Steering Panel

OPERATION MANUAL

KS81F
KS81A

KS81F

[Dip Switch]

<table>
<tr><th>Switch</th><th>ON</th><th>OFF</th><th>Default</th></tr>
<tr><td>1</td><td>Not available</td><td>PUMP Automatic
Feed-back available</td><td>OFF</td></tr>
<tr><td>2
3
4</td><td colspan="2">PUMP RUN/STOP Output time
<table><tr><th></th><th>2</th><th>3</th><th>4</th></tr><tr><td>1 second</td><td>OFF</td><td>OFF</td><td>OFF</td></tr><tr><td>2 second</td><td>OFF</td><td>OFF</td><td>ON</td></tr><tr><td>3 second</td><td>OFF</td><td>ON</td><td>ON</td></tr><tr><td>4 second</td><td>ON</td><td>ON</td><td>ON</td></tr><tr><td>5 second</td><td>ON</td><td>OFF</td><td>ON</td></tr></table></td><td>2 second</td></tr>
<tr><td>5
6
7</td><td colspan="2">PUMP Automatic Feed-back hold time
<table><tr><th></th><th>5</th><th>6</th><th>7</th></tr><tr><td>1 second</td><td>OFF</td><td>OFF</td><td>OFF</td></tr><tr><td>2 second</td><td>OFF</td><td>OFF</td><td>ON</td></tr><tr><td>3 second</td><td>OFF</td><td>ON</td><td>ON</td></tr><tr><td>4 second</td><td>ON</td><td>ON</td><td>ON</td></tr><tr><td>5 second</td><td>ON</td><td>OFF</td><td>ON</td></tr></table></td><td>2 second</td></tr>
<tr><td>8</td><td>ASP available</td><td>Not available</td><td>ON</td></tr>
<tr><td>9</td><td>STBD</td><td>PORT</td><td>ON(STBD)
OFF(PORT)</td></tr>
<tr><td>10</td><td>Operation mode</td><td>Test mode</td><td>ON</td></tr>
</table>

*Resistor Termination ON/OFF(PORT & STBD)

KS81A

[Dip Switch]

Switch	ON	OFF	Default
1	NC	NC	
2	NC	NC	
3	NC	NC	
4	Not available	**IND_FU** Available	OFF
5	STBD	PORT	ON(STBD) OFF(PORT)
6	Operation mode	Test mode	ON

*Resistor Termination ON/OFF(PORT&STBD)

COM

[Dip Switch]

<table>
<tr><th>Switch</th><th>ON</th><th>OFF</th><th>Default</th></tr>
<tr><td>1</td><td>J1 input/output available
<table><tr><th>Signal</th><th>Input</th><th>Output</th></tr><tr><td>FSP_SYNC</td><td>TB13-13</td><td>RL12 ON
RL1 ON</td></tr></table></td><td>Not available</td><td>ON</td></tr>
<tr><td>2</td><td>J2 input/output available
<table><tr><th>Signal</th><th>Input</th><th>Output</th></tr><tr><td>FSP_JS</td><td>TB13-15</td><td rowspan="2">R8J ON
RL8P ON</td></tr><tr><td>FSP_DP</td><td>TB13-15A</td></tr></table></td><td>Not available</td><td>ON</td></tr>
<tr><td>3</td><td>J3 input/output available
<table><tr><th>Signal</th><th>Input</th><th>Output</th></tr><tr><td>ASP_SYNC</td><td>TB13-16</td><td>RL1 ON
RK12A ON
RL11 ON</td></tr></table></td><td>Not available</td><td>ON</td></tr>
<tr><td>4</td><td>AP_RL1&RL4 activate</td><td>AP_RL4 activate</td><td>OFF</td></tr>
<tr><td>5</td><td>STBD</td><td>PORT</td><td>ON(STBD)
OFF(PORT)</td></tr>
<tr><td>6</td><td>Operation mode</td><td>Test mode</td><td>ON</td></tr>
</table>

*Resistor Termination ON/OFF

– **SW5**: Silence key release to “communication error”

COM [Relay output chart]

