- **Controller t**
- **Controller Fault Handler**
- **Power-Up Handler**

Tasks

- **MainTask**
  - **MainProgram**
    - **MainRoutine**
    - **Condtng_sets**
    - **disp_byte_1_2**
    - **mode_select**
      1=disabled, 2=standby, 3=shot, 4=sequence, 5=operator, 6=prime, 7=night
    - **shot_seq**
- **Unscheduled Programs / Phases**

Motion Groups

- **Ungrouped Axes**

Add-On Instructions

Data Types

- **User-Defined**
  - **input**
  - **output1**
  - **output3b**
  - **S1**
  - **S2**
  - **S3**
  - **S4**
  - **S5**
- **Strings**
  - **STRING**
- **Add-On-Defined**
- **Module-Defined**
  - **AB:ETHERNET_MODULE:C:0**
  - **AB:ETHERNET_MODULE_DINT_40Bytes:I:0**
  - **AB:ETHERNET_MODULE_DINT_40Bytes:O:0**
  - **AB:ETHERNET_MODULE_INT_20Bytes:I:0**
  - **AB:ETHERNET_MODULE_INT_20Bytes:O:0**
  - **AB:ETHERNET_MODULE_SINT_27Bytes:O:0**
  - **AB:ETHERNET_MODULE_SINT_84Bytes:I:0**

Trends

I/O Configuration

- **1768 Bus**
  - **[1] 1768-ENBT/A ttt**
    - **Ethernet**
      - **ETHERNET-MODULE gca**
      - **1768-ENBT/A ttt**
  - **[0] 1768-L45 t**
- **1769 Bus**
  - **[0] 1768-L45 t**

General			
Vendor:	Allen-Bradley	Mode:	Offline
Revision:	17.3	Key Switch Position:	Offline
Chassis Type:	<none>	Created:	7/7/2011 12:20:36 PM
Slot:	0	Edited:	9/1/2011 10:04:20 AM
Serial Port			
Mode:	System	Control Line:	No Handshake
Baud Rate:	19200	RTS Send Delay:	0 (x20 ms)
Date Bits:	8	RTS Off Delay:	0 (x20 ms)
Parity:	None	DCD Wait Delay:	0 (x1 sec)
Stop Bits:	1		
System Protocol - DF1 Master			
Station Address:	0	Polling Mode:	Message Based (slave can initiate messages)
Transmit Retries:	3	Error Detection:	BCC
ACK Timeout:	50 (x20 ms)	Enable Duplicate Detection:	Yes
Relay Message Wait:	5 (x20 ms)		
System Protocol - DF1 Point to Point (Current)			
Station Address:	0	Embedded Responses:	Autodetect
NAK Receive Limit:	3	Error Detection:	BCC
ENQ Transmit Limit:	3	Enable Duplicate Detection:	Yes
ACK Timeout:	50 (x20 ms)		
System Protocol - DF1 Radio Modem			
Station Address:	0	Error Detection:	BCC
Store and Foward:	No		
System Protocol - DF1 Slave			
Station Address:	0	EOT Suppression:	No
Transmit Retries:	3	Error Detection:	BCC
Slave Poll Timeout:	3000 (x20 ms)	Enable Duplicate Detection:	Yes
System Protocol - DH485			
Station Address:	0	Token Hold Factor:	1
Max Station Address:	31	Error Detection:	CRC
User Protocol - ASCII			
Read/Write Buffer Size:	82 bytes	Append Character 2:	'$l'
Termination Character 1:	'$r'	XON/XOFF:	No
Termination Character 2:	'$FF'	Echo Mode:	No
Append Character 1:	'$r'	Delete Mode:	Ignore
Date/Time			
Date and Time:	<offline>		
Time Zone:	<offline>		
Daylight Saving (+00:00):	<offline>		
CST Master:	No		
Is Master:	<offline>	Duplicate Master Detected:	<offline>
Synchronized with Master:	<offline>	Timer Hardware Faulted:	<offline>
Advanced			
Controller Fault Handler:	<none>	Security:	No Protection
Power-Up Handler:	<none>	Match Project To Controller:	No
System Overhead Time Slice:	20 %	Serial Number:	404AFC6F
During unused System Overhead Time Slice:	Run Continuous Task		
SFC Execution			
Execution Control:	Execute current active steps only	Last Scan of Active Step:	Don't scan
Restart Position:	Restart at most recently executed step		
Nonvolatile Memory			
<offline>			
Memory (Estimate)			
Memory Option:	1768-L45		
Estimated I/O Memory			
Total Memory:	505,856 bytes	Max Used:	18,456 bytes
Free Memory:	487,400 bytes	Largest Block Free:	487,400 bytes
Used Memory:	18,456 bytes		
Estimated Data and Logic Memory			
Total Memory:	3,145,728 bytes	Max Used:	40,824 bytes

Free Memory:	3,104,904 bytes	Largest Block Free:	3,104,904 bytes
Used Memory:	40,824 bytes		

