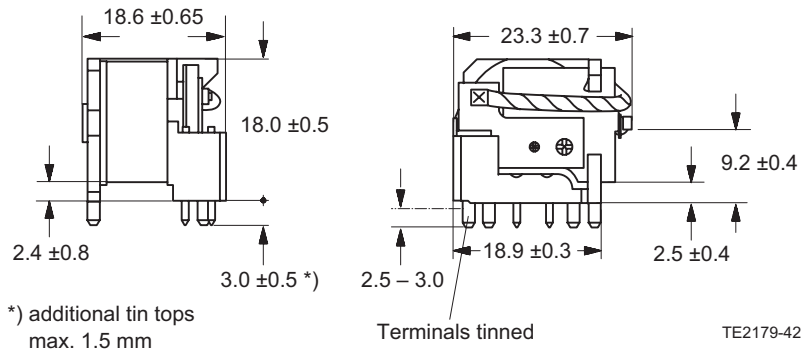


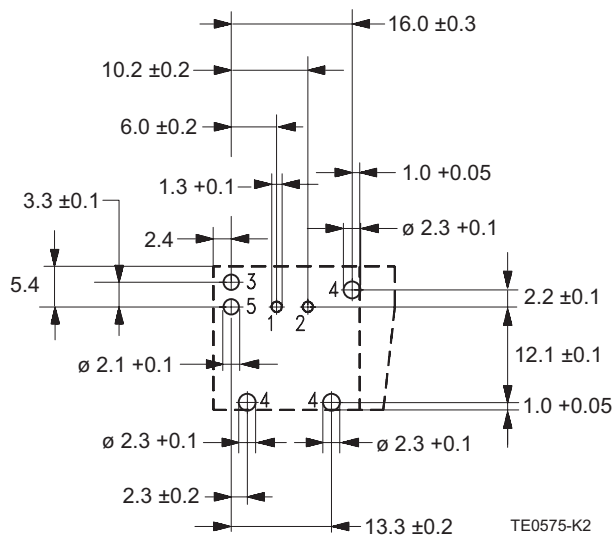
Power Relay K (Open)

Dimensional Drawing

Power Relay K Open Version








Mounting Hole Layout (bottom view)



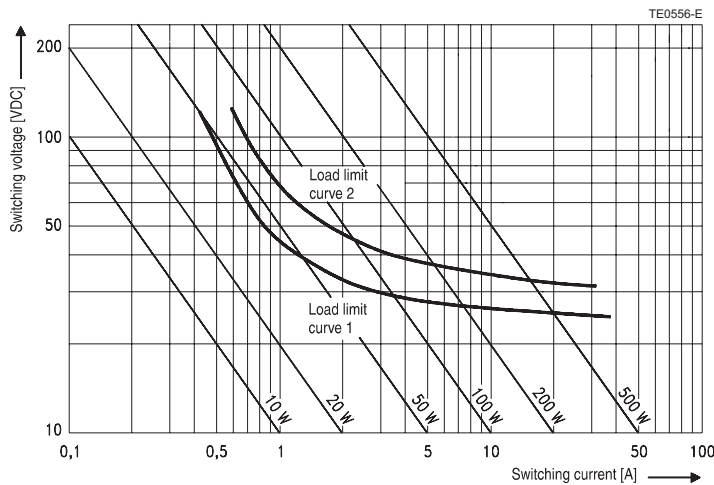
Power Relay K (Open – Sealed)

Contact Data

Typical areas of application	Resistive/inductive loads		Indicator lamps V23133-A3*-D152	Headlights, capacitive loads V23133/076-****-D142	
	1 Make contact/ 1 Form A	1 Changeover contact/ 1 Form C	1 Make contact/ 1 Form A	1 Make contact/ 1 Form A	1 Changeover contact/ 1 Form C
Contact configuration					
Circuit symbol (see also Pin assignment)					
Rated voltage	12 V	12 V	12 V	12 V	12 V
Rated current	30 A	NC/NO 25/30 A	25 A	25 A	NC/NO 20/25 A
Limiting continuous current					
23°C	45 A	30/45 A	30 A	40 A	25/40 A
85°C	30 A	25/30 A	25 A	25 A	20/25 A
Contact material	AgNi0.15		AgSnO ₂		
Max. switching voltage/power	See load limit curve				
Max. switching current ¹⁾		NC/NO			NC/NO
On ²⁾	100 A	30/100 A	120 A ³⁾	180 A	60/180 A
Off	60 A	30/60 A	60 A	60 A	30/60 A
Min. recommended load ⁴⁾	1 A at 5 V				
Voltage drop at 10 A (initial)	Typ. 20 mV, 300 mV max.				
Mechanical endurance (without load)	> 10 ⁷ operations				
Electrical endurance (example of resistive load)	> 2 x 10 ⁵ operations at 13.5 V/40 A		> 2.2 x 10 ⁶ operations up to 8 x 21 W	> 10 ⁵ operations up to 4 x 60 W	

