

## Power Relay K (Open - Sealed)

- Limiting continuous current 45A
- **■** Wide voltage range
- **24VDC coil versions available**
- For high current version refer to Power Relay K-S

### Typical applications

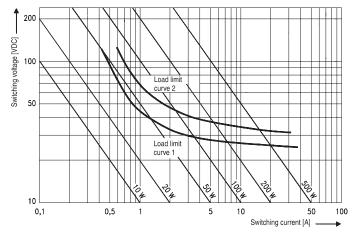
ABS control, blower fans, car alarm, cooling fan, engine control, fuel pump, hazard warning signal, heated front screen, heated rear screen, ignition, lamps front/rear/fog light, interior lights, main switch/supply relay, seat control, seatbelt pretensioner, sun roof, turn signal, valves, window lifter, wiper control.



Contact Data						
Typical applications	Resistive/inductive Resistive/inductive		Indicator lamps	Headlights,	Headlights	
	loads	loads		capacitive loads	capacitive loads	
Contact arrangement	1 form A, 1 NO	1 form C, 1 CO	1 form A, 1 NO	1 form A, 1 NO	1 form C, 1 CO	
Rated voltage	12VDC	12VDC	12VDC	12VDC	12VDC	
		A/B (NO/NC)			A/B (NO/NC)	
Rated current	45A	45/30A	30A	40A	40/25A	
Limiting continuous current						
23°C	45A	45/30A	30A	40A	40/25A	
85°C	30A	30/25A	25A	25A	25/20A	
Limiting making current <sup>1)</sup>	100A	100/30A	120A <sup>3)</sup>	180A	180/60A	
Limiting breaking current <sup>2)</sup>	60A 60/30A		60A	60A	60/30A	
Contact material	AgNi0.15	AgNi0.15	AgSnO <sub>2</sub>	AgSnO <sub>2</sub>	AgSnO <sub>2</sub>	
Min. recommended contact load	1A at 5VDC <sup>4)</sup>					
Initial voltage drop, at 10A, typ./max.	. 20/300mV					
Operate/release time	typ. 5/3ms <sup>5)</sup>					
Electrical endurance	>2x10 <sup>5</sup> ops.	>2x10 <sup>5</sup> ops.	>2.2x10 <sup>6</sup> ops.	>10 <sup>5</sup> ops.	>10 <sup>5</sup> ops.	
	at 13.5VDC, 40A	at 13.5VDC, 40A	up to 8x21W	up to 4x60W	up to 4x60W	
Mechanical endurance DC coil	>10 <sup>7</sup> ons					

- 1) The values apply to a resistive or inductive load with suitable spark suppression and at maximum 13.5VDC for 12VDC or 27VDC for 24VDC load voltages
- 2) For a load current duration of maximum 3s for a make/break ratio of 1:10.
- 3) Corresponds to a peak inrush current on initial actuation (cold filament).
- 4) See chapter Diagnostics of Relays in our Application Notes or consult the internet at http://relays.te.com/appnotes/
- 5) For unsuppressed relay coil. A low resistive suppression device in parallel to the relay coil increases the release time and reduces the lifetime caused by increased erosion and/or higher risk of contact tack welding.

## Max. DC load breaking capacity



Load limit curve 1: arc extinguishes, during transit time (changeover contact).

Load limit curve 2: safe shutdown, no stationary arc (make contact).

Load limit curves measured with low inductive resistors verified for 1000 switching events.



# Power Relay K (Open - Sealed) (Continued)

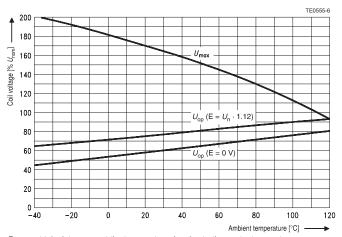
Coil Data	
Rated coil voltage	12VDC / 24VDC

### Coil versions, DC coil

Coil	Rated	Operate	Release	Coil	Rated coil
code	voltage	voltage	voltage	resistance	power
	VDC	VDC	VDC	Ω±10%	W
001	12	6.9	1.2	90	1.6
022	24	14.1	2.4	362	1.6

All figures are given for coil without pre-energization, at ambient temperature +23°C. Other coils on request.

### Coil operating range



Does not take into account the temperature rise due to the contact current  $\mathsf{E} = \mathsf{pre}\text{-}\mathsf{energization}$ 

# Insulation Data Initial dielectric strength between open contacts 500VAC<sub>rms</sub> between contact and coil 500VAC<sub>rms</sub>

