMode_16". ValveCall		
%DB736.DBX26.0 "UFMode_36". ValveCall		

Network 16: PACL/Coagulant Dosing Pump Control

%DB10.DBX2.0 "ModeSelect_ DB".AutoMode	%DB701.DBX26.0 "UFMode_1". ValveCall	%DB301.DBX10.0 "xDrive_ PMP101".RunX	%DB4005 "Misc_ DP301FlowPace" %FB146 "FlowPaceFB_L/s"	%DB303.DBX0.1 "xDrive_DP301". AutoCall
			EN	ENO
	%DB704.DBX26.0 "UFMode_4". ValveCall	%DB102.DBD32 "AnalogInput_ FIT101".Scaled	Flow_L/s	%DB303.DBD2 "xDrive_DP301". AutoSpeedComm and
		18.0	Dose	PumpPercent
		15.0	Conc	PumpRate
		1000.0	Density	701.7775
	%DB708.DBX26.0 "UFMode_8". ValveCall		MaxPumpRate	
	%DB716.DBX26.0 "UFMode_16". ValveCall			

21_UFStartupShutdown [FC21]

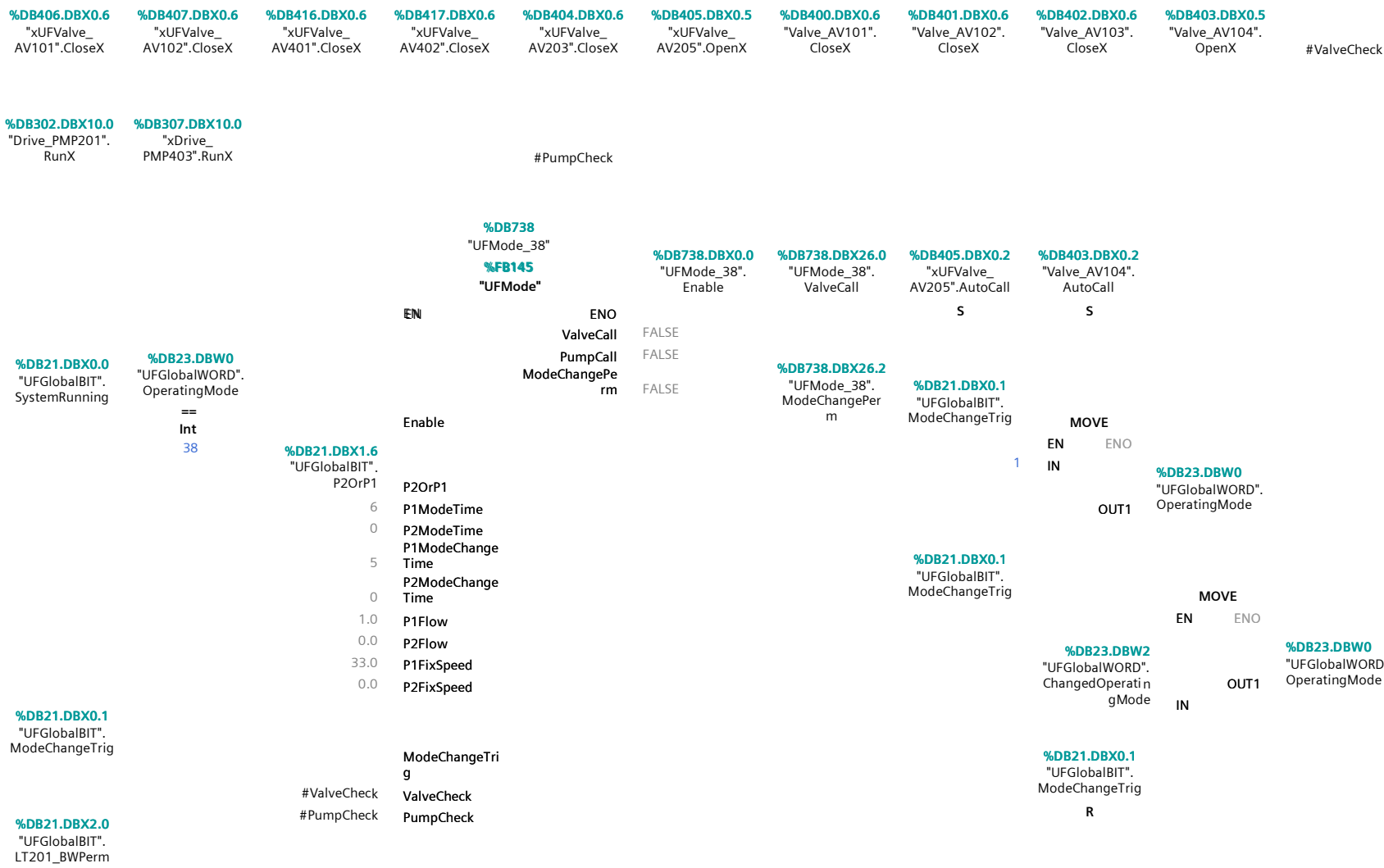
21_UFStartupShutdown Properties

General

Name	21_UFStartupShutdown	Number	21	Type	FC	Language	LAD
Numbering	Manual						
Information							
Title		Author		Comment		Family	
Version	0.1	User-defined ID					

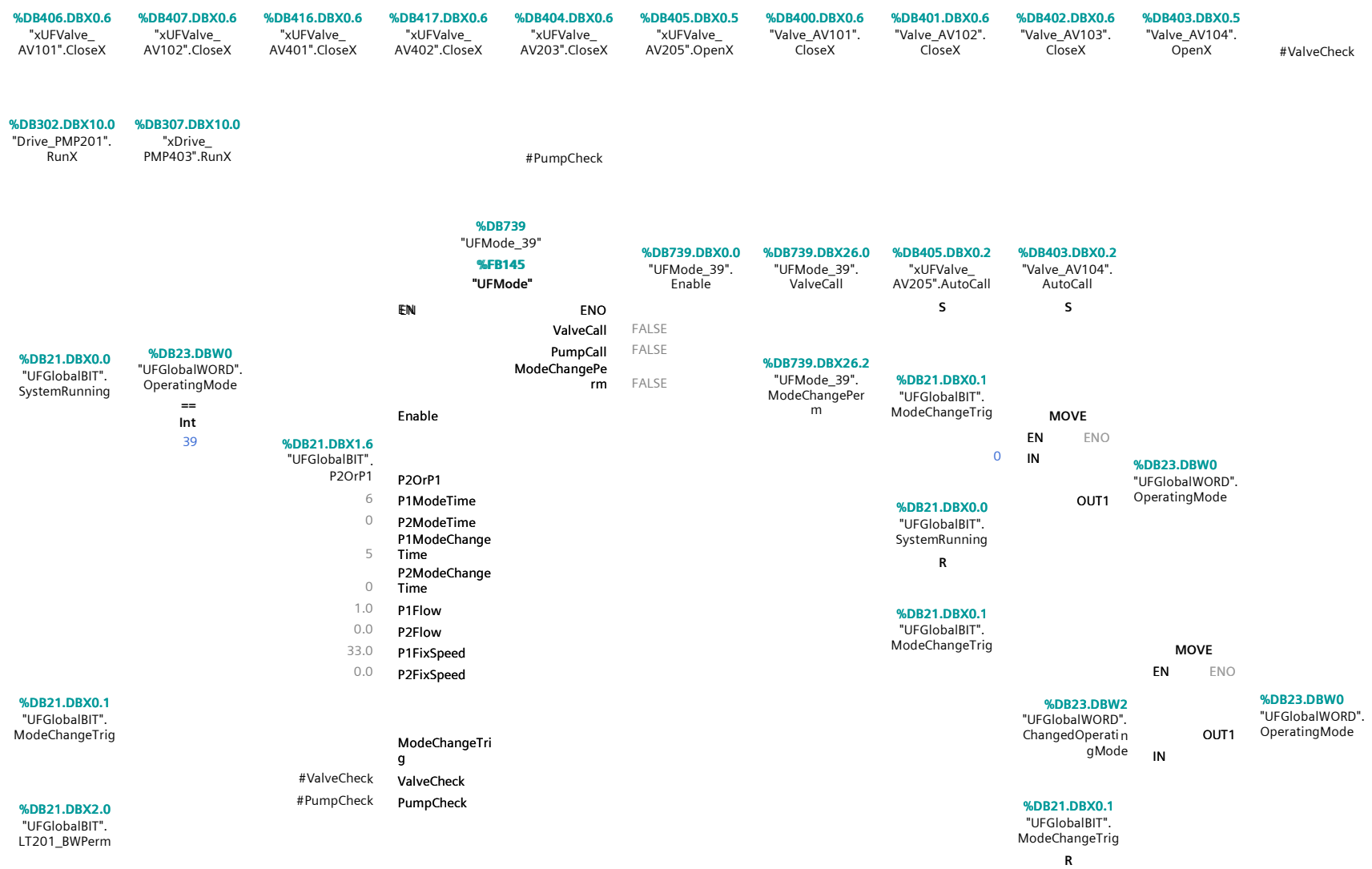
Name	Data type	Default value	Comment
Input			
Output			
InOut			
Temp			
ValveCheck	Bool		
PumpCheck	Bool		
Constant			
Return			
21_UFStartupShutdown	Void		

Network 1: 38 Startup Backwash Bottom from Sorek I desalination plant



Network 2: 39 Shutdown Backwash Bottom

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22_UFFiltration [FC22]

22_UFFiltration Properties

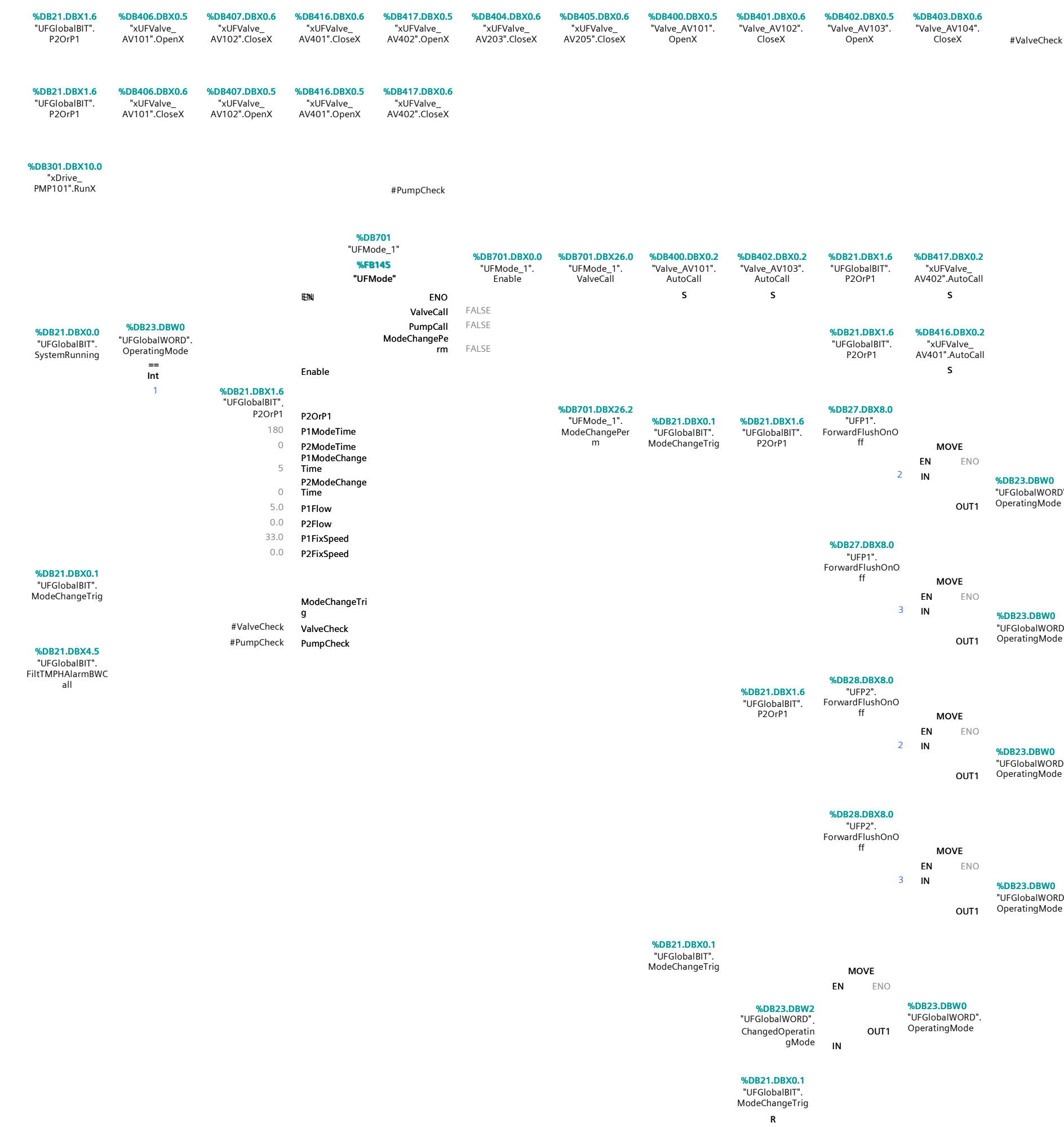
General

Name	22_UFFiltration	Number	22	Type	FC	Language	LAD
Numbering	Manual						
Information							
Title		Author		Comment		Family	
Version	0.1	User-defined ID					

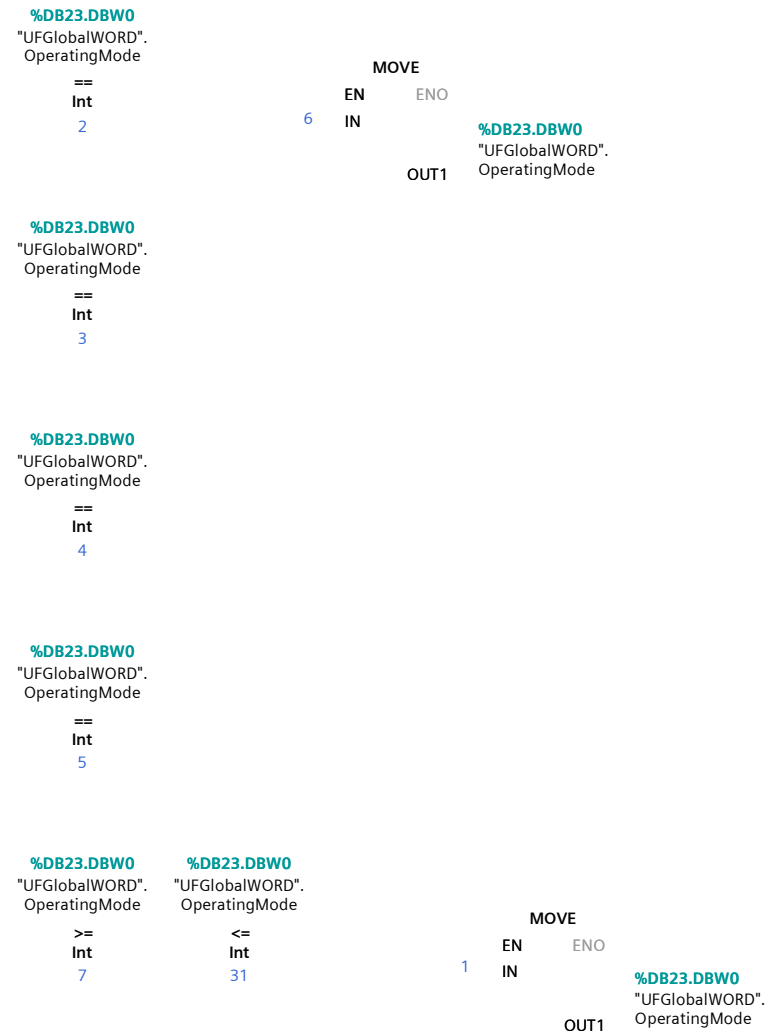
Name	Data type	Default value	Comment
Input			
Output			
InOut			
Temp			
ValveCheck	Bool		
PumpCheck	Bool		
Constant			
Return			
22_UFFiltration	Void		

Network 1: 1 Filtration Bottom

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Automation Portal



Network 2: Added: Skip Step 2 to 5

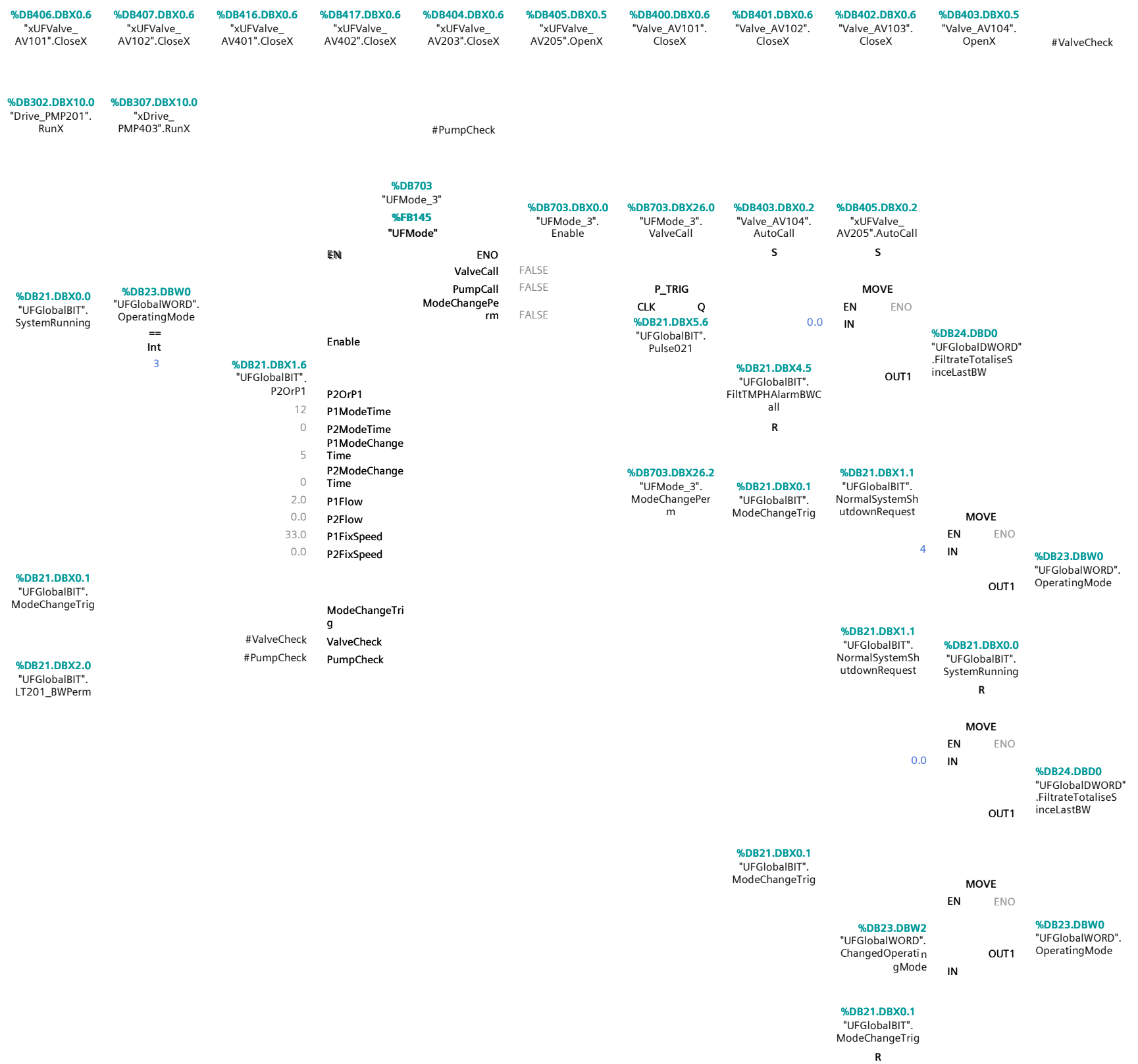


Network 3: 2 Forward Flush Bottom

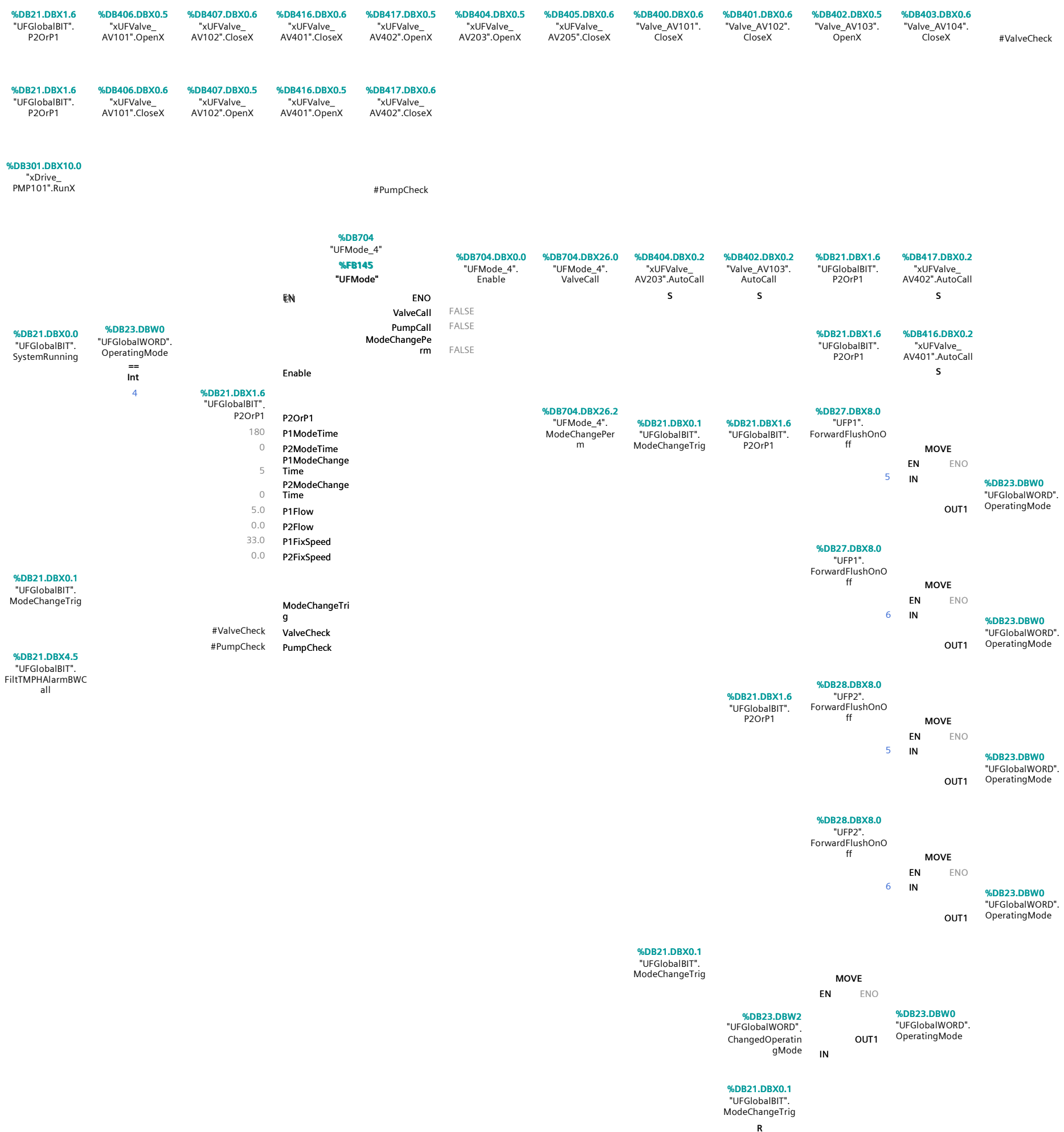


Network 4: 3 Backwash Bottom

Network 5: 4 Filtration Top

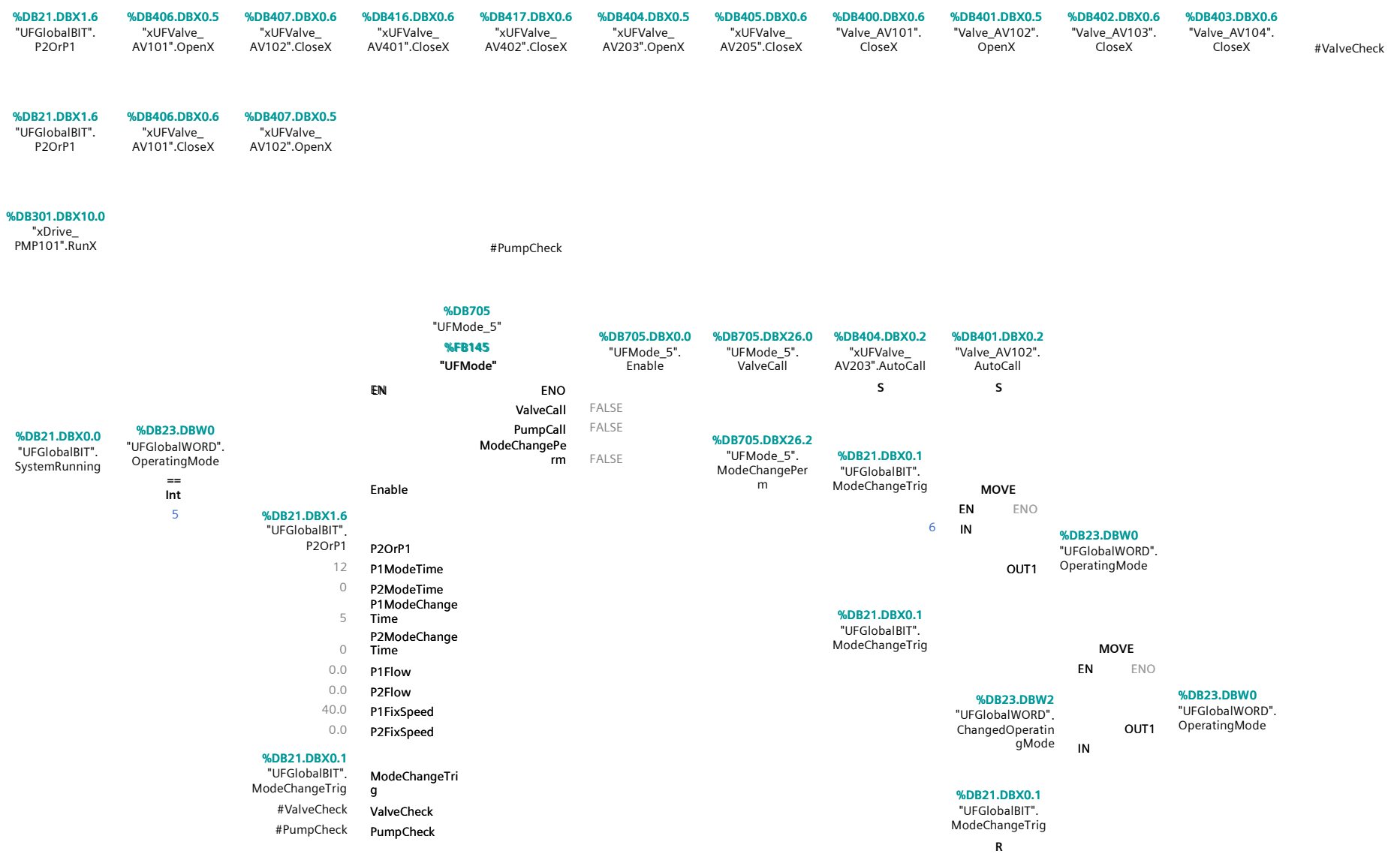


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Network 6: 5 Forward Flush Top

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Network 7: 6 Backwash Top

Network 7: 6 Backwash Top (1.1 / 2.1)

%DB406.DBX0.6
"xUFValve_
AV101".CloseX

%DB407.DBX0.6
"xUFValve_
AV102".CloseX

%DB416.DBX0.6
"xUFValve_
AV401".CloseX

%DB417.DBX0.6
"xUFValve_
AV402".CloseX

%DB404.DBX0.6
"xUFValve_
AV203".CloseX

%DB405.DBX0.6
"xUFValve_
AV205".CloseX

%DB400.DBX0.6
"Valve_AV101".
CloseX

%DB401.DBX0.5
"Valve_AV102".
OpenX

%DB402.DBX0.6
"Valve_AV103".
CloseX

%DB403.DBX0.5
"Valve_AV104".
OpenX

#ValveCheck

%DB302.DBX10.0
"Drive_PMP201".
RunX

%DB307.DBX10.0
"xDrive_
PMP403".RunX

#PumpCheck

%DB706
"UFMode_6"
"%FB145"
"UFMode"

%DB706.DBX0.0
"UFMode_6".
Enable

%DB706.DBX26.0
"UFMode_6".
ValveCall

%DB401.DBX0.2
"Valve_AV102".
AutoCall

%DB403.DBX0.2
"Valve_AV104".
AutoCall

EN

ENO
ValveCall
PumpCall
ModeChangePe
rm

FALSE
FALSE
FALSE

P_TRIG
CLK Q
%DB21.DBX5.7
"UFGlobalBIT".
Pulse022

0.0

MOVE
EN ENO
IN

%DB24.DBD0
"UFGlobalDWORD".
.FiltrateTotaliseS
inceLastBW

%DB21.DBX0.0
"UFGlobalBIT".
SystemRunning

%DB23.DBW0
"UFGlobalWORD".
OperatingMode
==
Int
6

%DB21.DBX1.6
"UFGlobalBIT".
P2OrP1

12
0
5
0
2.0
0.0
33.0
0.0

P2OrP1
P1ModeTime
P2ModeTime
P1ModeChange
Time
P2ModeChange
Time
P1Flow
P2Flow
P1FixSpeed
P2FixSpeed

%DB21.DBX4.5
"UFGlobalBIT".
FiltTMPHAlarmBWC
all

R

%DB706.DBX26.2
"UFMode_6".
ModeChangePer
m

P_TRIG
CLK Q
%DB21.DBX2.1
"UFGlobalBIT".
Pulse006

%DB21.DBX0.1
"UFGlobalBIT".
ModeChangeTrig

%DB21.DBX2.0
"UFGlobalBIT".
LT201_BWPerm

#ValveCheck

#PumpCheck

ModeChangeTri
g
ValveCheck
PumpCheck

%DB21.DBX1.6
"UFGlobalBIT".
P2OrP1

%DB23.DBW12
"UFGlobalWORD".
P1CEB1CountTrigS
p
<>
Int
0

1

%DB21.DBX1.6
"UFGlobalBIT".
P2OrP1

%DB23.DBW14
"UFGlobalWORD".
P2CEB1CountTrigS
p
<>
Int
0

%DB21.DBX1.6
"UFGlobalBIT".
P2OrP1

%DB23.DBW16
"UFGlobalWORD".
P1CEB2CountTrigS
p
<>
Int
0

2

%DB21.DBX1.6
"UFGlobalBIT".
P2OrP1

%DB23.DBW18
"UFGlobalWORD".
P2CEB2CountTrigS
p
<>
Int
0

%DB21.DBX1.6
"UFGlobalBIT".
P2OrP1

%DB23.DBW20
"UFGlobalWORD".
P1CEB3CountTrigS
p
<>
Int
0

3

%DB21.DBX1.6
"UFGlobalBIT".
P2OrP1

%DB23.DBW22
"UFGlobalWORD".
P2CEB3CountTrigS
p
<>
Int
0

%DB21.DBX0.1
"UFGlobalBIT".
ModeChangeTrig

%DB21.DBX1.1
"UFGlobalBIT".
NormalSystemSh
utdownRequest

MOVE
EN ENO
IN
OUT1

%DB23.DBW0
"UFGlobalWORD".
OperatingMode

%DB21.DBX1.1
"UFGlobalBIT".
NormalSystemSh
utdownRequest

%DB21.DBX0.0
"UFGlobalBIT".
SystemRunning

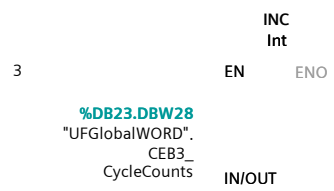
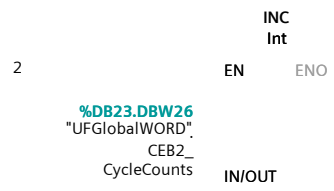
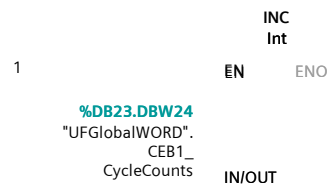
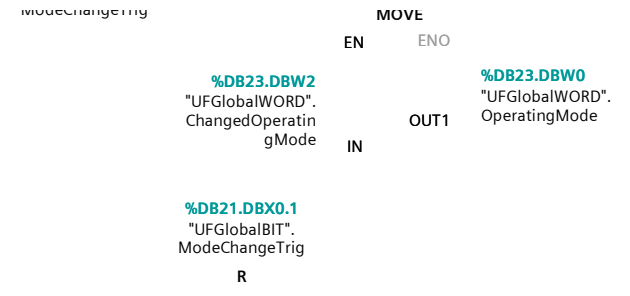
R

%DB21.DBX0.1
"UFGlobalBIT".
ModeChanqeTriq

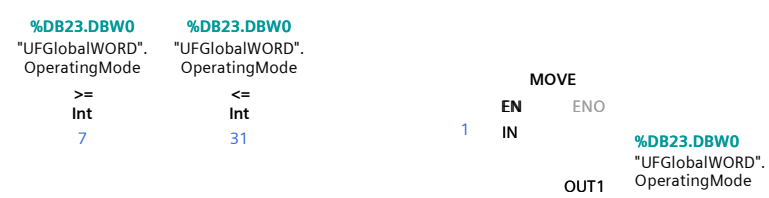
MOVE

Network 7: 6 Backwash Top (2.1 / 2.1)

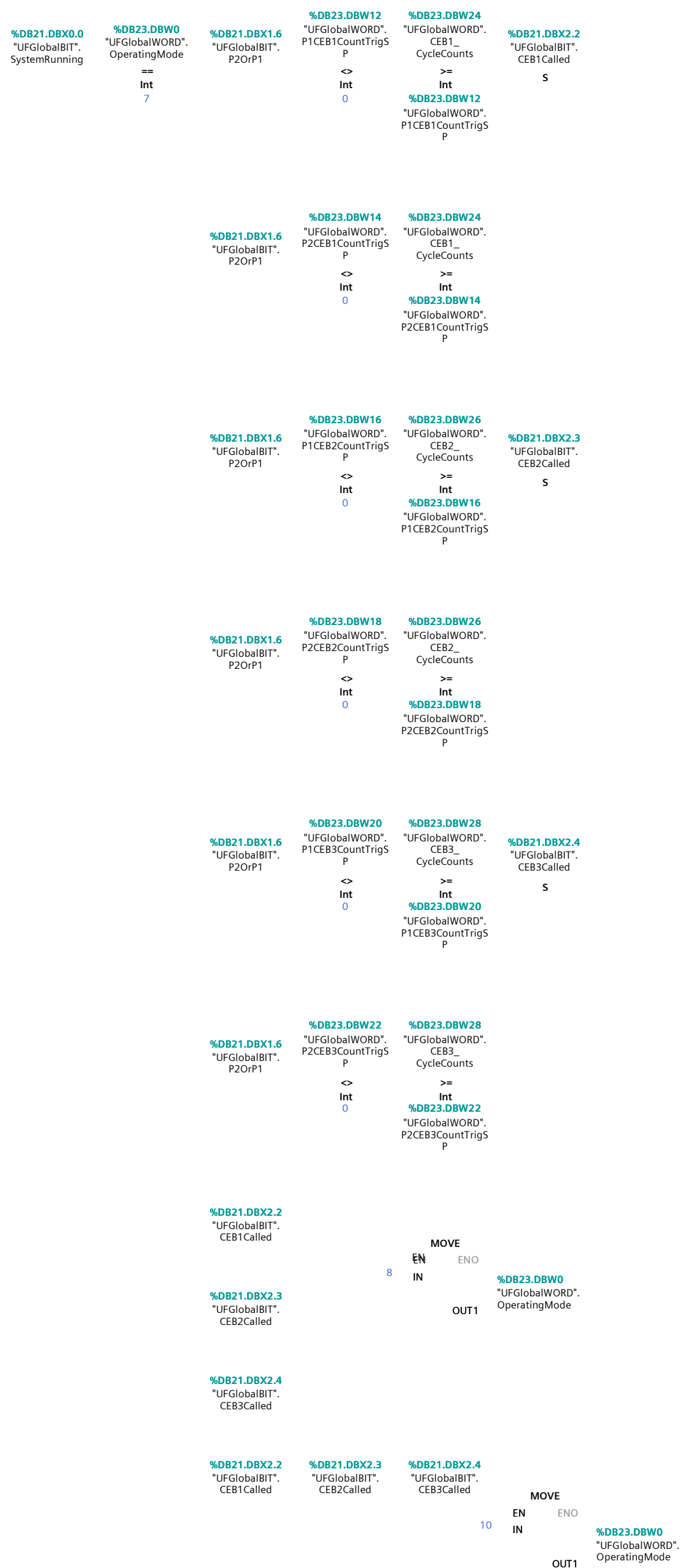
1.1 (Page12 - 7)