Name	Value	Data Type	Scope
b1	0	BOOL	MainProgram
b1 - MainProgram/disp_byte_1_2 - 0(XIO)			
b2	0	BOOL	MainProgram
b2 - MainProgram/disp_byte_1_2 - 0(XIC)			
blu84heat	0	BOOL	MainProgram
blu84heat - MainProgram/Condtng_sets - 4(XIC)			
blu87heat	0	BOOL	MainProgram
blu87heat - MainProgram/Condtng_sets - 5(XIC)			
CGM_control	1	BOOL	MainProgram
CGM_control - MainProgram/disp_byte_1_2 - 3(XIO)			
DVlocked	0	BOOL	MainProgram
DVlocked - MainProgram/disp_byte_1_2 - 5(XIC)			
enble_dispense	0	BOOL	MainProgram
enble_dispense - MainProgram/disp_byte_1_2 - 7(XIC)			
flow1	0	BOOL	MainProgram
flow1 - MainProgram/shot_seq - 9(XIC)			
flow2	0	BOOL	MainProgram
flow2 - MainProgram/shot_seq - 9(XIC)			
gca:I		AB:ETHERNET_MODULE_SINT_84Bytes:I:0	t
gca:I - MainProgram/MainRoutine - 0(COP), 0(COP), 0(COP), 0(COP), 0(COP)			
gca:O		AB:ETHERNET_MODULE_SINT_27Bytes:O:0	t
*gca:O - MainProgram/MainRoutine - *1(COP), *2(COP)*			
Inline_blue_ON	0	BOOL	MainProgram
Inline_blue_ON - MainProgram/Condtng_sets - 0(XIC)			
inline_red_ON	0	BOOL	MainProgram
inline_red_ON - MainProgram/Condtng_sets - 1(XIC)			
input1		input	t
*input1.S1 - MainProgram/MainRoutine - *0(COP)*			
input1.S1.heartbeat - MainProgram/disp_byte_1_2 - 0(XIC)			
input1.S1.Mode_select - MainProgram/mode_select - 0(MOV)			
input1.S1.Seq_Number - MainProgram/shot_seq - 4(MOV)			
input1.S1.Shot_Position - MainProgram/shot_seq - 0(MOV)			
*input1.S2 - MainProgram/MainRoutine - *0(COP)*			
*input1.S3 - MainProgram/MainRoutine - *0(COP)*			
*input1.S4 - MainProgram/MainRoutine - *0(COP)*			
*input1.S5 - MainProgram/MainRoutine - *0(COP)*			
input1.S5.ADM_System_power_BM - MainProgram/disp_byte_1_2 - 2(XIC)			
ms1	0	BOOL	MainProgram
disabled			
ms1 - MainProgram/mode_select - 1(XIC)			
ms2	0	BOOL	MainProgram
standby			
ms2 - MainProgram/mode_select - 2(XIC)			
ms3	1	BOOL	MainProgram
shot			

ms3 (Continued)
ms3 - MainProgram/mode_select - 3(XIC)

ms4 0 BOOL MainProgram
sequence
ms4 - MainProgram/mode_select - 4(XIC)

ms5 0 BOOL MainProgram
operator
ms5 - MainProgram/mode_select - 5(XIC)

ms6 0 BOOL MainProgram
prime
ms6 - MainProgram/mode_select - 6(XIC)

ms7 0 BOOL MainProgram
night
ms7 - MainProgram/mode_select - 7(XIC)

msw 2 SINT MainProgram
*msw - MainProgram/mode_select - *0(MOV)*

output2 output1 t
output2 - MainProgram/MainRoutine - 1(COP)
*output2.CGM_control_enable - MainProgram/disp_byte_1_2 - *3(OTE)*
*output2.DV_lock - MainProgram/disp_byte_1_2 - *5(OTE)*
*output2.heartbeat - MainProgram/disp_byte_1_2 - *0(OTE)*
*output2.Heat_inline_blu - MainProgram/Condtng_sets - *0(OTE)*
*output2.Heat_inline_red - MainProgram/Condtng_sets - *1(OTE)*
*output2.Mode_select - MainProgram/mode_select - *1(MOV), *2(MOV), *3(MOV), *4(MOV), *5(MOV), *6(MOV), *7(MOV)*
*output2.Pump_Park - MainProgram/disp_byte_1_2 - *4(OTE)*
*output2.Ratio_Blu_Red - MainProgram/shot_seq - *8(MOV)*
*output2.Recipe_set_amount - MainProgram/shot_seq - *7(MOV)*
*output2.Recipe_set_control - MainProgram/shot_seq - *9(MOV)*
*output2.Remote_disables_dispense - MainProgram/disp_byte_1_2 - *7(OTE)*
*output2.Seq_Number - MainProgram/shot_seq - *5(MOV), *6(MOV)*
*output2.Shot_Position - MainProgram/shot_seq - *1(MOV), *2(MOV), *3(MOV)*
*output2.Sys_Startup_Bit - MainProgram/disp_byte_1_2 - *6(OTE)*

output2a output3b MainProgram
output2a - MainProgram/MainRoutine - 2(COP)
*output2a.heat_change_setpt - MainProgram/Condtng_sets - *2(MOV), *3(MOV), *4(MOV), *5(MOV)*
*output2a.System_pwr_toggle - MainProgram/disp_byte_1_2 - *1(MOV)*

park 0 BOOL MainProgram
park - MainProgram/disp_byte_1_2 - 4(XIC)

ratio1 0 BOOL MainProgram
ratio1 - MainProgram/shot_seq - 8(XIC)

ratio2 0 BOOL MainProgram
ratio2 - MainProgram/shot_seq - 8(XIC)

red84heat 0 BOOL MainProgram
red84heat - MainProgram/Condtng_sets - 2(XIC)

red87heat 0 BOOL MainProgram
red87heat - MainProgram/Condtng_sets - 3(XIC)

s_pos 0 SINT MainProgram
shot #
*s_pos - MainProgram/shot_seq - *0(MOV)*

seq_1 0 BOOL MainProgram

seq_1 (Continued)
seq #1
seq_1 - MainProgram/shot_seq - 5(XIC)

seq_2 0 BOOL MainProgram
seq #2
seq_2 - MainProgram/shot_seq - 6(XIC)

seq_no 0 SINT MainProgram
*seq_no - MainProgram/shot_seq - *4(MOV)*

sh_1 1 BOOL MainProgram
shot #1
sh_1 - MainProgram/shot_seq - 1(XIC)

sh_2 0 BOOL MainProgram
shot #2
sh_2 - MainProgram/shot_seq - 2(XIC)

sh_3 0 BOOL MainProgram
shot #3
sh_3 - MainProgram/shot_seq - 3(XIC)

shot_size1 0 BOOL MainProgram
shot_size1 - MainProgram/shot_seq - 7(XIC)

