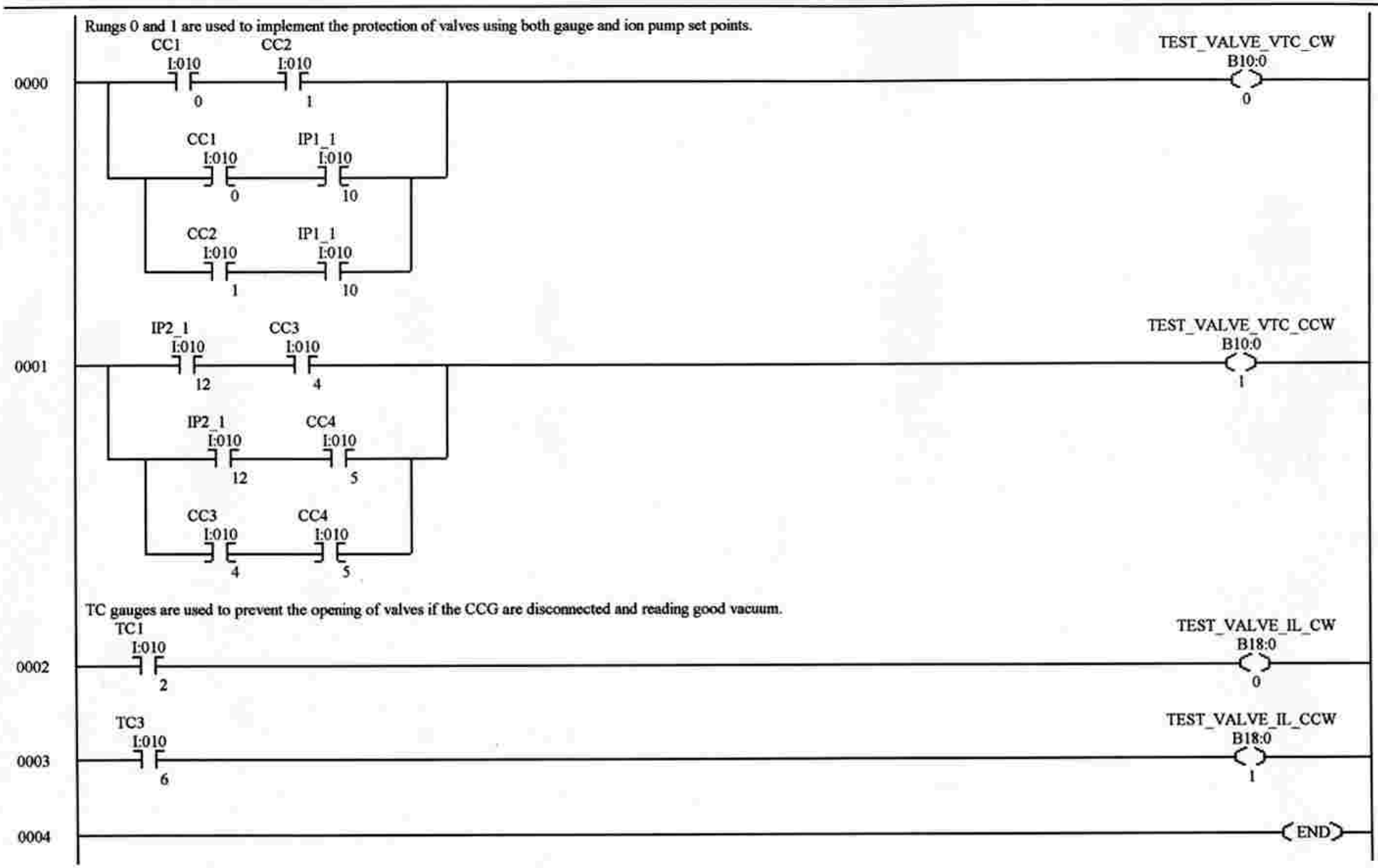
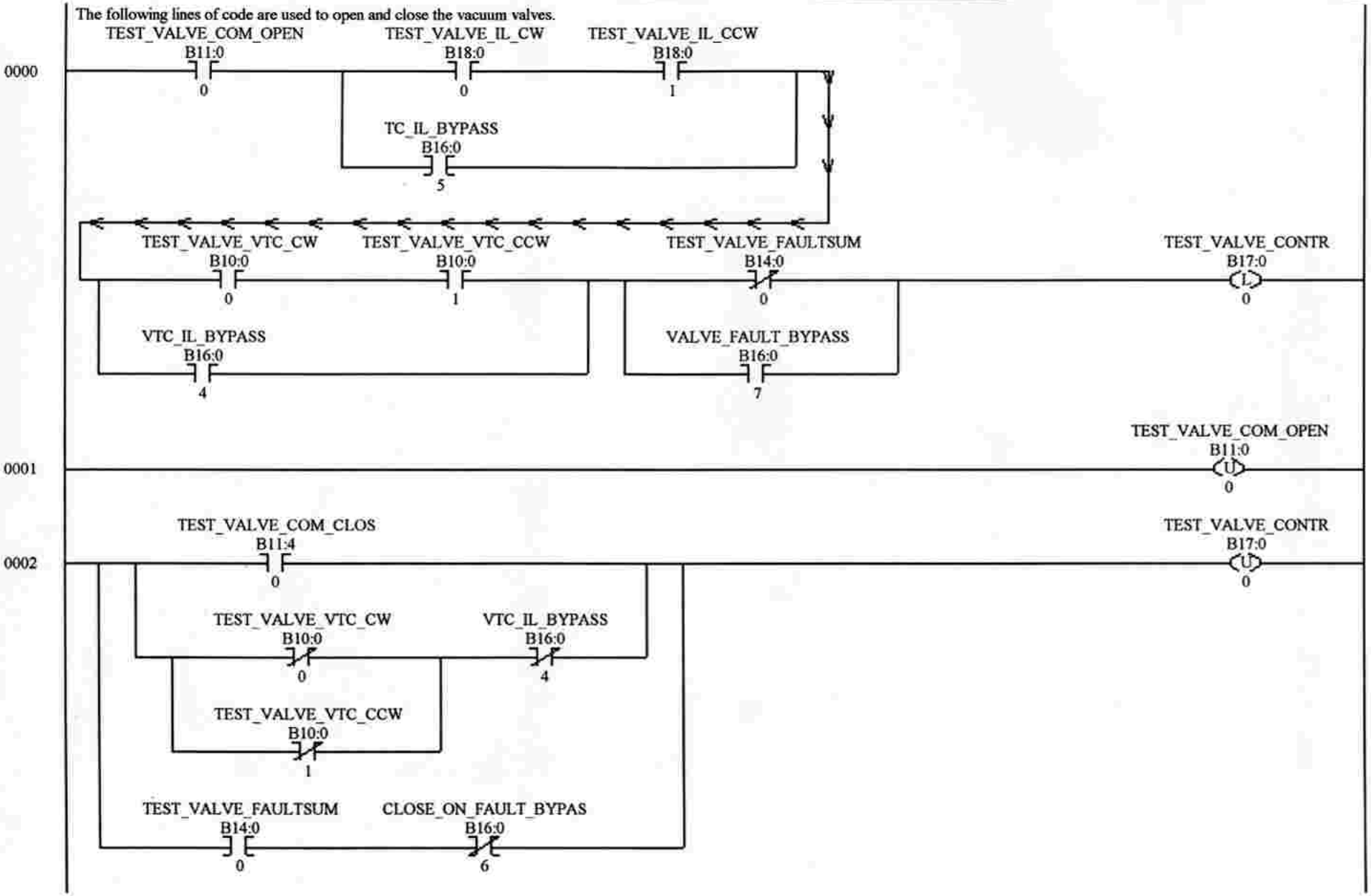
LAD 2 - VOTE TO CL - set point protection for valve control. --- Total Rungs in File = 5



