

AXICOM

Telecom-, Signal and RF Relays

FP2 Relay

FP2 Relay

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The dimensions in this datasheet are for reference purpose only and are subject to change without notice. Specifications are subject to change without notice.

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FP2 Relay

2 pole telecom / signal relay
Through Hole Type (THT), polarized.

Relay types: non-latching with 1 coil
 latching with 1 coil
 latching with 2 coils

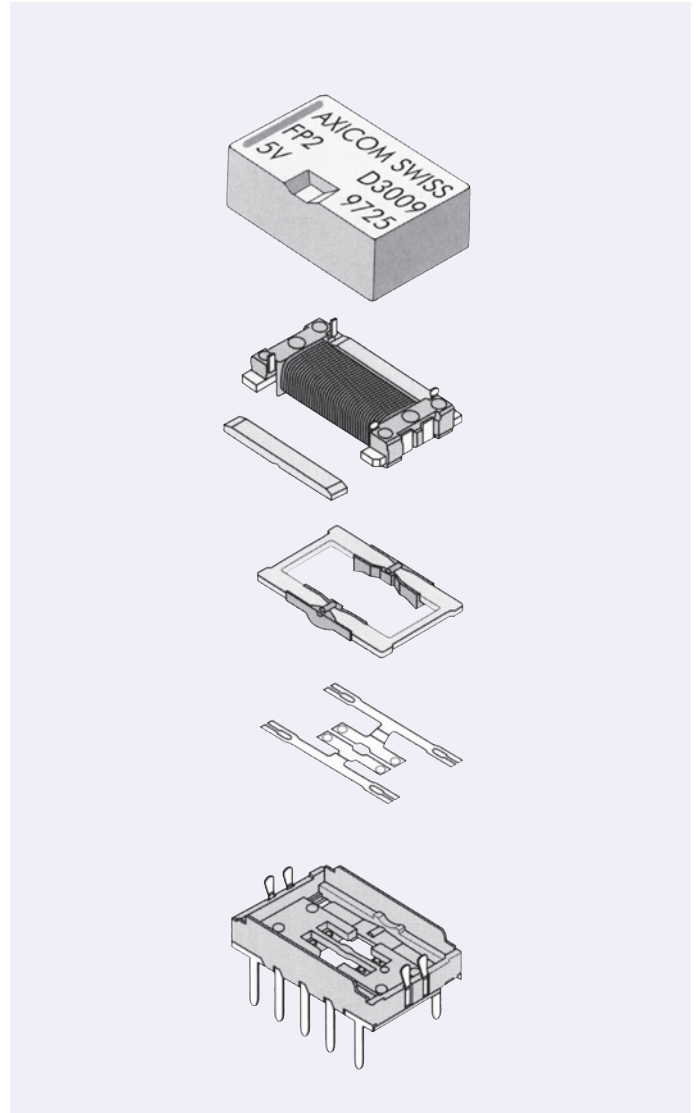
ROHS compliant (Directive 2002/95/EC) as
per product date code 0336.

Features

- Telecom/signal relay (dry circuit, test access, ringing)
- Slim line 14 x 9 mm, 0.551 x 0.354 inch
- Switching current 2 A
- 2 changeover contacts (2 form C / DPDT)
- Bifurcated contacts
- High sensitivity results in low nominal power consumption 80 mW for high sensitive, 140 mW for sensitive version
- High mechanical shock resistance
up to 300 G functional
up to 1500 G survival

Typical applications

- Communications equipment
Linecard application - analog, ISDN, xDSL, PABX
Voice over IP
- Office and business equipment
- Measurement and control equipment
- Consumer electronics
Set top boxes, HiFi
- Medical equipment



