

**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

**Applications**

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



F0143-C

**Approvals**

VDE REG.-Nr. 3919, cULus 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	A302: 65 A	
max 4 s, duty factor 10%	15 A	15 A
Contact material	AgSnO <sub>2</sub> , AgCdO	AgNiO, 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>

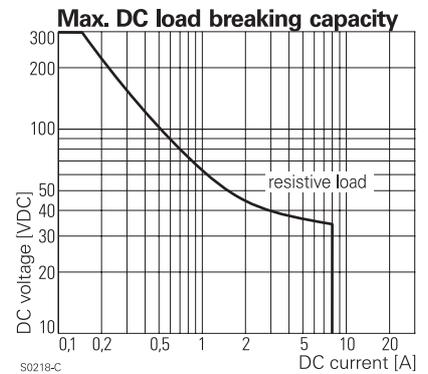
**Coil data**

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

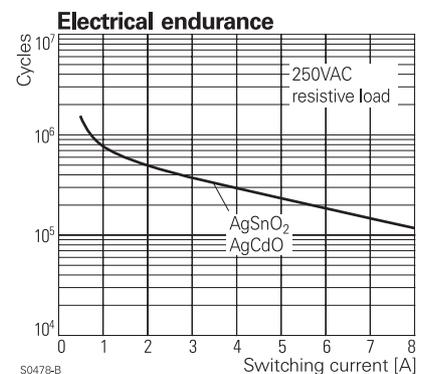
**Coil versions, DC-coil**

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

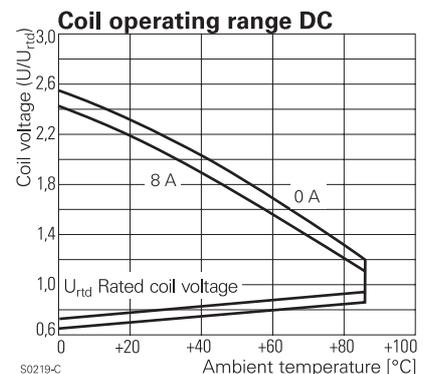
All figures are given for coil without preenergization, at ambient temperature +23°C  
Other coil voltages on request



