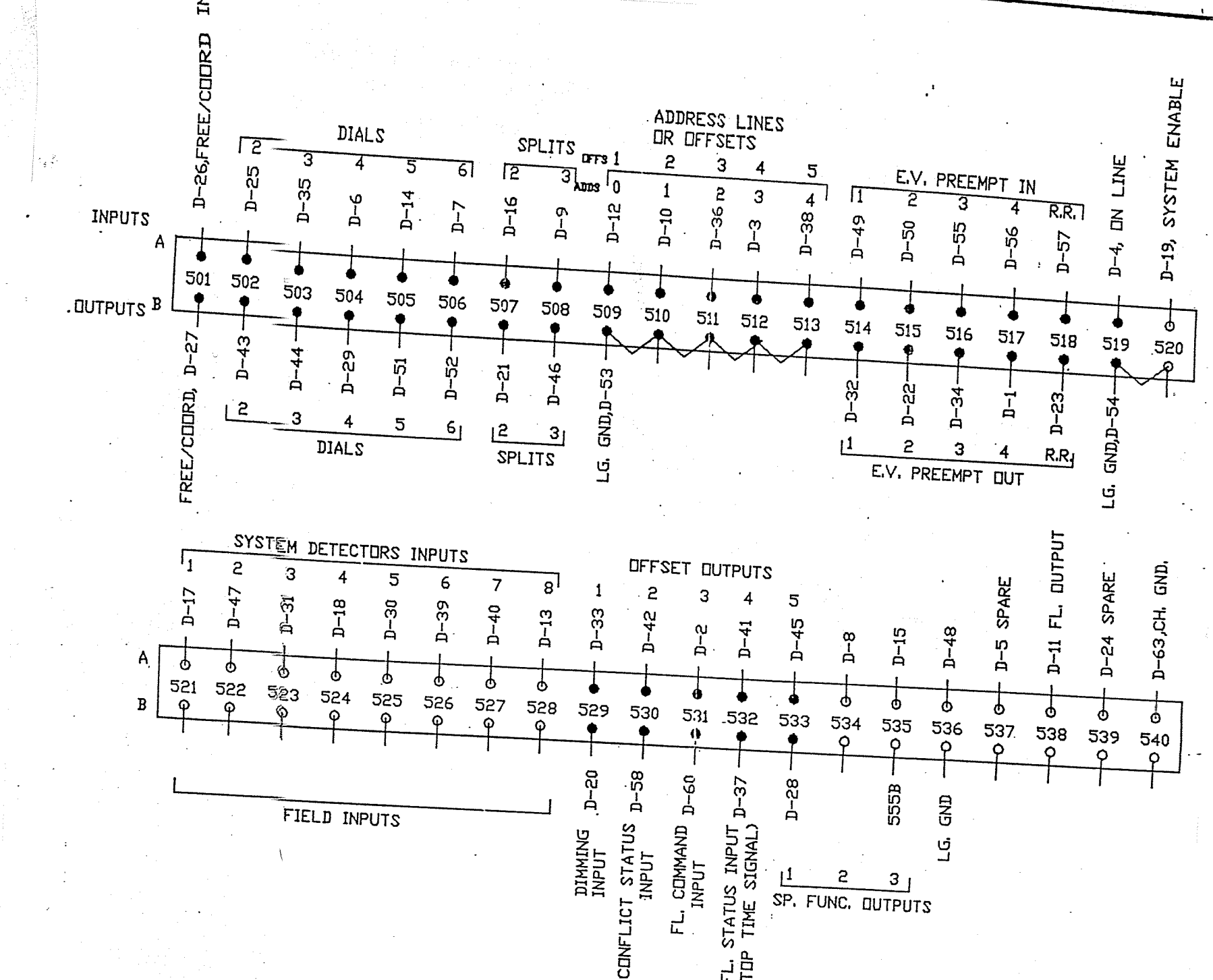


CONTROLLER INTERFACE PANEL

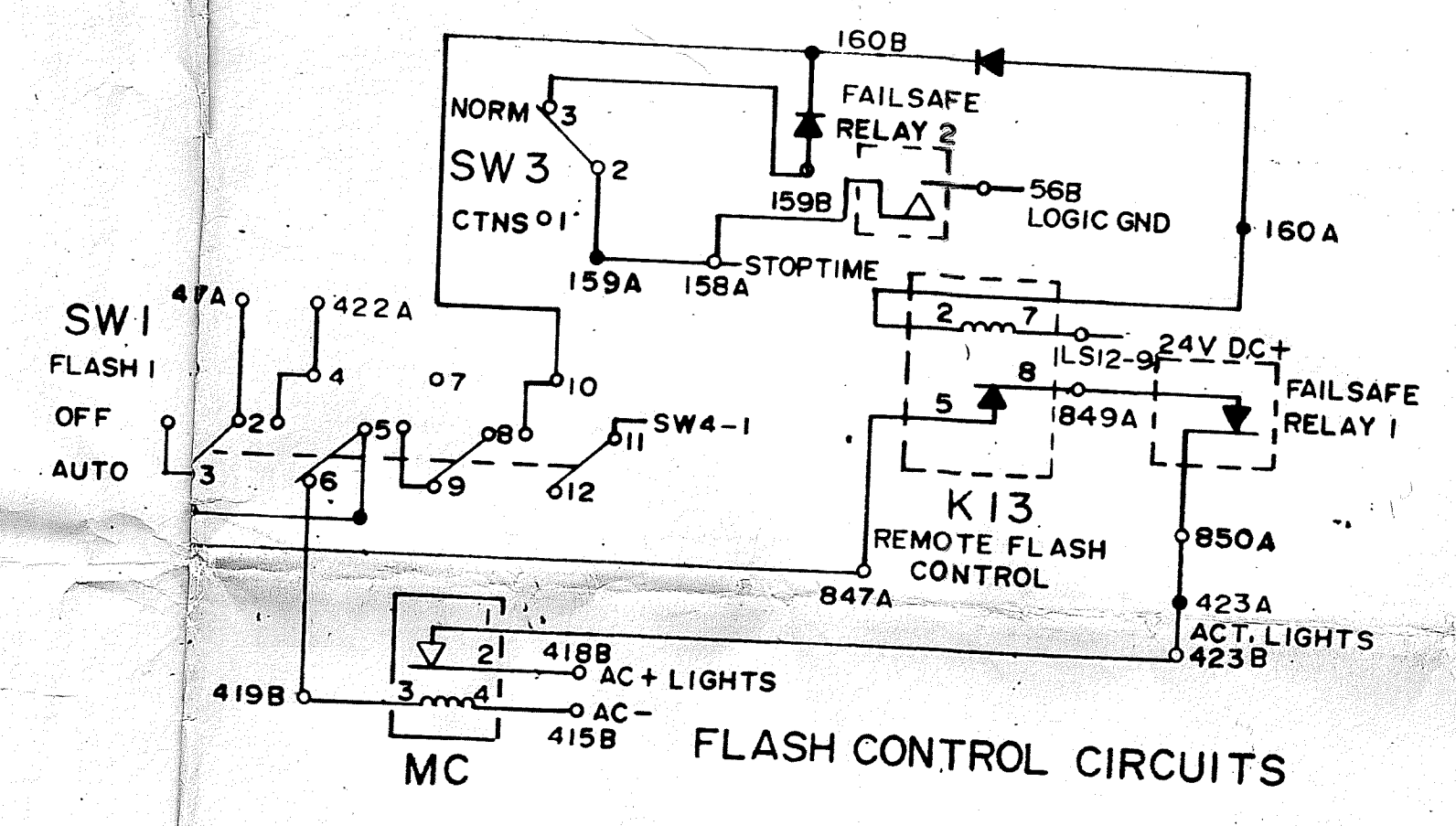
NEMA 12L CONFLICT MONITOR
CM1 CM2

P1	P2	P3	P4
SH SHELL GROUND 6B3	SH SHELL GROUND 6B3	SH SHELL GROUND 6B3	1 SPLIT (B) IN 658A
A RESV. 6B	A 0 1 PHASE NEXT 21B	A STATUS BIT A 2 18B	2 SYNC IN 662A
B 24V DC+ 59A	B SPARE 1 29A	B STATUS BIT B 2 18B	3 CALL DET A 671A
C VOLTAGE MONITOR 54A	C 0 2 PHASE NEXT 22B	C 0 8 DWK 19B	4 SPLIT (A) IN 657A
D 0 1 RED 64A	D 0 3 GRN 76A	D 0 8 RED 126A	5 CALL DET D 674A
E 0 1 DWK 66A	E 0 3 YEL 77A	D 0 7 YEL 117A	6 CALL DET C 673A
F 0 2 RED 71A	F 0 3 RED 78A	F 0 7 RED 118A	7 CYCLE B IN 652A
G 0 2 DWK 73A	G 0 4 RED 84A	G 0 6 RED 111A	8 CYCLE A IN 651A
H 0 2 PCL 142A	H 0 4 PCL 86A	H 0 5 RED 104A	9 OFFSET 1 IN 665A
I 0 2 VEH DET 68A	I 0 4 CHECK 24A	J 0 5 YEL 103A	10 OFFSET 2 IN 666A
J 0 2 PED DET 89A	J 0 4 VEH DET 81A	K 0 5 PCL 145A	11 OFFSET 3 IN 667A
K 0 2 HOLD 88B	K 0 4 PED DET 91A	L 0 5 DWK 106A	12 PREEMPT 5 IN 676A
L STOP TIMING I 15A	L 0 3 VEH DET 75A	M 0 5 PHASE NEXT 25B	13 PREEMPT 1 IN 681A
M INHIBIT MAX TERM I 9A	M 0 3 PED DET 90A	N 0 5 PHASE ON 37A	14 PREEMPT 2 IN 682A
N EXTERNAL START 19A	N 0 2 PHASE OMIT 43A	P 0 5 VEH DET 101A	15 PREEMPT 3 IN 683A
O INTERVAL ADVANCE 6A	O 2 PHASE OMIT 42A	R 0 6 PED DET 108A	16 PREEMPT 4 IN 684A
P INDICATOR LAMP CONT 20A	P 0 5 PED OMIT 42A	S 0 6 VEH DET 106A	17 FLASH STATUS OUT 679A