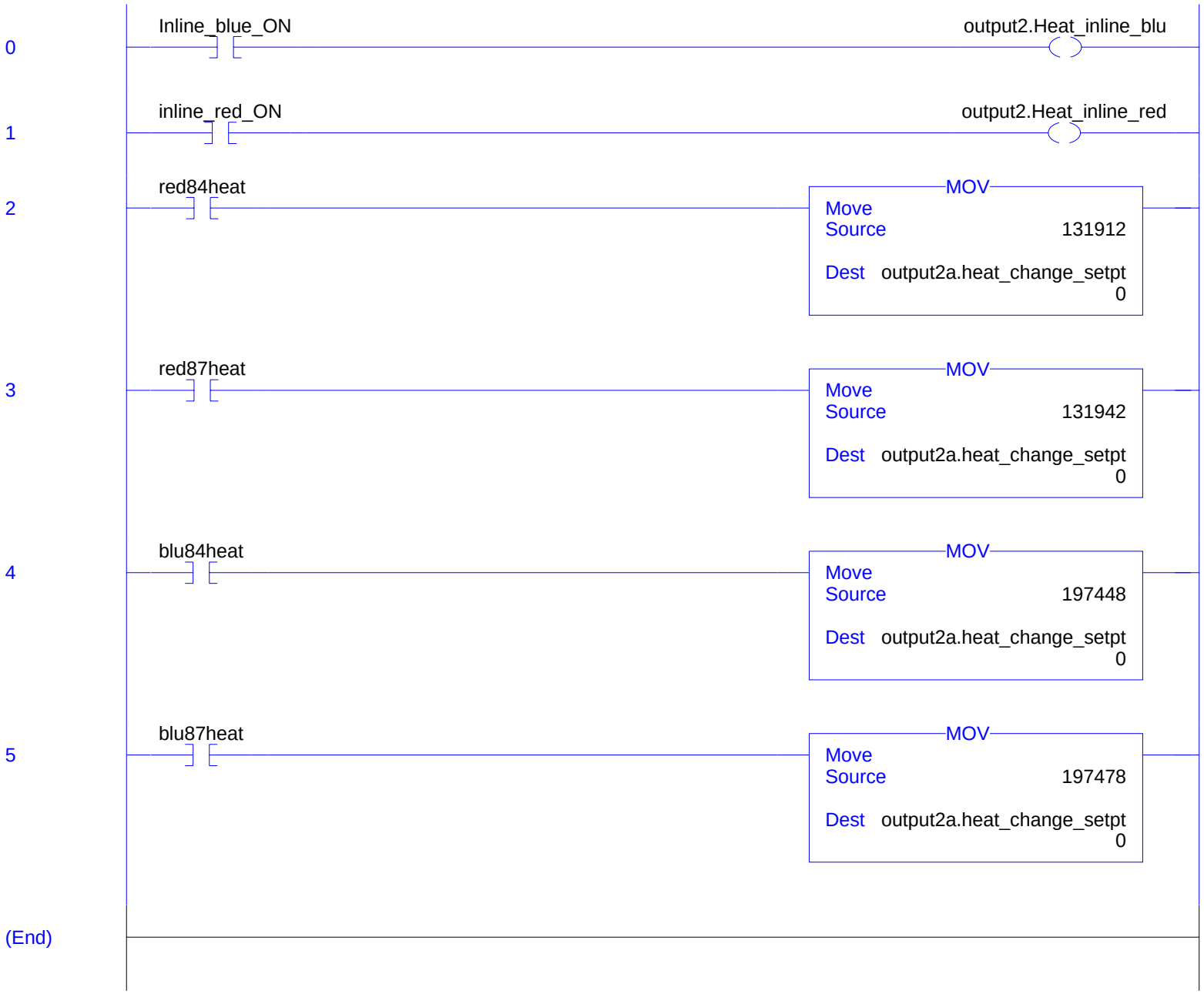
shot_size2 0 BOOL MainProgram
shot_size2 - MainProgram/shot_seq - 7(XIC)

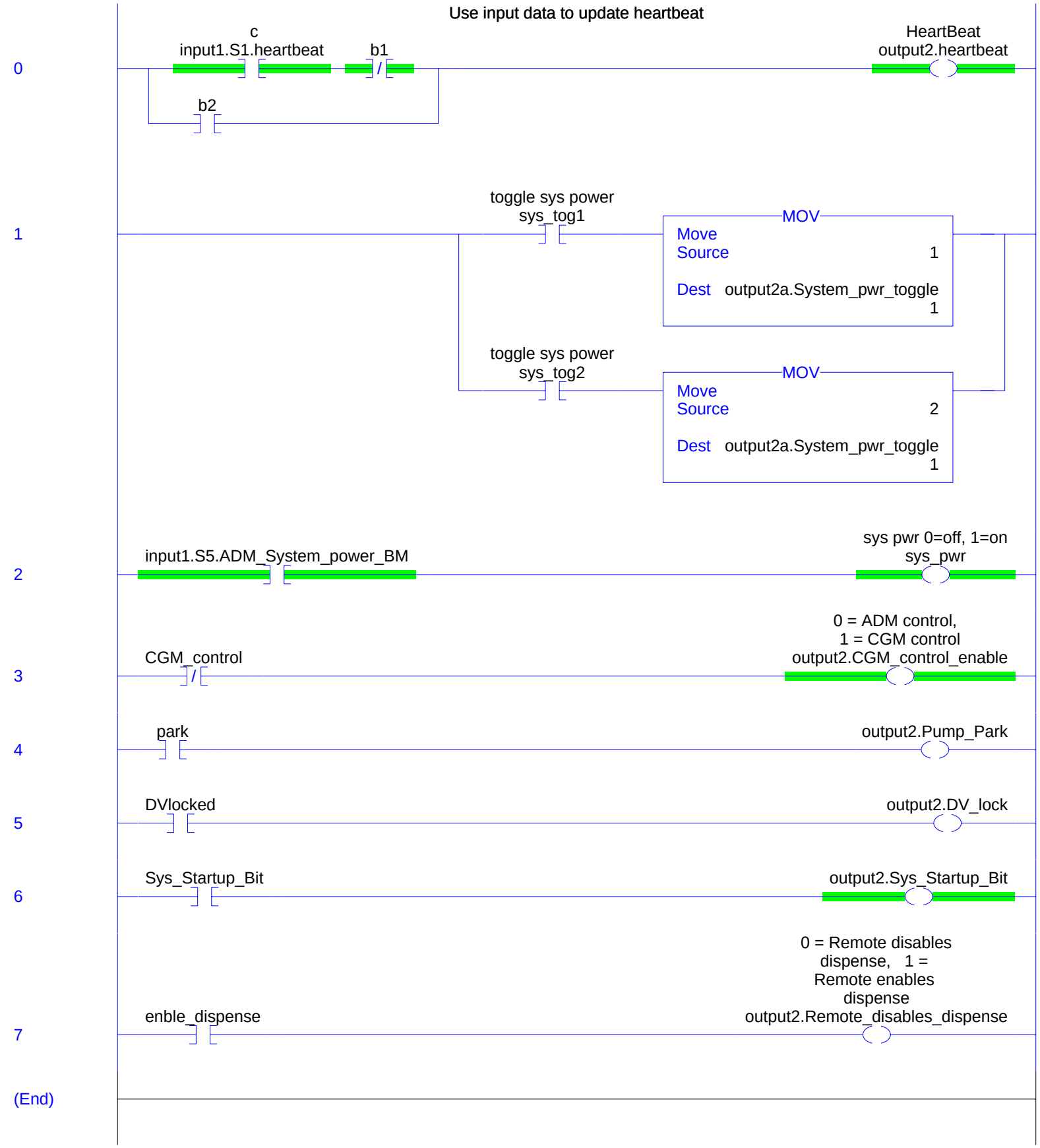
sys_pwr 1 BOOL MainProgram
sys pwr 0=off, 1=on
*sys_pwr - MainProgram/disp_byte_1_2 - *2(OTE)*

