

Double mini relay DMR



**Description**

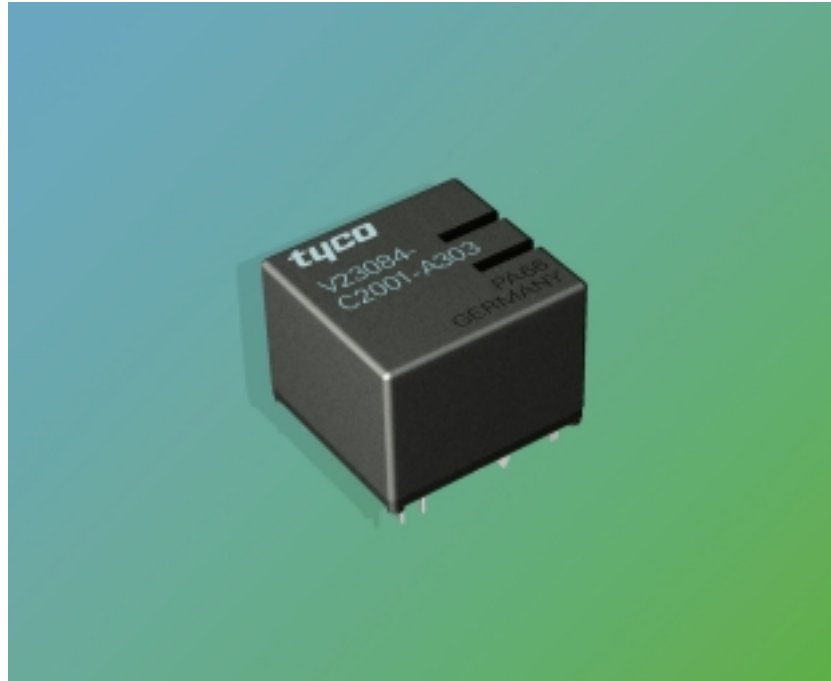
**Features**

- Two separate systems
- Lamp applications
- Extremely space saving double relay

**Typical applications**

- Door locking systems
- Immobilizers
- Seat adjustment motors
- Seatbelt pretensioner
- Sunroof and window motors

Please contact Tyco Electronics for relay application support.



84C\_3d04

**Design**

- Printed circuit terminals
- Immersion cleanable: protection class IP 67 to IEC 529 (EN 60 529)

**Weight**

Approx. 10 g - standard version

**Nominal voltage**

12 V

**Terminals**

Printed circuit terminals

**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).

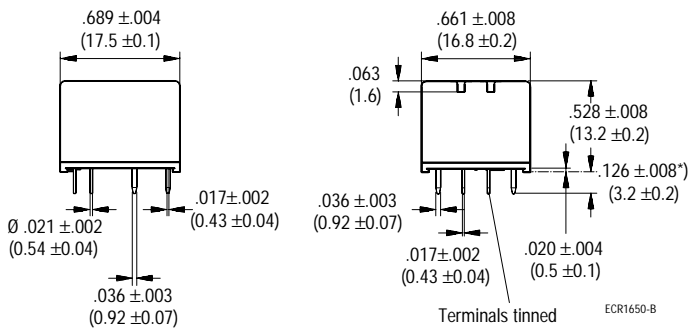
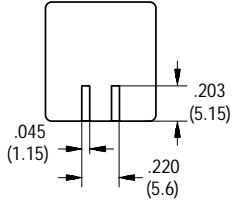
Please also refer to the Application Recommendations in this catalog for general precautions.

**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.

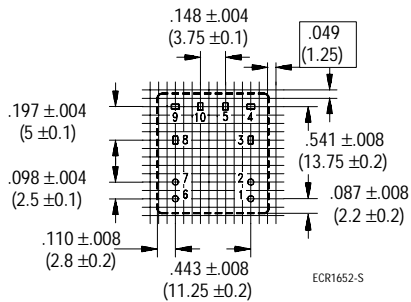
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Dimensional drawing



\*) additional tin tops  
max .039 inch (1 mm)

View of the terminals (Bottom view)