Q AC-COMMON N83	Q 0 1 PHASE OMIT 37B	T 0 6 PED DET 129A	18 CHASSIS GROUND 679A
R CHASSIS GROUND 6B3	R 0 3 PHASE OMIT 41A	U 0 7 PED DET 130A	19 N/C 689A
S LOGIC GROUND 55A	S SPARE 2 132A	V 0 7 VEH DET 115A	20 MASTER SELECT IN 675B
T FLASH LOGIC OUT 5A	T SPARE 3 29B	W 0 8 PED DET 131A	21 CALL DET B IN 675A
U STATUS BIT C I 17B	U 0 3 WK 30A	X 0 8 HOLD 148B	22 RTC DISABLE 672A
V 0 1 PCL 63A	V 0 3 PCL 79A	Y FORCE OFF 2 148B	23 PREEMPT 2 OUT 678A
W 0 2 YEL 141A	W 0 4 GRN 82A	Z STOP TIME 2 8A	24 PREEMPT 3 OUT 686A
X 0 2 GRN 70A	X 0 4 YEL 83A	0 INHIBIT MAX TERM 2 16A	25 SPARE 6 OUT 685B
Y 0 2 CHECK 69A	Y 0 4 WK 85A	1 SPARE 1 10A	26 OFFSET 3 OUT 670A
Z 0 2 PHASE ON 34A	Z 0 4 PHASE ON 36A	2 STATUS BIT C 2 31A	27 R12 STATUS OUT 669B
0 0 1 VEH DET 61A	0 0 4 PHASE NEXT 24B	3 0 8 WK 125A	28 OFFSET 2 OUT 669B
1 0 1 HOLD 88A	1 0 4 PHASE OMIT 44A	4 0 7 GRN 123A	29 SPARE 5 OUT 689A
2 FORCE OFF I 7A	2 0 3 HOLD 108B	5 0 6 GRN 116A	30 R34 STATUS OUT 686B
3 EXT MIN RECALL ALL 50A	3 0 3 PHASE OMIT 98B	6 0 6 YEL 109A	31 SYNC OUT 670B
4 MAN. CONTROL ENABLE 4A	4 0 6 PED OMIT 358B	7 0 5 GRN 110A	32 CYCLE B OUT 661B
5 CALL TO NON-ACT I 17A	5 0 7 PED OMIT 388B	8 0 5 WK 102A	33 FREE STATUS OUT 677B
6 AC+ CONTROL 846B	6 0 8 PED OMIT 398B	9 0 5 HOLD 25A	34 LOGIC GND 690A
7 STATUS BIT B I 16B	7 0 1 A YEL 96A	10 0 5 PHASE OMIT 118B	35 N/C 676B
8 0 1 GRN 62A	8 0 3 CHECK 97A	11 0 6 HOLD 45A	36 FLASH (MUTCD) IN 656A