Network 8: Added: Skip CEB's/Integrity Operation

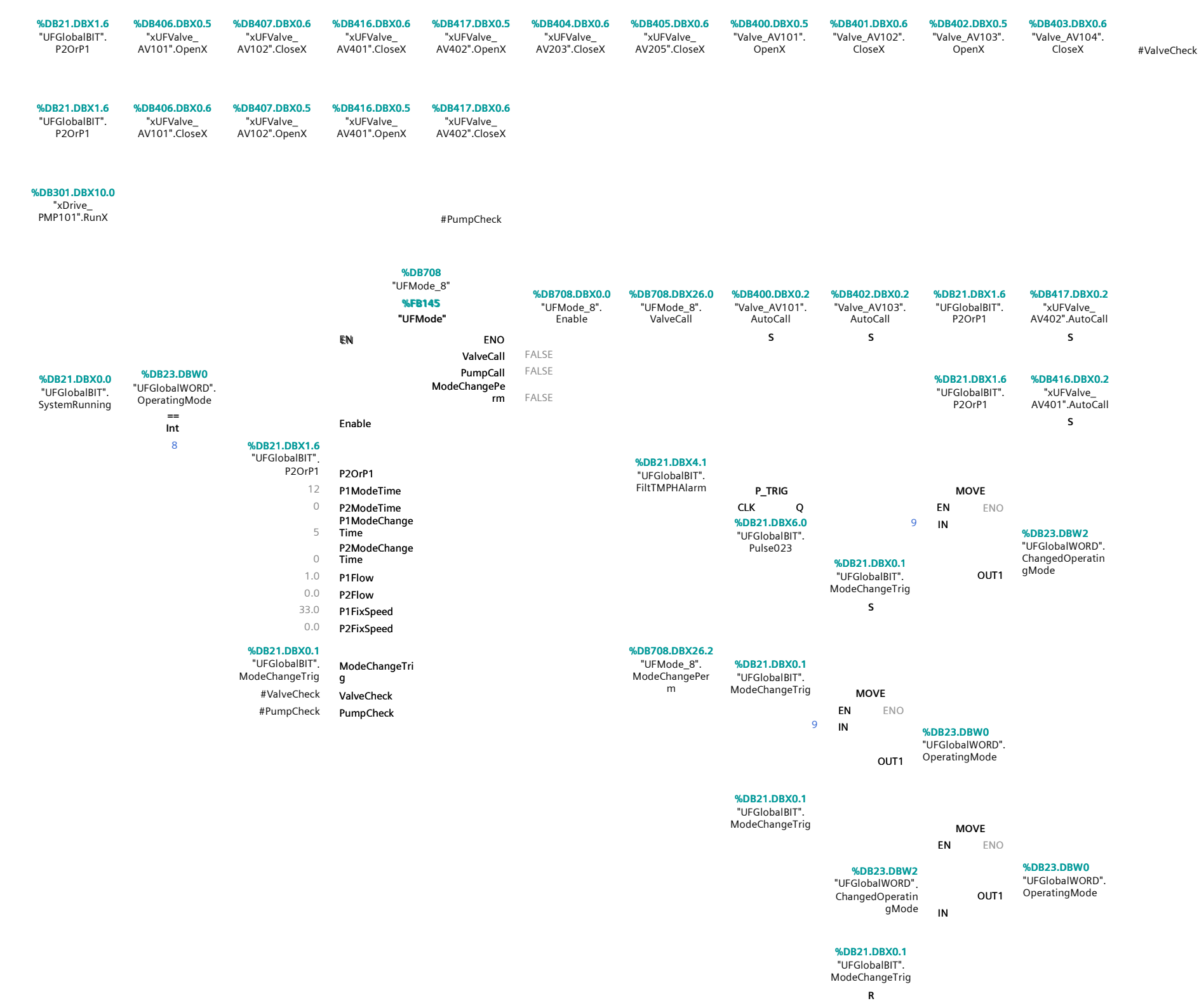


Network 9: 7 Check if CEB is sceduled to run this cycle



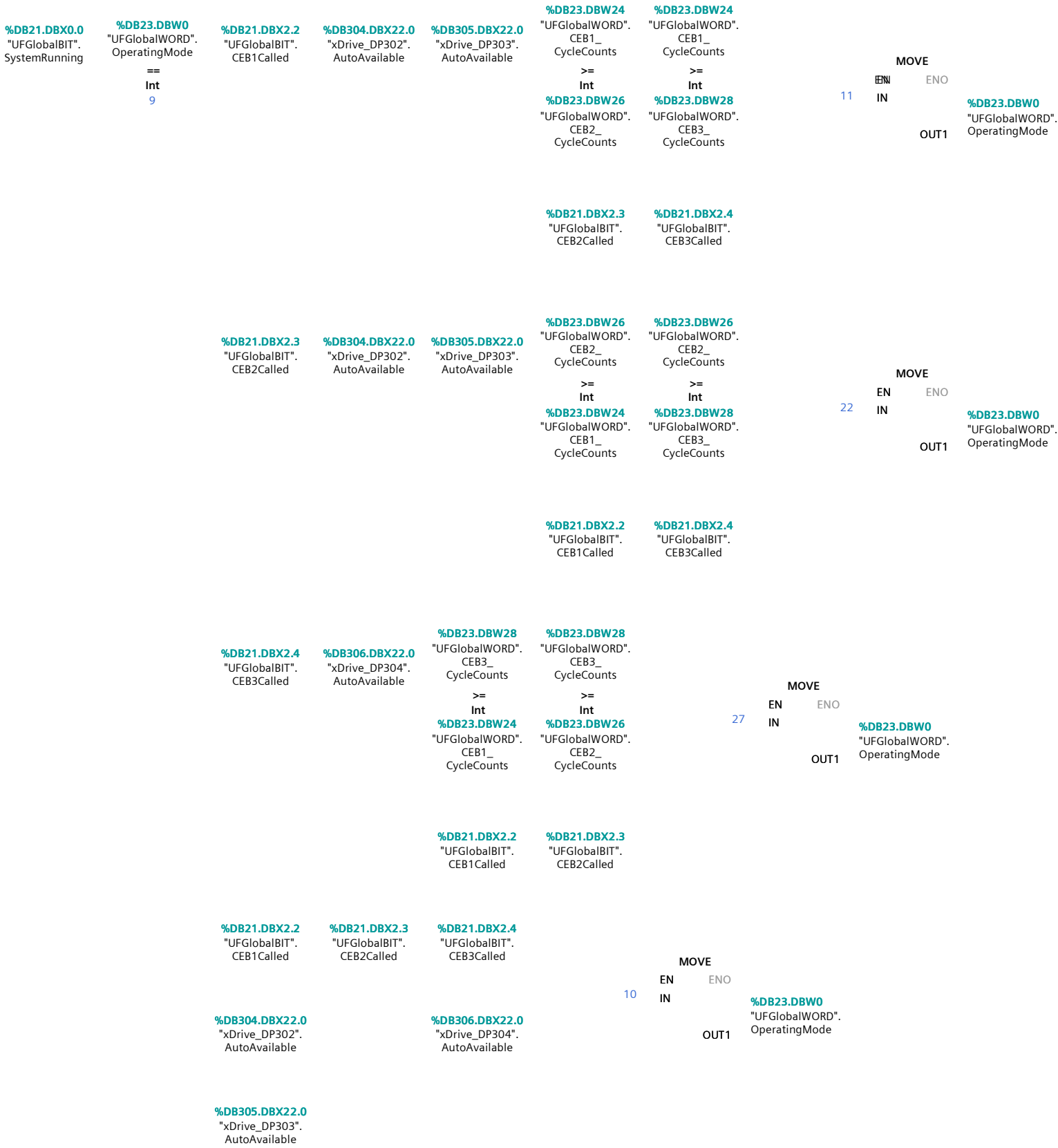
Network 10: 8 Filtration Bottom Short

Ensure there is enough water in the BW Tank for a CEB

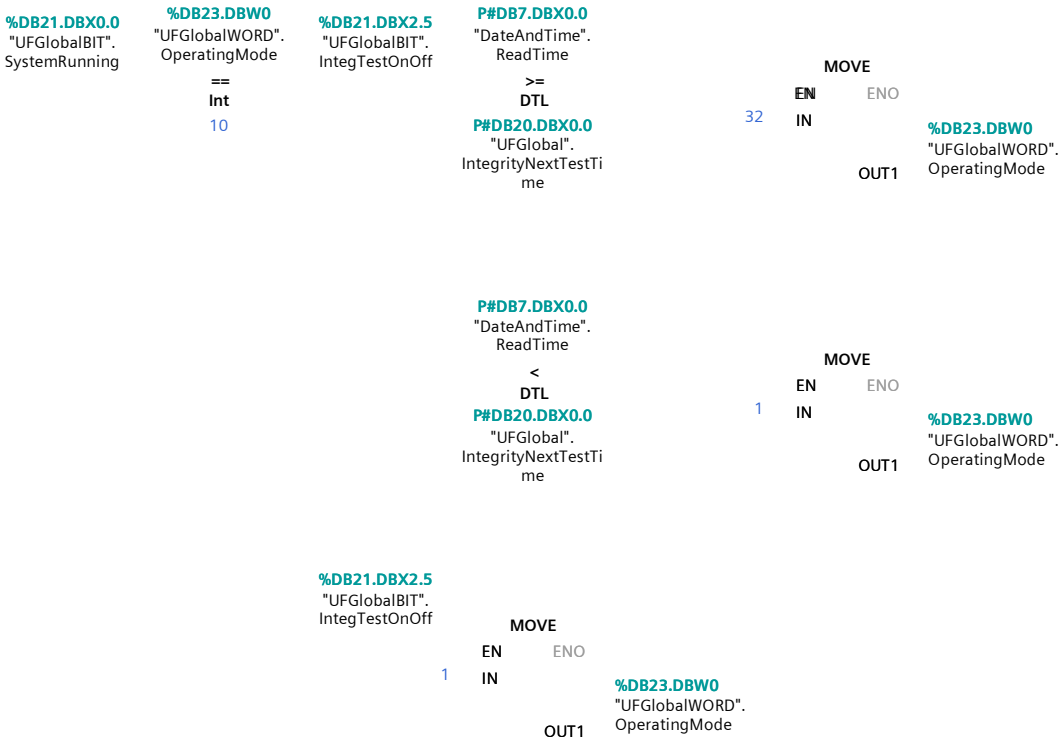


Network 11: 9 Call the scheduled CEB

If 2 or more CEBs are scheduled at the same time, call the one with the highest cycle count.



Network 12: 10 Check if a Integrity Test is due.



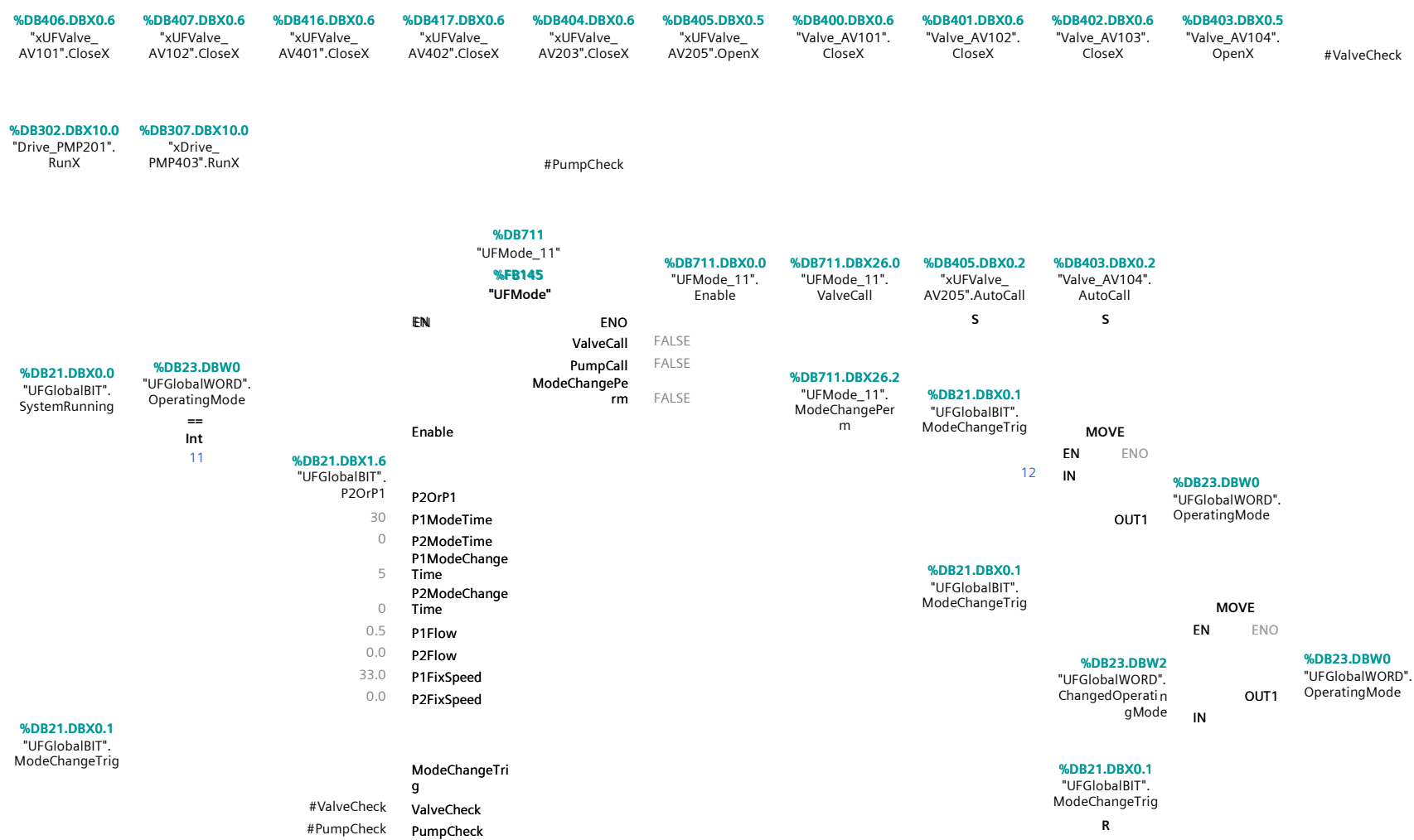
23_UFCEB1 [FC23]

23_UFCEB1 Properties

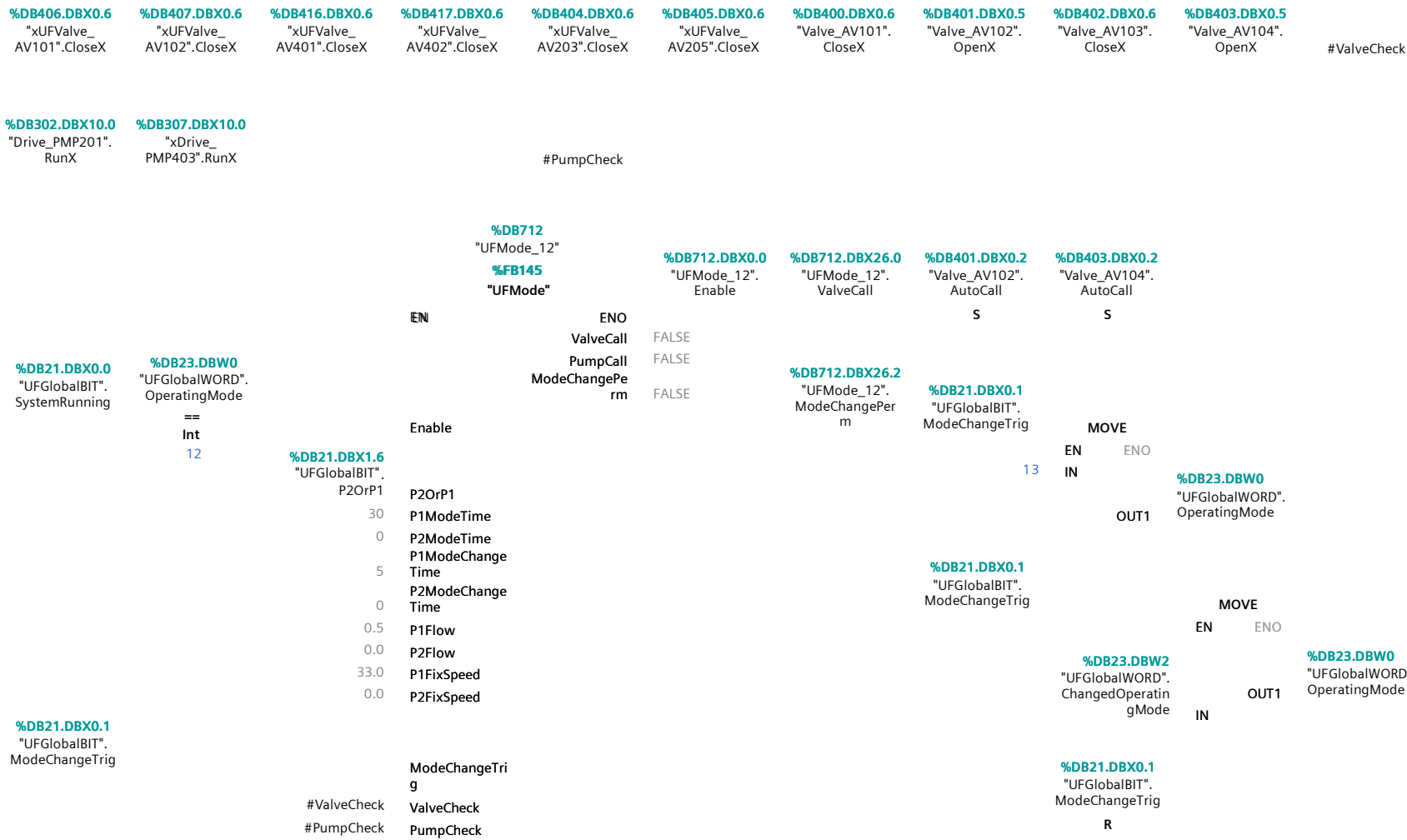
General							
Name	23_UFCEB1	Number	23	Type	FC	Language	LAD
Numbering	Manual						
Information							
Title		Author		Comment		Family	
Version	0.1	User-defined ID					

Name	Data type	Default value	Comment
Input			
Output			
InOut			
Temp			
ValveCheck	Bool		
PumpCheck	Bool		
Constant			
Return			
23_UFCEB1	Void		

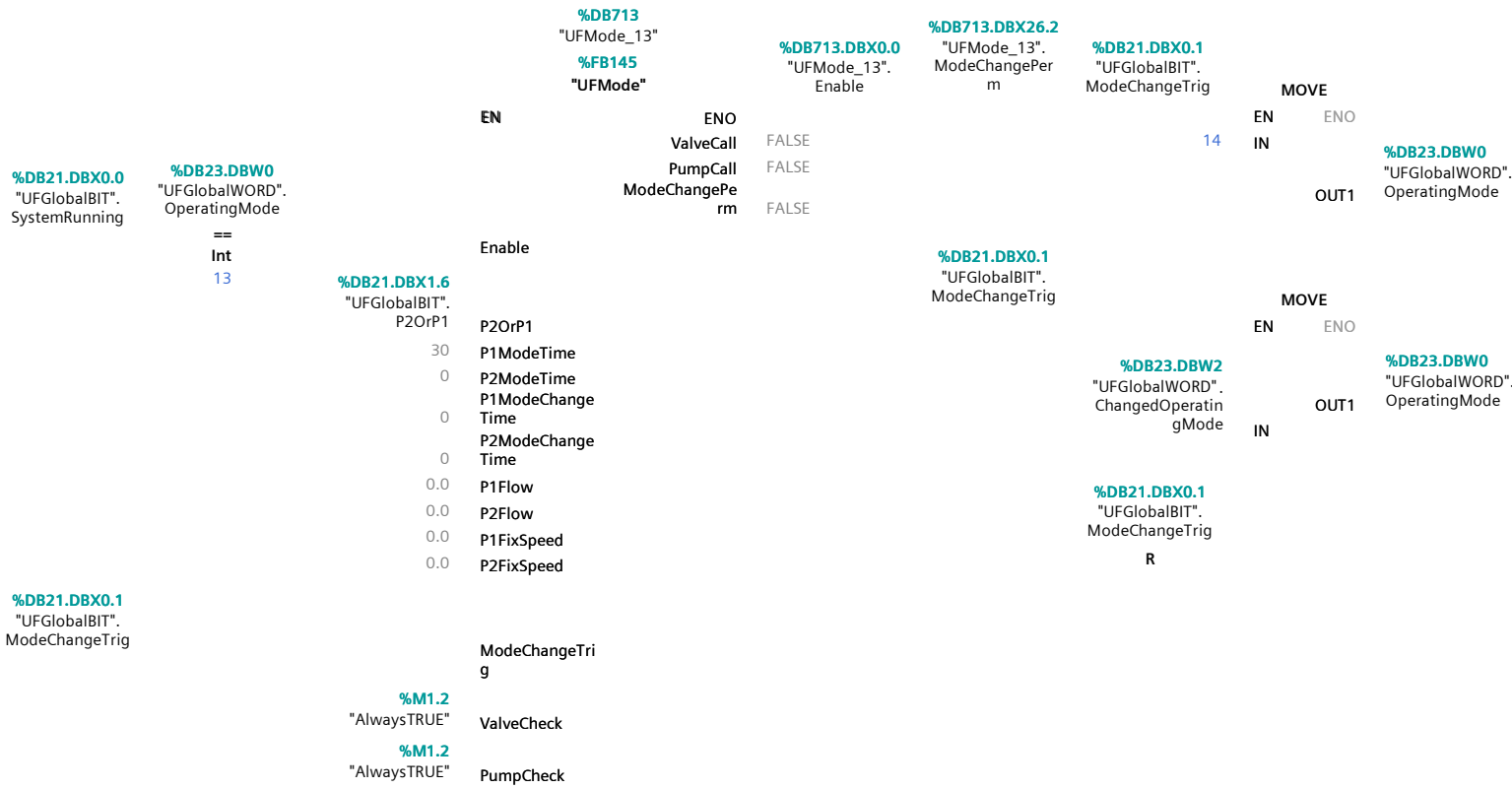
Network 1: 11 CEB1.1 Caustic Placement Backwash Bottom



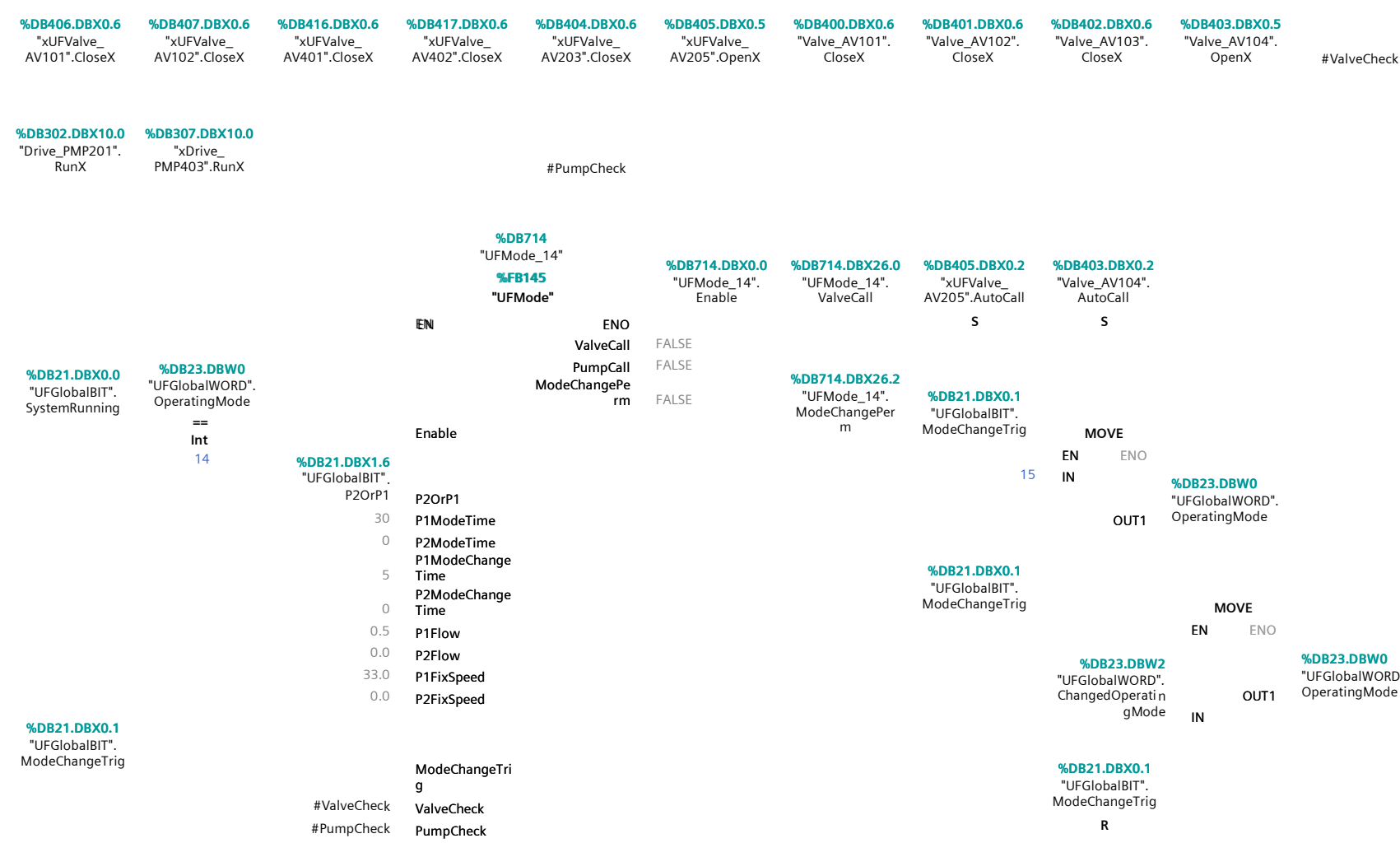
Network 2: 12 CEB1.1 Caustic Placement Backwash Top