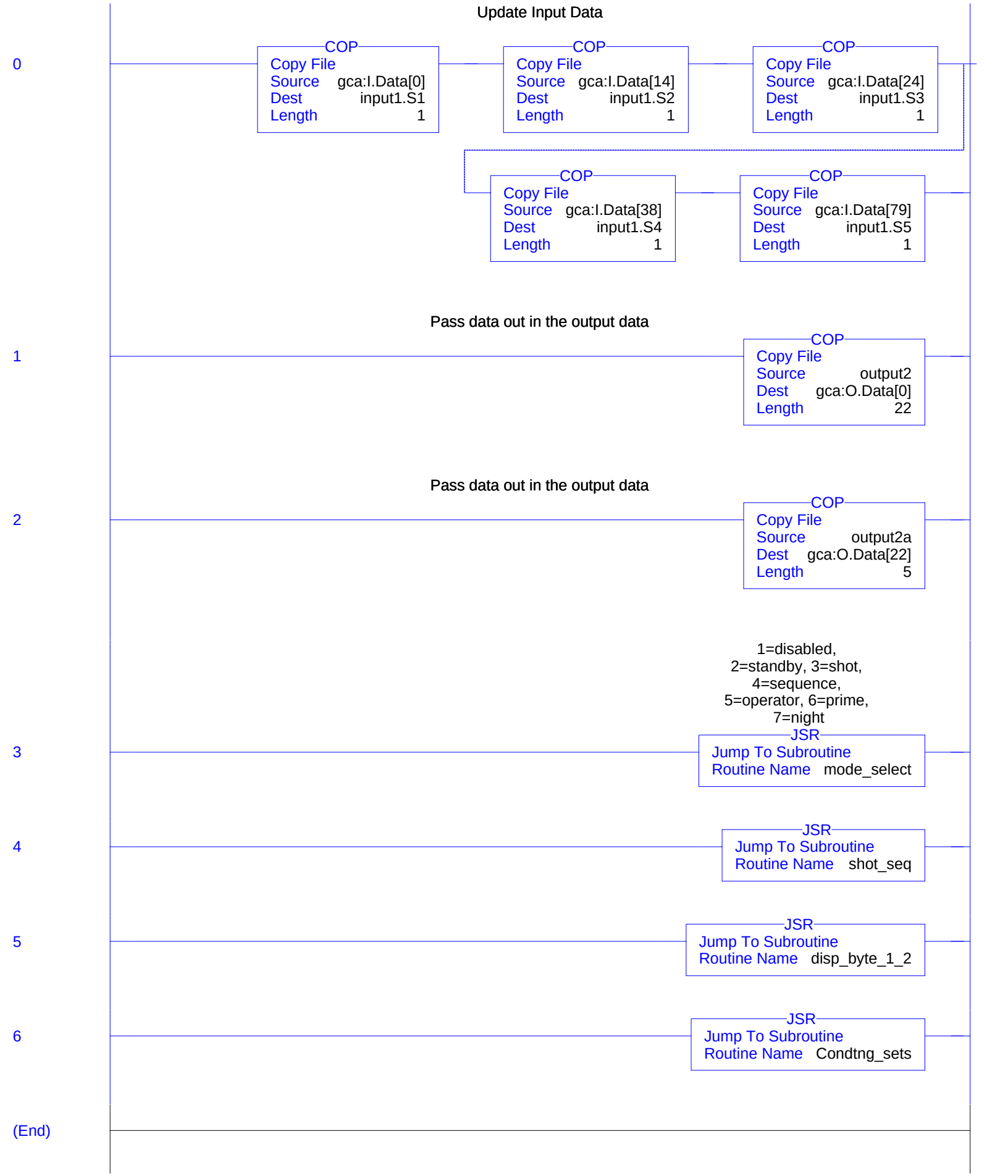
Sys_Startup_Bit 0 BOOL MainProgram
Sys_Startup_Bit - MainProgram/disp_byte_1_2 - 6(XIC)

