

SPDT SUBMINIATURE POWER RELAY

FEATURES

- 5 kV dielectric strength, 10 kV surge
- 8 mm creepage and clearance
- Proof tracking index (PTI/CTI) 250
- 5 A switching capability (high capacity version: 10 A)
- 20 A high inrush current (1 Form A)
- Epoxy sealed version available
- UL Class F insulation (155°C) standard
- EN 60335-1 (GWT) approved version available
- Reinforced insulation, EN 60730-1 (VDE 0631, part 1), 1 Form A: EN 60335-1 (VDE 0700, part 1)
- UL, CUR file E44211
- VDE certificate 40006815



CONTACTS

Arrangement	SPST (1 Form A), SPDT (1 Form C)
Ratings (max.)	(resistive load)
switched power	150 W or 1250 VA
switched current	5 A
switched voltage	30 VDC* or 400 VAC
High cap. version	
switched power	150 W or 2500 VA
switched current	10 A
switched voltage	30 VDC* or 400 VAC

* Note: If switching voltage is greater than 30 VDC, special precautions must be taken. Please contact the factory.

Rated Loads

UL	1 Form A 5 A at 250 VAC, resistive, 100k cycles 5 A at 30 VDC, resistive, 100k cycles 3 A at 250 VAC, cos phi 0.4, 100k cycles 1/8 HP at 125/250 VAC, 100k cycles C300 pilot duty, 125/250 VAC, 100k cycles TV-2 at 120 VAC 1 Form C 3 A at 250 VAC, resistive, 100k cycles 3 A at 30 VDC, resistive, 100k cycles
VDE	1 Form A 5 A at 250 VAC, 85°C, 100k cycles 2 A at 250 VAC, cos phi 0.5, 85°C, 30k cycles 3 A at 400 VAC, 85°C, 100k cycles * 5 A at 30 VDC, 85°C, 10k cycles * sensitive coil version only 1 Form C 3 A at 250 VAC, 85°C, 100k cycles 5 A at 250 VAC, 85°C, 100k cycles ** 2 A at 250 VAC, cos phi 0.5, 85°C, 30k cycles ** ** change-over contact tested as make contact
High cap. version	
UL	10 A at 250 VAC, resistive, 85°C, 100k cycles 15 A at 120 VAC, resistive, 70°C, 6k cycles B300 pilot duty, 40°C 1000 W, 250 VAC, tungsten load, 40°C, 6k cycles
VDE	10 A at 250 VAC, 85°C, 15k cycles 6 A at 250 VAC, 85°C, 100k cycles *** *** standard coil version only

Contact materials Silver nickel (standard version)
Silver tin oxide (high capacity version)
Gold plating available

Initial resistance < 100 mΩ

GENERAL DATA

Life Expectancy	(minimum operations)
Mechanical	1 x 10 ⁶
Electrical	1 x 10 ⁵ at 5 A 250 VAC resistive
High cap. version	
Mechanical	1 x 10 ⁶
Electrical	1 x 10 ⁵ at 10 A 250 VAC resistive
Operate Time	8 ms (max.) at nominal coil voltage
Release Time	4 ms (max.) at nominal coil voltage, without coil suppression
Dielectric Strength	(at sea level for 1 min.) 5000 V _{RMS} coil to contact 1000 V _{RMS} between open contacts
Surge voltage	Coil to contact 10,000 V (at 1.2 x 50 μs)
Insulation Resistance	1000 MΩ (min.) at 20°C, 500 VDC, 50% RH
Insulation	(according to DIN VDE 0110, IEC 60664-1) C250 Overvoltage category: III Pollution degree: 3 Nominal voltage: 250 VAC
Temperature Range	(at nominal coil voltage) Operating -40°C (-40°F) to 85°C (185°F)
Vibration resistance	1.5 mm (0.062") DA at 10–55 Hz N.C. contact: 0.6 mm (0.024") if vibration is in length direction
Shock	10 g operating, 100 g damage
Enclosure	P.B.T. polyester Type flux proof, wash tight Material group IIIa
Terminals	Tinned copper alloy, P. C.
Soldering	Max. Temperature 270°C (518°F) Max. Time 5 seconds
Cleaning	Max. Solvent Temp. 80°C (176°F) Max. Immersion Time 30 seconds
Dimensions	Length 17.85 mm (0.703") Width 10.35 mm (0.407") Height 12.95 mm (0.510")
Weight	4.6 grams (approx.)
Packing unit in pcs	100 per tray / 1000 per carton box
Compliance	UL 508, IEC 61810-1, IEC60335-1 (GWT), RoHS, REACH

AZ770

COIL

Nominal coil DC voltages	see coil voltage specifications tables
Dropout	> 5% of nominal coil voltage
Nominal power	(approx.)
standard coil	450 mW
sensitive coil - standard version	200 mW
sensitive coil - high cap. Version	230 mW
Power at pickup voltage	(typ.)
standard coil	253 mW
sensitive coil - standard version	113 mW
sensitive coil - high cap. Version	130 mW
Max. continuous dissipation	760 mW at 20°C (68°F) ambient
Temperature Rise	(at nominal coil voltage)
standard coil	41 K (74°F)
sensitive coil - standard version	22 K (40°F)
sensitive coil - high cap. Version	27 K (49°F)
Max. temperature	155°C (311°F)

COIL VOLTAGE SPECIFICATIONS

Standard Coil

Nominal Coil VDC	Must Operate VDC	Max. Continuous VDC	Resistance Ohm ± 10%
3	2.25	3.9	20
5	3.75	6.6	55
6	4.5	7.8	80
9	6.75	11.7	180
12	9.0	15.6	320
18	13.5	23.4	720
24	18.0	31.2	1280
48	36.0	62.4	5120

