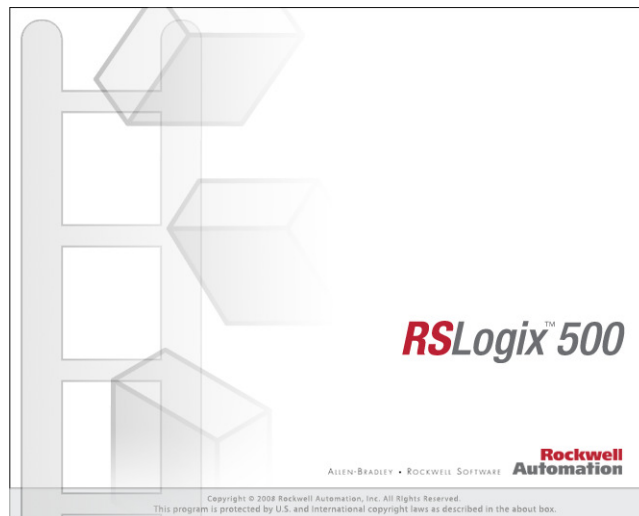


RSLogix Micro Project Report



Processor Information

Processor Type: Bul.1766 MicroLogix 1400 Series A

Processor Name: DRV_CTRL

Total Memory Used: 1144 Instruction Words Used - 996 Data Table Words Used

Total Memory Left: 11290 Instruction Words Left

Program Files: 7

Data Files: 20

Program ID: 3492

I/O Configuration

0	Bul.1766	MicroLogix 1400 Series A
1		
2		
3		
4		
5		
6		
7		

Channel Configuration

CHANNEL 0 (SYSTEM) - Driver: Modbus RTU Master

CHANNEL 0 (SYSTEM) - Driver: Modbus RTU Master Edit Resource/Owner Timeout: 60
CHANNEL 0 (SYSTEM) - Driver: Modbus RTU Master Passthru Link ID: 1
CHANNEL 0 (SYSTEM) - Driver: Modbus RTU Master Write Protected: No
CHANNEL 0 (SYSTEM) - Driver: Modbus RTU Master Comms Servicing Selection: Yes
CHANNEL 0 (SYSTEM) - Driver: Modbus RTU Master Message Servicing Selection: Yes
CHANNEL 0 (SYSTEM) - Driver: Modbus RTU Master 1st AWA Append Character: \d
CHANNEL 0 (SYSTEM) - Driver: Modbus RTU Master 2nd AWA Append Character: \a

Baud: 9600
Parity: NONE
Control Line : No Handshaking (485 Network)
InterCharacter Timeout(x1 ms): 0
Pre Transmit Delay(x1 ms): 0

CHANNEL 1 (SYSTEM) - Driver: Ethernet

CHANNEL 1 (SYSTEM) - Driver: Ethernet Edit Resource/Owner Timeout: 60
CHANNEL 1 (SYSTEM) - Driver: Ethernet Passthru Link ID: 1
CHANNEL 1 (SYSTEM) - Driver: Ethernet Write Protected: No
CHANNEL 1 (SYSTEM) - Driver: Ethernet Comms Servicing Selection: No
CHANNEL 1 (SYSTEM) - Driver: Ethernet Message Servicing Selection: No

Hardware Address: 00:00:00:00:00:00
IP Address: 192.168.1.2
Subnet Mask: 255.255.255.0
Gateway Address: 0.0.0.0
Msg Connection Timeout (x 1mS): 15000
Msg Reply Timeout (x mS): 3000
Inactivity Timeout (x Min): 30
Bootp Enable: No
Dhcp Enable: No
SMTP Enable: No
SNMP Enable: Yes
HTTP Enable: Yes
Auto Negotiate Enable: Yes
Port Speed Enable: 10/100 Mbps Full Duplex/Half Duplex
Contact:
Location:

CHANNEL 2 (SYSTEM) - Driver: DF1 Full Duplex

CHANNEL 2 (SYSTEM) - Driver: DF1 Full Duplex Edit Resource/Owner Timeout: 60
CHANNEL 2 (SYSTEM) - Driver: DF1 Full Duplex Passthru Link ID: 1
CHANNEL 2 (SYSTEM) - Driver: DF1 Full Duplex Write Protected: No
CHANNEL 2 (SYSTEM) - Driver: DF1 Full Duplex Comms Servicing Selection: Yes
CHANNEL 2 (SYSTEM) - Driver: DF1 Full Duplex Message Servicing Selection: Yes
CHANNEL 2 (SYSTEM) - Driver: DF1 Full Duplex 1st AWA Append Character: \d
CHANNEL 2 (SYSTEM) - Driver: DF1 Full Duplex 2nd AWA Append Character: \a

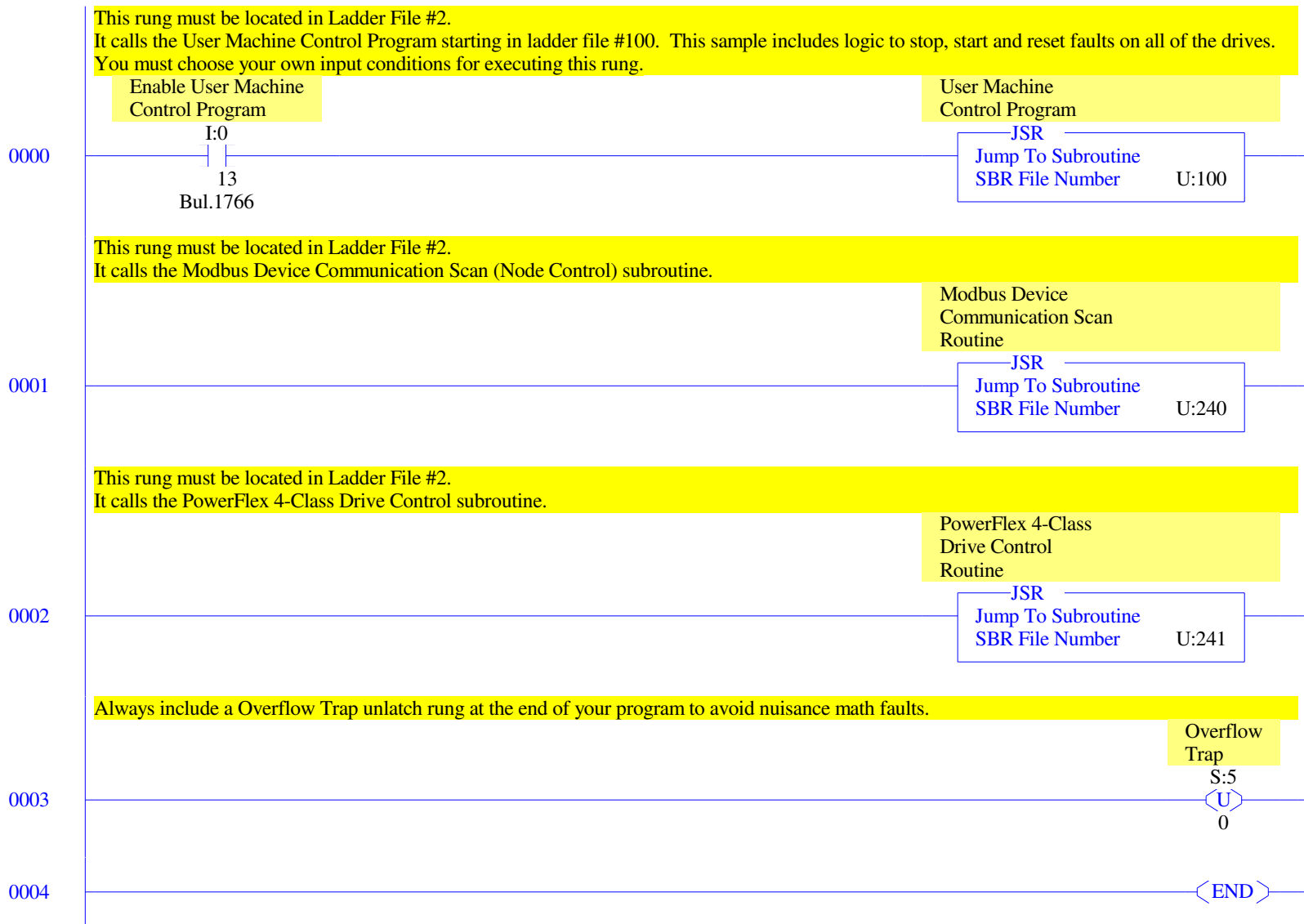
Source ID: 1 (decimal)
Baud: 19200
Parity: NONE
Control Line : No Handshaking
Error Detection: CRC
Embedded Responses: Auto Detect
Duplicate Packet Detect: Yes
ACK Timeout(x20 ms): 50
NAK Retries: 3
ENQ Retries: 3

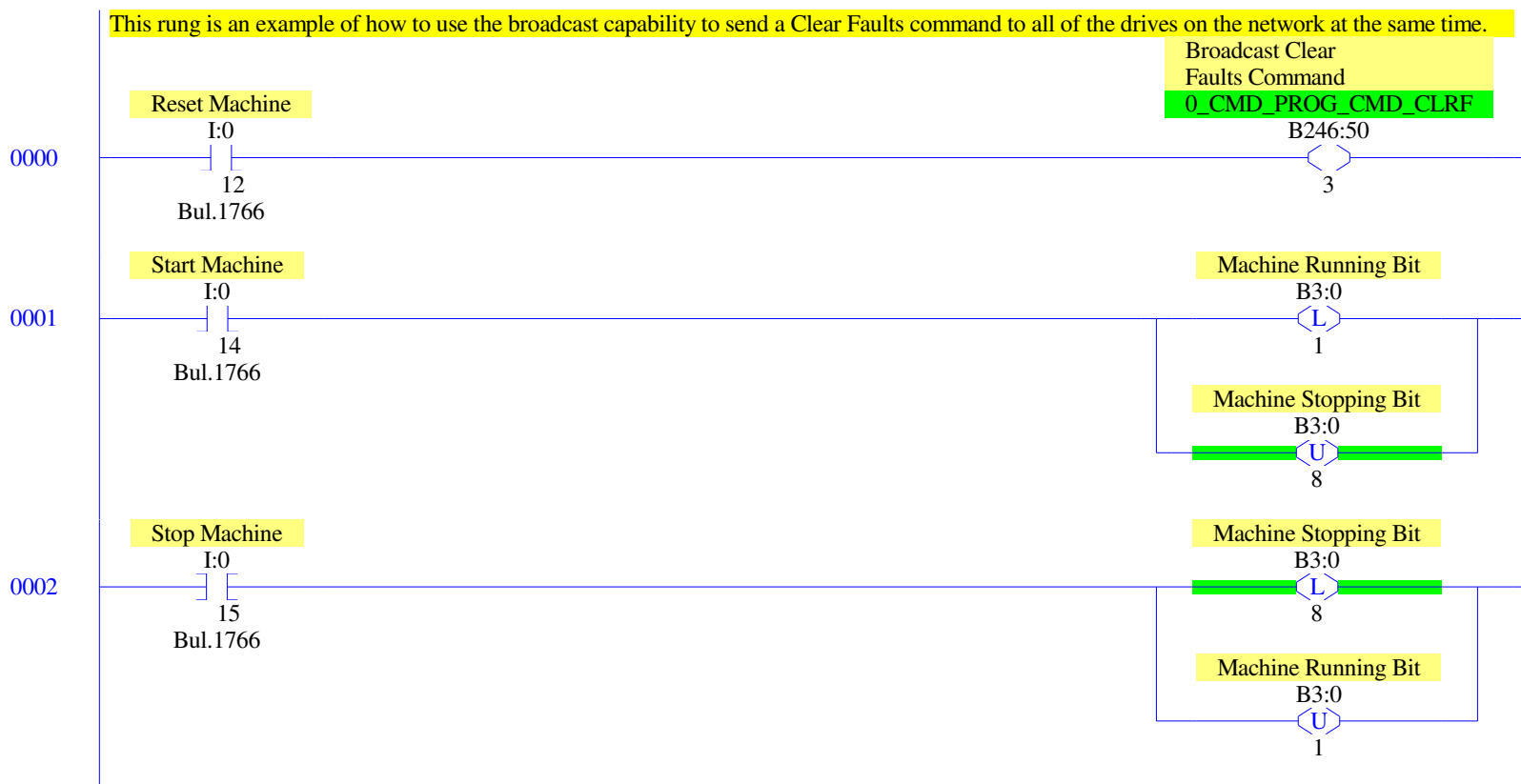
Program File List

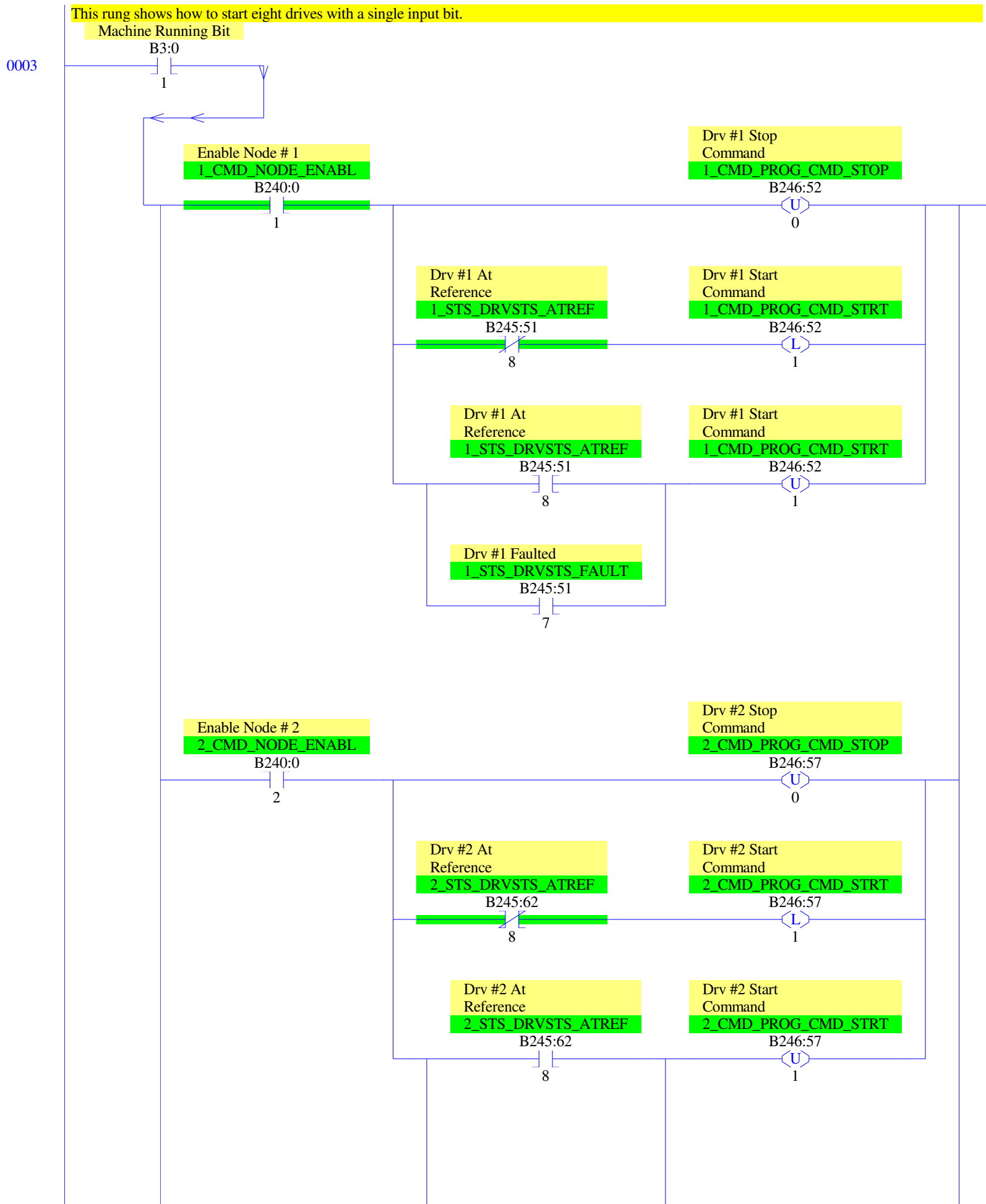
Name	Number	Type	Rungs	Debug	Bytes
[SYSTEM]	0	SYS	0	No	0
	1	SYS	0	No	0
MAIN	2	LADDER	5	No	46
USER PRGRM	100	LADDER	6	No	1035
PVC CTRL	239	LADDER	4	No	1284
NODE CTRL	240	LADDER	4	No	314
DRIVE CTRL	241	LADDER	16	No	3611