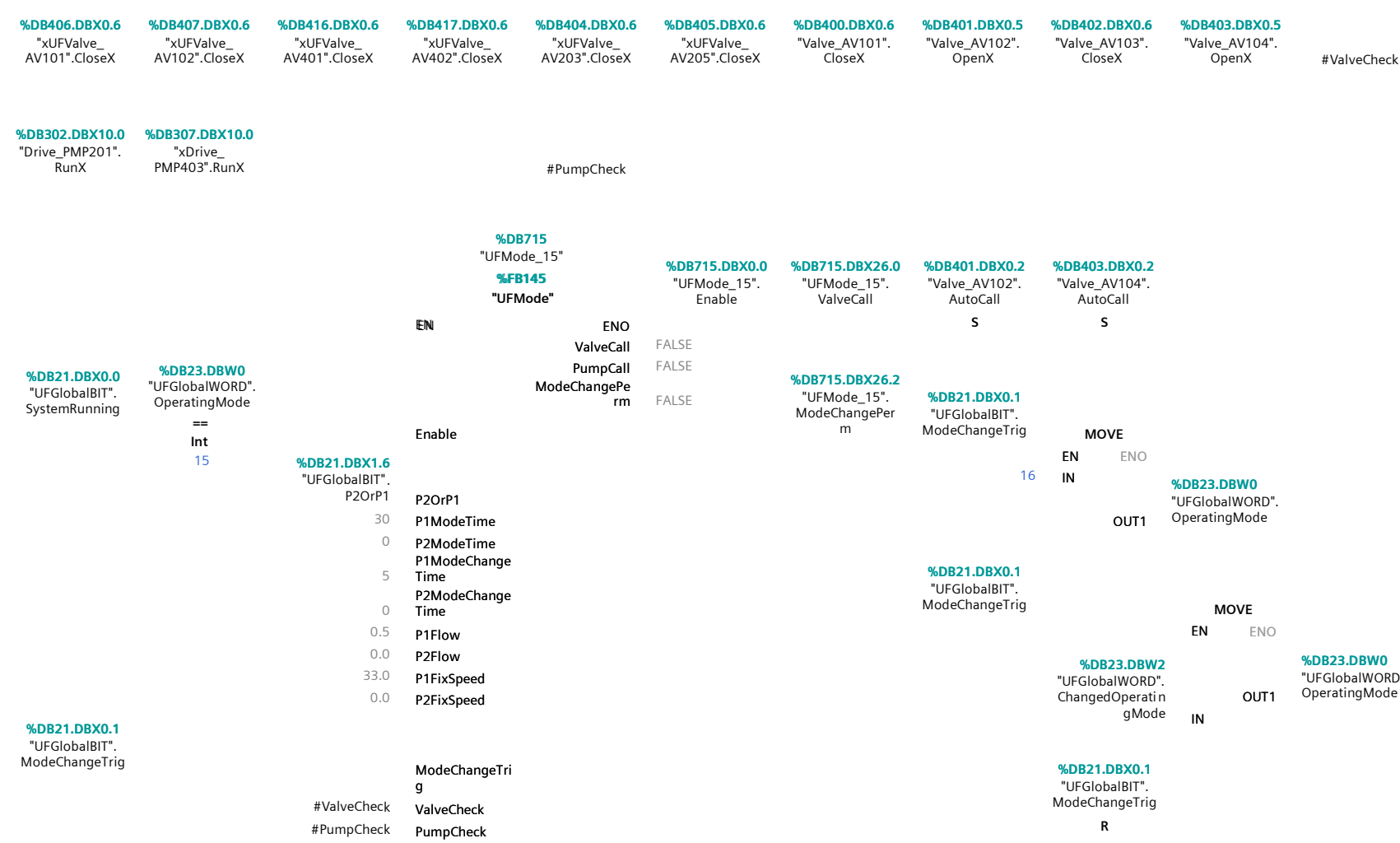
Network 3: 13 CEB1.1 Soak



Network 4: 14 CEB1.1 Caustic Rinse Backwash Bottom



Network 5: 15 CEB1.1 Caustic Rinse Backwash Top



Network 6: 16 Filtration Bottom Short

Ensure there is enough water in the BW Tank for a CEB

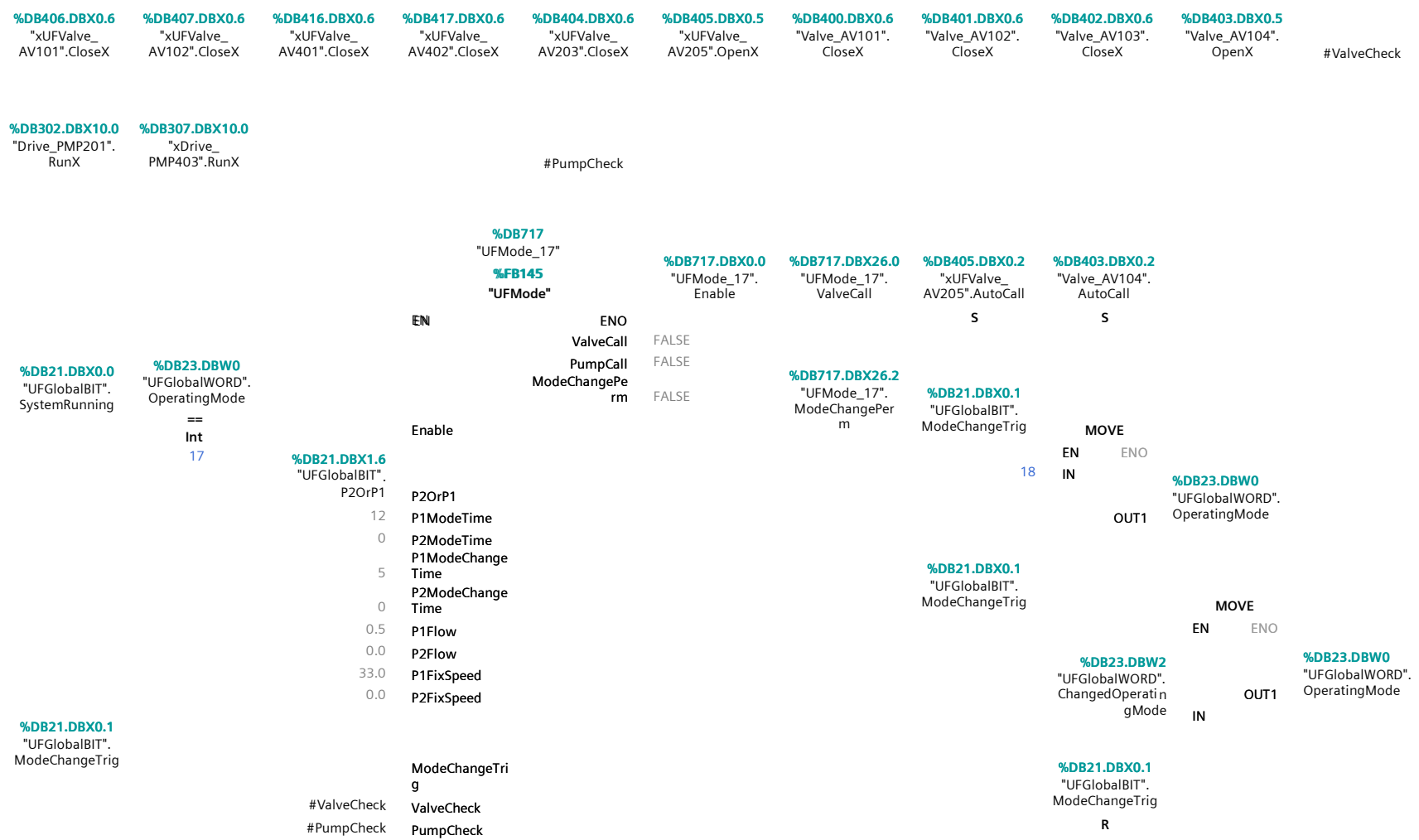
```

    graph TD
      R1((Rung 1)) --> S_PumpCheck[Set PumpCheck]
      R2((Rung 2)) --> S_ValveCall[Set ValveCall]
      R3((Rung 3)) --> S_PumpCall[Set PumpCall]
      R4((Rung 4)) --> S_ModeChangePerm[Set ModeChangePerm]
      R5((Rung 5)) --> S_Enable[Set Enable]
      R6((Rung 6)) --> S_P1ModeTime[T1 P1ModeTime]
      R7((Rung 7)) --> S_P2ModeTime[T2 P2ModeTime]
      R8((Rung 8)) --> S_P1ModeChangeTime[T3 P1ModeChangeTime]
      R9((Rung 9)) --> S_P2ModeChangeTime[T4 P2ModeChangeTime]
      R10((Rung 10)) --> S_P1Flow[P1Flow]
      R11((Rung 11)) --> S_P2Flow[P2Flow]
      R12((Rung 12)) --> S_P1FixSpeed[P1FixSpeed]
      R13((Rung 13)) --> S_P2FixSpeed[P2FixSpeed]
      R14((Rung 14)) --> S_ModeChangeTrigging[Set ModeChangeTrigging]
      R15((Rung 15)) --> S_ValveCheck[Set ValveCheck]
      R16((Rung 16)) --> S_PumpCheck[Set PumpCheck]
      R17((Rung 17)) --> S_MoveEN[Set MOVE EN]
      R18((Rung 18)) --> S_MoveIN[Set MOVE IN]
      R19((Rung 19)) --> S_MoveOUT1[Set MOVE OUT1]
      R20((Rung 20)) --> S_MoveEN[Set MOVE EN]
      R21((Rung 21)) --> S_MoveIN[Set MOVE IN]
      R22((Rung 22)) --> S_MoveOUT1[Set MOVE OUT1]
      R23((Rung 23)) --> S_MoveEN[Set MOVE EN]
      R24((Rung 24)) --> S_MoveIN[Set MOVE IN]
      R25((Rung 25)) --> S_MoveOUT1[Set MOVE OUT1]
      R26((Rung 26)) --> S_MoveEN[Set MOVE EN]
      R27((Rung 27)) --> S_MoveIN[Set MOVE IN]
      R28((Rung 28)) --> S_MoveOUT1[Set MOVE OUT1]
      R29((Rung 29)) --> S_MoveEN[Set MOVE EN]
      R30((Rung 30)) --> S_MoveIN[Set MOVE IN]
      R31((Rung 31)) --> S_MoveOUT1[Set MOVE OUT1]
      R32((Rung 32)) --> S_MoveEN[Set MOVE EN]
      R33((Rung 33)) --> S_MoveIN[Set MOVE IN]
      R34((Rung 34)) --> S_MoveOUT1[Set MOVE OUT1]
      R35((Rung 35)) --> S_MoveEN[Set MOVE EN]
      R36((Rung 36)) --> S_MoveIN[Set MOVE IN]
      R37((Rung 37)) --> S_MoveOUT1[Set MOVE OUT1]
      R38((Rung 38)) --> S_MoveEN[Set MOVE EN]
      R39((Rung 39)) --> S_MoveIN[Set MOVE IN]
      R40((Rung 40)) --> S_MoveOUT1[Set MOVE OUT1]
      R41((Rung 41)) --> S_MoveEN[Set MOVE EN]
      R42((Rung 42)) --> S_MoveIN[Set MOVE IN]
      R43((Rung 43)) --> S_MoveOUT1[Set MOVE OUT1]
      R44((Rung 44)) --> S_MoveEN[Set MOVE EN]
      R45((Rung 45)) --> S_MoveIN[Set MOVE IN]
      R46((Rung 46)) --> S_MoveOUT1[Set MOVE OUT1]
      R47((Rung 47)) --> S_MoveEN[Set MOVE EN]
      R48((Rung 48)) --> S_MoveIN[Set MOVE IN]
      R49((Rung 49)) --> S_MoveOUT1[Set MOVE OUT1]
      R50((Rung 50)) --> S_MoveEN[Set MOVE EN]
      R51((Rung 51)) --> S_MoveIN[Set MOVE IN]
      R52((Rung 52)) --> S_MoveOUT1[Set MOVE OUT1]
      R53((Rung 53)) --> S_MoveEN[Set MOVE EN]
      R54((Rung 54)) --> S_MoveIN[Set MOVE IN]
      R55((Rung 55)) --> S_MoveOUT1[Set MOVE OUT1]
      R56((Rung 56)) --> S_MoveEN[Set MOVE EN]
      R57((Rung 57)) --> S_MoveIN[Set MOVE IN]
      R58((Rung 58)) --> S_MoveOUT1[Set MOVE OUT1]
      R59((Rung 59)) --> S_MoveEN[Set MOVE EN]
      R60((Rung 60)) --> S_MoveIN[Set MOVE IN]
      R61((Rung 61)) --> S_MoveOUT1[Set MOVE OUT1]
      R62((Rung 62)) --> S_MoveEN[Set MOVE EN]
      R63((Rung 63)) --> S_MoveIN[Set MOVE IN]
      R64((Rung 64)) --> S_MoveOUT1[Set MOVE OUT1]
      R65((Rung 65)) --> S_MoveEN[Set MOVE EN]
      R66((Rung 66)) --> S_MoveIN[Set MOVE IN]
      R67((Rung 67)) --> S_MoveOUT1[Set MOVE OUT1]
      R68((Rung 68)) --> S_MoveEN[Set MOVE EN]
      R69((Rung 69)) --> S_MoveIN[Set MOVE IN]
      R70((Rung 70)) --> S_MoveOUT1[Set MOVE OUT1]
      R71((Rung 71)) --> S_MoveEN[Set MOVE EN]
      R72((Rung 72)) --> S_MoveIN[Set MOVE IN]
      R73((Rung 73)) --> S_MoveOUT1[Set MOVE OUT1]
      R74((Rung 74)) --> S_MoveEN[Set MOVE EN]
      R75((Rung 75)) --> S_MoveIN[Set MOVE IN]
      R76((Rung 76)) --> S_MoveOUT1[Set MOVE OUT1]
      R77((Rung 77)) --> S_MoveEN[Set MOVE EN]
      R78((Rung 78)) --> S_MoveIN[Set MOVE IN]
      R79((Rung 79)) --> S_MoveOUT1[Set MOVE OUT1]
      R80((Rung 80)) --> S_MoveEN[Set MOVE EN]
      R81((Rung 81)) --> S_MoveIN[Set MOVE IN]
      R82((Rung 82)) --> S_MoveOUT1[Set MOVE OUT1]
      R83((Rung 83)) --> S_MoveEN[Set MOVE EN]
      R84((Rung 84)) --> S_MoveIN[Set MOVE IN]
      R85((Rung 85)) --> S_MoveOUT1[Set MOVE OUT1]
      R86((Rung 86)) --> S_MoveEN[Set MOVE EN]
      R87((Rung 87)) --> S_MoveIN[Set MOVE IN]
      R88((Rung 88)) --> S_MoveOUT1[Set MOVE OUT1]
      R89((Rung 89)) --> S_MoveEN[Set MOVE EN]
      R90((Rung 90)) --> S_MoveIN[Set MOVE IN]
      R91((Rung 91)) --> S_MoveOUT1[Set MOVE OUT1]
      R92((Rung 92)) --> S_MoveEN[Set MOVE EN]
      R93((Rung 93)) --> S_MoveIN[Set MOVE IN]
      R94((Rung 94)) --> S_MoveOUT1[Set MOVE OUT1]
      R95((Rung 95)) --> S_MoveEN[Set MOVE EN]
      R96((Rung 96)) --> S_MoveIN[Set MOVE IN]
      R97((Rung 97)) --> S_MoveOUT1[Set MOVE OUT1]
      R98((Rung 98)) --> S_MoveEN[Set MOVE EN]
      R99((Rung 99)) --> S_MoveIN[Set MOVE IN]
      R100((Rung 100)) --> S_MoveOUT1[Set MOVE OUT1]
  
```

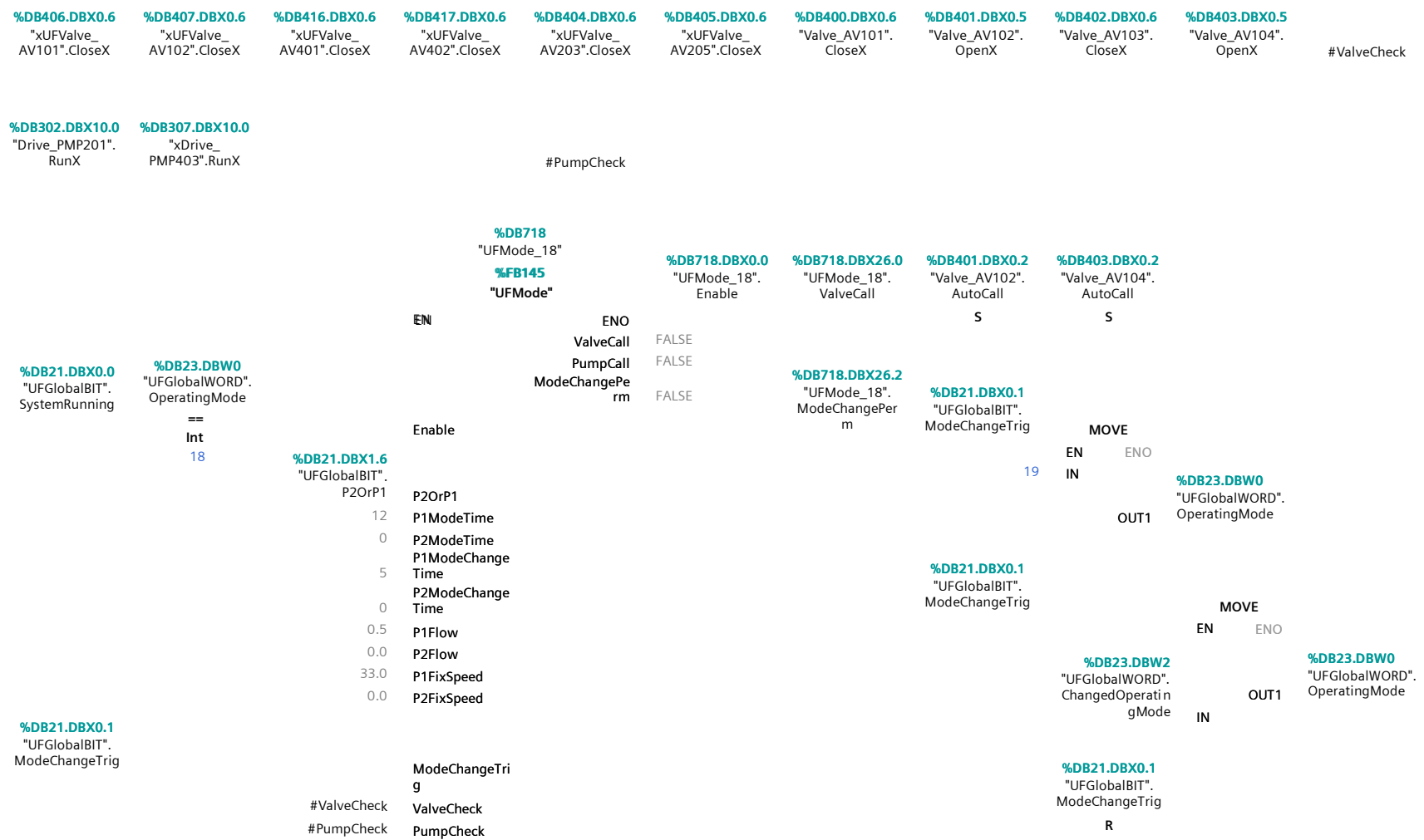
The diagram illustrates a complex industrial control system for a pump. It uses a series of rungs (R1-R100) to manage various functions:

- Rungs 1-4:** Initialize safety and status flags like #PumpCheck, #ValveCheck, #DriveRunX, and #FiltTMPHAlarm.
- Rungs 5-13:** Manage the pump's operating modes (P1, P2) by setting times and speeds.
- Rungs 14-16:** Control the pump's enable/disable state based on mode changes.
- Rungs 17-20:** Handle flow rate monitoring and mode transitions.
- Rungs 21-24:** Manage valve operations and mode changes.
- Rungs 25-28:** Control the pump's speed and mode.
- Rungs 29-32:** Manage the pump's mode and speed.
- Rungs 33-36:** Control the pump's mode and speed.
- Rungs 37-40:** Manage the pump's mode and speed.
- Rungs 41-44:** Control the pump's mode and speed.
- Rungs 45-48:** Manage the pump's mode and speed.
- Rungs 49-52:** Control the pump's mode and speed.
- Rungs 53-56:** Manage the pump's mode and speed.
- Rungs 57-60:** Control the pump's mode and speed.
- Rungs 61-64:** Manage the pump's mode and speed.
- Rungs 65-68:** Control the pump's mode and speed.
- Rungs 69-72:** Manage the pump's mode and speed.
- Rungs 73-76:** Control the pump's mode and speed.
- Rungs 77-80:** Manage the pump's mode and speed.
- Rungs 81-84:** Control the pump's mode and speed.
- Rungs 85-88:** Manage the pump's mode and speed.
- Rungs 89-92:** Control the pump's mode and speed.
- Rungs 93-96:** Manage the pump's mode and speed.
- Rungs 97-100:** Control the pump's mode and speed.

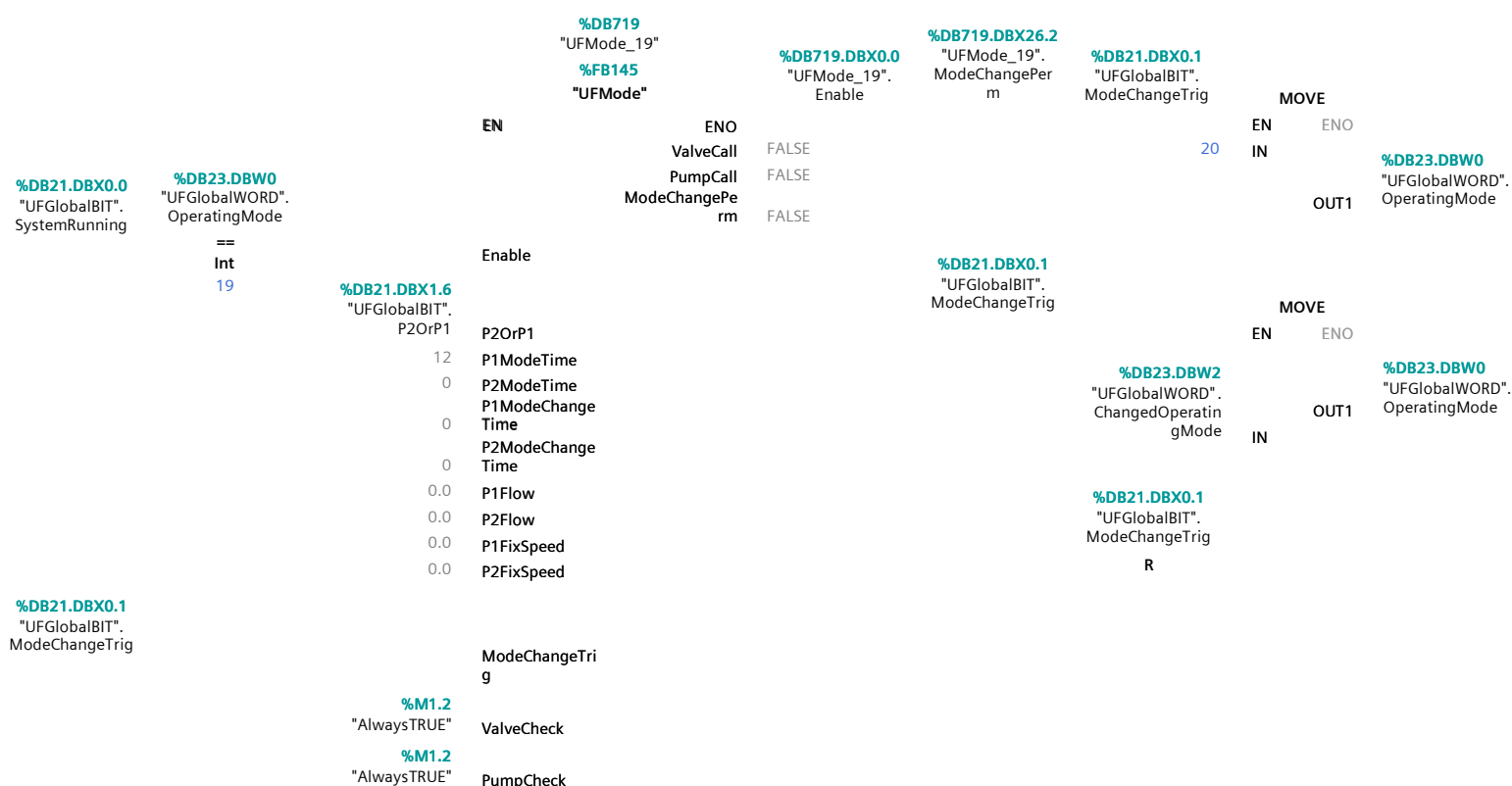
Totally Integrated Automation Portal



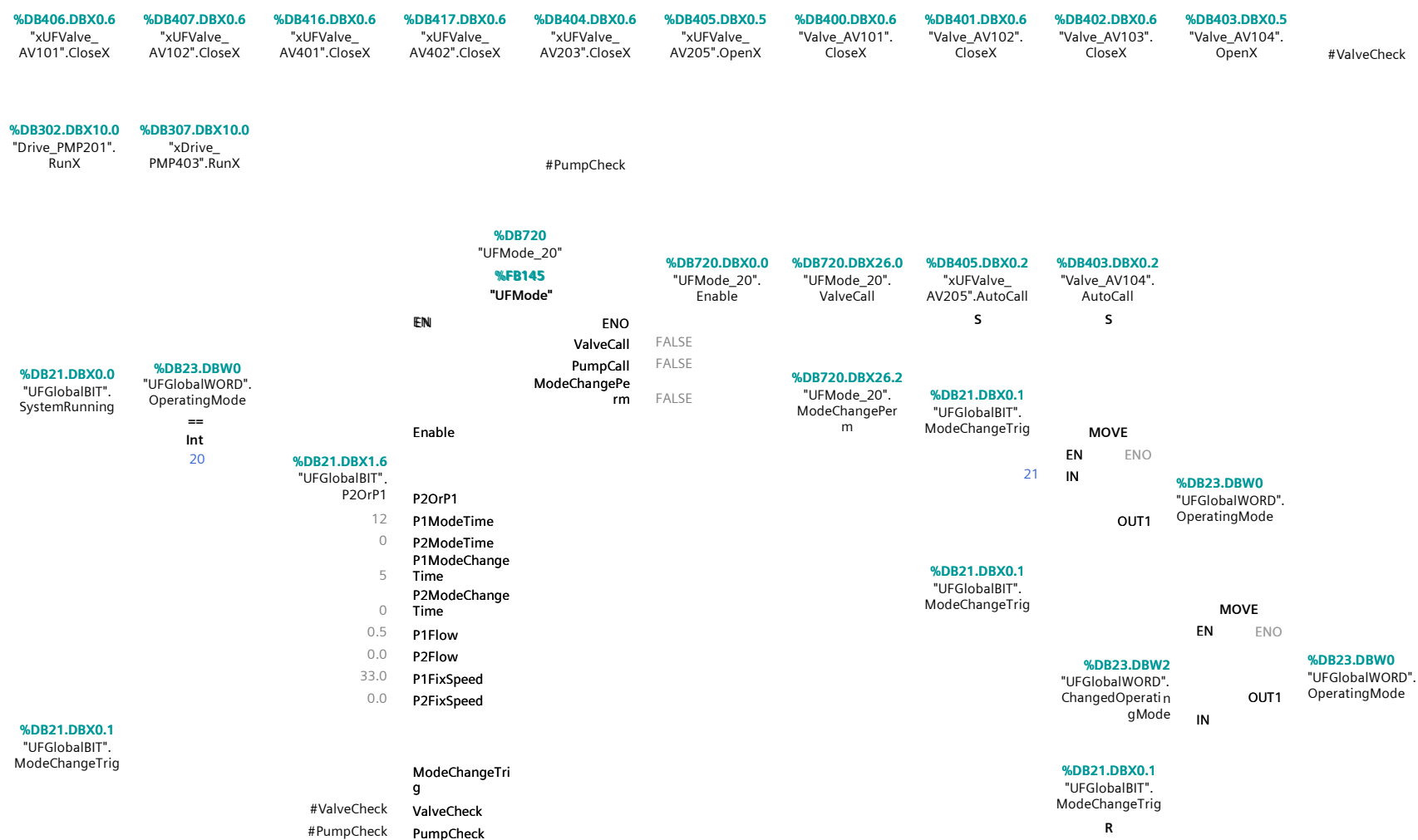
Network 8: 18 CEB1.2 Acid Placement Backwash Top



Network 9: 19 CEB1.2 Soak



Network 10: 20 CEB1.2 Acid Rinse Backwash Bottom



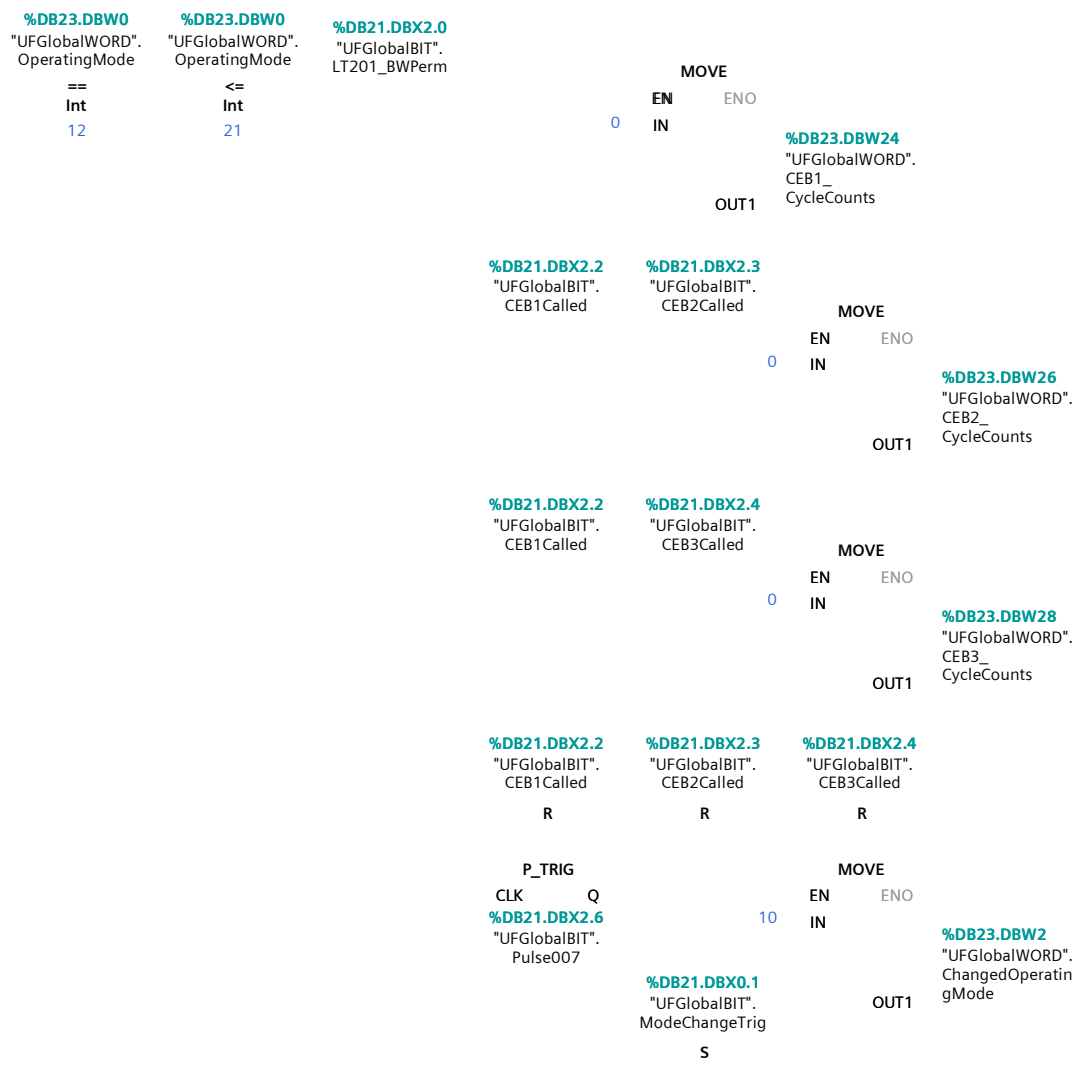
Network 11: 21 CEB1.2 Acid Rinse Backwash Top

Totally Integrated Automation Portal

%DB406.DBX0.6 "xUFValve_ AV101".CloseX	%DB407.DBX0.6 "xUFValve_ AV102".CloseX	%DB416.DBX0.6 "xUFValve_ AV401".CloseX	%DB417.DBX0.6 "xUFValve_ AV402".CloseX
%DB302.DBX10.0 "Drive_PMP201". RunX	%DB307.DBX10.0 "xDrive_ PMP403".RunX		
			EN
%DB21.DBX0.0 "UFGlobalBIT". SystemRunning	%DB23.DBW0 "UFGlobalWORD". OperatingMode == Int 21	%DB21.DBX1.6 "UFGlobalBIT". P2OrP1 12 0 5 0 0.5 0.0 33.0 0.0	Enable P2OrP1 P1ModeTim P2ModeTim P1ModeCh Time P2ModeCh Time P1Flow P2Flow P1FixSpee P2FixSpee
%DB21.DBX0.1 "UFGlobalBIT". ModeChangeTrig		#ValveCheck #PumpCheck	ModeChan g ValveCheck PumpCheck

Network 12: Stop CEB1 When BW Tank Level Not OK

Network 12: Stop CEB1 When BW Tank Level Not OK



24_UFCEB2 [FC24]

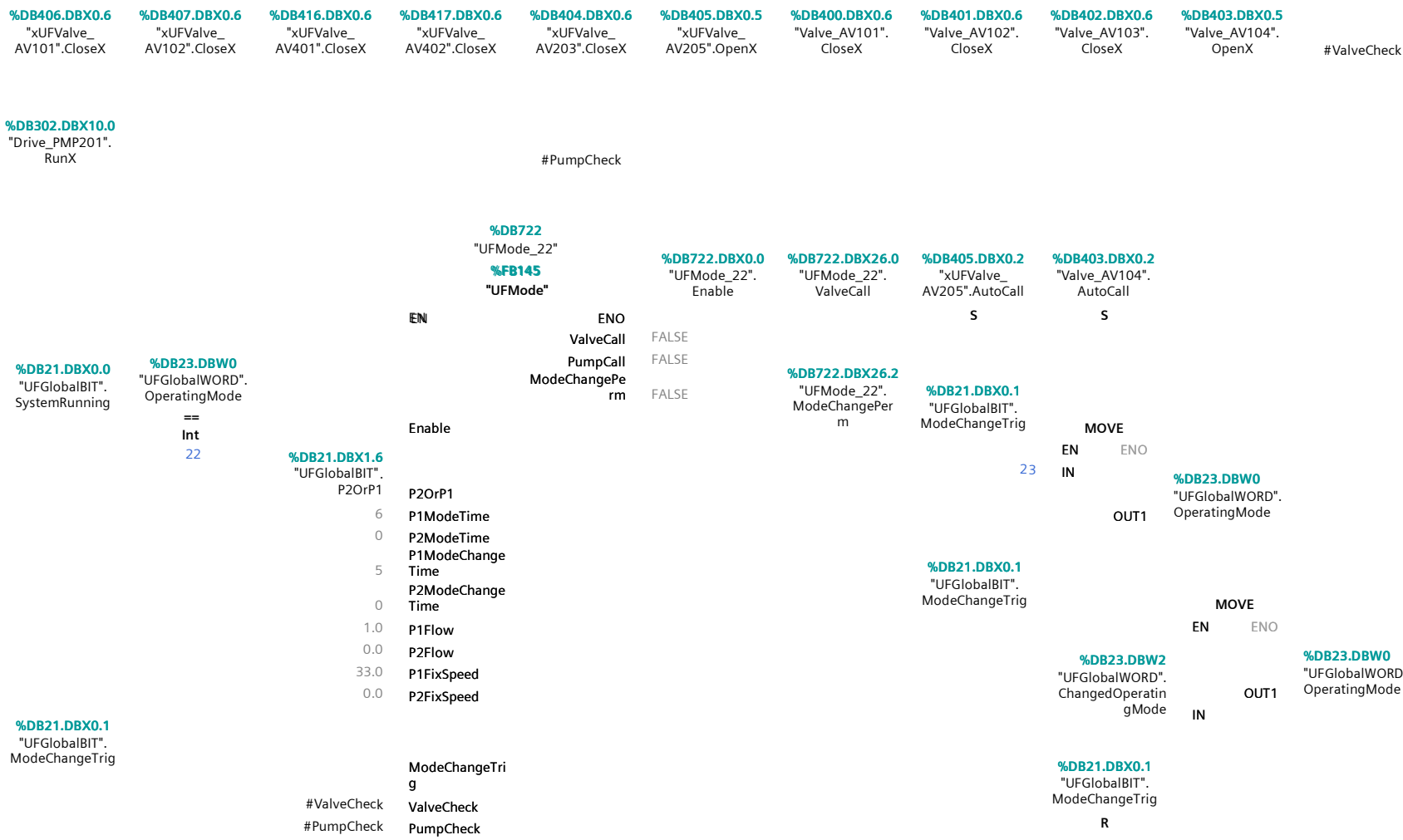
24_UFCEB2 Properties

General

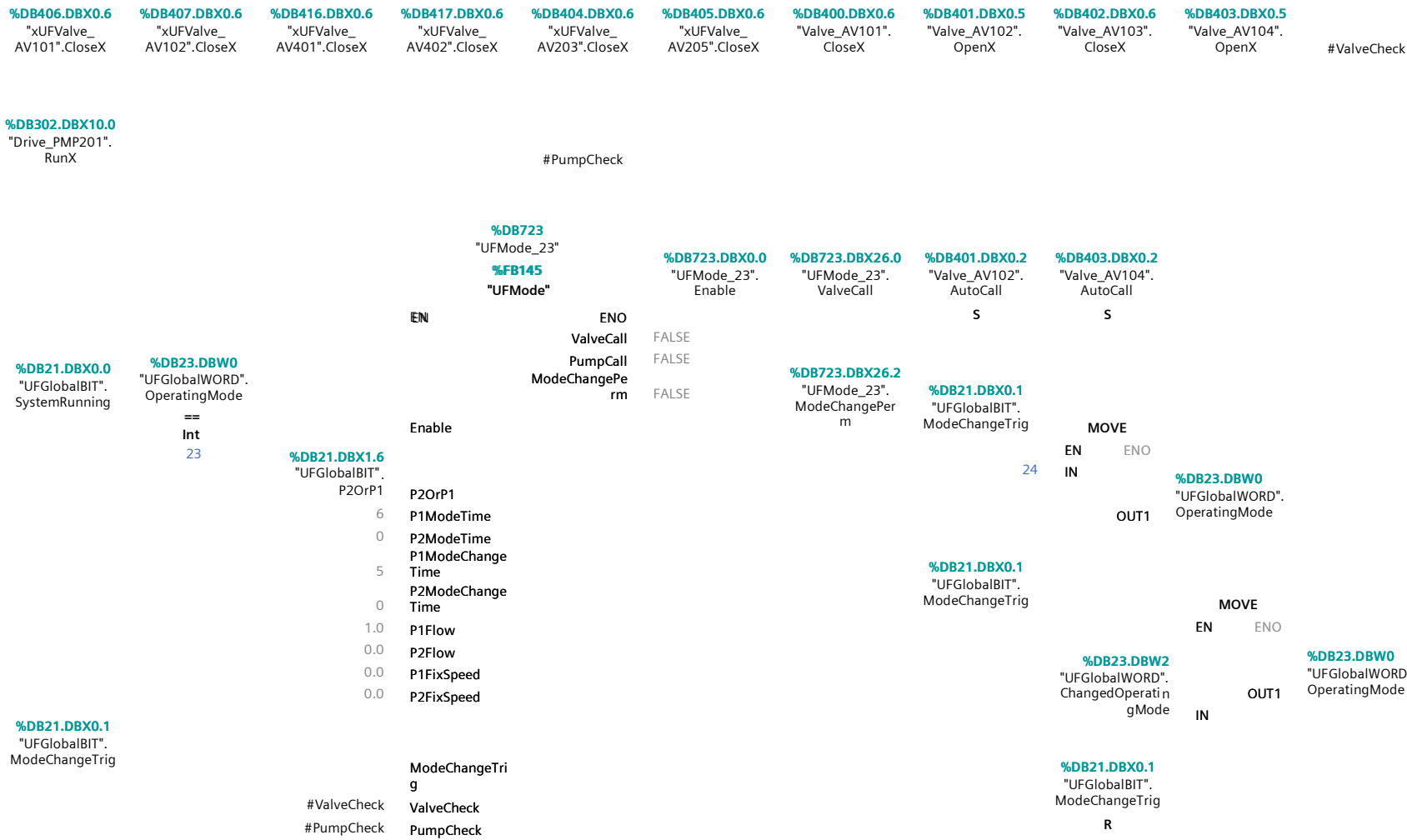
Name	24_UFCEB2	Number	24	Type	FC	Language	LAD
Numbering	Manual						
Information							
Title		Author		Comment		Family	
Version	0.1	User-defined ID					

Name	Data type	Default value	Comment
Input			
Output			
InOut			
Temp			
ValveCheck	Bool		
PumpCheck	Bool		
Constant			
Return			
24_UFCEB2	Void		

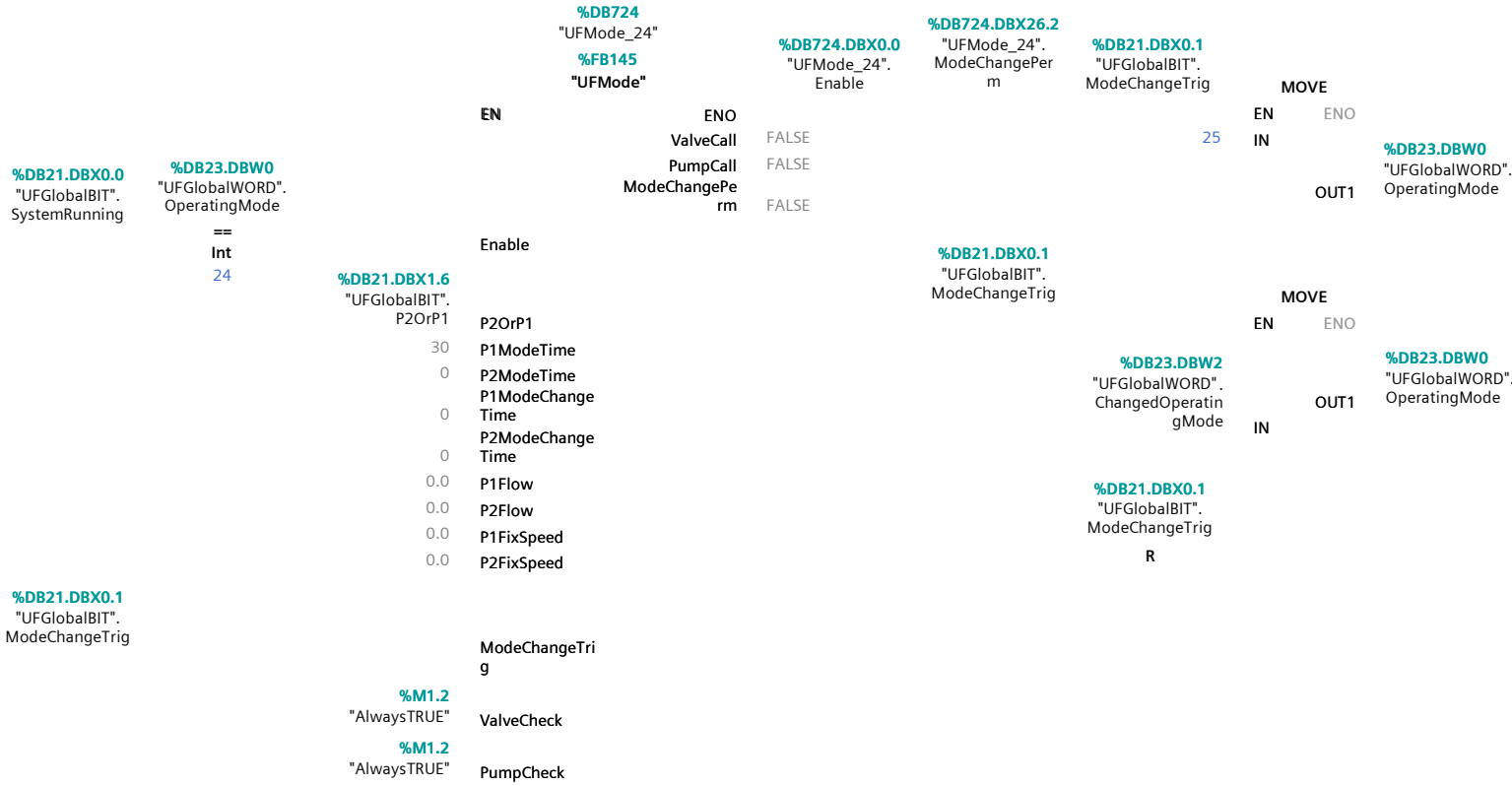
Network 1: 22 CEB2 Acid Placement Backwash Bottom