No	Signal (Key)	Input (Terminal)	RL12	RL2E	RL1	RL2	RL4	R8J	RL8P	RK12A	RL11	RL3
1	POWER	V+		ON								
2	COM POWER	TB13-1D		ON								
3	**KS81F _ IND_FU**	TB13-3		ON	ON							
4	**KS81F_NFU**	TB13-4		ON		ON						
5	**KS81F_ SYNC**	TB13-13		ON	ON							
6	**KS81F _AP**	TB13-14		ON	**ON** (DIP 4 ON)		ON					
7	**KS81F _JS**	TB13-15		ON				ON				
8	**KS81F _DP**	TB13-15A		ON					ON			
9	**KS81A_ SYNC**	TB13-16		ON	ON						ON	
10	**KS81A_ IND FU**	TB13-12A		ON	ON						ON	
11	**KS81A_ NFU**	TB13-11		ON								ON
12	**KS81F_ SYNC**	**DIP 1 ON** TB13-13	ON	ON	ON							
13	**KS81F_JS**	**DIP 2 ON** TB13-15		ON				ON	ON			
14	**KS81F_DP**	**DIP 2 ON** TB13-15A		ON				ON	ON			
15	**KS81A_ SYNC**	**DIP 3 ON** TB13-16		ON	ON					ON	ON	

KS81F&KS81A

[Test Mode]

Dip Switch “10” turn to OFF(KS81F) Dip switch “6” turn to OFF(KS81A)

1. PUMP 1 RUN KEY: LAMP test

2. PUMP 1 STOP KEY: OUTPUT test

3. PUMP 2 RUN KEY: CAN BUS communication test
   - CAN BUS OK with “short” buzzer sound
   - CAN BUS malfunction with “long” buzzer sound

4. PUMP 2 STOP KEY: INPUT Test with DIP switch 1 ~ 6 ON/OFF

*Test mode would be work PORT/STBD separately

COM

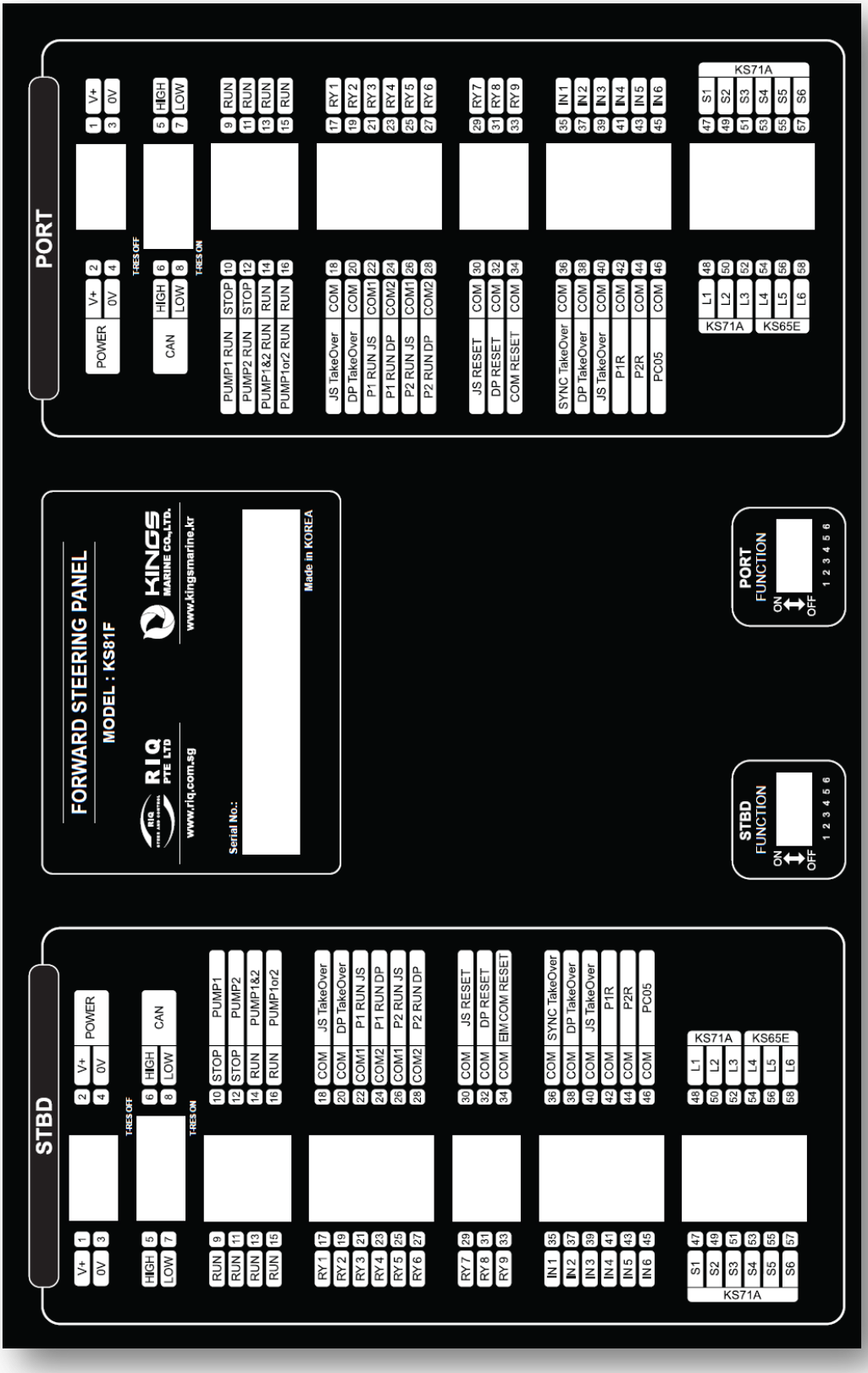
[Test Mode]

