FORM NO. A270-Q-107 (10-67)

(T56)

598-D

DOUGLAS MISSILE & SPACE SYSTEMS DIVISION

MCDONNELL DOUGLAS CORPORATION

ENGINEERING LABORATORIES & SERVICES
TECHNICAL MEMORANDUM

TO: J. Holmes, A3-263, AEAO
FROM: W. R. Spark, A-290, AEC2
SUBJECT: GENERAL PURPOSE, 10-AMPERE RELAY QUALIFICATION TEST

COPIES TO: C. W. Wilson, A3-860, KEDO (14);
J. Holmes, A3-263, AEAO, (2);
V. Sharp, A3-263, AEAO, (2);
W. R. Spark, A-290, AEC2, (File)(1);

CATALOG NO. PDL 86742
REPORT NO. TM-DSV-4B-EE-D6265
DATE 7-11-68
REQUESTED BY V. Sharp, A3-263
E.W.O. 27608 TCD 1T06947
TEST PLAN & ITEM NO. DAC-56625, AP11-12
SALES ORDER 5769-6304
CLASSIFICATION OR RESTRICTION: Unclassified

PREPARED BY: M. S. Kerwin APPROVED BY: W. R. Spark

APPROVAL SIGNATURES CERTIFY THAT ALL REQUIREMENTS OF REPORT HAVE BEEN MET INCLUDING THE REPORTING OF NEW TECHNOLOGY/REPORTABLE ITEMS PER SPB'S 92 AND 93. DISCLOSURES ARE MADE ON FORMS 25-207 AND 25-207-1.
NEW TECHNOLOGY: ☐ IS CONTAINED IN THIS REPORT, ☒ IS NOT CONTAINED IN THIS REPORT.

ABSTRACT:

SUMMARY

This memorandum, prepared by the Electronic Systems Laboratory of McDonnell Douglas Missile and Space Systems Division, presents the details and supporting data of a qualification test performed on twenty General Purpose, 10-Ampere, Double-Pole Double Throw Relays, P/N 1B58584-501, manufactured by Babcock Relay Division, Costa Mesa, California. All relays were sent to Ardel Corporation, Glendale, California, for initial seal leakage tests. Other initial tests performed were insulation resistance, dielectric strength, and electrical characteristics. Electrical characteristics tests comprised measurements of operate voltage, release voltage, contact resistance, coil resistance, coil current, and operate-release times. Low-level vibration and life cycling environmental tests were performed also. Fifteen relays passed the initial seal leakage test. Of these, three relays, in addition to five relays that failed the initial seal leakage test, were not subjected to any more testing. Numerous failures occurred during the test program. Failure and Rejection Reports (FARR) 240325, 151070, and 151136 were issued to document the failures. Relay and test instrumentation photographs are included in this report.

All testing, except for seal leakage tests, was performed at the Natural Environments Laboratory.

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CR-113232 (NASA CR OR TMX OR AD NUMBER) (CATEGORY)

INCIDENTS AND RESULTS

Following a seal leakage test performed by Ardel Corporation, Glendale, California, the General Dynamics, Convair Division, Double-Pole Double Throw Relays, P/N 3-5[illegible]4-5[illegible], were assigned to the test groups as follows: S/N 435, 436, 437, [illegible], 439 in Group I; S/N 440, 441, 442, 443, 444 in Group III. All ten specimens passed the initial seal leakage test. A maximum leakage of 1 x 10^{-4} scccs at a differential pressure of one atmosphere was specified.

Group I and Group III specimens underwent insulation resistance, dielectric strength, and electrical characteristics tests for initial qualification. There were a number of failures, as indicated on the data sheets, pages 4 through 25. The following stress criteria were applied to the electrical characteristics tests:

Operate voltage - 15 vdc maximum at 77°F

Release voltage - 3 vdc minimum at 77°F

Contact resistance - 100 milliohms maximum

Coil resistance - 270 ohms minimum

Operate-release times - 45 milliseconds maximum

Thermocouples and proved lugs were welded to the five Group III specimens and to three Group I specimens. In the interim, five additional specimens were sent to Ardel Corporation for seal leak tests. Four of the five specimens failed the leak test and were excluded from further testing. One specimen, S/N 115[illegible], passed the test. Group I specimens were cycled ten times with the contacts resistively loaded to 1[illegible] amperes; this action resulted in stable contact resistance measurements (see pages 14 and 15).

A temperature recorder and a chatter monitor were utilized during the vibration test in axis X at -[illegible]°F. The three specimens that were vibrated first were S/N 435, 436, and 437. S/N 436 failed to transfer after 30 minutes of vibration and chattered at 615 and 650 hz during the second 30-minute vibration period. Specimens S/N 438 and 439 were vibrated next in axis Y. Following the 30-minute upsweep, S/N 438 did not transfer although it was cycled several times. A third vibration run was performed using specimens S/N 435, 436, and 439. No chatter was observed on the monitor but S/N 435 failed to transfer after upsweep vibration. Vibration plots are on pages 26 through 31.

Group III specimens were subjected to the inductive life-cycling test. Specimens S/N 443 and 444 were replaced because of low release voltage measurements (ref. FARR A15[illegible]7) by S/N 602 and 115[illegible] which previously had undergone the initial qualification tests. The normally open contacts were inductively loaded to carry a 6-ampere current. When the specimen had completed 20 thousand cycles, the inductive load was moved to the normally closed contacts and the cycling was repeated. Numerous failures occurred resulting in the removal of specimens S/N 602 and 4[illegible].

PROCEDURES AND RESULTS (Continued)

Post-inductive life tests were performed on the Group III specimens. Insulation resistance measurements on specimens S/N 941 and 942 were consistantly low. A retest made with the specimens disconnected from the cabling provided measurements well above the specified minimum. All specimens passed the electrical characteristics test.

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GROUP ENGINEER C. G. McFaul
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Electronic Support Group

APPROVED BY W. R. Spark
W. R. Spark, Chief
Electronic Systems Laboratory Section
Electronics Department

FORM NO. 30-830 (REV. 6-66)

DATA SHEET

DATE 10/10/66 INITIAL QUALIFICATION TEST REPORT NO. D 6265
PART NO. 1B59584-501 CHG. LTR. S/N. LINE ITEM AP 11-12
S.O. 5769-6304 E.W.O. 27808 T.C.D. IT 06947 MODEL NO. DSV-48
OBSERVER D.D. Babcock LABORATORY Electronic Sys. ENGINEER N. Fischer

Part Name 10-Ampere Relay

Ambient Temperature — °F Relative Humidity — %

Selectors 1	Selectors 2	Terminals	Terminals	Insulation Resistance 500VDC Spec. min. 1KMegohm Data in KMegohms — Relay Serial Number 940	941	942	943	944	Dielectric Strength 700VRMS 60Hz Spec. max. 1000uA Data in uA — Relay Serial Number				
1	4	case	6	4	4.5	4	4	3					
1	5	case	4	2.5	2.5	3	2.8	2.4					
1	7	case	3	7	7.5	7	7.5	7					
1	8	case	1	5	5	3	5	4.5					
1	10	case	19	4	4	2	5	4.5					
5	4	4	6	1.4	1.4	1.2	1.3	.750					
7	4	3	6	1.8	3	2.5	3	1.4					
7	5	3	4	1	1.5	1.5	1.5	.500					
8	4	1	6	1.4	2	1.4	2	1.1					
8	5	1	4	.950	1.1	1.1	1.4	.750					
8	7	1	3	.800	.950	.900	1.3	.650					
10	4	19	6	1.2	1.4	1.5	2.5	1.2					
10	5	19	4	.750	.750	1.2	1.8	.850					
10	7	19	3	.900	1.15	1.5	2	.950					
10	8	19	1	.525	.670	1	1.4	.500					
Energized													
5	6	4	5										
8	9	1	2										
Cycling													
5	1	4	case	Not applicable									
8	1	1	case	Not applicable									

FORM NO. 30-830 (REV. 6-66)

DATA SHEET

DATE 10/11/66 INITIAL QUALIFICATION TEST REPORT NO. D6265

PART NO. 1B5955 84-501 CHG. LTR. S/N. LINE ITEM AP11-12

S.O. 5769-6304 E.W.O. 27828 T.C.D. 11 06947 MODEL NO. DSV-78

OBSERVER D.D. Babcock LABORATORY Electronic Sys. ENGINEER N. Fischer

Part Name 10-Ampere Relay

Ambient Temperature — °F Relative Humidity — %

Selectors 1	Selectors 2	Terminals		Insulation Resistance 500VDC Spec. min. 1KMegohm Data in KMegohms — Relay Serial Number 940	941	942	943	944	Dielectric Strength 700VRMS 60Hz Spec. max. Data in uA 1000uA — Relay Serial Number 940	941	942	943	944
1	4	case	6	3	4.5	3	2.5	5	6	8	6	6	6
1	5	case	4	✓.95	3	1.5	✓.95	4	10	12	10	10	10
1	7	case	3	2.3	4	2	2	4	7	8	7	6	6
1	8	case	1	1.8	1.8	1	1.5	3	10	12	10	10	10
1	10	case	19	2	2	1.5	✓.95	3	[illegible]	10	8	[illegible]	8
5	4	4	6	1.8	1.75	1.7	1.4	1.7	58	58	62	58	58
7	4	3	6	3	4	3	2.5	3	36	36	30	[illegible]	37
7	5	3	4	2	2	1.8	1.2	2	52	51	52	52	52
8	4	1	6	1.8	2.5	1.7	1.7	2	50	50	50	50	[illegible]
8	5	1	4	1.4	1.5	1.1	1.2	1.5	100+	100+	100+	100+	100+
8	7	1	3	1.4	1.8	1.3	1.1	1.6	62	60	62	100+	60
10	4	19	6	2.7	3	3	2	3	34	34	34	34	34
10	5	19	4	1.8	2	1.7	1.1	2.5	48	47	47	46	48
10	7	19	3	2	2.7	2.5	1.5	2.8	34	34	34	34	34
10	8	19	1	1.4	1.7	1.1	1.2	1.5	48	48	48	47	49
Energized													
5	6	4	5	1.9	1.8	1.5	[illegible]	1.5	46	46	47	47	46
8	9	1	2	1.5	1.7	1.1	1.2	1.5	46	46	48	48	48
Cycling													
5	1	4	case	Not applicable					4-10	6-12	4-10	4-12	4-10
8	1	1	case	Not applicable					4-10	6-12	5-10	5-12	4-10

FORM NO. 30-830 (REV. 6-66)

DATA SHEET

DATE 10/11/66 INITIAL QUALIFICATION TEST ____ REPORT NO. D6265
PART NO. 1858584-501 CHG. LTR. ____ S/N. ____ LINE ITEM AP 11-12
S.O. 5769-6304 E.W.O. 27208 T.C.D. IT 06947 MODEL NO. DSV-48
OBSERVER D.D. Babcock LABORATORY Electronic Sys. ENGINEER N. Fischer

Part Name 10-Ampere Relay

Ambient Temperature ____ °F

ELECTRICAL CHARACTERISTICS

TEST / Serial No.	940	941	942	943	944
Operate voltage (volts)	12.61	11.59	11.27	11.40	12.91
Release voltage (volts)	2.87	3.66	3.10	2.82	4.37
Contact resistance (milliohms)					
N.C. 1 - 2	47.30	23.03	6.35	16.68	8.04
N.C. 4 - 5	15.00	6.16	7.75	9.38	7.22
N.O. 1 - 3	6.19	5.29	5.98	6.34	6.26
N.O. 4 - 6	6.28	5.40	6.66	6.84	6.24
D.C. coil resistance (ohms)	465	465	459	450	470
Coil current (milliamperes)	59.6	59.7	60.8	61.9	59.3

