

**Miniature Power PCB Relay MSR**

- 1 pole 8 / 10 A, 1CO or 1NO contact
- High inrush currents with AgSnO contacts (TV4 = 65 A)
- 4 kV/8 mm coil-contact
- Reinforced insulation (protection class II)
- Ambient temperature up to 85°C at 8 A
- Plastic materials according to IEC60335-1 (domestic appliances)
- RoHS compliant (Directive 2002 / 95 / EC) as per product date code 0404



FD143-C

**Applications**

HVAC, interface technology, power supplies, TV-/Monitor control, computer-/communication technology, domestic appliances, Hi-Fi products, timers

**Approvals**

VDE REG.-Nr. 3919, **CE** US E214024  
 Technical data of approved types on request

**Contact data**

Contact configuration	1CO or 1NO
Contact set	single contact
Type of interruption	micro disconnection
Rated current	versions A,B: 8 A versions C,D: 10 A
Rated voltage / max.switching voltage AC	240/400 VAC
Maximum breaking capacity AC	2000 VA
Limiting making capacity, max 20 ms max 4 s, duty factor 10%	A302: 65 A 15 A 15 A
Contact material	AgSnO <sub>2</sub> , AgCdO AgNi0,15*
Mechanical endurance	10x10 <sup>6</sup> cycles
Rated frequency of operation with / without load	6 / 1200 min <sup>-1</sup>

\*not recommended for AC loads with arcing (CC2 according EN61810-2)

**Contact ratings**

Type	Load	Cycles
V23061-A1***-A302	8 A, 250 VAC, resistive load, 85°C, 1 mm mounting distance, 6 cycles min <sup>-1</sup> , 50% duty factor, EN61810-1	100x10 <sup>3</sup>
V23061-C2***-A302	10 A, 250 VAC, resistive load, 85°C, 0 mm mounting distance, 6 cycles min <sup>-1</sup> , 50% duty factor, EN61810-1	10x10 <sup>3</sup>
V23061-C2***-A302	5 A, 250 VAC, resistive load, 105°C, 0 mm mounting distance, 6 cycles min <sup>-1</sup> , 50% duty factor, EN61810-1	100x10 <sup>3</sup>
V23061-A1***-A302	TV-4 Tungsten, 120 VAC, UL508	25x10 <sup>3</sup>
V23061-*****-A30*	240 VAC, A300, Pilot duty, UL508	6x10 <sup>3</sup>

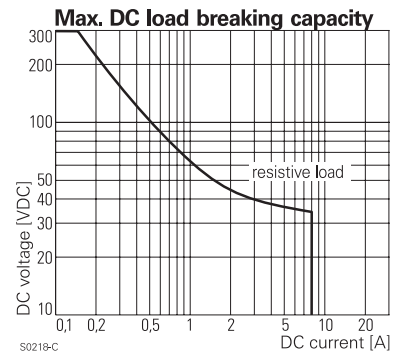
**Coil data**

Rated coil voltage range DC coil	3...60 VDC
Coil power DC coil	typ. 220 mW
Operative range	2
Coil insulation system according UL1446	Class A, Class F

**Coil versions, DC-coil**

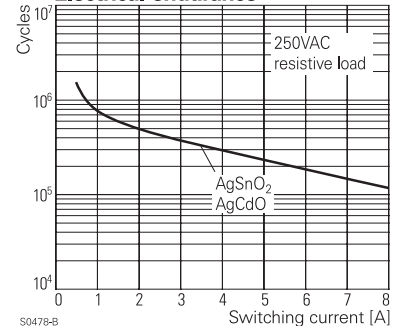
Coil code	Rated voltage VDC	Operate voltage VDC	Release voltage VDC	Coil resistance Ohm	Rated coil power mW
001	3	2.1	0.3	40±10%	225
002	5	3.4	0.5	118±10%	212
003	6	4.1	0.6	165±10%	218
004	9	6.1	0.9	364±10%	223
005	12	8.2	1.2	652±10%	221
007	24	16.3	2.4	2270±10%	254
009	48	32.6	4.8	8790±10%	262
010	60	40.8	6.0	15265±15%	236