Dip switch “6” turn to OFF

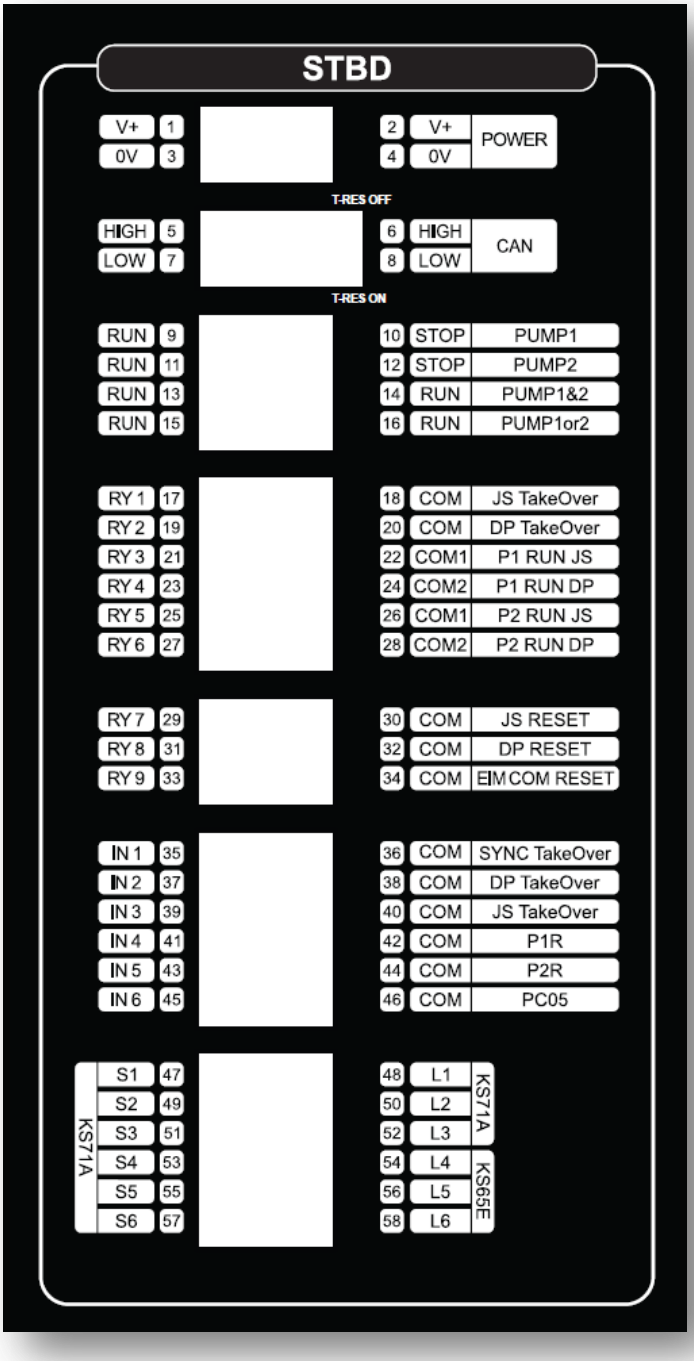
1. Switch “S5”: OUTPUT test

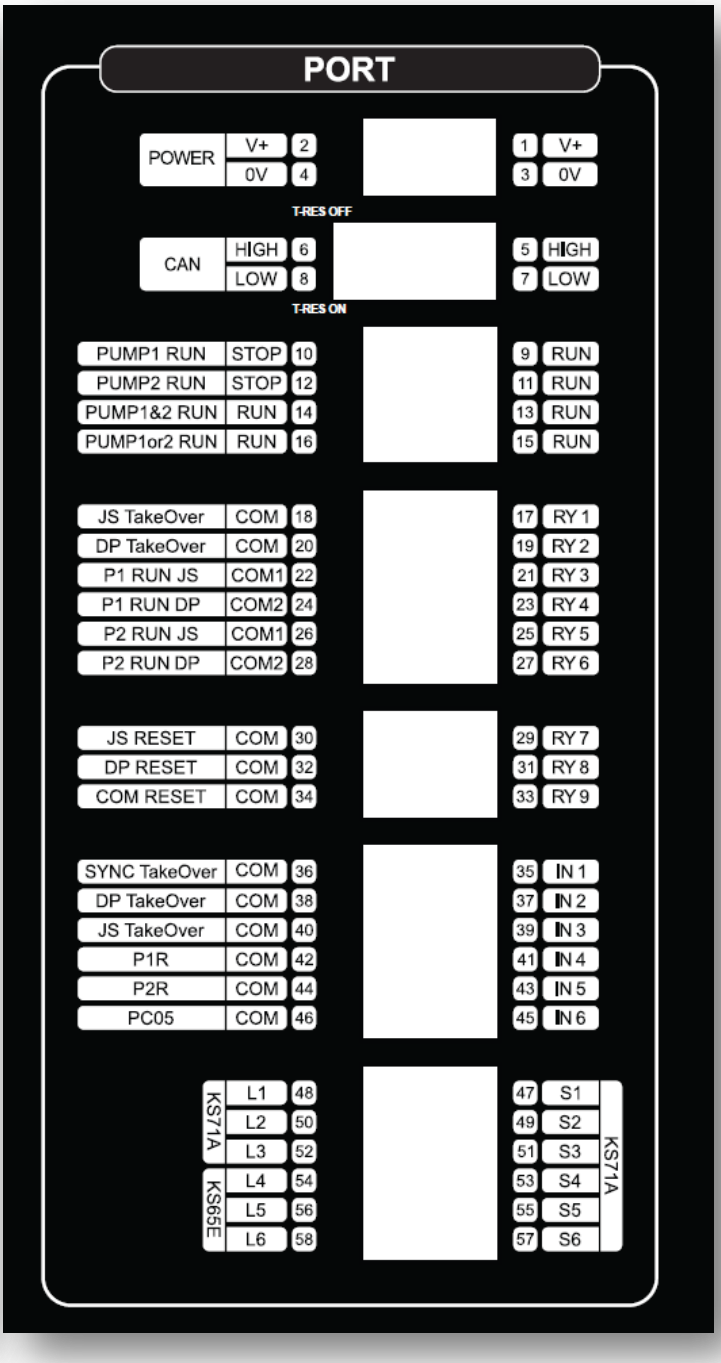
2. Switch “S6”: CAN BUS communication test
   - CAN BUS OK with “short” buzzer sound
   - CAN BUS malfunction with “long” buzzer sound

Terminal assignment
[KS81F]

