

INCH-POUND

MIL-PRF-83726/21H  
17 December 2015

SUPERSEDING  
MIL-PRF-83726/21G  
18 June 2013

PERFORMANCE SPECIFICATION SHEET

RELAY, SOLID-STATE, TIME DELAY (ON OPERATE), TYPE I,  
CLASS C, SPST, 250 MILLIAMPERES, VARIABLE TIME, 0.05 TO 500 SECONDS

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

The requirements for acquiring the relay described herein  
shall consist of this specification and [MIL-PRF-83726](#).

INACTIVE FOR NEW DESIGN AFTER 15 NOVEMBER 2002.  
No superseding document.

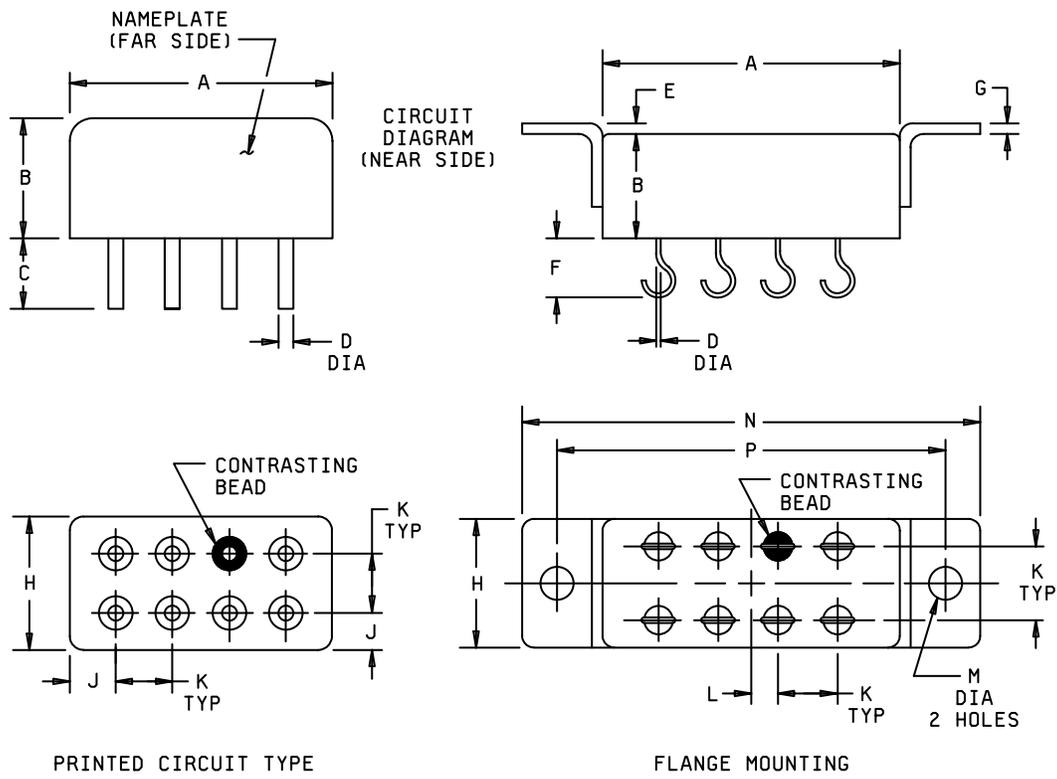
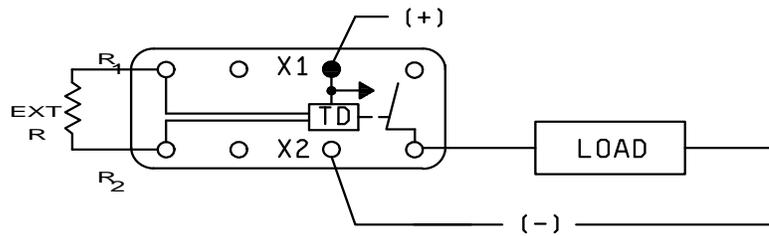


