

Twin pack relay TPR



Powertrain Systems



Chassis Systems



Safety



Security



Body



Driver Information



Convenience

Description

Features

- Two Mini power relay K in one housing
- Optimized assembly costs
- Reduced overall volume

Typical applications

- Flasher load
- Central doorlock
- Headlight dipping
- Immobilizers
- Seat adjustment motors
- Sunroof and window motors

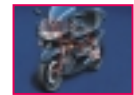
Please contact Tyco Electronics for relay application support.



Car Industry



Truck Industry



Other Industry

81_3d01

Design

Immersion cleanable:
protection class IP67 to IEC 529
(EN 60 529)

Weight

Approx. 19 g

Nominal voltage

12 V or 24 V;
other nominal voltages on request

Terminals

PCB terminals; for assembling in
printed circuit boards
Terminals in grid 0.049 ... 0.050"
(1.25 ... 1.27 mm)

Conditions

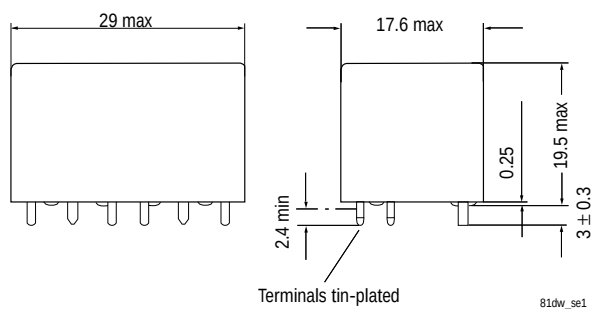
All parametric, environmental and
endurance tests are performed
according to EIA Standard RS-407-A
at standard test conditions unless
otherwise noted:
23 °C ambient temperature,
20-50% RH, 29.5 ± 1.0" Hg
(998.9 ± 33.9 hPa).
Please also refer to the Application
Recommendations in this catalog
for general precautions.

Disclaimer

All technical performance data apply to the relay as such, specific conditions of the individual application are not considered. Please always check the suitability of the relay for your intended purpose. We do not assume any responsibility or liability for not complying herewith. We recommend to complete our questionnaire and to request our technical service. Any responsibility for the application of the product remains with the customer only. All specifications are subject to change without notification. All rights of Tyco are reserved.

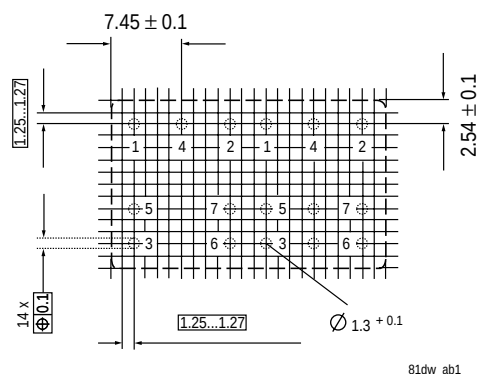
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Dimensional drawing



Mounting holes

View of the terminals (Bottom view)



Contact data

Typical areas of application	Resistive / inductive loads	
Contact configuration	Changeover contact/ twice Form C	
Contact material	AgNi0.15	
Circuit symbol (see also Pin assignment)		
Rated voltage	10 V, 12 V	
Rated current at 85 °C	NC 2 x 5 A	NO 2 x 10 A
Max. switching voltage/power	See load limit curve	
Max. switching current ¹⁾	NC 2 x 12 A	NO 2 x 60 A
On ²⁾	2 x 10 A	2 x 20 A
Off		
Min. recommended load ³⁾	1 A at 5 V	
Voltage drop at 10 A (initial)	Typ. 50 mV each, 300 mV max. each	
Mechanical endurance (without load)	> 10 ⁷ operations	
Electrical endurance	> 2 x 10 ⁵ operations at 15 V, 10 A	

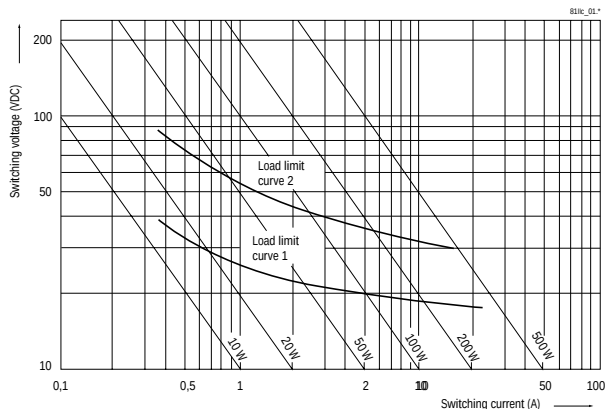
¹⁾ The values apply to a resistive load or inductive load with suitable spark suppression.