Sensitive Coil - Standard Version

Nominal Coil VDC	Must Operate VDC	Max. Continuous VDC	Resistance Ohm ± 10%
3	2.25	5.1	45
5	3.75	8.5	125
6	4.5	10.2	180
9	6.75	15.3	400
12	9.0	20.4	720
18	13.5	30.6	1600
24	18.0	40.8	2800

Sensitive Coil - High Capacity Version

Nominal Coil VDC	Must Operate VDC	Max. Continuous VDC	Resistance Ohm ± 10%
3	2.25	5.1	38
5	3.75	8.5	108
6	4.5	10.2	155
9	6.75	15.3	350
12	9.0	20.4	620
18	13.5	30.6	1390
24	18.0	40.8	2480
48	36.0	81.6	9920

ORDERING DATA

Standard Version

AZ770-□□-□□D□□□□□□

Material option

nil: standard version
GW: EN 60335-1 (GWT) approved

Plating option

nil: non plated
G: Gold plating

Footprint

nil: Type 1 footprint
K: Type 2 footprint

Sealing option

nil: non sealed
E: sealed version

Coil option

nil: standard coil
S: sensitive coil (1 Form A contacts only)

Nominal coil voltage

see coil voltage specifications tables

Contact arrangement

1A: 1 Form A (SPST)
1C: 1 Form C (SPDT)

High Capacity Version

AZ770T-1AE-□□D□□□□□□

Material option

nil: standard version
GW: EN 60335-1 (GWT) approved

Plating option

nil: non plated
G: Gold plating

Footprint

nil: Type 1 footprint
K: Type 2 footprint

Sealing option

nil: non sealed
E: sealed version

Coil option

nil: standard coil
S: sensitive coil

Nominal coil voltage

see coil voltage specifications tables

Contact arrangement

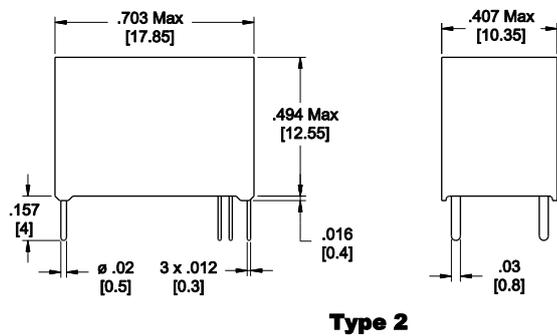
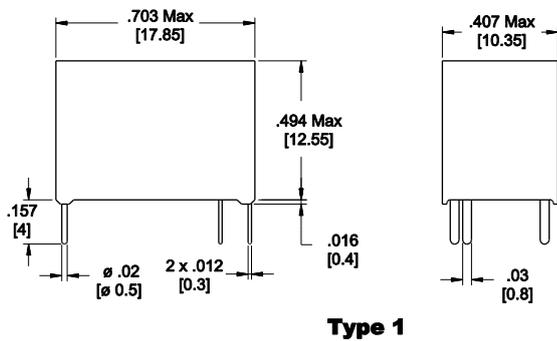
1A: 1 Form A (SPST)

Example ordering data

AZ770-1A-5D	Standard version, 1 Form A, 5 VDC nominal coil voltage, standard coil, non sealed, type 1 footprint, non gold plated
AZ770-1C-12DSEG	Standard version, 1 Form C, 12 VDC nominal coil voltage, sensitive coil, sealed, type 1 footprint, gold plated
AZ770T-1AE-24DS	High capacity version, 1 Form A, 24 VDC nominal coil voltage, sensitive coil, non sealed, type 1 footprint, non gold plated
AZ770-1A-9DSGW	Standard version, 1 Form A, 9 VDC nominal coil voltage, sensitive coil, EN 60335-1 (GWT) approved

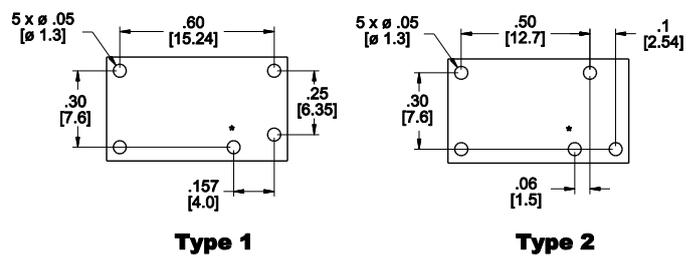
MECHANICAL DATA

Dimensions in inches with metric equivalents in parentheses. Tolerance: $\pm .010$ "



PC BOARD LAYOUT

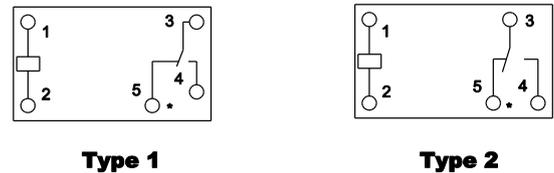
Viewed towards terminals



* Not used on 1 Form A version

WIRING DIAGRAMS

Viewed towards terminals



* Not used on 1 Form A version

NOTES

1. Specifications subject to change without notice.
2. All values at 20°C (68°F) unless otherwise stated.
3. Relay may pull in with less than "Must Operate" value.
4. Coil suppression circuits such as diodes, etc. in parallel to the coil will lengthen the release time.

DISCLAIMER

This product specification is to be used in conjunction with the application notes which can be downloaded from www.ZETTLERelectronics.com/pdfs/relais/ApplicationNotes.pdf

The specification provides an overview of the most significant part features. Any individual applications and operating conditions are not taken into consideration. It is recommended to test the product under application conditions. Responsibility for the application remains with the customer. Proper operation and service life cannot be guaranteed if the part is operated outside the specified limits.