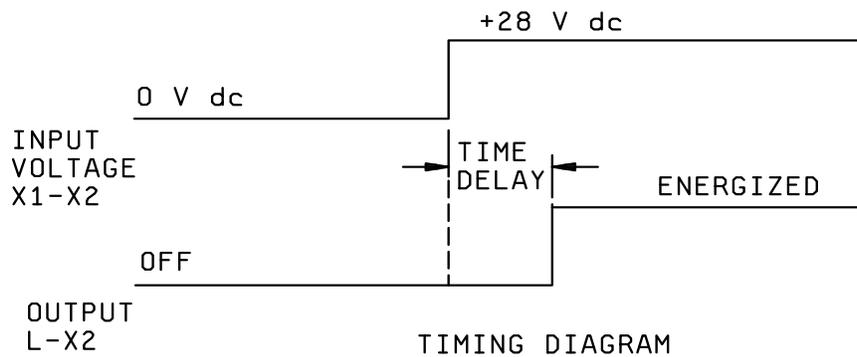
FIGURE 1. Outline drawing and dimensions.



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CIRCUIT DIAGRAM  
(SEE NOTE 4)



TIMING DIAGRAM

Ltr	Inches		mm	
	Min	Max	Min	Max
A	---	.810	---	20.57
B	---	.310	---	7.87
C	.182	.192	4.62	4.88
D	.028 DIA	.033 DIA	0.71 DIA	0.84 DIA
E	.010	.020	0.25	0.51
F	---	.190	---	4.83
G	.020	.030	0.51	0.76
H	---	.410	---	10.41
J	.088	.098	2.24	2.49
K	.195 TYP	.205 TYP	4.95 TYP	5.21 TYP
L	.095 REF	.105 REF	2.41 REF	2.67 REF
M	.118 DIA	.122 DIA	3.00 DIA	3.10 DIA
N	---	1.280	---	32.51
P	1.057	1.067	26.85	27.10

NOTES:

1. Dimensions are in inches.
2. Metric equivalents are given for general information only.
3. Unless otherwise specified, tolerance is  $\pm .010$  (0.25 mm) for three place decimals and  $\pm .03$  (0.76 mm) for two place decimals.
4. Spare terminals are connected internally. Do not use for external tie points or for terminals.

FIGURE 1. Outline drawing and dimensions - Continued.

REQUIREMENTS:

OPERATING REQUIREMENTS:

Timing action: Delay-on-operate.

Time delay 1/: Adjustable (see table I) with external resistor according to the following formula:

$$R_{ext} = 100 \text{ k}\Omega (T / T_m) - 1)$$

where T = desired time, T<sub>m</sub> = minimum time, and (T / T<sub>m</sub>) ≤ 10.

Timing accuracy 2/: +10 percent of the nominal value.

Recycle time 3/: 10 milliseconds.

Power interrupt: The accuracy will not be affected by power interruptions up to 1 millisecond spaced at least 10 milliseconds apart.

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- 1/ External resistor in accordance with [MIL-PRF-55182](#), RNC60HXXXXFS or equal.
  - 2/ The accuracy requirement applies for any combination of operating temperature and voltage.
  - 3/ Recycle time is defined as the maximum time that power must be removed from the input terminals to assure that the next timing cycle will be completed within the specified timing tolerance. (Units can be recycled during timing or after time-out.)

TABLE I. Available time delays. 1/

Dash number		Time delay (seconds)
Printed circuit type terminals	Flange mounting	±10%
-001	-005	0.05 – 0.5
-002	-006	0.5 – 5
-003	-007	5 – 50
-004	-008	50 – 500

- 1/ CAUTION: Relays supplied to this specification sheet are susceptible to damage from electrostatic discharge under class I devices as defined by [MIL-STD-1686](#) (see ESDS requirements herein).

INPUT REQUIREMENTS:

Input voltage: 28 V dc nominal; range 18 V dc to 32 V dc.

Duty rating: Continuous.