Network 2: 23 CEB2 Acid Placement Backwash Top

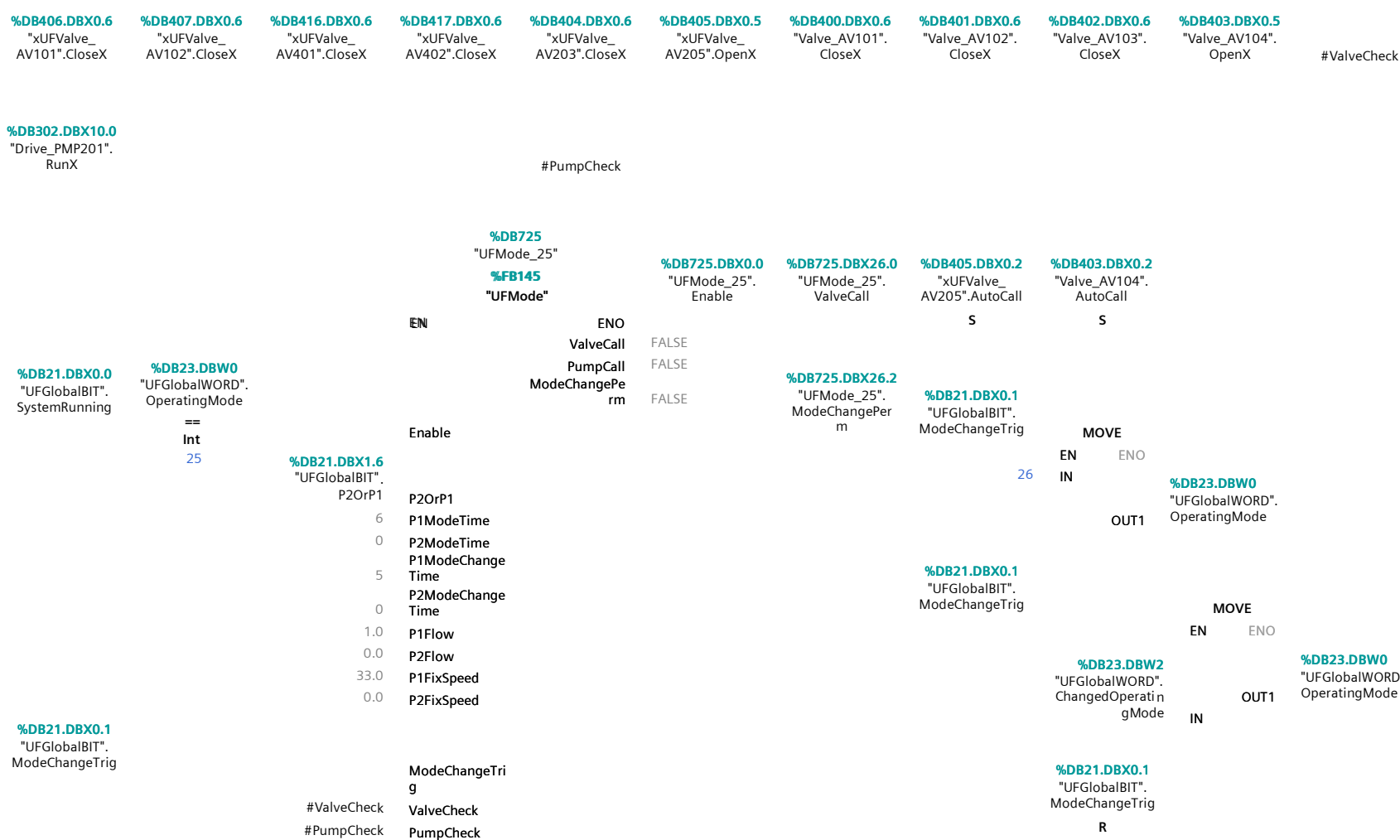


Network 3: 24 CEB1.2 Soak



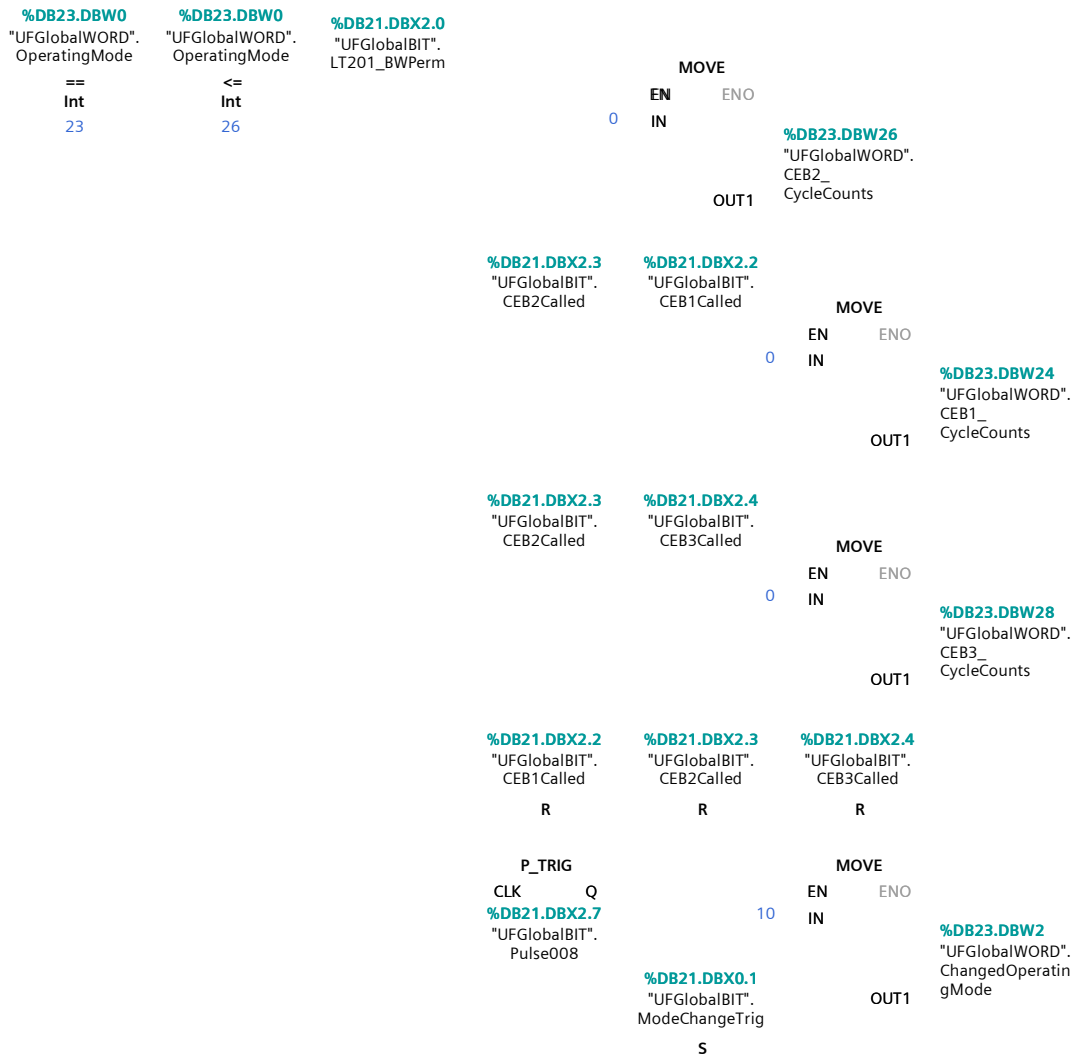
Network 4: 25 CEB1.2 Acid Rinse Backwash Bottom

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Network 5: 26 CEB2 Acid Rinse Backwash Top

[illegible]



25_UFCEB3 [FC25]

25_UFCEB3 Properties

General

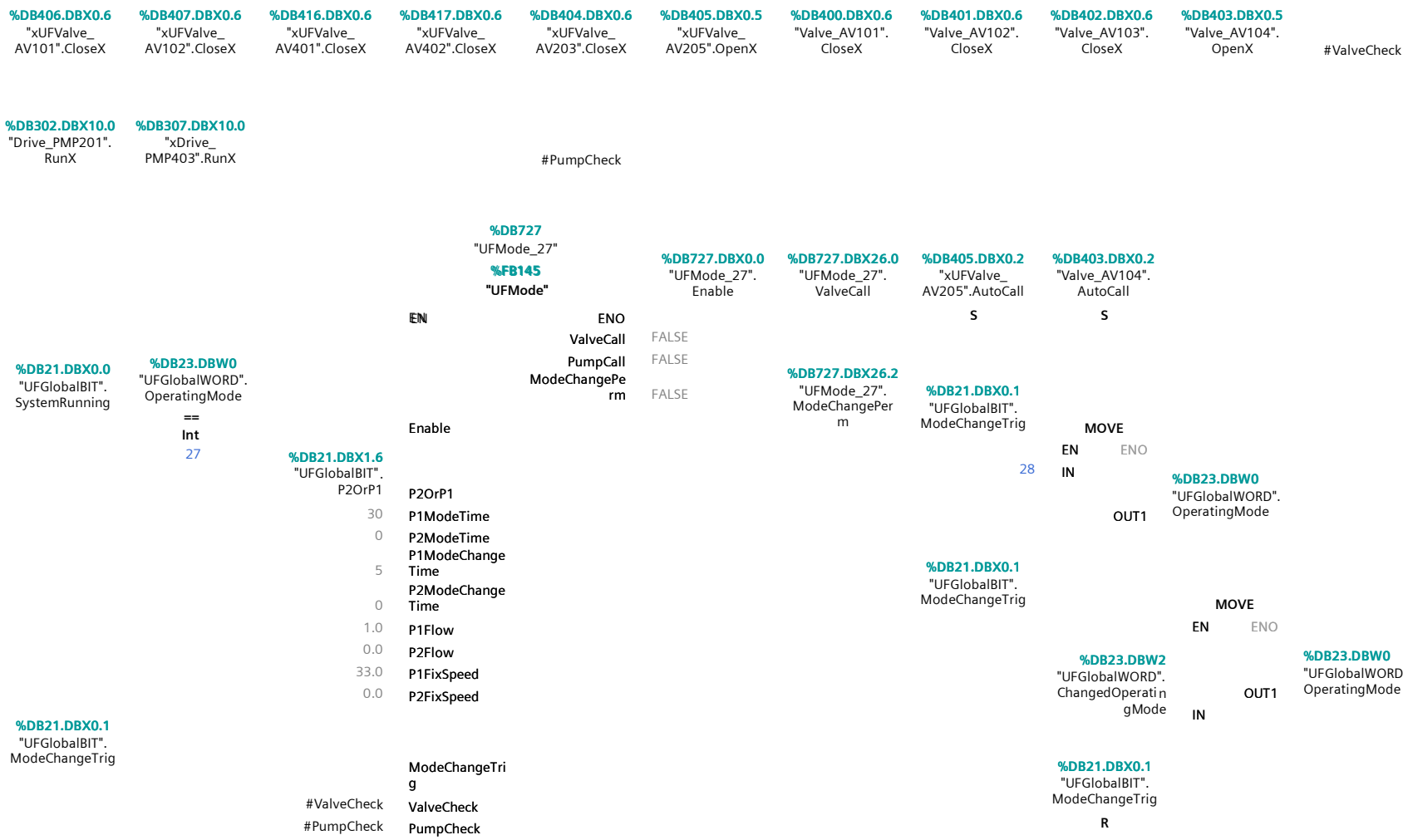
Name	25_UFCEB3	Number	25	Type	FC	Language	LAD
Numbering	Manual						

Information

Title		Author		Comment		Family	
Version	0.1	User-defined ID					

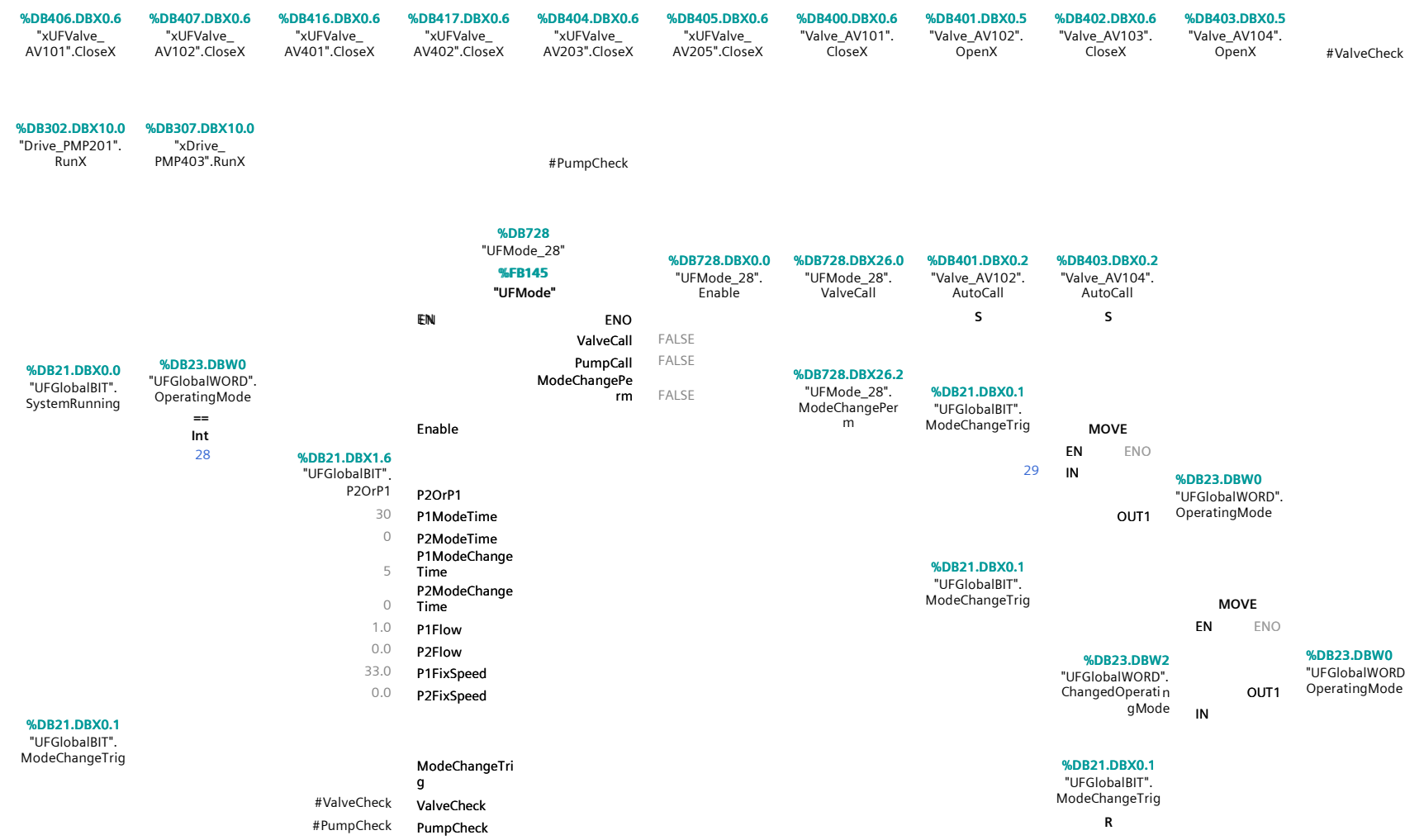
Name	Data type	Default value	Comment
Input			
Output			
InOut			
Temp			
ValveCheck	Bool		
PumpCheck	Bool		
Constant			
Return			
25_UFCEB3	Void		

Network 1: 27 CEB3 Chlorine Placement Backwash Bottom

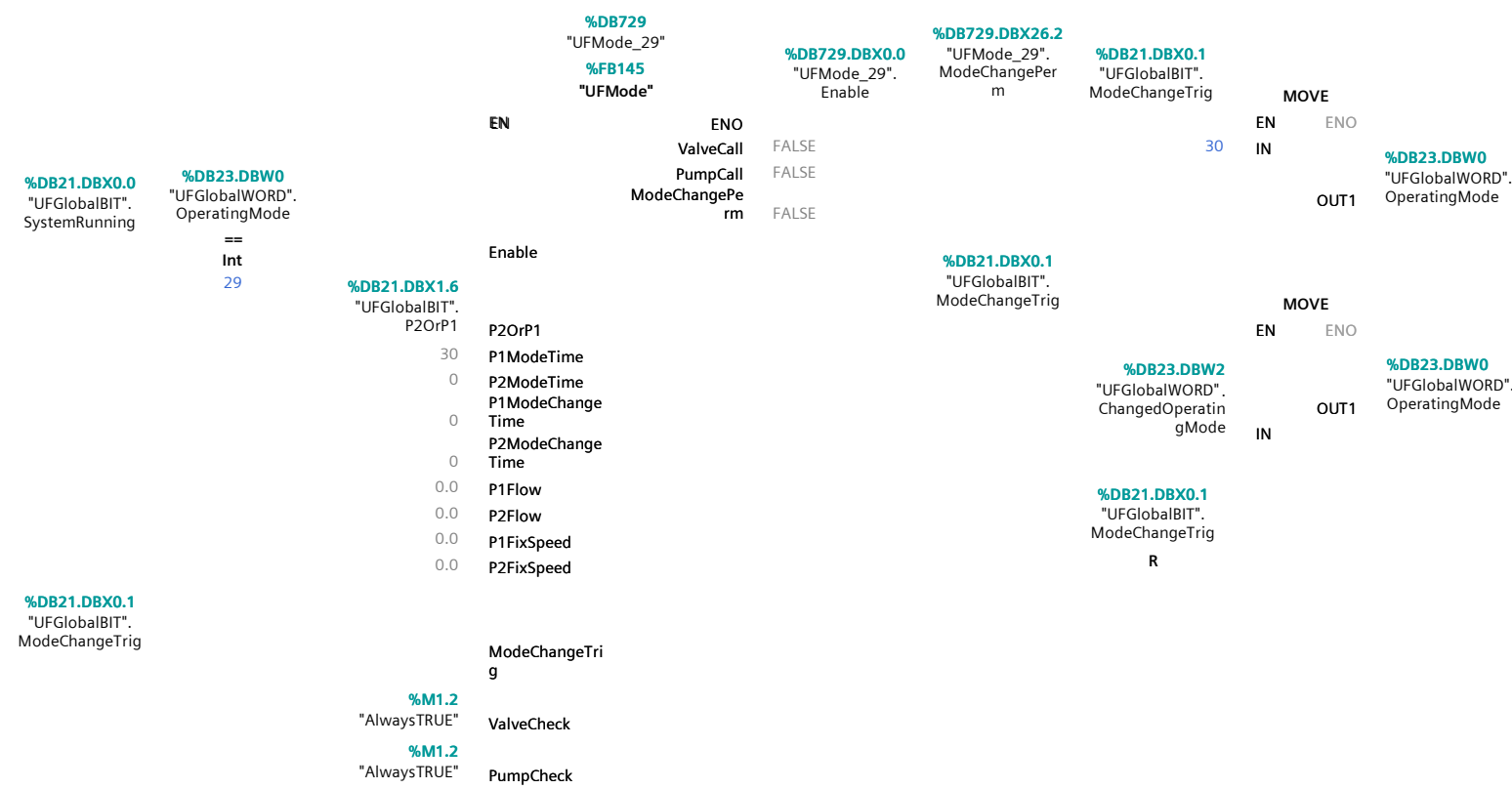


Network 2: 28 CEB3 Chlorine Placement Backwash Top about Sorek I desalination plant

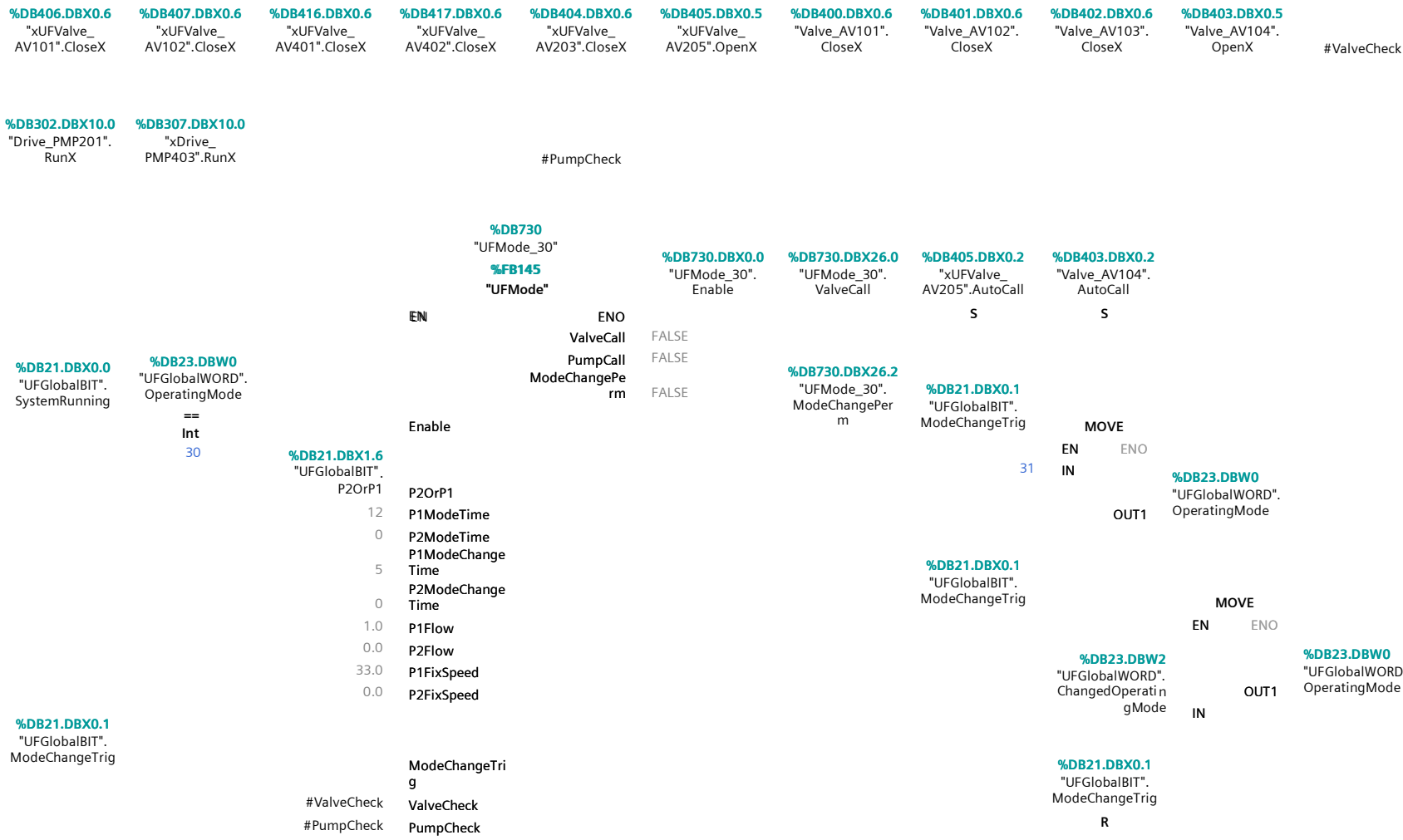
Totally Integrated
Automation Portal



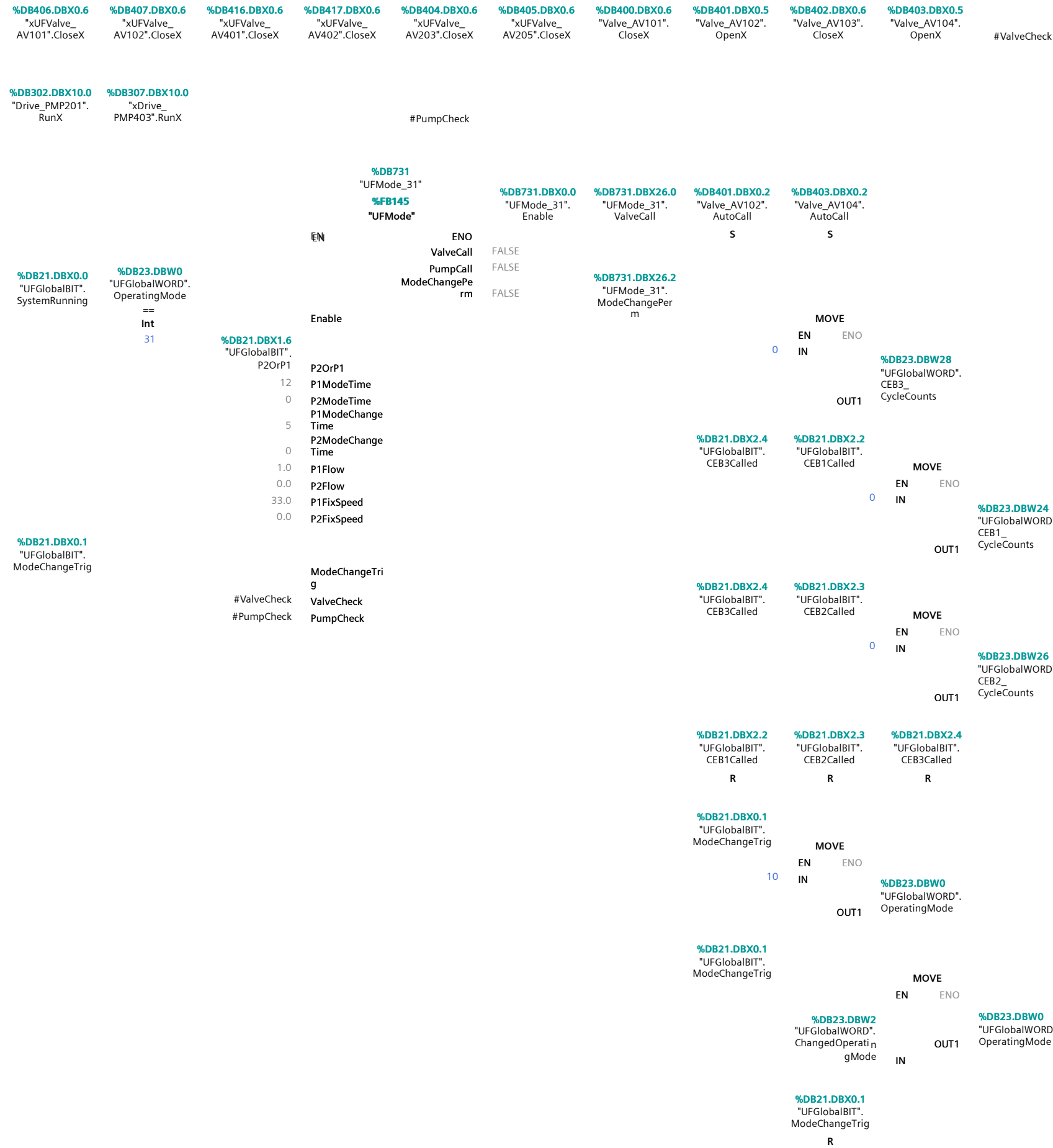
Network 3: 29 CEB3 Soak



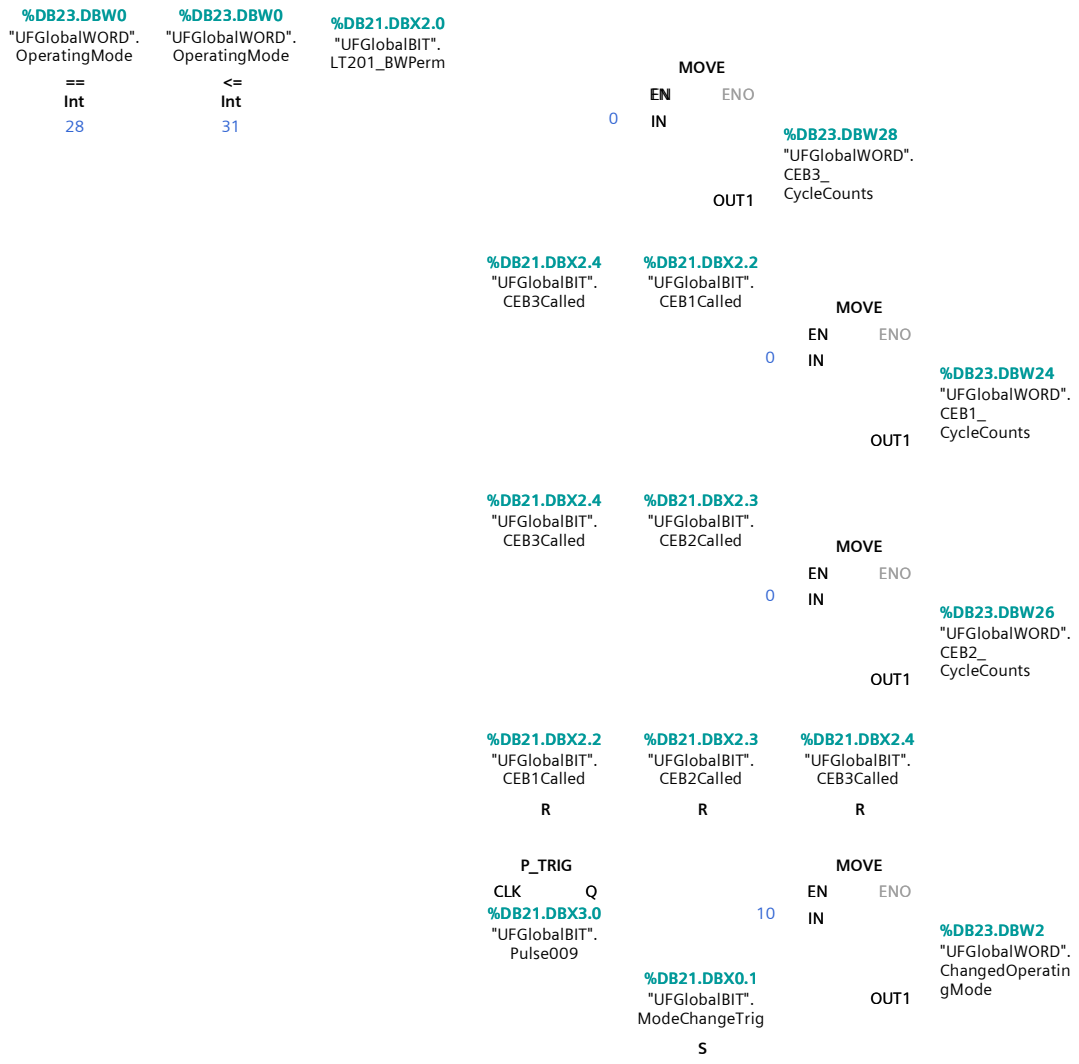
Network 4: 30 CEB3 Chlorine Rinse Backwash Bottom



Network 5: 31 CEB3 Chlorine Rinse Backwash Top



Network 6: Stop CEB3 When BW Tank Level Not OK



26_UFIntegrityTest [FC26]