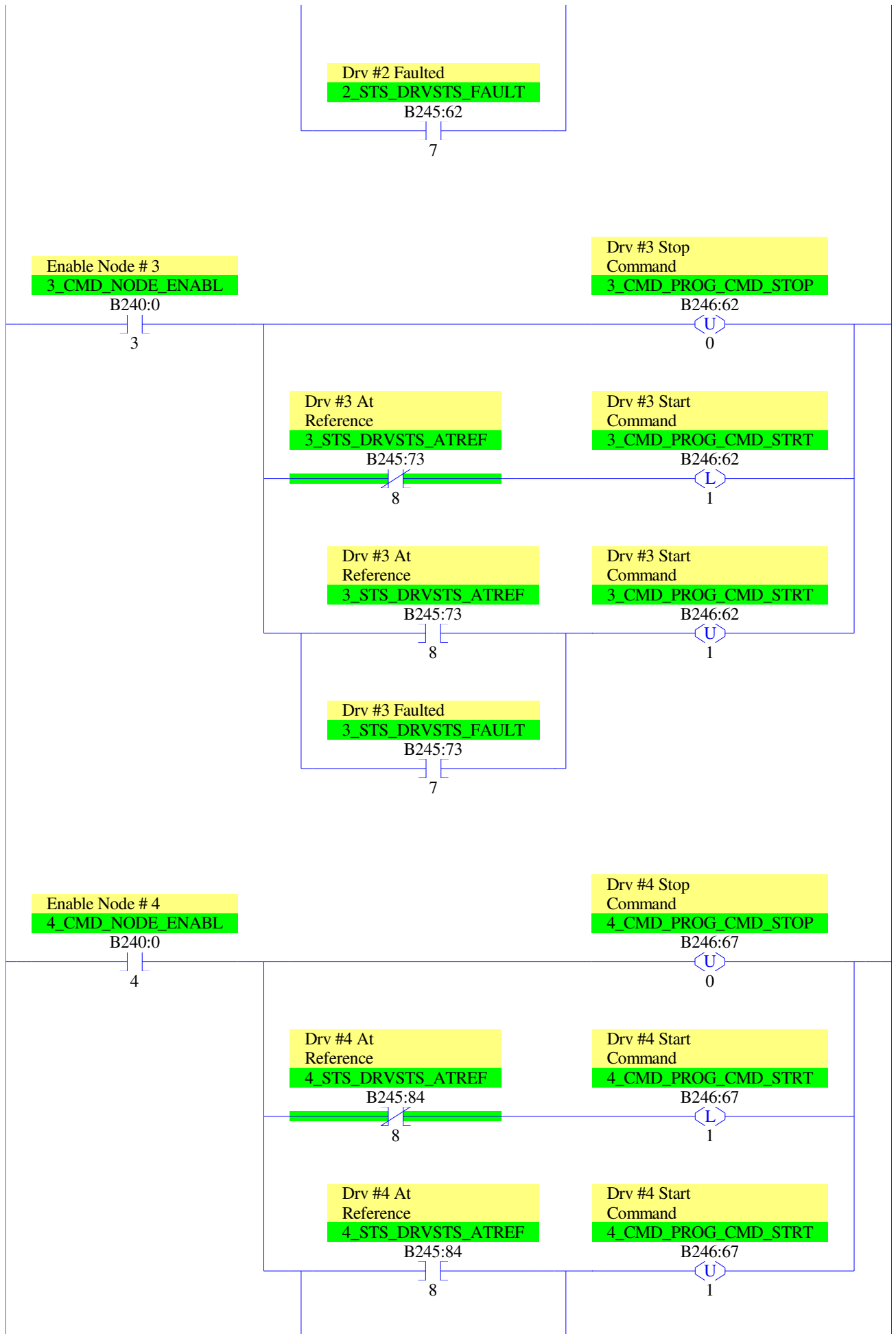
Data File List

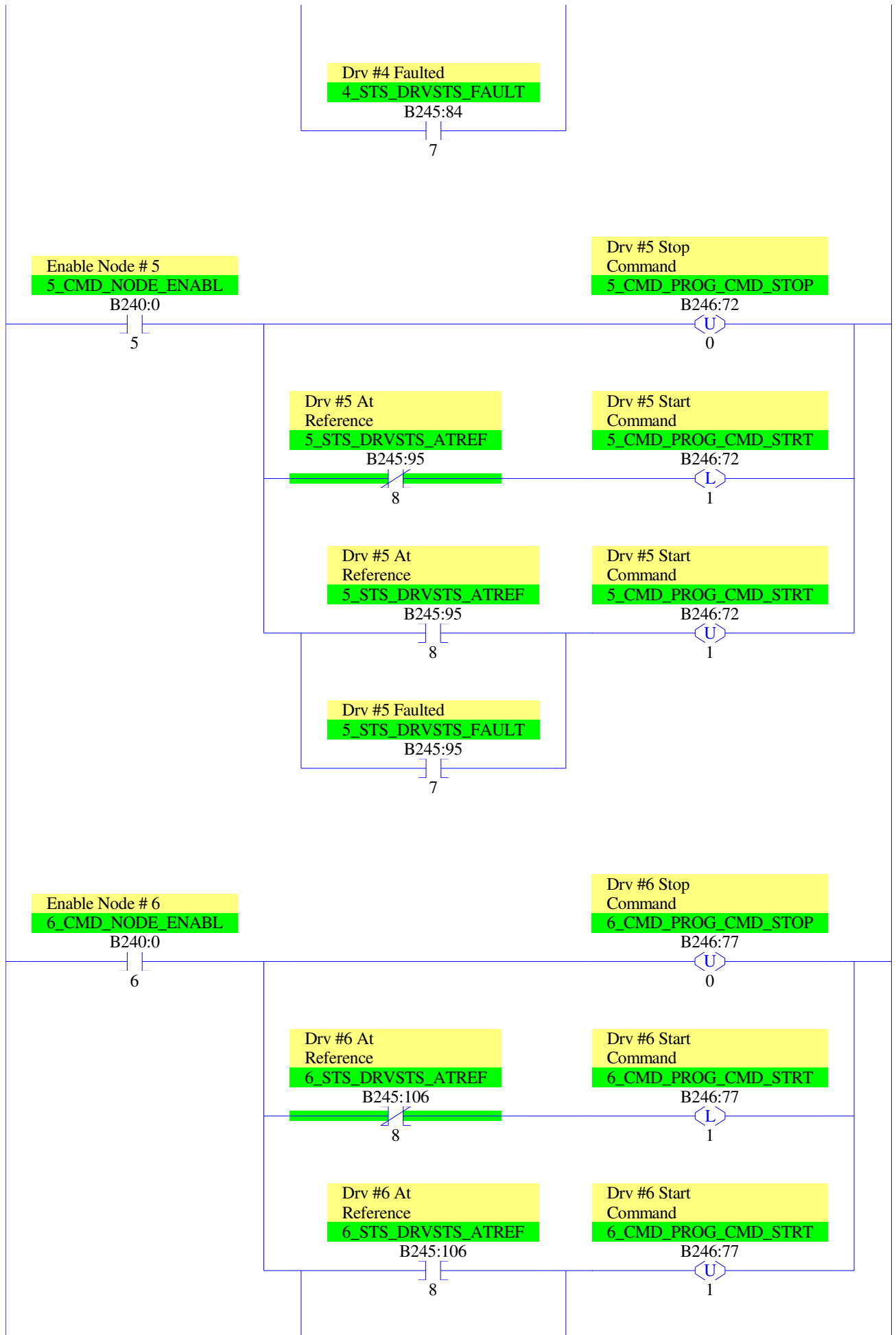
Name	Number	Type	Scope	Debug	Words	Elements	Last
OUTPUT	0	O	Global	No	18	6	O:5
INPUT	1	I	Global	No	24	8	I:7
STATUS	2	S	Global	No	0	66	S:65
BINARY	3	B	Global	No	1	1	B3:0
TIMER	4	T	Global	No	3	1	T4:0
COUNTER	5	C	Global	No	3	1	C5:0
CONTROL	6	R	Global	No	3	1	R6:0
INTEGER	7	N	Global	No	2	2	N7:1
FLOAT	8	F	Global	No	2	1	F8:0
NODE TIMER	238	T	Global	No	3	1	T238:0
NODE STS	239	B	Global	No	32	32	B239:31
NODE CTRL	240	B	Global	No	5	5	B240:4
NODE MISC	241	N	Global	No	7	7	N241:6
DC TIMERS	242	T	Global	No	12	4	T242:3
DC MSGS	243	MG	Global	No	200	8	MG243:7
DC FLOATS	244	F	Global	No	12	6	F244:5
DC STATUS	245	B	Global	No	226	226	B245:225
DC CMMNDS	246	B	Global	No	132	132	B246:131
DC MISC	247	N	Global	No	55	55	N247:54
	255	N	Global	No	256	256	N255:255