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**Contact data**

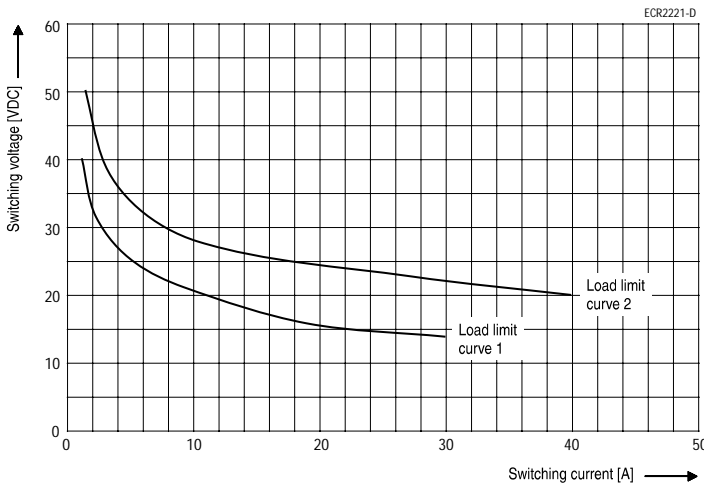
Contact configuration	2 Changeover contacts/ 2 Form C			
Circuit symbol (see also Pin assignment)				
Rated voltage	12 V		12 V	
Rated current at 85 °C	Both systems 15 A/15 A	Motor reverse <sup>1)</sup> 30 A/30 A	Both systems 12 A/12 A	Motor reverse <sup>1)</sup> 30 A/30 A
Contact material	AgNi 0,15		AgSnO <sub>2</sub>	
Max. switching voltage/power	See load limit curve			
Max. switching current <sup>2)</sup>	NC/NO			
Off	35 A/35 A			
Min. recommended load <sup>3)</sup>	1 A at 5 V			
Voltage drop at 10 A (initial) for NC/NO contacts	Typ. 30 mV, 300 mV max.			
Mechanical endurance (without load)	> 10 <sup>7</sup> operations			
Electrical endurance	Motor reverse blocked: >10 <sup>5</sup> operations at 25 A, 13.5 V, 0.77 mH inductive load <sup>1)</sup> -40 °C/23 °C/85 °C cyclic		Lamp load: >2 x 10 <sup>5</sup> operations at 45 A (on), 8 A (off), 13.5 V, 80 °C  Resistive load: >2 x 10 <sup>5</sup> operations at 20 A, 13.5 V, 80 °C	

<sup>1)</sup> At 50 % ON period: max. make time 15 s

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

<sup>3)</sup> See chapter Diagnostics in our Application Recommendations on page 18.

**Load limit curve**



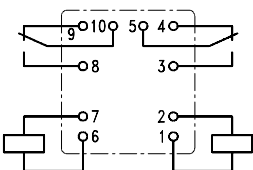
Load limit curve 1 ≙ arc extinguishes during transit time

Load limit curve 2 ≙ safe shutdown, no stationary arc

**Pin assignment**

2 changeover contacts/  
2 form C

PCB terminals



ECR1651-J

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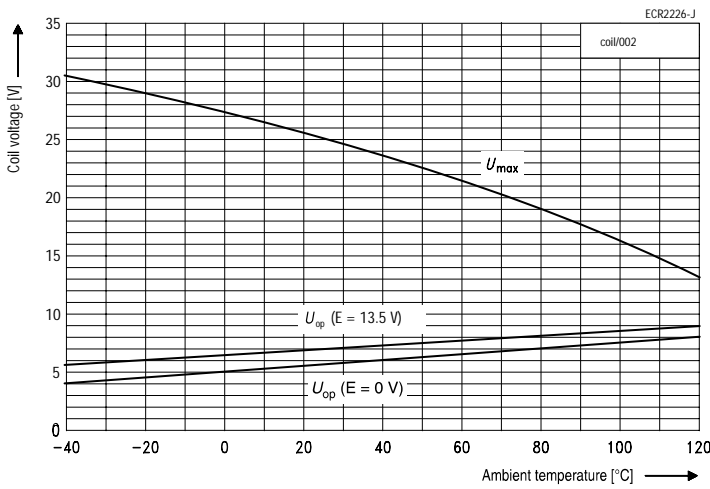
Coil data	Coil 1	Coil 2
Available for nominal voltages	12 V	
Nominal power consumption of the unsuppressed coil at nominal voltage	0.56 W	0.81 W
Test voltage winding/contact	500 VAC <sub>rms</sub>	
Maximum ambient temperature range	-40 to + 85 °C	
Operate time at nominal voltage	Typ. 3 ms	
Release time at nominal voltage <sup>1)</sup>	Typ. 1.3 ms	

