Small Relay W11

V23101

1 changeover contact

PCB relay for DC operation, non-polarized, monostable

Features

- General-application relay
- Small size permitting high packing density
- High vibration resistance
  (10 to 38 Hz: 3.3 mm double amplitude
  38 to 200 Hz: 10 g)
- High shock resistance
  30 g for sensitive and standard version
- Sensitive version usable up to an ambient temperature of 85 °C

ECR0987-Y

Approx. 1.5 x original size

Typical applications

- Security devices
- Electric door openers
- Duplex intercommunication systems
- Measurement and control

Version

– Monostable, 1 winding
  or
  bistable, 1 winding, on request
– Terminal assignments symmetrical
  or asymmetrical
  and
  5- or 6-pin version
– For 1 A or 3 A continuous current
– Standard or sensitive
– For printed circuit assembling
– Plastic case
– Immersion cleanable

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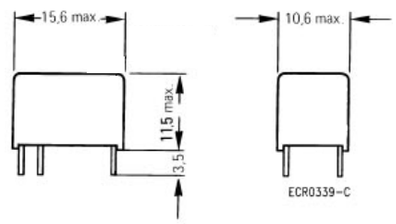
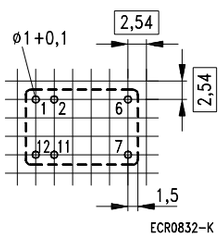
Dimension drawing (in mm)

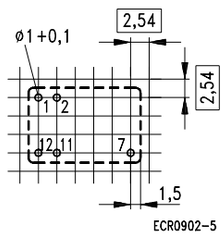


Mounting hole layout
View on the terminals

Version: 6 pins



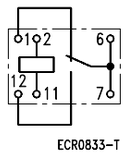
Version: 5 pins (without pin no. 6)



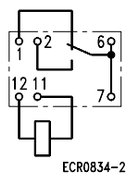
Basic grid 2.54 mm according to EN 60097 and DIN 40803, average

Terminal assignment
View on the terminals

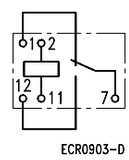
Terminal assignment A symmetrical
Version: 6 pins



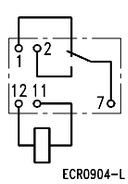
Terminal assignment B asymmetrical
Version: 6 pins



Version: 5 Pins



Version: 5 Pins



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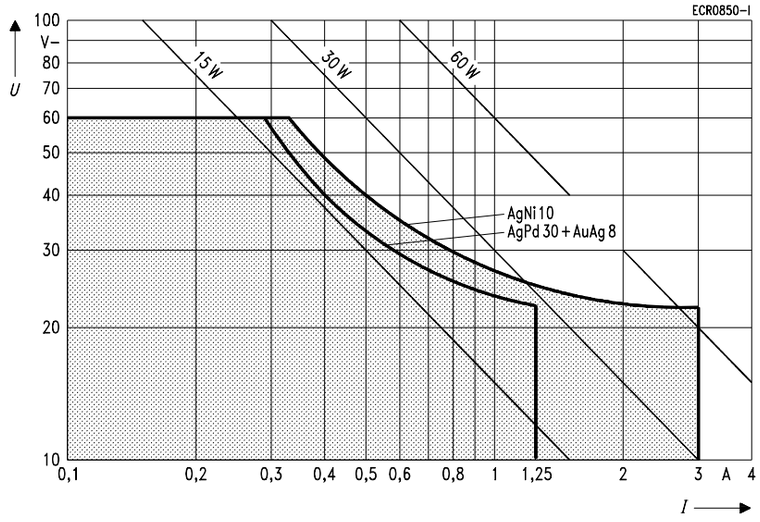
Contact data		
Ordering code block 3	A201 or B201	A301 or B301
Contact material	AgPd, gold-plated	AgNi 10
Max. continuous current at max. ambient temperature	1 A	3 A
Maximum switching voltage	60 V– 125 V~	
Maximum switching capacity DC voltage *) AC voltage	 30 W 60 VA	 72 W 360 VA
Recommended for load voltages greater than	1 V	5 V
Contact resistance (initial value) / measuring current / driver voltage	100 mΩ / 10 mA / 20 mV	100 mΩ / 100 mA / 6 V

*) see also load limit curve

Load limit curve



I = switching current
U = switching voltage
■ = recommended application field

Load limit curve: Quenching of the arc before the transit time

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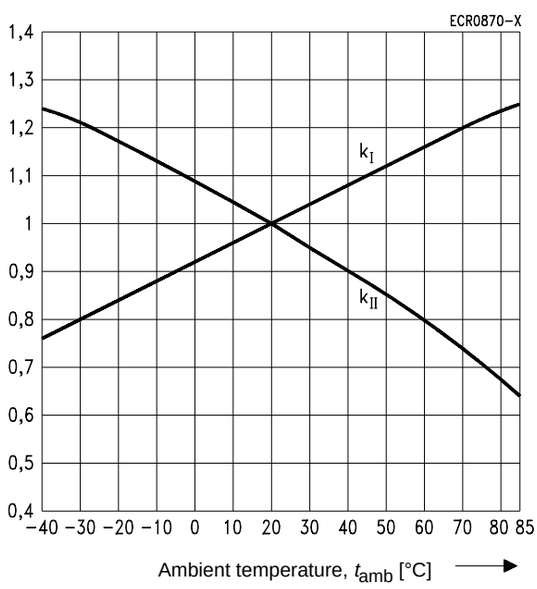
Coil data	
Nominal voltages	From 5 V– to 24 V–
Typical nominal power consumption standard version sensitive version	 450 mW 200 mW
Operative range/pickup class according to IEC 255-1-00 and VDE 0435 Part 201	1/a
Maximum operating voltage standard version sensitive version	 70% of the nominal voltage 75% of the nominal voltage
Minimum release voltage	10% of the nominal voltage

