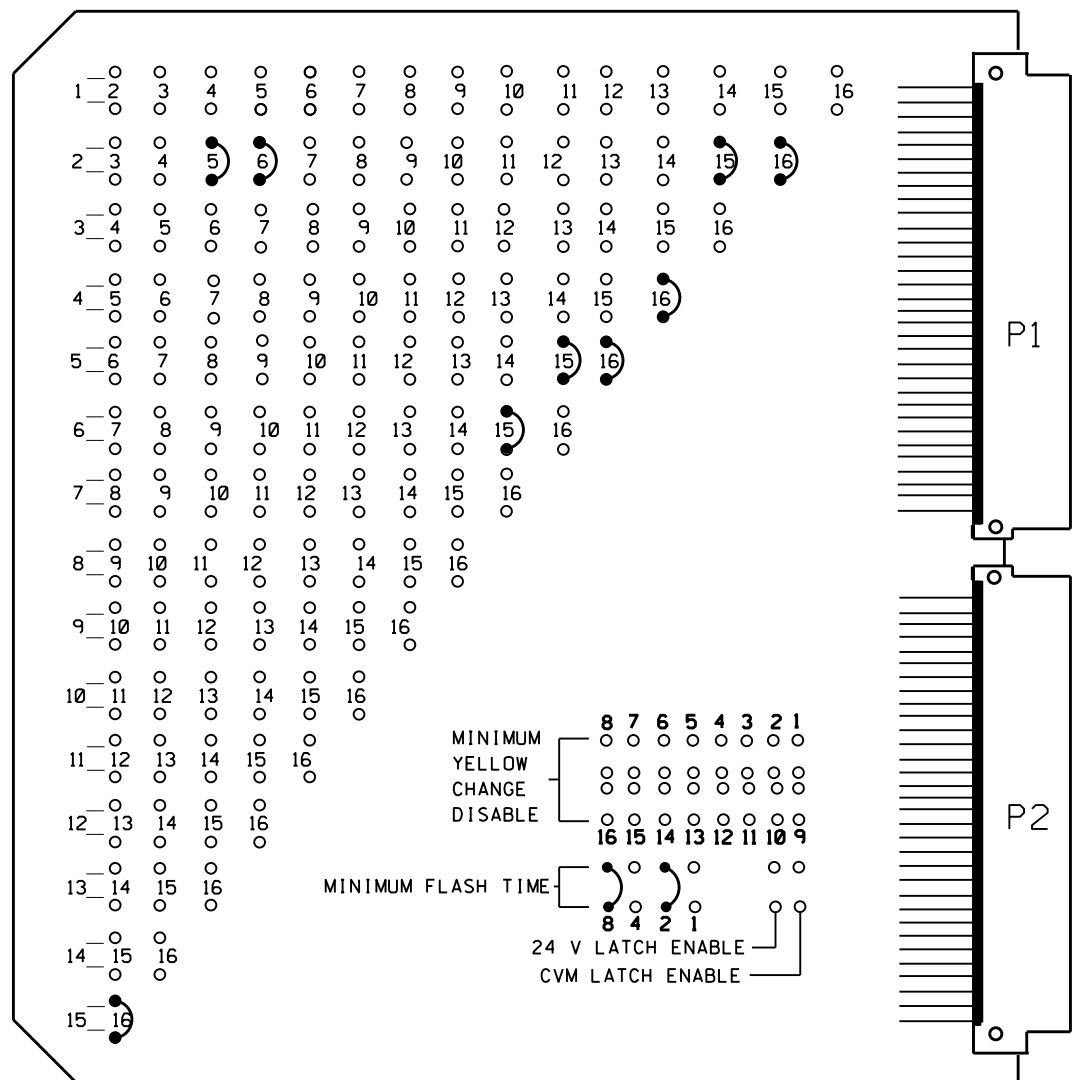


**EDI MODEL MMU2-16LEip  
MALFUNCTION MANAGEMENT UNIT  
PROGRAMMING DETAIL**

(program card and tables as shown below)



**FIELD CHECK ENABLE  
DUAL IND ENABLE  
RED FAIL ENABLE**

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

**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-SDLCL	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	ON
CH 7-16	OFF
RED/YEL INPUT ENABLE	
CH 1	OFF
CH 3	OFF
CH 5	ON
CH 7	OFF
FLASH RATE FAULT	ON
FYA TRAP DETECT	ON

**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 1,3,7,8,9,10,11,12,13, and 14 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 in phase 2 Green and 6 Green.
- 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 2 and 6 for volume density operation.
- 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	21,22	NU	41	51★	61,62 63	NU	NU	NU	NU	NU	NU	NU	NU	51★	42,43
RED		2R			*	6R										16R
YELLOW		2Y			*	6Y										
GREEN		2G				6G										
RED ARROW				4R												15R
YELLOW ARROW				4Y												15Y 16Y
FLASHING YELLOW ARROW																15G
GREEN ARROW				4G	5G											16G

NU = Not Used  
★ See pictorial of head wiring detail this sheet.  
\* Denotes install load resistor. See load resistor installation detail on sheet 2.