Contacts	1-3	4-6	1-3	4-6	1-3	4-6	1-3	4-6	1-3	4-6
Operate time (milliseconds)										
1.	5.44	5.57	5.56	5.58	5.13	5.12	5.71	5.50	5.35	5.42
2.	5.49	5.53	5.56	5.55	5.14	5.10	5.74	5.51	5.37	5.43
3.	5.51	5.57	5.57	5.65	5.13	5.11	5.73	5.51	5.35	5.43
4.	5.50	5.60	5.56	5.66	5.13	5.10	5.74	5.50	5.37	5.43
5.	5.51	5.62	5.57	5.66	5.14	5.09	5.76	5.51	5.37	5.41
Average (milliseconds)	5.49	5.58	5.56	5.62	5.13	5.10	5.73	5.50	5.36	5.42

FORM NO. 30-830 (REV. 6-66)

DATA SHEET

DATE 10/12/66 REPEAT INITIAL QUALIFICATION TEST ____ REPORT NO. D6265

PART NO. 1B588584-501 CHG. LTR. ____ S/N. ____ LINE ITEM AP11-12

S.O. 5769-6304 E.W.O. 27808 T.C.D. 1T06947 MODEL NO. DS1-4B

OBSERVER D.D. Babcock LABORATORY Electronic Sys. ENGINEER N. Fischer

Part Name 10-Ampere Relay

Ambient Temperature 82 °F

ELECTRICAL CHARACTERISTICS

TEST	Serial No.	940	941	942	943	944
Operate voltage (volts)		12.34	11.51	11.17	11.36	13.04
Release voltage (volts)		2.79	3.70	3.05	2.80	4.27
Contact resistance (milliohms)						
N.C. 1 - 2		15.22	6.64	6.74	10.73	7.86
N.C. 4 - 5		11.63	5.78	7.62	13.26	13.88
N.O. 1 - 3		7.57	5.45	5.93	5.81	6.58
N.O. 4 - 6		7.14	5.72	6.29	6.70	6.52
D.C. coil resistance (ohms)		473	471	465	456	474
Coil current (milliamperes)		59.5	59.6	60.5	61.6	59.3

	Contacts	1-3	4-6	1-3	4-6	1-3	4-6	1-3	4-6	1-3	4-6
Operate time (milliseconds)											
1.											
2.											
3.											
4.											
5.											
Average (milliseconds)											

DATA SHEET

DATE 10/12/66 INITIAL QUALIFICATION TEST ____ REPORT NO. D6265
PART NO. 1B58584-501 CHG. LTR. ____ S/N. ____ LINE ITEM AP11-12
S.O. 5769-6304 E.W.O. 27808 T.C.D. 1T06947 MODEL NO. DSV-4B
OBSERVER D.D. Babcock LABORATORY Electronic Sys. ENGINEER N. Fischof

Part Name 10-Ampere Relay

Ambient Temperature ____ °F

ELECTRICAL CHARACTERISTICS

TEST	Serial No.	940		941		942		943		944	
	Contacts	1-3	4-6	1-3	4-6	1-3	4-6	1-3	4-6	1-3	4-6
Operate bounce time (milliseconds)											
1.		.01	.01	.02	.03	.02	.03	.28	.02	.02	00
2.		.01	.01	.02	.02	.03	.03	.23	.02	.01	00
3.		.01	.03	.02	.14	.03	.02	.24	.01	.01	.01
4.		.01	.03	.02	.05	.03	.02	.27	.01	.01	00
5.		.01	.02	.02	.05	.02	.02	.22	.02	.00	00
Average (milliseconds)		.01	02	.02	.05	.02	.02	.24	.01	.01	00
Release time (milliseconds)	Contacts	1-2	4-5	1-2	4-5	1-2	4-5	1-2	4-5	1-2	4-5
1.		2.28	2.36	2.20	1.66	2.05	2.13	1.78	2.05	1.82	1.43
2.		2.37	2.38	2.15	1.61	1.86	2.04	1.67	1.93	1.58	1.59
3.		2.31	2.35	2.21	1.55	1.73	2.20	1.90	1.77	1.79	1.51
4.		2.31	2.34	2.21	1.53	1.88	2.06	1.96	1.71	1.54	1.50
5.		2.38	2.31	2.19	1.58	1.95	2.15	1.94	1.76	1.46	1.50
Average (milliseconds)		2.33	2.34	2.19	1.70	1.89	2.11	1.89	1.82	1.70	1.50
Release bounce time (milliseconds)											
1.		.43	.50	.43	.20	.26	.53	.41	.09	.41	.13
2.		.42	.40	.51	.42	.19	.51	.33	.04	.34	.19
3.		.42	.50	.43	.27	.34	.54	.36	.07	.38	.16
4.		.50	.51	.44	.21	.21	.60	.30	.09	.44	.05
5.		.54	.47	.41	.16	.12	.49	.32	00	.12	.03
Average (milliseconds)		.46	.47	.44	.25	.22	.51	.35	.05	.38	.11

DATA SHEET

DATE 10/13/66 INITIAL QUALIFICATION TEST REPORT NO. D 6265

PART NO. 12 58584-591 CHG. LTR. _____ S/N. _____ LINE ITEM AP11-12

S.O. 5769-6344 E.W.O. 27898 T.C.D. IT-6942 MODEL NO. DCV-48

OBSERVER D. D. Babcock LABORATORY Electronic Sys. ENGINEER N. Fischer

Part Name 10-Ampere Relay

Ambient Temperature ___ °F Relative Humidity ___ %

Selectors 1	Selectors 2	Terminals		Insulation Resistance 500VDC Spec. min. 1KMegohm Data in KMegohms — Relay Serial Number 935	936	937	938	939	Dielectric Strength 700VRMS 60Hz Spec. max. 1000uA Data in uA — Relay Serial Number 935	936	937	938	939
1	4	case	6	9	5	3	10	4	7	6	9	5	7
1	5	case	4	9	4	5	8	4	10	10	12	5	10
1	7	case	3	9	4	5	9	4	7	8	10	7	8
1	8	case	1	7	3.5	5	7	4	10	12	12	10	11
1	10	case	19	5	3	4	6	3	9	10	10	8	8
5	4	4	6	2	1.7	2.3	2.4	2.5	60	62	65	60	60
7	4	3	6	4.3	3	4.2	4.1	5	38	18	31	15	40
7	5	3	4	2.7	2	2.6	2.7	2.5	53	26	54	26	54
8	4	1	6	3	2.2	3.2	4	4	51	24	52	25	53
8	5	1	4	2.5	1.7	2.5	2.6	2.5	102	106	101	106	101
8	7	1	3	2	1.3	2	2	2.3	61	63	62	62	62
10	4	19	6	3.3	2	4	4	3	35	18	36	20	36
10	5	19	4	3	1.5	2.7	2.9	1.7	4[illegible]	26	[illegible]	28	[illegible]
10	7	19	3	3	1.8	3	3	2.5	36	38	36	38	36
10	8	19	1	2.5	1.4	2	2.3	2	60	54	50	56	61
Energized													
5	6	4	5	2	1.4	2.3	2.5	2.3	48	56	48	56	48
8	9	1	2	2	1.3	2	2.4	2.5	48	50	50	60	48
Cycling													
5	1	4	case	Not applicable					4-10	5-10	6-12	4-8	6-10
8	1	1	case	Not applicable					5-10	6-11	8-12	5-10	6-10

DATA SHEET

DATE 10/13/66 INITIAL QUALIFICATION TEST ____ REPORT NO. D 6265
PART NO. 1B58884-5-1 CHG. LTR. ____ S/N. ____ LINE ITEM AB 11-12
S.O. 5769-6304 E.W.O. 27808 T.C.D. IT 06947 MODEL NO. DCV-48
OBSERVER D.D. Babcock LABORATORY Electronic Sys. ENGINEER N. Fischer

Part Name 10 Ampere Relay

Ambient Temperature 79 °F

ELECTRICAL CHARACTERISTICS

TEST / Serial No.	935	936	937	938	939
Operate voltage (volts)	10.7	11.55	12.6	11.65	11.91
Release voltage (volts)	3.34	3.70	3.19	3.08	3.11
Contact resistance (milliohms)					
N.C. 1 - 2	7.23	7.84	5.94	✓ 34.70	4.08
N.C: 4 - 5	8.76	15.15	9.03	7.14	✓ 22.40
N.O. 1 - 3	4.97	6.44	5.98	6.04	5.82
N.O. 4 - 6	5.67	6.12	5.54	5.54	5.83
D.C. coil resistance (ohms)	446	477	468	463	469
Coil current (milliamperes)	62.61	58.49	59.52	60.54	59.52

Contacts	1-3	4-6	1-3	4-6	1-3	4-6	1-3	4-6	1-3	4-6
Operate time (milliseconds)										
1.	5.62	5.52	5.02	5.01	5.71	5.61	5.52	5.49	5.40	5.35
2.	5.42	5.51	5.02	5.01	5.59	5.59	5.52	5.49	5.39	5.35
3.	[illegible]	5.59	5.02	5.01	5.68	5.60	5.53	5.49	5.43	5.40
4.	5.54	5.52	5.01	5.01	5.64	5.61	5.52	[illegible]	5.31	5.36
5.	5.55	5.54	5.01	5.00	5.67	5.62	5.53	5.49	5.39	5.34
Average (milliseconds)	5.53	5.534	5.016	6.01	5.683	5.604	5.526	5.49	5.396	5.36

FORM NO. 30-830 (REV. 6-66)

DATA SHEET

DATE 10/13/64 RECEIVING INSPECTION TEST ____ REPORT NO. D6265

PART NO. [illegible]-2584-501 CHG. LTR. ____ S/N. ____ LINE ITEM AP11-12

S.O. 5709-6284 E.W.O. 27808 T.C.D. [illegible] MODEL NO. [illegible]

OBSERVER D.D. Bak[illegible] LABORATORY Electronic Sys. ENGINEER [illegible]

Part Name 10 Amps Relay

Ambient Temperature 81 °F

ELECTRICAL CHARACTERISTICS

TEST	Serial No.	935	936	937	938	939
Operate voltage (volts)		11.12	[illegible]	12.77	11.72	11.95
Release voltage (volts)		3.51	3.54	5.15	3.15	3.85
Contact resistance (milliohms)						
N.C. 1 - 2		7.82	[illegible]	6.74	9.57	16.55
N.C. 4 - 5		5.74	11.71	7.66	12.36	10.52
N.O. 1 - 3		5.03	[illegible]	6.37	6.67	[illegible]
N.O. 4 - 6		5.50	6.36	5.54	5.81	[illegible]
D.C. coil resistance (ohms)		457	479	470	465	470
Coil current (milliamperes)		61.21	[illegible]	59.44	60.32	59.70

	Contacts	1-3	4-6	1-3	4-6	1-3	4-6	1-3	4-6	1-3	4-6
Operate time (milliseconds)											
1.		5.63	5.56	[illegible]	5.01	5.76	5.62	[illegible]	[illegible]	[illegible]	5.37
2.		5.65	5.57	5.02	5.01	5.70	[illegible]	5.60	[illegible]	[illegible]	[illegible]
3.		5.60	[illegible]	[illegible]	6.00	5.71	[illegible]	[illegible]	5.53	[illegible]	5.42
4.		[illegible]	[illegible]	[illegible]	5.02	5.72	[illegible]	[illegible]	[illegible]	[illegible]	5.31
5.		5.59	[illegible]	[illegible]	5.00	5.74	5.63	5.58	[illegible]	[illegible]	5.34
Average (milliseconds)		[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	5.63	[illegible]	[illegible]	[illegible]	[illegible]

FORM NO. 30-830 (REV. 6-66)