9 0 1 WK 65A	9 0 3 PHASE ON 23A	12 0 6 PHASE OMIT 128B	37 EXT. RESYNC. IN 664B
10 0 1 CHECK 21A	10 0 3 PHASE NEXT 23B	13 0 7 PHASE OMIT 46A	38 FREE IN 655A
11 0 2 PED OMIT 34B	11 0 4 RED 140A	14 0 8 PHASE OMIT 47A	39 PREEMPT 1 OUT 685A
12 OMIT RED CLR 11A	12 0 4 GRN 130B	15 0 8 PHASE OMIT 48A	40 PREEMPT 4 OUT 688A
13 RED REST MODE I 13A	13 0 4 PED OMIT 36B	16 0 8 VEH DET 48A	41 PREEMPT 5 OUT 677A
14 SPARE 2 48B	14 0 5 SPARE 4 140A	17 RED REST MODE 2 121A	42 OFFSET 1 OUT 668A
15 TEST INPUT B 18A	15 0 4 D GRN 30B	18 OMIT RED CLR 2 12A	43 SPLIT A OUT 659A
16 WALK REST MODIFIER 2B	16 0 4 PCL 138A	19 0 8 GRN 148A	44 SF 1 OUT 660A
17 STATUS BIT A I 15B	17 0 4 SPARE 5 36B	20 0 8 DWK 122A	45 SF 2 OUT 680A
18 0 1 PHASE ON 33A	18 0 4 MAX 2 SELECT 2 31B	21 0 7 DWK 120A	46 SPARE 4 OUT 661A
19 0 1 PED OMIT 33B	19 0 4 OL A GRN 2A	22 0 6 DWK 113A	47 R78 STATUS OUT 663B
20 MAX 2 SELECT 92A	20 0 4 OL B YEL 95A	23 0 6 PCL 146A	48 R56 STATUS OUT 664A
21 SPARE 3 5B	21 0 4 OL B RED 100A	24 0 6 PHASE ON 26A	49 CYCLE A OUT 653A
	22 0 4 OL C RED 137A	25 0 6 PHASE NEXT 38A	
	23 0 4 OL D YEL 139A	26 0 7 HOLD 26B	
	24 0 4 OL C GRN 135A	27 0 8 CHECK 13B	
	25 0 4 OL B GRN 98A	28 0 8 PHASE ON 28A	
	26 0 4 OL C YEL 136A	29 0 8 PHASE NEXT 40A	
		30 0 7 WK 28B	
		31 0 7 PCL 119A	
		32 0 6 WK 147A	
		33 0 7 CHECK 112A	
		34 0 7 PHASE ON 27A	
		35 0 7 PHASE NEXT 39A	
		36 0 7 PHASE NEXT 27B	

