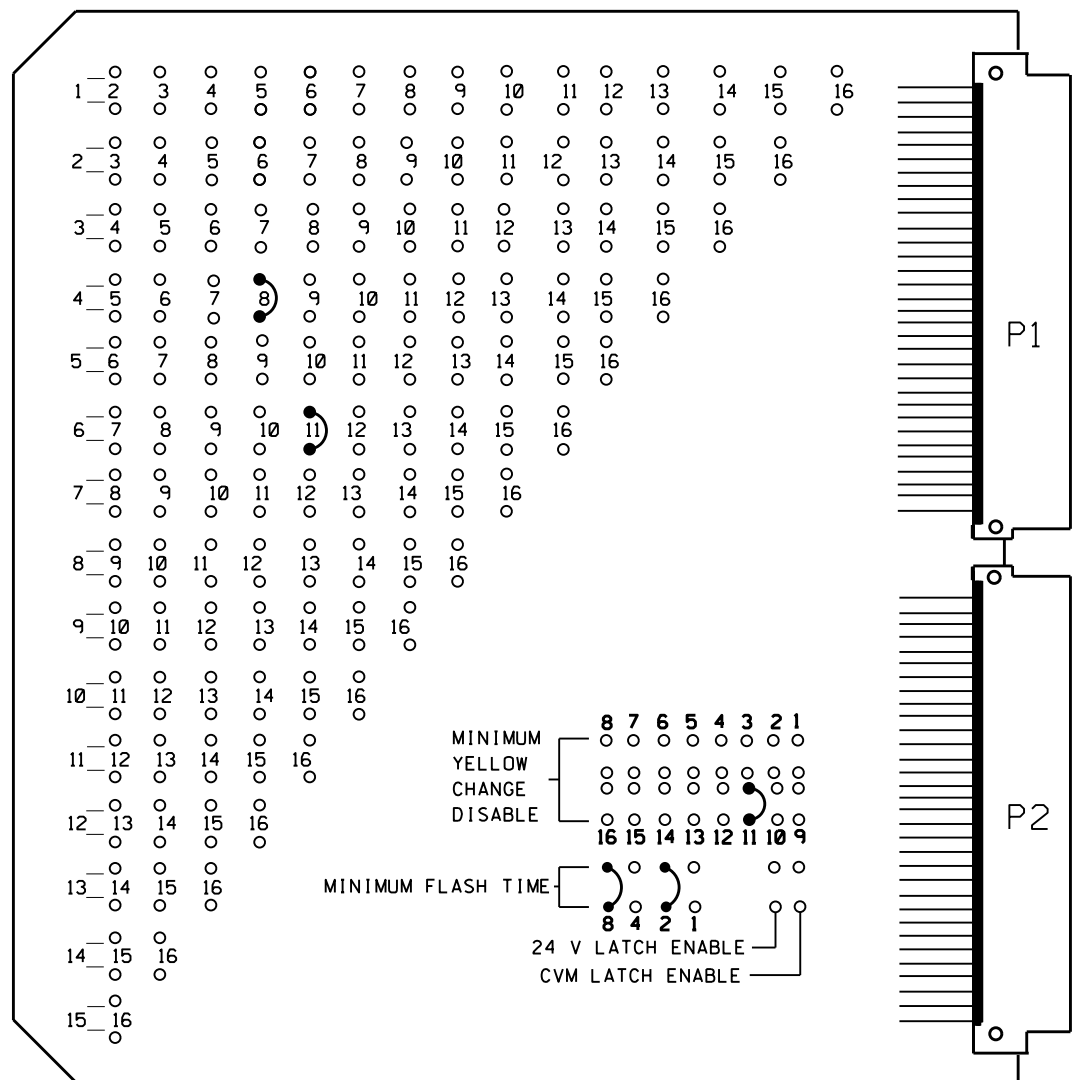


**EDI MODEL MMU2-16LEip  
MALFUNCTION MANAGEMENT UNIT  
PROGRAMMING DETAIL**

(program card and tables as shown below)



**FIELD CHECK ENABLE**

CHANNEL NUMBER	ENABLE/DISABLE
1	DISABLE
2	DISABLE
3	DISABLE
4	ENABLE
5	DISABLE
6	ENABLE
7	DISABLE
8	ENABLE
9	DISABLE
10	DISABLE
11	ENABLE
12	DISABLE
13	DISABLE
14	DISABLE
15	DISABLE
16	DISABLE

**UNIT OPTIONS**

OPTION	SETTING
RECURRENT PULSE	ON
WALK DISABLE	OFF
LOG CVM FAULTS	ON
EXTERN WATCHDOG	OFF
24V-2=12VDC	OFF
PGM CARD MEMORY	ON
LEDguard	ON
FORCE TYPE 16	OFF
TYPE12-SDLC	OFF
VM 3x/Day Latch	ON

**FLASHING YELLOW ARROW**

CONFIG MODE	SETTING
CONFIG MODE	8
ENABLE CHANNEL PAIR, FYA	
CH 1-13	OFF
CH 3-14	OFF
CH 5-15	OFF
CH 7-16	OFF
RED/YEL INPUT ENABLE	
CH 1	OFF
CH 3	OFF
CH 5	OFF
CH 7	OFF
FLASH RATE FAULT	OFF
FYA TRAP DETECT	OFF

