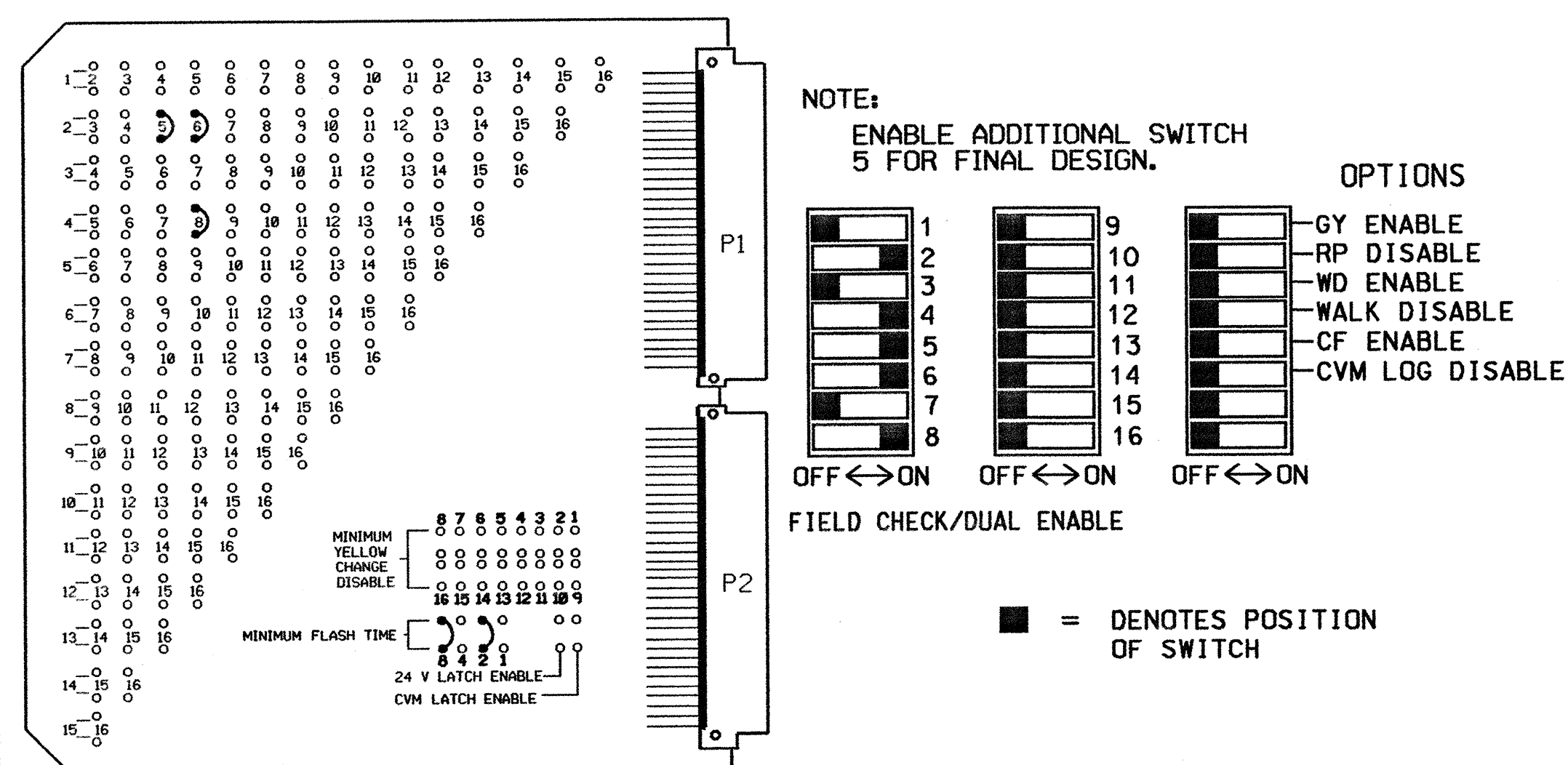


**EDI MODEL MMU-16E
MALFUNCTION MANAGEMENT UNIT
PROGRAMMING DETAIL**

(program card and set switches as shown below)

NOTE:
ADD JUMPER AT 2-5 FOR FINAL DESIGN.



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, 9, 10, 11, & 12 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 THE CONTROLLER TO START UP IN PHASES 2 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, ON CONTROLLER UNIT, FOR ALL PHASES.
- PROGRAM PHASES 4 AND 8, ON CONTROLLER UNIT, FOR DUAL ENTRY.
- SET ALL DETECTOR CARD UNITS TO 'PRESENCE' MODE.
- PROGRAM DETECTOR CALL DELAY AND EXTENSION TIMING ON THE CONTROLLER UNLESS OTHERWISE SPECIFIED.

NOTE:
ADD NEW LOAD SWITCH IN LOAD BAY POSITION 5 FOR FINAL DESIGN.

FIELD CONNECTION HOOK-UP CHART

PHASE	1	2	3	4	5	6	7	8	2 PED	4 PED	6 PED	8 PED
SIGNAL HEAD NO.	NU	2I,22	NU	4I,42,43	2I	6I,62	NU	8I,82,83	NU	NU	NU	NU
GREEN		2G		4G		6G		8G				
YELLOW		2Y		4Y		6Y		8Y				
RED		2R		4R	*	6R		8R				
RED ARROW												
YELLOW ARROW					5Y							
GREEN ARROW					5G							

NU = NOT USED

*INSTALL LOAD RESISTOR ON LOAD SWITCH 5 RED FIELD TERMINAL. REFER TO LOAD RESISTOR INSTALLATION DETAIL THIS SHEET.

