

Steering Panel

OPERATION MANUAL

KS81F

KS81A

KS81F
[Dip Switch]

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

*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]

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

*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]

STBD

V+	1	V+	2	POWER	3	V+	1	V+	2
0V	3	0V	4			0V	3	0V	4

T-RES OFF

HIGH	5	HIGH	6	CAN	7	HIGH	5	HIGH	6
LOW	7	LOW	8			LOW	7	LOW	8

T-RES ON

RUN	9	STOP	10	PUMP1	11	RUN	9	STOP	10
RUN	11	STOP	12	PUMP2	13	RUN	11	STOP	12
RUN	13	PUMP1&2	14		15	RUN	13	PUMP1&2	14
RUN	15	PUMP1or2	16			RUN	15	PUMP1or2	16

RY1	17	COM	18	JS TakeOver	19	RY1	17	COM	18
RY2	19	COM	20	DP TakeOver	21	RY2	19	COM	20
RY3	21	COM1	22	P1 RUN JS	23	RY3	21	COM1	22
RY4	23	COM2	24	P1 RUN DP	25	RY4	23	COM2	24
RY5	25	COM1	26	P2 RUN JS	27	RY5	25	COM1	26
RY6	27	COM2	28	P2 RUN DP		RY6	27	COM2	28

RY7	29	COM	30	JS RESET	31	RY7	29	COM	30
RY8	31	COM	32	DP RESET	33	RY8	31	COM	32
RY9	33	COM	34	EW/COM RESET		RY9	33	COM	34

IN1	35	COM	36	SYNC TakeOver	37	IN1	35	COM	36
IN2	37	COM	38	DP TakeOver	39	IN2	37	COM	38
IN3	39	COM	40	JS TakeOver	41	IN3	39	COM	40
IN4	41	COM	42	P1R	43	IN4	41	COM	42
IN5	43	COM	44	P2R	45	IN5	43	COM	44
IN6	45	COM	46	PC05		IN6	45	COM	46

S1	47	L1	48	S2	49	S1	47	L1	48
S2	49	L2	50	S3	51	S2	49	L2	50
S3	51	L3	52	S4	53	S3	51	L3	52
S4	53	L4	54	S5	55	S4	53	L4	54
S5	55	L5	56	S6	57	S5	55	L5	56
S6	57	L6	58			S6	57	L6	58

PORT

POWER	2	V+	3	0V	4	POWER	2	V+	3	0V	4
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T-RES OFF

CAN	6	HIGH	7	LOW	8	CAN	6	HIGH	7	LOW	8
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T-RES ON

