INCH-POUND

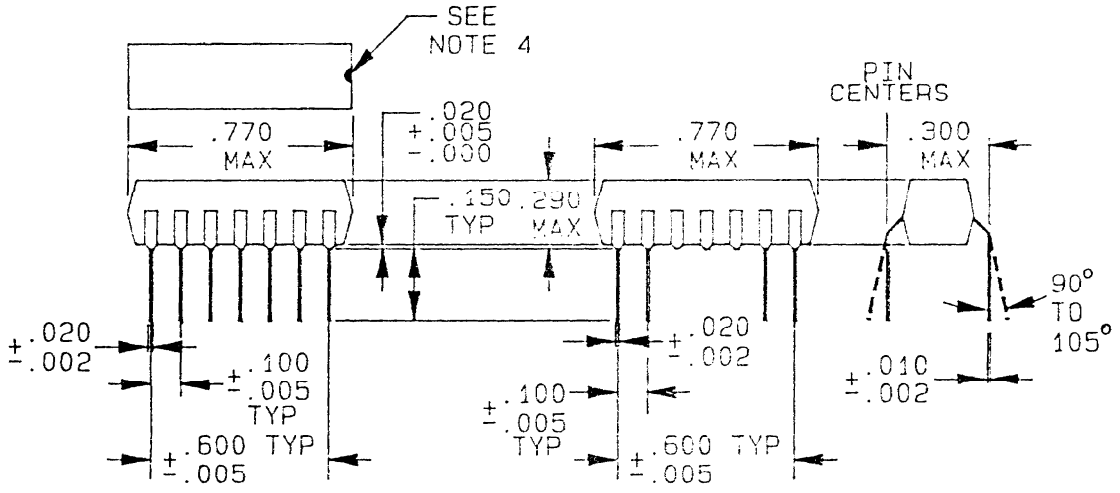
MIL-R-83516/4B(USAF)
30 SEP 1990
SUPERSEDING
MIL-R-83516/4A(USAF)
3 March 1983

MILITARY SPECIFICATION SHEET

RELAYS, REED, DRY, DUAL IN-LINE PACKAGE (DIP),
GENERAL PURPOSE, LOW-POWER COIL

This specification is approved for use by the Department of the Air Force, and is available for use by all Departments and Agencies of the Department of Defense.

The requirements for acquiring the product described herein shall consist of this specification sheet and the issue of the following specification listed in that issue of the Department of Defense Index of Specifications and Standards (DODISS) specified in the solicitation: MIL-R-83516.

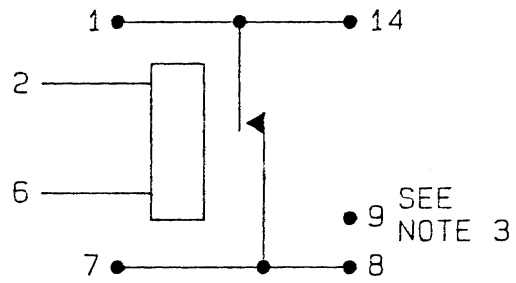


CONFIGURATION A
14 PINS

CONFIGURATION B
8 PINS

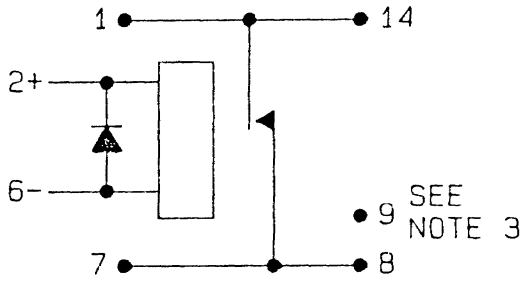
FIGURE 1. Outline drawing.

Ⓑ denotes changes



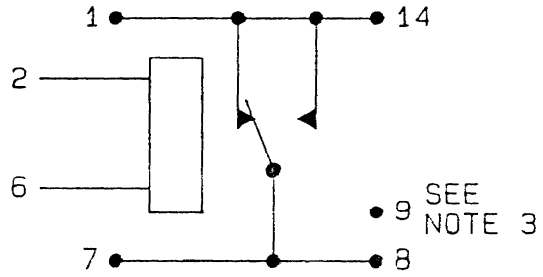
CIRCUIT DIAGRAM A

| FORM A



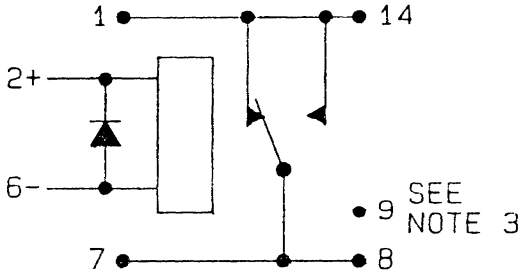
CIRCUIT DIAGRAM B

| FORM A



CIRCUIT DIAGRAM C

| FORM C



CIRCUIT DIAGRAM D

| FORM C

Inches	mm		Inches	mm
.002	0.05		.150	3.81
.005	0.12		.290	7.36
.010	0.25		.300	7.62
.020	0.51		.600	15.24
.100	2.54		.770	19.55