LAD 3 - VALVE OPS --- Total Rungs in File = 12



LAD 3 - VALVE OPS — Total Rungs in File = 12

0003

TEST_VALVE_COM_CLOS
B11:4
(U)
0

0004

TEST_VALVE_CONTR
B17:0
0

TEST_VALVE_SOL_1
O:012
0

reset commands: used to reset the fault set in program seven.

0005

TEST_VALVE_COM_RESET
B11:8
0

FAL
File Arith/Logical
Control R6:0
Length 1<
Position 0<
Mode 1
Dest B14:0
0000000000000000<
Expression N20:0 AND B14:0

EN
DN
ER

TEST_VALVE_STATUS
B12:0
(U)
0

0006

TEST_VALVE_COM_RESET
B11:8
(U)
0

Lines 7-10 are used for test to cotrol the test valve and display the fault sum

0007

TEST_VALVE_OPEN_COM
I:011
0

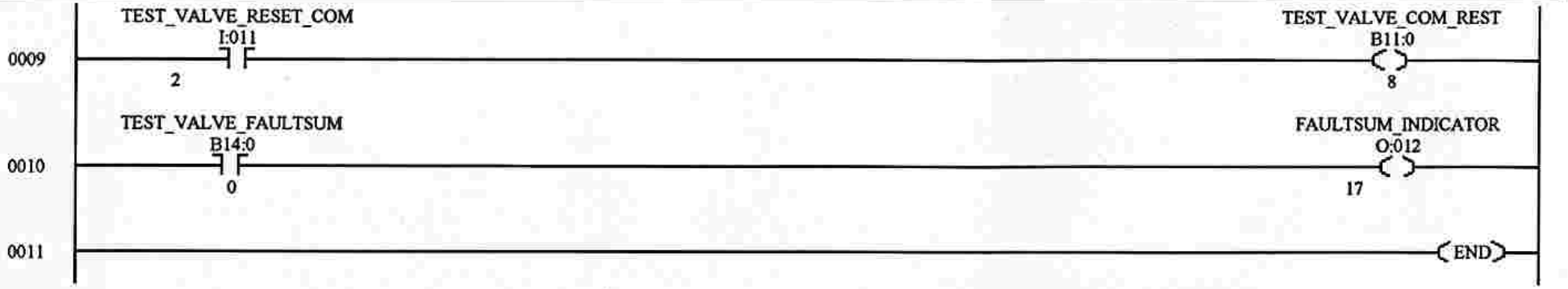
TEST_VALVE_COM_OPEN
B11:0
0

0008

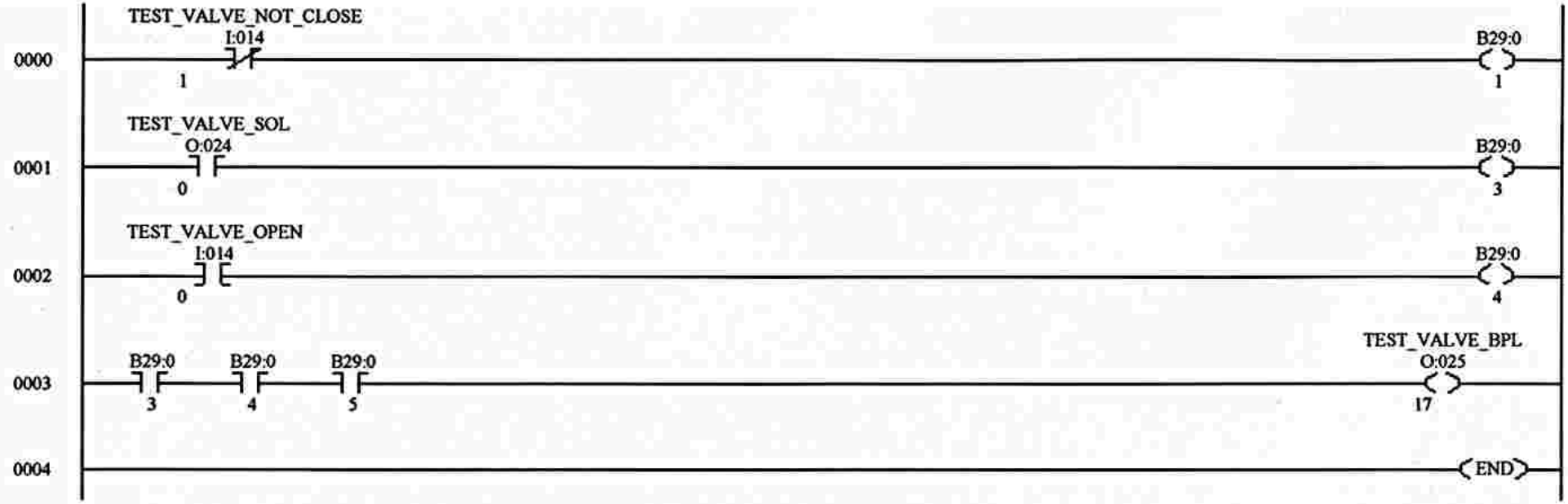
TEST_VALVE_CLOSE_COM
I:011
1

TEST_VALVE_COM_CLOSE
B11:0
4

LAD 3 - VALVE OPS — Total Rungs in File = 12



LAD 4 - BPL — Total Rungs in File = 5



LAD 5 - BTR --- Total Rungs in File = 5

These lines of code are used to set bits by the external computer to open, close, or reset the valves

0000 — I:000/10 I:000/11 I:000/12 I:000/13 I:000/14 I:000/15

BTR
Block Transfer Read
Module Type Generic Block Transfer
Rack 000
Group 0
Module 0
Control Block BT9:0
Data File N13:0
Length 16
Continuous No
EN DN ER

0001 — BT9:0 DN

FAL
File Arith/Logical
Control R6:62
Length 4<
Position 0<
Mode ALL
Dest #B11:0
0000000000000000<
Expression #N13:0
EN DN ER