²⁾ For a load current duration of maximum 3 s for a make/break ratio of 1:10.

³⁾ See chapter Diagnostics in our Application Recommendations on page 18.

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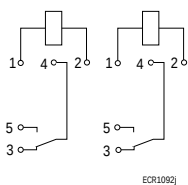
Load limit curve



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

Pin assignment

2 changeover contacts/



Coil data

Available for nominal voltages	12 V
Nominal power consumption of the unsuppressed coil at nominal voltage	1.1 W
Test voltage winding/contact	500 VAC _{rms}
Maximum ambient temperature range ¹⁾	- 40 to + 85 °C
Max. switching rate without contact loading	20 Hz
Operate time ²⁾	Typ. 3 ms
Release time ²⁾	Typ. 1.5 ms

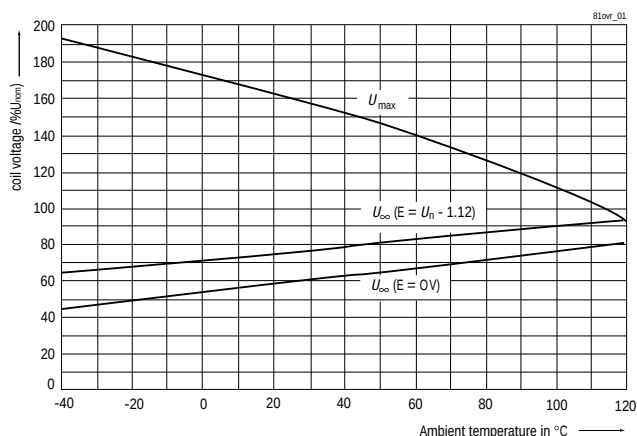
¹⁾ See also operating voltage range diagram

²⁾ Measured at nominal voltage without coil suppression

N.B.

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

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Operating conditions

Test	Relevant standard	Testing as per	Dimension	Comments
Climatic cycling with condensation	EN ISO 6988		20 cycles	Storage 8/16 h
Temperature cycling	IEC 68-2-14	Na	20 cycles	– 40/+ 85 °C (dwell time 1 h)
Damp heat constant	IEC 68-2-3	Ca	56 days	Upper air temperature 55 °C
Corrosive gases	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 23 ... 35 g	No change in the switching state > 10 µs
Shock resistance	IEC 68-2-27 (half-sine pulse form) acceleration, acc. to position		4 ... 6 ms 23 ... 280 g	No change in the switching state > 10 µs
Solderability	IEC 68-2-20	Ta, Method 1		Aging 3 (4 h/155 °C) Dewetting
Resistance to soldering heat	IEC 68-2-20	Tb, Method 1A		10 s ± 1 s with thermal screen
Sealing	IEC 68-2-17	Qc, Method 2		1 min / 70 °C
Flammability	UL94-HB			

Ordering information

Part numbers (see table below for coil data)		Contact arrangement	Contact material	Enclosure	Terminals
Relay part number	Tyco order number				
V23081-C1059-A303	1393270-2	2 Form C	AgNi0.15	Sealed	Printed circuit
V23081-C1061-A303	1393270-6	2 Form C	AgNi0.15	Sealed	Printed circuit

Coil versions

Coil data for TPR	Rated coil voltage (V)	Coil resistance +/- 10% (Ω)	Must operate voltage (V)	Must release voltage (V)	Allowable overdrive ¹⁾ voltage (V)	
					at 23 °C	at 85 °C
V23081-**059-****	12	107	6.0	1.2	18.5	14.5
V23081-**061-****	12	130	6.9	1.2	19.2	14.9

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

Standard delivery packs (orders in multiples of delivery pack)

Twin pack relay TPR: 252 pieces