

RSLogix Micro Project Report



Processor Information

Processor Type: Bul.1766 MicroLogix 1400 Series A

Processor Name: 1413-CAP

Total Memory Used: 3672 Instruction Words Used - 3738 Data Table Words Used

Total Memory Left: 8762 Instruction Words Left

Program Files: 29

Data Files: 138

Program ID: f1f2

I/O Configuration

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

Channel Configuration

CHANNEL 0 (SYSTEM) - Driver: DF1 Full Duplex

CHANNEL 0 (SYSTEM) - Driver: DF1 Full Duplex Edit Resource/Owner Timeout: 60
CHANNEL 0 (SYSTEM) - Driver: DF1 Full Duplex Passthru Link ID: 1
CHANNEL 0 (SYSTEM) - Driver: DF1 Full Duplex Write Protected: No
CHANNEL 0 (SYSTEM) - Driver: DF1 Full Duplex Comms Servicing Selection: Yes
CHANNEL 0 (SYSTEM) - Driver: DF1 Full Duplex Message Servicing Selection: Yes
CHANNEL 0 (SYSTEM) - Driver: DF1 Full Duplex 1st AWA Append Character: \d
CHANNEL 0 (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

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: Yes
CHANNEL 1 (SYSTEM) - Driver: Ethernet Message Servicing Selection: Yes

Hardware Address: 00:00:BC:38:50:B7
IP Address: 192.168.254.100
Subnet Mask: 255.255.0.0
Gateway Address: 128.1.1.1
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: Modbus RTU Master

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

Baud: 19200
Parity: NONE
Control Line : No Handshaking
InterCharacter Timeout(x1 ms): 0
Pre Transmit Delay(x1 ms): 0

Program File List

Name	Number	Type	Rungs	Debug	Bytes
[SYSTEM]	0	SYS	0	No	0
	1	SYS	0	No	0
MAIN	2	LADDER	17	No	436
PLC	3	LADDER	19	No	2474
PFMGR0	4	LADDER	7	No	228
PFMGR1	5	LADDER	8	No	409
PFMGR2	6	LADDER	8	No	409
PFMGR3	7	LADDER	7	No	237
COMMMGR	10	LADDER	41	No	3523
BUS	11	LADDER	18	No	1111
LOADCALC	12	LADDER	14	No	1338
BALANCER	13	LADDER	7	No	209
SEQUENCER	14	LADDER	11	No	1051
BANK	15	LADDER	33	No	4689
STEP	16	LADDER	51	No	3116
CONTACTOR	17	LADDER	5	No	186
AVERAGER	18	LADDER	5	No	636
BAL_INR_LP	19	LADDER	5	No	325
BEST_KVAR	20	LADDER	18	No	1110
FIND LEAST	21	LADDER	6	No	652
FIND MOST	22	LADDER	6	No	639
BEST_OTR_L	23	LADDER	5	No	304
BEST_INR_L	24	LADDER	5	No	459
AUTO_CONFIG	25	LADDER	14	No	1331
PM_DATA	27	LADDER	15	No	730
INPUT	29	LADDER	40	No	1565
DIAG_CONFIG	30	LADDER	3	No	209
DEMO_DATA	31	LADDER	7	No	1196
CHMI_VISIB	32	LADDER	63	No	2776

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	8	8	B3:7
TIMER	4	T	Global	No	3	1	T4:0
COUNTER	5	C	Global	No	63	21	C5:20
CONTROL	6	R	Global	No	6	2	R6:1
STEPSIZES	7	N	Global	No	64	64	N7:63
PWRVARIABL	8	F	Global	No	42	21	F8:20
FACT_BIN	9	B	Global	No	8	8	B9:7
FACT_STEP	10	N	Global	No	64	64	N10:63
PM_1_DATA	11	F	Global	No	40	20	F11:19
PM_2_DATA	12	F	Global	No	40	20	F12:19
PM_3_DATA	13	F	Global	No	40	20	F13:19
PM_4_DATA	14	F	Global	No	40	20	F14:19
PMTABLEF15	15	F	Global	No	26	13	F15:12
PMFLOATS16	16	F	Global	No	26	13	F16:12
PMTABLEF17	17	F	Global	No	26	13	F17:12
PMFLOATS18	18	F	Global	No	26	13	F18:12
PMTABLEF19	19	F	Global	No	26	13	F19:12
NET_ENI	20	N	Global	No	14	14	N20:13
INPUT	21	B	Global	No	10	10	B21:9
OFFICIAL B	22	B	Global	No	8	8	B22:7
HMI IMAGEB	23	B	Global	No	8	8	B23:7
HMI IMAGET	24	T	Global	No	3	1	T24:0
OFICIAL I	25	N	Global	No	64	64	N25:63
OFFICIAL F	26	F	Global	No	42	21	F26:20
HMI IMAGEI	27	N	Global	No	64	64	N27:63
HMI IMAGEF	28	F	Global	No	42	21	F28:20
INPUT	29	N	Global	No	5	5	N29:4
USER_CONFIG	30	N	Global	No	26	26	N30:25
PMDATA_BUF	31	F	Global	No	92	46	F31:45
PM_SETUP	33	N	Global	No	9	9	N33:8
PMFLOATS34	34	F	Global	No	26	13	F34:12
COMM_ERROR	40	B	Global	No	1	1	B40:0
COMM_TIMER	41	T	Global	No	9	3	T41:2
PMCOMMDATA	42	N	Global	No	20	20	N42:19
PLC MOD_FL	43	F	Global	No	2	1	F43:0
COMM_MGR_B	44	B	Global	No	2	2	B44:1
PM TIMERS	45	T	Global	No	39	13	T45:12
COMMGR IN	46	N	Global	No	23	23	N46:22
COMMGR FL	47	F	Global	No	40	20	F47:19
BUS_BIT	48	B	Global	No	1	1	B48:0
LIMITTIMER	49	T	Global	No	15	5	T49:4
BUS INT	50	N	Global	No	3	3	N50:2
BUS_FLT	51	F	Global	No	10	5	F51:4
LOADCALC B	52	B	Global	No	1	1	B52:0
UNBALTIMER	53	T	Global	No	3	1	T53:0
LOADCALCIN	54	N	Global	No	4	4	N54:3
LSTNETKVAR	55	F	Global	No	82	41	F55:40
STEP_CNTRL	56	B	Global	No	1	1	B56:0
SEQUENCE T	57	T	Global	No	3	1	T57:0
STEP_NUM	58	N	Global	No	13	13	N58:12
SEQUENCE F	59	F	Global	No	2	1	F59:0
BALANCER B	60	B	Global	No	1	1	B60:0
BALANCER T	61	T	Global	No	3	1	T61:0
OPERATIONS	62	N	Global	No	42	42	N62:41
BALANCER F	63	F	Global	No	2	1	F63:0
STEP_CMND	64	B	Global	No	7	7	B64:6
CAPSIZE	65	T	Global	No	9	3	T65:2
STEPSTATUS	66	N	Global	No	18	18	N66:17
RINGBUFFER	67	F	Global	No	262	131	F67:130

Data File List

Name	Number	Type	Scope	Debug	Words	Elements	Last
CMND_FLAGS	68	B	Global	No	7	7	B68:6
STEPTIMERS	69	T	Global	No	63	21	T69:20
POINTERS	70	N	Global	No	33	33	N70:32
STEPSIZES	71	F	Global	No	44	22	F71:21
USER_TRIP	72	B	Global	No	5	5	B72:4
CONTC_TIM	73	T	Global	No	3	1	T73:0
OPERCOUNT	74	N	Global	No	31	31	N74:30
CONTC_FLT	75	F	Global	No	2	1	F75:0
PFMGR0_BIT	76	B	Global	No	1	1	B76:0
PFMGR0_TIM	77	T	Global	No	3	1	T77:0
PFMGR0_INT	78	N	Global	No	1	1	N78:0
PFMGR0_FLT	79	F	Global	No	2	1	F79:0
PFMGR1_BIT	80	B	Global	No	1	1	B80:0
PFMGR1_TIM	81	T	Global	No	3	1	T81:0
PFMGR1_INT	82	N	Global	No	1	1	N82:0
PFMGR1_FLT	83	F	Global	No	2	1	F83:0
PFMGR2_BIT	84	B	Global	No	1	1	B84:0
PFMGR2_TIM	85	T	Global	No	3	1	T85:0
PFMGR2_INT	86	N	Global	No	2	2	N86:1
PFMGR2_FLT	87	F	Global	No	2	1	F87:0
PFMGR3_BIT	88	B	Global	No	5	5	B88:4
PFMGR3_TIM	89	T	Global	No	3	1	T89:0
KVAR_INDEX	90	N	Global	No	40	40	N90:39
DELTA_KVAR	91	F	Global	No	62	31	F91:30
PFMGR4_BIT	92	B	Global	No	1	1	B92:0
PFMGR4_TIM	93	T	Global	No	3	1	T93:0
PFMGR4_INT	94	N	Global	No	1	1	N94:0
PFMGR4_FLT	95	F	Global	No	2	1	F95:0
PFMGR5_BIT	96	B	Global	No	1	1	B96:0
PFMGR5_TIM	97	T	Global	No	3	1	T97:0
PFMGR5_INT	98	N	Global	No	1	1	N98:0
PFMGR5_FLT	99	F	Global	No	2	1	F99:0
MESSAGES	100	MG	Global	No	275	11	MG100:10
DIAG_INTS	101	N	Global	No	50	50	N101:49
DIAGFILE02	102	B	Global	No	13	13	B102:12
DIAGFILE03	103	B	Global	No	3	3	B103:2
DIAGFILE04	104	B	Global	No	3	3	B104:2
DIAGFILE05	105	B	Global	No	3	3	B105:2
DIAGFILE06	106	B	Global	No	1	1	B106:0
DIAGFILE07	107	B	Global	No	3	3	B107:2
DIAGFILE08	108	B	Global	No	3	3	B108:2
DIAGFILE09	109	B	Global	No	3	3	B109:2
DIAGFILE10	110	B	Global	No	3	3	B110:2
DIAGFILE11	111	B	Global	No	3	3	B111:2
DIAGFILE12	112	B	Global	No	3	3	B112:2
DIAGFILE13	113	B	Global	No	3	3	B113:2
DIAGFILE14	114	B	Global	No	3	3	B114:2
DIAGFILE15	115	B	Global	No	3	3	B115:2
DIAGFILE16	116	B	Global	No	3	3	B116:2
DIAGFILE17	117	B	Global	No	3	3	B117:2
DIAGFILE18	118	B	Global	No	3	3	B118:2
DIAGFILE19	119	B	Global	No	3	3	B119:2
DIAGFILE20	120	B	Global	No	3	3	B120:2
DIAGFILE21	121	B	Global	No	3	3	B121:2
DIAGFILE22	122	B	Global	No	3	3	B122:2
DIAGFILE23	123	B	Global	No	3	3	B123:2
DIAGFILE24	124	B	Global	No	3	3	B124:2
DIAGFILE25	125	B	Global	No	3	3	B125:2
DIAGFILE26	126	B	Global	No	3	3	B126:2
DIAGFILE27	127	B	Global	No	3	3	B127:2
DIAGFILE28	128	B	Global	No	3	3	B128:2
RESERVED	129	B	Global	No	3	3	B129:2

Data File List

Name	Number	Type	Scope	Debug	Words	Elements	Last
NET-ENI	130	N	Global	No	10	10	N130:9
ENI_BIT	131	B	Global	No	1	1	B131:0
DEMO_DATA	132	F	Global	No	102	51	F132:50
FACT_DEMO	133	F	Global	No	20	10	F133:9
REV_INFO	134	ST	Global	No	210	5	ST134:4
IP_ROUTING	135	RI	Global	No	220	11	RI135:10
IP_ADDRESS	138	L	Global	No	10	5	L138:4
HMIVIS&CTL	139	N	Global	No	100	100	N139:99
MSGRAWDATA	140	F	Global	No	80	40	F140:39
WIRE_CMD	142	F	Global	No	60	30	F142:29
TIMER_MSG	144	T	Global	No	9	3	T144:2
BOOTUP CAP	150	A	Global	No	256	256	A150:255
BOOT-CAP2	151	A	Global	No	256	256	A151:255
BOOT-CAP3	152	A	Global	No	32	32	A152:31

The Capacitor Bank Controller has 11 pre-assigned digital outputs, comprised of one Alarm bit and [up to] 10 output bits to drive relays that engage switches for the load balancing capacitors.

Power data comes into the base system from [up to] four PM-1000 Power Monitors. The controller interrogates the PM's EtherNet communication.

The base system can be set up using a built-in LCD of the MicroLogix controller. LCD is referred as DAT in this program comments. An optional enhancement of connecting a Panelview [HMI] permits an operator to view details of the power system characteristics. The base system is designed so that it can be configured solely via the DAT.

The basic control concept is to switch steps in and out as needed to control the KVAR (and, hence, the PF) of an electrical system. The Power Monitors provide voltage, current, power (KW & KVAR), and PF information.

Limits, tolerances, and timeouts for the various characteristics can be entered via the DAT or the Panelview. The DAT can show the switch status and the number of times each has been used. It also allows manual control of each step. The DAT can show the net PF, but for more information on the system, the user must go to the Power Monitors, to use their front panels, or include a Panelview.

2 System Description

This section describes the organization of the modules making up the MicroLogix program.

The MicroLogix Controller will consist of a main program (located in Ladder File 2), which will consist of jumps to many of the software modules. The basic functionality of each module and its respective interactions to other modules are described below.

The basic flow of data starts at the Power Monitors, received by the Communication Manager, and supplied to the Bus object. The PLC Object monitors communication status and refreshes the data to the memory area that interfaces to the Panelview HMI.

The Bus object monitors the data and sets alarms if anything is out of tolerance. The Load Calculation object collects raw readings and generates net values for KW, KVAR, and PF. Those are passed up to the main control algorithm, which decides how many steps are needed. That gets passed to the Sequencer object, which takes suggested switch order from the Balancer object, depending on the operating mode, and issues the directive.

The Bank object "owns" the individual steps. It takes direction on which step to use (or trip), commands it, and collects status on which steps are used, available, or in alarm. It also collects the number of operations to pass up to the Balancer object. The Bank object watches each time a step is engaged, collecting the change in KVAR (size of the step just activated) for the Step object.

The Step object keeps track of its particular contactor, deciding if it is available or in alarm. A step is considered bad if its average step size (maintained by an Averager object, not shown above) falls below a certain tolerance. This flag would be sent back to the Bank object. The Step object also contains a timer to assure that no step is engaged before being fully discharged.

The Contactor object actually controls the I/O. The number of operations for each I/O is accumulated here.

3 System Data

3.1 Data Flow

This section will outline system data and define the major data objects. Each file and data structure shall be uniquely identified. A system data diagram is included below:

3.2 Variables

A spreadsheet has been included as Appendix A that describes each of the variables shown in the data flow diagrams used in this document. The variables are assigned to data tables using the following criteria:

Module	Bit	Timer	iNteger	Float
PLC	40	41	42	43
"official" image	22	N/A	25	26
HMI image	23	24	27	28
CommMgr	44	45	46	47
CommMgr (PMs)	N/A	N/A	N/A	11 - 14
Bus	48	49	50	51
LoadCalc	52	53	54	55
Sequencer	56	57	58	59
Balancer	60	61	62	63
Bank	64	65	66	N/A
Averager	N/A	N/A	70	67
Step	68	69	N/A	71
Contactor	72	73	74	75
PMgr0	76	77	78	79
PMgr1	80	81	82	83
PMgr2	84	85	86	87
PMgr3	88	89	90	91
PMgr4	92	93	94	95
PMgr5	96	97	98	99

Each module has been assigned a data table of each type, starting with table 40, up through 100. Tables 22 through 28 are used for the HMI image. Certain other tables are ordered by PM number. The register numbers within each table are assigned ranges based on the intended purpose:

	Command	Public Display	Calc	Command	Internal Display	Calc	
B	0 - 49		50 - 99	N/A	100 - 149		N/A
T	N/A		N/A	N/A		N/A	20 - 39
N	0 - 19		20 - 39	N/A		N/A	40 - 59
F	N/A		0 - 19	N/A		40 - 59	60 - 79

"Public" is defined as information passed between modules; "internal" would be used for indexes, intermediate calculations, etc.

4 Object Details

This section details the operation of each module.

4.1 Overview

The MicroLogix controller will be comprised of the following:

Module Name	Ladder Program	... called from:
Main		2
PLC		3
PMgr0		4
PMgr1		5
PMgr2		6
PMgr3		7
PMgr4		8
PMgr5		9
CommMgr	10	Main
Bus		11
LoadCalc		12
Balancer		13
Sequencer	14	Main
Bank		15
Step		16
Contactor		17
Averager		18

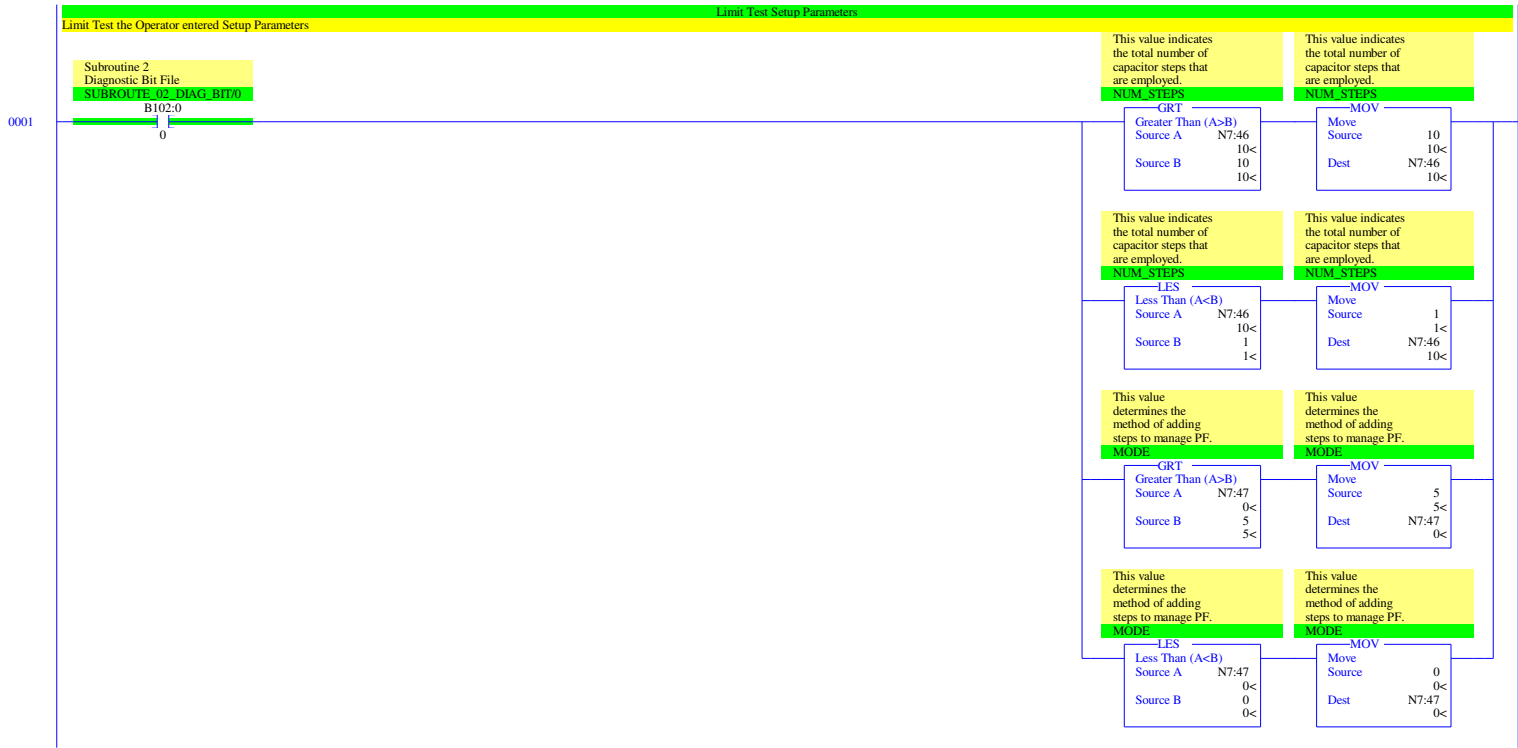
4.2 Main

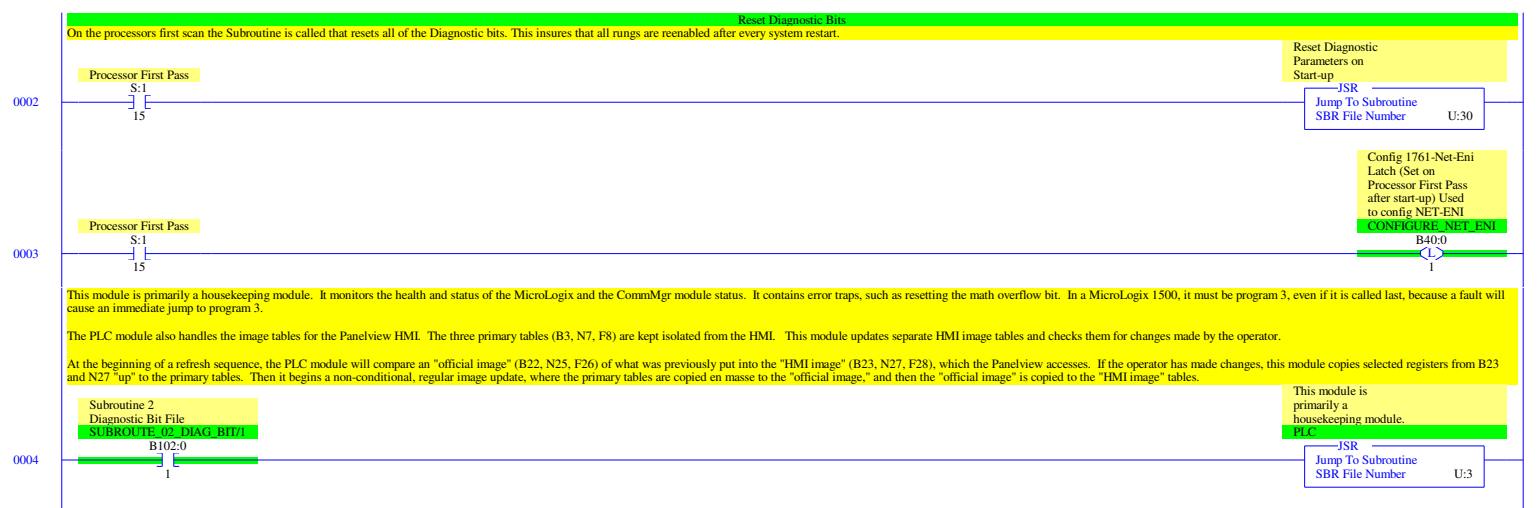
Main will be comprised of jumps to many of the ladder programs listed in the preceding table, as noted.

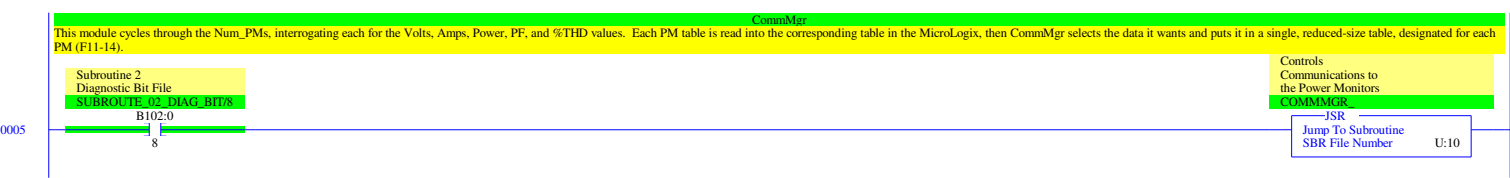
PLC must be program #3, required by MicroLogix 1400, as it contains fault routine instructions.

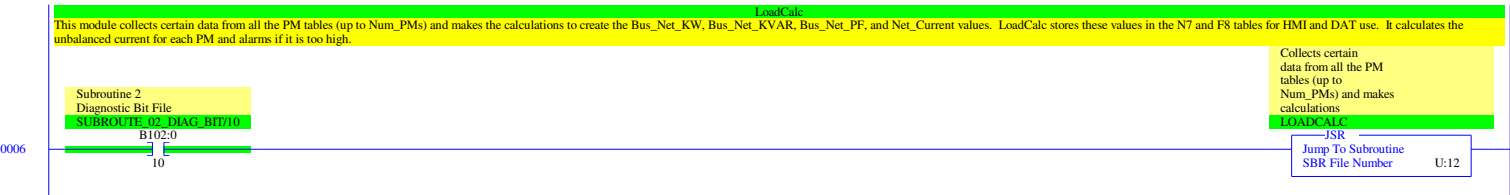
The PF Manager modules are the prime decision makers. They use the Bus_Net values from Data Table F8, and the Mode and various limit values from Data Table N7, to determine how many steps are required to be active. An alarm will be set if the system cannot maintain the PF above the limit.

Dummy bit for
documentation
B102:6









LAD 2 - MAIN - Controls Jumps to Ladder Programs 3 thru 18 --- Total Rungs in File = 17

0007

INPUT

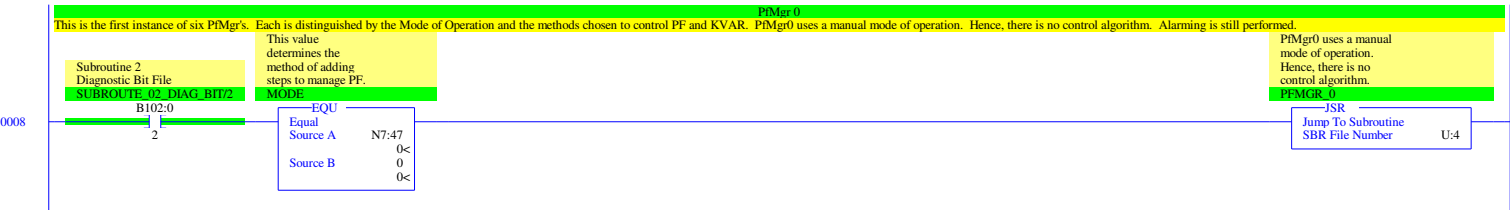
This module disables steps based upon discrete inputs.

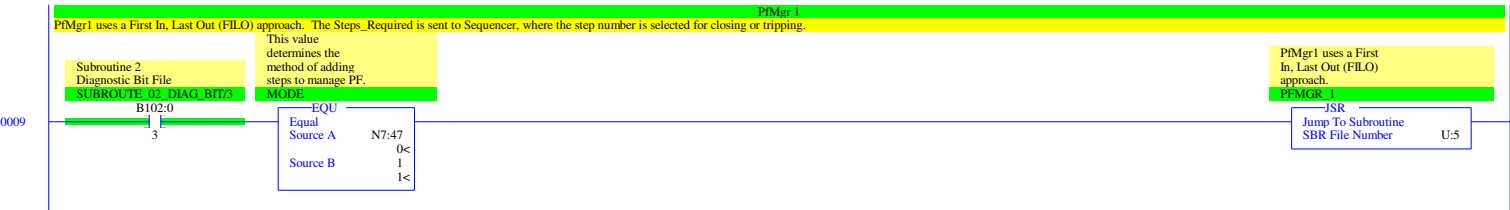
JSR

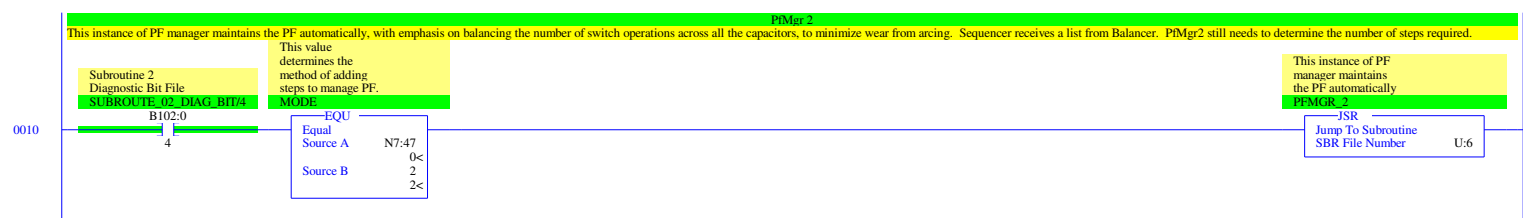
Jump To Subroutine

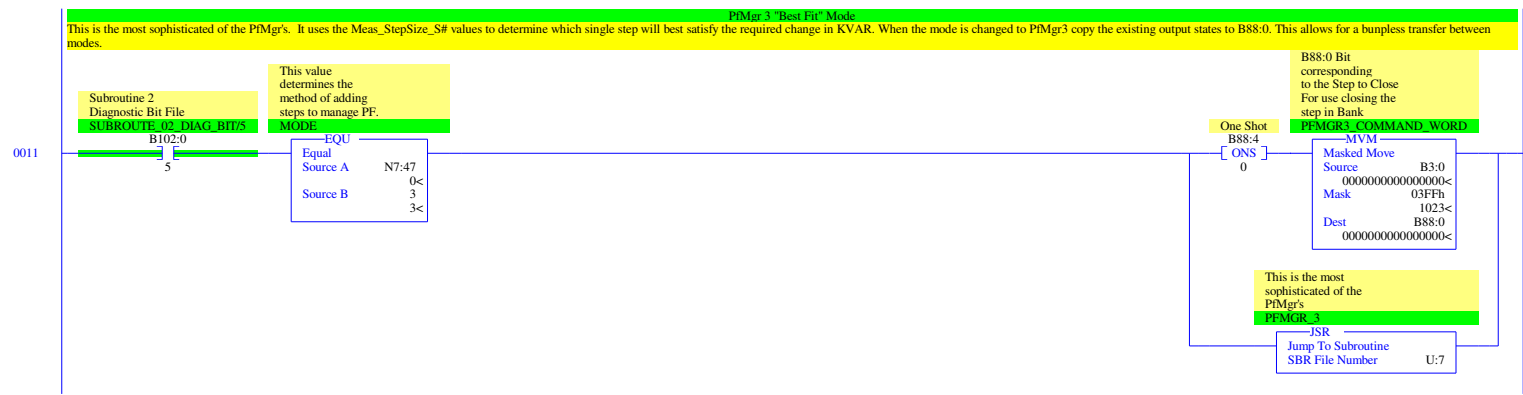
SBR File Number

U:29

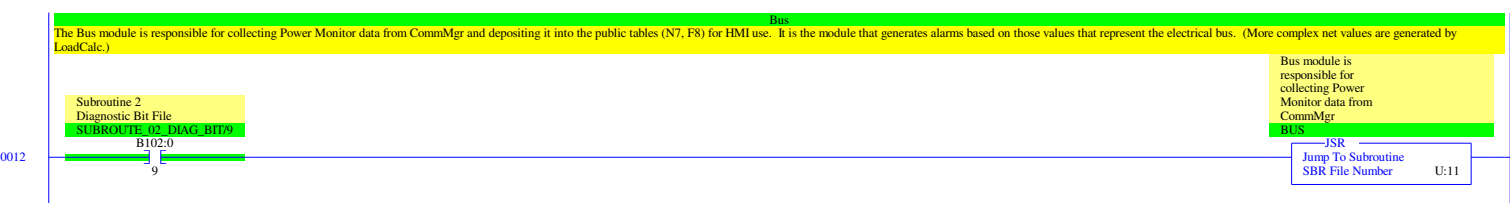


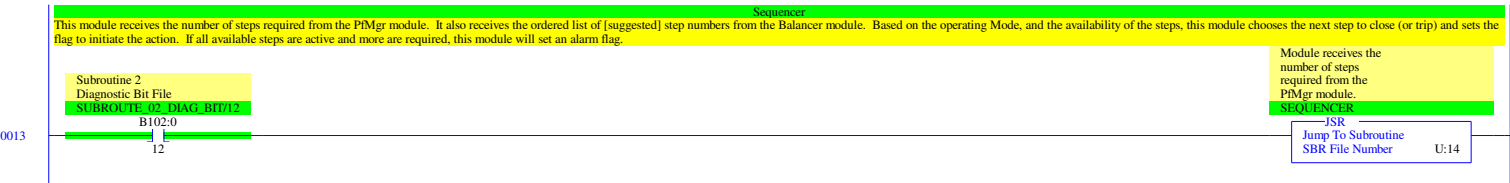


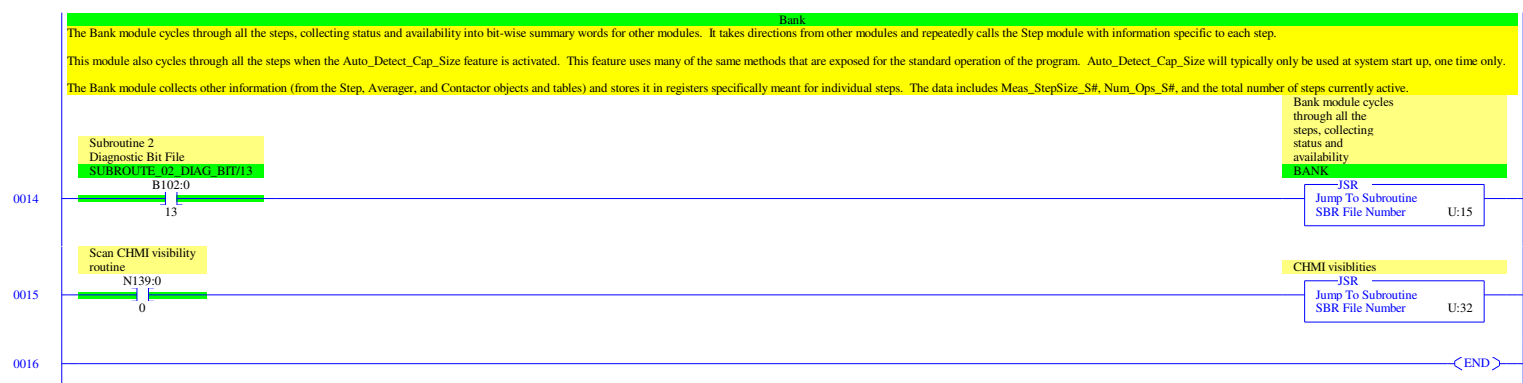


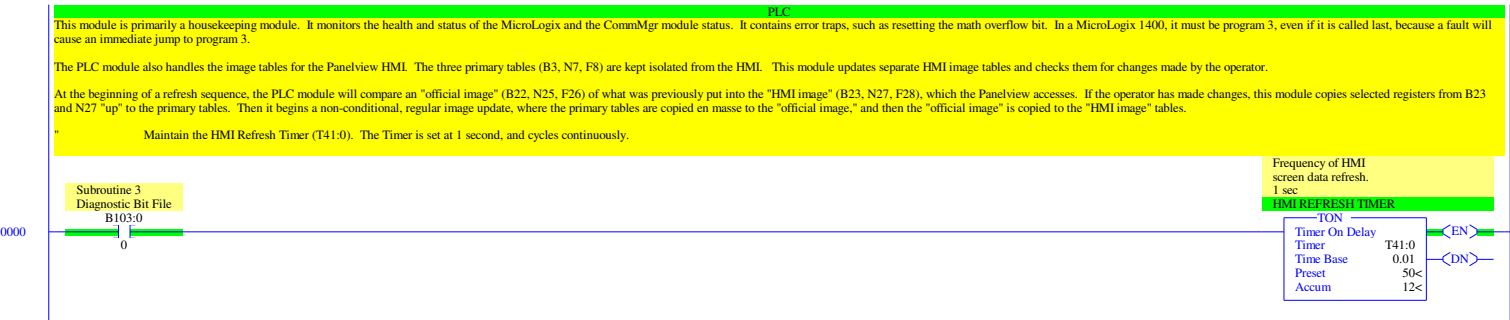


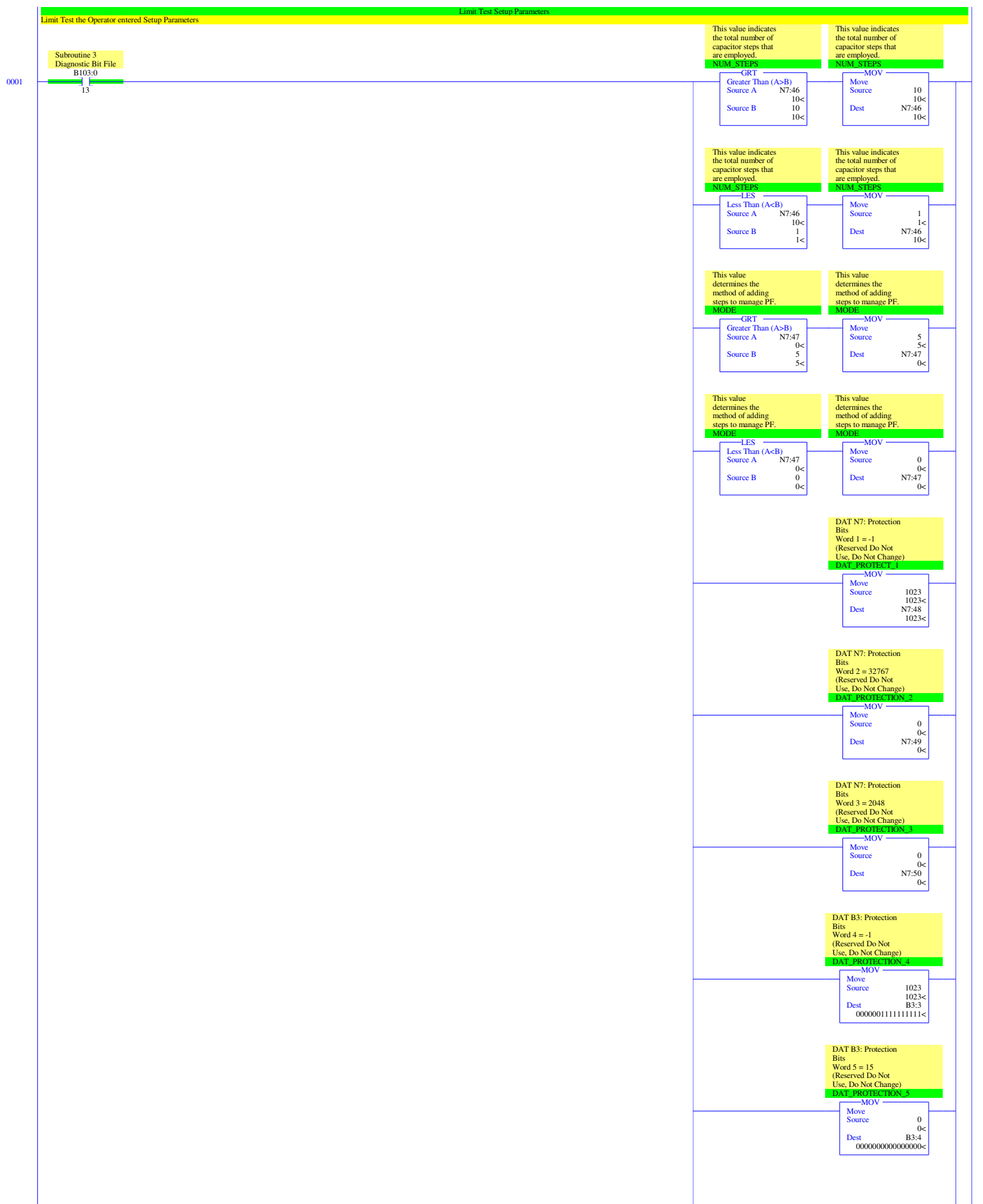
LAD 2 - MAIN - Controls Jumps to Ladder Programs 3 thru 18 --- Total Rungs in File = 17

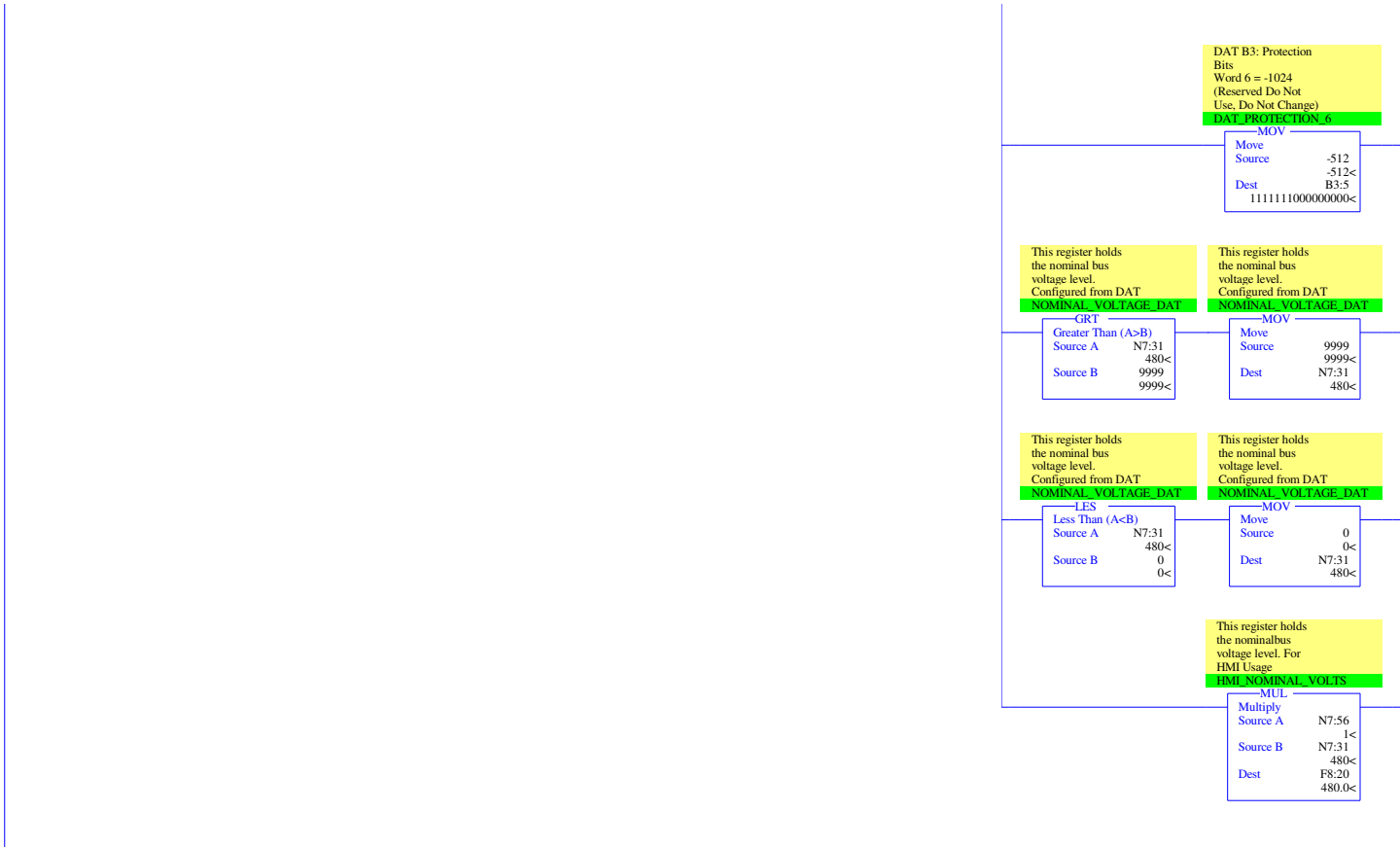


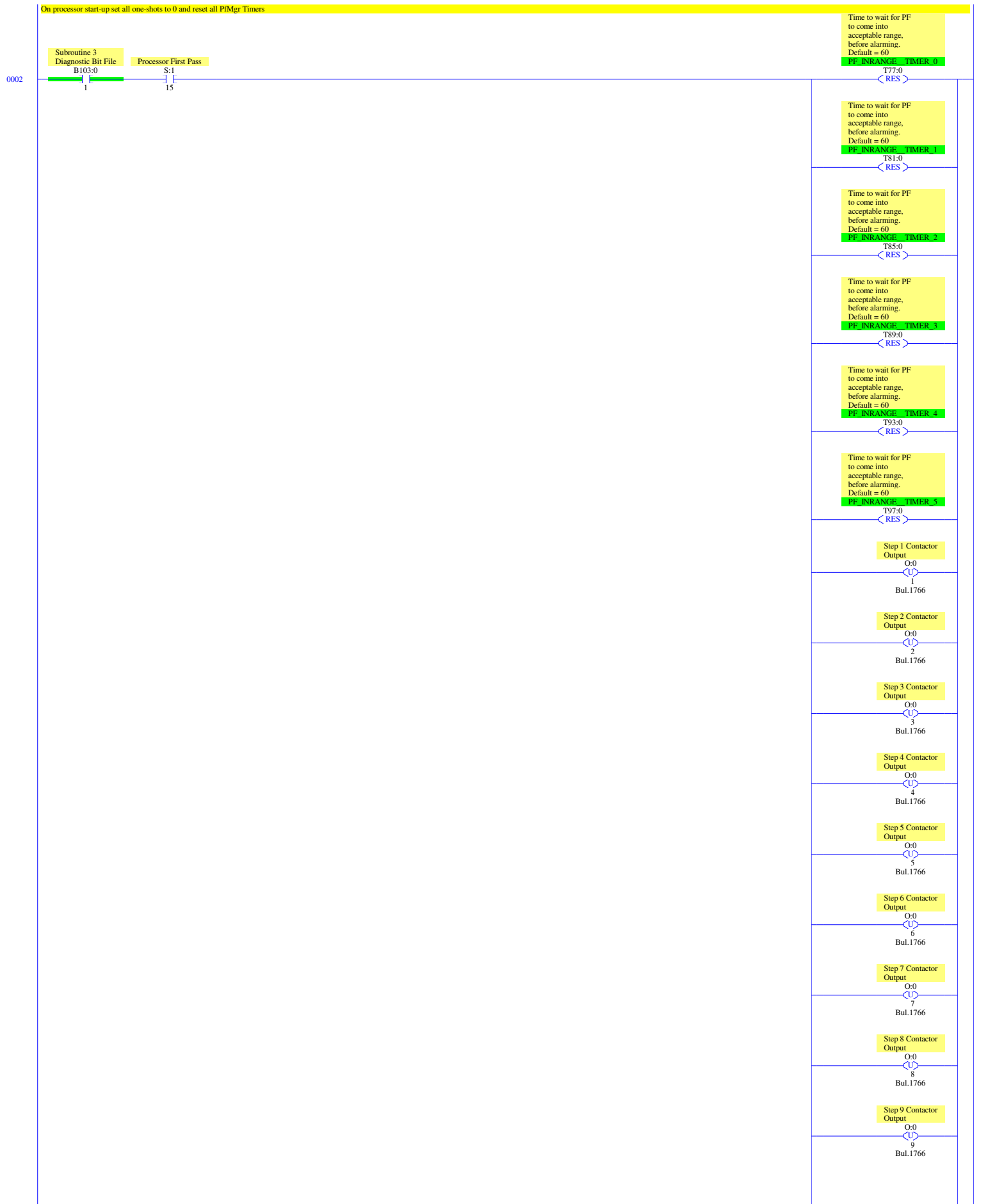


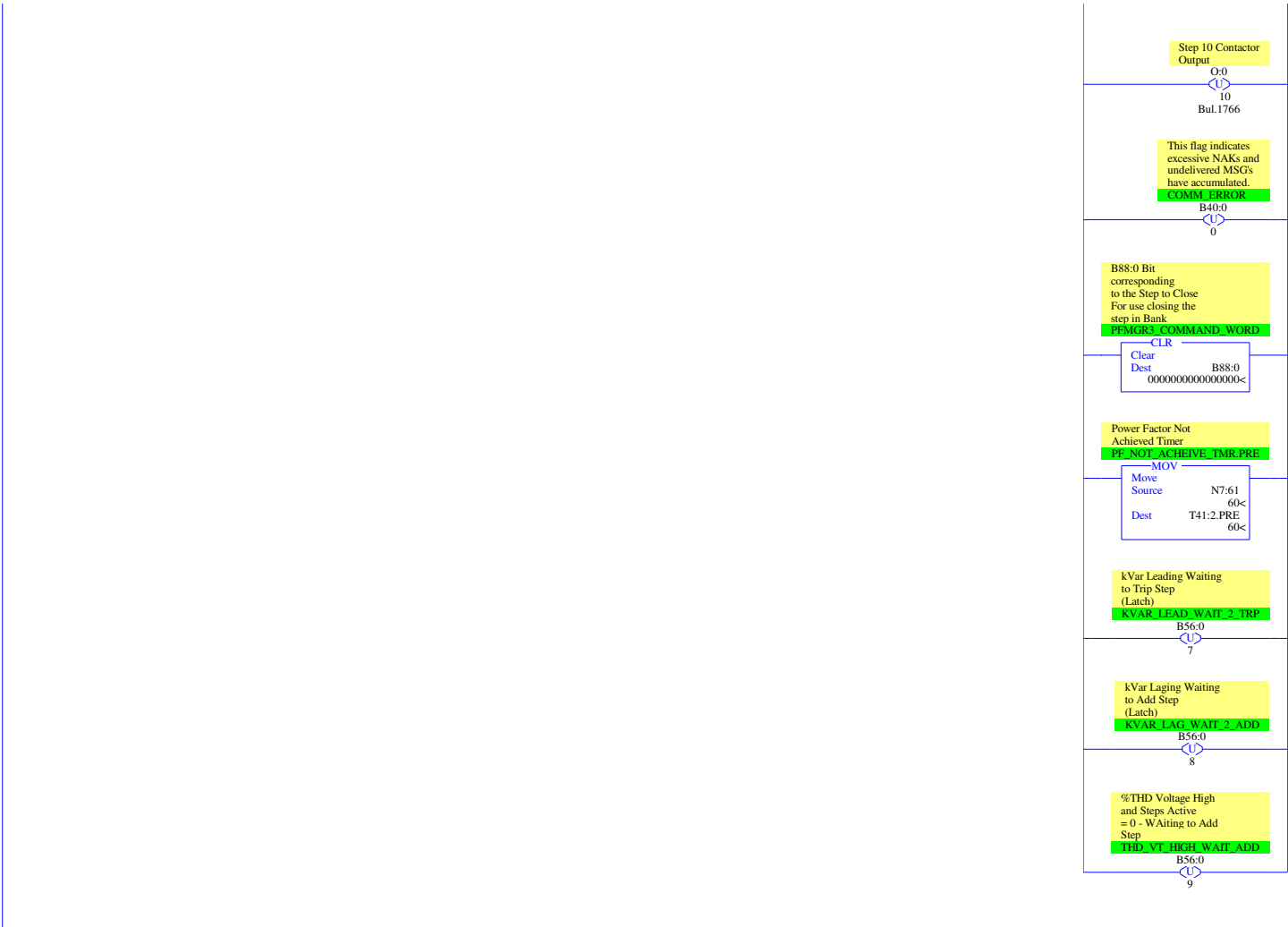


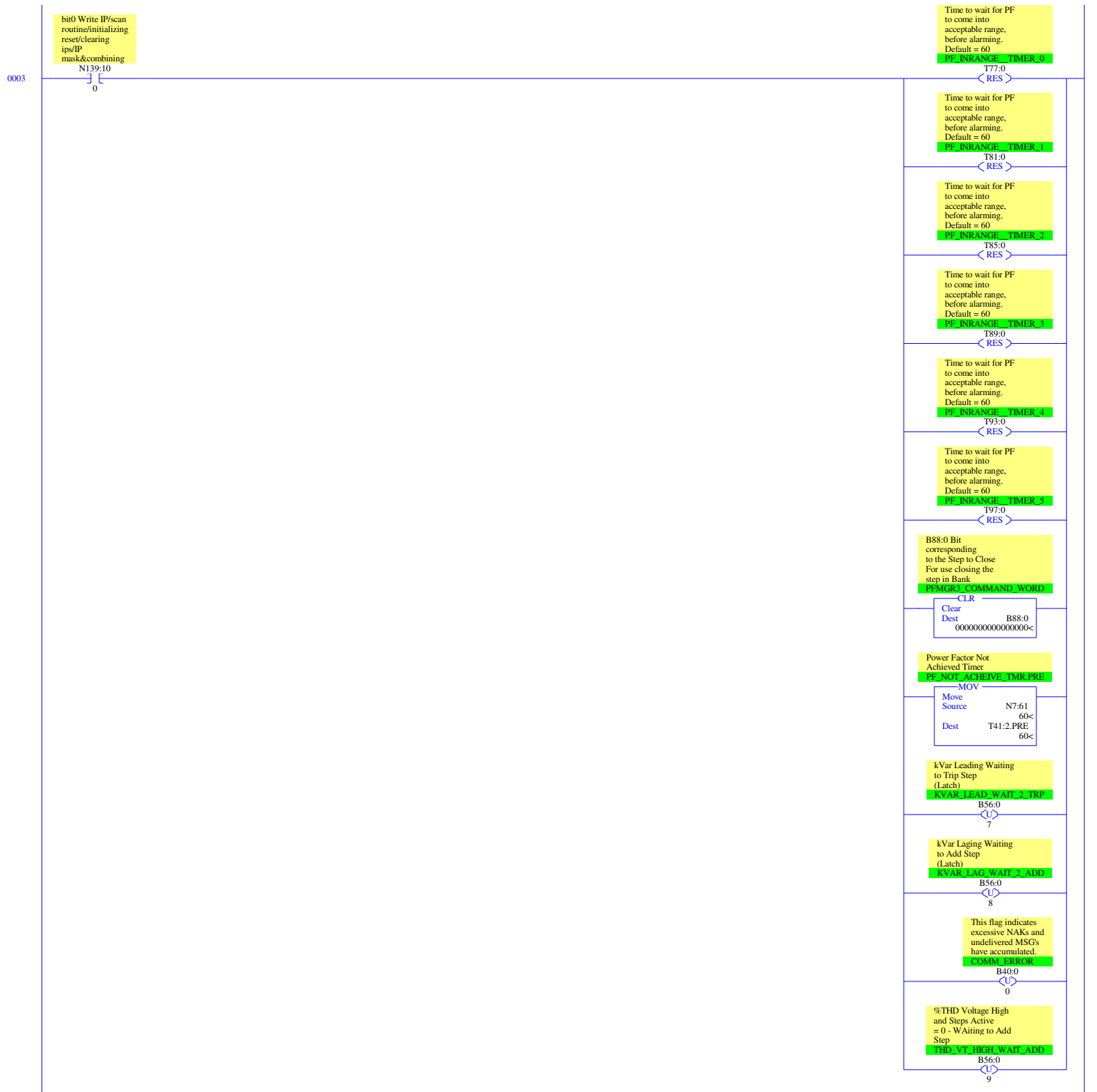


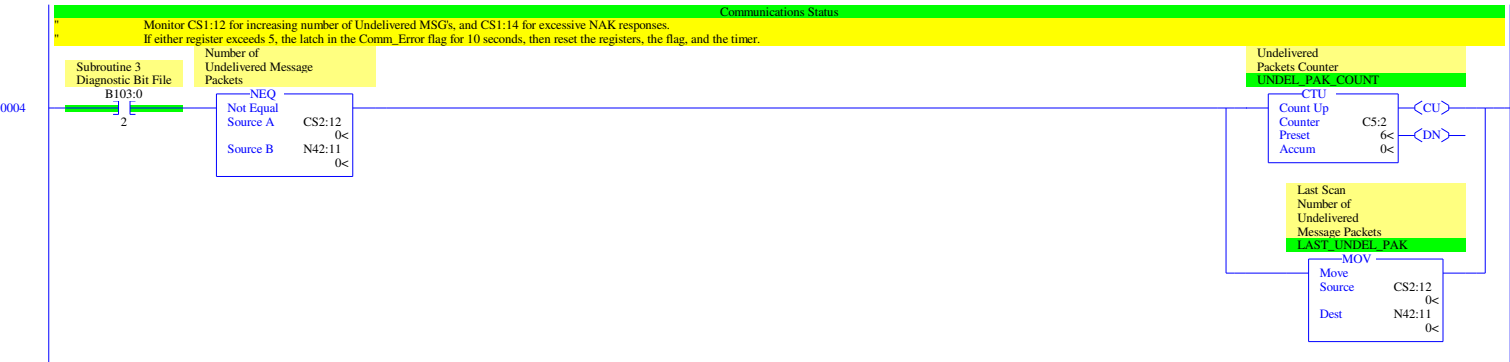


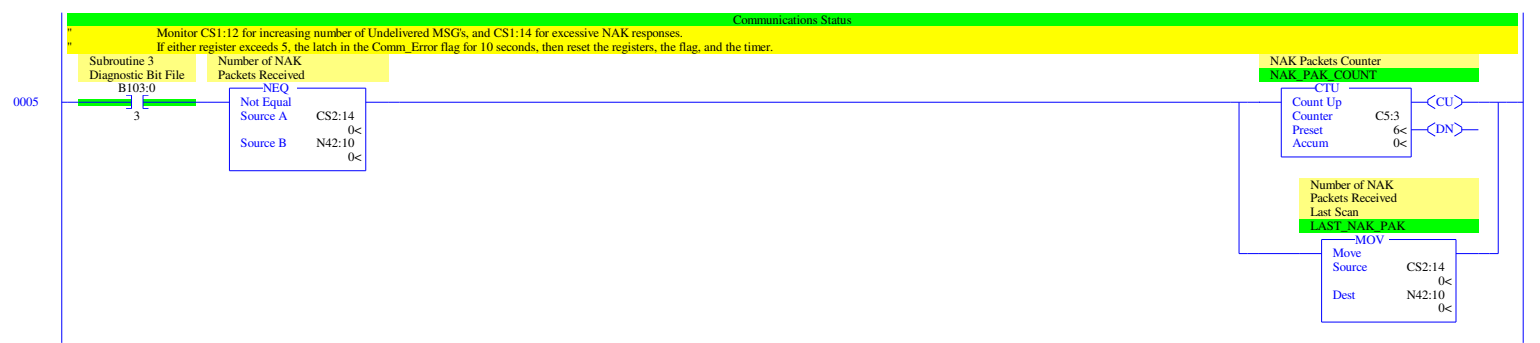




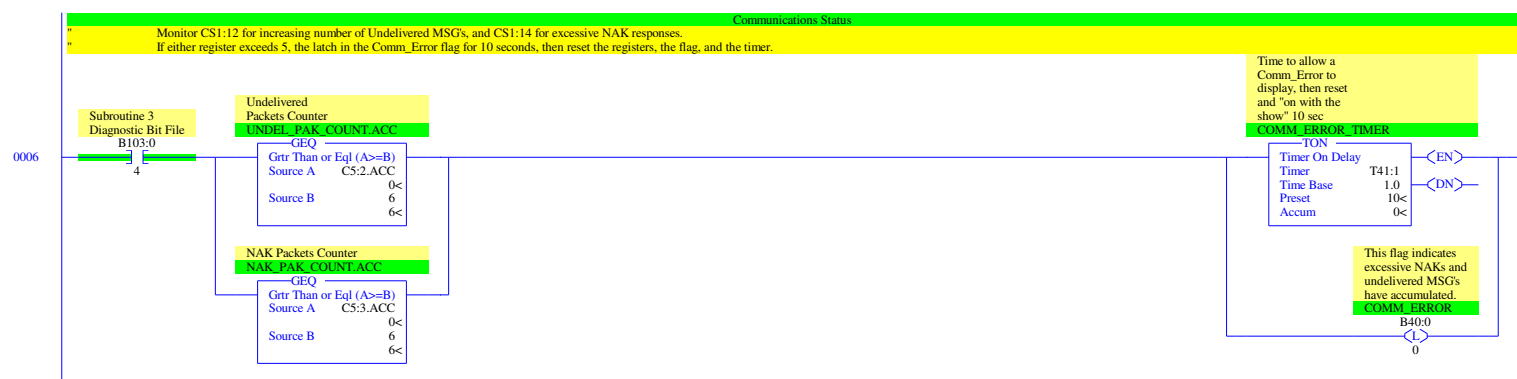




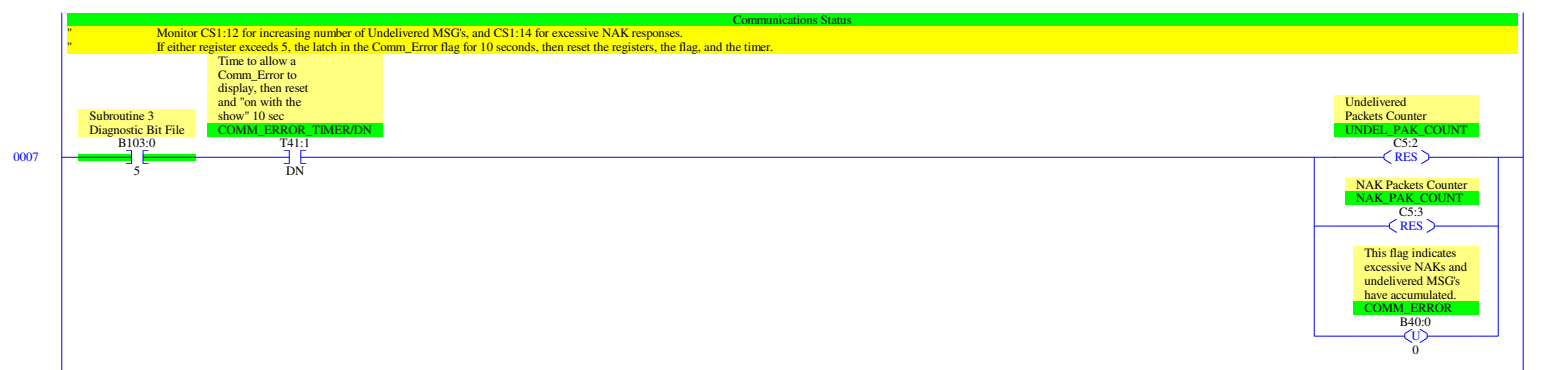




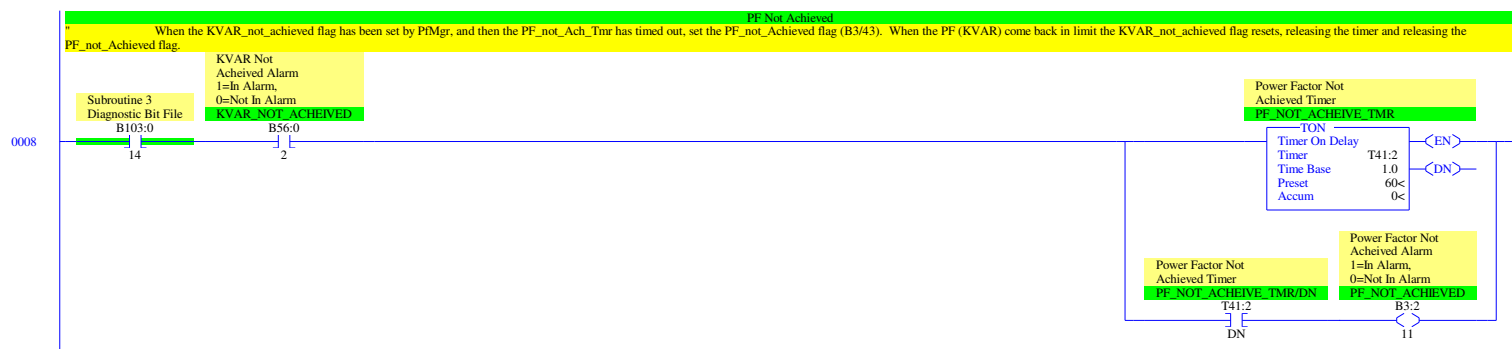
LAD 3 - PLC - Health & Status --- Total Rungs in File = 19



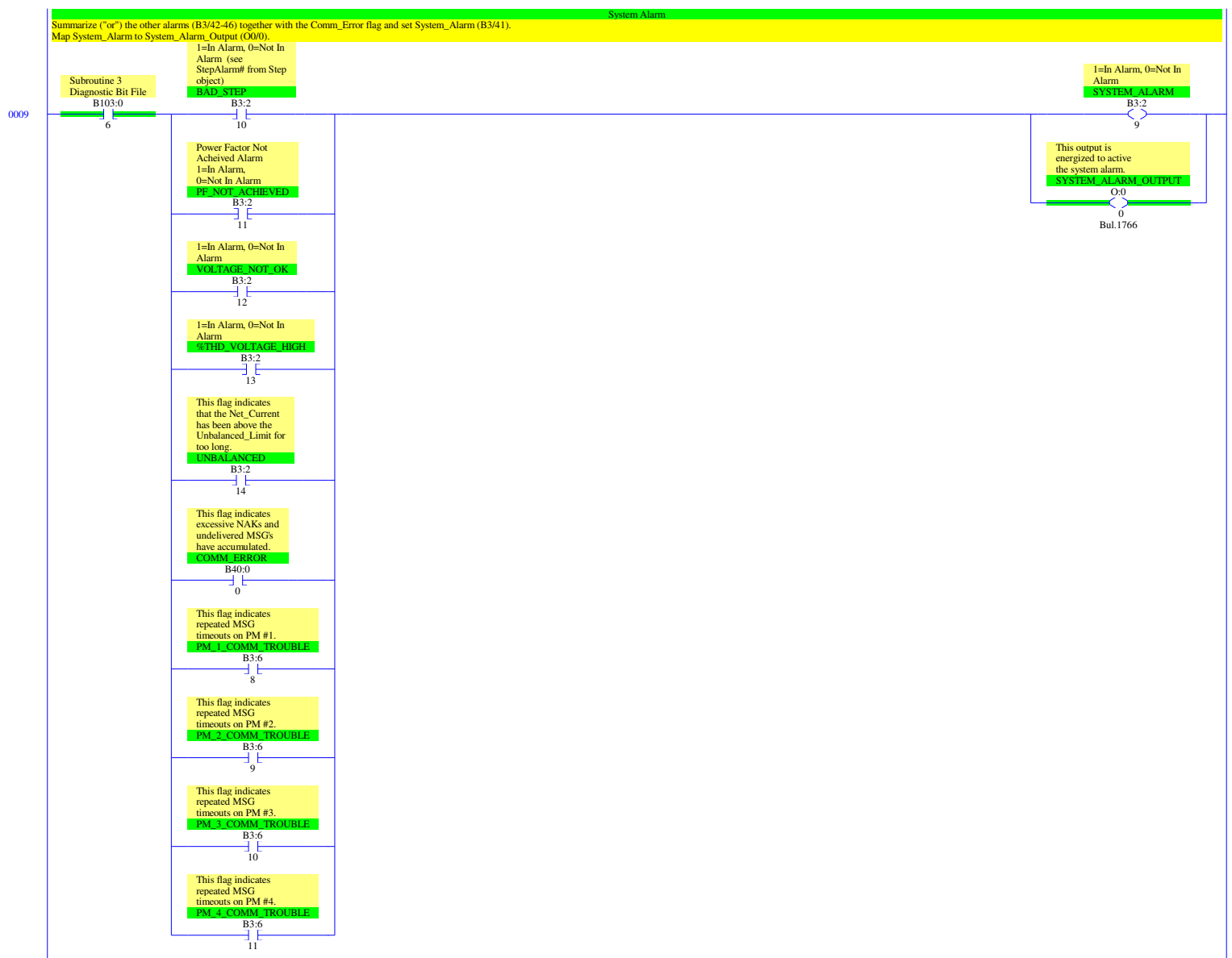
LAD 3 - PLC - Health & Status --- Total Rungs in File = 19

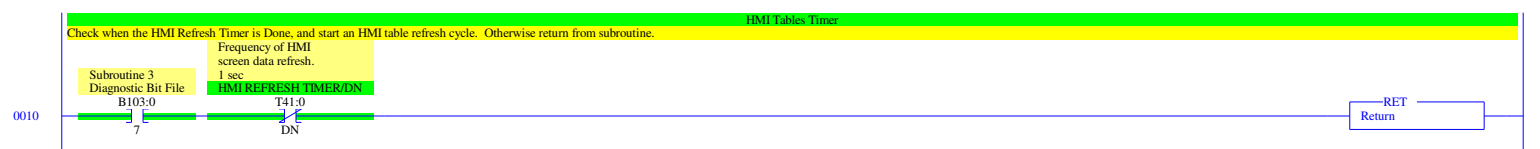


LAD 3 - PLC - Health & Status --- Total Rungs in File = 19

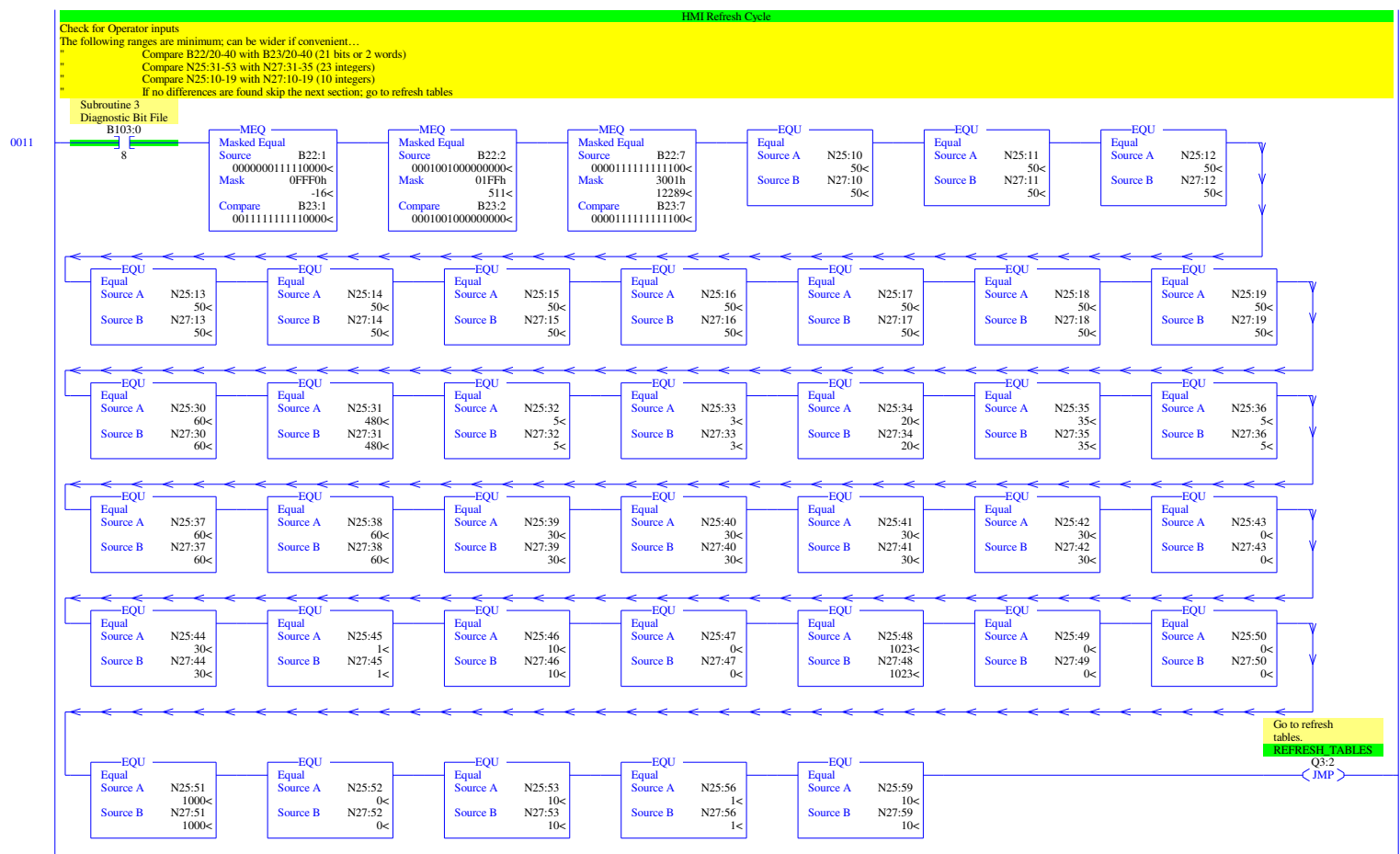


LAD 3 - PLC - Health & Status --- Total Rungs in File = 19

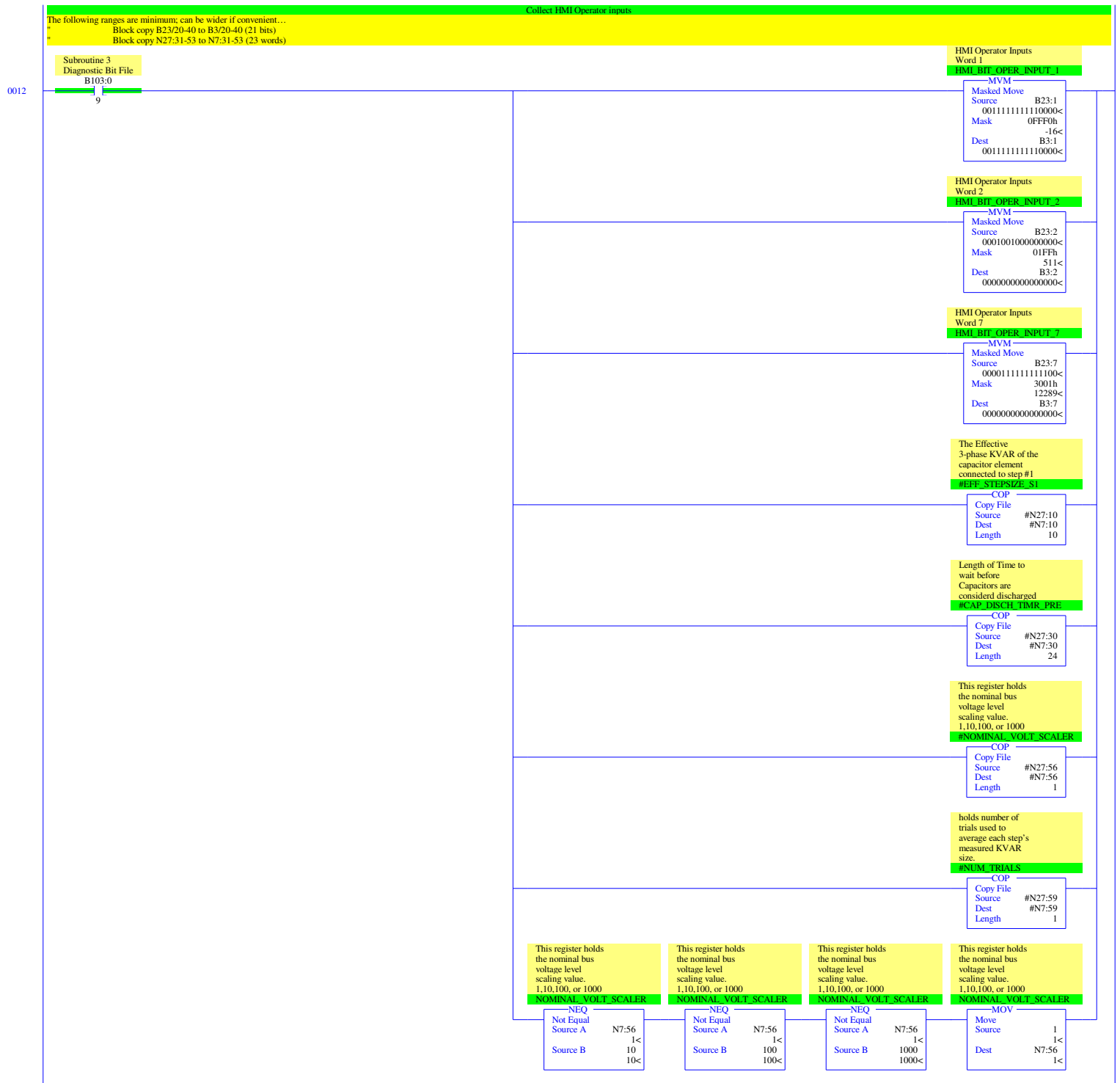




LAD 3 - PLC - Health & Status --- Total Rungs in File = 19

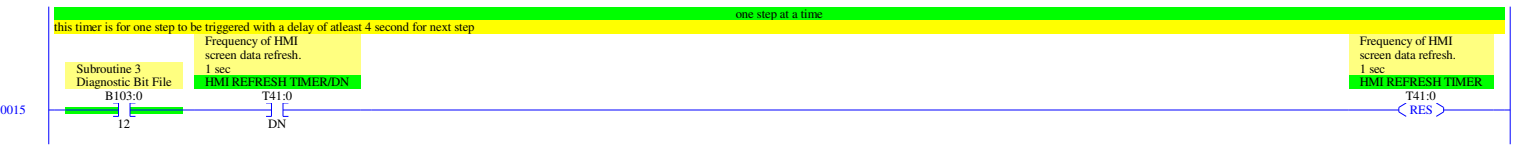


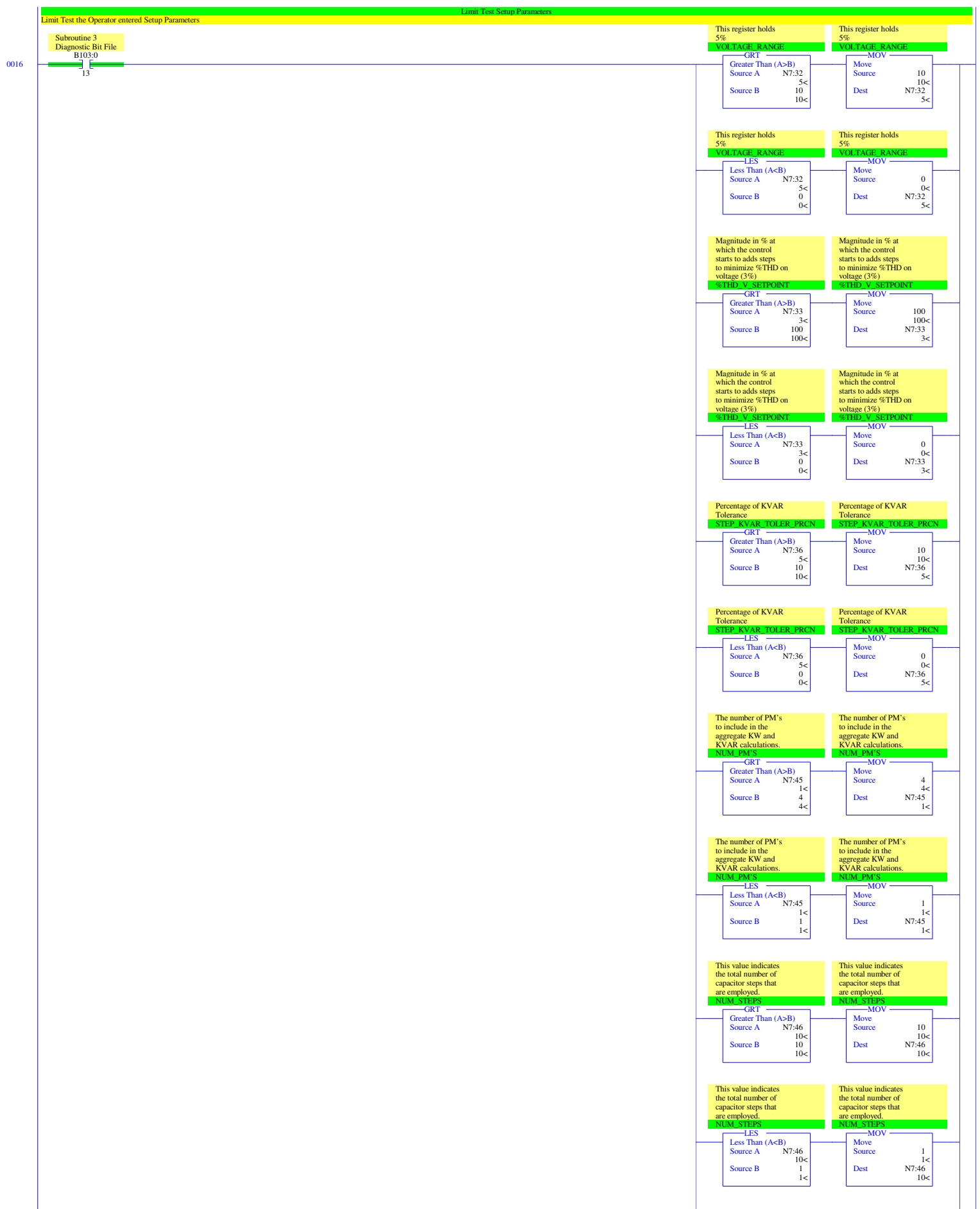
LAD 3 - PLC - Health & Status --- Total Rungs in File = 19

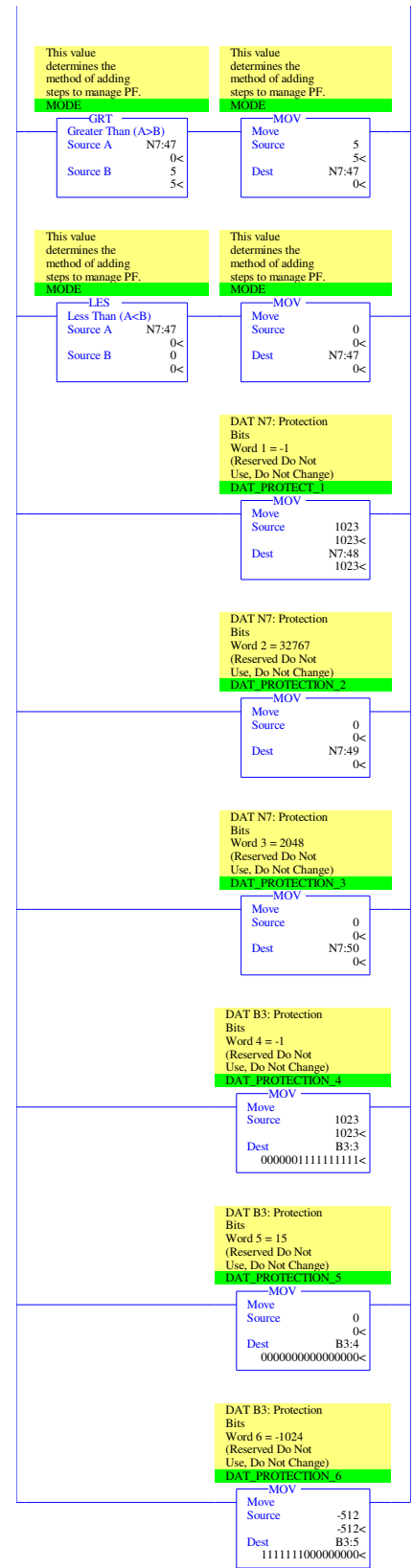




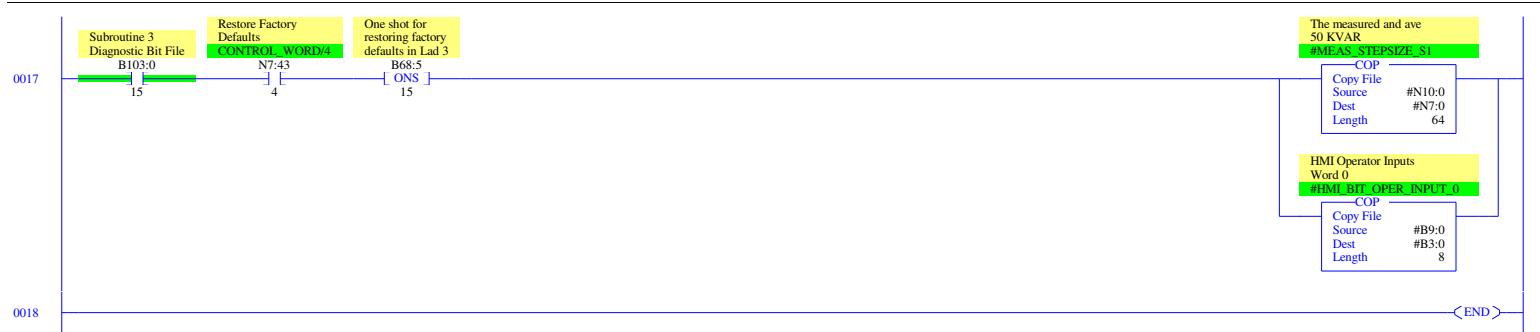




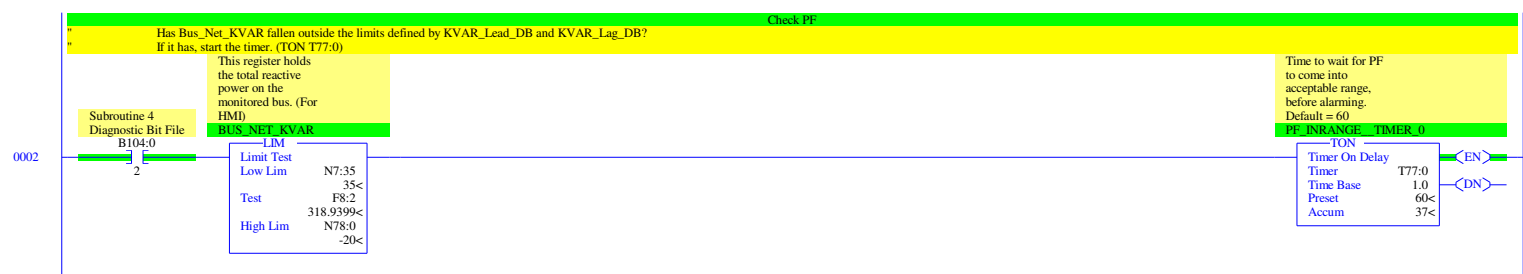


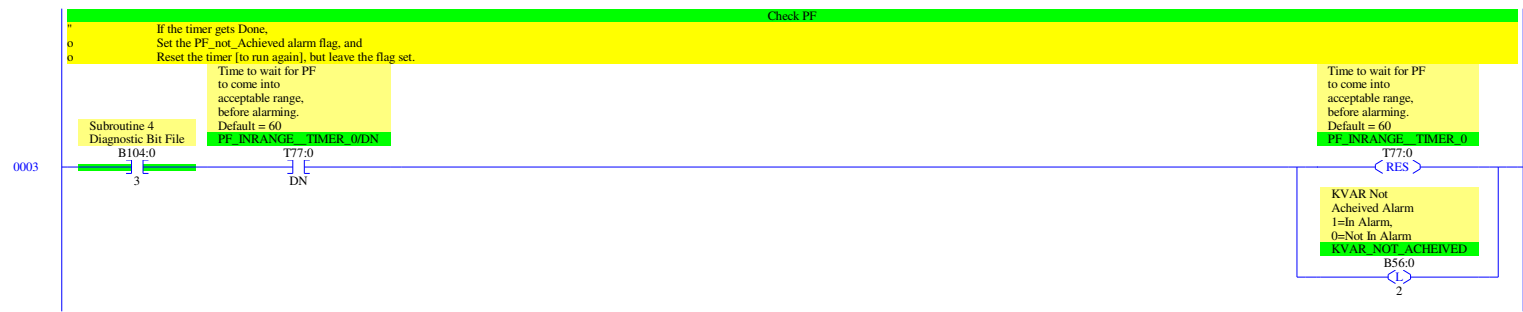


LAD 3 - PLC - Health & Status --- Total Rungs in File = 19

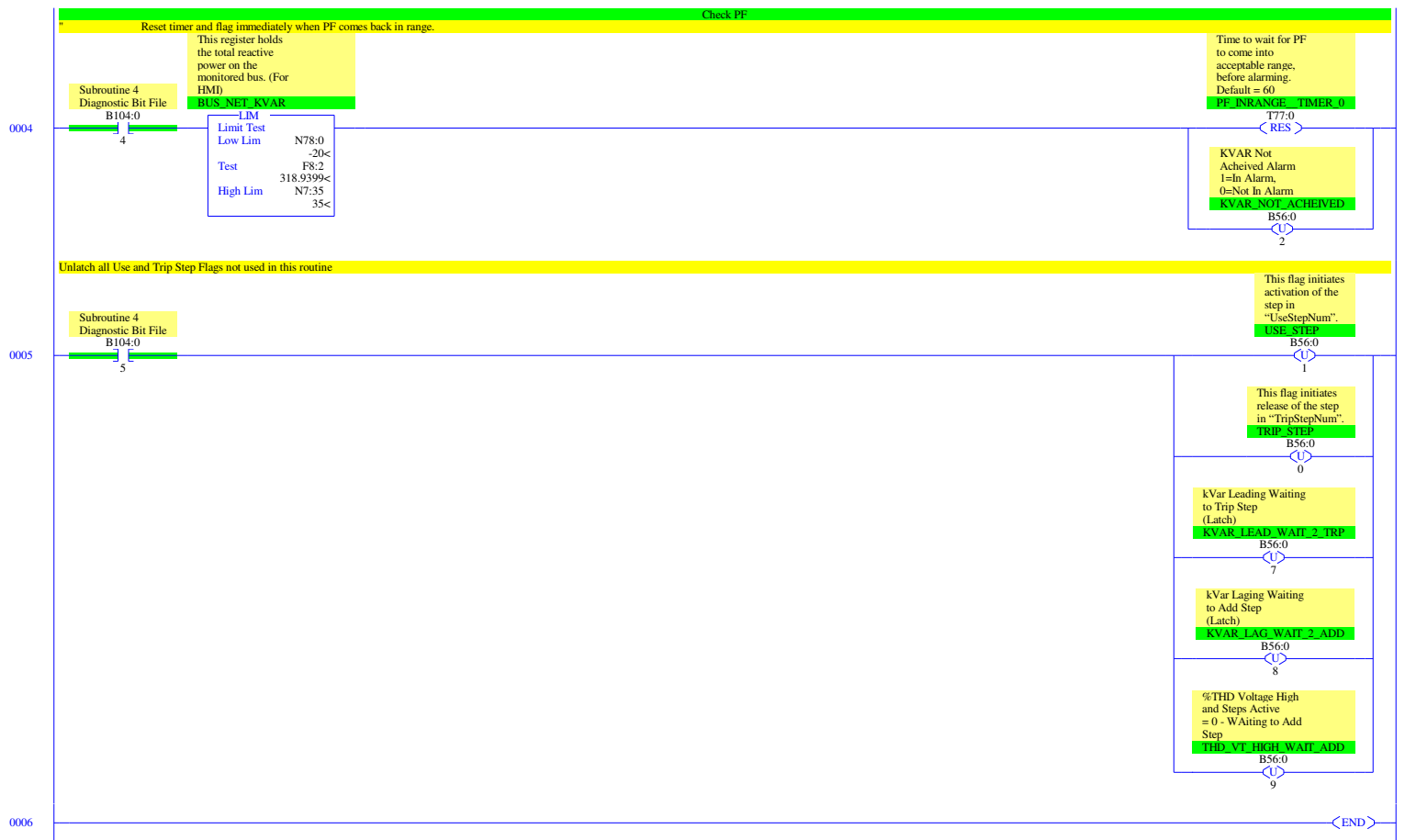


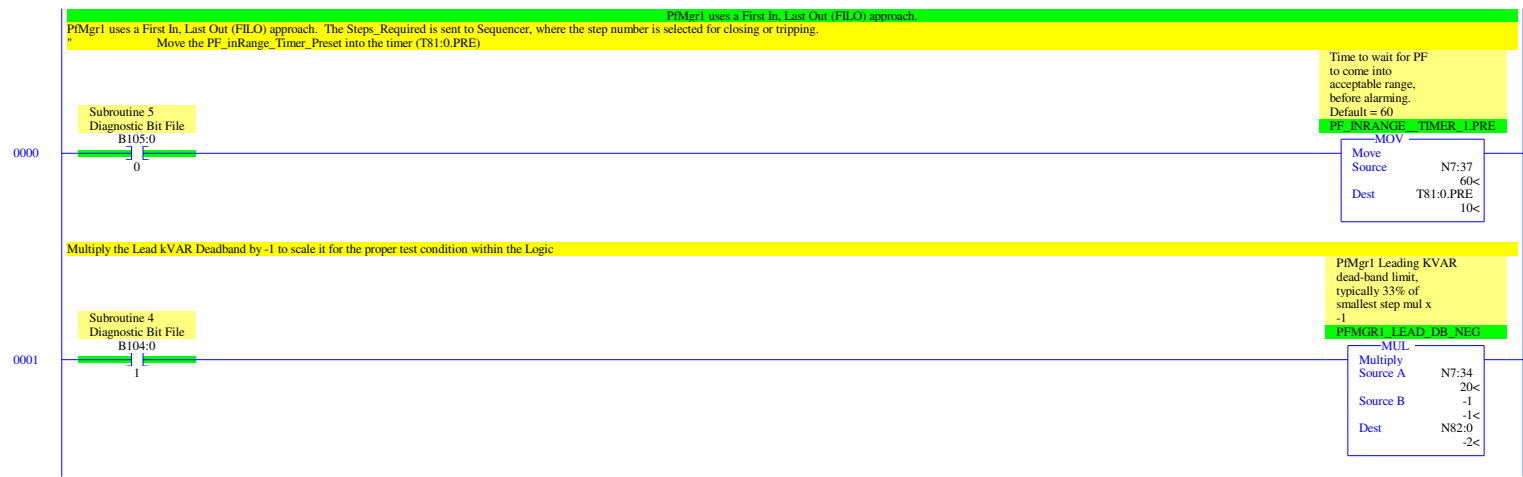


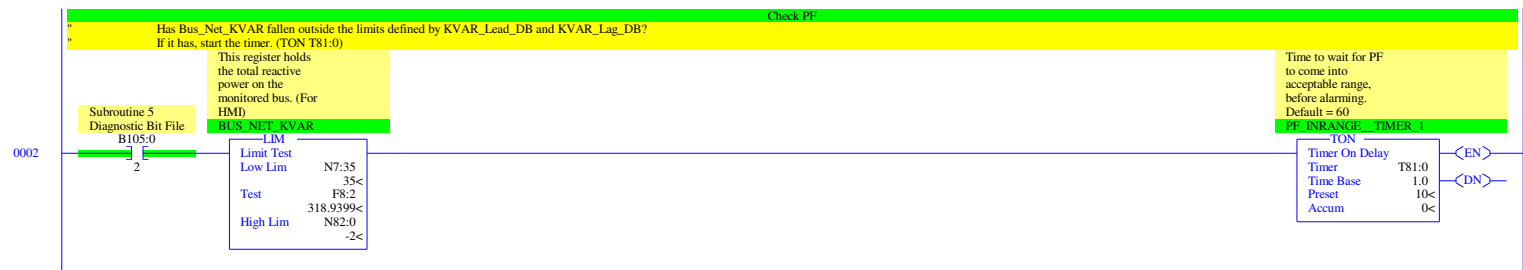


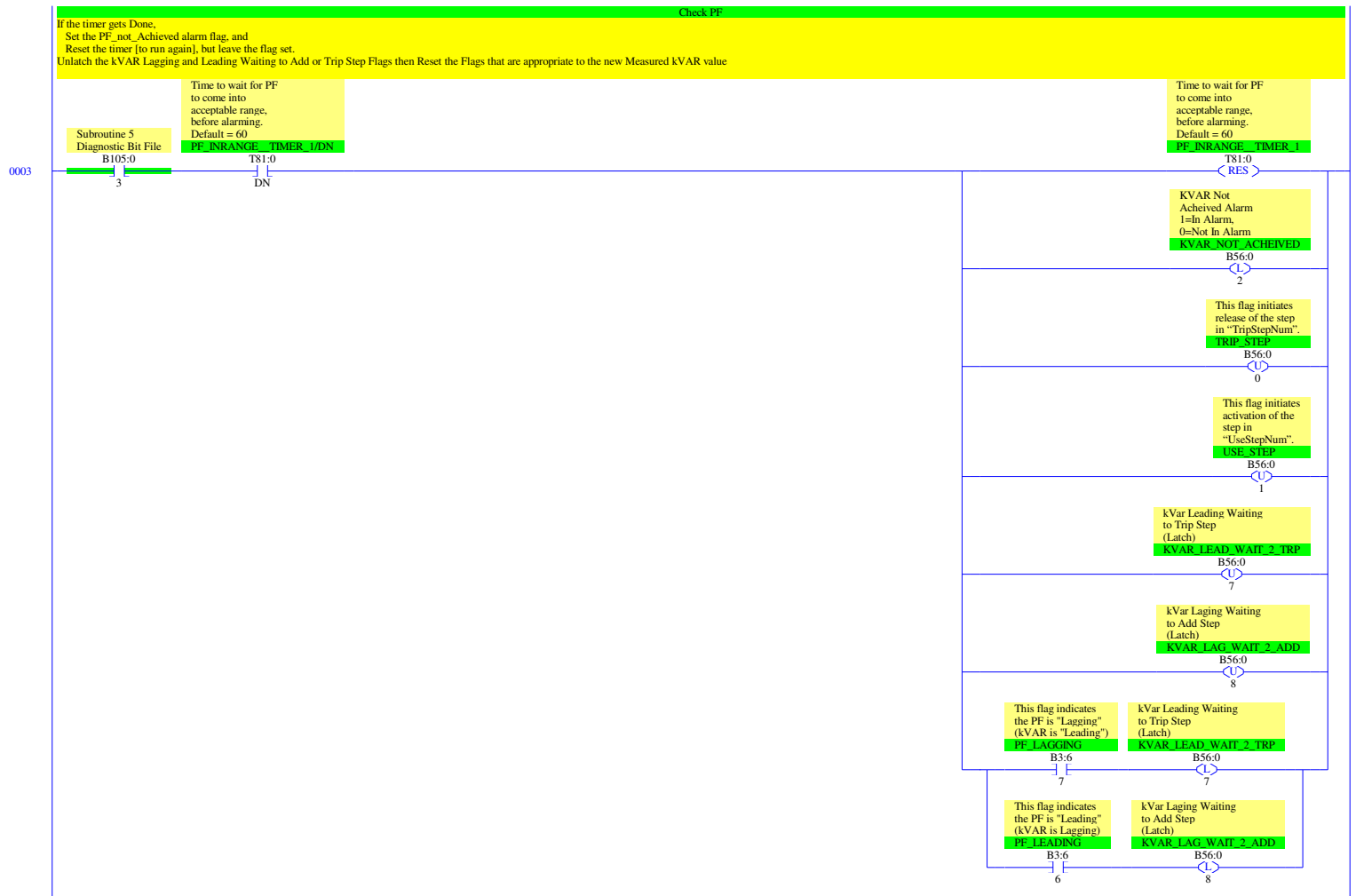


LAD 4 - PFMGR0 - PFMgr0 - Manual Mode of Operation --- Total Rungs in File = 7

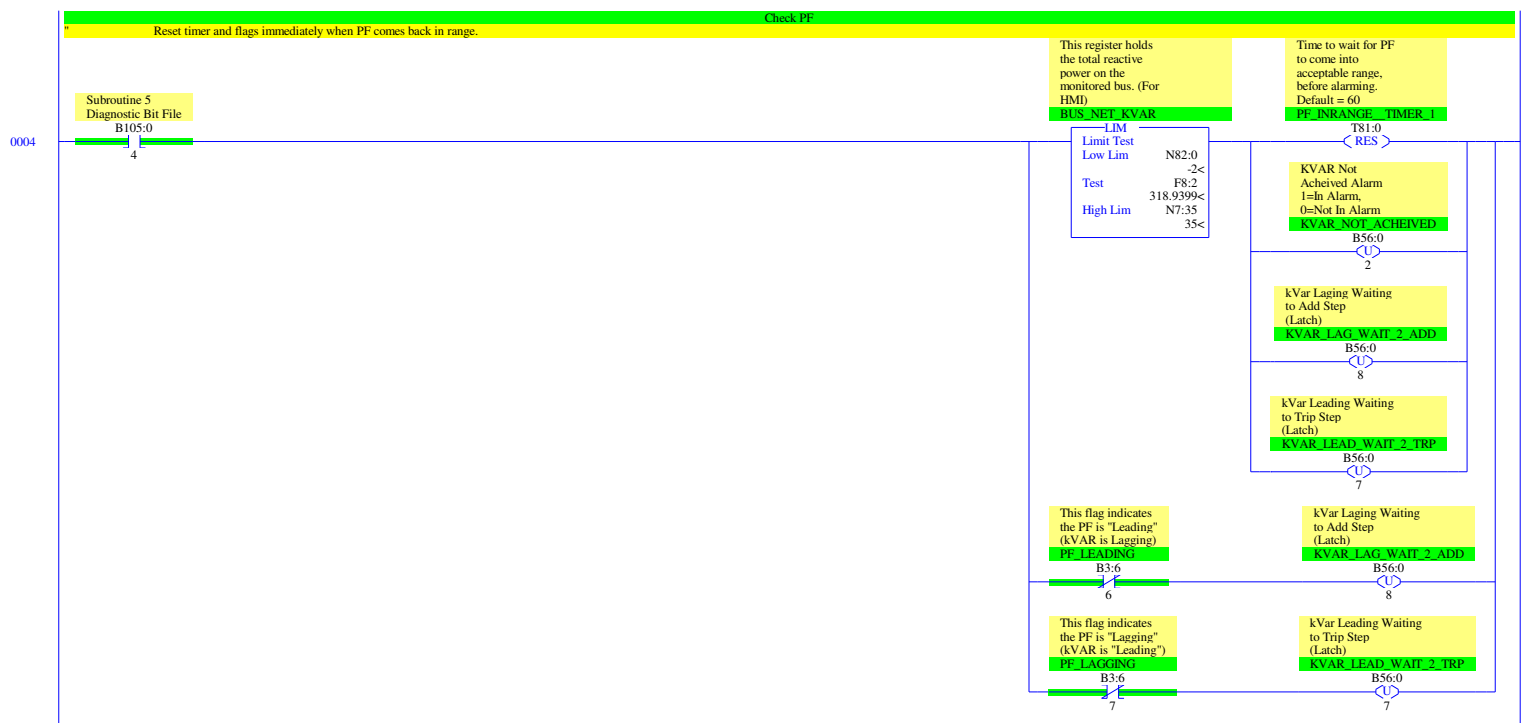




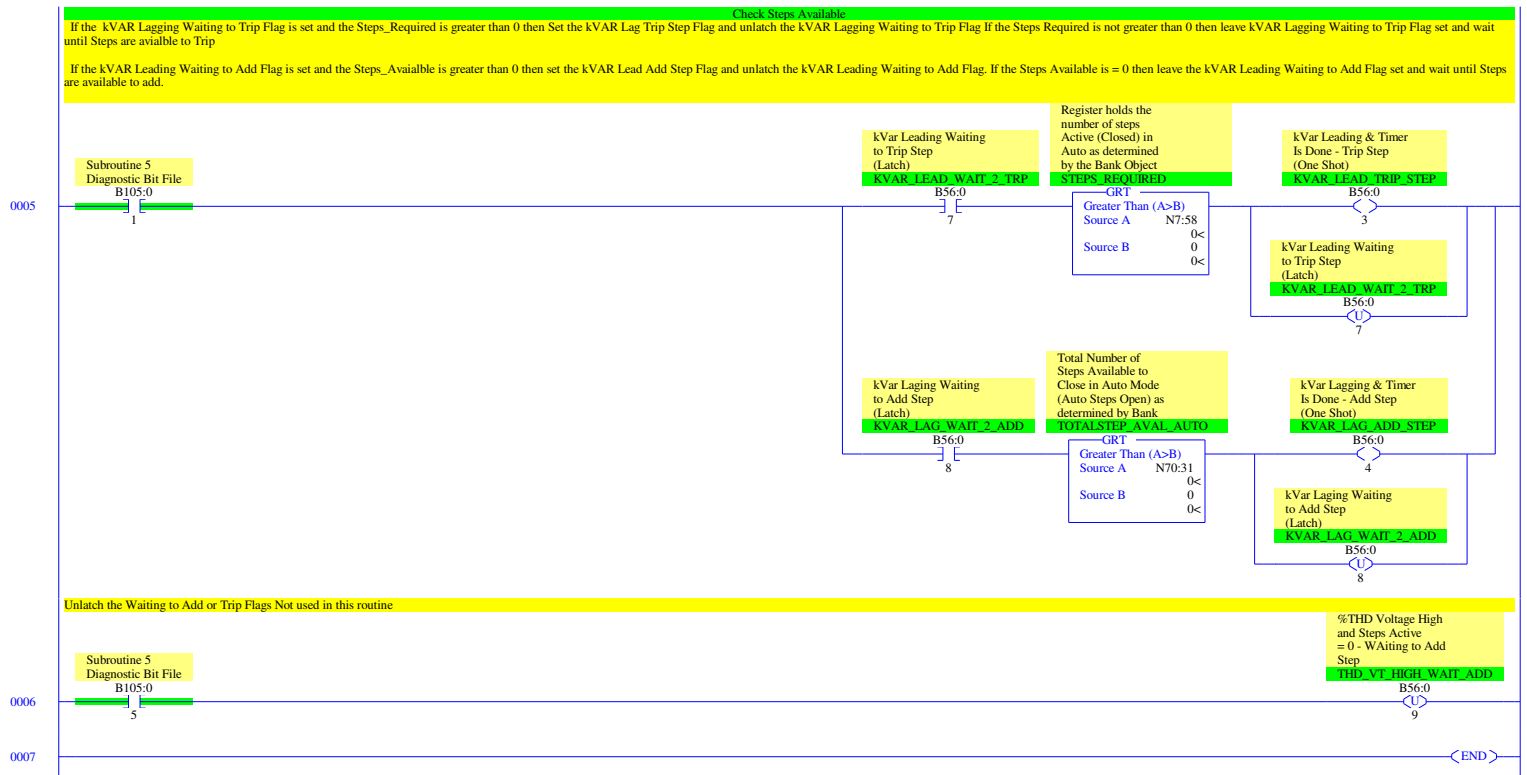


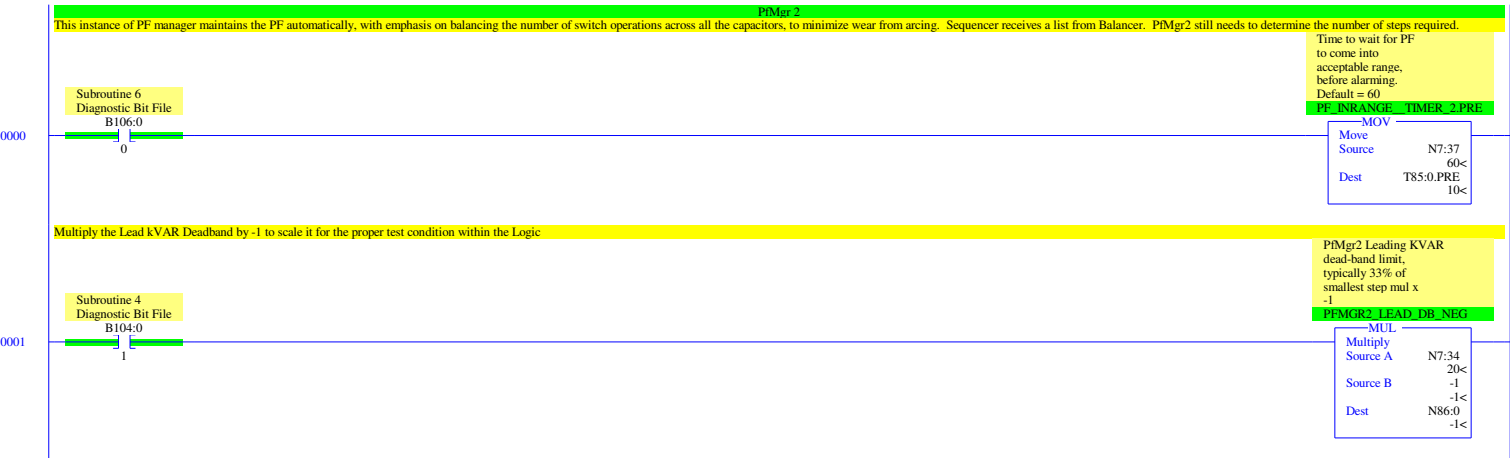


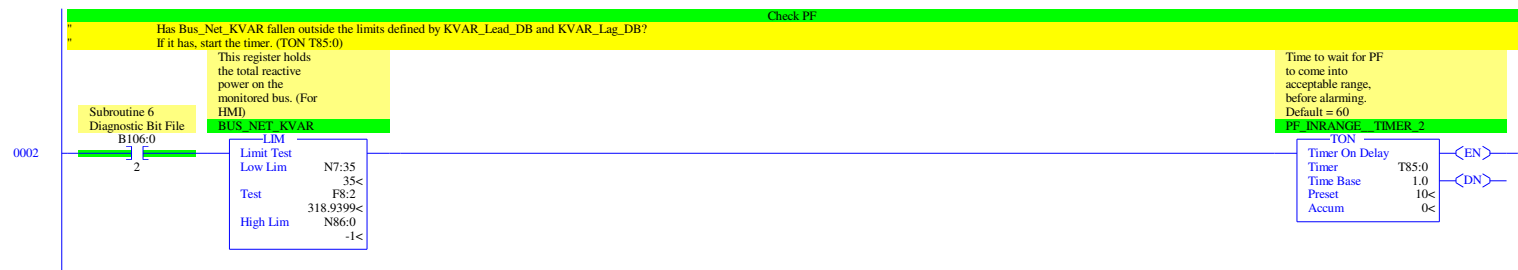
LAD 5 - PFMGR1 - First In Last Out --- Total Rungs in File = 8