0002 — BT9:0 DN

FAL
File Arith/Logical
Control R6:63
Length 4<
Position 0<
Mode ALL
Dest #B11:4
0000000000000000<
Expression #N13:4
EN DN ER

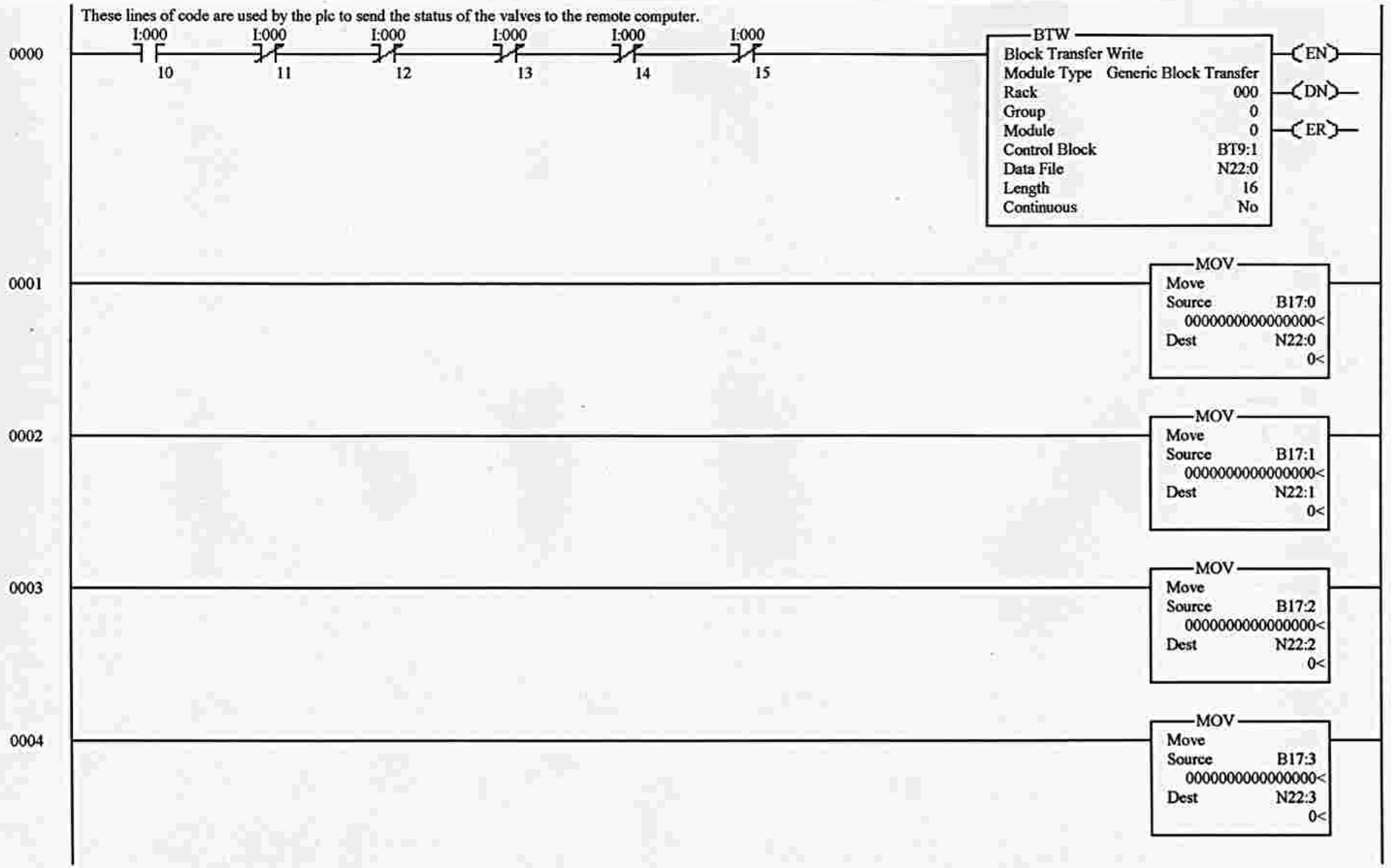
0003 — BT9:0 DN

FAL
File Arith/Logical
Control R6:64
Length 4<
Position 0<
Mode ALL
Dest #B11:8
0000000000000000<
Expression #N13:8
EN DN ER

LAD 5 - BTR — Total Rungs in File = 5

0004 —— (END)