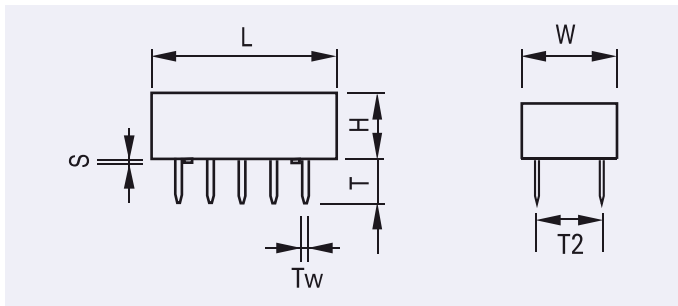
FP2 Relay

Dimensions

Dimensions in mm

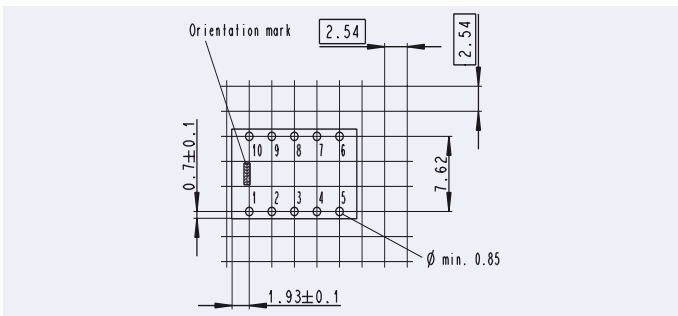
THT		
	mm	inch
L	14.00 ± 0.05	0.551 ± 0.002
W	9.00 ± 0.05	0.354 ± 0.002
H	5.00 ± 0.10	0.196 ± 0.004
T	3.20 + 0.30	0.125 ± 0.012
T1	N/A	N/A
T2	7.62 ± 0.15	0.299 ± 0.006
Tw	0.50	0.019
S	0.25 ± 0.05	0.009 ± 0.002

THT Version



Mounting hole layout

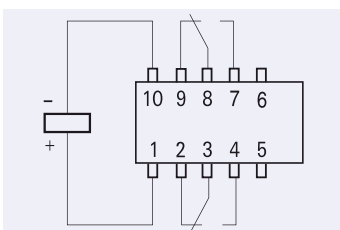
View onto the component side of the PCB (top view)



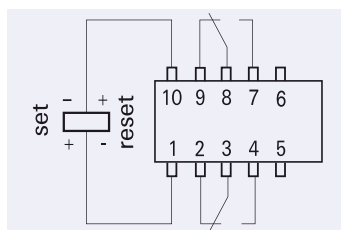
Terminal assignment

Relay – top view

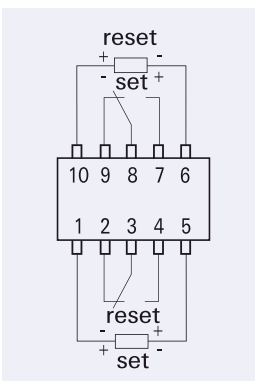
Non-latching type
not energized condition