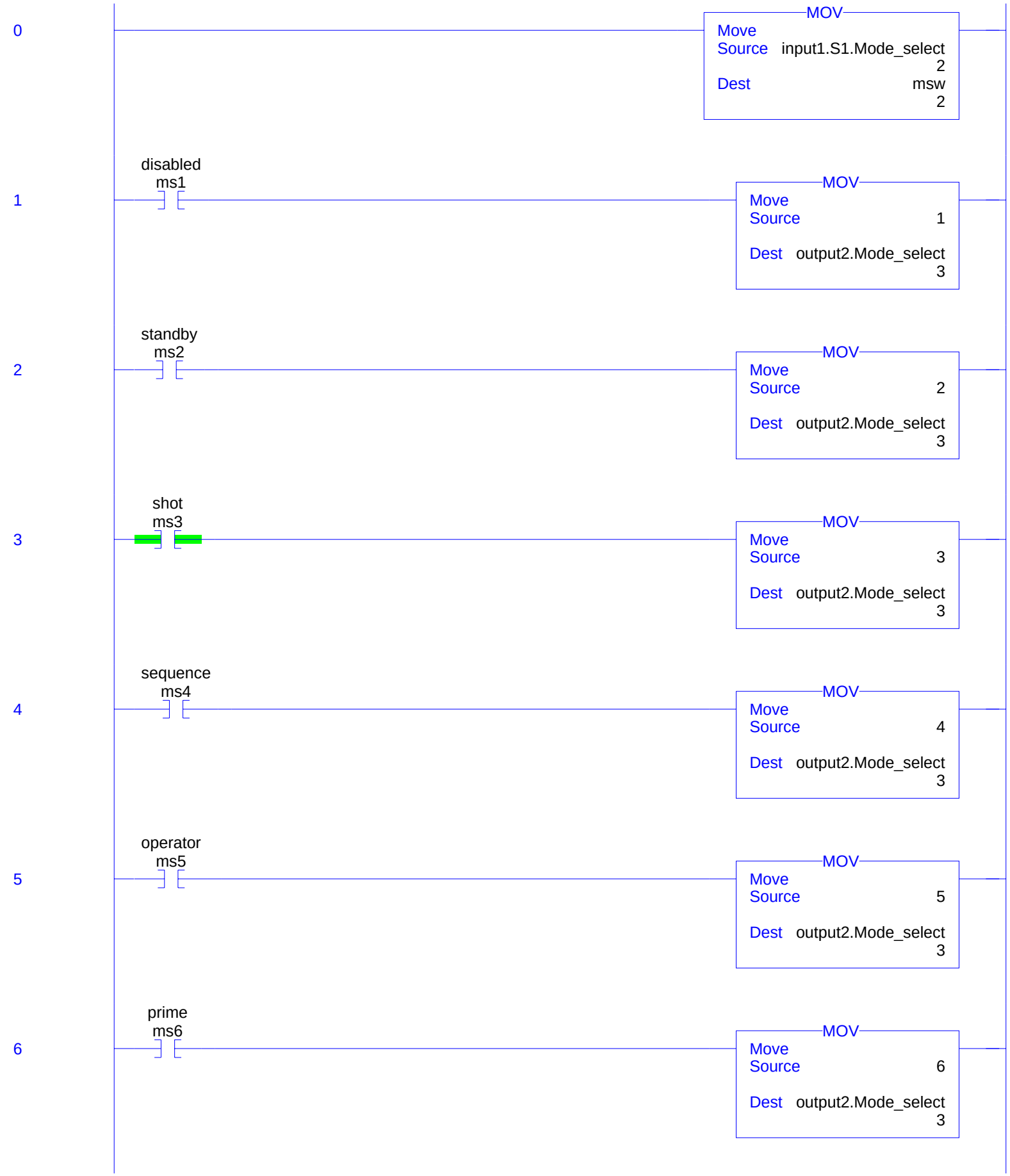
sys_tog1 0 BOOL MainProgram
toggle sys power
sys_tog1 - MainProgram/disp_byte_1_2 - 1(XIC)

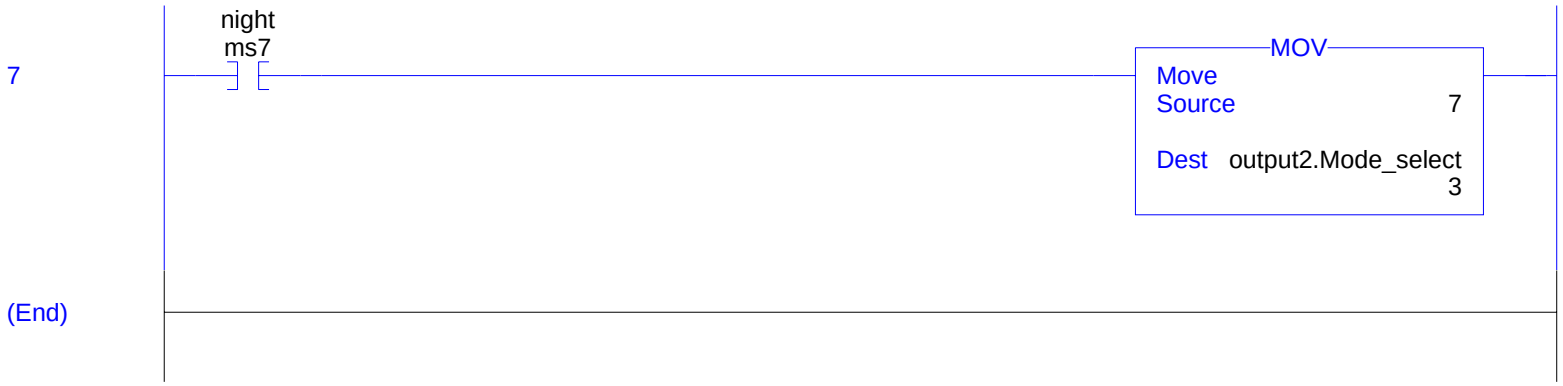
sys_tog2 0 BOOL MainProgram
toggle sys power
sys_tog2 - MainProgram/disp_byte_1_2 - 1(XIC)