PUMP1 RUN	9	STOP	10	PUMP2 RUN	11	PUMP1or2 RUN	12	STOP	13	RUN	14	RUN	15	RUN	16
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JS TakeOver	17	COM	18	DP TakeOver	19	RY1	20	COM	21	RY2	22	COM	23	RY3	24	COM	25	RY4	26	COM	27	RY5	28	COM	29	RY6	30	COM	31	RY7	32	COM	33	RY8	34	COM	35	RY9	36	COM	37	RY10	38	COM	39	RY11	40	COM	41	RY12	42	COM	43	RY13	44	COM	45	RY14	46	COM	47	RY15	48	COM	49	RY16	50	COM	51	RY17	52	COM	53	RY18	54	COM	55	RY19	56	COM	57	RY20	58	COM	59	RY21	60	COM	61	RY22	62	COM	63	RY23	64	COM	65	RY24	66	COM	67	RY25	68	COM	69	RY26	70	COM	71	RY27	72	COM	73	RY28	74	COM	75	RY29	76	COM	77	RY30	78	COM	79	RY31	80	COM	81	RY32	82	COM	83	RY33	84	COM	85	RY34	86	COM	87	RY35	88	COM	89	RY36	90	COM	91	RY37	92	COM	93	RY38	94	COM	95	RY39	96	COM	97	RY40	98	COM	99	RY41	100	COM	101	RY42	102	COM	103	RY43	104	COM	105	RY44	106	COM	107	RY45	108	COM	109	RY46	110	COM	111	RY47	112	COM	113	RY48	114	COM	115	RY49	116	COM	117	RY50	118	COM	119	RY51	120	COM	121	RY52	122	COM	123	RY53	124	COM	125	RY54	126	COM	127	RY55	128	COM	129	RY56	130	COM	131	RY57	132	COM	133	RY58	134	COM	135	RY59	136	COM	137	RY60	138	COM	139	RY61	140	COM	141	RY62	142	COM	143	RY63	144	COM	145	RY64	146	COM	147	RY65	148	COM	149	RY66	150	COM	151	RY67	152	COM	153	RY68	154	COM	155	RY69	156	COM	157	RY70	158	COM	159	RY71	160	COM	161	RY72	162	COM	163	RY73	164	COM	165	RY74	166	COM	167	RY75	168	COM	169	RY76	170	COM	171	RY77	172	COM	173	RY78	174	COM	175	RY79	176	COM	177	RY80	178	COM	179	RY81	180	COM	181	RY82	182	COM	183	RY83	184	COM	185	RY84	186	COM	187	RY85	188	COM	189	RY86	190	COM	191	RY87	192	COM	193	RY88	194	COM	195	RY89	196	COM	197	RY90	198	COM	199	RY91	200	COM	201	RY92	202	COM	203	RY93	204	COM	205	RY94	206	COM	207	RY95	208	COM	209	RY96	210	COM	211	RY97	212	COM	213	RY98	214	COM	215	RY99	216	COM	217	RY100	218	COM	219	RY101	220	COM	221	RY102	222	COM	223	RY103	224	COM	225	RY104	226	COM	227	RY105	228	COM	229	RY106	230	COM	231	RY107	232	COM	233	RY108	234	COM	235	RY109	236	COM	237	RY110	238	COM	239	RY111	240	COM	241	RY112	242	COM	243	RY113	244	COM	245	RY114	246	COM	247	RY115	248	COM	249	RY116	250	COM	251	RY117	252	COM	253	RY118	254	COM	255	RY119	256	COM	257	RY120	258	COM	259	RY121	260	COM	261	RY122	262	COM	263	RY123	264	COM	265	RY124	266	COM	267	RY125	268	COM	269	RY126	270	COM	271	RY127	272	COM	273	RY128	274	COM	275	RY129	276	COM	277	RY130	278	COM	279	RY131	280	COM	281	RY132	282	COM	283	RY133	284	COM	285	RY134	286	COM	287	RY135	288	COM	289	RY136	290	COM	291	RY137	292	COM	293	RY138	294	COM	295	RY139	296	COM	297	RY140	298	COM	299	RY141	300	COM	301	RY142	302	COM	303	RY143	304	COM	305	RY144	306	COM	307	RY145	308	COM	309	RY146	310	COM	311	RY147	312	COM	313	RY148	314	COM	315	RY149	316	COM	317	RY150	318	COM	319	RY151	320	COM	321	RY152	322	COM	323	RY153	324	COM	325	RY154	326	COM	327	RY155	328	COM	329	RY156	330	COM	331	RY157	332	COM	333	RY158	