LAD 6 - BTW — Total Rungs in File = 28



LAD 6 - BTW — Total Rungs in File = 28

0005
MOV
Move
Source B12:0
0000000000000000<
Dest N22:4
0<

0006
MOV
Move
Source B12:1
0000000000000000<
Dest N22:5
0<

0007
MOV
Move
Source B12:2
0000000000000000<
Dest N22:6
0<

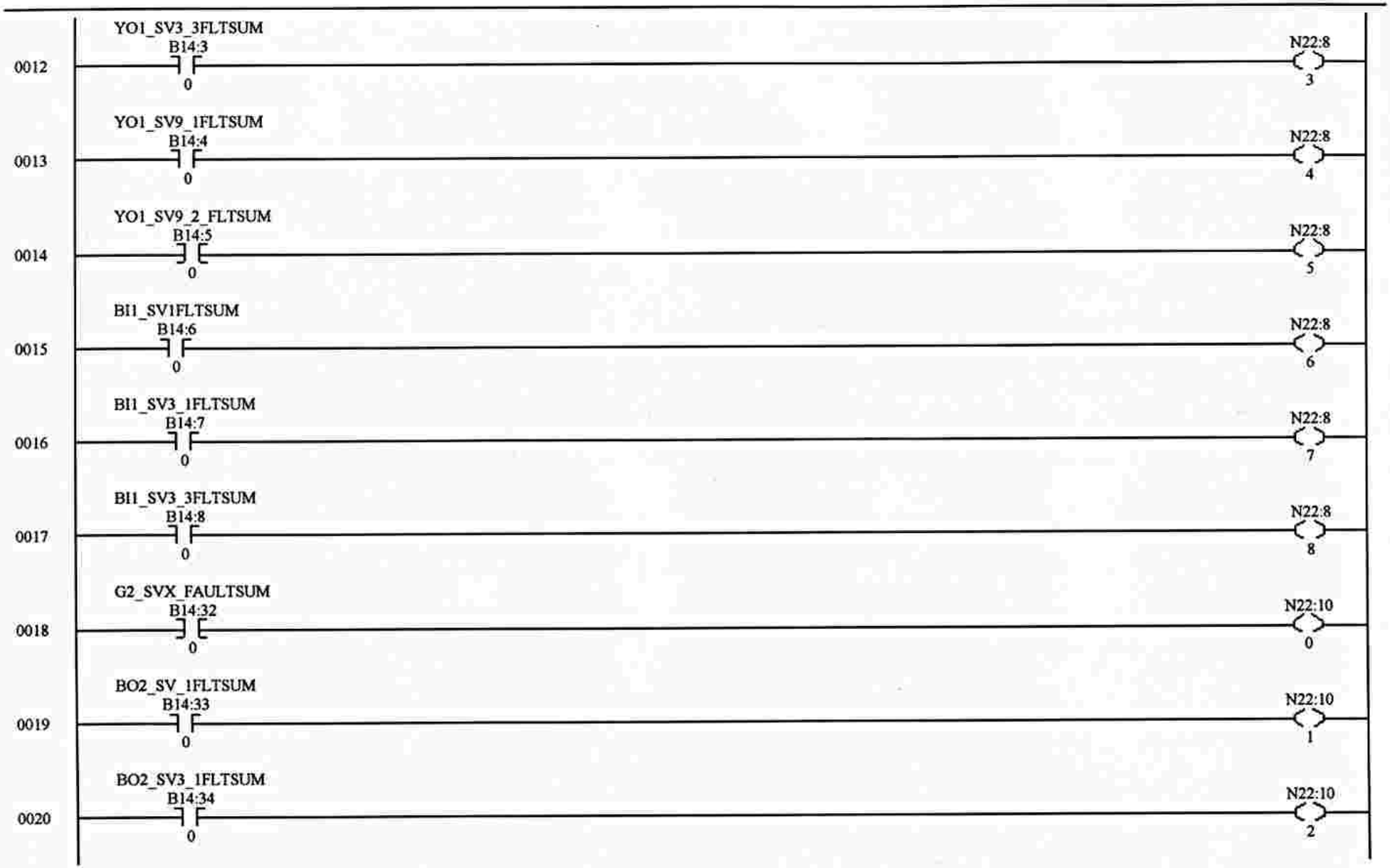
0008
MOV
Move
Source B12:3
0000000000000000<
Dest N22:7
0<

0009
TEST_VALVE_FAULTSUM
B14:0
0
N22:8
0

0010
YO1_SV1FLTSUM
B14:1
0
N22:8
1

0011
YO1_SV3_1FLTSUM
B14:2
0
N22:8
2

LAD 6 - BTW — Total Rungs in File = 28



LAD 6 - BTW — Total Rungs in File = 28

LAD 7 - VALVE FAUL — Total Rungs in File = 15

This program is ued to monitor the steady state of the vacuum as well as the transition from open to close and close to open. If a fault condition is detected it is latched.