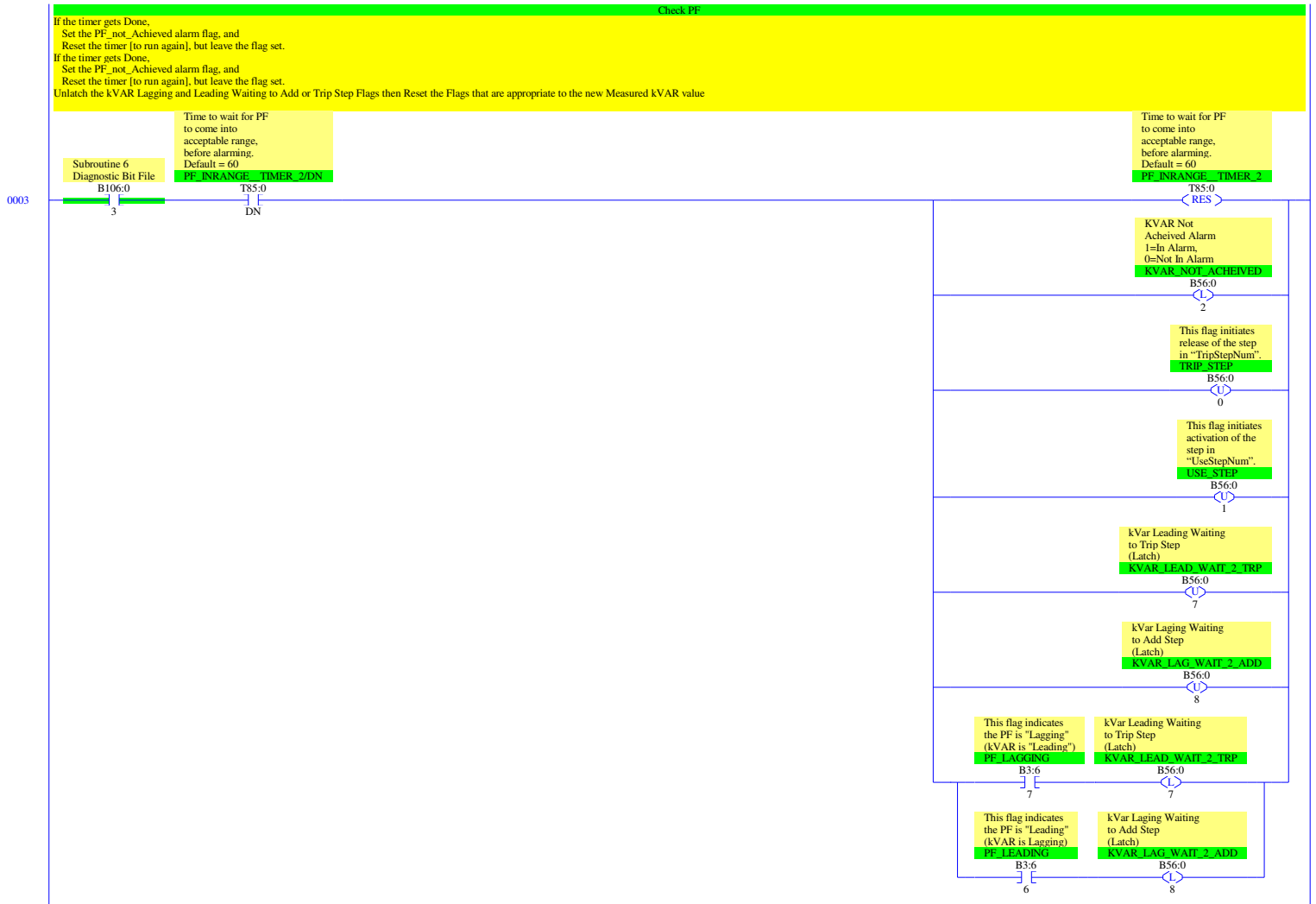


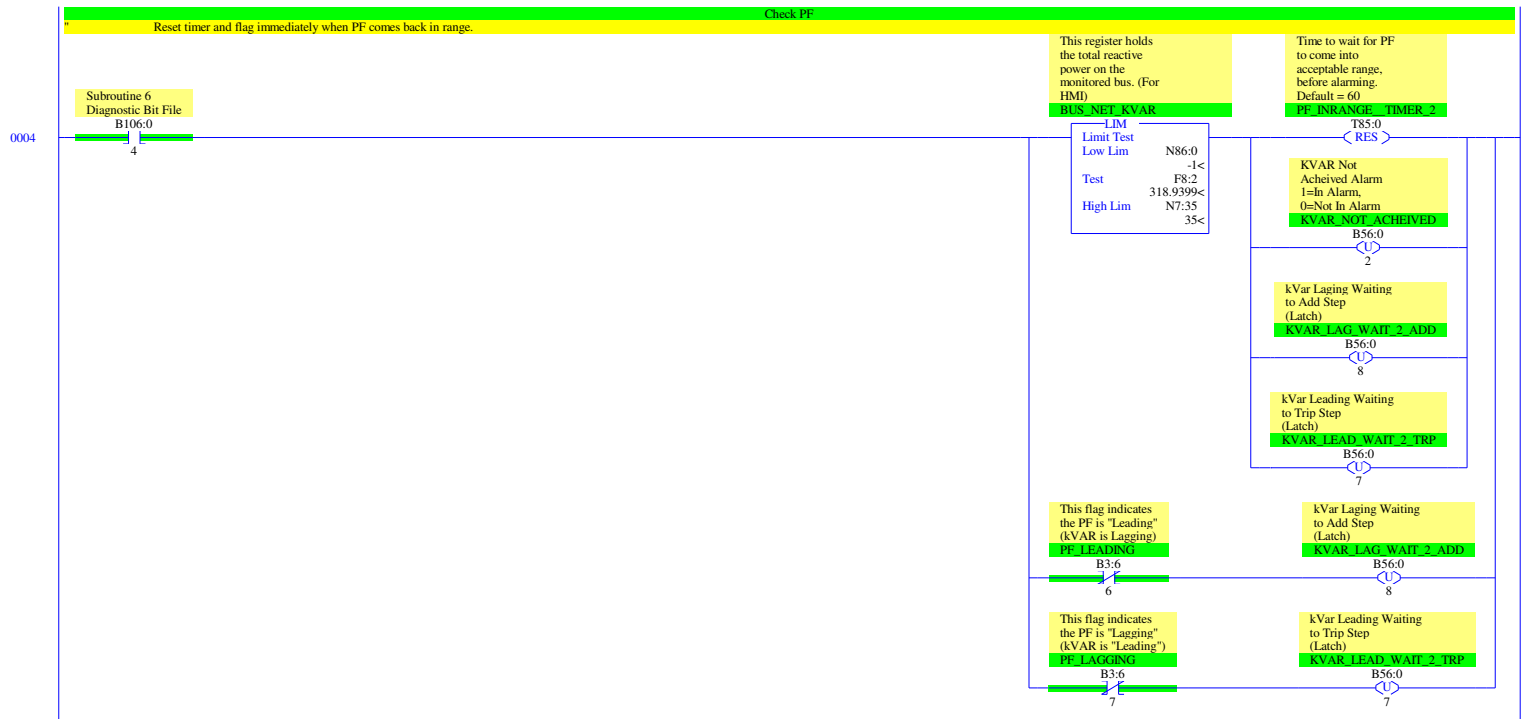
LAD 5 - PFMGR1 - First In Last Out --- Total Rungs in File = 8

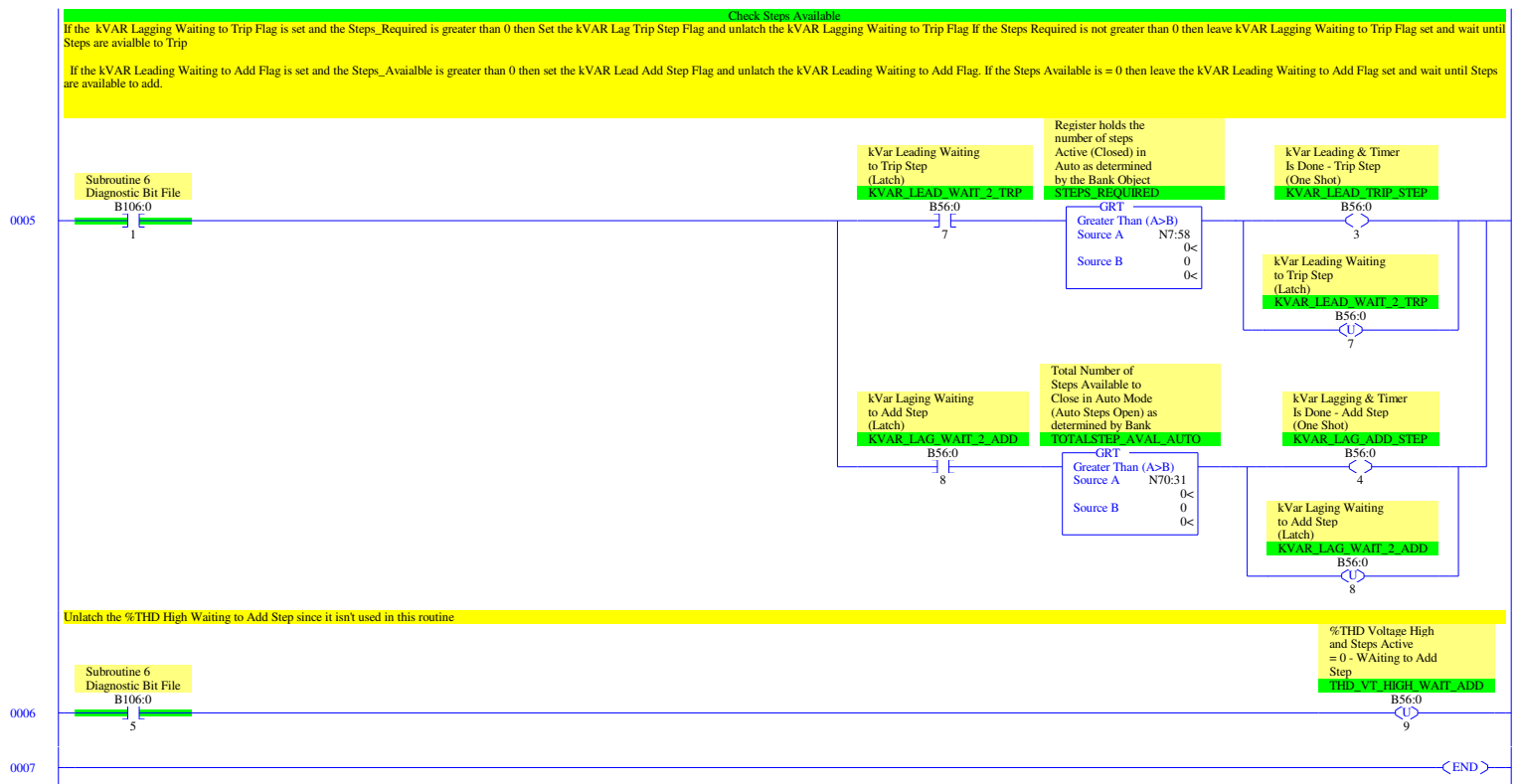


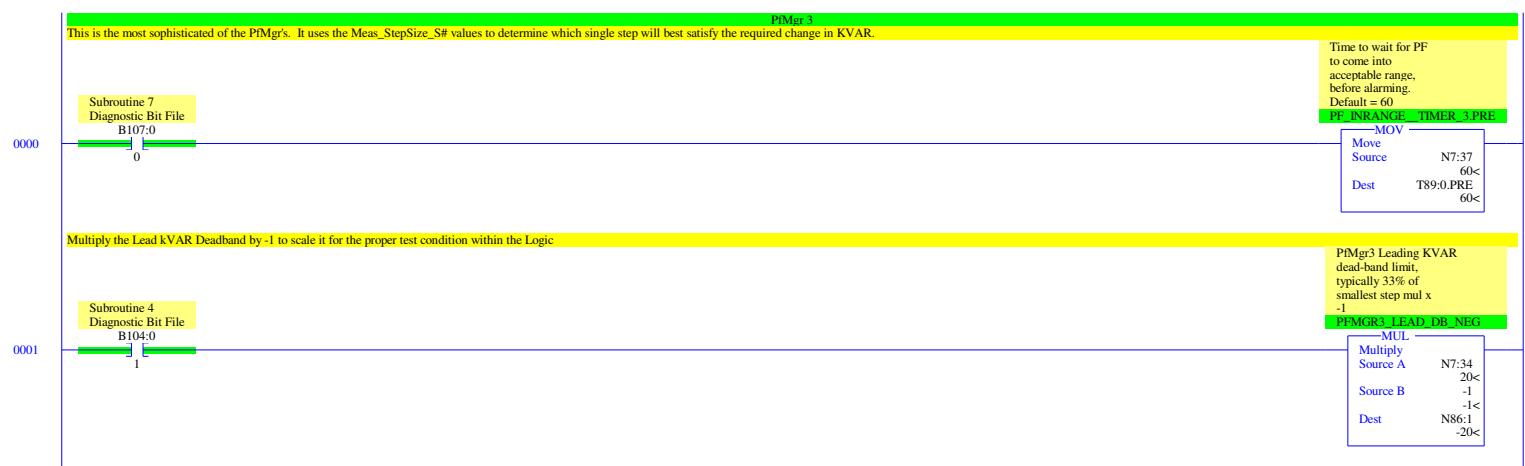


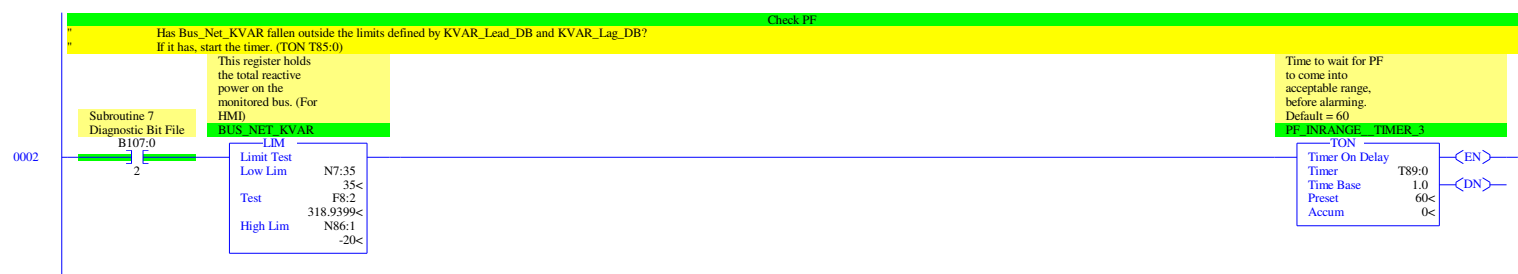








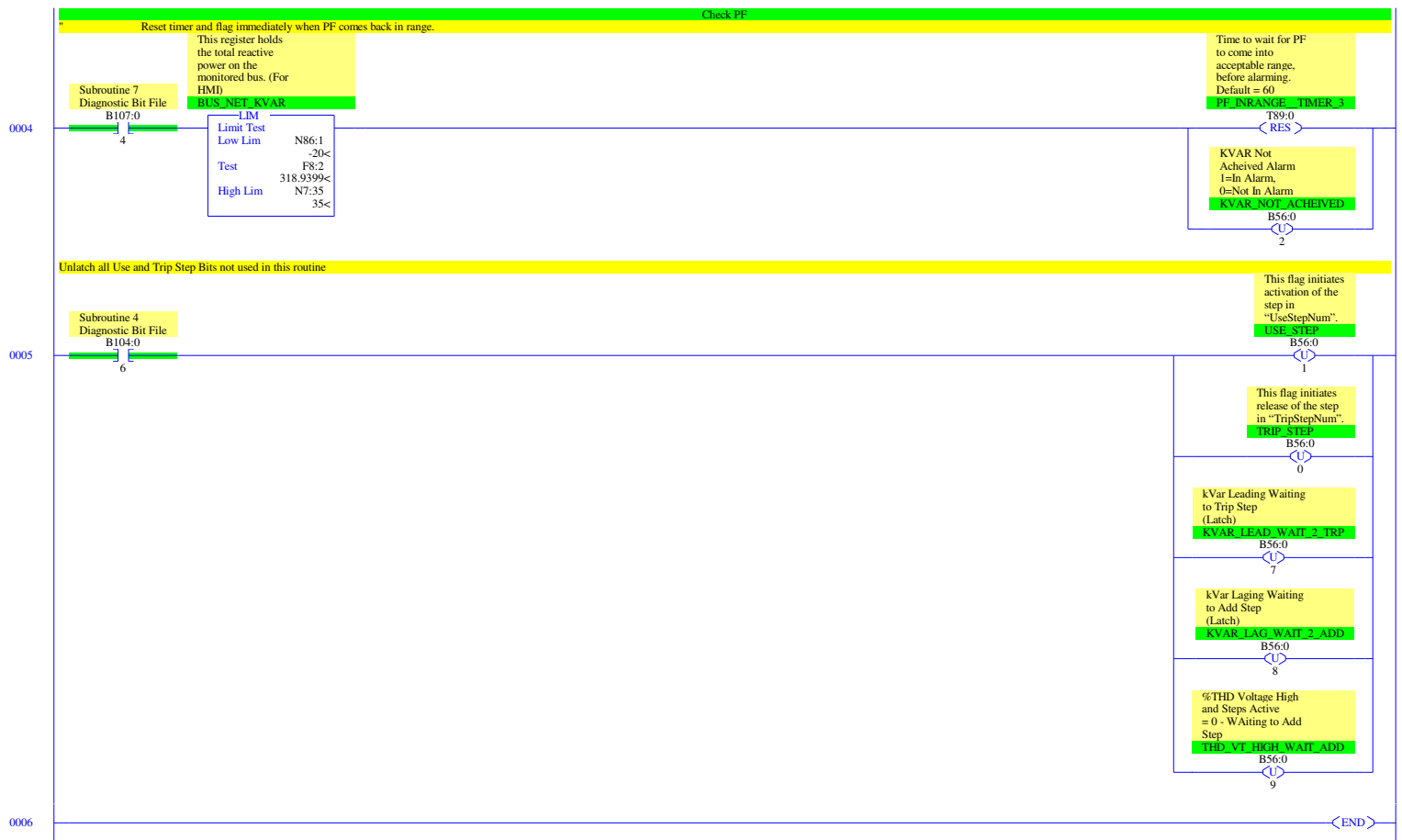


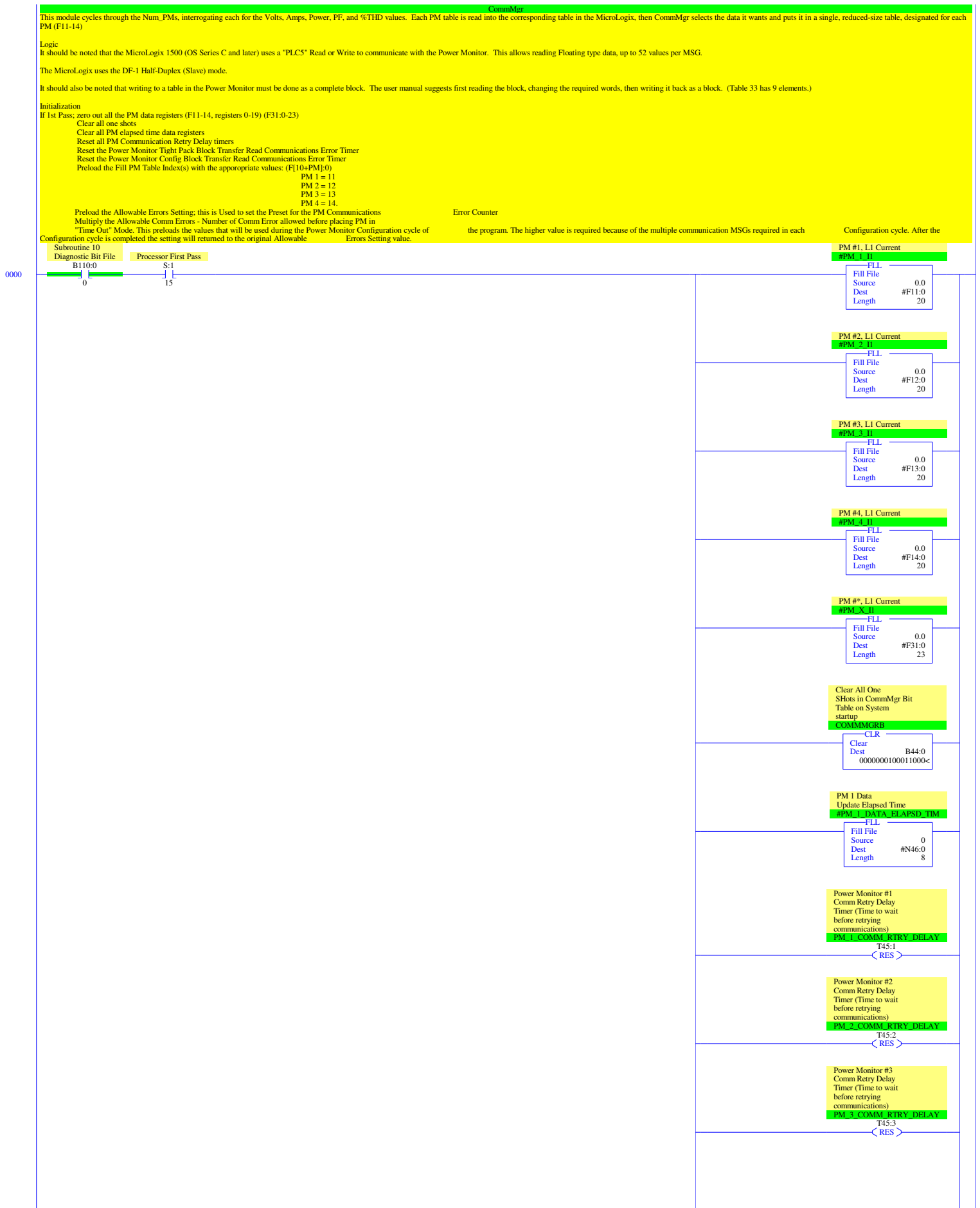


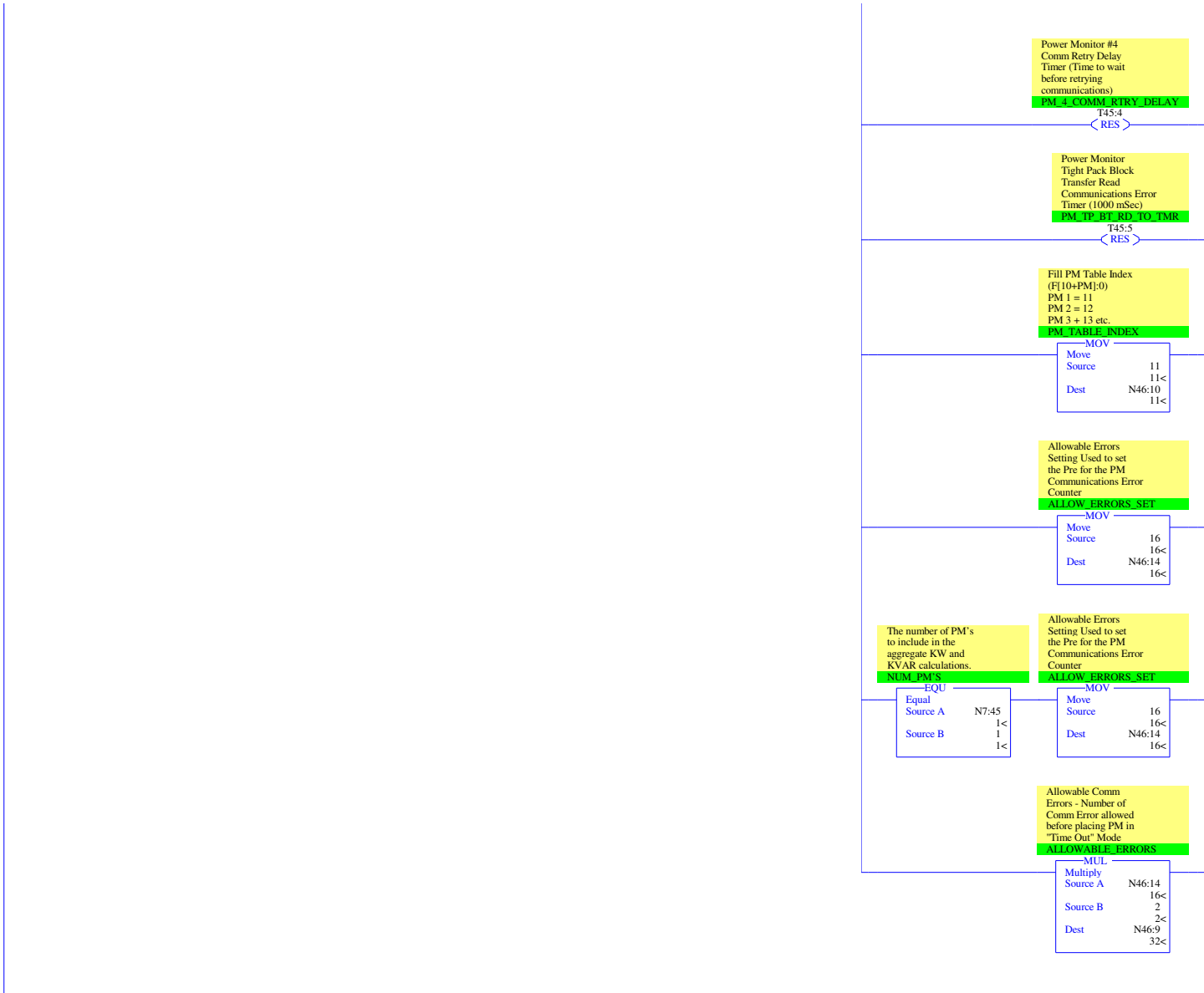
LAD 7 - PFMGR3 - PfMgr3 - Meas_Step_S# Mode "Best Fit" --- Total Rungs in File = 7

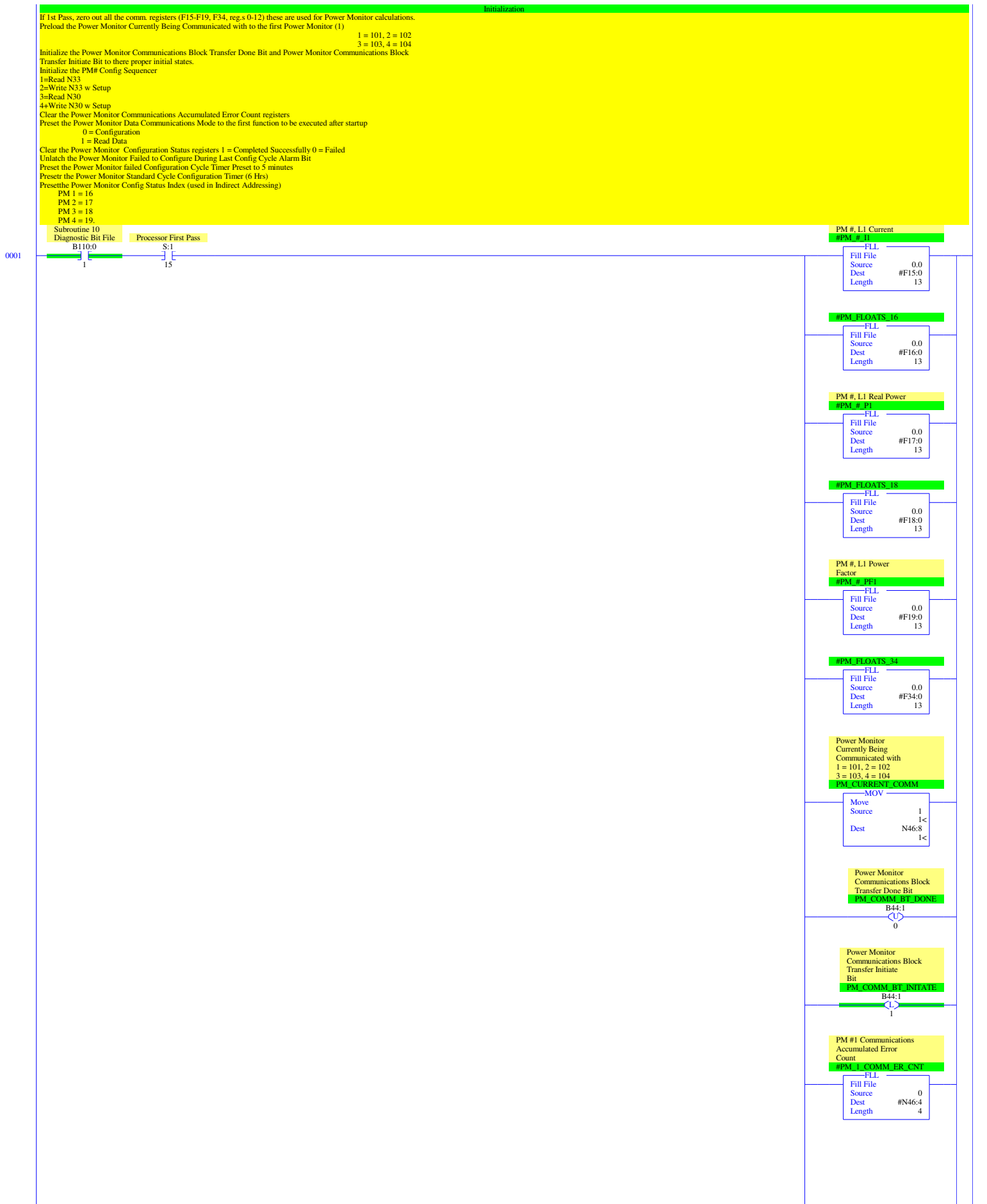


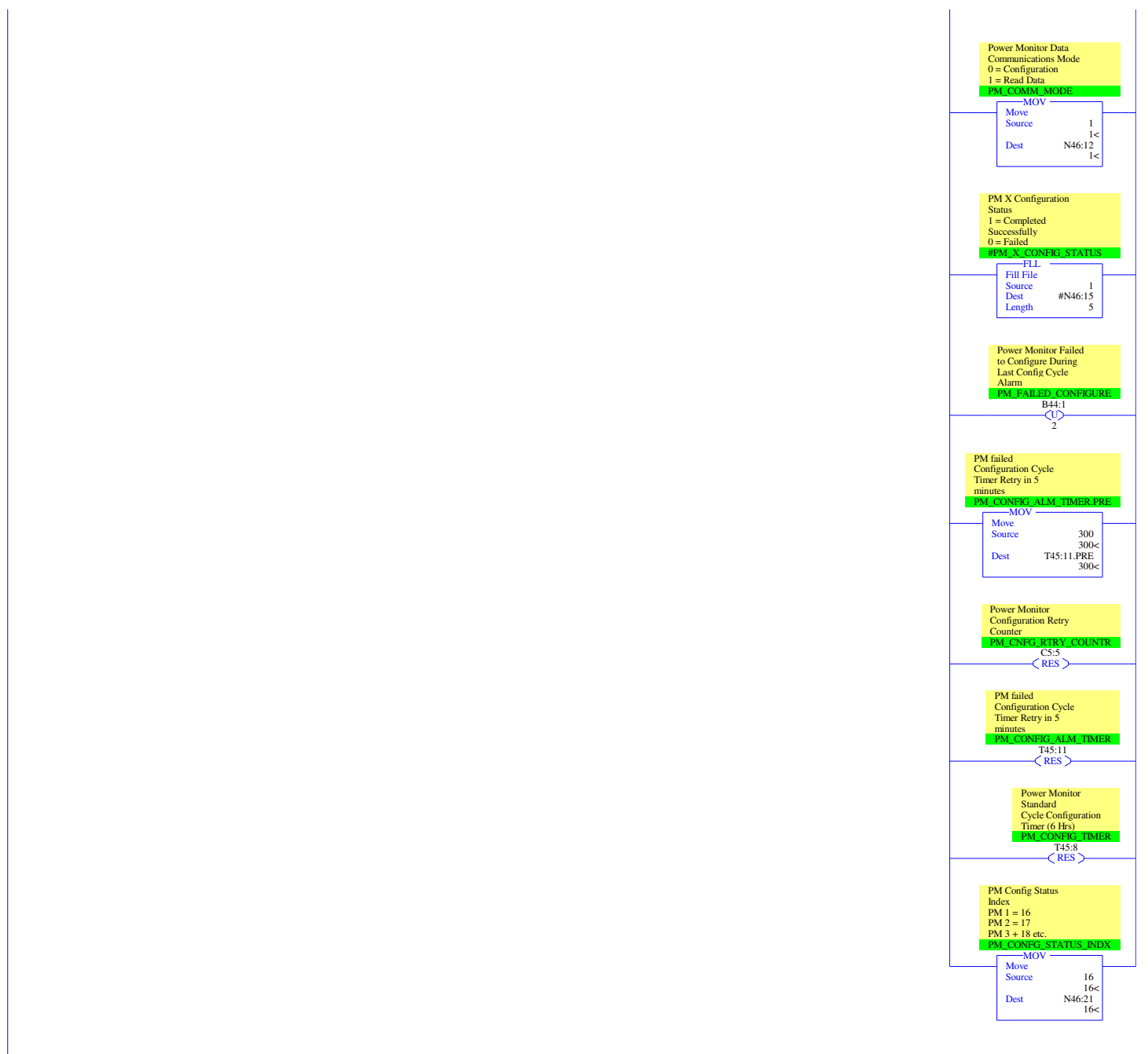
LAD 7 - PFMGR3 - PfMgr3 - Meas_Step_S# Mode "Best Fit" --- Total Rungs in File = 7





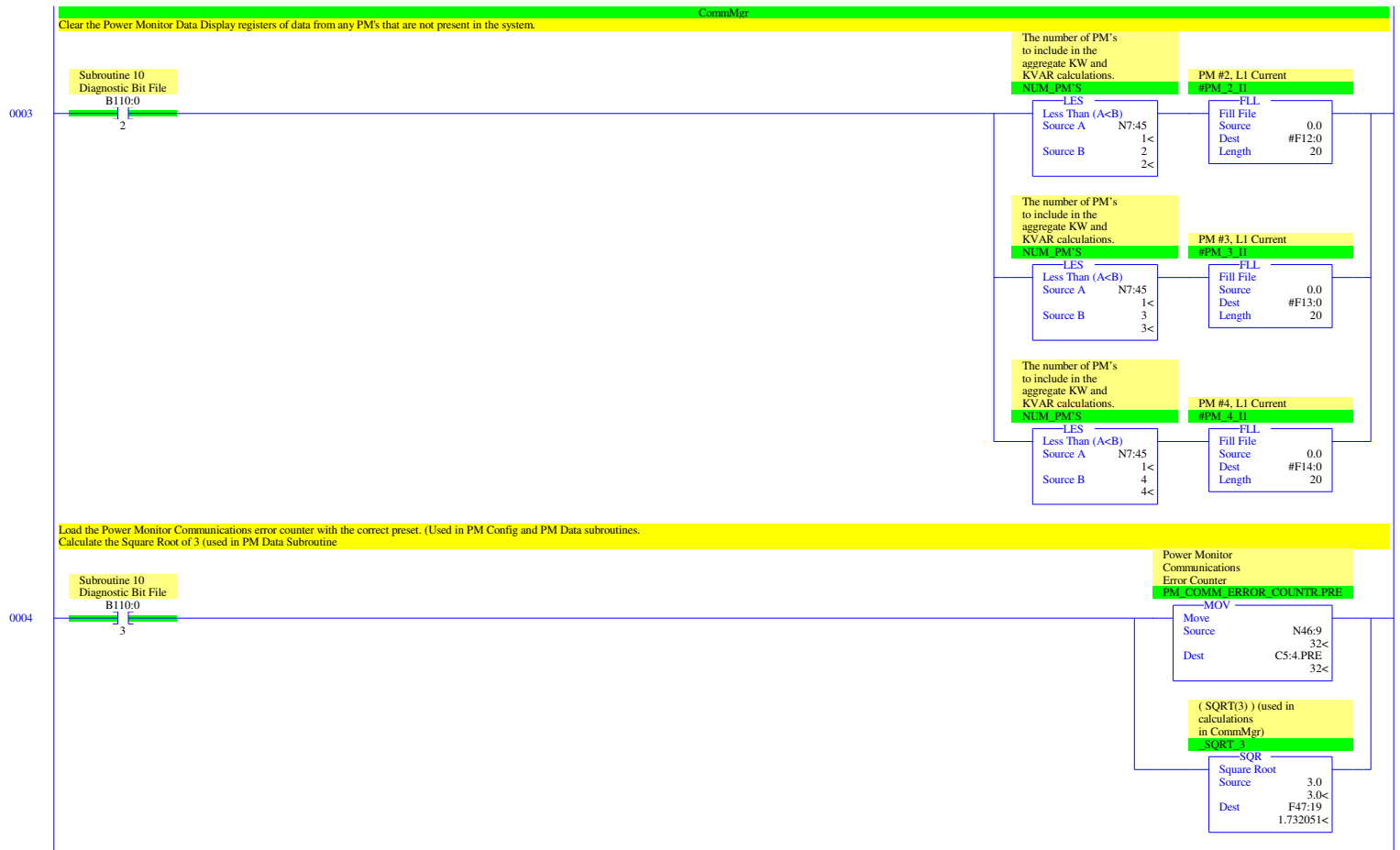


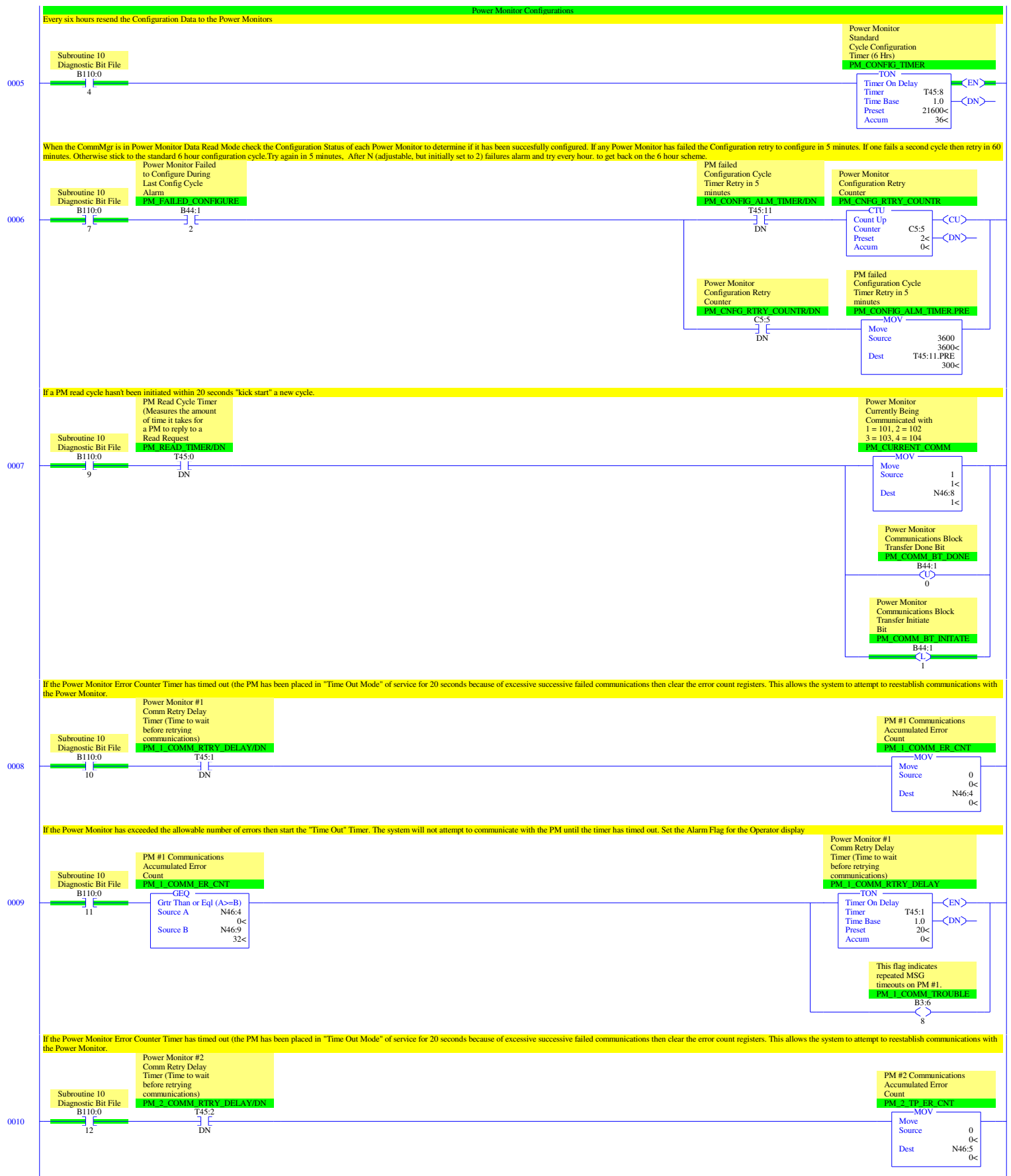




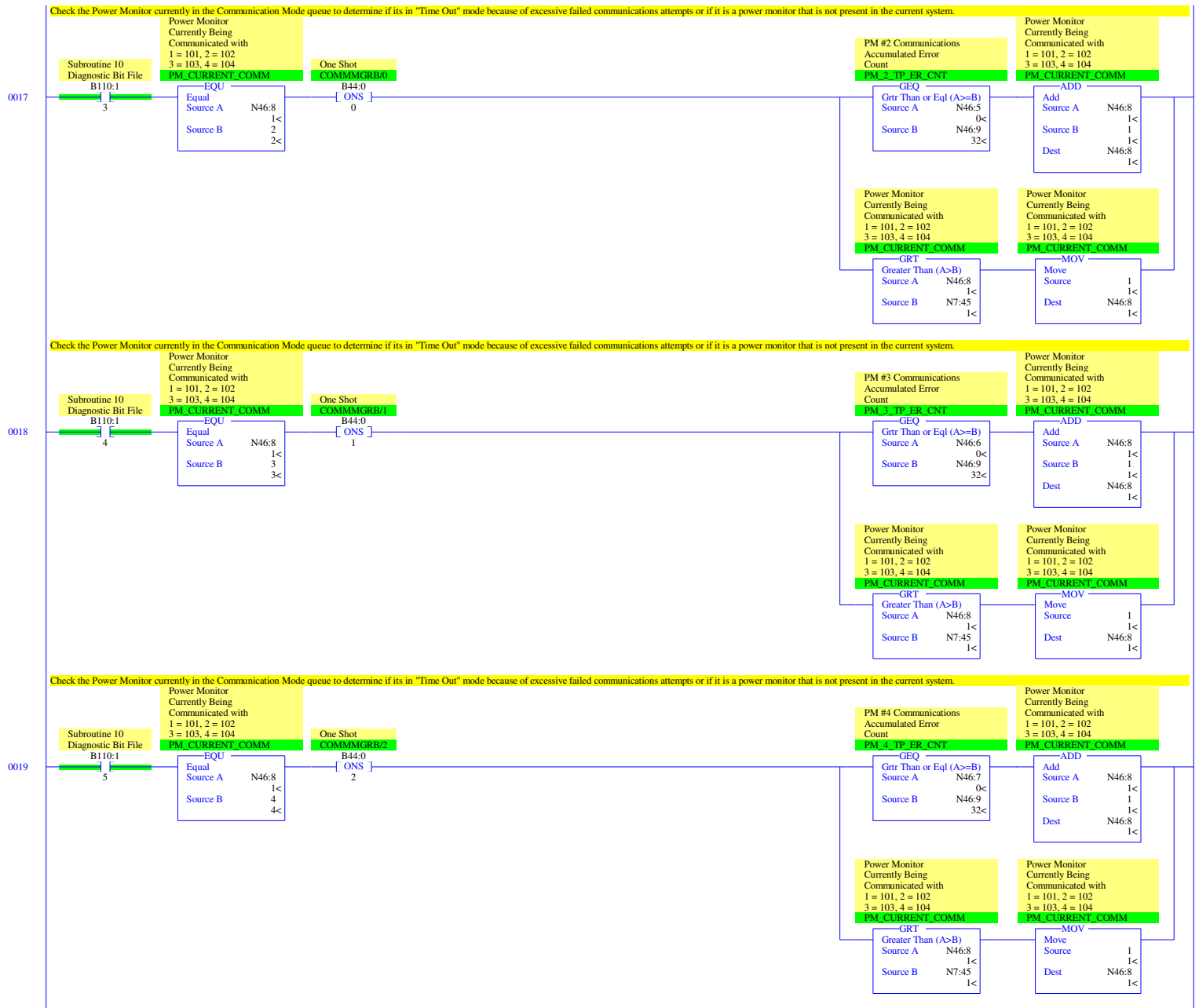


LAD 10 - COMMMGR - CommMgr - Communications Manager --- Total Rungs in File = 41

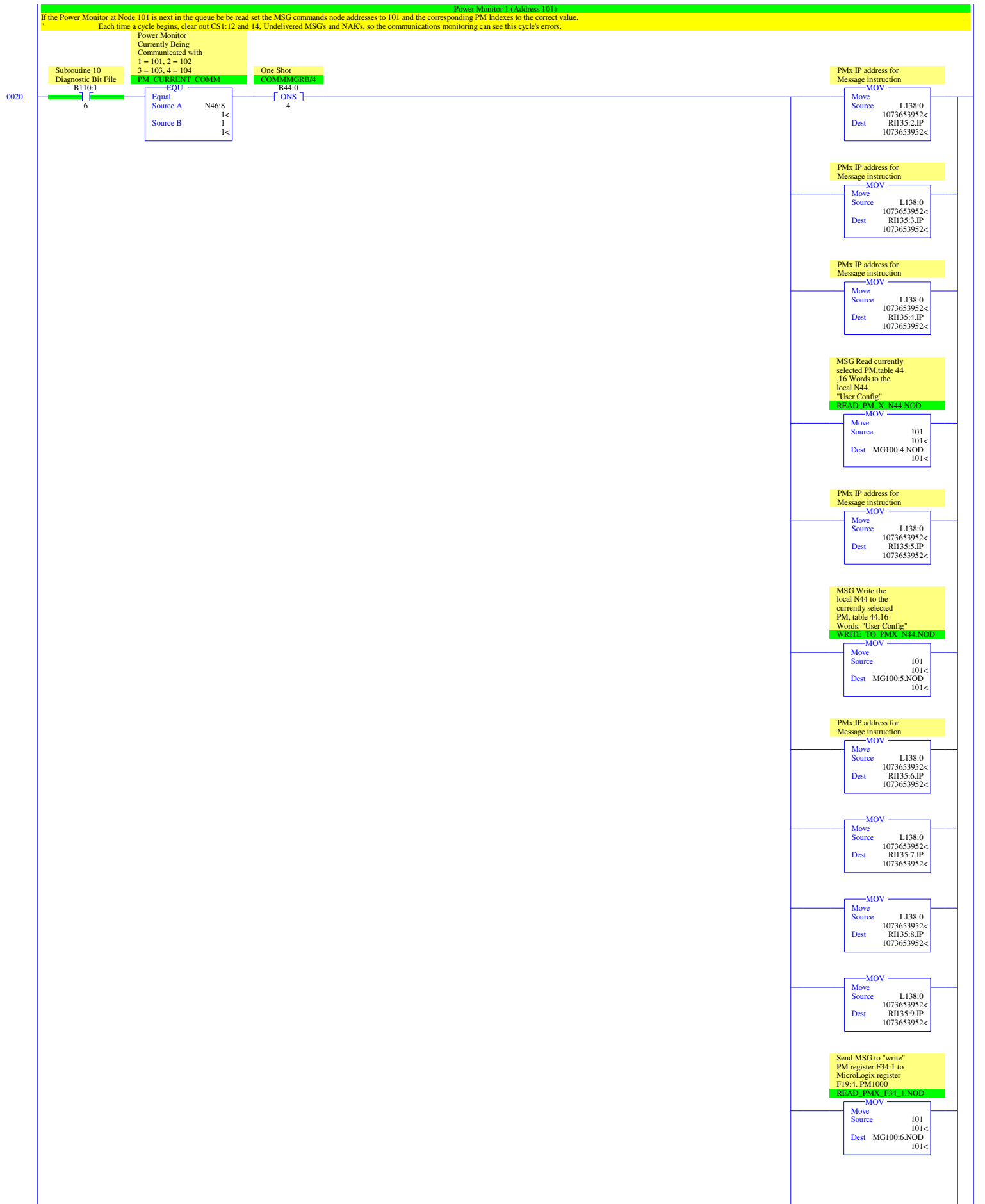


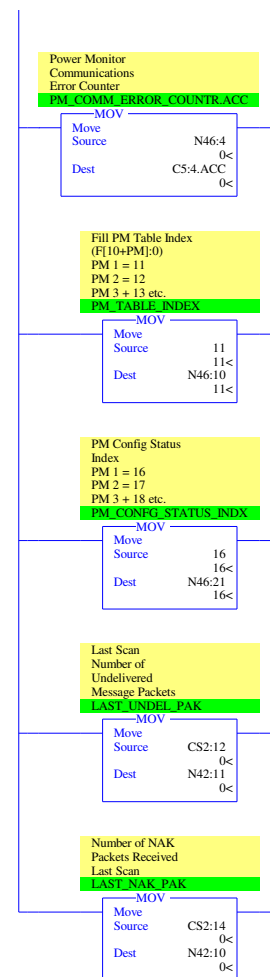


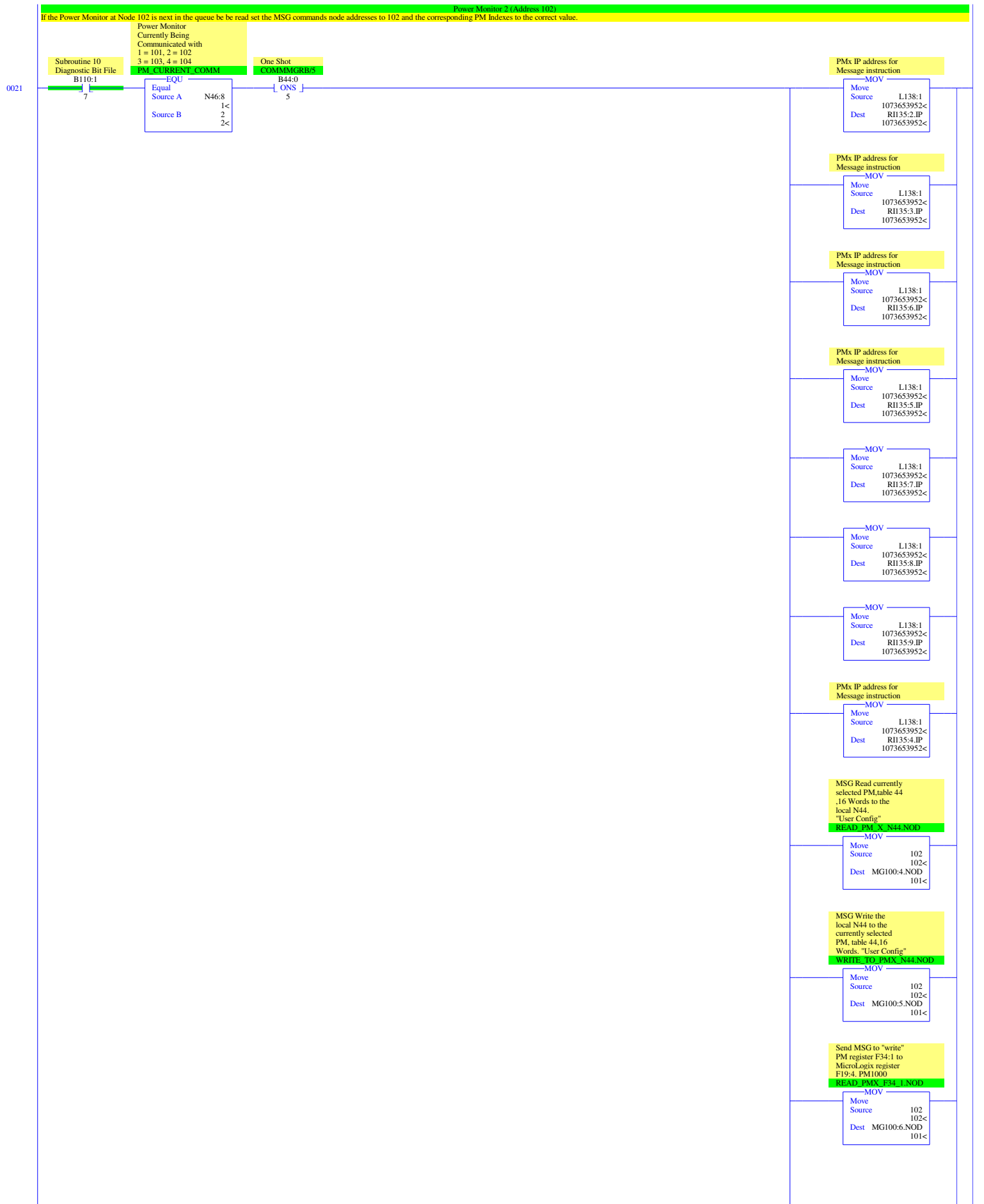




LAD 10 - COMMGR - CommMgr - Communications Manager --- Total Rungs in File = 41

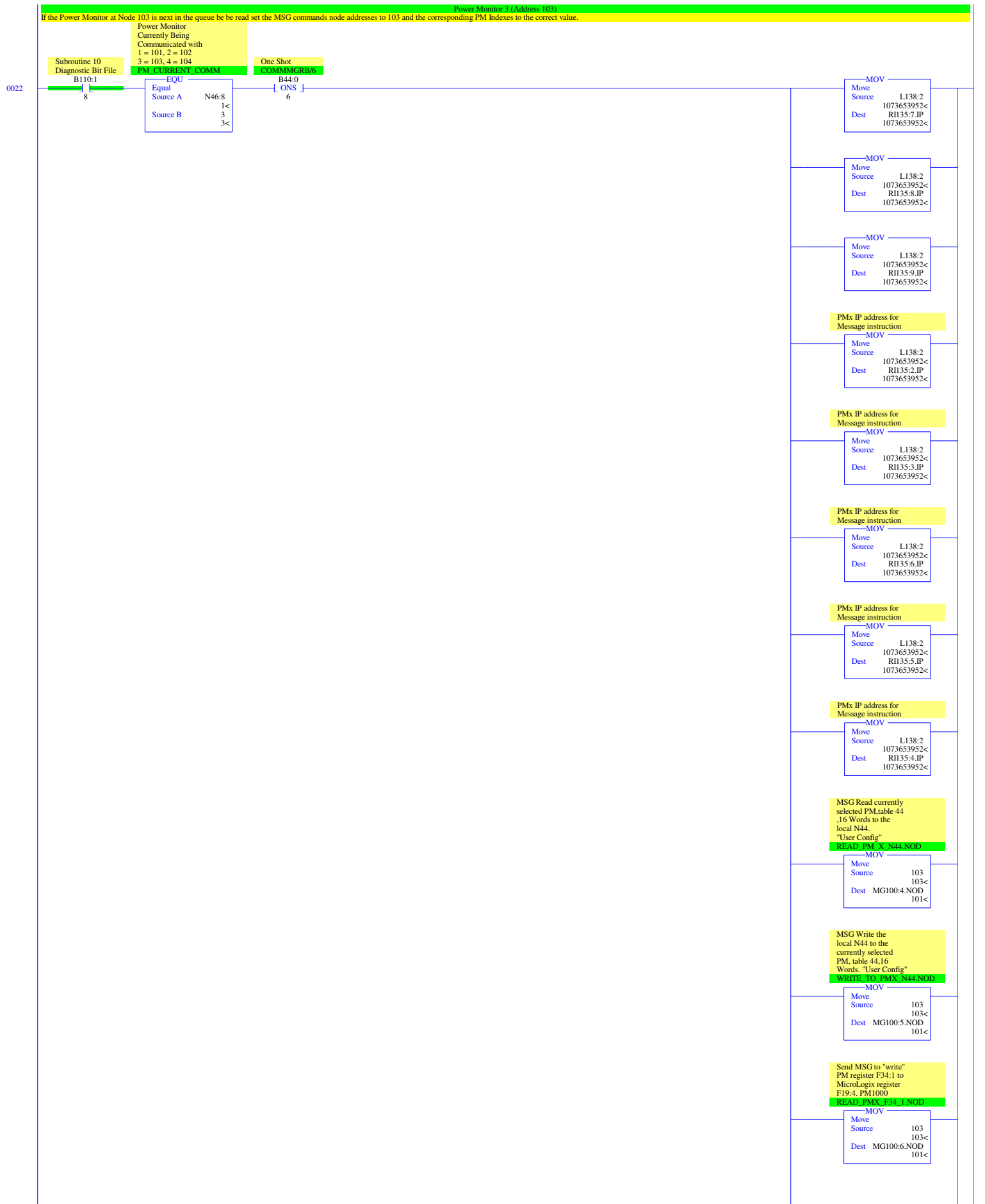






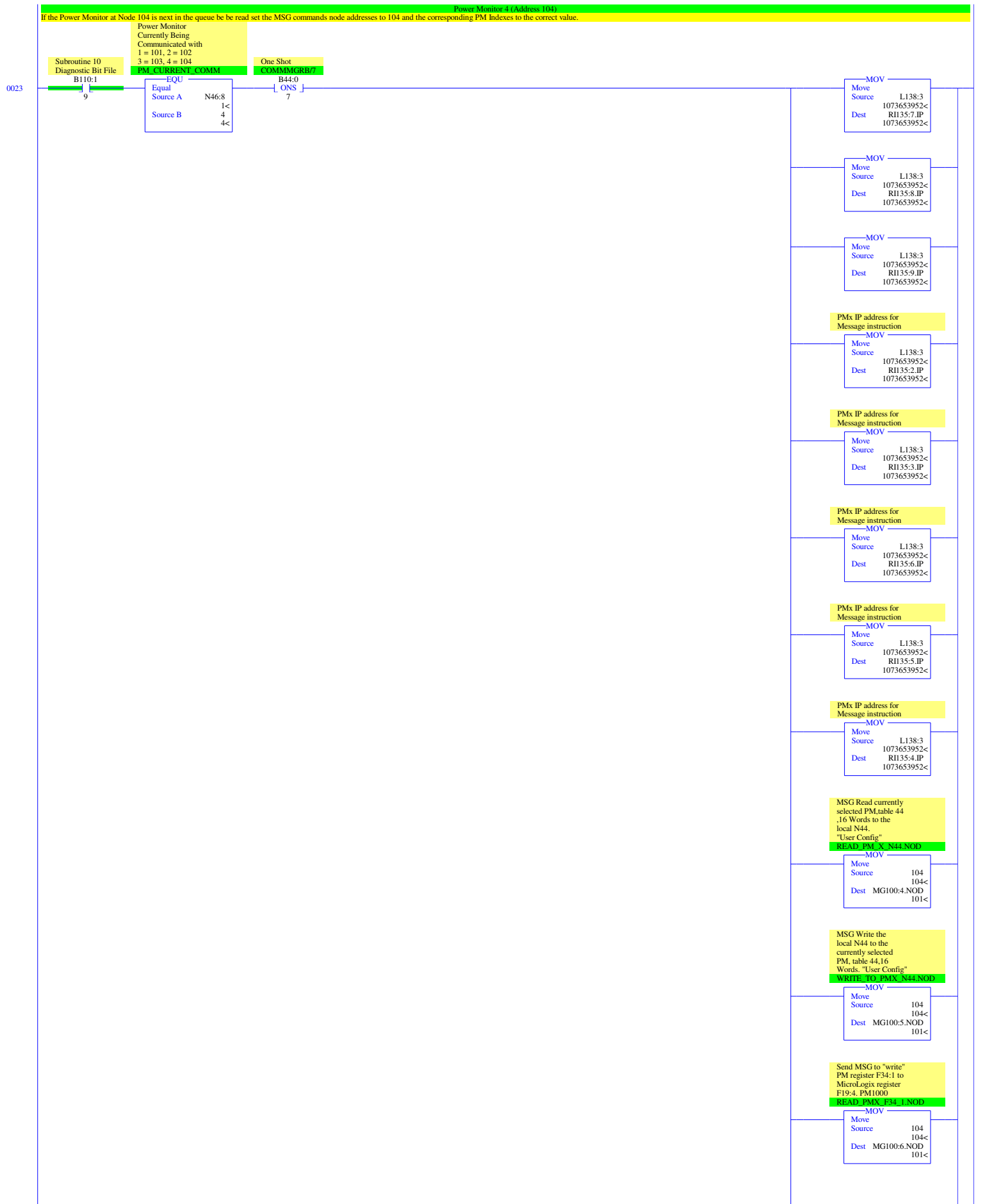


LAD 10 - COMMGR - CommMgr - Communications Manager --- Total Rungs in File = 41

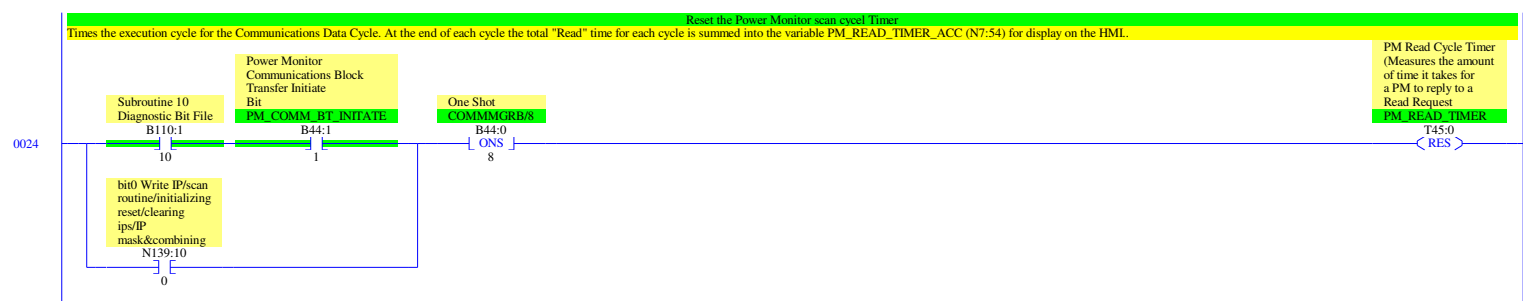


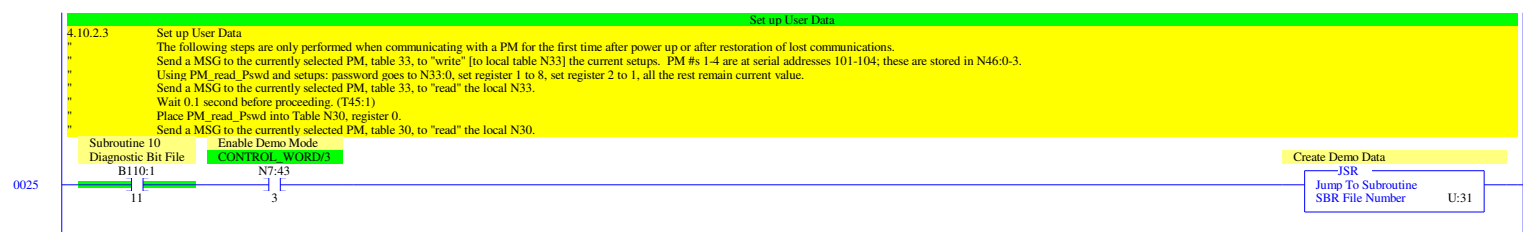


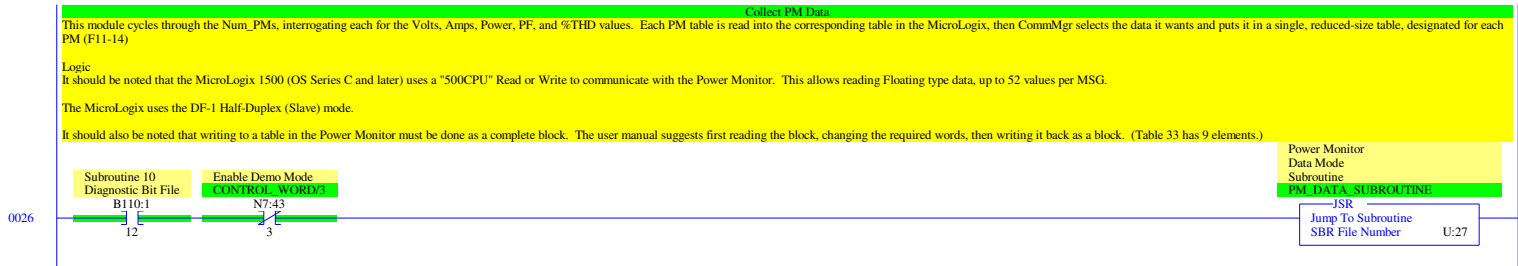
LAD 10 - COMMGR - CommMgr - Communications Manager --- Total Rungs in File = 41

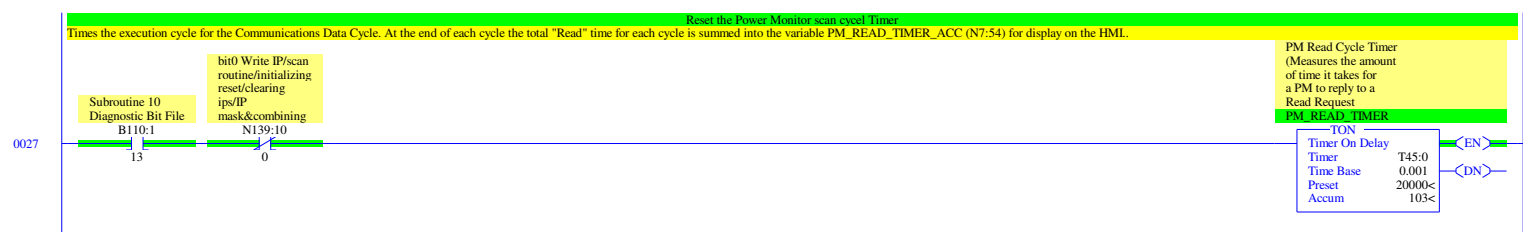


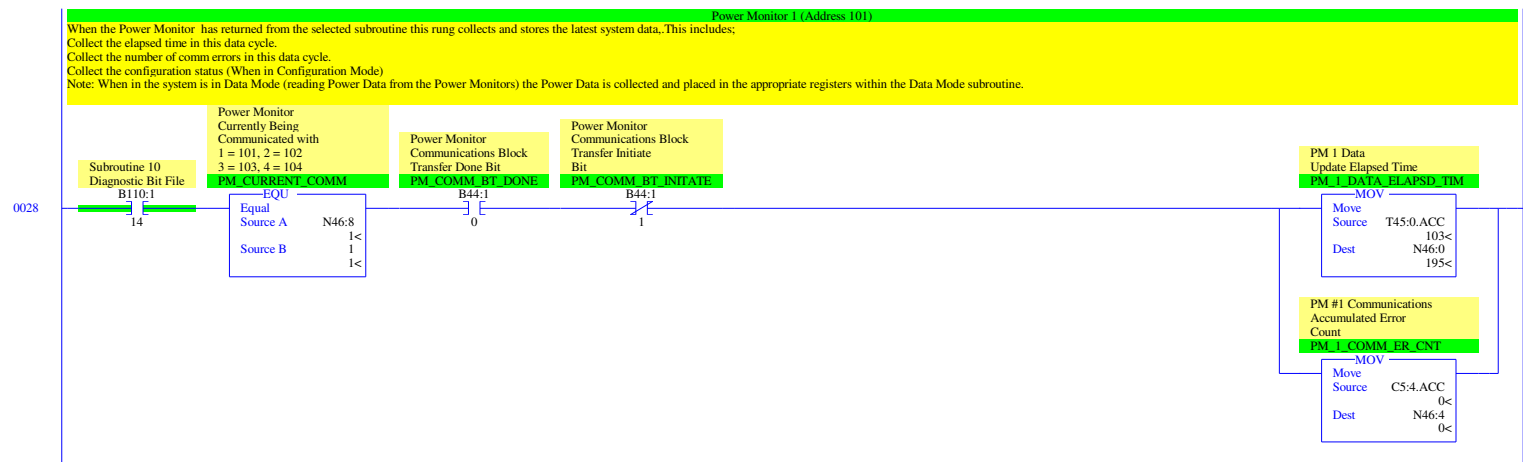


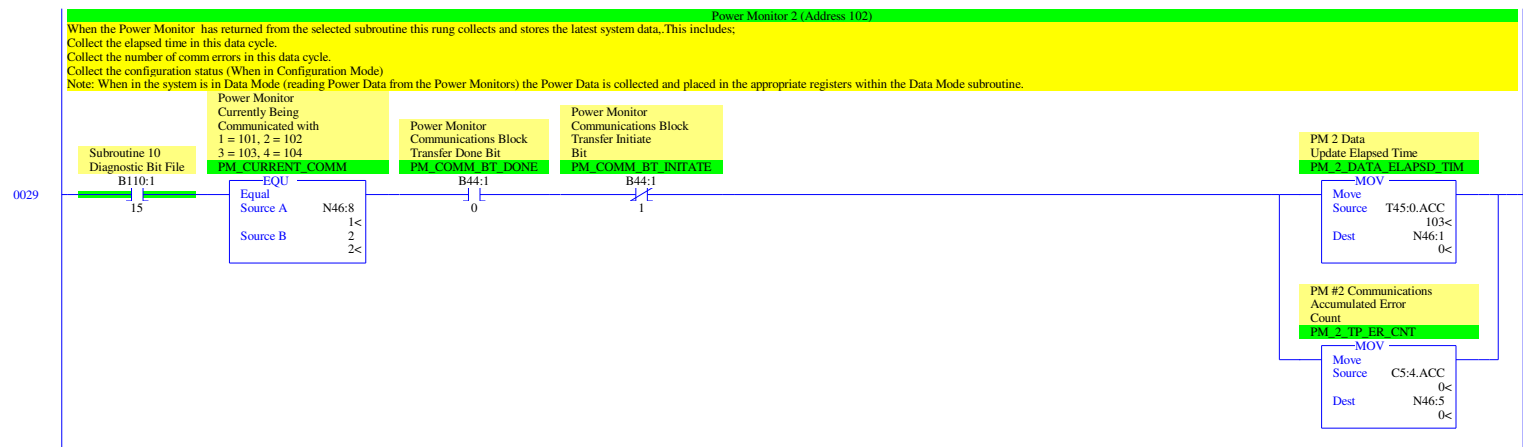


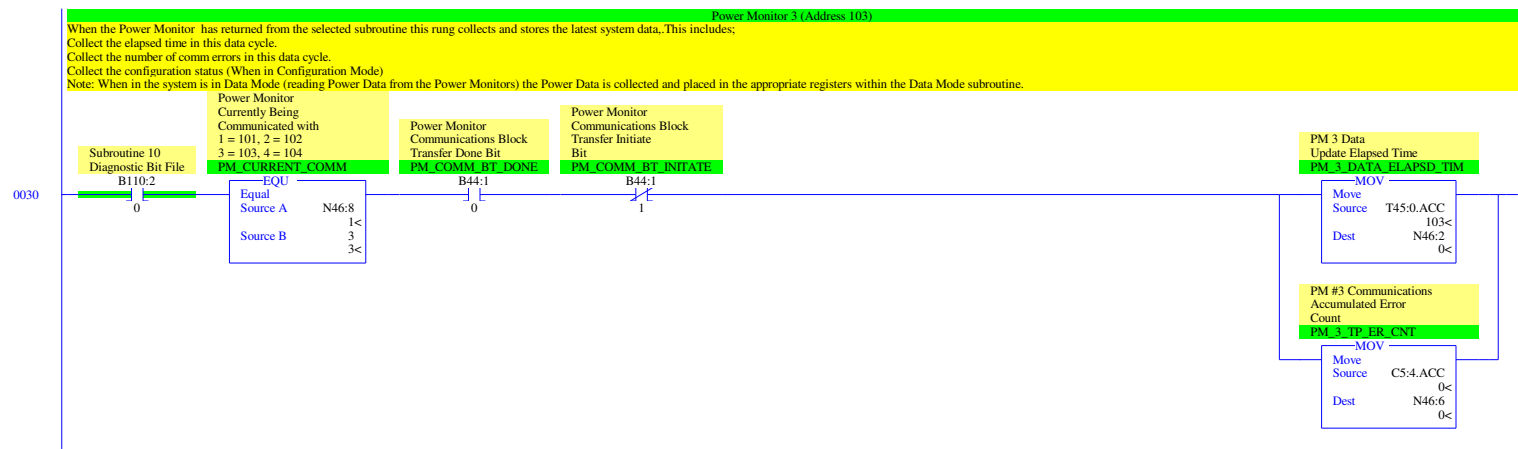


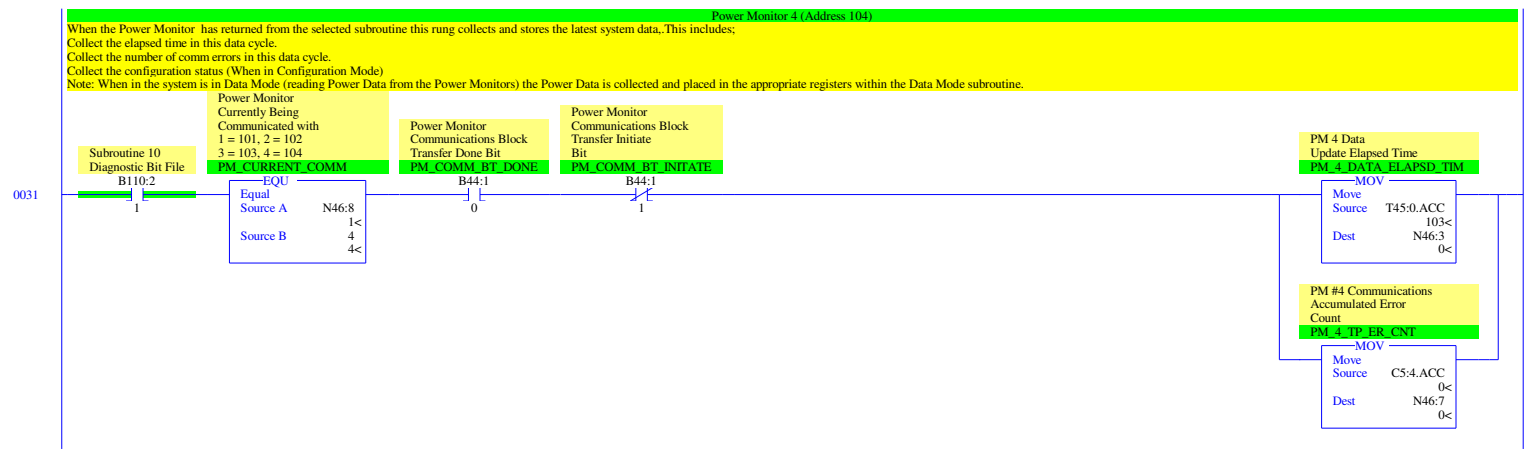




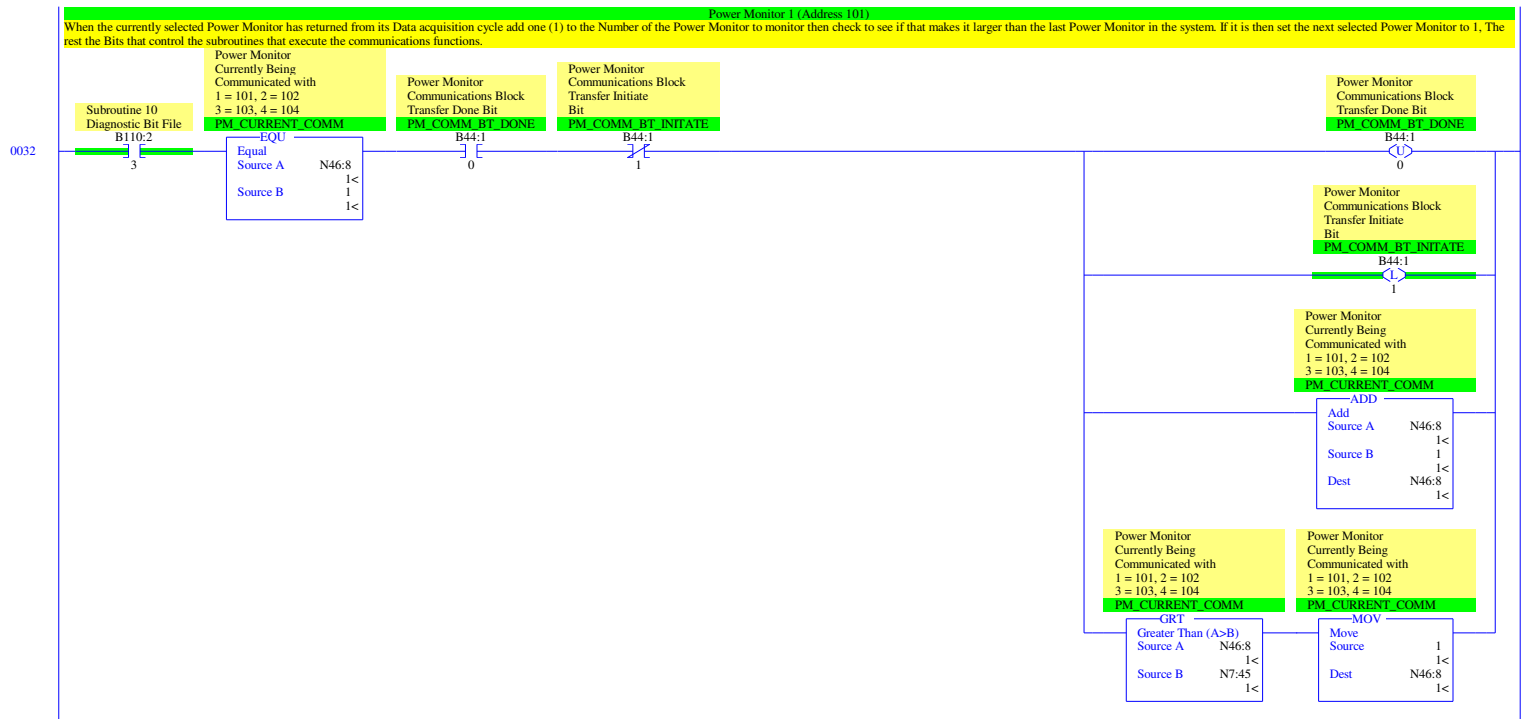








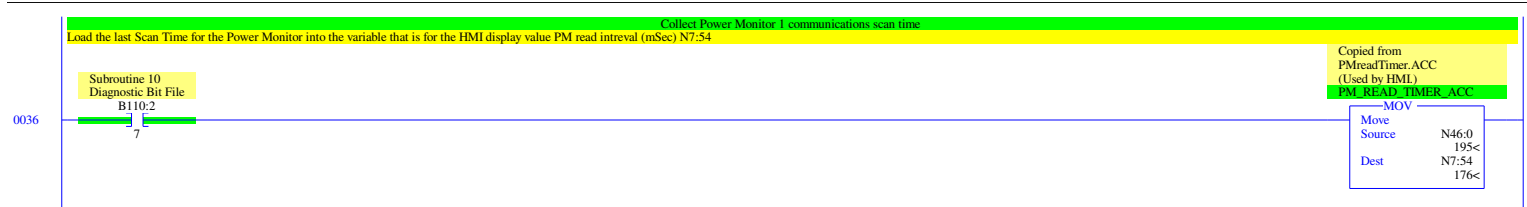
LAD 10 - COMMMGR - CommMgr - Communications Manager --- Total Rungs in File = 41

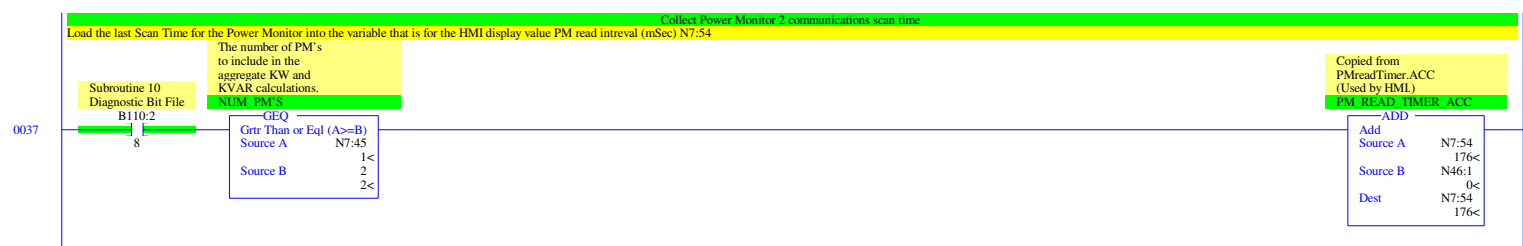


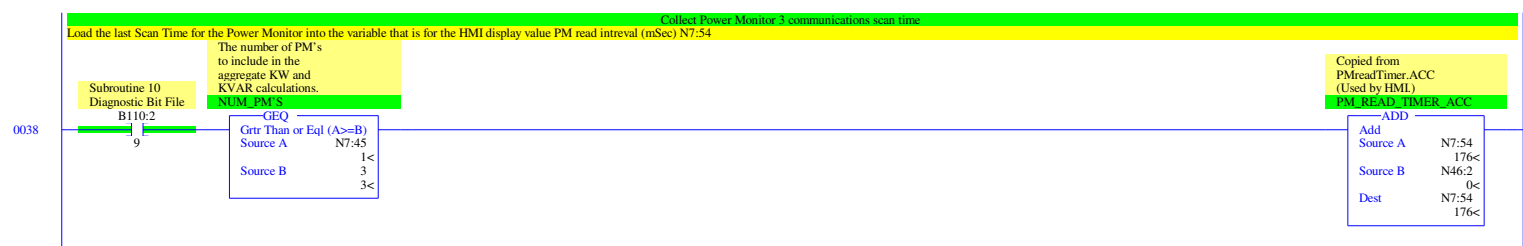


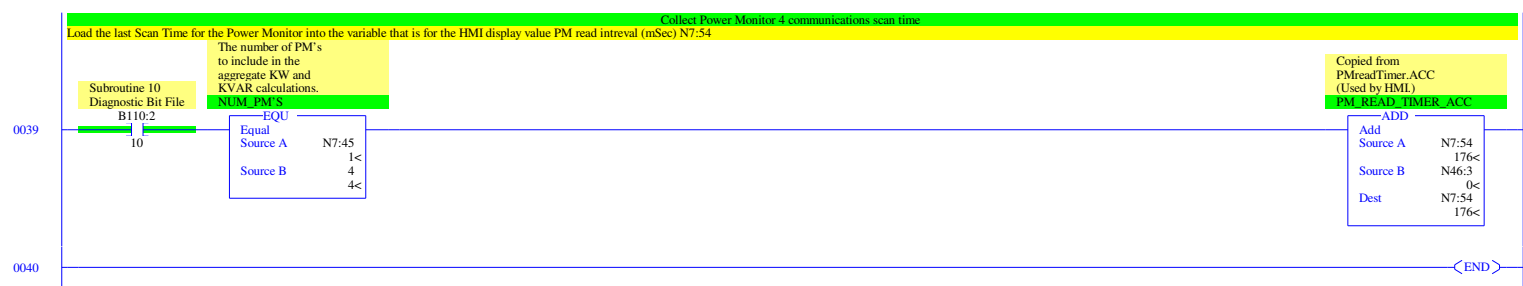




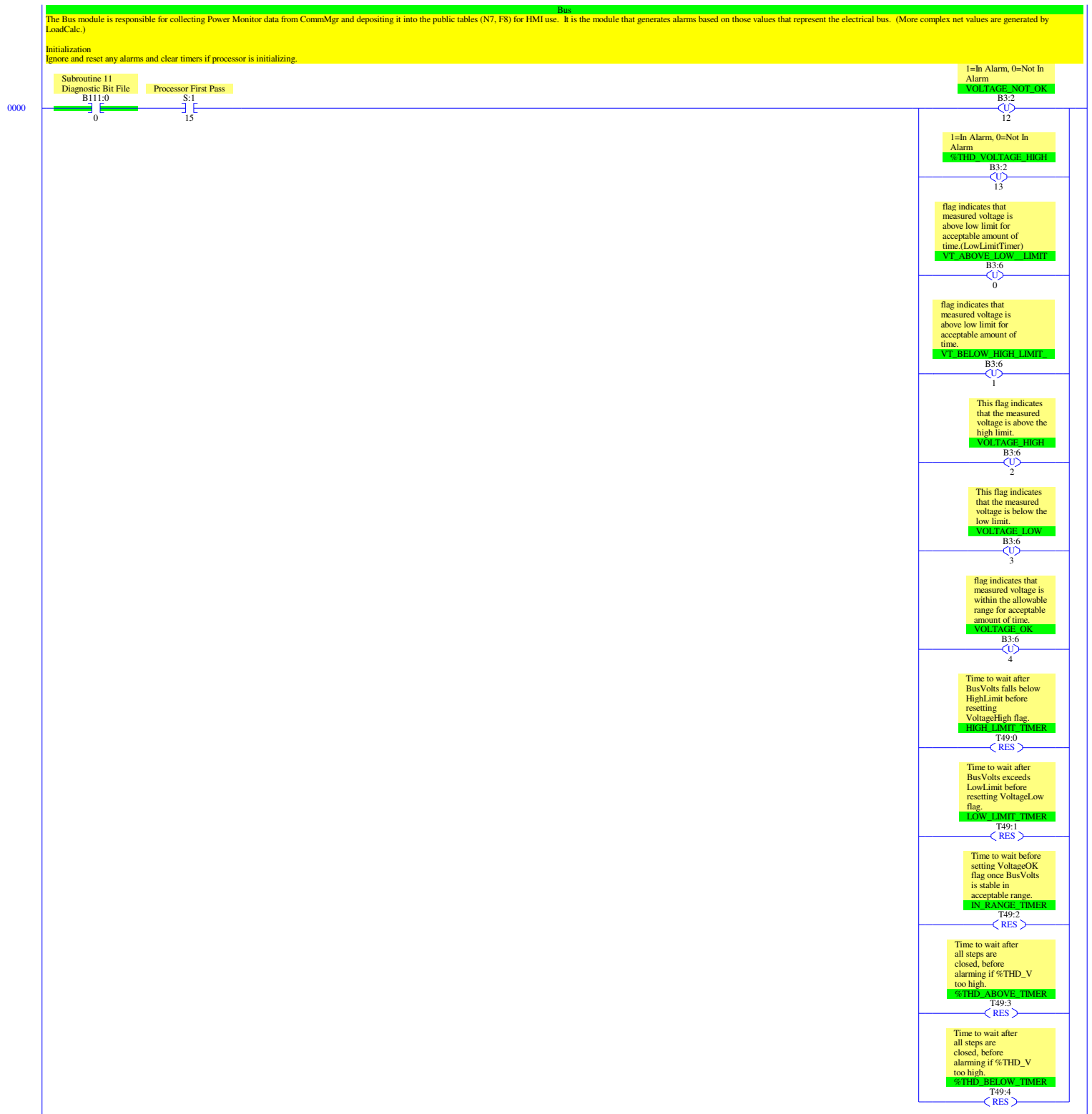


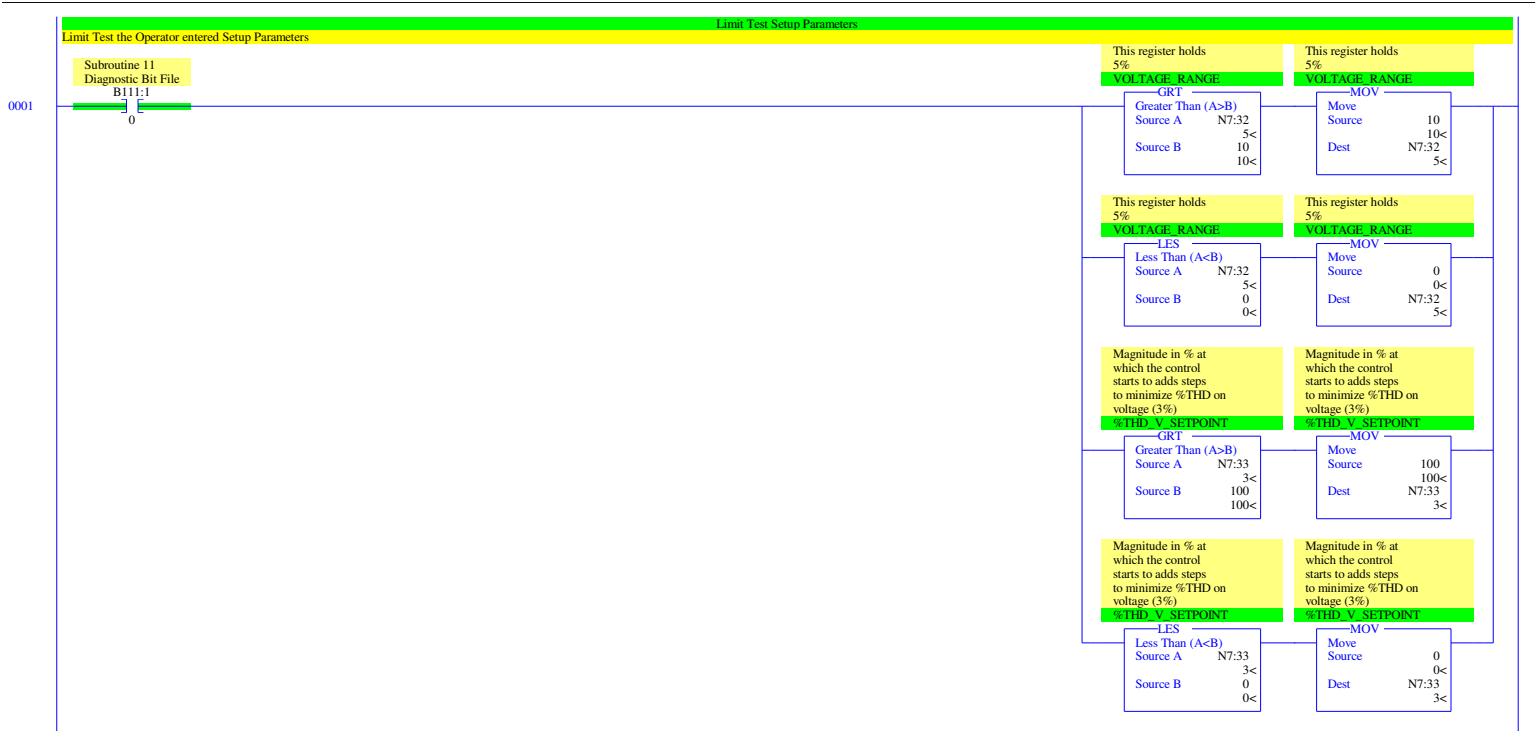




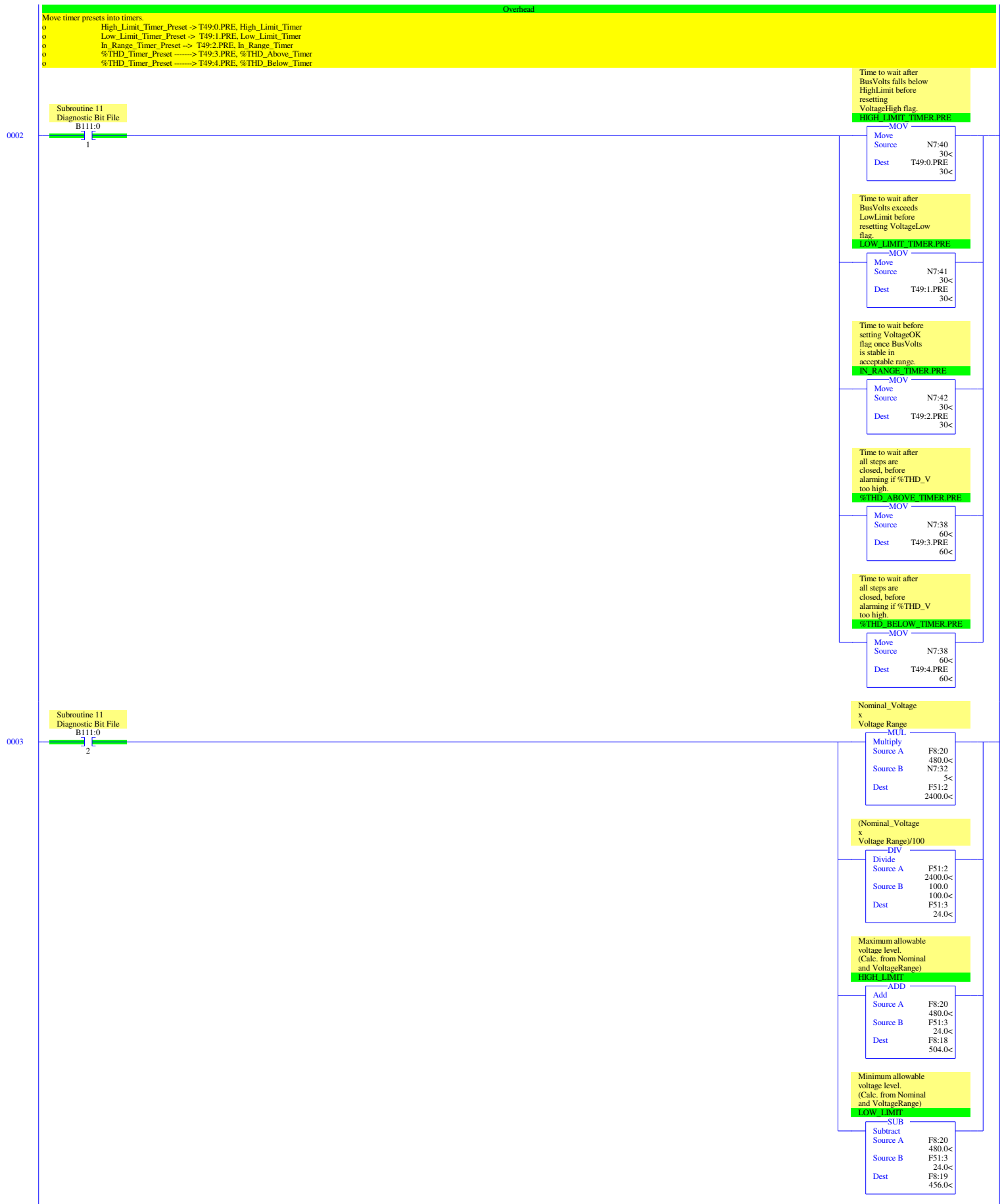


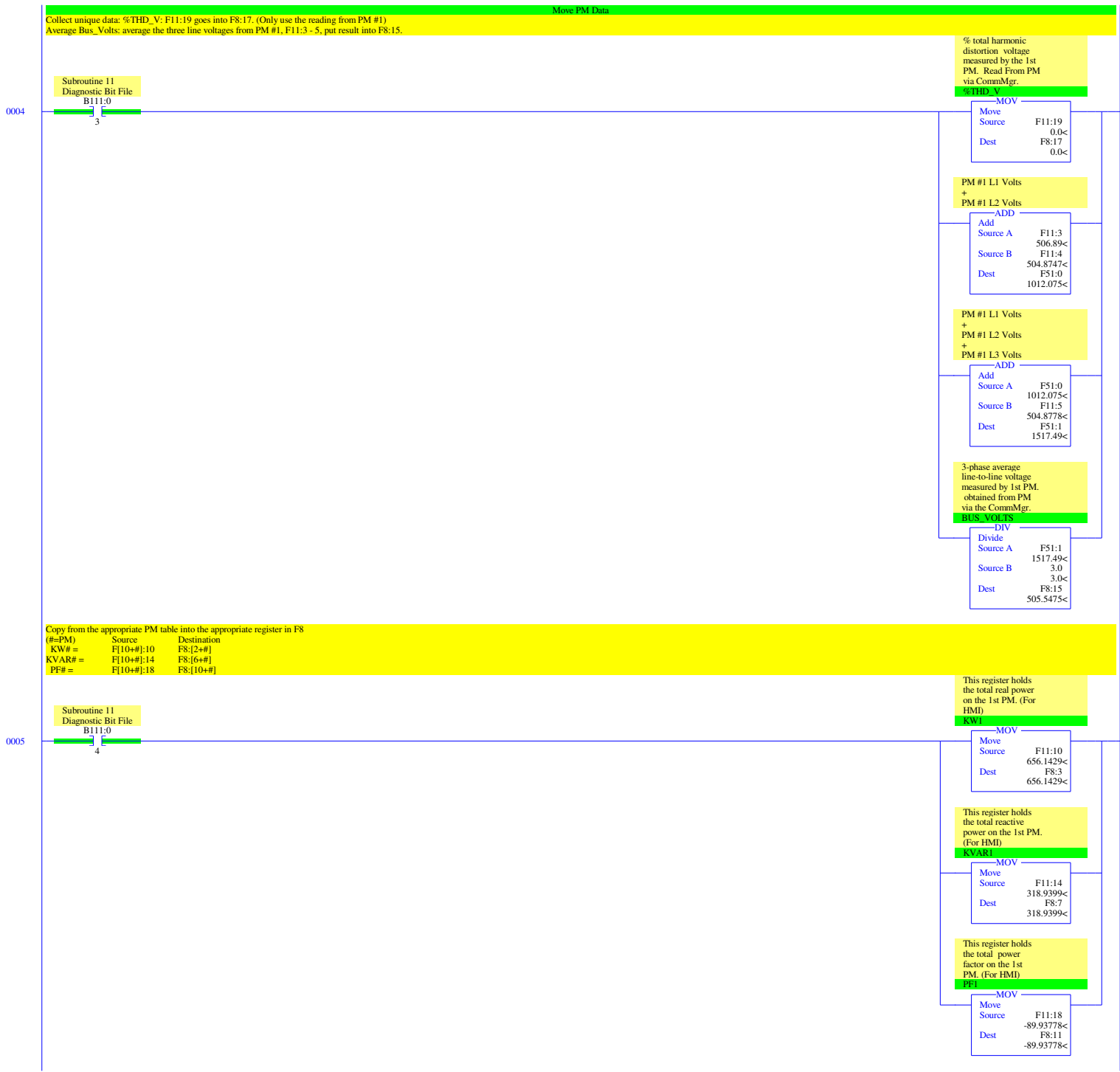
LAD 11 - BUS --- Total Rungs in File = 18