SH SHELL GROUND 6B3	SH SHELL GROUND 6B3
A AC+ I 826B	A AC+ I 826B
B RELAY 1 NO 825B	B RELAY 1 NO 825B
C RELAY 2 NC 578	C DELAY RELAY COMM 825B
D CH 12 RED 6A	D DELAY RELAY NO 578
E CH 11 RED 825A	E CH 12 RED 6A
F CH 8 RED 826A	F CH 11 RED 825A
G CH 7 RED 248A	G CH 8 RED 826A
H CH 6 RED 242A	H CH 7 RED 248A
I CH 5 RED 236A	I CH 6 RED 242A
J CH 4 RED 230A	J CH 5 RED 236A
K CH 3 RED 224A	K CH 4 RED 230A
L CH 2 RED 212A	L CH 3 RED 224A
M SPARE 1 206A	M CH 2 RED 212A
N +24V MONITOR II 153A	N SPARE 1 206A
O SPARE 2 98B	O +24V MONITOR II 153A
P SPARE 3 154A	P SPARE 2 98B
Q DELAY RELAY NC 153B	Q SPARE 3 154A
R CH 10 YEL 827A	R DELAY RELAY NC 153B
S SPARE 1 158B	S CH 10 YEL 827A
T SPARE 2 158B	T SPARE 1 158B
U SPARE 3 158B	U SPARE 2 158B
V CH 10 YEL 827A	V SPARE 3 158B
W SPARE 1 158B	W CH 10 YEL 827A
X SPARE 2 158B	X SPARE 1 158B
Y SPARE 3 158B	Y SPARE 2 158B
Z RED ENABLE 846A	Z SPARE 3 158B
0 SPARE 1 157B	0 RED ENABLE 846A
1 SPARE 2 158B	1 SPARE 1 157B
2 SPARE 3 158B	2 SPARE 2 158B
	3 SPARE 3 158B



PIN I/O	FUNCTION	TERM.
1	EMERG. PR. 4 OUT	517B
2	OFFSET 3 OUT	531A
3	OFFSET 4 (ADD BIT 3)	512A
4	DN LINE	519A
5	SPARE	532A
6	DIAL 4	504A
7	DIAL 6	506A
8	SPECIAL FUNCTION 2 OUT	518A
9	SPLIT 3	534A
10	OFFSET 2 (ADD BIT 1)	508A
11	FLASH OUT	510A
12	OFFSET 1 (ADD BIT 0)	536A
13	SYSTEM DET. 8	509A
14	DIAL 5	528A
15	SPECIAL FUNCTION 3 OUT	505A
16	SPLIT 2	535A
17	SYSTEM DET. 1 (SEQ. #1)	507A
18	EMERG. PR. 2 (SEQ. #1)	514A
19	SYSTEM DET. 4 (SEQ. #4)	524A
20	SYSTEM ENABLE	520A
21	DIMMING ENABLE	529B
22	SPLIT 1 OUT	537B
23	EMERG. PR. 2 (SEQ. #2)	515B
24	RAILROAD PR. OUT	518B
25	SPARE	529A
26	DIAL 2 (SPECIAL FUNCTION 2)	502A
27	DIAL 3 (SPECIAL FUNCTION 1)	503B
28	FREE/COORD OUT	501B
29	SPECIAL FUNCTION 1 OUT	504B
30	DIAL 4 OUT	505B
31	SYSTEM DET. 5	525A
32	SYSTEM DET. 3 (SEQ. #3)	514B
33	EMERG. PR. 1 OUT	514B
34	OFFSET 1 (ADD BIT 2)	529A
35	DIAL 3 (SPECIAL FUNCTION 3)	502A
36	OFFSET 4 OUT	532B
37	FLASH STATUS	511A
38	OFFSET 5 (ADD BIT 4)	512A
39	SYSTEM DET. 6	522B
40	SYSTEM DET. 7	503B
41	OFFSET 3 (ADD BIT 2)	532A
42	OFFSET 2 OUT	508B
43	DIAL 2 OUT	536A
44	DIAL 3 OUT	502B
45	OFFSET 5 OUT	503B
46	SPLIT 3 OUT	532A
47	SYSTEM DET. 2 (SEQ. #2)	508B
48	LOGIC GND.	522A
49	EMERG. PREEMPT 1	522A
50	EMERG. PREEMPT 2	514A
51	DIAL 5 OUT	515A
52	DIAL 6 OUT	505B
53	LOGIC GND.	506B
54	LOGIC GND.	509B
55	EMERG. PREEMPT 3	519B
56	EMERG. PREEMPT 4	514A
57	RAILROAD PREEMPT	516A
58	RESERVED	530B
59	FLASH COMMAND	531B
60	RESERVED	531B
61	RESERVED	531B
62	RESERVED	531B
63	CHASSIS GND.	540A