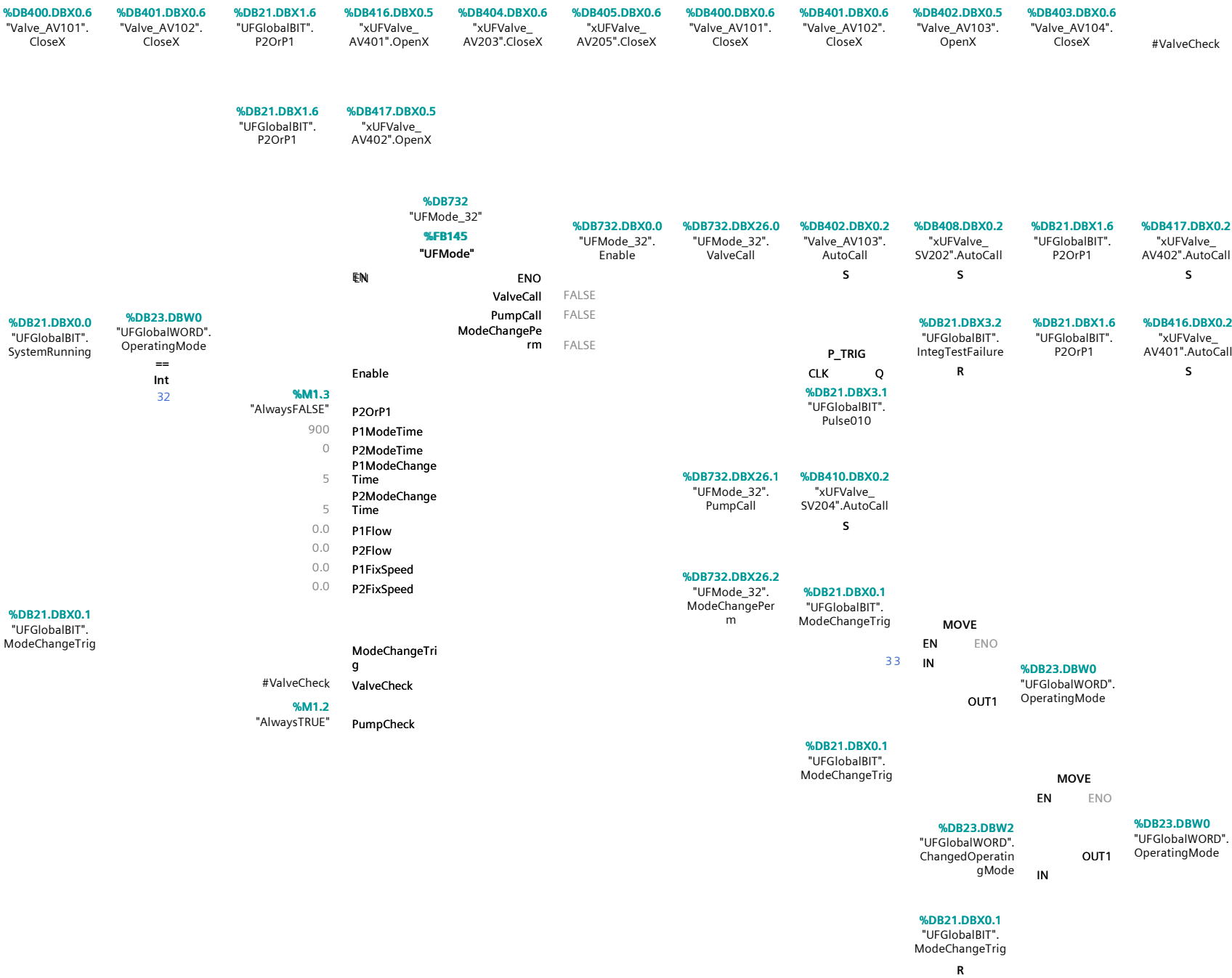
26_UFIntegrityTest Properties

General

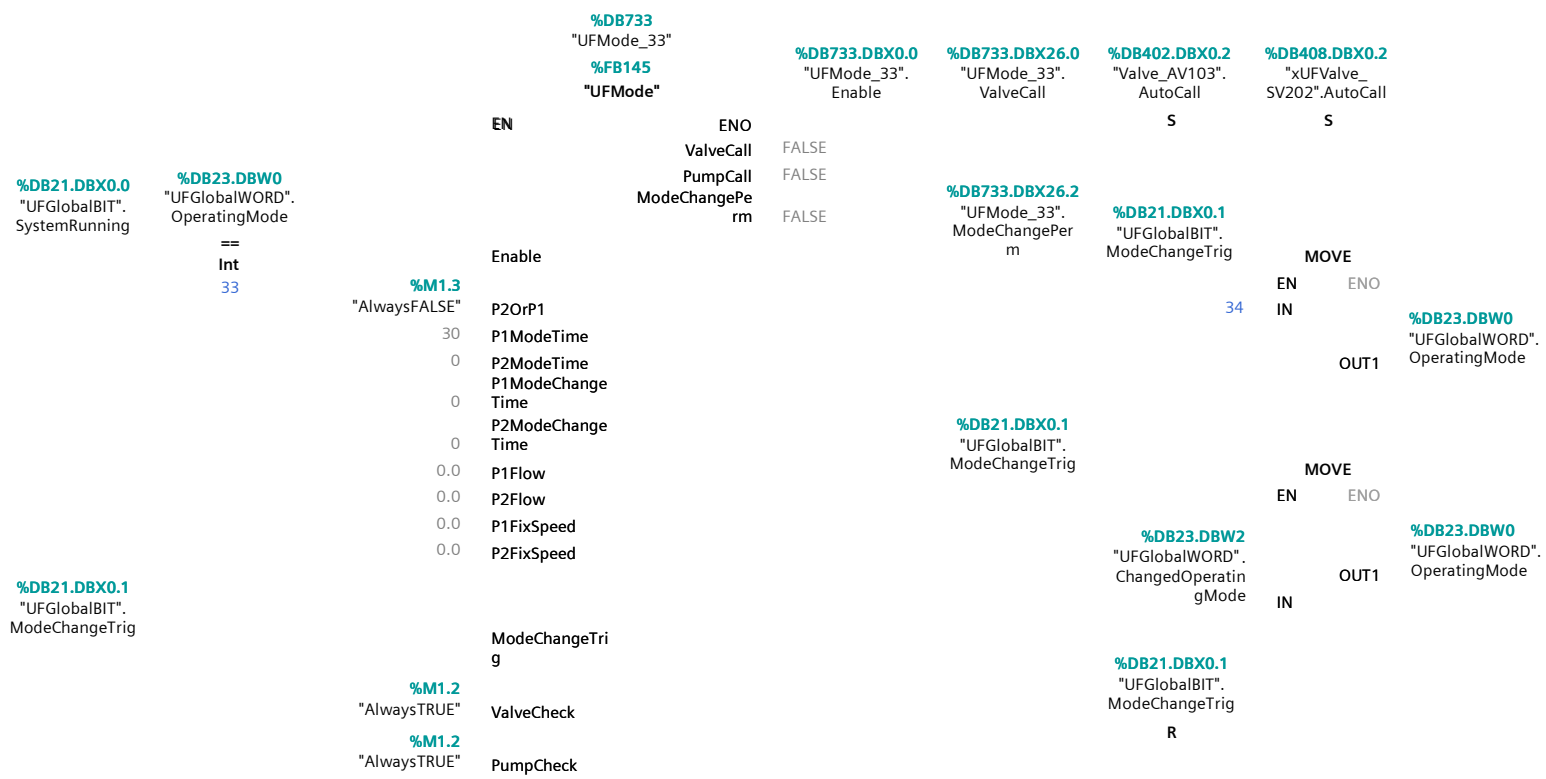
Name Numbering Information Title Version	26_UFIntegrityTest Manual	Number	26	Type	FC	Language	LAD
		Author		Comment		Family	
		User-defined ID					
	0.1						

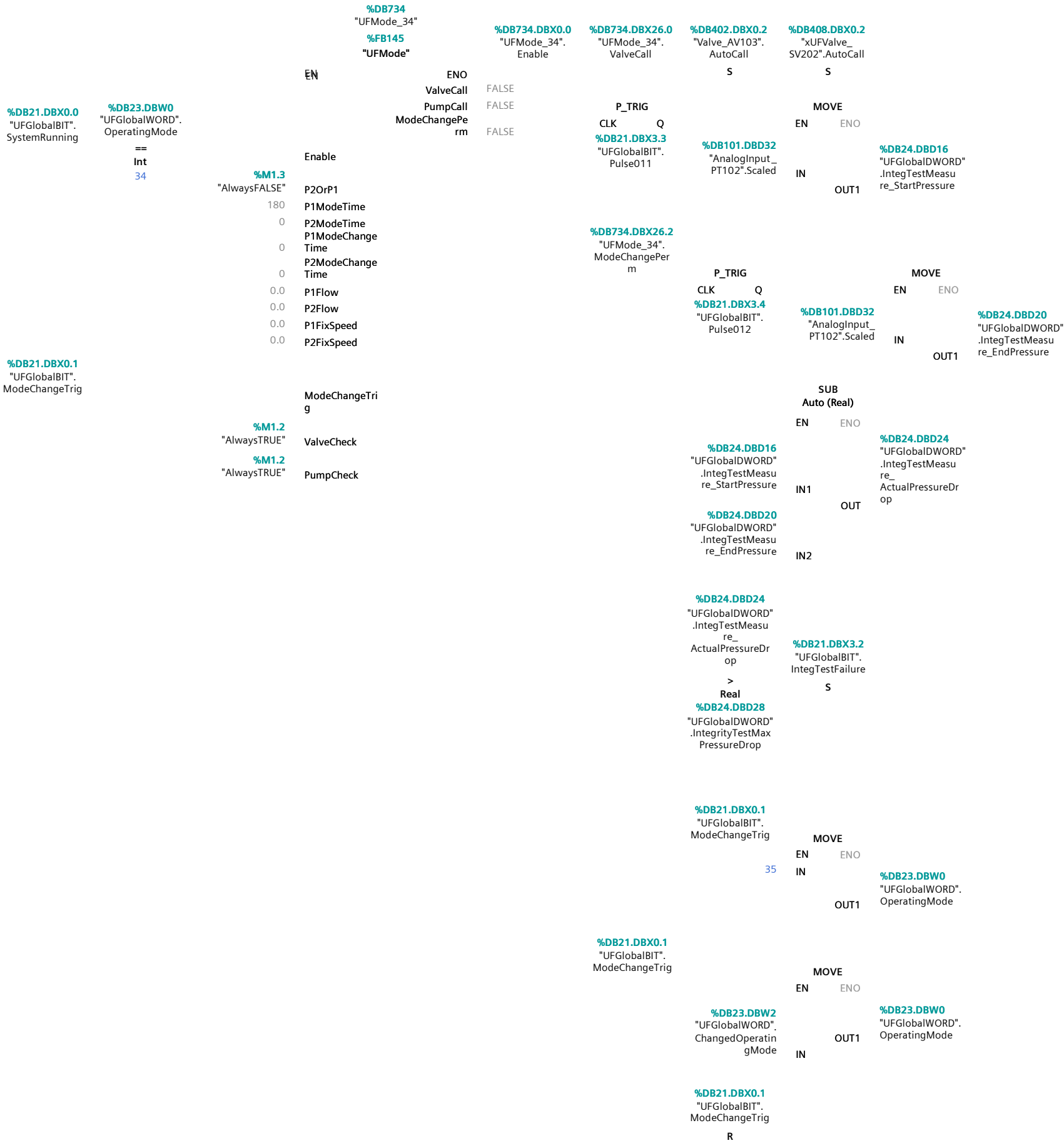
Name	Data type	Default value	Comment
Input			
Output			
InOut			
Temp			
ValveCheck	Bool		
PumpCheck	Bool		
IntegrityTestInterval	Time		
Constant			
Return			
26_UFIntegrityTest	Void		

Network 1: 32 Integrity Test Dewater

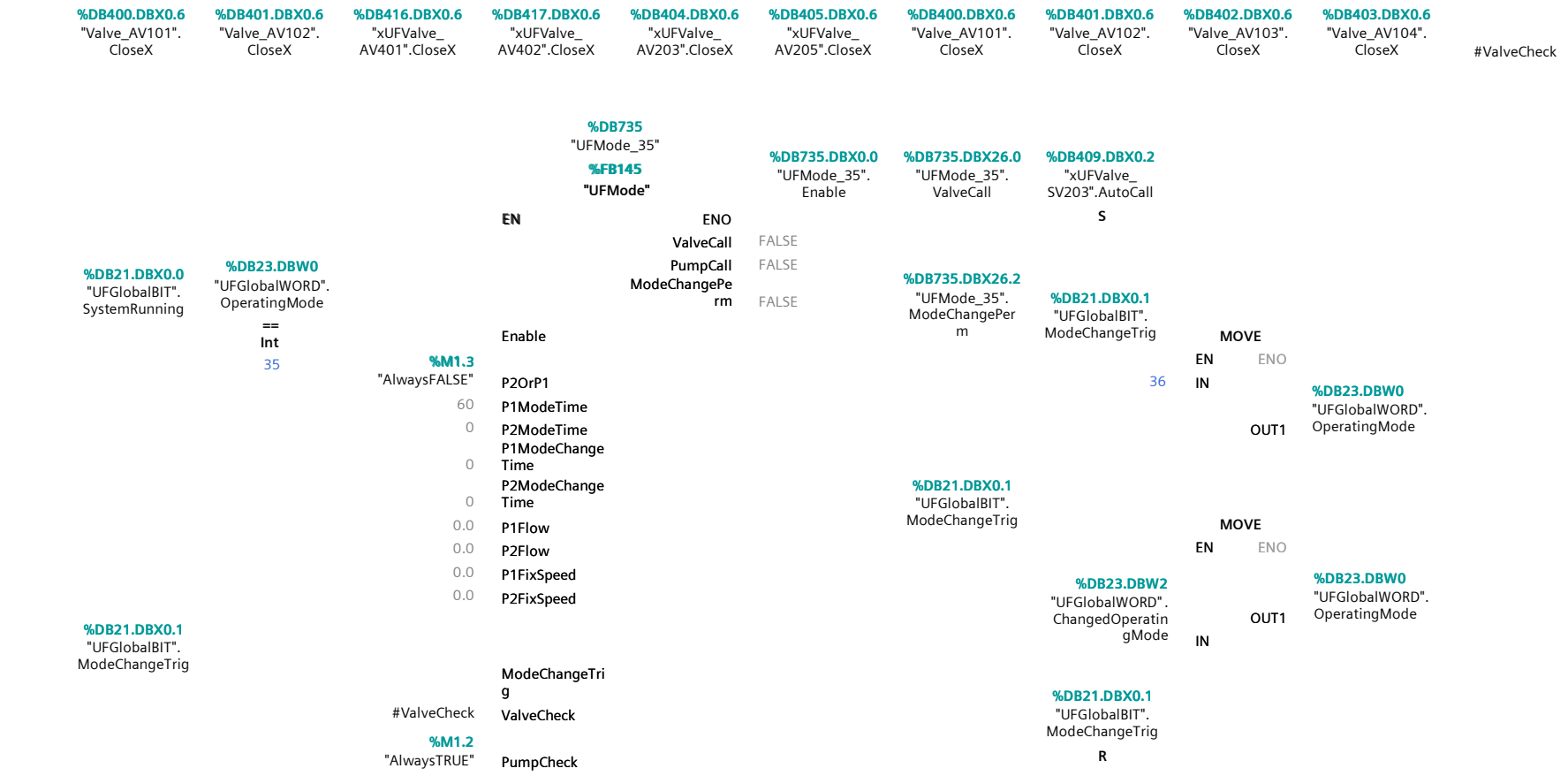


Network 2: 33 Integrity Test Pause

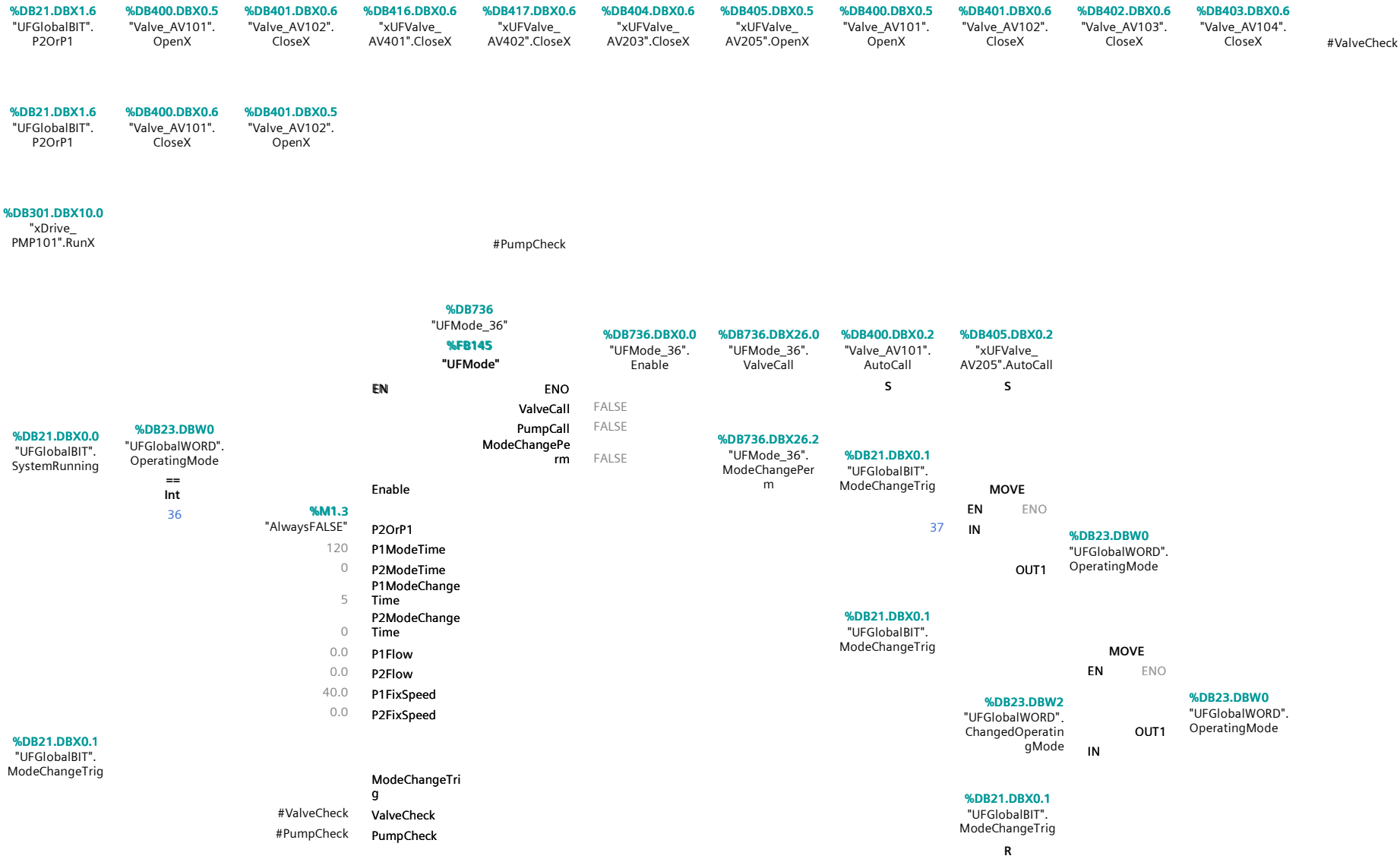




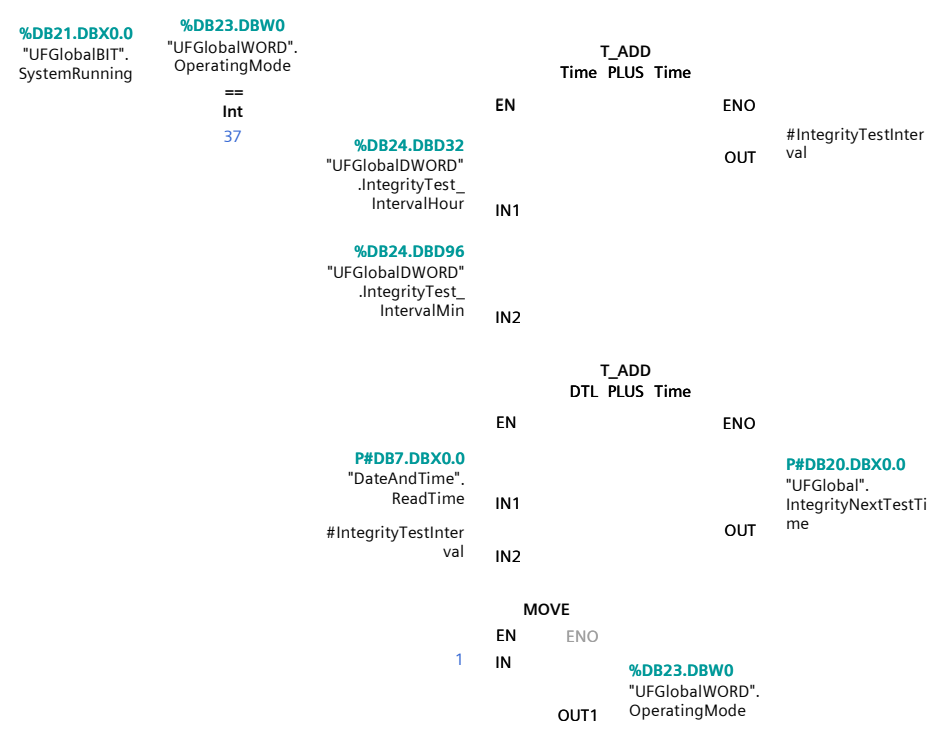
Network 4: 35 Integrity Test Pressure Release



Network 5: 36 Integrity Test Purge Forward Flush Bottom



Network 6: 37 Increment the Integrity Test due date for next time.



27_UFCalc [FC27]

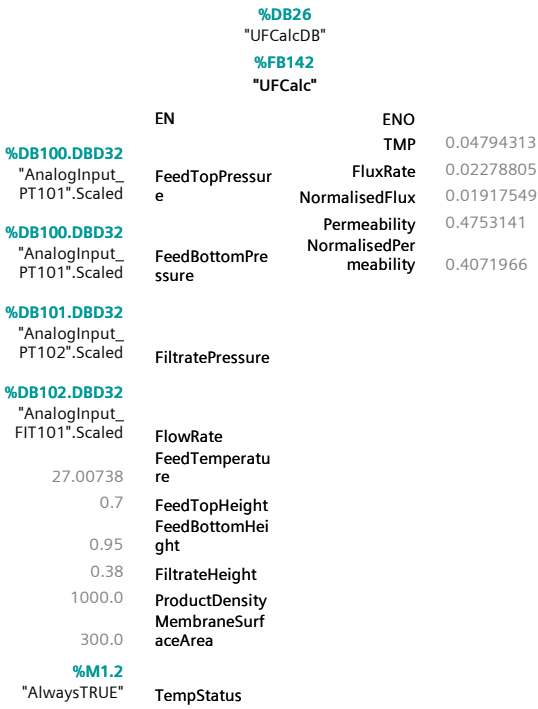
27_UFCalc Properties

General

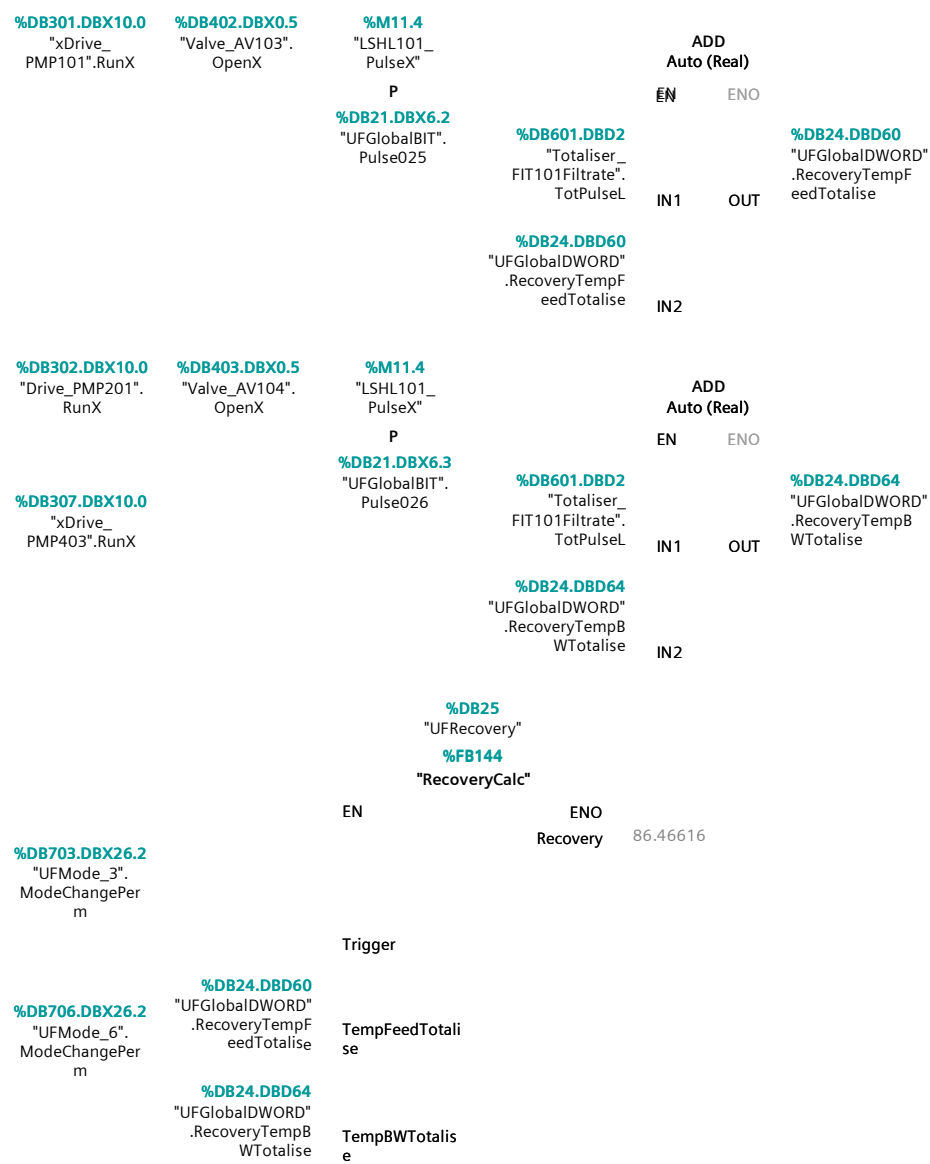
Name	27_UFCalc	Number	27	Type	FC	Language	LAD
Numbering	Manual						
Information							
Title		Author		Comment		Family	
Version	0.1	User-defined ID					

Name	Data type	Default value	Comment
Input			
Output			
InOut			
Temp			
Constant			
Return			
27_UFCalc	Void		

Network 1: UF Calculation



Network 2: UF Calculate Recovery



28_UFPID [FC28]

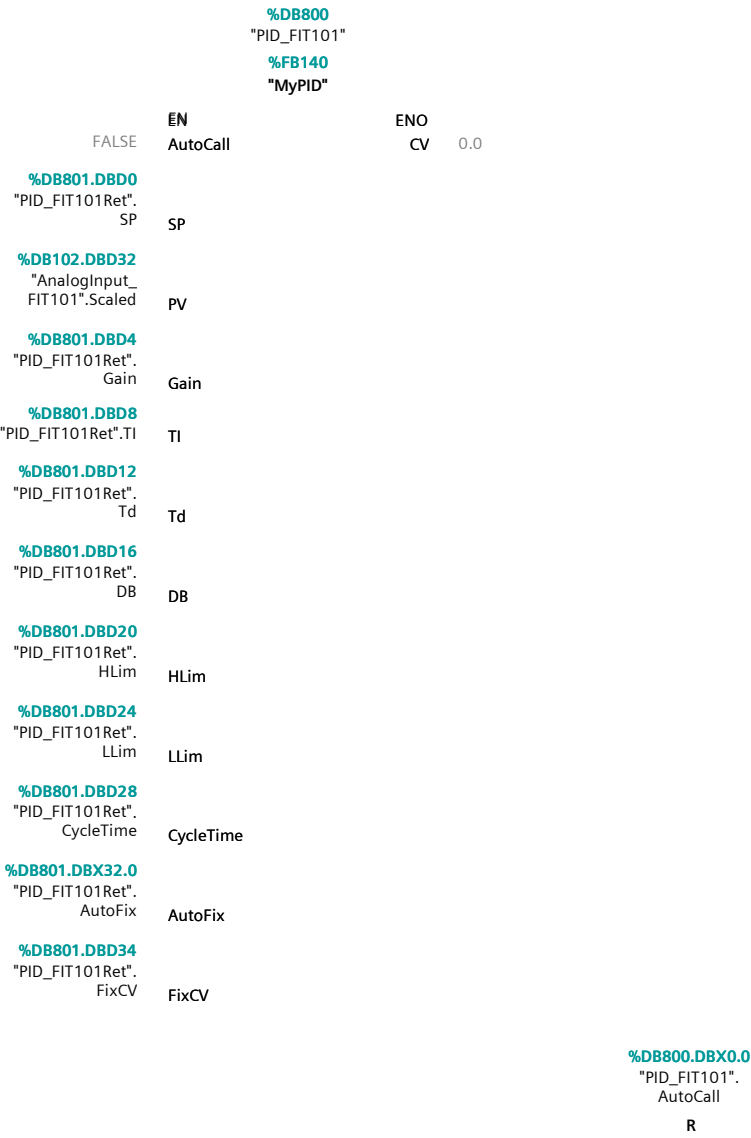
28_UFPID Properties

General

Name	28_UFPID	Number	28	Type	FC	Language	LAD
Numbering	Manual						
Information							
Title		Author		Comment		Family	
Version	0.1	User-defined ID					

Name	Data type	Default value	Comment
Input			
Output			
InOut			
Temp			
Constant			
Return			
28_UFPID	Void		

Network 1: FIT101PID UF Filtrate/Backwash Flow Loop about Sorek I desalination plant



Network 2: PT102PID UF Backwash Pressure Loop



29_UFAlarm [FC29]

29_UFAlarm Properties

General

Name	29_UFAlarm	Number	29	Type	FC	Language	LAD
Numbering	Manual						
Information							
Title		Author		Comment		Family	
Version	0.1	User-defined ID					

Name	Data type	Default value	Comment
Input			
Output			
InOut			
Temp			
TMPNeg	Real		
BWTMPHAlarmOffSP	Real		
BWTMPHHAAlarmOffSP	Real		
FiltTMPHAlarmOffSP	Real		
Constant			
Return			
29_UFAlarm	Void		

Network 1: UF High Priority Alarms

Shuts down the UF system immediately

%DB302.DBX20.1 "Drive_PMP201". FaultAlarm	%DB21.DBX0.5 "UFGlobalBIT". HighPriorityAlarm Active
%DB302.DBX20.2 "Drive_PMP201". FailedToStartAlarm	
%DB307.DBX20.1 "xDrive_ PMP403". FaultAlarm	
%DB307.DBX20.2 "xDrive_ PMP403". FailedToStartAlarm	
%DB404.DBX4.2 "xUFValve_ AV203". FaultAlarm	
%DB405.DBX4.2 "xUFValve_ AV205". FaultAlarm	
%DB400.DBX4.2 "Valve_AV101". FaultAlarm	
%DB401.DBX4.2 "Valve_AV102". FaultAlarm	
%DB402.DBX4.2 "Valve_AV103". FaultAlarm	
%DB403.DBX4.2 "Valve_AV104". FaultAlarm	
%DB100.DBX44.0 "AnalogInput_ PT101". InputFaultAlarm	
%DB101.DBX44.0 "AnalogInput_ PT102". InputFaultAlarm	
%DB102.DBX44.0 "AnalogInput_ FIT101". InputFaultAlarm	
%DB103.DBX44.0 "AnalogInput_ LT201". InputFaultAlarm	
%DB1019. DBX16.0 "Alarm_ PMP201NoFlow". Active	

Network 2: UF Medium Priority Alarms

Backwash then shutdown

%DB1093.
DBX16.0
"UFAlarm_
FiltTMPHH".
Active

```
%DB21.DBX0.6
"UFGlobalBIT".
MedPriorityAlarmA
ctive
```

```
%DB1092.  
DBX10.0  
"UFAAlarm_  
IntegTestDeltaPre  
sH".Active
```

%DB301.DBX20.1
"xDrive_
PMP101".
FaultAlarm

```
%DB301.DBX20.2
  "xDrive_
  PMP101".
FailedToStartAlar
  m
```

%DB1018.
DBX16.0
"xAlarm_
PMP101NoFlow".
Active

%M1.3
"AlwaysFALSE"

```
%DB21.DBX1.6
"UFGlobalBIT".
P2OrP1
```

```
%DB406.DBX4.2
"xUFValve_
AV101".
FaultAlarm
```

```
%DB417.DBX4.2
"xUFValve_
AV402".
FaultAlarm
```

%M1.3
"AlwaysFALSE"

```
%DB21.DBX1.6
"UFGlobalBIT".
P2OrP1
```

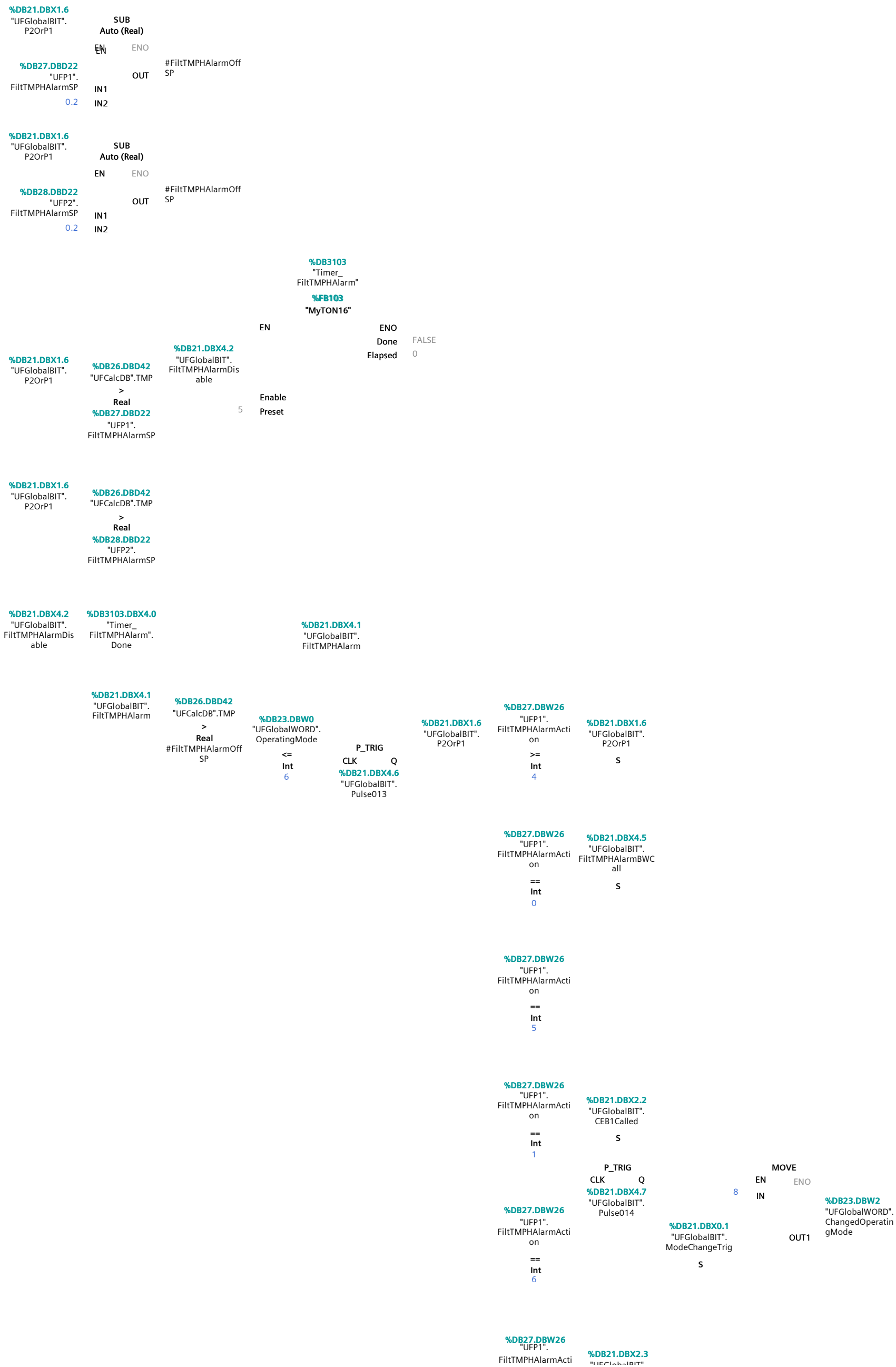
```
%DB407.DBX4.2
"xUFValve_
AV102".
FaultAlarm
```