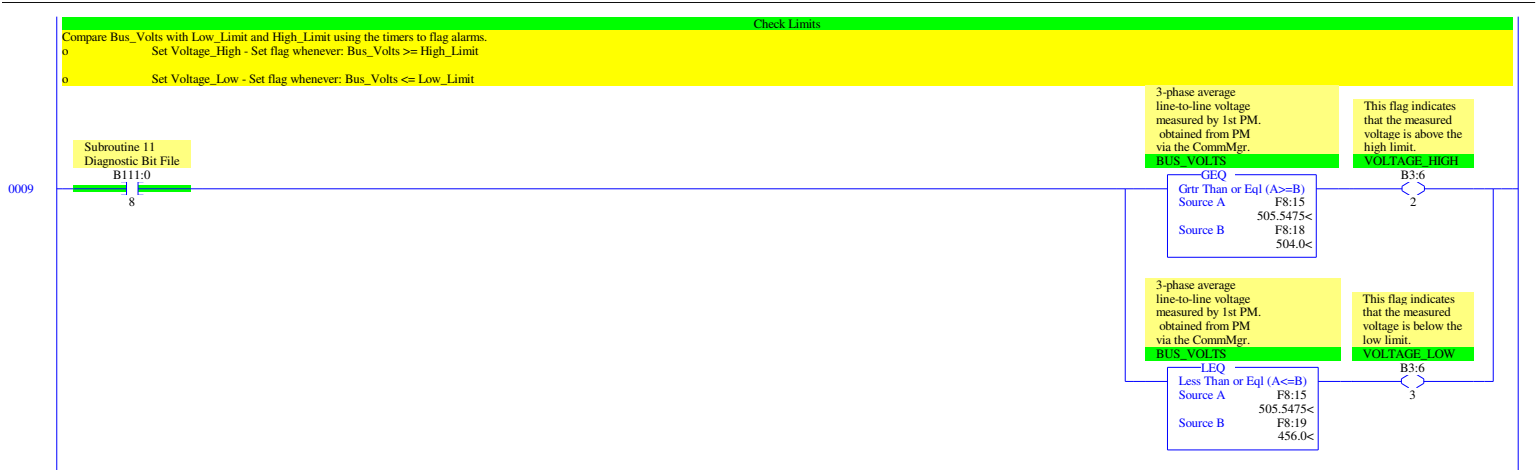
LAD 11 - BUS --- Total Rungs in File = 18





LAD 11 - BUS --- Total Rungs in File = 18

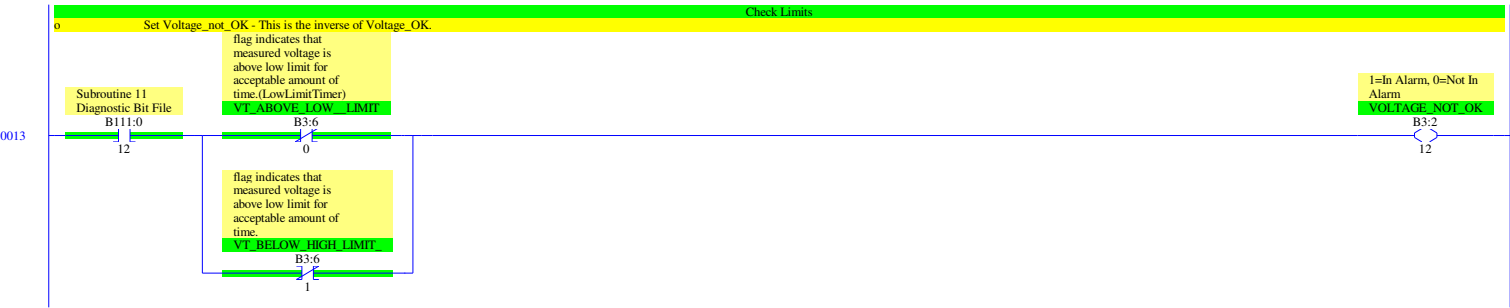


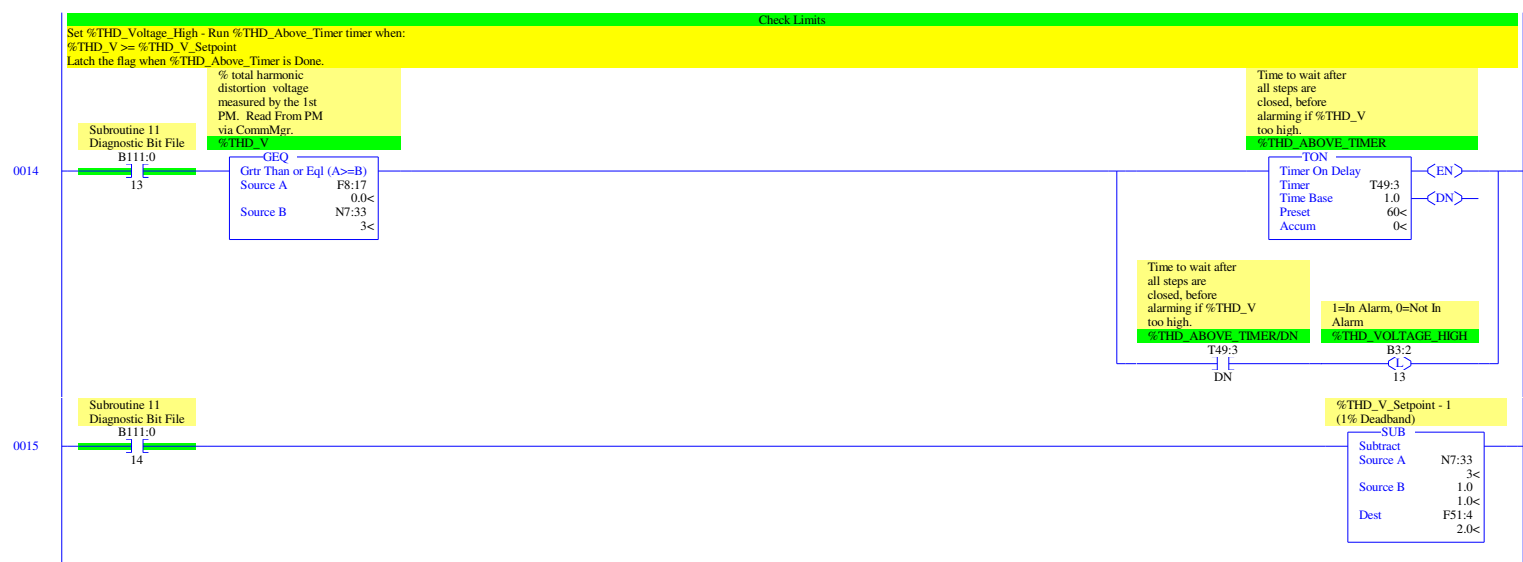


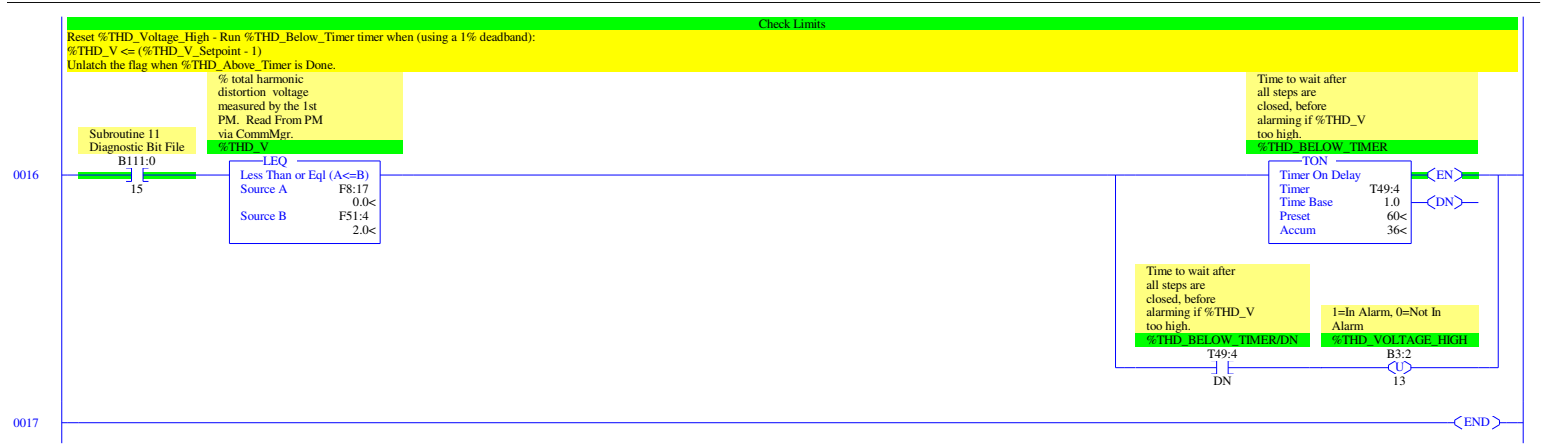


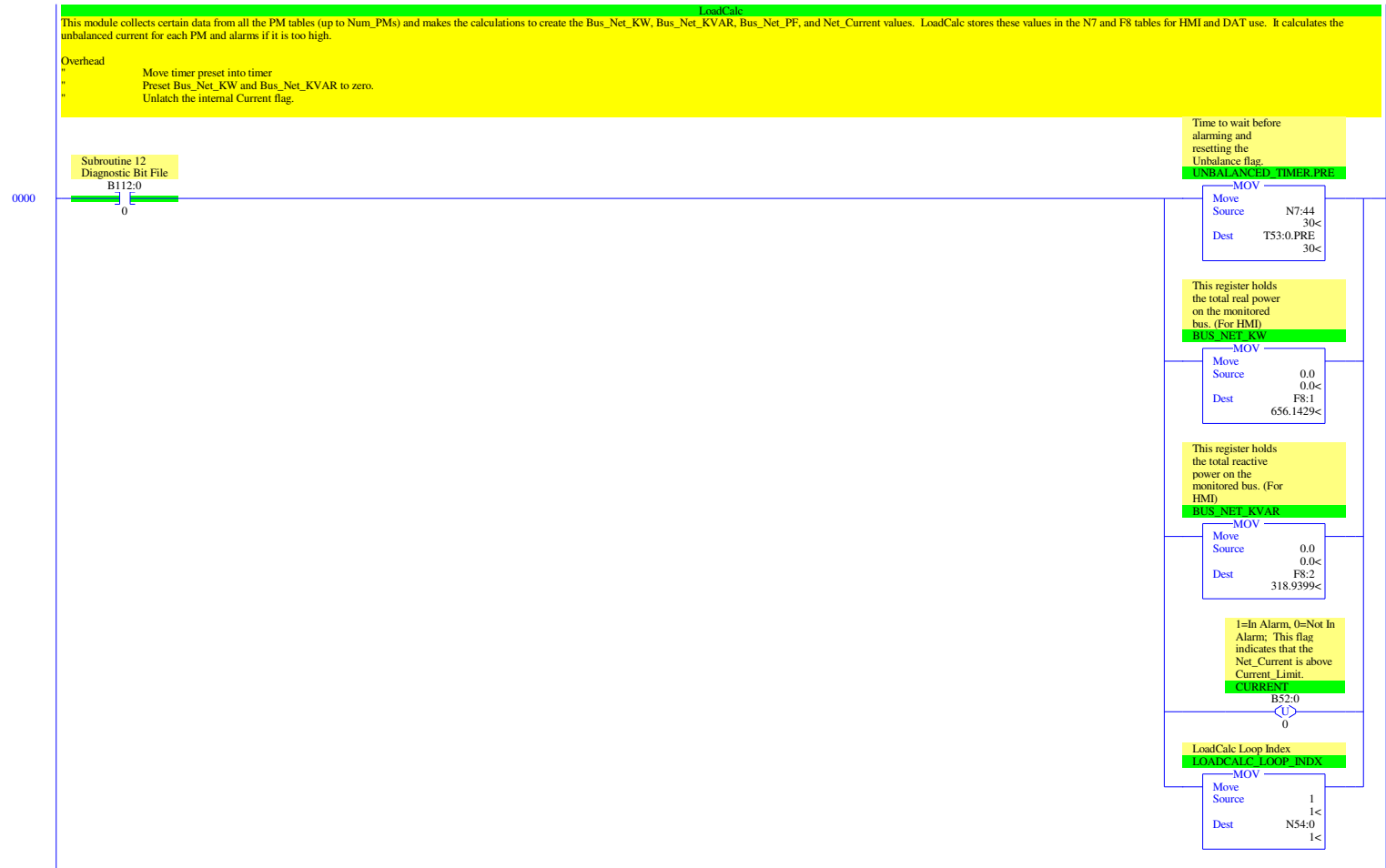


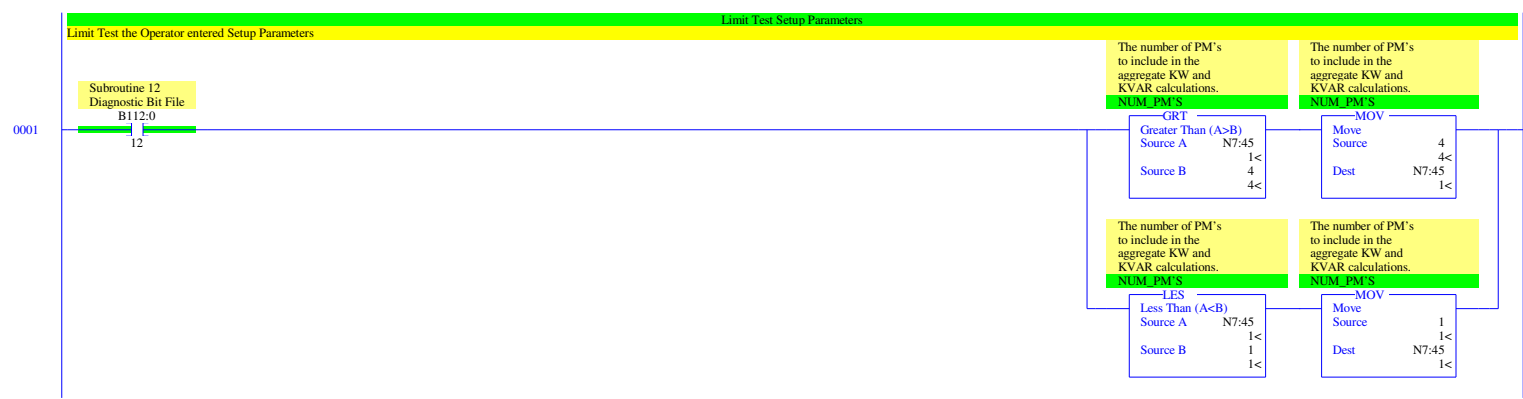


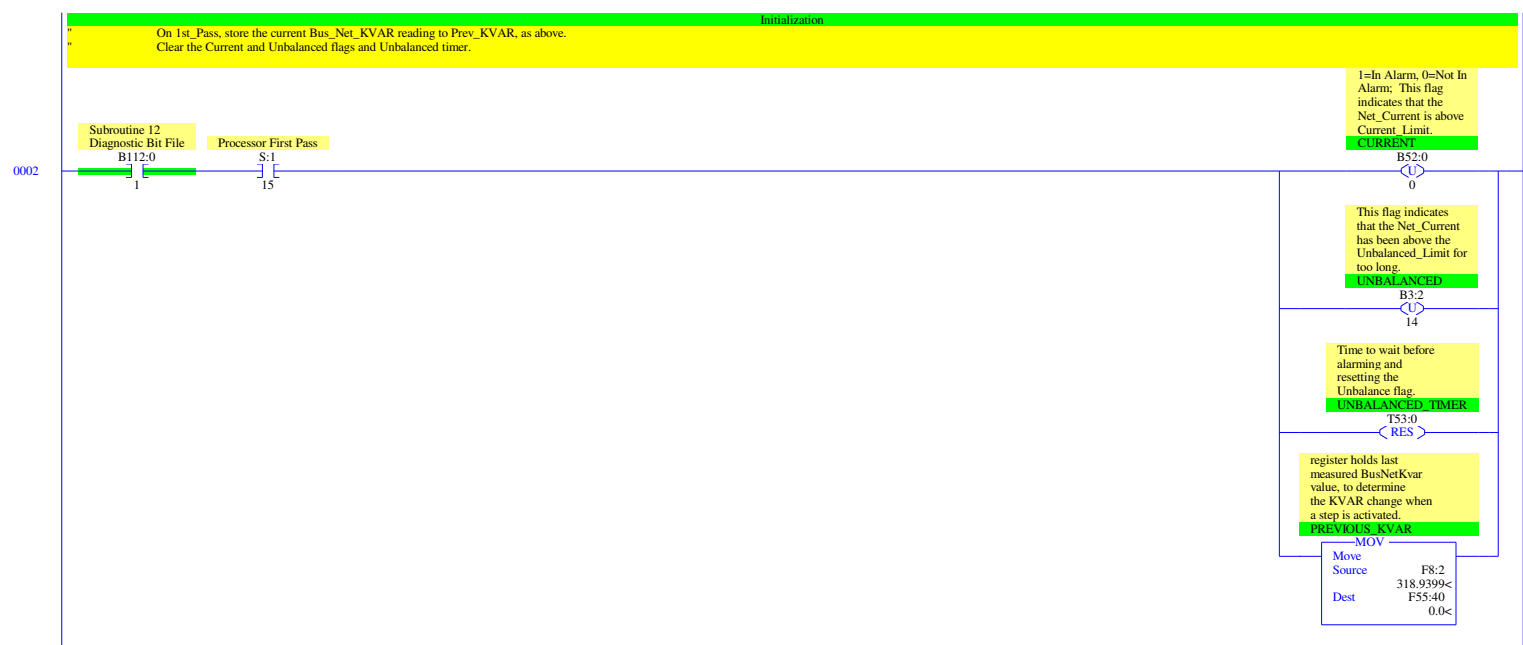




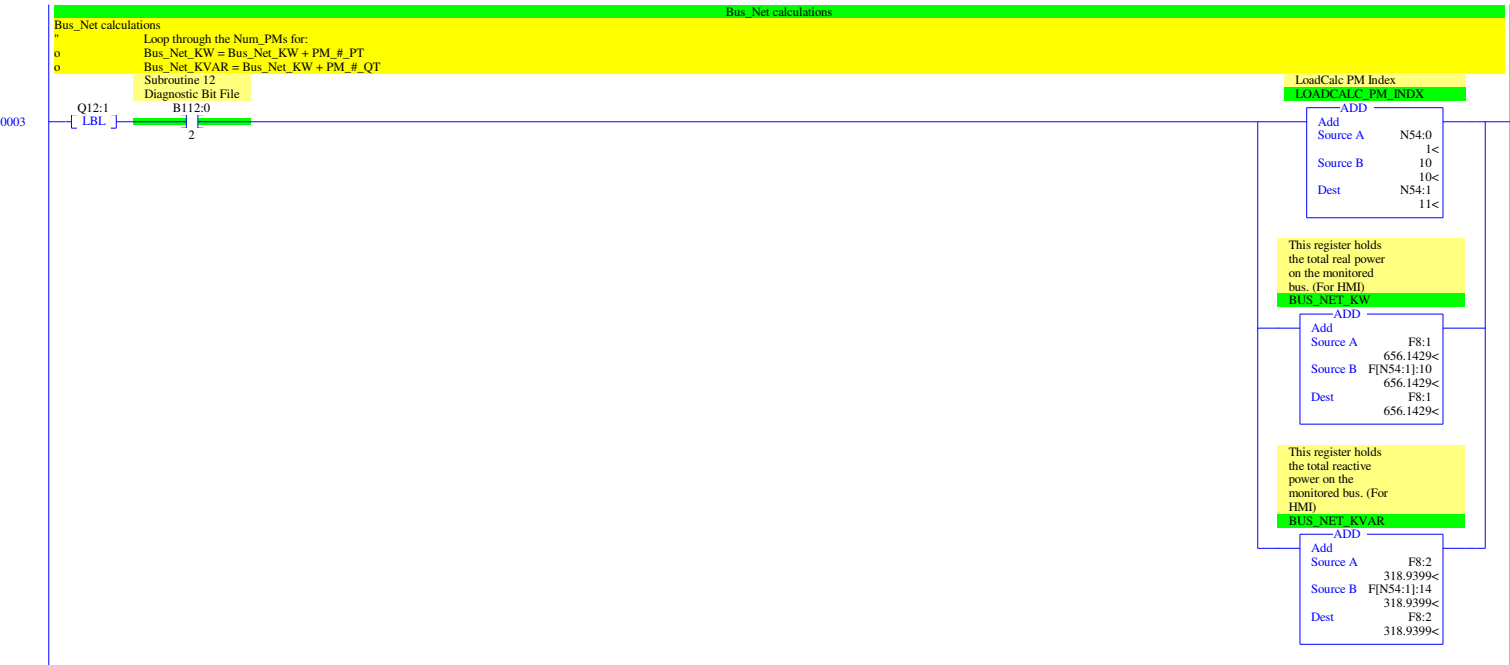




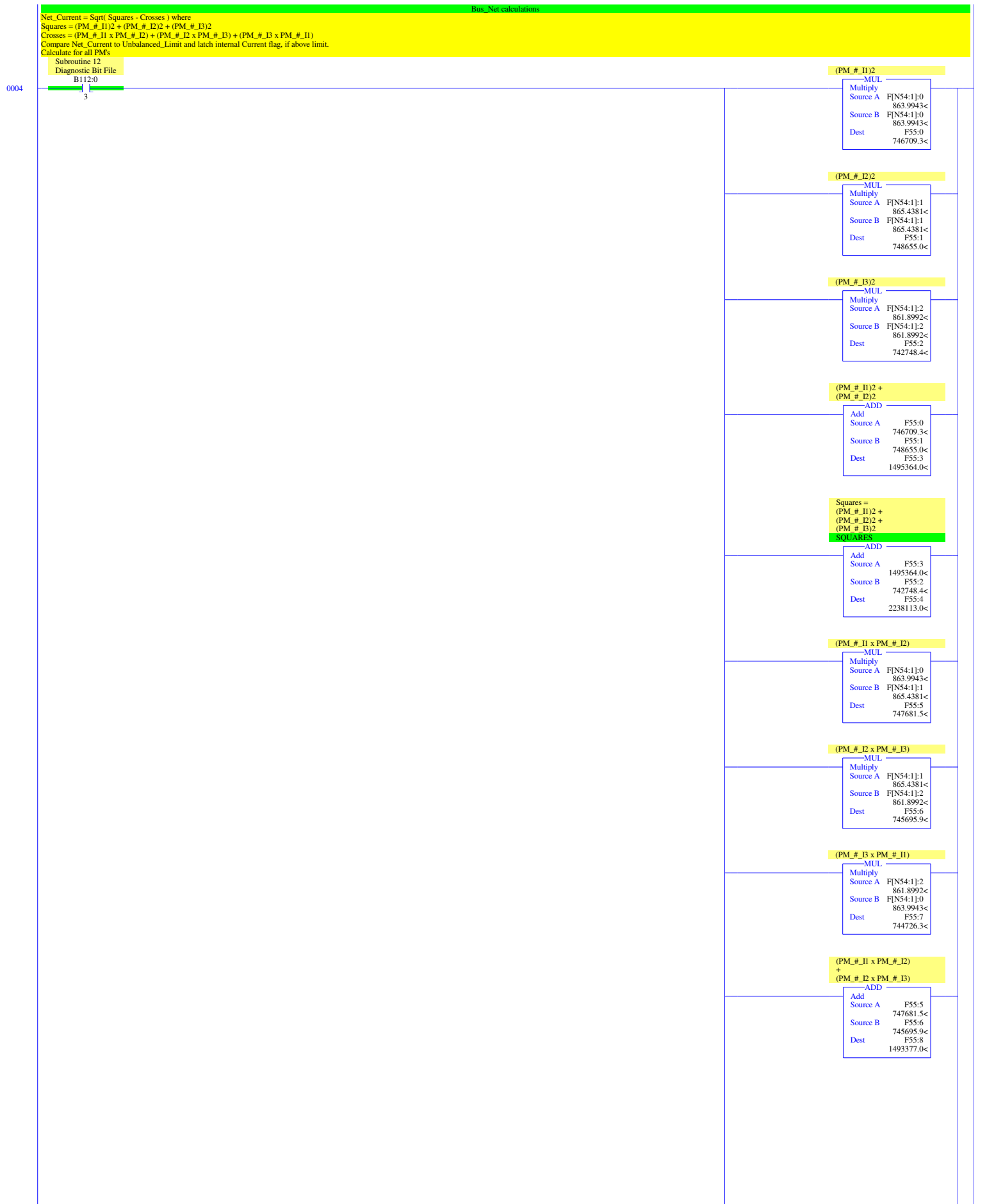




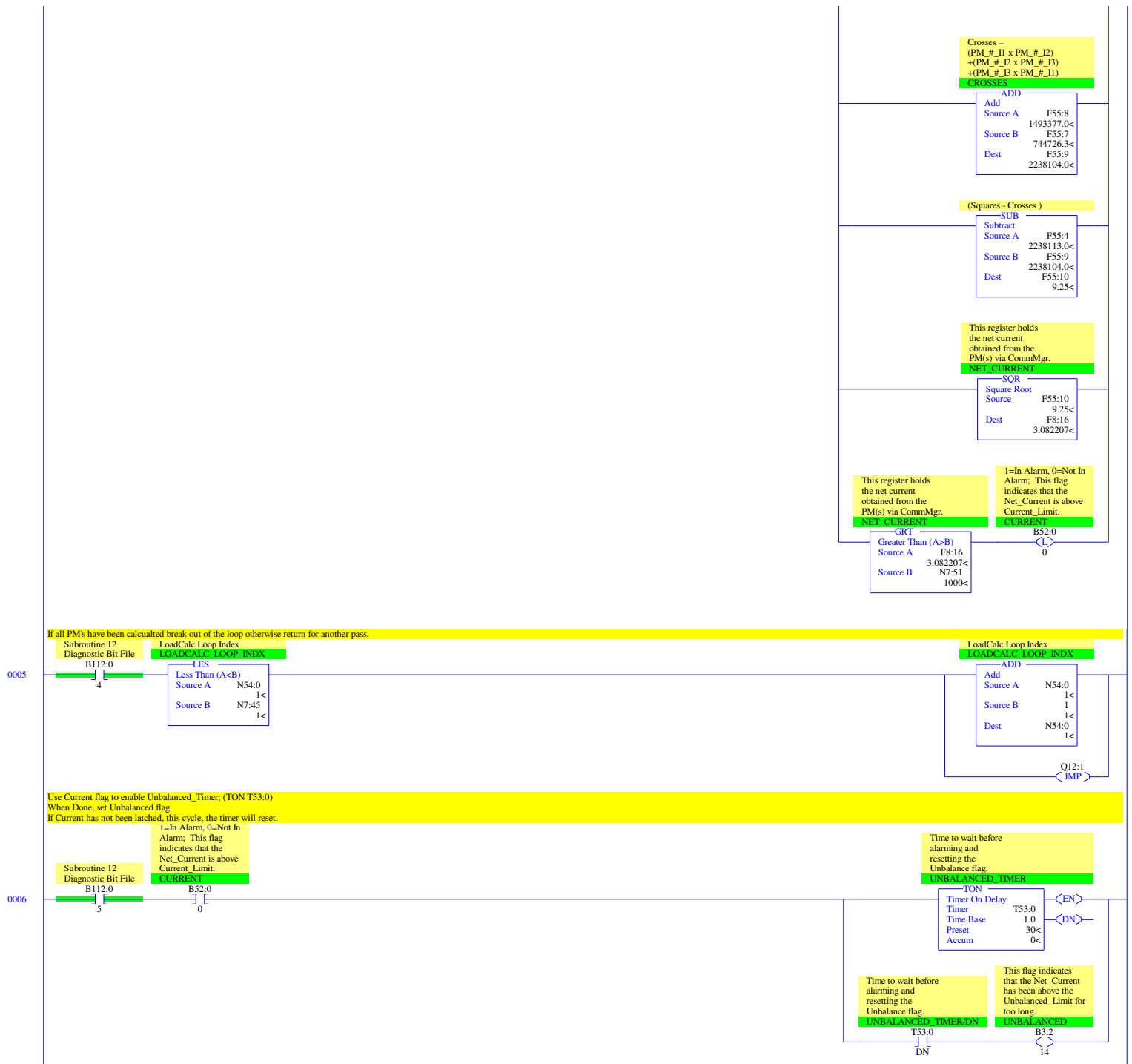
LAD 12 - LOADCALC - LoadCalc - Collects Data from the PM Tables --- Total Rungs in File = 14



LAD 12 - LOADCALC - LoadCalc - Collects Data from the PM Tables --- Total Rungs in File = 14

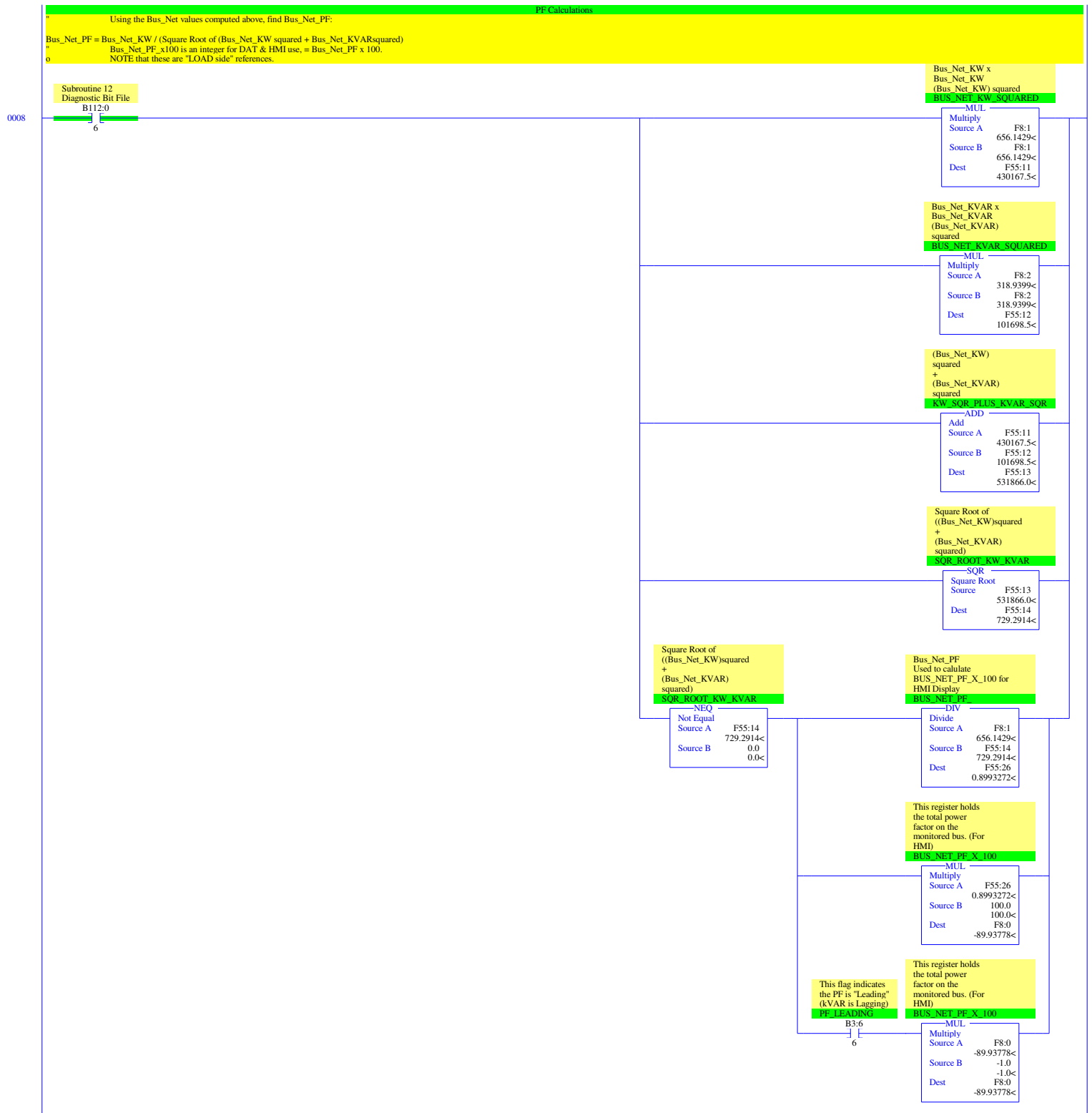


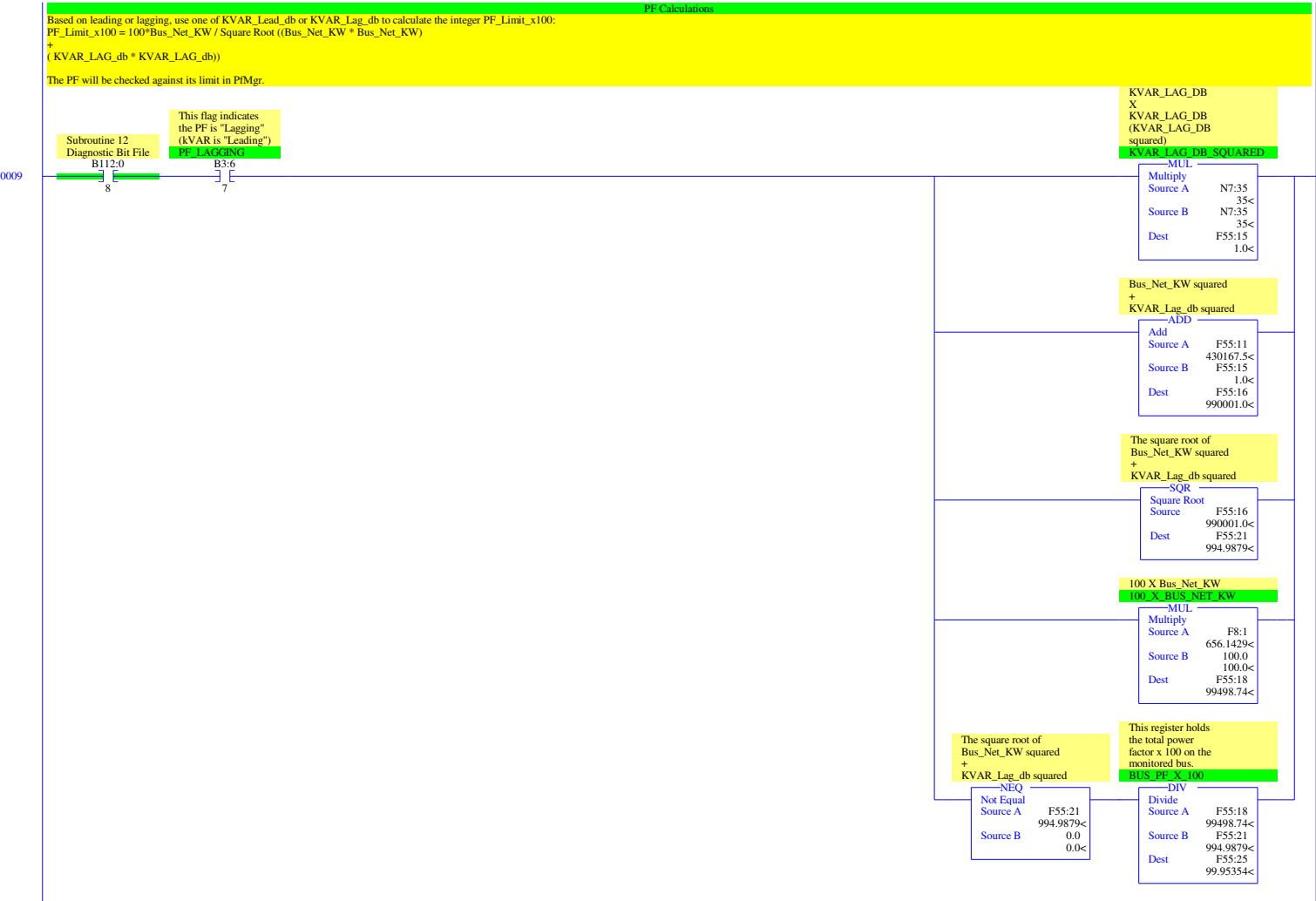
LAD 12 - LOADCALC - LoadCalc - Collects Data from the PM Tables --- Total Rungs in File = 14



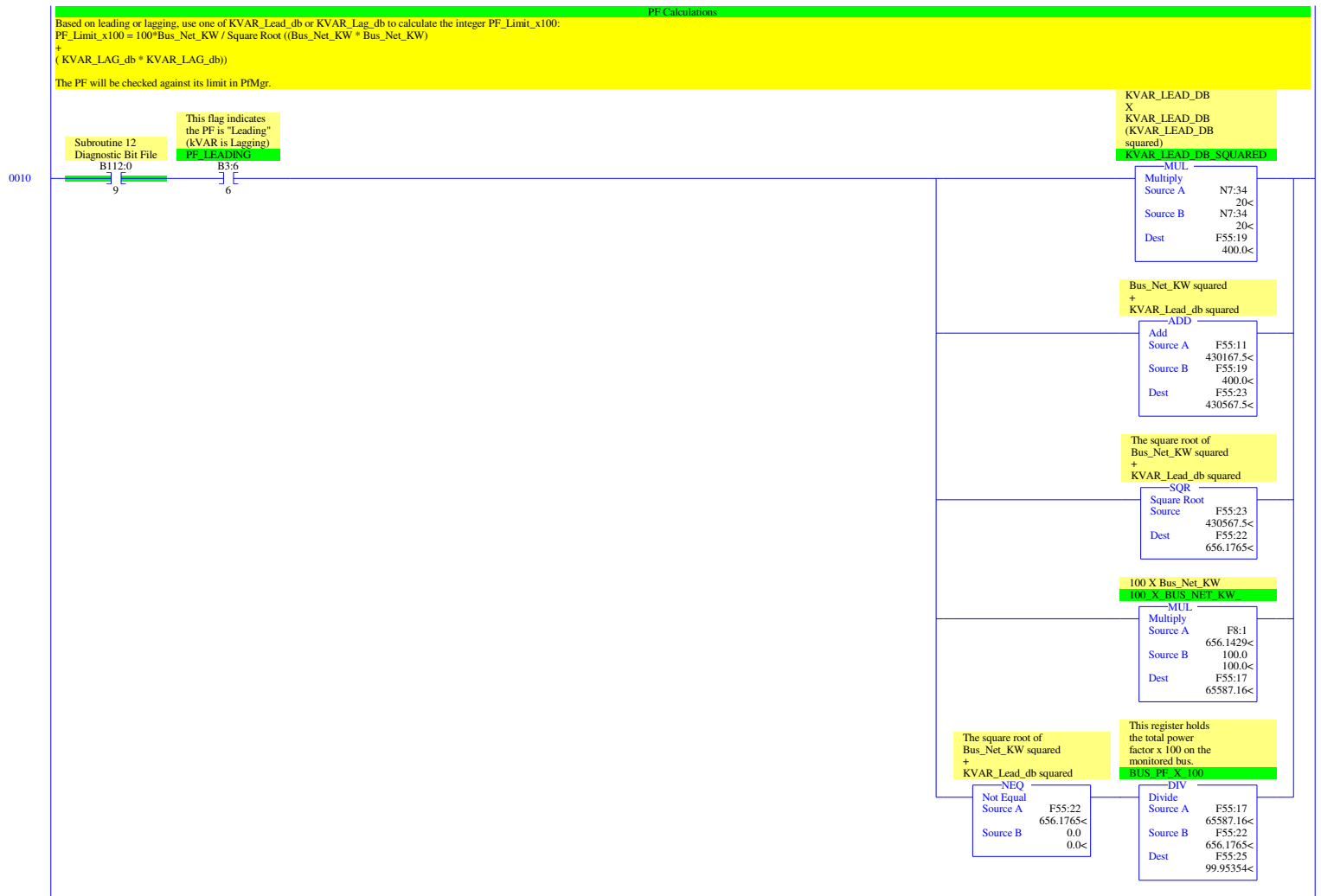


LAD 12 - LOADCALC - LoadCalc - Collects Data from the PM Tables --- Total Rungs in File = 14

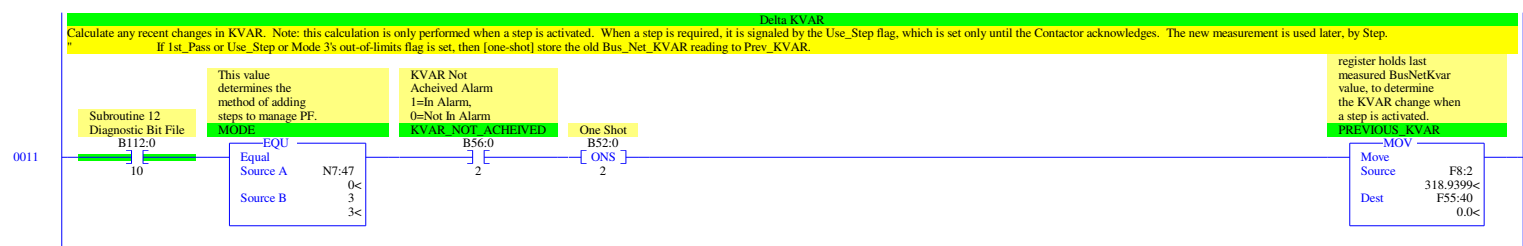




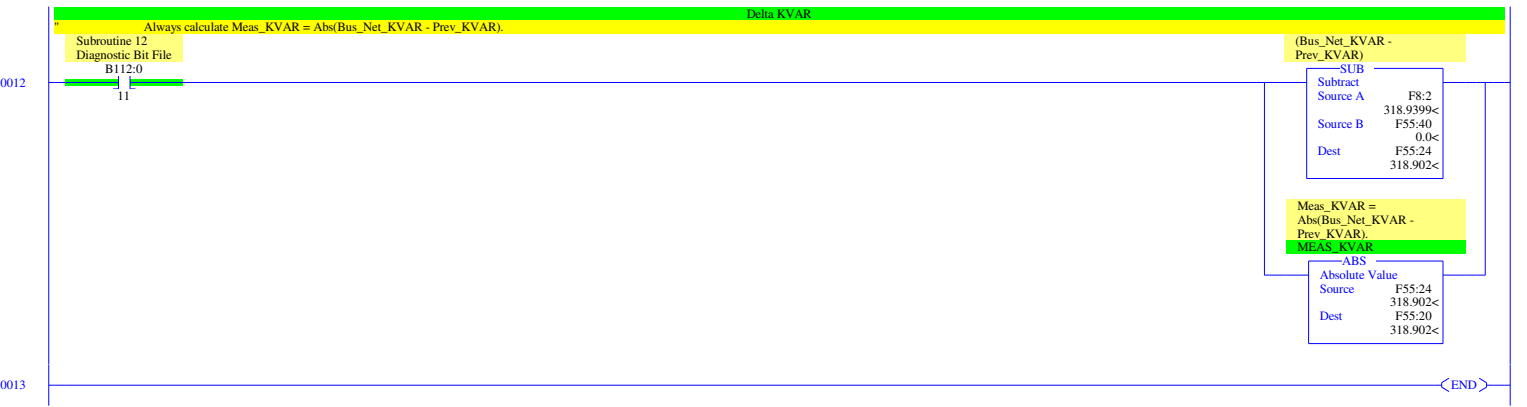
LAD 12 - LOADCALC - LoadCalc - Collects Data from the PM Tables --- Total Rungs in File = 14



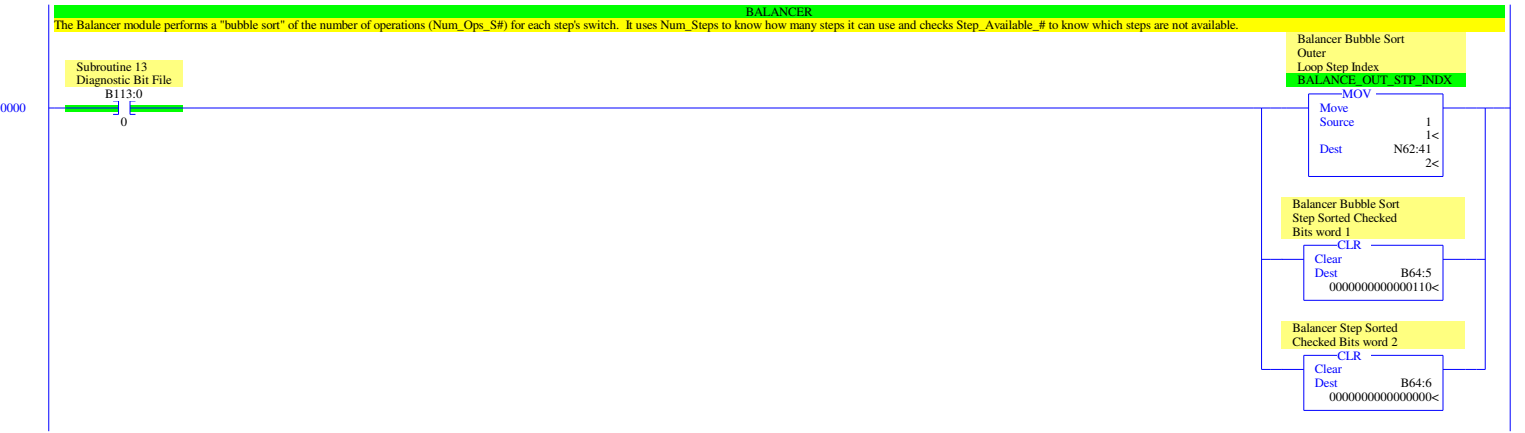
LAD 12 - LOADCALC - LoadCalc - Collects Data from the PM Tables --- Total Rungs in File = 14



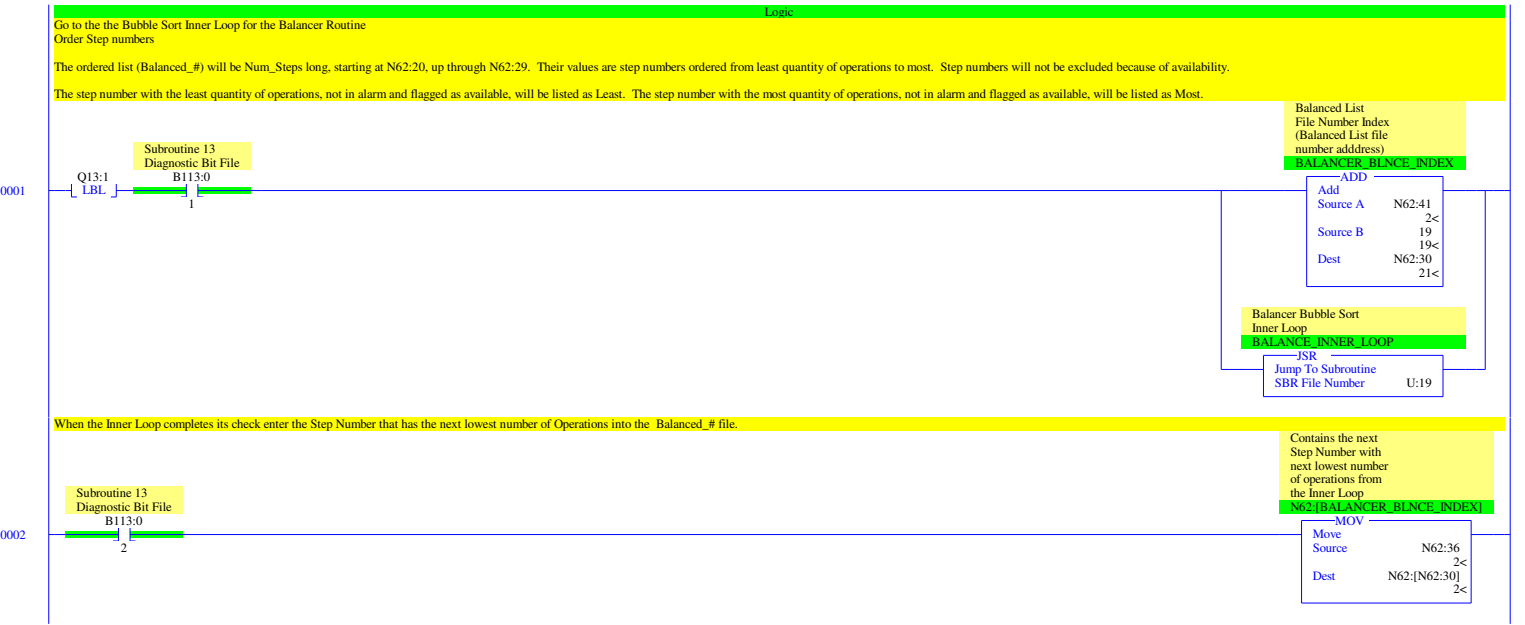
LAD 12 - LOADCALC - LoadCalc - Collects Data from the PM Tables --- Total Rungs in File = 14



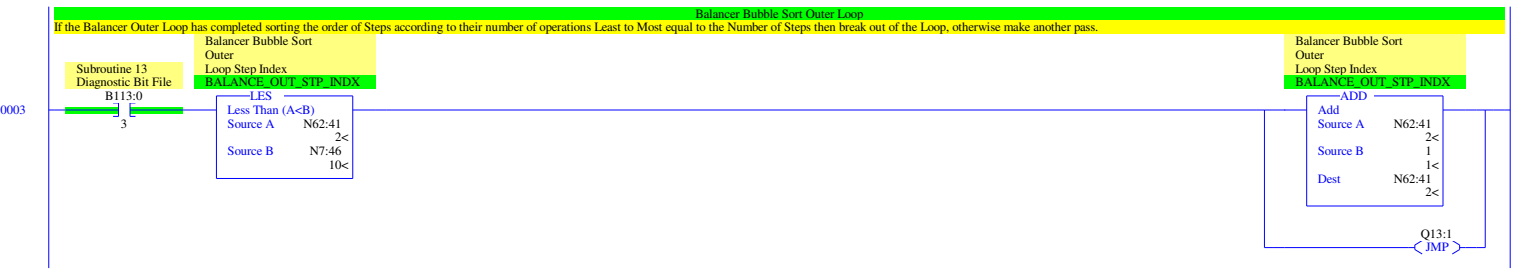
LAD 13 - BALANCER - Performs a "Bubble Sort" of the # of Operations --- Total Rungs in File = 7



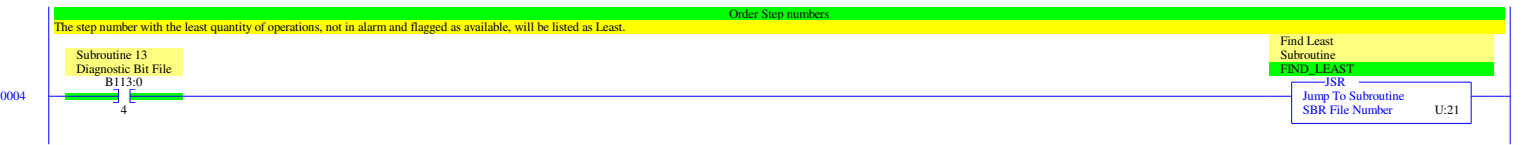
LAD 13 - BALANCER - Performs a "Bubble Sort" of the # of Operations --- Total Rungs in File = 7



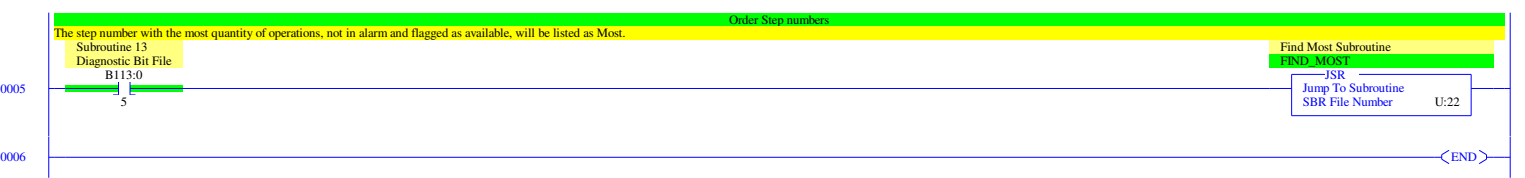
LAD 13 - BALANCER - Performs a "Bubble Sort" of the # of Operations --- Total Rungs in File = 7



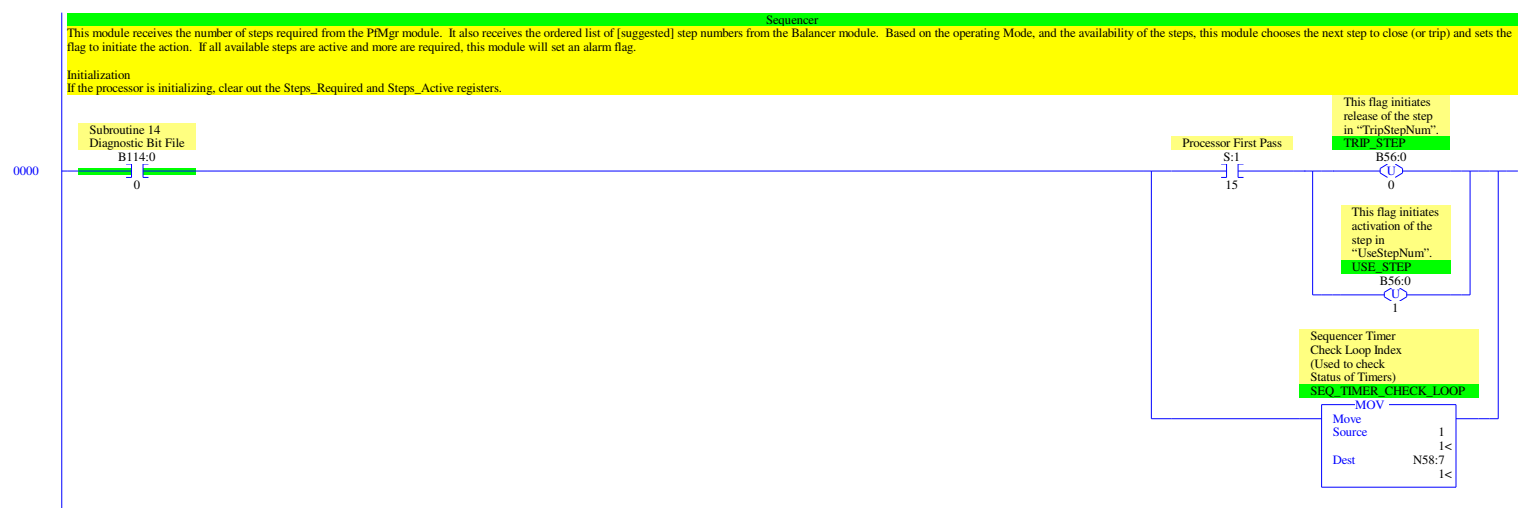
LAD 13 - BALANCER - Performs a "Bubble Sort" of the # of Operations --- Total Rungs in File = 7



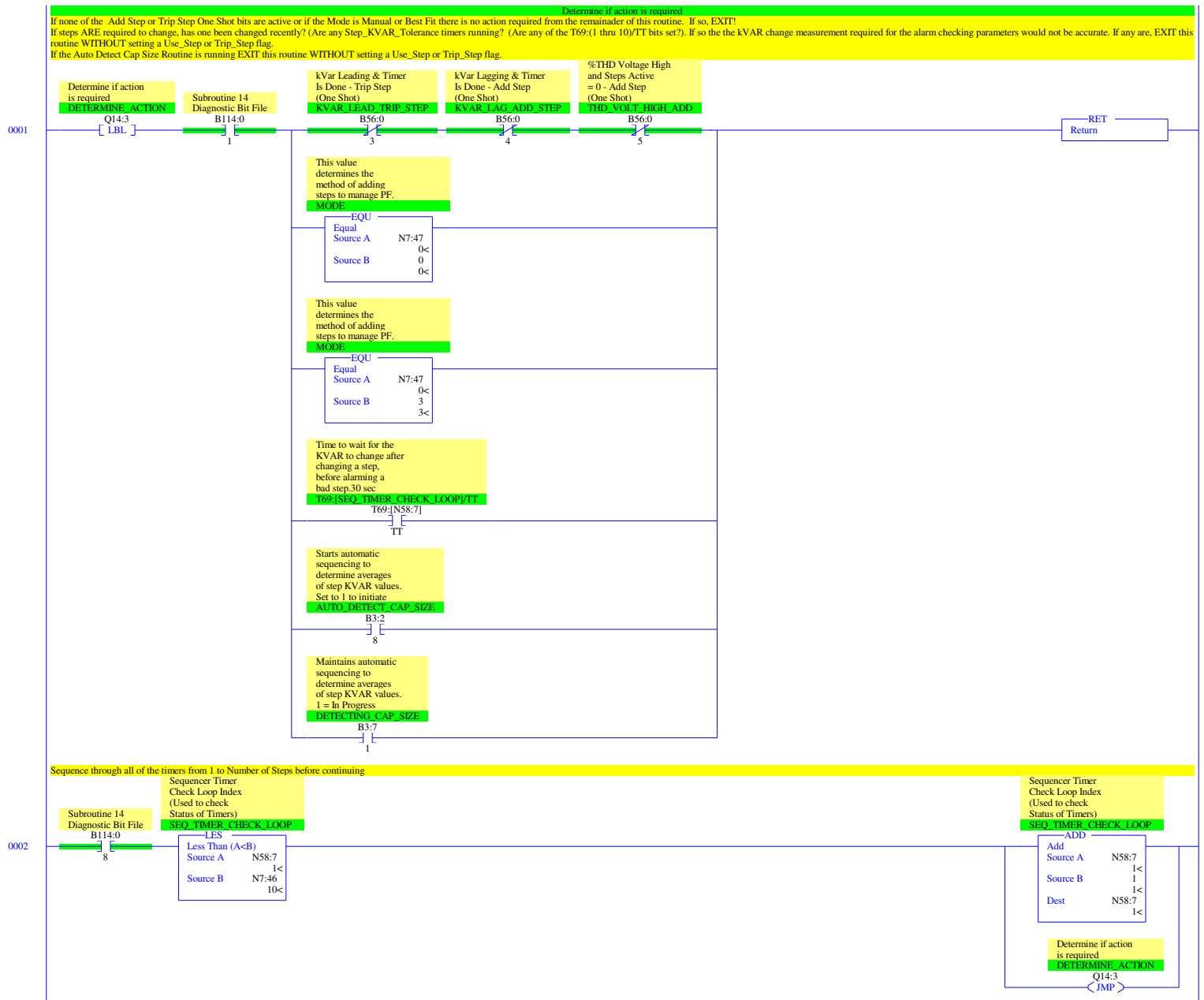
LAD 13 - BALANCER - Performs a "Bubble Sort" of the # of Operations --- Total Rungs in File = 7



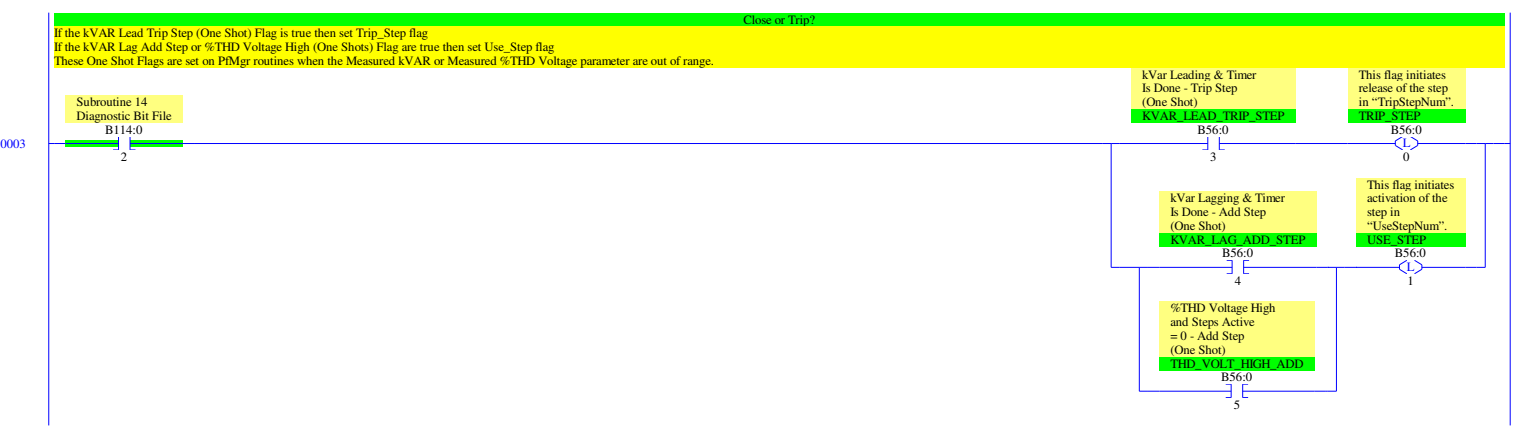
LAD 14 - SEQUENCER - Chooses the next step to close or trip --- Total Rungs in File = 11



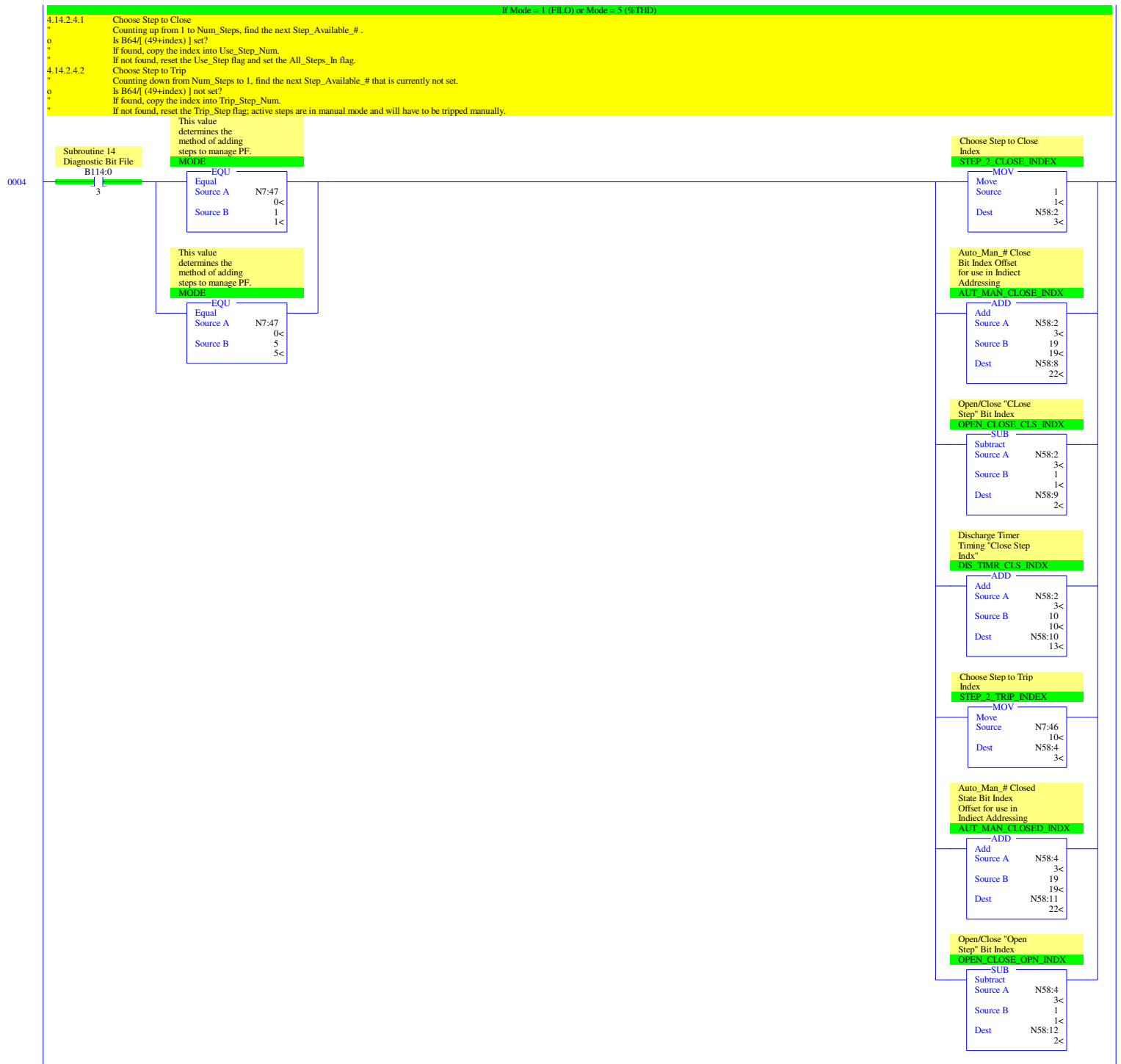
LAD 14 - SEQUENCER - Chooses the next step to close or trip --- Total Rungs in File = 11



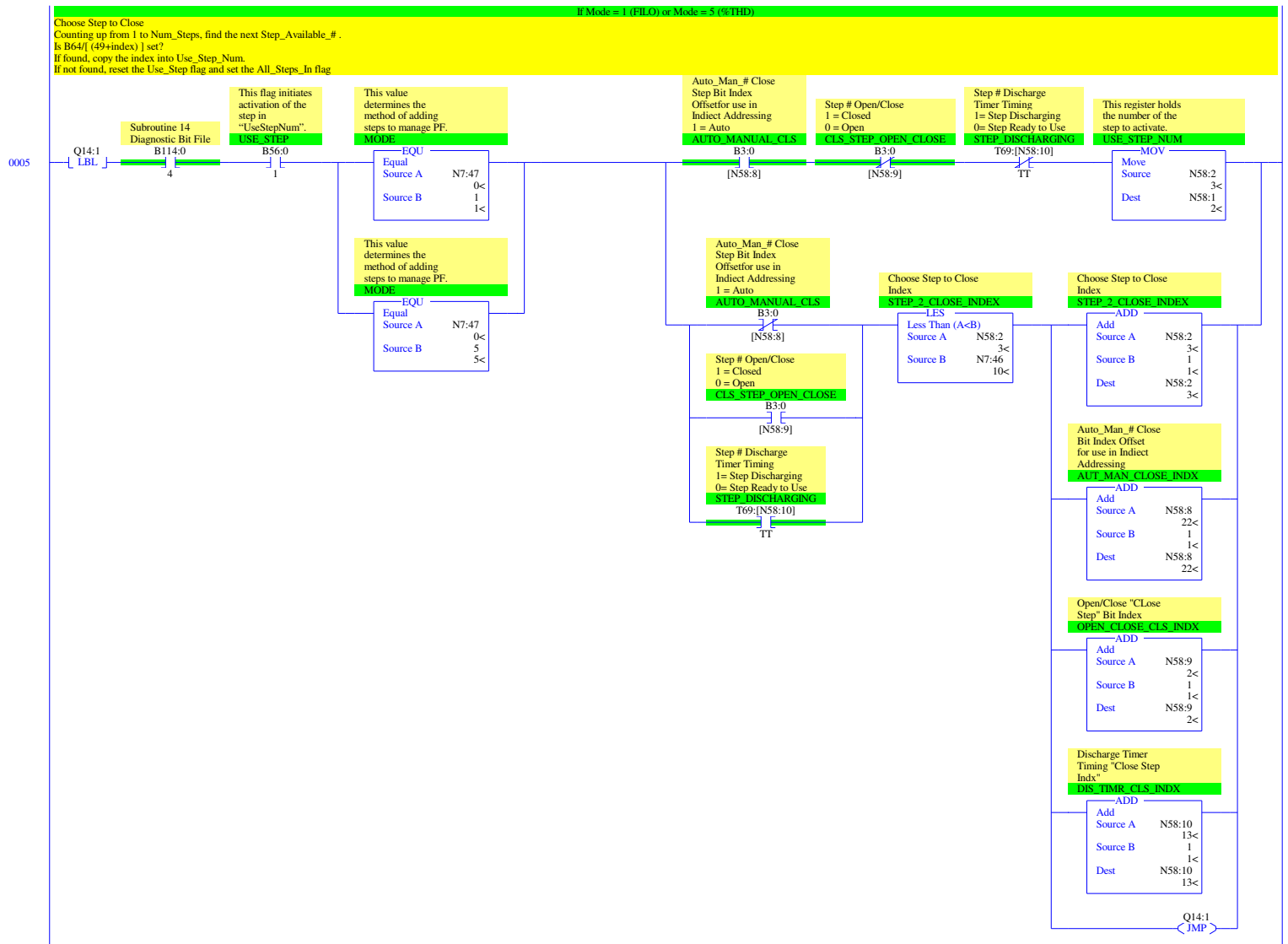
LAD 14 - SEQUENCER - Chooses the next step to close or trip --- Total Rungs in File = 11



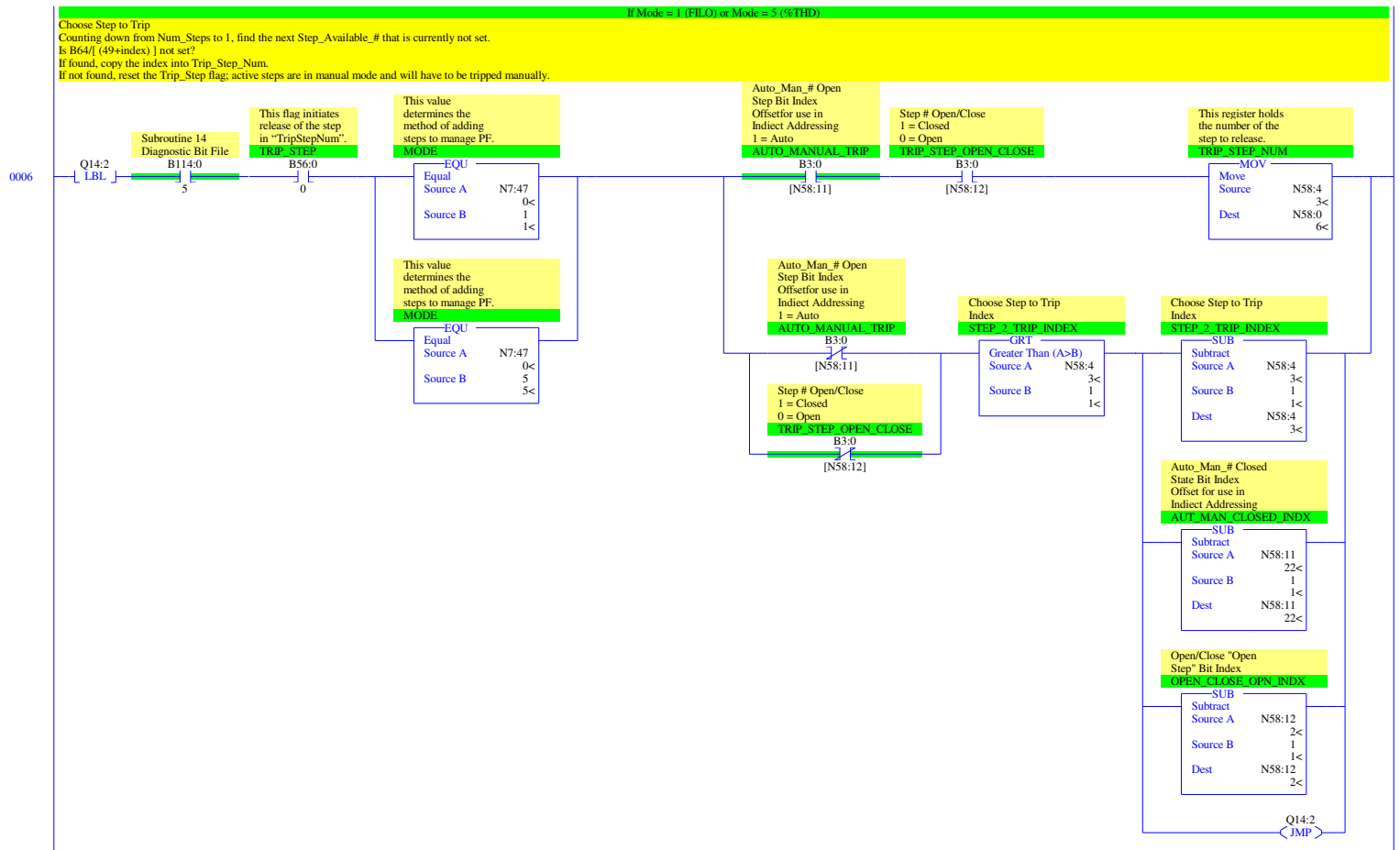
LAD 14 - SEQUENCER - Chooses the next step to close or trip --- Total Rungs in File = 11



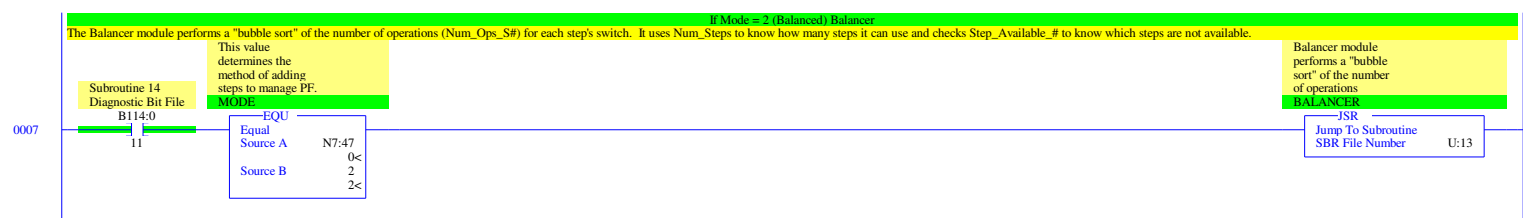
LAD 14 - SEQUENCER - Chooses the next step to close or trip --- Total Rungs in File = 11



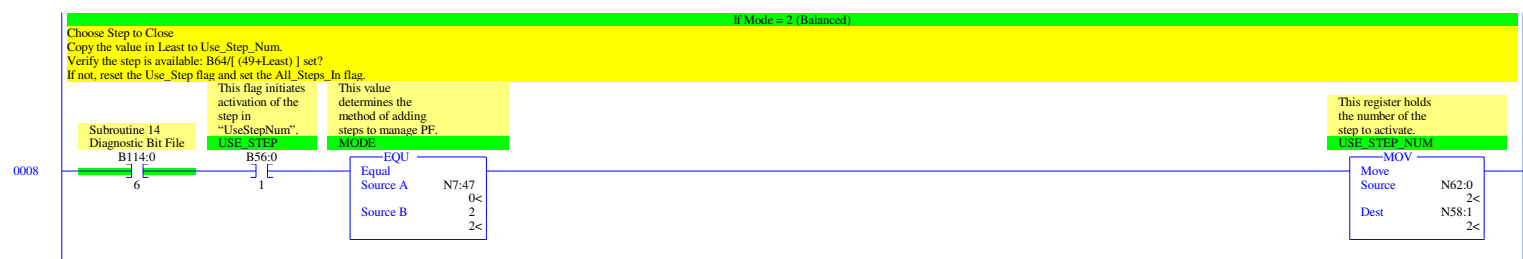
LAD 14 - SEQUENCER - Chooses the next step to close or trip --- Total Rungs in File = 11



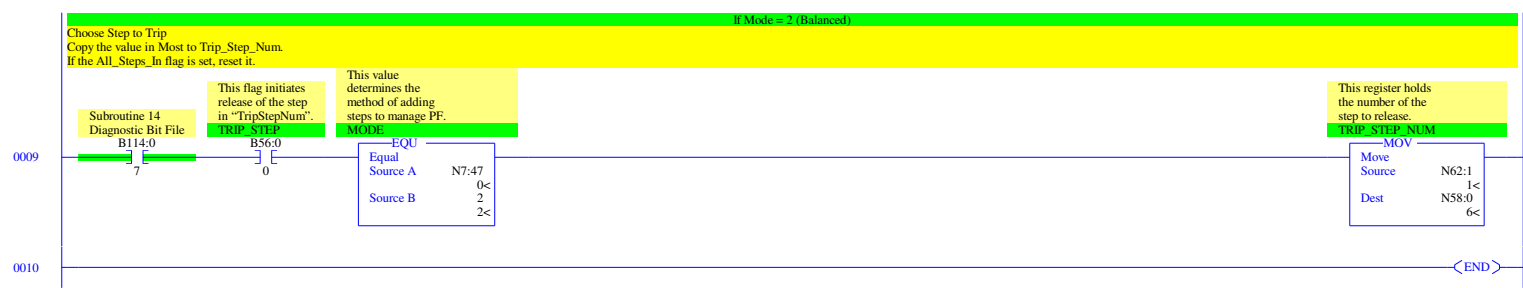
LAD 14 - SEQUENCER - Chooses the next step to close or trip --- Total Rungs in File = 11

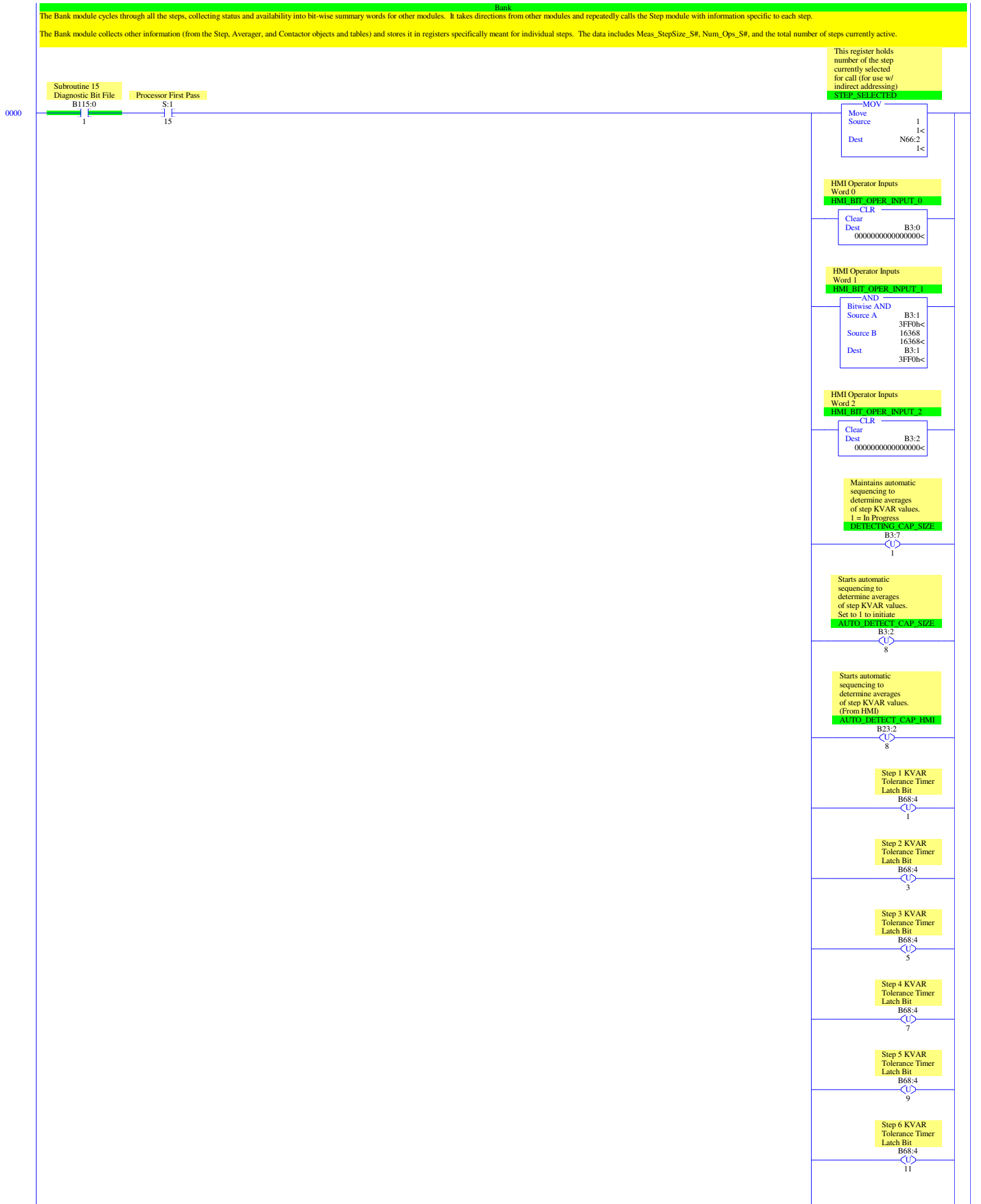


LAD 14 - SEQUENCER - Chooses the next step to close or trip --- Total Rungs in File = 11

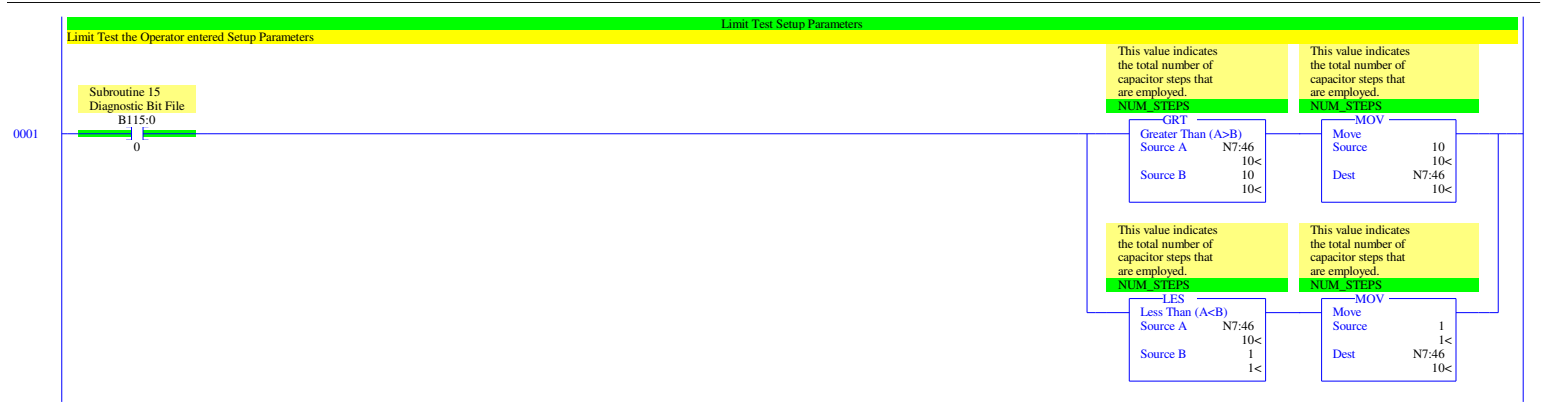


LAD 14 - SEQUENCER - Chooses the next step to close or trip --- Total Rungs in File = 11









LAD 15 - BANK - Bank --- Total Rungs in File = 33



LAD 15 - BANK - Bank --- Total Rungs in File = 33

Step 5 KVAR Ring
Buffer (Contains the
measured Step KVAR)

#STEP_5_KVAR_BUFFER

FLL

Fill File	
Source	F67:4
Dest	#F67:50
Length	10

Step 6 Buffer
0-9 are Buffers,
10-109 are values.
(Step 5 uses
reg. 5, 60-69)

RING_BUFFER_6

MOV

Move	
Source	N7:15
Dest	F67:50<
	100.0<

Step 6 KVAR Ring
Buffer (Contains the
measured Step KVAR)

#STEP_6_KVAR_BUFFER

FLL

Fill File	
Source	F67:5
Dest	#F67:60
Length	10

Step 7 Buffer
0-9 are Buffers,
10-109 are values.
(Step 5 uses
reg. 6, 70-79)

RING_BUFFER_7

MOV

Move	
Source	N7:16
Dest	F67:60<
	100.0<

Step 7 KVAR Ring
Buffer (Contains the
measured Step KVAR)

#STEP_7_KVAR_BUFFER

FLL

Fill File	
Source	F67:6
Dest	#F67:70
Length	10

Step 8 Buffer
0-9 are Buffers,
10-109 are values.
(Step 8 uses
reg. 7, 80-89)

RING_BUFFER_8

MOV

Move	
Source	N7:17
Dest	F67:70<
	100.0<

Step 8 KVAR Ring
Buffer (Contains the
measured Step KVAR)

#STEP_8_KVAR_BUFFER

FLL

Fill File	
Source	F67:7
Dest	#F67:80
Length	10

Step 9 Buffer
0-9 are Buffers,
10-109 are values.
(Step 9 uses
reg. 8, 90-99)

RING_BUFFER_9

MOV

Move	
Source	N7:18
Dest	F67:80<
	100.0<

Step 9 KVAR Ring
Buffer (Contains the
measured Step KVAR)

#STEP_9_KVAR_BUFFER

FLL

Fill File	
Source	F67:8
Dest	#F67:90
Length	10

LAD 15 - BANK - Bank --- Total Rungs in File = 33

Step 10 Buffer
0-9 are Buffers,
10-109 are values.
(Step 10 uses
reg. 9, 100-109)

RING_BUFFER_10

MOV
Source N7:19
Dest F67:9
100.0<

Step 10 KVAR Ring
Buffer (Contains the
measured Step KVAR)

#STEP_10_KVAR_BUFFER

FLL
Fill File
Source F67:9
Dest #F67:100
Length 10

Step 1
Running Total KVAR
Used to calculate
Step 1 Average KVAR

#STEP_1_SUMMED_KVAR

FLL
Fill File
Source 0.0
Dest #F67:111
Length 10

Step #1 Pointer
(Used in Averager
module as Index for
Ring Buffer for
Average KVAR calcs)

#POINTER_1

FLL
Fill File
Source 0
Dest #N70:1
Length 10

This flag indicates
whether the step# is
in (StepSize) alarm.
(Summed into BadStep
Alarm)1 = In Alarm

STEP_ALARM_1

B3:0
10

This flag indicates
whether the step# is
in (StepSize) alarm.
(Summed into BadStep
Alarm)1 = In Alarm

STEP_ALARM_2

B3:0
11

This flag indicates
whether the step# is
in (StepSize) alarm.
(Summed into BadStep
Alarm)1 = In Alarm

STEP_ALARM_3

B3:0
12

This flag indicates
whether the step# is
in (StepSize) alarm.
(Summed into BadStep
Alarm)1 = In Alarm

STEP_ALARM_4

B3:0
13

This flag indicates
whether the step# is
in (StepSize) alarm.
(Summed into BadStep
Alarm)1 = In Alarm

STEP_ALARM_5

B3:0
14

This flag indicates
whether the step# is
in (StepSize) alarm.
(Summed into BadStep
Alarm)1 = In Alarm

STEP_ALARM_6

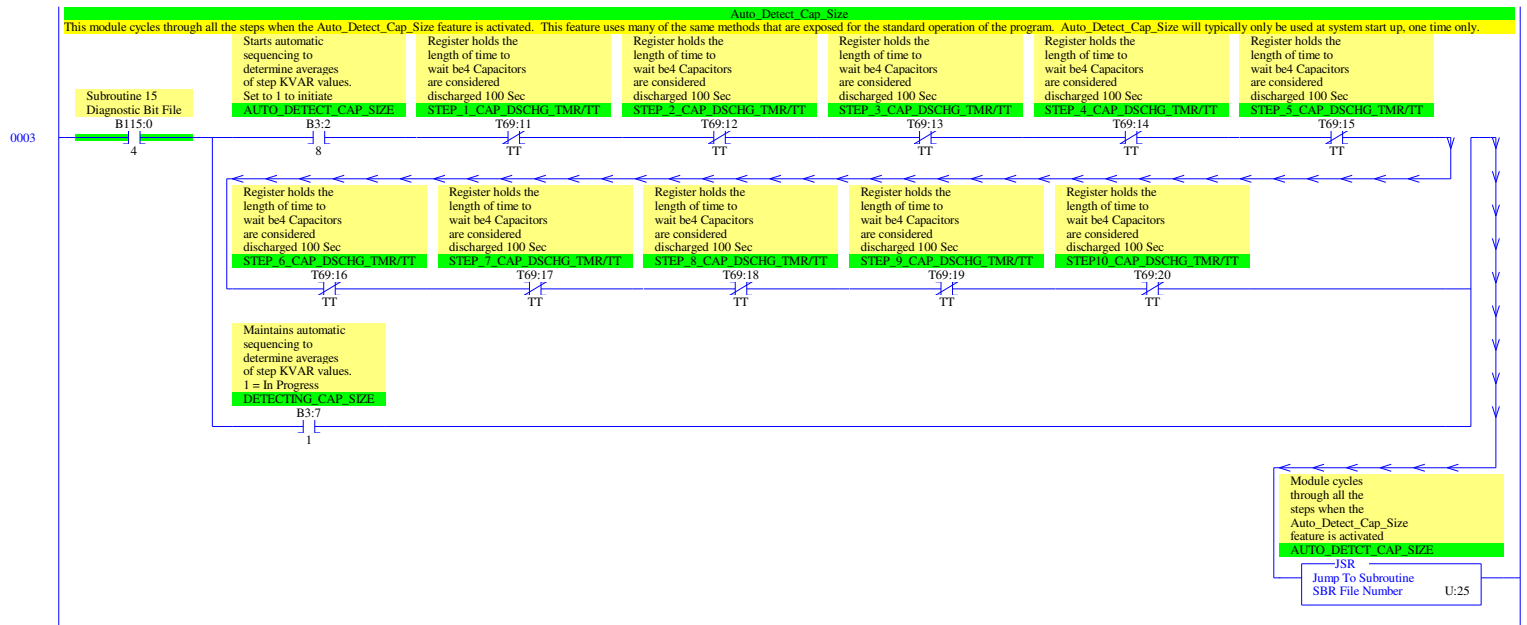
B3:0
15

This flag indicates
whether the step# is
in (StepSize) alarm.
(Summed into BadStep
Alarm)1 = In Alarm

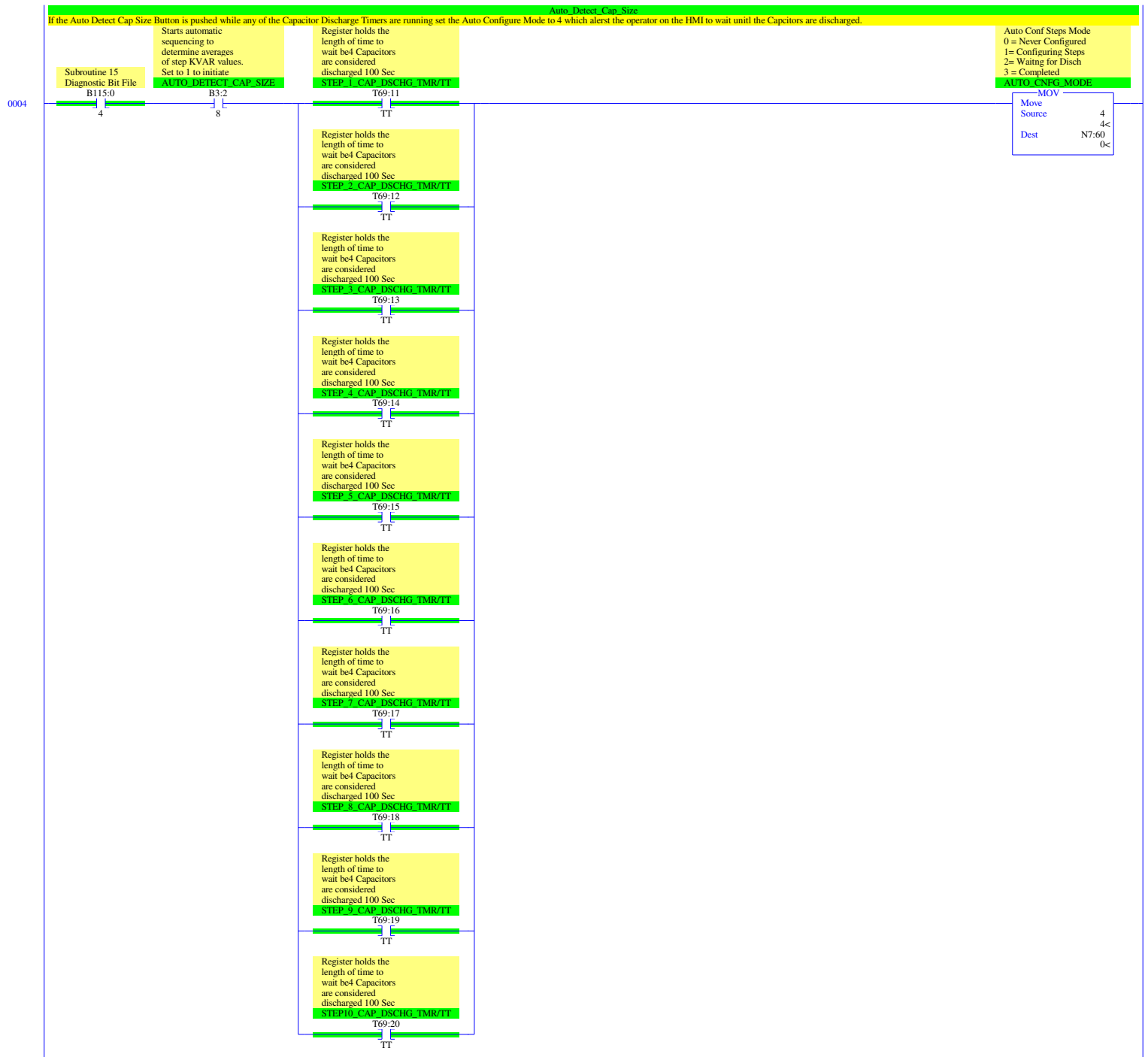
STEP_ALARM_7

B3:1
0

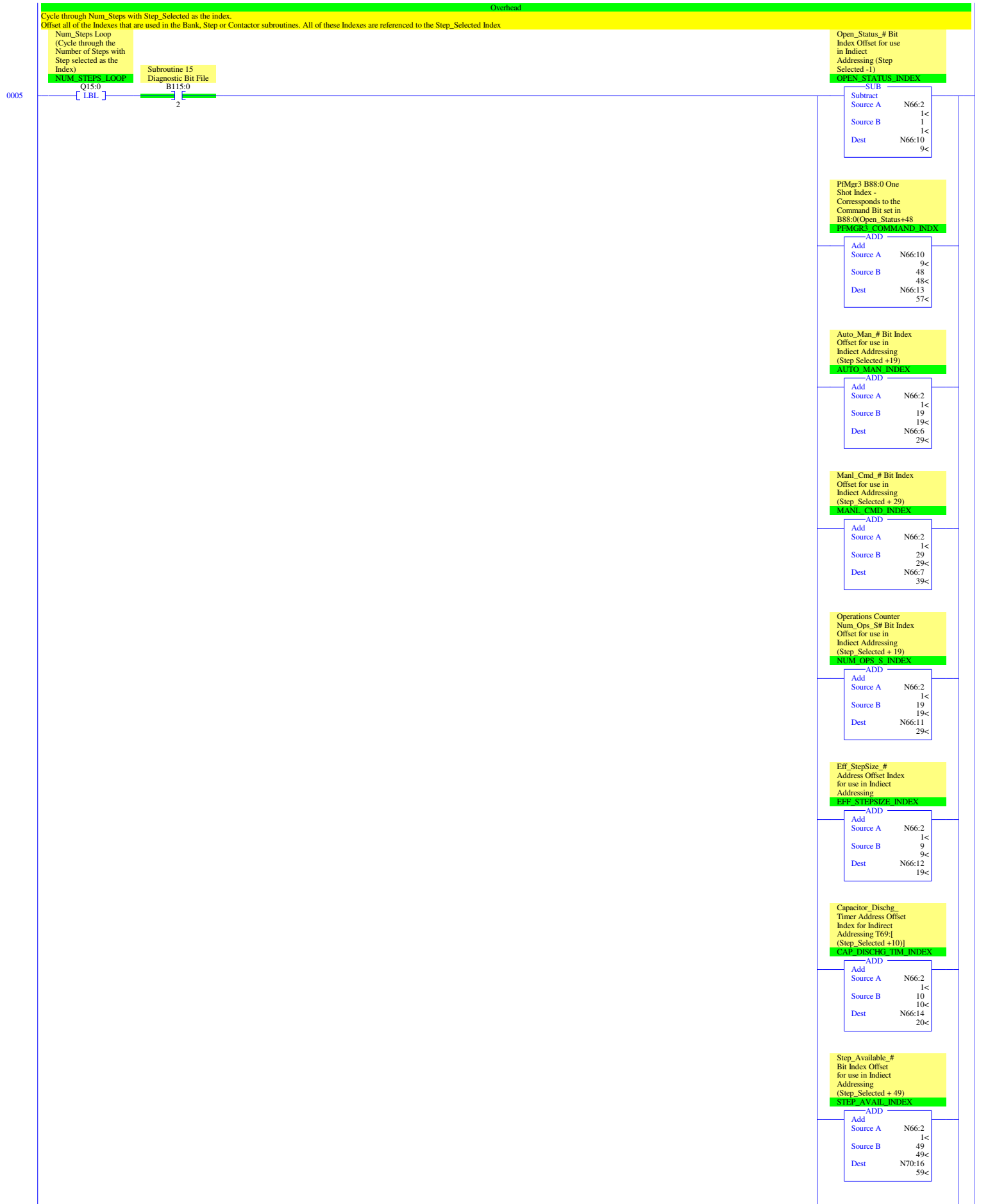




LAD 15 - BANK - Bank --- Total Rungs in File = 33



LAD 15 - BANK - Bank --- Total Rungs in File = 33



LAD 15 - BANK - Bank --- Total Rungs in File = 33

Step_Alarm_# Bit
Index Offset for use
in Indirect
Addressing
(Step_Selected + 9)

STEP_ALARM_INDEX

ADD

Add	
Source A	N66:2
Source B	1<9
Dest	N66:9
	19<

KVAR Timer Done One
Shot Bit (Used to
index the timers
Done Bit to One Shot
Table(Step_Select+96