NOTES:
1. Dimensions are in inches.
2. Metric equivalents are given for general information only.
3. Relays are available with electrostatic shielding at pin 9.
4. A position identifier (shape optional) shall be placed on the top of each relay centered between pins 1 and 14 or directly over pin 1.
5. Relay heights can be found in table I.
6. Unless otherwise specified, tolerance is ±.010 (0.25 mm).

FIGURE 1. Outline drawing - Continued.

TABLE I. Dash numbers and applicable characteristics.

Dash number		Circuit diagram (see figure 1)	Configuration (see figure 1)	DC coil data at 25°C			
Without shielding	With shielding			Resistance (minimum) ohms	Pickup voltage (maximum)	Dropout voltage (minimum)	Power dissipation (nominal) mW
5-volt coil	5-volt coil						
001	002	A	A	450	4.0	1.0	50
003	004	B	A	"	"	"	"
005	006	A	B	"	"	"	"
007	008	B	B	"	"	"	"
009	010	C	A	324	"	"	170
011	012	D	A	"	"	"	"
013	014	C	B	"	"	"	"
015	016	D	B	"	"	"	"

REQUIREMENTS:

DESIGN AND CONSTRUCTION:

Dimensions and configurations: See figure 1.

Diode characteristics (when applicable): Diodes shall be JANTX as a minimum. 1/

Peak inverse voltage: 75.0 V dc.

CONTACT DATA:

Arrangements: See figure 1.

Load ratings:

Contacts	V dc (max)	mA (max)	VA (max)
Form A	100	500	10
Form C	28	250	3

Contact resistance:

Before life: 0.130 ohm maximum.

During and after life: 1.0 ohm maximum.

Group A inspection: 0.200 ohm maximum.

Contact noise: Applicable.

Contact stability: Applicable.

COIL DATA: See table I.

Duty rating: Continuous.

Coil power dissipation: See table I.

Operate time: See table II.

Release time: See table II.

TABLE II. Operate and release times (including bounce).

Contact arrangement	Operate time (nominal)		Release time (nominal)	
	Without diode	With diode	Without diode	With diode
	ms	ms	ms	ms
Form A	1	1	.5	1
Form C	2	2	2.5	2.5

1/ WARNING: Reverse polarity on coil terminals will destroy diode.

ELECTRICAL DATA:

Dielectric withstanding voltage: MIL-STD-202, method 301. 2/

Test points:

Between all mutually insulated components: 500 V dc.

Across contacts: 250 V dc.

Insulation resistance: 10,000 MΩ minimum.

Test potential: 100 V dc ±10%.

Test points: Between contacts.

Coil transient suppression (relays with internal diodes): 1.0 V maximum negative transient.

Capacitance, pF maximum:

	1A	1C
Across open contacts, no shield:	1.25	2.0
Across open contacts, shield guarded:	0.25	1.2
Contact to coil, no shield:	3.0	3.5
Contact to coil, shield guarded:	2.0	2.0

ENVIRONMENTAL DATA:

Thermal EMF: Not applicable.

Thermal shock: Applicable.

Shock (specified pulse): Applicable.

Vibration, high frequency: Applicable.

Salt spray (corrosion): Applicable.

Moisture resistance: Applicable.

Magnetic interference: Relays are subject to interaction with stray magnetic fields. To keep within operating parameters, relays should be mounted no closer than .500 inch (12.7 mm) of each other. Greater spacing is required for stronger magnetic fields.

Resistance to soldering heat: Applicable.

PHYSICAL:

Enclosure: Molded plastic.

Operating temperature range: -40°C to +85°C.

Lead integrity: MIL-STD-883, method 2004, test condition B2; the force to be applied shall be 8.0 ±0.5 ounces.

Solderability: Applicable.

Life: Applicable.

2/ For relays supplied with an internal diode, the coil leads shall be connected together to avoid damage to the coil.

Weight: 2.5 grams maximum.

Part or Identifying Number (PIN): M83516/4-(dash number from table I).

QUALIFICATION:

Qualification inspection and sample size: See table III.

TABLE III. Qualification inspection and sample size.

M83516/4-	Number of samples
008 016	13 units each part number plus 1 open unit. Qualification inspection as applicable.

CONCLUDING MATERIAL

Custodian:
Air Force - 85

Review activities:
Air Force - 99
DLA - ES

Preparing activity:
Air Force - 85

Agent:
DLA - ES

(Project 5945-F715-02)