

**RELAYS
AK-TYPE
(WIRE-SPRING TYPE)
REQUIREMENTS
(CONDENSED SECTION FOR 040-504-701)**

1. REQUIREMENTS (also see Section 020-012-711)

1.01 *Balancing Spring Tension:* Fig. 1(A)—Card bears against associated surfaces on armature and armature bears against backstop; relay unoperated.

1.02 *Armature Back Tension:* Min 25 grams (readjust 30 grams). 70D gauge.

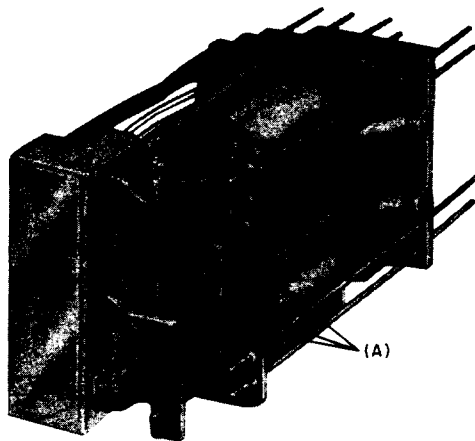


Fig. 1 — AK-Type Relay

1.03 *Contact Sequence*

Test

- (a) *EMB Position:* EM contacts make before B contacts break.
- (b) *EBM Position:* EB contacts break before M contacts make.
- (c) *EM and EB Positions:* Check sequence if note on circuit requirement table so specifies.
- (d) *BM Position:* No requirement.

Readjust: Covered by readjust requirement 1.04.

1.04 *Contact Make and Break*

- (a) Both contacts of movable twin springs make in operated position for make contacts and in unoperated position for break contacts.
- (b) With relay energized against 171A gauge, except where noted, make and break contacts meet the following requirements.

SECTION 040-931-701**TEST**

(1) *Before Turnover:* (Refer to 040-504-701 for requirements.)

(2) *After Turnover*

MAKE CONTACTS	NEITHER PAIR OF CONTACTS SHALL MAKE (INCH)	AT LEAST ONE PAIR OF CONTACTS SHALL MAKE (INCH)
Spring combination No. 1 to 199	#0.0045	0.0015
Spring combination No. 200 to 399	#0.007	0.0015

BREAK CONTACTS	AT LEAST ONE PAIR OF CONTACTS SHALL NOT BREAK (INCH)	BOTH PAIRS OF CONTACTS SHALL BREAK (INCH)
Spring combination No. 1 to 199	#0.0045	0.0015
Spring combination No. 200 to 399	#0.007	0.0015 .

#182-type gauge inserted between the armature and backstop.

READJUST

MAKE CONTACTS	NEITHER PAIR OF CONTACTS SHALL MAKE (INCH)	AT LEAST ONE PAIR OF CONTACTS SHALL MAKE (INCH)
M (make)	0.015	0.005
EM (early make)	0.0265	0.0165

BREAK CONTACTS	AT LEAST ONE PAIR OF CONTACTS SHALL NOT BREAK (INCH)	BOTH PAIRS OF CONTACTS SHALL BREAK (INCH)
B (break)	0.015	0.005
EB (early break)	0.0265	0.0165

TABLE A – SPRING COMBINATION FIGURE NUMBERS AND CONTACT POSITIONS

CONTACT POSITIONS	SPRING COMBINATION FIGURE NUMBERS										
	1	2	3	4	5	6	7	8	9	10	
12	M	BM	BM	M	M	M	BM	—	B	M	
11	M	BM	BM	B	—	B	M	—	M	B	
10	M	BM	—	B	B	—	M	M	M	BM	
9	M	BM	—	B	—	—	M	—	—	B	
8	M	BM	—	—	BM	—	M	M	—	M	
5	M	BM	—	—	—	—	M	—	—	M	
4	M	BM	—	B	B	—	BM	M	M	BM	
3	M	BM	—	B	—	B	BM	—	BM	B	
2	M	BM	BM	B	M	BM	BM	M	BM	BM	
1	M	BM	BM	M	—	M	BM	—	BM	M	
	11	12	13	14	15	16	17	18	19	20	21
12	—	BM	BM	BM	B	BM	M	—	M	—	BM
11	M	BM	BM	BM	BM	BM	M	—	M	B	BM
10	M	—	B	BM	M	BM	—	BM	M	BM	BM
9	—	M	—	BM	B	BM	B	—	B	M	B
8	—	M	—	BM	B	BM	B	M	B	M	M
5	—	M	—	—	B	B	B	—	B	M	M
4	M	M	—	—	BM	B	B	M	B	M	B
3	M	—	B	B	M	BM	B	—	M	M	BM
2	M	BM	BM	M	BM	BM	M	M	M	B	BM
1	M	BM	BM	M	M	BM	M	—	M	—	BM