334	COM	335	RY159	336	COM	337	RY160	338	COM	339	RY161	340	COM	341	RY162	342	COM	343	RY163	344	COM	345	RY164	346	COM	347	RY165	348	COM	349	RY166	350	COM	351	RY167	352	COM	353	RY168	354	COM	355	RY169	356	COM	357	RY170	358	COM	359	RY171	360	COM	361	RY172	362	COM	363	RY173	364	COM	365	RY174	366	COM	367	RY175	368	COM	369	RY176	370	COM	371	RY177	372	COM	373	RY178	374	COM	375	RY179	376	COM	377	RY180	378	COM	379	RY181	380	COM	381	RY182	382	COM	383	RY183	384	COM	385	RY184	386	COM	387	RY185	388	COM	389	RY186	390	COM	391	RY187	392	COM	393	RY188	394	COM	395	RY189	396	COM	397	RY190	398	COM	399	RY191	399	COM	400	RY192	400	COM	401	RY193	401	COM	402	RY194	402	COM	403	RY195	403	COM	404	RY196	404	COM	405	RY197	405	COM	406	RY198	406	COM	407	RY199	407	COM	408	RY200	408	COM	409	RY201	409	COM	410	RY202	410	COM	411	RY203	411	COM	412	RY204	412	COM	413	RY205	413	COM	414	RY206	414	COM	415	RY207	415	COM	416	RY208	416	COM	417	RY209	417	COM	418	RY210	418	COM	419	RY211	419	COM	420	RY212	420	COM	421	RY213	421	COM	422	RY214	422	COM	423	RY215	423	COM	424	RY216	424	COM	425	RY217	425	COM	426	RY218	426	COM	427	RY219	427	COM	428	RY220	428	COM	429	RY221	429	COM	430	RY222	430	COM	431	RY223	431	COM	432	RY224	432	COM	433	RY225	433	COM	434	RY226	434	COM	435	RY227	435	COM	436	RY228	436	COM	437	RY229	437	COM	438	RY230	438	COM	439	RY231	439	COM	440	RY232	440	COM	441	RY233	441	COM	442	RY234	442	COM	443	RY235	443	COM	444	RY236	444	COM	445	RY237	445	COM	446	RY238	446	COM	447	RY239	447	COM	448	RY240	448	COM	449	RY241	449	COM	450	RY242	450	COM	451	RY243	451	COM	452	RY244	452	COM	453	RY245	453	COM	454	RY246	454	COM	455	RY247	455	COM	456	RY248	456	COM	457	RY249	457	COM	458	RY250	458	COM	459	RY251	459	COM	460	RY252	460	COM	461	RY253	461	COM	462	RY254	462	COM	463	RY255	463	COM	464	RY256	464	COM	465	RY257	465	COM	466	RY258	466	COM	467	RY259	467	COM	468	RY260	468	COM	469	RY261	469	COM	470	RY262	470	COM	471	RY263	471	COM	472	RY264	472	COM	473	RY265	473	COM	474	RY266	474	COM	475	RY267	475	COM	476	RY268	476	COM	477	RY269	477	COM	478	RY270	478	COM	479	RY271	479	COM	480	RY272	480	COM	481	RY273	481	COM	482	RY274	482	COM	483	RY275	483	COM	484	RY276	484	COM	485	RY277	485	COM	486	RY278	486	COM	487	RY279	487	COM	488	RY280	488	COM	489	RY281	489	COM	490	RY282	490	COM	491	RY283	491	COM	492	RY284	492	COM	493	RY285	493	COM	494	RY286	494	COM	495	RY287	495	COM	496	RY288	496	COM	497	RY289	497	COM	498	RY290	498	COM	499	RY291	499	COM	500	RY292	500	COM	501	RY293	501	COM	502	RY294	502	COM	503	RY295	503	COM	504	RY296	504	COM	505	RY297	505	COM	506	RY298	506	COM	507	RY299	507	COM	508	RY300	508	COM	509	RY301	509	COM	510	RY302	510	COM	511	RY303	511	COM	512	RY304	512	COM	513	RY305	513	COM	514	RY306	514	COM	515	RY307	515	COM	516	RY308	516	COM	517	RY309	517	COM	518	RY310	518	COM	519	RY311
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[KS81F]