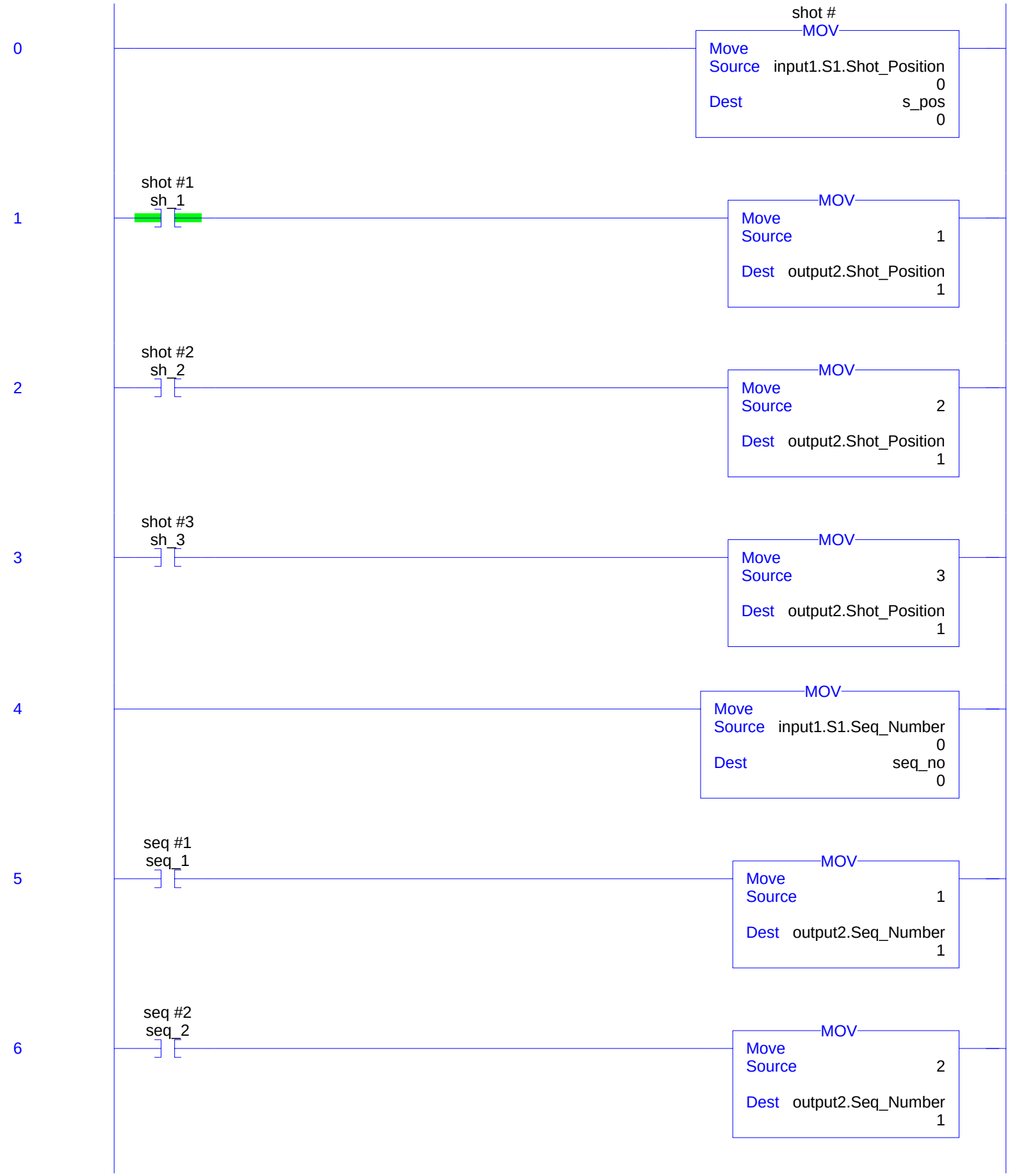

0
Inline_blue_ON
output2.Heat_inline_blu
1
inline_red_ON
output2.Heat_inline_red
2
red84heat
MOV
Move
Source 131912
Dest output2a.heat_change_setpt
0
3
red87heat
MOV
Move
Source 131942
Dest output2a.heat_change_setpt
0
4
blu84heat
MOV
Move
Source 197448
Dest output2a.heat_change_setpt
0
5
blu87heat
MOV
Move
Source 197478
Dest output2a.heat_change_setpt
0
(End)