U_I = Minimum voltage at 20 °C after pre-energizing with nominal voltage without contact current
U_{II} = Maximum continuous voltage at 20 °C

The operating voltage limits U_I and U_{II} are dependent on the temperature according to the formulae:

$U_{I\ tamb} = k_I \cdot U_{I\ 20\ °C}$
and
$U_{II\ tamb} = k_{II} \cdot U_{II\ 20\ °C}$

t_{amb} = Ambient temperature
$U_{I\ tamb}$ = Minimum voltage at ambient temperature, t_{amb}
$U_{II\ tamb}$ = Maximum voltage at ambient temperature, t_{amb}
k_I a. k_{II} = Factors (temperature dependent), see diagram



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Coil versions

Nominal voltage U_{nom} V–	Operating voltage range at 20 °C		Resistance at 20 °C	Coil number Ordering code block 2
	Minimum voltage, U_{I} V–	Maximum voltage, U_{II} V–	Ω	
Standard version				
1.5	1.25	2.6	6 ± 0.6	001
3	2.1	4.7	20 ± 2	002
5	3.5	7.9	56 ± 5.6	003
6	4.2	9.5	80 ± 8	004
9	6.3	14.2	180 ± 18	005
12	8.4	19.0	320 ± 32	006
24	16.8	38.0	1280 ± 128	007
Sensitive version				
1.5	1.13	3.6	12 ± 1.2	101
3	2.25	7.1	45 ± 4.5	102
5	3.75	11.6	120 ± 12	103
6	4.5	14.2	180 ± 18	104
9	6.75	21.2	400 ± 40	105
12	9.0	28.0	700 ± 70	106
24	18.0	56.0	2800 ± 280	107

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General data		
Version	standard	sensitive
Operate time at U_{nom} and 20 °C, typ.	5 ms	
Release time without/with parallel diode, typ.	3/10 ms	
Maximum switching rate without load	20 operations/s	
Ambient temperature according to IEC 255-1-00 or VDE 0435 Part 201	-40 °C ... +70 °C	-40 °C ... +85 °C
Thermal resistance	125 K/W	
Maximum permissible coil temperature	130 °C	
Vibration resistance (function), Frequency range according to IEC 68-2-6	10 to 38 Hz: 3.3 mm double amplitude 38 to 200 Hz: 10 g	
Shock resistance, half sinus, 11 ms according to IEC 68-2-27	30 g (function), 100 g (damage)	
Degree of protection according to IEC 529 / VDE 0470 Part 1	immersion cleanable, IP 67	
Mechanical endurance	approx. 10^7 operations	
Mounting position	any	
Processing information	Ultrasonic cleaning is not recommended	
Weight	approx. 4 g	

Electrical endurance

Coil version	Switching voltage	Switching current A	Operations (approx.)	Load type	Endurance determined by operations/s
Contact material: AgPd, gold-plated					
standard	24 V–	1	3×10^5	resistive	0.1
	120 V~	0.5	1.5×10^5	resistive	0.1
sensitive	24 V–	1	2×10^5	resistive	0.1
	120 V~	0.5	1×10^5	resistive	0.1
Contact material: AgNi 10					
standard	24 V–	2.5	2×10^5	resistive	0.1
	120 V~	1	4×10^5	resistive	0.1
sensitive	24 V–	2.5	1×10^5	resistive	0.1
	120 V~	1	3×10^5	resistive	0.1

Insulation	
Insulation resistance at 500 V	$\geq 10^9\ \Omega$
Dielectric test voltage (1 min) Contact / winding at open contact	 1000 $V\sim_{rms}$ 750 $V\sim_{rms}$

Small Relay W11

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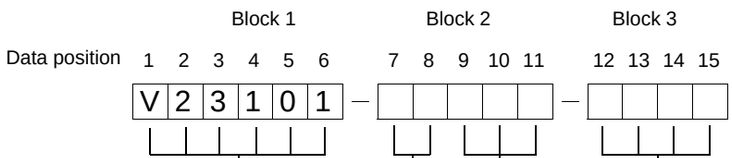
Ordering code



Identification of the
Small Relay W11 - 1 changeover contact

Pin version

D0 = Standard 6 pins
D1 = 5-pin version (without pin no. 6)

Coil number

Standard version
001 = 1.5 V nominal voltage
002 = 3 V
003 = 5 V
004 = 6 V
005 = 9 V
006 = 12 V
007 = 24 V

Sensitive version
101 = 1.5 V nominal voltage
102 = 3 V
103 = 5 V
104 = 6 V
105 = 9 V
106 = 12 V
107 = 24 V

Contact assembly / material

A201 = Terminal assignment A,
AgPd, gold-plated

B201 = Terminal assignment B,
AgPd, gold-plated

A301 = Terminal assignment A,
AgNi 10

B301 = Terminal assignment B,
AgNi 10

Ordering example: V23101-D0104-B201
Small relay W11 - 1 changeover contact, standard pin version (6 pins), sensitive version, coil 6 V nominal voltage, terminal assignment B, contact material AgPd, gold-plated

Note:
Special designs can be carried out to customer specifications. Please contact your local representative. The addresses are given below.