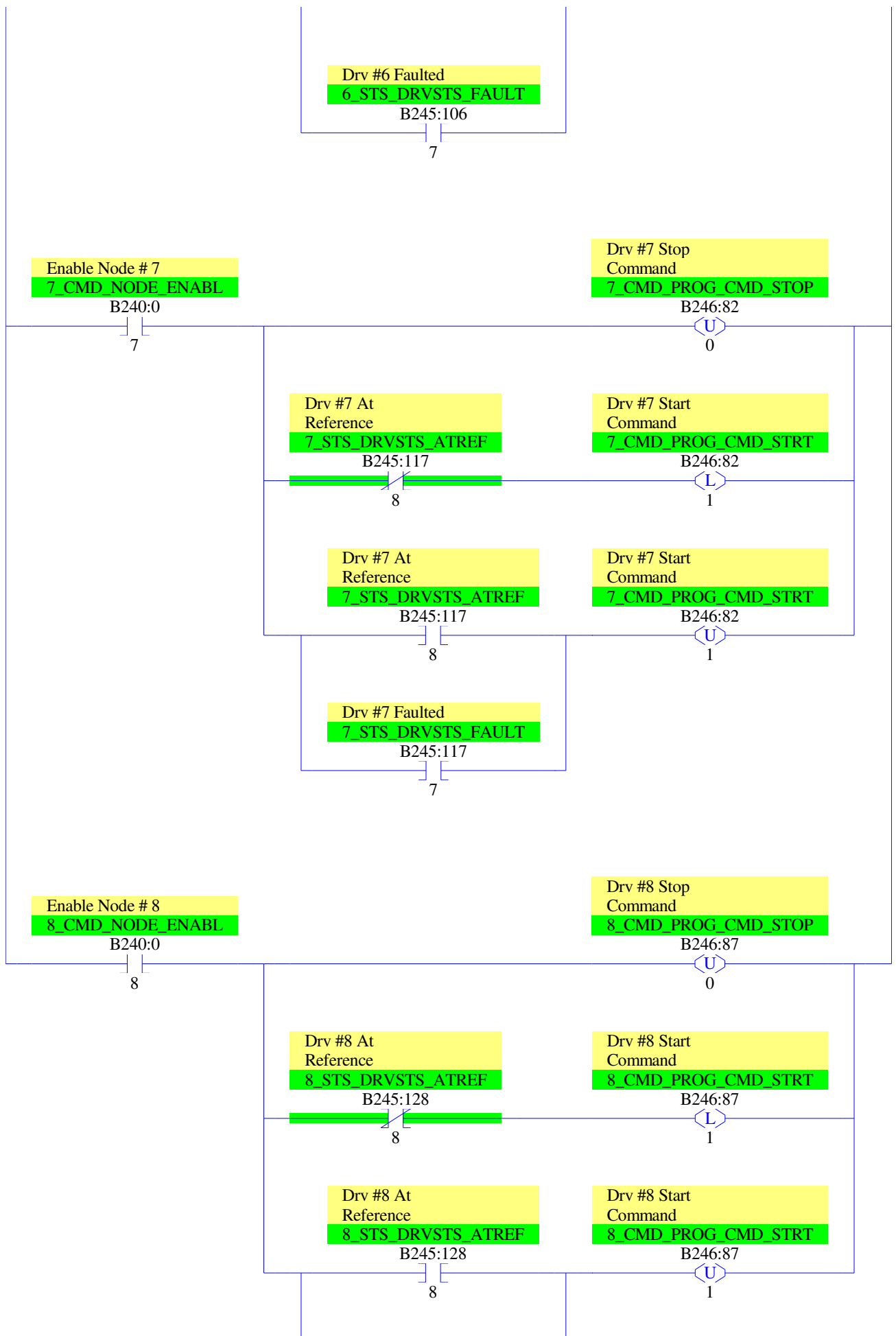




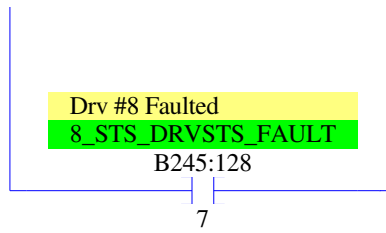


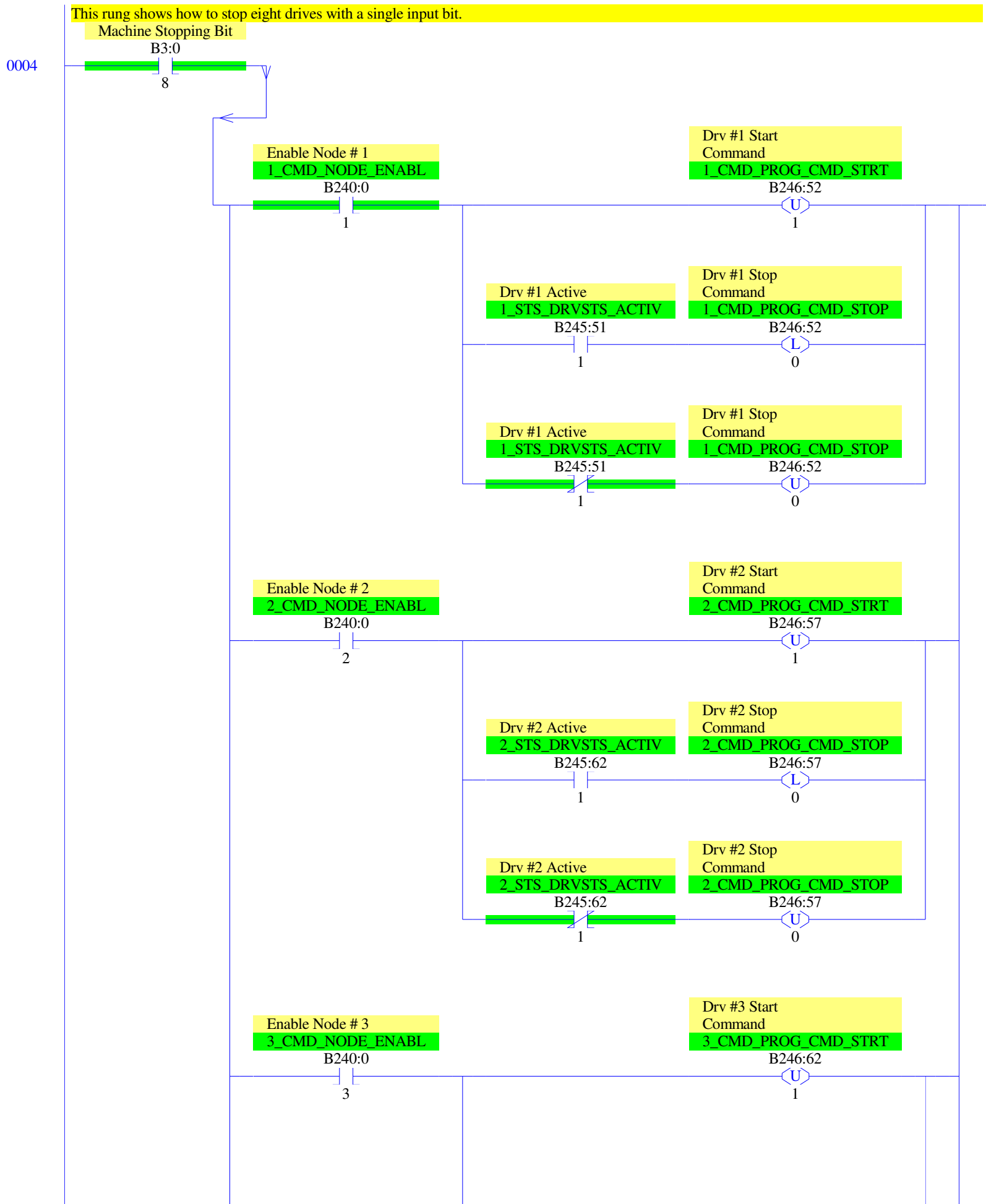




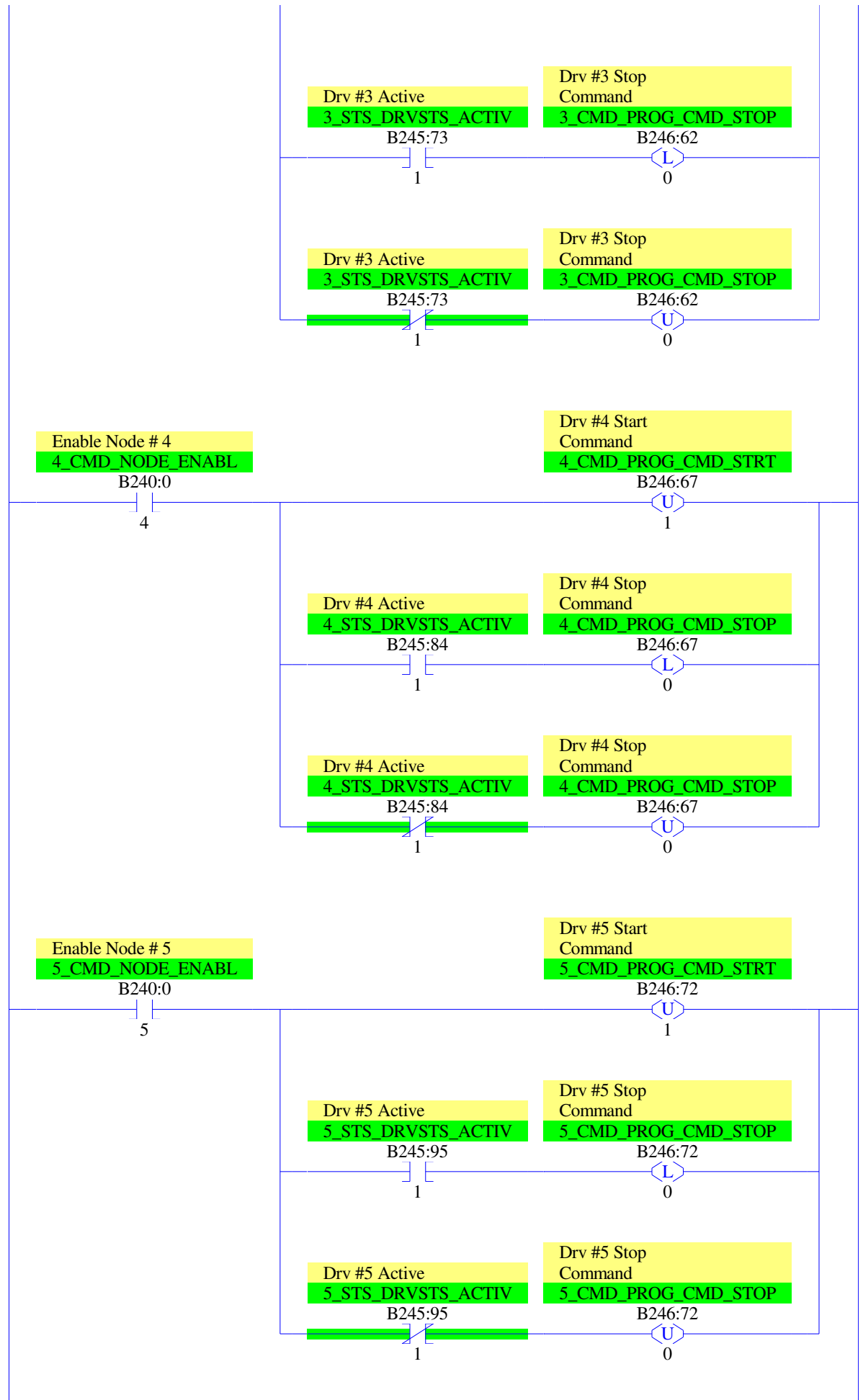


LAD 100 - USER PRGRM --- Total Rungs in File = 6

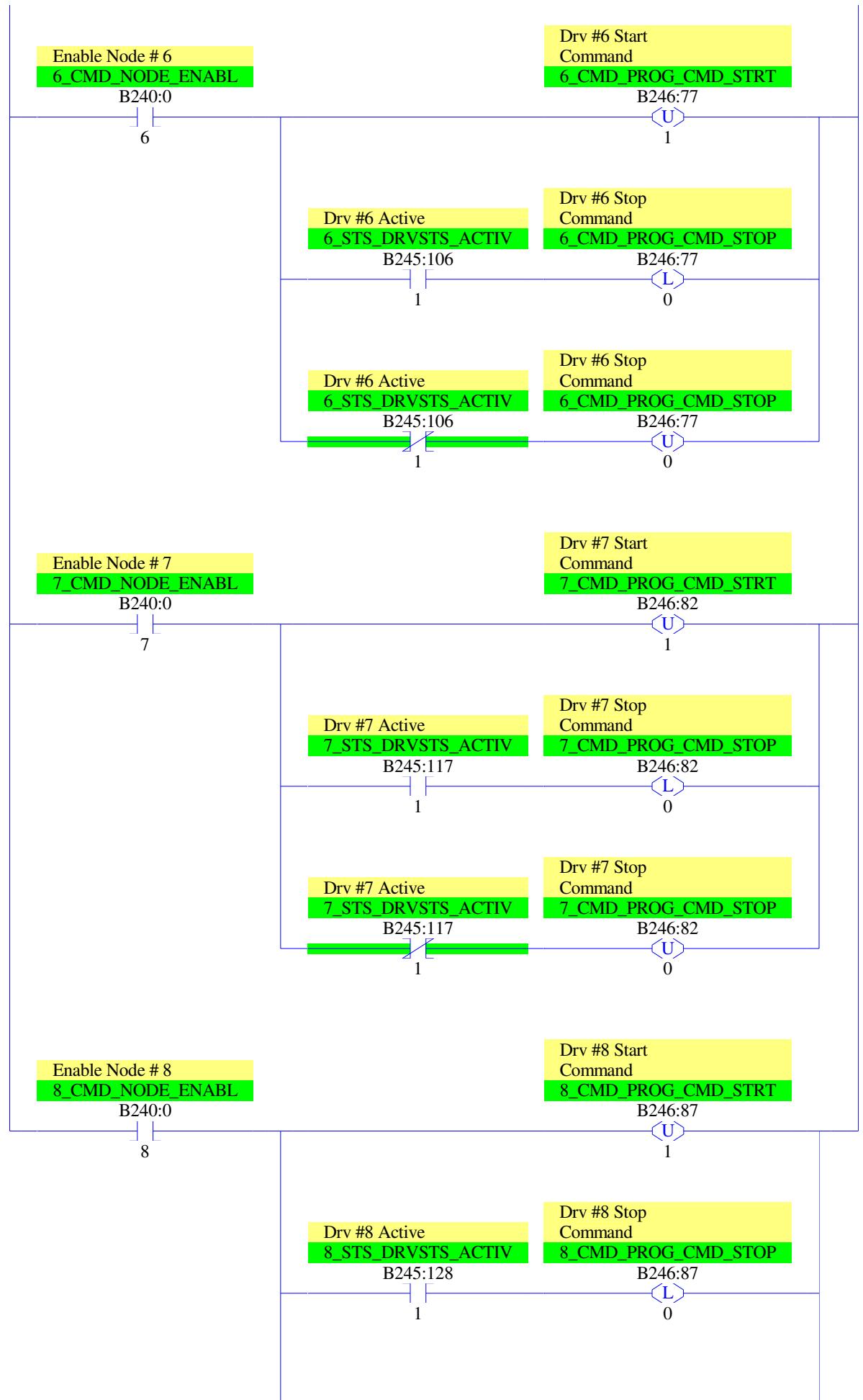




LAD 100 - USER PRGRM --- Total Rungs in File = 6

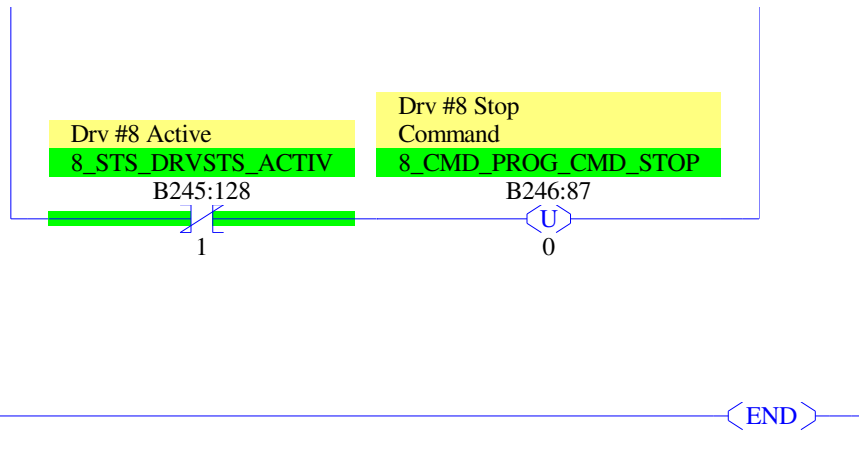


LAD 100 - USER PRGRM --- Total Rungs in File = 6



LAD 100 - USER PRGRM --- Total Rungs in File = 6

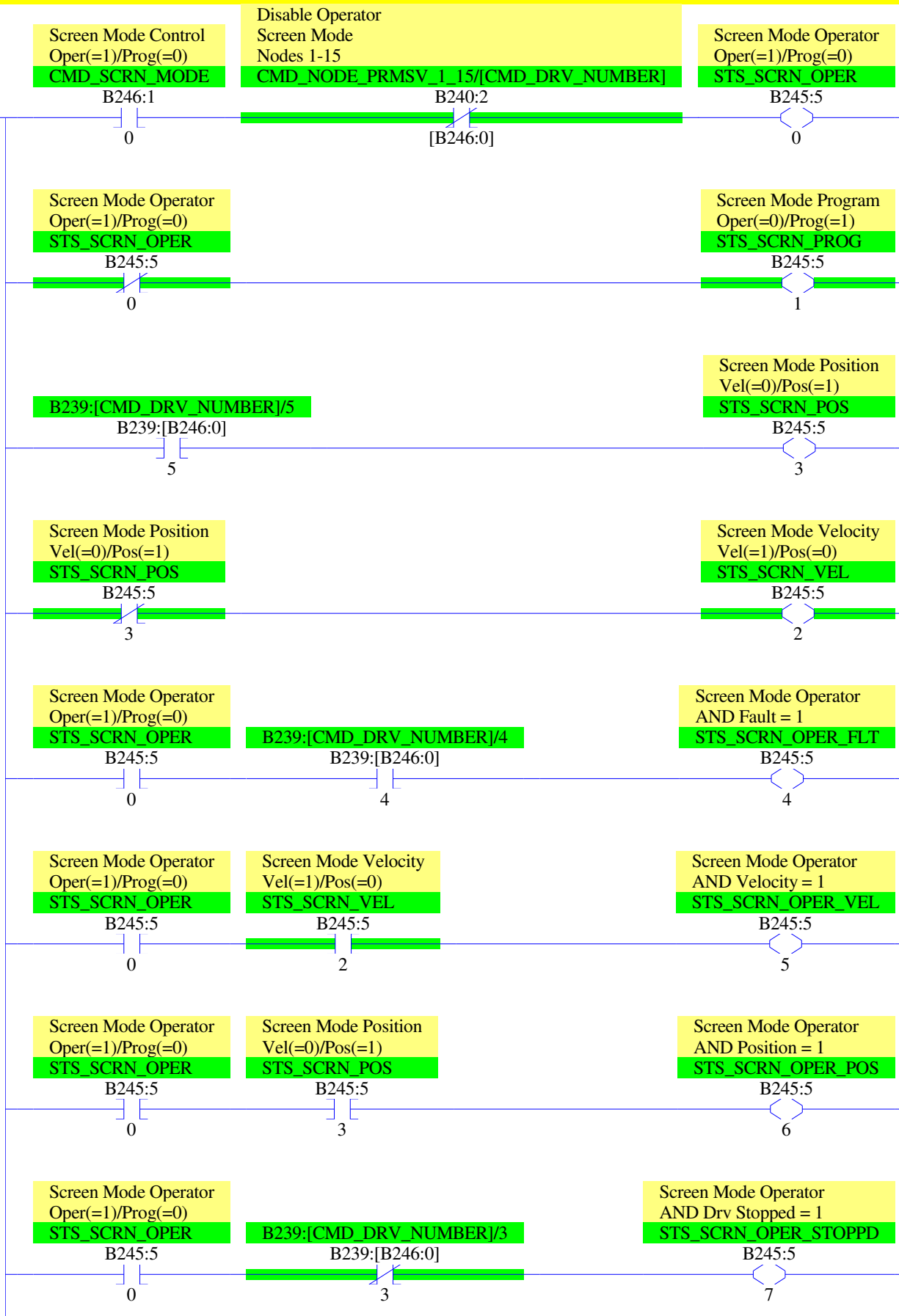
0005



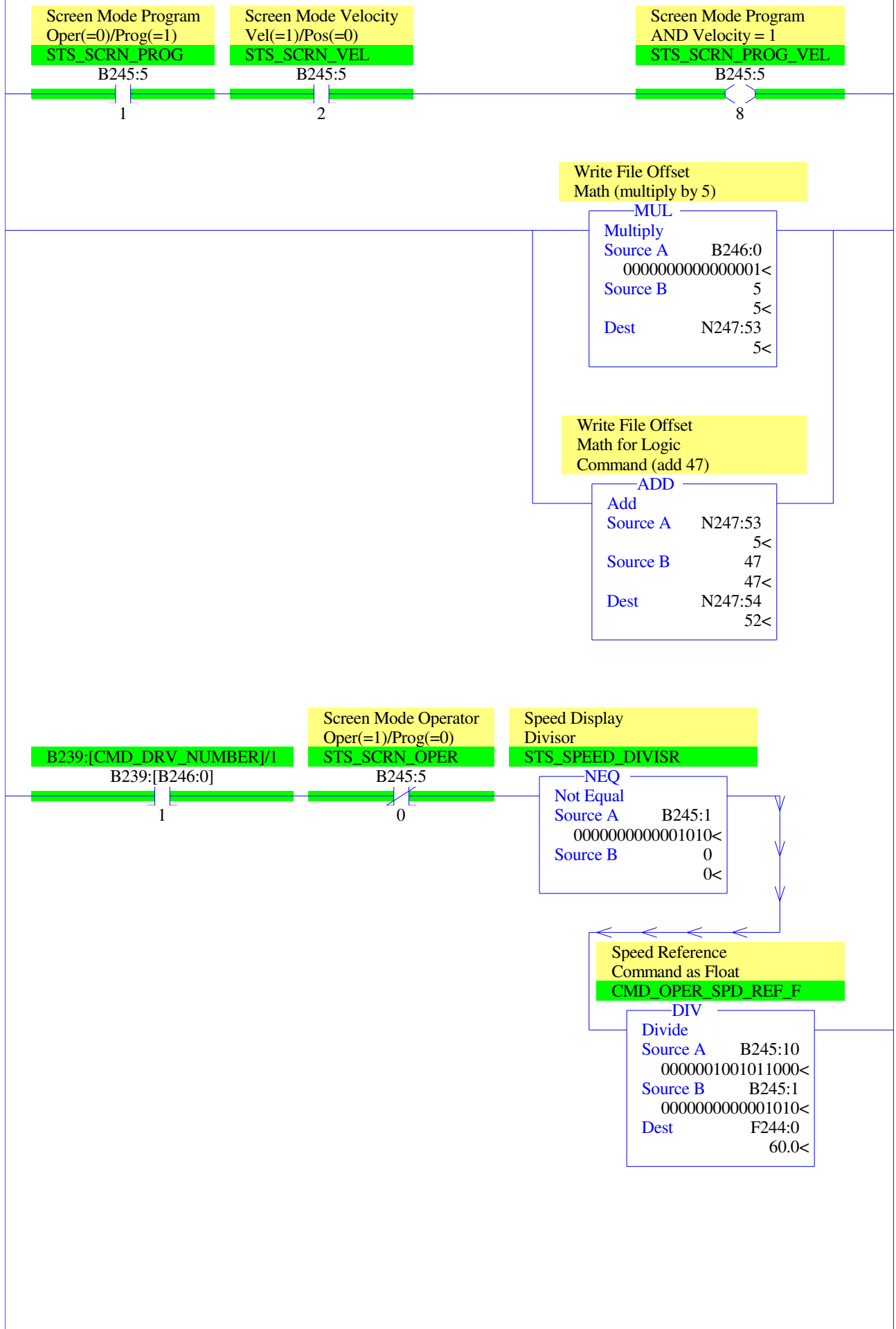
PanelView Component (PVC) Display Control for Drives Subroutine

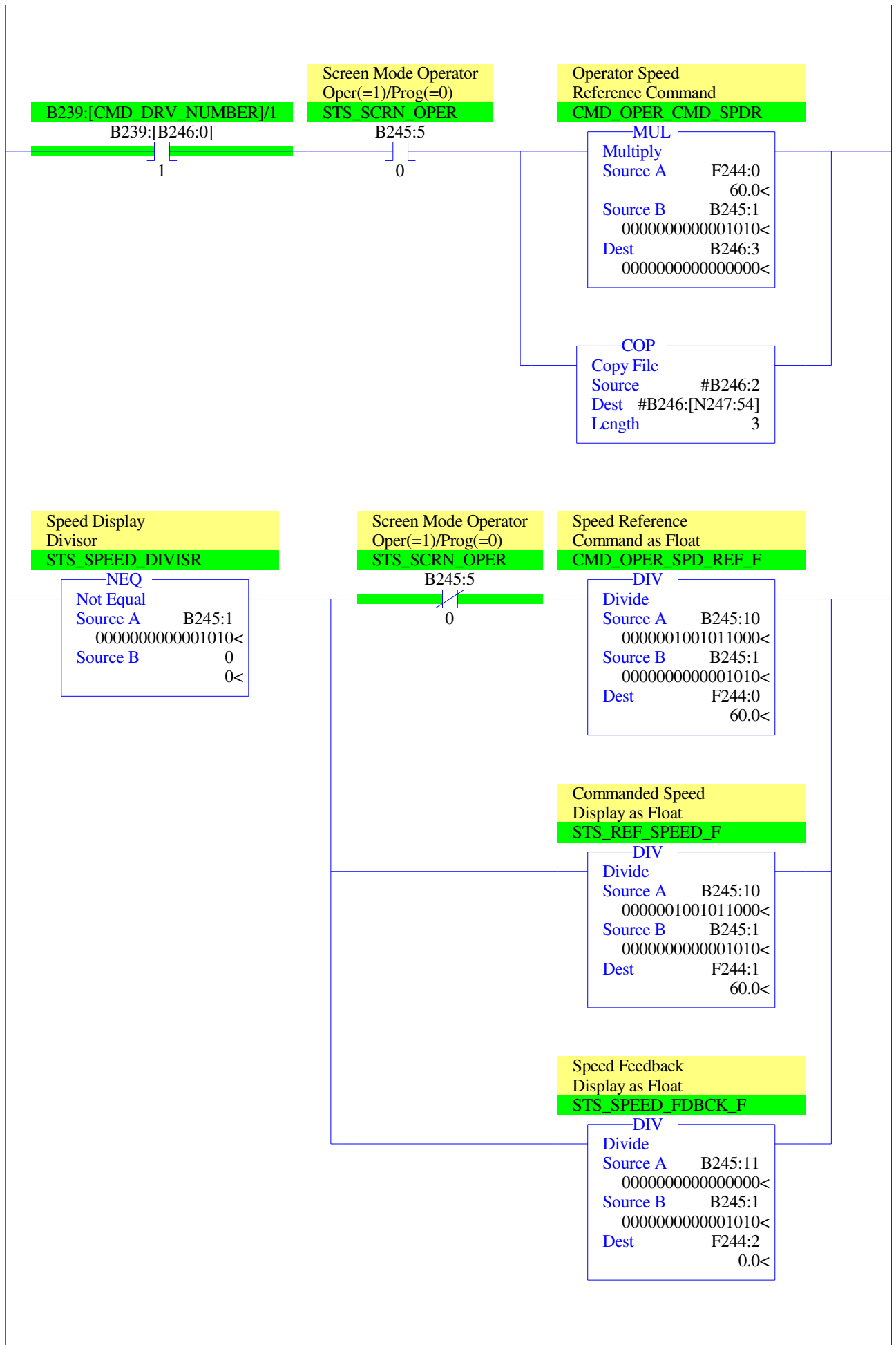
All of the PVC drive status data is read from B245:1-17. The MicroLogix subroutines move the data for the drive being displayed (based on the screen number) into these registers. Similarly, the PVC drive commands are written to B246:1-4. The MicroLogix subroutines move the data from here to the appropriate drive registers (based on the screen number). Once the divisors have been assigned, the floating point screen values are kept updated.