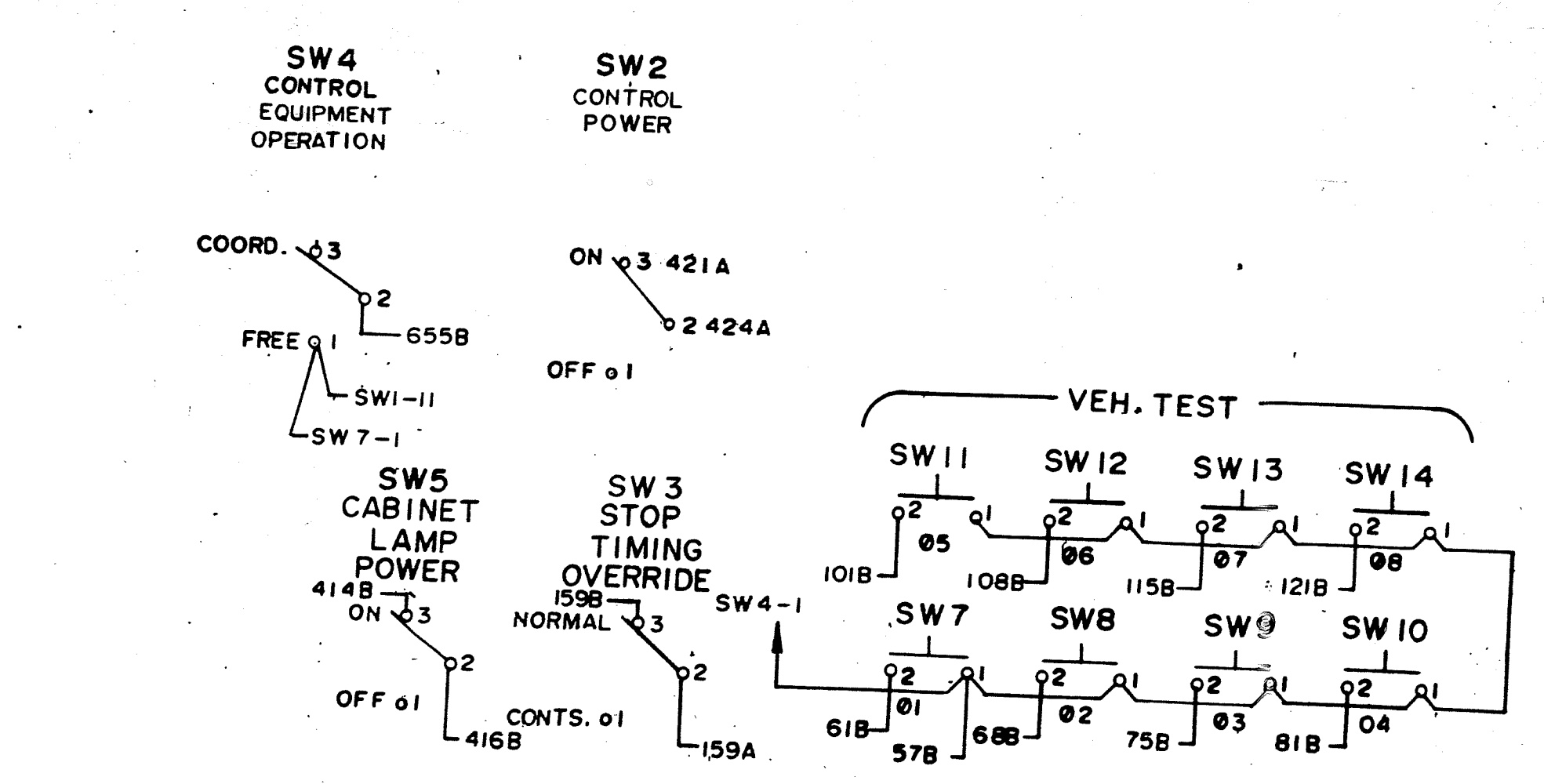
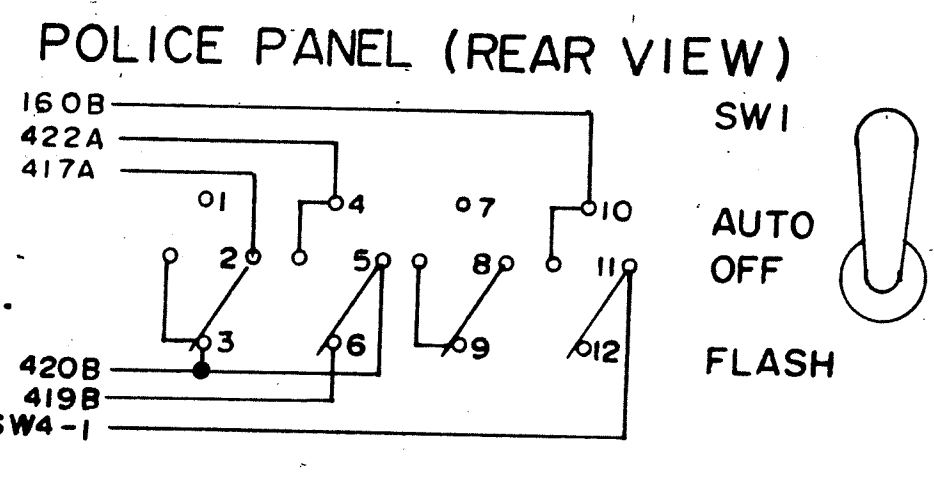