DATA SHEET

DATE 10/13/66 INITIAL QUALIFICATION TEST ____ REPORT NO. D6265

PART NO. 1B588584-501 CHG. LTR. ____ S/N. ____ LINE ITEM A11-12

S.O. 5769-6304 E.W.O. 27858 T.C.D. IT 06947 MODEL NO. DSV-48

OBSERVER D. D. Babcock LABORATORY Electronic Sys. ENGINEER N. Fisher

Part Name 10 Ampere Relay

Ambient Temperature 79 °F

ELECTRICAL CHARACTERISTICS

TEST	Serial No.	935		936		937		938		939	
	Contacts	1-3	4-6	1-3	4-6	1-3	4-6	1-3	4-6	1-3	4-6
Operate bounce time (milliseconds)											
1.		.05	.05	.04	.04	.04	.04	.05	.04	.05	.04
2.		.05	.04	.05	.04	.05	.04	.05	.05	.05	.05
3.		.05	.04	.04	.04	.04	.04	.04	.04	.05	.05
4.		.05	.04	.05	.05	.04	.05	.04	.04	.05	.05
5.		.05	.04	.04	.05	.06	.04	.05	.04	.05	.04
Average (milliseconds)		.05	.04	.045	.045	.045	.04	.045	.04	.05	.045
Release time (milliseconds)	Contacts	1-2	4-5	1-2	4-5	1-2	4-5	1-2	4-5	1-2	4-5
1.		1.99	2.46	1.53	1.53	1.73	1.45	1.97	2.12	2.21	2.46
2.		2.03	2.66	1.41	1.42	1.73	1.43	1.94	2.04	2.01	2.45
3.		2.06	2.44	1.42	1.72	1.73	1.45	1.99	2.05	2.10	2.44
4.		1.91	2.36	1.42	1.55	1.75	1.43	1.95	1.99	1.98	2.13
5.		2.06	2.33	1.60	1.58	1.73	1.42	1.99	2.02	2.04	2.39
Average (milliseconds)		2.01	2.45	1.476	1.56	1.733	1.436	1.968	2.044	2.084	2.374
Release bounce time (milliseconds)											
1.		.26	.54	.07	.10	.45	.05	.26	.60	.06	.35
2.		.27	.44	.11	.12	.44	.05	.42	.22	.06	.24
3.		.12	.52	.21	.05	.42	.06	.44	.60	.04	.14
4.		.52	.25	.04	.03	.47	.05	.41	.65	.05	.28
5.		.22	.49	.06	.04	.46	.05	.49	.58	.07	.27
Average (milliseconds)		.238	.45	.138	.068	.448	.05	.424	.552	.056	.286

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DATA SHEET

DATE 10/12/67 REPEAT INITIAL QUALIFICATION TEST ___ REPORT NO. D 6265

PART NO. 1B5955-4-501 CHG. LTR. ___ S/N. ___ LINE ITEM API-12

S.O. 5769-6304 E.W.O. 27398 T.C.D. 1T06447 MODEL NO. D-1-48

OBSERVER D.D. Barnes LABORATORY Electronic Sys. ENGINEER N. Fischer

Part Name 10-Amps Relay

Ambient Temperature 81 °F

ELECTRICAL - CHARACTERISTICS

TEST	Serial No.	935		936		937		938		939	
	Contacts	1-3	4-6	1-3	4-6	1-3	4-6	1-3	4-6	1-3	4-6
Operate bounce time (milliseconds) 1.		.06	.05	.05	.05	.06	.05	.06	.06	.10	.06
2.		.06	.05	.05	.06	.05	.05	.06	.05	.12	.05
3.		.07	.05	.05	.05	.05	.06	.05	.05	.08	.05
4.		.06	.06	.05	.05	.05	.05	.05	.05	.07	.06
5.		.07	.06	.05	.05	.06	.06	.06	.05	.07	.06
Average (milliseconds)		.064	.054	.05	.05	.054	.054	.056	.05	.084	.056
Release time (milliseconds)	Contacts	1-2	4-5	1-2	4-5	1-2	4-5	1-2	4-5	1-2	4-5
1.		1.98	2.55	1.52	1.44	1.55	1.44	1.66	2.20	2.07	2.09
2.		2.38	2.53	1.45	1.38	1.72	1.42	1.55	2.18	2.04	2.17
3.		2.41	2.26	1.77	1.44	1.72	1.49	1.56	2.09	2.05	2.25
4.		2.34	2.42	1.77	1.45	1.67	1.42	1.66	2.05	2.09	2.12
5.		2.12	2.50	1.55	1.49	1.50	1.46	1.71	2.12	2.08	2.13
Average (milliseconds)		2.186	2.45	1.67	1.46	1.70	1.446	1.628	2.12	2.066	2.15
Release bounce time (milliseconds) 1.		.45	.25	.06	.05	.42	.05	.53	.62	.05	.05
2.		.22	.51	.07	.04	.38	.06	.42	.60	.05	.07
3.		.39	.54	.06	.03	.41	.06	.42	.59	.07	.06
4.		.23	.51	.05	.04	.38	.05	.41	.58	.06	.06
5.		.32	.48	.05	.04	.16	.06	.51	.57	.07	.05
Average (milliseconds)		.32	.453	.058	.04	.35	.056	.418	.596	.064	.053

DATA SHEET

DATE 10/19/66 RUN-IN CYCLING (10 AMPERES) TEST ____ REPORT NO. D6265
PART NO. 1B58584-501 CHG. LTR. ____ S/N. ____ LINE ITEM AP11-12
S.O. 5769-6304 E.W.O. 27808 T.C.D. 1T06947 MODEL NO. DSY-4B
OBSERVER D.D. Babcock LABORATORY Electronic Sys. ENGINEER N. Fischer

Part Name 10-Ampere Relay

Ambient Temperature 90 °F

ELECTRICAL CHARACTERISTICS

TEST	Serial No.	935		936		937		938		939	
Operate voltage (volts)		10.73		11.04		12.76		11.76		12.08	
Release voltage (volts)		4.14		4.39		5.65		4.41		4.75	
Contact resistance (milliohms)											
N.C. 1 - 2		4.97		5.19		5.09		5.62		5.44	
N.C: 4 - 5		5.68		5.39		5.79		5.44		5.39	
N.O. 1 - 3		5.06		5.61		6.34		5.46		5.08	
N.O. 4 - 6		6.00		4.98		5.24		5.52		5.14	
D.C. coil resistance (ohms)		460		493		483		478		482	
Coil current (milliamperes)		61.7		57.02		58.24		59.02		58.51	
	Contacts	1-3	4-6	1-3	4-6	1-3	4-6	1-3	4-6	1-3	4-6
Operate time (milliseconds)											
1.		5.66	5.49	5.01	5.00	5.77	5.85	5.56	5.49	5.46	5.59
2.		5.57	5.64	5.01	4.99	5.75	5.73	5.54	5.51	5.44	5.43
3.		5.73	5.54	4.98	5.00	5.80	5.66	5.56	5.50	5.40	5.47
4.		5.61	5.51	4.99	5.00	5.72	5.70	5.54	5.50	5.45	5.44
5.		5.65	5.71	4.98	5.01	5.74	5.71	5.56	5.50	5.43	5.39
Average (milliseconds)		5.64	5.578	4.994	5.00	5.752	5.73	5.552	5.50	5.434	5.464

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DATA SHEET

DATE 10/19/66 RUN-IN CYCLING (10 AMPERES) TEST ____ REPORT NO. D6265

PART NO. 1B58584-501 CHG. LTR. ____ S/N. ____ LINE ITEM AP11-12

S.O. 5769-6304 E.W.O. 27808 T.C.D. 1T06947 MODEL NO. DSV-48

OBSERVER D.D. Babcock LABORATORY Electronic Sys. ENGINEER N. Fischer

Part Name 10-Ampere Relay

Ambient Temperature 90 °F

ELECTRICAL CHARACTERISTICS

TEST	Serial No.	935		936		937		938		939	
	Contacts	1-3	4-6	1-3	4-6	1-3	4-6	1-3	4-6	1-3	4-6
Operate bounce time (milliseconds)											
1.		.11	.05	.05	.06	.05	.06	.06	.06	.13	.06
2.		.09	.05	.05	.05	.05	.05	.05	.06	.06	.05
3.		.08	.05	.05	.06	.05	.06	.05	.05	.11	.05
4.		.09	.05	.05	.06	.05	.05	.05	.06	.10	.06
5.		.09	.06	.05	.06	.05	.06	.06	.05	.14	.06
Average (milliseconds)		.092	.052	.05	.058	.05	.056	.054	.056	.108	.056
Release time (milliseconds)	Contacts	1-2	4-5	1-2	4-5	1-2	4-5	1-2	4-5	1-2	4-5
1.		2.10	2.21	1.33	1.47	1.31	1.53	2.21	1.95	1.84	2.03
2.		2.11	2.21	1.41	1.47	1.90	1.45	2.25	2.04	2.04	1.98
3.		2.22	2.22	1.31	1.55	2.07	1.51	2.18	1.93	1.97	2.39
4.		2.12	2.18	1.44	1.47	1.84	1.48	2.20	2.10	1.84	2.39
5.		2.10	2.23	1.44	1.71	1.67	1.50	2.16	2.25	2.14	2.34
Average (milliseconds)		2.13	2.21	1.40	1.53	1.75	1.49	2.20	2.05	1.96	2.22
Release bounce time (milliseconds)											
1.		.06	.06	.07	.54	.52	.06	.58	.61	.05	.56
2.		.07	.06	.13	.53	.07	.07	.61	.26	.07	.51
3.		.06	.06	.07	.36	.07	.07	.56	.06	.06	.48
4.		.06	.07	.14	.36	.07	.07	.56	.17	.06	.46
5.		.06	.07	.07	.42	.07	.07	.53	.51	.06	.46
Average (milliseconds)		.062	.064	.096	.442	.16	.068	.568	.32	.06	.494

DATA SHEET

DATE 11/2/66 INITIAL QUALIFICATION TEST REPORT NO. D 6265
PART NO. 1B585834-501 CHG. LTR. S/N. LINE ITEM AC11-12
S.O. 5769-6304 E.W.O. 27808 T.C.D. IT 06747 MODEL NO. DSV-48
OBSERVER H. Hackbrock LABORATORY Electronic Sys. ENGINEER N. Fischer

Part Name 10-Ampere Relay

Ambient Temperature — °F Relative Humidity — %

Selectors 1	Selectors 2	Terminals		Insulation Resistance 500VDC Spec. min. 1KMegohm Data in KMegohms — Relay Serial Number 1158					Dielectric Strength 700VRMS 60Hz Spec. max. Data in uA 1000uA — Relay Serial Number 1158				
1	4	case	6	4					10				
1	5	case	4	3					14				
1	7	case	3	4					10				
1	8	case	1	3					15				
1	10	case	19	3					12				
5	4	4	6	4					66				
7	4	3	6	5					41				
7	5	3	4	3					55				
8	4	1	6	4					57				
8	5	1	4	2					77				
8	7	1	3	3					68				
10	4	19	6	3					39				
10	5	19	4	1.75					52				
10	7	19	3	4					39				
10	8	19	1	2.5					53				
Energized													
5	6	4	5	5					54				
8	9	1	2	3					56				
Cycling													
5	1	4	case	Not applicable					14-8				
8	1	1	case	Not applicable					15-8				

DATA SHEET

DATE 11/15/66 INITIAL QUALIFICATION TEST REPORT NO. D6265
PART NO. 1B58584-501 CHG. LTR. S/N. LINE ITEM A°11-12
S.O. 5769-6304 E.W.O. 27808 T.C.D. 1T06947 MODEL NO. DS1-48
OBSERVER H. Hasbrouck LABORATORY Electronic Sys. ENGINEER N. Fischof

Part Name 10-Ampere Relay

Ambient Temperature 79 °F Relative Humidity 49 %

Selectors 1	Selectors 2	Terminals	Terminals	Insulation Resistance 500VDC Spec. min. 1KMegohm Data in KMegohms — Relay Serial Number 832					Dielectric Strength 700VRMS 60Hz Spec. max. 1000uA Data in uA — Relay Serial Number 832				
1	4	case	6	4					11				
1	5	case	4	3					15				
1	7	case	3	2.5					12				
1	8	case	1	2.5					16				
1	10	case	19	3					13				
5	4	4	6	3					60				
7	4	3	6	4					38				
7	5	3	4	3					53				
8	4	1	6	3					52				
8	5	1	4	2.5					100				
8	7	1	3	2					61				
10	4	19	6	4					35				
10	5	19	4	3					48				
10	7	19	3	3					36				
10	8	19	1	1.2					49				
Energized													
5	6	4	5	3					49				
8	9	1	2	1.75					49				
Cycling													
5	1	4	case	Not applicable					17-9				
8	1	1	case	Not applicable					17-9				