0000



LAD 239 - PVC CTRL --- Total Rungs in File = 4





Amperage Display
Divisor

STS_AMPS_DIVISR

NEQ

Not Equal

Source A B245:2
0000000001100100<
Source B 0
0<

Output Current
Display as Float

STS_OUTPT_CURRNT_F

DIV

Divide

Source A B245:12
0000000000000000<
Source B B245:2
0000000001100100<
Dest F244:3
0.0<

Voltage Display
Divisor

STS_VOLTS_DIVISR

NEQ

Not Equal

Source A B245:3
0000000000001010<
Source B 0
0<

Output Voltage
Display as Float

STS_OUTPT_VOLTAG_F

DIV

Divide

Source A B245:14
0000000000000000<
Source B B245:3
0000000000001010<
Dest F244:4
0.0<

DC Bus Voltage
Display Divisor

STS_DCBUSV_DIVISR

NEQ

Not Equal

Source A B245:4
0000000000000001<
Source B 0
0<

DC Bus Voltage
Display as Float

STS_DCBUS_VOLTAG_F

DIV

Divide

Source A B245:13
0000000101010001<
Source B B245:4
0000000000000001<
Dest F244:5
337.0<

Every time the screen/drive number changes between 1-16 (or the program goes to RUN mode), set the new screen for Program mode, copy the current screen/drive status data to B245:7-17 and the current drive command data to B246:2-4.

Drive Number Data to
Display

STS_DRV_NUMBER

NEQ

Not Equal

Source A B245:0

0000000000000001<

Source B B246:0

0000000000000001<

First Pass

S:1

15

Screen Mode Control

Oper(=1)/Prog(=0)

CMD_SCRN_MODE

B246:1

U

0

Write File Offset

Math (multiply by 5)

MUL

Multiply

Source A B246:0

0000000000000001<

Source B 5

5<

Dest N247:10

5<

Write File Offset

Math for Logic

Command (add 47)

ADD

Add

Source A N247:10

5<

Source B 47

47<

Dest N247:17

52<

Operator Command

Word

#CMD_OPER_CMD

COP

Copy File

Source #B246:[N247:17]

Dest #B246:2

Length 3

Operator Command

Word

CMD_OPER_CMD

AND

Bitwise AND

Source A B246:2

0000h<

Source B -64

-64<

Dest B246:2

0000h<

LAD 239 - PVC CTRL --- Total Rungs in File = 4

Read File Offset
Math (multiply by
11)

MUL
Multiply

Source A	B246:0
	0000000000000001<
Source B	10
	10<
Dest	N247:13
	11<

Read File Offset
Math for Drive Type
(add 40)

ADD

Add

Source A	N247:13
	11<
Source B	40
	40<
Dest	N247:18
	50<

Speed Display
Divisor

#STS_SPEED_DIVISR

FLL

Fill File

Source	0
Dest	#B245:1
Length	6

PF4 Class Drive
Type

#STS_DRV_TYPE

COP

Copy File

Source	#B245:[N247:18]
Dest	#B245:7
Length	11

Commanded Speed
Display as Float

#STS_REF_SPEED_F

FLL

Fill File

Source	0.0
Dest	#F244:1
Length	5

LAD 239 - PVC CTRL --- Total Rungs in File = 4

Drive Number Data to
Display

STS_DRV_NUMBER

MOV

Move

Source B246:0

0000000000000001<

Dest B245:0

0000000000000001<

This rung assigns the divisors, based on drive type, for each of the floating point displays so that the screen display matches the drive display.
(drive, drive type, speed divisor, output current divisor, output voltage divisor, dc bus voltage divisor)

PF4M, 132, 10, 100, 10, 1

PF4, 39, 10, 100, 10, 10

PF40, 40, 10, 100, 10, 1

PF40P, 129, 100, 100, 10, 1

PF400, 41, 100, 10, 1, 1

Speed Display

Divisor

STS_SPEED_DIVISR

EQU

Equal

Source A B245:1

0000000000001010<

Source B 0

0<

Amperage Display

Divisor

STS_AMPS_DIVISR

EQU

Equal

Source A B245:2

0000000001100100<

Source B 0

0<

Voltage Display

Divisor

STS_VOLTS_DIVISR

EQU

Equal

Source A B245:3

0000000000001010<

Source B 0

0<

DC Bus Voltage

Display Divisor

STS_DCBUSV_DIVISR

EQU

Equal

Source A B245:4

0000000000000001<

Source B 0

0<

PF4 Class Drive

Type

STS_DRV_TYPE

EQU

Equal

Source A B245:7

0000000010000100<

Source B 132

132<

Speed Display

Divisor

STS_SPEED_DIVISR

MOV

Move

Source

10

10<

Dest

B245:1

0000000000001010<

LAD 239 - PVC CTRL --- Total Rungs in File = 4

Amperage Display
Divisor

STS_AMPS_DIVISR

MOV

Move
Source 100
100<
Dest B245:2
0000000001100100<

Voltage Display
Divisor

STS_VOLTS_DIVISR

MOV

Move
Source 10
10<
Dest B245:3
000000000001010<

DC Bus Voltage
Display Divisor

STS_DCBUSV_DIVISR

MOV

Move
Source 1
1<
Dest B245:4
0000000000000001<

PF4 Class Drive
Type

STS_DRV_TYPE

EQU

Equal
Source A B245:7
0000000010000100<
Source B 39
39<

Speed Display
Divisor

STS_SPEED_DIVISR

MOV

Move
Source 10
10<
Dest B245:1
000000000001010<

Amperage Display
Divisor

STS_AMPS_DIVISR

MOV

Move
Source 100
100<
Dest B245:2
0000000001100100<

LAD 239 - PVC CTRL --- Total Rungs in File = 4

Voltage Display
Divisor

STS_VOLTS_DIVISR

MOV

Move

Source

10

10<

Dest

B245:3

0000000000001010<

DC Bus Voltage
Display Divisor

STS_DCBUSV_DIVISR

MOV

Move

Source

10

10<

Dest

B245:4

0000000000000001<

PF4 Class Drive
Type

STS_DRV_TYPE

EQU

Equal

Source A

B245:7

0000000010000100<

Source B

40

40<

Speed Display
Divisor

STS_SPEED_DIVISR

MOV

Move

Source

10

10<

Dest

B245:1

0000000000001010<

Amperage Display
Divisor

STS_AMPS_DIVISR

MOV

Move

Source

100

100<

Dest

B245:2

0000000001100100<

Voltage Display
Divisor

STS_VOLTS_DIVISR

MOV

Move

Source

10

10<

Dest

B245:3

0000000000001010<

LAD 239 - PVC CTRL --- Total Rungs in File = 4

DC Bus Voltage
Display Divisor
STS_DCBUSV_DIVISR

MOV

Move
Source 1
1<
Dest B245:4
000000000000001<

PF4 Class Drive
Type
STS_DRV_TYPE

EQU

Equal
Source A B245:7
0000000010000100<
Source B 129
129<

Speed Display
Divisor
STS_SPEED_DIVISR

MOV

Move
Source 100
100<
Dest B245:1
0000000000001010<

Amperage Display
Divisor
STS_AMPS_DIVISR

MOV

Move
Source 100
100<
Dest B245:2
0000000001100100<

Voltage Display
Divisor
STS_VOLTS_DIVISR

MOV

Move
Source 10
10<
Dest B245:3
0000000000001010<

DC Bus Voltage
Display Divisor
STS_DCBUSV_DIVISR

MOV

Move
Source 1
1<
Dest B245:4
000000000000001<

LAD 239 - PVC CTRL --- Total Rungs in File = 4

PF4 Class Drive
Type
STS_DRV_TYPE

EQU
Equal
Source A B245:7
0000000010000100<
Source B 41
41<

Speed Display
Divisor
STS_SPEED_DIVISR

MOV
Move
Source 100
100<
Dest B245:1
0000000000001010<

Amperage Display
Divisor
STS_AMPS_DIVISR

MOV
Move
Source 10
10<
Dest B245:2
0000000001100100<

Voltage Display
Divisor
STS_VOLTS_DIVISR

MOV
Move
Source 1
1<
Dest B245:3
0000000000001010<

DC Bus Voltage
Display Divisor
STS_DCBUSV_DIVISR

MOV
Move
Source 1
1<
Dest B245:4
0000000000000001<

END

Modbus Network Scan Control

Enter in the minimum Modbus node number into N241:0 (normally 1).

Enter in 1 + (maximum Modbus node number) into N241:2 (less than or equal to 32).

The Comms Scan Cycle Timer records how long, in milliseconds, it takes to read all of the enabled nodes. This time includes any writes that may have occurred within the scan due to changes in the write data.

When the node counter reaches 1 + maximum (32 for RS485 Modbus network), the node counter is reset to minimum (normally 1) and the last scan cycle time is saved and compared against the maximum scan cycle time. If the last scan cycle time is longer than the current maximum scan cycle time, then it becomes the new maximum scan cycle time.

Use the Comms Scan Cycle Timer to determine the maximum response time to changes.

The other routines, such as Drive Control, are responsible for allocating a subset of this range of node numbers. The Drive Control routines may allocate node numbers from 1-8. The Pump Control routines may allocate node numbers 9-16. The Temperature Control routine may allocate node numbers 17-24.

The other routines are also responsible for incrementing the node counter within their assigned range.

0000

Minimum Node#

LEQ

Less Than or Eql (A<=B)

Source A N241:1

1<

Source B

0

0<

RET

Return

Minimum Node#

GEQ

Grtr Than or Eql (A>=B)

Source A N241:1

1<

Source B

N241:2

9<

Maximum Node# +1

GRT

Greater Than (A>B)

Source A N241:2

9<

Source B

32

32<

Comms Scan Cycle
Timer

TON

Timer On Delay

Timer T238:0

Time Base 0.001

Preset 32767<

Accum 37<

EN

DN

Node Counter

GEQ

Grtr Than or Eql (A>=B)

Source A N241:0

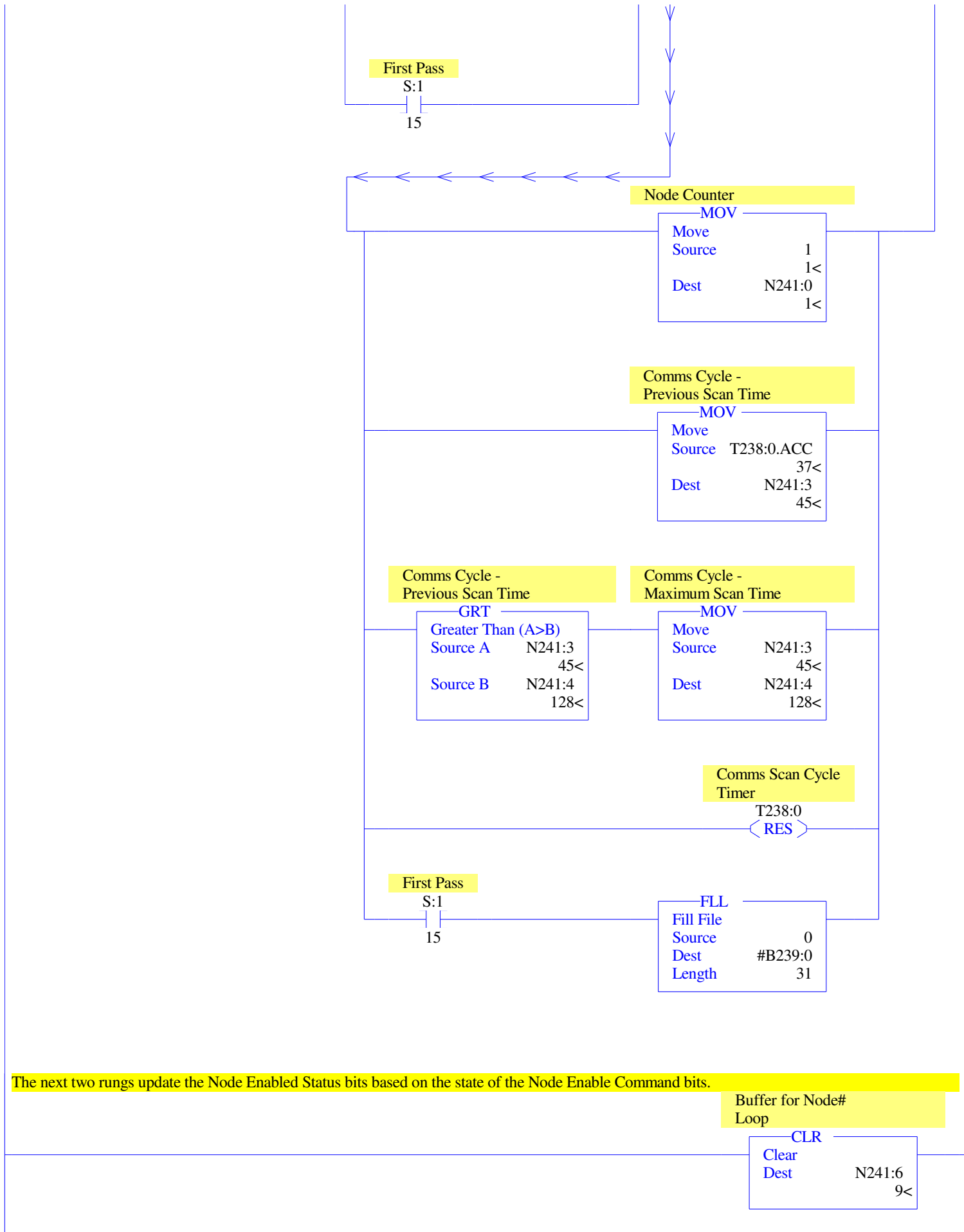
1<

Source B

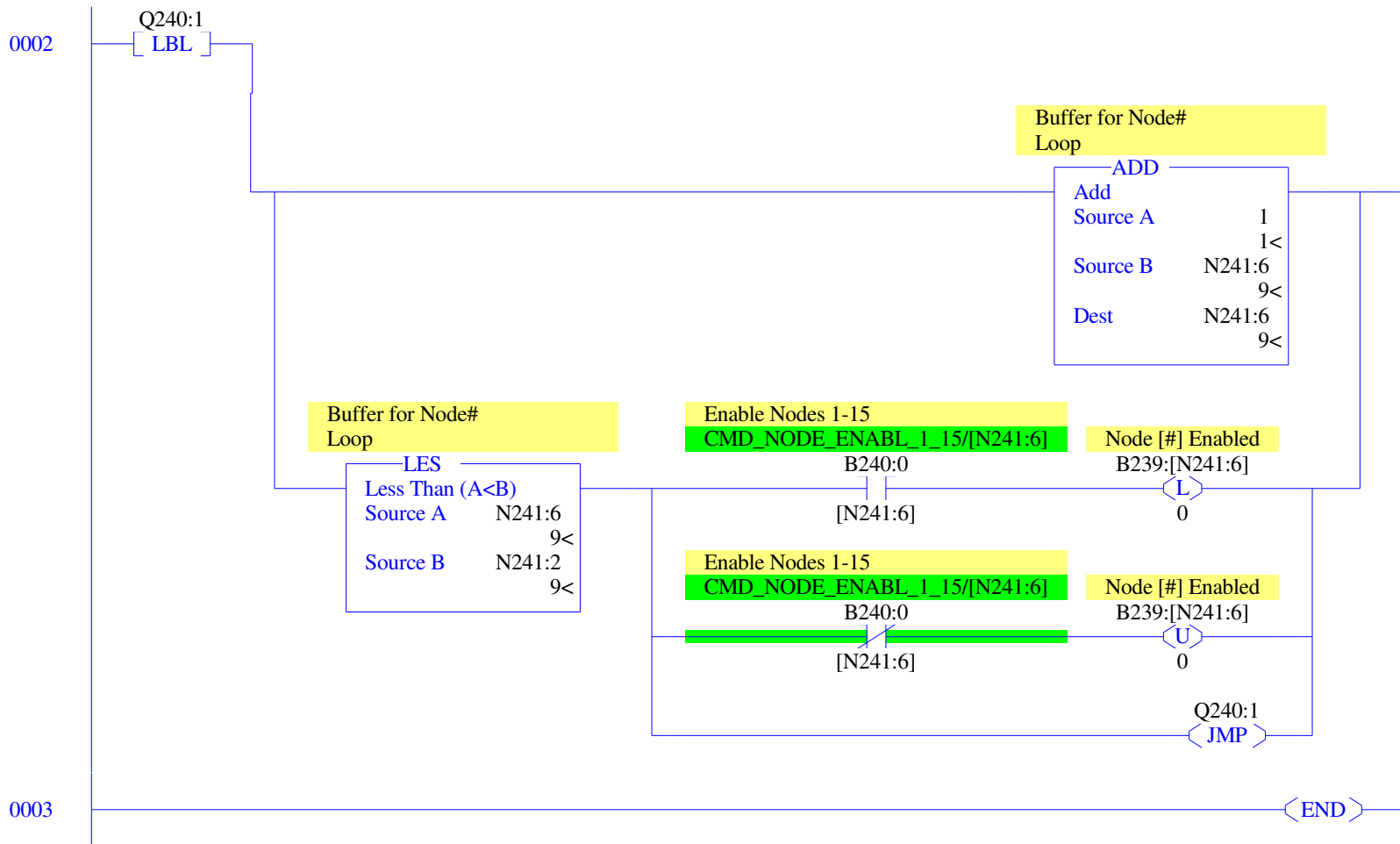
N241:2

9<

LAD 240 - NODE CTRL --- Total Rungs in File = 4



LAD 240 - NODE CTRL --- Total Rungs in File = 4



Main Drive Control Subroutine

The limit test makes sure that the rest of the subroutine only executes when the node counter (N241:0) is between the minimum and maximum drive node numbers. It also verifies that the values configured by the user in N241:1 (minimum Modbus node #) and N241:2 (maximum Modbus node #) are valid.