COLOR	FUNCTIONAL *
BLACK	AC+
WHITE	AC NEUTRAL
GREEN	EARTH GROUND
RED	CONFLICT MONITOR WIRING
BLUE	INTERCONNECT
YELLOW	INTERCONNECT
ORANGE	INTERCONNECT
PURPLE	CALLING DETECTOR

CONTR. CHAN.	PHASES	POLE#	TERM.
1	1-6	1	257
2	2-5	3	257
3	4	2	263
4	8	4	269

CONTR. CHAN.	PHASES	POLE#	SIGNAL	DC(+)	GND
1	1-6	1	361	362	365
2	2-5	3	364	362	365
3	4	2	366	367	370
4	8	4	369	367	370

SIGNAL	DC(+)	GND
YEL	DRS	BLU
GRN	RED	BLK
WHI	RED	BLK



SIGNAL	TERMINAL		
	+G+Y	+R	G Y R
1-1	301	302	303
2-1		307	308 209
3-2		210	211 212
4-1		219	220 221
4-2			222 223 224
5-1	225	226	227
6-1		231	232 233
6-2		234	235 236
8-1		243	244 245
8-2		246	247 248

DET	TERMINAL
D2-1,2	301B-302B
D6-1,2	304B-305B
D5-1	313B-314B
	316B-317B
D2-3	318B-319B
D2-4	321B-322B
D1-1	325B-326B
	328B-329B
D6-3	330B-331B
D6-4	333B-334B
D4-1	337B-338B
D4-2	340B-341B
D4-3	342B-343B
D8-1	349B-350B
D8-2	352B-353B

