

POWERSWITCH

Solid-State Contactor for DC Loads
PK 9265

Translation
of the original instructions



Your Advantages

- Low input current control
- Protected against slow varying input control voltages
- Built-in overvoltage protection
- Low off-state leakage current
- Very low on-state resistance
- Resistant to physical shocks and vibrations according to IEC/EN 60068-2-6
- High switching cycles, low maintenance
- Silent switching
- Can be used as a high-side driver or a low-side driver

Features

- MOSFET Power semiconductor
- Maximum transient peak voltage: 100 V and 600 V
- DIN Rail mount with integral heat sink
- No radiated or conducted interference
- IP20 Touch protected housing

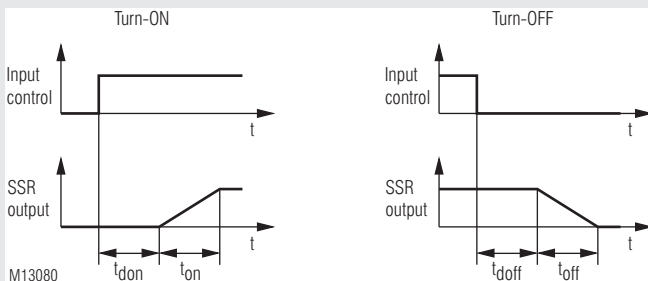
Product Description

The PK 9265 solid-state contactor from the POWERSWITCH series is designed as a switch for DC loads. When the control voltage is applied, the load circuit at the output of the solid-state contactor is switched through. The LED indicator signals the status of the control input. The semiconductor principle eliminates the disadvantages of electromechanical relays, which manifest themselves, for example, in the form of arcing (especially with DC loads) and contact bounce. This results in a longer service life and higher current carrying capacity for the solid-state contactor.

Approvals and Markings



Function Diagram



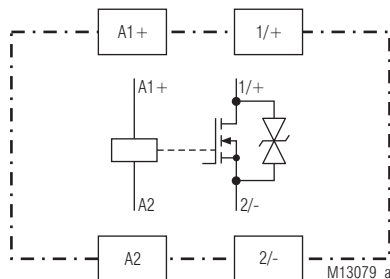
Application

The PK 9265 is ideal for DC applications where fast switching without contact bounce is desirable, e.g., in solenoid valves for hydraulics and pneumatics. It is also used for switching LEDs and DC heating elements for energy management.

Operating instructions

Depending on the application, it may be advisable to protect the solid-state contactor against short circuits when special super-fast solid-state fuses. If several solid-state contactors are mounted together, sufficient cooling and ventilation must be ensured.

Circuit Diagram



Safety Notes



Risk of fire or other thermal hazards!
Danger to life, risk of serious injuries or property damage.

- The device has no overtemperature alarm or shut-off. If the relay fails, it may overheat and become a fire hazard.



Risk of electrocution!
Danger to life or risk of serious injuries.

- Voltage is still present at the output terminals even when the device is switched off.



Functional error!
Danger to life, risk of serious injuries or property damage.

- When switching off, the PK 9265 only blocks currents in the forward direction. In the event of energy recovery or bidirectional current flow, current may flow back in an uncontrolled manner.



The LED indicator shows the status of the control input, not the status of the output.

Control circuit

Control voltage range [V]:	DC 4 ... 32
Max. input current [mA]:	22
Max. making voltage [V]:	3.5
Min. drop-out voltage [V]:	1
Max. reverse voltage [V]:	32

Output

	60 V / 25 A	300 V / 10 A
Rated output current DC-1 at 40 °C:	25 A	10 A
Rated output current DC-13 at 40 °C:	6 A at 24 V	0.2 A at 230 V
Operational voltage range:	0 ... 60 V	20 ... 300 V
Max. peak voltage:	100 V	600 V
Max. off-state leakage current at rated voltage:	0.1 µA	1.5 mA
Max. on-state resistance	6 mΩ	100 mΩ
Min. operational current:	100 mA	100 mA
Max. transient surge current (t=1 ms):	300 A	110 A
Turn-on delay [t _{don}]:	28 µs	64 µs
Turn-on time [t _{on}]:	8 µs	11 µs
Turn-off delay [t _{doff}]:	120 µs	20 µs
Turn-off time [t _{off}]:	0.3 µs	0.3 µs
Maximum Switching frequency:	See section „Characteristics“	See section „Characteristics“
Current derating factor above 40 °C:	No derating up to 80 °C	0.1 A / °C
Rated impuls voltage: Input to output	4.0 kV	4.0 kV
Rated impuls voltage: Input & Output to heat sink:	4.0 kV	4.0 kV
Operating Temperature:	- 20 / + 80 °C	- 20 / + 80 °C
Storage Temperature:	- 40 / + 100 °C	- 40 / + 100 °C
Relative humidity:	95 % non-condensing	95 % non-condensing
Vibration resistance IEC 60068-2-6:	Amplitude 0.35 mm Frequency 10 ... 55 Hz	Amplitude 0.35 mm Frequency 10 ... 55 Hz