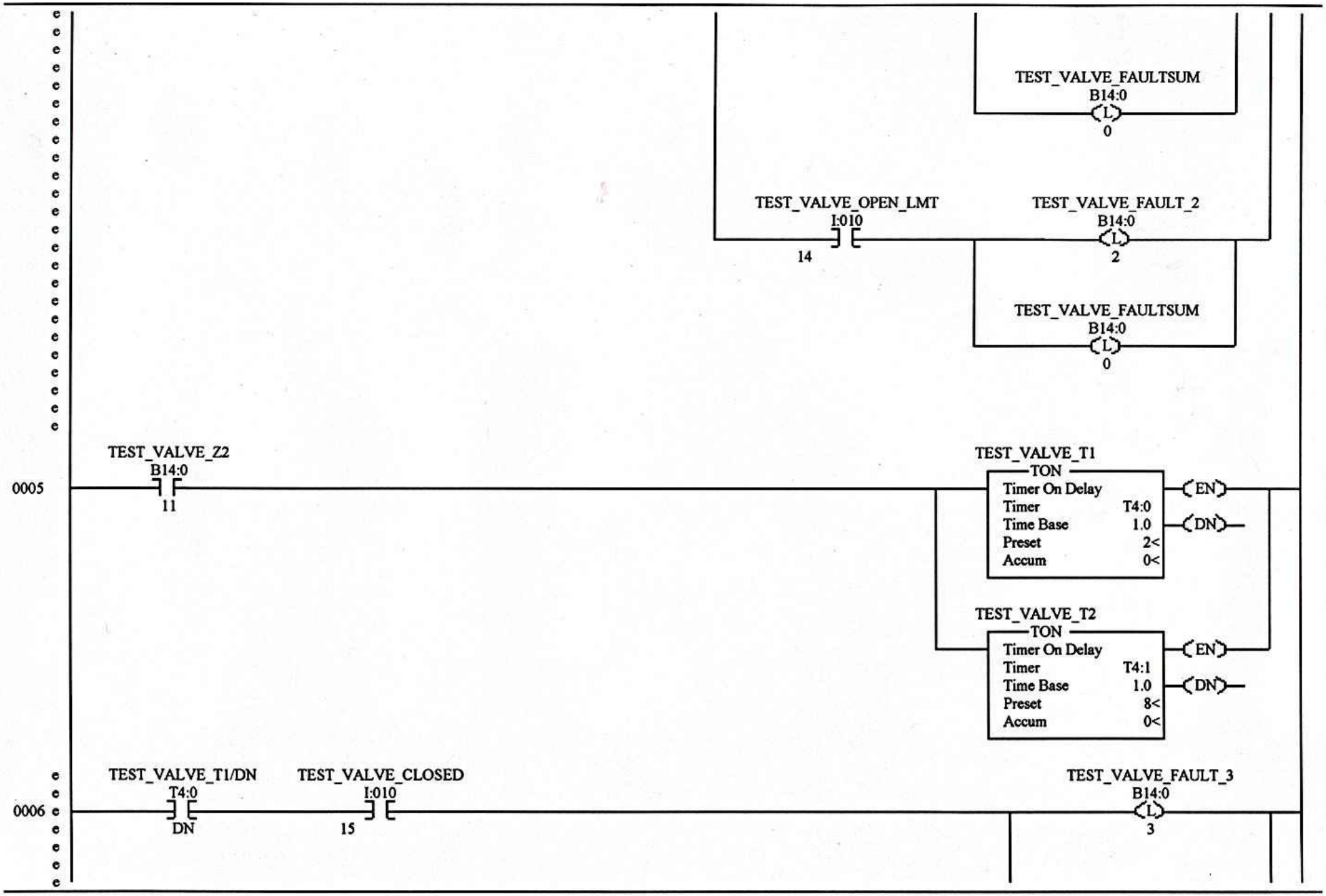
0000
TEST_VALVE_CONTR B17:0 [0] — TEST_VALVE_STATUS B12:0 [0] — TEST_VALVE_TRANS B19:0 (L) 0
TEST_VALVE_Z2 B14:0 ( ) 11