0000

First Pass

S:1

15

Always Zero

CLR

Clear
DestN247:0
0<Drive Control Read
Message

MOV

Move
Source247
247<Dest MG243:0.NOD
1<Drive Number Data to
Display

#STS_DRV_NUMBER

FLL

Fill File

Source

0

Dest

#B245:0

Length

50

Drv #1 PF4 Class
Drive Type

#1_STS_DRV_TYPE

FLL

Fill File

Source

0

Dest

#B245:50

Length

128

Commanded Speed
Display as Float

#STS_REF_SPEED_F

FLL

Fill File

Source

0.0

Dest

#F244:1

Length

5

Node Counter

LIM

Limit Test
Low Lim

9

9<

Test

N241:0

1<

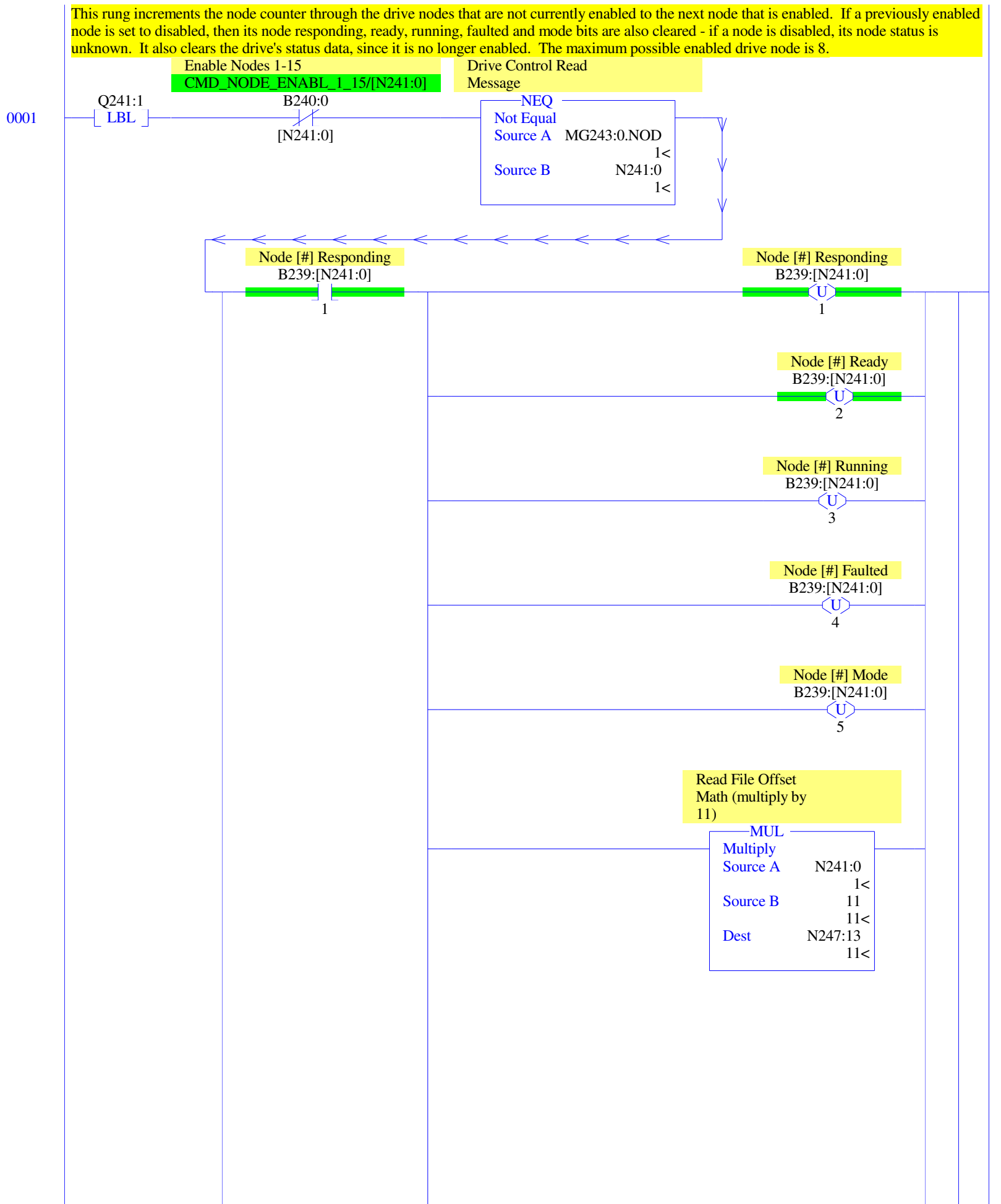
High Lim

0

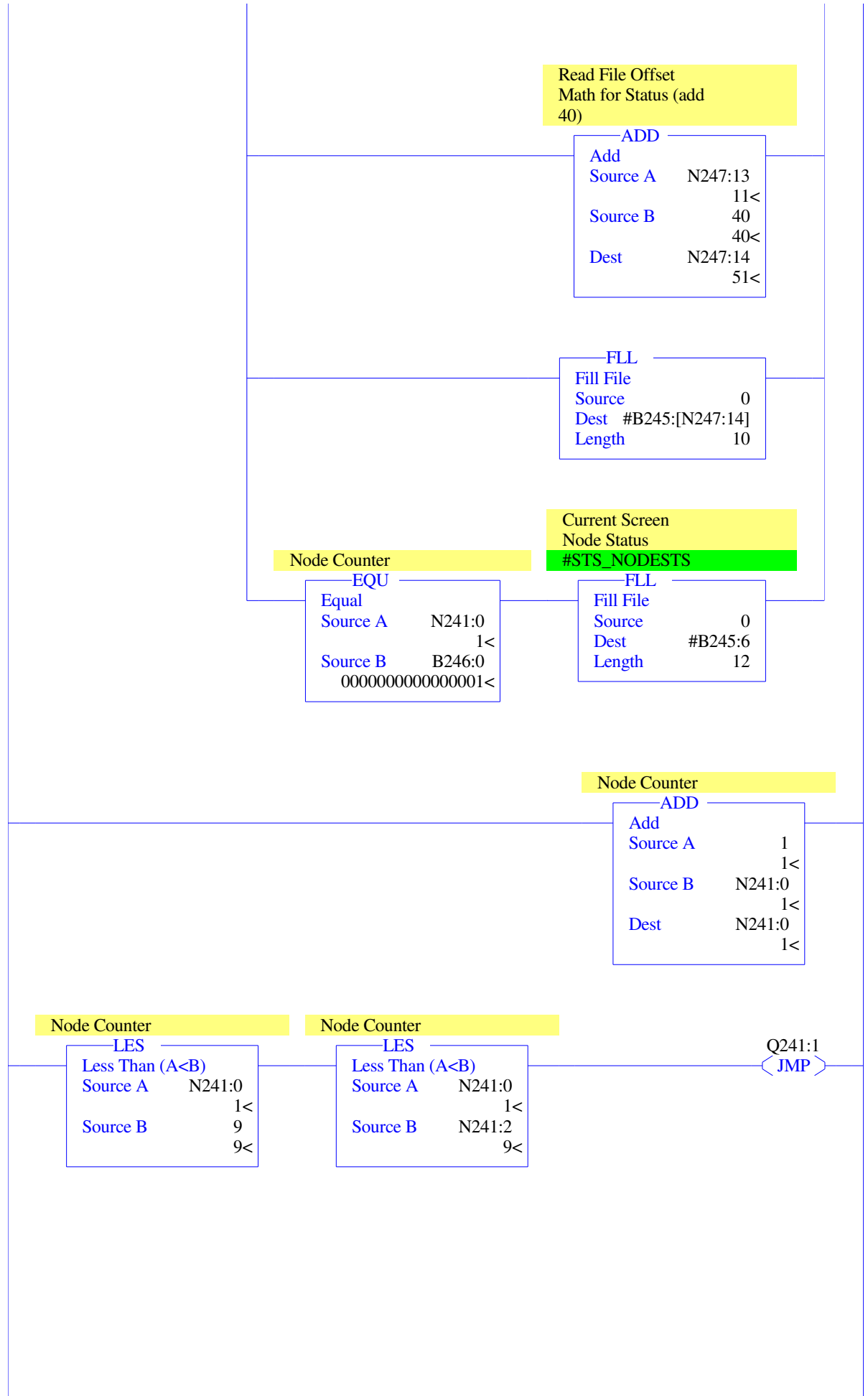
0<

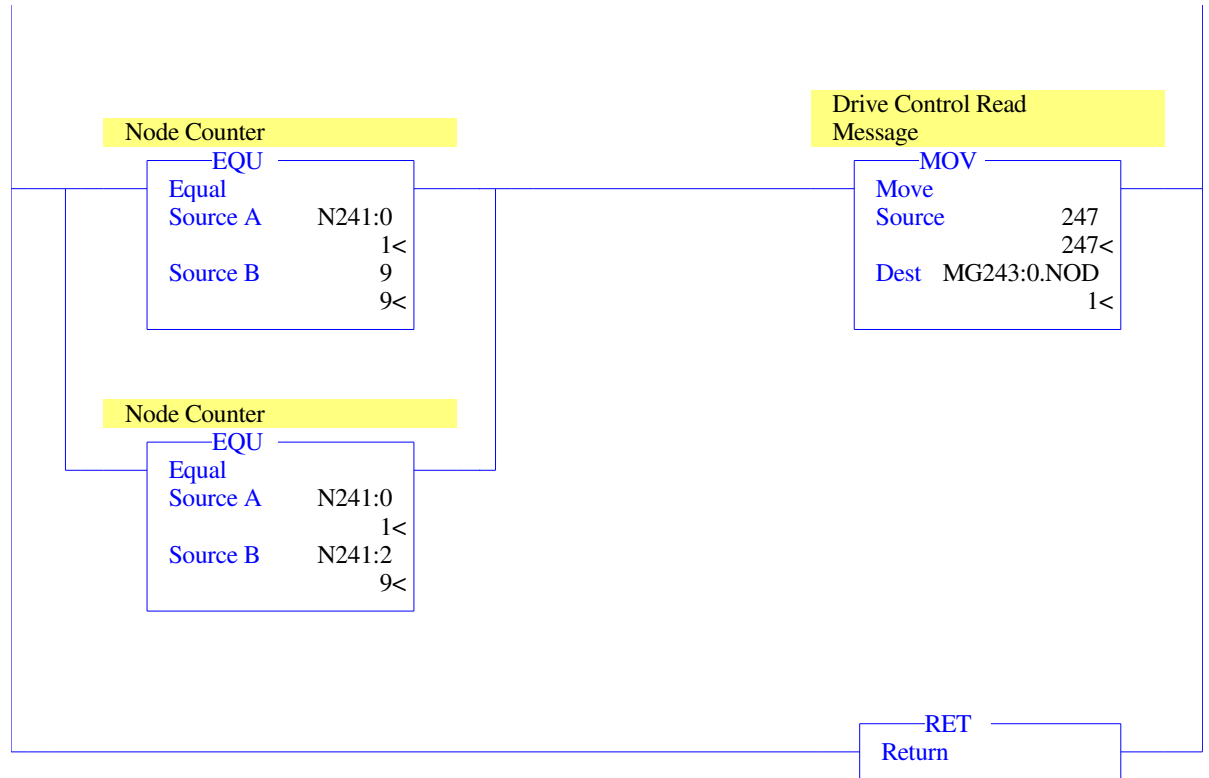
RET

Return

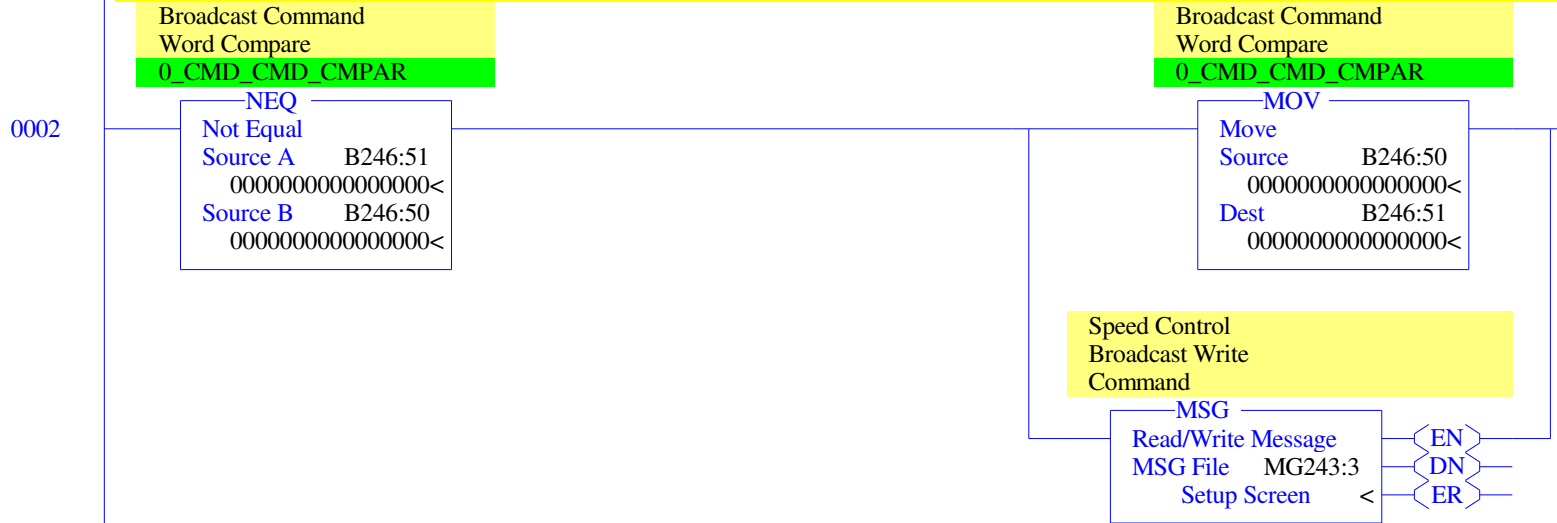


LAD 241 - DRIVE CTRL --- Total Rungs in File = 16

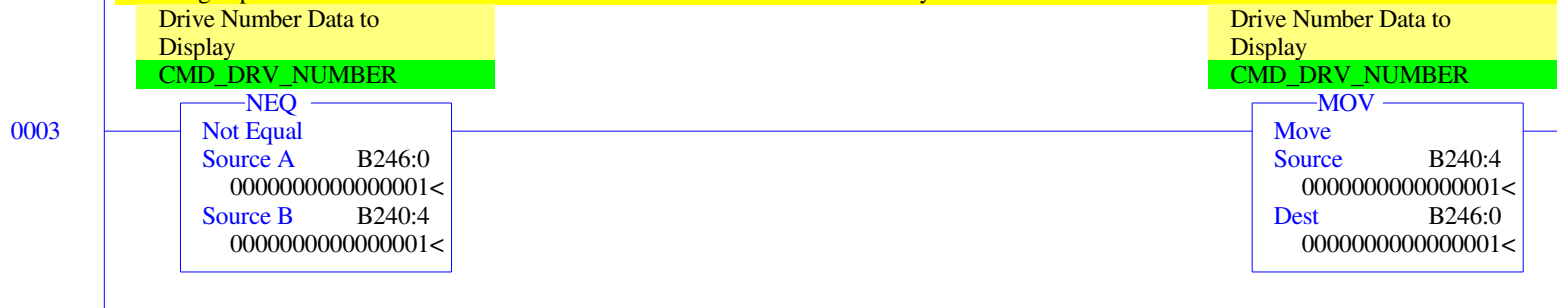




This rung initiates a broadcast write command to the Logic Command Data word to all of the drives on the Modbus network whenever a new value is written into B246:50. It can be used to simultaneously start (by writing a value of 4 into B246:50) and stop (by writing a value of 2 into B246:50) all of the drives.



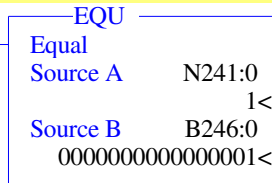
This rung copies the current screen number that is written from the HMI for use by the Drive Control routine.