**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

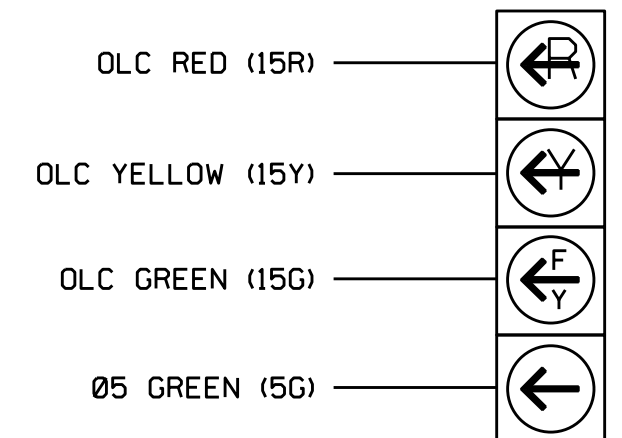
CH1	CH1	CH1	CH1	CH1	CH1					
L3	L1	L7	L5	L11	L9	SLOT	SLOT	SLOT	SLOT	SLOT
∅ 4	∅ 2	∅ 5	∅ 5	∅ 6	∅ 5					
	**			**						
CH2	CH2	CH2	CH2	CH2	CH2					
L4	L2	L8	L6	L12	L10	EMPTY	EMPTY	EMPTY	EMPTY	EMPTY
NOT USED	∅ 2	∅ 5	∅ 2	∅ 6	∅ 6					
	**	*	**	**	**					

**EQUIPMENT INFORMATION**

CONTROLLER.....2070EN2  
CABINET .....NC-8 [TS-2]  
SOFTWARE .....ECONOLITE ASC/3-2070  
CABINET MOUNT.....BASE  
LOADBAY POSITIONS.....16  
LOAD SWITCHES USED.....2,4,5,6,15,16  
PHASES USED.....2,4,5,6  
OLA.....NOT USED  
OLB.....NOT USED  
OLC.....\*  
OLD.....4+5  
\* SEE OVERLAP PROGRAMMING DETAIL ON SHEET 2

**FYA SIGNAL WIRING DETAIL**

(wire signal head as shown)



51

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

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

LOOP NO.	LOOP PANEL TERMINALS
2A	L1A,L1B
2B	L2A,L2B
4A	L3A,L3B
NU	L4A,L4B
5A	L5A,L5B
	L6A,L6B
5B	L7A,L7B
5C	L8A,L8B
5D	L9A,L9B
6A	L10A,L10B
6B	L11A,L11B
6C	L12A,L12B
NU	L13A,L13B
NU	L14A,L14B
NU	L15A,L15B
NU	L16A,L16B

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

- \* Detector Type - G (remove delay from existing detector card)
- \*\* Detector Type - N
- ★ For the detectors to work as shown on the signal plan, see the Vehicle Detector Setup Programming Detail for Alternate Phasing on sheet 3.

**LOAD SWITCH ASSIGNMENT DETAIL**

(program controller according to schedule in chart below)

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

THIS ELECTRICAL DETAIL IS FOR THE SIGNAL DESIGN: 05-1906  
DESIGNED: March 2019  
SEALED: 7/24/2019  
REVISED: N/A

Electrical Detail - Final Design - Sheet 1 of 4

SR 3015 (Airport Blvd.) at SR 1789 (Pleasant Grove Church Rd.)

Division 5 Wake County Cary

PLAN DATE: November 2015 REVIEWED BY:

PREPARED BY: S. Armstrong REVIEWED BY:

REVISIONS INIT. DATE

Seal: RYAN W. HOUGH, PROFESSIONAL ENGINEER, SEAL 036833

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

SIG. INVENTORY NO. 05-1906

20-111-2019 05:42  
\*011506.ssm ete-wmk.dgn  
sarmstrong