S0218-C



S0478-B



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

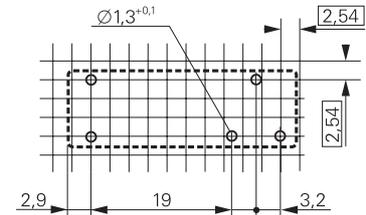
**Other data**

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	

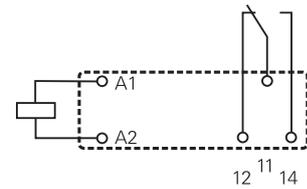
**PCB layout / terminal assignment**

Bottom view on solder pins

1 CO contact, 3,2 mm

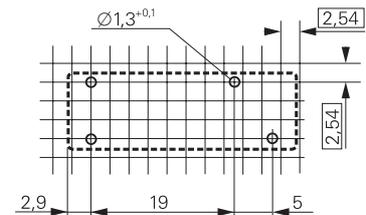


S0255-AA

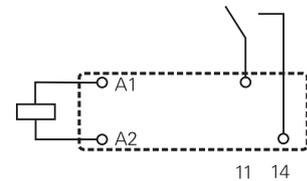


S0255-AB

1 NO contact, 5 mm



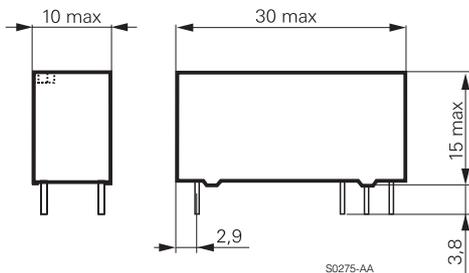
S0255-AH



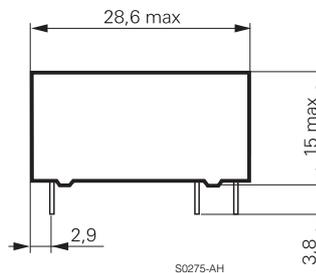
S0255-AI

**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.		2-1393222-8
V23061-A1007-A302			AgSnO <sub>2</sub>	24 VDC	3-1393222-9
V23061-A1007-A502			AgNi 0.15		4-1393222-6
V23061-A1007-A602			AgCdO gold pl.		4-1393222-7
V23061-A1009-A502			AgNi 0.15	48 VDC	5-1393222-7
V23061-A1009-A602			AgCdO gold pl.		5-1393222-8
V23061-A1010-A502			AgNi 0.15	60 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.		7-1393222-5
V23061-B1003-A501			AgNi 0.15	6 VDC	8-1393222-1
V23061-B1003-A601			AgCdO gold pl.		8-1393222-2
V23061-B1005-A301			AgSnO <sub>2</sub>	12 VDC	9-1393222-1
V23061-B1005-A501			AgNi 0.15		9-1393222-7
V23061-B1005-A601			AgCdO gold pl.		9-1393222-9
V23061-B1007-A301			AgSnO <sub>2</sub>	24 VDC	1-1393223-7
V23061-B1007-A501			AgNi 0.15		2-1393223-5
V23061-B1007-A601			AgCdO gold pl.		2-1393223-6
V23061-B1009-A301			AgSnO <sub>2</sub>	48 VDC	3-1393223-7
V23061-B1009-A501			AgNi 0.15		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

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## 8-1393222-9 Product Details



**8-1393222-9**  
(V23061B1004A601)  
TE Part Number: 8-1393222-9

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### Industrial Relays (General Purpose)

[Converted to EU RoHS but not ELV Compliant \(Statement of Compliance\)](#)

#### Product Highlights:

- MSR Series
- Contact Arrangement = 1 Form C, SPDT, 1 C/O
- Contact Current Rating = 8 Amps.
- Monostable Coil Magnetic System
- Without Coil Suppression Diode

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Documentation & Additional Information	
<p><b>Product Drawings:</b></p> <ul style="list-style-type: none"> <li>● None Available</li> </ul> <p><b>Catalog Pages/Data Sheets:</b></p> <ul style="list-style-type: none"> <li>● <a href="#">Miniature Power PCB Relay MSR</a> (PDF, English)</li> </ul> <p><b>Product Specifications:</b></p> <ul style="list-style-type: none"> <li>● None Available</li> </ul> <p><b>Application Specifications:</b></p> <ul style="list-style-type: none"> <li>● None Available</li> </ul> <p><b>Instruction Sheets:</b></p> <ul style="list-style-type: none"> <li>● None Available</li> </ul> <p><b>Instruction Sheets:</b></p> <ul style="list-style-type: none"> <li>● None Available</li> </ul> <p><b>CAD Files:</b></p> <ul style="list-style-type: none"> <li>● None Available</li> </ul>	<p><b>Additional Information:</b></p> <ul style="list-style-type: none"> <li>● <a href="#">Product Line Information</a></li> </ul> <p><b>Related Products:</b></p> <ul style="list-style-type: none"> <li>● <a href="#">Tooling</a></li> </ul>

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Product Features (Please use the Product Drawing for all design activity)	
<p><b>Product Type Features:</b></p> <ul style="list-style-type: none"> <li>● <a href="#">Termination Type</a> = Through Hole</li> </ul> <p><b>Electrical Characteristics:</b></p> <ul style="list-style-type: none"> <li>● <a href="#">Contact Current Rating (Amps.)</a> = 8</li> <li>● <a href="#">Coil Resistance (<math>\Omega</math>)</a> = 364</li> <li>● <a href="#">Coil Power, Nominal (mW)</a> = 220</li> <li>● <a href="#">Actuating System</a> = DC</li> <li>● <a href="#">Coil Power, Nominal (W)</a> = 0.22</li> <li>● <a href="#">Input Voltage (VDC)</a> = 9</li> <li>● Dielectric Strength - Coil Contacts (V rms) = 4000</li> <li>● Coil Rating = Sensitive</li> </ul> <p><b>Body Related Features:</b></p> <ul style="list-style-type: none"> <li>● <a href="#">Series</a> = MSR</li> <li>● Polarized = No</li> <li>● Enclosure Color = White</li> </ul>	<p><b>Housing Related Features:</b></p> <ul style="list-style-type: none"> <li>● Version = Pinning 3.2mm, Version for IEC 60335-1 (domestic appliances)</li> <li>● Pick-Up (V) = 6.3</li> <li>● Drop-Out (V) = 0.9</li> </ul> <p><b>Configuration Related Features:</b></p> <ul style="list-style-type: none"> <li>● <a href="#">Contact Arrangement</a> = 1 Form C, SPDT, 1 C/O</li> <li>● <a href="#">Coil Magnetic System</a> = Monostable</li> <li>● <a href="#">Coil Suppression Diode</a> = Without</li> <li>● <a href="#">Coil Selection Criteria</a> = Nominal Voltage</li> <li>● Coil Latching = Without</li> <li>● <a href="#">LED Indicator</a> = Without</li> <li>● Number of Coils = 1</li> </ul> <p><b>Industry Standards:</b></p> <ul style="list-style-type: none"> <li>● <a href="#">RoHS/ELV Compliance</a> = RoHS/Not ELV Compliant</li> <li>● <a href="#">Lead Free Solder Processes</a> = Wave solder capable to 240°C,</li> </ul>