KVAR_TIMER_DN_INDEX

ADD

Add	
Source A	N66:2
Source B	1<96
Dest	N70:11
	106<

Meas_StepSize_S#
Address Offset Index
for use in Indirect
Addressing
(Step_Selected -1)

MEAS_STEPSIZE_INDEX

SUB

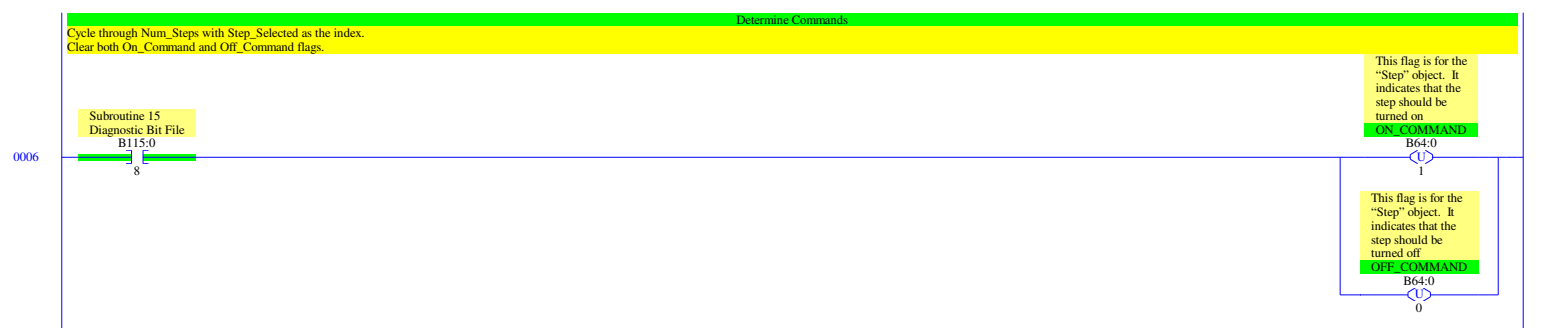
Subtract	
Source A	N66:2
Source B	1<1
Dest	N70:21
	9<

Capacitor_Dischg_Tim
er Preset Index
Offset for use in
Indirect Addressing
(Step_Selected+10)

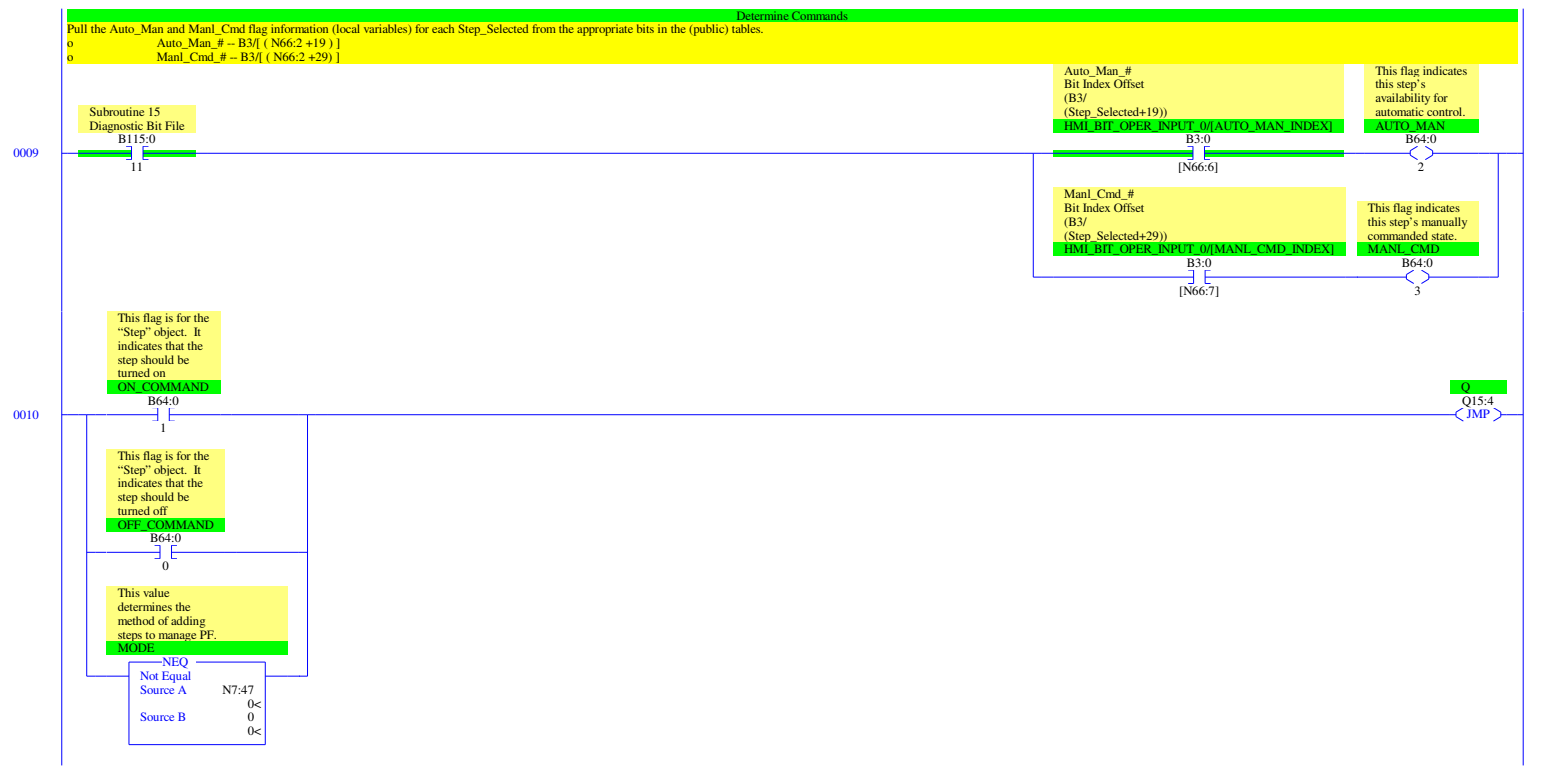
CAP_DIS_TIM_PRE_INDEX

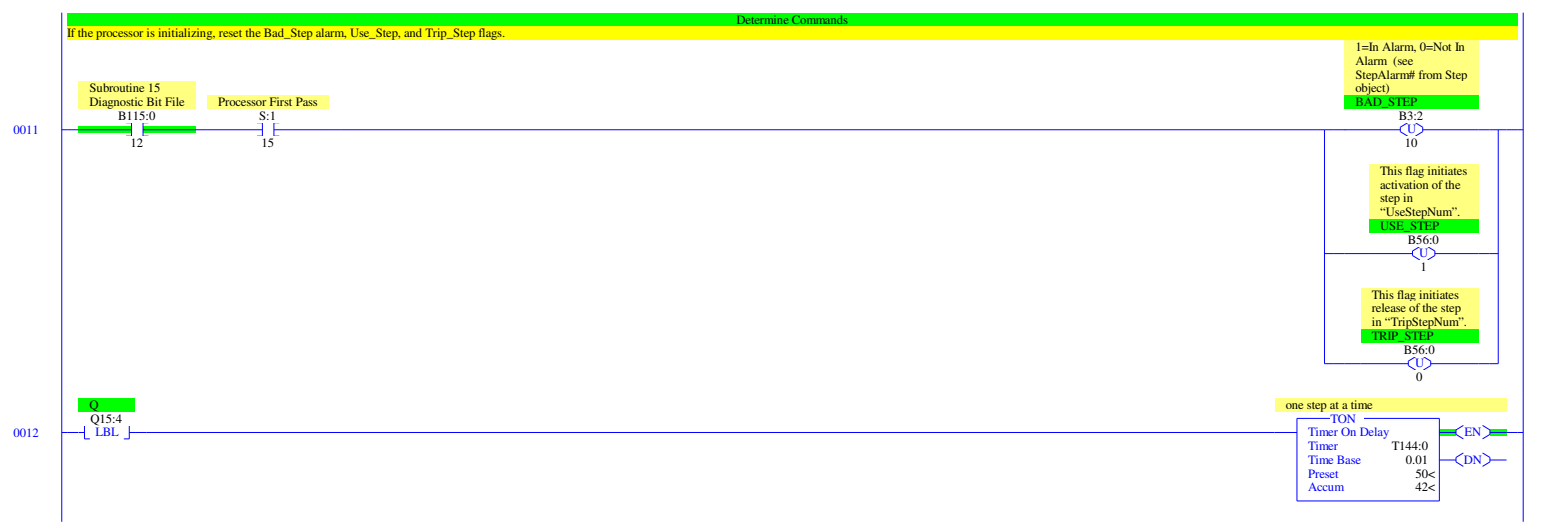
ADD

Add	
Source A	N66:2
Source B	1<10
Dest	N70:30
	20<

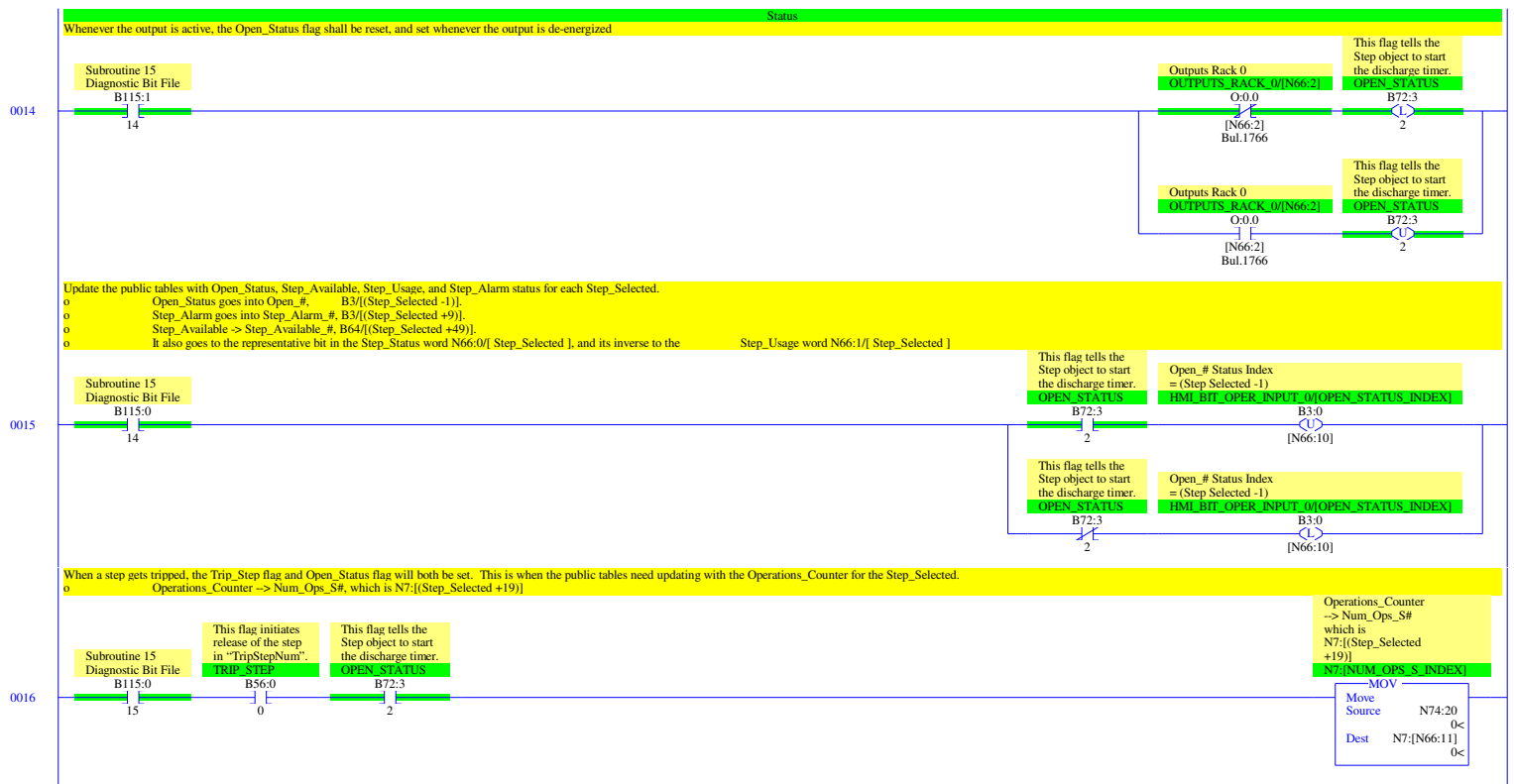


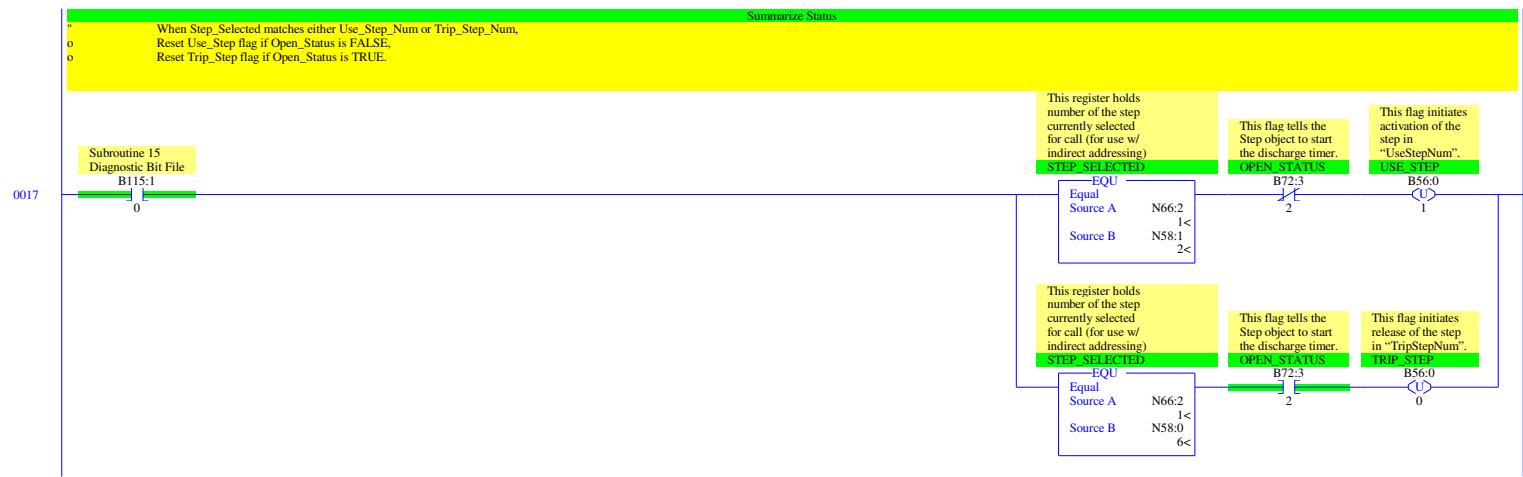


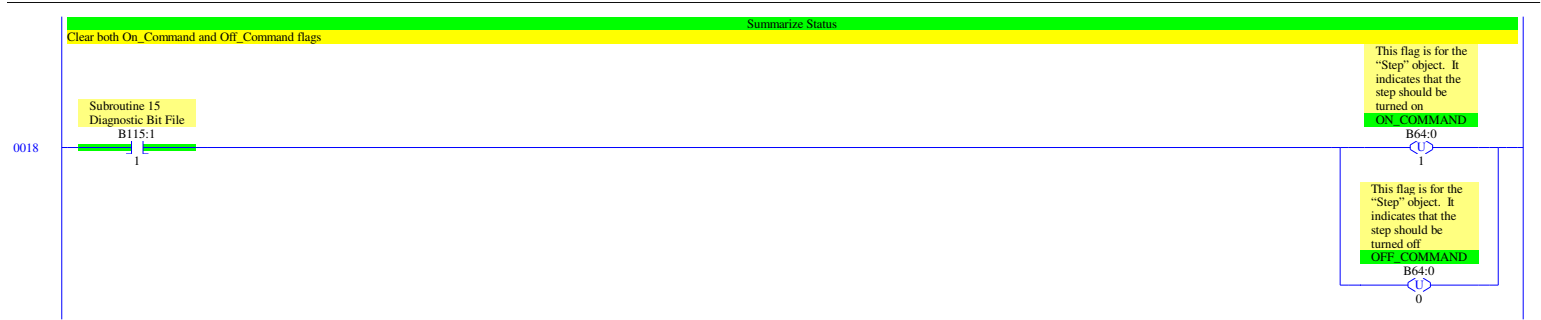


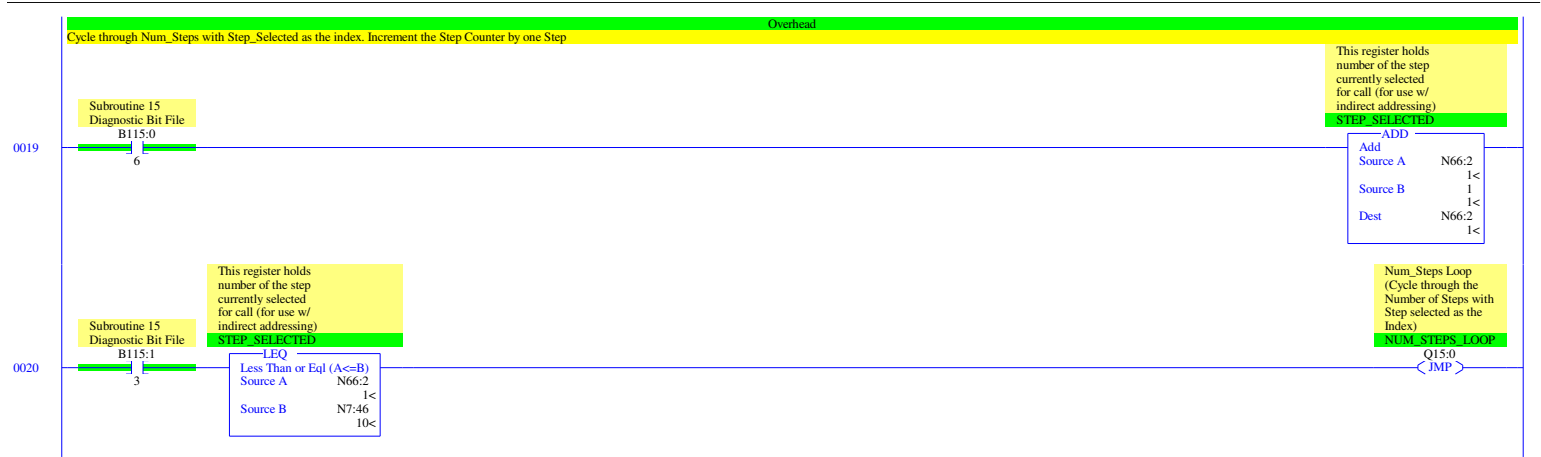


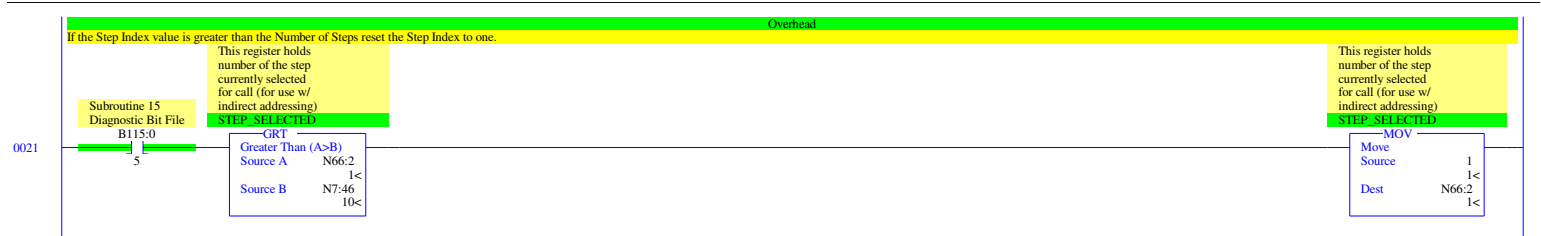


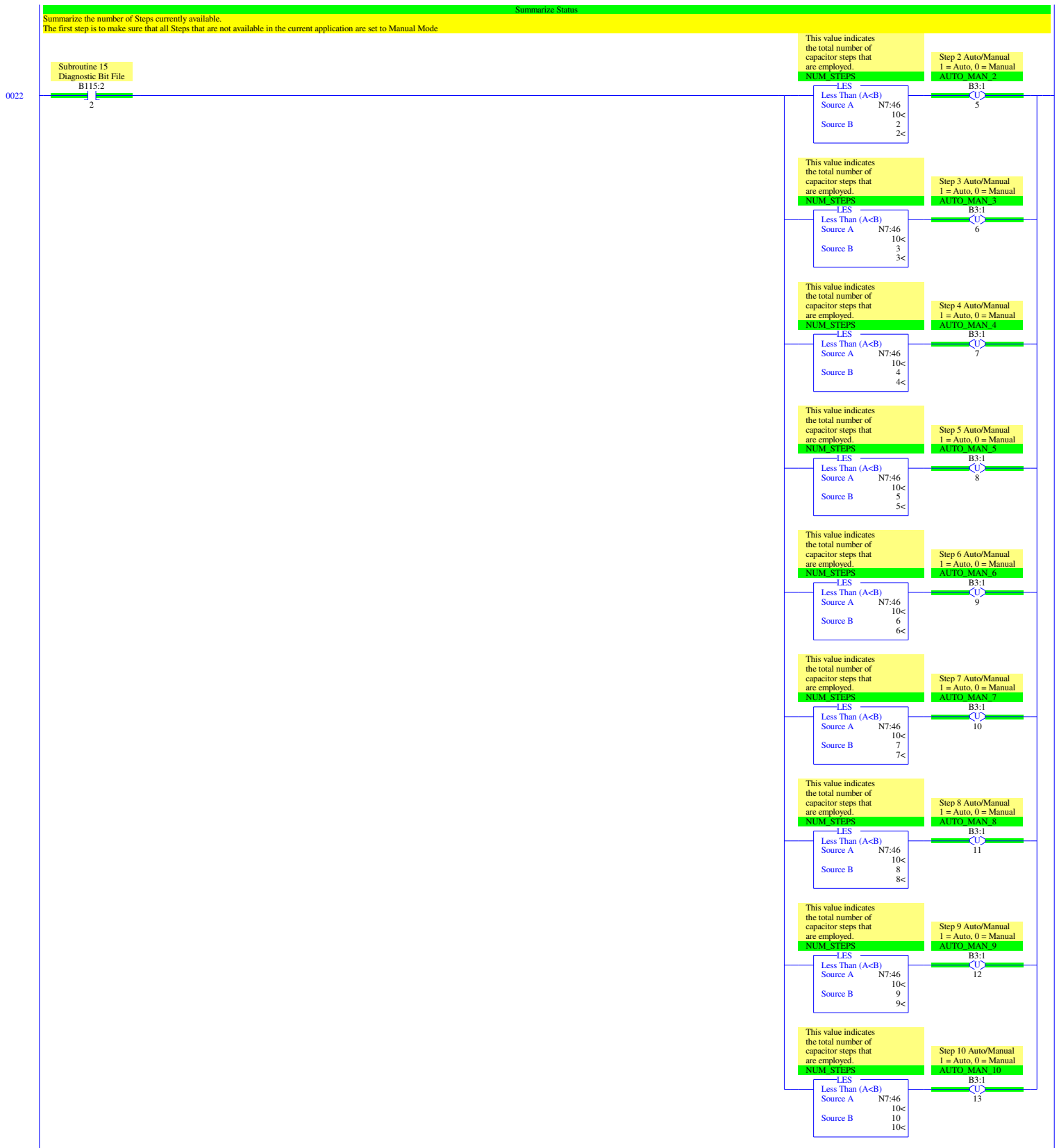


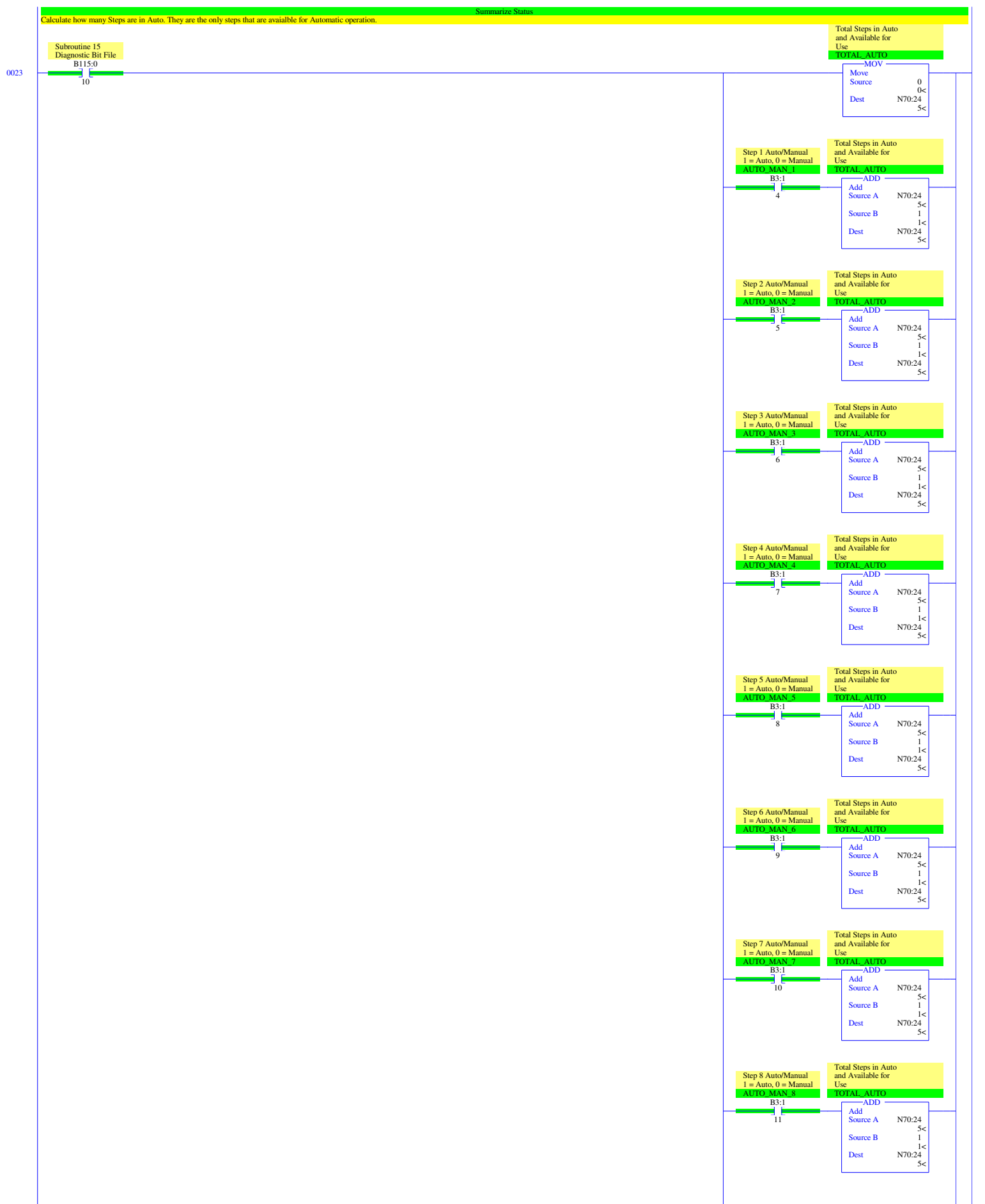


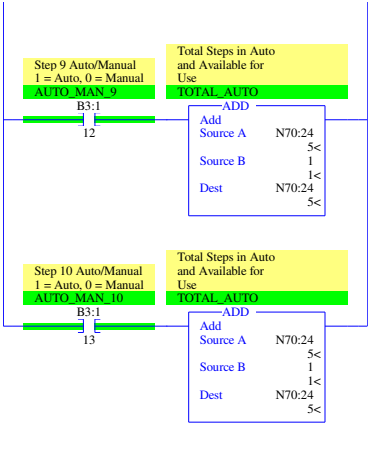


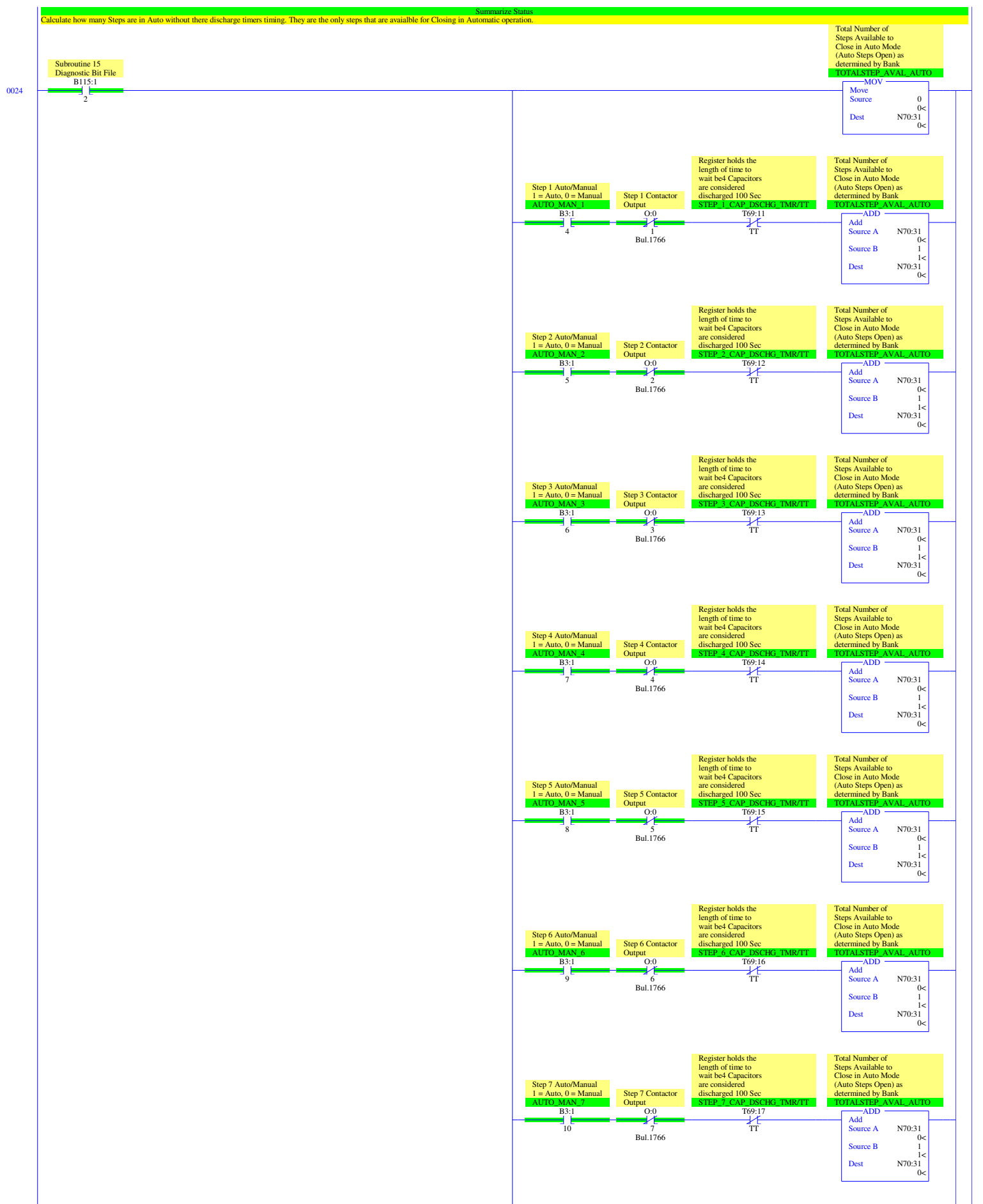




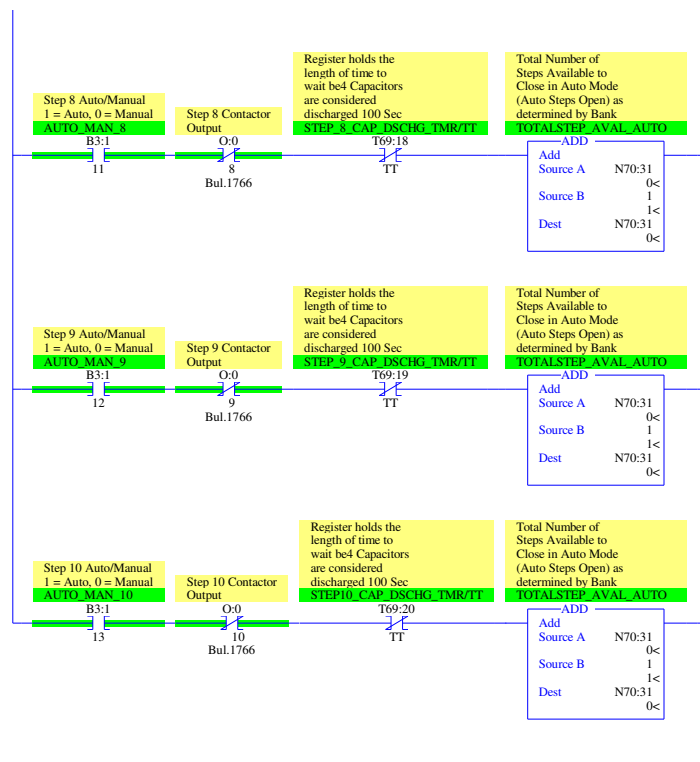


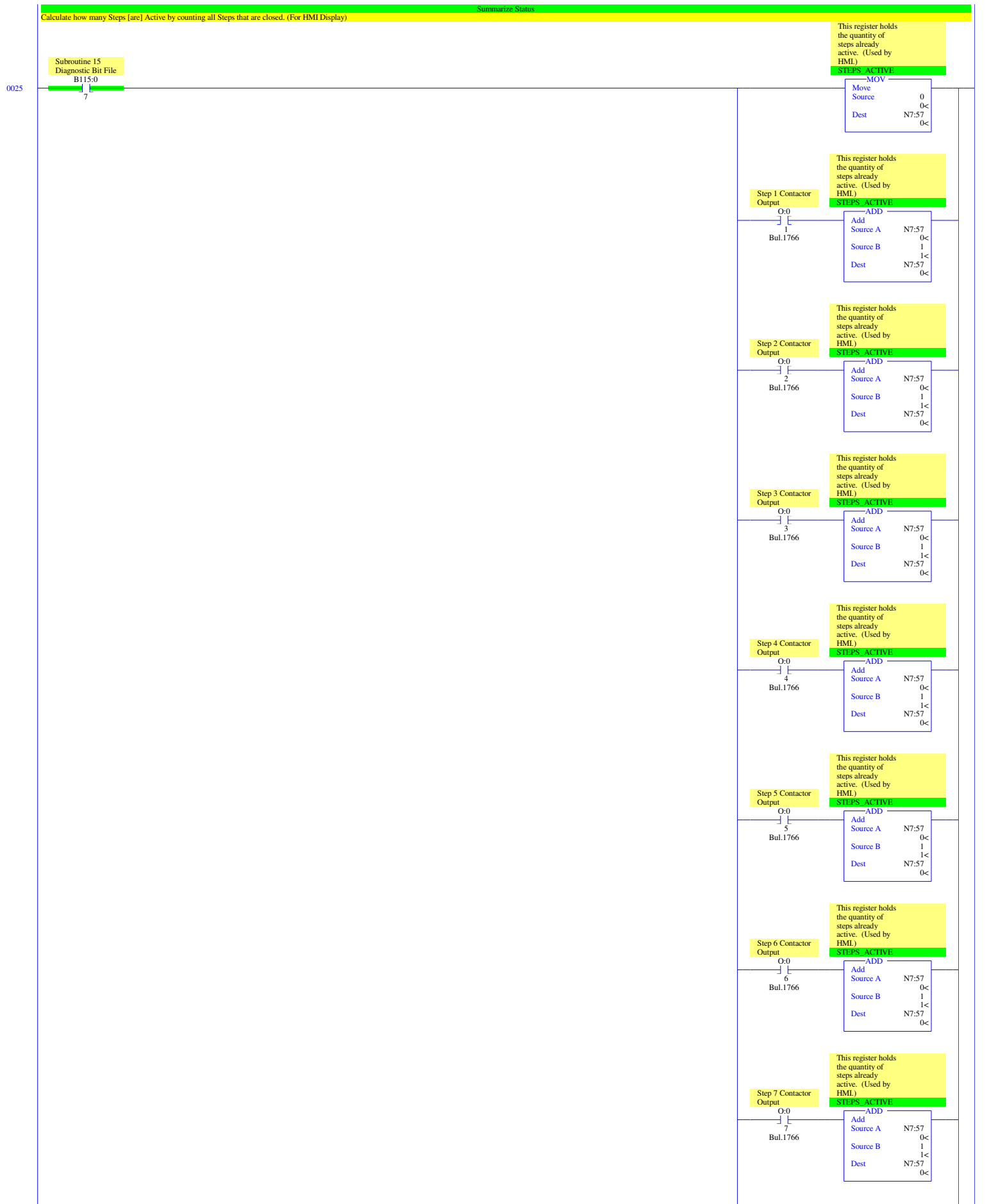


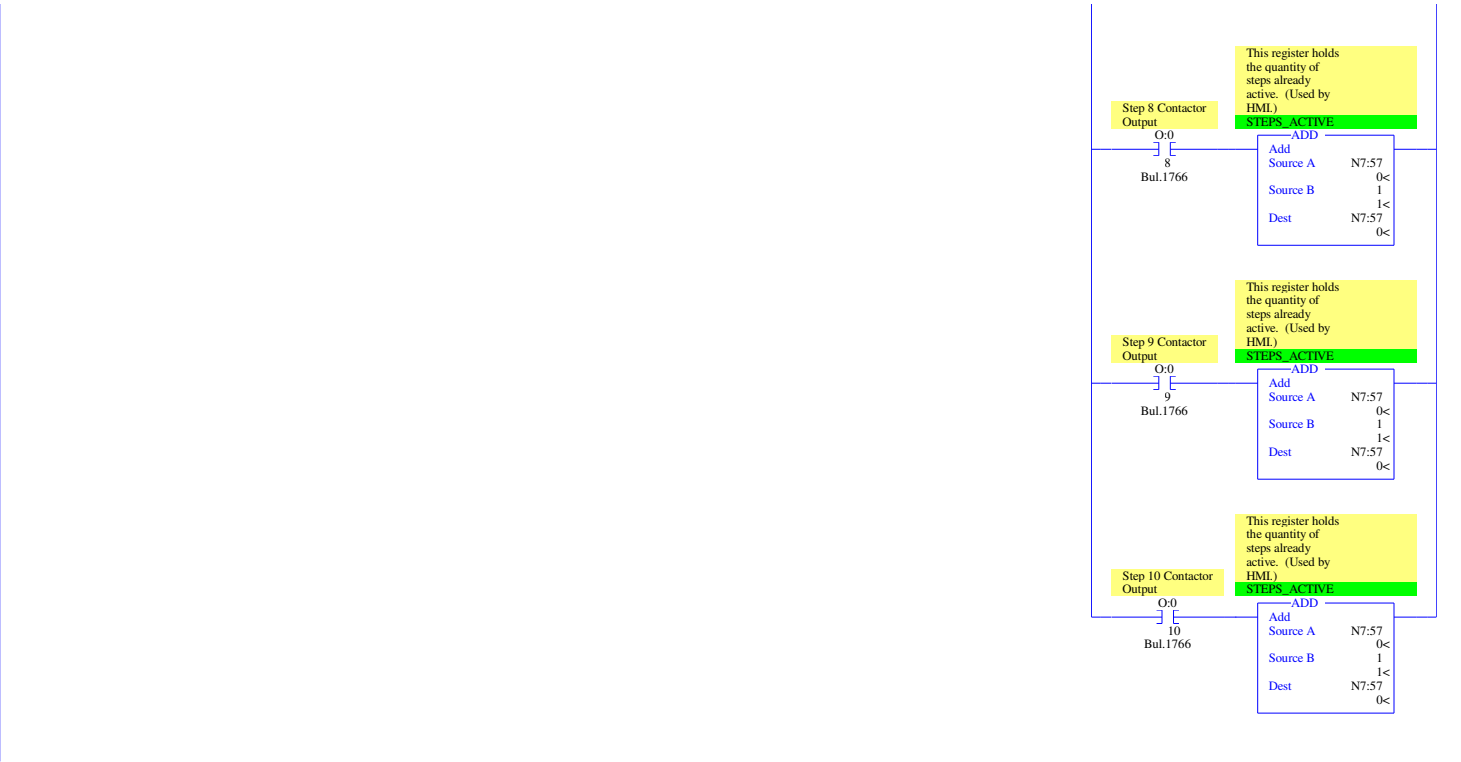


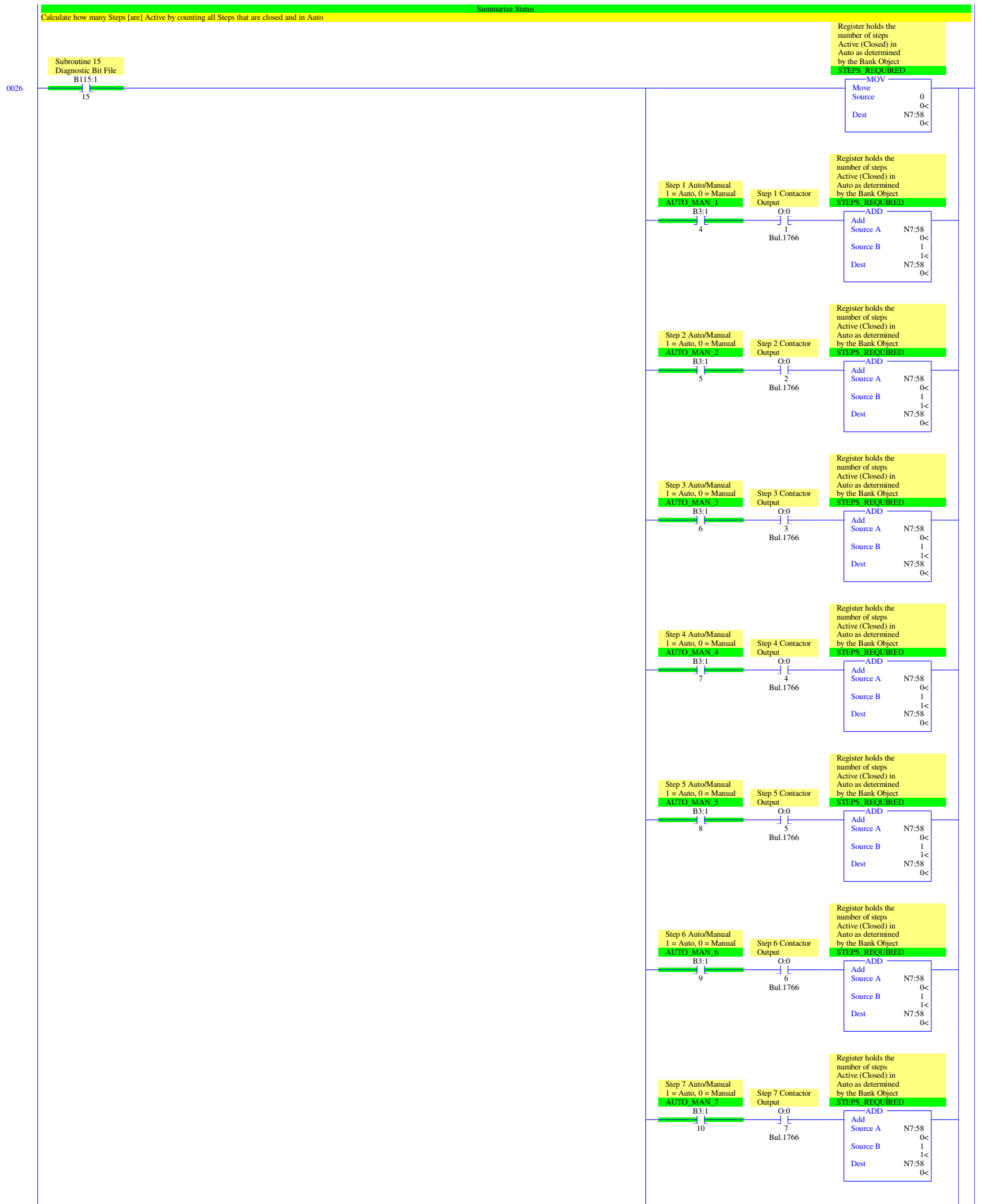


LAD 15 - BANK - Bank --- Total Rungs in File = 33

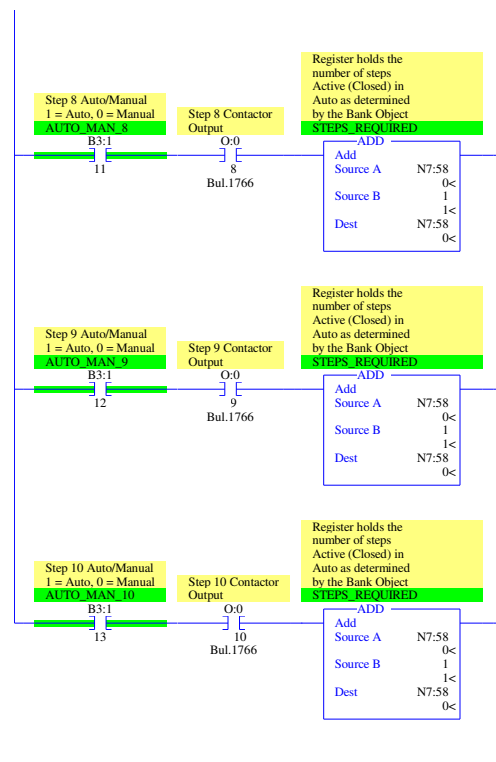


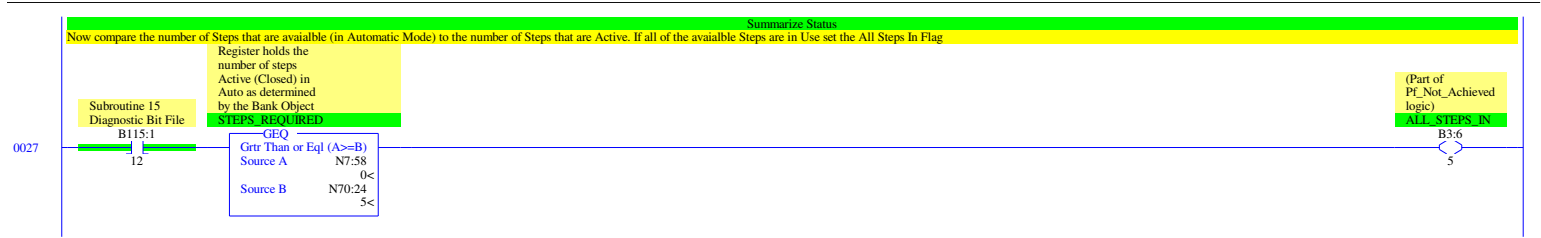




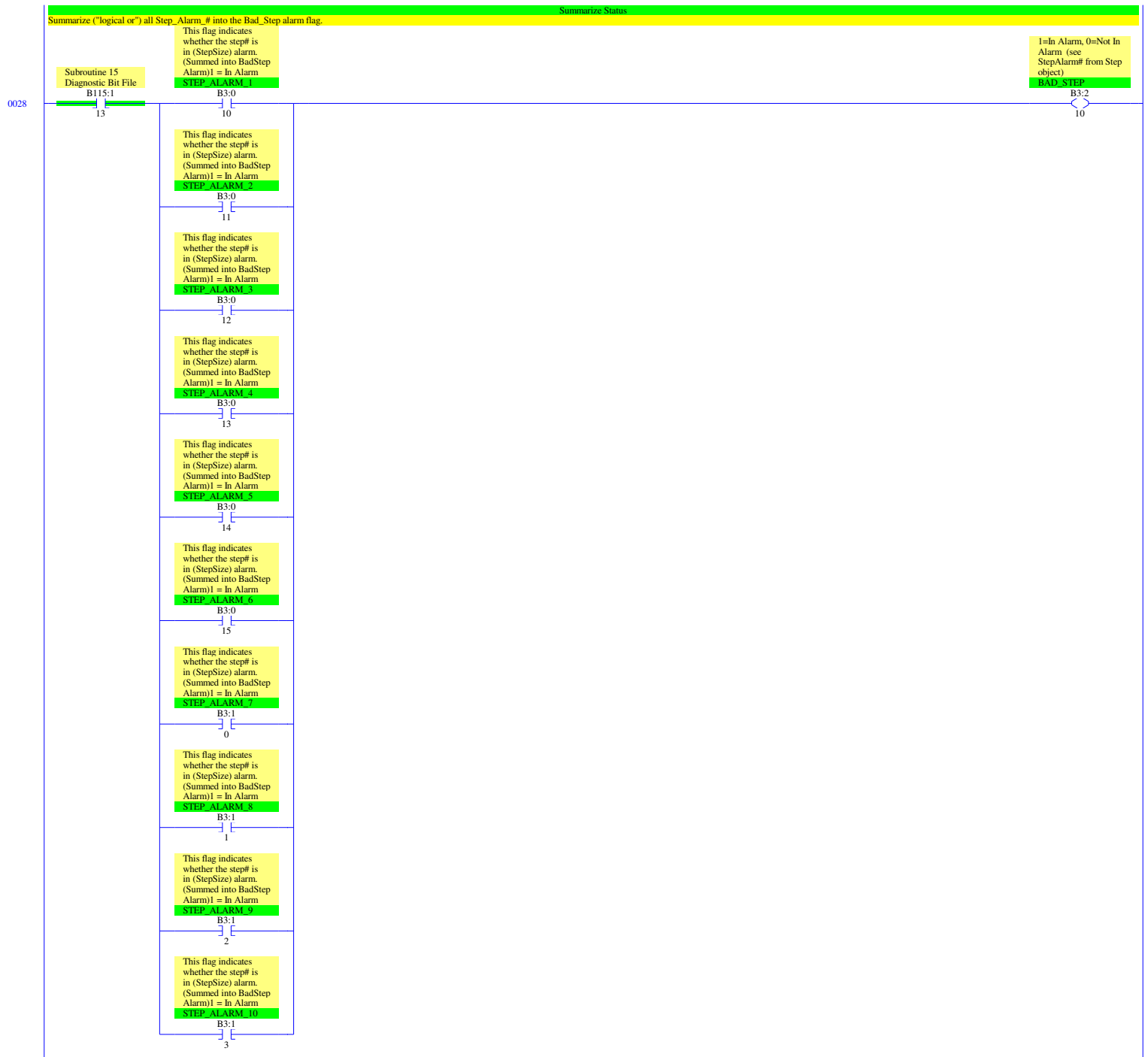


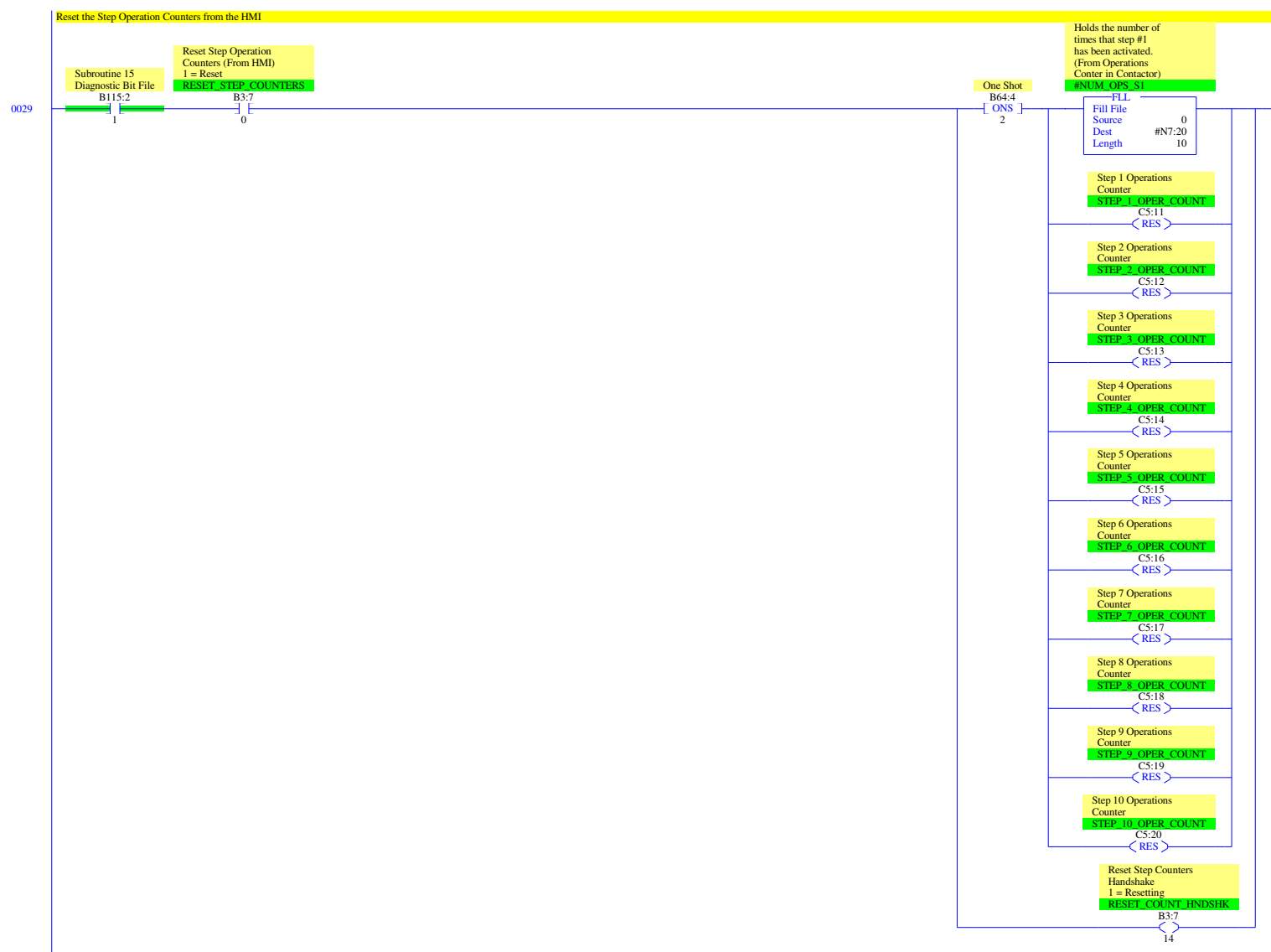
LAD 15 - BANK - Bank --- Total Rungs in File = 33

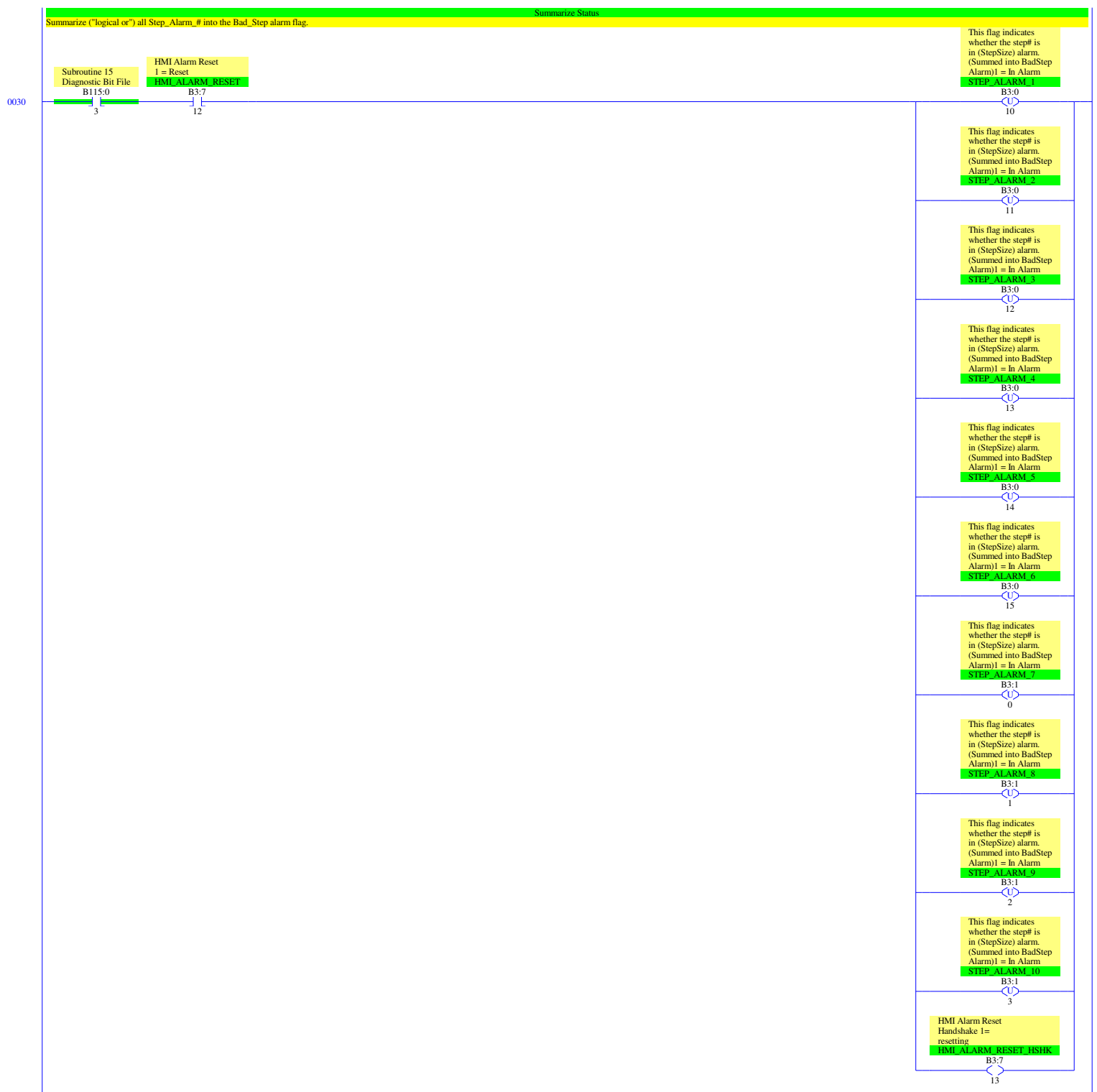


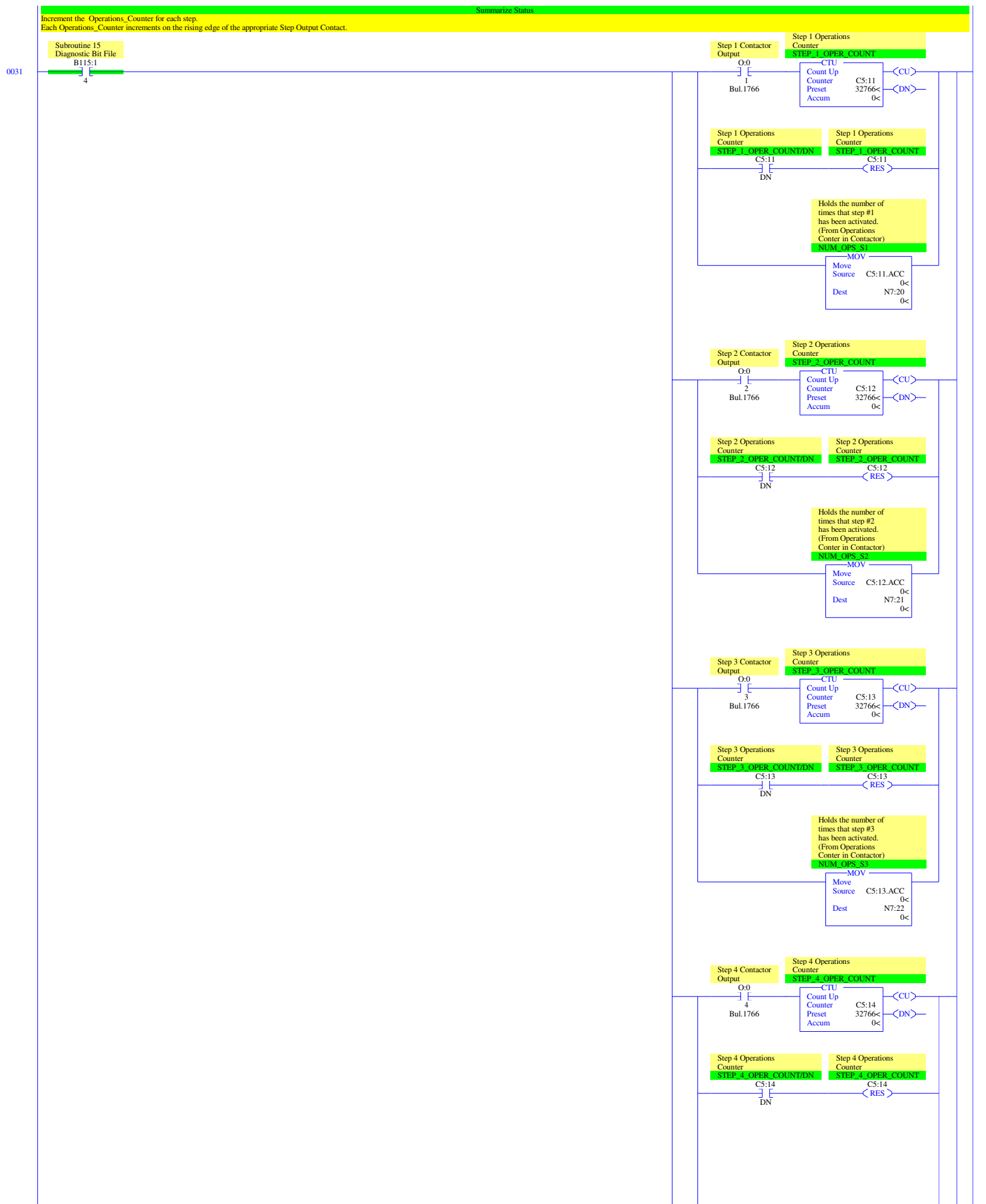


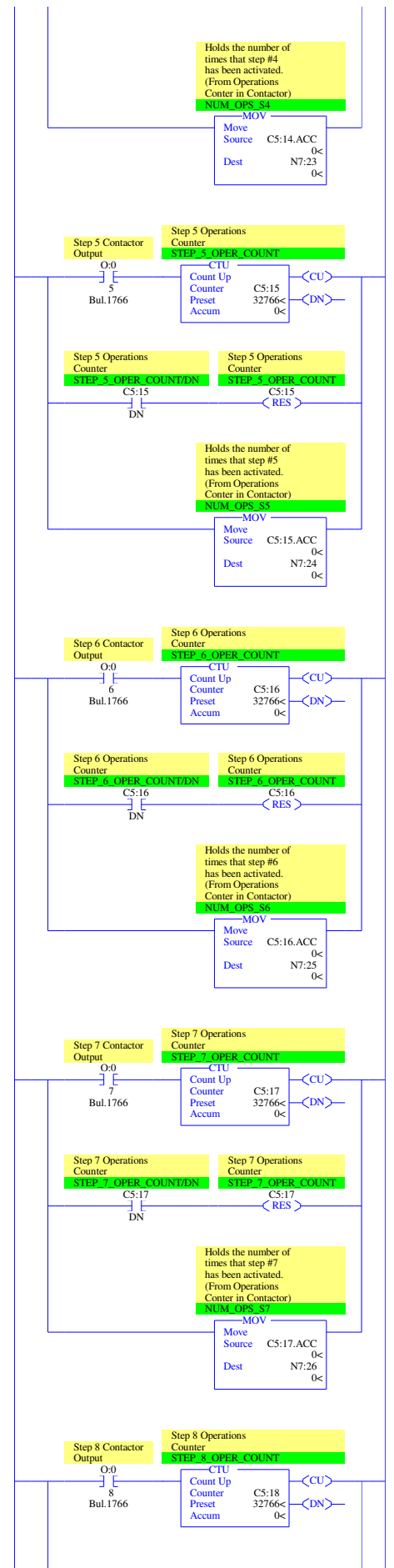
LAD 15 - BANK - Bank --- Total Rungs in File = 33





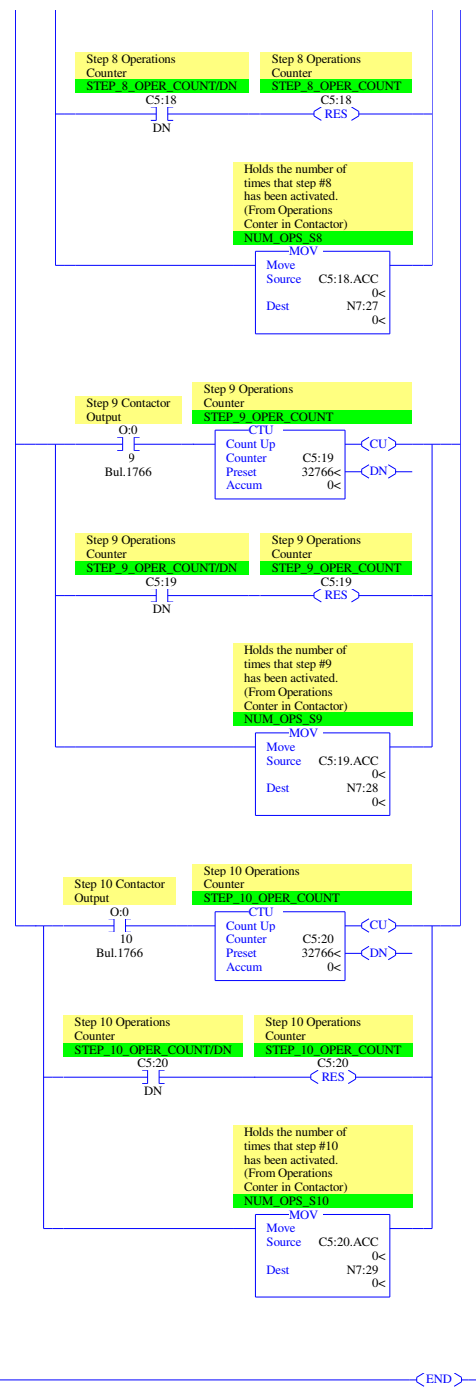






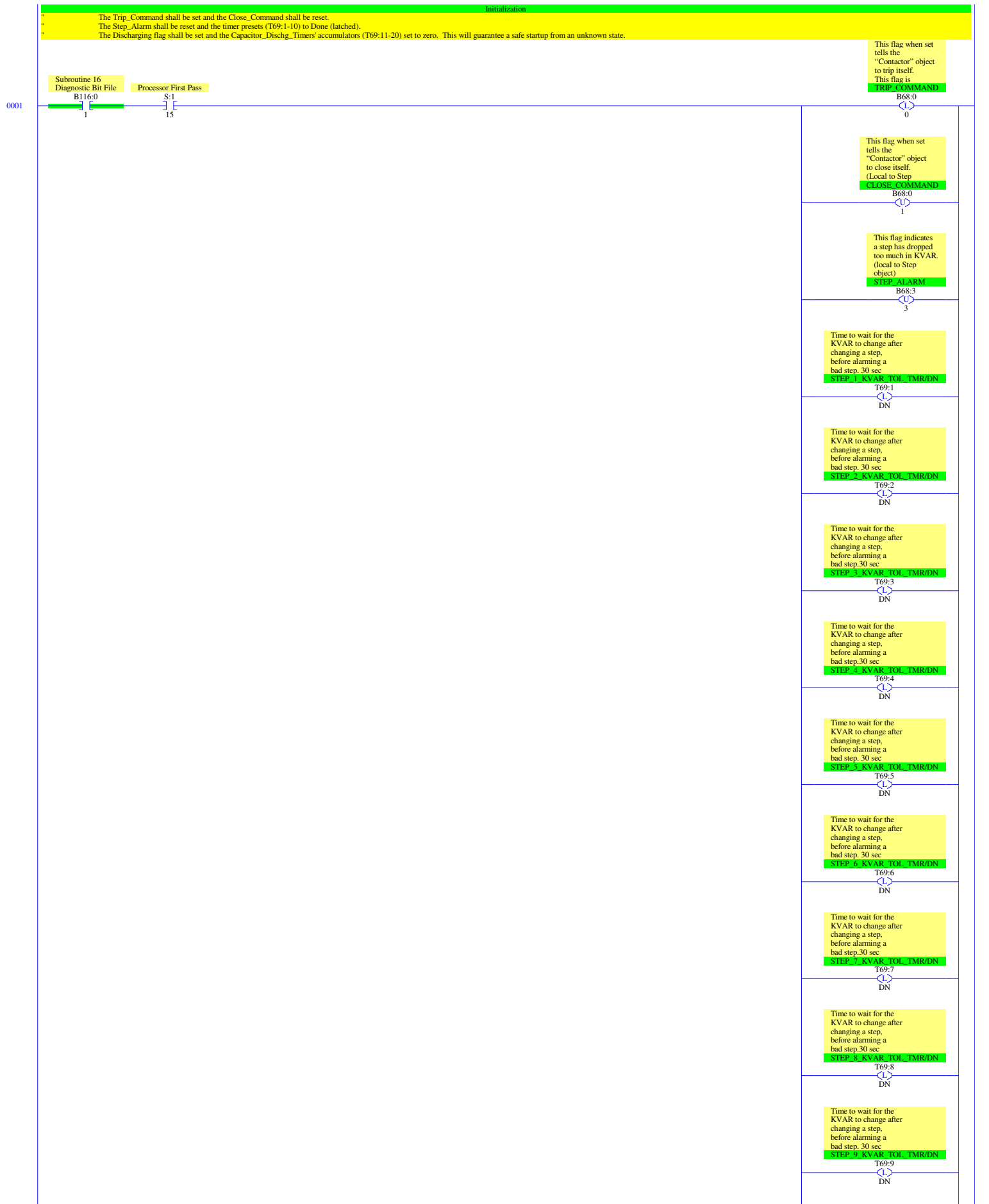
LAD 15 - BANK - Bank --- Total Rungs in File = 33

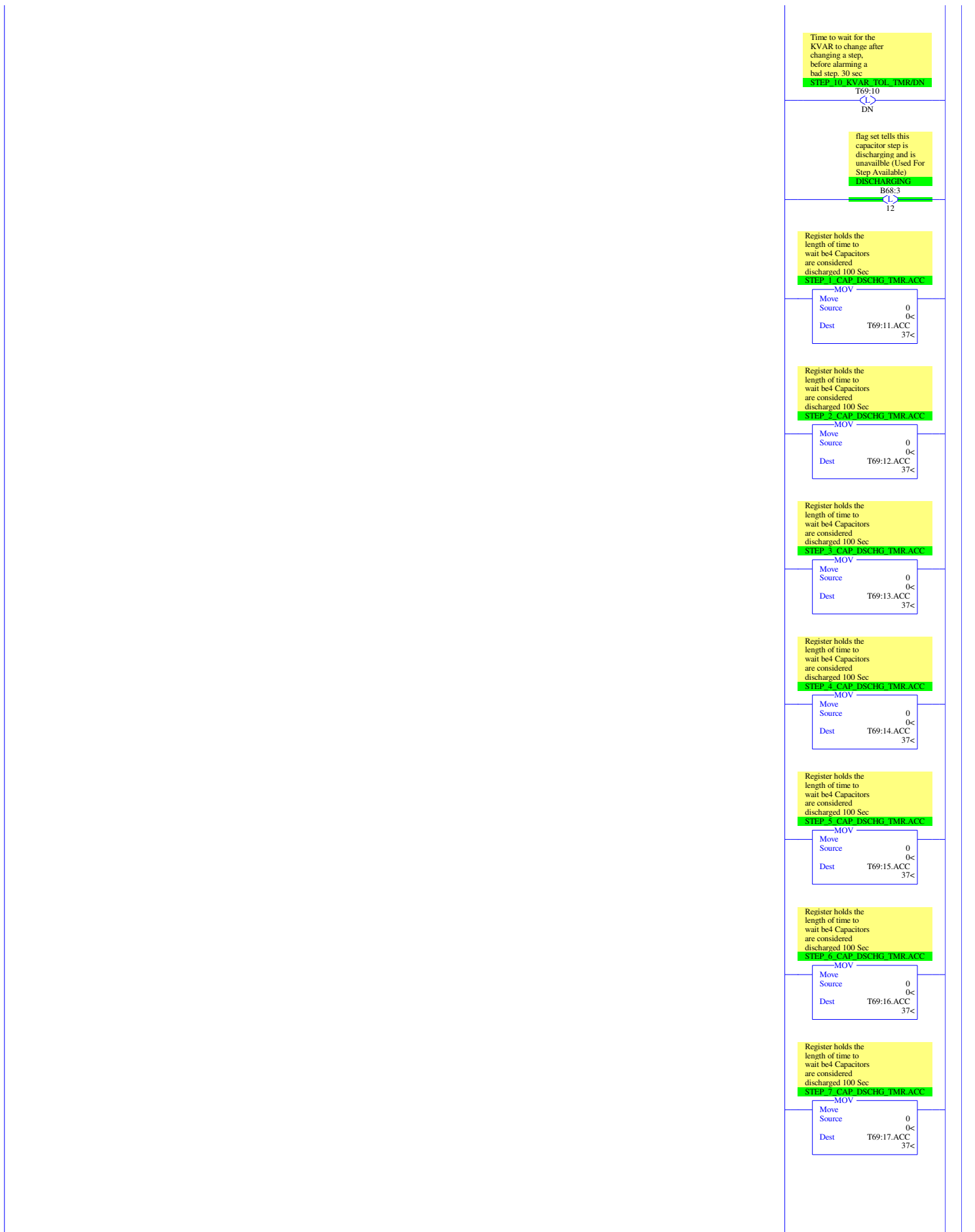
0032





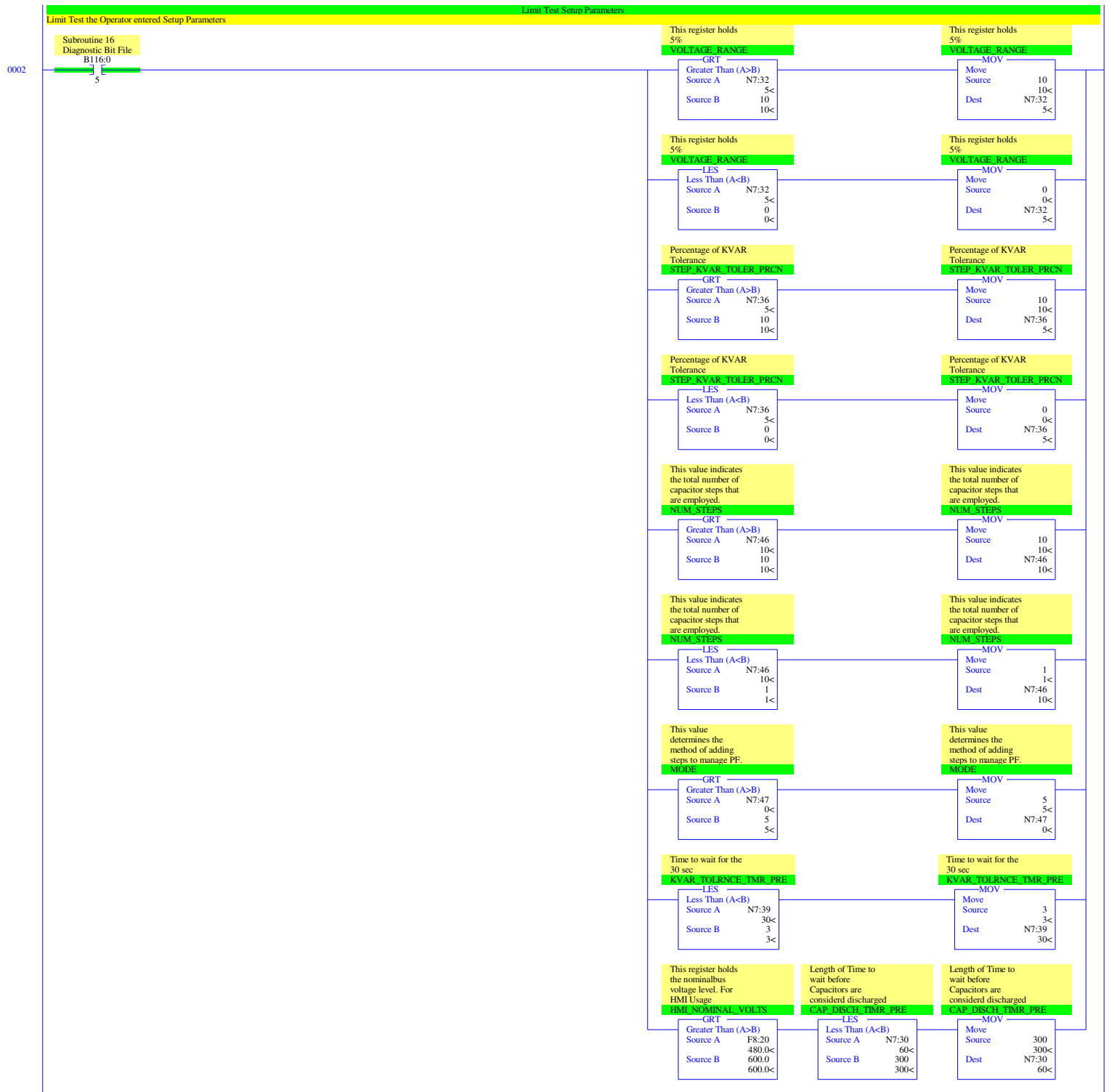
LAD 16 - STEP - Step Control --- Total Rungs in File = 51



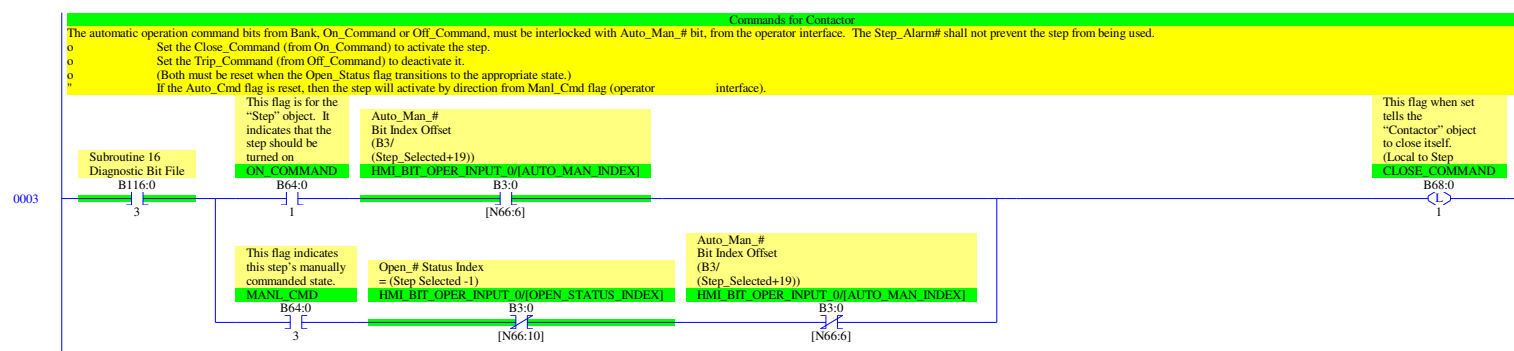




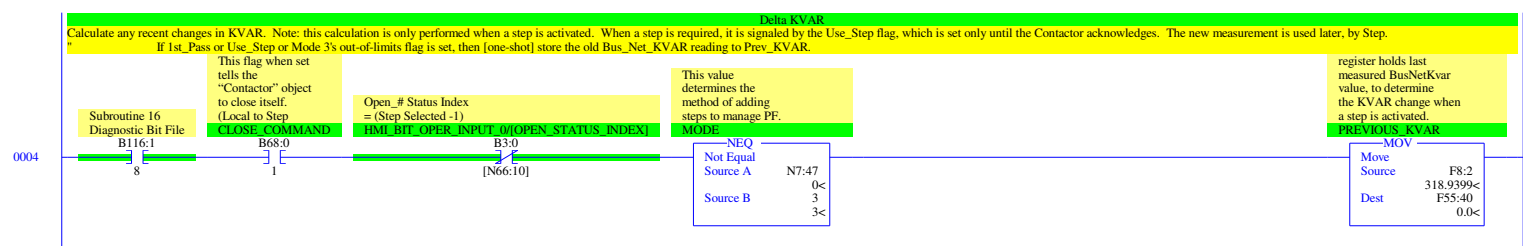
LAD 16 - STEP - Step Control --- Total Rungs in File = 51

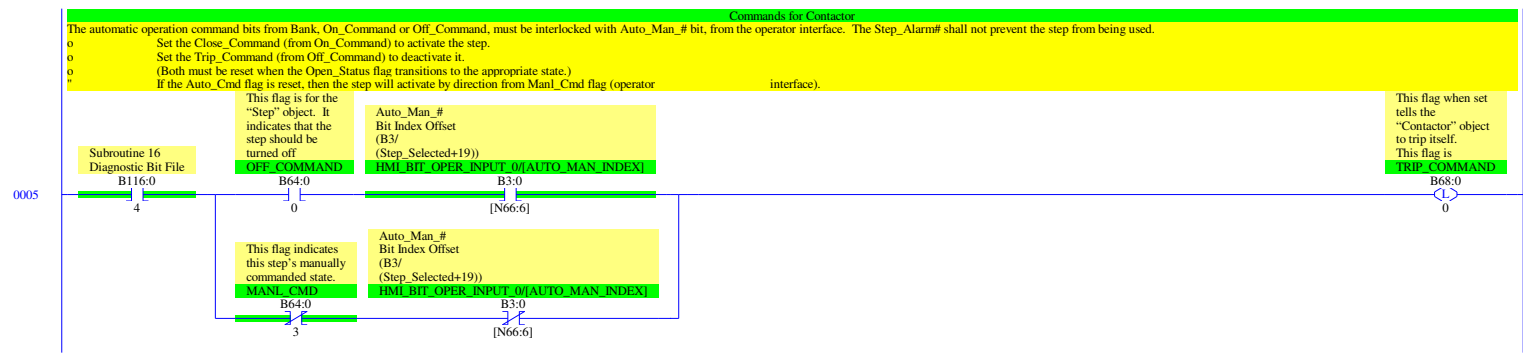


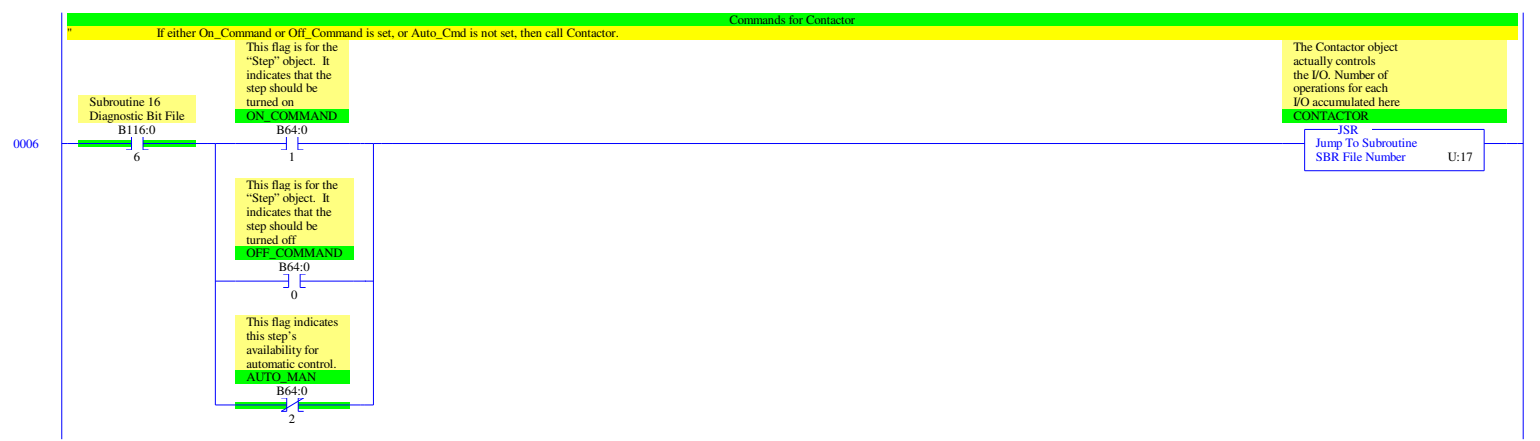
LAD 16 - STEP - Step Control --- Total Rungs in File = 51

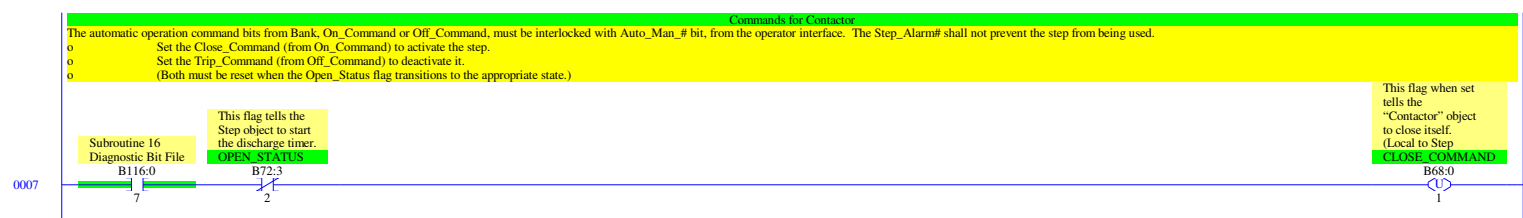


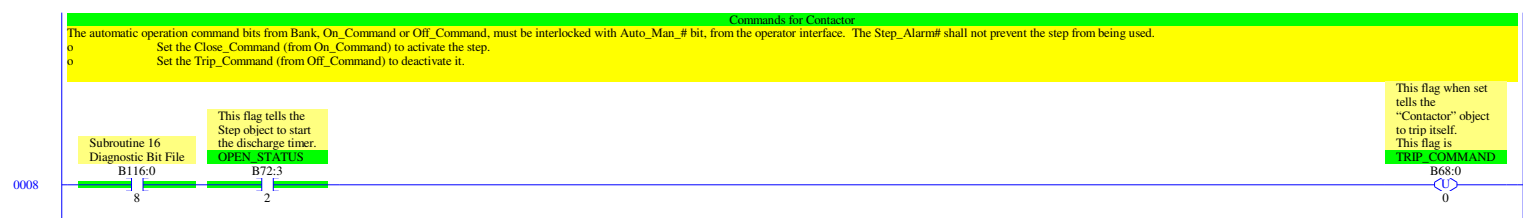
LAD 16 - STEP - Step Control --- Total Rungs in File = 51