Latching type
reset condition



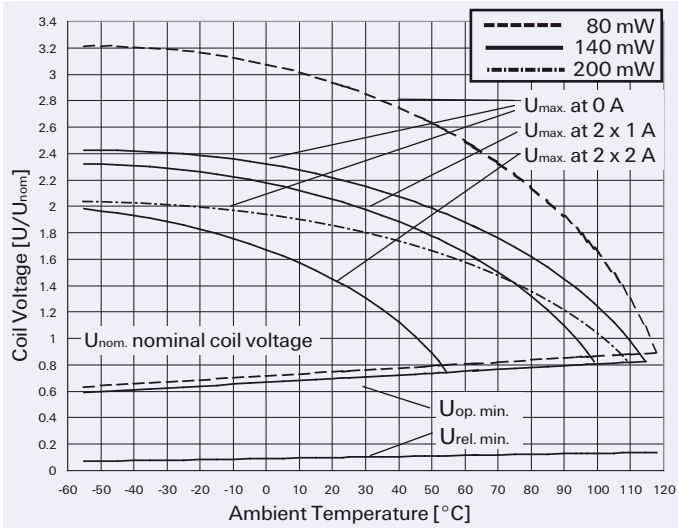
Latching, 2 coils
reset condition



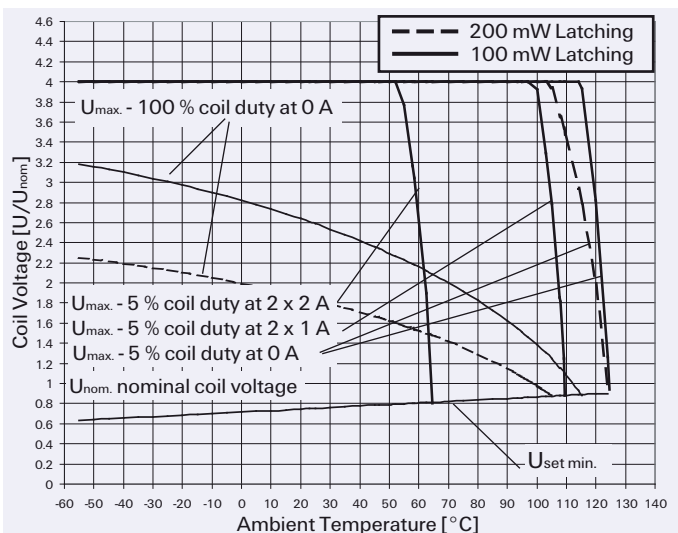
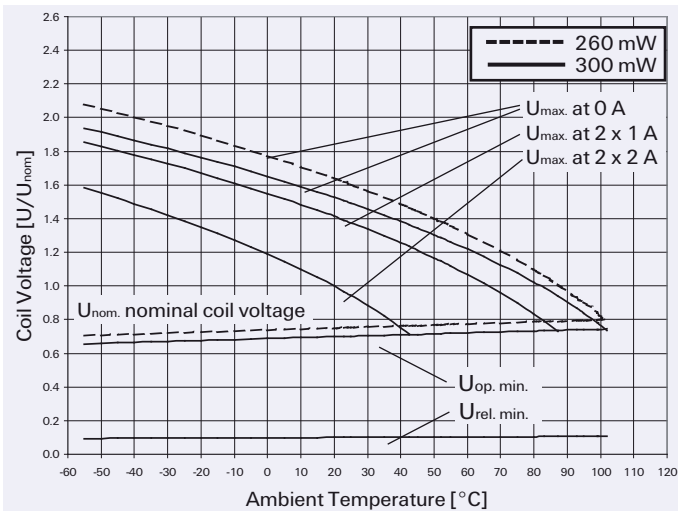
Contacts in reset
position. Both coils
can be used as either set or
reset coils.

FP2 Relay

Coil Operating Range



- U_{nom} = Nominal coil voltage
- U_{max} = Upper limit of the operative range of the coil voltage (limiting voltage)
- $U_{op. min.}$ = Lower limit of the operative range of the coil voltage (reliable operate voltage)
- For latching relays $U_{set min.}$ resp. $U_{reset min.}$
- $U_{rel. min.}$ = Lower limit of the operative range of the coil voltage (reliable release voltage)



FP2 Relay

Coil Data (values at 23 °C)

Ordering Information

Nominal voltage U_{nom}	Operate/set voltage range		Release/ reset voltage Minimum	Coil power	Coil Resistance	Relay code	Tyco part number
	Minimum voltage U_{min}	Maximum voltage U_{max}					
Vdc	Vdc	Vdc	Vdc	mW	$\Omega / \pm 10\%$		

Non-Latching, 1 coil

3	2.10	6.60	0.30	140	64	D 3006	1-1462033-3
4.5	3.15	9.90	0.45	140	145	D 3004	1462033-9
5	3.50	11.00	0.50	140	178	D 3009	1-1462033-4
6	4.20	13.20	0.60	140	257	D 3005	1-1462033-1
9	6.30	19.80	0.90	140	574	D 3010	2-1462033-1
12	8.40	26.40	1.20	140	1028	D 3002	1462033-5
24	16.80	44.30	2.40	200	2880	D 3012	2-1462033-2
48	33.60	72.30	4.80	300	7680	D 3013	2-1462033-6