M — Make

B — Break

See Requirements 1.03 and 1.04.

BM — Break Make

TABLE A — SPRING COMBINATION FIGURE NUMBERS AND
CONTACT POSITIONS (Cont)

CONTACT POSITIONS	SPRING COMBINATION FIGURE NUMBERS									
	201	202	203	204	205	206	207	208	209	210
12	EBM	M	EBM	M	—	M	M	EBM	M	M
11	EBM	EBM	EBM	M	—	—	M	EBM	M	M
10	M	EBM	EBM	EBM	M	—	EB	EBM	M	EMB
9	B	EMB	EM	EMB	—	EMB	EM	B	B	EM
8	EMB	EMB	EM	EM	EM	B	EM	B	B	EMB
5	B	EMB	EM	EM	—	B	EM	—	EMB	EMB
4	B	EMB	EM	B	EM	EMB	EM	—	EMB	EM
3	—	EBM	EBM	EBM	—	—	EB	EBM	EB	EMB
2	EBM	EBM	EBM	EBM	M	—	M	EBM	EB	M
1	M	M	EBM	M	—	M	M	EBM	EBM	M
	211	212	213	214	215	216	217	218	219	220
12	M	M	M	EBM	M	EBM	M	M	M	M
11	M	M	M	EBM	M	EBM	M	M	M	EB
10	M	EBM	M	EBM	M	EBM	M	M	M	EBM
9	EMB	EM	—	—	EM	EMB	—	—	EM	EMB
8	EMB	EMB	—	—	EMB	EMB	—	EMB	EMB	—
5	EMB	EMB	EM	—	EMB	EMB	—	EMB	EMB	—
4	EMB	EM	B	—	EM	EMB	—	B	EM	EMB
3	M	EBM	—	EBM	M	EBM	EBM	—	M	EBM
2	M	M	—	EBM	M	EBM	EBM	M	EBM	EBM
1	M	M	EBM	EBM	M	EBM	M	EB	EBM	M

M — Make

B — Break

EM — Early Make

EB — Early Break

EMB — Early Make Break

EBM — Early Break Make

See Requirements 1.03 and 1.04.

**TABLE A — SPRING COMBINATION FIGURE NUMBERS AND
CONTACT POSITIONS (Cont)**

CONTACT POSITIONS	SPRING COMBINATION FIGURE NUMBERS										
	221	222	223	224	225	226	227	228	229	230	231
12	EBM	EBM	M	M	EB	EB	EBM	EB	EBM	EBM	EBM
11	EBM	EBM	M	EBM	EBM	EBM	—	EB	EBM	EBM	EBM
10	—	EBM	EBM	EMB	EBM	EBM	M	EM	—	M	EMB
9	EMB	EBM	—	EMB	EMB	EBM	M	EMB	EMB	EM	EMB
8	EMB	EBM	EMB	EMB	EMB	EBM	M	EMB	EMB	—	EMB
5	EMB	EBM	EMB	EMB	EMB	EBM	M	EMB	BM	EMB	EMB
4	EMB	EBM	—	EMB	EMB	EBM	M	EMB	BM	EMB	EMB
3	—	EBM	EBM	EMB	EBM	EBM	M	EM	—	EBM	EMB
2	EBM	EBM	M	EBM	EBM	EBM	—	EB	BM	EBM	EBM
1	M	EBM	M	M	EB	EB	EBM	EB	BM	M	EBM

M — Make

EMB — Early Make Break See Requirements 2.08 and 2.09.

EBM — Early Break Make