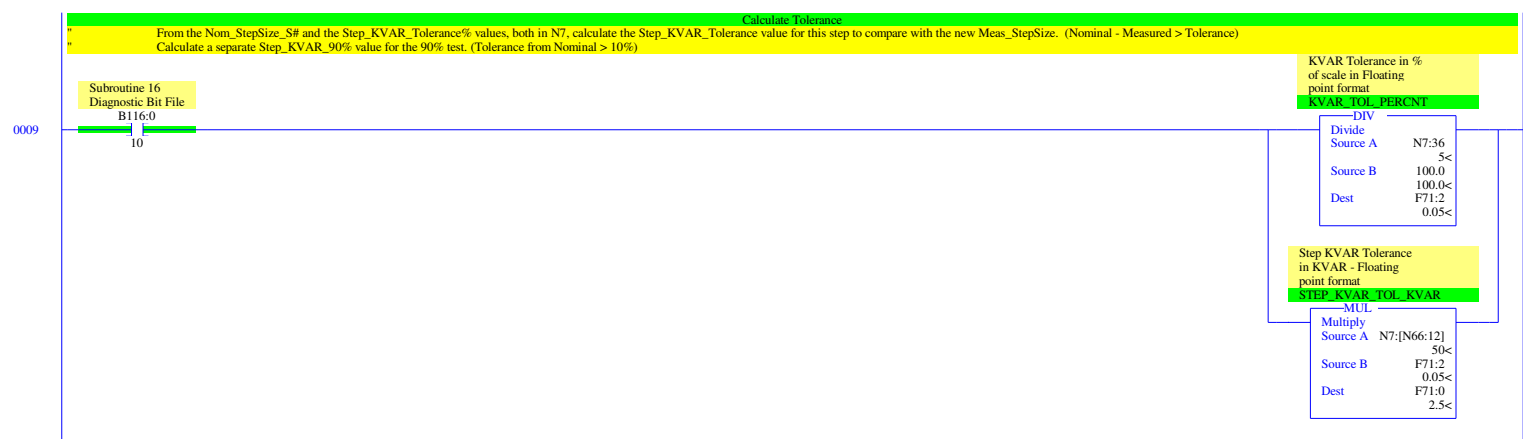


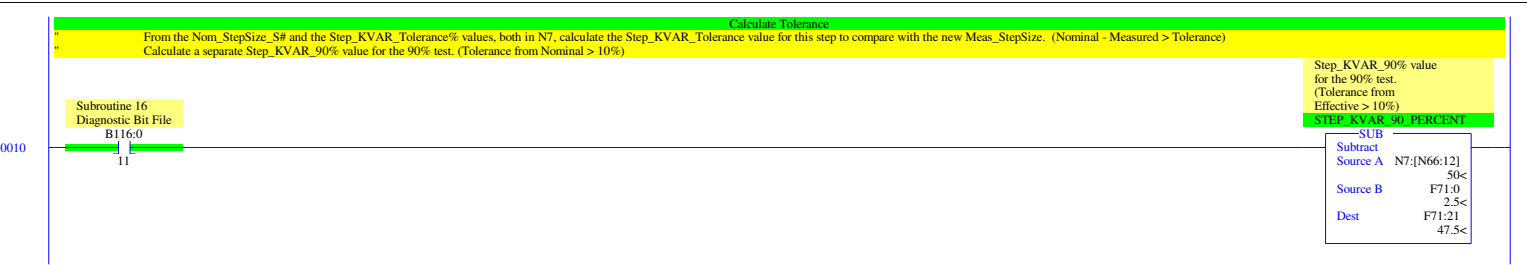


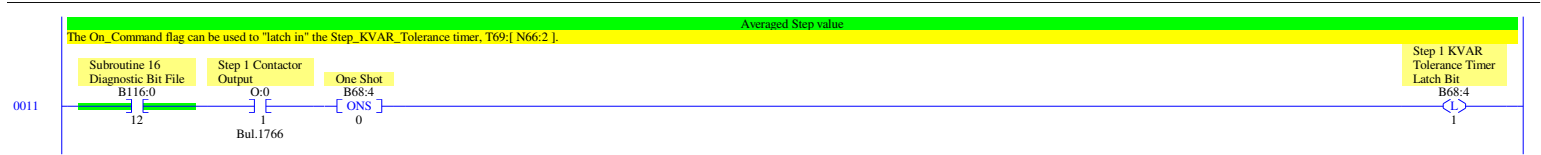


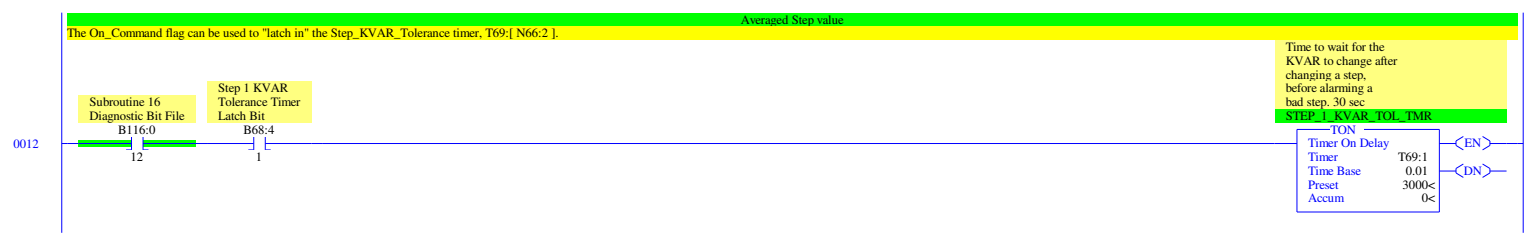


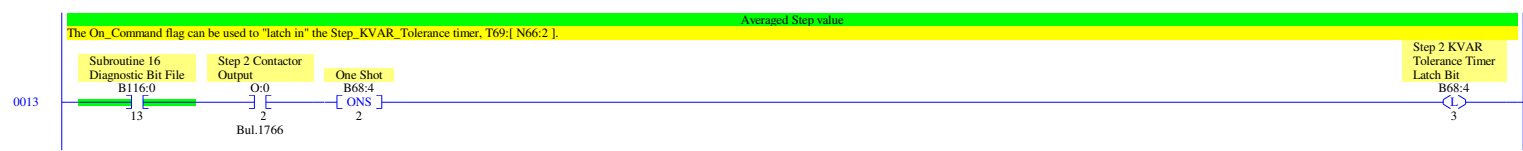


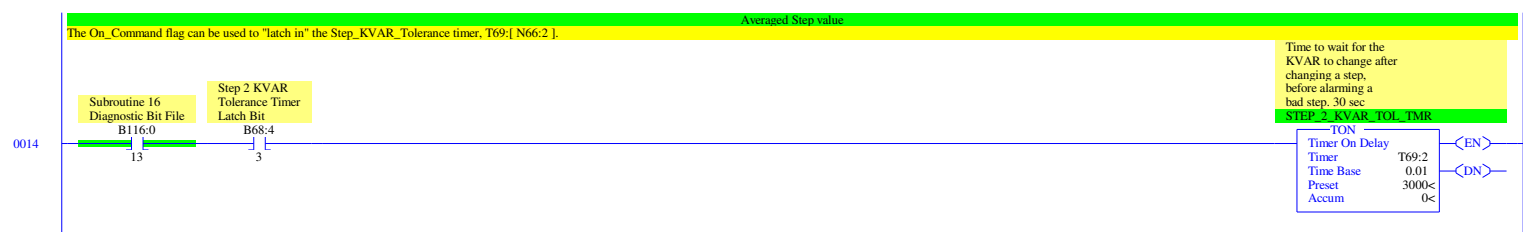


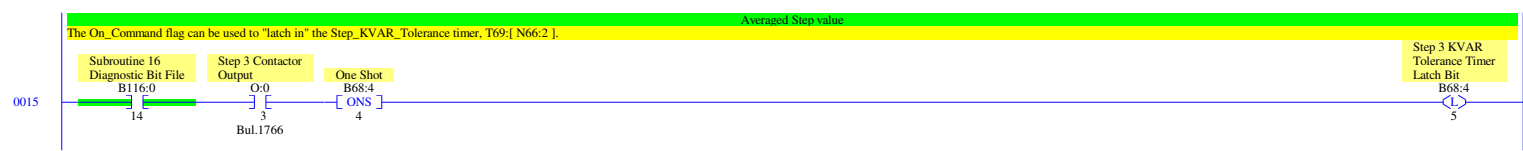


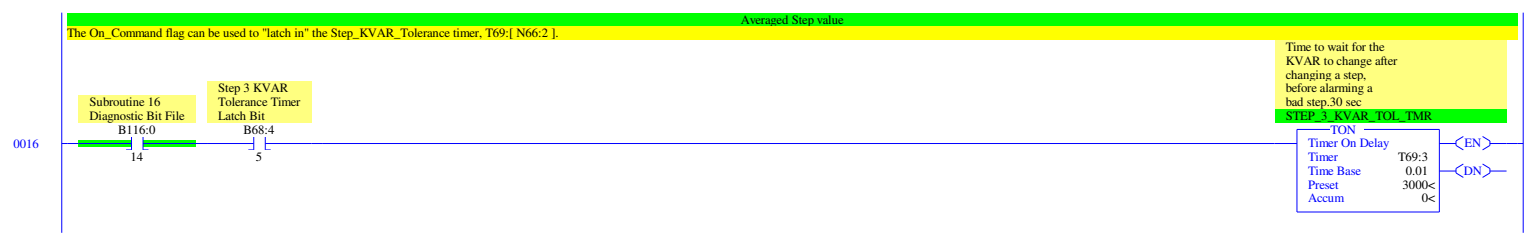


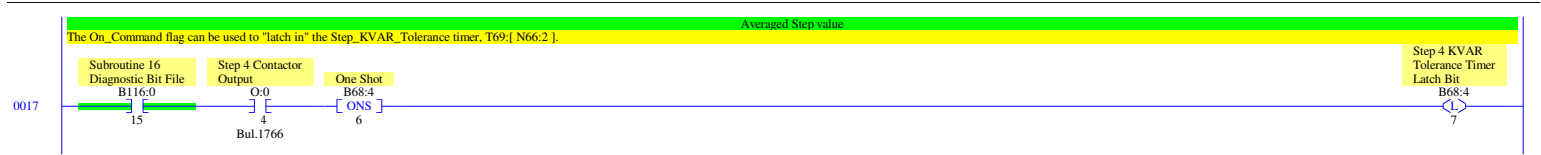


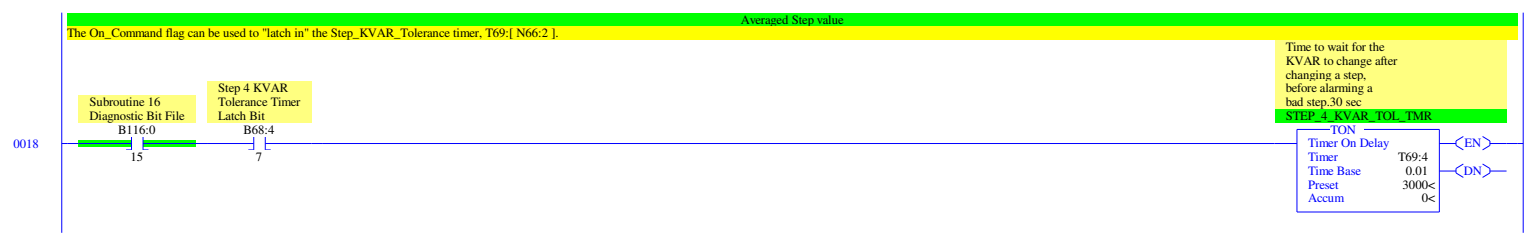


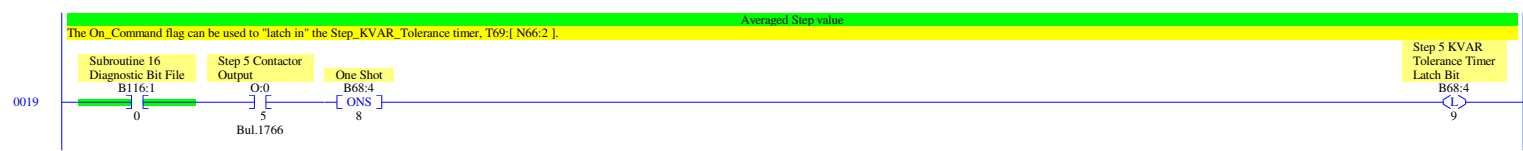


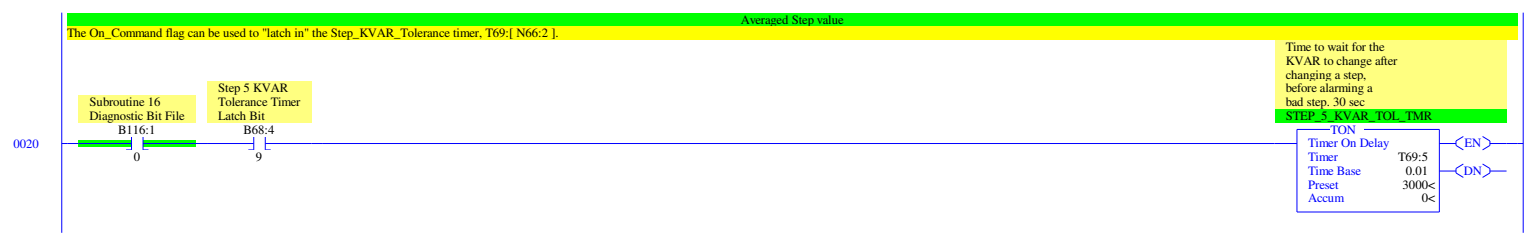


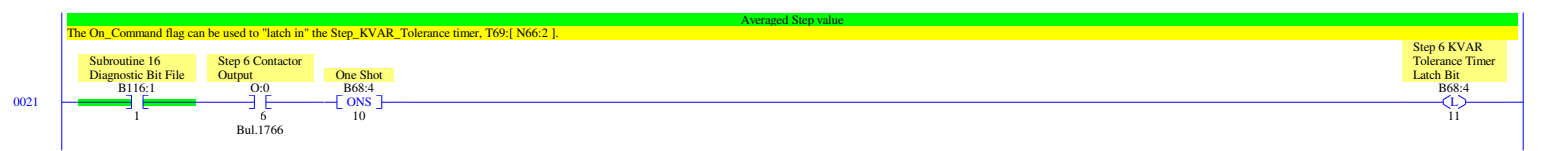


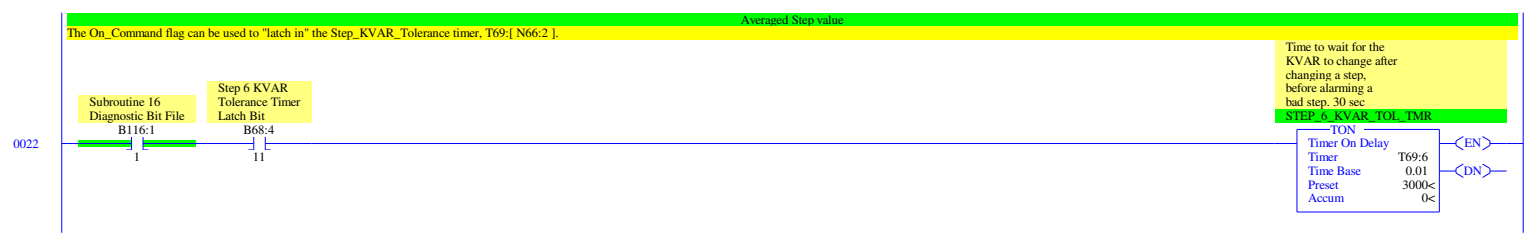


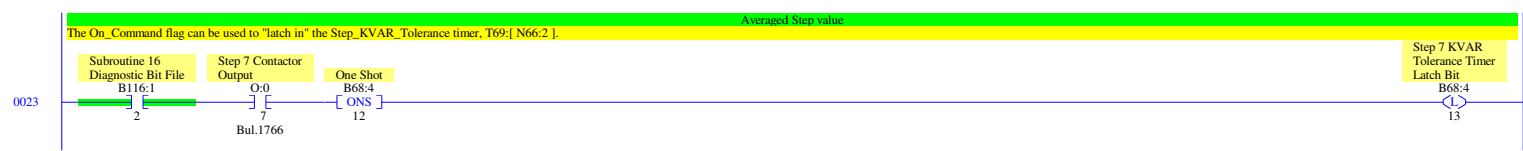


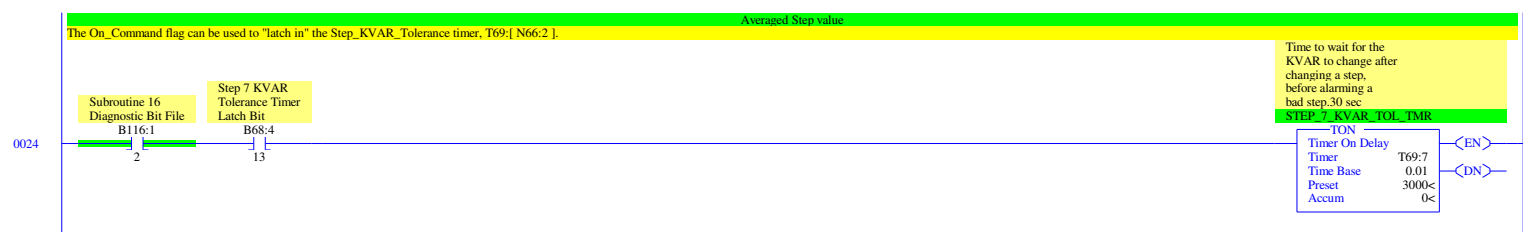


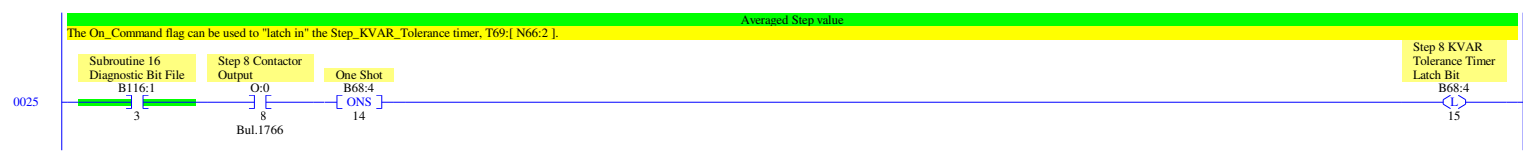


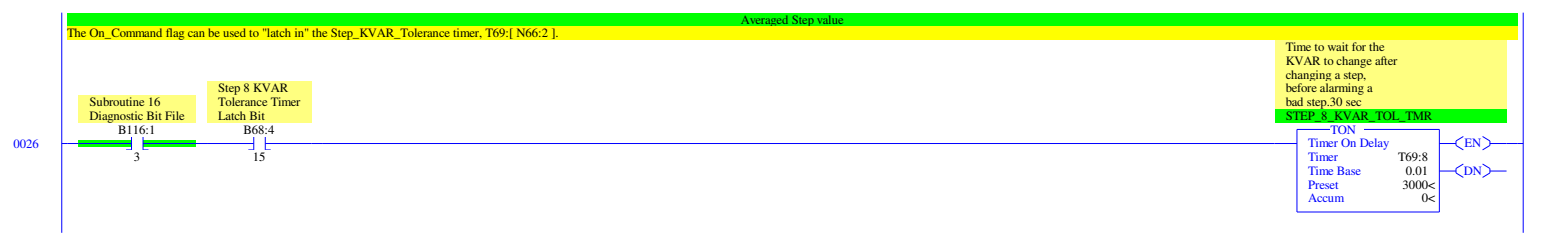


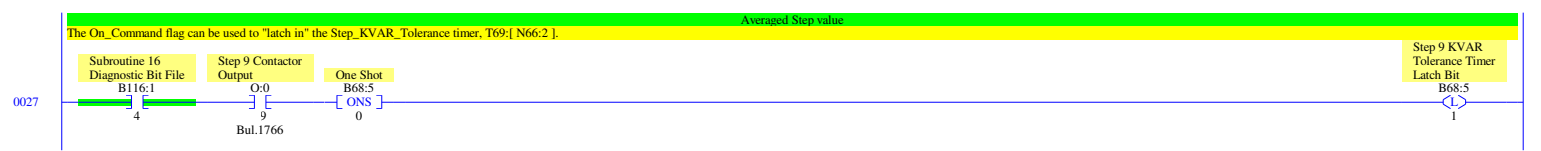


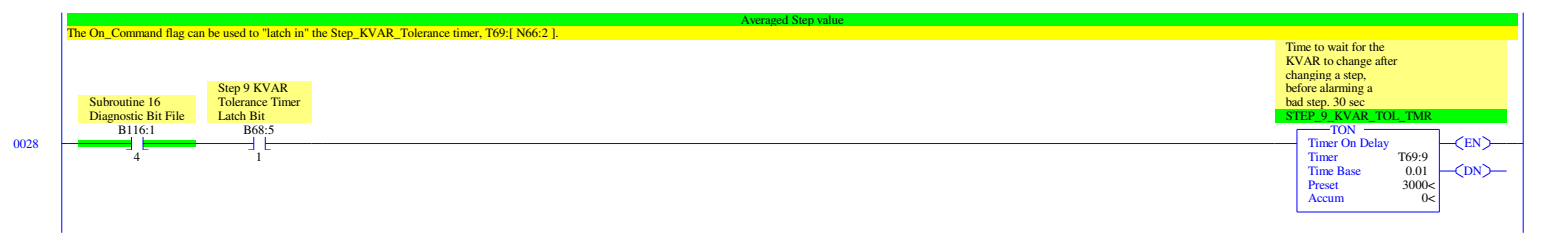


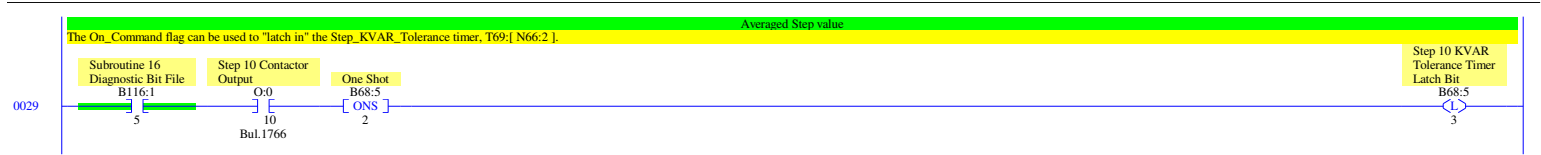


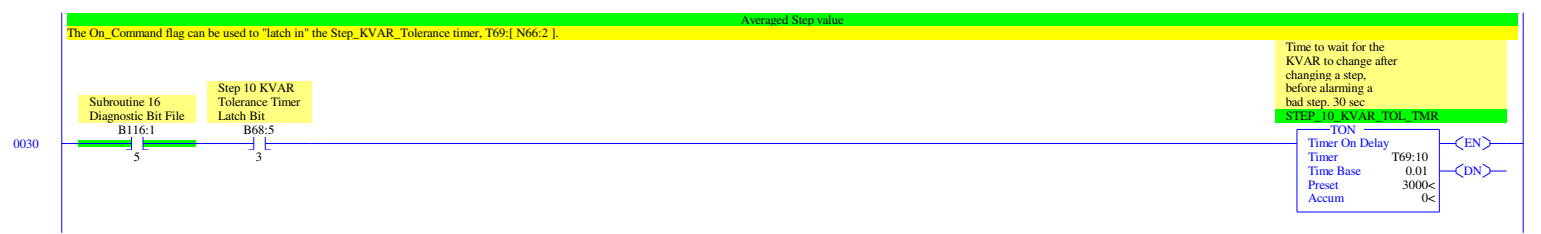


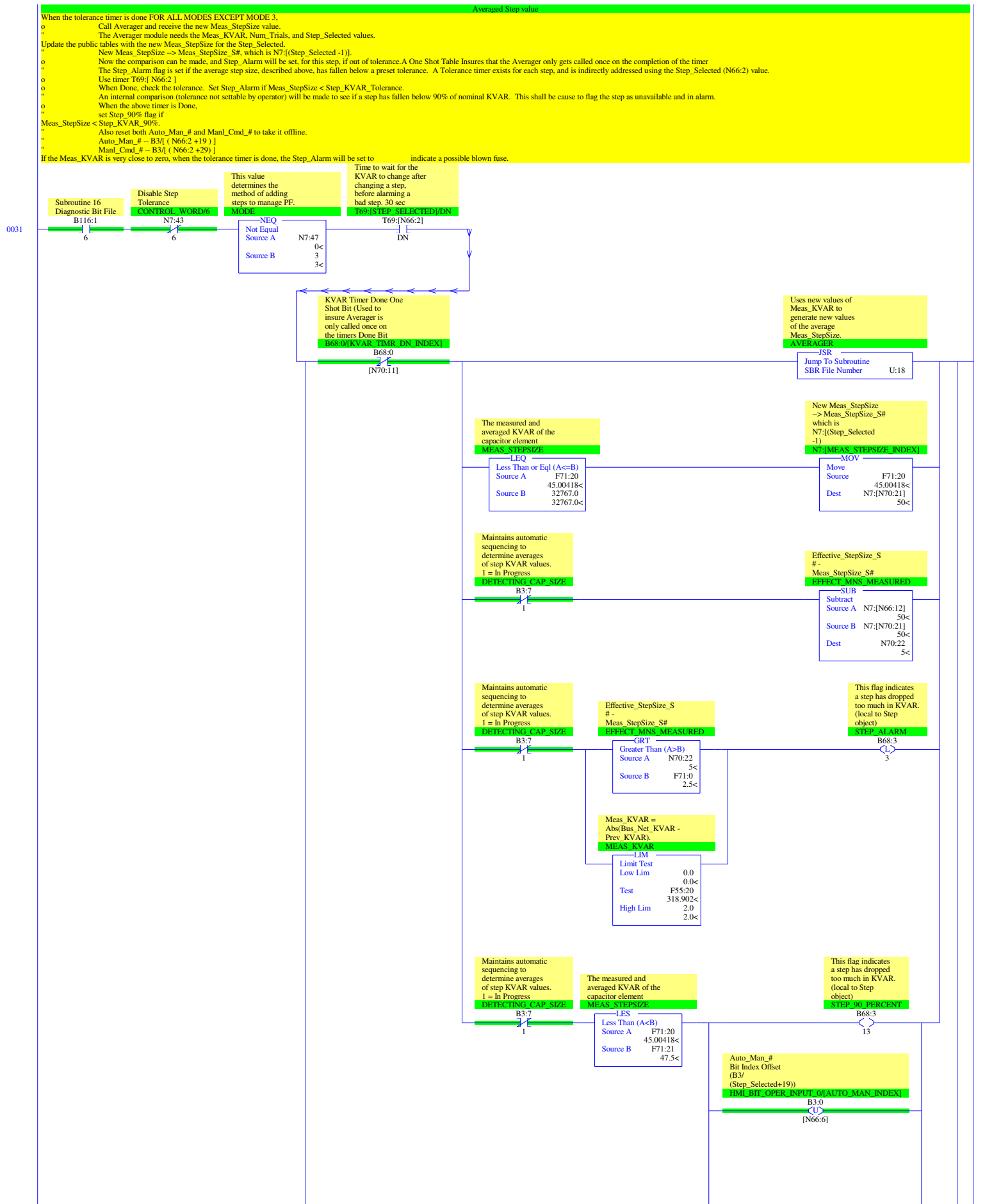




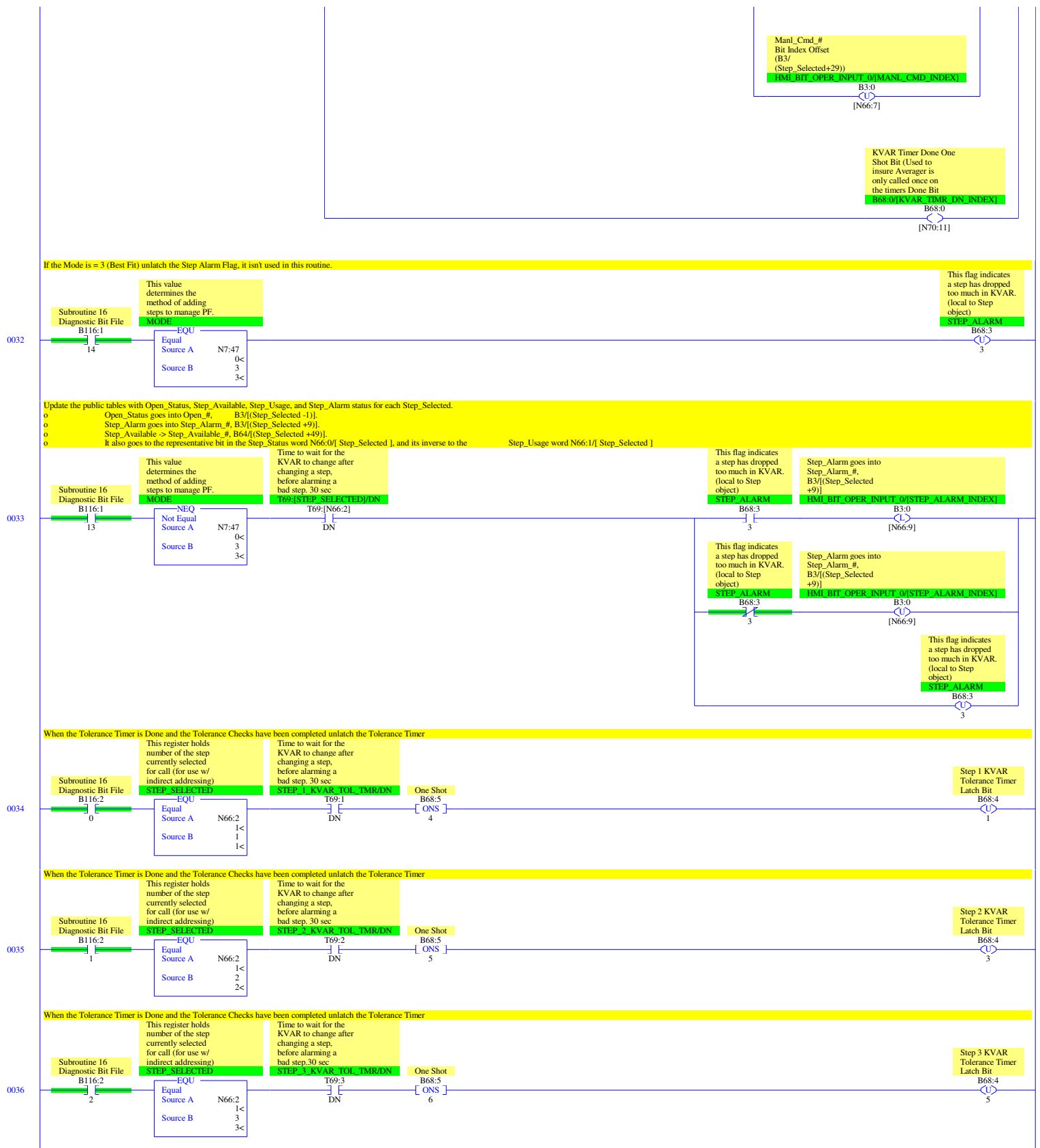




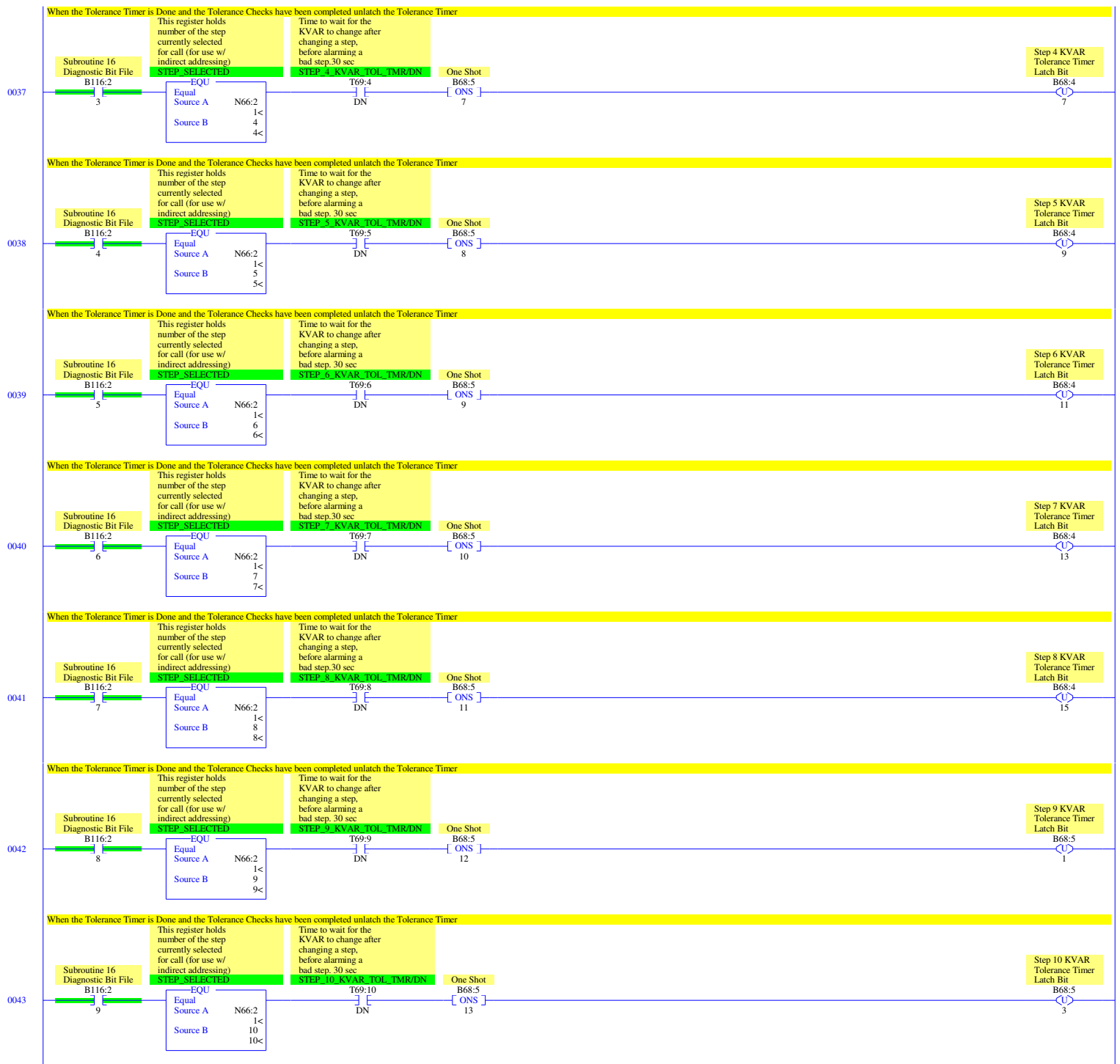


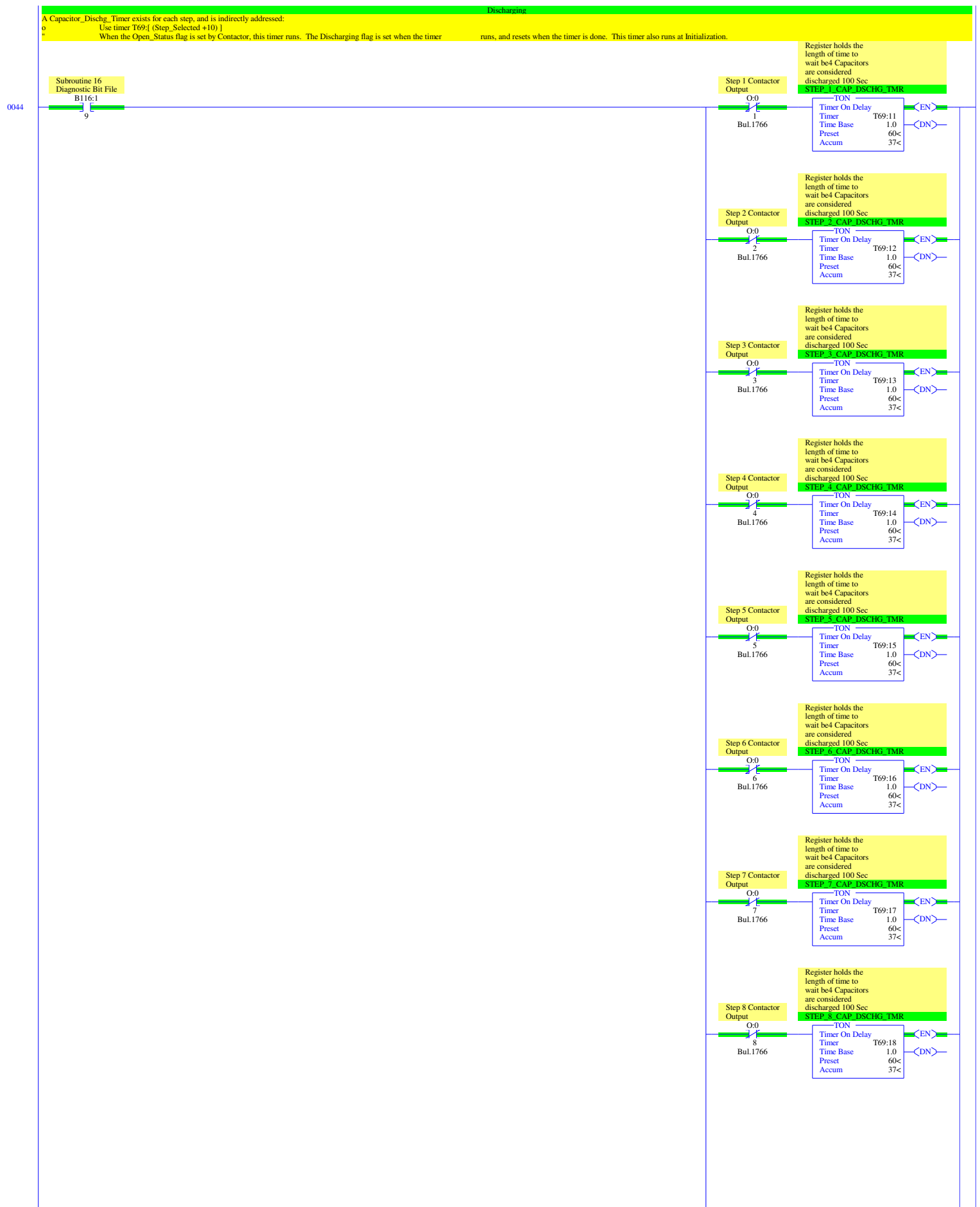


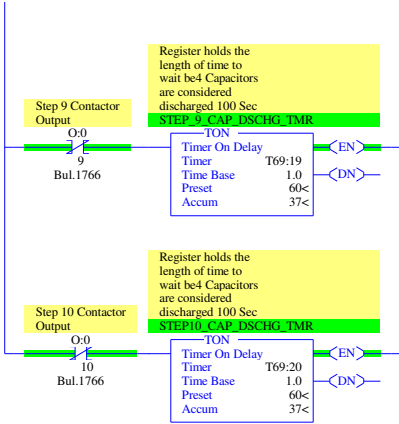
LAD 16 - STEP - Step Control --- Total Rungs in File = 51

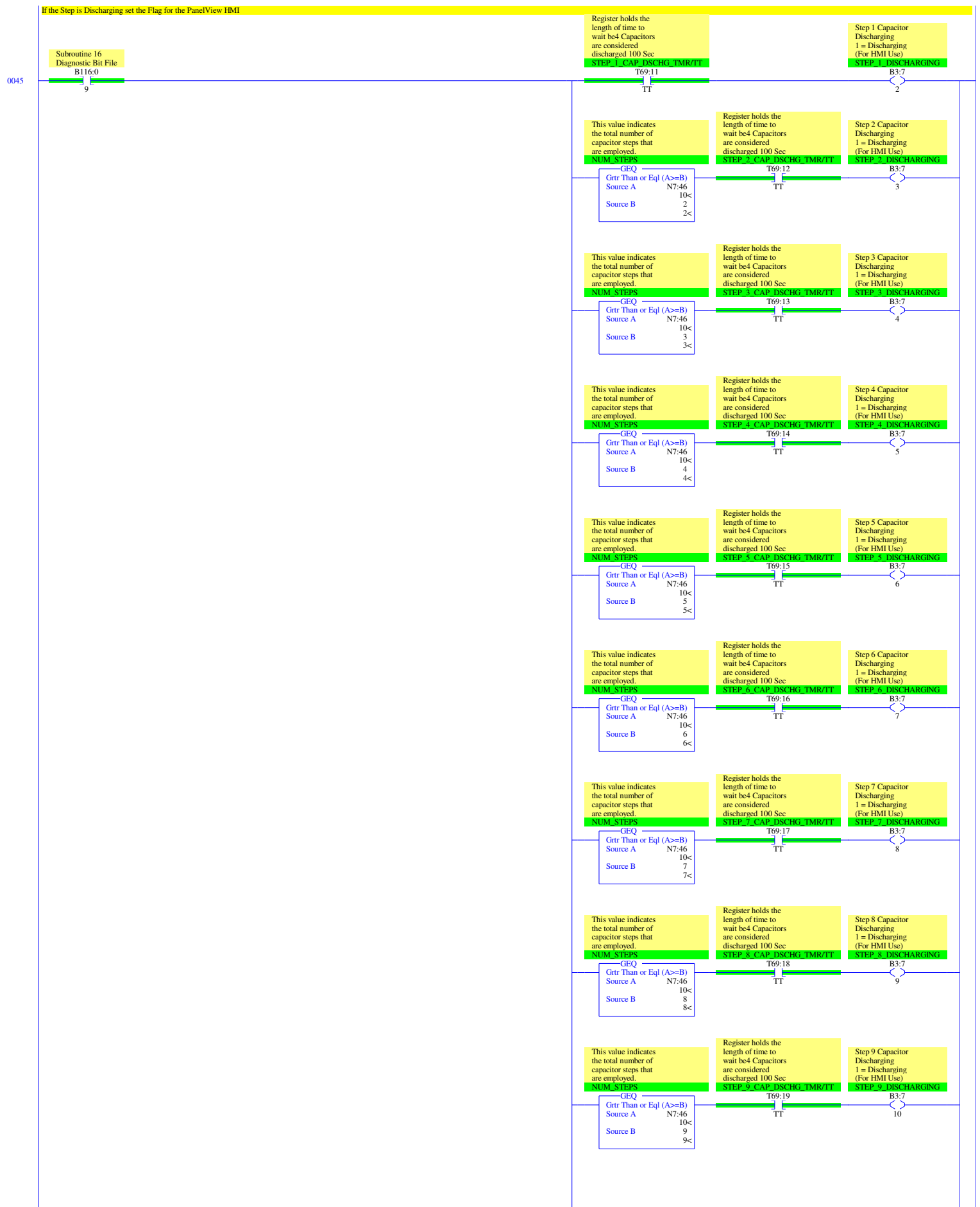


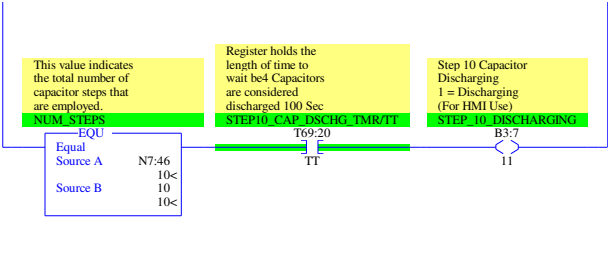
LAD 16 - STEP - Step Control --- Total Rungs in File = 51

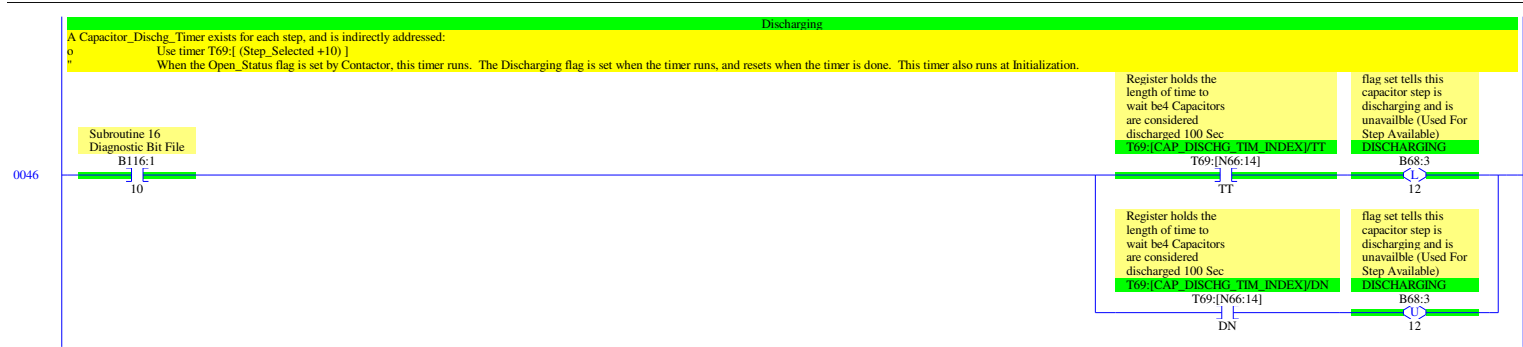




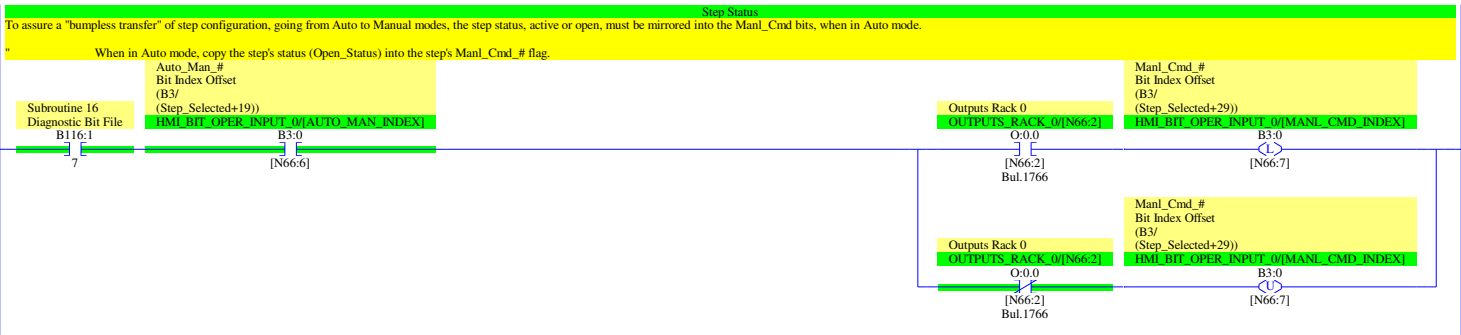




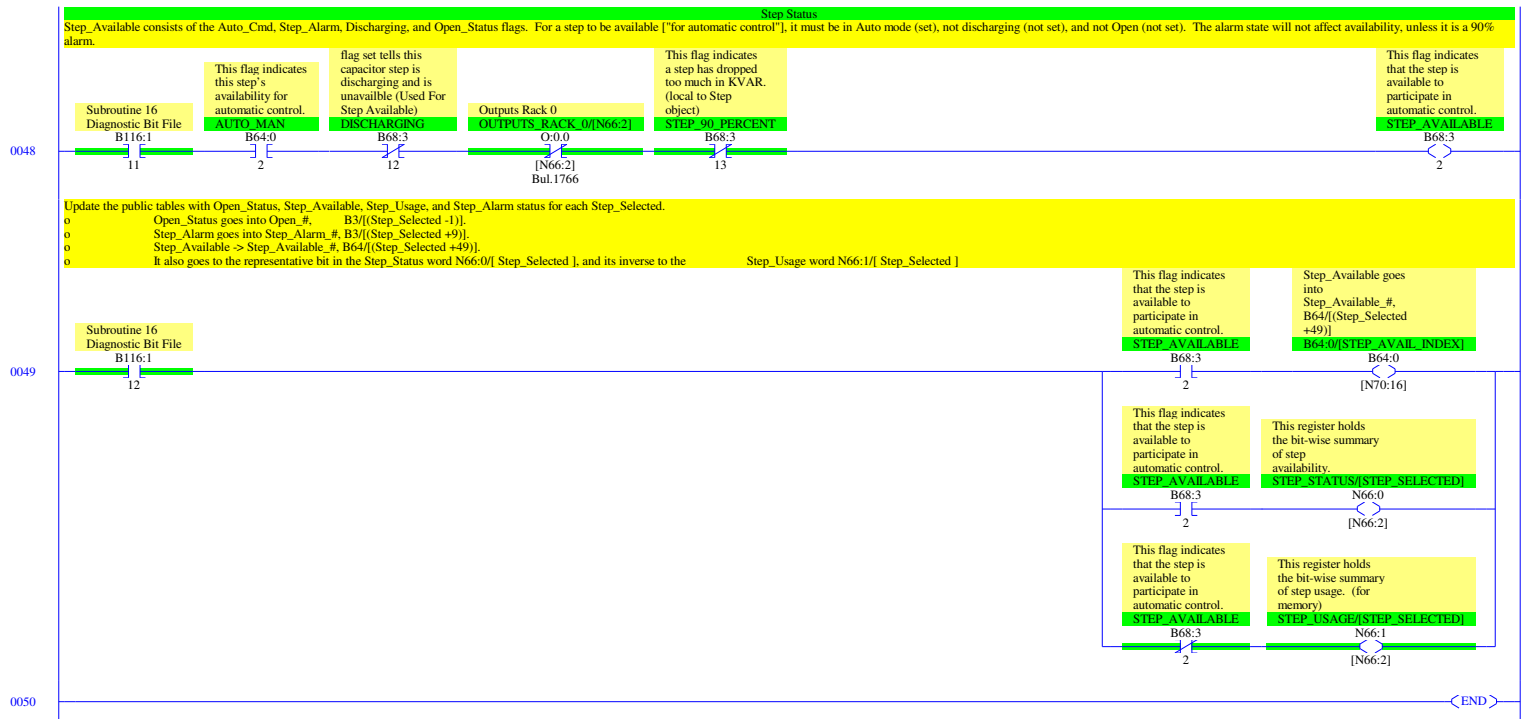




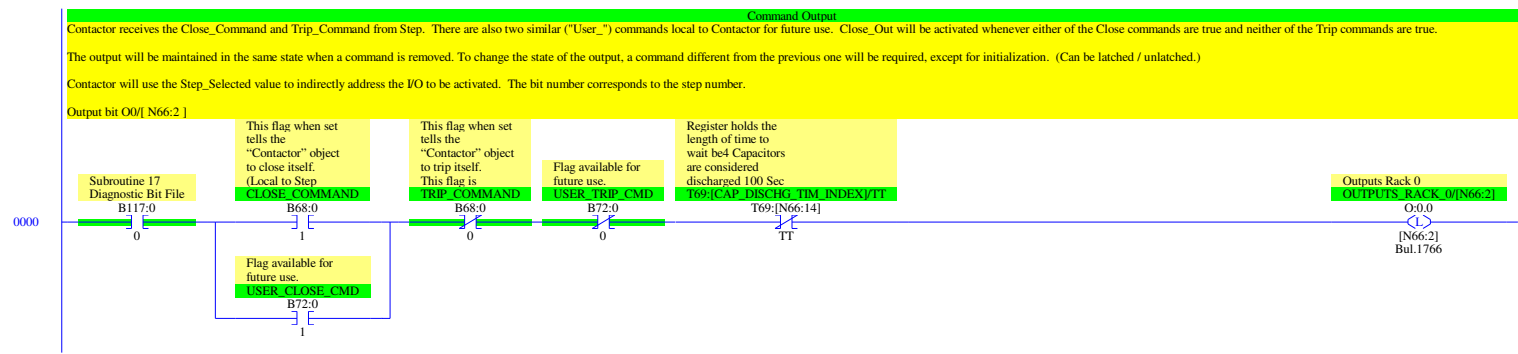
0047



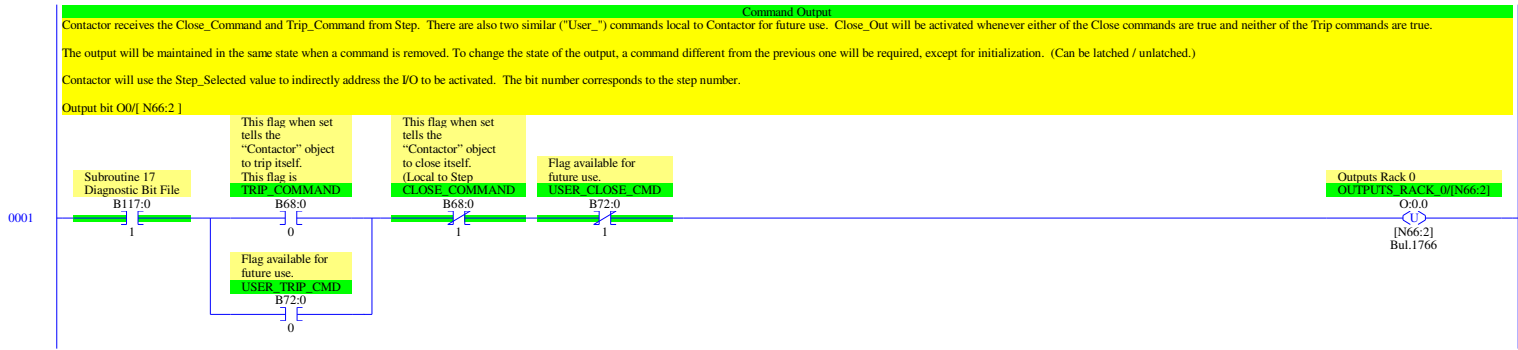
LAD 16 - STEP - Step Control --- Total Rungs in File = 51

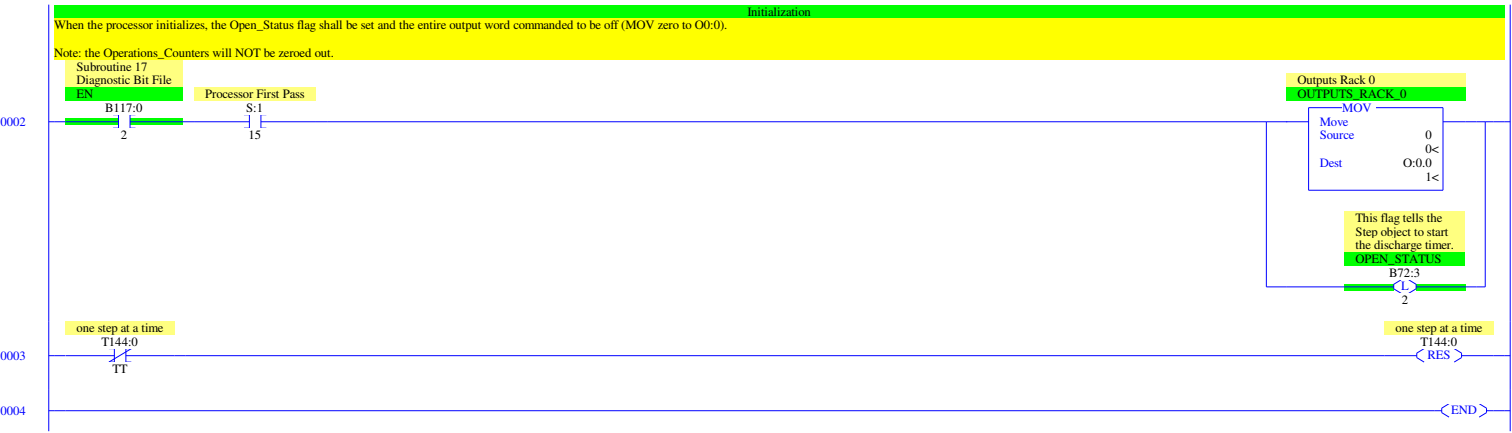


LAD 17 - CONTACTOR - Contactor Control & Status --- Total Rungs in File = 5

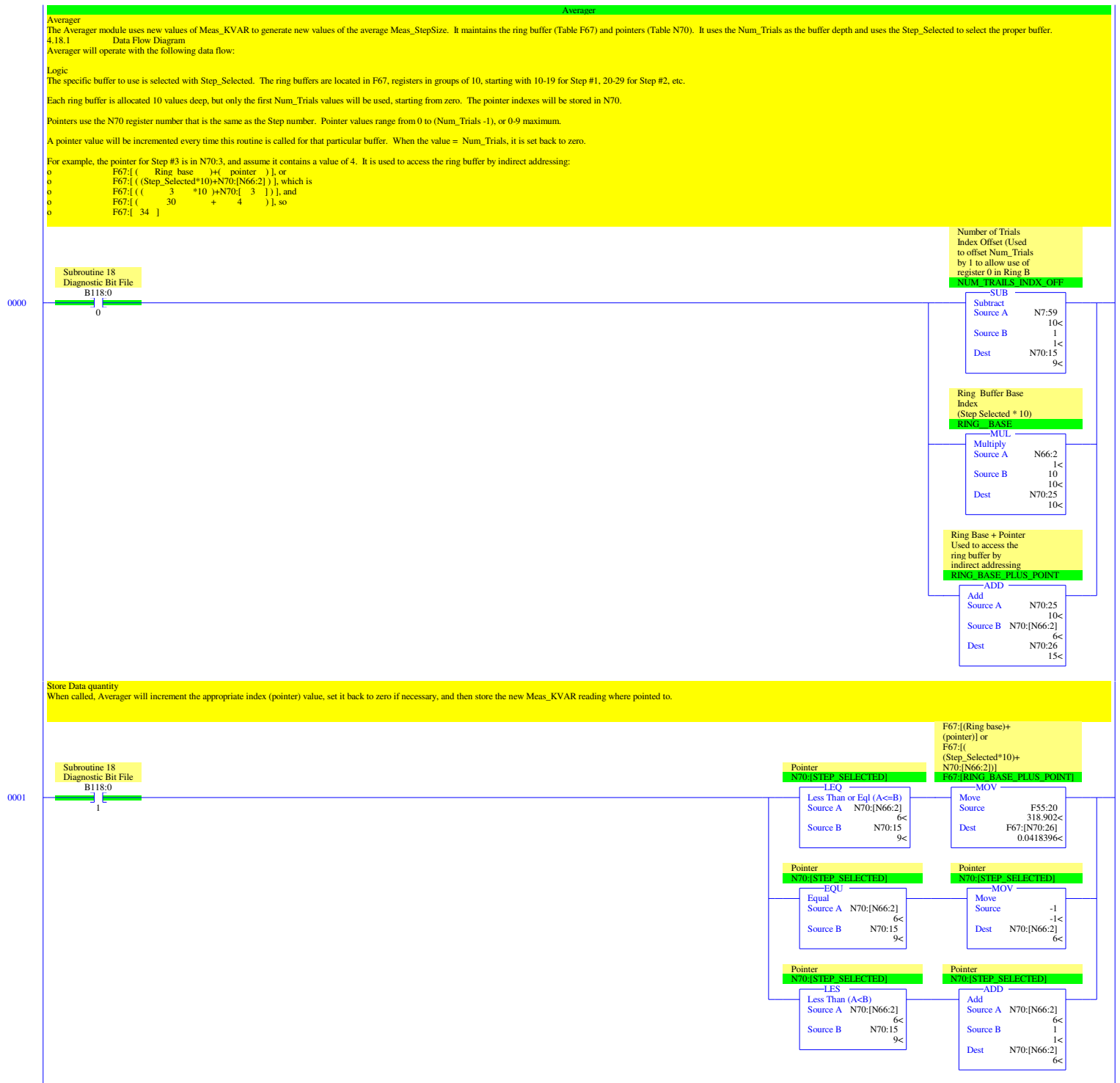


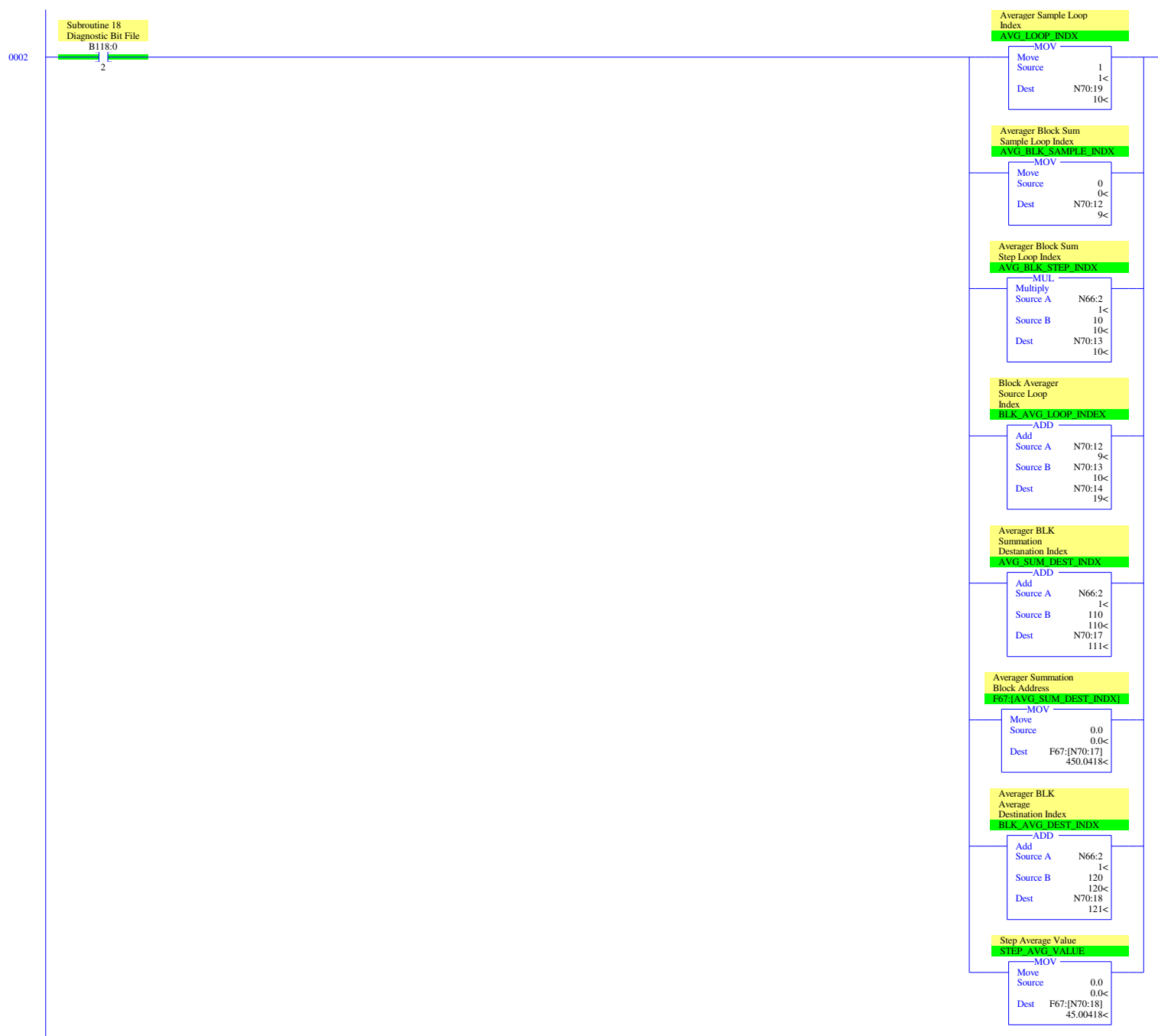
LAD 17 - CONTACTOR - Contactor Control & Status --- Total Rungs in File = 5





LAD 18 - AVERAGER - Averager Function --- Total Rungs in File = 5





LAD 18 - AVERAGER - Averager Function --- Total Rungs in File = 5

Averager

The Averager module uses new values of Meas_KVAR to generate new values of the average Meas_StepSize. It maintains the ring buffer (Table F67) and pointers (Table N70). It uses the Num_Trials as the buffer depth and uses the Step_Selected to select the proper buffer.

4.18.1 Data Flow Diagram

Averager will operate with the following data flow:

Logic

The specific buffer to use is selected with Step_Selected. The ring buffers are located in F67, registers in groups of 10, starting with 10-19 for Step #1, 20-29 for Step #2, etc.

Each ring buffer is allocated 10 values deep, but only the first Num_Trials values will be used, starting from zero. The pointer indexes will be stored in N70.

Pointers use the N70 register number that is the same as the Step number. Pointer values range from 0 to (Num_Trials -1), or 0-9 maximum.

A pointer value will be incremented every time this routine is called for that particular buffer. When the value = Num_Trials, it is set back to zero.

For example, the pointer for Step #3 is in N70:3, and assume it contains a value of 4. It is used to access the ring buffer by indirect addressing:

```
o F67:[ ( Ring base )+( pointer ) ], or
o F67:[ ( (Step_Selected*10)+N70:[N66:2] ) ], which is
o F67:[ ( ( 3 *10 )+N70:[ 3 1 ] ) ], and
o F67:[ ( 30 + 4 ) ], so
o F67:[ 34 ]
```

Store Data quantity

When called, Averager will increment the appropriate index (pointer) value, set it back to zero if necessary, and then store the new Meas_KVAR reading where pointed to.

Then it does a block average of the first Num_Trials values in that buffer and returns the Meas_StepSize result.

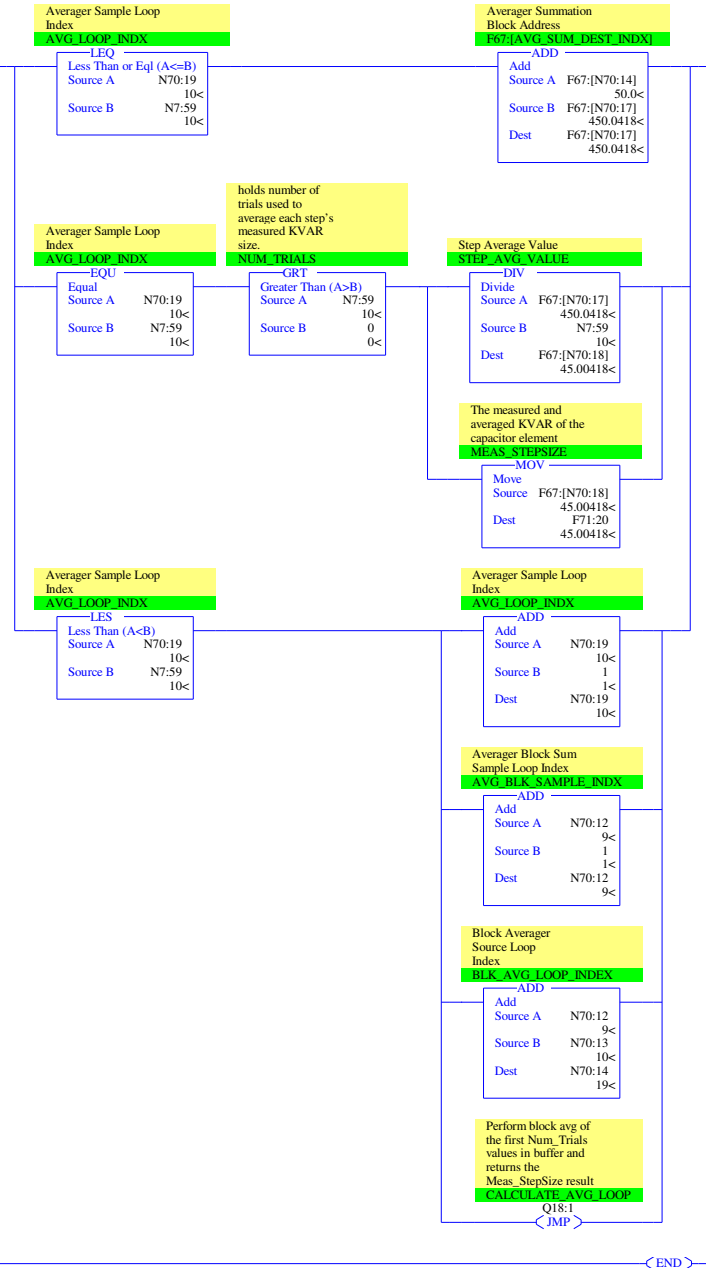
In the example, assuming Num_Trials=8, the routine would average the block F67:30-37.

Perform block avg of
the first Num_Trials
values in buffer and
returns the
Meas_StepSize result
CALCULATE AVG LOOP

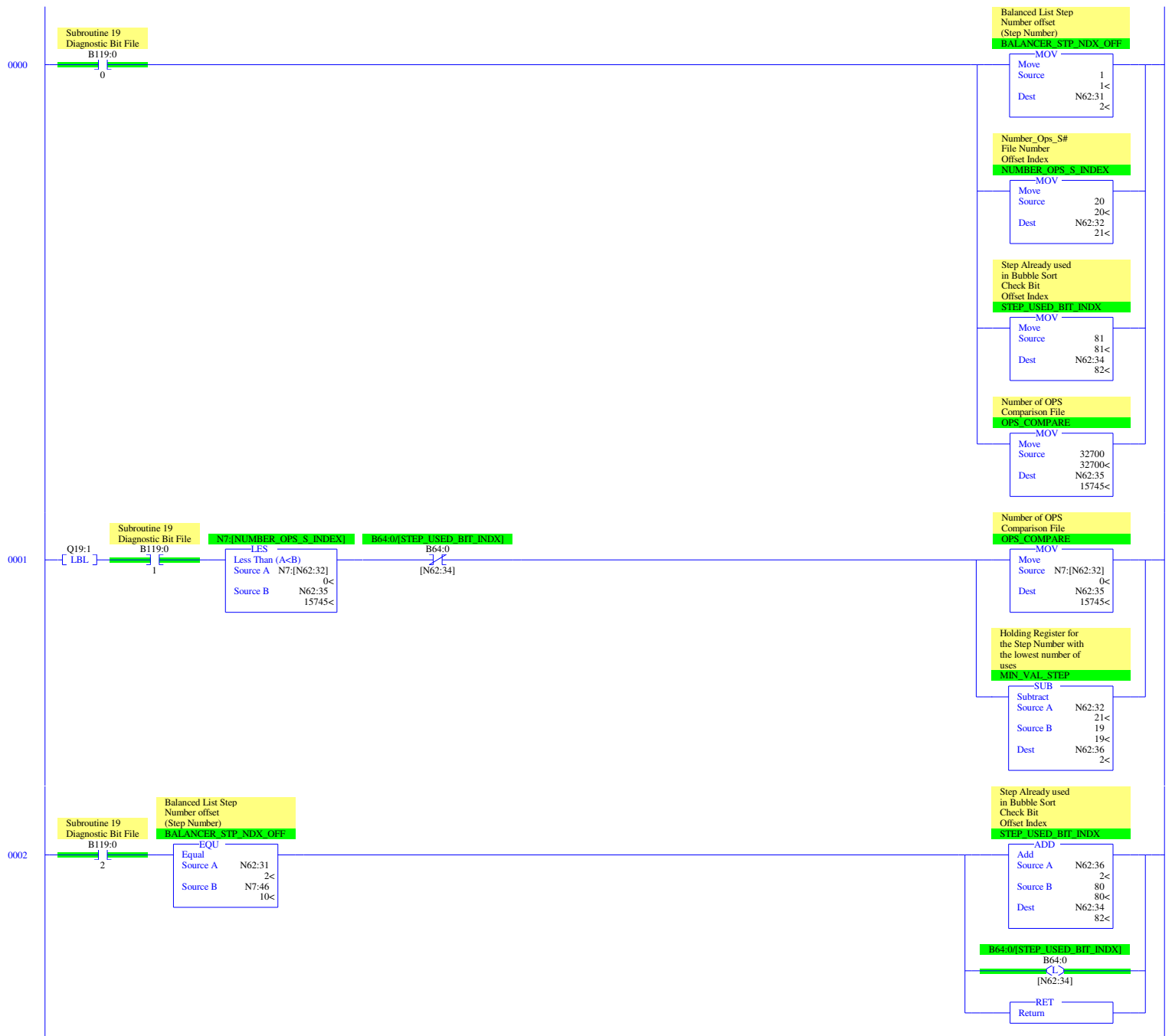
Subroutine 18
Diagnostic Bit File
B118:0

0003

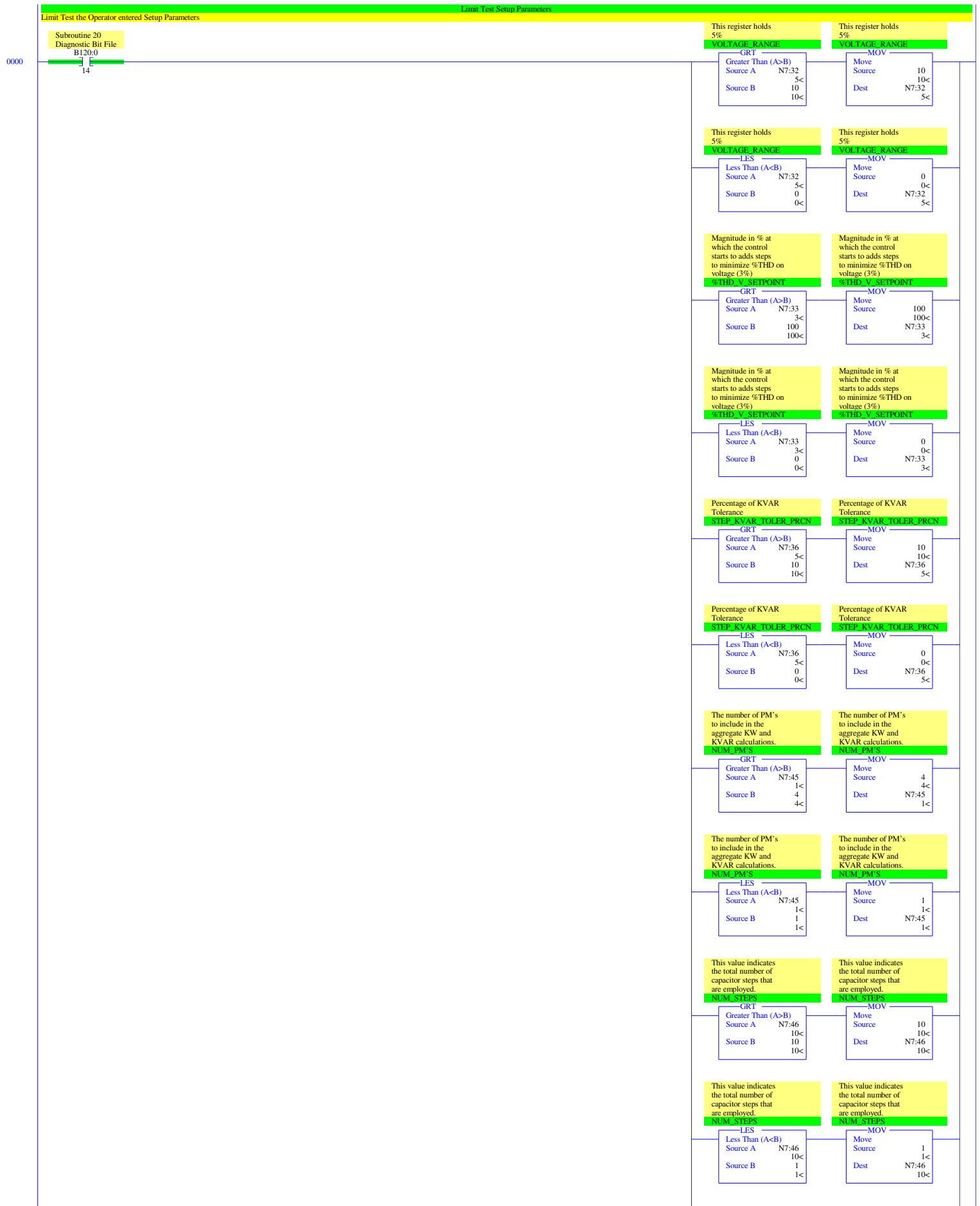
0004

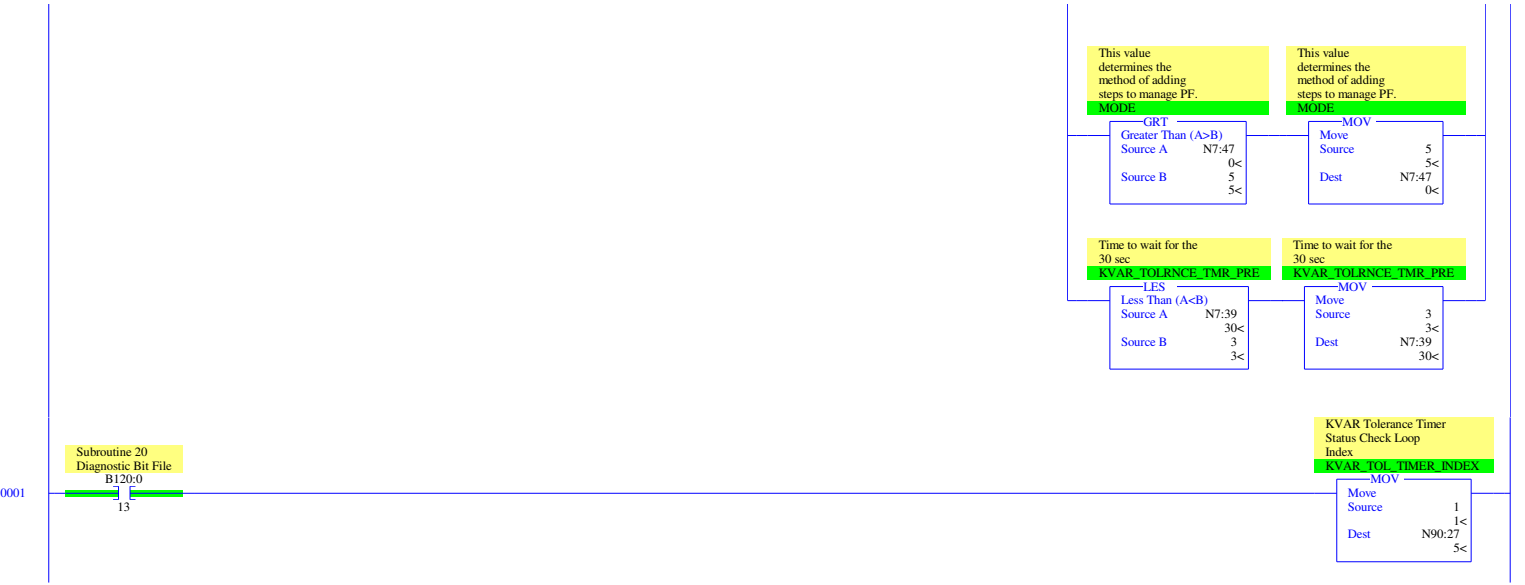


LAD 19 - BAL_INR_LP - Balancer Inner Loop (Bubble Sort) --- Total Rungs in File = 5

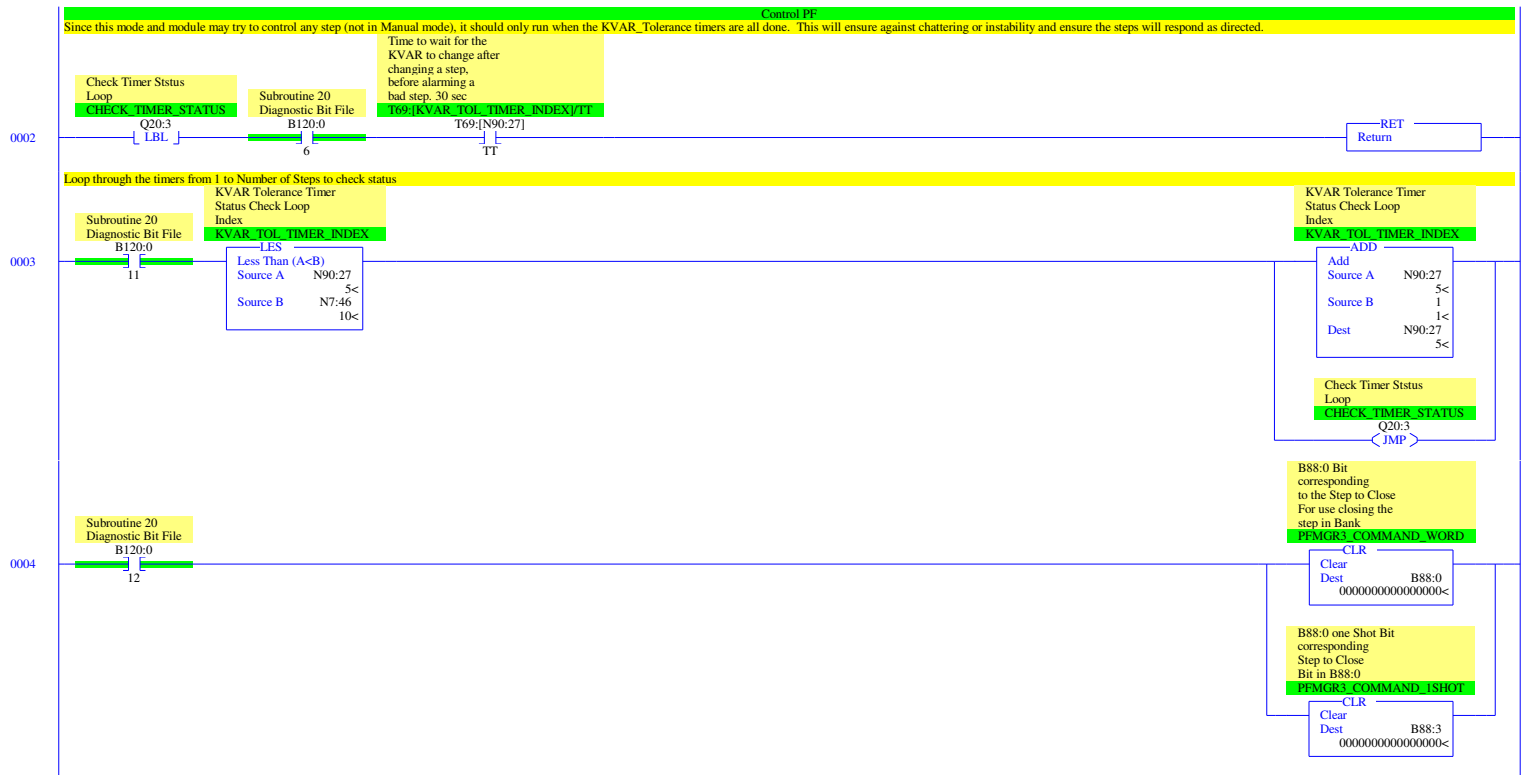






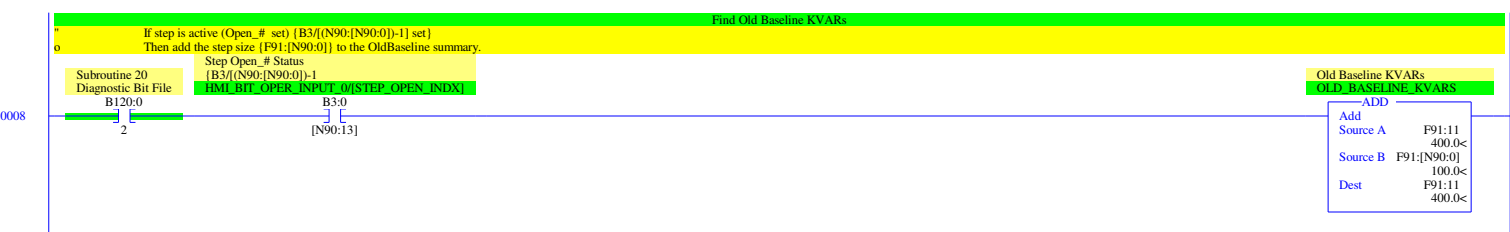


LAD 20 - BEST_KVAR - PFMGR3 Calculate Optimal KVAR match --- Total Rungs in File = 18



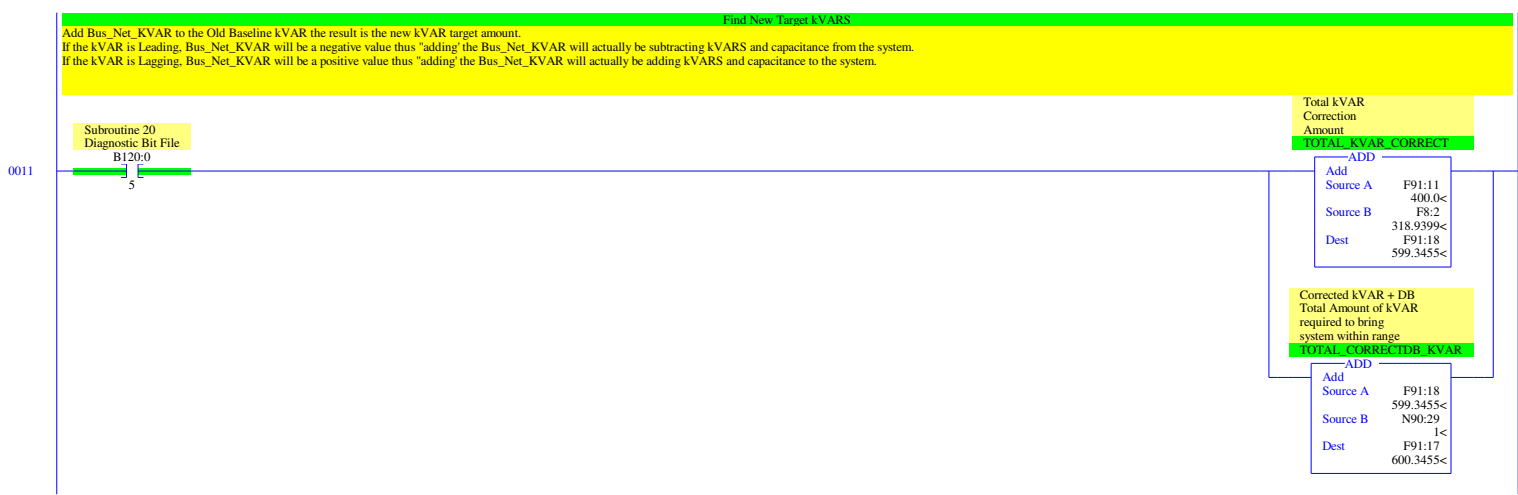


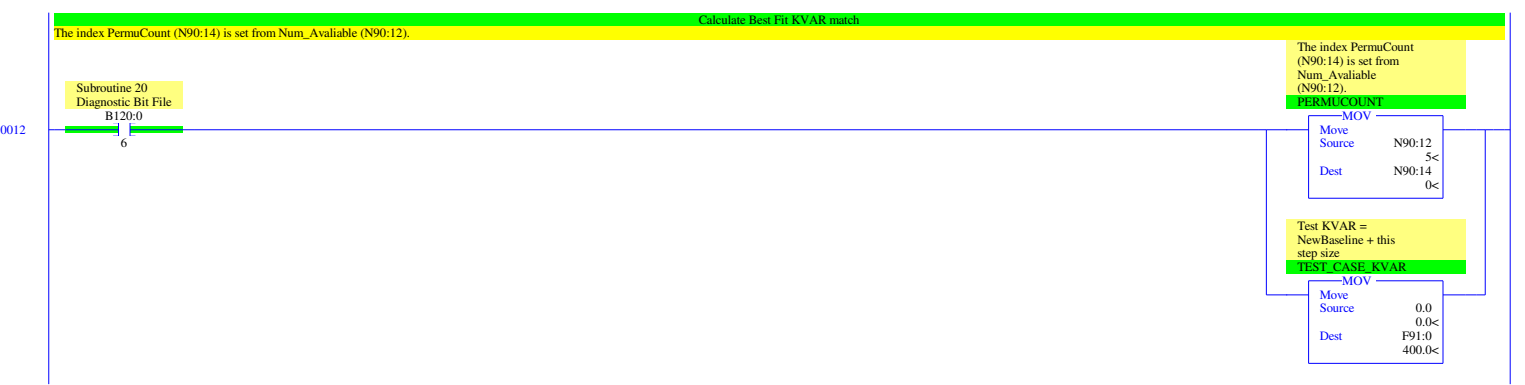


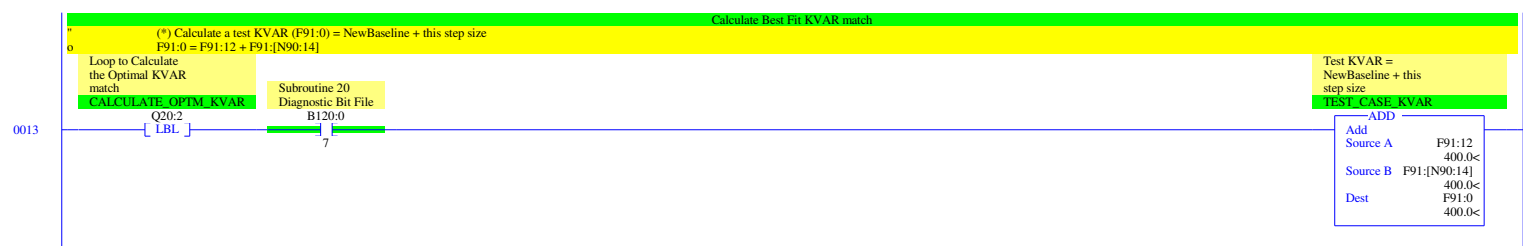


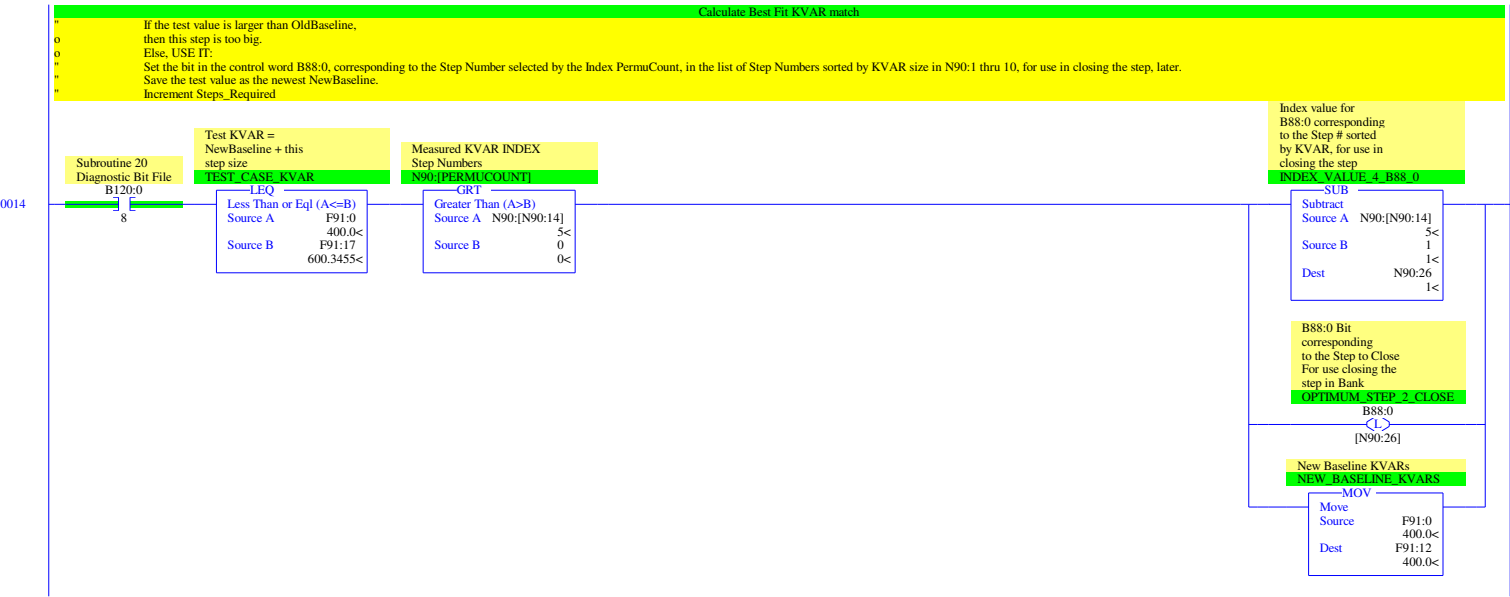
LAD 20 - BEST_KVAR - PFMGR3 Calculate Optimal KVAR match --- Total Rungs in File = 18



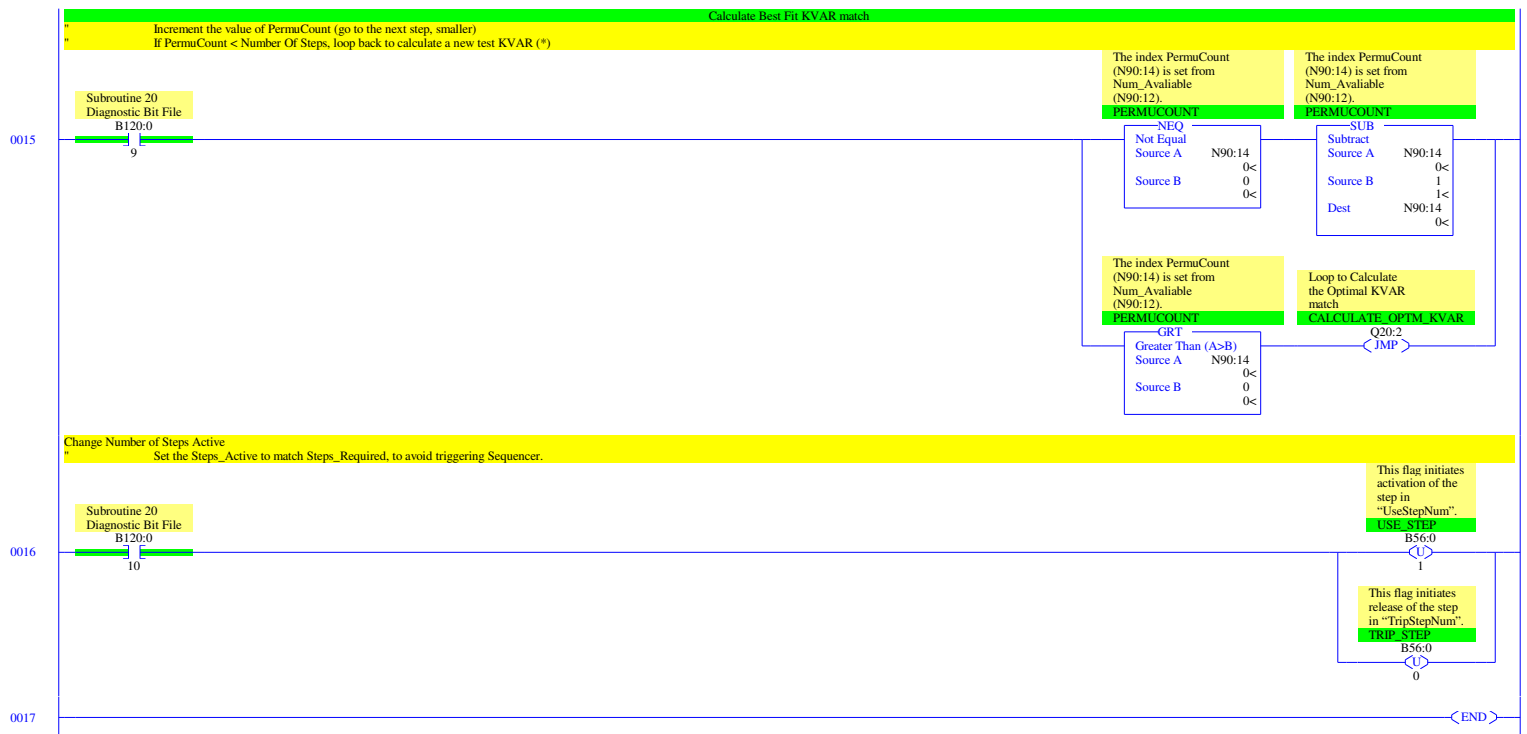




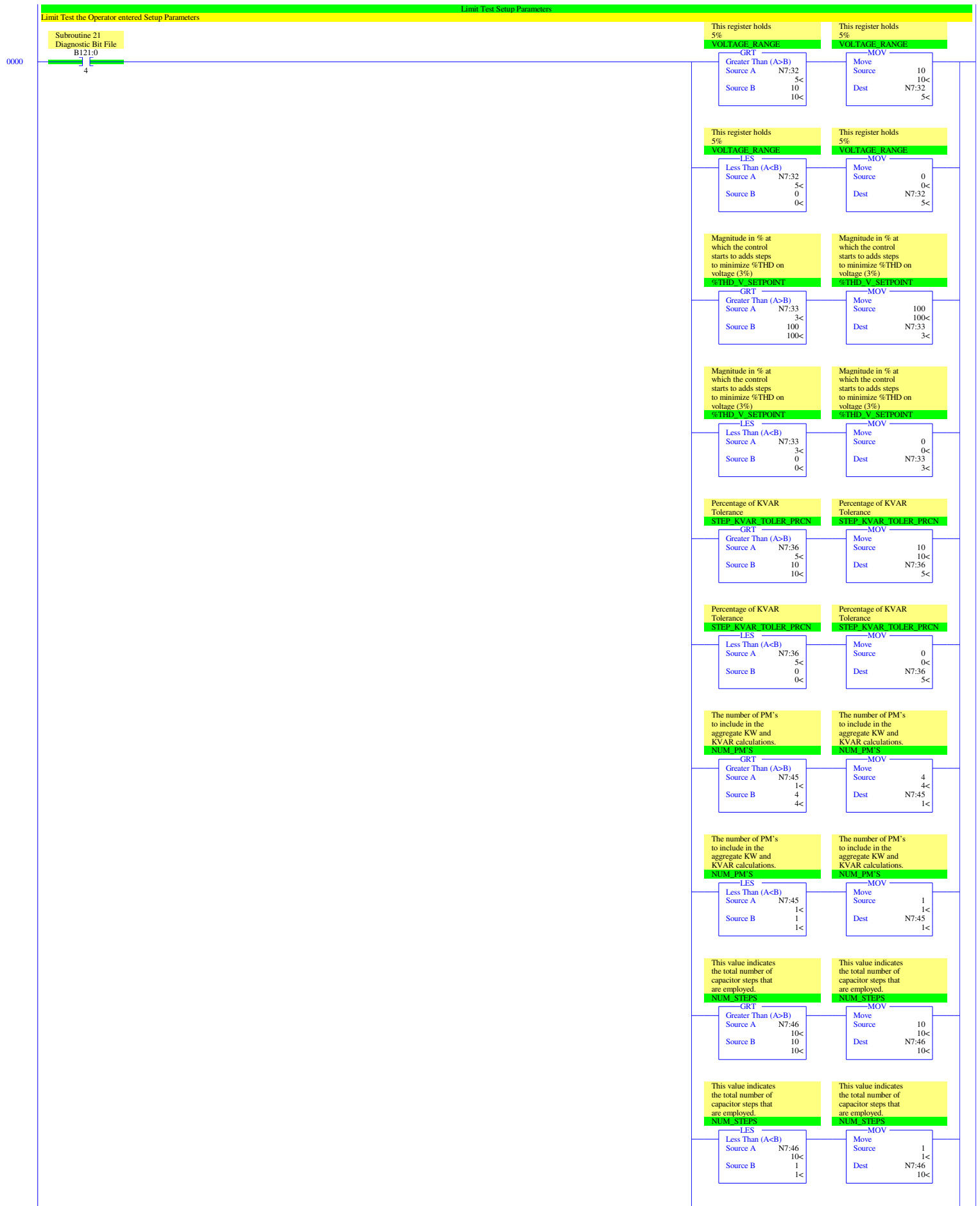




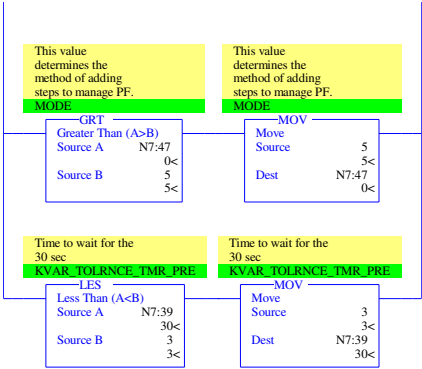
LAD 20 - BEST_KVAR - PFMGR3 Calculate Optimal KVAR match --- Total Rungs in File = 18



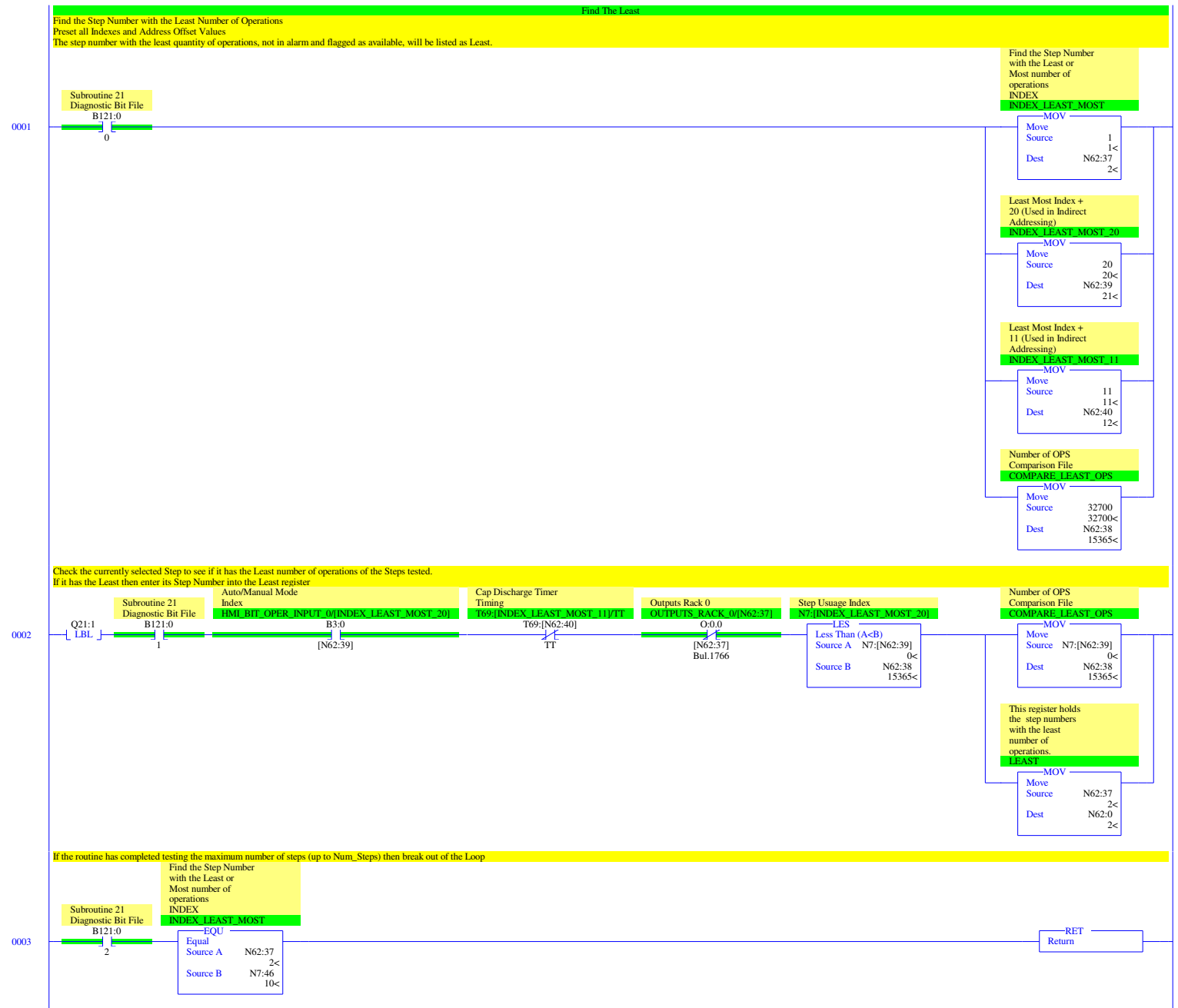
AD 21 - FIND LEAST - Find the Step No. with the Least # of operations --- Total Rungs in File = 6



AD 21 - FIND LEAST - Find the Step No. with the Least # of operations --- Total Rungs in File = 6



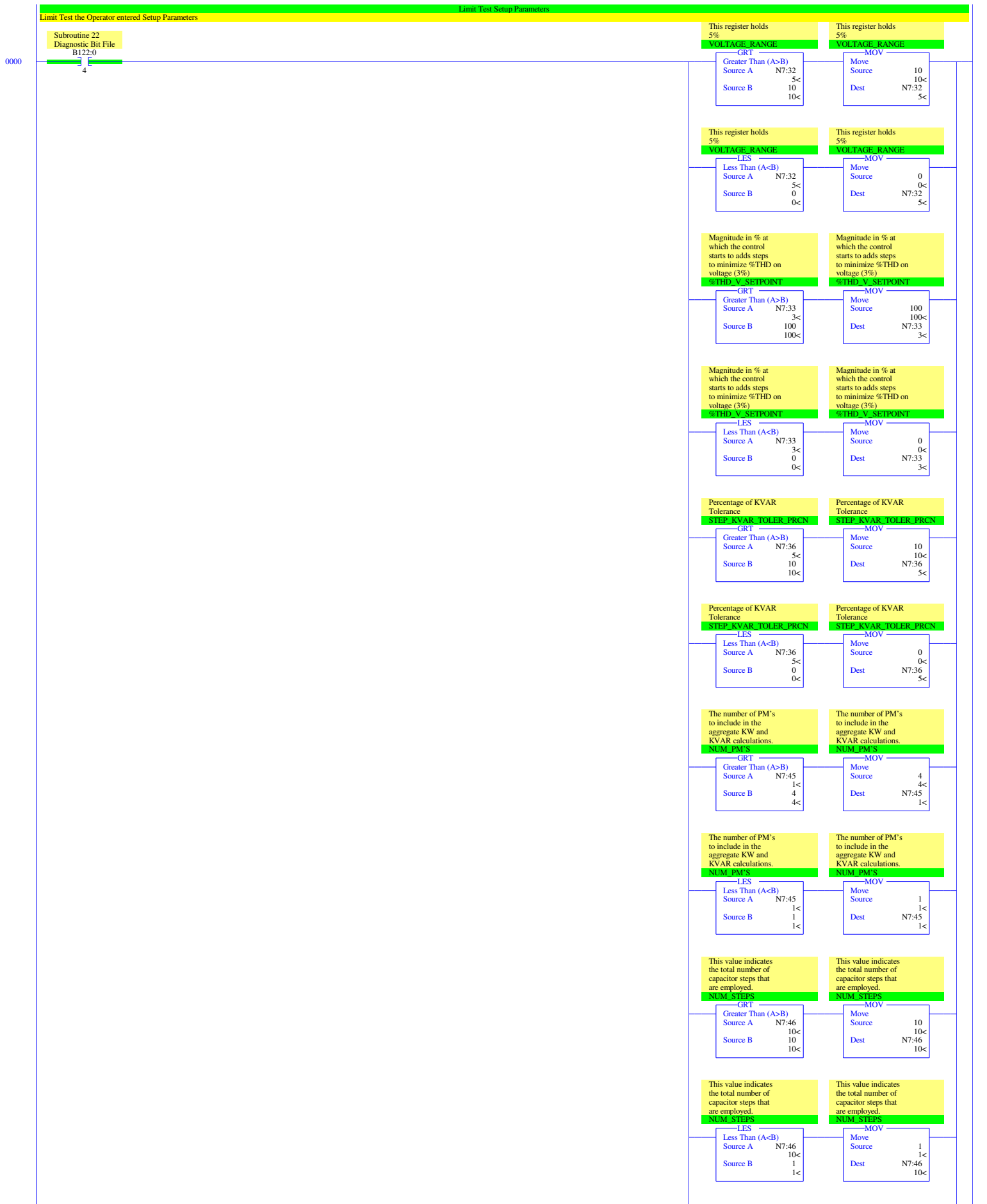
AD 21 - FIND LEAST - Find the Step No. with the Least # of operations --- Total Rungs in File = 6



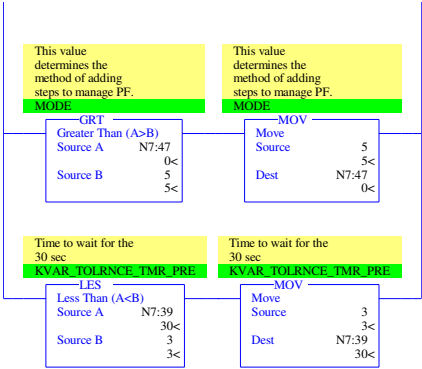
AD 21 - FIND LEAST - Find the Step No. with the Least # of operations --- Total Rungs in File = 6



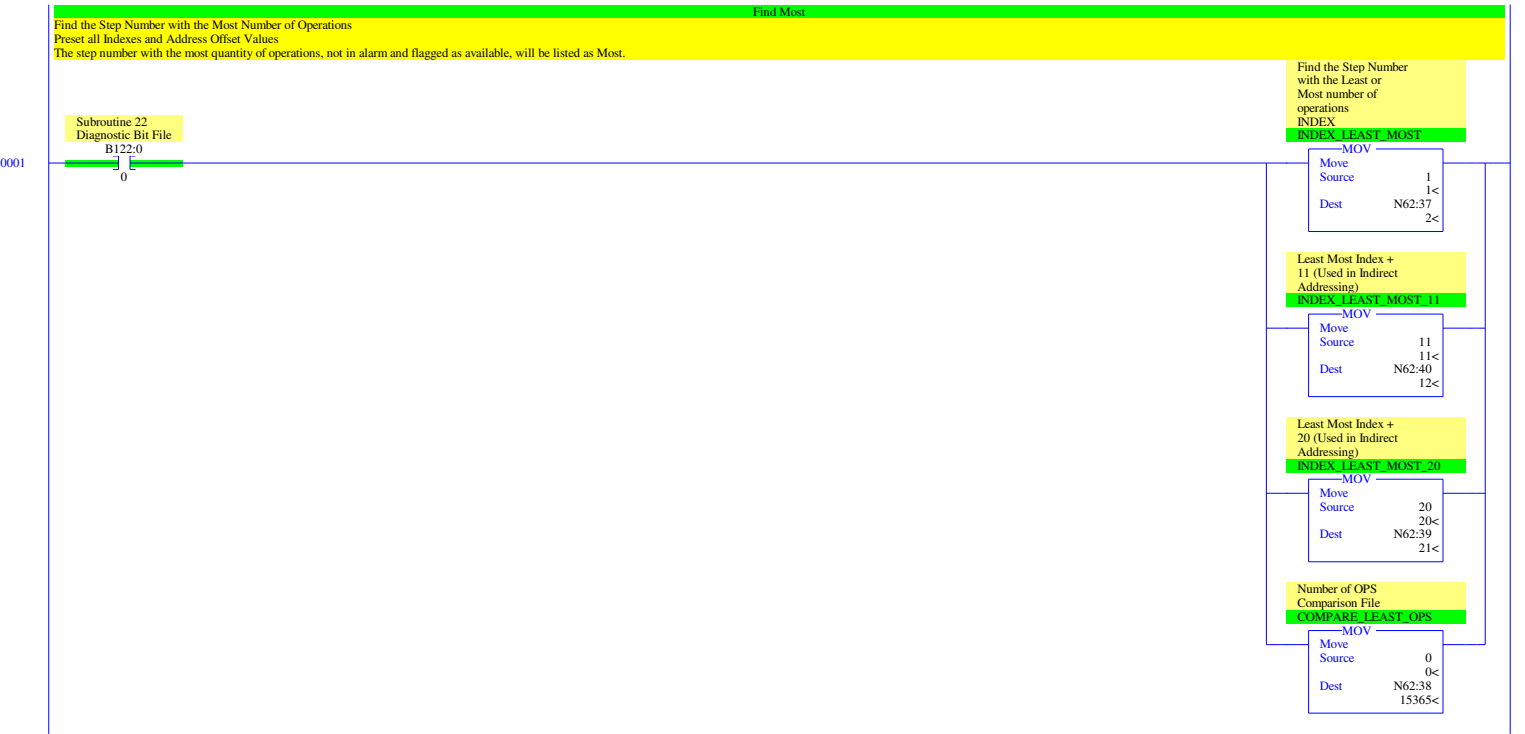
LAD 22 - FIND MOST - Find the Step Number with the Most no. of uses --- Total Rungs in File = 6



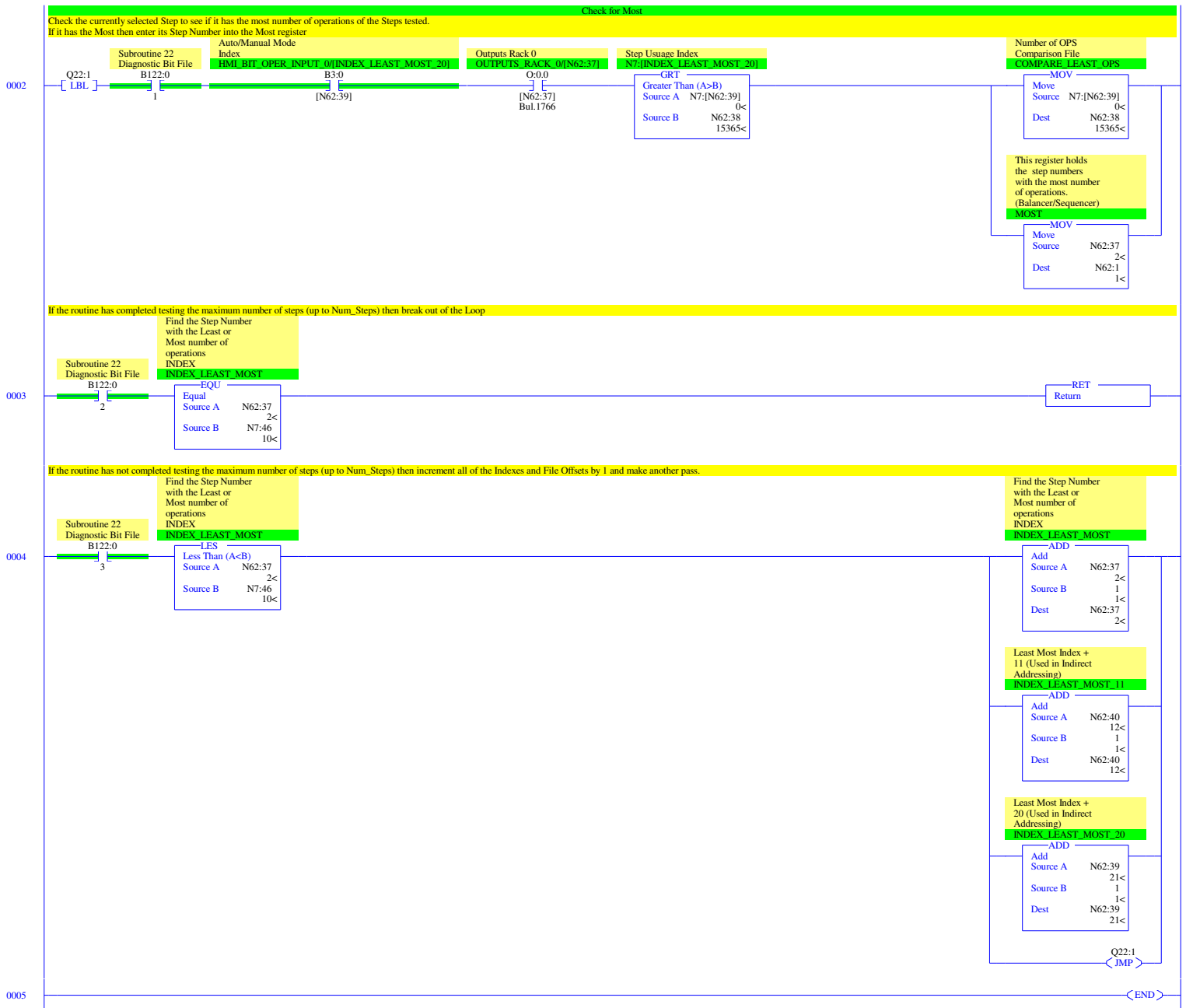
LAD 22 - FIND MOST - Find the Step Number with the Most no. of uses --- Total Rungs in File = 6



LAD 22 - FIND MOST - Find the Step Number with the Most no. of uses --- Total Rungs in File = 6