High Sensitive Version, Non-Latching 1 coil

3	2.25	8.70	0.30	80	113	D 3021	3-1462033-2
4.5	3.38	13.10	0.45	80	253	D 3022	3-1462033-3
5	3.75	14.60	0.50	80	313	D 3023	3-1462033-4
6	4.50	17.50	0.60	80	450	D 3024	3-1462033-5
9	6.75	24.20	0.90	80	1013	D 3025	3-1462033-6
12	9.00	35.00	1.20	80	1800	D 3026	3-1462033-7
24	18.00	52.80	2.40	140	4114	D 3027	3-1462033-8
48	36.00	77.60	4.80	260	8882	D 3028	3-1462033-9

Latching, 1 coil

3	2.25	7.80	-2.25	100	90	D 3041	4-1462033-0
4.5	3.38	11.70	-3.38	100	203	D 3042	4-1462033-1
5	3.75	13.00	-3.75	100	250	D 3043	4-1462033-2
6	4.50	15.60	-4.50	100	360	D 3044	4-1462033-3
9	6.75	23.50	-6.75	100	810	D 3045	4-1462033-4
12	9.00	31.30	-9.00	100	1440	D 3046	4-1462033-5
24	18.00	47.50	-18.00	150	3840	D 3047	4-1462033-6

Latching, 2 coils

3	2.10	5.50	2.10	200	45	D 3061	4-1462033-7
4.5	3.15	8.30	3.15	200	101	D 3062	4-1462033-8
5	3.20	7.20	3.50	200	125	D 3063	4-1462033-9
6	4.20	11.10	4.20	200	180	D 3064	5-1462033-0
9	6.30	16.80	6.30	200	405	D 3065	5-1462033-1
12	8.40	28.10	8.40	200	720	D 3066	5-1462033-4
24	16.80	44.30	16.80	300	1920	D 3067	5-1462033-6

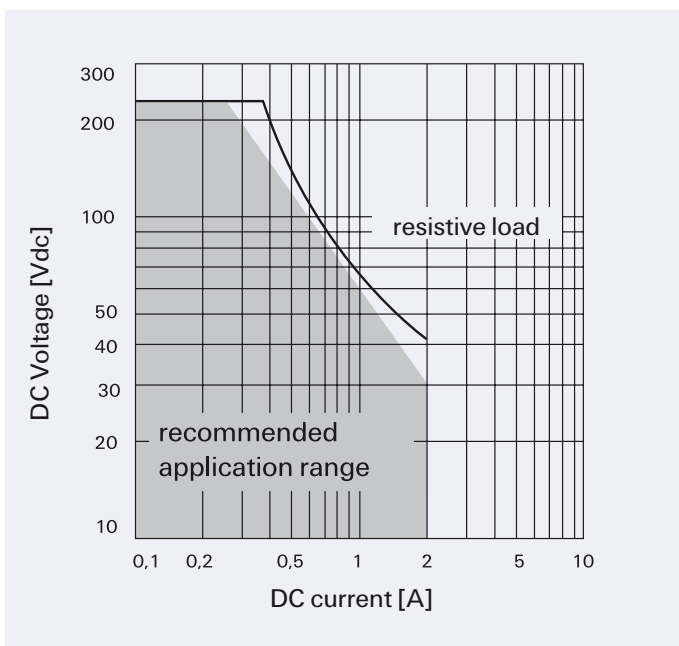
Further coil versions are available on request.

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Contact Data

Number of contacts and type	2 changeover contacts
Contact assembly	Bifurcated contacts
Contact material	Silver-nickel, gold covered
Limiting continuous current at max. ambient temperature	2 A
Maximum switching current	2 A
Maximum switching voltage	220 Vdc 250 Vac
Maximum switching capacity	60 W, 62.5 VA
Thermoelectric potential	< 10 μ V
Minimum switching voltage	100 μ V
Initial contact resistance / measuring condition: 10 mA / 20 mV	< 50 m Ω
Electrical endurance at contact application 0 (≤ 30 mV / ≤ 10 mA) at cable load open end at 125 Vdc / 0.24 A - 30 W at 250 Vac / 0.25 A - 62.5 VA at 24 V / 1.25 A - 30 W	min. 2.5 x 10 ⁶ operations min. 2.0 x 10 ⁶ operations min. 1.0 x 10 ⁵ operations min. 1.0 x 10 ⁵ operations min. 3.0 x 10 ⁵ operations
Mechanical endurance	typ. 10 ⁸ operations
UL contact ratings	220 Vdc / 0.24 A - 60 W 125 Vdc / 0.24 A - 30 W 250 Vac / 0.25 A - 62.5 VA 125 Vac / 0.5 A - 62.5 VA 30 Vdc / 2 A - 60 W