STBD

V+	1		2	V+	POWER
0V	3		4	0V	

T-RES OFF

HIGH	5		6	HIGH	CAN
LOW	7		8	LOW	

T-RES ON

RUN	9		10	STOP	PUMP1
RUN	11		12	STOP	PUMP2
RUN	13		14	RUN	PUMP1&2
RUN	15		16	RUN	PUMP1or2

RY 1	17		18	COM	JS TakeOver
RY 2	19		20	COM	DP TakeOver
RY 3	21		22	COM1	P1 RUN JS
RY 4	23		24	COM2	P1 RUN DP
RY 5	25		26	COM1	P2 RUN JS
RY 6	27		28	COM2	P2 RUN DP

RY 7	29		30	COM	JS RESET
RY 8	31		32	COM	DP RESET
RY 9	33		34	COM	EIMCOM RESET

IN 1	35		36	COM	SYNC TakeOver
IN 2	37		38	COM	DP TakeOver
IN 3	39		40	COM	JS TakeOver
IN 4	41		42	COM	P1R
IN 5	43		44	COM	P2R
IN 6	45		46	COM	PC05

S1	47		48	L1	KST1A
S2	49		50	L2	
S3	51		52	L3	
S4	53		54	L4	KS65E
S5	55		56	L5	
S6	57		58	L6	

PORT

POWER	V+	2		1	V+
	0V	4		3	0V

T-RES OFF

CAN	HIGH	6		5	HIGH
	LOW	8		7	LOW

T-RES ON

PUMP1 RUN	STOP	10		9	RUN
PUMP2 RUN	STOP	12		11	RUN
PUMP1&2 RUN	RUN	14		13	RUN
PUMP1or2 RUN	RUN	16		15	RUN

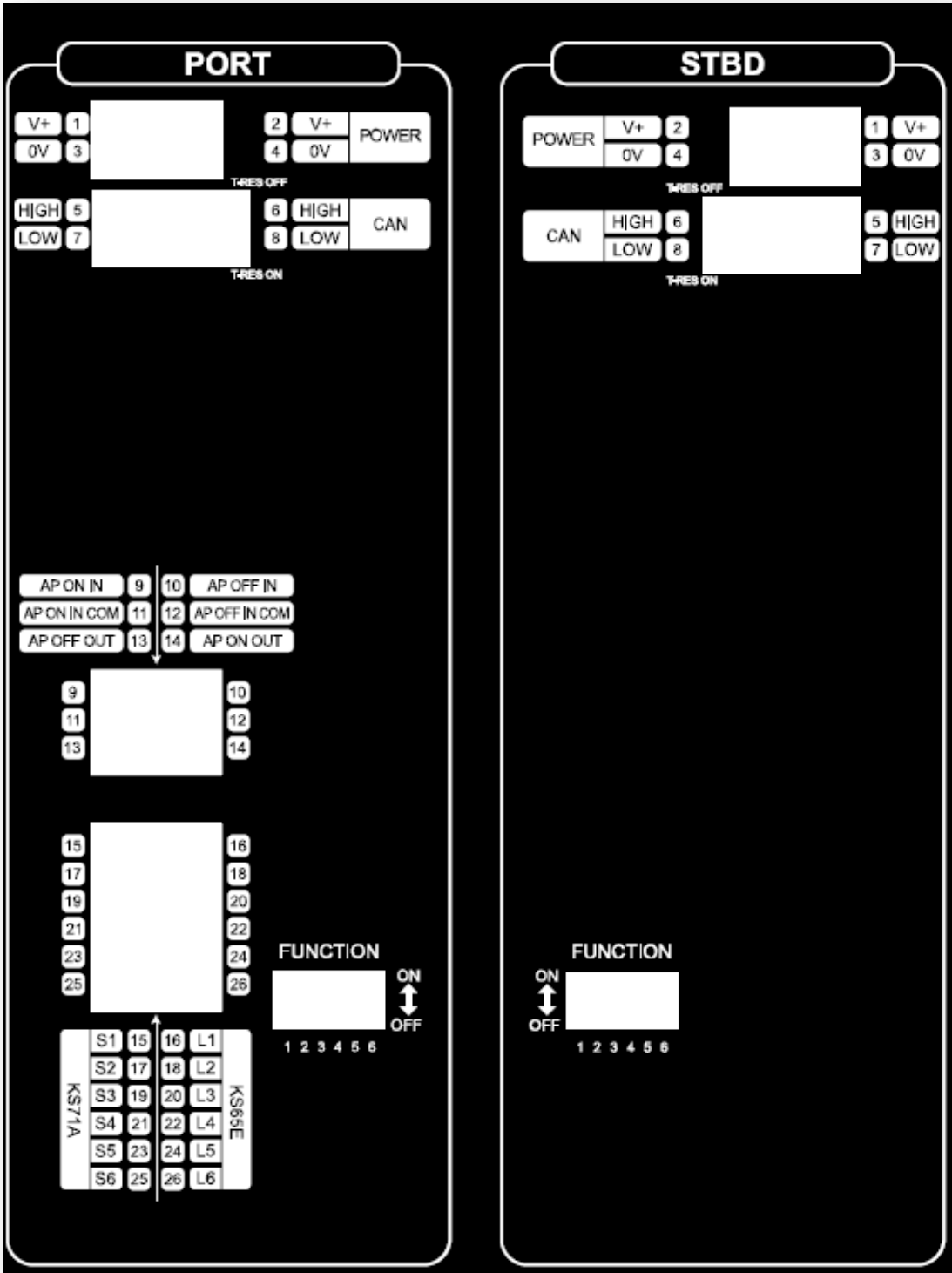
JS TakeOver	COM	18		17	RY 1
DP TakeOver	COM	20		19	RY 2
P1 RUN JS	COM1	22		21	RY 3
P1 RUN DP	COM2	24		23	RY 4
P2 RUN JS	COM1	26		25	RY 5
P2 RUN DP	COM2	28		27	RY 6

JS RESET	COM	30		29	RY 7
DP RESET	COM	32		31	RY 8
COM RESET	COM	34		33	RY 9

SYNC TakeOver	COM	36		35	IN 1
DP TakeOver	COM	38		37	IN 2
JS TakeOver	COM	40		39	IN 3
P1R	COM	42		41	IN 4
P2R	COM	44		43	IN 5
PC05	COM	46		45	IN 6

L1	48		47	S1	KST1A
L2	50		49	S2	
L3	52		51	S3	
L4	54		53	S4	
L5	56		55	S5	
L6	58		57	S6	

[KS81A]



[COM]