General technical data

EMC:

Electrostatic discharge:	8 kV (air)	IEC/EN 61000-4-2
	4 kV (contact)	IEC/EN 61000-4-2
HF-irradiation:	10 V / m	IEC/EN 61000-4-3
Fast transients		
Output:	2 kV	IEC/EN 61000-4-4
Input:	1 kV	IEC/EN 61000-4-4
Surge voltages between		
wires for power supply:	0.5 kV	IEC/EN 61000-4-5
Between output and ground:	1 kV	IEC/EN 61000-4-5
HF-wire guided:	10 V	IEC/EN 61000-4-6
Interference suppression:	Limit value class B	EN 55011

Standard Type

PK 9265.91/000/00 DC 0 ... 60 V 25 A $U_H = DC 4 \dots 32 V$

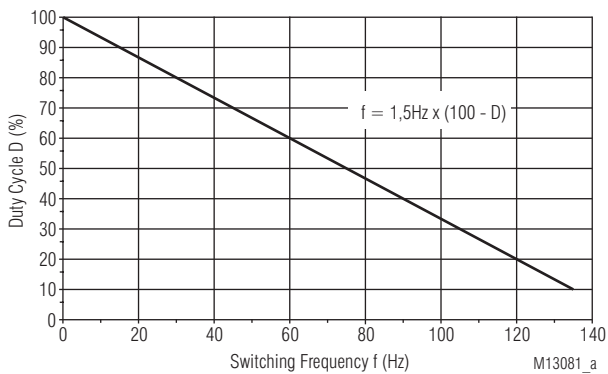
Article number:	0070242
• Load voltage:	DC 0 ... 60 V
• Load current:	25 A
• Control voltage:	DC 4 ... 32 V
• Width:	22.5 mm

PK 9265.91/000/03 DC 20 ... 300 V 10 A $U_H = DC 4 \dots 32 V$

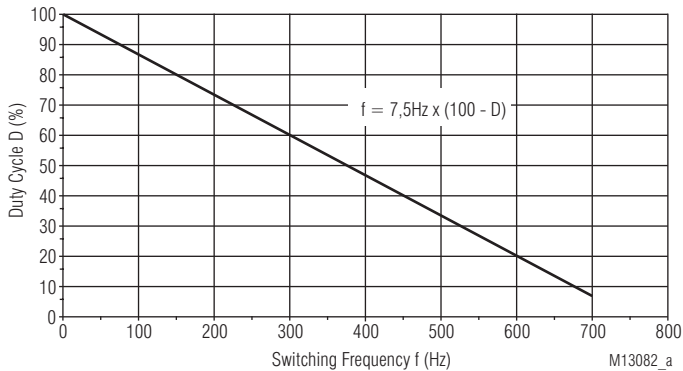
Article number:	0070243
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• Load current:	10 A
• Tension de commande:	DC 4 ... 32 V
• Width:	22.5 mm

Characteristics

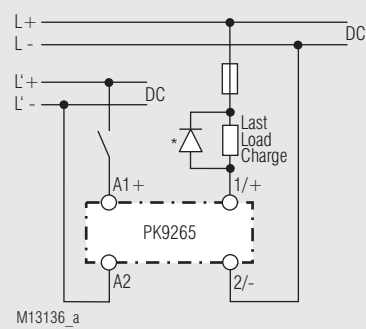
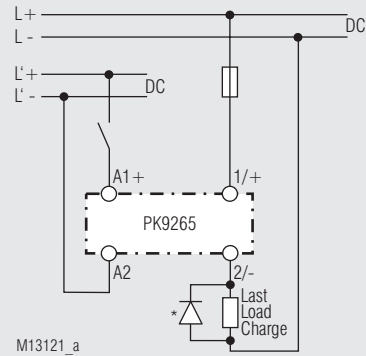
Duty Cycle vs Switching Frequency
at full rated Voltage and Current at 25°C
60V/25A



Duty Cycle vs Switching Frequency
at full rated Voltage and Current at 25°C
300V/10A



Connection Examples



* For inductive loads, a free-wheeling diode parallel to the load is required.