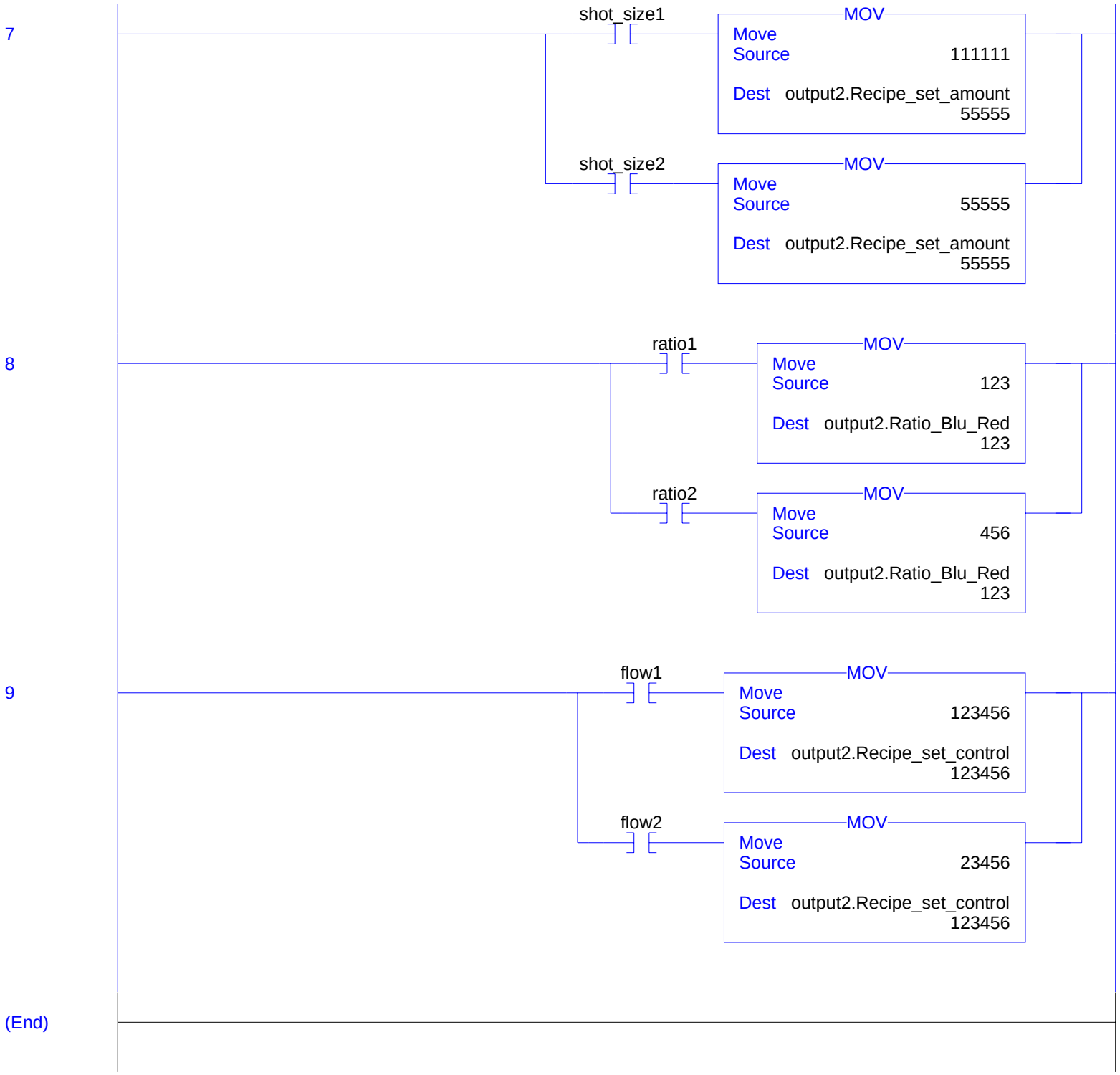

Use input data to update heartbeat
0
c
input1.S1.heartbeat
b1
b2
HeartBeat
output2.heartbeat
1
toggle sys power
sys_tog1
MOV
Move
Source 1
Dest output2a.System_pwr_toggle
1
toggle sys power
sys_tog2
MOV
Move
Source 2
Dest output2a.System_pwr_toggle
1
2
input1.S5.ADM_System_power_BM
sys pwr 0=off, 1=on
sys_pwr
3
CGM_control
0 = ADM control,
1 = CGM control
output2.CGM_control_enable
4
park
output2.Pump_Park
5
DVlocked
output2.DV_lock
6
Sys_Startup_Bit
output2.Sys_Startup_Bit
7
enble_dispense
0 = Remote disables
dispense, 1 =
Remote enables
dispense
output2.Remote_disables_dispense
(End)


Update Input Data
0
COP
Copy File
Source gca:I.Data[0]
Dest input1.S1
Length 1
COP
Copy File
Source gca:I.Data[14]
Dest input1.S2
Length 1
COP
Copy File
Source gca:I.Data[24]
Dest input1.S3
Length 1
COP
Copy File
Source gca:I.Data[38]
Dest input1.S4
Length 1
COP
Copy File
Source gca:I.Data[79]
Dest input1.S5
Length 1
Pass data out in the output data
1
COP
Copy File
Source output2
Dest gca:O.Data[0]
Length 22
Pass data out in the output data
2
COP
Copy File
Source output2a
Dest gca:O.Data[22]
Length 5
1=disabled,
2=standby, 3=shot,
4=sequence,
5=operator, 6=prime,
7=night
3
JSR
Jump To Subroutine
Routine Name mode_select
4
JSR
Jump To Subroutine
Routine Name shot_seq
5
JSR
Jump To Subroutine
Routine Name disp_byte_1_2
6
JSR
Jump To Subroutine
Routine Name Condtng_sets
(End)


0
MOV
Move
Source input1.S1.Mode_select
2
Dest msw
2
1
disabled
ms1
MOV
Move
Source 1
Dest output2.Mode_select
3
2
standby
ms2
MOV
Move
Source 2
Dest output2.Mode_select
3
3
shot
ms3
MOV
Move
Source 3
Dest output2.Mode_select
3
4
sequence
ms4
MOV
Move
Source 4
Dest output2.Mode_select
3
5
operator
ms5
MOV
Move
Source 5
Dest output2.Mode_select
3
6
prime
ms6
MOV
Move
Source 6
Dest output2.Mode_select
3


night
ms7
7
MOV
Move
Source 7
Dest output2.Mode_select
3
(End)


0
shot #
MOV
Move
Source input1.S1.Shot_Position
0
Dest s_pos
0
1
shot #1
sh_1
MOV
Move
Source 1
Dest output2.Shot_Position
1
2
shot #2
sh_2
MOV
Move
Source 2
Dest output2.Shot_Position
1
3
shot #3
sh_3
MOV
Move
Source 3
Dest output2.Shot_Position
1
4
MOV
Move
Source input1.S1.Seq_Number
0
Dest seq_no
0
5
seq #1
seq_1
MOV
Move
Source 1
Dest output2.Seq_Number
1
6
seq #2
seq_2
MOV
Move
Source 2
Dest output2.Seq_Number
1


7
shot_size1
MOV
Move
Source 111111
Dest output2.Recipe_set_amount
55555
shot_size2
MOV
Move
Source 55555
Dest output2.Recipe_set_amount
55555
8
ratio1
MOV
Move
Source 123
Dest output2.Ratio_Blu_Red
123
ratio2
MOV
Move
Source 456
Dest output2.Ratio_Blu_Red
123
9
flow1
MOV
Move
Source 123456
Dest output2.Recipe_set_control
123456
flow2
MOV
Move
Source 23456
Dest output2.Recipe_set_control
123456
(End)

Data type Name: input

Description:

Size: 96 byte(s)

Name	Data Type	Style	Description
S1	S1		
S2	S2		
S3	S3		
S4	S4		
S5	S5		

Data type Name: output1

Description:

Size: 24 byte(s)