DATA SHEET

DATE 11/16/66 INITIAL QUALIFICATION TEST ____ REPORT NO. D6265

PART NO. 1B5868V-501 CHG. LTR. ____ S/N. ____ LINE ITEM A° 11-12

S.O. 5769-6304 E.W.O. 27808 T.C.D. 1766947 MODEL NO. DSV-48

OBSERVER H. Hashrook LABORATORY Electronic Sys. ENGINEER N. Fischer

Part Name 10-Ampere Relay

Ambient Temperature 80 °F

ELECTRICAL CHARACTERISTICS

TEST	Serial No.	852									
Operate voltage (volts)		13.11									
Release voltage (volts)		3.79									
Contact resistance (milliohms)											
N.C. 1 - 2		16.52		17.06							
N.C: 4 - 5		11.92		12.11							
N.O. 1 - 3		6.59		6.54							
N.O. 4 - 6		7.06		6.98							
D.C. coil resistance (ohms)		4.91									
Coil current (milliamperes)		53.6									
	Contacts	1-3	4-6	1-3	4-6	1-3	4-6	1-3	4-6	1-3	4-6
Operate time (milliseconds)											
1.											
2.											
3.											
4.											
5.											
Average (milliseconds)											

DATA SHEET

DATE 11/16/66 INITIAL QUALIFICATION TEST ___ REPORT NO. D6265
PART NO. 1B58584-501 CHG. LTR. ___ S/N. ___ LINE ITEM AP11-12
S.O. 5769-6304 E.W.O. 27808 T.C.D. IT06947 MODEL NO. DSV-4B
OBSERVER H. Hasbrouck LABORATORY Electronic Sys. ENGINEER N. Fischof

Part Name 10-Ampere Relay

Ambient Temperature 80 °F

ELECTRICAL CHARACTERISTICS

TEST	Serial No.	822									
	Contacts	1-3	4-6	1-3	4-6	1-3	4-6	1-3	4-6	1-3	4-6
Operate bounce time (milliseconds)											
1.		.04	.03								
2.		.02	.02								
3.		.03	.02								
4.		.03	.17								
5.		.02	.12								
Average (milliseconds)		.028	.072								
Release time (milliseconds)	Contacts	1-2	4-5	1-2	4-5	1-2	4-5	1-2	4-5	1-2	4-5
1.											
2.											
3.											
4.											
5.											
Average (milliseconds)											
Release bounce time (milliseconds)											
1.											
2.											
3.											
4.											
5.											
Average (milliseconds)											

DATA SHEET

DATE 11/17/66 INITIAL QUALIFICATION TEST ____ REPORT NO. D6265
PART NO. 1B58584-501 CHG. LTR. ____ S/N. ____ LINE ITEM AP11-12
S.O. 5769-6264 E.W.O. 27803 T.C.D. 1T66947 MODEL NO. DSV-48
OBSERVER H. Hasbrouck LABORATORY Electronic Sys. ENGINEER N. Fischer

Part Name 10-Ampere Relay

Ambient Temperature 78 °F

ELECTRICAL CHARACTERISTICS

TEST	Serial No.	882								
Operate voltage (volts)		12.23								
Release voltage (volts)		3.41								
Contact resistance (milliohms)										
N.C. 1 - 2		30.95	26.33							
N.C: 4 - 5		8.09	7.73							
N.O. 1 - 3		6.48	6.40							
N.O. 4 - 6		7.75	7.69							
D.C. coil resistance (ohms)		480								
Coil current (milliamperes)		57.0								
	Contacts	1-3	4-6	1-3	4-6	1-3	4-6	1-3	4-6	1-3	4-6
Operate time (milliseconds)											
1.		5.25	5.25								
2.		5.13	5.26								
3.		5.21	5.23								
4.		5.23	5.39								
5.		5.21	5.26								
Average (milliseconds)		5.216	5.275								

DATA SHEET

DATE 11/17/66 INITIAL QUALIFICATION TEST ____ REPORT NO. D6265
PART NO. 1B58584-501 CHG. LTR. ____ S/N. ____ LINE ITEM AP 11-12
S.O. 5769-6304 E.W.O. 27808 T.C.D. 1T66747 MODEL NO. DSV-4B
OBSERVER H. Hachrovick LABORATORY Electronic Sys. ENGINEER N. Fischof

Part Name 10-Ampere Relay

Ambient Temperature 78 °F

ELECTRICAL CHARACTERISTICS

TEST	Serial No.	852									
	Contacts	1-3	4-6	1-3	4-6	1-3	4-6	1-3	4-6	1-3	4-6
Operate bounce time (milliseconds)											
1.		.01	.03								
2.		.00	.01								
3.		.00	.01								
4.		.00	.12								
5.		.01	.06								
Average (milliseconds)		.004	.046								
Release time (milliseconds)	Contacts	1-2	4-5	1-2	4-5	1-2	4-5	1-2	4-5	1-2	4-5
1.		2.15	2.08								
2.		1.68	1.85								
3.		1.72	1.73								
4.		1.91	1.53								
5.		1.67	1.67								
Average (milliseconds)		1.826	1.832								
Release bounce time (milliseconds)											
1.		.28	.09								
2.		.60	.31								
3.		.32	.27								
4.		.12	.13								
5.		.53	.24								
Average (milliseconds)		.35	.208								

FORM NO. 30-830 (REV. 6-66)

DATA SHEET

DATE 12/2/66 POST-INDUCTIVE LIFE TEST REPORT NO. D6265

PART NO. 1B5S5[illegible]-[illegible] CHG. LTR. _____ S/N. _____ LINE ITEM AP11-12

S.O. 5769-6304 E.W.O. 27[illegible] T.C.D. 1T06947 MODEL NO. D[illegible]-48

OBSERVER J. Omiya LABORATORY Electronic Sys. ENGINEER N. Fischer

Part Name 10-Ampere Relay

Ambient Temperature — °F Relative Humidity 47 %

Selectors 1	Selectors 2	Terminals	Terminals	Insulation Resistance 500VDC Spec. min. 1KMegohm Data in KMegohms. Relay Serial Number 941	942	944	882	1158	Dielectric Strength 700VRMS 60Hz Spec. max. 1000uA Data in uA Relay Serial Number 941	942	944	882	1158
1	4	case	6	—	.006	900	10	5	270	150	8	130	130
1	5	case	4	—	.005	900	8	6	100	140	12	130	120
1	7	case	3	—	.012	.500	8	5	135	150	8	130	130
1	8	case	1	—	.012	1.2	7	5	300	140	12	130	120
1	10	case	19	—	2.5	.80	6	5	290	140	10	130	120
5	4	4	6	3	—	5	5	5	150	100	58	110	120
7	4	3	6	3	.020	10	10	10	140	110	35	130	120
7	5	3	4	5	.020	9	5	5	75	75	62	125	54
8	4	1	6	—	.020	8	7	7	250	72	50	140	52
8	5	1	4	—	.020	7	4	4	100	110	72	130	74
8	7	1	3	—	—	5	4	4	140	100	58	110	62
10	4	19	6	—	.50	7	8	8	250	110	32	140	26
10	5	19	4	—	.50	5	6	5	100	74	48	130	50
10	7	19	3	—	.50	6	8	6	140	54	33	120	36
10	8	19	1	—	.50	4	5	5	300	74	48	56	52
Energized													
5	6	4	5	—	.50	1.1	3	2.8	400	66	46	53	48
8	9	1	2	—	.50	1	2.8	2.7	400	67	47	47	48
Cycling													
5	1	4	case	Not applicable					180-[illegible]	200-240	170-180	160-240	200-240
8	1	1	case	Not applicable					70-300	20-230	70-[illegible]	120-240	190-190

DATA SHEET

DATE 12/2/66 POST-INDUCTIVE LIFE TEST ____ REPORT NO. D6265

PART NO. 1B5[illegible]84-501 CHG. LTR. ____ S/N. ____ LINE ITEM AP11-12

S.O. 5769-6304 E.W.O. 27808 T.C.D. 1T06947 MODEL NO. DSV-48

OBSERVER J. Omiya LABORATORY Electronic Sys. ENGINEER N. Fischer

Part Name 10-Ampere Relay

Ambient Temperature 80 °F

ELECTRICAL CHARACTERISTICS

TEST	Serial No.	941		942		944		882		1158	
Operate voltage (volts)		10.87		11.44		11.06		11.64		10.92	
Release voltage (volts)		5.70		5.37		6.67		5.40		5.58	
Contact resistance (milliohms)											
N.C. 1 - 2		5.01		4.65		4.35		5.07		5.06	
N.C: 4 - 5		5.27		5.10		5.01		4.51		5.51	
N.O. 1 - 3		4.73		4.83		4.05		4.72		5.05	
N.O. 4 - 6		4.95		5.48		4.25		4.74		5.17	
D.C. coil resistance (ohms)		476.4		459.3		477.4		469.7		465.3	
Coil current (milliamperes)		59.9		62.2		59.7		60.6		61.2	
	Contacts	1-3	4-6	1-3	4-6	1-3	4-6	1-3	4-6	1-3	4-6
Operate time (milliseconds)											
1.		5.62	5.64	7.83	7.89	7.70	6.72	8.07	8.02	6.22	6.22
2.		5.68	5.70	7.82	7.83	6.98	7.94	8.04	8.04	6.24	6.23
3.		5.64	5.64	7.83	7.87	7.75	8.13	8.07	8.02	6.21	6.27
4.		5.67	5.61	7.83	7.93	7.81	7.99	8.08	8.03	6.26	6.23
5.		5.65	5.63	7.83	7.89	7.85	8.14	8.15	8.06	6.22	6.23
Average (milliseconds)		5.652	5.654	7.828	7.896	7.608	7.785	8.092	8.03	6.232	6.236

FORM NO. 30-830 (REV. 6-66)

DATA SHEET

DATE 12/2/66 POST-INDUCTIVE LIFE TEST ____ REPORT NO. D6265

PART NO. 1B58584-501 CHG. LTR. ____ S/N. ____ LINE ITEM AP11-12

S.O. 5769-6304 E.W.O. 27808 T.C.D. 1T06947 MODEL NO. DSV-48

OBSERVER J. Omiya LABORATORY Electronic Sys. ENGINEER N. Fischer

Part Name 10-Ampere Relay

Ambient Temperature 80 °F

ELECTRICAL CHARACTERISTICS

TEST	Serial No.	941		942		944		882		1158	
	Contacts	1-3	4-6	1-3	4-6	1-3	4-6	1-3	4-6	1-3	4-6
Operate bounce time (milliseconds)											
1.		.03	.12	2.63	2.68	1.54	2.66	2.39	2.44	.02	1.02
2.		.10	.10	2.63	2.70	1.53	2.65	2.38	2.47	.72	1.02
3.		.01	.01	2.64	2.69	1.55	2.70	2.39	2.39	.79	1.03
4.		.02	.10	2.64	2.70	1.59	2.71	2.41	2.42	.71	1.03
5.		.12	.03	2.65	2.71	2.51	2.64	2.42	2.46	.73	1.02
Average (milliseconds)		.056	.132	2.638	2.696	1.744	2.672	2.398	2.436	.594	1.024
Release time (milliseconds)	Contacts	1-2	4-5	1-2	4-5	1-2	4-5	1-2	4-5	1-2	4-5
1.		1.47	.87	1.36	1.27	1.01	.96	1.14	1.10	1.35	1.15
2.		1.45	.88	1.25	1.28	1.02	.96	1.16	1.10	1.33	1.13
3.		1.44	.88	1.27	1.27	1.01	.93	1.20	1.09	1.35	1.19
4.		1.45	.88	1.32	1.21	1.04	.95	1.16	1.04	1.37	1.16
5.		1.47	.87	1.26	1.25	1.02	1.01	1.15	1.09	1.31	1.11
Average (milliseconds)		1.456	.88	1.292	1.252	1.02	.962	1.162	1.084	1.342	1.148
Release bounce time (milliseconds)											
1.		.41	.00	.00	.00	.00	.00	.11	.00	.00	.00
2.		.41	.00	.00	.00	.00	.00	.00	.00	.00	.00
3.		.41	.00	.00	.00	.00	.00	.00	.00	.00	.00
4.		.41	.00	.00	.00	.00	.00	.00	.12	.00	.03
5.		.42	.00	.00	.00	.00	.00	.00	.13	.00	.00
Average (milliseconds)		.412	.00	.00	.00	.00	.00	.022	.05	.00	.006