**MMU PROGRAMMING NOTE**  
ENSURE YELLOW CHANGE PLUS RED CLEARANCE MONITORING IS ENABLED FOR ALL CHANNELS.

MMU PROGRAMMING CARD

**NOTES**

- To prevent "flash-conflict" problems, wire all unused load switches to flash red. Verify that signal heads flash in accordance with the signal plans.
- To prevent red failures on unused monitor channels, tie unused load switch red outputs 1,2,3,5,7,9,10,12,13,14,15, and 16 to load switch AC+ by inserting a jumper plug in the unused load switch socket from pin 1 (LS AC+) to pin 3 (RED out). Make sure all flash transfer relays are in place.
- Program controller to start up as follows: Main Menu 2-5 MUTCD->YES, ALL RED...6, Phase 2 Green, Phase 6 Walk
- Set power-up flash time to 10 seconds and implement on the Malfunction Management Unit. Set controller power-up flash time to 0 seconds.
- Enable simultaneous gap-out feature for all phases.
- Program detectors in accordance with the manufacturer's instructions to accomplish the detection schemes shown on the signal design plans.
- Program detector call delay and extension timing on the controller, unless otherwise specified.
- Set all detector card unit channels to "presence" mode.
- Program phases 6 for volume density operation.
- Program phases 4 and 8 for dual entry.
- The cabinet and controller are a part of the Cary Signal System.

**SIGNAL HEAD HOOK-UP CHART**

PHASE	1	2	3	4	5	6	7	8	2 PED	4 PED	6 PED	8 PED	OLA	OLB	OLC	OLD
SIGNAL HEAD NO.	NU	NU	NU	41,42	NU	61,62 63	NU	81,82	NU	NU	P61, P62	NU	NU	NU	NU	NU
RED				4R		6R										
YELLOW				4Y		6Y										
GREEN																
RED ARROW								8R								
YELLOW ARROW								8Y								
GREEN ARROW				4G		6G		8G								
											11R					
											11G					

NU = Not Used

**DETECTOR RACK SET-UP DETAIL**

INSERT DETECTOR CARDS IN RACK ACCORDING TO THE DETAIL SHOWN BELOW. PARTICULAR DETECTOR CHANNELS WILL CALL PHASES INDICATED.

RACK #1

CH1	CH1	CH1	CH1	CH1	CH1					
L3	L1	L7	L5	L11	L9	S	S	S	S	S
ø 6	ø 4	ø 6	ø 6	ø 8	ø 6	L	L	L	L	L
**	**	**	**	**	**	E	E	E	E	E
CH2	CH2	CH2	CH2	CH2	CH2	M	M	M	M	M
L6	L2	L6	L6	L12	L10	P	P	P	P	P
ø 6	ø 4	ø 6	ø 6	NOT USED	ø 8	T	T	T	T	T
**	**	**	**	**	**					

**EQUIPMENT INFORMATION**

CONTROLLER.....2070EN2  
 CABINET .....NC-8 [TS-2]  
 SOFTWARE .....ECONOLITE ASC/3-2070  
 CABINET MOUNT.....BASE  
 LOADBAY POSITIONS.....16  
 LOAD SWITCHES USED.....4,6,8,11  
 PHASES USED.....4,6,6PED,8  
 OLA.....NOT USED  
 OLB.....NOT USED  
 OLC.....NOT USED  
 OLD.....NOT USED

WIRE LOOPS TO TERMINALS ON LOOP PANEL AS SHOWN IN THE CHART BELOW

LOOP NO.	LOOP PANEL TERMINALS
4A	L1A,L1B
4B	L2A,L2B
6A	L3A,L3B
6B	L4A,L4B
6C	L5A,L5B
6D	L6A,L6B
6E	L7A,L7B
6F	L8A,L8B
6G	L9A,L9B
8A	L10A,L10B
8B	L11A,L11B
NU	L12A,L12B
NU	L13A,L13B
NU	L14A,L14B
NU	L15A,L15B
NU	L16A,L16B

PROGRAM CONTROLLER DETECTORS ACCORDING TO THE SCHEDULE SHOWN IN THE CHART BELOW

CONTROLLER DETECTOR NO.	FUNCTION	TIMING	
		FEATURE	TIME(SEC)
1	ø 4		
2	ø 4		
** 3	ø 6		
** 4	ø 6		
** 5	ø 6		
6	ø 6		
7	ø 6		
8	ø 6		
9	ø 6	DELAY	20
10	ø 8		
11	ø 8		
12			
13			
14			
15			
16			

\*\* Detector Type - N

**LOAD SWITCH ASSIGNMENT DETAIL**

(program controller according to schedule in chart below)

LOAD SWITCH NUMBER	FUNCTION
1	ø 1
2	ø 2
3	ø 3
4	ø 4
5	ø 5
6	ø 6
7	ø 7
8	ø 8
9	ø 2 PED
10	ø 4 PED
11	ø 6 PED
12	ø 8 PED
13	OLA
14	OLB
15	OLC
16	OLD

THIS ELECTRICAL DETAIL IS FOR THE SIGNAL DESIGN: 05-1168  
 DESIGNED: March 2019  
 SEALED: 7/24/2019  
 REVISED: N/A

Electrical Detail - Final Design - Sheet 1 of 2

Prepared In the Offices of:  
  
 750 N. Greenfield Pkwy, Garner, NC 27529

DETAILS FOR: SR 3015 (Airport Boulevard) at I-40 WB Ramps

Division 5 Wake County Morrisville

PLAN DATE: May 2015 REVIEWED BY:  
 PREPARED BY: S. Armstrong REVIEWED BY:

REVISIONS INIT. DATE

DocuSigned by: Ryan W. Hough 8/1/2019

SEAL  
 NORTH CAROLINA PROFESSIONAL ENGINEER  
 SEAL 036833  
 RYAN W. HOUGH

DOCUMENT NOT CONSIDERED FINAL UNLESS ALL SIGNATURES COMPLETED

SIG. INVENTORY NO. 05-1168

20-011-2019 09:38  
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 3/21/2019 10:00:00 AM  
 3/21/2019 10:00:00 AM  
 3/21/2019 10:00:00 AM