0001
TEST_VALVE_STATUS B12:0 [0] — TEST_VALVE_CONTR B17:0 [0] — TEST_VALVE_TRANS B19:0 (L) 0
TEST_VALVE_Z4 B14:0 ( ) 13

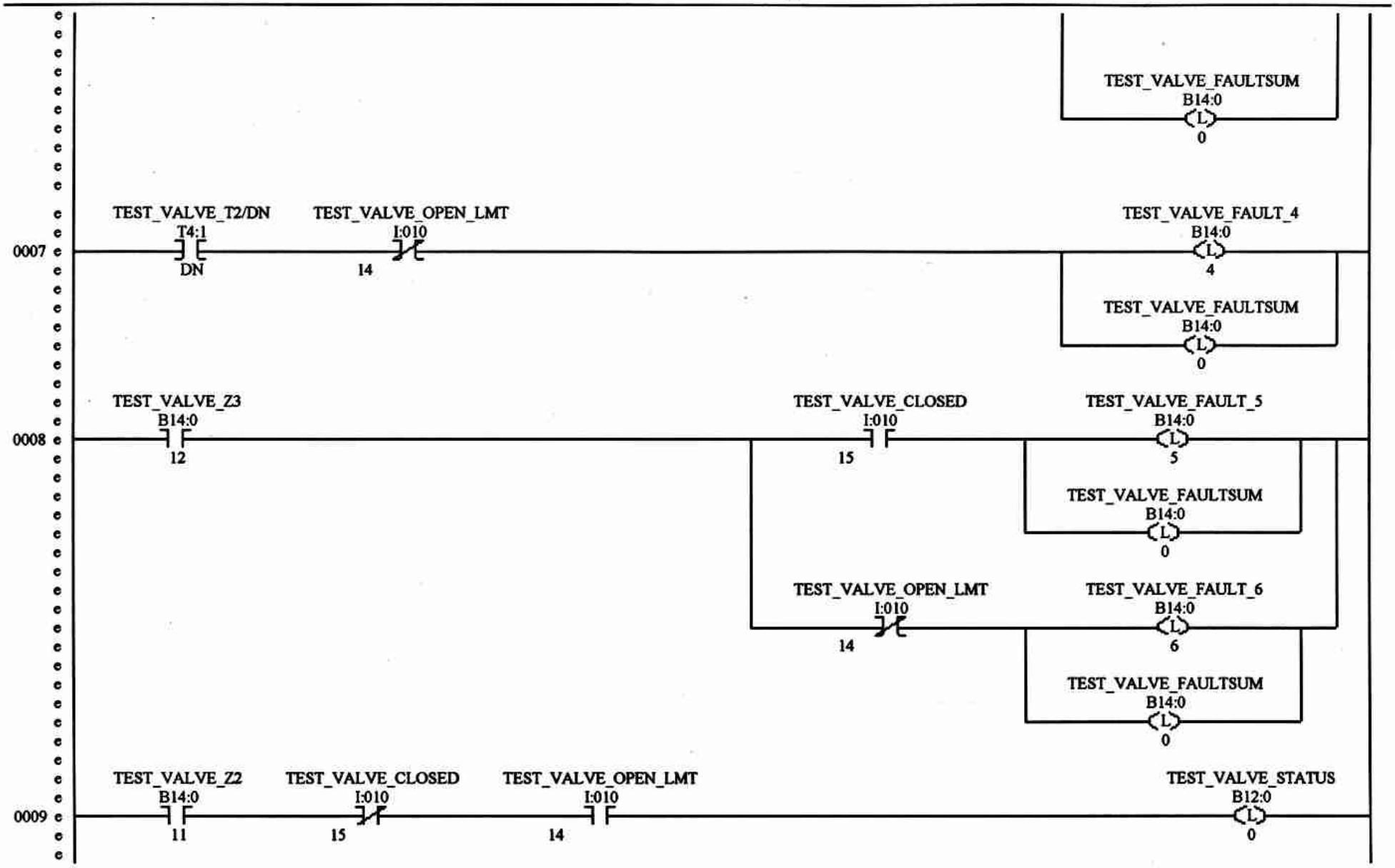