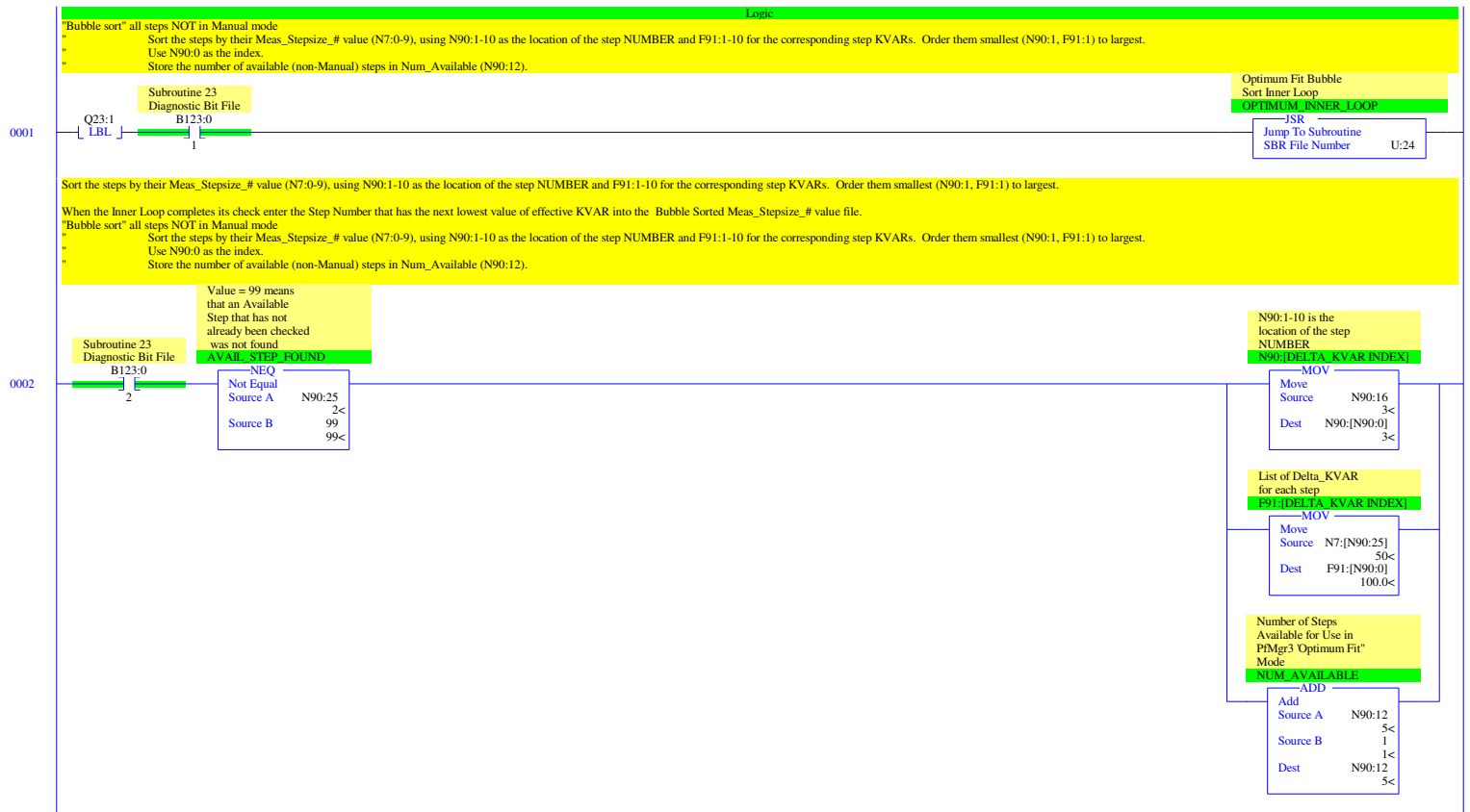


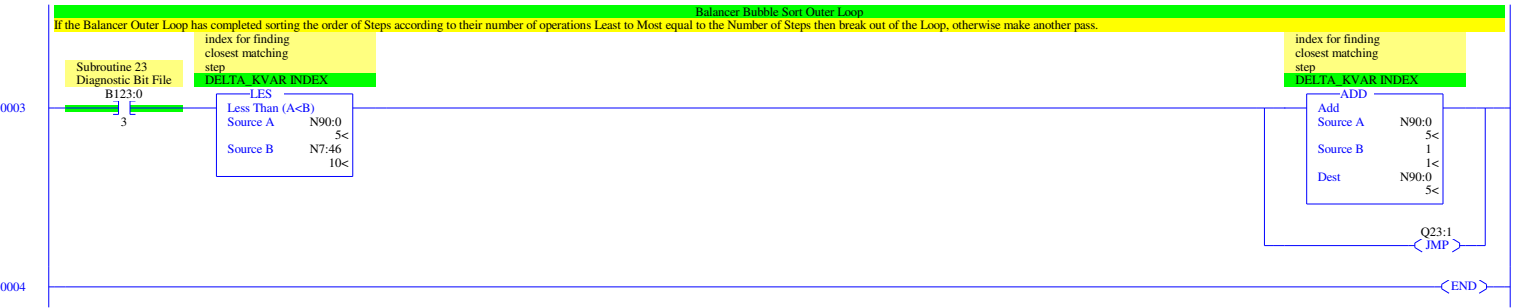
LAD 22 - FIND MOST - Find the Step Number with the Most no. of uses --- Total Rungs in File = 6



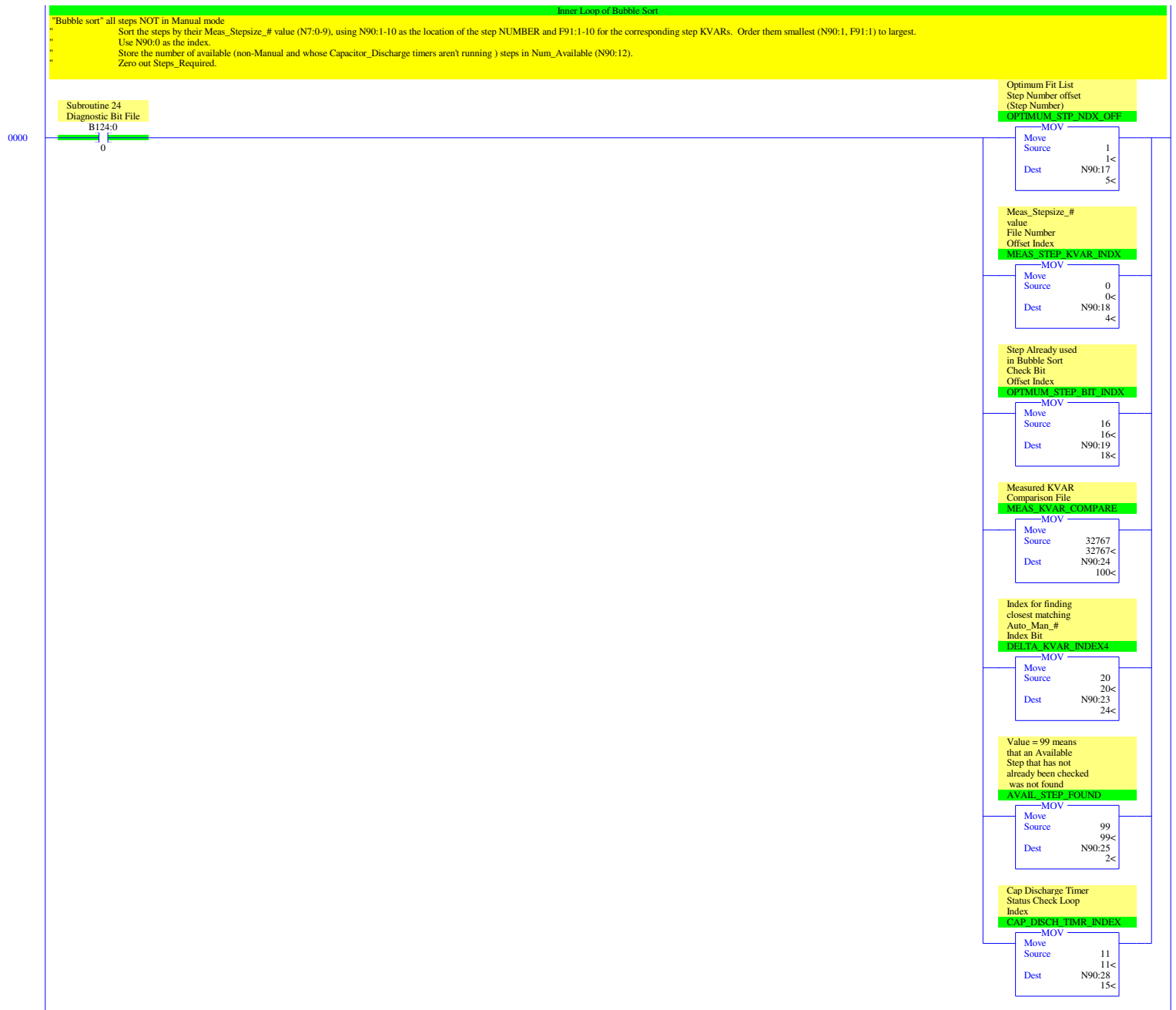


LAD 23 - BEST_OTR_L - PfMgr3 Optimum Fit Bubble Sort Outer Loop --- Total Rungs in File = 5

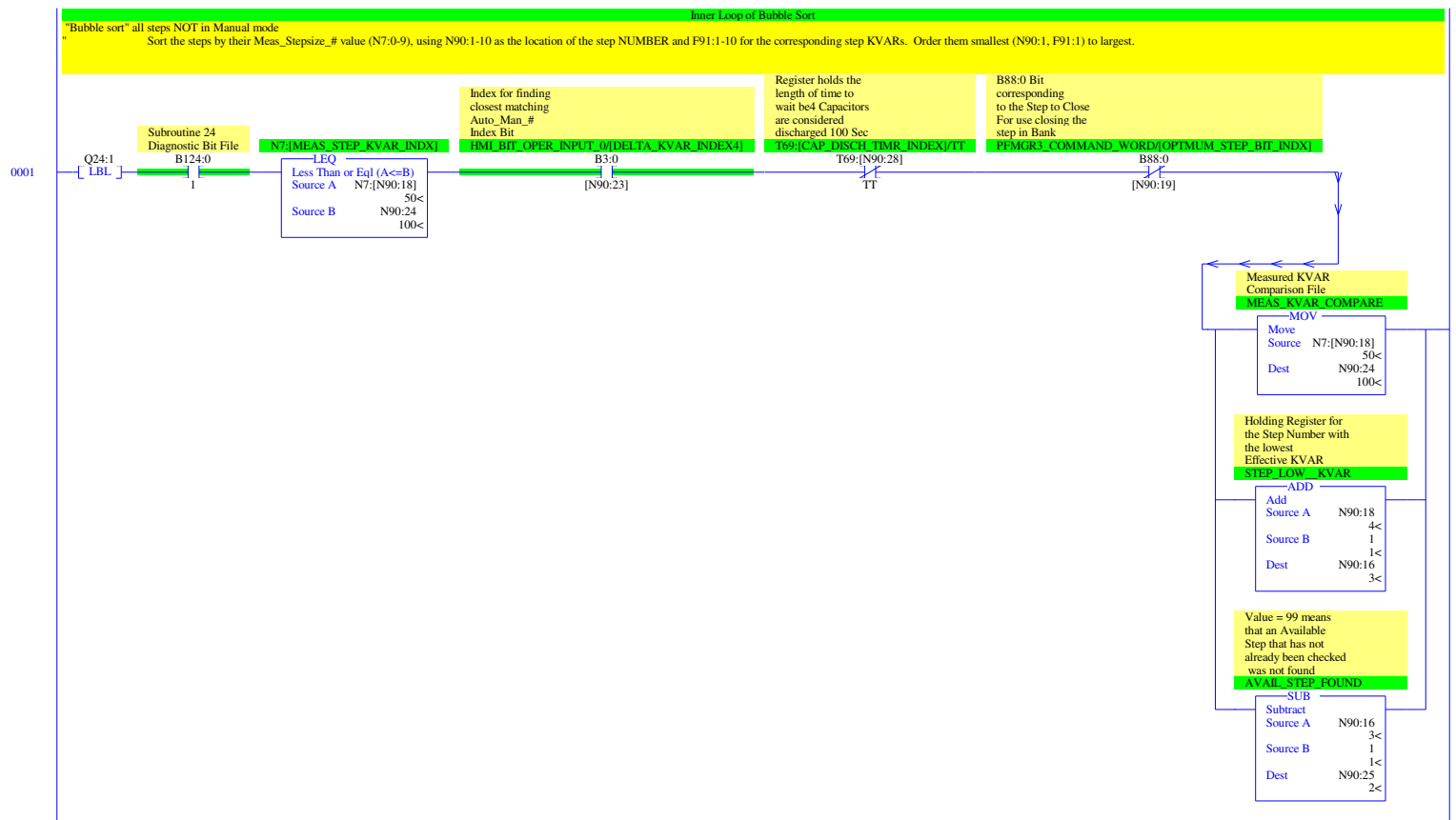




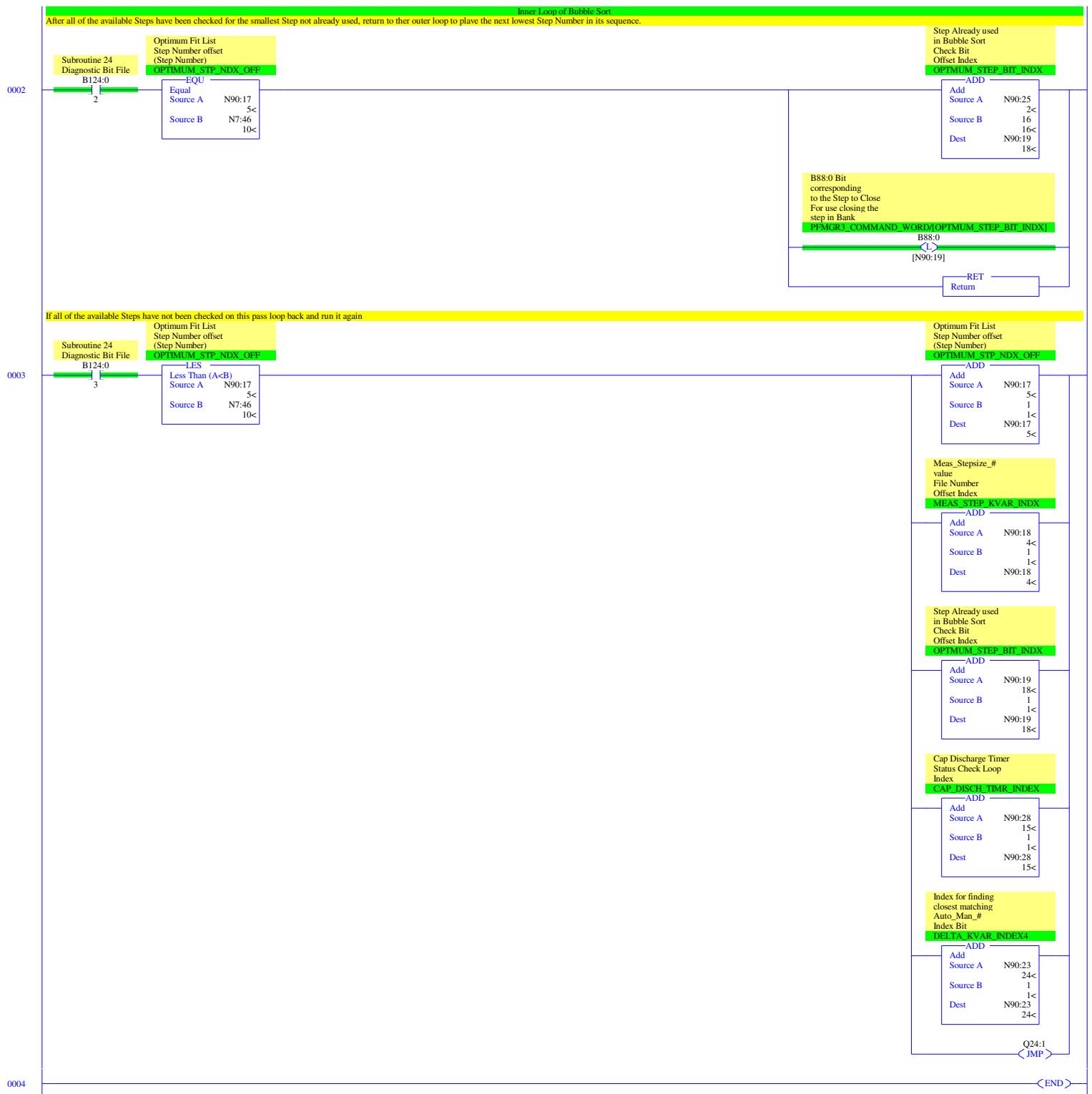
LAD 24 - BEST_INR_L - PfMgr3 Optimum Fit Bubble Sort Inner Loop --- Total Rungs in File = 5



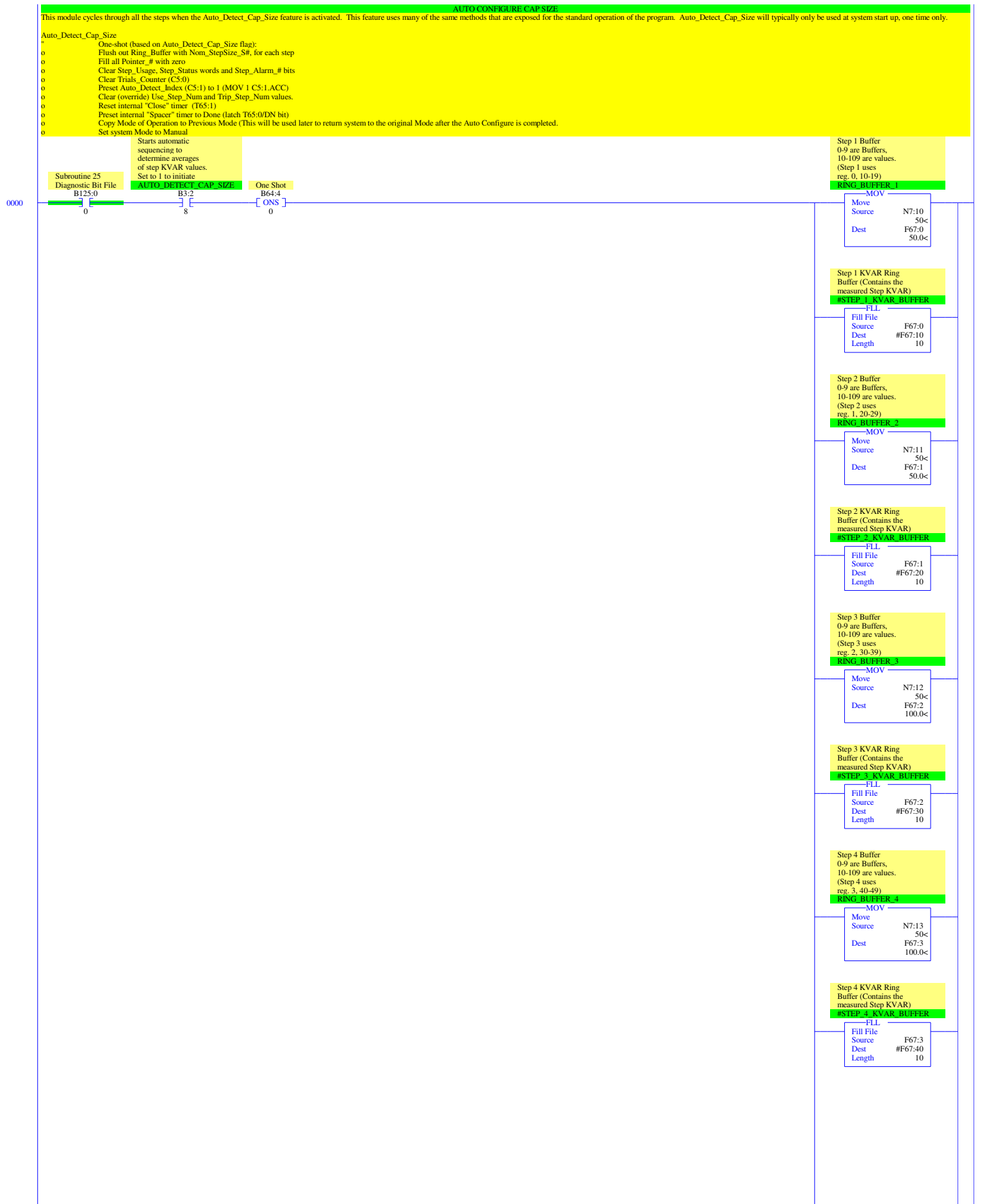
LAD 24 - BEST_INR_L - PfMgr3 Optimum Fit Bubble Sort Inner Loop --- Total Rungs in File = 5



LAD 24 - BEST_INR_L - PfMgr3 Optimum Fit Bubble Sort Inner Loop --- Total Rungs in File = 5



LAD 25 - AUTO_CONFIG - Auto_Detect_Cap_Size --- Total Rungs in File = 14



Step 5 Buffer
0-9 are Buffers,
10-109 are values.
(Step 5 uses
reg. 4, 50-59)

MOV
Move
Source N7:14
Dest F67:4
100.0<

Step 5 KVAR Ring
Buffer (Contains the
measured Step KVAR)

FLL
Fill File
Source F67:4
Dest #F67:50
Length 10

Step 6 Buffer
0-9 are Buffers,
10-109 are values.
(Step 5 uses
reg. 5, 60-69)

MOV
Move
Source N7:15
Dest F67:5
100.0<

Step 6 KVAR Ring
Buffer (Contains the
measured Step KVAR)

FLL
Fill File
Source F67:5
Dest #F67:60
Length 10

Step 7 Buffer
0-9 are Buffers,
10-109 are values.
(Step 5 uses
reg. 6, 70-79)

MOV
Move
Source N7:16
Dest F67:6
100.0<

Step 7 KVAR Ring
Buffer (Contains the
measured Step KVAR)

FLL
Fill File
Source F67:6
Dest #F67:70
Length 10

Step 8 Buffer
0-9 are Buffers,
10-109 are values.
(Step 8 uses
reg. 7, 80-89)

MOV
Move
Source N7:17
Dest F67:7
100.0<

Step 8 KVAR Ring
Buffer (Contains the
measured Step KVAR)

FLL
Fill File
Source F67:7
Dest #F67:80
Length 10

Step 9 Buffer
0-9 are Buffers,
10-109 are values.
(Step 9 uses
reg. 8, 90-99)

MOV
Move
Source N7:18
Dest F67:8
100.0<

Step 9 KVAR Ring
Buffer (Contains the
measured Step KVAR)

#STEP_9_KVAR_BUFFER

FLL

Fill File	
Source	F67:8
Dest	#F67:90
Length	10

Step 10 Buffer
0-9 are Buffers,
10-109 are values.
(Step 10 uses
reg. 9, 100-109)

RING_BUFFER_10

MOV

Move	
Source	N7:19
Dest	F67:9
	50<
	100.0<

Step 10 KVAR Ring
Buffer (Contains the
measured Step KVAR)

#STEP_10_KVAR_BUFFER

FLL

Fill File	
Source	F67:9
Dest	#F67:100
Length	10

Step 1
Running Total KVAR
Used to calculate
Step 1 Average KVAR

#STEP_1_AVERAGE_KVAR

FLL

Fill File	
Source	0.0
Dest	#F67:111
Length	10

Step #1 Pointer
(Used in Averager
module as Index for
Ring Buffer for
Average KVAR calcs)

#POINTER_1

FLL

Fill File	
Source	0
Dest	#N70:1
Length	10

This register holds
the bit-wise summary
of step usage. (for
memory)

STEP_USAGE

CLR

Clear	
Dest	N66:1
	-2<

This register holds
the bit-wise summary
of step
availability.

STEP_STATUS

CLR

Clear	
Dest	N66:0
	0<

This flag indicates
whether the step# is
in (StepSize) alarm.
(Summed into BadStep
Alarm)1 = In Alarm

STEP_ALARM_1

B3:0

U

10

This flag indicates
whether the step# is
in (StepSize) alarm.
(Summed into BadStep
Alarm)1 = In Alarm

STEP_ALARM_2

B3:0

U

11

This flag indicates
whether the step# is
in (StepSize) alarm.
(Summed into BadStep
Alarm)1 = In Alarm

STEP_ALARM_3

B3:0

U

12

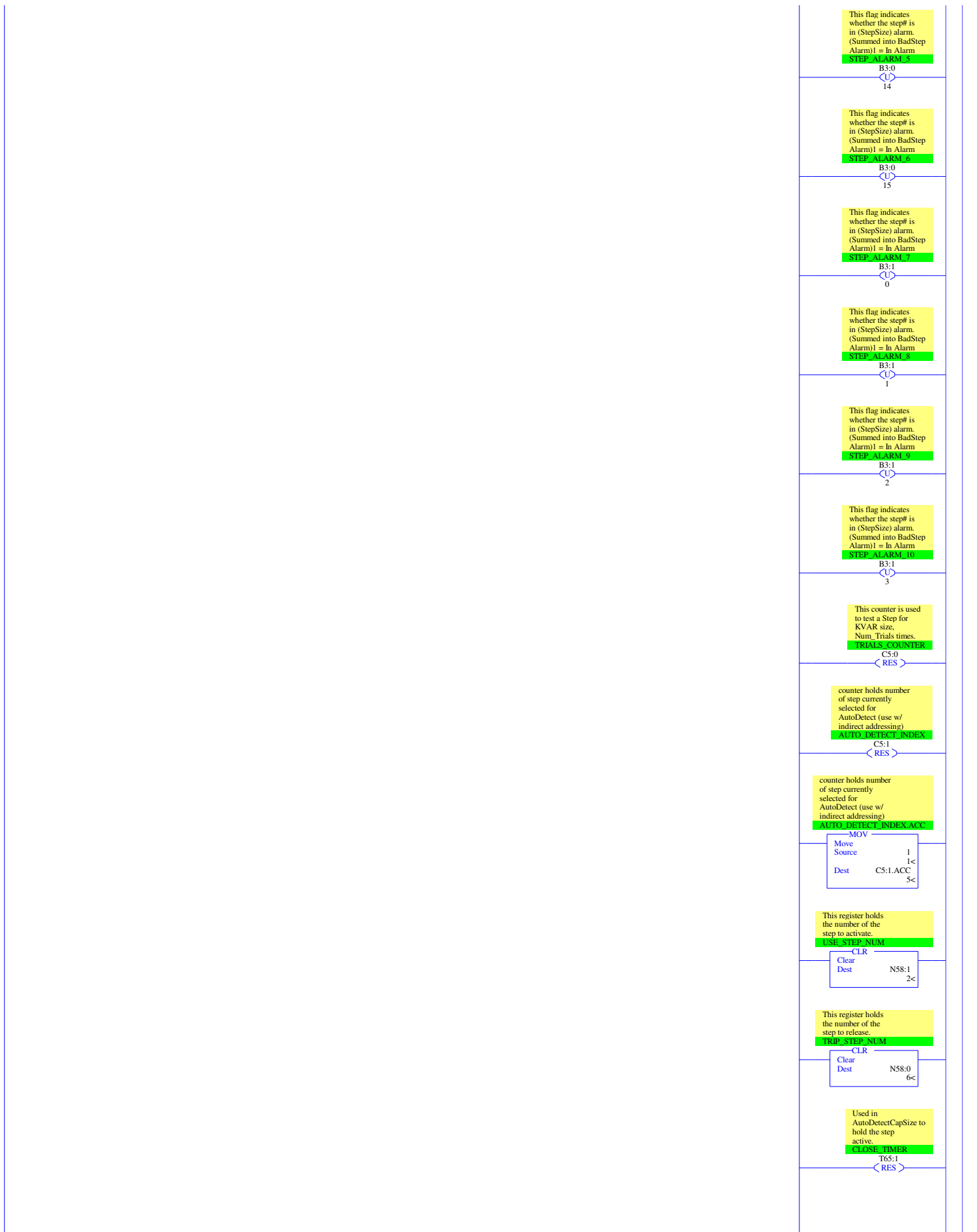
This flag indicates
whether the step# is
in (StepSize) alarm.
(Summed into BadStep
Alarm)1 = In Alarm

STEP_ALARM_4

B3:0

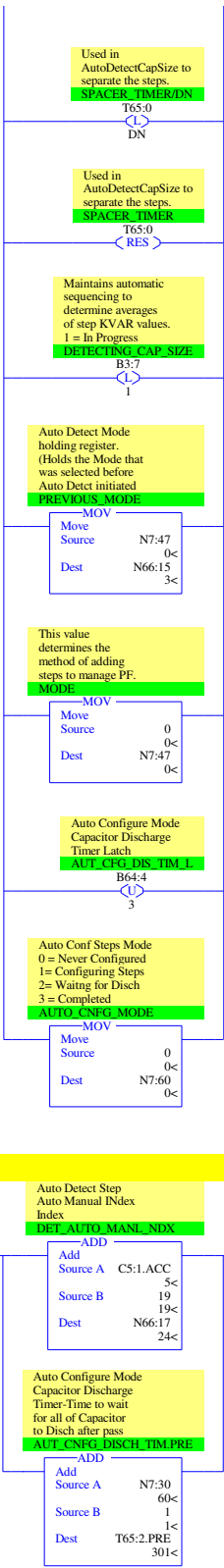
U

13

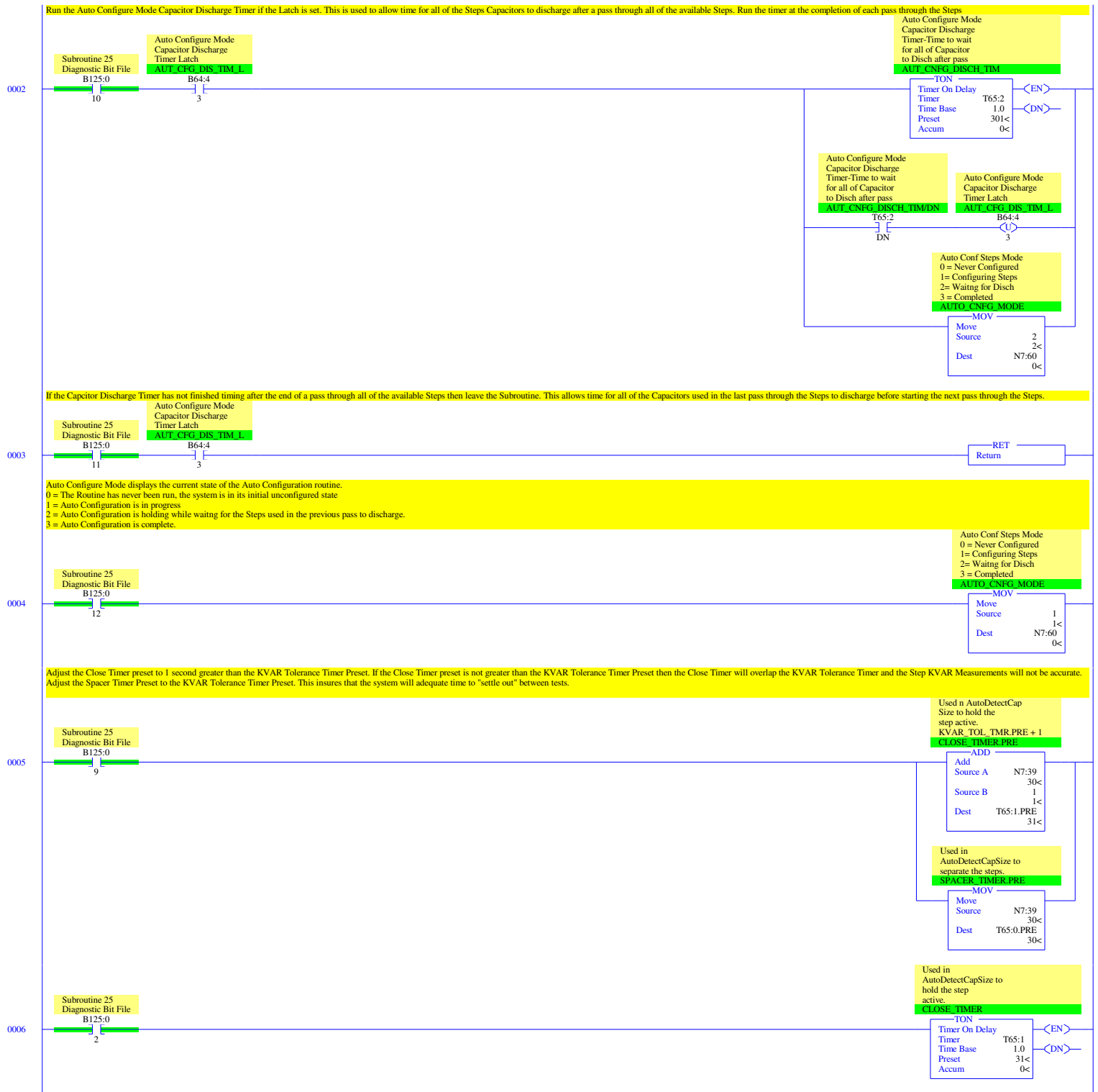


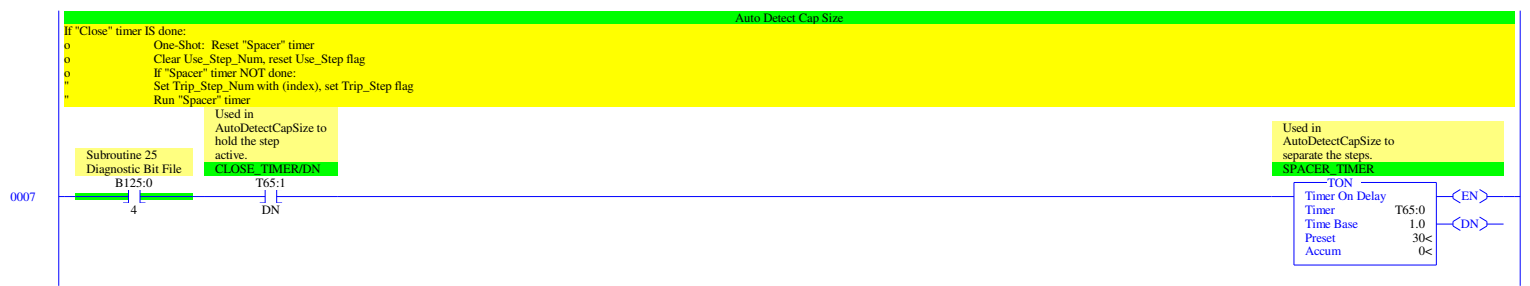
0001

Set the Auto/Manual Mode Index to match the Step Currently selected for Auto Configuration
Move the Capacitor Discharge Timer Preset into the Auto Configure Mode Capacitor Discharge Timer.

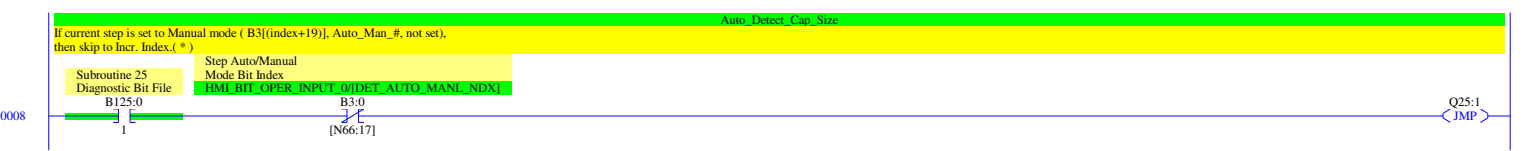


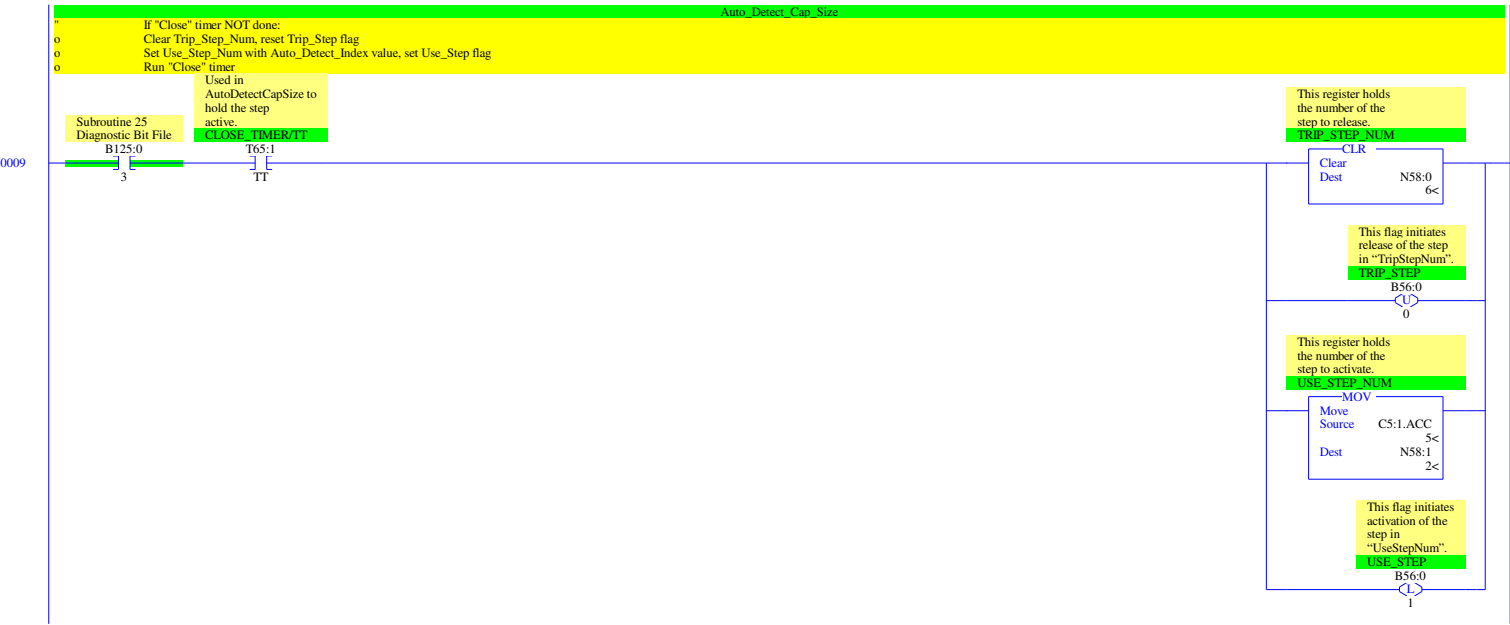
LAD 25 - AUTO_CONFIG - Auto_Detect_Cap_Size --- Total Rungs in File = 14





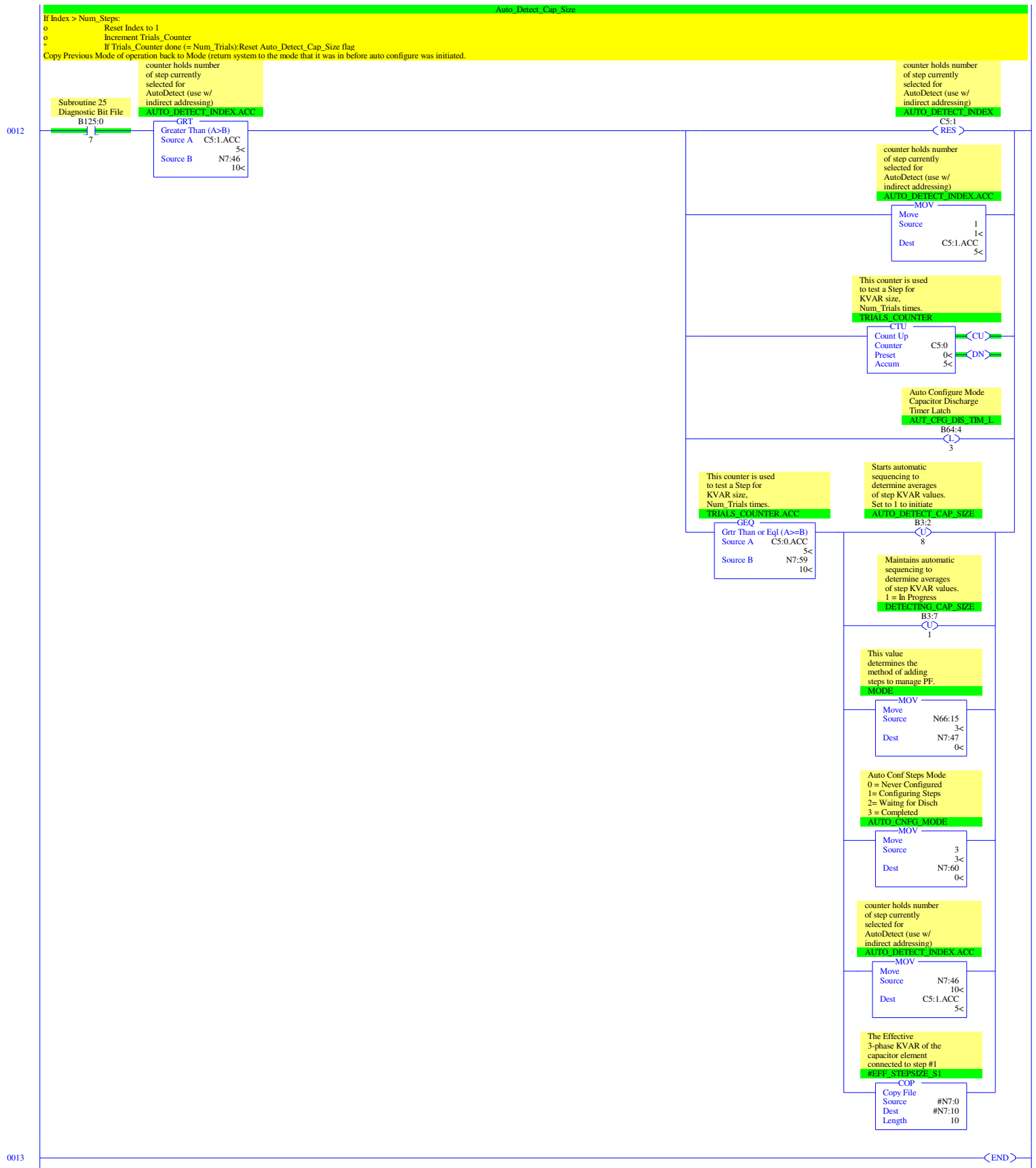
LAD 25 - AUTO_CONFIG - Auto_Detect_Cap_Size --- Total Rungs in File = 14



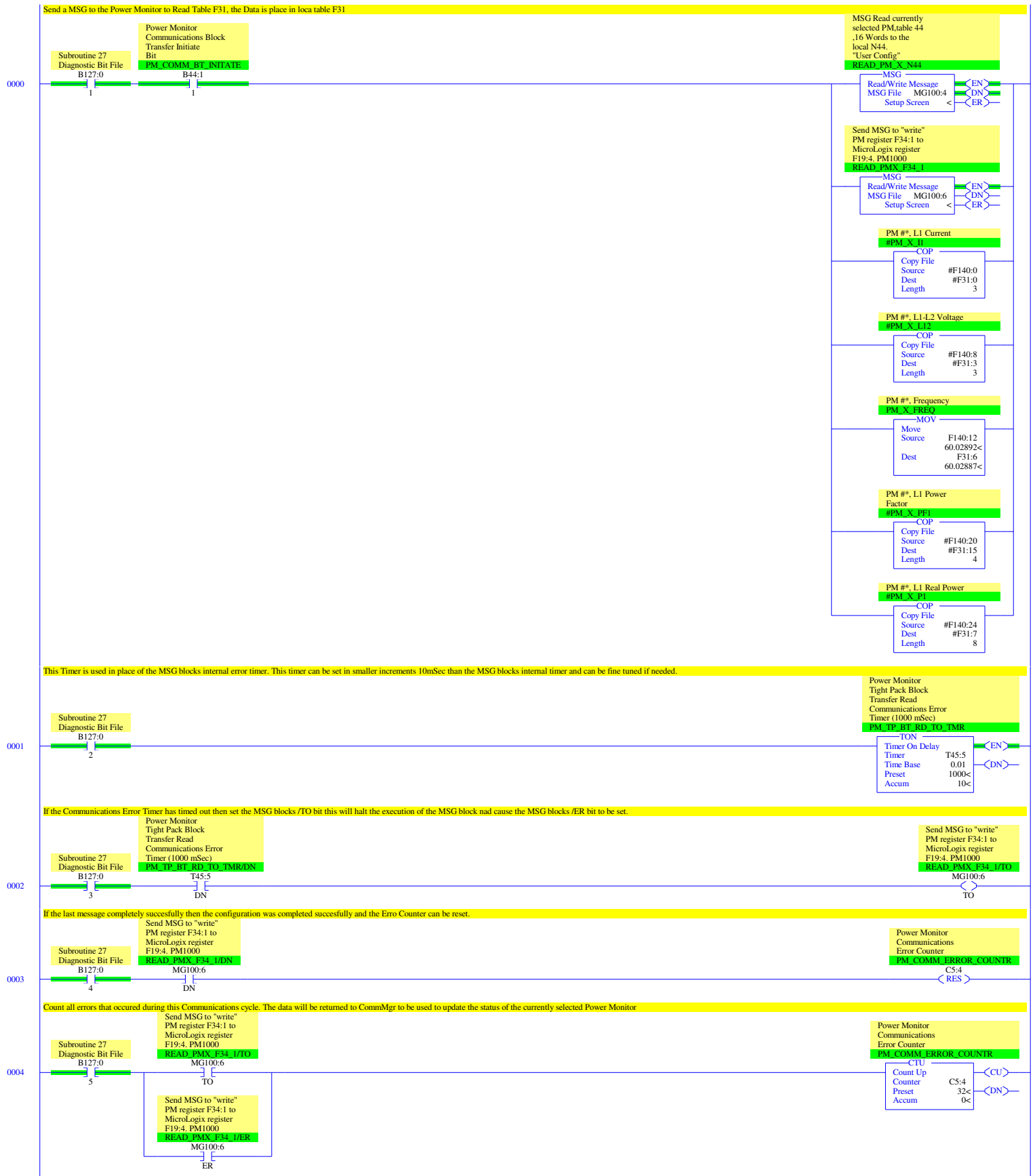




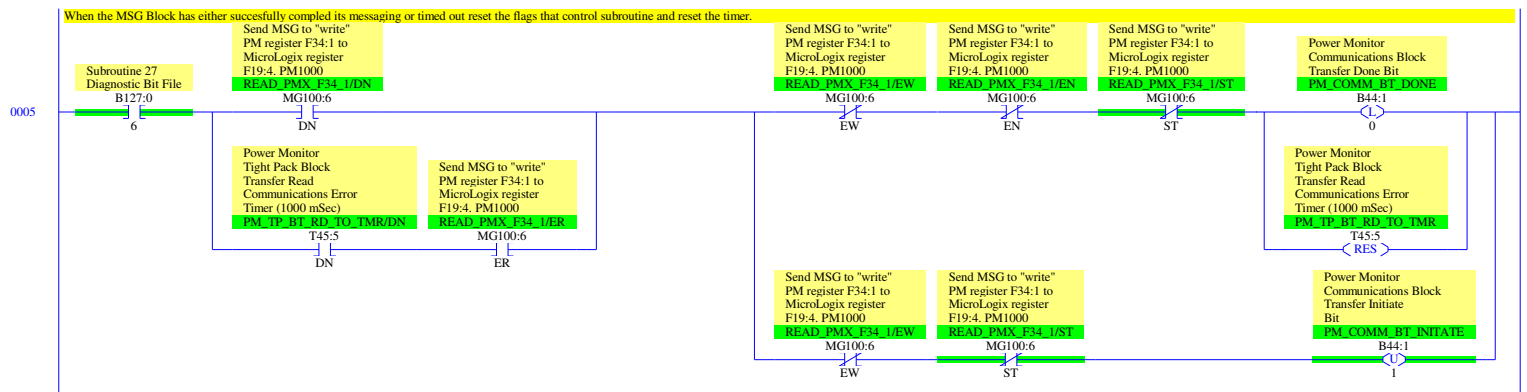
LAD 25 - AUTO_CONFIG - Auto_Detect_Cap_Size --- Total Rungs in File = 14



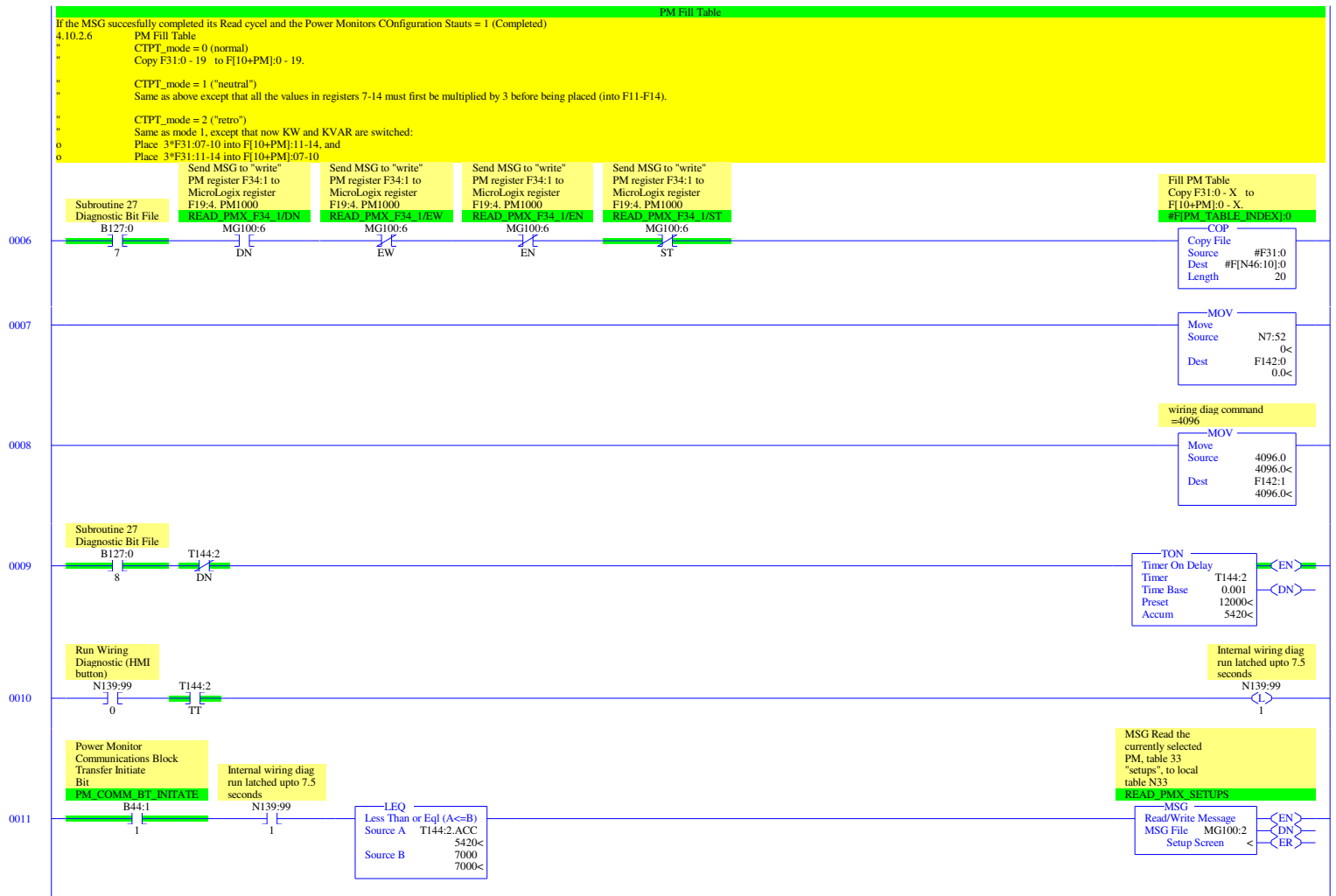
LAD 27 - PM_DATA - PM Data Tight Pack Communications --- Total Rungs in File = 15



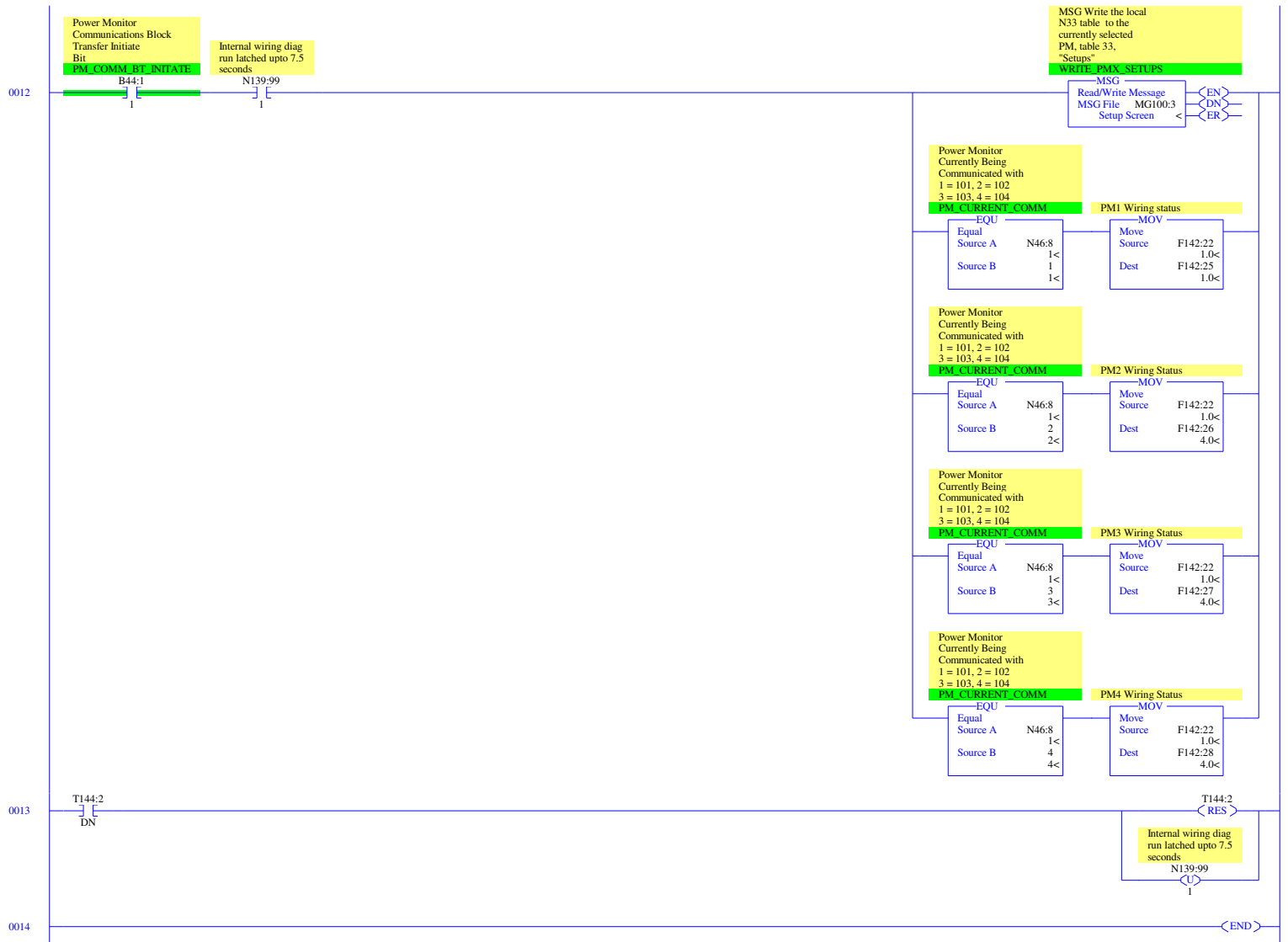
LAD 27 - PM_DATA - PM Data Tight Pack Communications --- Total Rungs in File = 15



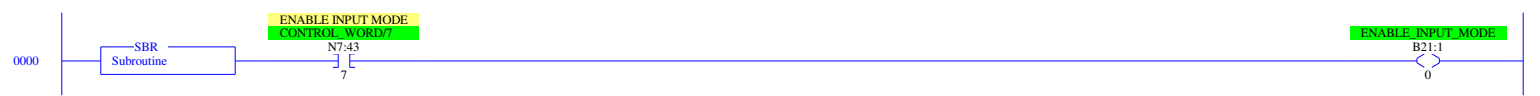
LAD 27 - PM_DATA - PM Data Tight Pack Communications --- Total Rungs in File = 15



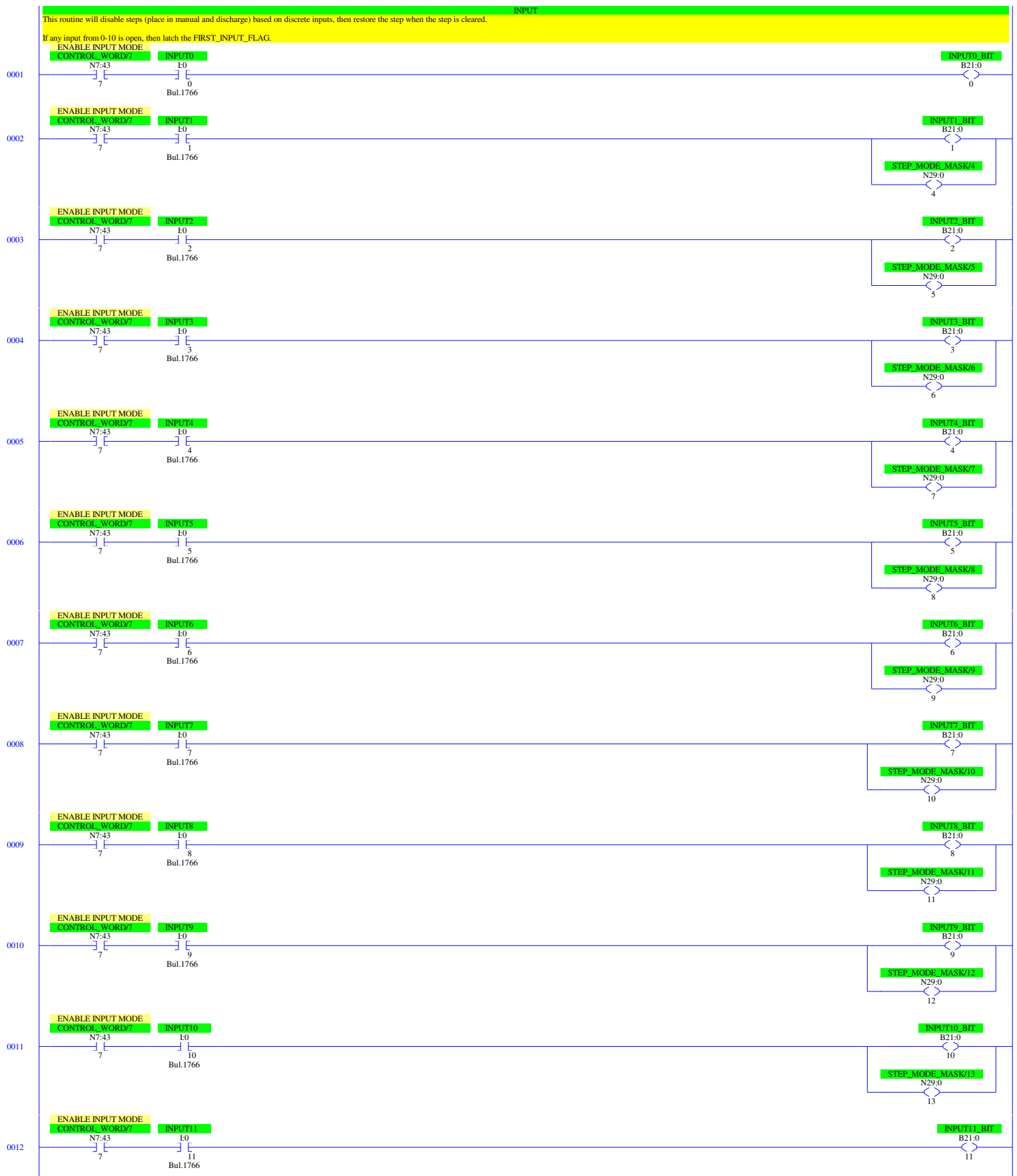
LAD 27 - PM_DATA - PM Data Tight Pack Communications --- Total Rungs in File = 15



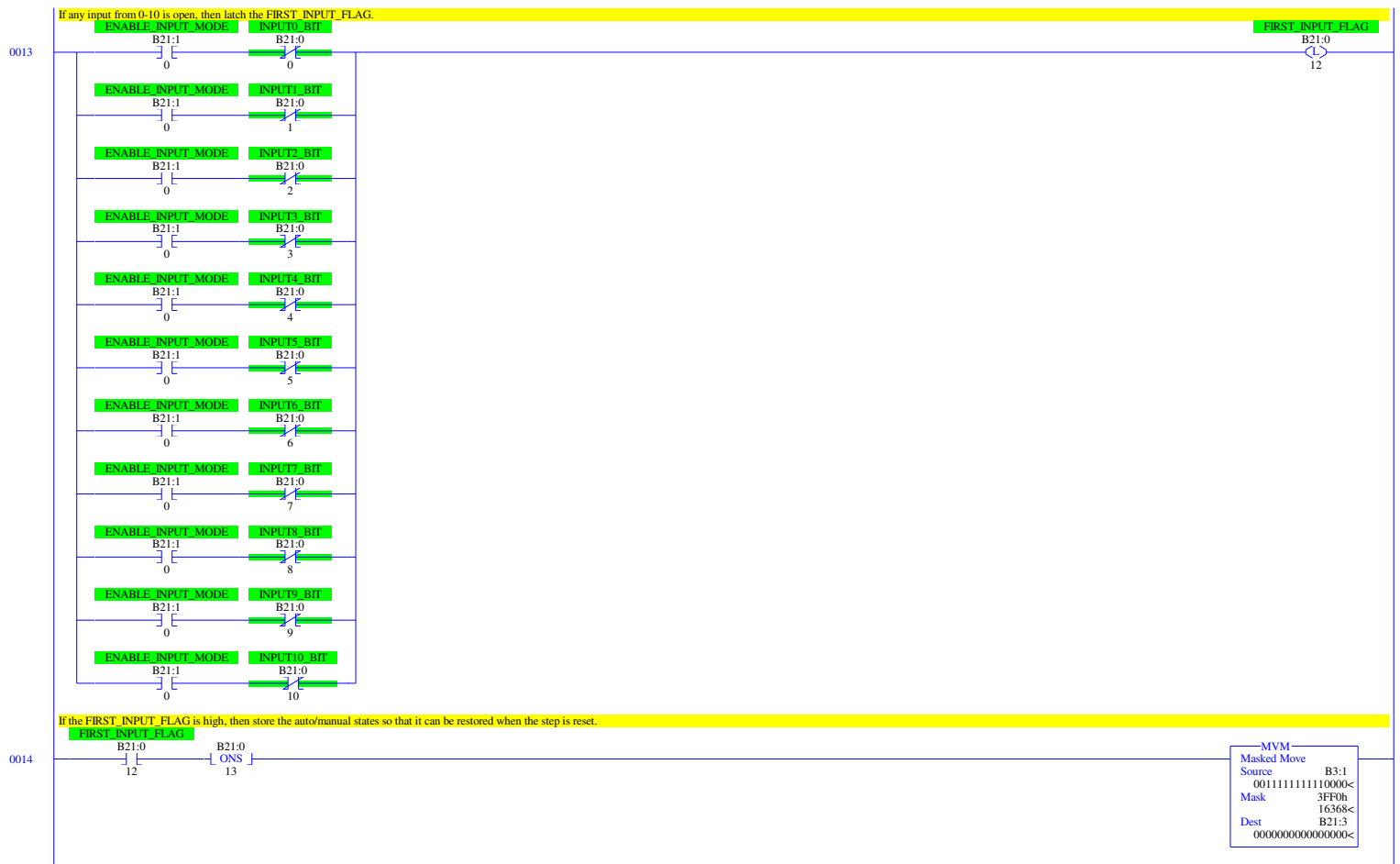
LAD 29 - INPUT - Disables steps based on discrete inputs. --- Total Rungs in File = 40

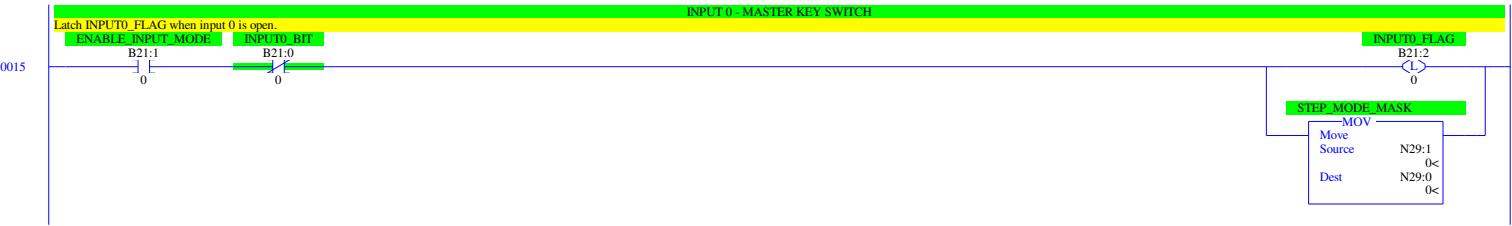


LAD 29 - INPUT - Disables steps based on discrete inputs. --- Total Rungs in File = 40



LAD 29 - INPUT - Disables steps based on discrete inputs. --- Total Rungs in File = 40

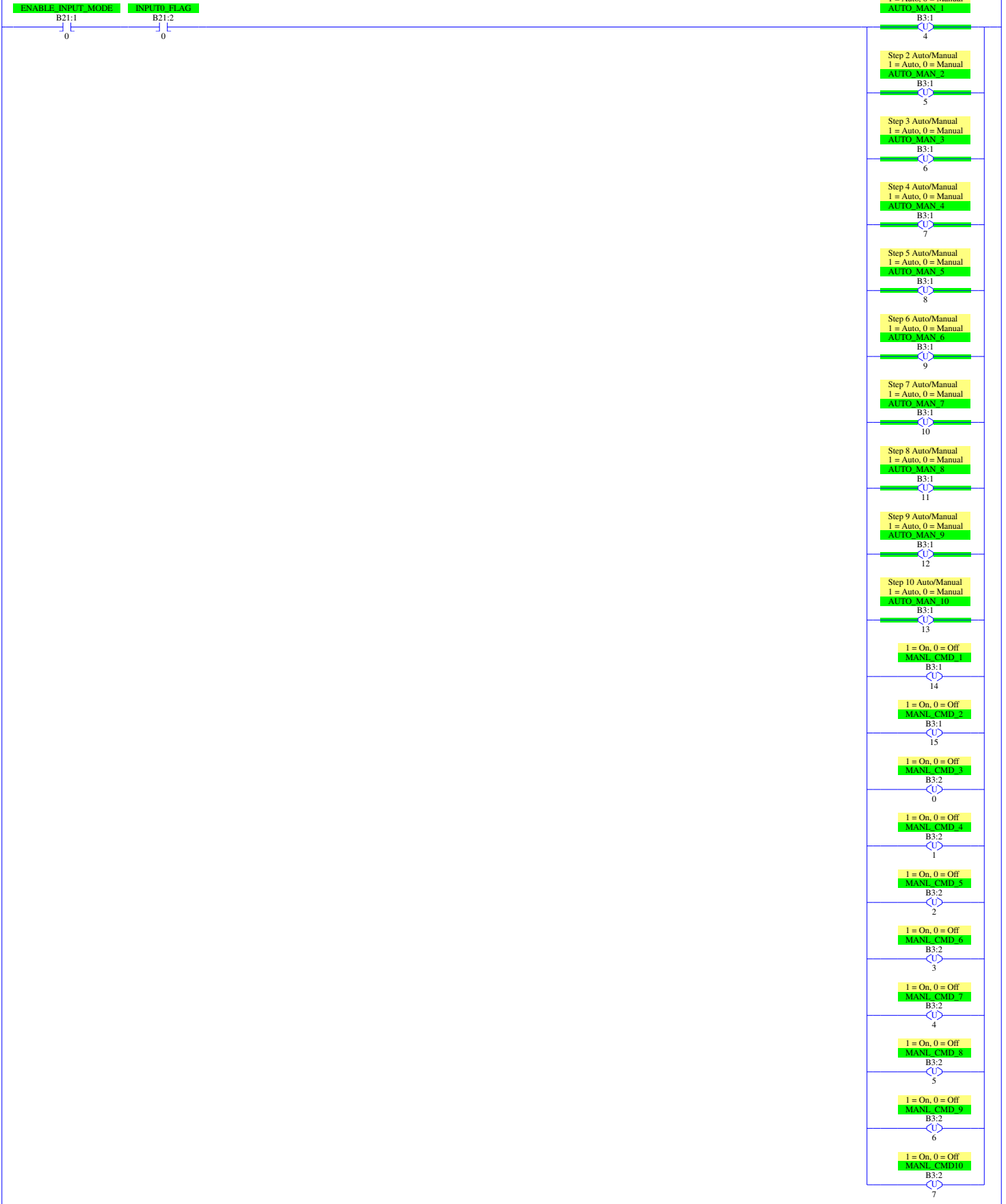




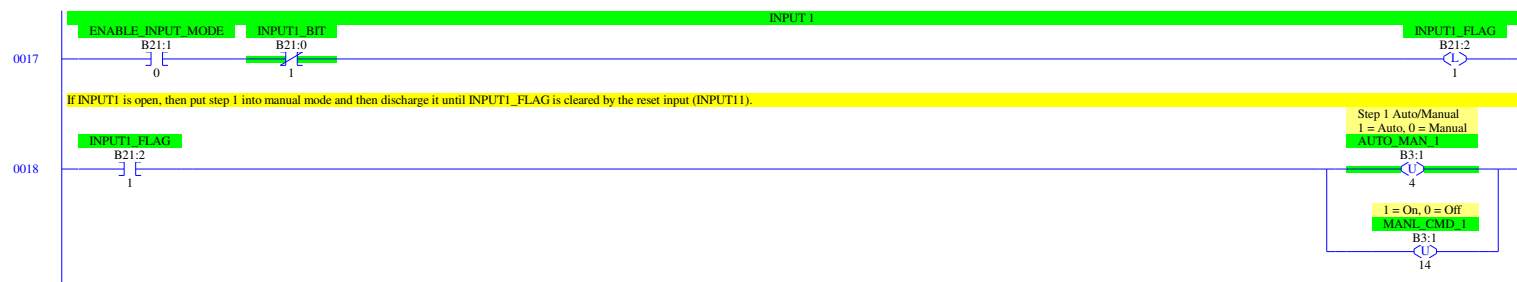
LAD 29 - INPUT - Disables steps based on discrete inputs. --- Total Rungs in File = 40

If INPUT0_FLAG is high, then put all steps into manual mode and then discharge them until flag is cleared by the reset input (INPUT11).

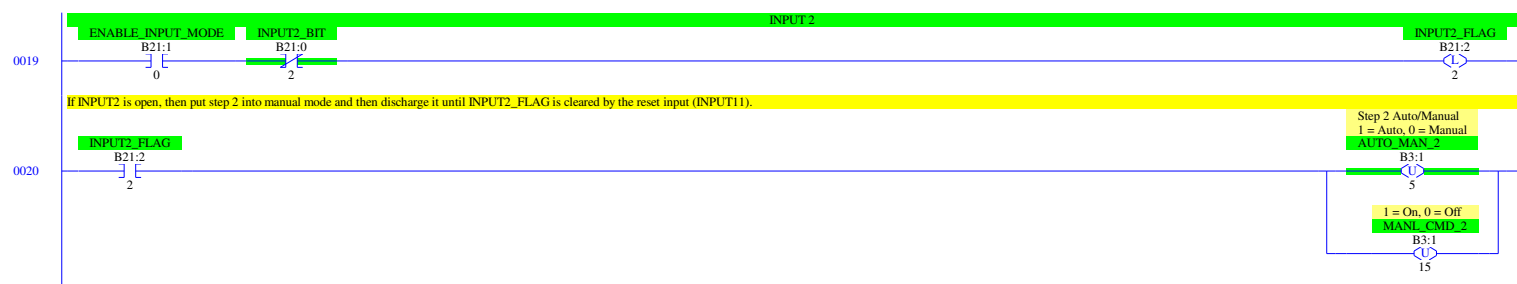
0016



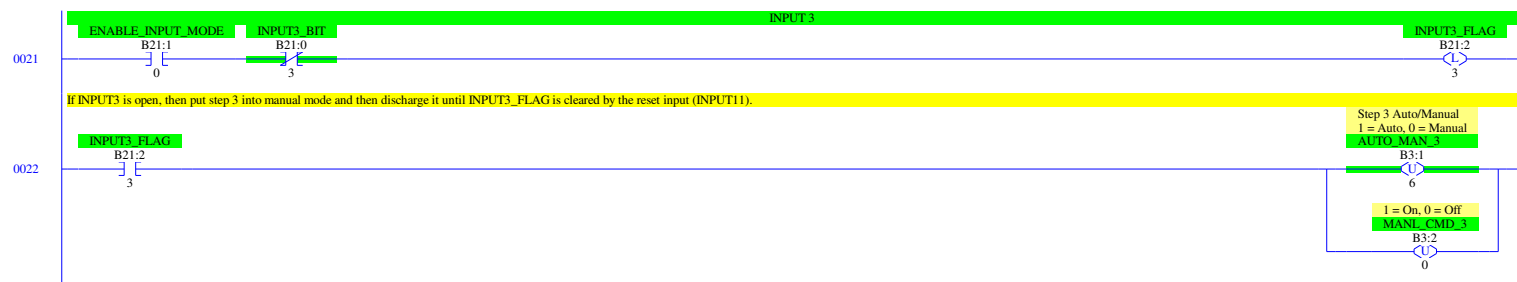
LAD 29 - INPUT - Disables steps based on discrete inputs. --- Total Rungs in File = 40



LAD 29 - INPUT - Disables steps based on discrete inputs. --- Total Rungs in File = 40

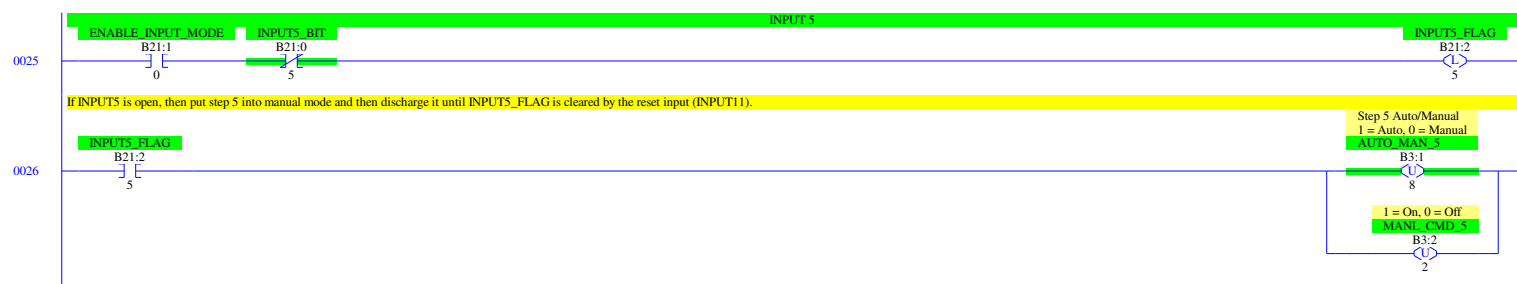


LAD 29 - INPUT - Disables steps based on discrete inputs. --- Total Rungs in File = 40

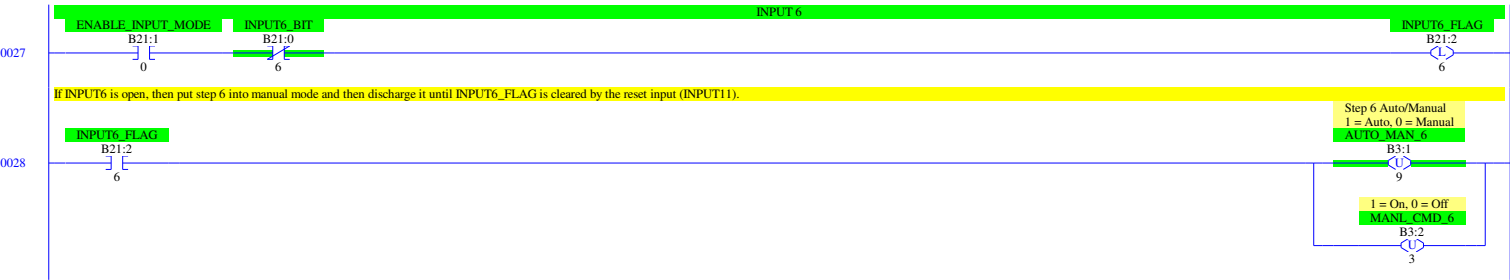




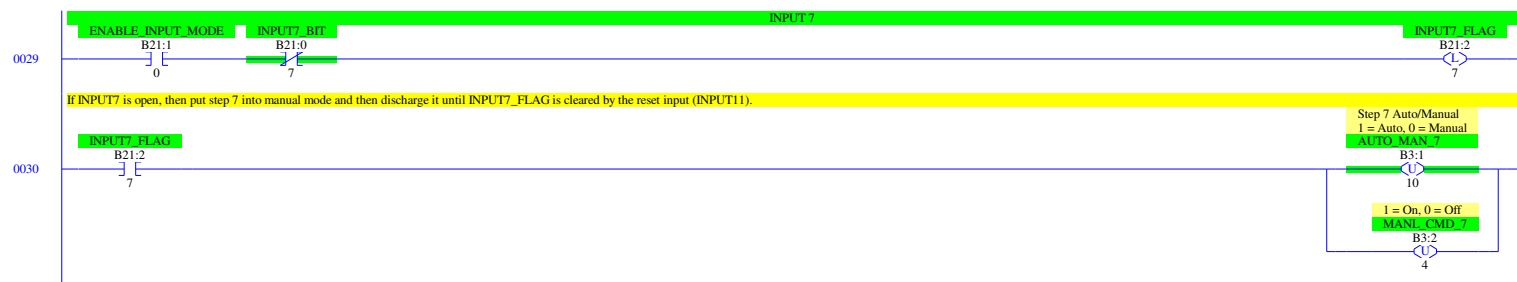
LAD 29 - INPUT - Disables steps based on discrete inputs. --- Total Rungs in File = 40



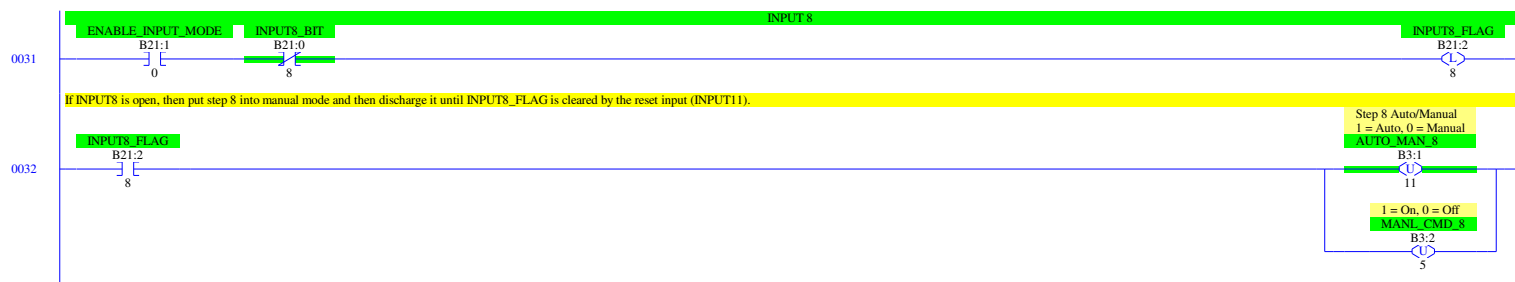
LAD 29 - INPUT - Disables steps based on discrete inputs. --- Total Rungs in File = 40



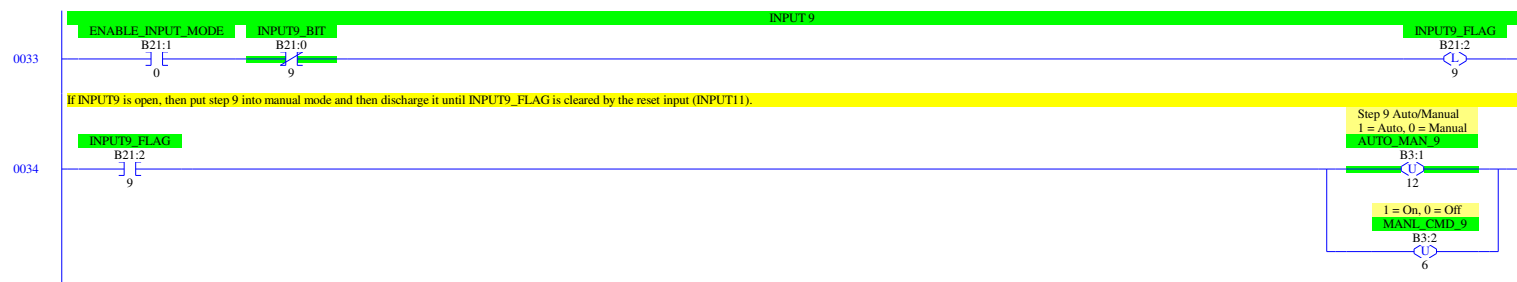
LAD 29 - INPUT - Disables steps based on discrete inputs. --- Total Rungs in File = 40



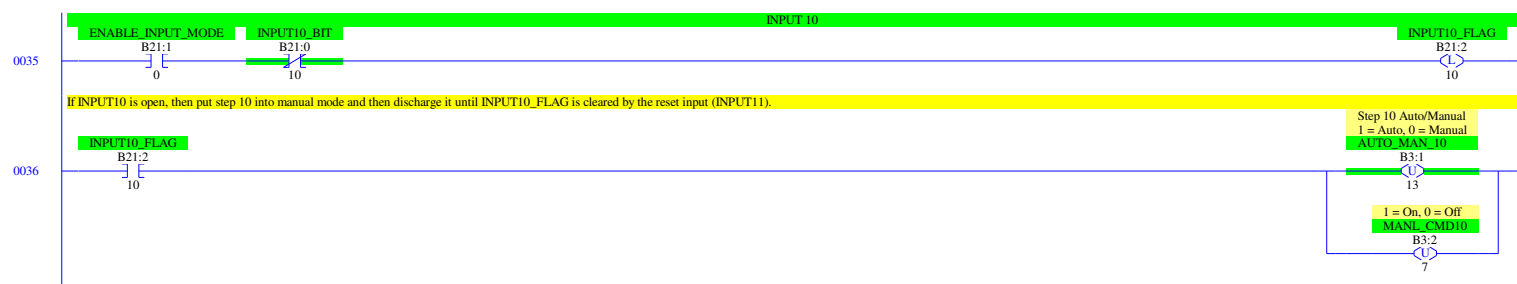
LAD 29 - INPUT - Disables steps based on discrete inputs. --- Total Rungs in File = 40



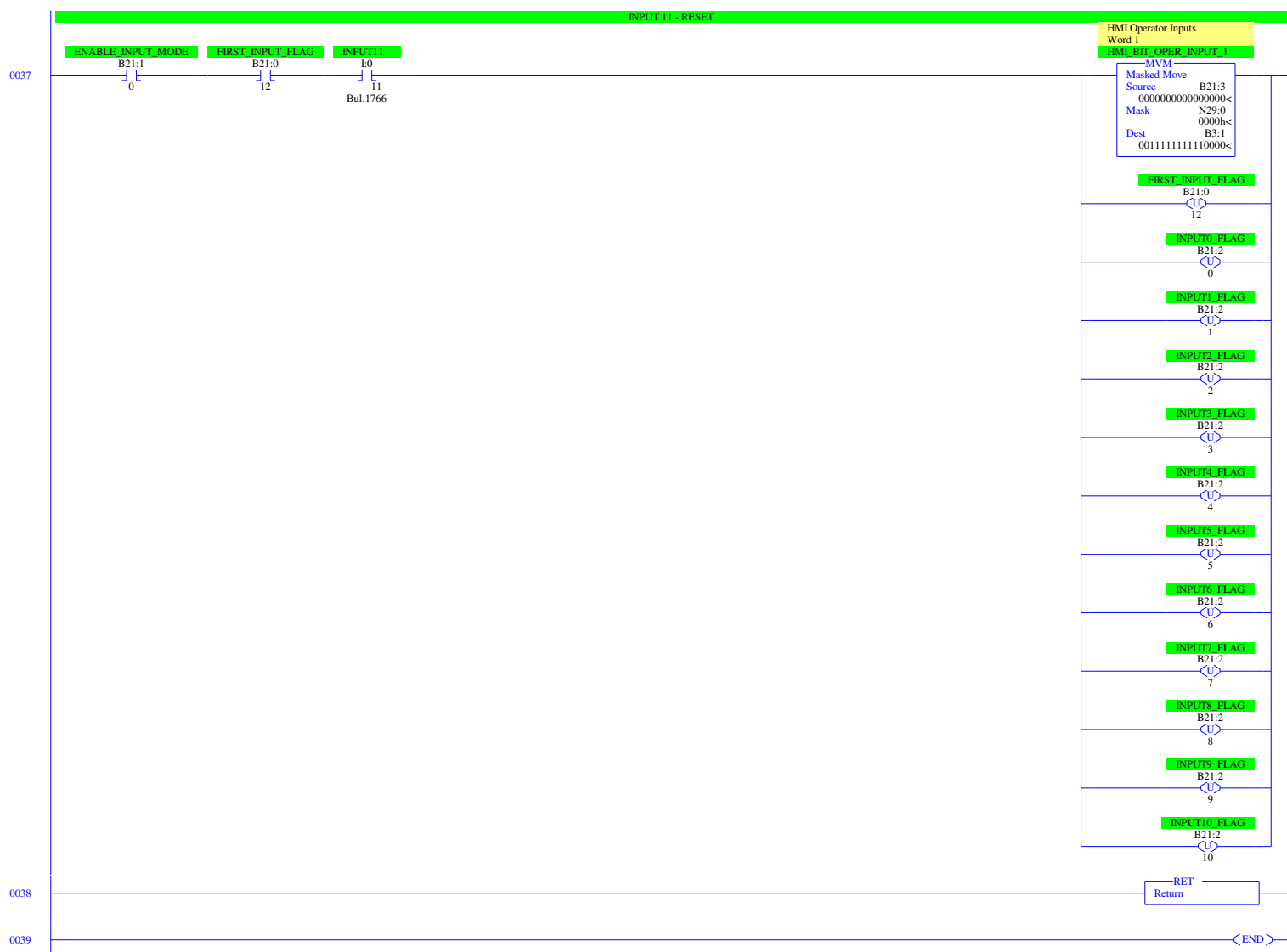
LAD 29 - INPUT - Disables steps based on discrete inputs. --- Total Rungs in File = 40



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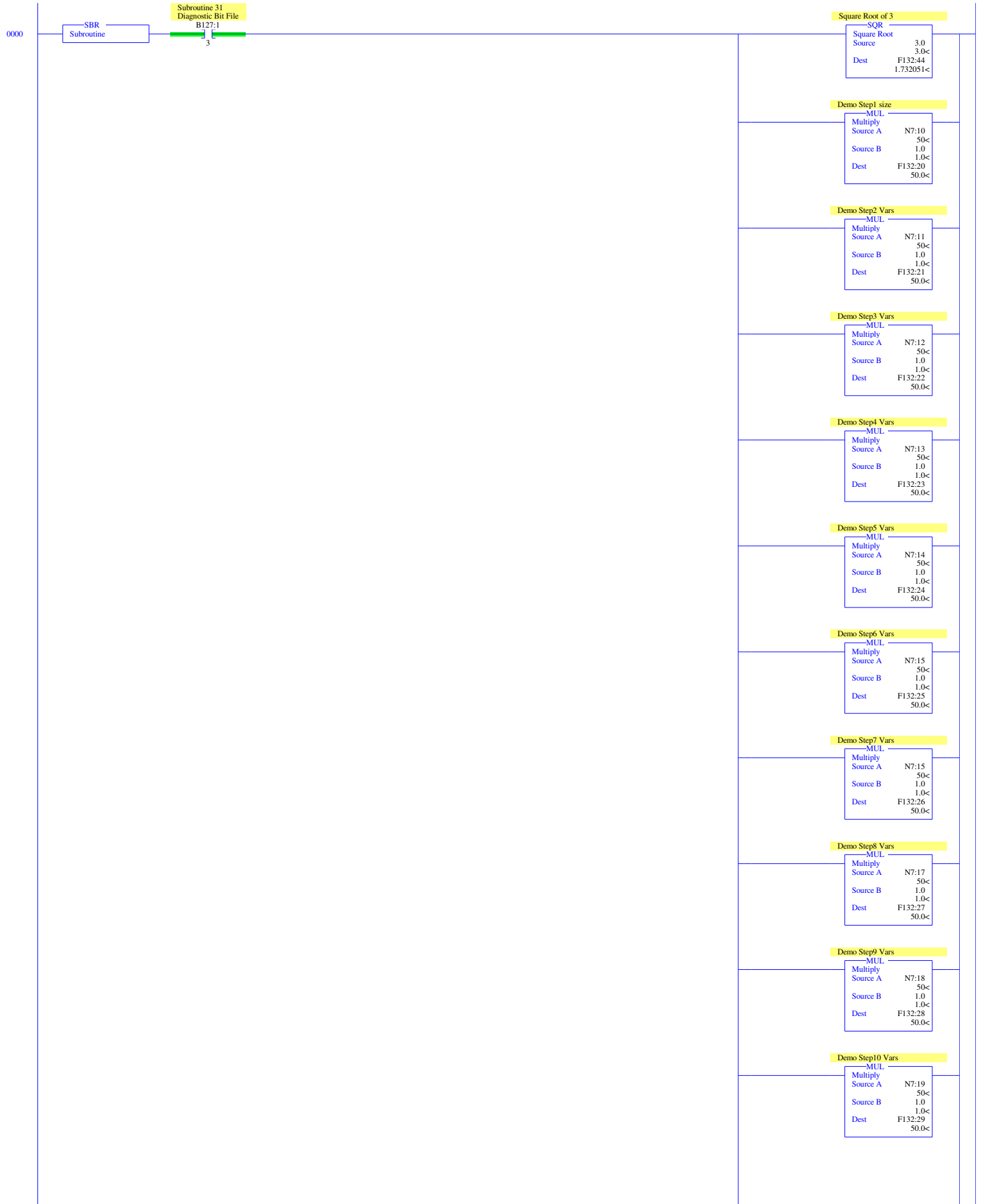


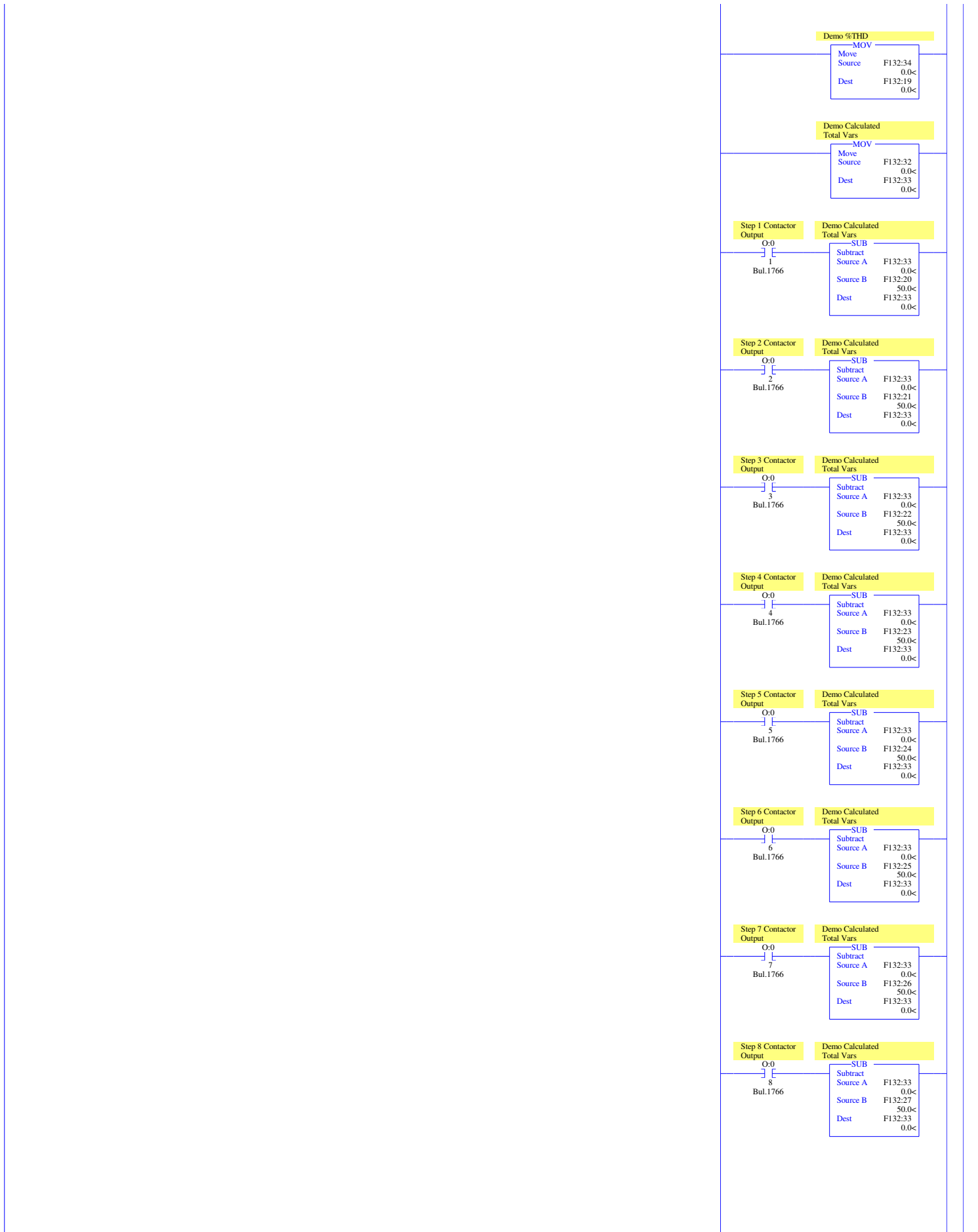
LAD 29 - INPUT - Disables steps based on discrete inputs. --- Total Rungs in File = 40





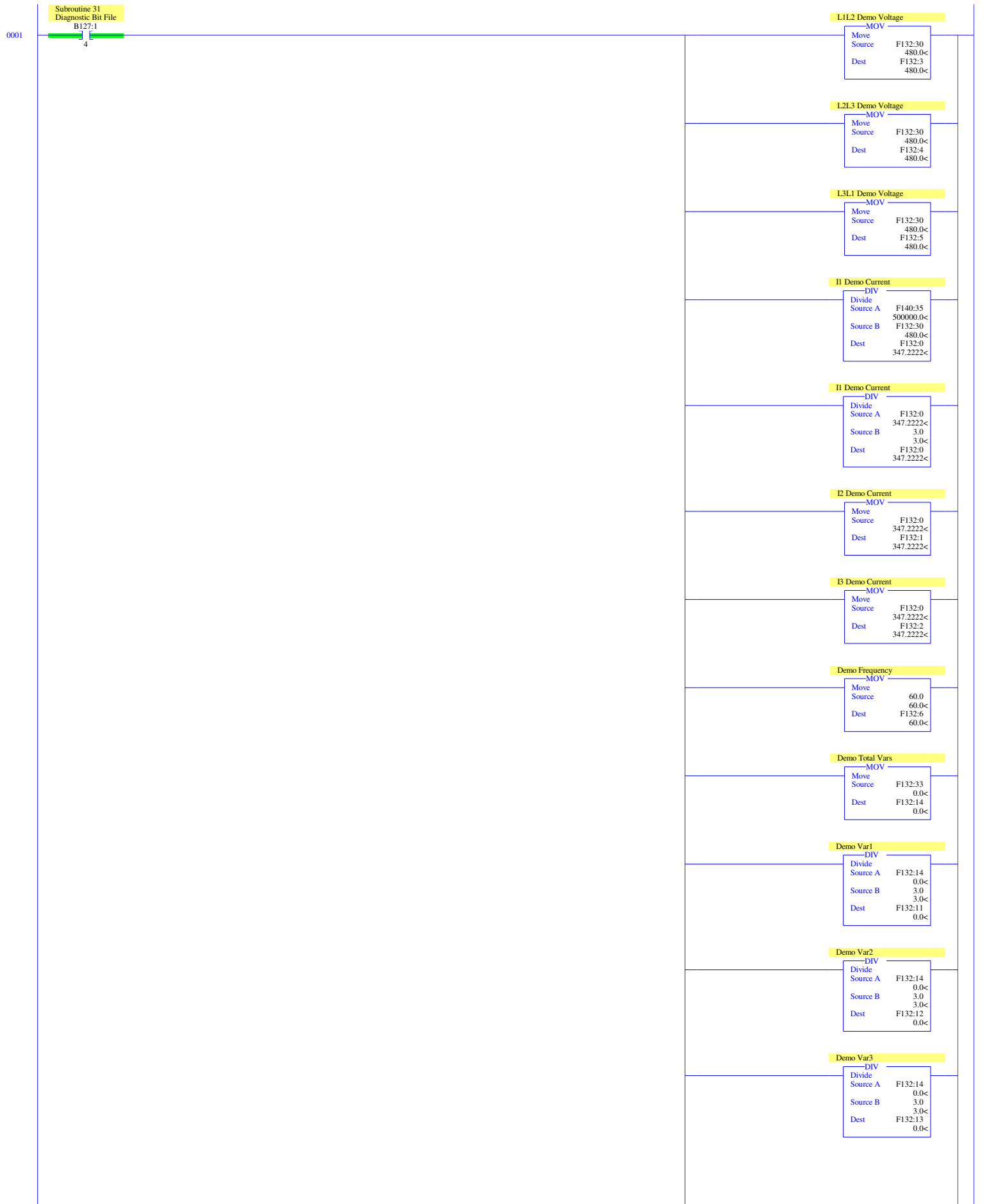
LAD 31 - DEMO_DATA - PM Data Tight Pack Communications --- Total Rungs in File = 7







LAD 31 - DEMO_DATA - PM Data Tight Pack Communications --- Total Rungs in File = 7



VA*VA

MUL	
Multiply	
Source A	F132:31
Source B	1000.0<
Dest	F132:31
	1000.0<
	F132:40
	1000000.0<

VAR*VAR

MUL	
Multiply	
Source A	F132:33
Source B	0.0<
Dest	F132:33
	0.0<
	F132:41
	0.0<

(Var*Var)/(VA*VA)

DIV	
Divide	
Source A	F132:41
Source B	0.0<
Dest	F132:40
	1000000.0<
	F132:42
	0.0<

1-((Var*Var)/(VA*VA))

SUB	
Subtract	
Source A	1.0
Source B	1.0<
Dest	F132:42
	0.0<
	F132:43
	1.0<

Demo Total PF

SQR	
Square Root	
Source	F132:43
Dest	1.0<
	F132:18
	-100.0<

for watts calculation

SQR	
Square Root	
Source	F132:43
Dest	1.0<
	F132:50
	1.0<

Demo Calculated
Total Vars

GEQ	
Grtr Than or Eql (A>=B)	
Source A	F132:33
Source B	0.0<
	0.0
	0.0<

Demo Total PF

MUL	
Multiply	
Source A	F132:18
Source B	-100.0<
Dest	-100.0
	-100.0<
	F132:18
	-100.0<

Demo Calculated
Total Vars

LES	
Less Than (A<B)	
Source A	F132:33
Source B	0.0<
	0.0
	0.0<

Demo Total PF

MUL	
Multiply	
Source A	F132:18
Source B	-100.0<
Dest	100.0
	100.0<
	F132:18
	-100.0<

Demo PF1

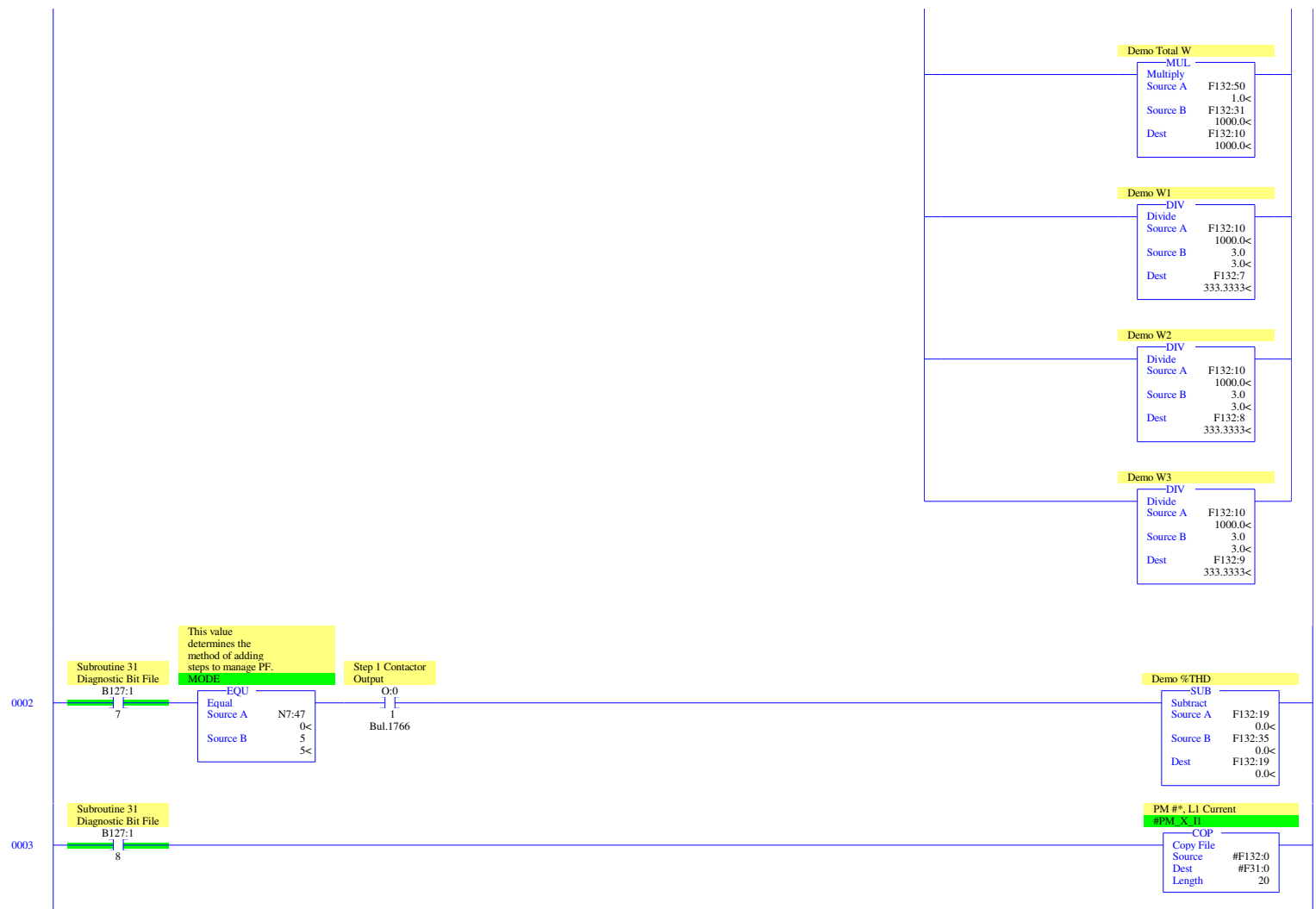
MOV	
Move	
Source	F132:18
Dest	-100.0<
	F132:15
	-100.0<