Name	Data Type	Style	Description
heartbeat	BOOL	Decimal	c
start_pb	BOOL	Decimal	
DV_open	BOOL	Decimal	
Ratio_open	BOOL	Decimal	
Pump_Park	BOOL	Decimal	
DV_lock	BOOL	Decimal	
MixHd_Clean	BOOL	Decimal	
Sys_Startup_Bit	BOOL	Decimal	
Selected_Appl	BOOL	Decimal	
Prime_Pump	BOOL	Decimal	
Base_Purge	BOOL	Decimal	
Recirc_Status	BOOL	Decimal	
Purge_Alarm	BOOL	Decimal	
Remote_disables_dispense	BOOL	Decimal	0 = Remote disables dispense, 1 = Remote enables dispense
CGM_control_enable	BOOL	Decimal	0 = ADM control, 1 = CGM control
r3	BOOL	Decimal	
Mode_select	SINT	Decimal	
Shot_Position	SINT	Decimal	
Seq_Number	SINT	Decimal	
Heat_tank_red	BOOL	Decimal	
Heat_tank_blu	BOOL	Decimal	
Heat_inline_red	BOOL	Decimal	
Heat_inline_blu	BOOL	Decimal	
Heat_hose_red	BOOL	Decimal	
Heat_hose_blu	BOOL	Decimal	
Chiller_red	BOOL	Decimal	
Chiller_blu	BOOL	Decimal	
Fill_tank_blu	SINT	Decimal	
Fill_tank_red	SINT	Decimal	
Error_ack_reqd	DINT	Decimal	
Recipe_set_control	DINT	Decimal	
Recipe_set_amount	DINT	Decimal	
Ratio_Blu_Red	INT	Decimal	

Data type Name: output3b

Description:

Size: 8 byte(s)

Name	Data Type	Style	Description
heat_change_setpt	DINT	Decimal	
System_pwr_toggle	SINT	Decimal	

Data type Name: S1

Description:

Size: 16 byte(s)

Name	Data Type	Style	Description
heartbeat	BOOL	Decimal	c
start_pb	BOOL	Decimal	
DV_open	BOOL	Decimal	
Ratio_open	BOOL	Decimal	
Pump_Park	BOOL	Decimal	
DV_lock	BOOL	Decimal	
MixHd_Clean	BOOL	Decimal	
Sys_Start_Bit	BOOL	Decimal	
Selected_Appl	BOOL	Decimal	
Prime_Pump	BOOL	Decimal	
Base_Purge	BOOL	Decimal	
Recirc_Status	BOOL	Decimal	
Purge_Alarm	BOOL	Decimal	
Remote_disables_dispense	BOOL	Decimal	0 = Remote disables dispense, 1 = Remote enables dispense
CGM_control_enable	BOOL	Decimal	0 = ADM control, 1 = CGM control
R2_7	BOOL	Decimal	
Mode_select	SINT	Decimal	
Shot_Position	SINT	Decimal	
Seq_Number	SINT	Decimal	
Heat_tank_red	BOOL	Decimal	
Heat_tank_blu	BOOL	Decimal	
Heat_inline_red	BOOL	Decimal	
Heat_inline_blu	BOOL	Decimal	
Heat_hose_red	BOOL	Decimal	
Heat_hose_blu	BOOL	Decimal	
Chiller_red	BOOL	Decimal	
Chiller_blu	BOOL	Decimal	
Fill_tank_blu	SINT	Decimal	
Fill_tank_red	SINT	Decimal	
Error_ack_reqd	DINT	Decimal	byte 9-12
Volume_units_b1	BOOL	Decimal	
Volume_units_b2	BOOL	Decimal	
Weight_units_b1	BOOL	Decimal	
Weight_units_b2	BOOL	Decimal	

Name	Data Type	Style	Description
Press_units_b1	BOOL	Decimal	
Press_units_b2	BOOL	Decimal	
Temp_units	BOOL	Decimal	
Flow_mode	BOOL	Decimal	
Rate_units	BOOL	Decimal	
Control_mode	BOOL	Decimal	
Disp_mode_b1	BOOL	Decimal	
Disp_mode_b2	BOOL	Decimal	
R14_12	BOOL	Decimal	
R14_13	BOOL	Decimal	
R14_14	BOOL	Decimal	
R14_15	BOOL	Decimal	

Data type Name: S2

Description:

Size: 12 byte(s)

Name	Data Type	Style	Description
Flow_rate_current	DINT	Decimal	
Disp_amount_current	DINT	Decimal	
Ratio_current_int1	INT	Decimal	

Data type Name: S3

Description:

Size: 16 byte(s)

Name	Data Type	Style	Description
Pressure_Red	DINT	Decimal	
Pressure_Blu	DINT	Decimal	
Flow_pump_actual	DINT	Decimal	
Ratio_actual	INT	Decimal	

Data type Name: S4

Description:

Size: 44 byte(s)

Name	Data Type	Style	Description
Disp_amount_actual	DINT	Decimal	
Disp_duration_actual	DINT	Decimal	byte 43-46
Temp_inline_blu	INT	Decimal	
Temp_hose_blu	INT	Decimal	
Temp_inline_red	INT	Decimal	
Temp_hose_red	INT	Decimal	
Temp_tank_blu	INT	Decimal	
Temp_tank_red	INT	Decimal	
Temp_chill_blu	INT	Decimal	
Temp_chill_red	INT	Decimal	
Temp_inline_blu_stpt	INT	Decimal	
Temp_hose_blu_stpt	INT	Decimal	
Temp_inline_red_stpt	INT	Decimal	
Temp_hose_red_stpt	INT	Decimal	
Temp_tank_blu_stpt	INT	Decimal	
Temp_tank_red_stpt	INT	Decimal	
Temp_chill_blu_stpt	INT	Decimal	
Temp_chill_red_stpt	INT	Decimal	
Level_status_red_b1	BOOL	Decimal	
Level_status_red_b2	BOOL	Decimal	
Level_status_red_b3	BOOL	Decimal	
Level_status_red_b4	BOOL	Decimal	
Level_status_blu_b1	BOOL	Decimal	
Level_status_blu_b2	BOOL	Decimal	
Level_status_blu_b3	BOOL	Decimal	
Level_status_blu_b4	BOOL	Decimal	

Data type Name: S5

Description:

Size: 8 byte(s)

Name	Data Type	Style	Description
Error_scrolling	DINT	Decimal	
ADM_error_status_b1	BOOL	Decimal	
ADM_error_status_b2	BOOL	Decimal	
ADM_error_status_b3	BOOL	Decimal	
ADM_error_status_b4	BOOL	Decimal	
ADM_System_power_BM	BOOL	Decimal	
ADM_OK_to_Dispense	BOOL	Decimal	
ADM_OK_for_requests	BOOL	Decimal	
ADM_future	BOOL	Decimal	