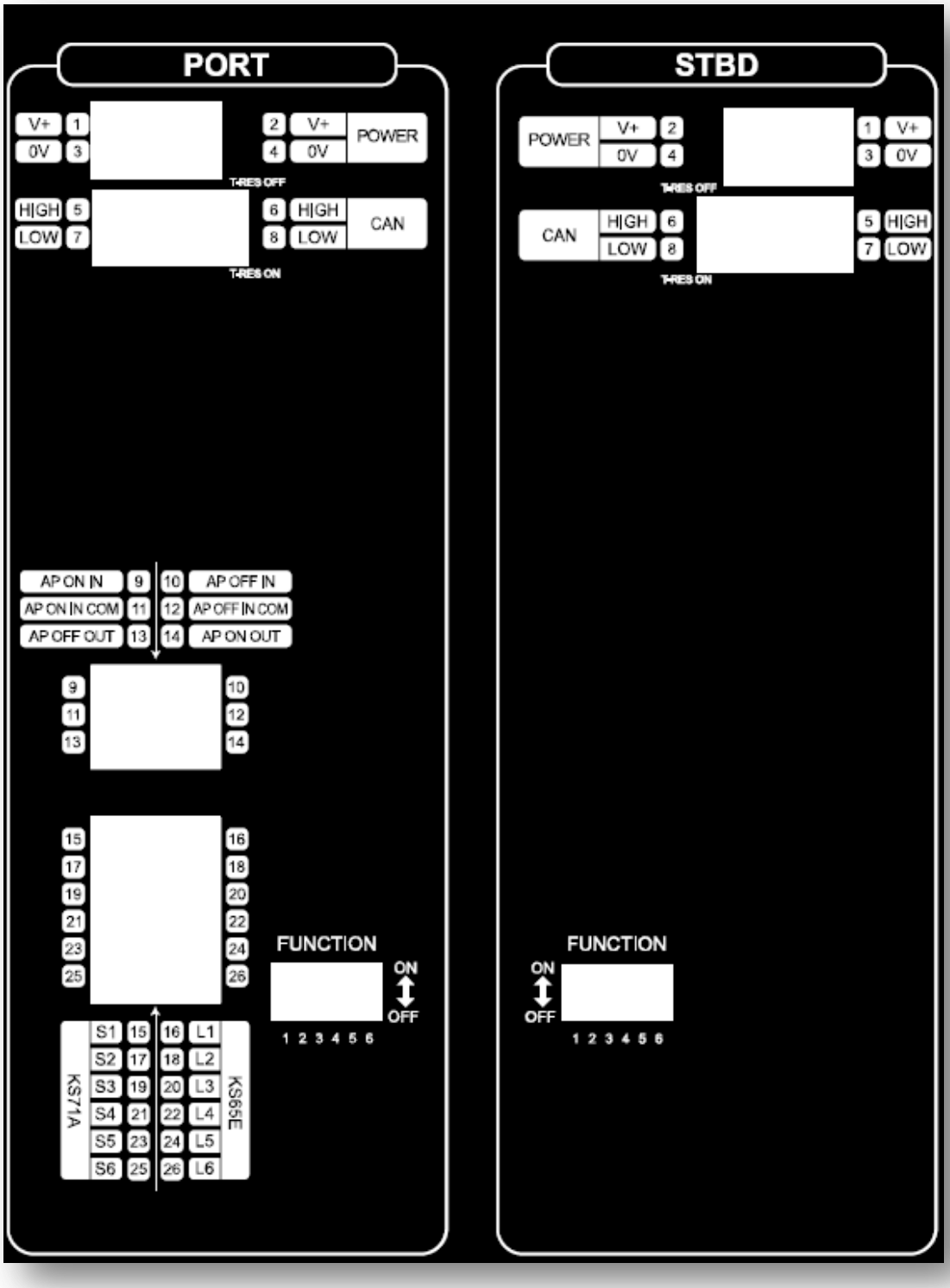


[KS81F]