Max. DC Load Breaking Capacity



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Insulation

Insulation resistance at 500 Vdc	> 10 ⁹ Ω
Dielectric test voltage (1 min)	
between coil and contacts	1000 Vrms
between adjacent contact sets	1000 Vrms
between open contacts	750 Vrms
Surge voltage resistance	
according IEC (10 / 700 μs)	
between coil and contacts	1500 V
between adjacent contact sets	1500 V
between open contacts	1500 V
according to FCC 68 (10 / 160 μs)	
between coil and contacts	1500 V
between adjacent contact sets	1500 V
between open contacts	1500 V

High Frequency Data

Capacitance	
between coil and contacts	max. 4 pF
between adjacent contact sets	max. 1 pF
between open contacts	max. 1 pF
RF Characteristics	
Isolation at 100 MHz / 900 MHz	- 40.2 dB / - 22.3 dB
Insertion loss at 100 MHz / 900 MHz	- 0.03 dB / - 0.25 dB
V.S.W.R. at 100 MHz / 900 MHz	1.01 / 1.07

General Data

Operate time at U _{nom} typ. / max.	3 ms / 4 ms
Reset time (latching) at U _{nom} , typ. / max.	3 ms / 4 ms
Release time without diode in parallel (non-latching), typ. / max.	1 ms / 3 ms
Release time with diode in parallel (non-latching), typ. / max.	3 ms / 4 ms
Bounce time at closing contact, typ. / max.	1 ms / 5 ms
Maximum switching rate without load	50 operations/s
Ambient temperature	-55 °C ... +85 °C
Thermal resistance	< 150 K/W
Maximum permissible coil temperature	125 °C
Vibration resistance (function)	20 G 10 to 500 Hz
Shock resistance, half sinus, 11 ms	50 G (function) 1500 G (damage)
Degree of protection / Environmental protection	immersion cleanable, IP 67 / RT III
Needle flame test	application time 20 s, no burning or glowing
Mounting position	any
Processing information	Ultrasonic cleaning is not recommended
Weight (mass)	max. 2 g
Terminal surface	SnCu 0.7
Resistance to soldering heat	265 °C / 10 s

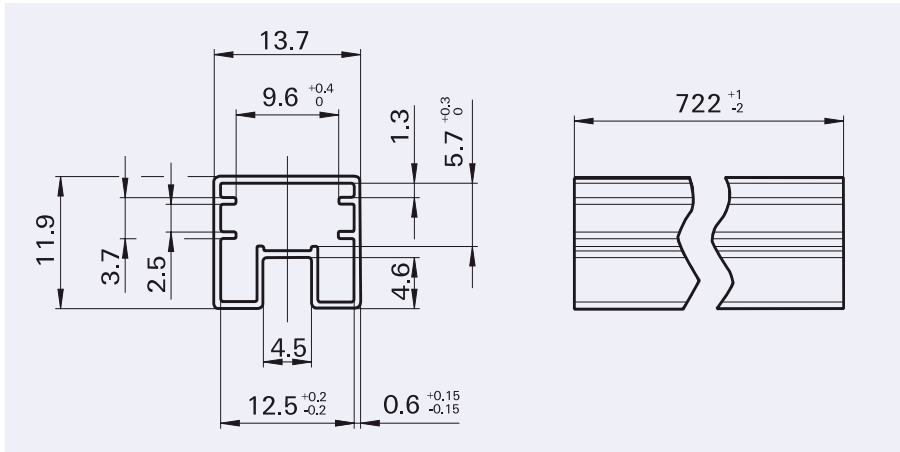
All data refers to 23 °C unless otherwise specified.

FP2 Relay

Packing

Dimensions in mm

Stick dimension



Tube for THT version
50 relays per stick
1000 relays per box