All figures are given for coil without preenergization, at ambient temperature +23°C  
 Other coil voltages on request



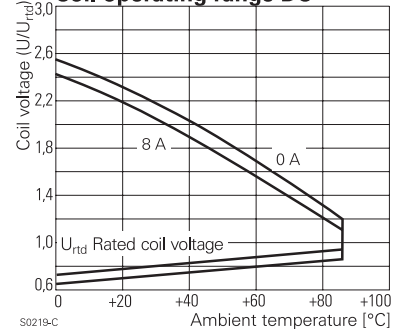
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**Electrical endurance**



S0478-B

**Coil operating range DC**



S0219-C

**Miniature Power PCB Relay MSR (Continued)**

Insulation	CO contact	NO contact
Dielectric strength coil-contact circuit	4000 V <sub>rms</sub>	
open contact circuit	1000 V <sub>rms</sub>	
Clearance / creepage coil-contact circuit	≥ 8 / 8 mms	≥ 8 / 8 mm
Material group of insulation parts	IIIb	IIIb
Insulation to IEC 60664-1		
Type of insulation coil-contact circuit	reinforced	reinforced
open contact circuit	functional	functional
Rated insulation voltage	250 V	250 V
Pollution degree	3	2
Rated voltage system	230 V	400 V
Overvoltage category	III	III

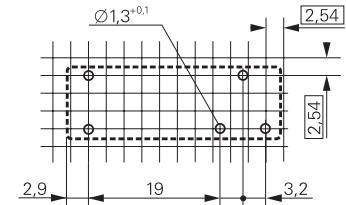
**Other data**

RoHS - Directive 2002/95/EC	compliant as per product date code 0404	
Flammability class according to UL94	V-0	
For WG version: GWFI to IEC 60335-1	> 850 °C	
GWIT to IEC 60335-1	> 775 °C	
Ambient temperature range	-40...+85°C	
Operate- / release time	6 / 2,5 ms	
Bounce time NO / NC contact	0,5 / 4 ms	
Vibration resistance (function) NO / NC contact	10 / 4 g	
Shock resistance (function) NO / NC contact	20 / 5 g	
Shock resistance (destruction)	100 g	
Category of protection	RTII-flux proof; RTIII- wash tight	
Mounting	pcb	
Mounting position	any	
Minimum mounting distance	0 mm	
Resistance to soldering heat flux-proof version	270°C / 10 s	
wash-tight version	260°C / 5s	
Relay weight	11 g	
Packaging unit	20 / 1000 pcs	

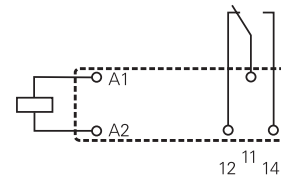
**PCB layout / terminal assignment**

Bottom view on solder pins

1 CO contact, 3,2 mm

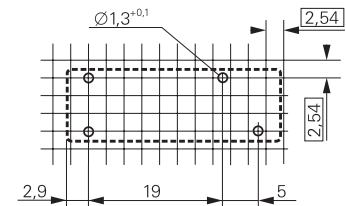


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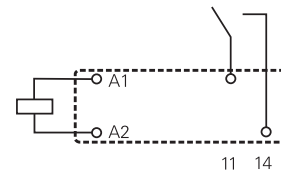


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1 NO contact, 5 mm



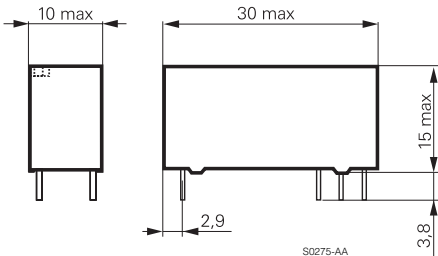
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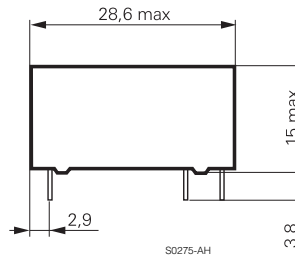
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**Dimensions**