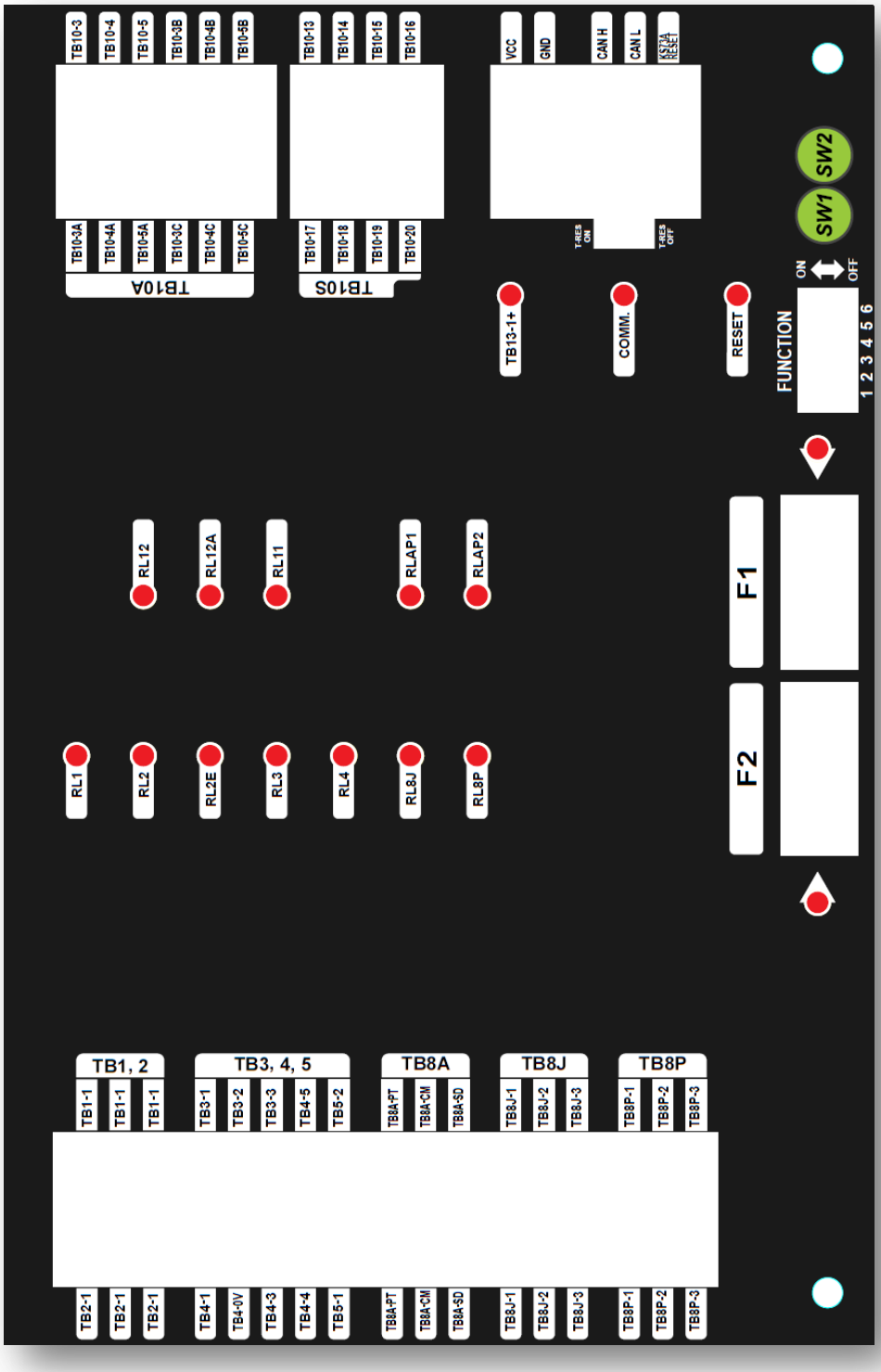

STBD
V+ 1
0V 3
2 V+
4 0V
POWER
T-RES OFF
HIGH 5
LOW 7
6 HIGH
8 LOW
CAN
T-RES ON
RUN 9
RUN 11
RUN 13
RUN 15
10 STOP PUMP1
12 STOP PUMP2
14 RUN PUMP1&2
16 RUN PUMP1or2
RY 1 17
RY 2 19
RY 3 21
RY 4 23
RY 5 25
RY 6 27
18 COM JS TakeOver
20 COM DP TakeOver
22 COM1 P1 RUN JS
24 COM2 P1 RUN DP
26 COM1 P2 RUN JS
28 COM2 P2 RUN DP
RY 7 29
RY 8 31
RY 9 33
30 COM JS RESET
32 COM DP RESET
34 COM EIM COM RESET
IN 1 35
IN 2 37
IN 3 39
IN 4 41
IN 5 43
IN 6 45
36 COM SYNC TakeOver
38 COM DP TakeOver
40 COM JS TakeOver
42 COM P1R
44 COM P2R
46 COM PC05
KS71A
S1 47
S2 49
S3 51
S4 53
S5 55
S6 57
48 L1
50 L2
52 L3
54 L4
56 L5
58 L6
KS71A
KS65E