DETECTOR RACK SET-UP DETAIL

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

BIU	CH1	CH1	CH1	CH1	CH1	CH1	CH1	SLOT	CH1	SLOT	SLOT	SLOT
	L3 ø4	L1 ø2	L7 ø5	L5 ø4	L11 ø6	L9 ø6		L13 ø8				
	CH2 L4 ø4	CH2 L2 ø2	CH2 L8 ø2	CH2 L6	CH2 L12	CH2 L10 ø6	EMPTY	CH2 L14 ø8	EMPTY	EMPTY	EMPTY	
			*	NOT USED	NOT USED							

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

LOOP NO.	LOOP PANEL TERMINALS
2A,2B	L1A, L1B
2C,2D	L2A, L2B
4A	L3A, L3B
4B	L4A, L4B
4C	L5A, L5B
---	L6A, L6B
5A	L7A, L7B
---	L8A, L8B
6A,6B	L9A, L9B
6C,6D	L10A, L10B
6E	L11A, L11B
---	L12A, L12B
8A	L13A, L13B
8B	L14A, L14B
---	L15A, L15B
---	L16A, L16B

ADD JUMPERS FROM: L7A TO L8A, AND L7B TO L8B

NOTE
BE SURE TO PROGRAM DETECTOR TYPES AND TIMERS (EXTEND AND DELAY) AS SHOWN ON THE SIGNAL PLANS.

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

CONTROLLER DETECTOR NO.	FUNCTION	TIMING	
		FEATURE	TIME (SEC)
1	ø 2	EXTEND	2.3
2	ø 2	---	---
3	ø 4	---	---
4	ø 4	---	---
5	ø 4	DELAY	15
6	---	---	---
7	ø 5	DELAY	15
8 *	ø 2	DELAY	3
9	ø 6	EXTEND	2.3
10	ø 6	---	---
11	ø 6	---	---
12	---	---	---
13	ø 8	---	---
14	ø 8	DELAY	10
15	---	---	---
16	---	---	---

* THIS DETECTOR IS EQUIPPED WITH DELAY AND EXTEND TIMER. PROGRAM THE TIMING REQUIRED FOR THIS DETECTOR CHANNEL ON THE DETECTOR UNIT, NOT THE CONTROLLER.

SPECIAL BACK-UP PROTECTION NOTES

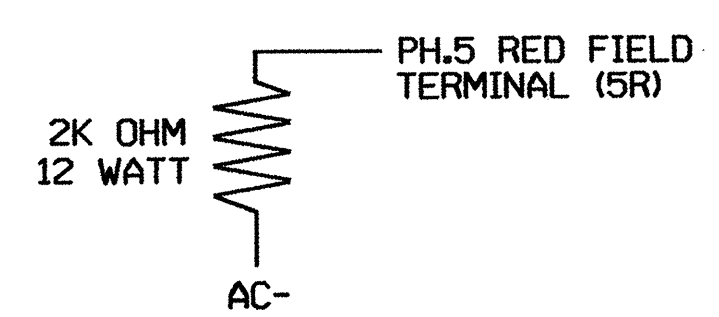
- PROGRAM CONTROLLER TO OMIT PHASE 5 DURING PHASE 6 ON.
- TO ACCOMPLISH BACK-UP FEATURE DESCRIBED IN NOTE 1, ENABLE 'BACK-UP PROTECTION GROUP 1' UNDER CONTROLLER SUBMENU 9: 'OPTION DATA'.

EQUIPMENT INFORMATION

- * CONTROLLER.....CONTRACTOR SUPPLIED ECONOLITE ASC/2
- * CABINET.....CONTRACTOR SUPPLIED ECONOLITE NC-3
- CABINET MOUNT.....BASE
- LOADBAY POSITIONS.....12
- LOAD SWITCHES USED.....2, 4, 5, 6, 8
- PHASES USED.....2, 4, 5, 6, 8
- OL/A.....NOT USED
- OL/B.....NOT USED
- OL/C.....NOT USED
- OL/D.....NOT USED

EXISTING FROM TEMPORARY DESIGN*

LOAD RESISTOR INSTALLATION DETAIL



NOTE: THE PURPOSE OF THIS RESISTOR IS TO LOAD THE CHANNEL RED MONITOR INPUT IN ORDER FOR THE MALFUNCTION MANAGEMENT UNIT TO USE THE FULL SIGNAL SEQUENCE MONITORING CAPABILITY ON THIS CHANNEL, WHICH DOES NOT USE THE RED DISPLAY IN THE FIELD.

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

THIS ELECTRICAL DETAIL IS FOR THE SIGNAL DESIGN: 12-1681
DESIGNED: AUGUST 2002*
SEALED: 1-27-03*
REVISED: N/A

* BY ARCADIS G & M OF NORTH CAROLINA, INC.
801 CORPORATE CENTER DRIVE, SUITE 300
RALEIGH, NC 27607-5073
TEL: 919/854-1282 FAX: 919/854-5448

TS-2 TYPE 1 CABINET

FINAL DESIGN

ELECTRICAL AND PROGRAMMING DETAILS FOR:

US 70 at BUSINESS PARK DR.

DIVISION 12 IREDELL COUNTY E. of STATESVILLE

PLAN DATE: JANUARY 2003 REVIEWED BY: T. Jupp

PREPARED BY: F.E. RUSS REVIEWED BY:

REVISIONS: _____ INIT. DATE

Signature: *F.E. Russ* DATE: _____

SEAL: NORTH CAROLINA PROFESSIONAL ENGINEER SEAL 022013 GEORGE C. BRUNN

SIG. INVENTORY NO. 12-1681