Current drain: 5 milliamperes maximum plus load at 25°C.

Polarity protection: The timer shall be inoperative during, and undamaged by, reversal of the polarity of the operating voltage.

OUTPUT REQUIREMENTS:

Configuration: SPST; switch closure to +28 V dc.

Rating: 250 milliamperes maximum.

Suppression: Inductive suppression provided for output protection.

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Voltage drop: 2 V dc maximum.

Leakage current: 1.0 microampere maximum at 28 V dc and 25°C; 10 microamperes maximum at 28 V dc and 125°C.

Endurance: 1,000,000 cycles minimum for test.

Qualification: 2,000 hours or 1,000,000 cycles, whichever is less.

Group B: 1,000 hours or 1,000,000 cycles, whichever is less.

### ELECTRICAL REQUIREMENTS:

Transients: In accordance with [MIL-STD-704](#) for 28 volts dc system (figure 11).

Radio noise: [MIL-STD-461](#), class 1D.

Motor load: Not applicable.

Insulation resistance: 1,000 megohms at 500 V dc at sea level, and 100 V dc at 80,000 feet between each pin and case.

Dielectric strength: 1,000 V rms at 60 Hz at sea level, and 350 V rms at 80,000 feet between case and pins connected together.

### ENVIRONMENTAL REQUIREMENTS:

Ambient temperature (operating or nonoperating): -55°C to +125°C.

Vibration (sinusoidal): 10 Hz to 100 Hz at 0.06 inch DA; 100 Hz to 3,000 Hz at 30 g's.

Vibration (random): [MIL-STD-202](#), method 214, condition I, letter J, duration of 30 minutes.

Maximum altitude rating: 80,000 feet.

Shock: 1,100 g's for 0.5 millisecond.

Acceleration: 100 g's.

Seal: [MIL-STD-883](#), method 1014, condition B and condition C.

Moisture resistance: [MIL-STD-202](#), method 106.

### PHYSICAL REQUIREMENTS:

Dimensions and configurations: See [figure 1](#).

Terminations: See [figure 1](#).

Terminal strength: 3 pounds pull.

Weight: 0.5 ounce.

Marking: Marking shall be in accordance with [MIL-PRF-83726](#). In addition, relays shall be marked with the ESDS identifier as specified in [MIL-STD-1285](#).

Part or Identifying Number (PIN): The PIN consists of the prefix M83726/21- and a three digit dash number. [4/](#) [5/](#)

Example: M83726/21-001

Suspension of inspections: Group B and group C inspections may be suspended at the discretion of the qualifying activity.

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[4/](#) Relays numbered prior to the date of this specification shall be considered interchangeable (store and issue).

[5/](#) For dash numbers refer to [table I](#).

NOTE: As of 15 June 1999, [MIL-PRF-83726](#) no longer specifies Quality Levels, but existing order configurations may still include them. Relays with a "W" quality level indicator at the end are interchangeable with relays without a quality level letter.

Changes from previous issue. The margins of this specification are marked with a vertical line to indicate where changes from the previous issues were made. This was done as a convenience only and the Government assumes no liability whatsoever for an inaccuracies in these notations. Bidders and contractors are cautioned to evaluate the requirements of this document based on the entire content irrespective of the marginal notations and relationship to the last previous issue.

Referenced documents. In addition to [MIL-PRF-83726](#), this document references the following:

[MIL-STD-202](#)  
[MIL-STD-461](#)  
[MIL-STD-704](#)  
[MIL-STD-1686](#)

[MIL-STD-883](#)  
[MIL-STD-1285](#)  
[MIL-PRF-55182](#)

Custodians:  
Air Force - 85  
DLA – CC

Preparing activity:  
DLA - CC

Review activity:  
Air Force - 19

(Project 5945-2016-006)

NOTE: The activities listed above were interested in this document as of the date of this document. Since organizations and responsibilities can change, please verify the currency of the information above using the ASSIST Online database at <https://assist.dla.mil/>.