1 CO contact, 3,2 mm



1 NO contact, 5 mm



**Miniature Power PCB Relay MSR (Continued)**

**Product key** V 2 3 0 6 1 -   - A      

Type

Version  
**A** 1 NO contact, UL-class A      **B** 1 CO contact, UL-class A  
**C** 1 NO contact, UL-class F      **D** 1 CO contact, UL-class F

Version  
**1** wash tight                              **2** flux proof

Coil  
 Coil code: please refer to coil versions table

Contact system  
**A** standard

Contact material  
**3** AgSnO<sub>2</sub>                                  **5** AgNi 0.15  
**4** AgCdO                                      **6** AgCdO, gold plated

Contact configuration  
**01** 1 CO contact                          **02** 1 NO contact

Other types on request

Product key	Version	Contacts	Contact material	Coil	Part number		
V23061-A1002-A302	wash tight	1 NO contact	AgSnO <sub>2</sub>	5 VDC	0-1393222-4		
V23061-A1002-A502			AgNi 0.15		0-1393222-6		
V23061-A1003-A302			AgSnO <sub>2</sub>	6 VDC	0-1393222-9		
V23061-A1003-A502			AgNi 0.15		1-1393222-3		
V23061-A1005-A302			AgSnO <sub>2</sub>	12 VDC	2-1393222-0		
V23061-A1005-A502			AgNi 0.15		2-1393222-7		
V23061-A1005-A602			AgCdO gold pl.	24 VDC	2-1393222-8		
V23061-A1007-A302			AgSnO <sub>2</sub>		3-1393222-9		
V23061-A1007-A502			AgNi 0.15	48 VDC	4-1393222-6		
V23061-A1007-A602			AgCdO gold pl.		4-1393222-7		
V23061-A1009-A502		1 CO contact	AgNi 0.15	60 VDC	5-1393222-7		
V23061-A1009-A602			AgCdO gold pl.		5-1393222-8		
V23061-A1010-A502			AgNi 0.15	6 VDC	6-1393222-2		
V23061-A1010-A602			AgCdO gold pl.		6-1393222-3		
V23061-B1002-A301				1 CO contact	AgSnO <sub>2</sub>	5 VDC	7-1393222-2
V23061-B1002-A501					AgNi 0.15		7-1393222-4
V23061-B1002-A601					AgCdO gold pl.	6 VDC	7-1393222-5
V23061-B1003-A501					AgNi 0.15		8-1393222-1
V23061-B1003-A601					AgCdO gold pl.	12 VDC	8-1393222-2
V23061-B1005-A301					AgSnO <sub>2</sub>		9-1393222-1
V23061-B1005-A501	AgNi 0.15	24 VDC			9-1393222-7		
V23061-B1005-A601	AgCdO gold pl.				9-1393222-9		
V23061-B1007-A301	AgSnO <sub>2</sub>	48 VDC			1-1393223-7		
V23061-B1007-A501	AgNi 0.15				2-1393223-5		
V23061-B1007-A601	AgCdO gold pl.	60 VDC	2-1393223-6				
V23061-B1009-A301	AgSnO <sub>2</sub>		3-1393223-7				
V23061-B1009-A501	AgNi 0.15	60 VDC	3-1393223-9				
V23061-B1009-A601	AgCdO gold pl.		4-1393223-0				
V23061-B1010-A501	AgNi 0.15	60 VDC	4-1393223-3				
V23061-B1010-A601	AgCdO gold pl.		4-1393223-4				
V23061-A2002-A402	flux proof	1 NO contact	AgCdO	5 VDC	6-1393222-8		
V23061-A2003-A402			6 VDC		1-1416200-9		
V23061-A2005-A402			12 VDC	2-1416200-1			
V23061-A2007-A402			24 VDC	2-1416200-3			
V23061-A2009-A402			48 VDC	2-1416200-5			
V23061-A2010-A402			60 VDC	2-1416200-6			
V23061-B2002-A401			1 CO contact		5 VDC	2-1416200-7	
V23061-B2003-A401					6 VDC	2-1416200-8	
V23061-B2005-A401					12 VDC	3-1416200-1	
V23061-B2007-A401					24 VDC	5-1393223-0	
V23061-B2009-A401	48 VDC	3-1416200-6					
V23061-B2010-A401	60 VDC	4-1416200-0					