FORM NO. 30-830 (REV. 6-66)

DATA SHEET

DATE 12/5/66 POST-INDUCTIVE LIFE TEST REPORT NO. D 6265

PART NO. 1B58584-501 CHG. LTR. ____ S/N. ____ LINE ITEM AP 11-12

S.O. 5769-6304 E.W.O. 27808 T.C.D. 1T06747 MODEL NO. DSV-48

OBSERVER H. Hasbrouck LABORATORY Electronic Sys. ENGINEER N. Fischer

Part Name 10-Ampere Relay

Ambient Temperature — °F Relative Humidity 55 %

Selectors 1	Selectors 2	Terminals		Insulation Resistance 500VDC Spec. min. 1KMegohm Data in KMegohms — Relay Serial Number 941	942	944	882	1158	Dielectric Strength 700VRMS 60Hz Spec. max. Data in uA 1000uA — Relay Serial Number 941	942	944	882	1158
1	4	case	6	40	40	40	50+	50+	6	6	6	6	5
1	5	case	4	40	40	50+	11	20	6	6	6	5	5
1	7	case	3	—	40	50+	25	25	6	6	6	5	5
1	8	case	1	—	40	50+	10	50	310	6	5	5	4
1	10	case	19	—	8	50+	25	30+	300	4	4	4	4
5	4	4	6	30	40	50+	50+	50+	6	6	6	5	5
7	4	3	6	30	40	50+	50+	50+	6	6	6	6	6
7	5	3	4	40	40	50+	50+	50+	6	6	6	5	5
8	4	1	6	12	40	50+	25	50+	6	6	6	5	5
8	5	1	4	30	40	50+	30	40	5	6	6	5	5
8	7	1	3	—	40	50+	40	50	6	5	6	6	6
10	4	19	6	30	40	50+	40	50+	6	5	6	5	5
10	5	19	4	25	40	50+	25	50+	6	5	5	5	5
10	7	19	3	—	30	50+	40	50+	6	5	6	5	5
10	8	19	1	—	40	50+	40	50+	200	5	5	5	5
Energized													
5	6	4	5	—	12	30	30	15	6	5	6	6	5
8	9	1	2	—	10	50	40	30	5	5	5	6	6
Cycling													
5	1	4	case	Not applicable					20-180	5-160	5-20	5-160	5-16
8	1	1	case	Not applicable					300-210	6-40	6-6	6-160	5-20

FORM A-270-G-13 (3-67)

DOUGLAS AIRCRAFT COMPANY, INC.

Page No: 26
Report No: D6265

SIV-B RELAYS SIN 935,936,937

SINUSOIDAL FREQUENCY SWEEP (AP10-12)

CONFIGURATION:

P/N 1B58584-501

NOTE: See page _____ for pick up location.

☒ Upsweep ————

☐ Downsweep - - - - -

TEST CONDITIONS:

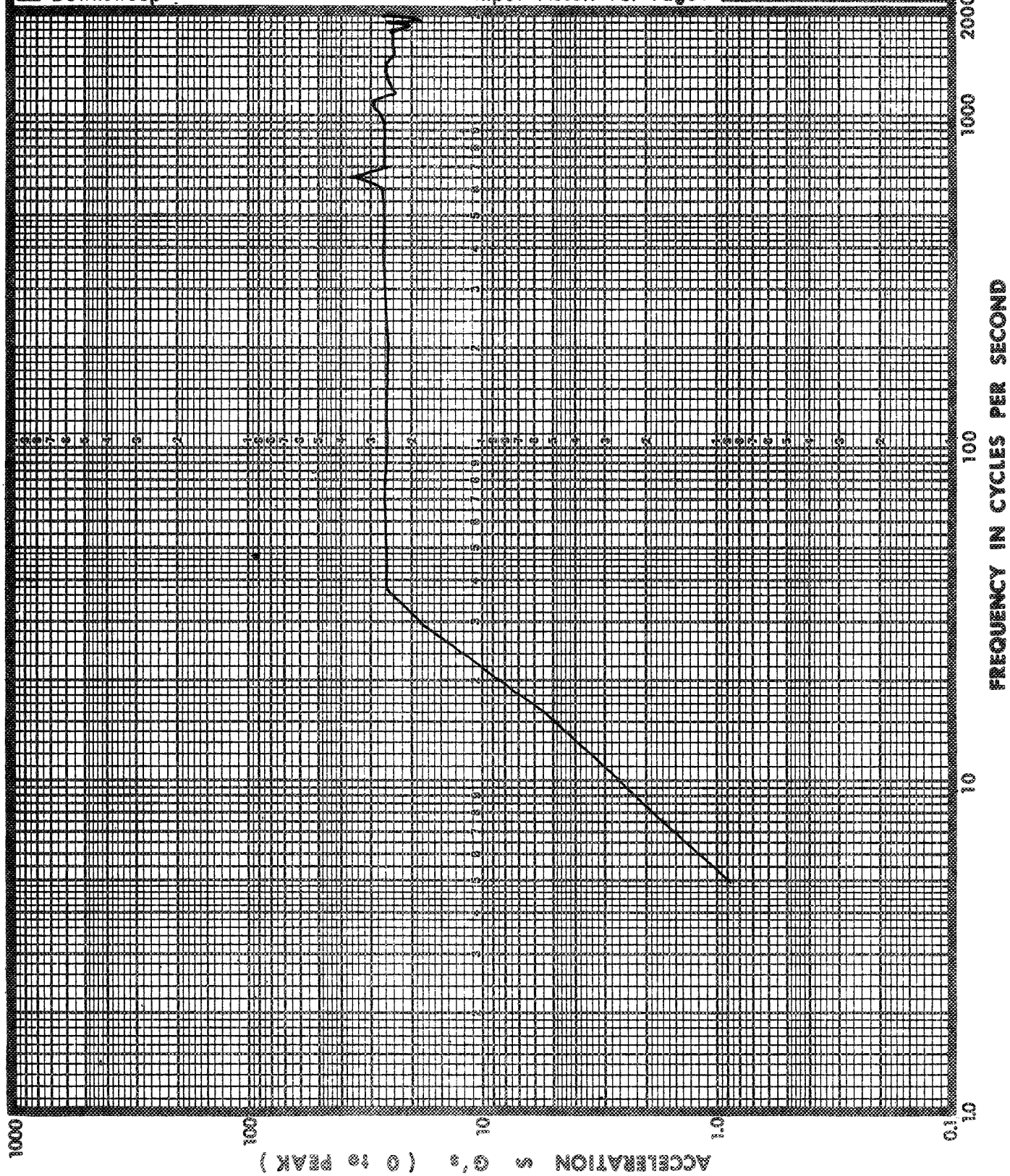
Test Date: 10-24-66

Axis of Excitation: Y

Pick Up Number: 1 CONTROL

Pick Up Response: Y

Input Accel. Per Page: _____



FORM A-270-Q-13 (3-67)

DOUGLAS AIRCRAFT COMPANY, INC.

Page No: 27
Report No: D 6265

SIV-B RELAYS S/N 935 936 937

SINUSOIDAL FREQUENCY SWEEP (AP 10-12)

CONFIGURATION:

P/N 1B58584-501

NOTE: See page _____ for pick up location.

☐ Upsweep

☒ Downsweep

TEST CONDITIONS:

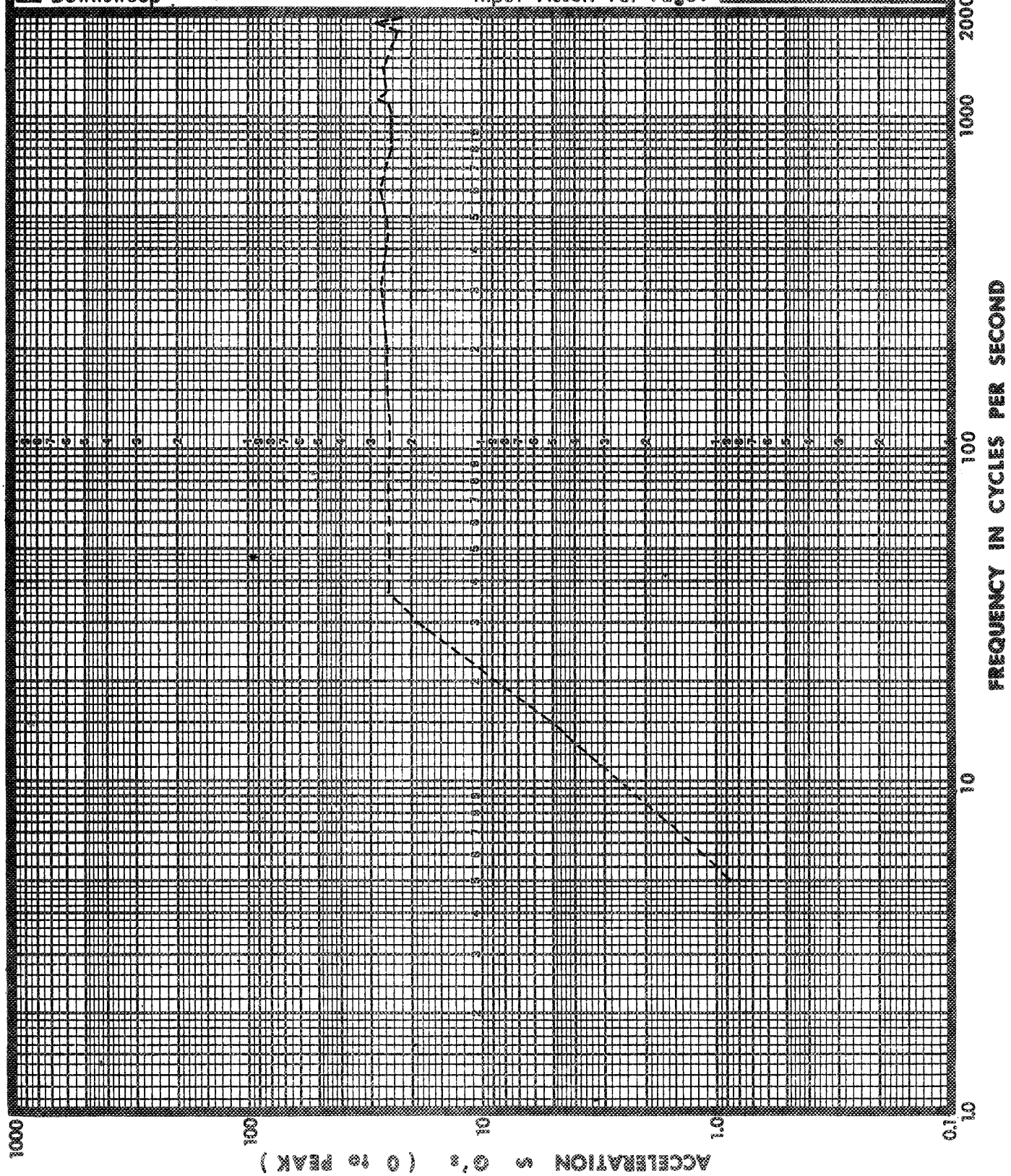
Test Date: 10-24-66

Axis of Excitation: Y

Pick Up Number: 1 CONTROL

Pick Up Response: Y

Input Accel. Per Page:



FORM A-270-G-13 (3-67)

DOUGLAS AIRCRAFT COMPANY, INC.

Page No: 28
Report No: D0265

SIV-B RELAYS S/N 938, 939

SINUSOIDAL FREQUENCY SWEEP (AP 10-12)

CONFIGURATION:

P/N 1B58584-501

NOTE: See page _____ for pick up location.