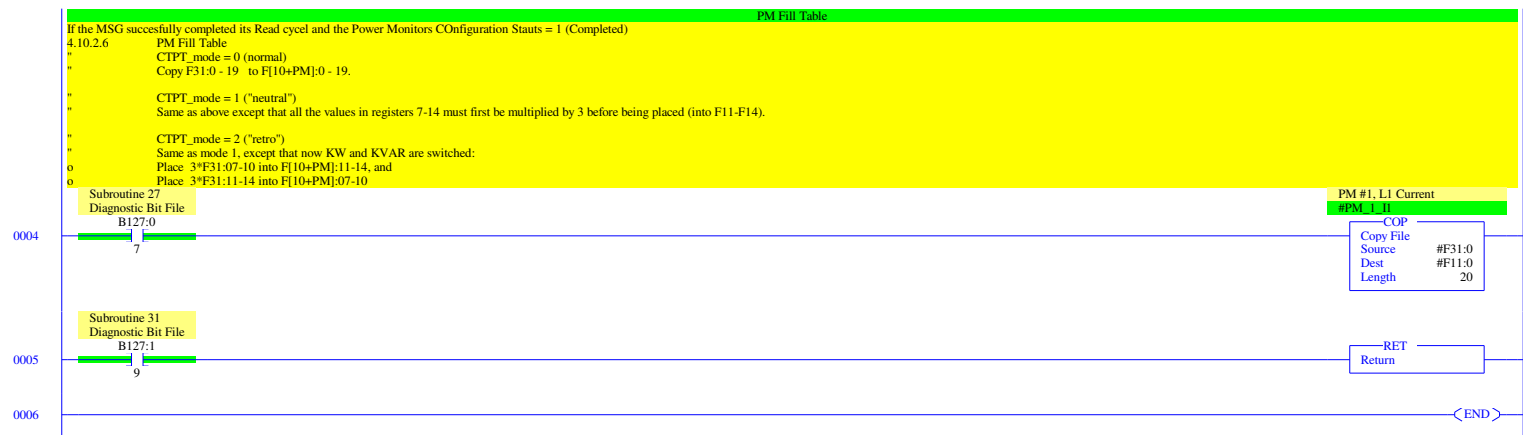
Demo PF2

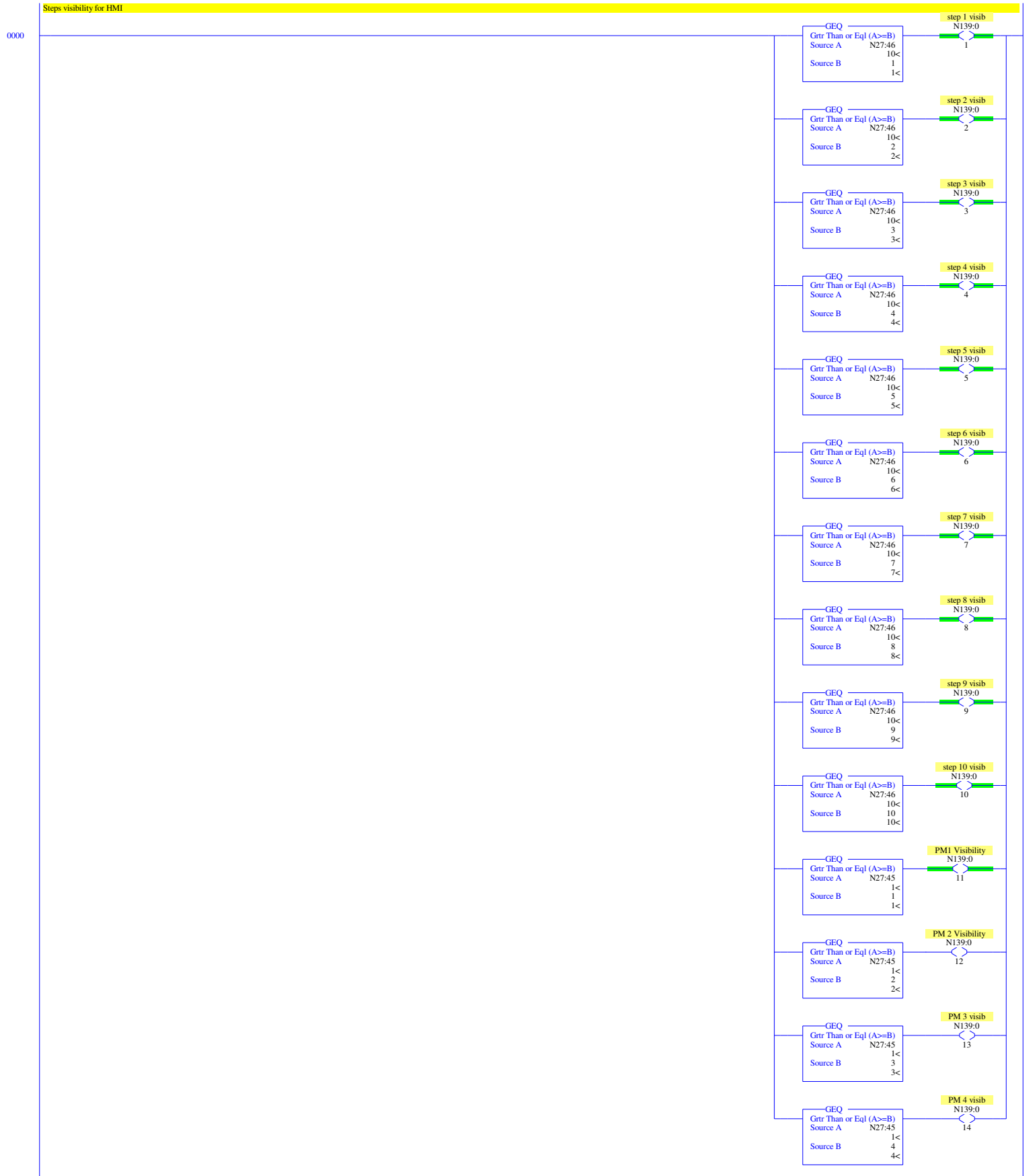
MOV	
Move	
Source	F132:18
Dest	-100.0<
	F132:16
	-100.0<

Demo PF3

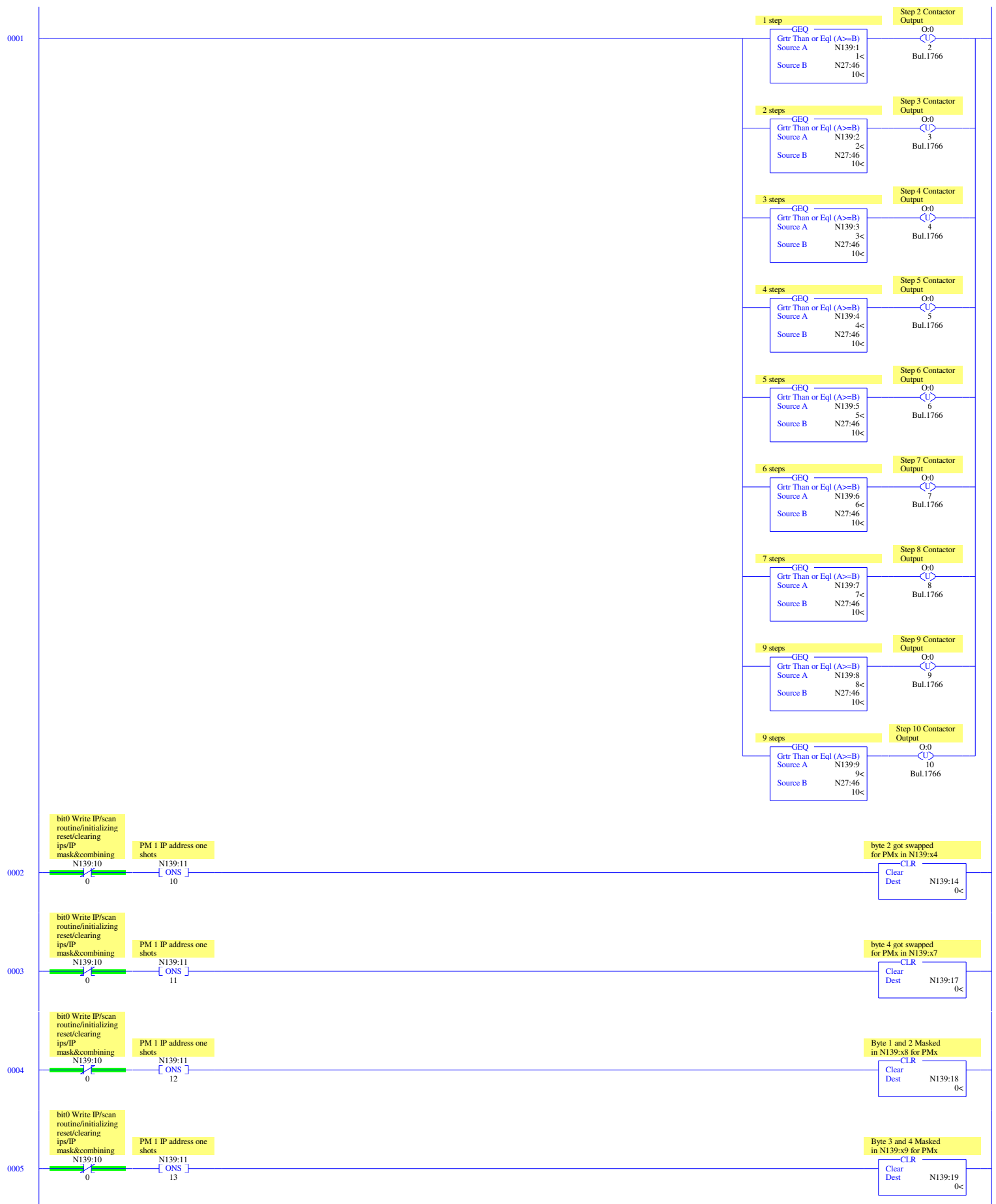
MOV	
Move	
Source	F132:18
Dest	-100.0<
	F132:17
	-100.0<

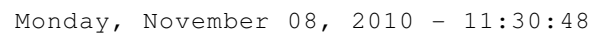






LAD 32 - CHMI_VISIB --- Total Rungs in File = 63







LAD 32 - CHMI_VISIB --- Total Rungs in File = 63



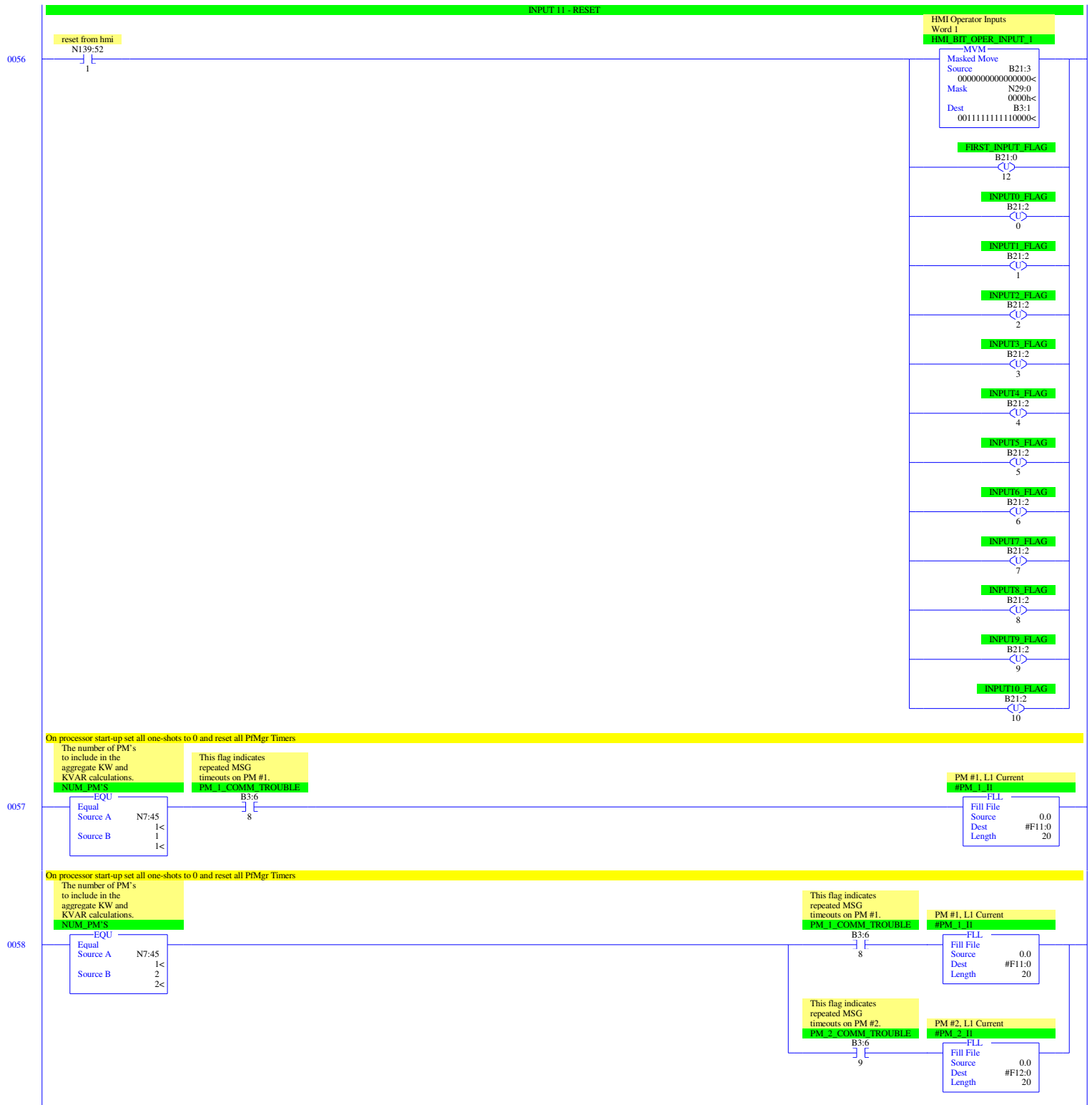
LAD 32 - CHMI_VISIB --- Total Rungs in File = 63



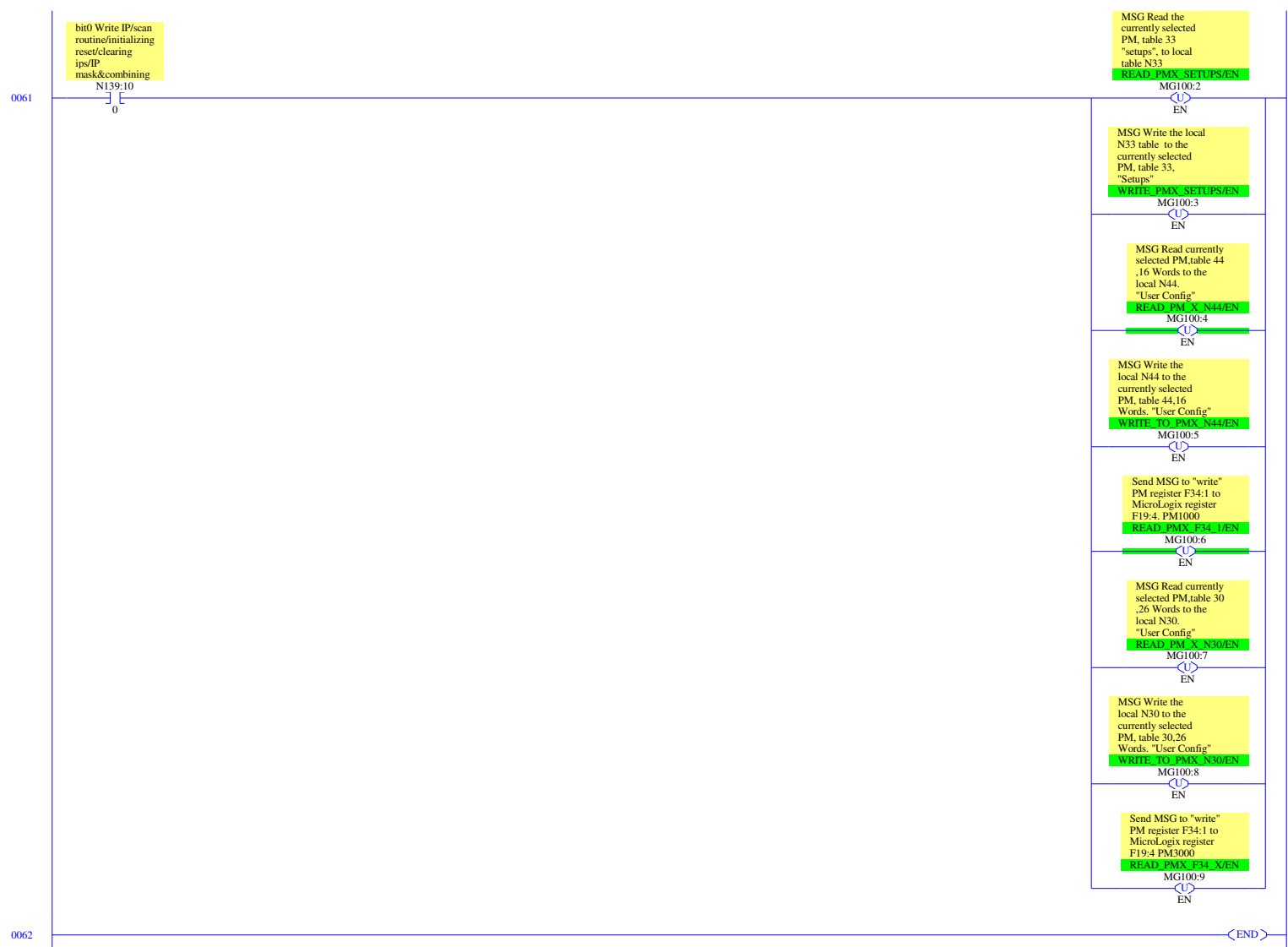
LAD 32 - CHMI_VISIB --- Total Rungs in File = 63











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	1	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	

Data File I1 (bin) -- INPUT

Offset	15	14	13	12	11	10	9	8	7	6	5	4	3	2	1	0				
I:0.0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	Bul.1766	MicroLogix	1400 Series A	
I:0.1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	Bul.1766	MicroLogix	1400 Series A	
I:0.2	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	Bul.1766	MicroLogix	1400 Series A	
I:0.3	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	Bul.1766	MicroLogix	1400 Series A	
I:0.4	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	Bul.1766	MicroLogix	1400 Series A	
I:0.5	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	Bul.1766	MicroLogix	1400 Series A	
I:0.6	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	Bul.1766	MicroLogix	1400 Series A	
I:0.7	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	Bul.1766	MicroLogix	1400 Series A	

Main

Processor Mode S:1/0 - S:1/4 = Remote Run
 On Power up Go To Run (Mode Behavior) S:1/12 = 1
 First Pass S:1/15 = No
 Free Running Clock S:4 = 0011-0000-1010-1110

Proc

OS Catalog Number S:57 = 1400 User Program Type S:63 = 9001h
 OS Series S:58 = A Compiler Revision Number S:64 =
 OS FRS S:59 =
 Processor Catalog Number S:60 =
 Processor Series S:61 = A
 Processor FRN S:62 =

Scan Times

Maximum (x10 ms) S:22 = 116
 Watchdog (x10 ms) S:3 (high byte) = 10
 Last 100 uSec Scan Time S:35 = 108
 Scan Toggle Bit S:33/9 = 0

Math

Math Overflow Selected S:2/14 = 0 Math Register (lo word) S:13 = 0
 Overflow Trap S:5/0 = 0 Math Register (high word) S:14-S:13 = 0
 Carry S:0/0 = 0 Math Register (32 Bit) S:14-S:13 = 0
 Overflow S:0/1 = 0
 Zero Bit S:0/2 = 1
 Sign Bit S:0/3 = 0

Chan 0

Processor Mode S:1/0- S:1/4 = Remote Run
 Node Address S:15 (low byte) = 0 Outgoing Msg Cmd Pending S:33/2 = 0
 Baud Rate S:15 (high byte) = ?
 Channel Mode S:33/3 = 0
 Comms Active S:33/4 = 0
 Incoming Cmd Pending S:33/0 = 0
 Msg Reply Pending S:33/1 = 0

Debug

Suspend Code S:7 = 0
 Suspend File S:8 = 0

Errors

Fault Override At Power Up S:1/8 = 0 Fault Routine S:29 = 3
 Startup Protection Fault S:1/9 = 0 Major Error S:6 = 0h
 Major Error Halt S:1/13 = 0
 Overflow Trap S:5/0 = 0 Error Description:
 Control Register Error S:5/2 = 0
 Major Error Executing User Fault Rtn. S:5/3 = 0
 Battery Low S:5/11 = 0
 Input Filter Selection Modified S:5/13 = 0
 ASCII String Manipulation error S:5/15 = 0

Protection

Deny Future Access S:1/14 = No
 Data File Overwrite Protection Lost S:36/10 = True

Mem Module

Memory Module Loaded On Boot S:5/8 = 0
Password Mismatch S:5/9 = 0
Load Memory Module On Memory Error S:1/10 = 1
Load Memory Module Always S:1/11 = 0
On Power up Go To Run (Mode Behavior) S:1/12 = 1
Program Compare S:2/9 = 0
Data File Overwrite Protection Lost S:36/10 = 1

Forces

Forces Enabled S:1/5 = Yes
Forces Installed S:1/6 = No

Data File B3 (bin) -- BINARY

Offset	15	14	13	12	11	10	9	8	7	6	5	4	3	2	1	0	(Symbol) Description
B3:0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	(HMI_BIT_OPER_INPUT_0) HMI Operator Inpu
B3:1	0	0	1	1	1	1	1	1	1	1	1	1	0	0	0	0	(HMI_BIT_OPER_INPUT_1) HMI Operator Inpu
B3:2	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	(HMI_BIT_OPER_INPUT_2) HMI Operator Inpu
B3:3	0	0	0	0	0	0	1	1	1	1	1	1	1	1	1	1	(DAT_PROTECTION_4) DAT B3: Protection Bi
B3:4	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	(DAT_PROTECTION_5) DAT B3: Protection Bi
B3:5	1	1	1	1	1	1	1	0	0	0	0	0	0	0	0	0	(DAT_PROTECTION_6) DAT B3: Protection Bi
B3:6	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
B3:7	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	(HMI_BIT_OPER_INPUT_7) HMI Operator Inpu

Offset	EN	TT	DN	BASE	PRE	ACC	(Symbol)	Description
T4:0	1	1	0	1.0 sec	100	0	(NET_ENI_CNFG_TIMER)	1761-NET-ENI Configuraion Timer (Us

Data File C5 -- COUNTER

Offset	CU	CD	DN	OV	UN	UA	PRE	ACC	(Symbol) Description
C5:0	1	0	1	0	0	0	0	5	(TRIALS_COUNTER) This counter is used to test a Step for
C5:1	1	0	0	0	0	0	0	5	(AUTO_DETECT_INDEX) counter holds number of step current
C5:2	0	0	0	0	0	0	6	0	(UNDEL_PAK_COUNT) Undelivered Packets Counter
C5:3	0	0	0	0	0	0	6	0	(NAK_PAK_COUNT) NAK Packets Counter
C5:4	0	0	0	0	0	0	32	0	(PM_COMM_ERROR_COUNTER) Power Monitor Communications Error
C5:5	0	0	0	0	0	0	2	0	(PM_CNFG_RTRY_COUNTER) Power Monitor Configuration Retry
C5:6	0	0	0	0	0	0	4	1	(NET_ENI_SEQUENCER) Auto Configure 1761-NET-ENI Sequence
C5:7	0	0	0	0	0	0	0	0	
C5:8	0	0	0	0	0	0	0	0	
C5:9	0	0	0	0	0	0	0	0	
C5:10	0	0	0	0	0	0	2	0	(READ_PMX_CNT_1) Read PM# Error Counter No.1
C5:11	0	0	0	0	0	0	32766	0	(STEP_1_OPER_COUNT) Step 1 Operations Counter
C5:12	0	0	0	0	0	0	32766	0	(STEP_2_OPER_COUNT) Step 2 Operations Counter
C5:13	0	0	0	0	0	0	32766	0	(STEP_3_OPER_COUNT) Step 3 Operations Counter
C5:14	0	0	0	0	0	0	32766	0	(STEP_4_OPER_COUNT) Step 4 Operations Counter
C5:15	0	0	0	0	0	0	32766	0	(STEP_5_OPER_COUNT) Step 5 Operations Counter
C5:16	0	0	0	0	0	0	32766	0	(STEP_6_OPER_COUNT) Step 6 Operations Counter
C5:17	0	0	0	0	0	0	32766	0	(STEP_7_OPER_COUNT) Step 7 Operations Counter
C5:18	0	0	0	0	0	0	32766	0	(STEP_8_OPER_COUNT) Step 8 Operations Counter
C5:19	0	0	0	0	0	0	32766	0	(STEP_9_OPER_COUNT) Step 9 Operations Counter
C5:20	0	0	0	0	0	0	32766	0	(STEP_10_OPER_COUNT) Step 10 Operations Counter

Offset	EN	EU	DN	EM	ER	UL	IN	FD	LEN	POS	(Symbol)	Description
R6:0	0	0	0	1	0	0	0	0	10	0		
R6:1	0	0	0	0	0	0	0	0	1	0		

Data File N7 (dec) -- STEPSIZES -- Measured & Averaged Step Sizes

Offset	0	1	2	3	4	5	6	7	8	9
N7:0	50	50	50	50	50	50	50	50	50	50
N7:10	50	50	50	50	50	50	50	50	50	50
N7:20	0	0	0	0	0	0	0	0	0	0
N7:30	60	480	5	3	20	35	5	60	60	30
N7:40	30	30	30	0	30	1	10	0	1023	0
N7:50	0	1000	0	10	176	504	1	0	0	10
N7:60	0	60	0	0						

Data File F8 -- PWRVARIABL -- Measured Power Variables

Offset	0	1	2	3	4
F8:0	-89.93778	656.1429	318.9399	656.1429	0
F8:5	0	0	318.9399	0	0
F8:10	0	-89.93778	0	0	0
F8:15	505.5475	3.082207	0	504	456
F8:20	480				

Data File B9 (bin) -- FACT_BIN

Offset	15	14	13	12	11	10	9	8	7	6	5	4	3	2	1	0	(Symbol)	Description
B9:0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0		
B9:1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0		
B9:2	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0		
B9:3	0	0	0	0	0	0	1	1	1	1	1	1	1	1	1	1		
B9:4	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0		
B9:5	1	1	1	1	1	1	1	0	0	0	0	0	0	0	0	0		
B9:6	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0		
B9:7	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0		

Data File N10 (dec) -- FACT_STEP

Offset	0	1	2	3	4	5	6	7	8	9
N10:0	50	50	100	100	100	100	100	100	100	100
N10:10	50	50	100	100	100	100	100	100	100	100
N10:20	0	0	0	0	0	0	0	0	0	0
N10:30	100	480	5	3	20	35	5	60	60	30
N10:40	120	120	120	65	30	1	4	0	1023	0
N10:50	0	1000	0	10	0	504	1	0	0	5
N10:60	0	60	0	0						

Data File F11 -- PM_1_DATA -- PM Node 101 Compiled Data

Offset	0	1	2	3	4
F11:0	863.9943	865.4381	861.8992	506.89	504.8747
F11:5	504.8778	60.01597	218.7447	218.6885	218.7097
F11:10	656.1429	106.29	106.346	106.304	318.9399
F11:15	-89.94394	-89.93047	-89.93892	-89.93778	0

	Data File F12	--	PM_2_DATA	--	PM Node 102	Compiled Data
--	---------------	----	-----------	----	-------------	---------------

Offset	0		1		2		3		4
F12:0	0		0		0		0		0
F12:5	0		0		0		0		0
F12:10	0		0		0		0		0
F12:15	0		0		0		0		0

	Data File F13	--	PM_3_DATA	--	PM Node 103	Compiled Data
--	---------------	----	-----------	----	-------------	---------------

Offset	0		1		2		3		4
F13:0	0		0		0		0		0
F13:5	0		0		0		0		0
F13:10	0		0		0		0		0
F13:15	0		0		0		0		0

	Data File F14	--	PM_4_DATA	--	PM Node 104	Compiled Data
--	---------------	----	-----------	----	-------------	---------------

Offset	0		1		2		3		4
F14:0	0		0		0		0		0
F14:5	0		0		0		0		0
F14:10	0		0		0		0		0
F14:15	0		0		0		0		0

	Data	File	F15	--	PMTABLEF15	--	PM#	Data	Table	F15
--	------	------	-----	----	------------	----	-----	------	-------	-----

Offset	0		1		2		3		4
F15:0	0		0		0		0		0
F15:5	0		0		0		0		0
F15:10	0		0		0				

Data File F16 -- PMFLOATS16

Offset	0	1	2	3	4
F16:0	0	0	0	0	0
F16:5	0	0	0	0	0
F16:10	0	0	0		

	Data	File	F17	--	PMTABLEF17	--	PM#	Data	Table	F17
--	------	------	-----	----	------------	----	-----	------	-------	-----

Offset	0		1		2		3		4
F17:0	0		0		0		0		0
F17:5	0		0		0		0		0
F17:10	0		0		0				

Data File F18 -- PMFLOATS18

Offset	0	1	2	3	4
F18:0	0	0	0	0	0
F18:5	0	0	0	0	0
F18:10	0	0	0		

	Data	File	F19	--	PMTABLEF19	--	PM#	Data	Table	F19
--	------	------	-----	----	------------	----	-----	------	-------	-----

Offset	0		1		2		3		4
F19:0	0		0		0		0		0
F19:5	0		0		0		0		0
F19:10	0		0		0				

Data File N20 (dec) -- NET_ENI -- 1761-Net-Eni TCP/IP Configuration Parameters										
Offset	0	1	2	3	4	5	6	7	8	9
N20:0	192	168	0	100	1	0	0	0	0	0
N20:10	192	168	0	100						

Data File B21 (bin) -- INPUT

Offset	15	14	13	12	11	10	9	8	7	6	5	4	3	2	1	0	(Symbol)	Description
B21:0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0		
B21:1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0		
B21:2	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0		
B21:3	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0		
B21:4	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0		
B21:5	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0		
B21:6	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0		
B21:7	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0		
B21:8	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0		
B21:9	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0		

Data File B22 (bin) -- OFFICIAL B -- "Official" Bits

Offset	15	14	13	12	11	10	9	8	7	6	5	4	3	2	1	0	(Symbol) Description
B22:0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	(OFFICIAL_BIT) "Official" Bit Image Tabl
B22:1	0	0	0	0	0	0	0	1	1	1	1	1	0	0	0	0	
B22:2	0	0	0	1	0	0	1	0	0	0	0	0	0	0	0	0	
B22:3	0	0	0	0	0	0	1	1	1	1	1	1	1	1	1	1	
B22:4	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
B22:5	1	1	1	1	1	1	1	0	0	0	0	0	0	0	0	0	
B22:6	0	0	0	0	0	0	0	0	0	1	0	0	0	1	0	1	
B22:7	0	0	0	0	1	1	1	1	1	1	1	1	1	1	0	0	

Data File B23 (bin) -- HMI IMAGEB -- HMI Image Bits

Offset	15	14	13	12	11	10	9	8	7	6	5	4	3	2	1	0	(Symbol) Description
B23:0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	(HMI_BIT) "HMI" Bit Image Table
B23:1	0	0	1	1	1	1	1	1	1	1	1	1	0	0	0	0	
B23:2	0	0	0	1	0	0	1	0	0	0	0	0	0	0	0	0	
B23:3	0	0	0	0	0	0	1	1	1	1	1	1	1	1	1	1	
B23:4	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
B23:5	1	1	1	1	1	1	1	0	0	0	0	0	0	0	0	0	
B23:6	0	0	0	0	0	0	0	0	0	1	0	0	0	1	0	1	
B23:7	0	0	0	0	1	1	1	1	1	1	1	1	1	1	0	0	

Data File T24 -- HMI IMAGET -- HMI Image Timers

Offset	EN	TT	DN	BASE	PRE	ACC	(Symbol)	Description
T24:0	0	0	0	.01 sec	0	0		

Data File N25 (dec) -- OFICIAL I -- "Official" Integers

Offset	0	1	2	3	4	5	6	7	8	9
N25:0	50	50	50	50	50	50	50	50	50	50
N25:10	50	50	50	50	50	50	50	50	50	50
N25:20	0	0	0	0	0	0	0	0	0	0
N25:30	60	480	5	3	20	35	5	60	60	30
N25:40	30	30	30	0	30	1	10	0	1023	0
N25:50	0	1000	0	10	175	504	1	0	0	10
N25:60	0	60	0	0						

Data File F26 -- OFFICIAL F -- "Official" Floats

Offset	0	1	2	3	4
F26:0	-89.9333	656.0397	318.973	656.0397	0
F26:5	0	0	318.973	0	0
F26:10	0	-89.9333	0	0	0
F26:15	505.5626	2.12132	0	504	456
F26:20	480				

Data File N27 (dec) -- HMI IMAGEI -- HMI Image Integers

Offset	0	1	2	3	4	5	6	7	8	9
N27:0	50	50	50	50	50	50	50	50	50	50
N27:10	50	50	50	50	50	50	50	50	50	50
N27:20	0	0	0	0	0	0	0	0	0	0
N27:30	60	480	5	3	20	35	5	60	60	30
N27:40	30	30	30	0	30	1	10	0	1023	0
N27:50	0	1000	0	10	175	504	1	0	0	10
N27:60	0	60	0	0						

Data File F28 -- HMI IMAGEF -- HMI Image Floats

Offset	0	1	2	3	4
F28:0	-89.9333	656.0397	318.973	656.0397	0
F28:5	0	0	318.973	0	0
F28:10	0	-89.9333	0	0	0
F28:15	505.5626	2.12132	0	504	456
F28:20	480				

Data File N29 (dec) -- INPUT

Offset	0	1	2	3	4	5	6	7	8	9
N29:0	0	0	0	0	0					

Data File N30 (dec) -- USER_CONFIG -- Power Monitor File N:30

Offset	0	1	2	3	4	5	6	7	8	9
N30:0	0	0	0	29	30	31	37	38	39	41
N30:10	49	50	51	52	53	54	55	56	48	109
N30:20	110	111	296	0	0	0				

Data File F31 -- PMDATA_BUF -- Power Monitor Data Buffer (Floats)

Offset	0	1	2	3	4
F31:0	863.4822	865.0832	862.4013	506.8462	504.6686
F31:5	505.2606	60.02887	218.6153	218.643	218.6082
F31:10	655.8665	106.2581	106.321	106.272	318.8511
F31:15	-89.93893	-89.93093	-89.93612	-89.93532	0
F31:20	0	0	0	0	0
F31:25	0	0	0	0	0
F31:30	0	0	0	0	0
F31:35	0	0	0	0	0
F31:40	0	0	0	0	0
F31:45	0				

Data File N33 (dec) -- PM_SETUP

Offset	0	1	2	3	4	5	6	7	8	9
N33:0	0	8	1	1	1	0	0	0	0	

Data File F34 -- PMFLOATS34

Offset	0	1	2	3	4
F34:0	0	0	0	0	0
F34:5	0	0	0	0	0
F34:10	0	0	0		

Data File B40 (bin)	--	COMM_ERROR	--	Flag indicates excessive NAKs and undelivered MSGs
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Offset	15	14	13	12	11	10	9	8	7	6	5	4	3	2	1	0	(Symbol)	Description
--------	----	----	----	----	----	----	---	---	---	---	---	---	---	---	---	---	----------	-------------

B40:0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	1	0		
-------	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	--	--

Data File T41 -- COMM_TIMER -- Communications Timers

Offset	EN	TT	DN	BASE	PRE	ACC	(Symbol)	Description
T41:0	1	1	0	.01 sec	50	12	(HMI_REFRESH_TIMER)	Frequency of HMI screen data refresh
T41:1	0	0	0	1.0 sec	10	0	(COMM_ERROR_TIMER)	Time to allow a Comm_Error to display
T41:2	0	0	0	1.0 sec	60	0	(PF_NOT_ACHIEVE_TMR)	Power Factor Not Achieved Timer

	Data	File	N42	(dec)	--	PMCOMMDATA	--	Power	Monitor	Comm	Data	Flags
--	------	------	-----	-------	----	------------	----	-------	---------	------	------	-------

Offset	0	1	2	3	4	5	6	7	8	9
N42:0	101	102	102	104	13	14	12	116	12	18
N42:10	0	0	101	361	0	0	0	0	2	2

	Data	File	F43	--	PLC	MOD_FL	--	PLC	Module	Floats
--	------	------	-----	----	-----	--------	----	-----	--------	--------

Offset	0		1		2		3		4
F43:0	0								

Data File B44 (bin) -- COMM_MGR_B -- CommMgr Bits

Offset	15	14	13	12	11	10	9	8	7	6	5	4	3	2	1	0	(Symbol)	Description
B44:0	0	0	0	0	0	0	0	1	0	0	0	1	1	0	0	0	(COMMMGRB)	Clear All One SHots in CommMg
B44:1	0	0	0	0	0	1	0	0	1	0	1	0	0	0	1	0		

Data File T45 -- PM TIMERS -- Power Monitor Communications Timers

Offset	EN	TT	DN	BASE	PRE	ACC	(Symbol) Description
T45:0	1	1	0	.001 sec	20000	103	(PM_READ_TIMER) PM Read Cycle Timer (Measures the amount
T45:1	0	0	0	1.0 sec	20	0	(PM_1_COMM_RTRY_DELAY) Power Monitor #1 Comm Retry Delay
T45:2	0	0	0	1.0 sec	20	0	(PM_2_COMM_RTRY_DELAY) Power Monitor #2 Comm Retry Delay
T45:3	0	0	0	1.0 sec	20	0	(PM_3_COMM_RTRY_DELAY) Power Monitor #3 Comm Retry Delay
T45:4	0	0	0	1.0 sec	20	0	(PM_4_COMM_RTRY_DELAY) Power Monitor #4 Comm Retry Delay
T45:5	1	1	0	.01 sec	1000	10	(PM_TP_BT_RD_TO_TMR) Power Monitor Tight Pack Block Tran
T45:6	0	0	0	.01 sec	300	0	(PM_CNFG_BTR_TO_TMR) Power Monitor Config Block Transfer
T45:7	0	0	0	.01 sec	300	0	(PM_CNFG_BTW_TO_TMR) Power Monitor Config Block Transfer
T45:8	1	1	0	1.0 sec	21600	36	(PM_CONFIG_TIMER) Power Monitor Standard Cycle Configura
T45:9	0	0	0	.01 sec	5000	0	(PM_USER_BTR_TO_TMR) Power Monitor User Config Block Tra
T45:10	0	0	0	.01 sec	5000	0	(PM_USER_BTW_TO_TMR) Power Monitor User Config Block Tra
T45:11	0	0	0	1.0 sec	300	0	(PM_CONFIG_ALM_TIMER) PM failed Configuration Cycle Time
T45:12	0	0	0	.01 sec	1000	0	(UC_WRITE_DELAY_TIMER) PM # Write User Cnfg Delay Timer(

	Data	File	N46	(dec)	--	COMMGR	IN	--	CommMgr	Ints
--	------	------	-----	-------	----	--------	----	----	---------	------

Offset	0	1	2	3	4	5	6	7	8	9
N46:0	195	0	0	0	0	0	0	0	1	32
N46:10	11	0	1	0	16	1	1	1	1	1
N46:20	0	16	1							

Data File F47 -- COMMGR FL -- CommMgr Floats

Offset	0	1	2	3	4
F47:0	0	0	0	0	0
F47:5	0	0	136.6718	136.6833	136.6483
F47:10	410.0034	-66.4325	-66.4442	-66.46167	-199.3384
F47:15	0	0	0	0	1.732051

Data File B48 (bin) -- BUS_BIT -- Bus Bit File

Offset	15	14	13	12	11	10	9	8	7	6	5	4	3	2	1	0	(Symbol)	Description
B48:0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0		

Data File T49 -- LIMITTIMER -- Limit & Range Timers

Offset	EN	TT	DN	BASE	PRE	ACC	(Symbol)	Description
T49:0	0	0	0	1.0 sec	30	0	(HIGH_LIMIT_TIMER)	Time to wait after BusVolts falls bel
T49:1	1	0	1	1.0 sec	30	30	(LOW_LIMIT_TIMER)	Time to wait after BusVolts exceeds Lc
T49:2	0	0	0	1.0 sec	30	0	(IN_RANGE_TIMER)	Time to wait before setting VoltageOK f
T49:3	0	0	0	1.0 sec	60	0	(%THD_ABOVE_TIMER)	Time to wait after all steps are clos
T49:4	1	1	0	1.0 sec	60	36	(%THD_BELOW_TIMER)	Time to wait after all steps are clos

	Data	File	N50	(dec)	--	BUS	INT	--	Bus	Integer	Data	Table
--	------	------	-----	-------	----	-----	-----	----	-----	---------	------	-------

Offset	0	1	2	3	4	5	6	7	8	9
N50:0	2400	24	2							

	Data	File	F51	--	BUS_FLT	--	Bus	Float	File
--	------	------	-----	----	---------	----	-----	-------	------

Offset	0	1	2	3	4
F51:0	1012.075	1517.49	2400	24	2

Data File B52 (bin) -- LOADCALC B -- LoadCalc Bits

Offset	15	14	13	12	11	10	9	8	7	6	5	4	3	2	1	0	(Symbol)	Description
B52:0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0		

Data File T53 -- UNBALTIMER -- Time to wait before alarming and resetting flags

Offset	EN	TT	DN	BASE	PRE	ACC	(Symbol)	Description
T53:0	0	0	0	1.0 sec	30	0	(UNBALANCED_TIMER)	Time to wait before alarming and rese

	Data	File	N54	(dec)	--	LOADCALCIN	--	LoadCalc	Integers
--	------	------	-----	-------	----	------------	----	----------	----------

Offset	0	1	2	3	4	5	6	7	8	9
N54:0	1	11	0	8						

Data File F55 -- LSTNETKVAR -- Holds the last measured BusNetKvar value

Offset	0	1	2	3	4
F55:0	746709.3	748655	742748.4	1495364	2238113
F55:5	747681.5	745695.9	744726.3	1493377	2238104
F55:10	9.25	430167.5	101698.5	531866	729.2914
F55:15	1	990001	65587.16	99498.74	400
F55:20	318.902	994.9879	656.1765	430567.5	318.902
F55:25	99.95354	0.8993272	0	0	0
F55:30	0	0	0	0	0
F55:35	0	0	0	0	0
F55:40	0				

Data File B56 (bin) -- STEP_CNTRL -- Initiates release of the step in TripStepNum																	
Offset	15	14	13	12	11	10	9	8	7	6	5	4	3	2	1	0	(Symbol) Description
B56:0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	

Data File T57 -- SEQUENCE T -- Sequencer Timers

Offset	EN	TT	DN	BASE	PRE	ACC	(Symbol)	Description
T57:0	0	0	0	.01 sec	0	0		

Data File N58 (dec)	--	STEP_NUM	--	Holds the number of the step to release & activate						
Offset	0	1	2	3	4	5	6	7	8	9
N58:0	6	2	3	50	3	50	51	1	22	2
N58:10	13	22	2							

	Data File F59	--	SEQUENCE F	--	Sequencer Floats
--	---------------	----	------------	----	------------------

Offset	0	1	2	3	4
F59:0	0				

Data File B60 (bin) -- BALANCER B -- Balancer Bits

Offset	15	14	13	12	11	10	9	8	7	6	5	4	3	2	1	0	(Symbol)	Description
B60:0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0		

Data File T61 -- BALANCER T -- Balancer Timers

Offset	EN	TT	DN	BASE	PRE	ACC	(Symbol)	Description
T61:0	0	0	0	.01 sec	0	0		

Data File N62 (dec) -- OPERATIONS -- Holds the step numbers with the # of operations

Offset	0	1	2	3	4	5	6	7	8	9
N62:0	2	1	0	0	0	0	0	0	0	0
N62:10	0	0	0	0	0	0	0	0	0	0
N62:20	1	2	1	5	4	3	2	4	3	2
N62:30	21	2	21	53	82	15745	2	2	15365	21
N62:40	12	2								

	Data File F63	--	BALANCER F	--	Balancer Floats
--	---------------	----	------------	----	-----------------

Offset	0		1		2		3		4
F63:0	0								

Data File B64 (bin) -- STEP_CMND -- Step Command Bits

Offset	15	14	13	12	11	10	9	8	7	6	5	4	3	2	1	0	(Symbol)	Description
B64:0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0		
B64:1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0		
B64:2	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0		
B64:3	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0		
B64:4	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0		
B64:5	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	1	0	Balancer Bubble Sort Step Sorted Checked
B64:6	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0		Balancer Step Sorted Checked Bits word 2

Data File T65 -- CAPSIZE -- Used in AutoDetectCapSize to separate the steps.

Offset	EN	TT	DN	BASE	PRE	ACC	(Symbol)	Description
T65:0	0	0	0	1.0 sec	30	0	(SPACER_TIMER)	Used in AutoDetectCapSize to separate the
T65:1	0	0	0	1.0 sec	31	0	(CLOSE_TIMER)	Used in AutoDetectCapSize to hold the step
T65:2	0	0	0	1.0 sec	301	0	(AUT_CNFG_DISCH_TIM)	Auto Configure Mode Capacitor Disch

	Data	File	N66	(dec)	--	STEPSTATUS	--	Holds	the	step	status	bits
--	------	------	-----	-------	----	------------	----	-------	-----	------	--------	------

Offset	0	1	2	3	4	5	6	7	8	9
N66:0	0	-2	1	23	53	13	29	39	3	19
N66:10	9	29	19	57	20	3	1	24		

Data File F67 -- RINGBUFFER -- Ring Buffers 0-9 are pointers, 10-109 are values.

Offset	0	1	2	3	4
F67:0	50	50	100	100	100
F67:5	100	100	100	100	100
F67:10	50	50	50	50	50
F67:15	0.0418396	50	50	50	50
F67:20	0.02362061	0.03744507	50	50	50
F67:25	50	50	50	50	50
F67:30	0	100	100	100	100
F67:35	100	100	100	100	100
F67:40	100	100	100	100	100
F67:45	0.009460449	100	100	100	100
F67:50	0.05104065	0.03189087	100	100	100
F67:55	100	100	100	100	100
F67:60	0.08204651	100	100	100	100
F67:65	100	100	100	100	100
F67:70	100	100	100	100	100
F67:75	100	100	100	100	100
F67:80	0.1243896	100	100	100	100
F67:85	100	100	100	100	100
F67:90	0	0.08476257	0.07171631	100	100
F67:95	100	100	100	100	100
F67:100	0	100	100	100	100
F67:105	0.01631165	0.04867554	100	100	100
F67:110	0	450.0418	400.0611	900	900.0095
F67:115	800.0829	900.082	1000	900.1244	700.1565
F67:120	700.0649	45.00418	40.00611	90	90.00095
F67:125	80.00829	90.0082	100	90.01244	70.01565
F67:130	70.00649				

Data File B68 (bin) -- CMND_FLAGS -- Contactor Object Flags

Offset	15	14	13	12	11	10	9	8	7	6	5	4	3	2	1	0	(Symbol)	Description
B68:0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0		
B68:1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0		
B68:2	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0		
B68:3	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0		
B68:4	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0		
B68:5	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0		
B68:6	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0		

Data File T69 -- STEPTIMERS -- Time to wait for the KVAR to change after changing

Offset	EN	TT	DN	BASE	PRE	ACC	(Symbol)	Description
T69:0	0	0	0	.01 sec	3000	0	((UNUSED))	
T69:1	0	0	0	.01 sec	3000	0	(STEP_1_KVAR_TOL_TMR)	Time to wait for the KVAR to chang
T69:2	0	0	0	.01 sec	3000	0	(STEP_2_KVAR_TOL_TMR)	Time to wait for the KVAR to chang
T69:3	0	0	0	.01 sec	3000	0	(STEP_3_KVAR_TOL_TMR)	Time to wait for the KVAR to chang
T69:4	0	0	0	.01 sec	3000	0	(STEP_4_KVAR_TOL_TMR)	Time to wait for the KVAR to chang
T69:5	0	0	0	.01 sec	3000	0	(STEP_5_KVAR_TOL_TMR)	Time to wait for the KVAR to chang
T69:6	0	0	0	.01 sec	3000	0	(STEP_6_KVAR_TOL_TMR)	Time to wait for the KVAR to chang
T69:7	0	0	0	.01 sec	3000	0	(STEP_7_KVAR_TOL_TMR)	Time to wait for the KVAR to chang
T69:8	0	0	0	.01 sec	3000	0	(STEP_8_KVAR_TOL_TMR)	Time to wait for the KVAR to chang
T69:9	0	0	0	.01 sec	3000	0	(STEP_9_KVAR_TOL_TMR)	Time to wait for the KVAR to chang
T69:10	0	0	0	.01 sec	3000	0	(STEP_10_KVAR_TOL_TMR)	Time to wait for the KVAR to chan
T69:11	1	1	0	1.0 sec	60	37	(STEP_1_CAP_DSCHG_TMR)	Register holds the length of time
T69:12	1	1	0	1.0 sec	60	37	(STEP_2_CAP_DSCHG_TMR)	Register holds the length of time
T69:13	1	1	0	1.0 sec	60	37	(STEP_3_CAP_DSCHG_TMR)	Register holds the length of time
T69:14	1	1	0	1.0 sec	60	37	(STEP_4_CAP_DSCHG_TMR)	Register holds the length of time
T69:15	1	1	0	1.0 sec	60	37	(STEP_5_CAP_DSCHG_TMR)	Register holds the length of time
T69:16	1	1	0	1.0 sec	60	37	(STEP_6_CAP_DSCHG_TMR)	Register holds the length of time
T69:17	1	1	0	1.0 sec	60	37	(STEP_7_CAP_DSCHG_TMR)	Register holds the length of time
T69:18	1	1	0	1.0 sec	60	37	(STEP_8_CAP_DSCHG_TMR)	Register holds the length of time
T69:19	1	1	0	1.0 sec	60	37	(STEP_9_CAP_DSCHG_TMR)	Register holds the length of time
T69:20	1	1	0	1.0 sec	60	37	(STEP10_CAP_DSCHG_TMR)	Register holds the length of time

Data File N70 (dec) -- POINTERS

Offset	0	1	2	3	4	5	6	7	8	9
N70:0	0	6	2	1	6	2	1	3000	1	3
N70:10	7	106	9	10	19	9	59	111	121	10
N70:20	250	9	5	-400	5	10	15	113	123	7
N70:30	20	0	0							

Data File F71 -- STEPSIZES -- Measured and averaged KVAR of the capacitor elemnt

Offset	0	1	2	3	4
F71:0	2.5	0	0.05	0	0
F71:5	0	0	0	0	0
F71:10	0	0	0	0	0
F71:15	0	0	0	0	0
F71:20	45.00418	47.5			

Data File B72 (bin) -- USER_TRIP -- User Trip_Close Commands

Offset	15	14	13	12	11	10	9	8	7	6	5	4	3	2	1	0	(Symbol)	Description
B72:0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0		
B72:1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0		
B72:2	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0		
B72:3	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0	0		
B72:4	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0		

Offset	EN	TT	DN	BASE	PRE	ACC	(Symbol)	Description
T73:0	0	0	0	.01 sec	0	0		

Data File N74 (dec) -- OPERCOUNT -- This register holds the number of trip operations

Offset	0	1	2	3	4	5	6	7	8	9
N74:0	0	0	0	0	0	0	0	0	0	0
N74:10	0	0	0	0	0	0	0	0	0	0
N74:20	0	0	0	0	0	0	0	0	0	0
N74:30	21									

Data File F75 -- CONTACT_FLT

Offset	0	1	2	3	4
F75:0	0				

Data File B76 (bin) -- PFMGR0_BIT

Offset	15	14	13	12	11	10	9	8	7	6	5	4	3	2	1	0	(Symbol)	Description
B76:0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0		

Data File T77 -- PFMGR0_TIM -- Time to wait for PF to come into acceptable range,

Offset	EN	TT	DN	BASE	PRE	ACC	(Symbol)	Description
T77:0	1	1	0	1.0 sec	60	37	(PF_INRANGE__TIMER_0)	Time to wait for PF to come into a

Data File N78 (dec) -- PFMGR0_INT

Offset	0	1	2	3	4	5	6	7	8	9
N78:0	-20									

Data File F79 -- PFMGR0_FLT

Offset	0	1	2	3	4
F79:0	0				

Data File B80 (bin) -- PFMGR1_BIT

Offset	15	14	13	12	11	10	9	8	7	6	5	4	3	2	1	0	(Symbol)	Description
B80:0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0		

Data File T81 -- PFMGR1_TIM -- Time to wait for PF to come into acceptable range,

Offset	EN	TT	DN	BASE	PRE	ACC	(Symbol)	Description
T81:0	0	0	0	1.0 sec	10	0	(PF_INRANGE__TIMER_1)	Time to wait for PF to come into a

Data File N82 (dec) -- PFMGR1_INT

Offset	0	1	2	3	4	5	6	7	8	9
N82:0	-2									

Data File F83 -- PFMGR1_FLT

Offset	0	1	2	3	4
F83:0	0				

Data File B84 (bin) -- PFMGR2_BIT

Offset	15	14	13	12	11	10	9	8	7	6	5	4	3	2	1	0	(Symbol)	Description
B84:0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0		

Data File T85 -- PFMGR2_TIM -- Time to wait for PF to come into acceptable range,

Offset	EN	TT	DN	BASE	PRE	ACC	(Symbol)	Description
T85:0	0	0	0	1.0 sec	10	0	(PF_INRANGE__TIMER_2)	Time to wait for PF to come into a

Data File N86 (dec) -- PFMGR2_INT

Offset	0	1	2	3	4	5	6	7	8	9
N86:0	-1	-20								

Data File F87 -- PFMGR2_FLT

Offset	0	1	2	3	4
F87:0	0				

Data File B88 (bin) -- PFMGR3_BIT

Offset	15	14	13	12	11	10	9	8	7	6	5	4	3	2	1	0	(Symbol) Description
B88:0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	(PFMGR3_COMMAND_WORD) B88:0 Bit correspc
B88:1	0	0	0	0	0	0	0	0	0	0	0	1	1	1	1	1	PfMgr3 Optimum Fit Bubble Sort Step Sort
B88:2	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	PfMgr3 Optimum Fit Step Sorted Checked B
B88:3	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	(PFMGR3_COMMAND_1SHOT) B88:0 one Shot Bi
B88:4	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0	

Data File T89 -- PFMGR3_TIM -- Time to wait for PF to come into acceptable range,

Offset	EN	TT	DN	BASE	PRE	ACC	(Symbol)	Description
T89:0	0	0	0	1.0 sec	60	0	(PF_INRANGE__TIMER_3)	Time to wait for PF to come into a

Data File	N90 (dec)	--	KVAR_INDEX	--	Delta_KVAR index for finding closest matching step					
Offset	0	1	2	3	4	5	6	7	8	9
N90:0	5	2	1	5	4	3	0	0	0	0
N90:10	0	0	5	2	0	0	3	5	4	18
N90:20	1046	52	2	24	100	2	1	5	15	1
N90:30	0	0	0	0	0	0	0	0	0	0

Data File F91 -- DELTA_KVAR -- measured and averaged KVAR of the capacitor elemen

Offset	0	1	2	3	4
F91:0	400	50	50	100	100
F91:5	100	0	0	0	0
F91:10	0	400	400	0	50
F91:15	0	0	600.3455	599.3455	0
F91:20	0	0	0	0	0
F91:25	0	0	0	0	0
F91:30	0				

Data File B92 (bin) -- PFMGR4_BIT

Offset	15	14	13	12	11	10	9	8	7	6	5	4	3	2	1	0	(Symbol)	Description
B92:0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0		

Data File T93 -- PFMGR4_TIM -- Time to wait for PF to come into acceptable range,

Offset	EN	TT	DN	BASE	PRE	ACC	(Symbol)	Description
T93:0	0	0	0	1.0 sec	60	0	(PF_INRANGE__TIMER_4)	Time to wait for PF to come into a

Data File N94 (dec) -- PFMGR4_INT

Offset	0	1	2	3	4	5	6	7	8	9
N94:0	0									

Data File F95 -- PFMGR4_FLT

Offset	0	1	2	3	4
F95:0	0				

Data File B96 (bin) -- PFMGR5_BIT

Offset	15	14	13	12	11	10	9	8	7	6	5	4	3	2	1	0	(Symbol)	Description
B96:0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0		

Data File T97 -- PFMGR5_TIM -- Time to wait for PF to come into acceptable range,

Offset	EN	TT	DN	BASE	PRE	ACC	(Symbol)	Description
T97:0	0	0	0	1.0 sec	10	0	(PF_INRANGE__TIMER_5)	Time to wait for PF to come into a

Data File N98 (dec) -- PFMGR5_INT

Offset	0	1	2	3	4	5	6	7	8	9
N98:0	-9									

Data File F99 -- PFMGR5_FLT

Offset	0	1	2	3	4
F99:0	0				

Data File MG100 -- MESSAGES

Offset	IA	RBL	LBN	RBN	CHN	NOD	MTO	NB	TFT	TFN	ELE	SEL	BK	I
MG100:0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
MG100:1	0	0	0	0	0	0	0	0	0	0	0	0	0	0
MG100:2	0	0	-1	0	1	0	33	88	138	16	0	0	0	0
MG100:3	0	0	-1	0	1	0	33	4	138	20	0	0	0	0
MG100:4	0	0	-1	0	1	101	33	48	138	22	0	0	0	0
MG100:5	0	0	-1	0	1	101	33	34	137	44	0	0	0	0
MG100:6	0	0	-1	0	1	101	33	52	138	21	0	0	0	0
MG100:7	0	0	-1	0	1	101	33	46	137	30	0	0	0	0
MG100:8	0	0	-1	0	1	101	33	52	137	30	0	0	0	0
MG100:9	23720	0	-1	0	1	0	33	16	138	22	0	0	0	0
MG100:10	0	0	-1	0	0	248	60	2	0	0	0	0	0	0

Data File N101 (dec) -- DIAG_INTS

Offset	0	1	2	3	4	5	6	7	8	9
N101:0	2	29	129	129	0	0	0	0	0	0
N101:10	0	0	0	0	0	0	0	0	0	0
N101:20	0	0	0	0	0	0	0	0	0	0
N101:30	0	0	0	0	0	0	0	0	0	0
N101:40	0	0	0	0	0	0	0	0	0	0

Data File B102 (bin) -- DIAGFILE02

Offset	15	14	13	12	11	10	9	8	7	6	5	4	3	2	1	0	(Symbol) Description
B102:0	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	(SUBROUTE_02_DIAG_BIT) Subroutine 2 Diag
B102:1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	
B102:2	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	
B102:3	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
B102:4	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
B102:5	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
B102:6	0	0	0	0	0	0	0	0	0	0	0	1	0	0	0	0	
B102:7	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
B102:8	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
B102:9	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
B102:10	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	Diagnostic Bits Default State file Word
B102:11	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	Diagnostic Bits Default State file Word
B102:12	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	Diagnostic Bits Default State file Word

Offset	15	14	13	12	11	10	9	8	7	6	5	4	3	2	1	0	(Symbol)	Description
B103:0	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1		
B103:1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1		
B103:2	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1		

Offset	15	14	13	12	11	10	9	8	7	6	5	4	3	2	1	0	(Symbol)	Description
B104:0	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1		
B104:1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1		
B104:2	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1		

Offset	15	14	13	12	11	10	9	8	7	6	5	4	3	2	1	0	(Symbol)	Description
B105:0	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1		
B105:1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1		
B105:2	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1		

Offset	15	14	13	12	11	10	9	8	7	6	5	4	3	2	1	0	(Symbol)	Description
B106:0	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1		

Offset	15	14	13	12	11	10	9	8	7	6	5	4	3	2	1	0	(Symbol)	Description
B107:0	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1		
B107:1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1		
B107:2	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1		

Offset	15	14	13	12	11	10	9	8	7	6	5	4	3	2	1	0	(Symbol)	Description
B108:0	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1		
B108:1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1		
B108:2	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1		

Offset	15	14	13	12	11	10	9	8	7	6	5	4	3	2	1	0	(Symbol)	Description
B109:0	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1		
B109:1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1		
B109:2	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1		

Offset	15	14	13	12	11	10	9	8	7	6	5	4	3	2	1	0	(Symbol)	Description
B110:0	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1		
B110:1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1		
B110:2	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1		

Data File B111 (bin) -- DIAGFILE11

Offset	15	14	13	12	11	10	9	8	7	6	5	4	3	2	1	0	(Symbol)	Description
B111:0	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1		
B111:1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1		
B111:2	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1		

Offset	15	14	13	12	11	10	9	8	7	6	5	4	3	2	1	0	(Symbol)	Description
B112:0	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1		
B112:1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1		
B112:2	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1		

Data File B113 (bin) -- DIAGFILE13

Offset	15	14	13	12	11	10	9	8	7	6	5	4	3	2	1	0	(Symbol)	Description
B113:0	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1		
B113:1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1		
B113:2	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1		

Offset	15	14	13	12	11	10	9	8	7	6	5	4	3	2	1	0	(Symbol)	Description
B114:0	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1		
B114:1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1		
B114:2	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1		

Offset	15	14	13	12	11	10	9	8	7	6	5	4	3	2	1	0	(Symbol)	Description
B115:0	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1		
B115:1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1		
B115:2	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1		

Data File B116 (bin) -- DIAGFILE16

Offset	15	14	13	12	11	10	9	8	7	6	5	4	3	2	1	0	(Symbol)	Description
B116:0	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1		
B116:1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1		
B116:2	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1		

Data File B117 (bin) -- DIAGFILE17

Offset	15	14	13	12	11	10	9	8	7	6	5	4	3	2	1	0	(Symbol)	Description
B117:0	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1		
B117:1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1		
B117:2	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1		

Data File B118 (bin) -- DIAGFILE18

Offset	15	14	13	12	11	10	9	8	7	6	5	4	3	2	1	0	(Symbol)	Description
B118:0	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1		
B118:1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1		
B118:2	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1		

Offset	15	14	13	12	11	10	9	8	7	6	5	4	3	2	1	0	(Symbol)	Description
B119:0	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1		
B119:1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1		
B119:2	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1		

Offset	15	14	13	12	11	10	9	8	7	6	5	4	3	2	1	0	(Symbol)	Description
B120:0	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1		
B120:1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1		
B120:2	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1		

Offset	15	14	13	12	11	10	9	8	7	6	5	4	3	2	1	0	(Symbol)	Description
B121:0	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1		
B121:1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1		
B121:2	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1		

Offset	15	14	13	12	11	10	9	8	7	6	5	4	3	2	1	0	(Symbol)	Description
B122:0	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1		
B122:1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1		
B122:2	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1		

Data File B123 (bin) -- DIAGFILE23 -- Subroutine 23 Diangnostic Bit File

Offset	15	14	13	12	11	10	9	8	7	6	5	4	3	2	1	0	(Symbol)	Description
B123:0	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1		
B123:1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1		
B123:2	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1		

Data File B124 (bin) -- DIAGFILE24 -- Subroutine 24 Diangnostic Bit File

Offset	15	14	13	12	11	10	9	8	7	6	5	4	3	2	1	0	(Symbol)	Description
B124:0	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1		
B124:1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1		
B124:2	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1		

Data File B125 (bin) -- DIAGFILE25 -- Reserved For Future Diangnostic Bits

Offset	15	14	13	12	11	10	9	8	7	6	5	4	3	2	1	0	(Symbol)	Description
B125:0	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1		
B125:1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1		
B125:2	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1		

Data File B126 (bin) -- DIAGFILE26 -- Subroutine 25 Diangnostic Bit File

Offset	15	14	13	12	11	10	9	8	7	6	5	4	3	2	1	0	(Symbol)	Description
B126:0	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1		
B126:1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1		
B126:2	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1		

Data File B127 (bin) -- DIAGFILE27 -- Reserved For Future Diangnostic Bits

Offset	15	14	13	12	11	10	9	8	7	6	5	4	3	2	1	0	(Symbol)	Description
B127:0	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1		
B127:1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1		
B127:2	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1		

Data File B128 (bin) -- DIAGFILE28 -- Reserved For Future Diangnostic Bits

Offset	15	14	13	12	11	10	9	8	7	6	5	4	3	2	1	0	(Symbol)	Description
B128:0	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1		
B128:1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1		
B128:2	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1		

Data File B129 (bin) -- RESERVED -- Reserved For Future Diagnostic Bits

Offset	15	14	13	12	11	10	9	8	7	6	5	4	3	2	1	0	(Symbol)	Description
B129:0	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1		
B129:1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1		
B129:2	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1		

	Data	File	N130	(dec)	--	NET-ENI	--	Net-ENI	Setup	File
--	------	------	------	-------	----	---------	----	---------	-------	------

Offset	0	1	2	3	4	5	6	7	8	9
N130:0	3000	0	0	3000	0	0	3000	0	0	3000

Data File B131 (bin) -- ENI_BIT

Offset	15	14	13	12	11	10	9	8	7	6	5	4	3	2	1	0	(Symbol)	Description
B131:0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1		

Data File F132 -- DEMO_DATA -- Data needed for Demo Mode

Offset	0	1	2	3	4
F132:0	347.2222	347.2222	347.2222	480	480
F132:5	480	60	333.3333	333.3333	333.3333
F132:10	1000	0	0	0	0
F132:15	-100	-100	-100	-100	0
F132:20	50	50	50	50	50
F132:25	50	50	50	50	50
F132:30	480	1000	0	0	0
F132:35	0	0	0	0	0
F132:40	1000000	0	0	1	1.732051
F132:45	0	0	0	0	0
F132:50	1				

Data File F133 -- FACT_DEMO

Offset	0	1	2	3	4
F133:0	480	50000	0	0	0
F133:5	0	0	0	0	0

Offset	LEN	String	Text	(Symbol)	Description
ST134:0	4	1413			
ST134:1	0				
ST134:2	1	3			
ST134:3	0				
ST134:4	0				

Data File RI135 -- IP_ROUTING

Offset	STY	IP	IOIS	IOI0	IOI1	IOI2	IOI3	IOI4	ACPS	ACP0	ACP1	A
RI135:0	10	192.168.0.100	4B02	2067	2401	0	0	0	2	2002	2401	
RI135:1	10	192.168.0.100	4B02	2067	2401	0	0	0	2	2002	2401	
RI135:2	10	192.168.254.63	4B02	2067	2401	0	0	0	2	2002	2401	
RI135:3	10	192.168.254.63	4B02	2067	2401	0	0	0	2	2002	2401	
RI135:4	10	192.168.254.63	4B02	2067	2401	0	0	0	2	2002	2401	
RI135:5	10	192.168.254.63	4B02	2067	2401	0	0	0	2	2002	2401	
RI135:6	10	192.168.254.63	4B02	2067	2401	0	0	0	2	2002	2401	
RI135:7	10	192.168.254.63	4B02	2067	2401	0	0	0	2	2002	2401	
RI135:8	10	192.168.254.63	4B02	2067	2401	0	0	0	2	2002	2401	
RI135:9	10	192.168.254.63	4B02	2067	2401	0	0	0	2	2002	2401	
RI135:10	0	0.0.0.0	0	0	0	0	0	0	0	0	0	

Data File L138 (dec) -- IP_ADDRESS

Offset	0	1	2	3	4
L138:0	1073653952	1073653952	1073653952	1073653952	0

Data File N139 (dec) -- HMIVIS&CTL

Offset	0	1	2	3	4	5	6	7	8	9
N139:0	4095	1	2	3	4	5	6	7	8	9
N139:10	0	15360	192	168	0	254	63	0	0	0
N139:20	0	15360	192	168	0	254	64	0	0	0
N139:30	0	15360	192	168	0	254	65	0	0	0
N139:40	0	15360	192	168	0	254	66	0	0	0
N139:50	1	1	0	0	0	0	0	0	0	0
N139:60	0	0	0	0	0	0	0	0	0	0
N139:70	0	0	0	0	0	0	0	0	0	0
N139:80	-15693	-8015	-15693	-7882	0	0	0	0	0	0
N139:90	0	0	0	0	0	0	0	0	0	0

Offset	0	1	2	3	4
F140:0	863.4013	865.5094	861.9287	863.6131	293.0253
F140:5	292.152	290.663	291.9468	507.0052	504.9609
F140:10	504.9643	505.6435	60.02892	0	0
F140:15	0	0	0	0	0
F140:20	-89.9444	-89.92657	-89.92376	-89.93158	218.7166
F140:25	218.6047	218.5977	655.919	106.2735	106.3293
F140:30	106.3433	318.946	0	0	0
F140:35	500000	0.9165152	0	0	0

Data File F142 -- WIRE_CMD

Offset	0	1	2	3	4
F142:0	0	4096	0	0	0
F142:5	0	0	0	0	0
F142:10	0	0	0	0	0
F142:15	0	0	0	0	0
F142:20	0	0	1	0	0
F142:25	1	4	4	4	0

Offset	EN	TT	DN	BASE	PRE	ACC	(Symbol)	Description
T144:0	1	1	0	.01 sec	50	42		one step at a time
T144:1	0	0	0	.01 sec	0	0		
T144:2	1	1	0	.001 sec	12000	5420		

Data File A150 (ascii) -- BOOTUP CAP

Offset	0	1	2	3	4	5	6	7	8	9
A150:0	MB	^D@	\00\00	\00\00	\00\00	\00>	\00\00	\00(\00\00	\00\80
A150:10	\00\00	\00@	\00\00	\00^A	\00^A	\00\00	\00\00	^D\00	\00\00	^K^R
A150:20	\00\00	^K^R	\00\00	\00\00	\00\00	\00\00	\00\00	\FF\FF	\00\FF	\00\00
A150:30	\00\00	\00\00	\00\00	\00\00	\00\00	\00\00	\00\00	\00\00	\00\00	\00\00
A150:40	\00\00	\00\00	\00\00	\00\00	\00\00	\00\00	\00\00	\00\00	\00\00	\00\00
A150:50	\00\00	\00\00	\00\00	\00\00	\00\00	\00\00	\00\00	\00\00	\00\00	\00\00
A150:60	\00\00	\00\00	\00\00	\00\00	\00\00	\00\00	\00\00	\00\00	\00\00	\00\00
A150:70	\00\00	\00\00	\00\00	\00\00	\00\00	\00\00	\00\00	\00\00	\00\00	\00\00
A150:80	\00\00	\00\00	\00\00	\00\00	\00\00	\00\00	\00\00	\00\00	\00\00	\00\00
A150:90	\00\00	\00\00	\00\00	\00\00	\00\00	\00\00	\00\00	\00\00	\00\00	\00\00
A150:100	\00\00	\00\00	\00\00	\00\00	\00\00	\00\00	\00\00	\00\00	\00\00	\00\00
A150:110	\00\00	\00\00	\00\00	\00\00	\00\00	\00\00	\00\00	\00\00	\00\00	\00\00
A150:120	\00\00	\00\00	\00\00	\00\00	\00\00	\00\00	\00\00	\00\00	\00\00	\00\00
A150:130	\00\00	\00\00	\00\00	\00\00	\00\00	\00\00	\00\00	\00\00	\00\00	\00\00
A150:140	\00\00	\00\00	\00\00	\00\00	\00\00	\00\00	\00\00	\00\00	\00\00	\00\00
A150:150	\00\00	\00\00	\00\00	\00\00	\00\00	\00\00	\00\00	\00\00	\00\00	\00\00
A150:160	\00\00	\00\00	\00\00	\00\00	\00\00	\00\00	\00\00	\00\00	\00\00	\00\00
A150:170	\00\00	\00\00	\00\00	\00\00	\00\00	\00\00	\00\00	\00\00	\00\00	\00\00
A150:180	\00\00	\00\00	\00\00	\00\00	\00\00	\00\00	\00\00	\00\00	\00\00	\00\00
A150:190	\00\00	\00\00	\00\00	\00\00	\00\00	\00\00	\00\00	\00\00	\00\00	\00\00
A150:200	\00\00	\00\00	\00\00	\00\00	\00\00	\00\00	\00\00	\00\00	\00\00	\00\00
A150:210	\00\00	\00\00	\00\00	\00\00	\00\00	\00\00	\00\00	\00\00	\00\00	\00\00
A150:220	\00\00	\00\00	\00\00	\00\00	\00\00	\00\00	\00\00	\00\00	\00\00	\00\00
A150:230	\00\00	\00\00	\00\00	\00\00	\00\00	\00\00	\00\00	\00\00	\00\00	\00\00
A150:240	\00\00	\00\00	\00\00	\00\00	\00\00	\00\00	\00\00	\00\00	\00\00	\00\00
A150:250	\00\00	\00\00	\00\00	\00\00	\00\00	\00\00				

Offset	0	1	2	3	4	5	6	7	8	9
A151:0	\00^G	\1C\E0	\80^O	\F0^A	;\E0	\00\80	\00\00	\00\00	\00^G	\1C\E0
A151:10	\C0\1F	\FC^G	;\E0	\00\80	\00\00	\00\00	\00^G	\1C\E0	\E08	\FC^O
A151:20	sp	\00\80	\00\00	\00\00	\1F^G	\1C\F8	\E08	\1E^N	\F3	\00\80
A151:30	\00\00	\00\00	\1F^G	\1C\F8	\E7\00	^L\DC	\F3	\00\80	\00\00	\00\00
A151:40	^X^G	\1C\E0	\E7\00	\00\DC	\E3?	\00\FE	\00\00	\00\00	^L^G	\1C\E0
A151:50	\E7\00	\00\DC	\E38	\00\FF	\00\00	\00\00	^F^G	\1C\E0	\C0^C	\00\1C
A151:60	\E38	\80\FF	\00\00	\00\00	^F'	\9C\E0	\C0^C	\00\1C	\C3\1D	\80\87
A151:70	\00\00	\00\00	^C7	\DC\E0	\E0\00	^L\1C	\C3\1D	\80\83	\00\00	\00\00
A151:80	^C?	\FC\E0	\E08	\1E^N	\C3\1D	\80\87	\00\00	\00\00	^A\1F	\E0
A151:90	\E08	\FC^O	\83^O	\80\FF	\00\00	\00\00	^A^G	\1C\E0	\C0\1F	\FC^G
A151:100	\83^O	\00\FF	\00\00	\00\00	\00^C	^L\E0	\80^O	\F0^A	\83^O	\00\FE
A151:110	\00\00	\00\00	\00\00	\00\00	\00\00	\00\00	\00\00	\00\00	\00\00	\00\00
A151:120	\00\00	\00\00	\00\00	\00\00	\00\00	\00\00	\00\00	\00\00	\00\00	\00\00
A151:130	\00\00	\00\00	\00\00	\00\00	\00\00	\00\00	\00\00	\00\00	\00\00	\00\00
A151:140	\00\00	\00\00	\00\00	\00\00	\00\00	\00\00	\00\00	\00\00	\00\00	\00\00
A151:150	\00\00	\00\00	\00\00	\00\00	\00\00	\00\00	\00\00	\00\00	\00\00	\00\00
A151:160	\00\00	\00\00	\00\00	\00\00	\00\00	\00\00	\00\00	\00\00	\00\00	\00\00
A151:170	\00\00	\00\00	\00\00	\00\00	\00\00	\00\00	\00\00	\00\00	\00\00	\00\00
A151:180	\00\00	\00\00	\00\00	\00\00	\00\00	\00\00	\00\00	\00\00	\00\00	\00\00
A151:190	\00\00	\00\00	\00\00	\00\00	\00\00	\00\00	\00\00	\00\00	\00\00	\00\00
A151:200	\00\00	\00\00	\00\00	\00\00	\00\00	\00\00	\00\00	\00\00	\00\00	\00\00
A151:210	\00\00	\00\00	\00\00	\00\00	\00\00	\00\00	\00\00	\00\00	\00\00	\00\00
A151:220	\00\00	\00\00	\00\00	\00\00	\00\00	\00\00	\00\00	\00\00	\00\00	\00\00
A151:230	\00\00	\00\00	\00\00	\00\00	\00\00	\00\00	\00\00	\00\00	\00\00	\00\00
A151:240	\00\00	\00\00	\00\00	\00\00	\00\00	\00\00	\00\00	\00\00	\00\00	\00\00
A151:250	\00\00	\00\00	\00\00	\00\00	\00\00	\00\00	\00\00	\00\00	\00\00	\00\00

Offset	0	1	2	3	4	5	6	7	8	9
A152:0	\00\00	\00\00	\00\00	\00\00	\00\00	\00\00	\00\00	\00\00	\00\00	\00\00
A152:10	\00\00	\00\00	\00\00	\00\00	\00\00	\00\00	\00\00	\00\00	\00\00	\00\00
A152:20	\00\00	\00\00	\00\00	\00\00	\00\00	\00\00	\00\00	\00\00	\00\00	\00\00
A152:30	\00\00	\00\00								

Address (Symbol) = Value [Description]

Address/Symbol Database

Address	Symbol	Scope	Description
B3:0	HMI_BIT_OPER_INPUT_0	Global	HMI Operator Inputs Word 0
B3:0/0	OPEN_1	Global	This flag indicated that Contactor #1 has closed. 1 = Closed
B3:0/1	OPEN_2	Global	This flag indicated that Contactor #2 has closed. 1 = Closed
B3:0/2	OPEN_3	Global	This flag indicated that Contactor #3 has closed. 1 = Closed
B3:0/3	OPEN_4	Global	This flag indicated that Contactor #4 has closed. 1 = Closed
B3:0/4	OPEN_5	Global	This flag indicated that Contactor #5 has closed. 1 = Closed
B3:0/5	OPEN_6	Global	This flag indicated that Contactor #6 has closed. 1 = Closed
B3:0/6	OPEN_7	Global	This flag indicated that Contactor #7 has closed. 1 = Closed
B3:0/7	OPEN_8	Global	This flag indicated that Contactor #8 has closed. 1 = Closed
B3:0/8	OPEN_9	Global	This flag indicated that Contactor #9 has closed. 1 = Closed
B3:0/9	OPEN_10	Global	This flag indicated that Contactor #10 has closed. 1 = Closed
B3:0/10	STEP_ALARM_1	Global	This flag indicates whether the step# is in (StepSize) alarm. (Summed int
B3:0/11	STEP_ALARM_2	Global	This flag indicates whether the step# is in (StepSize) alarm. (Summed int
B3:0/12	STEP_ALARM_3	Global	This flag indicates whether the step# is in (StepSize) alarm. (Summed int
B3:0/13	STEP_ALARM_4	Global	This flag indicates whether the step# is in (StepSize) alarm. (Summed int
B3:0/14	STEP_ALARM_5	Global	This flag indicates whether the step# is in (StepSize) alarm. (Summed int
B3:0/15	STEP_ALARM_6	Global	This flag indicates whether the step# is in (StepSize) alarm. (Summed int
B3:0/[N58:8]	AUTO_MANUAL_CLS	Global	Auto_Man_# Close Step Bit Index Offsetfor use in Indirect Addressing 1 = A
B3:0/[N58:9]	CLS_STEP_OPEN_CLOSE	Global	Step # Open/Close 1 = Closed 0 = Open
B3:0/[N58:11]	AUTO_MANUAL_TRIP	Global	Auto_Man_# Open Step Bit Index Offsetfor use in Indirect Addressing 1 = Au
B3:0/[N58:12]	TRIP_STEP_OPEN_CLOSE	Global	Step # Open/Close 1 = Closed 0 = Open
B3:0/[N62:39]			Auto/Manual Mode Index
B3:0/[N66:2]			Open_# Status
B3:0/[N66:3]			Step is in Manual 0= Manual 1 = Auto
B3:0/[N66:5]			Step_Alarm_# offset Index for use in Indirect addressing
B3:0/[N66:6]			Auto_Man_# Bit Index Offset (B3/ (Step_Selected+19))
B3:0/[N66:7]			Manl_Cmd_# Bit Index Offset (B3/ (Step_Selected+29))
B3:0/[N66:8]			Open_Status goes into Open_#, B3/[(Step_Selected -1)]
B3:0/[N66:9]			Step_Alarm goes into Step_Alarm_#, B3/[(Step_Selected +9)]
B3:0/[N66:10]			Open_# Status Index = (Step Selected -1)
B3:0/[N66:13]			
B3:0/[N66:17]			Step Auto/Manual Mode Bit Index
B3:0/[N90:13]			Step Open_# Status {B3/[(N90:[N90:0])-1
B3:0/[N90:22]			Index for finding closest matching Open_# Index Bit
B3:0/[N90:23]			Index for finding closest matching Auto_Man_# Index Bit
B3:1	HMI_BIT_OPER_INPUT_1	Global	HMI Operator Inputs Word 1
B3:1/0	STEP_ALARM_7	Global	This flag indicates whether the step# is in (StepSize) alarm. (Summed int
B3:1/1	STEP_ALARM_8	Global	This flag indicates whether the step# is in (StepSize) alarm. (Summed int
B3:1/2	STEP_ALARM_9	Global	This flag indicates whether the step# is in (StepSize) alarm. (Summed int
B3:1/3	STEP_ALARM_10	Global	This flag indicates whether the step# is in (StepSize) alarm. (Summed int
B3:1/4	AUTO_MAN_1	Global	Step 1 Auto/Manual 1 = Auto, 0 = Manual
B3:1/5	AUTO_MAN_2	Global	Step 2 Auto/Manual 1 = Auto, 0 = Manual
B3:1/6	AUTO_MAN_3	Global	Step 3 Auto/Manual 1 = Auto, 0 = Manual
B3:1/7	AUTO_MAN_4	Global	Step 4 Auto/Manual 1 = Auto, 0 = Manual
B3:1/8	AUTO_MAN_5	Global	Step 5 Auto/Manual 1 = Auto, 0 = Manual
B3:1/9	AUTO_MAN_6	Global	Step 6 Auto/Manual 1 = Auto, 0 = Manual
B3:1/10	AUTO_MAN_7	Global	Step 7 Auto/Manual 1 = Auto, 0 = Manual
B3:1/11	AUTO_MAN_8	Global	Step 8 Auto/Manual 1 = Auto, 0 = Manual
B3:1/12	AUTO_MAN_9	Global	Step 9 Auto/Manual 1 = Auto, 0 = Manual
B3:1/13	AUTO_MAN_10	Global	Step 10 Auto/Manual 1 = Auto, 0 = Manual
B3:1/14	MANL_CMD_1	Global	1 = On, 0 = Off
B3:1/15	MANL_CMD_2	Global	1 = On, 0 = Off
B3:2	HMI_BIT_OPER_INPUT_2	Global	HMI Operator Inputs Word 2
B3:2/0	MANL_CMD_3	Global	1 = On, 0 = Off
B3:2/1	MANL_CMD_4	Global	1 = On, 0 = Off
B3:2/2	MANL_CMD_5	Global	1 = On, 0 = Off
B3:2/3	MANL_CMD_6	Global	1 = On, 0 = Off
B3:2/4	MANL_CMD_7	Global	1 = On, 0 = Off
B3:2/5	MANL_CMD_8	Global	1 = On, 0 = Off
B3:2/6	MANL_CMD_9	Global	1 = On, 0 = Off
B3:2/7	MANL_CMD10	Global	1 = On, 0 = Off
B3:2/8	AUTO_DETECT_CAP_SIZE	Global	Starts automatic sequencing to determine averages of step KVAR values. Se
B3:2/9	SYSTEM_ALARM	Global	1=In Alarm, 0=Not In Alarm
B3:2/10	BAD_STEP	Global	1=In Alarm, 0=Not In Alarm (see StepAlarm# from Step object)
B3:2/11	PF_NOT_ACHIEVED	Global	Power Factor Not Acheived Alarm 1=In Alarm, 0=Not In Alarm
B3:2/12	VOLTAGE_NOT_OK	Global	1=In Alarm, 0=Not In Alarm
B3:2/13	%THD_VOLTAGE_HIGH	Global	1=In Alarm, 0=Not In Alarm
B3:2/14	UNBALANCED	Global	This flag indicates that the Net_Current has been above the Unbalanced_Li
B3:2/15	RESERVED	Global	Reserved
B3:3	DAT_PROTECTION_4	Global	DAT B3: Protection Bits Word 4 = -1 (Reserved Do Not Use, Do Not Change)
B3:4	DAT_PROTECTION_5	Global	DAT B3: Protection Bits Word 5 = 15 (Reserved Do Not Use, Do Not Change)
B3:5	DAT_PROTECTION_6	Global	DAT B3: Protection Bits Word 6 = -1024 (Reserved Do Not Use, Do Not Chang
B3:6/0	VT_ABOVE_LOW_LIMIT	Global	flag indicates that measured voltage is above low limit for acceptable am
B3:6/1	VT_BELOW_HIGH_LIMIT_	Global	flag indicates that measured voltage is above low limit for acceptable am
B3:6/2	VOLTAGE_HIGH	Global	This flag indicates that the measured voltage is above the high limit.
B3:6/3	VOLTAGE_LOW	Global	This flag indicates that the measured voltage is below the low limit.
B3:6/4	VOLTAGE_OK	Global	flag indicates that measured voltage is within the allowable range for ac
B3:6/5	ALL_STEPS_IN	Global	(Part of Pf_Not_Achieved logic)
B3:6/6	PF_LEADING	Global	This flag indicates the PF is "Leading" (kVAR is Lagging)
B3:6/7	PF_LAGGING	Global	This flag indicates the PF is "Lagging" (kVAR is "Leading")
B3:6/8	PM_1_COMM_TROUBLE	Global	This flag indicates repeated MSG timeouts on PM #1.