- ¹⁾ The values apply to a resistive or inductive load with suitable spark suppression and at maximum 13.5 V for 12 V or 27 V for 24 V load voltages.
- ²⁾ For a load current duration of maximum 3 s 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 page 31 or consult the internet at <http://relays.tycoelectronics.com/appnotes/>
- ⁵⁾ For 24 V please contact your nearest Tyco Electronics representative.

Load Limit Curve



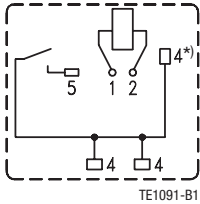
Load limit curve 1 ≙ arc extinguishes, during transit time (changeover contact)
Load limit curve 2 ≙ safe shutdown, no stationary arc (make contact)

Power Relay K (Open – Sealed)

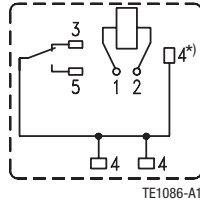
Circuit Diagram

1 Make contact/1 Form A

1 Changeover contact/1 Form C



TE1091-B1



TE1086-A1

*) Terminal 4 to be bridged

Coil Data

Available for nominal voltages	12 V / 24 V
Nominal power consumption of the unsuppressed coil at nominal voltage	1.6 W
Test voltage winding/contact	500 VAC _{rms}
Maximum ambient temperature range ¹⁾	-40 to +85°C
Operate time at nominal voltage	Typ. 5 ms
Release time at nominal voltage ²⁾	Typ. 3 ms

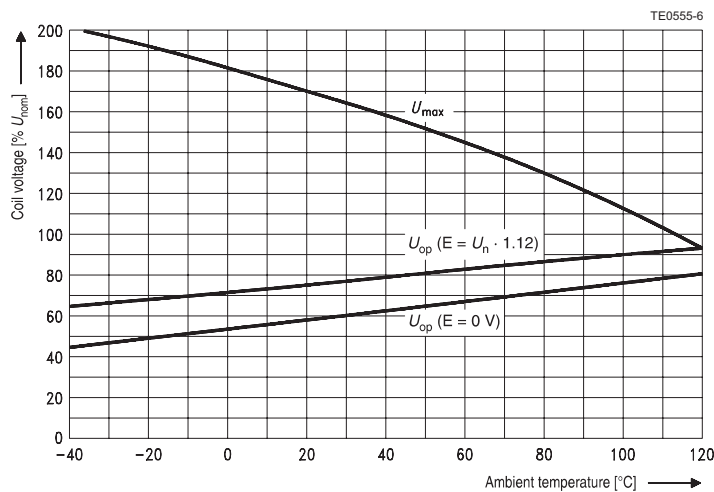
¹⁾ See also operating voltage range diagram.

²⁾ For unsuppressed relay coil.

Note:

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.

Operating Voltage Range



Does not take into account the temperature rise due to the contact current
E = pre-energization

Power Relay K (Open – Sealed)