☒ Upsweep ———

☐ Downsweep - - - - -

TEST CONDITIONS:

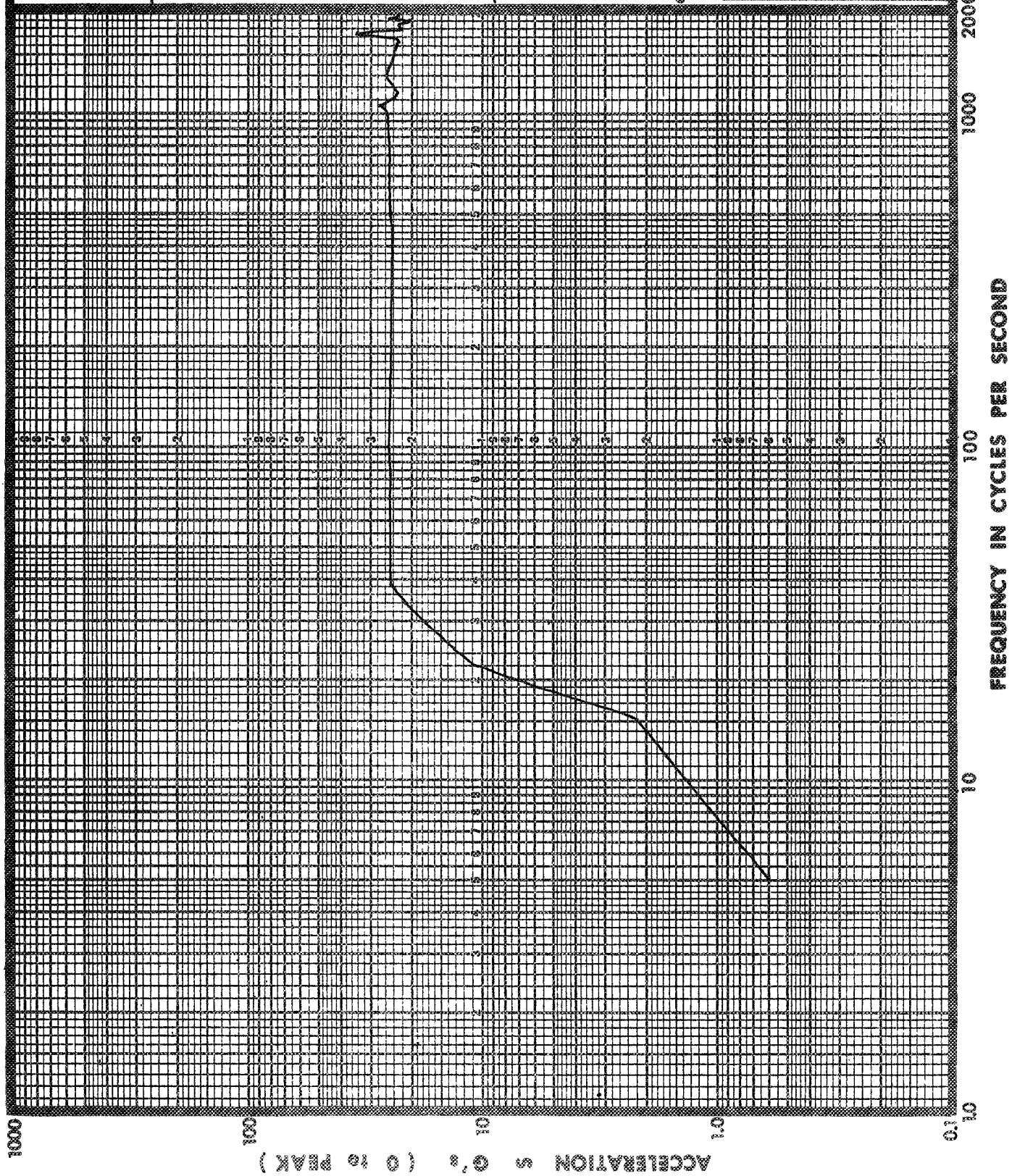
Test Date: 10-25-66

Axis of Excitation: Y

Pick Up Number: 1 CONTROL

Pick Up Response: Y

Input Accel. Per Page: _____



FORM A-270-G-13 (3-67)

DOUGLAS AIRCRAFT COMPANY, INC.

Page No: 29
Report No: D6265

S1V-B RELAYS S/N 935, 936, 938

SINUSOIDAL FREQUENCY SWEEP (AP 10-12)

CONFIGURATION:

P/N 1B58584-501

NOTE: See page _____ for pick up location.

☒ Upsweep _____

☐ Downsweep - - - - - -

TEST CONDITIONS:

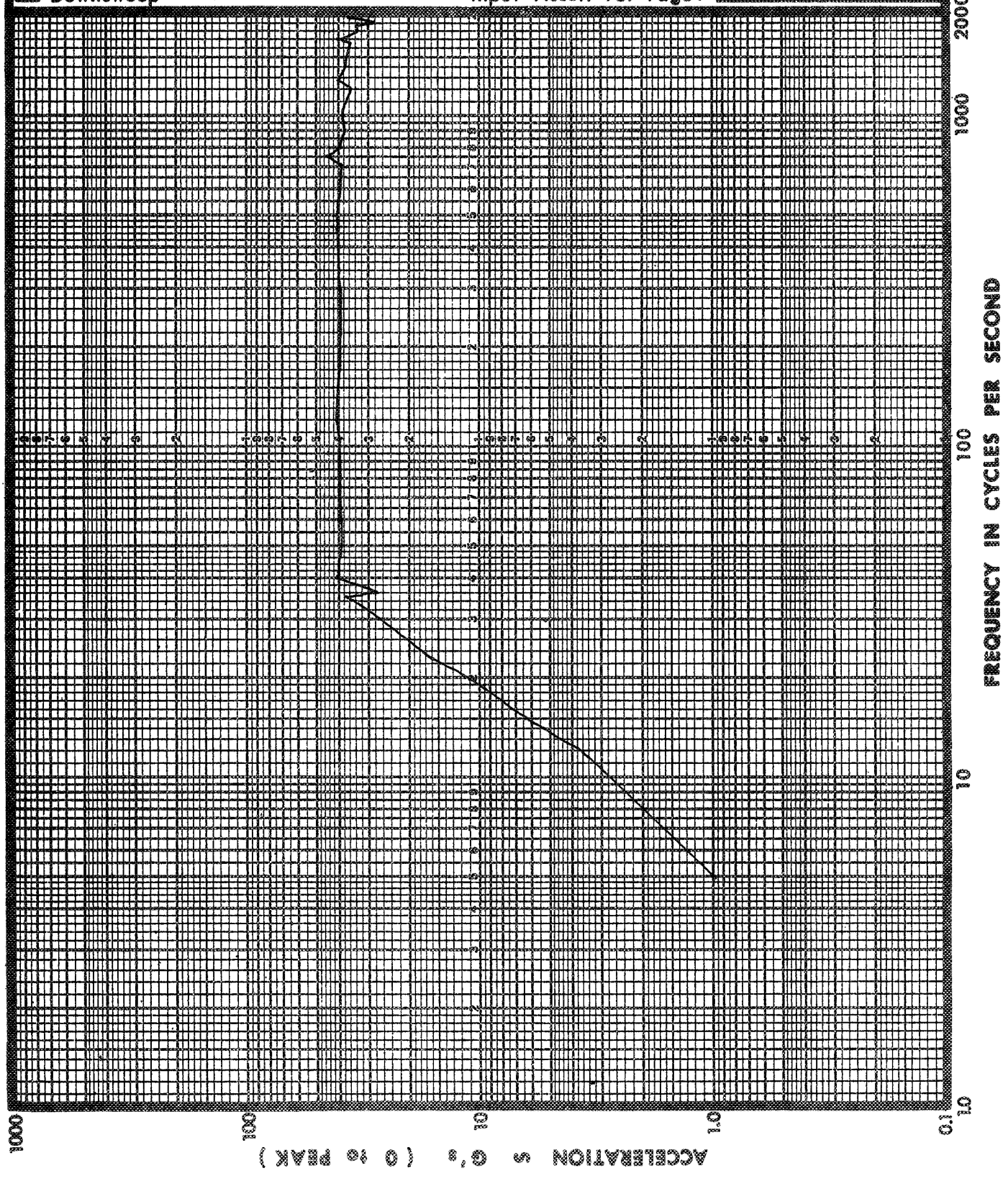
Test Date: 10-27-66

Axis of Excitation: Y

Pick Up Number: 1 CONTROL

Pick Up Response: Y

Input Accel. Per Page: _____



FORM A-270-Q-15 (3-67)

DOUGLAS AIRCRAFT COMPANY, INC.

Page No: 30
Report No: 06265

SIV-B RELAYS S/N 935, 936, 938

SINUSOIDAL FREQUENCY SWEEP (AP 10-12)

CONFIGURATION:

P/N 1B58584-501

NOTE: See page _____ for pick up location.

☒ Upsweep ———

☐ Downsweep - - - - -

TEST CONDITIONS:

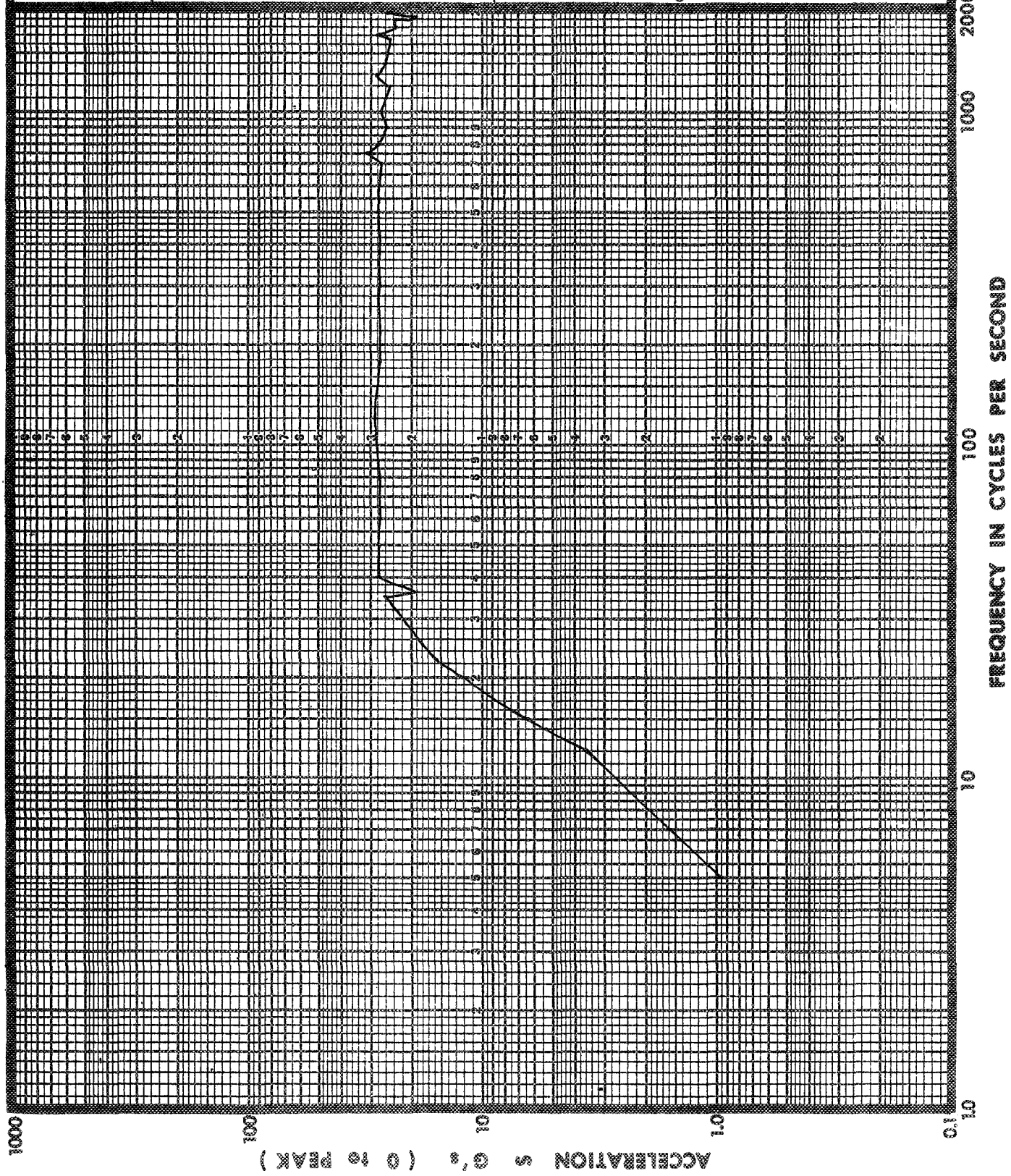
Test Date: 10-27-66

Axis of Excitation: Y

Pick Up Number: 1 CONTROL

Pick Up Response: Y

Input Accel. Per Page: _____



FORM A-270-G-13 (3-67)

DOUGLAS AIRCRAFT COMPANY, INC.