As long as the node counter equals the currently displayed drive number, the drive is enabled and the screen is in Operator mode, then accept commands from the PVc and overwrite any PLC drive commands. In Program mode, the operator may initiate a drive stop command, which will also switch the screen to Operator mode.

0004

Node Counter

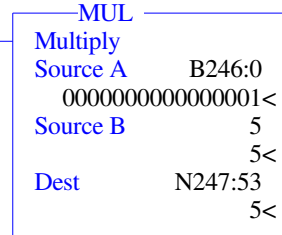


B239:[CMD_DRV_NUMBER]/1

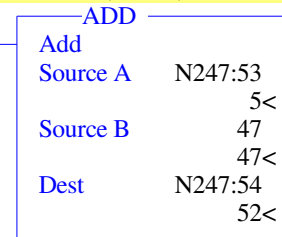
B239:[B246:0]

1

Write File Offset
Math (multiply by 5)



Write File Offset
Math for Logic
Command (add 47)



Screen Mode Operator
Oper(=1)/Prog(=0)

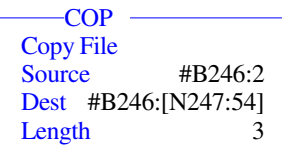
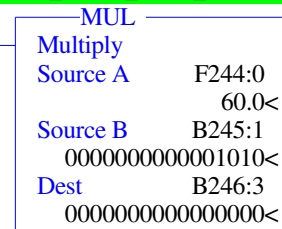
STS_SCRN_OPER

B245:5

0

Operator Speed
Reference Command

CMD_OPER_CMD_SPDR



Screen Mode Operator
Oper(=1)/Prog(=0)

STS_SCRN_OPER

B245:5

0

Operator Stop
Command

CMD_OPER_CMD_STOP

B246:2

0

Screen Mode Control
Oper(=1)/Prog(=0)

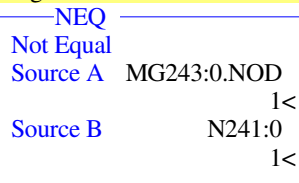
CMD_SCRN_MODE

B246:1

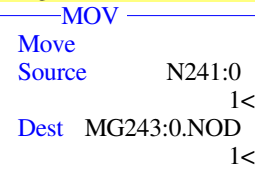
0

For the next enabled node, the read message destination node is set and the write message data file offsets are calculated. For this drive, if either the command word or speed reference have changed since the last time it was written to, and if the node is active (responded to the last read attempt), then a write message will be sent to this drive with the latest logic command word or speed reference value. In any case, at least one read message is then sent to the drive to read logic status, fault code, commanded speed and speed feedback from the drive. This rung is only true for one scan, which is enough to enable the read message(s) and, under the conditions mentioned above, enable one or both write message(s).

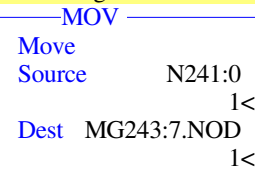
Drive Control Read
Message



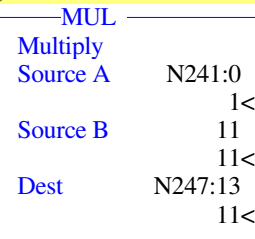
Drive Control Read
Message



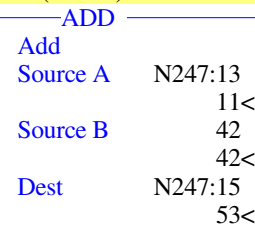
Position Control
Read Message



Read File Offset
Math (multiply by
11)



Read File Offset
Math for Commanded
Speed (add 42)



Read File Offset
Math for Drive Type
(add 39)

—ADD—

Add	
Source A	N247:13
	11<
Source B	39
	39<
Dest	N247:19
	50<

Read File Offset
Math for Position
Step Parameter (add
48)

—ADD—

Add	
Source A	N247:13
	11<
Source B	48
	48<
Dest	N247:35
	59<

Read File Offset
Math for Speed
Source Parameter
(add 49)

—ADD—

Add	
Source A	N247:13
	11<
Source B	49
	49<
Dest	N247:36
	60<

Write File Offset
Math (multiply by 5)

—MUL—

Multiply	
Source A	N241:0
	1<
Source B	5
	5<
Dest	N247:10
	5<

Write File Offset
Math for Logic
Command (add 47)

ADD		
Add		
Source A	N247:10	5<
Source B	47	47<
Dest	N247:12	52<

Write File Offset
Math for Logic
Command Compare (add 50)

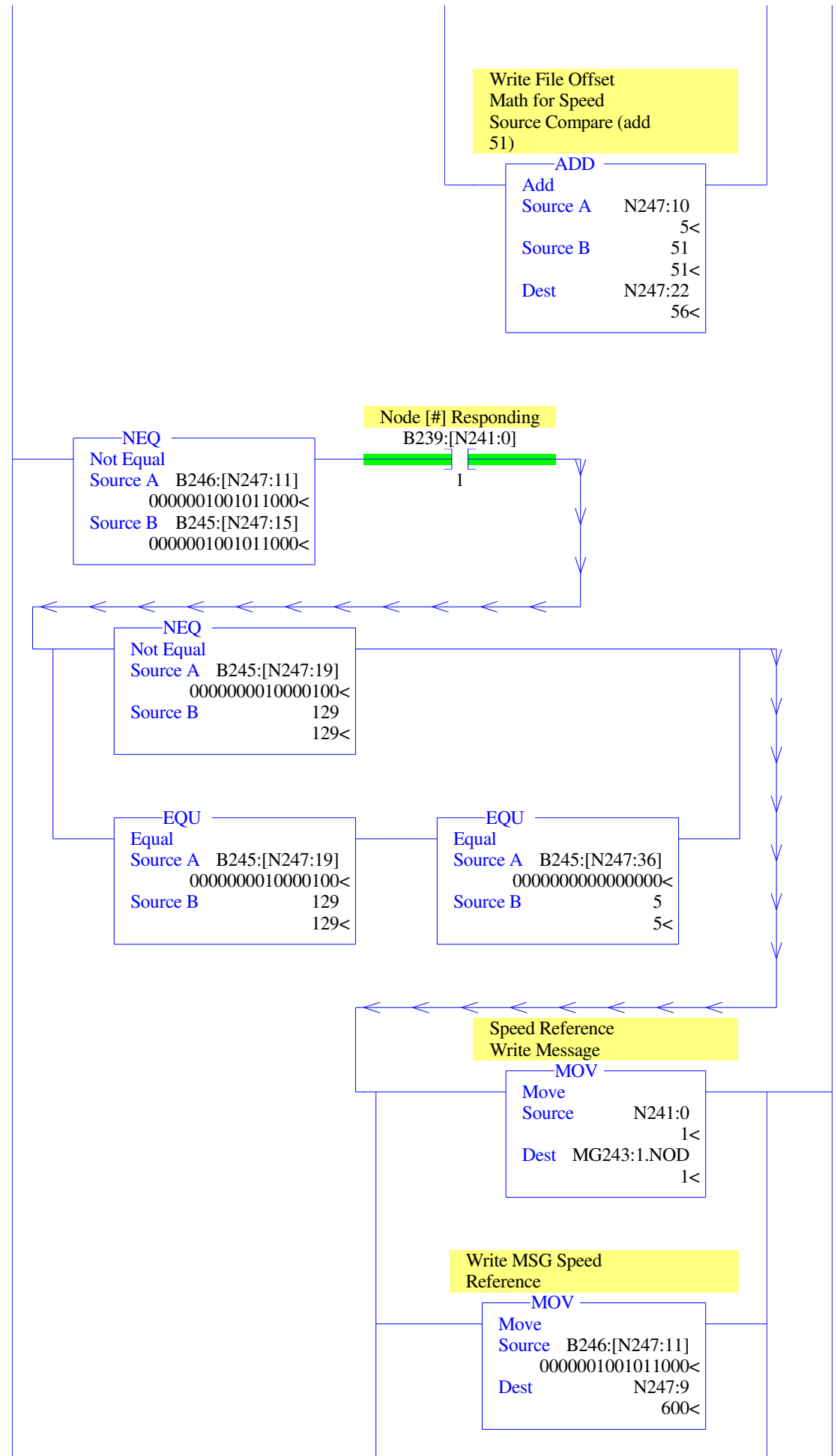
ADD		
Add		
Source A	N247:10	5<
Source B	50	50<
Dest	N247:16	55<

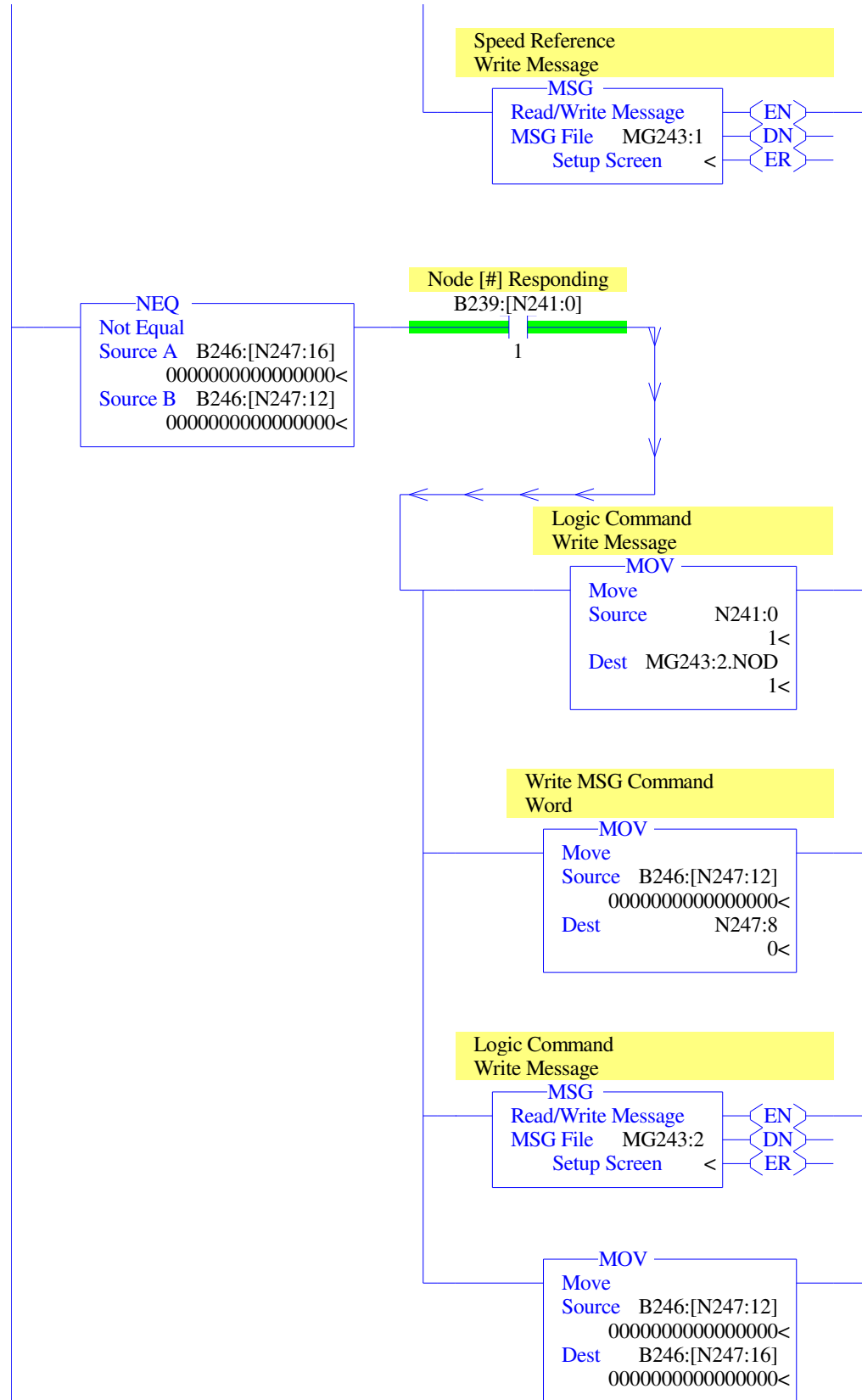
Write File Offset
Math for Speed (add 48)

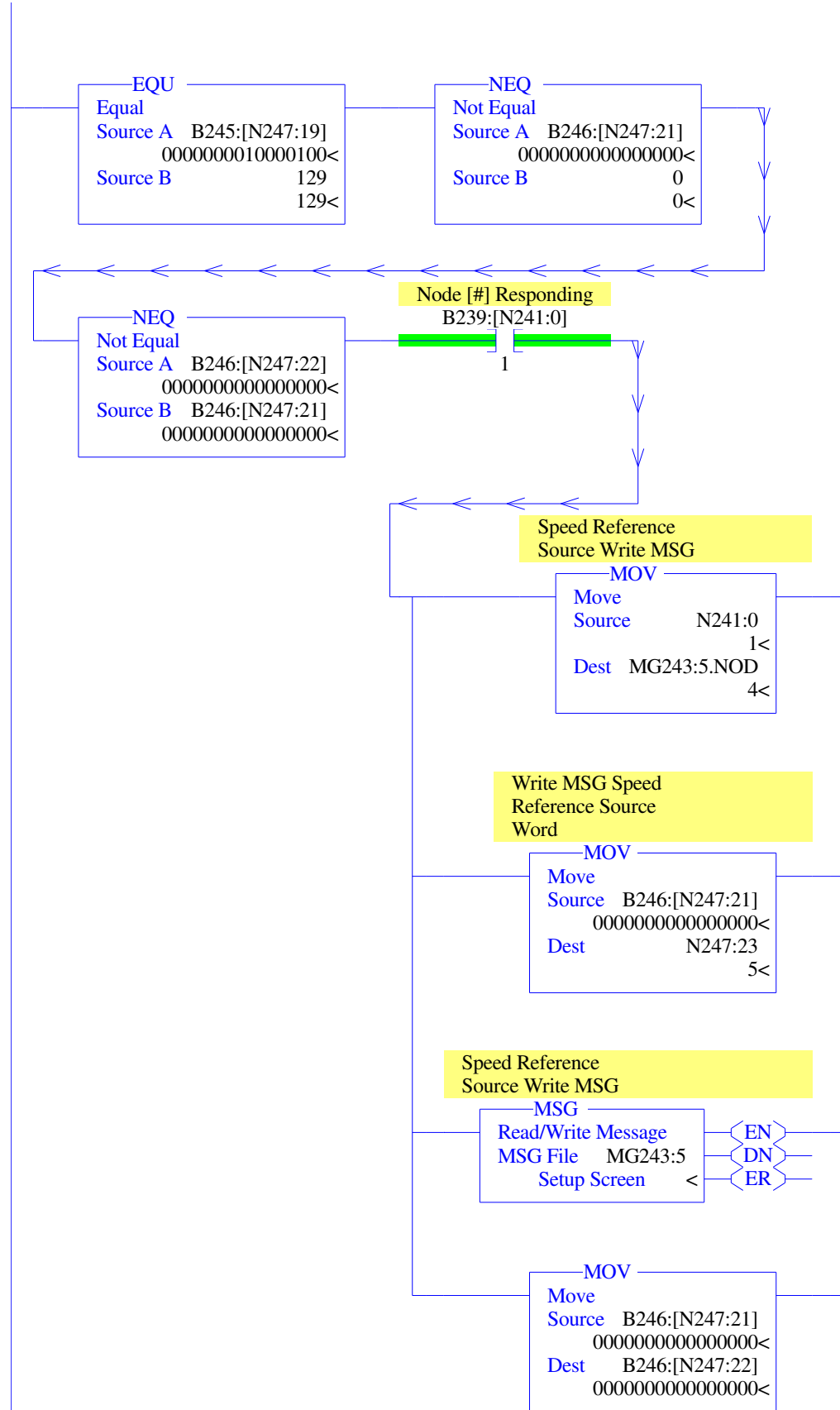
ADD		
Add		
Source A	N247:10	5<
Source B	48	48<
Dest	N247:11	53<