<sup>1)</sup> For unsuppressed relay coil

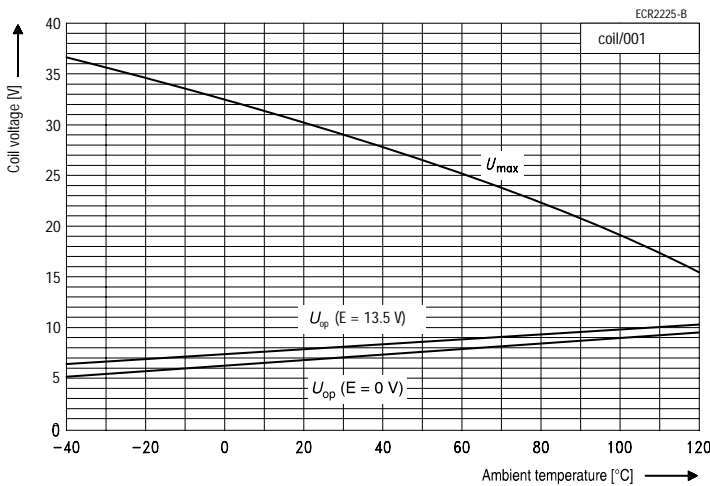
N.B.

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

Temperature range, storage	-40 to +155 °C			
Test	Relevant standard	Testing as per	Dimension	Comments
Cold storage	IEC 68-2-1		1000 h	-40 °C
Dry heat	IEC 68-2-2	Ba	1000 h	125 °C
Temperature cycling	IEC 68-2-14	Nb	35 cycles	- 40/+ 125 °C
Thermal shock	IEC 68-2-14	Na	1000 cycles	- 40/+ 125 °C
Damp heat <sup>1)</sup>				
cyclic	IEC 68-2-30	Db, variant 2	6 cycles	25 °C / 55 °C / 93% rh
constant	IEC 68-2-3	Method Ca	56 days	40 °C / 95% rh <sup>1)</sup>
Resistance to aggressive liquids	VDA-test-conditions 621	Liquid 1-11		48 h / 50 °C drying
Vibration resistance	IEC 68-2-6 (vibration, sinusoidal) acceleration, depending on position		10 ... 200Hz 6 ... 30 g	No change in the switching state > 10 µs
Shock resistance	IEC 68 - 2 - 29 (half-sine)		6 ms 30 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	260 °C, 10 s	10 s ± 1 s with thermal screen
Sealing	IEC 68-2-17	Qc, method 2		1 min / 70 °C
Wipe resistance	IEC 68-2-45	Propanol-2-ol or dest. water	5 min	Room temperature

<sup>1)</sup> Relays have to be dried at 85°C for 24 hours after test.

### Ordering information

Part numbers (see table below for coil data)		Contact arrangement	Contact material	Enclosure	Terminals
Relay part number	Tyco order number				
V23084-C2001-A303	1393267-2	2 Form C	AgNi0.15	Immersion cleanable	Printed circuit
V23084-C2002-A303	1-1393267-0	2 Form C	AgNi0.15	Immersion cleanable	Printed circuit
V23084-C2001-A403	1393267-6	2 Form C	AgSnO2	Immersion cleanable	Printed circuit
V23084-C2002-A403	1-1393267-2	2 Form C	AgSnO2	Immersion cleanable	Printed circuit

### Coil versions

Coil data for DMR	Rated coil voltage (V)	Coil resistance +/- 10% (Ω)	Must operate voltage (V)	Must release voltage (V)	Allowable overdrive <sup>1)</sup> voltage (V)	
					at 23 °C	at 85 °C
V23084-**001-****	12	255	6.9	1	31	24
V23084-**002-****	12	178	5.8	0.8	25.8	19.5

<sup>1)</sup> Allowable overdrive is stated with no load applied and minimum coil resistance.

### Standard delivery pack (orders in multiples of delivery pack)

Standard version: 600 pieces  
Silent version: 600 pieces