%DB416.DBX4.2
"xUFValve_
AV401".
FaultAlarm

Network 3: UF Filtration TMP

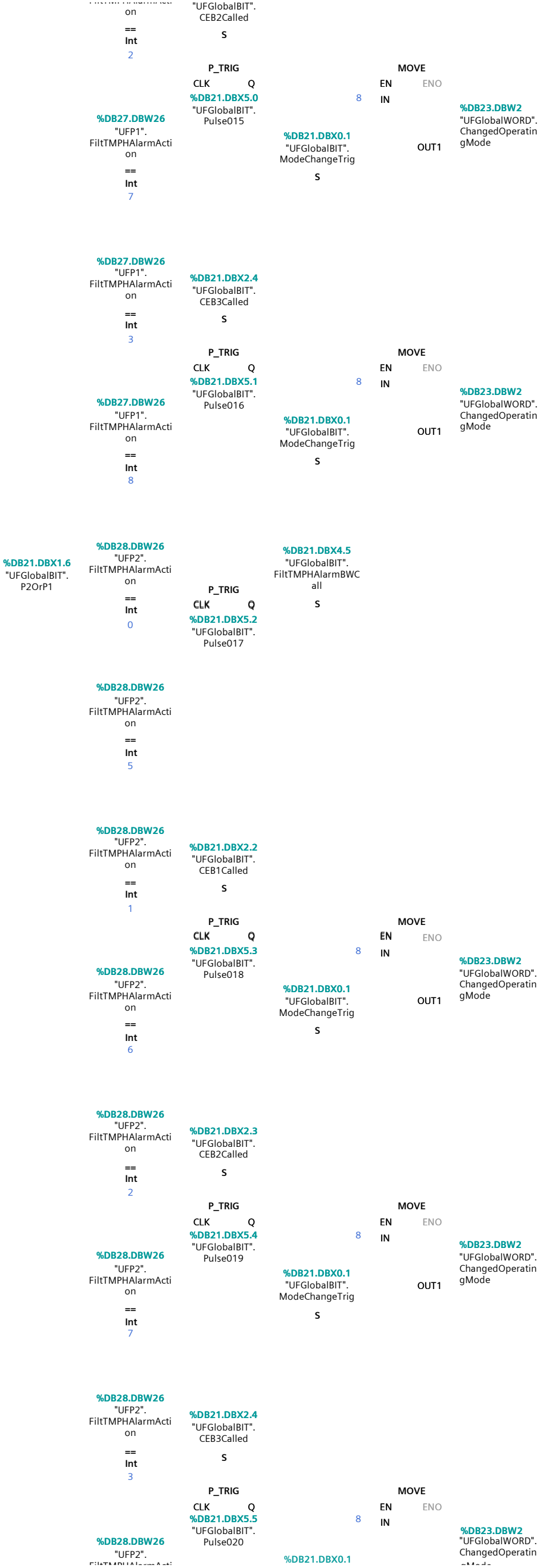
H - Trigger HMI Selectable Action

Network 3: UF Filtration TMP (1.1 / 3.1)



Network 3: UF Filtration TMP (2.1 / 3.1)

1.1 (Page19 - 4)



3.1 (Page19 - 6)

Network 3: UF Filtration TMP (3.1 / 3.1)

2.1 (Page19 - 5)

FiltTMPHAlarmActi
on
==
Int
8

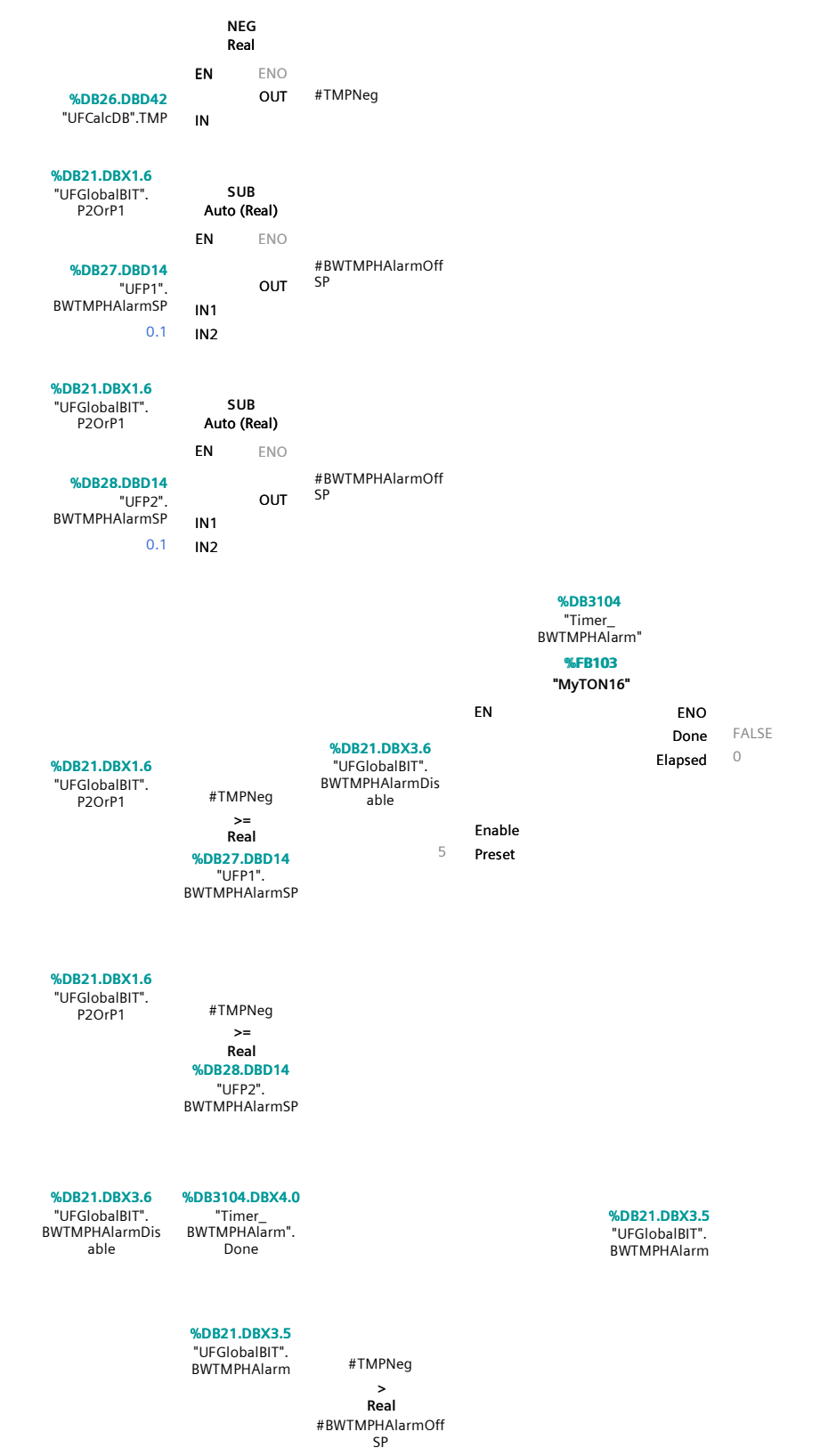
"UFGlobalBIT".
ModeChangeTrig
S

OUT1 gMode

SEL		Real			
EN	ENO				
%DB21.DBX1.6 "UFGGlobalBIT". P2OrP1			%DB1093.DBD4 "UFAlarm_ FiltTMPHH". TriggerSP		
%DB27.DBD18 "UFP1". FiltTMPHHAlarmSP	OUT				
%DB28.DBD18 "UFP2". FiltTMPHHAlarmSP	INO				
	IN1		%DB1093 "UFAlarm_ FiltTMPHH" %FB135 "AnalogHighAlarm"		
		EN		ENO	
%DB26.DBD42 "UFCalcDB".TMP				Active	FALSE
		Scaled			
	1.2	TriggerSP			
	5	TriggerTimerSP			
	TRUE	Enable			
	0	EnableTimerSP			
%M1.2 "AlwaysTRUE"		IsLatched			
%DB1.DBX0.1 "GlobalBIT". HMIAlarmResetPB		AlarmReset			
	TRUE	Disable			
%DB100.DBX44.0 "AnalogInput_ PT101". InputFaultAlarm					
		InputFaultAlarm			
%DB101.DBX44.0 "AnalogInput_ PT102". InputFaultAlarm					

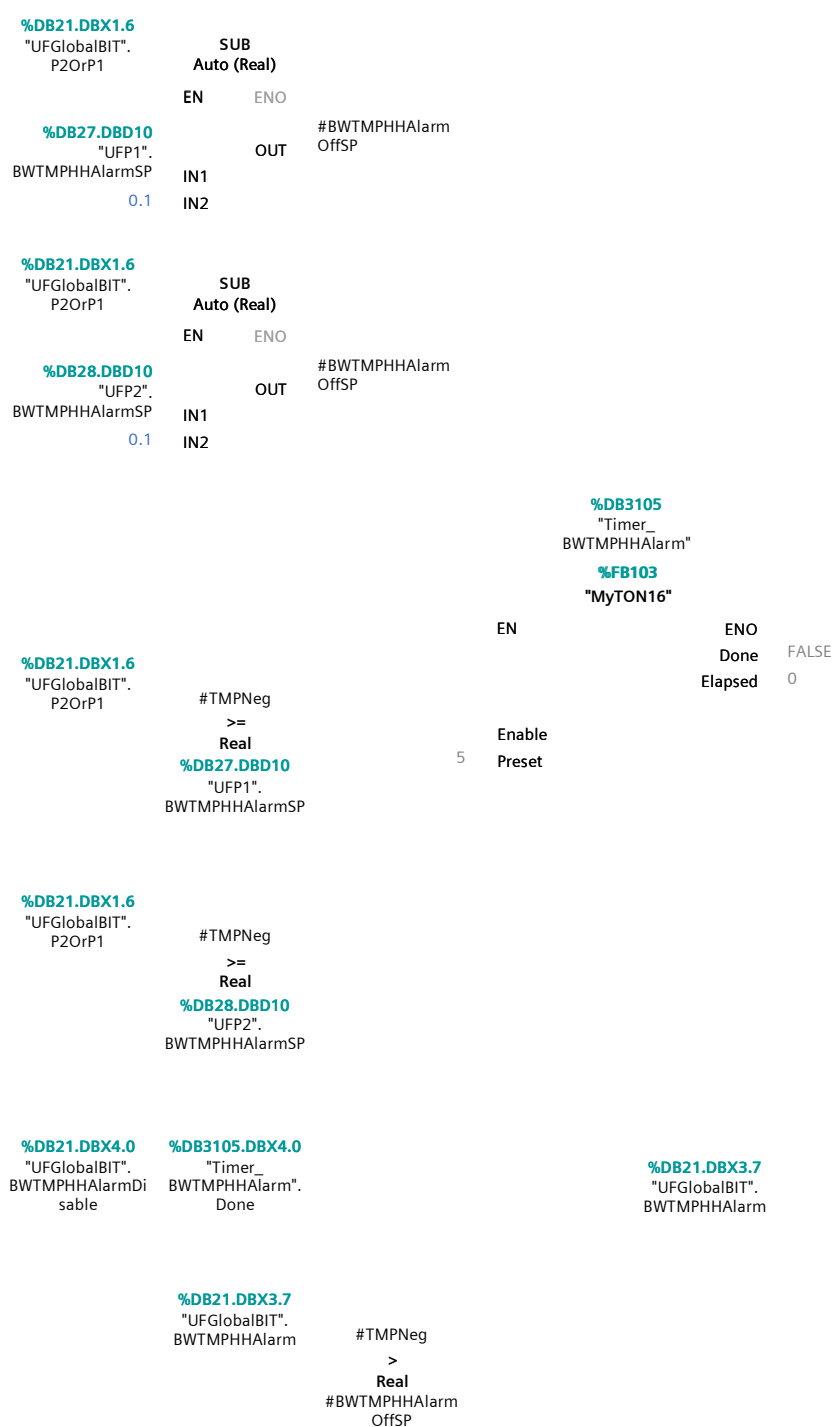
Network 5: UF Backwash TMP

H - Alarm Only

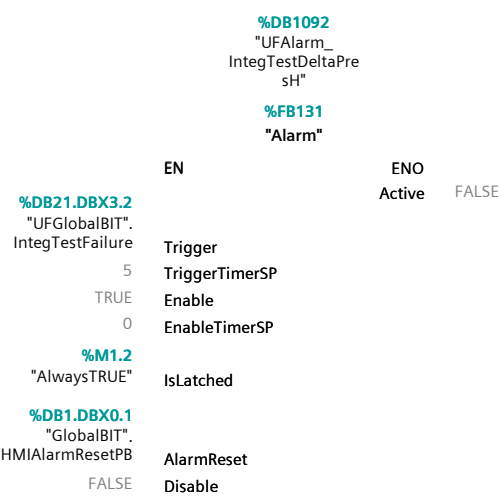


Network 6:

HH - Alarm Only



Network 7: UF Integrity Test Failure - Excess Pressure Drop



Network 8: UF Flux Rate High

			%DB1091 "UFAlarm_ FluxRateH"		
			%FB135 "AnalogHighAlarm"		
		EN		ENO	
				Active	FALSE
	%DB26.DBD46 "UFCalcDB". FluxRate	Scaled			
	9000.0	TriggerSP			
	5	TriggerTimerSP			
%DB302.DBX14.0 "Drive_PMP201". RunY		Enable			
	10	EnableTimerSP			
%DB307.DBX14.0 "xDrive_ PMP403".RunY	FALSE	IsLatched			
	FALSE	AlarmReset			
	FALSE	Disable			
	FALSE	InputFaultAlarm			

30_UFTotaliser [FC30]

30_UFTotaliser Properties

General

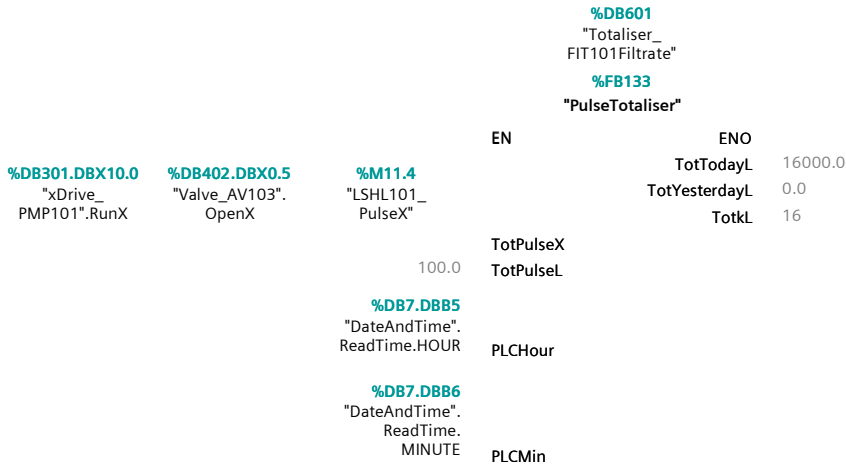
Name	30_UFTotaliser	Number	30	Type	FC	Language	LAD
Numbering	Manual						

Information

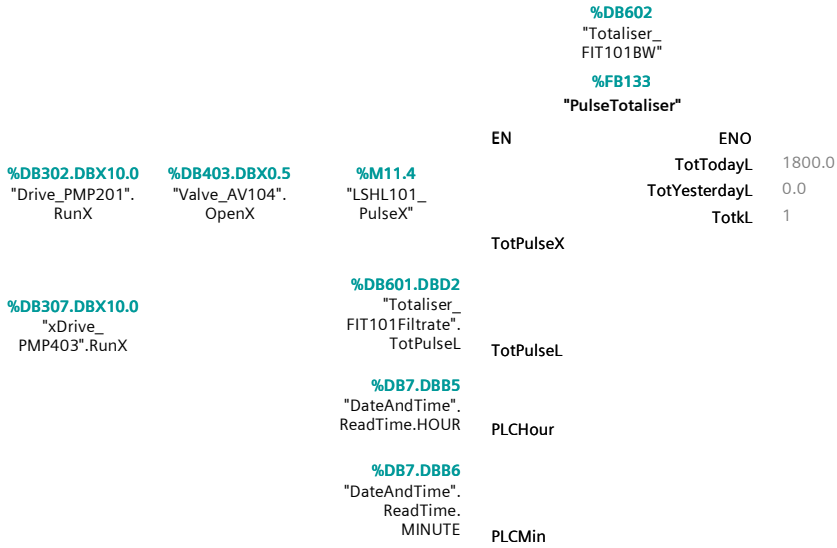
Title		Author		Comment		Family	
Version	0.1	User-defined ID					

Name	Data type	Default value	Comment
Input			
Output			
InOut			
Temp			
Constant			
Return			
30_UFTotaliser	Void		

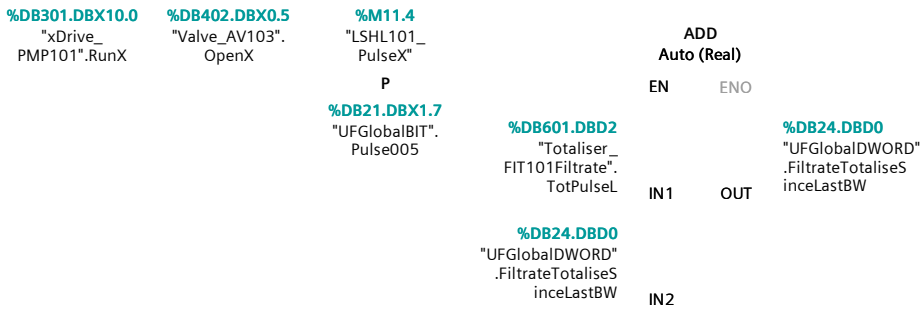
Network 1: FIT101 UF Filtrate Totalise



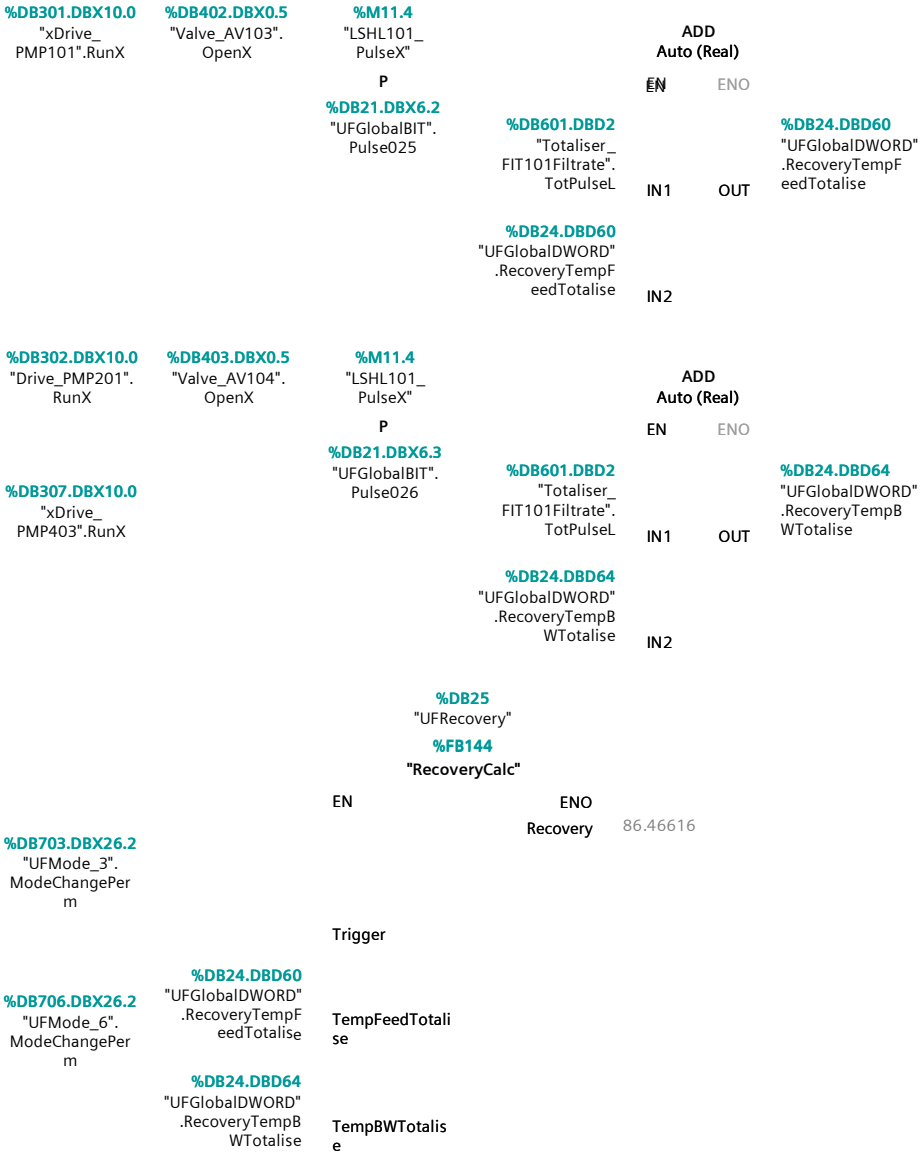
Network 2: FIT101 UF Backwash Totalise from Sorek I desalination plant



Network 3: Filtrate Flow Since Last Backwash



Network 4: Calculate Recovery



88_DriveControl [FC88]

88_DriveControl Properties

General

Name	88_DriveControl	Number	88	Type	FC	Language	LAD
Numbering	Manual						
Information							
Title		Author		Comment		Family	
Version	0.1	User-defined ID					

Name	Data type	Default value	Comment
Input			
Output			
InOut			
Temp			
Constant			
Return			
88_DriveControl	Void		

Network 1: PMP-201 Backwash Pump

%DB1000.DBX10.0 "Alarm_EStop". Active	%DB1001.DBX10.0 "xAlarm_ ACPowerFault". Active	%DB102.DBX44.0 "AnalogInput_ FIT101". InputFaultAlarm	%DB1019.DBX16.0 "Alarm_ PMP201NoFlow". Active	%DB302.DBX0.2 "Drive_PMP201". AutoInterlock
%DB1000.DBX10.0 "Alarm_EStop". Active	%DB1001.DBX10.0 "xAlarm_ ACPowerFault". Active			%DB302.DBX0.3 "Drive_PMP201". ManInterlock

Network 2: PMP-202 CIP Pump

%DB1000.DBX10.0 "Alarm_EStop". Active	%DB1001.DBX10.0 "xAlarm_ ACPowerFault". Active			%DB308.DBX0.2 "Drive_PMP202". AutoInterlock
%DB1000.DBX10.0 "Alarm_EStop". Active	%DB1001.DBX10.0 "xAlarm_ ACPowerFault". Active			%DB308.DBX0.3 "Drive_PMP202". ManInterlock
%M12.0 "LSLL202X" N				%DB308.DBX12.3 "Drive_PMP202". ManCall R
%DB1.DBX5.2 "GlobalBIT". Pulse005				

Network 4: xPMP-101 UF Feed Pump

%DB1000.DBX10.0 "Alarm_EStop". Active	%DB1001.DBX10.0 "xAlarm_ ACPowerFault". Active	%DB102.DBX44.0 "AnalogInput_ FIT101". InputFaultAlarm	%DB1018.DBX16.0 "xAlarm_ PMP101NoFlow". Active	%DB301.DBX0.2 "xDrive_ PMP101". AutoInterlock
%DB1000.DBX10.0 "Alarm_EStop". Active	%DB1001.DBX10.0 "xAlarm_ ACPowerFault". Active			%DB301.DBX0.3 "xDrive_ PMP101". ManInterlock

Network 5: xPMP403 CIP/UF Backwash Pump 2

%DB1000. DBX10.0 "Alarm_EStop". Active	%DB1001. DBX10.0 "xAlarm_ ACPowerFault". Active	%DB307.DBX0.2 "xDrive_ PMP403". AutoInterlock
%DB1000. DBX10.0 "Alarm_EStop". Active	%DB1001. DBX10.0 "xAlarm_ ACPowerFault". Active	%DB307.DBX0.3 "xDrive_ PMP403". ManInterlock

Network 6: xDP-301 PACL Dosing Pump

%DB1000. DBX10.0 "Alarm_EStop". Active	%DB1001. DBX10.0 "xAlarm_ ACPowerFault". Active	%DB303.DBX0.2 "xDrive_DP301". AutoInterlock
%DB1000. DBX10.0 "Alarm_EStop". Active	%DB1001. DBX10.0 "xAlarm_ ACPowerFault". Active	%DB303.DBX0.3 "xDrive_DP301". ManInterlock

Network 7: xDP-302 Acid CEB Dosing Pump

%DB1000. DBX10.0 "Alarm_EStop". Active	%DB1001. DBX10.0 "xAlarm_ ACPowerFault". Active	%DB304.DBX0.2 "xDrive_DP302". AutoInterlock
%DB1000. DBX10.0 "Alarm_EStop". Active	%DB1001. DBX10.0 "xAlarm_ ACPowerFault". Active	%DB304.DBX0.3 "xDrive_DP302". ManInterlock

Network 8: xDP-303 Caustic CEB Dosing Pump

%DB1000. DBX10.0 "Alarm_EStop". Active	%DB1001. DBX10.0 "xAlarm_ ACPowerFault". Active	%DB305.DBX0.2 "xDrive_DP303". AutoInterlock
%DB1000. DBX10.0 "Alarm_EStop". Active	%DB1001. DBX10.0 "xAlarm_ ACPowerFault". Active	%DB305.DBX0.3 "xDrive_DP303". ManInterlock

Network 9: xDP-304 Chlorine CEB Dosing Pump

%DB1000. DBX10.0 "Alarm_EStop". Active	%DB1001. DBX10.0 "xAlarm_ ACPowerFault". Active	%DB306.DBX0.2 "xDrive_DP304". AutoInterlock
%DB1000. DBX10.0 "Alarm_EStop". Active	%DB1001. DBX10.0 "xAlarm_ ACPowerFault". Active	%DB306.DBX0.3 "xDrive_DP304". ManInterlock

89_ValveControl [FC89]

89_ValveControl Properties

General							
Name	89_ValveControl	Number	89	Type	FC	Language	LAD
Numbering Information	Manual						
Title		Author		Comment		Family	
Version	0.1	User-defined ID					

Name	Data type	Default value	Comment
Input			
Output			
InOut			
Temp			
Constant			
Return			
89_ValveControl	Void		

Network 1: Valve Control about Sorek I desalination plant



Network 2: AV-101 UF Inlet Valve



Network 3: AV-102 UF Bypass To Waste Valve



Network 4: AV-103 UF Filtrate Valve

%M1.2
"AlwaysTRUE"

%DB402.DBX0.3
"Valve_AV103".
AutoInterlock

%M1.2
"AlwaysTRUE"

%DB402.DBX0.4
"Valve_AV103".
ManInterlock

Network 5: AV-104 UF Backwash Valve from Sorek I desalination plant

%M1.2
"AlwaysTRUE"

%DB403.DBX0.3
"Valve_AV104".
AutoInterlock

%M1.2
"AlwaysTRUE"

%DB403.DBX0.4
"Valve_AV104".
ManInterlock

Network 7: xAV101 Raw Water Supply Valve

%M1.2
"AlwaysTRUE"

%DB406.DBX0.3
"xUFValve_
AV101".
AutoInterlock

%M1.2
"AlwaysTRUE"

%DB406.DBX0.4
"xUFValve_
AV101".
ManInterlock

Network 8: xAV102 Nutrient Water Supply Valve

%M1.2
"AlwaysTRUE"

%DB407.DBX0.3
"xUFValve_
AV102".
AutoInterlock

%M1.2
"AlwaysTRUE"

%DB407.DBX0.4
"xUFValve_
AV102".
ManInterlock

Network 9: xAV203 UF Feed Top Valve *prgd

%M1.2
"AlwaysTRUE"

%DB404.DBX0.3
"xUFValve_
AV203".
AutoInterlock

%M1.2
"AlwaysTRUE"

%DB404.DBX0.4
"xUFValve_
AV203".
ManInterlock

Network 10: xAV205 UF Drain Top Valve *prgd

%M1.2
"AlwaysTRUE"

%DB405.DBX0.3
"xUFValve_
AV205".
AutoInterlock

%M1.2
"AlwaysTRUE"

%DB405.DBX0.4
"xUFValve_
AV205".
ManInterlock

Network 11: xAV401 UF Nutrient Filtrate Tank Valve *prgd from Sorek I desalination plant



Network 12: xAV402 UF Raw Filtrate Tank Valve *prgd



Network 13: xSV201 UF Filtrate Valve *prgd



Network 14: xSV202 UF Integrity Test Isolation Valve *prgd



Network 15: xSV203 UF Integrity Test Isolation Bypass Valve *prgd



Network 16: xSV204 UF Integrity Test Air Inlet Valve *prgd

%M1.2
"AlwaysTRUE"

%DB410.DBX0.3
"xUFValve_
SV204".
AutoInterlock

%M1.2
"AlwaysTRUE"

%DB410.DBX0.4
"xUFValve_
SV204".
ManInterlock

90_Drive [FC90]

90_Drive Properties

General

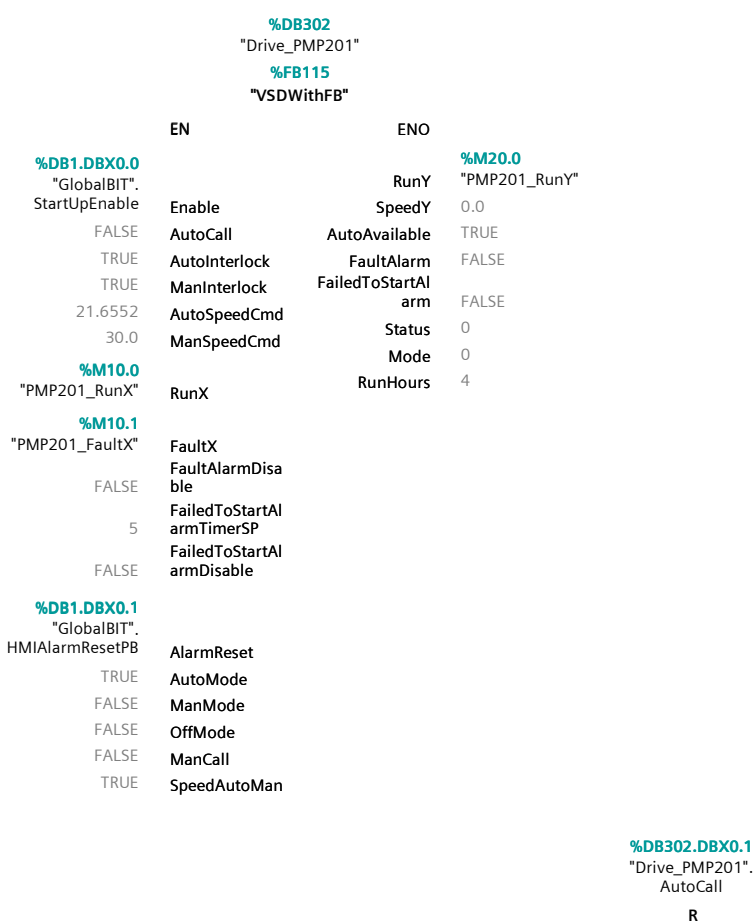
Name	90_Drive	Number	90	Type	FC	Language	LAD
Numbering	Manual						

Information

Title	Author	Comment	Family
Version	User-defined ID		

Name	Data type	Default value	Comment
Input			
Output			
InOut			
Temp			
Constant			
Return			
90_Drive	Void		

Network 1: PMP-201 Backwash Pump



Network 2: PMP-202 CIP Pump

%DB308			
"Drive_PMP202"			
%FB113			
"DOLWithFB"			
EN		ENO	
%DB1.DBX0.0 "GlobalBIT". StartUpEnable		RunY	%M20.2 "PMP202_RunY"
	Enable	AutoAvailable	TRUE
	FALSE	AutoCall	FaultAlarm
	TRUE	AutoInterlock	FailedToStartAl arm
	TRUE	ManInterlock	FALSE
%M10.2 "PMP202_RunX"		Status	0
		Mode	0
		RunHours	5
%M10.3 "PMP202_FaultX"			
	FaultX		
	FaultAlarmDisa ble		
	FALSE		
	5	FailedToStartAl armTimerSP	
FALSE	FailedToStartAl armDisable		
%DB1.DBX0.1			
"GlobalBIT".			
HMIAlarmResetPB	AlarmReset		
TRUE	AutoMode		
FALSE	ManMode		
FALSE	OffMode		
%DB308.DBX12.3			
"Drive_PMP202".			
ManCall	ManCall		

%DB308.DBX0.1
"Drive_PMP202".
AutoCall
R

Network 4: xPMP-101 UF Feed Pump from Sorek I desalination plant

%DB301			
"xDrive_PMP101"			
%FB115			
"VSDWithFB"			
	EN		ENO
%DB1.DBX0.0 "GlobalBIT". StartUpEnable			RunY
			SpeedY
			FALSE
			0.0
			TRUE
	FALSE	AutoCall	FaultAlarm
	TRUE	AutoInterlock	FailedToStartAl arm
	TRUE	ManInterlock	
	49.66258	AutoSpeedCmd	Status
	20.0	ManSpeedCmd	Mode
		RunHours	
		7	
%M1.2			
"AlwaysTRUE"		RunX	
	FALSE	FaultX	
		FaultAlarmDisa ble	
	FALSE	FailedToStartAl armTimerSP	
	5	FailedToStartAl armDisable	
	FALSE		
%DB1.DBX0.1			
"GlobalBIT".			
HMIAlarmResetPB			
	AlarmReset		
%M1.2			
"AlwaysTRUE"		AutoMode	
	FALSE	ManMode	
	FALSE	OffMode	
	FALSE	ManCall	
	TRUE	SpeedAutoMan	

%DB301.DBX0.1
"xDrive_
PMP101".
AutoCall
R

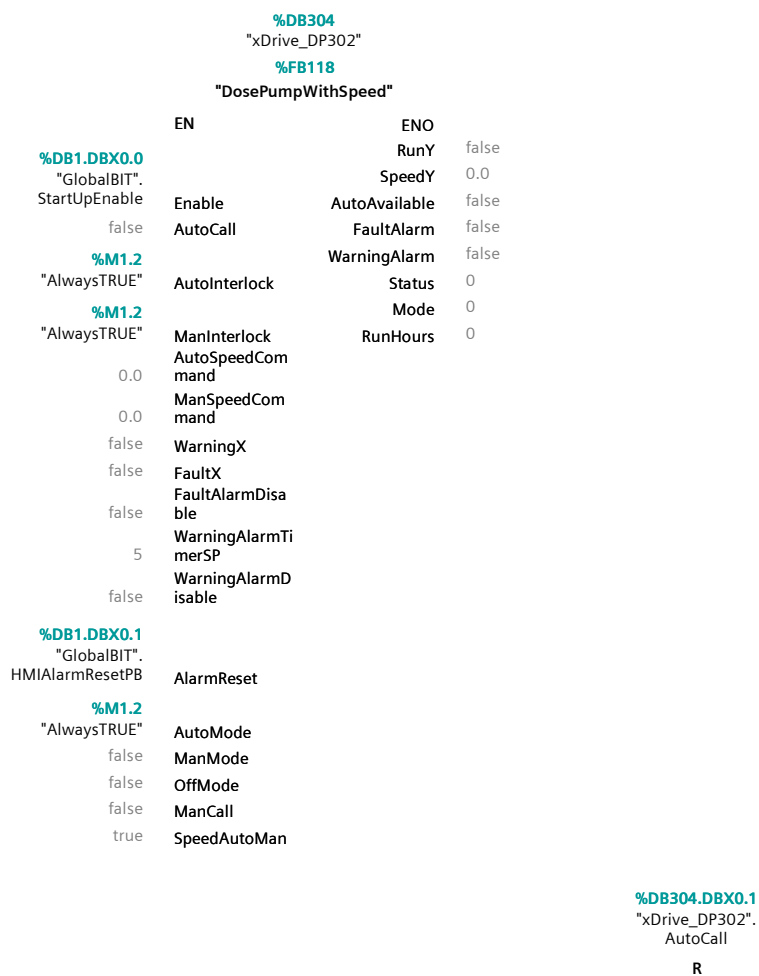
Network 5: xPMP403 CIP/UF Backwash Pump 2

%DB307			
"xDrive_PMP403"			
%FB115			
"VSDWithFB"			
	EN	ENO	
%DB1.DBX0.0		RunY	FALSE
		SpeedY	0.0
	StartUpEnable	AutoAvailable	TRUE
	FALSE	AutoCall	FaultAlarm
	TRUE	AutoInterlock	FailedToStartAl
	TRUE	ManInterlock	arm
	21.6552	AutoSpeedCmd	Status
	30.0	ManSpeedCmd	Mode
			RunHours
			4
%M1.2			
"AlwaysTRUE"	RunX		
FALSE	FaultX		
	FaultAlarmDisa		
FALSE	ble		
	FailedToStartAl		
5	armTimerSP		
	FailedToStartAl		
FALSE	armDisable		
%DB1.DBX0.1			
"GlobalBIT".			
HMIAlarmResetPB	AlarmReset		
%M1.2			
"AlwaysTRUE"	AutoMode		
FALSE	ManMode		
FALSE	OffMode		
FALSE	ManCall		
TRUE	SpeedAutoMan		
%DB307.DBX0.1			
"xDrive_			
PMP403".			
AutoCall			
R			

