

Program name here

PLC Inputs & Output assignment

Inputs		Outputs	
I:0/0	Emergency Stop	O:0/0	Push button Light 1
I:0/1	Automatic Mode	O:0/1	Push button Light 2
I:0/2	Push Button 1	O:0/2	Alarm 1 (soft alarm)
I:0/3	Push Button 2	O:0/3	Alarm 2 (hard alarm)
I:0/4	Block Detect 0	O:0/4	Track Switch enable
I:0/5	Block Detect 1	O:0/5	Track Switch 1
I:0/6	Block Detect 2	O:0/6	Track Switch 2
I:0/7	Block Detect 3	O:0/7	Track Switch 3
I:0/8	Block Detect 4	O:0/8	Track Power 1
I:0/9	Block Detect 5	O:0/9	Track Power 2
I:0/10	Block Detect 6	O:0/10	Track Power 3
I:0/11	Block Detect 7	O:0/11	Track Power 4
I:0/12	Block Detect 8		
I:0/13	Block Detect 9		
I:0/14	Block Detect 10		
I:0/15	Block Detect 11	NOTE: Block detects can also be optical sensors usually starting from 15 down	
I:0/16	Block Detect 12		
I:0/17	Block Detect 13		
I:0/18	Block Detect 14		
I:0/19	Block Detect 15		

Alarm Bit Assignment B3:20

0	No movement detected on main line	
1	No movement detected on through way	
2	No movement detected on side track	
3	No movement detected on spur	
4	No train detected on main line	
5	No train detected on through way	
6	No train detected on side track	
7	No train detected on spur track	
8	Through way sensor mismatch	(optical sensors & block detect)
9	Siding sensor mismatch	(optical sensors & block detect)
10	Spur sensor mismatch	(optical sensors & block detect)
11	Train too long for through way	(block detect high, both opticals low)
12	Train too long for side track	(block detect high, both opticals low)
13	Train too long for spur	(block detect high, both opticals low)
14	Switches not clear for change	sensors not cleared for switch throw
15	No trains detected on any track	(main,side,spur) nothing to do

Binary Assignments

B3:0	B3:20	Alarm code bits
B3:1	B3:21	Switch positions
B3:2	B3:22	Track Power
B3:3	B3:23	Switch throw sequence
B3:4	B3:24	Track power sequence
B3:5	B3:25	
B3:6	B3:26	
B3:7	B3:27	
B3:8	B3:28	
B3:9	B3:29	
B3:10	B3:30	
B3:11	B3:31	
B3:12	B3:32	
B3:13	B3:33	
B3:14	B3:34	
B3:15	B3:35	
B3:16	B3:36	
B3:17	B3:37	
B3:18	B3:38	
B3:19	B3:39	

B3:21: bit 0 – track switch 1 (0=through /1=turnout)
bit 1 – track switch 2 (0=through /1=turnout)
bit 2 – track switch 3 (0=through /1=turnout)
bit 4 – track switch 1 changing [bits indicate which switch to check the]
bit 5 – track switch 2 changing [optical sensors to insure its clear of a]
bit 6 – track switch 3 changing [train, switches not changing are ignored]

B3:22: Bit 0 – Track Power 1
Bit 1 – Track Power 2
Bit 2 – Track Power 3
Bit 3 – Track Power 4