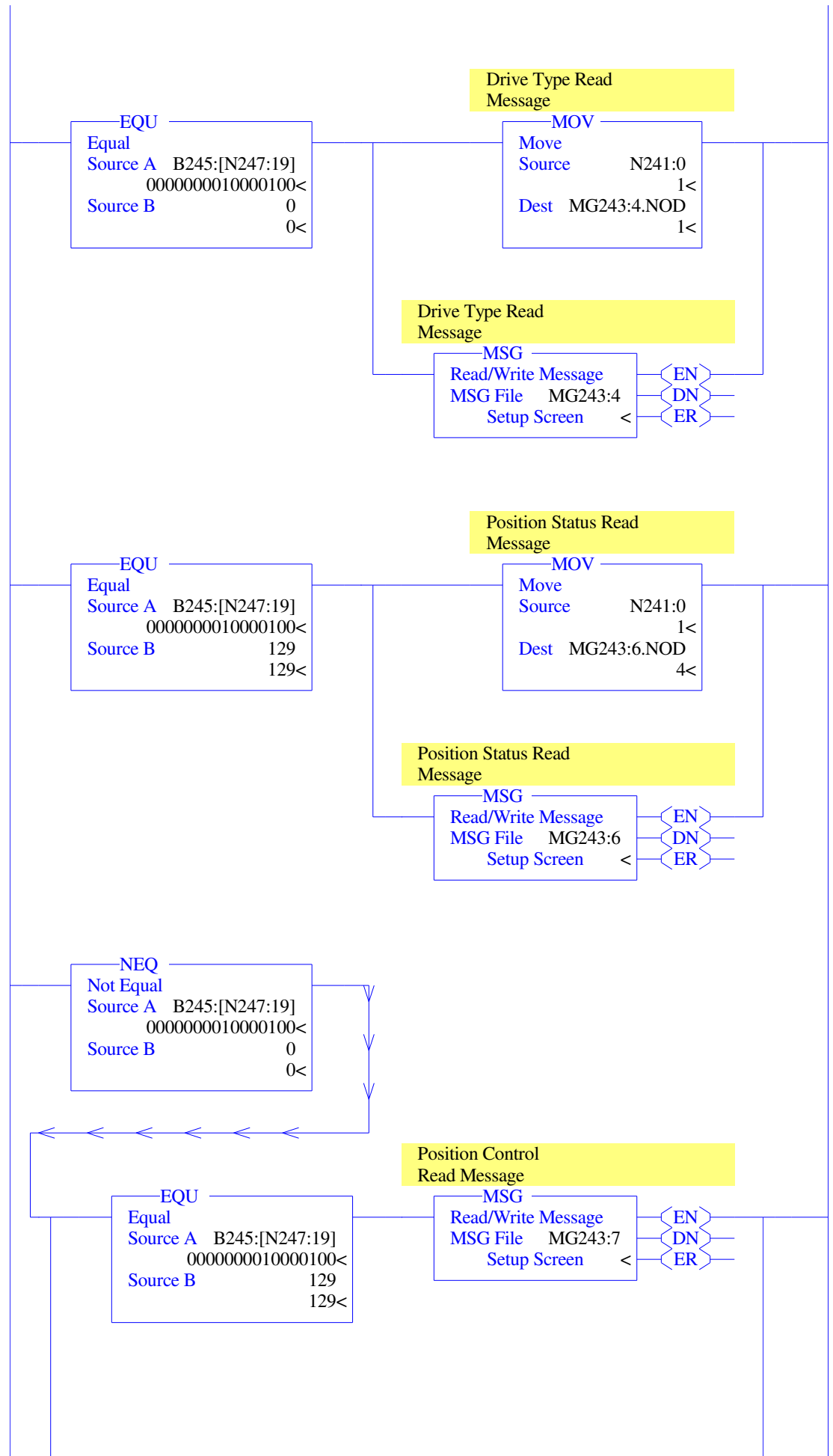
Write File Offset
Math for Speed
Source (add 49)

ADD		
Add		
Source A	N247:10	5<
Source B	49	49<
Dest	N247:21	54<

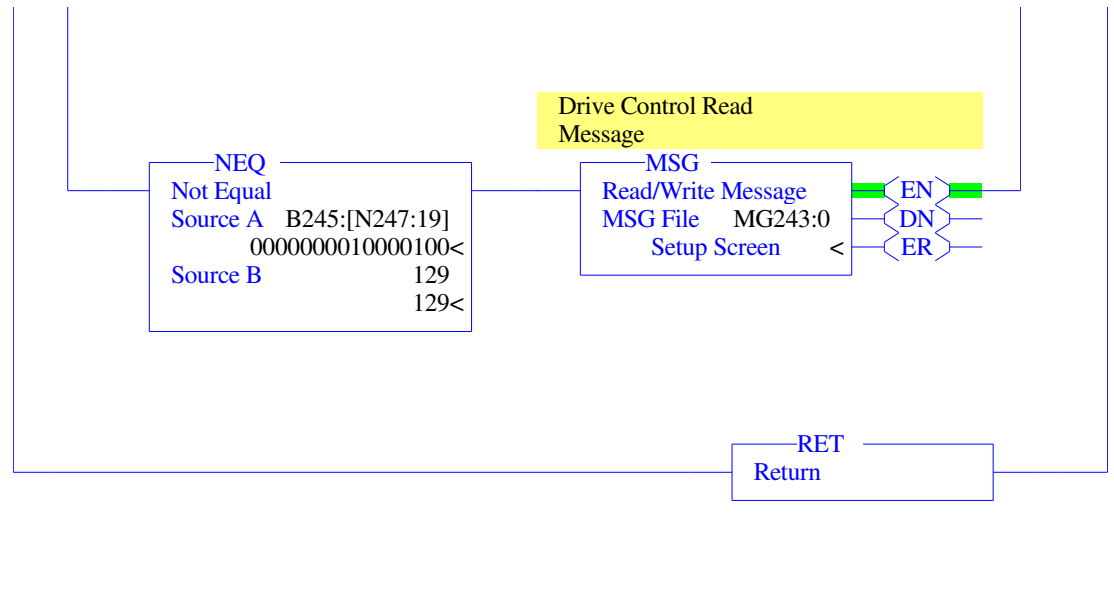








LAD 241 - DRIVE CTRL --- Total Rungs in File = 16



As long as one of the read messages is still executing for the current node, the subroutine ends here. Once the last read message is done executing, then the result can be evaluated in the remaining rungs.

0006

Drive Control Read
Message

MG243:0

EN

Drive Control Read
Message

MG243:0

ST

TON
Timer On Delay
Timer T242:0
Time Base 0.01
Preset 10<
Accum 1<

<EN>

<DN>

T242:0

DN

Drive Control Read
Message

MG243:0

L

TO

RET
Return

Drive Type Read
Message

MG243:4

EN

Drive Type Read
Message

MG243:4

ST

TON
Timer On Delay
Timer T242:1
Time Base 0.01
Preset 10<
Accum 0<

<EN>

<DN>

T242:1

DN

Drive Type Read
Message

MG243:4

L

TO

RET
Return

Position Status Read
Message

MG243:6

EN

Position Status Read
Message

MG243:6

ST

TON
Timer On Delay
Timer T242:2
Time Base 0.01
Preset 10<
Accum 0<

<EN>

<DN>

T242:2

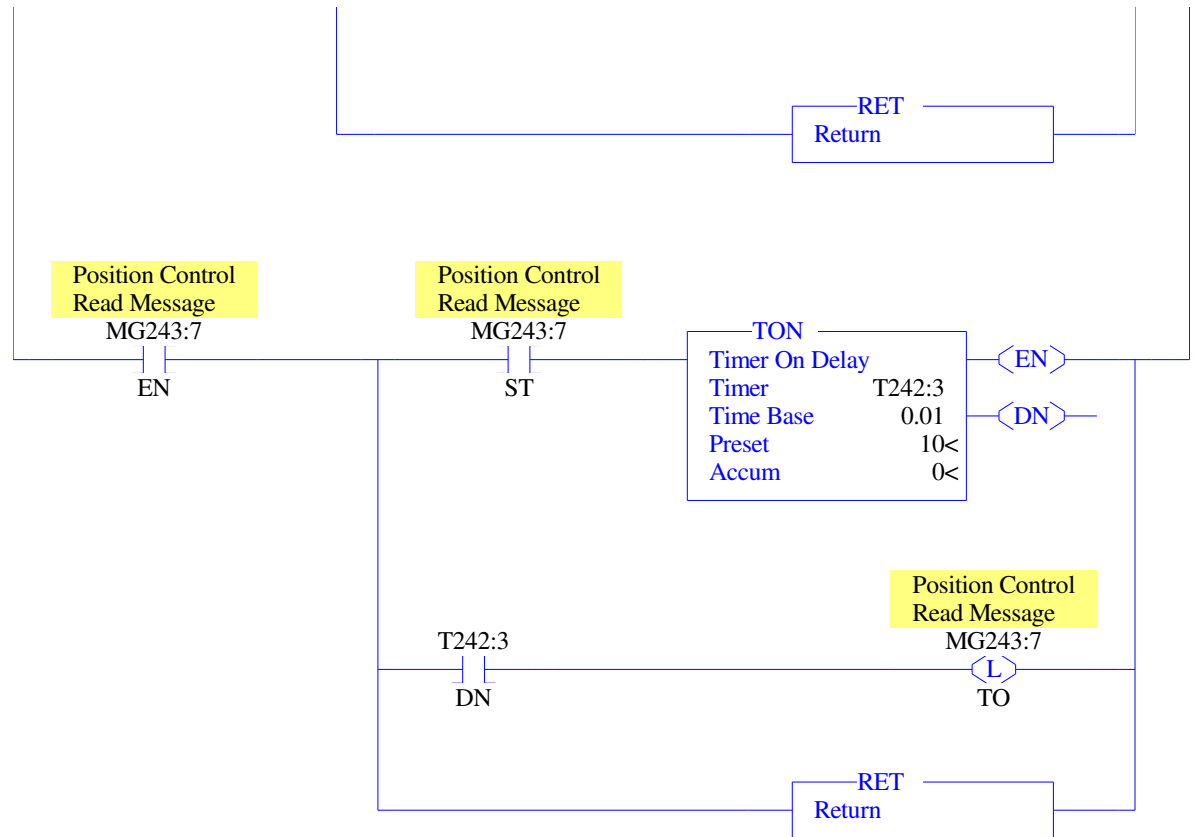
DN

Position Status Read
Message

MG243:6

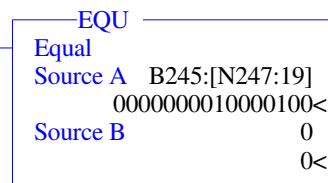
L

TO

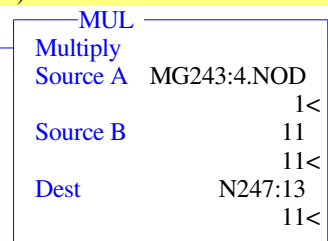


Calculate drive type offset into the drive status file based on the drive node number.

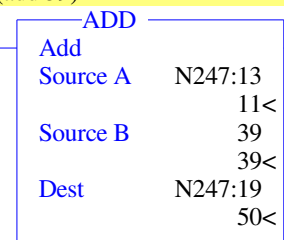
0007



Read File Offset
Math (multiply by
11)



Read File Offset
Math for Drive Type
(add 39)



If the Drive Type value was previously 0 and the Drive Type read message completes done, then save the Drive Type value to the appropriate location in the drive status file and increment the node counter.

0008

Drive Type Read
Message

MG243:4

DN

EQU

Equal

Source A B245:[N247:19]

0000000010000100<

Source B

0

0<

Node [#] Responding

B239:[N241:0]

L

1

MOV

Move

Source N247:20

132<

Dest B245:[N247:19]

0000000010000100<

Node Counter

ADD

Add

Source A 1

1<

Source B N241:0

1<

Dest N241:0

1<

Node Counter

EQU

Equal

Source A N241:0

1<

Source B

9

9<

Drive Control Read
Message

MOV

Move

Source 247

247<

Dest MG243:0.NOD

1<

Node Counter

EQU

Equal

Source A N241:0

1<

Source B N241:2

9<

RET

Return

If the Drive Type value is 0 and the Drive Type read message completes in error, then clear the node active, ready and running bits and increment the node counter.

0009

Drive Type Read
Message

MG243:4

ER

EQU

Equal

Source A B245:[N247:19]

0000000010000100<

Source B

0

0<

Node [#] Responding

B239:[N241:0]

U

1

Node [#] Ready

B239:[N241:0]

U

2

Node [#] Running

B239:[N241:0]

U

3

Node Counter

EQU

Equal

Source A N241:0

1<

Source B B246:0

0000000000000001<

Drive Control PVc
Display Control

JSR

Jump To Subroutine
SBR File Number

U:239

Node Counter

ADD

Add

Source A

1

1<

Source B

N241:0

1<

Dest

N241:0

1<

Node Counter

EQU

Equal

Source A N241:0

1<

Source B

9

9<

Drive Control Read
Message

MOV

Move

Source

247

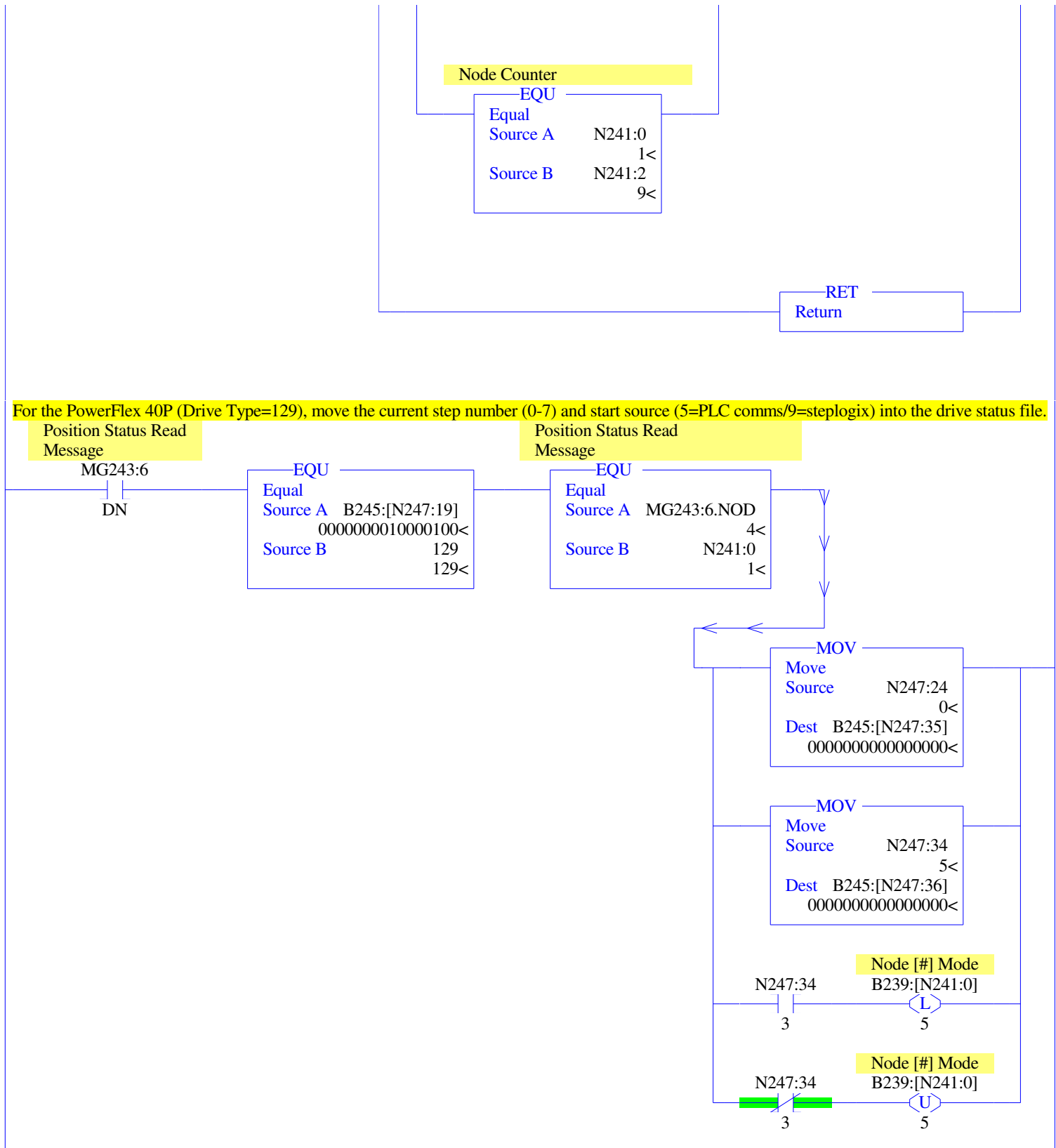
247<

Dest

MG243:0.NOD

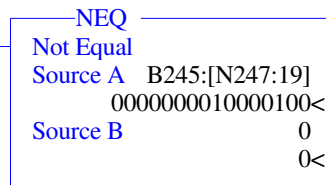
1<

0010

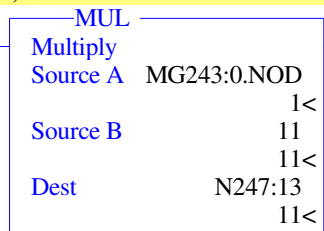


Calculate offsets into the drive status file based on the drive node number.

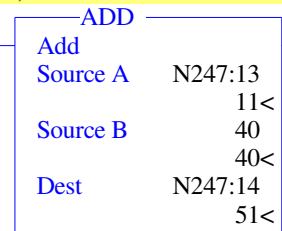
0011



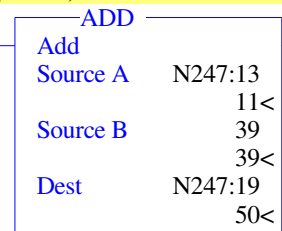
Read File Offset
Math (multiply by
11)



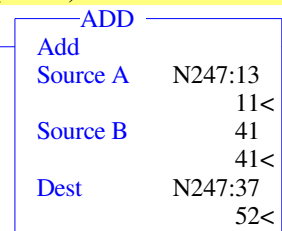
Read File Offset
Math for Status (add
40)



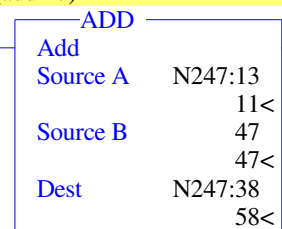
Read File Offset
Math for Drive Type
(add 39)



Read File Offset
Math for Drive Type
(add 41)



Read File Offset
Math for Drive Type
(add 47)



If the read PF4M/4/40/400 status message completes successfully, then copy the data read to the appropriate offset for this node in the drive status file. A successful read sets the active node bit for this drive in the Node Status file. The ready and running bits are also updated in the Node Status file. If this drive is currently being displayed on the HMI, then update the screen data. Finally, the node counter gets incremented.