Other Data	
EU RoHS/ELV compliance	compliant
Ambient temperature, DC coil	-40 to +85°C <sup>6)</sup>
Climatic cycling with condensation,	
EN ISO 6988	3 cycles, storage 8/16h
Temperature cycling (shock),	
IEC 60068-2-14, Na	20 cycles, -40/+85°C (dwell time 1h)
Damp heat cyclic,	
IEC 60068-2-30, Db, Variant 1	6 cycles, upper air temperature 55°C
Damp heat constant,	
IEC 60068-2-3, method Ca	56 days, upper air temperature 55°C
Degree of protection, IEC 61810	RT 0/II – open version
	RT III – immersion cleanable version
Corrosive gas,	
IEC 60068-2-42	10 days
IEC 60068-2-43	10 days
Vibration resistance (functional),	
IEC 60068-2-6 (sine pulse form),	_
acceleration, acc. to position	10 to 200Hz, 20 to 40g <sup>7)</sup>
Shock resistance (functional),	
IEC 60068-2-27 (half sine form sir	•
acceleration, acc. to position	8ms 30g <sup>7)</sup>
Terminal type	PCB
Weight	
sealed version	approx. 22g (0.77oz)
open version	approx. 19g (0.67oz)
Solderability (aging 3: 4h/155°C)	
for leaded process (Tm = 183°C),	
for Pb-free process (Tm = 217°C)	
IEC 60068-2-20	Ta, method 1, hot dip 5s, 215°C
Storage conditions	according IEC 600688 8)
Packaging unit	505
sealed version	525 pcs.

6) See coil operating range DC.

open version

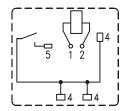
- No change in the switching state >10μs.
- 8) For general storage and processing recommendations please refer to our Application Notes and especially to Storage in the Definitions or at http://relays.te.com/appnotes/

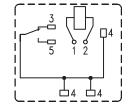
500 pcs.

## Terminal Assignment (Open and Sealed Version)

Bottom view on solder pins

1 form A, 1 NO





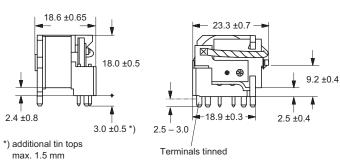
\*) Terminal 4 to be bridged



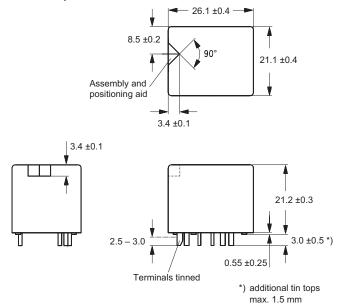
# Power Relay K (Open - Sealed) (Continued)

#### **Dimensions**

Power Relay K open version



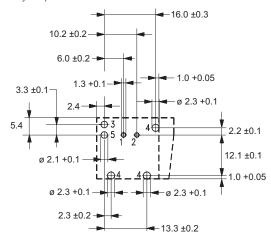
Power Relay K sealed version



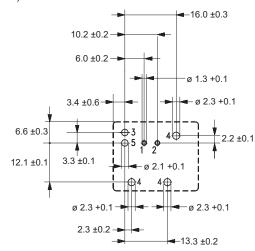
## **Mounting Hole Layout**

Bottom view on solder pins

Power Relay K open version

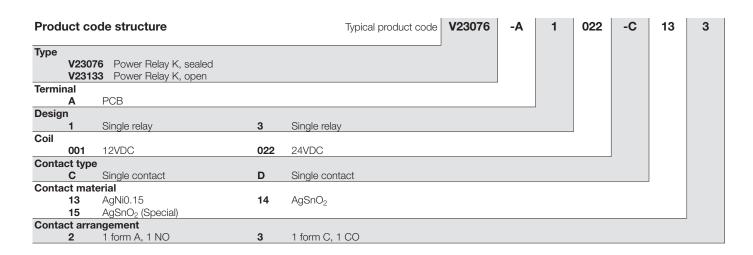


Power Relay K sealed version





# Power Relay K (Open - Sealed) (Continued)



Product code	Terminal/Encl.	Design	Coil	Contact	Cont. material	Arrangement	Part number
V23076-A1001-C133	PCB, sealed	Single relay	12VDC	Single	AgNi0.15	1 form C, CO	1393277-4
V23076-A1001-D143					AgSnO <sub>2</sub>		1393277-6
V23076-A3001-C132					AgNi0.15	1 form A, NO	1-1393277-4
V23076-A3001-D142					AgSnO <sub>2</sub>		1-1393277-7
V23076-A3001-D152	1)				AgSnO <sub>2</sub> special		1-1414175-0
V23076-A1022-C133			24VDC		AgNi0.15	1 form C, CO	1393277-8
V23076-A1022-D143					AgSnO <sub>2</sub>		1393277-9
V23076-A3022-C132					AgNi0.15	1 form A, NO	1-1393277-8
V23076-A3022-D142					AgSnO <sub>2</sub>		1-1393277-9
V23133-A1001-C133	PCB, open		12VDC		AgNi0.15	1 form C, CO	1393278-7
V23133-A1001-D143					AgSnO <sub>2</sub>		1-1393278-3
V23133-A3001-C132					AgNi0.15	1 form A, NO	5-1393278-7
V23133-A3001-D142					AgSnO <sub>2</sub>		5-1393278-9
V23133-A3001-D152	1)				AgSnO <sub>2</sub> special		1-1414173-0
V23133-A1022-C133			24VDC		AgNi0.15	1 form C, CO	3-1393278-7
V23133-A1022-D143					AgSnO <sub>2</sub>		3-1393278-9
V23133-A3022-C132					AgNi0.15	1 form A, NO	7-1393278-1
V23133-A3022-D142					AgSnO <sub>2</sub>		7-1393278-2
V23133-A3022-D152	1)				AgSnO <sub>2</sub> special		1-1414174-0

<sup>1)</sup> For indicator lamps.