**Contact Related Features:**

- [Mounting Options](#) = PC Board, Socket
- [Enclosure](#) = Immersion Cleanable
- FCC Part 68 Isolation = No
- Relay Type = PCB
- [Contact Material](#) = Silver Cadmium Oxide, Gold Plated
- Contact Finish = Gold Plate
- Approx. Dimensions (L x W x H) (mm [in]) = 30.00 x 10.00 x 15.00 [1.182 x .394 x .591]
- Contact Type = Single
- Pin Configuration = Industry Standard 3.2mm
- Wiring Diagram = 1 Form C
- Approved Standards = VDE Component Mark, UL Recognized for Canada and US
- Number of Poles = 1

Wave solder capable to 260°C

- RoHS/ELV Compliance History = Converted to comply with RoHS not ELV directives
- Coil Insulation Classification = UL Class A

**Packaging Related Features:**

- Packaging Method = Plastic Bar

**Other:**

- Electrical Spacing = 8.0mm Clearance 8.0mm Creepage
- Brand = Schrack

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**1-1393223-2 Product Details****1-1393223-2**  
(V23061B1006A401)  
TE Part Number: 1-1393223-2

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Product Features (Please use the Product Drawing for all design activity)	
<p><b>Product Type Features:</b></p> <ul style="list-style-type: none"> <li>● <a href="#">Termination Type</a> = Through Hole</li> </ul> <p><b>Electrical Characteristics:</b></p> <ul style="list-style-type: none"> <li>● <a href="#">Contact Current Rating (Amps.)</a> = 8</li> <li>● <a href="#">Coil Resistance (<math>\Omega</math>)</a> = 1455</li> <li>● <a href="#">Coil Power, Nominal (mW)</a> = 223</li> <li>● <a href="#">Actuating System</a> = DC</li> <li>● <a href="#">Coil Power, Nominal (W)</a> = 0.223</li> <li>● <a href="#">Input Voltage (VDC)</a> = 18</li> <li>● Dielectric Strength - Coil Contacts (V rms) = 4000</li> <li>● Coil Rating = Sensitive</li> </ul> <p><b>Body Related Features:</b></p> <ul style="list-style-type: none"> <li>● <a href="#">Series</a> = MSR</li> <li>● Polarized = No</li> <li>● Enclosure Color = White</li> </ul>	<p><b>Housing Related Features:</b></p> <ul style="list-style-type: none"> <li>● Version = Pinning 3.2mm, Version for IEC 60335-1 (domestic appliances)</li> <li>● Pick-Up (V) = 12.2</li> <li>● Drop-Out (V) = 1.8</li> </ul> <p><b>Configuration Related Features:</b></p> <ul style="list-style-type: none"> <li>● <a href="#">Contact Arrangement</a> = 1 Form C, SPDT, 1 C/O</li> <li>● <a href="#">Coil Magnetic System</a> = Monostable</li> <li>● <a href="#">Coil Suppression Diode</a> = Without</li> <li>● <a href="#">Coil Selection Criteria</a> = Nominal Voltage</li> <li>● Coil Latching = Without</li> <li>● <a href="#">LED Indicator</a> = Without</li> <li>● Number of Coils = 1</li> </ul> <p><b>Industry Standards:</b></p> <ul style="list-style-type: none"> <li>● <a href="#">RoHS/ELV Compliance</a> = RoHS/Not ELV Compliant</li> <li>● <a href="#">Lead Free Solder Processes</a> = Wave solder capable to 240°C,</li> </ul>

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