SIGNAL	TERMINAL
P3-1	349 350
P3-2	253 254
P4-1	255 256
P4-2	259 260
P6-1	261 262
P6-2	265 266
P8-1	267 268
P8-2	271 272

PPB	TERMINAL
PPB-1/PPB-2	311 *
PPB-3/PPB-4	312 *
PPB-5/PPB-6	313 *
PPB-7/PPB-8	314 *

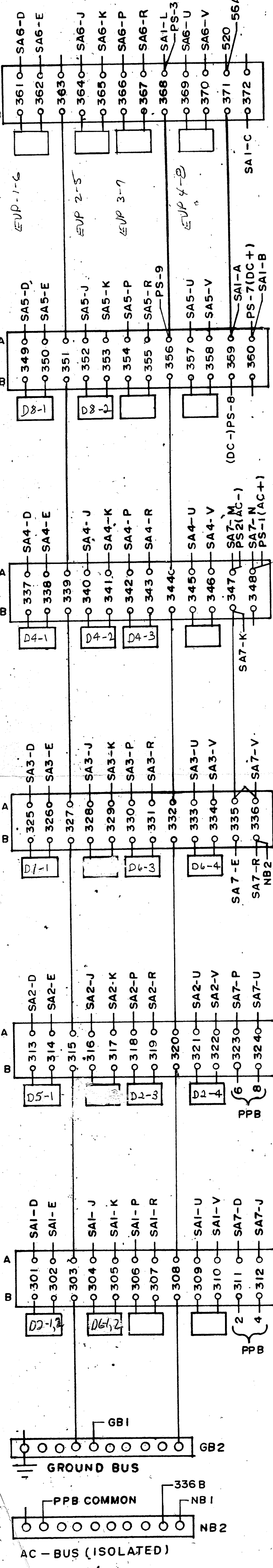
* - PB COMMON RETURN TERMINATED ON N82

MINNESOTA DEPARTMENT OF TRANSPORTATION
80 BINNET FACILITY FOR MINNESOTA MICROTRONICS
TYPE 800 CONTROLLER

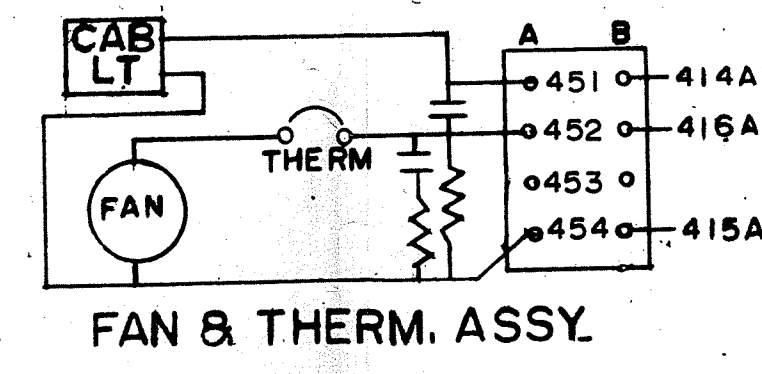
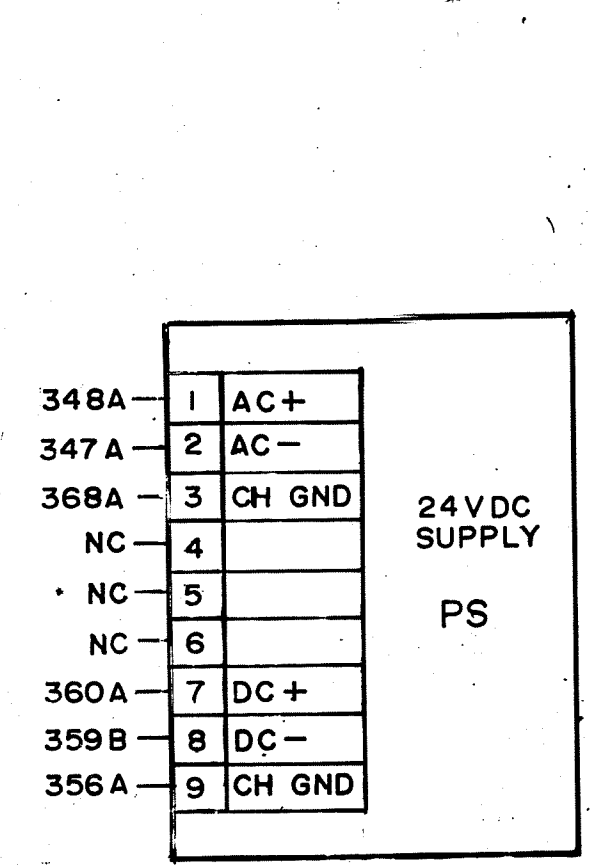
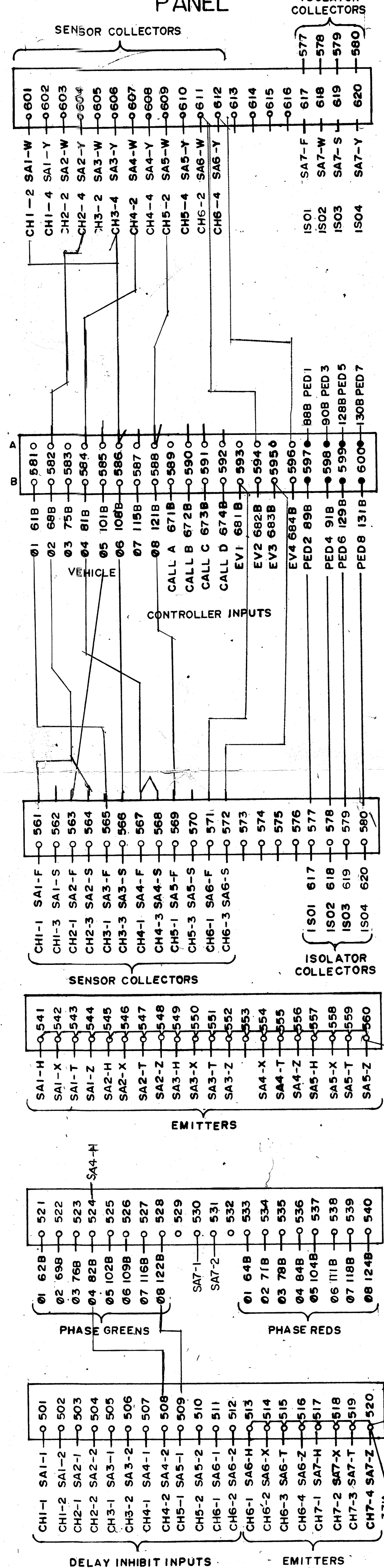
SUPPLIED BY RIDDLE CONTROL PRODUCTS INC.