Drive Control Read
Message

MG243:0

DN

NEQ
Not Equal
Source A B245:[N247:19]
0000000010000100<
Source B 0
0<

NEQ
Not Equal
Source A B245:[N247:19]
0000000010000100<
Source B 129
129<

COP
Copy File
Source #N247:1
Dest #B245:[N247:14]
Length 7

Node [#] Responding
B239:[N241:0]

1

Node [#] Ready
B239:[N241:0]

2

Node [#] Ready
B239:[N241:0]

2

Node [#] Running
B239:[N241:0]

3

Node [#] Running
B239:[N241:0]

3

Node [#] Faulted
B239:[N241:0]

4

Node [#] Faulted
B239:[N241:0]

4

B245:[N247:14]

0

B245:[N247:14]

0

B245:[N247:14]

1

B245:[N247:14]

1

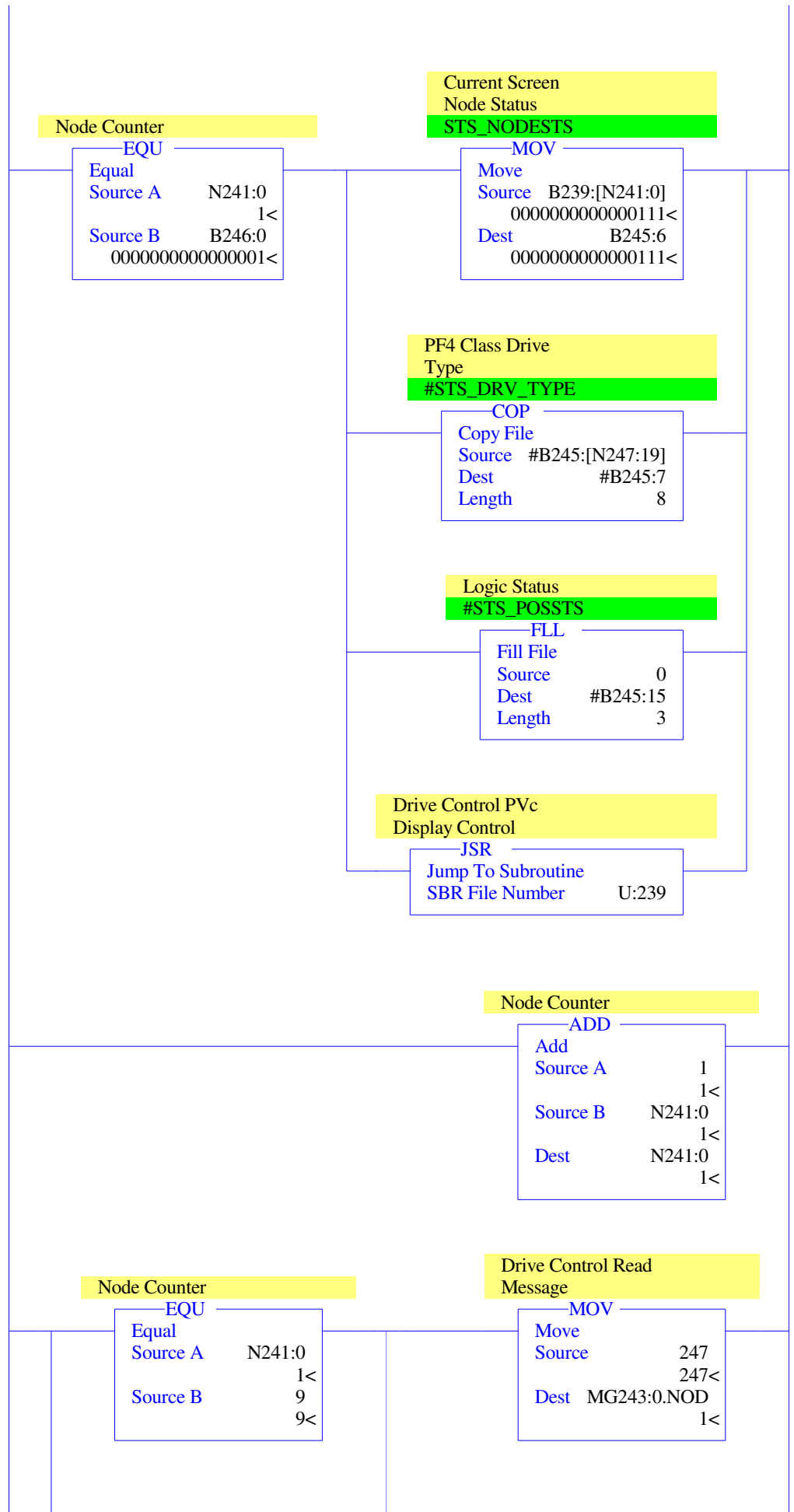
B245:[N247:14]

7

B245:[N247:14]

7

LAD 241 - DRIVE CTRL --- Total Rungs in File = 16



LAD 241 - DRIVE CTRL --- Total Rungs in File = 16

Node Counter

EQU

Equal

Source A N241:0

1<

Source B N241:2

9<

RET

Return

If the read PF40 status message completes successfully, then copy the data read to the appropriate offset for this node in the drive status file. A successful read sets the active node bit for this drive in the Node Status file. The ready and running bits are also updated in the Node Status file. If this drive is currently being displayed on the HMI, then update the screen data. Finally, the node counter gets incremented.

0013

Position Control
Read Message
MG243:7

DN

NEQ

Not Equal

Source A B245:[N247:19]
0000000010000100<
Source B 0
0<

EQU

Equal

Source A B245:[N247:19]
0000000010000100<
Source B 129
129<

COP

Copy File

Source #N247:41
Dest #B245:[N247:37]
Length 6

MOV

Move

Source N247:52
1549<
Dest B245:[N247:14]
0000011000000001<

MOV

Move

Source N247:40
77<
Dest B245:[N247:38]
0000000000000000<

Node [#] Responding

B239:[N241:0]

1

B245:[N247:14]

0

Node [#] Ready

B239:[N241:0]

2

B245:[N247:14]

0

Node [#] Ready

B239:[N241:0]

2

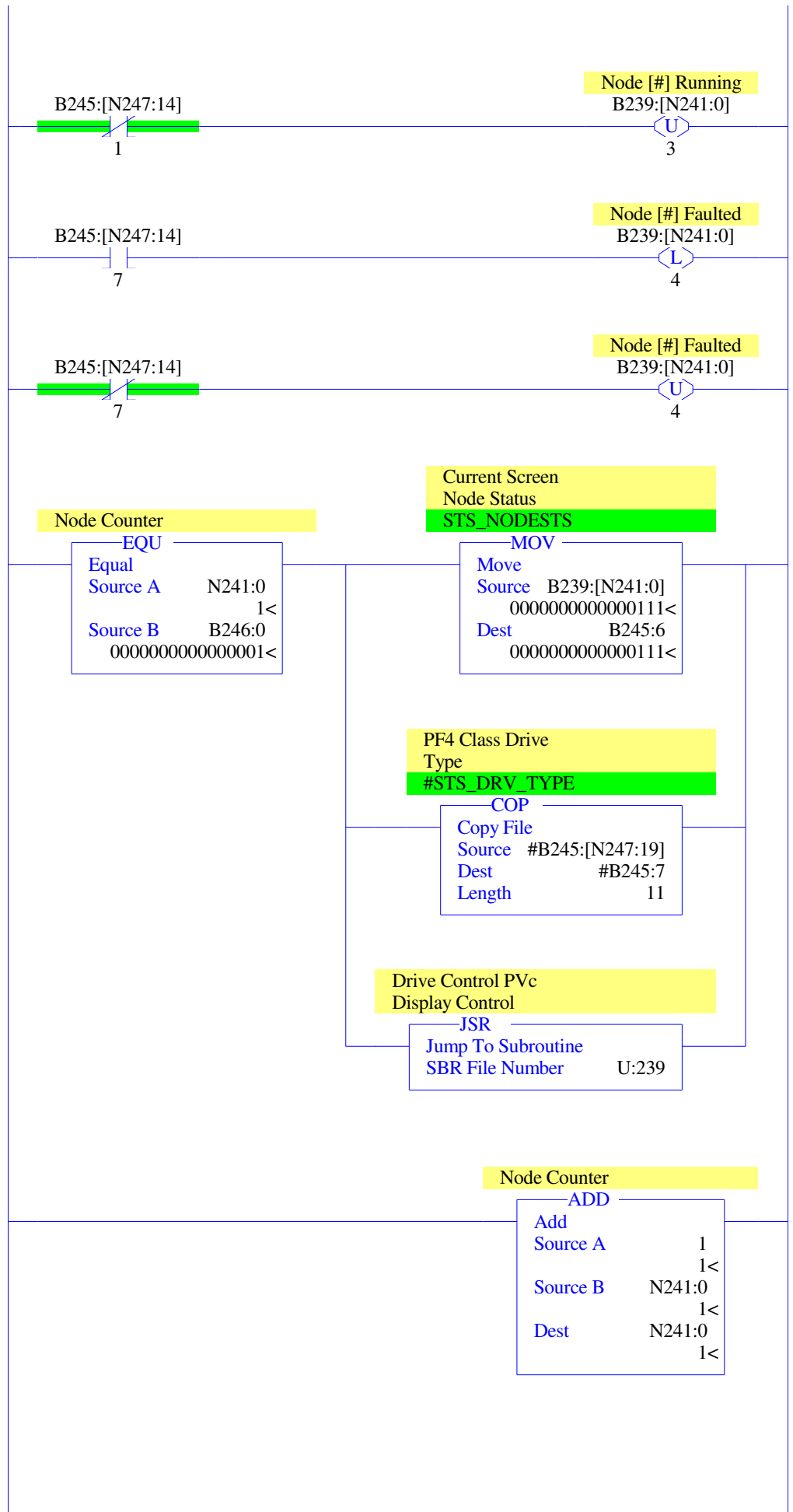
B245:[N247:14]

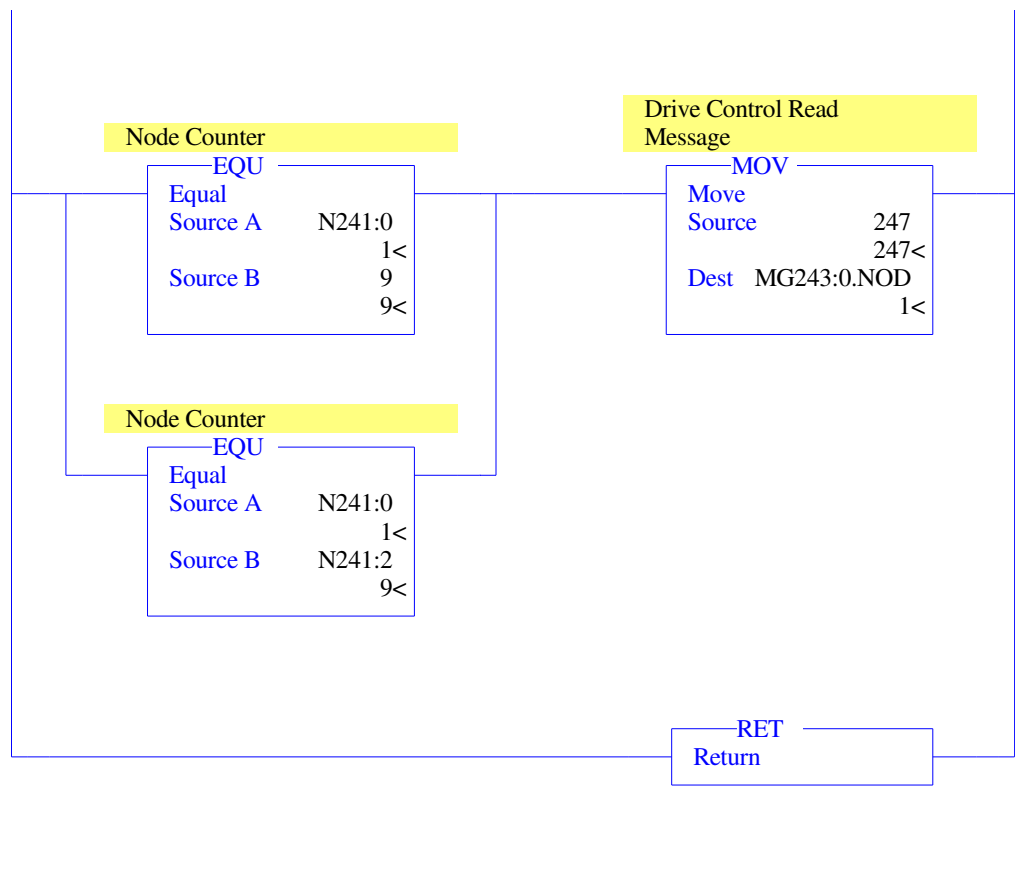
1

Node [#] Running

B239:[N241:0]

3





If the read attempt fails, then clear the node active, ready and running bits and the status data for this drive. If this drive is currently being displayed on the HMI, then update the screen data. Finally, the node counter gets incremented.

0014

Drive Control Read
Message

MG243:0

ER

Position Control
Read Message

MG243:7

ER

NEQ

Not Equal

Source A B245:[N247:19]

0000000010000100<

Source B

0

0<

Node [#] Responding

B239:[N241:0]

1

Node [#] Ready

B239:[N241:0]

2

Node [#] Running

B239:[N241:0]

3

Node [#] Faulted

B239:[N241:0]

4

Node [#] Mode

B239:[N241:0]

5

FLL

Fill File

Source

0

Dest #B245:[N247:14]

Length

10

Node Counter

EQU

Equal

Source A N241:0

1<

Source B B246:0

0000000000000001<

Current Screen

Node Status

#STS_NODESTS

FLL

Fill File

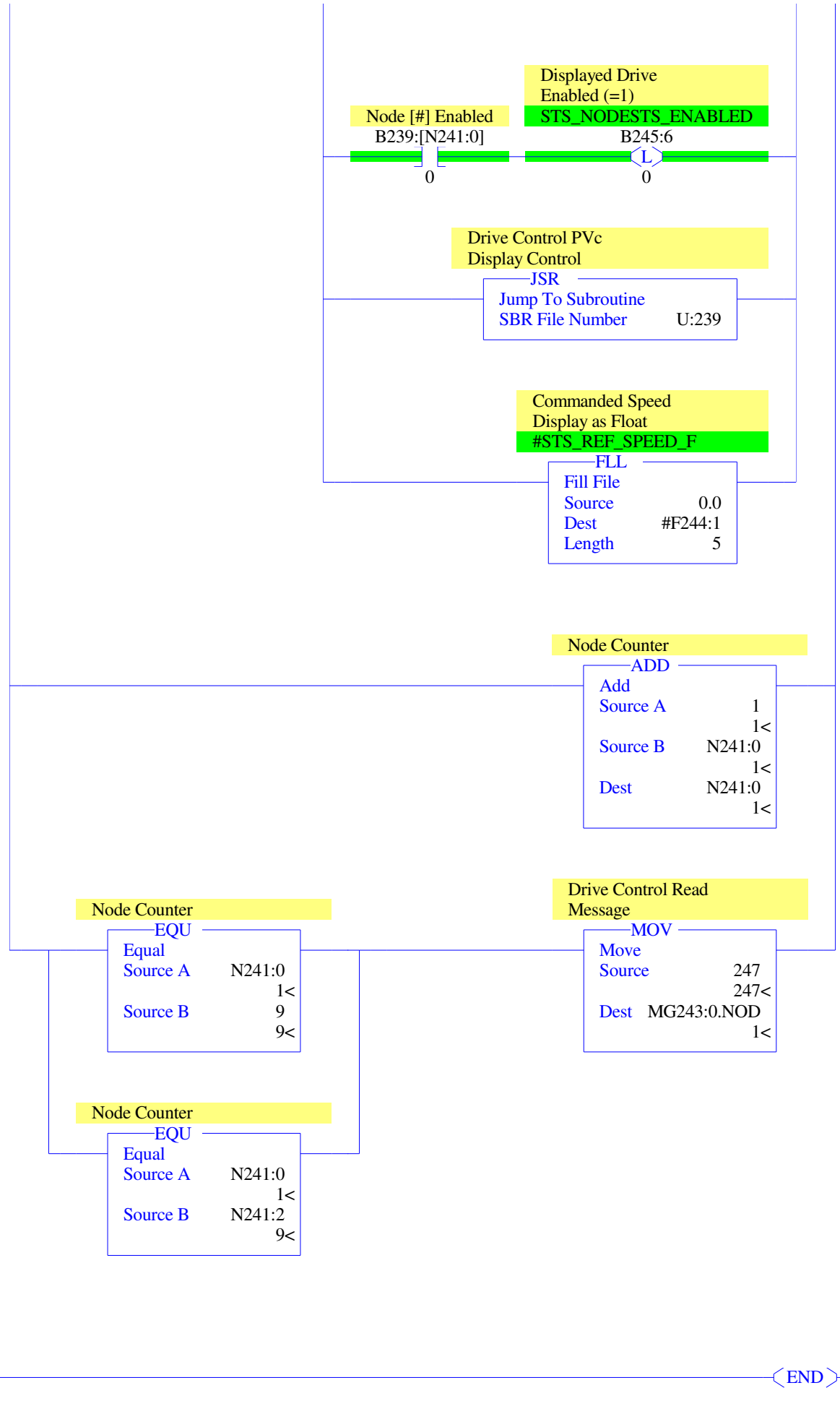
Source

0

Dest #B245:6

Length

12



Data File 00 (bin) -- OUTPUT

Offset	15	14	13	12	11	10	9	8	7	6	5	4	3	2	1	0				
O:0.0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	Bul.1766	MicroLogix 1400 Series A		
O:0.1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	Bul.1766	MicroLogix 1400 Series A		
O:0.2	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	Bul.1766	MicroLogix 1400 Series A		
O:0.3	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	Bul.1766	MicroLogix 1400 Series A		
O:0.4	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	Bul.1766	MicroLogix 1400 Series A		
O:0.5	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	Bul.1766	MicroLogix 1400 Series A		