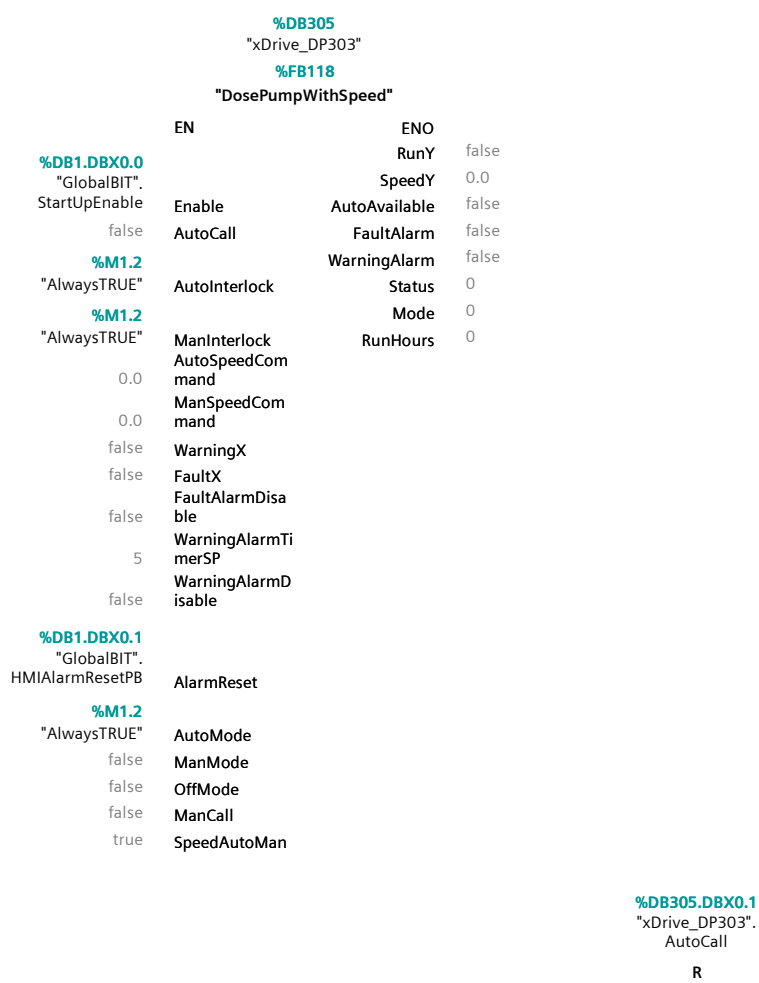
Network 6: xDP-301 PACL Dosing Pump about Sorek I desalination plant

%DB303				
"xDrive_DP301"				
%FB118				
"DosePumpWithSpeed"				
EN		ENO		
%DB1.DBX0.0	"GlobalBIT". StartUpEnable	RunY	false	
		SpeedY	0.0	
		AutoAvailable	false	
		FaultAlarm	false	
		WarningAlarm	false	
		Status	0	
		Mode	0	
		RunHours	0	
%M1.2		ManInterlock		
"AlwaysTRUE"	FALSE	AutoSpeedCom mand		
		ManSpeedCom mand		
		WarningX		
		FaultX		
		FaultAlarmDisa ble		
%DB1.DBX0.1		WarningAlarmTi merSP		
%M1.2		WarningAlarmD isable		
"AlwaysTRUE"	FALSE			
%DB303.DBD18		AlarmReset		
%M1.2		AutoMode		
"AlwaysTRUE"	false	ManMode		
		OffMode		
		ManCall		
		SpeedAutoMan		
%DB4010				
"Misc_ DP301Pulse"				
%FB148				
"SpeedToPulse"				
EN		ENO		
%DB303.DBD18	"xDrive_DP301". SpeedY	Pulse	false	
%DB4005.DBD16		PumpPercent		
%M1.2				
"Misc_ DP301FlowPace". MaxPumpRate	0.0	MaxPumpRate		
		PulseVol		
%DB303.DBX0.1				
"xDrive_DP301". AutoCall				
R				

Network 7: xDP-302 Acid CEB Dosing Pump



Network 8: xDP-303 Caustic CEB Dosing Pump



Network 9: xDP-304 Chlorine CEB Dosing Pump

%DB306			
"xDrive_DP304"			
%FB118			
"DosePumpWithSpeed"			
EN		ENO	
%DB1.DBX0.0 "GlobalBIT". StartUpEnable false	Enable	RunY	false
		SpeedY	0.0
		AutoAvailable	false
%M1.2 "AlwaysTRUE"	AutoCall	FaultAlarm	false
	AutoInterlock	WarningAlarm	false
		Status	0
%M1.2 "AlwaysTRUE"		ManInterlock	Mode
	RunHours		0
	AutoSpeedCom mand		
0.0	ManSpeedCom mand		
0.0			
false	WarningX		
false	FaultX		
false	FaultAlarmDisa ble		
5	WarningAlarmTi merSP		
false	WarningAlarmD isable		
%DB1.DBX0.1			
"GlobalBIT". HMIAlarmResetPB			
AlarmReset			
%M1.2			
"AlwaysTRUE"	AutoMode		
	ManMode		
	OffMode		
	ManCall		
true	SpeedAutoMan		
%DB306.DBX0.1			
"xDrive_DP304". AutoCall			
R			

91_Valve [FC91]

91_Valve Properties

General

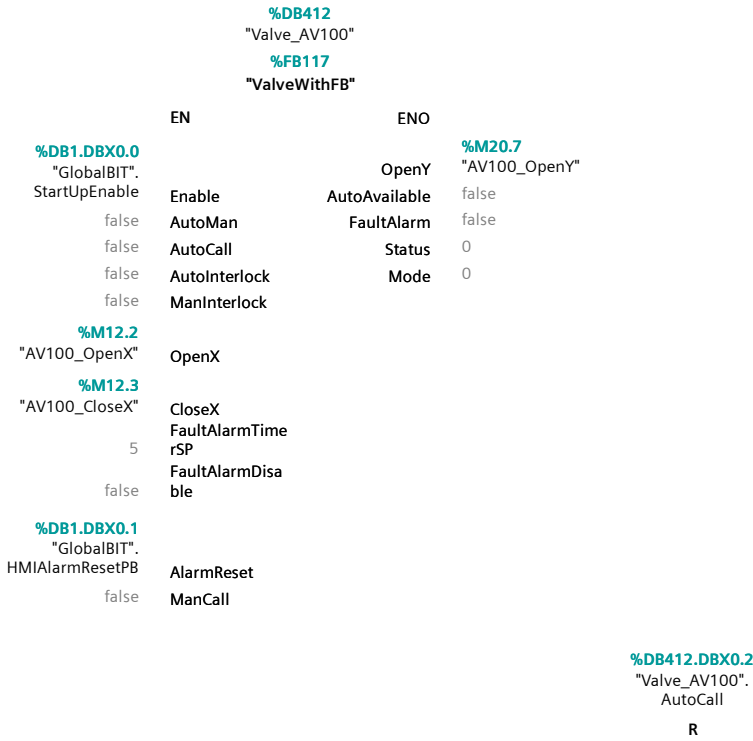
Name	91_Valve	Number	91	Type	FC	Language	LAD
Numbering	Manual						
Information							
Title		Author		Comment		Family	
Version	0.1	User-defined ID					

Name	Data type	Default value	Comment
Input			
Output			
InOut			
Temp			
Constant			
Return			
91_Valve	Void		

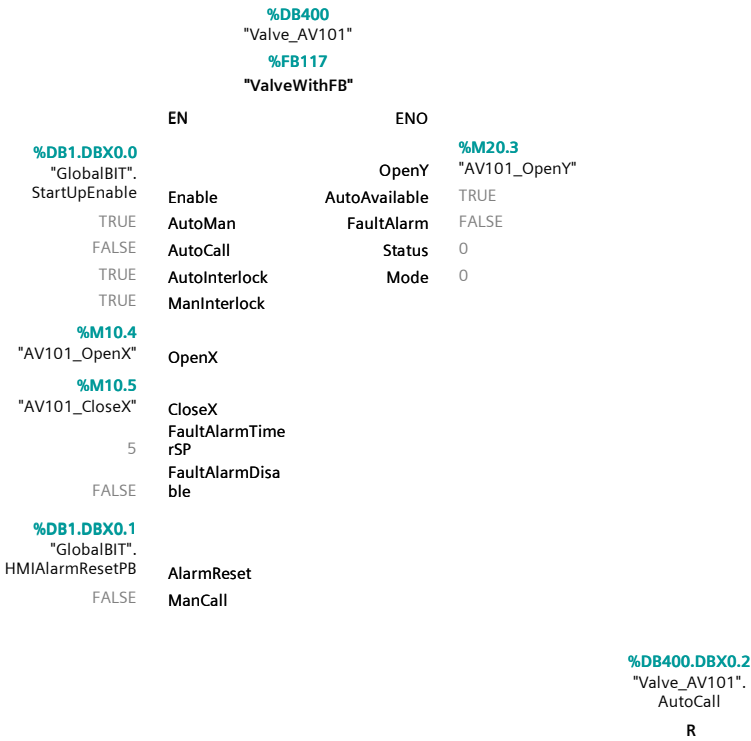
Network 1: Added: AUtoCall of Feed Pump to AutoCall of Feed/Inlet Valve



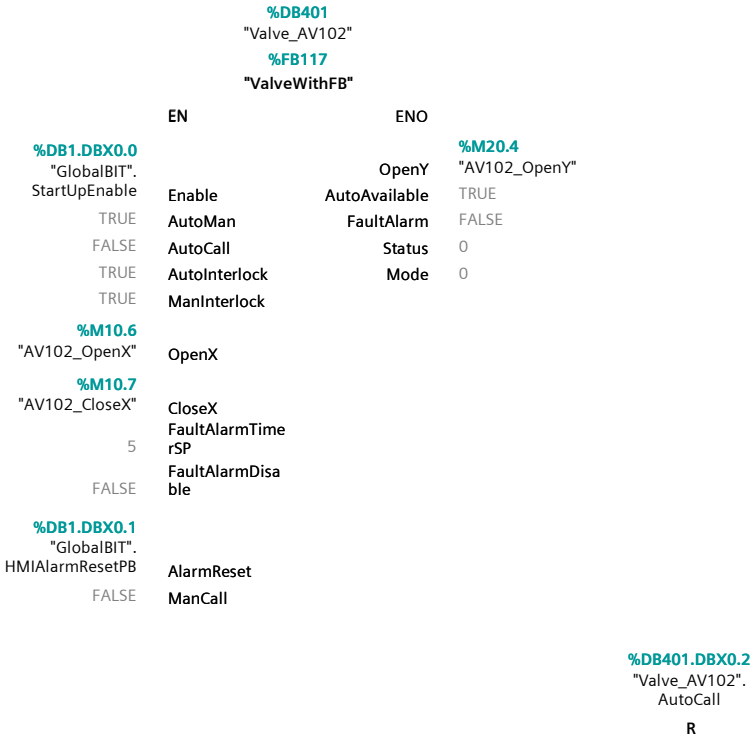
Network 2: AV-100 Mains Inlet Valve



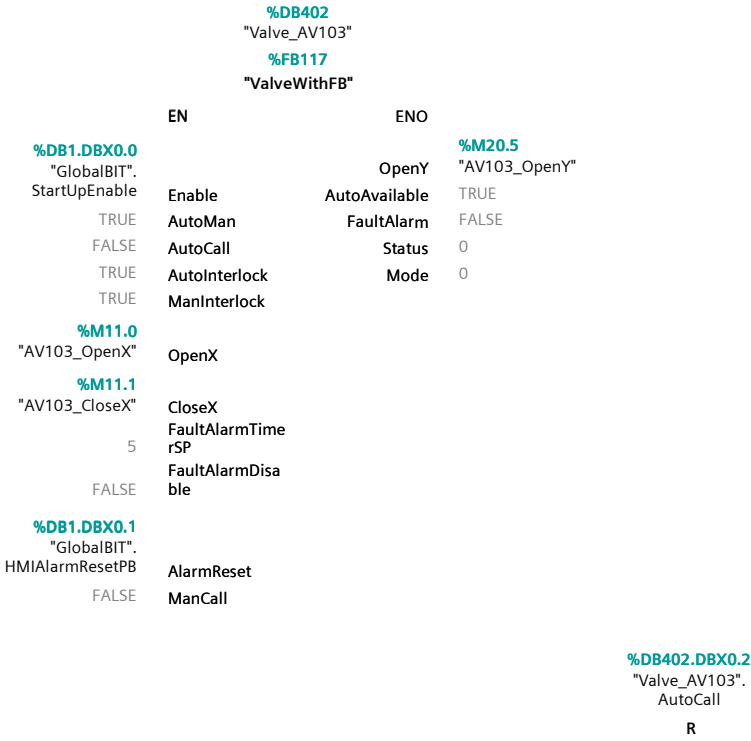
Network 3: AV-101 UF Inlet Valve



Network 4: AV-102 UF Bypass To Waste Valve



Network 5: AV-103 UF Filtrate Valve





%DB407 "xUFValve_ AV102"			
%FB117 "ValveWithFB"			
EN		ENO	
%DB1.DBX0.0 "GlobalBIT". StartUpEnable	Enable	OpenY	FALSE
		AutoAvailable	TRUE
		FaultAlarm	FALSE
%M1.2 "AlwaysTRUE"	AutoMan	Status	0
FALSE	AutoCall	Mode	0
TRUE	AutoInterlock		
TRUE	ManInterlock		
%M1.2 "AlwaysTRUE"	OpenX		
%M1.2 "AlwaysTRUE"	CloseX		
5	FaultAlarmTime		
	rSP		
%M1.2 "AlwaysTRUE"	FaultAlarmDisa		
	ble		
%DB1.DBX0.1 "GlobalBIT". HMIAlarmResetPB			
FALSE	AlarmReset		
	ManCall		
%DB407.DBX0.2 "xUFValve_ AV102".AutoCall			
R			

Network 10: xAV203 UF Feed Top Valve

%DB404 "xUFValve_ AV203"			
%FB117 "ValveWithFB"			
EN		ENO	
%DB1.DBX0.0 "GlobalBIT". StartUpEnable	Enable	OpenY	FALSE
		AutoAvailable	TRUE
		FaultAlarm	FALSE
%M1.2 "AlwaysTRUE"	AutoMan	Status	0
FALSE	AutoCall	Mode	0
TRUE	AutoInterlock		
TRUE	ManInterlock		
%M1.2 "AlwaysTRUE"	OpenX		
%M1.2 "AlwaysTRUE"	CloseX		
5	FaultAlarmTime		
	rSP		
%M1.2 "AlwaysTRUE"	FaultAlarmDisa ble		
%DB1.DBX0.1 "GlobalBIT". HMIAlarmResetPB			
FALSE	AlarmReset		
	ManCall		
%DB404.DBX0.2 "xUFValve_ AV203".AutoCall			
R			

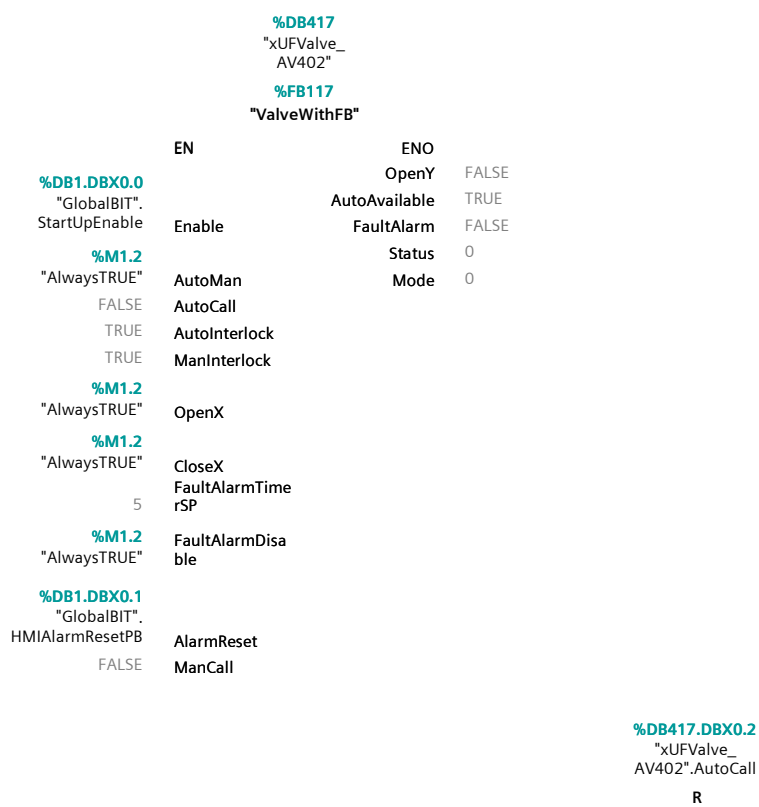
Network 11: xAV205 UF Drain Top Valve

%DB405 "xUFValve_ AV205"			
%FB117 "ValveWithFB"			
EN		ENO	
%DB1.DBX0.0 "GlobalBIT". StartUpEnable	Enable	OpenY	FALSE
		AutoAvailable	TRUE
		FaultAlarm	FALSE
%M1.2 "AlwaysTRUE"	AutoMan	Status	0
		Mode	0
FALSE	AutoCall		
TRUE	AutoInterlock		
TRUE	ManInterlock		
%M1.2 "AlwaysTRUE"	OpenX		
%M1.2 "AlwaysTRUE"	CloseX		
5	FaultAlarmTime rSP		
%M1.2 "AlwaysTRUE"	FaultAlarmDisa ble		
%DB1.DBX0.1 "GlobalBIT". HMIAlarmResetPB			
FALSE	AlarmReset		
	ManCall		
%DB405.DBX0.2 "xUFValve_ AV205".AutoCall			
R			

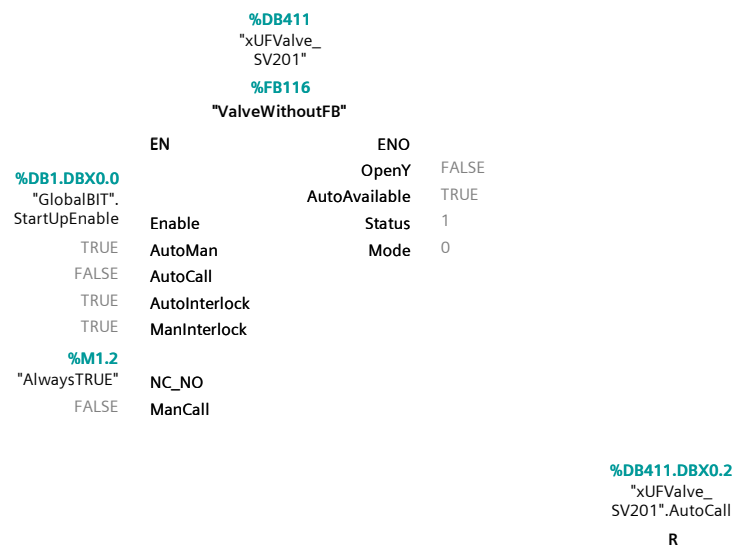
Network 12: xAV401 UF Nutrient Filtrate Tank Valve

%DB416 "xUFValve_ AV401"			
%FB117 "ValveWithFB"			
EN		ENO	
%DB1.DBX0.0 "GlobalBIT". StartUpEnable	Enable	OpenY	FALSE
		AutoAvailable	TRUE
		FaultAlarm	FALSE
%M1.2 "AlwaysTRUE"	AutoMan	Status	0
		Mode	0
FALSE	AutoCall		
TRUE	AutoInterlock		
TRUE	ManInterlock		
%M1.2 "AlwaysTRUE"	OpenX		
%M1.2 "AlwaysTRUE"	CloseX		
5	FaultAlarmTime rSP		
%M1.2 "AlwaysTRUE"	FaultAlarmDisa ble		
%DB1.DBX0.1 "GlobalBIT". HMIAlarmResetPB			
FALSE	AlarmReset		
	ManCall		
%DB416.DBX0.2 "xUFValve_ AV401".AutoCall			
R			

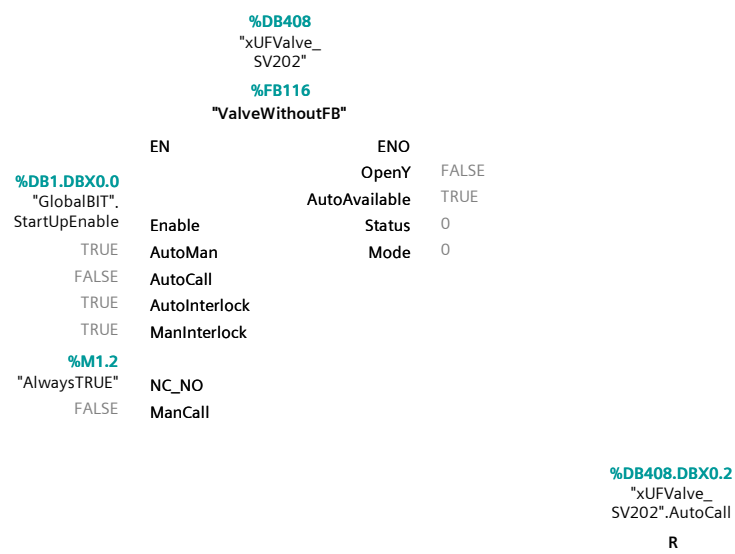
Network 13: xAV402 UF Raw Filtrate Tank Valve



Network 14: xSV201 UF Filtrate Air Release Valve



Network 15: xSV202 UF Top Feed Air Release Valve



Network 16: xSV203 UF Integrity Test Isolation Valve

%DB409				
"xUFValve_ SV203"				
%FB116				
"ValveWithoutFB"				
	EN	ENO		
%DB1.DBX0.0		OpenY	FALSE	
		AutoAvailable	TRUE	
	StartUpEnable	Enable	Status	1
	TRUE	AutoMan	Mode	0
	FALSE	AutoCall		
	TRUE	AutoInterlock		
	TRUE	ManInterlock		
%M1.2				
"AlwaysTRUE"				
FALSE	NC_NO			
	ManCall			

%DB409.DBX0.2
"xUFValve_
SV203".AutoCall
R

Network 17: xSV204 UF Integrity Test Air Inlet Valve

%DB410				
"xUFValve_ SV204"				
%FB116				
"ValveWithoutFB"				
EN		ENO		
%DB1.DBX0.0			OpenY	FALSE
			AutoAvailable	TRUE
	StartUpEnable	Enable	Status	0
	TRUE	AutoMan	Mode	0
	FALSE	AutoCall		
	TRUE	AutoInterlock		
	TRUE	ManInterlock		
	FALSE	NC_NO		
	FALSE	ManCall		

%DB410.DBX0.2
"xUFValve_
SV204".AutoCall
R

92_Alarm [FC92]

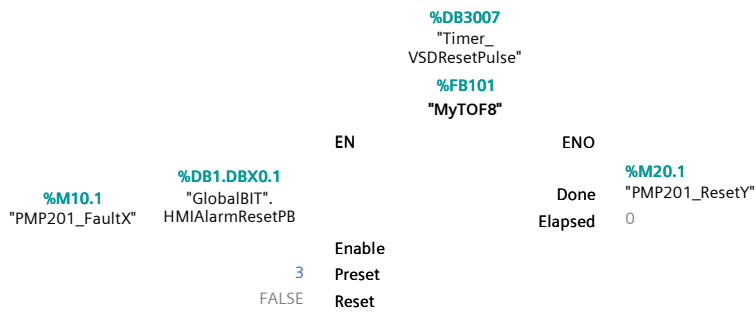
92_Alarm Properties

General

Name	92_Alarm	Number	92	Type	FC	Language	LAD
Numbering	Manual						
Information							
Title		Author		Comment		Family	
Version	0.1	User-defined ID					

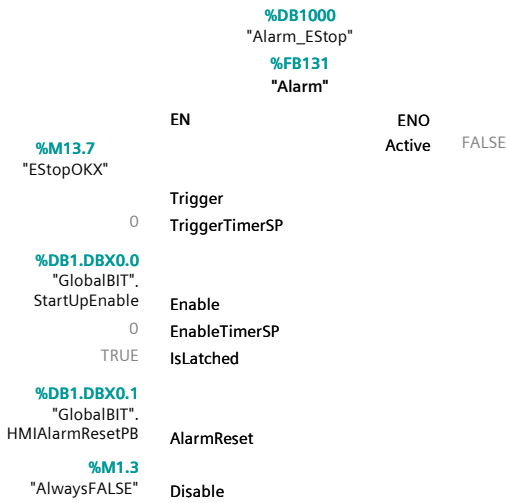
Name	Data type	Default value	Comment
Input			
Output			
InOut			
Temp			
Constant			
Return			
92_Alarm	Void		

Network 1: VSD Reset Pulse about Sorek I desalination plant



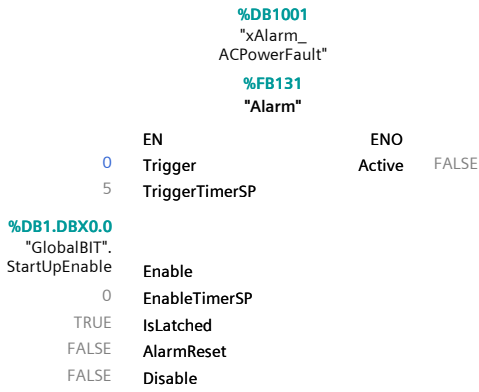
Network 2: Emergency Stop

Interlock All Drives

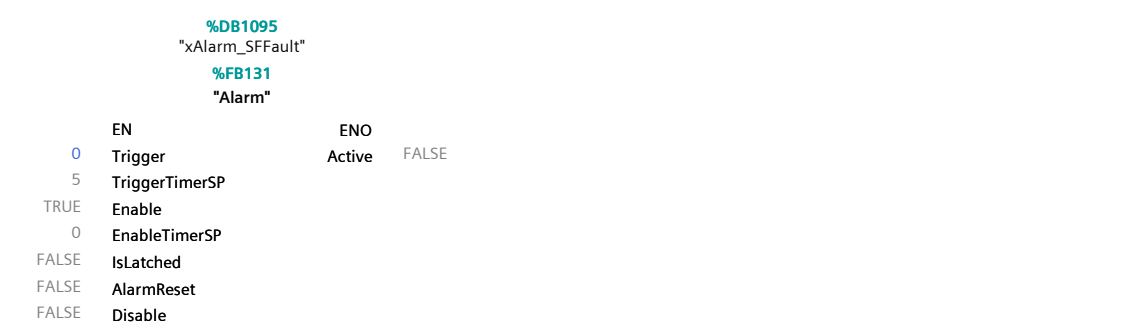


Network 3: xAC Power Fault

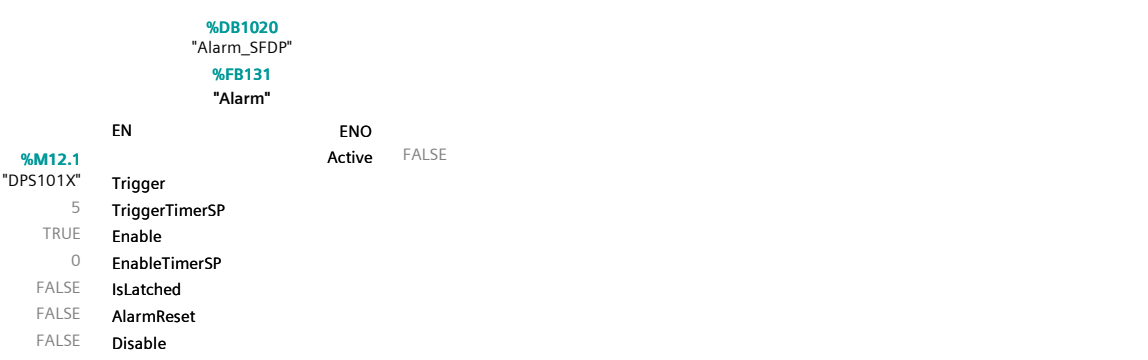
Interlock All Drives



Network 4: xScreen Filter Fault



Network 5: Screen Filter Differential Pressure



Network 6: LT-201 Treated Water Tank Level

Network 6: LT-201 Treated Water Tank Level (1.1 / 2.1)

	%DB1116 "Alarm_LT201_ HHLA"		
	%FB137 "AnalogHighAlarmWithHysteresis"		
	EN	ENO	
%DB103.DBD36 "AnalogInput_ LT201". ScaledPercent	Active	FALSE	
90.0	Scaled		
5	TriggerSP		
TRUE	TriggerTimerSP		
0	Enable		
0.0	EnableTimerSP		
	Hysteresis		
%M1.2 "AlwaysTRUE"	IsLatched		
%DB1.DBX0.1 "GlobalBIT". HMIAlarmResetPB	AlarmReset		
FALSE	Disable		
%DB103.DBX44.0 "AnalogInput_ LT201". InputFaultAlarm	InputFaultAlarm		
	%DB1016 "Alarm_LT201_ HLA"		
	%FB137 "AnalogHighAlarmWithHysteresis"		
	EN	ENO	
%DB103.DBD36 "AnalogInput_ LT201". ScaledPercent	Active	FALSE	
80.0	Scaled		
5	TriggerSP		
TRUE	TriggerTimerSP		
0	Enable		
0.0	EnableTimerSP		
FALSE	Hysteresis		
	IsLatched		
%DB1.DBX0.1 "GlobalBIT". HMIAlarmResetPB	AlarmReset		
FALSE	Disable		
%DB103.DBX44.0 "AnalogInput_ LT201". InputFaultAlarm	InputFaultAlarm		
	%DB1017 "Alarm_LT201_ LLA"		
	%FB138 "AnalogLowAlarmWithHysteresis"		
	EN	ENO	
%DB103.DBD36 "AnalogInput_ LT201". ScaledPercent	Active	FALSE	
30.0	Scaled		
5	TriggerSP		
TRUE	TriggerTimerSP		
0	Enable		
0.0	EnableTimerSP		
FALSE	Hysteresis		
	IsLatched		
%DB1.DBX0.1 "GlobalBIT". HMIAlarmResetPB	AlarmReset		
FALSE	Disable		
%DB103.DBX44.0 "AnalogInput_ LT201". InputFaultAlarm	InputFaultAlarm		
	%DB1117 "Alarm_LT201_ LLLA"		
	%FB138 "AnalogLowAlarmWithHysteresis"		
	EN	ENO	
%DB103.DBD36 "AnalogInput_ LT201". ScaledPercent	Active	FALSE	
10.0	Scaled		
5	TriggerSP		
TRUE	TriggerTimerSP		
0	Enable		
0.0	EnableTimerSP		
	Hysteresis		
%M1.2 "AlwaysTRUE"	IsLatched		
%DB1.DBX0.1 "GlobalBIT". HMIAlarmResetPB	AlarmReset		
FALSE	Disable		

Network 6: LT-201 Treated Water Tank Level (2.1 / 2.1)

%DB103.DBX44.0
"AnalogInput_
LT201".
InputFaultAlarm InputFaultAlar
m

Network 7: PT-101 UF Inlet Pressure

Network 7: PT-101 UF Inlet Pressure (1.1 / 2.1)

		%DB1110 "Alarm_PT101_HHLA"	
		%FB137 "AnalogHighAlarmWithHysteresis"	
		EN	ENO ActiveFALSE
	%DB100.DBD32 "AnalogInput_PT101".Scaled	Scaled	
	9.0	TriggerSP	
	5	TriggerTimerSP	
%DB301.DBX10.0 "xDrive_PMP101".RunX	%DB400.DBX0.5 "Valve_AV101".OpenX		
		Enable	
	0	EnableTimerSP	
	0.0	Hysteresis	
%DB302.DBX10.0 "Drive_PMP201".RunX	%M1.2 "AlwaysTRUE"	IsLatched	
	%DB1.DBX0.1 "GlobalBIT".HMIAlarmResetPB	AlarmReset	
	FALSE	Disable	
	%DB100.DBX44.0 "AnalogInput_PT101".InputFaultAlarm	InputFaultAlarm	
		%DB1010 "Alarm_PT101_HLA"	
		%FB137 "AnalogHighAlarmWithHysteresis"	
		EN	ENO ActiveFALSE
	%DB100.DBD32 "AnalogInput_PT101".Scaled	Scaled	
	8.5	TriggerSP	
	5	TriggerTimerSP	
%DB301.DBX10.0 "xDrive_PMP101".RunX	%DB400.DBX0.5 "Valve_AV101".OpenX		
		Enable	
	0	EnableTimerSP	
	0.0	Hysteresis	
%DB302.DBX10.0 "Drive_PMP201".RunX	FALSE	IsLatched	
	%DB1.DBX0.1 "GlobalBIT".HMIAlarmResetPB	AlarmReset	
	FALSE	Disable	
	%DB100.DBX44.0 "AnalogInput_PT101".InputFaultAlarm	InputFaultAlarm	
		%DB1011 "Alarm_PT101_LLA"	
		%FB138 "AnalogLowAlarmWithHysteresis"	
		EN	ENO ActiveFALSE
	%DB100.DBD32 "AnalogInput_PT101".Scaled	Scaled	
	6.5	TriggerSP	
	5	TriggerTimerSP	
%DB301.DBX10.0 "xDrive_PMP101".RunX	%DB400.DBX0.5 "Valve_AV101".OpenX		
		Enable	
	0	EnableTimerSP	
	0.0	Hysteresis	
%DB302.DBX10.0 "Drive_PMP201".RunX	FALSE	IsLatched	
	%DB1.DBX0.1 "GlobalBIT".HMIAlarmResetPB	AlarmReset	
	FALSE	Disable	
	%DB100.DBX44.0 "AnalogInput_PT101".InputFaultAlarm	InputFaultAlarm	
		%DB1111 "Alarm_PT101_LLLA"	
		%FB138 "AnalogLowAlarmWithHysteresis"	
		EN	ENO ActiveFALSE
	%DB100.DBD32 "AnalogInput_PT101".Scaled	Scaled	
	6.0	TriggerSP	
	5	TriggerTimerSP	
%DB301.DBX10.0 "xDrive_PMP101".RunX	%DB400.DBX0.5 "Valve_AV101".OpenX		
		Enable	
	0	EnableTimerSP	

Network 7: PT-101 UF Inlet Pressure (2.1 / 2.1)

1.1 (Page25 - 6)

%DB302.DBX10.0 "Drive_PMP201". RunX	0	EnableTimerSP
	0.0	Hysteresis
	%M1.2 "AlwaysTRUE"	IsLatched
	%DB1.DBX0.1 "GlobalBIT". HMIAlarmResetPB	AlarmReset
%DB100.DBX44.0 "AnalogInput_ PT101". InputFaultAlarm	FALSE	Disable

Network 8: PT-102 UF Filtrate Pressure

Network 8: PT-102 UF Filtrate Pressure (1.1 / 2.1)