ENGINEER R.R.	REV	ORDER	DATE
DRAFTSMAN D.W.L.	REV	DWG NO. 60-088	9-27-86
APPR.	MNDOT		PAGE 1 OF 3

SENSOR FIELD PANEL



SENSOR PROGRAM PANEL



DETECTOR RACK CARD EDGE HARNESS-TYPICAL
(ONE HARNESS FOR EACH FOUR CHANNEL POSITION)

CARD EDGE PIN	HARNESS PIN	COLOR CODE	FUNCTION
1	1	WHITE/RED	CH1 TIMER INHIBIT
2	2	BROWN	CH2 TIMER INHIBIT
3	3	WHITE/BROWN	CH1 LOOP
4	4	WHITE/BLUE	CH1 OUT (+)
5	5	BLUE	CH1 OUT (-)
6	6	BLACK/RED	CH2 LOOP
7	7	BLACK/WHITE	CH2 LOOP
8	8	ORANGE	CH3 LOOP
9	9	WHITE/ORANGE	CH3 LOOP
10	10	WHITE/GREY	CH3 OUT (+)
11	11	GREY	CH3 OUT (-)
12	12	YELLOW	CH4 LOOP
13	13	WHITE/YELLOW	CH4 LOOP
14	14	WHITE/VIOLET	CH2 OUT (+)
15	15	VIOLET	CH2 OUT (-)
16	16	WHITE/GREEN	CH4 OUT (+)
17	17	WHITE/BLACK	CH4 OUT (-)
18	18	WHITE/BLACK	CH4 OUT (-)

THE FOLLOWING 20 GAUGE WIRES ARE SOLDERED TO TERMINALS ON THE BACK OF THE DETECTOR RACK

WIRE	COLOR	FUNCTION
L	GREEN	EARTH GND
M-11	WHITE	AC NEUTRAL
N-12	BLACK	120 VAC+
B	RED	24VDC+
A	BLACK/YELLOW	24VDC-
C	BLACK/BLUE	RESET

- FUNCTIONS:**
- 1-CALL AND EXTEND
 - 2-CALL ONLY
 - 3-EXTEND ONLY
 - 4-CALL ONLY DENS
 - 5-DLY CALL ONLY
 - 6-DLY CALL ONLY DENSITY
 - 7-DLY CALL IMMED EXTEND
 - 8-CARRY OVER
 - 9-ADVISORY
 - 10-SAMPLING
 - 11-SPECIAL-SEE NOTE

DETECTORS AND PPB ISOLATION

PIN RACK HARNESS	SA1		SA2		SA3		SA4		SA5		SA6		SA7	
	PHASE	FUNC	PHASE	FUNC	PHASE	FUNC	PHASE	FUNC	PHASE	FUNC	PHASE	FUNC	PHASE	FUNC
1	CH1	2	CH2	3	CH3	4	CH4	5	CH1	6	CH2	7	CH3	8
9	CH3 LOOP	306A	318A	330A	342A	354A	366A	378A	390A	402A	414A	426A	438A	450A
10	CH3 LOOP	307A	319A	331A	343A	355A	367A	379A	391A	403A	415A	427A	439A	451A
11	CH3 OUTPUT (+)	562	564	566	568	570	572	574	576	578	580	582	584	586
12	CH3 OUTPUT (-)	543	547	551	555	559	563	567	571	575	579	583	587	591
13	CH4 LOOP	309A	321A	333A	345A	357A	369A	381A	393A	405A	417A	429A	441A	453A
14	CH4 LOOP	310A	322A	334A	346A	358A	370A	382A	394A	406A	418A	430A	442A	454A
15	CH2 OUTPUT (+)	601	603	605	607	609	611	613	615	617	619	621	623	625
16	CH2 OUTPUT (-)	542	546	550	554	558	562	566	570	574	578	582	586	590
17	CH4 OUTPUT (+)	602	604	606	608	610	612	614	616	618	620	622	624	626
18	CH4 OUTPUT (-)	544	548	552	556	560	564	568	572	576	580	584	588	592
19	CH1 GREEN	501	503	505	507	509	511	513	515	517	519	521	523	525
20	CH2 GREEN	502	504	506	508	510	512	514	516	518	520	522	524	526
21	CH3 GREEN	501	503	505	507	509	511	513	515	517	519	521	523	525
22	CH4 GREEN	502	504	506	508	510	512	514	516	518	520	522	524	526