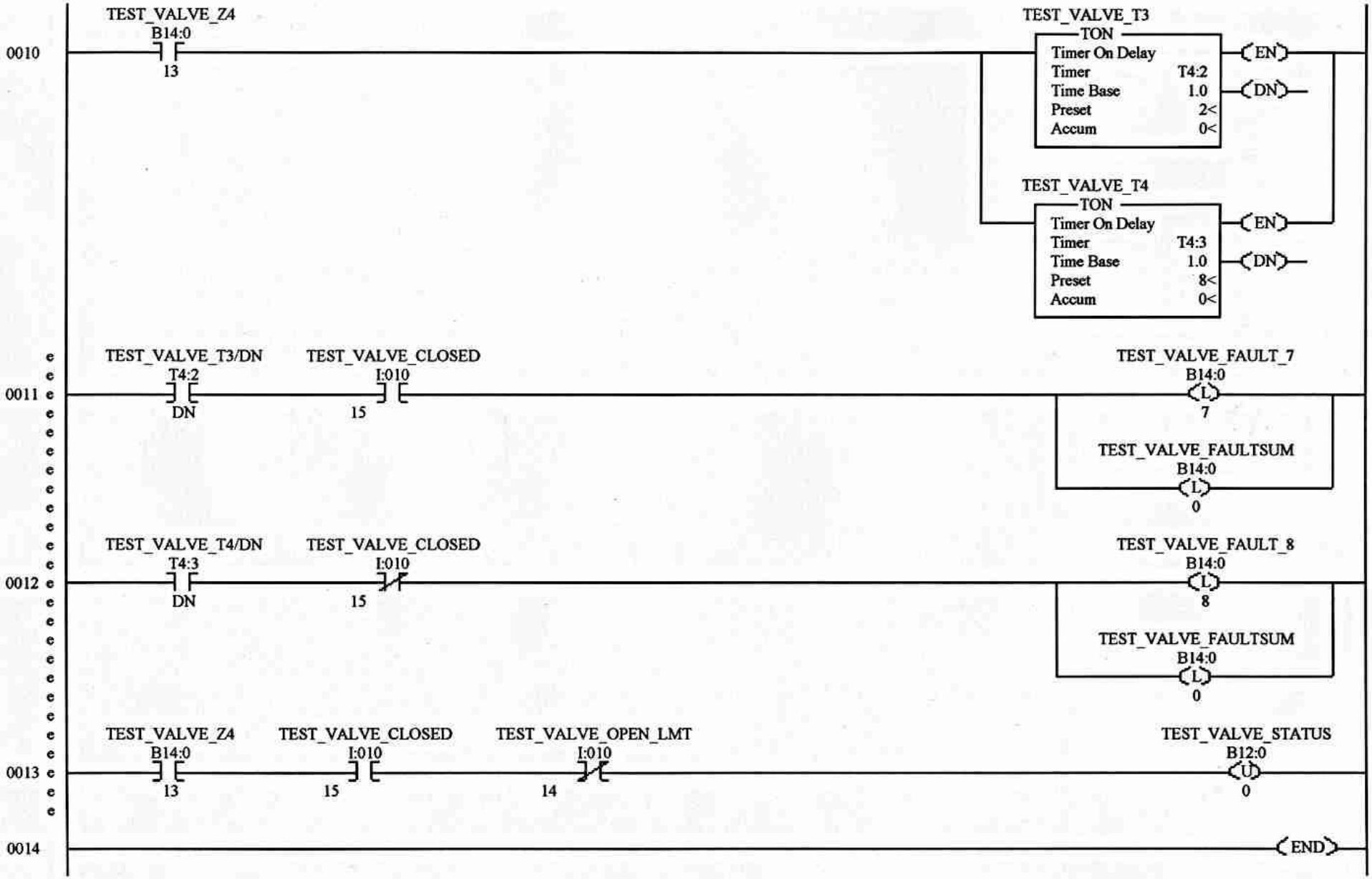
0002
TEST_VALVE_STATUS B12:0 [0] — TEST_VALVE_CONTR B17:0 [0] — TEST_VALVE_TRANS B19:0 (U) 0
TEST_VALVE_Z3 B14:0 ( ) 12