Page No: 31
Report No: D6265

SIV-B RELAYS S/N 935, 936, 938

SINUSOIDAL FREQUENCY SWEEP

(AP 10-12)

CONFIGURATION:

P/N 1B58584-501

NOTE: See page _____ for pick up location.

☐ Upsweep

☒ Downsweep

TEST CONDITIONS:

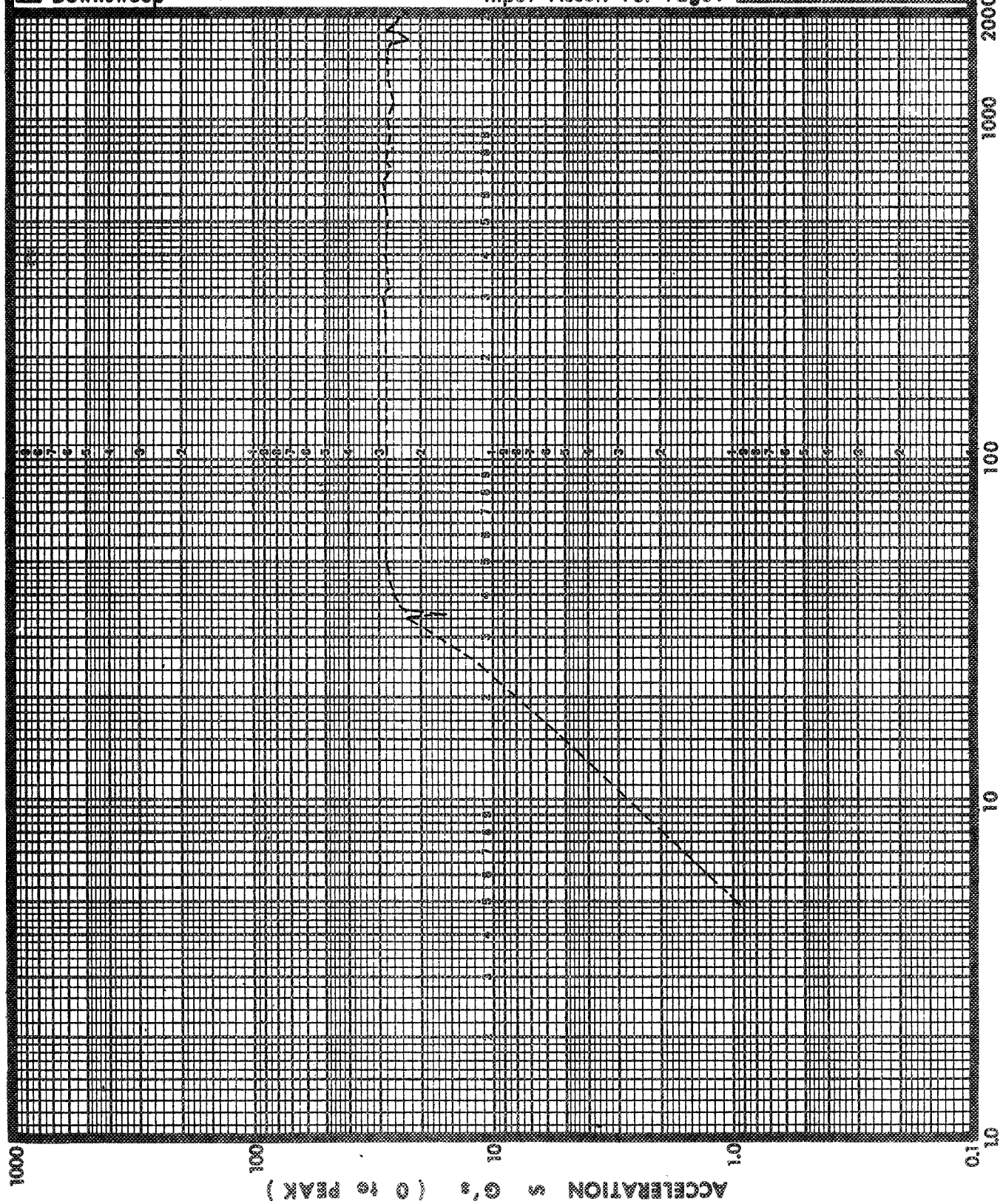
Test Date: 10-27-66

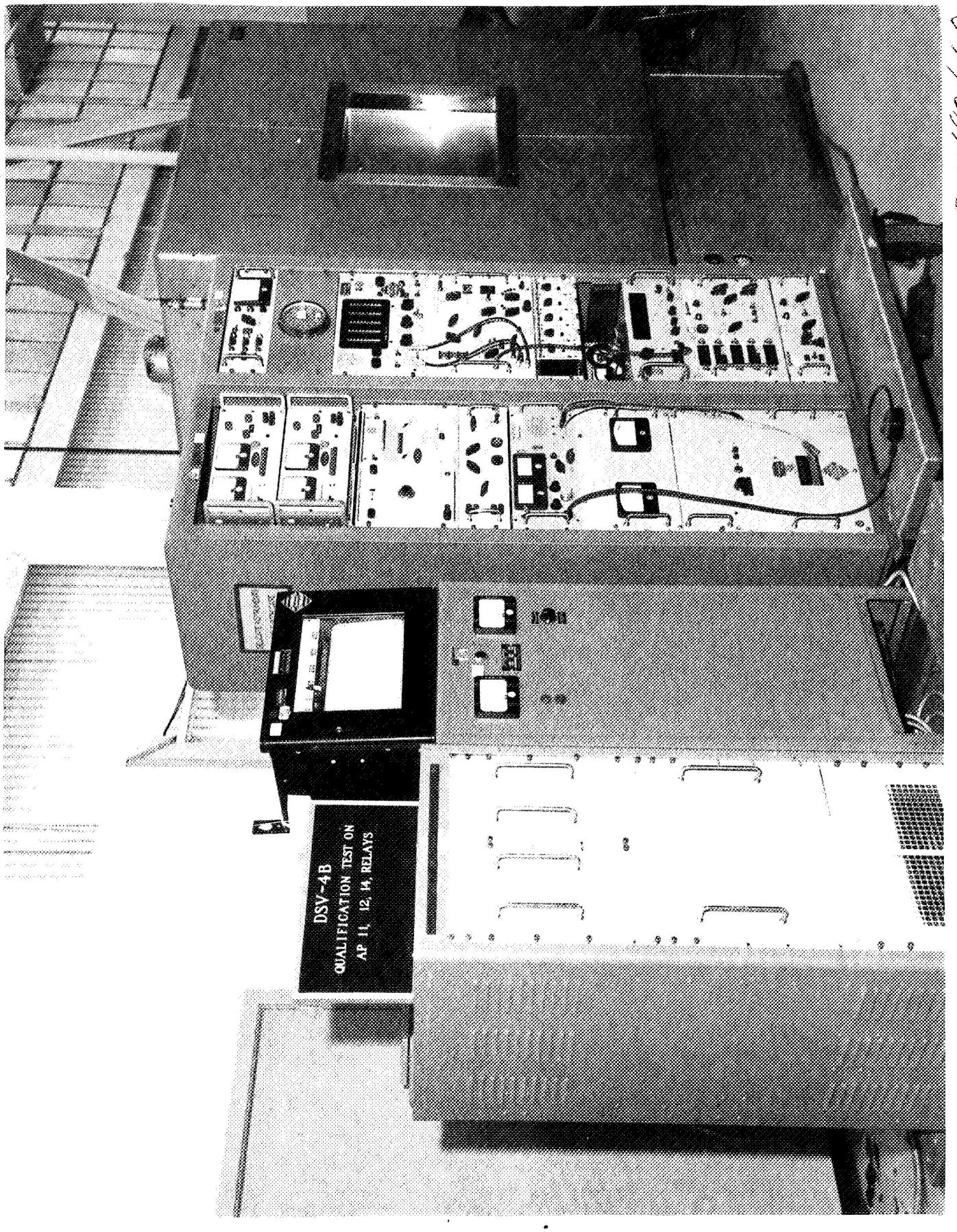
Axis of Excitation: Y

Pick Up Number: 1 CONTROL

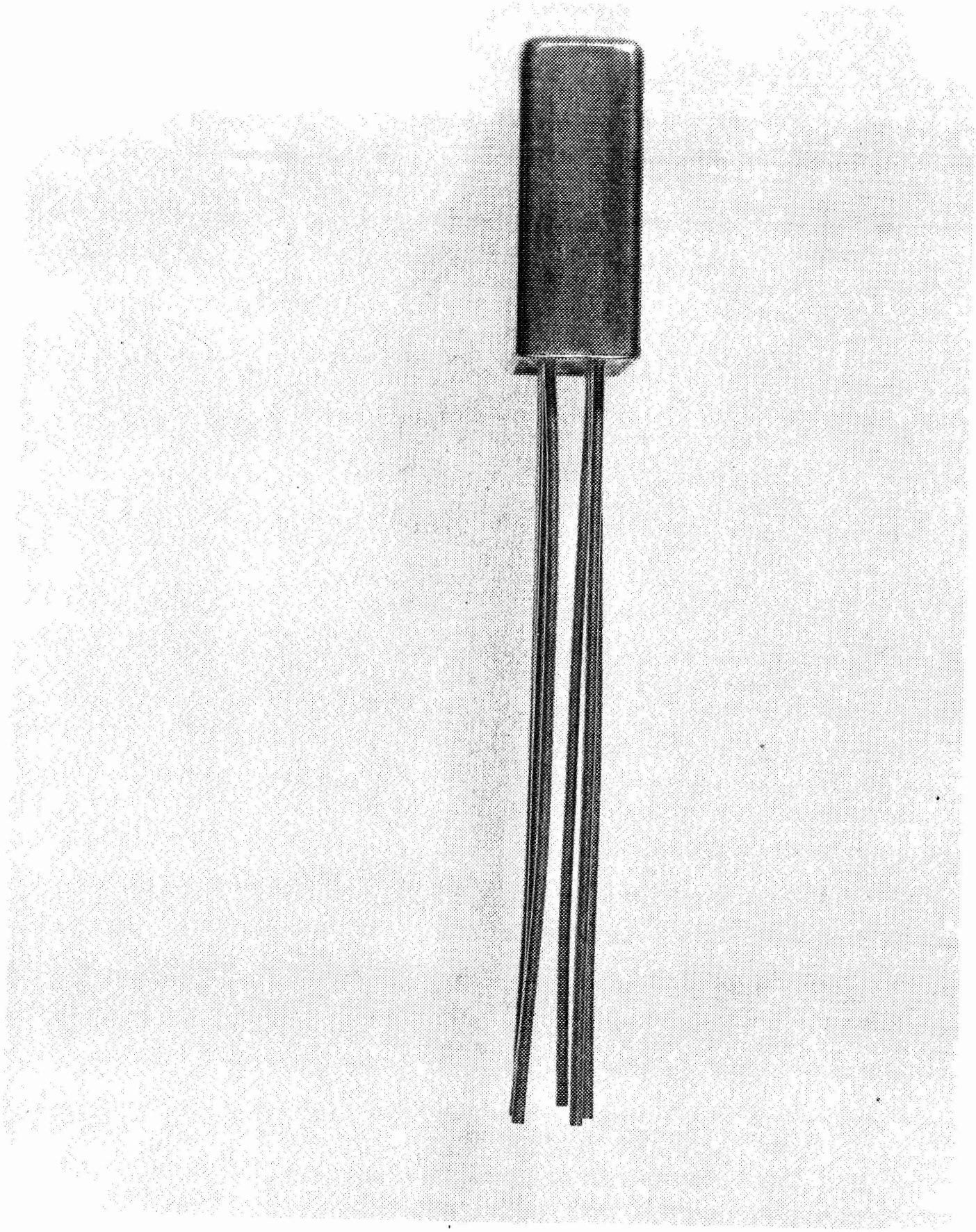
Pick Up Response: Y

Input Accel. Per Page:

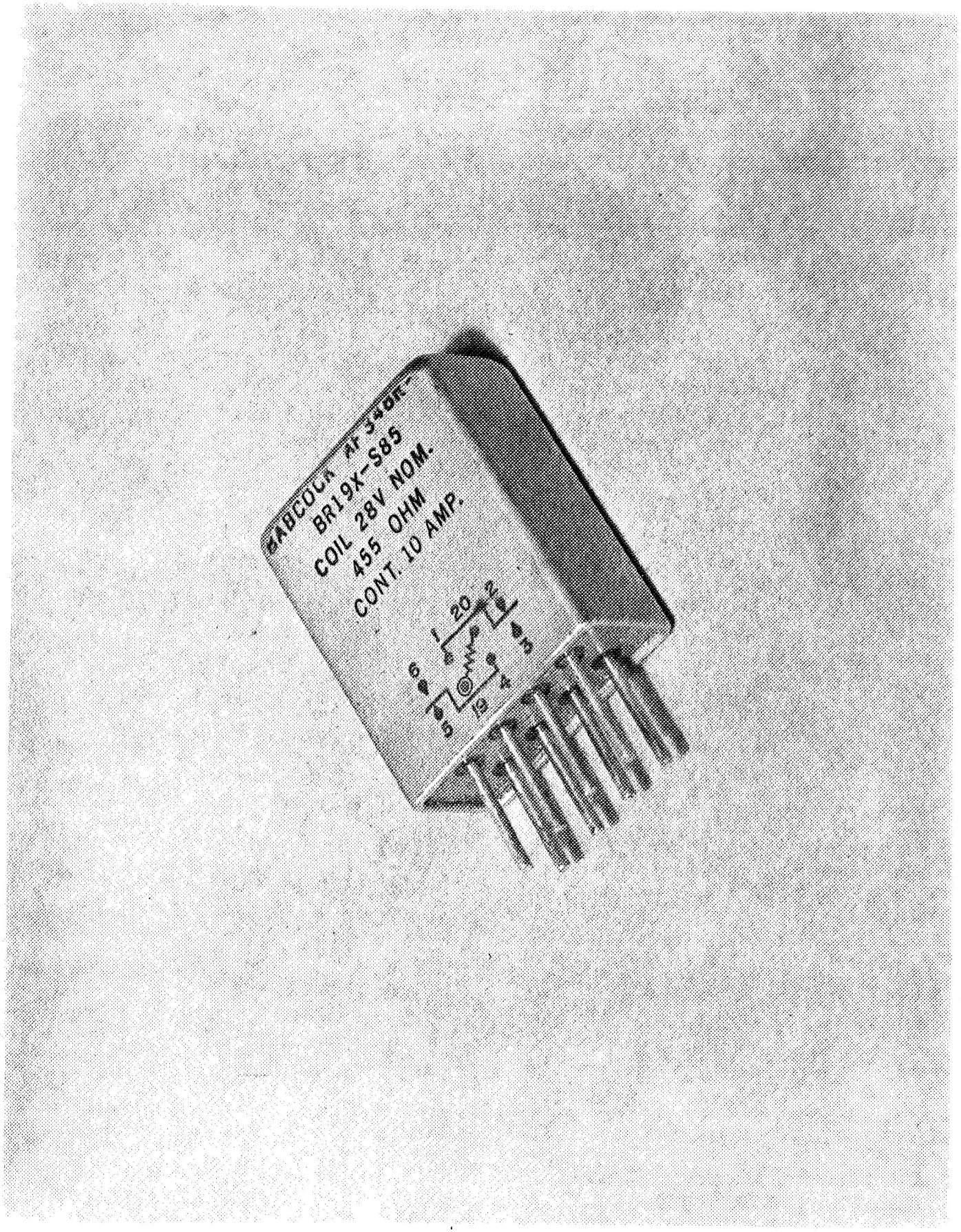




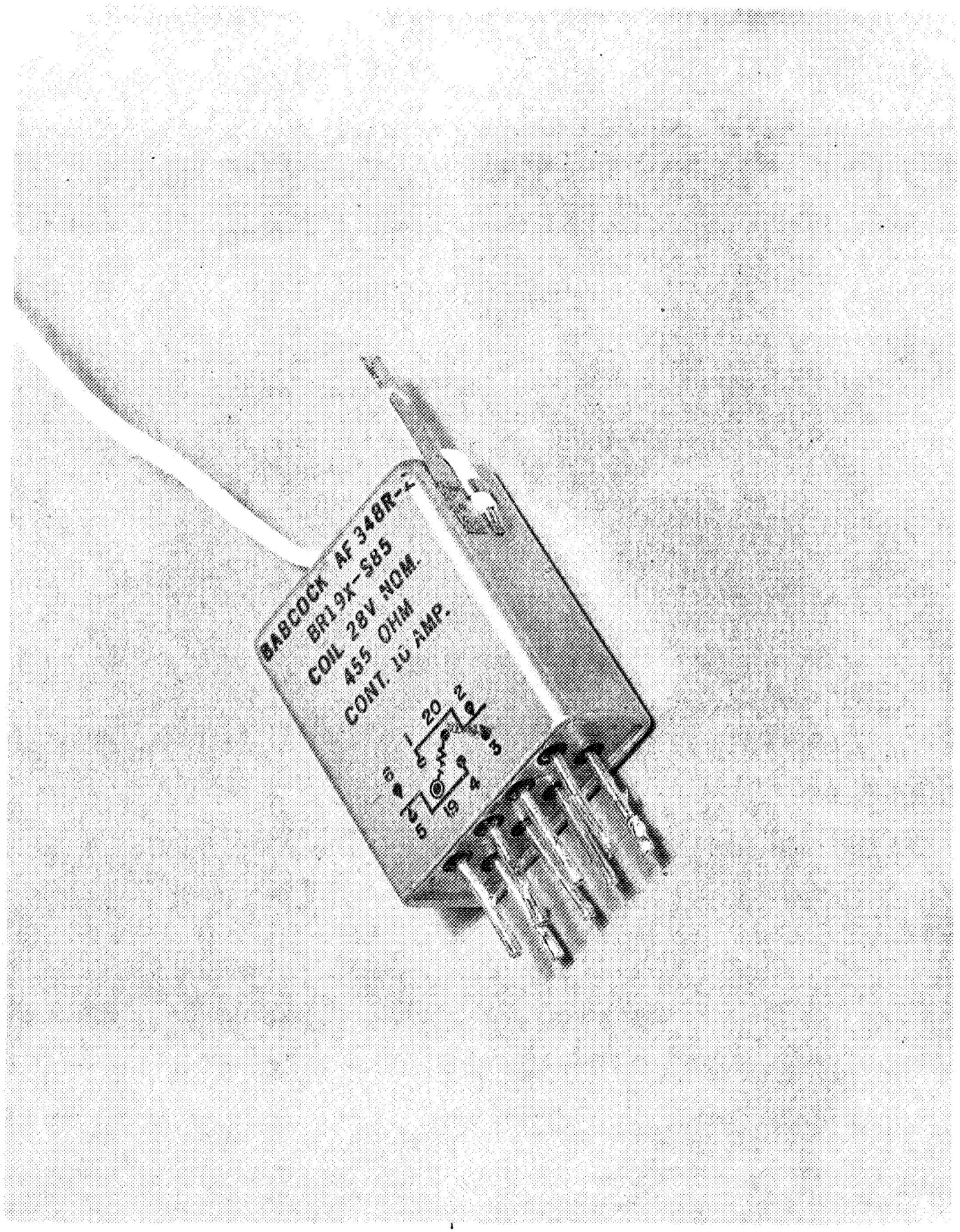
LIFE CYCLE INSTRUMENTATION



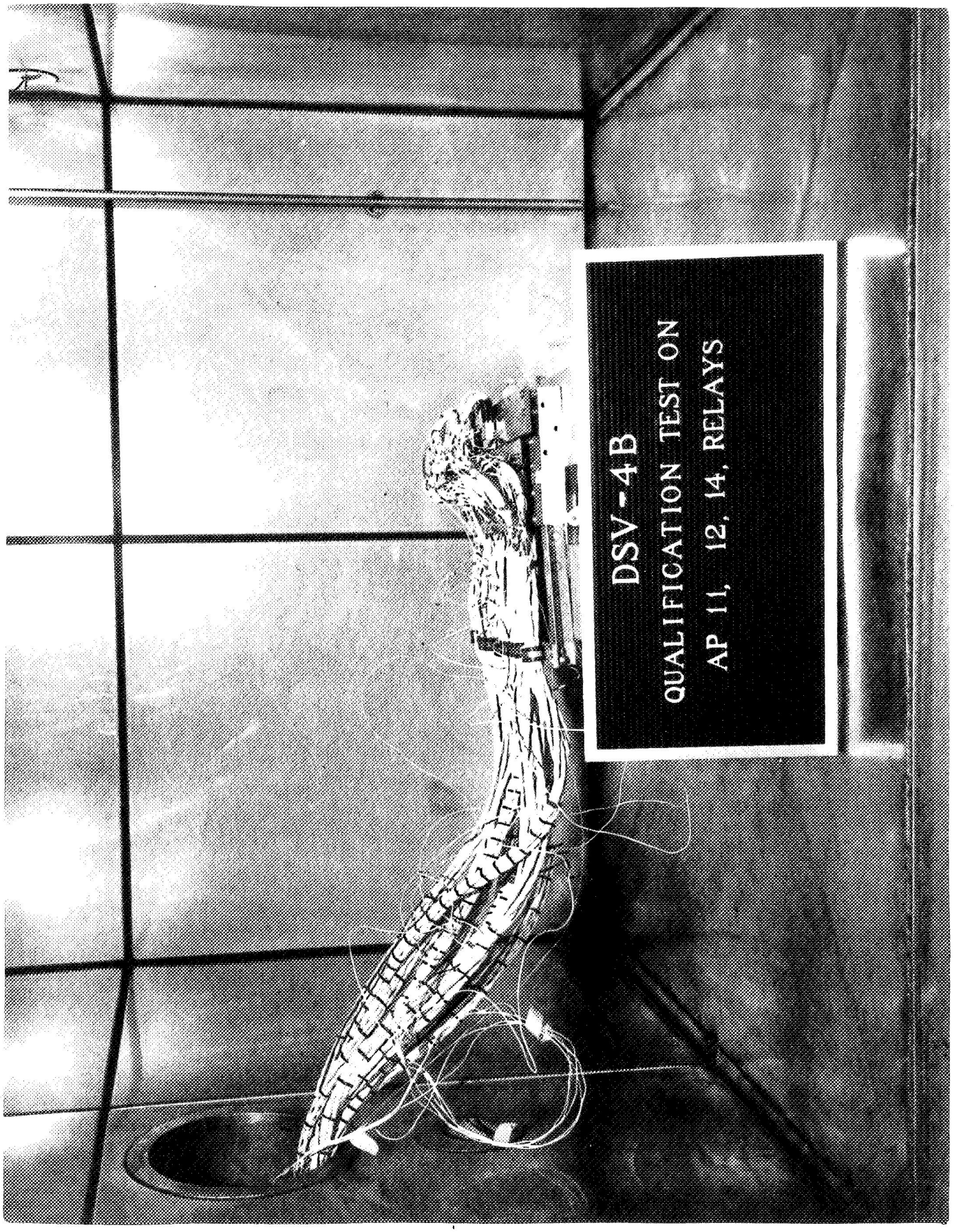
GENERAL PURPOSE RELAY



GENERAL PURPOSE RELAY



L THERMOCOUPLE


DSV-4B
QUALIFICATION TEST ON
AP 11, 12, 14, RELAYS