OV-24DC ...

Solid-State Relays

INTERFACE

Data Sheet 103082_01_en

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Description

OV-24DC ... solid-state relays for electrical isolation can be mounted directly on the PCB as interfaces or plugged in using the SIM-AMS socket, which can be soldered.

The solid-state relays are suitable for switching ohmic, capacitive or inductive loads. Relays for switching AC circuits have a zero point switch to switch on loads that are in the zero voltage crossing. They are switched off in the zero current crossing.

DC loads can switch up to 1 A at 350 V DC and up to 4 A at 60 V DC, while AC loads can switch up to 5 A at 480 V AC. Inductive loads must be provided with an appropriate protective circuit (e.g., free-wheeling diode or RC element).



The electronic load relays have the following advantages:

- No wear, even at high switching frequencies
- No contact bounce no movable parts
- No electromagnetic interference
- Electrically insulated housing
- Compact dimensions
- High test voltage of up to 4 kV between control and load circuits



Make sure you always use the latest documentation. It can be downloaded at <u>www.download.phoenixcontact.com</u>.

A conversion table is available on the Internet at <u>www.download.phoenixcontact.com/general/7000_en_00.pdf</u>.



This data sheet is valid for all products listed on the following page:



Ordering Data

Solid-State Relays With DC Voltage Output

Solid-State Relays with DC voltage Output			
Description	Туре	Order No	. Pcs./Pck.
Solid-state relay, for signal amplification and electrical isolation of the contro and load circuits, can be plugged into the SIM-AMS plug-in base, which car be soldered, or mounted directly on the PCB with PCB connection, input/output: DC voltage (350 V DC, maximum)		2982634	10
Solid-state relay, for signal amplification and electrical isolation of the contro and load circuits, can be plugged into the SIM-AMS plug-in base, which car be soldered, or mounted directly on the PCB with PCB connection, input/output: DC voltage (60 V DC, maximum)		2982647	10
Solid-State Relays With AC Voltage Output			
Description	Туре	Order No	. Pcs./Pck.
Solid-state relay, for signal amplification and electrical isolation of the contro and load circuits, can be plugged into the SIM-AMS plug-in base, which car be soldered, or mounted directly on the PCB with PCB connection, input: DC voltage/output: AC voltage Accessories		2982650	10
Description	Туре	Order No	. Pcs./Pck.
Plug-in base	SIM-AMS		ACE catalog
Input Data	350DC/1	60DC/4	480AC/5
Nominal input voltage U _N	24 V DC	24 V DC	24 V DC
Operating voltage range	4.25 V DC	32 V DC	4 V DC 32 V DC
Voltage switching threshold			
"0" signal	< 1 V DC	< 1 V DC	< 1.2 V DC
"1" signal	> 3.3 V DC	> 3.3 V DC	> 3.5 V DC
Typical input current at U _N	15 mA	15 mA	10 mA
Typical switch-on time	< 100 µs	< 100 µs	1/2 period, maximum
Typical switch-off time	< 250 μs	< 250 μs	1/2 period, maximum
Switching frequency for ohmic nominal load	100 Hz	100 Hz	25 Hz
Output Data	350DC/1	60DC/4	480AC/5
Nominal output voltage range	1 V DC 350 V DC	1 V DC 60 V DC	12 V AC 530 V AC
Periodic peak reverse voltage	-	-	1000 V
Limiting continuous current (see derating curves)	1 A	4 A	5 A
Minimum load current	1 mA	1 mA	20 mA
Surge current	20 A (tp = 1 s)	25 A (tp = 1 s)	80 A (tp = 20 ms)
Voltage drop at maximum limiting continuous current (2-wire)	0.5 V	0.5 V	1.2 V
Maximum load value l ² t	-	_	50 A ² s
Leakage current when switched off	100 µA	100 µA	1 mA
Maximum phase shift (inductive loads)	-	-	$\cos\phi \text{ = } \geq 0.5$
Protective circuit	Diode for protection	Diode for protection	_

General Data	350DC/1	60DC/4	480AC/5		
Test voltage input/output	4 kV _{rms}	4 kV _{rms}	4 kV _{rms}		
Ambient temperature range	-20°C +80°C		-20°C +70°C		
Operating mode	100% operating factor	100% operating factor	100% operating factor		
Assembly	Directly on the PCB or can be plugged in with a SIM-AMS socket, which can be soldered				
Conformance With EMC Directive 89/336/EEC and Low Voltage Directive 73/23/EEC					
Noise Immunity Test According to EN 61000-6-2 ¹					

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Electrostatic discharge (ESD)	EN 61000-4-2
Electromagnetic HF field	EN 61000-4-3
Fast transients (burst)	EN 61000-4-4
Noise Emission Test According to EN 61000-6-4	
Noise emission of housing	EN 55011 ²
¹ EN 61000 corresponds to IEC 61000	

² EN 55011 corresponds to CISPR11

Approvals

UL

Dimensions



Figure 1 Dimensions (in mm)

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10,5

Block diagram for OV-24DC/350DC/1 and OV-24DC/ 60DC/4



Figure 3 Block diagram for OV-24DC/480AC/5



Figure 4 Derating curve for OV-24DC/350DC/1



Figure 5 Derating curve for OV-24DC/ 60DC/4



Figure 6 Derating curve for OV-24DC/480AC/5

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