0003
TEST_VALVE_STATUS B12:0 [0] — TEST_VALVE_CONTR B17:0 [0] — TEST_VALVE_TRANS B19:0 (U) 0
TEST_VALVE_Z1 B14:0 ( ) 10

0004
TEST_VALVE_Z1 B14:0 [10] — TEST_VALVE_CLOSED I:010 [15] — TEST_VALVE_FAULT_1 B14:0 (L) 1


TEST_VALVE_FAULTSUM
B14:0
L
0
TEST_VALVE_OPEN_LMT
I:010
14
TEST_VALVE_FAULT_2
B14:0
L
2
TEST_VALVE_FAULTSUM
B14:0
L
0
0005
TEST_VALVE_Z2
B14:0
11
TEST_VALVE_T1
TON
Timer On Delay
Timer T4:0
Time Base 1.0
Preset 2<
Accum 0<
EN
DN
TEST_VALVE_T2
TON
Timer On Delay
Timer T4:1
Time Base 1.0
Preset 8<
Accum 0<
EN
DN
0006
TEST_VALVE_T1/DN
T4:0
DN
TEST_VALVE_CLOSED
I:010
15
TEST_VALVE_FAULT_3
B14:0
L
3

LAD 7 - VALVE FAUL — Total Rungs in File = 15



LAD 7 - VALVE FAUL — Total Rungs in File = 15