Environmental Conditions				
Temperature range, storage	Refer to <i>Storage</i> in the “Glossary” catalog page 23 or http://relays.tycoelectronics.com/appnotes/			
Test	Relevant standard	Testing as per	Dimension	Comments
Climatic cycling with condensation ¹⁾	EN ISO 6988		3 cycles	Storage 8/16 h
Temperature cycling ¹⁾	IEC 68-2-14	Na	20 cycles	-40/+85°C (dwell time 1 h)
Damp heat ¹⁾				
cyclic	IEC 68-2-30	Db, Variant 1	6 cycles	Upper air temperature 55°C
constant	IEC 68-2-3	Method Ca	56 days	
Corrosive gas ¹⁾	IEC 68-2-42 IEC 68-2-43		10 days 10 days	
Vibration resistance	IEC 68-2-6 (sine pulse form) acceleration, acc. to position		10 - 200 Hz 20 - 40 g	No change in the switching state > 10 µs
Shock resistance	IEC 68-2-27 (half sine form single pulses) acceleration, acc. to position		8 ms 30 g	
Solderability	IEC 68-2-20	Ta, Method 1	Hot dip 5 s 215°C	Aging 3 (4 h/155°C) for leaded process (T _m = 183°C) for Pb-free process (T _m = 217°C)
Resistance to soldering heat	IEC 68-2-20	Tb, Method 1A	Hot dip 10 s 260°C	with thermal screen
Sealing ¹⁾	IEC 68-2-17	Qc, Method 2		1 min/70°C

¹⁾ Only sealed version.

Ordering Information

Part Numbers (see table below for coil data)		Contact Arrangement	Contact Material	Enclosure	Terminals
Relay Description	Part Number				
12 V PCB Relays					
V23133-A1001-C133	1393278-7	1 Form C	AgNi0.15	Open	Printed circuit
V23133-A1001-D143	1-1393278-3	1 Form C	AgSnO ₂	Open	Printed circuit
V23133-A3001-C132	5-1393278-7	1 Form A	AgNi0.15	Open	Printed circuit
V23133-A3001-D142	5-1393278-9	1 Form A	AgSnO ₂	Open	Printed circuit
V23133-A3001-D152 ¹⁾	1-1414173-0	1 Form A	AgSnO ₂	Open	Printed circuit
24 V PCB Relays					
V23133-A1022-C133	3-1393278-7	1 Form C	AgNi0.15	Open	Printed circuit
V23133-A1022-D143	3-1393278-9	1 Form C	AgSnO ₂	Open	Printed circuit
V23133-A3022-C132	7-1393278-1	1 Form A	AgNi0.15	Open	Printed circuit
V23133-A3022-D142	7-1393278-2	1 Form A	AgSnO ₂	Open	Printed circuit
V23133-A3022-D152 ¹⁾	1-1414174-0	1 Form A	AgSnO ₂	Open	Printed circuit
12 V PCB Relays					
V23076-A1001-C133	1393277-4	1 Form C	AgNi0.15	Sealed	Printed circuit
V23076-A1001-D143	1393277-6	1 Form C	AgSnO ₂	Sealed	Printed circuit
V23076-A3001-C132	1-1393277-4	1 Form A	AgNi0.15	Sealed	Printed circuit
V23076-A3001-D142	1-1393277-7	1 Form A	AgSnO ₂	Sealed	Printed circuit
V23076-A3001-D152 ¹⁾	1-1414175-0	1 Form A	AgSnO ₂	Sealed	Printed circuit
24 V PCB Relays					
V23076-A1022-C133	1393277-8	1 Form C	AgNi0.15	Sealed	Printed circuit
V23076-A1022-D143	1393277-9	1 Form C	AgSnO ₂	Sealed	Printed circuit
V23076-A3022-C132	1-1393277-8	1 Form A	AgNi0.15	Sealed	Printed circuit
V23076-A3022-D142	1-1393277-9	1 Form A	AgSnO ₂	Sealed	Printed circuit

¹⁾ For indicator lamps.

Power Relay K (Open – Sealed)

Coil Versions

Coil Data for Power K	Rated Coil Voltage (V)	Coil Resistance $\pm 10\%$ (Ω)	Must Operate Voltage (V)	Must Release Voltage (V)	Allowable Overdrive ¹⁾ Voltage (V)	
					at 23°C	at 85°C
V23133-**001-****	12	90	6.9	1.2	20.8	15.5
V23133-**022-****	24	362	14.1	2.4	41.2	32.5
V23076-**001-****	12	90	6.9	1.2	20.8	15.5
V23076-**022-****	24	362	14.1	2.4	41.2	32

¹⁾ Allowable overdrive is stated with no load applied and minimum coil resistance.

Note: further coils on request.

Standard Delivery Packs (orders in multiples of delivery pack)

Power K – Open: 500 pieces
Power K – Sealed: 300 pieces