PORT
POWER
V+ 2
0V 4
1 V+
3 0V
T-RES OFF
CAN
HIGH 6
LOW 8
5 HIGH
7 LOW
T-RES ON
PUMP1 RUN STOP 10
PUMP2 RUN STOP 12
PUMP1&2 RUN RUN 14
PUMP1or2 RUN RUN 16
9 RUN
11 RUN
13 RUN
15 RUN
JS TakeOver COM 18
DP TakeOver COM 20
P1 RUN JS COM1 22
P1 RUN DP COM2 24
P2 RUN JS COM1 26
P2 RUN DP COM2 28
17 RY 1
19 RY 2
21 RY 3
23 RY 4
25 RY 5
27 RY 6
JS RESET COM 30
DP RESET COM 32
COM RESET COM 34
29 RY 7
31 RY 8
33 RY 9
SYNC TakeOver COM 36
DP TakeOver COM 38
JS TakeOver COM 40
P1R COM 42
P2R COM 44
PC05 COM 46
35 IN 1
37 IN 2
39 IN 3
41 IN 4
43 IN 5
45 IN 6
KS71A
KS65E
L1 48
L2 50
L3 52
L4 54
L5 56
L6 58
47 S1
49 S2
51 S3
53 S4
55 S5
57 S6
KS71A

[KS81A]


PORT
V+ 1
0V 3
2 V+
4 0V
POWER
T-RES OFF
H|GH 5
LOW 7
6 H|GH
8 LOW
CAN
T-RES ON
AP ON IN 9
AP ON IN COM 11
AP OFF OUT 13
10 AP OFF IN
12 AP OFF IN COM
14 AP ON OUT
9 10
11 12
13 14
15 16
17 18
19 20
21 22
23 24
25 26
FUNCTION
ON
OFF
1 2 3 4 5 6
KS71A
S1 15
S2 17
S3 19
S4 21
S5 23
S6 25
16 L1
18 L2
20 L3
22 L4
24 L5
26 L6
KS65E
STBD
POWER V+ 2
0V 4
1 V+
3 0V
T-RES OFF
CAN H|GH 6
LOW 8
5 H|GH
7 LOW
T-RES ON
FUNCTION
ON
OFF
1 2 3 4 5 6

[COM]


TB10-3
TB10-4
TB10-5
TB10-3B
TB10-4B
TB10-5B
TB10-3A
TB10-4A
TB10-5A
TB10-3C
TB10-4C
TB10-5C
TB10A
TB10-13
TB10-14
TB10-15
TB10-16
TB10-17
TB10-18
TB10-19
TB10-20
TB10S
VCC
GND
CAN H
CAN L
KEY A RESET
T-RES ON
T-RES OFF
SW1
SW2
ON
OFF
FUNCTION
1 2 3 4 5 6
TB13-1+
COMM.
RESET
RL12
RL12A
RL11
RLAP1
RLAP2
RL1
RL2
RL2E
RL3
RL4
RL8J
RL8P
F1
F2
TB1, 2
TB3, 4, 5
TB8A
TB8J
TB8P
TB1-1
TB1-1
TB1-1
TB3-1
TB3-2
TB3-3
TB4-5
TB5-2
TB8A-PT
TB8A-CM
TB8A-SD
TB8J-1
TB8J-2
TB8J-3
TB8P-1
TB8P-2
TB8P-3
TB2-1
TB2-1
TB2-1
TB4-1
TB4-0V
TB4-3
TB4-4
TB5-1
TB8A-PT
TB8A-CM
TB8A-SD
TB8J-1
TB8J-2
TB8J-3
TB8P-1
TB8P-2
TB8P-3