			%DB1112 "Alarm_PT102_HHLA"	
			%FB137 "AnalogHighAlarmWithHysteresis"	
			EN	ENO ActiveFALSE
		%DB101.DBD32 "AnalogInput_PT102".Scaled	Scaled	
		9.0	TriggerSP	
		5	TriggerTimerSP	
%DB301.DBX10.0 "xDrive_PMP101".RunX	%DB400.DBX0.5 "Valve_AV101".OpenX		Enable	
		0	EnableTimerSP	
		0.0	Hysteresis	
%DB302.DBX10.0 "Drive_PMP201".RunX	%DB403.DBX0.5 "Valve_AV104".OpenX	%M1.2 "AlwaysTRUE"	IsLatched	
		%DB1.DBX0.1 "GlobalBIT".HMIAlarmResetPB	AlarmReset	
		FALSE	Disable	
		%DB101.DBX44.0 "AnalogInput_PT102".InputFaultAlarm	InputFaultAlarm	
			%DB1012 "Alarm_PT102_HLA"	
			%FB137 "AnalogHighAlarmWithHysteresis"	
			EN	ENO ActiveFALSE
		%DB101.DBD32 "AnalogInput_PT102".Scaled	Scaled	
		8.5	TriggerSP	
		5	TriggerTimerSP	
%DB301.DBX10.0 "xDrive_PMP101".RunX	%DB400.DBX0.5 "Valve_AV101".OpenX		Enable	
		0	EnableTimerSP	
		0.0	Hysteresis	
%DB302.DBX10.0 "Drive_PMP201".RunX	%DB403.DBX0.5 "Valve_AV104".OpenX	FALSE	IsLatched	
		%DB1.DBX0.1 "GlobalBIT".HMIAlarmResetPB	AlarmReset	
		FALSE	Disable	
		%DB101.DBX44.0 "AnalogInput_PT102".InputFaultAlarm	InputFaultAlarm	
			%DB1013 "Alarm_PT102_LLA"	
			%FB138 "AnalogLowAlarmWithHysteresis"	
			EN	ENO ActiveFALSE
		%DB101.DBD32 "AnalogInput_PT102".Scaled	Scaled	
		6.5	TriggerSP	
		5	TriggerTimerSP	
%DB301.DBX10.0 "xDrive_PMP101".RunX	%DB400.DBX0.5 "Valve_AV101".OpenX		Enable	
		0	EnableTimerSP	
		0.0	Hysteresis	
%DB302.DBX10.0 "Drive_PMP201".RunX	%DB403.DBX0.5 "Valve_AV104".OpenX	FALSE	IsLatched	
		%DB1.DBX0.1 "GlobalBIT".HMIAlarmResetPB	AlarmReset	
		FALSE	Disable	
		%DB101.DBX44.0 "AnalogInput_PT102".InputFaultAlarm	InputFaultAlarm	
			%DB1113 "Alarm_PT102_LLLA"	
			%FB138 "AnalogLowAlarmWithHysteresis"	
			EN	ENO ActiveFALSE
		%DB101.DBD32 "AnalogInput_PT102".Scaled	Scaled	
		6.0	TriggerSP	
		5	TriggerTimerSP	
%DB301.DBX10.0 "xDrive_PMP101".RunX	%DB400.DBX0.5 "Valve_AV101".OpenX		Enable	
		0	EnableTimerSP	

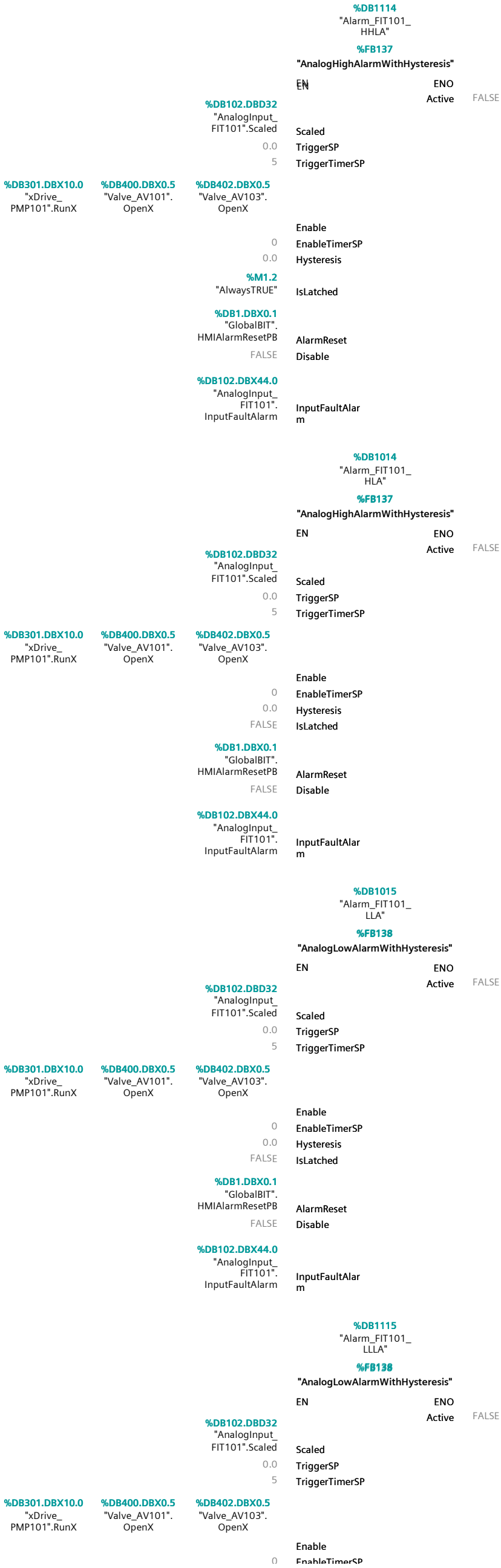
Network 8: PT-102 UF Filtrate Pressure (2.1 / 2.1)

1.1 (Page25 - 9)

		u	EnableTimerSP
%DB302.DBX10.0	%DB403.DBX0.5	0.0	Hysteresis
"Drive_PMP201".RunX	"Valve_AV104".OpenX	%M1.2	
		"AlwaysTRUE"	IsLatched
		%DB1.DBX0.1	
		"GlobalBIT".HMIAlarmResetPB	AlarmReset
		FALSE	Disable
		%DB101.DBX44.0	
		"AnalogInput_PT102".InputFaultAlarm	InputFaultAlarm

Network 9: FIT-101 UF Filtrate Flowmeter

Network 9: FIT-101 UF Filtrate Flowmeter (1.1 / 2.1)

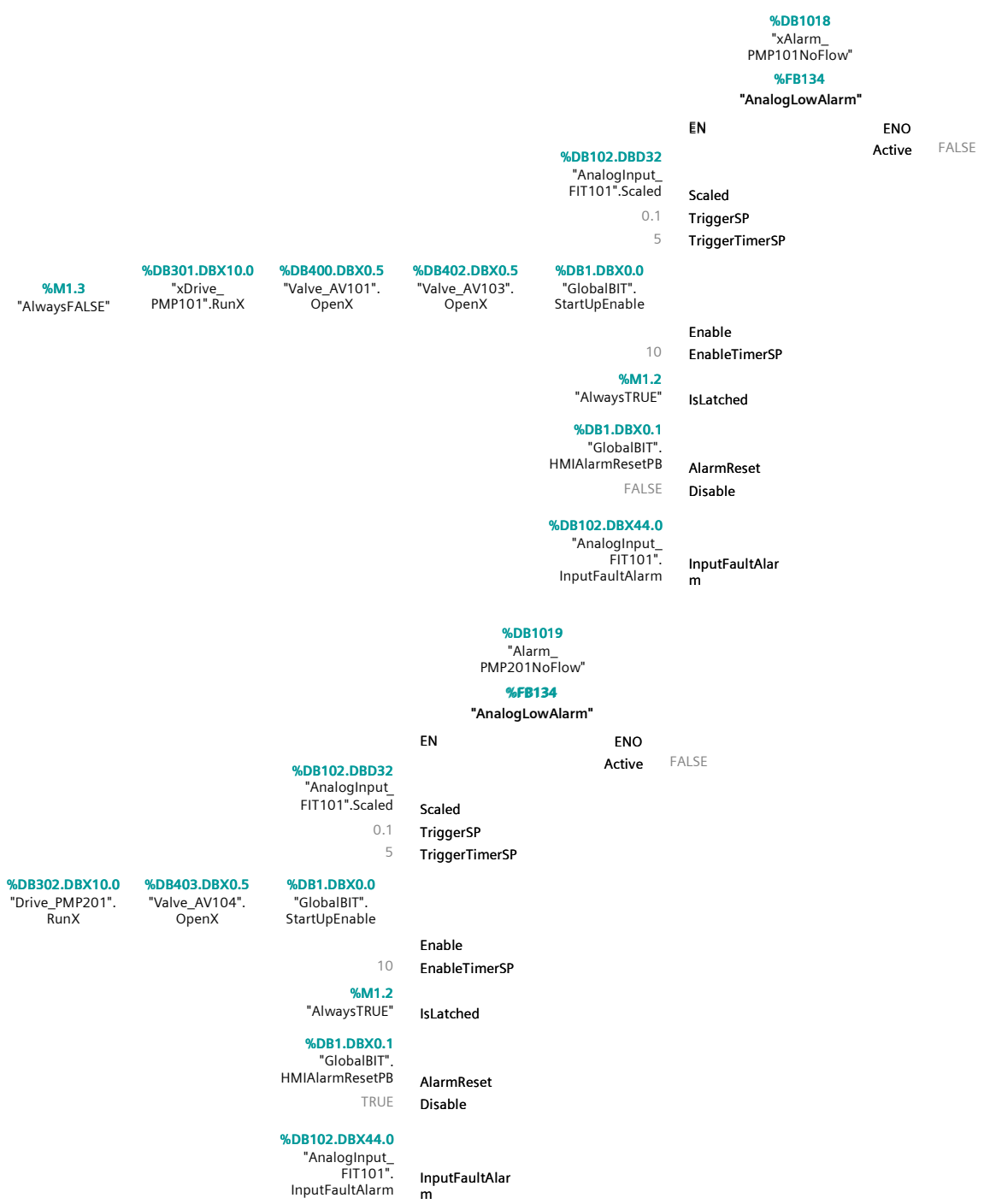


Network 9: FIT-101 UF Filtrate Flowmeter (2.1 / 2.1)

0	EnableTimerSP
0.0	Hysteresis
%M1.2	
"AlwaysTRUE"	IsLatched
%DB1.DBX0.1	
"GlobalBIT".	
HMIAlarmResetPB	AlarmReset
FALSE	Disable
%DB102.DBX44.0	
"AnalogInput_	
FIT101".	
InputFaultAlarm	InputFaultAlarm

Network 10: No Flow

LL - No Flow Alarm To Interlock PMP101/PMP201



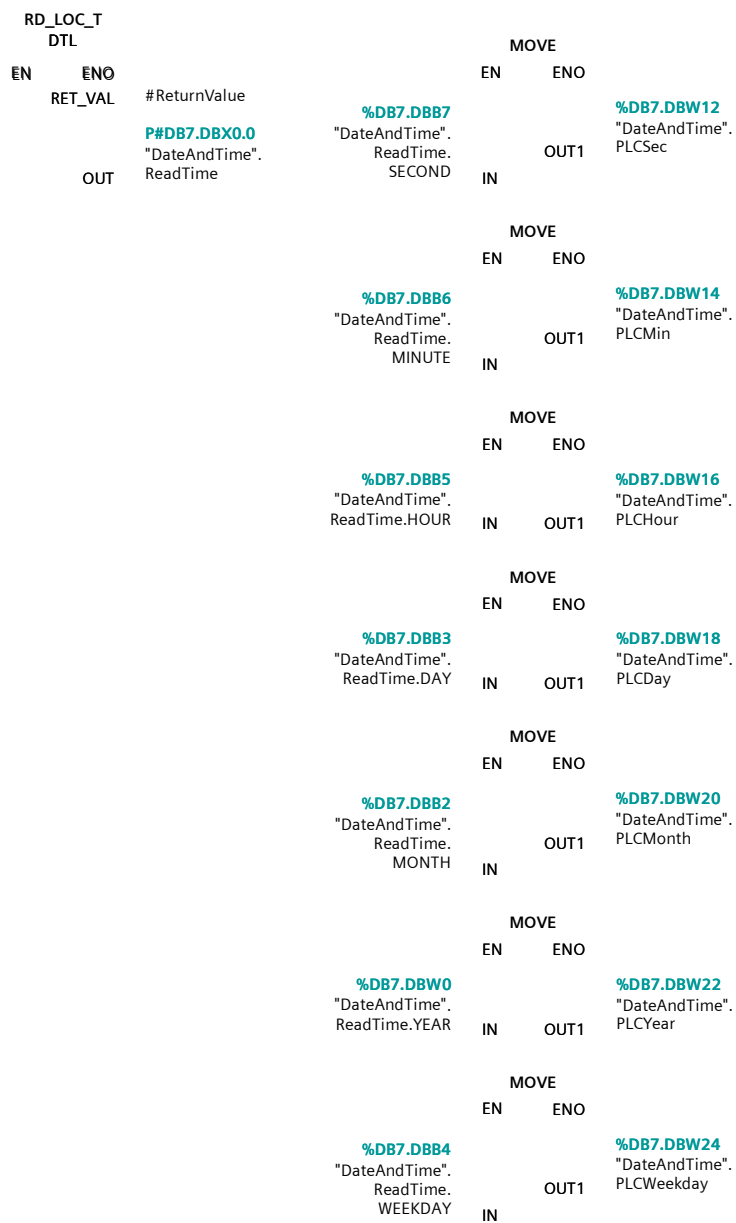
94_DateAndTime [FC94]

94_DateAndTime Properties

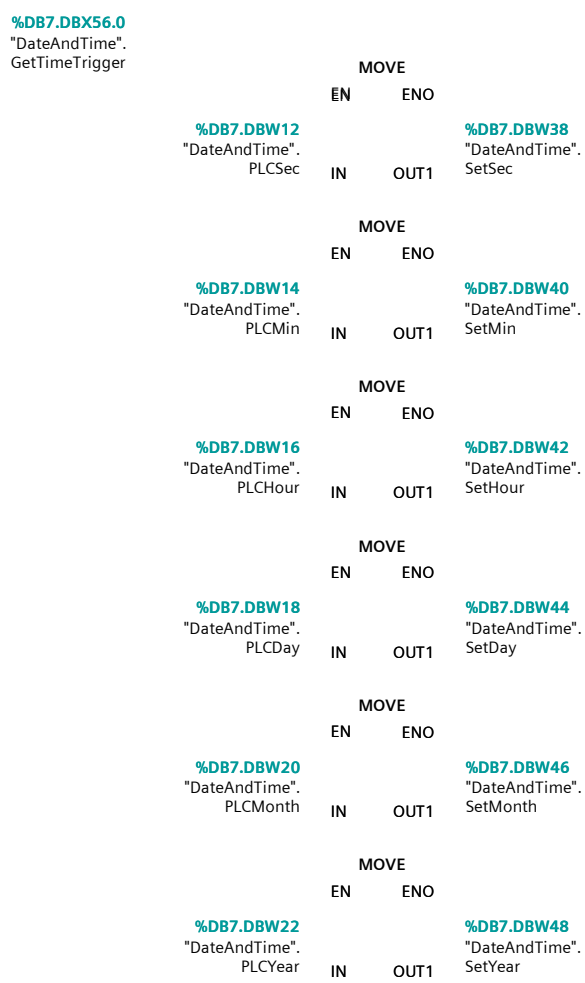
General							
Name	94_DateAndTime	Number	94	Type	FC	Language	LAD
Numbering Information	Manual						
Title		Author		Comment		Family	
Version	0.1	User-defined ID					

Name	Data type	Default value	Comment
Input			
Output			
InOut			
Temp			
ReturnValue	Int		Dummy return value
DTL01	DTL		
YEAR	UInt		
MONTH	UInt		
DAY	UInt		
WEEKDAY	UInt		
HOUR	UInt		
MINUTE	UInt		
SECOND	UInt		
NANOSECOND	UInt		
Constant			
Return			
94_DateAndTime	Void		

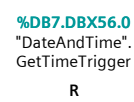
Network 1: Read PLC Clock



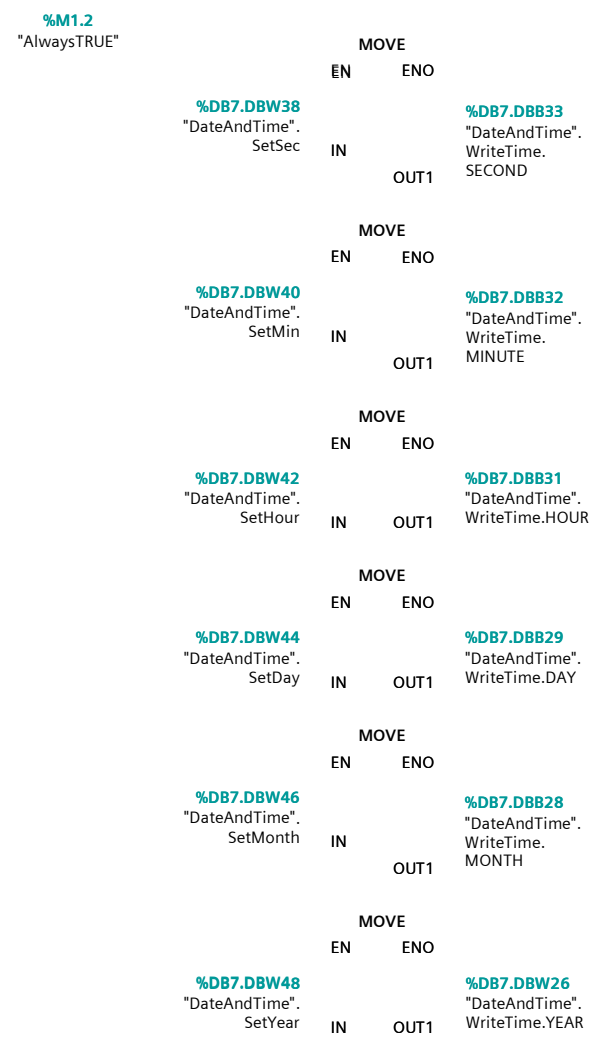
Network 2: Set PLC Clock



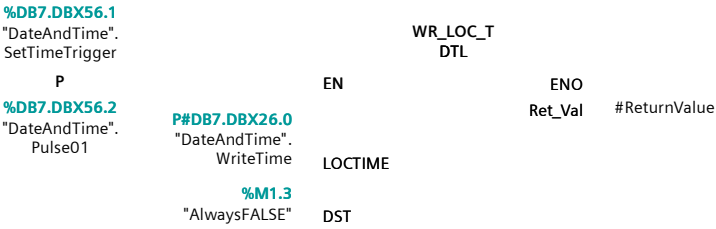
Network 3:



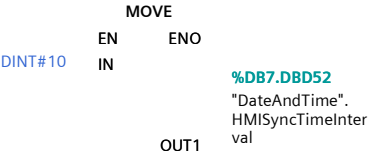
Network 4:



Network 5:



Network 6:



98_Trend [FC98]

98_Trend Properties

General

Name	98_Trend	Number	98	Type	FC	Language	LAD
Numbering	Manual						

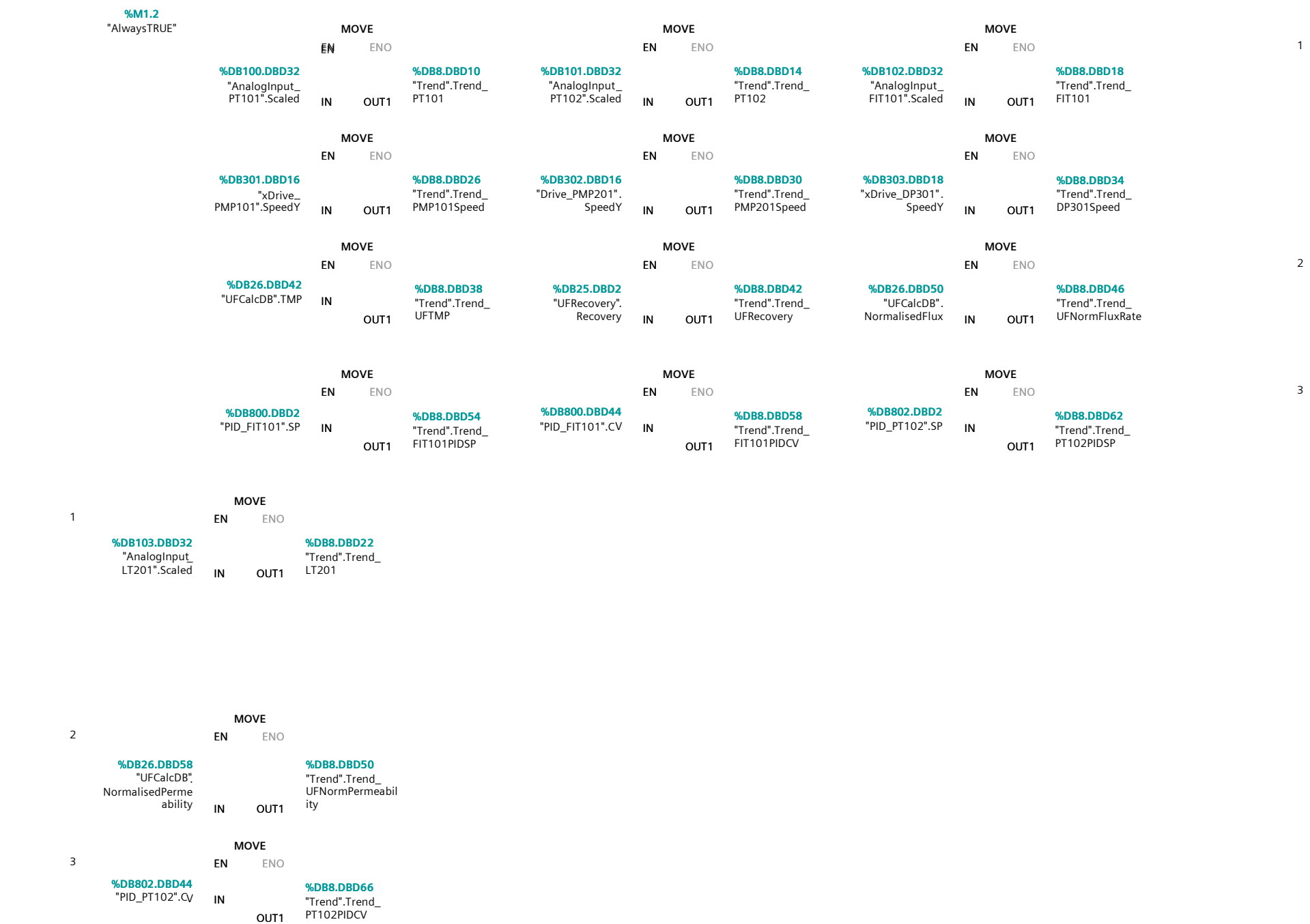
Information

Title	Author	Comment	Family
Version	User-defined ID		

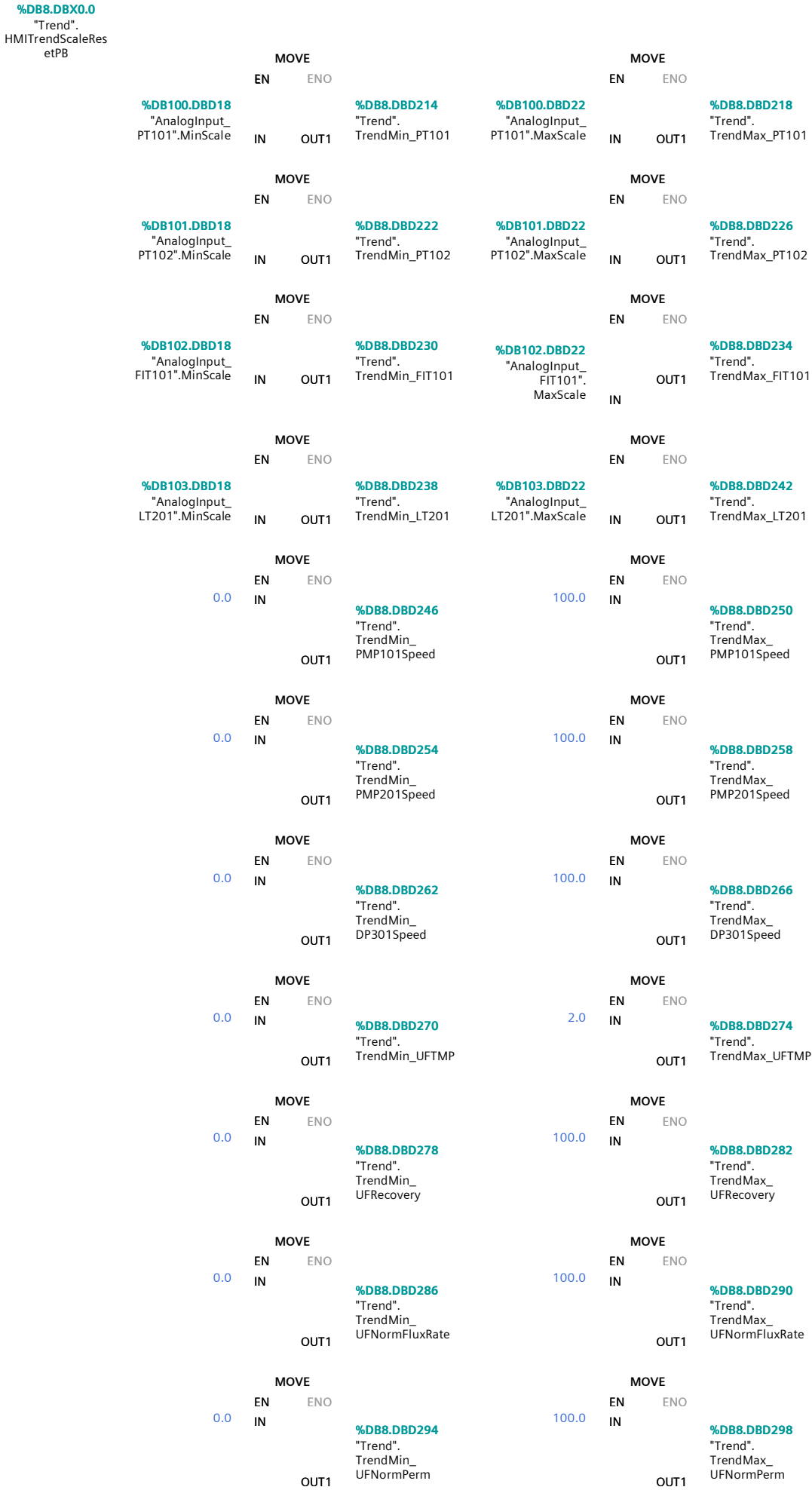
Name	Data type	Default value	Comment
Input			
Output			
InOut			
Temp			
SMSAlarmDelayPreset	Time		
Constant			
Return			
98_Trend	Void		

Network 1: Map Trend Value

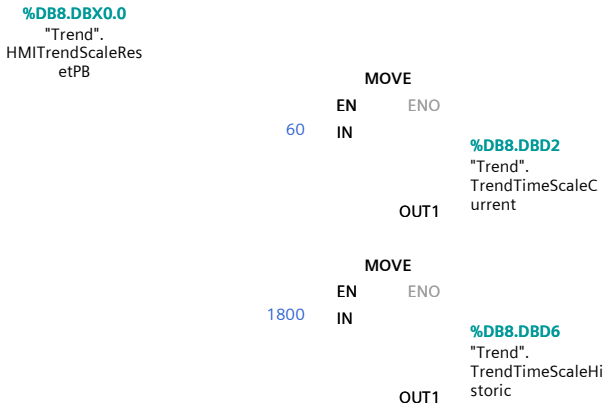
Network 1: Map Trend Value



Network 2: Reset Trend Min / MaxScale



Network 3: Reset Trend Time Scale



99_PostScan [FC99]

99_PostScan Properties

General

Name	99_PostScan	Number	99	Type	FC	Language	LAD
Numbering	Manual						
Information							
Title		Author		Comment		Family	
Version	0.1	User-defined ID					

Name	Data type	Default value	Comment
Input			
Output			
InOut			
Temp			
TCONDONE	Bool		
TCONBUSY	Bool		
TCONERROR	Bool		
TCONSTATUS	Word		
TUSENDLEN	UDInt		
TUSENDDONE	Bool		
TUSENDBUSY	Bool		
TUSENDERERROR	Bool		
TUSENDSTATUS	Word		
TURCVRCVDLEN	UInt		
TURCVNDR	Bool		
TURCVBUSY	Bool		
TURCVERERROR	Bool		
TURCVSTATUS	Word		
SendCharArray	Array[1..255] of Char		
SendCharArray[1]	Char		
SendCharArray[2]	Char		
SendCharArray[3]	Char		
SendCharArray[4]	Char		
SendCharArray[5]	Char		
SendCharArray[6]	Char		
SendCharArray[7]	Char		
SendCharArray[8]	Char		
SendCharArray[9]	Char		
SendCharArray[10]	Char		
SendCharArray[11]	Char		
SendCharArray[12]	Char		
SendCharArray[13]	Char		
SendCharArray[14]	Char		
SendCharArray[15]	Char		
SendCharArray[16]	Char		
SendCharArray[17]	Char		
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SendCharArray[46]	Char		
SendCharArray[47]	Char		
SendCharArray[48]	Char		

Name	Data type	Default value	Comment
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SendCharArray[51]	Char		
SendCharArray[52]	Char		
SendCharArray[53]	Char		
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RcvCharArray	Array[1..255] of Char		
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Name	Data type	Default value	Comment
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Name	Data type	Default value	Comment
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RcvCharArray[251]	Char		
RcvCharArray[252]	Char		
RcvCharArray[253]	Char		
RcvCharArray[254]	Char		
RcvCharArray[255]	Char		
Constant			
Return			
99_PostScan	Void		

AnalogOutputScale0_20mA [FC206]

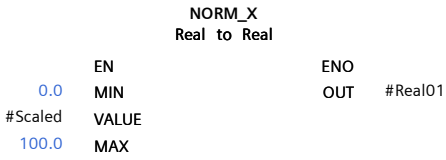
AnalogOutputScale0_20mA Properties

General

Name	AnalogOutputScale0_20mA	Number	206	Type	FC	Language	LAD
Numbering	Manual						
Information							
Title		Author		Comment	For 0-20mA Analog Output Card	Family	
Version	0.1	User-defined ID					

Name	Data type	Default value	Comment
Input			
Scaled	Real		
Output			
RawY	Int		
InOut			
Temp			
Real01	Real		
Real02	Real		
Constant			
Return			
AnalogOutputScale0_20mA	Void		

Network 1:



Network 2:



Network 3:



Network 4:



AnalogOutputScale4_20mA [FC202]

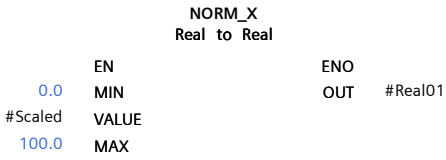
AnalogOutputScale4_20mA Properties

General

Name	AnalogOutputScale4_20mA	Number	202	Type	FC	Language	LAD
Numbering	Manual						
Information							
Title		Author		Comment	For 4-20mA Analog Output Card	Family	
Version	0.1	User-defined ID					

Name	Data type	Default value	Comment
Input			
Scaled	Real		
Output			
RawY	Int		
InOut			
Temp			
Real01	Real		
Real02	Real		
Constant			
Return			
AnalogOutputScale4_20mA	Void		

Network 1: AnalogOutputScale4_20mA about Sorek I desalination plant



Network 2:



Network 3:



Network 4:

TRUE
RET

ArrayLength [FC204]

ArrayLength Properties

General

Name	ArrayLength	Number	204	Type	FC	Language	SCL
Numbering	Manual						
Information							
Title		Author		Comment		Family	
Version	0.1	User-defined ID					

Name	Data type	Default value	Comment
Input			
Array	Array[0..30] of Char		
Array[0]	Char		
Array[1]	Char		
Array[2]	Char		
Array[3]	Char		
Array[4]	Char		
Array[5]	Char		
Array[6]	Char		
Array[7]	Char		
Array[8]	Char		
Array[9]	Char		
Array[10]	Char		
Array[11]	Char		
Array[12]	Char		
Array[13]	Char		
Array[14]	Char		
Array[15]	Char		
Array[16]	Char		
Array[17]	Char		
Array[18]	Char		
Array[19]	Char		
Array[20]	Char		
Array[21]	Char		
Array[22]	Char		
Array[23]	Char		
Array[24]	Char		
Array[25]	Char		
Array[26]	Char		
Array[27]	Char		
Array[28]	Char		
Array[29]	Char		
Array[30]	Char		
Output			
Len	UInt		
InOut			
Temp			
pointer	Int		
Constant			
Return			
ArrayLength	Void		

```
0001 #pointer := 0;
0002 REPEAT
0003   #pointer := #pointer + 1;
0004 UNTIL
0005   #Array[#pointer] = '$00' OR #pointer = 30
0006 END_REPEAT;
0007
0008 #Len := #pointer;
```

Symbol	Address	Type	Comment
#Array		Array	
#Len		UInt	
#pointer		Int	

FlowPaceFC_L/s [FC203]

FlowPaceFC_L/s Properties

General

Name	FlowPaceFC_L/s	Number	203	Type	FC	Language	LAD
Numbering Information	Manual						

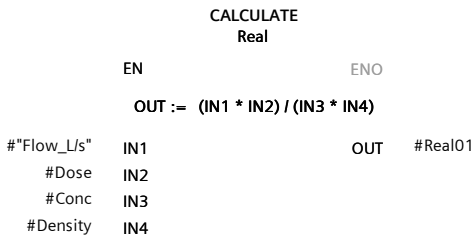
Title

Version	0.1	Author		Comment		Family	
---------	-----	--------	--	---------	--	--------	--

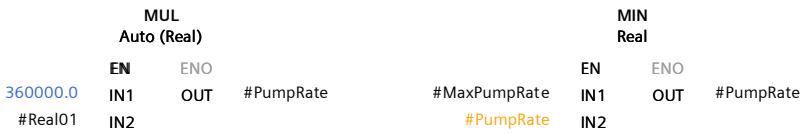
User-defined ID

Name	Data type	Default value	Comment
Input			
Flow_L/s	Real		L/s
Dose	Real		mg/L
Conc	Real		%
Density	Real		kg/m³
MaxPumpRate	Real		ml/h
Output			
PumpPercent	Real		%
PumpRate	Real		ml/h
InOut			
Temp			
Real01	Real		
Real02	Real		
Constant			
Return			
FlowPaceFC_L/s	Void		

Network 1:



Network 2:



Network 3:



TimeToGo_UDint [FC200]

TimeToGo_UDint Properties

General

Name Numbering Information Title Version	TimeToGo_UDint	Number	200	Type	FC	Language	LAD
	Manual						
		Author		Comment		Family	
	0.1	User-defined ID					

Name	Data type	Default value	Comment
Input			
RawSec	UDInt		
Output			
Hour	UDInt		
Min	UDInt		
Sec	UDInt		
InOut			
Temp			
UDINT01	UDInt		
UDINT02	UDInt		
Constant			
Return			
TimeToGo_UDint	Void		

Network 1:



Network 2:



Network 3:

TRUE
RET

TimeToGo_UInt [FC201]

TimeToGo_UInt Properties

General

Name	TimeToGo_UInt	Number	201	Type	FC	Language	LAD
Numbering	Manual						
Information							
Title		Author		Comment		Family	
Version	0.1	User-defined ID					

Name	Data type	Default value	Comment
Input			
RawSec	UInt		
Output			
Hour	UInt		
Min	UInt		
Sec	UInt		
InOut			
Temp			
UINT01	UInt		
UINT02	UInt		
Constant			
Return			
TimeToGo_UInt	Void		

Network 1:



Network 2:



Network 3:

TRUE
RET