Address/Symbol Database

Address	Symbol	Scope	Description
B3:6/9	PM_2_COMM_TROUBLE	Global	This flag indicates repeated MSG timeouts on PM #2.
B3:6/10	PM_3_COMM_TROUBLE	Global	This flag indicates repeated MSG timeouts on PM #3.
B3:6/11	PM_4_COMM_TROUBLE	Global	This flag indicates repeated MSG timeouts on PM #4.
B3:6/12	PM1_CONFIG_FAIL	Global	Power Monitor 1 Failed to Configure (For HMI)
B3:6/13	PM2_CONFIG_FAIL	Global	Power Monitor 2 Failed to Configure (For HMI)
B3:6/14	PM3_CONFIG_FAIL	Global	Power Monitor 3 Failed to Configure (For HMI)
B3:6/15	PM4_CONFIG_FAIL	Global	Power Monitor 4 Failed to Configure (For HMI)
B3:7	HMI_BIT_OPER_INPUT_7	Global	HMI Operator Inputs Word 7
B3:7/0	RESET_STEP_COUNTERS	Global	Reset Step Operation Counters (From HMI) 1 = Reset
B3:7/1	DETECTING_CAP_SIZE	Global	Maintains automatic sequencing to determine averages of step KVAR values.
B3:7/2	STEP_1_DISCHARGING	Global	Step 1 Capacitor Discharging 1 = Discharging (For HMI Use)
B3:7/3	STEP_2_DISCHARGING	Global	Step 2 Capacitor Discharging 1 = Discharging (For HMI Use)
B3:7/4	STEP_3_DISCHARGING	Global	Step 3 Capacitor Discharging 1 = Discharging (For HMI Use)
B3:7/5	STEP_4_DISCHARGING	Global	Step 4 Capacitor Discharging 1 = Discharging (For HMI Use)
B3:7/6	STEP_5_DISCHARGING	Global	Step 5 Capacitor Discharging 1 = Discharging (For HMI Use)
B3:7/7	STEP_6_DISCHARGING	Global	Step 6 Capacitor Discharging 1 = Discharging (For HMI Use)
B3:7/8	STEP_7_DISCHARGING	Global	Step 7 Capacitor Discharging 1 = Discharging (For HMI Use)
B3:7/9	STEP_8_DISCHARGING	Global	Step 8 Capacitor Discharging 1 = Discharging (For HMI Use)
B3:7/10	STEP_9_DISCHARGING	Global	Step 9 Capacitor Discharging 1 = Discharging (For HMI Use)
B3:7/11	STEP_10_DISCHARGING	Global	Step 10 Capacitor Discharging 1 = Discharging (For HMI Use)
B3:7/12	HMI_ALARM_RESET	Global	HMI Alarm Reset 1 = Reset
B3:7/13	HMI_ALARM_RESET_HSHK	Global	HMI Alarm Reset Handshake 1= resetting
B3:7/14	RESET_COUNT_HNDSHK	Global	Reset Step Counters Handshake 1 = Resetting
B9:0			
B21:0/0	INPUT0_BIT	Global	
B21:0/1	INPUT1_BIT	Global	
B21:0/2	INPUT2_BIT	Global	
B21:0/3	INPUT3_BIT	Global	
B21:0/4	INPUT4_BIT	Global	
B21:0/5	INPUT5_BIT	Global	
B21:0/6	INPUT6_BIT	Global	
B21:0/7	INPUT7_BIT	Global	
B21:0/8	INPUT8_BIT	Global	
B21:0/9	INPUT9_BIT	Global	
B21:0/10	INPUT10_BIT	Global	
B21:0/11	INPUT11_BIT	Global	
B21:0/12	FIRST_INPUT_FLAG	Global	
B21:0/13			
B21:1			
B21:1/0	ENABLE_INPUT_MODE	Global	
B21:1/1			
B21:1/2			
B21:1/3			
B21:1/4			
B21:1/5			
B21:1/6			
B21:1/7			
B21:1/8			
B21:1/9			
B21:1/10			
B21:2/0	INPUT0_FLAG	Global	
B21:2/1	INPUT1_FLAG	Global	
B21:2/2	INPUT2_FLAG	Global	
B21:2/3	INPUT3_FLAG	Global	
B21:2/4	INPUT4_FLAG	Global	
B21:2/5	INPUT5_FLAG	Global	
B21:2/6	INPUT6_FLAG	Global	
B21:2/7	INPUT7_FLAG	Global	
B21:2/8	INPUT8_FLAG	Global	
B21:2/9	INPUT9_FLAG	Global	
B21:2/10	INPUT10_FLAG	Global	
B21:2/11	INPUT11_FLAG	Global	
B21:3			
B22:0	OFFICIAL_BIT	Global	"Official" Bit Image Table
B23:0	HMI_BIT	Global	"HMI" Bit Image Table
B23:1			
B23:2/8	AUTO_DETECT_CAP_HMI	Global	Starts automatic sequencing to determine averages of step KVAR values. (F
B23:3			
B40:0/0	COMM_ERROR	Global	This flag indicates excessive NAKs and undelivered MSG's have accumulated
B40:0/1	CONFIGURE_NET_ENI	Global	Config 1761-Net-Eni Latch (Set on Processor First Pass after start-up) Us
B40:0/2			One Shot
B40:0/3			One Shot
B40:0/4			One Shot
B40:0/5			One Shot
B40:0/6			One Shot
B40:0/7			One Shot
B40:0/8			One Shot
B40:0/9			One Shot
B44:0	COMMGRB	Global	Clear All One SHots in CommMgr Bit Table on System startup
B44:0/0			One Shot
B44:0/1			One Shot

Address/Symbol Database

Address	Symbol	Scope	Description
B44:0/2			One Shot
B44:0/3			One Shot
B44:0/4			One Shot
B44:0/5			One Shot
B44:0/6			One Shot
B44:0/7			One Shot
B44:0/8			One Shot
B44:0/9	RETRY_READ_F19	Global	Write PM Table F19 Retry One Time
B44:0/10			One Shot
B44:0/11			One Shot
B44:0/12			One Shot
B44:0/13			One Shot
B44:0/14			One Shot
B44:0/15			One Shot
B44:1/0	PM_COMM_BT_DONE	Global	Power Monitor Communications Block Transfer Done Bit
B44:1/1	PM_COMM_BT_INITATE	Global	Power Monitor Communications Block Transfer Initiate Bit
B44:1/2	PM_FAILED_CONFIGURE	Global	Power Monitor Failed to Configure During Last Config Cycle Alarm
B44:1/12	READ_PM_X_USR_CNFG_	Global	Write PM_X Setups Done Now Read User Configuration File "Tight Pack" File
B44:1/13	WRITE_PM_X_USR_CNFG_	Global	Read PM_X User Cnfg Done Now Write User Configuration File "Tight Pack" F
B44:1/14			One Shot
B50:0			Word 1 Containing One Shot Bits
B50:0/3			One Shot
B50:0/4			One Shot
B50:0/5			One Shot
B50:0/6			One Shot
B50:0/7			One Shot
B50:0/8			One Shot
B50:0/9			One Shot
B50:0/10			One Shot
B50:0/11			One Shot
B50:0/12			One Shot
B50:0/13			One Shot
B50:0/14			One Shot
B50:0/15			One Shot
B52:0/0	CURRENT	Global	1=In Alarm, 0=Not In Alarm; This flag indicates that the Net_Current is
B52:0/1			One Shot
B52:0/2			One Shot
B56:0/0	TRIP_STEP	Global	This flag initiates release of the step in "TripStepNum".
B56:0/1	USE_STEP	Global	This flag initiates activation of the step in "UseStepNum".
B56:0/2	KVAR_NOT_ACHEIVED	Global	KVAR Not Acheived Alarm 1=In Alarm, 0=Not In Alarm
B56:0/3	KVAR_LEAD_TRIP_STEP	Global	kVar Leading & Timer Is Done - Trip Step (One Shot)
B56:0/4	KVAR_LAG_ADD_STEP	Global	kVar Lagging & Timer Is Done - Add Step (One Shot)
B56:0/5	THD_VOLT_HIGH_ADD	Global	%THD Voltage High and Steps Active = 0 - Add Step (One Shot)
B56:0/6			One Shot
B56:0/7	KVAR_LEAD_WAIT_2_TRP	Global	kVar Leading Waiting to Trip Step (Latch)
B56:0/8	KVAR_LAG_WAIT_2_ADD	Global	kVar Lagging Waiting to Add Step (Latch)
B56:0/9	THD_VT_HIGH_WAIT_ADD	Global	%THD Voltage High and Steps Active = 0 - WAITing to Add Step
B64:0/0	OFF_COMMAND	Global	This flag is for the "Step" object. It indicates that the step should be
B64:0/1	ON_COMMAND	Global	This flag is for the "Step" object. It indicates that the step should be
B64:0/2	AUTO_MAN	Global	This flag indicates this step's availability for automatic control.
B64:0/3	MANL_CMD	Global	This flag indicates this step's manually commanded state.
B64:0/[N62:33]			Step_Available Bit File
B64:0/[N66:4]			Step_Availble Index Addressing Offset for use in Indirect Addressing
B64:0/[N66:10]			Step_Available goes into Step_Available_#, B64/[(Step_Selected +49)]
B64:0/[N70:16]			Step_Available goes into Step_Available_#, B64/[(Step_Selected +49)]
B64:0/[N90:21]			Step_Available_# Index Bit Address
B64:1			
B64:1/4	STEP_1_SORTED	Global	Step 1 has been sorted in the Balancer Routine
B64:1/5	STEP_2_SORTED	Global	Step 2 has been sorted in the Balancer Routine
B64:1/6	STEP_3_SORTED	Global	Step 3 has been sorted in the Balancer Routine
B64:1/7	STEP_4_SORTED	Global	Step 4 has been sorted in the Balancer Routine
B64:1/8	STEP_5_SORTED	Global	Step 5 has been sorted in the Balancer Routine
B64:1/9	STEP_6_SORTED	Global	Step 6 has been sorted in the Balancer Routine
B64:1/10	STEP_7_SORTED	Global	Step 7 has been sorted in the Balancer Routine
B64:1/11	STEP_8_SORTED	Global	Step 8 has been sorted in the Balancer Routine
B64:1/12	STEP_9_SORTED	Global	Step 9 has been sorted in the Balancer Routine
B64:1/13	STEP_10_SORTED	Global	Step 10 has been sorted in the Balancer Routine
B64:3/2	STEP_AVAILABLE_1	Global	Flag indicates the step is available to participate in automatic control.
B64:3/3	STEP_AVAILABLE_2	Global	Flag indicates the step is available to participate in automatic control.
B64:3/4	STEP_AVAILABLE_3	Global	Flag indicates the step is available to participate in automatic control.
B64:3/5	STEP_AVAILABLE_4	Global	Flag indicates the step is available to participate in automatic control.
B64:3/6	STEP_AVAILABLE_5	Global	Flag indicates the step is available to participate in automatic control.
B64:3/7	STEP_AVAILABLE_6	Global	Flag indicates the step is available to participate in automatic control.
B64:3/8	STEP_AVAILABLE_7	Global	Flag indicates the step is available to participate in automatic control.
B64:3/9	STEP_AVAILABLE_8	Global	Flag indicates the step is available to participate in automatic control.
B64:3/10	STEP_AVAILABLE_9	Global	Flag indicates the step is available to participate in automatic control.
B64:3/11	STEP_AVAILABLE_10	Global	Flag indicates the step is available to participate in automatic control.
B64:4/0			One Shot
B64:4/1			One Shot
B64:4/2			One Shot
B64:4/3	AUT_CFG_DIS_TIM_L	Global	Auto Configure Mode Capacitor Discharge Timer Latch

Address/Symbol Database

Address	Symbol	Scope	Description
B64:4/4			One Shot for manually intializing the ring buffer
B64:5			Balancer Bubble Sort Step Sorted Checked Bits word 1
B64:6			Balancer Step Sorted Checked Bits word 2
B68:0/0	TRIP_COMMAND	Global	This flag when set tells the "Contactor" object to trip itself. This flag
B68:0/1	CLOSE_COMMAND	Global	This flag when set tells the "Contactor" object to close itself. (Local t
B68:0/[N70:11]			KVAR Timer Done One Shot Bit (Used to insure Averager is only called once
B68:2/0			Storage Bit for OSR in Contactor Subroutine
B68:3/2	STEP_AVAILABLE	Global	This flag indicates that the step is available to participate in automati
B68:3/3	STEP_ALARM	Global	This flag indicates a step has dropped too much in KVAR. (local to Step o
B68:3/12	DISCHARGING	Global	flag set tells this capacitor step is discharging and is unavailble (Used
B68:3/13	STEP_90_PERCENT	Global	This flag indicates a step has dropped too much in KVAR. (local to Step o
B68:4/0			One Shot
B68:4/1			Step 1 KVAR Tolerance Timer Latch Bit
B68:4/2			One Shot
B68:4/3			Step 2 KVAR Tolerance Timer Latch Bit
B68:4/4			One Shot
B68:4/5			Step 3 KVAR Tolerance Timer Latch Bit
B68:4/6			One Shot
B68:4/7			Step 4 KVAR Tolerance Timer Latch Bit
B68:4/8			One Shot
B68:4/9			Step 5 KVAR Tolerance Timer Latch Bit
B68:4/10			One Shot
B68:4/11			Step 6 KVAR Tolerance Timer Latch Bit
B68:4/12			One Shot
B68:4/13			Step 7 KVAR Tolerance Timer Latch Bit
B68:4/14			One Shot
B68:4/15			Step 8 KVAR Tolerance Timer Latch Bit
B68:5/0			One Shot
B68:5/1			Step 9 KVAR Tolerance Timer Latch Bit
B68:5/2			One Shot
B68:5/3			Step 10 KVAR Tolerance Timer Latch Bit
B68:5/4			One Shot
B68:5/5			One Shot
B68:5/6			One Shot
B68:5/7			One Shot
B68:5/8			One Shot
B68:5/9			One Shot
B68:5/10			One Shot
B68:5/11			One Shot
B68:5/12			One Shot
B68:5/13			One Shot
B68:5/14			One Shot
B68:5/15			One shot for restoring factory defaults in Lad 3
B72:0/0	USER_TRIP_CMD	Global	Flag available for future use.
B72:0/1	USER_CLOSE_CMD	Global	Flag available for future use.
B72:3/2	OPEN_STATUS	Global	This flag tells the Step object to start the discharge timer.
B72:4/1			One Shot
B72:4/2			One Shot
B72:4/3			One Shot
B72:4/4			One Shot
B72:4/5			One Shot
B72:4/6			One Shot
B72:4/7			One Shot
B72:4/8			One Shot
B72:4/9			One Shot
B72:4/10			One Shot
B72:4/[N66:2]			
B80:0/0			One Shot
B88:0	PfMGR3_COMMAND_WORD	Global	B88:0 Bit corresponding to the Step to Close For use closing the step in
B88:0/[N66:2]	OPTIMUM_COMMAND_WORD	Global	PfMger3 Optimal Fit Command Word (Maps to OuTput Commands)
B88:0/[N66:10]			PfMger3 Optimal Fit Command Word (Maps to Output Commands) = (Step Select
B88:0/[N66:13]			PfMger3 One Shot Bits corresopnding to the Command Bits Set in B88:0 (Ope
B88:0/[N90:26]	OPTIMUM_STEP_2_CLOSE	Global	B88:0 Bit corresponding to the Step to Close For use closing the step in
B88:1			PfMger3 Optimum Fit Bubble Sort Step Sorted Checked Bits word 1
B88:2			PfMger3 Optimum Fit Step Sorted Checked Bits word 2
B88:3	PfMGR3_COMMAND_1SHOT	Global	B88:0 one Shot Bit corresponding Step to Close Bit in B88:0
B88:4/0			One Shot
B102:0	SUBROUTE_02_DIAG_BIT	Global	Subroutine 2 Diagnostic Bit File
B102:0/0			Subroutine 2 Diagnostic Bit File
B102:0/1			Subroutine 2 Diagnostic Bit File
B102:0/2			Subroutine 2 Diagnostic Bit File
B102:0/3			Subroutine 2 Diagnostic Bit File
B102:0/4			Subroutine 2 Diagnostic Bit File
B102:0/5			Subroutine 2 Diagnostic Bit File
B102:0/6			Subroutine 2 Diagnostic Bit File
B102:0/7			Subroutine 2 Diagnostic Bit File
B102:0/8			Subroutine 2 Diagnostic Bit File
B102:0/9			Subroutine 2 Diagnostic Bit File
B102:0/10			Subroutine 2 Diagnostic Bit File
B102:0/11			Subroutine 2 Diagnostic Bit File
B102:0/12			Subroutine 2 Diagnostic Bit File

Address/Symbol Database

Address	Symbol	Scope	Description
B102:0/13			Subroutine 2 Diagnostic Bit File
B102:6/3			Remove Before Shipping !!!!!!!!!!!!!!!!!!!!! !!!!!!!!!!!!!!!!!!!!! !!!!!!!!!
B102:6/4			Dummy bit for documantation
B102:10			Diagnostic Bits Default State file Word 1
B102:11			Diagnostic Bits Default State file Word 2
B102:12			Diagnostic Bits Default State file Word 3
B103:0/0			Subroutine 3 Diagnostic Bit File
B103:0/1			Subroutine 3 Diagnostic Bit File
B103:0/2			Subroutine 3 Diagnostic Bit File
B103:0/3			Subroutine 3 Diagnostic Bit File
B103:0/4			Subroutine 3 Diagnostic Bit File
B103:0/5			Subroutine 3 Diagnostic Bit File
B103:0/6			Subroutine 3 Diagnostic Bit File
B103:0/7			Subroutine 3 Diagnostic Bit File
B103:0/8			Subroutine 3 Diagnostic Bit File
B103:0/9			Subroutine 3 Diagnostic Bit File
B103:0/10			Subroutine 3 Diagnostic Bit File
B103:0/11			Subroutine 3 Diagnostic Bit File
B103:0/12			Subroutine 3 Diagnostic Bit File
B103:0/13			Subroutine 3 Diagnostic Bit File
B103:0/14			Subroutine 3 Diagnostic Bit File
B103:0/15			Subroutine 3 Diagnostic Bit File
B104:0/0			Subroutine 4 Diagnostic Bit File
B104:0/1			Subroutine 4 Diagnostic Bit File
B104:0/2			Subroutine 4 Diagnostic Bit File
B104:0/3			Subroutine 4 Diagnostic Bit File
B104:0/4			Subroutine 4 Diagnostic Bit File
B104:0/5			Subroutine 4 Diagnostic Bit File
B104:0/6			Subroutine 4 Diagnostic Bit File
B105:0/0			Subroutine 5 Diagnostic Bit File
B105:0/1			Subroutine 5 Diagnostic Bit File
B105:0/2			Subroutine 5 Diagnostic Bit File
B105:0/3			Subroutine 5 Diagnostic Bit File
B105:0/4			Subroutine 5 Diagnostic Bit File
B105:0/5			Subroutine 5 Diagnostic Bit File
B106:0/0			Subroutine 6 Diagnostic Bit File
B106:0/1			Subroutine 6 Diagnostic Bit File
B106:0/2			Subroutine 6 Diagnostic Bit File
B106:0/3			Subroutine 6 Diagnostic Bit File
B106:0/4			Subroutine 6 Diagnostic Bit File
B106:0/5			Subroutine 6 Diagnostic Bit File
B107:0/0			Subroutine 7 Diagnostic Bit File
B107:0/1			Subroutine 7 Diagnostic Bit File
B107:0/2			Subroutine 7 Diagnostic Bit File
B107:0/3			Subroutine 7 Diagnostic Bit File
B107:0/4			Subroutine 7 Diagnostic Bit File
B108:0/0			Subroutine 8 Diagnostic Bit File
B108:0/1			Subroutine 8 Diagnostic Bit File
B108:0/2			Subroutine 8 Diagnostic Bit File
B108:0/3			Subroutine 8 Diagnostic Bit File
B108:0/4			Subroutine 8 Diagnostic Bit File
B109:0/0			Subroutine 9 Diagnostic Bit File
B109:0/1			Subroutine 9 Diagnostic Bit File
B109:0/2			Subroutine 9 Diagnostic Bit File
B109:0/3			Subroutine 9 Diagnostic Bit File
B109:0/4			Subroutine 9 Diagnostic Bit File
B109:0/5			Subroutine 9 Diagnostic Bit File
B109:0/6			Subroutine 9 Diagnostic Bit File
B109:0/7			Subroutine 9 Diagnostic Bit File
B110:0/0			Subroutine 10 Diagnostic Bit File
B110:0/1			Subroutine 10 Diagnostic Bit File
B110:0/2			Subroutine 10 Diagnostic Bit File
B110:0/3			Subroutine 10 Diagnostic Bit File
B110:0/4			Subroutine 10 Diagnostic Bit File
B110:0/5			Subroutine 10 Diagnostic Bit File
B110:0/6			Subroutine 10 Diagnostic Bit File
B110:0/7			Subroutine 10 Diagnostic Bit File
B110:0/8			Subroutine 10 Diagnostic Bit File
B110:0/9			Subroutine 10 Diagnostic Bit File
B110:0/10			Subroutine 10 Diagnostic Bit File
B110:0/11			Subroutine 10 Diagnostic Bit File
B110:0/12			Subroutine 10 Diagnostic Bit File
B110:0/13			Subroutine 10 Diagnostic Bit File
B110:0/14			Subroutine 10 Diagnostic Bit File
B110:0/15			Subroutine 10 Diagnostic Bit File
B110:1/0			Subroutine 10 Diagnostic Bit File
B110:1/1			Subroutine 10 Diagnostic Bit File
B110:1/2			Subroutine 10 Diagnostic Bit File
B110:1/3			Subroutine 10 Diagnostic Bit File
B110:1/4			Subroutine 10 Diagnostic Bit File
B110:1/5			Subroutine 10 Diagnostic Bit File

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Address/Symbol Database

Address	Symbol	Scope	Description
B117:0/4		Subroutine 17	Diagnostic Bit File
B118:0/0		Subroutine 18	Diagnostic Bit File
B118:0/1		Subroutine 18	Diagnostic Bit File
B118:0/2		Subroutine 18	Diagnostic Bit File
B118:0/3		Subroutine 18	Diagnostic Bit File
B118:0/4		Subroutine 18	Diagnostic Bit File
B119:0/0		Subroutine 19	Diagnostic Bit File
B119:0/1		Subroutine 19	Diagnostic Bit File
B119:0/2		Subroutine 19	Diagnostic Bit File
B119:0/3		Subroutine 19	Diagnostic Bit File
B119:0/4		Subroutine 19	Diagnostic Bit File
B120:0/0		Subroutine 20	Diagnostic Bit File
B120:0/1		Subroutine 20	Diagnostic Bit File
B120:0/2		Subroutine 20	Diagnostic Bit File
B120:0/3		Subroutine 20	Diagnostic Bit File
B120:0/4		Subroutine 20	Diagnostic Bit File
B120:0/5		Subroutine 20	Diagnostic Bit File
B120:0/6		Subroutine 20	Diagnostic Bit File
B120:0/7		Subroutine 20	Diagnostic Bit File
B120:0/8		Subroutine 20	Diagnostic Bit File
B120:0/9		Subroutine 20	Diagnostic Bit File
B120:0/10		Subroutine 20	Diagnostic Bit File
B120:0/11		Subroutine 20	Diagnostic Bit File
B120:0/12		Subroutine 20	Diagnostic Bit File
B120:0/13		Subroutine 20	Diagnostic Bit File
B120:0/14		Subroutine 20	Diagnostic Bit File
B120:0/15		Subroutine 20	Diagnostic Bit File
B121:0/0		Subroutine 21	Diagnostic Bit File
B121:0/1		Subroutine 21	Diagnostic Bit File
B121:0/2		Subroutine 21	Diagnostic Bit File
B121:0/3		Subroutine 21	Diagnostic Bit File
B121:0/4		Subroutine 21	Diagnostic Bit File
B122:0/0		Subroutine 22	Diagnostic Bit File
B122:0/1		Subroutine 22	Diagnostic Bit File
B122:0/2		Subroutine 22	Diagnostic Bit File
B122:0/3		Subroutine 22	Diagnostic Bit File
B122:0/4		Subroutine 22	Diagnostic Bit File
B123:0/0		Subroutine 23	Diagnostic Bit File
B123:0/1		Subroutine 23	Diagnostic Bit File
B123:0/2		Subroutine 23	Diagnostic Bit File
B123:0/3		Subroutine 23	Diagnostic Bit File
B123:0/4		Subroutine 23	Diagnostic Bit File
B124:0/0		Subroutine 24	Diagnostic Bit File
B124:0/1		Subroutine 24	Diagnostic Bit File
B124:0/2		Subroutine 24	Diagnostic Bit File
B124:0/3		Subroutine 24	Diagnostic Bit File
B124:0/4		Subroutine 24	Diagnostic Bit File
B125:0/0		Subroutine 25	Diagnostic Bit File
B125:0/1		Subroutine 25	Diagnostic Bit File
B125:0/2		Subroutine 25	Diagnostic Bit File
B125:0/3		Subroutine 25	Diagnostic Bit File
B125:0/4		Subroutine 25	Diagnostic Bit File
B125:0/5		Subroutine 25	Diagnostic Bit File
B125:0/6		Subroutine 25	Diagnostic Bit File
B125:0/7		Subroutine 25	Diagnostic Bit File
B125:0/8		Subroutine 25	Diagnostic Bit File
B125:0/9		Subroutine 25	Diagnostic Bit File
B125:0/10		Subroutine 25	Diagnostic Bit File
B125:0/11		Subroutine 25	Diagnostic Bit File
B125:0/12		Subroutine 25	Diagnostic Bit File
B126:0/0		Subroutine 26	Diagnostic Bit File
B126:0/1		Subroutine 26	Diagnostic Bit File
B126:0/2		Subroutine 26	Diagnostic Bit File
B126:0/3		Subroutine 26	Diagnostic Bit File
B126:0/4		Subroutine 26	Diagnostic Bit File
B126:0/5		Subroutine 26	Diagnostic Bit File
B126:0/6		Subroutine 26	Diagnostic Bit File
B126:0/7		Subroutine 26	Diagnostic Bit File
B126:0/8		Subroutine 26	Diagnostic Bit File
B126:0/9		Subroutine 26	Diagnostic Bit File
B126:0/10		Subroutine 26	Diagnostic Bit File
B126:0/11		Subroutine 26	Diagnostic Bit File
B126:0/12		Subroutine 26	Diagnostic Bit File
B126:0/13		Subroutine 26	Diagnostic Bit File
B126:0/14		Subroutine 26	Diagnostic Bit File
B126:0/15		Subroutine 26	Diagnostic Bit File
B126:1/0		Subroutine 26	Diagnostic Bit File
B126:1/1		Subroutine 26	Diagnostic Bit File
B126:1/2		Subroutine 26	Diagnostic Bit File
B126:1/3		Subroutine 26	Diagnostic Bit File
B126:1/4		Subroutine 26	Diagnostic Bit File

Address/Symbol Database

Address	Symbol	Scope	Description
B126:1/5	E	Global	Subroutine 26 Diagnostic Bit File
B126:1/6			Subroutine 26 Diagnostic Bit File
B126:1/7			Subroutine 26 Diagnostic Bit File
B126:1/8			Subroutine 26 Diagnostic Bit File
B126:1/9			Subroutine 26 Diagnostic Bit File
B127:0/0			Subroutine 27 Diagnostic Bit File
B127:0/1			Subroutine 27 Diagnostic Bit File
B127:0/2			Subroutine 27 Diagnostic Bit File
B127:0/3			Subroutine 27 Diagnostic Bit File
B127:0/4			Subroutine 27 Diagnostic Bit File
B127:0/5			Subroutine 27 Diagnostic Bit File
B127:0/6			Subroutine 27 Diagnostic Bit File
B127:0/7			Subroutine 27 Diagnostic Bit File
B127:0/8			Subroutine 27 Diagnostic Bit File
B127:0/9			Subroutine 27 Diagnostic Bit File
B127:0/10			Subroutine 27 Diagnostic Bit File
B127:0/11			Subroutine 27 Diagnostic Bit File
B127:0/12			Subroutine 27 Diagnostic Bit File
B127:0/13			Subroutine 27 Diagnostic Bit File
B127:0/14			Subroutine 27 Diagnostic Bit File
B127:0/15			Subroutine 27 Diagnostic Bit File
B127:1/0			Subroutine 27 Diagnostic Bit File
B127:1/1			Subroutine 27 Diagnostic Bit File
B127:1/2			Subroutine 27 Diagnostic Bit File
B127:1/3			Subroutine 31 Diagnostic Bit File
B127:1/4			Subroutine 31 Diagnostic Bit File
B127:1/5			Subroutine 31 Diagnostic Bit File
B127:1/6			Subroutine 31 Diagnostic Bit File
B127:1/7			Subroutine 31 Diagnostic Bit File
B127:1/8			Subroutine 31 Diagnostic Bit File
B127:1/9			Subroutine 31 Diagnostic Bit File
B128:0/0	ONS_ENI1	Global	Subroutine 28 Diagnostic Bit File
B128:0/1			Subroutine 28 Diagnostic Bit File
B128:0/2			Subroutine 28 Diagnostic Bit File
B128:0/3			Subroutine 28 Diagnostic Bit File
B128:0/4			Subroutine 28 Diagnostic Bit File
B128:0/5			Subroutine 28 Diagnostic Bit File
B128:0/6			Subroutine 28 Diagnostic Bit File
B128:0/7			Subroutine 28 Diagnostic Bit File
B128:0/8			Subroutine 28 Diagnostic Bit File
B128:0/9			Subroutine 28 Diagnostic Bit File
B128:0/10			Subroutine 28 Diagnostic Bit File
B128:0/11			Subroutine 28 Diagnostic Bit File
B128:0/12			Subroutine 28 Diagnostic Bit File
B131:0/0			One shot NET_ENI_SEQUENCER (C5:6) after MG100:7/DN
B131:0/1			One shot NET_ENI_SEQUENCER (C5:6) after MG100:8/DN
B131:0/2			One shot NET_ENI_SEQUENCER (C5:6) after MG100:9/DN
B131:0/3			One shot NET_ENI_SEQUENCER (C5:6) after MG100:10/DN
B143:0/1	ONS_ENI4	Global	output 1
B143:0/2			output 2
B143:0/3			output 3
B143:0/4			output 4
B143:0/5			output 5
B143:0/6			output 6
B143:0/7			output 7
B143:0/8			output 8
B143:0/9			output 9
B143:0/10			output 10
B[N101:2]:0	TRIALS_COUNTER	Global	Subroutine Diagnostic Bit Reset Index (Used in Indirect Addressing to res
C5:0			This counter is used to test a Step for KVAR size, Num_Trials times.
C5:1			counter holds number of step currently selected for AutoDetect (use w/ in
C5:2			Undelivered Packets Counter
C5:3			NAK Packets Counter
C5:4			Power Monitor Communications Error Counter
C5:5			Power Monitor Configuration Retry Counter
C5:6			Auto Configure 1761-NET-ENI Sequencer
C5:10			Read PM# Error Counter No.1
C5:11			Step 1 Operations Counter
C5:12	STEP_1_OPER_COUNT	Global	Step 2 Operations Counter
C5:13			Step 3 Operations Counter
C5:14			Step 4 Operations Counter
C5:15			Step 5 Operations Counter
C5:16			Step 6 Operations Counter
C5:17			Step 7 Operations Counter
C5:18			Step 8 Operations Counter
C5:19			Step 9 Operations Counter
C5:20			Step 10 Operations Counter
CS1:12	UNDEL_PACKETS	Global	Number of Undelivered Message Packets
CS1:14			Number of NAK Packets Received
CS2:12			Number of Undelivered Message Packets
CS2:14			Number of NAK Packets Received

Address/Symbol Database

Address	Symbol	Scope	Description
DAT:0/F1L	DAT_F1_FUNCTION_KEY		DAT F1 Function Key
DAT:0/F2L	DAT_F2_FUNCTION_KEY		DAT F2 Function Key
F8:0	BUS_NET_PF_X_100	Global	This register holds the total power factor on the monitored bus. (For HMI)
F8:1	BUS_NET_KW	Global	This register holds the total real power on the monitored bus. (For HMI)
F8:2	BUS_NET_KVAR	Global	This register holds the total reactive power on the monitored bus. (For HMI)
F8:3	KW1	Global	This register holds the total real power on the 1st PM. (For HMI)
F8:4	KW2	Global	This register holds the total real power on the 2nd PM. (For HMI)
F8:5	KW3	Global	This register holds the total real power on the 3rd PM. (For HMI)
F8:6	KW4	Global	This register holds the total real power on the 4th PM. (For HMI)
F8:7	KVAR1	Global	This register holds the total reactive power on the 1st PM. (For HMI)
F8:8	KVAR2	Global	This register holds the total reactive power on the 2nd PM. (For HMI)
F8:9	KVAR3	Global	This register holds the total reactive power on the 3rd PM. (For HMI)
F8:10	KVAR4	Global	This register holds the total reactive power on the 4th PM. (For HMI)
F8:11	PF1	Global	This register holds the total power factor on the 1st PM. (For HMI)
F8:12	PF2	Global	This register holds the total power factor on the 2nd PM. (For HMI)
F8:13	PF3	Global	This register holds the total power factor on the 3rd PM. (For HMI)
F8:14	PF4	Global	This register holds the total power factor on the 4th PM. (For HMI)
F8:15	BUS_VOLTS	Global	3-phase average line-to-line voltage measured by 1st PM. obtained from P
F8:16	NET_CURRENT	Global	This register holds the net current obtained from the PM(s) via CommMgr.
F8:17	%THD_V	Global	% total harmonic distortion voltage measured by the 1st PM. Read From P
F8:18	HIGH_LIMIT	Global	Maximum allowable voltage level. (Calc. from Nominal and VoltageRange)
F8:19	LOW_LIMIT	Global	Minimum allowable voltage level. (Calc. from Nominal and VoltageRange)
F8:20	HMI_NOMINAL_VOLTS	Global	This register holds the nominalbus voltage level. For HMI Usage
F10:0	VALUE_0_FLT	Global	"0" Value Float reference file
F11:0	PM_1_I1	Global	PM #1, L1 Current
F11:1	PM_1_I2	Global	PM #1, L2 Current
F11:2	PM_1_I3	Global	PM #1, L3 Current
F11:3	PM_1_L12	Global	PM #1, L1-L2 Voltage
F11:4	PM_1_L23	Global	PM #1, L2-L3 Voltage
F11:5	PM_1_L31	Global	PM #1, L3-L1 Voltage
F11:6	PM_1_FREQ	Global	PM #1, Frequency
F11:7	PM_1_P1	Global	PM #1, L1 Real Power
F11:8	PM_1_P2	Global	PM #1, L2 Real Power
F11:9	PM_1_P3	Global	PM #1, L3 Real Power
F11:10	PM_1_PT	Global	PM #1, Total Real Power
F11:11	PM_1_Q1	Global	PM #1, L1 Reactive Power
F11:12	PM_1_Q2	Global	PM #1, L2 Reactive Power
F11:13	PM_1_Q3	Global	PM #1, L3 Reactive Power
F11:14	PM_1_QT	Global	PM #1, Total Reactive Power
F11:15	PM_1_PF1	Global	PM #1, L1 Power Factor
F11:16	PM_1_PF2	Global	PM #1, L2 Power Factor
F11:17	PM_1_PF3	Global	PM #1, L3 Power Factor
F11:18	PM_1_PFT	Global	PM #1, Total Power Factor
F11:19	PM_1_%THD	Global	PM #1, measured Total Harmonic Distortion percentage
F12:0	PM_2_I1	Global	PM #2, L1 Current
F12:1	PM_2_I2	Global	PM #2, L2 Current
F12:2	PM_2_I3	Global	PM #2, L3 Current
F12:3	PM_2_L12	Global	PM #2, L1-L2 Voltage
F12:4	PM_2_L23	Global	PM #2, L2-L3 Voltage
F12:5	PM_2_L31	Global	PM #2, L3-L1 Voltage
F12:6	PM_2_FREQ	Global	PM #2, Frequency
F12:7	PM_2_P1	Global	PM #2, L1 Real Power
F12:8	PM_2_P2	Global	PM #2, L2 Real Power
F12:9	PM_2_P3	Global	PM #2, L3 Real Power
F12:10	PM_2_PT	Global	PM #2, Total Real Power
F12:11	PM_2_Q1	Global	PM #2, L1 Reactive Power
F12:12	PM_2_Q2	Global	PM #2, L2 Reactive Power
F12:13	PM_2_Q3	Global	PM #2, L3 Reactive Power
F12:14	PM_2_QT	Global	PM #2, Total Reactive Power
F12:15	PM_2_PF1	Global	PM #2, L1 Power Factor
F12:16	PM_2_PF2	Global	PM #2, L2 Power Factor
F12:17	PM_2_PF3	Global	PM #2, L3 Power Factor
F12:18	PM_2_PFT	Global	PM #2, Total Power Factor
F12:19	PM_2_%THD	Global	PM #2, measured Total Harmonic Distortion percentage
F13:0	PM_3_I1	Global	PM #3, L1 Current
F13:1	PM_3_I2	Global	PM #3, L2 Current
F13:2	PM_3_I3	Global	PM #3, L3 Current
F13:3	PM_3_L12	Global	PM #3, L1-L2 Voltage
F13:4	PM_3_L23	Global	PM #3, L2-L3 Voltage
F13:5	PM_3_L31	Global	PM #3, L3-L1 Voltage
F13:6	PM_3_FREQ	Global	PM #3, Frequency
F13:7	PM_3_P1	Global	PM #3, L1 Real Power
F13:8	PM_3_P2	Global	PM #3, L2 Real Power
F13:9	PM_3_P3	Global	PM #3, L3 Real Power
F13:10	PM_3_PT	Global	PM #3, Total Real Power
F13:11	PM_3_Q1	Global	PM #3, L1 Reactive Power
F13:12	PM_3_Q2	Global	PM #3, L2 Reactive Power
F13:13	PM_3_Q3	Global	PM #3, L3 Reactive Power
F13:14	PM_3_QT	Global	PM #3, Total Reactive Power
F13:15	PM_3_PF1	Global	PM #3, L1 Power Factor
F13:16	PM_3_PF2	Global	PM #3, L2 Power Factor

Address/Symbol Database

Address	Symbol	Scope	Description
F13:17	PM_3_P3	Global	PM #3, L3 Power Factor
F13:18	PM_3_PFT	Global	PM #3, Total Power Factor
F13:19	PM_3_%THD	Global	PM #3, measured Total Harmonic Distortion percentage
F14:0	PM_4_I1	Global	PM #4, L1 Current
F14:1	PM_4_I2	Global	PM #4, L2 Current
F14:2	PM_4_I3	Global	PM #4, L3 Current
F14:3	PM_4_L12	Global	PM #4, L1-L2 Voltage
F14:4	PM_4_L23	Global	PM #4, L2-L3 Voltage
F14:5	PM_4_L31	Global	PM #4, L3-L1 Voltage
F14:6	PM_4_FREQ	Global	PM #4, Frequency
F14:7	PM_4_P1	Global	PM #4, L1 Real Power
F14:8	PM_4_P2	Global	PM #4, L2 Real Power
F14:9	PM_4_P3	Global	PM #4, L3 Real Power
F14:10	PM_4_PT	Global	PM #4, Total Real Power
F14:11	PM_4_Q1	Global	PM #4, L1 Reactive Power
F14:12	PM_4_Q2	Global	PM #4, L2 Reactive Power
F14:13	PM_4_Q3	Global	PM #4, L3 Reactive Power
F14:14	PM_4_QT	Global	PM #4, Total Reactive Power
F14:15	PM_4_PF1	Global	PM #4, L1 Power Factor
F14:16	PM_4_PF2	Global	PM #4, L2 Power Factor
F14:17	PM_4_PF3	Global	PM #4, L3 Power Factor
F14:18	PM_4_PFT	Global	PM #4, Total Power Factor
F14:19	PM_4_%THD	Global	PM #4, measured Total Harmonic Distortion percentage
F15:0	PM_#_I1	Global	PM #, L1 Current
F15:1	PM_#_I2	Global	PM #, L2 Current
F15:2	PM_#_I3	Global	PM #, L3 Current
F15:8	PM_#_L12	Global	PM #, L1-L2 Voltage
F15:9	PM_#_L23	Global	PM #, L2-L3 Voltage
F15:10	PM_#_L31	Global	PM #, L3-L1 Voltage
F15:12	PM_#_FREQ	Global	PM #, Frequency
F16:0	PM_FLOATS_16	Global	
F17:0	PM_#_P1	Global	PM #, L1 Real Power
F17:1	PM_#_P2	Global	PM #, L2 Real Power
F17:2	PM_#_P3	Global	PM #, L3 Real Power
F17:3	PM_#_PT	Global	PM #, Total Real Power
F17:4	PM_#_Q1	Global	PM #, L1 Reactive Power
F17:5	PM_#_Q2	Global	PM #, L2 Reactive Power
F17:6	PM_#_Q3	Global	PM #, L3 Reactive Power
F17:7	PM_#_QT	Global	PM #, Total Reactive Power
F18:0	PM_FLOATS_18	Global	
F19:0	PM_#_PF1	Global	PM #, L1 Power Factor
F19:1	PM_#_PF2	Global	PM #, L2 Power Factor
F19:2	PM_#_PF3	Global	PM #, L3 Power Factor
F19:3	PM_#_PFT	Global	PM #, Total Power Factor
F19:4	PM_#_%THD	Global	PM #, measured Total Harmonic Distortion percentage
F26:0	OFFICIAL_FLT	Global	"Official" Float Image Table
F28:0	HMI_FLT	Global	"HMI" Float Image Table
F28:20			This register holds the nominalbus voltage level. From PanelView HMI
F31:0	PM_X_I1	Global	PM #*, L1 Current
F31:1	PM_X_I2	Global	PM #*, L2 Current
F31:2	PM_X_I3	Global	PM #*, L3 Current
F31:3	PM_X_L12	Global	PM #*, L1-L2 Voltage
F31:4	PM_X_L23	Global	PM #*, L2-L3 Voltage
F31:5	PM_X_L31	Global	PM #*, L3-L1 Voltage
F31:6	PM_X_FREQ	Global	PM #*, Frequency
F31:7	PM_X_P1	Global	PM #*, L1 Real Power
F31:8	PM_X_P2	Global	PM #*, L2 Real Power
F31:9	PM_X_P3	Global	PM #*, L3 Real Power
F31:10	PM_X_PT	Global	PM #*, Total Real Power
F31:11	PM_X_Q1	Global	PM #*, L1 Reactive Power
F31:12	PM_X_Q2	Global	PM #*, L2 Reactive Power
F31:13	PM_X_Q3	Global	PM #*, L3 Reactive Power
F31:14	PM_X_QT	Global	PM #*, Total Reactive Power
F31:15	PM_X_PF1	Global	PM #*, L1 Power Factor
F31:16	PM_X_PF2	Global	PM #*, L2 Power Factor
F31:17	PM_X_PF3	Global	PM #*, L3 Power Factor
F31:18	PM_X_PFT	Global	PM #*, Total Power Factor
F31:19	PM_X_THD	Global	PM #*, measured Total Harmonic Distortion percentage
F34:0	PM_FLOATS_34	Global	
F47:7			PM# L1 Real Power/1000 (Used in scaling PM Data to kWatts)
F47:8			PM# L2 Real Power/1000 (Used in scaling PM Data to kWatts)
F47:9			PM# L3 Real Power/1000 (Used in scaling PM Data to kWatts)
F47:10			PM# Total Power/1000 (Used in scaling PM Data to kWatts)
F47:11			PM# L1 Reactive Power/1000 (Used in scaling PM Data to kVars)
F47:12			PM# L2 Reactive Power/1000 (Used in scaling PM Data to kVars)
F47:13			PM# L3 Reactive Power/1000 (Used in scaling PM Data to kVars)
F47:14			PM# Total Reactive Power/1000 (Used in scaling PM Data to kVars)
F47:19	_SQRT_3	Global	(SQRT(3)) (used in calculations in CommMgr)
F50:0			
F51:0			PM #1 L1 Volts + PM #1 L2 Volts
F51:1			PM #1 L1 Volts + PM #1 L2 Volts + PM #1 L3 Volts

Address/Symbol Database

Address	Symbol	Scope	Description
F51:2			Nominal_Voltage x Voltage Range
F51:3			(Nominal_Voltage x Voltage Range)/100
F51:4			%THD_V_Setpoint - 1 (1% Deadband)
F55:0			(PM_#_I1)2
F55:1			(PM_#_I2)2
F55:2			(PM_#_I3)2
F55:3			(PM_#_I1)2 + (PM_#_I2)2
F55:4	SQUARES	Global	Squares = (PM_#_I1)2 + (PM_#_I2)2 + (PM_#_I3)2
F55:5			(PM_#_I1 x PM_#_I2)
F55:6			(PM_#_I2 x PM_#_I3)
F55:7			(PM_#_I3 x PM_#_I1)
F55:8			(PM_#_I1 x PM_#_I2) + (PM_#_I2 x PM_#_I3)
F55:9	CROSSES	Global	Crosses = (PM_#_I1 x PM_#_I2) + (PM_#_I2 x PM_#_I3) + (PM_#_I3 x PM_#_I1)
F55:10			(Squares - Crosses)
F55:11	BUS_NET_KW_SQUARED	Global	Bus_Net_KW x Bus_Net_KW (Bus_Net_KW) squared
F55:12	BUS_NET_KVAR_SQUARED	Global	Bus_Net_KVAR x Bus_Net_KVAR (Bus_Net_KVAR) squared
F55:13	KW_SQR_PLUS_KVAR_SQR	Global	(Bus_Net_KW) squared + (Bus_Net_KVAR) squared
F55:14	SQR_ROOT_KW_KVAR	Global	Square Root of ((Bus_Net_KW)squared + (Bus_Net_KVAR) squared)
F55:15	KVAR_LAG_DB_SQUARED	Global	KVAR_LAG_DB X KVAR_LAG_DB (KVAR_LAG_DB squared)
F55:16			Bus_Net_KW squared + KVAR_Lag_db squared
F55:17	100_X_BUS_NET_KW	Global	100 X Bus_Net_KW
F55:18	100_X_BUS_NET_KW	Global	100 X Bus_Net_KW
F55:19	KVAR_LEAD_DB_SQUARED	Global	KVAR_LEAD_DB X KVAR_LEAD_DB (KVAR_LEAD_DB squared)
F55:20	MEAS_KVAR	Global	Meas_KVAR = Abs(Bus_Net_KVAR - Prev_KVAR).
F55:21			The square root of Bus_Net_KW squared + KVAR_Lag_db squared
F55:22			The square root of Bus_Net_KW squared + KVAR_Lead_db squared
F55:23			Bus_Net_KW squared + KVAR_Lead_db squared
F55:24			(Bus_Net_KVAR - Prev_KVAR)
F55:25	BUS_PF_X_100	Global	This register holds the total power factor x 100 on the monitored bus.
F55:26	BUS_NET_PF	Global	Bus_Net_PF Used to calculate BUS_NET_PF_X_100 for HMI Display
F55:40	PREVIOUS_KVAR	Global	register holds last measured BusNetKvar value, to determine the KVAR chan
F67:0	RING_BUFFER_1	Global	Step 1 Buffer 0-9 are Buffers, 10-109 are values. (Step 1 uses reg. 0, 10
F67:1	RING_BUFFER_2	Global	Step 2 Buffer 0-9 are Buffers, 10-109 are values. (Step 2 uses reg. 1, 20
F67:2	RING_BUFFER_3	Global	Step 3 Buffer 0-9 are Buffers, 10-109 are values. (Step 3 uses reg. 2, 30
F67:3	RING_BUFFER_4	Global	Step 4 Buffer 0-9 are Buffers, 10-109 are values. (Step 4 uses reg. 3, 40
F67:4	RING_BUFFER_5	Global	Step 5 Buffer 0-9 are Buffers, 10-109 are values. (Step 5 uses reg. 4, 50
F67:5	RING_BUFFER_6	Global	Step 6 Buffer 0-9 are Buffers, 10-109 are values. (Step 5 uses reg. 5, 60
F67:6	RING_BUFFER_7	Global	Step 7 Buffer 0-9 are Buffers, 10-109 are values. (Step 5 uses reg. 6, 70
F67:7	RING_BUFFER_8	Global	Step 8 Buffer 0-9 are Buffers, 10-109 are values. (Step 8 uses reg. 7, 80
F67:8	RING_BUFFER_9	Global	Step 9 Buffer 0-9 are Buffers, 10-109 are values. (Step 9 uses reg. 8, 90
F67:9	RING_BUFFER_10	Global	Step 10 Buffer 0-9 are Buffers, 10-109 are values. (Step 10 uses reg. 9,
F67:10	STEP_1_KVAR_BUFFER	Global	Step 1 KVAR Ring Buffer (Contains the measured Step KVAR)
F67:20	STEP_2_KVAR_BUFFER	Global	Step 2 KVAR Ring Buffer (Contains the measured Step KVAR)
F67:30	STEP_3_KVAR_BUFFER	Global	Step 3 KVAR Ring Buffer (Contains the measured Step KVAR)
F67:40	STEP_4_KVAR_BUFFER	Global	Step 4 KVAR Ring Buffer (Contains the measured Step KVAR)
F67:50	STEP_5_KVAR_BUFFER	Global	Step 5 KVAR Ring Buffer (Contains the measured Step KVAR)
F67:60	STEP_6_KVAR_BUFFER	Global	Step 6 KVAR Ring Buffer (Contains the measured Step KVAR)
F67:70	STEP_7_KVAR_BUFFER	Global	Step 7 KVAR Ring Buffer (Contains the measured Step KVAR)
F67:80	STEP_8_KVAR_BUFFER	Global	Step 8 KVAR Ring Buffer (Contains the measured Step KVAR)
F67:90	STEP_9_KVAR_BUFFER	Global	Step 9 KVAR Ring Buffer (Contains the measured Step KVAR)
F67:100	STEP_10_KVAR_BUFFER	Global	Step 10 KVAR Ring Buffer (Contains the measured Step KVAR)
F67:110	BLOCK_TOTAL_KVAR	Global	Total KVAR of the selected Block. Used to calculate the Block Average KVA
F67:111	STEP_1_SUMMED_KVAR	Global	Step 1 Running Total KVAR Used to calculate Step 1 Average KVAR
F67:112	STEP_2_SUMMED_KVAR	Global	Step 2 Running Total KVAR Used to calculate Step 2 Average KVAR
F67:113	STEP_3_SUMMED_KVAR	Global	Step 3 Running Total KVAR Used to calculate Step 3 Average KVAR
F67:114	STEP_4_SUMMED_KVAR	Global	Step 4 Running Total KVAR Used to calculate Step 4 Average KVAR
F67:115	STEP_5_SUMMED_KVAR	Global	Step 5 Running Total KVAR Used to calculate Step 5 Average KVAR
F67:116	STEP_6_SUMMED_KVAR	Global	Step 6 Running Total KVAR Used to calculate Step 6 Average KVAR
F67:117	STEP_7_SUMMED_KVAR	Global	Step 7 Running Total KVAR Used to calculate Step 7 Average KVAR
F67:118	STEP_8_SUMMED_KVAR	Global	Step 8 Running Total KVAR Used to calculate Step 8 Average KVAR
F67:119	STEP_9_SUMMED_KVAR	Global	Step 9 Running Total KVAR Used to calculate Step 9 Average KVAR
F67:120	STEP_10_SUMMED_KVAR	Global	Step 10 Running Total KVAR Used to calculate Step 10 Average KVAR
F67:121	STEP_1_AVERAGE_KVAR	Global	Step 1 Average KVAR Calculated after Num_Trials is complete
F67:122	STEP_2_AVERAGE_KVAR	Global	Step 2 Average KVAR Calculated after Num_Trials is complete
F67:123	STEP_3_AVERAGE_KVAR	Global	Step 3 Average KVAR Calculated after Num_Trials is complete
F67:124	STEP_4_AVERAGE_KVAR	Global	Step 4 Average KVAR Calculated after Num_Trials is complete
F67:125	STEP_5_AVERAGE_KVAR	Global	Step 5 Average KVAR Calculated after Num_Trials is complete
F67:126	STEP_6_AVERAGE_KVAR	Global	Step 6 Average KVAR Calculated after Num_Trials is complete
F67:127	STEP_7_AVERAGE_KVAR	Global	Step 7 Average KVAR Calculated after Num_Trials is complete
F67:128	STEP_8_AVERAGE_KVAR	Global	Step 8 Average KVAR Calculated after Num_Trials is complete
F67:129	STEP_9_AVERAGE_KVAR	Global	Step 9 Average KVAR Calculated after Num_Trials is complete
F67:130	STEP_10_AVERAGE_KVAR	Global	Step 10 Average KVAR Calculated after Num_Trials is complete
F67:[N70:17]			Averager Summation Block Address
F67:[N70:18]	STEP_AVG_VALUE	Global	Step Average Value
F67:[N70:26]			F67:[(Ring base)+ (pointer)] or F67:[((Step_Selected*10)+ N70:[N66:2])]
F67:[N70:27]			Totalize the KVAR for the selected Block (Step)
F67:[N70:28]			Calculate the Average KVAR for the selected Block (Step)
F71:0	STEP_KVAR_TOL_KVAR	Global	Step KVAR Tolerance in KVAR - Floating point format
F71:2	KVAR_TOL_PERCNT	Global	KVAR Tolerance in % of scale in Floating point format
F71:20	MEAS_STEPSIZE	Global	The measured and averaged KVAR of the capacitor element
F71:21	STEP_KVAR_90_PERCENT	Global	Step_KVAR_90% value for the 90% test. (Tolerance from Effective > 10%)

Address/Symbol Database

Address	Symbol	Scope	Description
F91:0	TEST_CASE_KVAR	Global	Test KVAR = NewBaseline + this step size
F91:1	DELTA_KVAR_1	Global	Delta_KVAR for Step #1
F91:2	DELTA_KVAR_2	Global	Delta_KVAR for Step #2
F91:3	DELTA_KVAR_3	Global	Delta_KVAR for Step #3
F91:4	DELTA_KVAR_4	Global	Delta_KVAR for Step #4
F91:5	DELTA_KVAR_5	Global	Delta_KVAR for Step #5
F91:6	DELTA_KVAR_6	Global	Delta_KVAR for Step #6
F91:7	DELTA_KVAR_7	Global	Delta_KVAR for Step #7
F91:8	DELTA_KVAR_8	Global	Delta_KVAR for Step #8
F91:9	DELTA_KVAR_9	Global	Delta_KVAR for Step #9
F91:10	DELTA_KVAR_10	Global	Delta_KVAR for Step #10
F91:11	OLD_BASELINE_KVARs	Global	Old Baseline KVARs
F91:12	NEW_BASELINE_KVARs	Global	New Baseline KVARs
F91:14	ABS_BUS_NET_KVAR	Global	This register holds the Absolute Value total reactive power on the monito
F91:15	KVAR_LEAD_DB_ERROR	Global	kVAR Leading Error Amount the kVAR is Leading the kVAR Lead Deadband
F91:16	KVAR_LAG_DB_ERROR	Global	kVAR Lagging Error Amount the kVAR is Lagging the kVAR Lag Deadband
F91:17	TOTAL_CORRECTDB_KVAR	Global	Corrected kVAR + DB Total Amount of kVAR required to bring system within
F91:18	TOTAL_KVAR_CORRECT	Global	Total kVAR Correction Amount
F91:21			"0" Value Reference File for Floats
F91:[N90:0]			List of Delta_KVAR for each step
F91:[N90:14]			
F91:[N90:16]			Effective KVAR Value of the Step with the next Lowest Effective KVAR
F132:0			I1 Demo Current
F132:1			I2 Demo Current
F132:2			I3 Demo Current
F132:3			L1L2 Demo Voltage
F132:4			L2L3 Demo Voltage
F132:5			L3L1 Demo Voltage
F132:6			Demo Frequency
F132:7			Demo W1
F132:8			Demo W2
F132:9			Demo W3
F132:10			Demo Total W
F132:11			Demo Var1
F132:12			Demo Var2
F132:13			Demo Var3
F132:14			Demo Total Vars
F132:15			Demo PF1
F132:16			Demo PF2
F132:17			Demo PF3
F132:18			Demo Total PF
F132:19			Demo %THD
F132:20			Demo Step1 size
F132:21			Demo Step2 Vars
F132:22			Demo Step3 Vars
F132:23			Demo Step4 Vars
F132:24			Demo Step5 Vars
F132:25			Demo Step6 Vars
F132:26			Demo Step7 Vars
F132:27			Demo Step8 Vars
F132:28			Demo Step9 Vars
F132:29			Demo Step10 Vars
F132:30			DEMO Voltage Setup
F132:31			Demo Total VA Value
F132:32			Initial Total Demo Vars
F132:33			Demo Calculated Total Vars
F132:34			Demo Initial %THD
F132:35			%THD Reduction Filter Size
F132:36			
F132:40			VA*VA
F132:41			VAR*VAR
F132:42			(Var*Var)/(VA*VA)
F132:43			1-((Var*Var)/(VA*VA))
F132:44			Square Root of 3
F132:50			for watss calcuation
F133:0			
F140:0			line 1 current
F140:12			
F142:1			wiring diag command =4096
F142:22			PM dynamic wiring status of ALL PMs through MSG
F142:25			PM1 Wiring status
F142:26			PM2 Wiring Status
F142:27			PM3 Wiring Status
F142:28			PM4 Wiring Status
F[N46:6]:0			FILL PM TABLE Copy F15:0 - 2 to F[10+PM]:0 - 2
F[N46:6]:3			FILL PM TABLE Copy F15:8 - 10 to F[10+PM]:3 - 5
F[N46:6]:6			FILL PM TABLE Move F15:12 to F[10+PM]:6
F[N46:6]:7			FILL PM TABLE Copy F17:0 - 7 to F[10+PM]:7 - 14
F[N46:6]:15			FILL PM TABLE F19:0 - 4 to F[10+PM]:15 - 19.
F[N46:10]:0			Fill PM Table Copy F31:0 - X to F[10+PM]:0 - X.
F[N46:10]:3			Registers 7-14 must first be multiplied by SQRT(3) before being placed int

Address/Symbol Database

Address	Symbol	Scope	Description
F[N46:10]:4			Registers 7-14 must first be multiplied by SQRT(3) before being placed in
F[N46:10]:5			Registers 7-14 must first be multiplied by SQRT(3) before being placed in
F[N46:10]:6			
F[N46:10]:7			registers 7-14 must first be multiplied by 3 (SQRT(3)) before being placed
F[N46:10]:8			registers 7-14 must first be multiplied by (SQRT(3)) before being placed
F[N46:10]:9			registers 7-14 must first be multiplied by (SQRT(3)) before being placed
F[N46:10]:10			registers 7-14 must first be multiplied by (SQRT(3)) before being placed
F[N46:10]:11			registers 7-14 must first be multiplied by (SQRT(3)) before being placed
F[N46:10]:12			registers 7-14 must first be multiplied by (SQRT(3)) before being placed
F[N46:10]:13			registers 7-14 must first be multiplied by (SQRT(3)) before being placed
F[N46:10]:14			registers 7-14 must first be multiplied by (SQRT(3)) before being placed
F[N46:10]:15			Change Sign for PF values and copy F31:15 - 19 to F[10+PM]:15 - 19.
I:0/0	INPUT0	Global	
I:0/1	INPUT1	Global	
I:0/2	INPUT2	Global	
I:0/3	INPUT3	Global	
I:0/4	INPUT4	Global	
I:0/5	INPUT5	Global	
I:0/6	INPUT6	Global	
I:0/7	INPUT7	Global	
I:0/8	INPUT8	Global	
I:0/9	INPUT9	Global	
I:0/10	INPUT10	Global	
I:0/11	INPUT11	Global	
L136:0			
L136:4			
L137:0			
L137:1			
L138:0	L138	Global	PM1 IP address Copy word consecutive N139:18 & N139:19
L138:1			PM2 IP address Copy word consecutive N139:28 & N139:29
L138:2			PM3 IP address Copy word consecutive N139:38 & N139:39
L138:3	L1383	Global	PM4 IP address Copy word consecutive N139:48 & N139:49
L138:4			
L138:17/0			
L138:17/1			
MG100:2	READ_PMX_SETUPS	Global	MSG Read the currently selected PM, table 33 "setups", to local table N33
MG100:2/DN			
MG100:3	WRITE_PMX_SETUPS	Global	MSG Write the local N33 table to the currently selected PM, table 33, "S
MG100:3/ER			
MG100:3/DN			
MG100:4	READ_PM_X_N44	Global	MSG Read currently selected PM, table 44 ,16 Words to the local N44. "User
MG100:4.NB			
MG100:5	WRITE_TO_PMX_N44	Global	MSG Write the local N44 to the currently selected PM, table 44,16 Words.
MG100:6	READ_PMX_F34_1	Global	Send MSG to "write" PM register F34:1 to MicroLogix register F19:4. PM100
MG100:7	READ_PM_X_N30	Global	MSG Read currently selected PM, table 30 ,26 Words to the local N30. "User
MG100:7/EN			
MG100:8	WRITE_TO_PMX_N30	Global	MSG Write the local N30 to the currently selected PM, table 30,26 Words.
MG100:9	READ_PMX_F34_X	Global	Send MSG to "write" PM register F34:1 to MicroLogix register F19:4 PM3000
MG100:10	NET_ENI_MSG_248	Global	1761-NET-ENI Message Instruction Node 248 (Save Configuration)
MG100:14			
MG100:14/DN			
MG100:15			
N7:0	MEAS_STEPSIZE_S1	Global	The measured and averaged 3-phase KVAR of the capacitor element connected
N7:1	MEAS_STEPSIZE_S2	Global	The measured and averaged 3-phase KVAR of the capacitor element connected
N7:2	MEAS_STEPSIZE_S3	Global	The measured and averaged 3-phase KVAR of the capacitor element connected
N7:3	MEAS_STEPSIZE_S4	Global	The measured and averaged 3-phase KVAR of the capacitor element connected
N7:4	MEAS_STEPSIZE_S5	Global	The measured and averaged 3-phase KVAR of the capacitor element connected
N7:5	MEAS_STEPSIZE_S6	Global	The measured and averaged 3-phase KVAR of the capacitor element connected
N7:6	MEAS_STEPSIZE_S7	Global	The measured and averaged 3-phase KVAR of the capacitor element connected
N7:7	MEAS_STEPSIZE_S8	Global	The measured and averaged 3-phase KVAR of the capacitor element connected
N7:8	MEAS_STEPSIZE_S9	Global	The measured and averaged 3-phase KVAR of the capacitor element connected
N7:9	MEAS_STEPSIZE_S10	Global	The measured and averaged 3-phase KVAR of the capacitor element connected
N7:10	EFF_STEPSIZE_S1	Global	The Effective 3-phase KVAR of the capacitor element connected to step #1
N7:11	EFF_STEPSIZE_S2	Global	The Effective 3-phase KVAR of the capacitor element connected to step #2
N7:12	EFF_STEPSIZE_S3	Global	The Effective 3-phase KVAR of the capacitor element connected to step #3
N7:13	EFF_STEPSIZE_S4	Global	The Effective 3-phase KVAR of the capacitor element connected to step #4
N7:14	EFF_STEPSIZE_S5	Global	The Effective 3-phase KVAR of the capacitor element connected to step #5
N7:15	EFF_STEPSIZE_S6	Global	The Effective 3-phase KVAR of the capacitor element connected to step #6
N7:16	EFF_STEPSIZE_S7	Global	The Effective 3-phase KVAR of the capacitor element connected to step #7
N7:17	EFF_STEPSIZE_S8	Global	The Effective 3-phase KVAR of the capacitor element connected to step #8
N7:18	EFF_STEPSIZE_S9	Global	The Effective 3-phase KVAR of the capacitor element connected to step #9
N7:19	EFF_STEPSIZE_S10	Global	The Effective 3-phase KVAR of the capacitor element connected to step #10
N7:20	NUM_OPS_S1	Global	Holds the number of times that step #1 has been activated. (From Operatio
N7:21	NUM_OPS_S2	Global	Holds the number of times that step #2 has been activated. (From Operatio
N7:22	NUM_OPS_S3	Global	Holds the number of times that step #3 has been activated. (From Operatio
N7:23	NUM_OPS_S4	Global	Holds the number of times that step #4 has been activated. (From Operatio
N7:24	NUM_OPS_S5	Global	Holds the number of times that step #5 has been activated. (From Operatio
N7:25	NUM_OPS_S6	Global	Holds the number of times that step #6 has been activated. (From Operatio
N7:26	NUM_OPS_S7	Global	Holds the number of times that step #7 has been activated. (From Operatio
N7:27	NUM_OPS_S8	Global	Holds the number of times that step #8 has been activated. (From Operatio
N7:28	NUM_OPS_S9	Global	Holds the number of times that step #9 has been activated. (From Operatio

Address/Symbol Database

Address	Symbol	Scope	Description
N7:29	NUM_OPS_S10	Global	Holds the number of times that step #10 has been activated. (From Operati
N7:30	CAP_DISCH_TIMR_PRE	Global	Length of Time to wait before Capacitors are considered discharged
N7:31	NOMINAL_VOLTAGE_DAT	Global	This register holds the nominal bus voltage level. Configured from DAT
N7:32	VOLTAGE_RANGE	Global	This register holds the allowable \pm voltage range in percent (user config
N7:33	%THD_V_SETPPOINT	Global	Magnitude in % at which the control starts to adds steps to minimize %THD
N7:34	KVAR_LEAD_DB	Global	Leading KVAR dead-band limit, typically 33% of smallest step
N7:35	KVAR_LAG_DB	Global	Lagging KVAR dead-band limit, typically 66% of largest step 35 KVAR
N7:36	STEP_KVAR_TOLER_PRCN	Global	Percentage of KVAR Tolerance
N7:37	PF_INRANGE_TIMR_PRE	Global	Time to wait for PF to come into acceptable range, before alarming.
N7:38	%THD_TIMER_PRESET	Global	Time to wait after all steps are closed, before alarming if %THD_V too hi
N7:39	KVAR_TOLRNCE_TMR_PRE	Global	Time to wait for the KVAR to change after changing a step, before alarmin
N7:40	HIGH_LIMIT_TIMER_PRE	Global	Time to wait after BusVolts falls below HighLimit before resetting Voltag
N7:41	LOW_LIMIT_TIMER_PRES	Global	Time to wait after BusVolts exceeds LowLimit before resetting VoltageLow
N7:42	IN_RANGE_TIMER_PREST	Global	Time to wait before setting VoltageOK flag once BusVolts is stable in acc
N7:43	CONTROL_WORD	Global	CTPT Mode 0=normal, 1="new" mode (PT across A,B), 2="retro" mode (PT acro
N7:43/0	CTPT_MODE_0	Global	CTPT Mode 0=normal, 1=neutral mode (PT across A-N), 2=retro mode (PT acro
N7:43/1	CTPT_MODE_1	Global	CTPT Mode 0=normal, 1=neutral mode (PT across A-N), 2=retro mode (PT acro
N7:43/2	CTPT_MODE_2	Global	CTPT Mode 0=normal, 1=neutral mode (PT across A-N), 2=retro mode (PT acro
N7:43/3			Enable Demo Mode
N7:43/4			Restore Factory Defaults
N7:43/5			Initialize Step Buffer
N7:43/6			Disable Step Tolerance
N7:43/7			ENABLE INPUT MODE
N7:44	UNBALANCE_TIMER_PRES	Global	Time to wait before alarming and resetting the Unbalance flag. 30 sec
N7:45	NUM_PM'S	Global	The number of PM's to include in the aggregate KW and KVAR calculations.
N7:46	NUM_STEPS	Global	This value indicates the total number of capacitor steps that are employe
N7:47	MODE	Global	This value determines the method of adding steps to manage PF.
N7:48	DAT_PROTECT_1	Global	DAT N7: Protection Bits Word 1 = -1 (Reserved Do Not Use, Do Not Change)
N7:49	DAT_PROTECTION_2	Global	DAT N7: Protection Bits Word 2 = 32767 (Reserved Do Not Use, Do Not Chang
N7:50	DAT_PROTECTION_3	Global	DAT N7: Protection Bits Word 3 = 2048 (Reserved Do Not Use, Do Not Change
N7:51	UNBALANCED_LIMIT	Global	This register holds the limit for current that will trigger an Unbalanced
N7:52	PM_READ_PSWD	Global	(Used by HMI.)
N7:53	PM_READ_TIMER_PRESET	Global	(Used by HMI.) 5 sec
N7:54	PM_READ_TIMER_ACC	Global	Copied from PMreadTimer.ACC (Used by HMI.)
N7:56	NOMINAL_VOLT_SCALER	Global	This register holds the nominal bus voltage level scaling value. 1,10,100
N7:57	STEPS_ACTIVE	Global	This register holds the quantity of steps already active. (Used by HMI.)
N7:58	STEPS_REQUIRED	Global	Register holds the number of steps Active (Closed) in Auto as determined
N7:59	NUM_TRIALS	Global	holds number of trials used to average each step's measured KVAR size.
N7:60	AUTO_CNFG_MODE	Global	Auto Conf Steps Mode 0 = Never Configured 1= Configuring Steps 2= Waitng
N7:61	PF_NOT_ACHVE_TMR_PRE	Global	TTime before Alarming that PF (KVAR) out of limits
N7:62			Unused
N7:63			Unused
N7:[N62:39]			Step Usage Index
N7:[N66:11]			Operations_Counter --> Num_Ops_S# which is N7:[(Step_Selected +19)]
N7:[N70:21]			New Meas_StepSize --> Meas_StepSize_S# which is N7:[(Step_Selected -1)
N7:[N74:30]			These registers hold the number of times that each step "#" has been acti
N10:0			
N20:0	NET_ENI_BYTE_1_W	Global	1761-NET-ENI TCP/IP Byte 1 Written to NET-ENI
N20:1	NET_ENI_BYTE_2_W	Global	1761-NET-ENI TCP/IP Byte 2 Written to NET-ENI
N20:2	NET_ENI_BYTE_3_W	Global	1761-NET-ENI TCP/IP Byte 3 (Written to NET-ENI)
N20:3	NET_ENI_BYTE_4_W	Global	1761-NET-ENI TCP/IP Byte 4 (Written to NET-ENI)
N20:4	NET_ENI_NODE_252	Global	1761-NET-ENI Node252 BOOT/P Disable (1 = DF1 Configuration)
N20:5	NET_ENI_NODE_248	Global	1761-NET-ENI Node248 Save Configuration (0 = Save Configuration to Flash)
N20:10	NET_ENI_BYTE_1_R	Global	1761-NET-ENI TCP/IP Byte 1 Read from NET-ENI
N20:11	NET_ENI_BYTE_2_R	Global	1761-NET-ENI TCP/IP Byte 2 Read from NET-ENI
N20:12	NET_ENI_BYTE_3_R	Global	1761-NET-ENI TCP/IP Byte 3 (Read from NET-ENI)
N20:13	NET_ENI_BYTE_4_R	Global	1761-NET-ENI TCP/IP Byte 4 (Read from NET-ENI)
N25:0	OFFICIAL_INT	Global	"Official" Integer Image Table
N25:60			
N27:0	HMI_INT	Global	"HMI" Integer Image Table
N27:10			
N27:46			
N27:59			
N27:60			
N27:61			
N29:0	STEP_MODE_MASK	Global	
N29:0/0			
N29:1	INPUT_0_LOW_MASK	Global	
N29:2			
N30:0	PM_X_PASSWORD	Global	PM_X_Password
N30:1	PM_X_COMM_INSTANCE	Global	Communications Instance 31=RS485 or CSP Ethernet
N30:2	IGNORED	Global	PM_X_PASSWORD
N30:3	PM_X_L1_CURRENT	Global	PM #*, L1 Current
N30:4	PM_X_L2_CURRENT	Global	PM #*, L2 Current
N30:5	PM_X_L3_CURRENT	Global	PM #*, L3 Current
N30:6	PM_X_L1_L2_VOLTAGE	Global	PM #*, L1-L2 Voltage
N30:7	PM_X_L2_L3_VOLTAGE	Global	PM #*, L2-L3 Voltage
N30:8	PM_X_L3_L1_VOLTAGE	Global	PM #*, L3-L1 Voltage
N30:9	PM_X_FREQUENCY	Global	PM #*, Frequency
N30:10	PM_X_L1_REAL_POWER	Global	PM #*, L1 Real Power
N30:11	PM_X_L2_REAL_POWER	Global	PM #*, L2 Real Power

Address/Symbol Database

Address	Symbol	Scope	Description
N30:12	PM_X_L3_REAL_POWER	Global	PM #*, L3 Real Power
N30:13	PM_X_TOTAL_REAL_POWR	Global	PM #*, Total Real Power
N30:14	PM_X_L1_REACTIVE_PWR	Global	PM #*, L1 Reactive Power
N30:15	PM_X_L2_REACTIVE_PWR	Global	PM #*, L2 Reactive Power
N30:16	PM_X_L3_REACTIVE_PWR	Global	PM #*, L3 Reactive Power
N30:17	PM_X_TOTL_REACT_PWR	Global	PM #*, Total Reactive Power
N30:18	PM_X_L1_POWER_FACTOR	Global	PM #*, L1 Power Factor
N30:19	PM_X_L2_POWER_FACTOR	Global	PM #*, L2 Power Factor
N30:20	PM_X_L3_POWER_FACTOR	Global	PM #*, L3 Power Factor
N30:21	PM_X_TOTAL_PWR_FACTR	Global	PM #*, Total Power Factor
N30:22	PM_X_TOTAL_HARMONIC	Global	PM #*, measured Total Harmonic Distortion percentage
N30:23			Unused
N30:24			Unused
N30:25			Unused
N33:0	PM_SETUP_WORD_0	Global	PM# Setup Table Word 0
N33:1	PM_SETUP_WORD_1	Global	PM# Setup Table Word 1
N33:2	PM_SETUP_WORD_2	Global	PM# Setup Table Word 2
N42:0	PM_1_ADDR	Global	PM #1 DH-485 address
N42:1	PM_2_ADDR	Global	PM #2 DH-485 address
N42:2	PM_3_ADDR	Global	PM #3 DH-485 address 103
N42:3	PM_4_ADDR	Global	PM #4 DH-485 address 104
N42:10	LAST_NAK_PAK	Global	Number of NAK Packets Received Last Scan
N42:11	LAST_UNDEL_PAK	Global	Last Scan Number of Undelivered Message Packets
N42:14	TP_ERROR_COUNT	Global	Tight Pack BTR Accumulated Error Count
N46:0	PM_1_DATA_ELAPSD_TIM	Global	PM 1 Data Update Elapsed Time
N46:1	PM_2_DATA_ELAPSD_TIM	Global	PM 2 Data Update Elapsed Time
N46:2	PM_3_DATA_ELAPSD_TIM	Global	PM 3 Data Update Elapsed Time
N46:3	PM_4_DATA_ELAPSD_TIM	Global	PM 4 Data Update Elapsed Time
N46:4	PM_1_COMM_ER_CNT	Global	PM #1 Communications Accumulated Error Count
N46:5	PM_2_TP_ER_CNT	Global	PM #2 Communications Accumulated Error Count
N46:6	PM_3_TP_ER_CNT	Global	PM #3 Communications Accumulated Error Count
N46:7	PM_4_TP_ER_CNT	Global	PM #4 Communications Accumulated Error Count
N46:8	PM_CURRENT_COMM	Global	Power Monitor Currently Being Communicated with 1 = 101, 2 = 102 3 = 103,
N46:9	ALLOWABLE_ERRORS	Global	Allowable Comm Errors - Number of Comm Error allowed before placing PM in
N46:10	PM_TABLE_INDEX	Global	Fill PM Table Index (F[10+PM]:0) PM 1 = 11 PM 2 = 12 PM 3 + 13 etc.
N46:11	DEADBAND_MIDPOINT	Global	Deadband Midpoint The sum of (kVAR Lag Deadband + kVAR Lead Deadband) /2
N46:12	PM_COMM_MODE	Global	Power Monitor Data Communications Mode 0 = Configuration 1 = Read Data
N46:13	TOTAL_KVAR_DB	Global	Total kVAR Deadband The sum of (kVAR Lag Deadband + kVAR Lead Deadband)
N46:14	ALLOW_ERRORS_SET	Global	Allowable Errors Setting Used to set the Pre for the PM Communications Er
N46:15	PM_X_CONFIG_STATUS	Global	PM X Configuration Status 1 = Completed Successfully 0 = Failed
N46:16	PM_1_CONFIG_STATUS	Global	PM 1 Configuration Status 1= Completed Successfully 0 = Failed
N46:17	PM_2_CONFIG_STATUS	Global	PM 2 Configuration Status 1= Completed Successfully 0 = Failed
N46:18	PM_3_CONFIG_STATUS	Global	PM 3 Configuration Status 1= Completed Successfully 0 = Failed
N46:19	PM_4_CONFIG_STATUS	Global	PM 4 Configuration Status 1= Completed Successfully 0 = Failed
N46:20	PM_X_CONFIG_SEQENCR	Global	PM# Config Sequencer 1=Read N33 2=Write N33 w Setup 3=Read N30 4=Write N3
N46:21	PM_CONFIG_STATUS_INDX	Global	PM Config Status Index PM 1 = 16 PM 2 = 17 PM 3 + 18 etc.
N46:22	LAST_NUM_PMS	Global	Number of Power Monitors at last PM Configuration Cycle
N46:[N46:21]	PMX_CNFG_STATUS_CHK	Global	Check the PMs Configuration Status if = 1 then Data is good and can be us
N54:0	LOADCALC_LOOP_INDX	Global	LoadCalc Loop Index
N54:1	LOADCALC_PM_INDX	Global	LoadCalc PM Index
N54:2	LOADCALC_LOOP_TERMIN	Global	Loop Index + 1
N58:0	TRIP_STEP_NUM	Global	This register holds the number of the step to release.
N58:1	USE_STEP_NUM	Global	This register holds the number of the step to activate.
N58:2	STEP_2_CLOSE_INDX	Global	Choose Step to Close Index
N58:3	STEP_CLOSE_INDX_49	Global	Choose Step to Close Index Offset (+49)
N58:4	STEP_2_TRIP_INDX	Global	Choose Step to Trip Index
N58:5	STEP_2_TRIP_INDX_49	Global	Choose Step to Trip Index Offset (+49)
N58:6	MODE_2_CLOSE_INDX	Global	Mode 2 Choose Step to Close Index (49 + Least)
N58:7	SEQ_TIMER_CHECK_LOOP	Global	Sequencer Timer Check Loop Index (Used to check Status of Timers)
N58:8	AUT_MAN_CLOSE_INDX	Global	Auto_Man_# Close Bit Index Offset for use in Indirect Addressing
N58:9	OPEN_CLOSE_CLS_INDX	Global	Open/Close "Close Step" Bit Index
N58:10	DIS_TIMR_CLS_INDX	Global	Discharge Timer Timing "Close Step Indx"
N58:11	AUT_MAN_CLOSED_INDX	Global	Auto_Man_# Closed State Bit Index Offset for use in Indirect Addressing
N58:12	OPEN_CLOSE_OPN_INDX	Global	Open/Close "Open Step" Bit Index
N62:0	LEAST	Global	This register holds the step numbers with the least number of operations
N62:1	MOST	Global	This register holds the step numbers with the most number of operations.
N62:5	BALANCER_INR_NDX_OFF	Global	Balancer Inner Loop Index Offset
N62:20	BALANCED_1	Global	This group of registers hold the balanced, ordered step numbers. (Balanc
N62:21	BALANCED_2	Global	This group of registers hold the balanced, ordered step numbers. (Balance
N62:22	BALANCED_3	Global	This group of registers hold the balanced, ordered step numbers. (Balance
N62:23	BALANCED_4	Global	This group of registers hold the balanced, ordered step numbers. (Balance
N62:24	BALANCED_5	Global	This group of registers hold the balanced, ordered step numbers. (Balance
N62:25	BALANCED_6	Global	This group of registers hold the balanced, ordered step numbers. (Balance
N62:26	BALANCED_7	Global	This group of registers hold the balanced, ordered step numbers. (Balance
N62:27	BALANCED_8	Global	This group of registers hold the balanced, ordered step numbers. (Balance
N62:28	BALANCED_9	Global	This group of registers hold the balanced, ordered step numbers. (Balance
N62:29	BALANCED_10	Global	This group of registers hold the balanced, ordered step numbers. (Balance
N62:30	BALANCER_BLNCE_INDX	Global	Balanced List File Number Index (Balanced List file number address)
N62:31	BALANCER_STP_NDX_OFF	Global	Balanced List Step Number offset (Step Number)
N62:32	NUMBER_OPS_S_INDX	Global	Number_Ops_S# File Number Offset Index
N62:33	STEP_AVAIL_OFST_INDX	Global	Step_Available_# File Number Address Offset Index

Address/Symbol Database

Address	Symbol	Scope	Description
N62:34	STEP_USED_BIT_INDX	Global	Step Already used in Bubble Sort Check Bit Offset Index
N62:35	OPS_COMPARE	Global	Number of OPS Comparison File
N62:36	MIN_VAL_STEP	Global	Holding Register for the Step Number with the lowest number of uses
N62:37	INDEX_LEAST_MOST	Global	Find the Step Number with the Least or Most number of operations INDEX
N62:38	COMPARE_LEAST_OPS	Global	Number of OPS Comparison File
N62:39	INDEX_LEAST_MOST_20	Global	Least Most Index + 20 (Used in Indirect Addressing)
N62:40	INDEX_LEAST_MOST_11	Global	Least Most Index + 11 (Used in Indirect Addressing)
N62:41	BALANCE_OUT_STP_INDX	Global	Balancer Bubble Sort Outer Loop Step Index
N62:[N62:30]			Contains the next Step Number with next lowest number of operations from
N62:[N90:15]			Contains the next Step Number with next lowest number of operations from
N66:0	STEP_STATUS	Global	This register holds the bit-wise summary of step availability.
N66:1	STEP_USAGE	Global	This register holds the bit-wise summary of step usage. (for memory)
N66:2	STEP_SELECTED	Global	This register holds number of the step currently selected for call (for u
N66:3	STEP_SELECT_PLUS_19	Global	Step Selected + 19
N66:4	STEP_AVAILABLE_OFFSET	Global	Step_Available_# Bit Index Offset for use in Indirect Addressing
N66:5	STEP_ALARM_OFFSET	Global	Step_Alarm_# Bit Index Offset for use in Indirect Addressing
N66:6	AUTO_MAN_INDEX	Global	Auto_Man_# Bit Index Offset for use in Indirect Addressing (Step Selected
N66:7	MANL_CMD_INDEX	Global	Manl_Cmd_# Bit Index Offset for use in Indirect Addressing (Step_Selected
N66:8	OPEN_INDEX	Global	Open_# Bit Index Offset for use in Indirect Addressing (Step Selected -1)
N66:9	STEP_ALARM_INDEX	Global	Step_Alarm_# Bit Index Offset for use in Indirect Addressing (Step_Selecte
N66:10	OPEN_STATUS_INDEX	Global	Open_Status_# Bit Index Offset for use in Indirect Addressing (Step Select
N66:11	NUM_OPS_S_INDEX	Global	Operations Counter Num_Ops_S# Bit Index Offset for use in Indirect Address
N66:12	EFF_STEP_SIZE_INDEX	Global	Eff_StepSize_# Address Offset Index for use in Indirect Addressing
N66:13	PFMGR3_COMMAND_INDX	Global	PfMgr3 B88:0 One Shot Index - Corresponds to the Command Bit set in B88:
N66:14	CAP_DISCHG_TIM_INDEX	Global	Capacitor_Dischg_Timer Address Offset Index for Indirect Addressing T69:
N66:15	PREVIOUS_MODE	Global	Auto Detect Mode holding register. (Holds the Mode that was selected befo
N66:16	DET_STP_DIS_TMR_NDX	Global	Auto Detect Step Discharge Timer Index
N66:17	DET_AUTO_MANL_NDX	Global	Auto Detect Step Auto Manual INdex Index
N66:18	AUT_CNFG_STP_DIS_N	Global	Auto Configure Capacitor Discharge Timer Index- Used to determine if the
N70:1	POINTER_1	Global	Step #1 Pointer (Used in Averager module as Index for Ring Buffer for Ave
N70:2	POINTER_2	Global	Step #2 Pointer (Used in Averager module as Index for Ring Buffer for Ave
N70:3	POINTER_3	Global	Step #3 Pointer (Used in Averager module as Index for Ring Buffer for Ave
N70:4	POINTER_4	Global	Step #4 Pointer (Used in Averager module as Index for Ring Buffer for Ave
N70:5	POINTER_5	Global	Step #5 Pointer (Used in Averager module as Index for Ring Buffer for Ave
N70:6	POINTER_6	Global	Step #6 Pointer (Used in Averager module as Index for Ring Buffer for Ave
N70:7	POINTER_7	Global	Step #7 Pointer (Used in Averager module as Index for Ring Buffer for Ave
N70:8	POINTER_8	Global	Step #8 Pointer (Used in Averager module as Index for Ring Buffer for Ave
N70:9	POINTER_9	Global	Step #9 Pointer (Used in Averager module as Index for Ring Buffer for Ave
N70:10	POINTER_10	Global	Step #10 Pointer (Used in Averager module as Index for Ring Buffer for Av
N70:11	KVAR_TIMER_DN_INDEX	Global	KVAR Timer Done One Shot Bit (Used to index the timers Done Bit to One Sh
N70:12	AVG_BLK_SAMPLE_INDX	Global	Averager Block Sum Sample Loop Index
N70:13	AVG_BLK_STEP_INDX	Global	Averager Block Sum Step Loop Index
N70:14	BLK_AVG_LOOP_INDX	Global	Block Averager Source Loop Index
N70:15	NUM_TRIALS_INDX_OFF	Global	Number of Trials Index Offset (Used to offset Num_Trials by 1 to allow us
N70:16	STEP_AVAIL_INDEX	Global	Step_Available_# Bit Index Offset for use in Indirect Addressing (Step_Sel
N70:17	AVG_SUM_DEST_INDX	Global	Averager BLK Summation Destination Index
N70:18	BLK_AVG_DEST_INDX	Global	Averager BLK Average Destination Index
N70:19	AVG_LOOP_INDX	Global	Averager Sample Loop Index
N70:21	MEAS_STEP_SIZE_INDEX	Global	Meas_StepSize_S# Address Offset Index for use in Indirect Addressing (Ste
N70:22	EFFECT_MNS_MEASURED	Global	Effective_StepSize_S # - Meas_StepSize_S#
N70:23	NOMINAL_MNS_TOLERANC	Global	Calculate a separate Step_KVAR_90% value for the 90% test. Tolerance from
N70:24	TOTAL_AUTO	Global	Total Steps in Auto and Available for Use
N70:25	RING_BASE	Global	Ring Buffer Base Index (Step Selected * 10)
N70:26	RING_BASE_PLUS_POINT	Global	Ring Base + Pointer Used to access the ring buffer by indirect addressing
N70:27	BLOCK_SUM_KVAR_INDEX	Global	Block Sum KVAR INDEX used in Indirect Addressing to SUM KVAR for Step_# B
N70:28	BLOCK_AVG_KVAR_INDEX	Global	Block Average Index used in Indirect Addressing to calculate the Block Av
N70:29	NUM_TRIALS_POINTER	Global	Number of Trials Pointer. Used to compare Calculated KVAR Averager to Num
N70:30	CAP_DIS_TIM_PRE_INDX	Global	Capacitor_Dischg_Timer Preset Index Offset for use in Indirect Addressing
N70:31	TOTALSTEP_AVAL_AUTO	Global	Total Number of Steps Available to Close in Auto Mode (Auto Steps Open) a
N70:32	TOTALSTEP_ACTV_AUTO	Global	Total Number of Steps Steps Active in Auto Mode (Auto Steps Closed)
N70:[N66:2]			Pointer
N74:20	OPERATIONS_COUNTER	Global	This register holds the number of trip operations that the vacuum switch
N74:30	OPERATION_COUNT_INDX	Global	Operations Counter Address Offset Index (Used in Indirect Addressing)
N78:0	PFMGR0_LEAD_DB_NEG	Global	PfMgr0 Leading KVAR dead-band limit, typically 33% of smallest step mul x
N82:0	PFMGR1_LEAD_DB_NEG	Global	PfMgr1 Leading KVAR dead-band limit, typically 33% of smallest step mul x
N86:0	PFMGR2_LEAD_DB_NEG	Global	PfMgr2 Leading KVAR dead-band limit, typically 33% of smallest step mul x
N86:1	PFMGR3_LEAD_DB_NEG	Global	PfMgr3 Leading KVAR dead-band limit, typically 33% of smallest step mul x
N90:0	DELTA_KVAR_INDEX	Global	index for finding closest matching step
N90:1	DELTA_KVAR_STEP1	Global	List of step numbers available for use
N90:2	DELTA_KVAR_STEP2	Global	List of step numbers
N90:3	DELTA_KVAR_STEP3	Global	List of step numbers
N90:4	DELTA_KVAR_STEP4	Global	List of step numbers
N90:5	DELTA_KVAR_STEP5	Global	List of step numbers
N90:6	DELTA_KVAR_STEP6	Global	List of step numbers
N90:7	DELTA_KVAR_STEP7	Global	List of step numbers
N90:8	DELTA_KVAR_STEP8	Global	List of step numbers
N90:9	DELTA_KVAR_STEP9	Global	List of step numbers
N90:10	DELTA_KVAR_STEP10	Global	List of step numbers
N90:11			Balancer Bubble Sort Outer Loop Step Index
N90:12	NUM_AVAILABLE	Global	Number of Steps Available for Use in PfMgr3 'Optimum Fit' Mode
N90:13	STEP_OPEN_INDX	Global	B3/[(N90:[N90:0])-1] Index

Address/Symbol Database

Address	Symbol	Scope	Description
N90:14	PERMUCOUNT	Global	The index PermuCount (N90:14) is set from Num_Avaliable (N90:12).
N90:15			Balanced List File Number Index (Balanced List file number address)
N90:16	STEP_LOW_KVAR	Global	Holding Register for the Step Number with the lowest Effective KVAR
N90:17	OPTIMUM_STP_NDX_OFF	Global	Optimum Fit List Step Number offset (Step Number)
N90:18	MEAS_STEP_KVAR_INDX	Global	Meas_Stepsize_# value File Number Offset Index
N90:19	OPTMUM_STEP_BIT_INDX	Global	Step Already used in Bubble Sort Check Bit Offset Index
N90:20	BUS_NET_KVAR_INTERMD	Global	Bus_Net_KVAR - Meas_StepSize_S# Intermediate Value
N90:21	DELTA_KVAR_INDEX2	Global	Index for finding closest matching step available bit Index Bit
N90:22	DELTA_KVAR_INDEX3	Global	Index for finding closest matching Open_# Index Bit
N90:23	DELTA_KVAR_INDEX4	Global	Index for finding closest matching Auto_Man_# Index Bit
N90:24	MEAS_KVAR_COMPARE	Global	Measured KVAR Comparison File
N90:25	AVAIL_STEP_FOUND	Global	Value = 99 means that an Available Step that has not already been checked
N90:26	INDEX_VALUE_4_B88_0	Global	Index value for B88:0 corresponding to the Step # sorted by KVAR, for use
N90:27	KVAR_TOL_TIMER_INDEK	Global	KVAR Tolerance Timer Status Check Loop Index
N90:28	CAP_DISCH_TIMR_INDEK	Global	Cap Discharge Timer Status Check Loop Index
N90:29	BEST_FIT_LIMIT	Global	"Best Fit" Closest Limit
N90:30			"0" Value Reference File for Integers
N90:[N90:0]			N90:1-10 is the location of the step NUMBER
N90:[N90:14]			Measured KVAR INDEX Step Numbers
N90:[N90:15]			Contains the next Step Number with next lowest KVAR Value from the Inner
N90:[N90:16]			Holding Register of the Step Number with the next Lowest Effective KVAR
N94:0	PFMGR4_LEAD_DB_NEG	Global	PfMgr4 Leading KVAR dead-band limit, typically 33% of smallest step mul x
N98:0	PFMGR5_LEAD_DB_NEG	Global	PfMgr5 Leading KVAR dead-band limit, typically 33% of smallest step mul x
N101:0	FIRST_SUBROUTINE	Global	Program File Number of First Ladder Subroutine
N101:1	LAST_SUBROUTINE	Global	Program File Number of Last Ladder Subroutine
N101:2	DIAG_BIT_INDEX	Global	Subroutine Diagnostic Bit Reset Index (Used in Indirect Addressing to res
N101:3	TERMINATE_RESET_LOOP	Global	Subroutine Diagnostic Bit Reset Index Loop Terminator (Used To Terminate
N101:10			
N137:0	N	Global	
N138:0	L	Global	
N138:1			
N139:0			
N139:0/0			Scan CHMI visibility routine
N139:0/1			step 1 visib
N139:0/2			step 2 visib
N139:0/3			step 3 visib
N139:0/4			step 4 visib
N139:0/5			step 5 visib
N139:0/6			step 6 visib
N139:0/7			step 7 visib
N139:0/8			step 8 visib
N139:0/9			step 9 visib
N139:0/10			step 10 visib
N139:0/11			PM1 Visibility
N139:0/12			PM 2 Visibility
N139:0/13			PM 3 visib
N139:0/14			PM 4 visib
N139:1			1 step
N139:2			2 steps
N139:3			3 steps
N139:4			4 steps
N139:5			5 steps
N139:6			6 steps
N139:7			7 steps
N139:8			9 steps
N139:9			9 steps
N139:10			bit 0
N139:10/0			bit0 Write IP/scan routine/initializing reset/clearing ips/IP mask&combin
N139:11			PM 1 IP address one shots
N139:11/0			One shot for moving IP Byte 2 to N139:x4 to PM x
N139:11/10			
N139:12			PM1 byte 1 from HMI
N139:13			PM1 byte 2 from HMI
N139:14			byte 2 got swapped for PMx in N139:x4
N139:15			PM1 byte 3 from HMI
N139:16			PM1 byte 4 from HMI
N139:17			byte 4 got swapped for PMx in N139:x7
N139:18			Byte 1 and 2 Masked in N139:x8 for PMx
N139:19			Byte 3 and 4 Masked in N139:x9 for PMx
N139:21			PM 2 IP address one shots
N139:22			PM2 byte 1 from HMI
N139:23			PM2 byte 2 from HMI
N139:24			byte 2 got swapped for PMx in N139:x4
N139:25			PM2 byte 3 from HMI
N139:26			PM2 byte 4 from HMI
N139:27			byte 4 got swapped for PMx in N139:x7
N139:28			Byte 1 and 2 Masked in N139:x8 for PMx
N139:29			Byte 3 and 4 Masked in N139:x9 for PMx
N139:31			PM 3 IP address one shots
N139:32			PM3 byte 1 from HMI
N139:33			PM3 byte 2 from HMI

Address/Symbol Database

Address	Symbol	Scope	Description
N139:34			byte 2 got swapped for PMx in N139:x4
N139:35			PM3 byte 3 from HMI
N139:36			PM3 byte 4 from HMI
N139:37			byte 4 got swapped for PMx in N139:x7
N139:38			Byte 1 and 2 Masked in N139:x8 for PMx
N139:39			Byte 3 and 4 Masked in N139:x9 for PMx
N139:41			PM 4 IP address one shots
N139:42			PM4 byte 1 from HMI
N139:43			PM4 byte 2 from HMI
N139:44			byte 2 got swapped for PMx in N139:x4
N139:45			PM4 byte 3 from HMI
N139:46			PM4 byte 4 from HMI
N139:47			byte 4 got swapped for PMx in N139:x7
N139:48			Byte 1 and 2 Masked in N139:x8 for PMx
N139:49			Byte 3 and 4 Masked in N139:x9 for PMx
N139:50			product selection 1=1000 2=3000
N139:51			CHMI control 1=Normal, 2= Neutral, 3=Retro
N139:52/0			%thd visibility
N139:52/1			reset from hmi
N139:52/2			One shot for PM1 ip addresses
N139:52/3			one shot for disabling output for PM1 config fail (#PM=1)
N139:52/4			one shot for disabling output for PM1 or 2 config fail (#PM=2)
N139:52/5			one shot for disabling output for PM1, 2 or 3 config fail (#PM=3)
N139:52/6			one shot for disabling output for PM1,2,3 or 4 config fail (#PM=4)
N139:99/0			Run Wiring Diagnostic (HMI button)
N139:99/1			Internal wiring diag run latched upto 7.5 seconds
N140:26/0			
O:0.0	OUTPUTS_RACK_0	Global	Outputs Rack 0
O:0/0	SYSTEM_ALARM_OUTPUT	Global	This output is energized to active the system alarm.
O:0/1			Step 1 Contactor Output
O:0/2			Step 2 Contactor Output
O:0/3			Step 3 Contactor Output
O:0/4			Step 4 Contactor Output
O:0/5			Step 5 Contactor Output
O:0/6			Step 6 Contactor Output
O:0/7			Step 7 Contactor Output
O:0/8			Step 8 Contactor Output
O:0/9			Step 9 Contactor Output
O:0/10			Step 10 Contactor Output
O:0.1			
O:1.0	CLOSEOUT_1	Global	This output is energized to close the contactor.
O:2.0	CLOSEOUT_2	Global	This output is energized to close the contactor.
O:3.0	CLOSEOUT_3	Global	This output is energized to close the contactor.
O:4.0	CLOSEOUT_4	Global	This output is energized to close the contactor.
O:5.0	CLOSEOUT_5	Global	This output is energized to close the contactor.
O:6.0	CLOSEOUT_6	Global	This output is energized to close the contactor.
O:7.0	CLOSEOUT_7	Global	This output is energized to close the contactor.
O:8.0	CLOSEOUT_8	Global	This output is energized to close the contactor.
O:9.0	CLOSEOUT_9	Global	This output is energized to close the contactor.
O:10.0	CLOSEOUT_10	Global	This output is energized to close the contactor.
Q14:3	DETERMINE_ACTION	Global	Determine if action is required
Q15:0	NUM_STEPS_LOOP	Global	Num_Steps Loop (Cycle through the Number of Steps with Step selected as t
Q15:1	INCR_INDEX	Global	
Q15:2	DETERMINE_COMMANDS	Global	Determine Commands Cycle through Num_Steps with Step_Selected as the inde
Q15:4	Q	Global	
Q18:1	CALCULATE_AVG_LOOP	Global	Perform block avg of the first Num_Trials values in buffer and returns th
Q20:1	CALC_OLD_BASELINE	Global	Find Old Baseline KVARs
Q20:2	CALCULATE_OPTM_KVAR	Global	Loop to Calculate the Optimal KVAR match
Q20:3	CHECK_TIMER_STATUS	Global	Check Timer Status Loop
Q30:1			Reset Diagnostic Bits Index (Used to reset all Diagnostic Bits used in Su
Q3:2	REFRESH_TABLES	Global	Go to refresh tables.
R6:0			
RI135:2.IP			PMx IP address for Message instruction
RI135:3.IP			PMx IP address for Message instruction
RI135:4.IP			PMx IP address for Message instruction
RI135:5.IP			PMx IP address for Message instruction
RI135:6.IP			PMx IP address for Message instruction
RIX145:0.IP			
RIX145:2.IP			PMx IP address for Message instruction
RIX145:3.IP			PMx IP address for Message instruction
RIX145:4.IP			PMx IP address for Message instruction
RIX145:5.IP			PMx IP address for Message instruction
RIX145:6.IP			PMx IP address for Message instruction
S:0			Arithmetic Flags
S:0/0			Processor Arithmetic Carry Flag
S:0/1			Processor Arithmetic Underflow/ Overflow Flag
S:0/2			Processor Arithmetic Zero Flag
S:0/3			Processor Arithmetic Sign Flag
S:1			Processor Mode Status/ Control
S:1/0			Processor Mode Bit 0
S:1/1			Processor Mode Bit 1

Address/Symbol Database

Address	Symbol	Scope	Description
S:1/2			Processor Mode Bit 2
S:1/3			Processor Mode Bit 3
S:1/4			Processor Mode Bit 4
S:1/5			Forces Enabled
S:1/6			Forces Present
S:1/7			Comms Active
S:1/8			Fault Override at Powerup
S:1/9			Startup Protection Fault
S:1/10			Load Memory Module on Memory Error
S:1/11			Load Memory Module Always
S:1/12			Load Memory Module and RUN
S:1/13			Major Error Halted
S:1/14			Access Denied
S:1/15			Processor First Pass
S:2/0			STI Pending
S:2/1			STI Enabled
S:2/2			STI Executing
S:2/3			Index Addressing File Range
S:2/4			Saved with Debug Single Step
S:2/5			DH-485 Incoming Command Pending
S:2/6			DH-485 Message Reply Pending
S:2/7			DH-485 Outgoing Message Command Pending
S:2/15			Comms Servicing Selection
S:3			Current Scan Time/ Watchdog Scan Time
S:4			Time Base
S:5/0			Overflow Trap
S:5/2			Control Register Error
S:5/3			Major Err Detected Executing UserFault Routine
S:5/4			M0-M1 Referenced on Disabled Slot
S:5/8			Memory Module Boot
S:5/9			Memory Module Password Mismatch
S:5/10			STI Overflow
S:5/11			Battery Low
S:6			Major Error Fault Code
S:7			Suspend Code
S:8			Suspend File
S:9			Active Nodes
S:10			Active Nodes
S:11			I/O Slot Enables
S:12			I/O Slot Enables
S:13			Math Register
S:14			Math Register
S:15			Node Address/ Baud Rate
S:16			Debug Single Step Rung
S:17			Debug Single Step File
S:18			Debug Single Step Breakpoint Rung
S:19			Debug Single Step Breakpoint File
S:20			Debug Fault/ Powerdown Rung
S:21			Debug Fault/ Powerdown File
S:22			Maximum Observed Scan Time
S:23			Average Scan Time
S:24			Index Register
S:25			I/O Interrupt Pending
S:26			I/O Interrupt Pending
S:27			I/O Interrupt Enabled
S:28			I/O Interrupt Enabled
S:29			User Fault Routine File Number
S:30			STI Setpoint
S:31			STI File Number
S:32			I/O Interrupt Executing
S:33			Extended Proc Status Control Word
S:33/0			Incoming Command Pending
S:33/1			Message Reply Pending
S:33/2			Outgoing Message Command Pending
S:33/3			Selection Status User/DF1
S:33/4			Communicat Active
S:33/5			Communicat Servicing Selection
S:33/6			Message Servicing Selection Channel 0
S:33/7			Message Servicing Selection Channel 1
S:33/8			Interrupt Latency Control Flag
S:33/9			Scan Toggle Flag
S:33/10			Discrete Input Interrupt Reconfigur Flag
S:33/11			Online Edit Status
S:33/12			Online Edit Status
S:33/13			Scan Time Timebase Selection
S:33/14			DTR Control Bit
S:33/15			DTR Force Bit
S:34			Pass-thru Disabled
S:34/0			Pass-Thru Disabled Flag
S:34/1			DH+ Active Node Table Enable Flag
S:34/2			Floating Point Math Flag Disable

Address/Symbol Database

Address	Symbol	Scope	Description
S:35			Last 1 ms Scan Time
S:36			Extended Minor Error Bits
S:36/8			Dll Lost
S:36/9			STI Lost
S:36/10			Memory Module Data File Overwrite Protection
S:37			Clock Calendar Year
S:38			Clock Calendar Month
S:39			Clock Calendar Day
S:40			Clock Calendar Hours
S:41			Clock Calendar Minutes
S:42			Clock Calendar Seconds
S:43			STI Interrupt Time
S:44			I/O Event Interrupt Time
S:45			Dll Interrupt Time
S:46			Discrete Input Interrupt- File Number
S:47			Discrete Input Interrupt- Slot Number
S:48			Discrete Input Interrupt- Bit Mask
S:49			Discrete Input Interrupt- Compare Value
S:50			Processor Catalog Number
S:51			Discrete Input Interrupt- Return Number
S:52			Discrete Input Interrupt- Accumulat
S:53			Discrete Input Interrupt- Timer
S:54			Discrete Input Interrupt- Timer
S:55			Last Dll Scan Time
S:56			Maximum Observed Dll Scan Time
S:57			Operating System Catalog Number
S:58			Operating System Series
S:59			Operating System FRN
S:61			Processor Series
S:62			Processor Revision
S:63			User Program Type
S:64			User Program Functional Index
S:65			User RAM Size
S:66			Flash EEPROM Size
S:67			Channel 0 Active Nodes
S:68			Channel 0 Active Nodes
S:69			Channel 0 Active Nodes
S:70			Channel 0 Active Nodes
S:71			Channel 0 Active Nodes
S:72			Channel 0 Active Nodes
S:73			Channel 0 Active Nodes
S:74			Channel 0 Active Nodes
S:75			Channel 0 Active Nodes
S:76			Channel 0 Active Nodes
S:77			Channel 0 Active Nodes
S:78			Channel 0 Active Nodes
S:79			Channel 0 Active Nodes
S:80			Channel 0 Active Nodes
S:81			Channel 0 Active Nodes
S:82			Channel 0 Active Nodes
S:83			DH+ Active Nodes
S:84			DH+ Active Nodes
S:85			DH+ Active Nodes
S:86			DH+ Active Nodes
T4:0	NET_ENI_CNFG_TIMER	Global	1761-NET-ENI Configuraion Timer (Used 2 time NET_ENI Config or determine
T41:0	HMI_REFRESH_TIMER	Global	Frequency of HMI screen data refresh. 1 sec
T41:0/DN			
T41:1	COMM_ERROR_TIMER	Global	Time to allow a Comm_Error to display, then reset and "on with the show"
T41:2	PF_NOT_ACHIEVE_TMR	Global	Power Factor Not Achieved Timer
T45:0	PM_READ_TIMER	Global	PM Read Cycle Timer (Measures the amount of time it takes for a PM to rep
T45:1	PM_1_COMM_RETRY_DELAY	Global	Power Monitor #1 Comm Retry Delay Timer (Time to wait before retrying com
T45:2	PM_2_COMM_RETRY_DELAY	Global	Power Monitor #2 Comm Retry Delay Timer (Time to wait before retrying com
T45:3	PM_3_COMM_RETRY_DELAY	Global	Power Monitor #3 Comm Retry Delay Timer (Time to wait before retrying com
T45:4	PM_4_COMM_RETRY_DELAY	Global	Power Monitor #4 Comm Retry Delay Timer (Time to wait before retrying com
T45:5	PM_TP_BT_RD_TO_TMR	Global	Power Monitor Tight Pack Block Transfer Read Communications Error Timer (
T45:6	PM_CNFG_BTR_TO_TMR	Global	Power Monitor Config Block Transfer Read Communications Error Timer (1000
T45:7	PM_CNFG_BTW_TO_TMR	Global	Power Monitor Config Block Transfer Write Communications Error Timer (100
T45:8	PM_CONFIG_TIMER	Global	Power Monitor Standard Cycle Configuration Timer (6 Hrs)
T45:9	PM_USER_BTR_TO_TMR	Global	Power Monitor User Config Block Transfer Read N30 Communications Error Ti
T45:10	PM_USER_BTW_TO_TMR	Global	Power Monitor User Config Block Transfer Write N30 Communications Error T
T45:11	PM_CONFIG_ALM_TIMER	Global	PM failed Configuration Cycle Timer Retry in 5 minutes
T45:12	UC_WRITE_DELAY_TIMER	Global	PM # Write User Cnfg Delay Timer(Time to wait after Reading User Cnfg bef
T49:0	HIGH_LIMIT_TIMER	Global	Time to wait after BusVolts falls below HighLimit before resetting Voltag
T49:1	LOW_LIMIT_TIMER	Global	Time to wait after BusVolts exceeds LowLimit before resetting VoltageLow
T49:2	IN_RANGE_TIMER	Global	Time to wait before setting VoltageOK flag once BusVolts is stable in acc
T49:3	%THD_ABOVE_TIMER	Global	Time to wait after all steps are closed, before alarming if %THD_V too hi
T49:4	%THD_BELOW_TIMER	Global	Time to wait after all steps are closed, before alarming if %THD_V too hi
T53:0	UNBALANCED_TIMER	Global	Time to wait before alarming and resetting the Unbalance flag.
T65:0	SPACER_TIMER	Global	Used in AutoDetectCapSize to separate the steps.
T65:1	CLOSE_TIMER	Global	Used in AutoDetectCapSize to hold the step active.
T65:1.PRE			Used n AutoDetectCap Size to hold the step active. KVAR_TOL_TMR.PRE + 1

Address/Symbol Database

Address	Symbol	Scope	Description
T65:2	AUT_CNFG_DISCH_TIM	Global	Auto Configure Mode Capacitor Discharge Timer-Time to wait for all of Cap
T69:0	(UNUSED)	Global	
T69:1	STEP_1_KVAR_TOL_TMR	Global	Time to wait for the KVAR to change after changing a step, before alarmin
T69:2	STEP_2_KVAR_TOL_TMR	Global	Time to wait for the KVAR to change after changing a step, before alarmin
T69:3	STEP_3_KVAR_TOL_TMR	Global	Time to wait for the KVAR to change after changing a step, before alarmin
T69:4	STEP_4_KVAR_TOL_TMR	Global	Time to wait for the KVAR to change after changing a step, before alarmin
T69:5	STEP_5_KVAR_TOL_TMR	Global	Time to wait for the KVAR to change after changing a step, before alarmin
T69:6	STEP_6_KVAR_TOL_TMR	Global	Time to wait for the KVAR to change after changing a step, before alarmin
T69:7	STEP_7_KVAR_TOL_TMR	Global	Time to wait for the KVAR to change after changing a step, before alarmin
T69:8	STEP_8_KVAR_TOL_TMR	Global	Time to wait for the KVAR to change after changing a step, before alarmin
T69:9	STEP_9_KVAR_TOL_TMR	Global	Time to wait for the KVAR to change after changing a step, before alarmin
T69:10	STEP_10_KVAR_TOL_TMR	Global	Time to wait for the KVAR to change after changing a step, before alarmin
T69:11	STEP_1_CAP_DSCHG_TMR	Global	Register holds the length of time to wait be4 Capacitors are considered d
T69:12	STEP_2_CAP_DSCHG_TMR	Global	Register holds the length of time to wait be4 Capacitors are considered d
T69:13	STEP_3_CAP_DSCHG_TMR	Global	Register holds the length of time to wait be4 Capacitors are considered d
T69:14	STEP_4_CAP_DSCHG_TMR	Global	Register holds the length of time to wait be4 Capacitors are considered d
T69:14/TT			
T69:15	STEP_5_CAP_DSCHG_TMR	Global	Register holds the length of time to wait be4 Capacitors are considered d
T69:16	STEP_6_CAP_DSCHG_TMR	Global	Register holds the length of time to wait be4 Capacitors are considered d
T69:17	STEP_7_CAP_DSCHG_TMR	Global	Register holds the length of time to wait be4 Capacitors are considered d
T69:18	STEP_8_CAP_DSCHG_TMR	Global	Register holds the length of time to wait be4 Capacitors are considered d
T69:19	STEP_9_CAP_DSCHG_TMR	Global	Register holds the length of time to wait be4 Capacitors are considered d
T69:20	STEP10_CAP_DSCHG_TMR	Global	Register holds the length of time to wait be4 Capacitors are considered d
T69:[N58:7]/TT			Time to wait for the KVAR to change after changing a step, before alarmin
T69:[N58:10]/TT	STEP_DISCHARGING	Global	Step # Discharge Timer Timing 1= Step Discharging 0= Step Ready to Use
T69:[N62:40]/TT			Cap Discharge Timer Timing
T69:[N66:2].PRE	STEP_KVAR_TOL_PRE	Global	Step_KVAR_Tolerance_Timer Preset Indexed from Step_Selected Index= Step_
T69:[N66:2]/DN			Time to wait for the KVAR to change after changing a step, before alarmin
T69:[N66:14]/DN			Register holds the length of time to wait be4 Capacitors are considered d
T69:[N66:14]/TT			Register holds the length of time to wait be4 Capacitors are considered d
T69:[N66:16]/TT			Step Capacitor Discharge Timer Timing
T69:[N70:30].PRE	CAP_DISCHG_TIMR_PRE	Global	Capacitor_Dischg_Tim er Preset, Indexed from Step_Selected (Step_Selected
T69:[N90:27]/TT			Time to wait for the KVAR to change after changing a step, before alarmin
T69:[N90:28]/TT			Register holds the length of time to wait be4 Capacitors are considered d
T77:0	PF_INRANGE__TIMER_0	Global	Time to wait for PF to come into acceptable range, before alarming. Defau
T77:0.PRE			Time to wait for PF to come into acceptable range, before alarming.
T81:0	PF_INRANGE__TIMER_1	Global	Time to wait for PF to come into acceptable range, before alarming. Defau
T81:0.PRE			Time to wait for PF to come into acceptable range, before alarming. Defau
T81:0/DN			Time to wait for PF to come into acceptable range, before alarming. Defau
T85:0	PF_INRANGE__TIMER_2	Global	Time to wait for PF to come into acceptable range, before alarming. Defau
T85:0.PRE			Time to wait for PF to come into acceptable range, before alarming. Defau
T89:0	PF_INRANGE__TIMER_3	Global	Time to wait for PF to come into acceptable range, before alarming. Defau
T89:0.PRE			Time to wait for PF to come into acceptable range, before alarming. Defau
T93:0	PF_INRANGE__TIMER_4	Global	Time to wait for PF to come into acceptable range, before alarming. Defau
T97:0	PF_INRANGE__TIMER_5	Global	Time to wait for PF to come into acceptable range, before alarming. Defau
T141:0	ONE_STEP_AT_A_TIME	Global	
T141:0/DN			
T144:0			one step at a time
T144:0/DN			
T144:0/TT			
T144:2			
U:2	U	Global	
U:3	PLC	Global	This module is primarily a housekeeping module.
U:4	PFMGR_0	Global	PfMgr0 uses a manual mode of operation. Hence, there is no control algori
U:5	PFMGR_1	Global	PfMgr1 uses a First In, Last Out (FILO) approach.
U:6	PFMGR_2	Global	This instance of PF manager maintains the PF automatically
U:7	PFMGR_3	Global	This is the most sophisticated of the PfMgr's
U:8	PFMGR_4	Global	This module is reserved for future programming.
U:9	PFMGR_5	Global	This mode of control requires that at least one step be active, to lower
U:10	COMMGR_	Global	Controls Communications to the Power Monitors
U:11	BUS	Global	Bus module is responsible for collecting Power Monitor data from CommMgr
U:12	LOADCALC	Global	Collects certain data from all the PM tables (up to Num_PMs) and makes ca
U:13	BALANCER	Global	Balancer module performs a "bubble sort" of the number of operations
U:14	SEQUENCER	Global	Module receives the number of steps required from the PfMgr module.
U:15	BANK	Global	Bank module cycles through all the steps, collecting status and availabil
U:16	STEP_ROUTINE	Global	Call Step Routine
U:17	CONTACTOR	Global	The Contactor object actually controls the I/O. Number of operations for
U:18	AVERAGER	Global	Uses new values of Meas_KVAR to generate new values of the average Meas_S
U:19	BALANCE_INNER_LOOP	Global	Balancer Bubble Sort Inner Loop
U:20	OPTIMAL_KVAR	Global	Calculate Optimal KVAR match
U:21	FIND_LEAST	Global	Find Least Subroutine
U:22	FIND_MOST	Global	Find Most Subroutine
U:23	SORT_KVAR	Global	Bubble sort" all steps NOT in Manual mode by Effective KVAR
U:24	OPTIMUM_INNER_LOOP	Global	Optimum Fit Bubble Sort Inner Loop
U:25	AUTO_DETCT_CAP_SIZE	Global	Module cycles through all the steps when the Auto_Detect_Cap_Size feature
U:26	PM_CONFIG_SUBROUTINE	Global	Power Monitor Configuration Mode Subroutine
U:27	PM_DATA_SUBROUTINE	Global	Power Monitor Data Mode Subroutine
U:28	1761_NET_ENI	Global	Configure 1761-Net-ENI on System restart
U:30			Reset Diagnostic Parameters on Start-up
U:31			Create Demo Data
U:32			CHMI visibilities

Instruction Comment Database

Address	Instruction	Description
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F[N46:10]:14		
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Symbol Group Database

Group_Name	Description
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Averager	
Balancer	
Bank	
Bus	
CommMgr	
Contactor	
LoadCalc	
PFMGR5	
PLC	
PfMgr	
PfMgr0	
PfMgr1	
PfMgr2	
PfMgr3	
PfMgr4	
Sequencer	
Step	