

Double mini relays DMR and DMR-S



Features

- Two separate systems
- Lamp applications
- Extremely space saving double relay
- Silent version available (DMR-S)

Typical applications

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



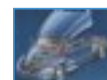
Standard version

Silent version

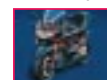
84C_3d01 / 84S_3d01



~~Car Industry~~



Truck Industry



~~Other Industry~~

Design

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

Weight

Approx. 10 g -- standard version
Approx. 15 g -- silent version

Nominal voltage

12 V

Terminals

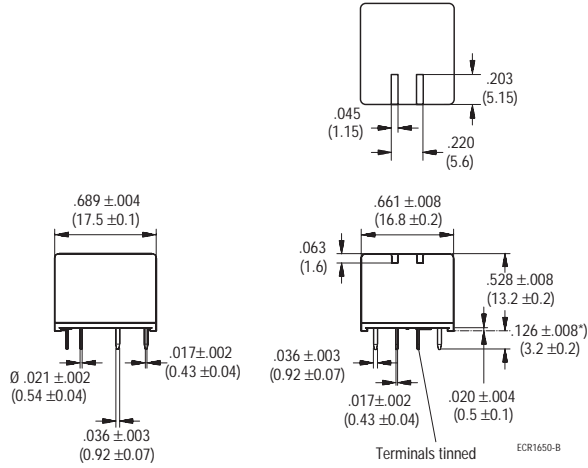
- Printed circuit terminals

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).

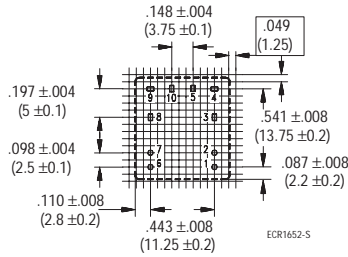
Double mini relays DMR and DMR-S

Dimensional drawing
Standard version

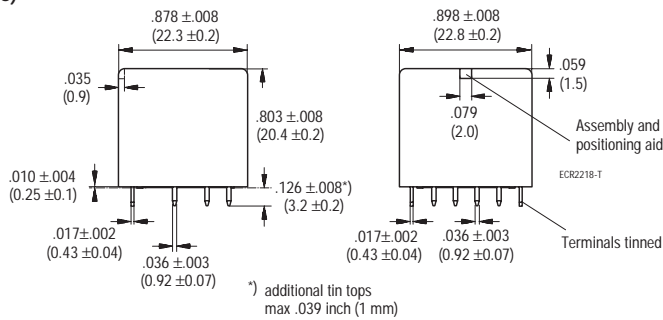


*) additional tin tops
max .039 inch (1 mm)

View of the terminals (Bottom view)

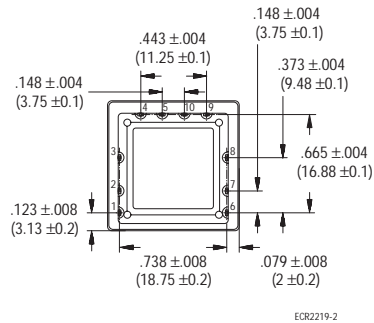


Silent version (DMR-S)



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

View of the terminals (Bottom view)



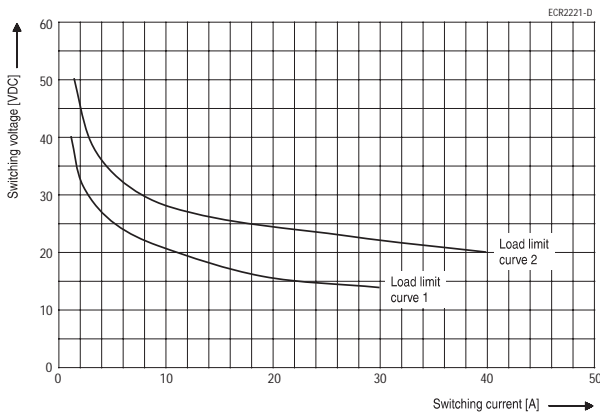
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Contact data				
Contact configuration	2 Changeover / 2 Form C			
Contact material	AgNi 0,15		AgSnO ₂	
Circuit symbol (see also Pin assignment)				
Max. switching voltage	See load limit curve			
Max. switching power	See load limit curve			
Max. switching current ¹⁾	NC/NO 35 A/35 A			
Off				
Limiting continuous current	Both systems	Motor reverse ²⁾	Both systems	Motor reverse ²⁾
at 23 °C	20 A/20 A	30 A/30 A	18 A/18 A	30 A/30 A
at 85 °C	15 A/15 A	30 A/30 A	12 A/12 A	30 A/30 A
Min. recommended current	1 A			
Voltage drop (initial) at 10 A	Typ. 30 mV			
Increase in coil temperature at 10 A load	Typ 9 °C			
Mechanical endurance (without load)	> 10 ⁷ operations			
Electrical endurance	Motor reverse blocked: > 10 ⁶ operations at 25 A, 13.5 VDC, 0.77 mH inductive load ²⁾ -40 °C/23 °C/85 °C cyclic		Lamp load: > 2 x 10 ⁶ operations at 45 A (on), 8 A (off), 13.5 VDC, 80 °C Resistive load: > 2 x 10 ⁶ operations at 20 A, 13.5 VDC, 80 °C	

¹⁾ The values apply to a resistive load or inductive load with suitable spark suppression. This current may flow for a maximum of 3 sec for a make/break ratio of 1 : 10.

²⁾ At 50 % ON period: max. make time 15 sec

Load limit curve



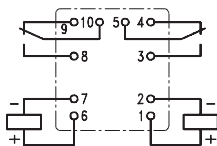
Load limit curve 1 ≙ arc extinguishes during transit time

Load limit curve 2 ≙ safe shutdown, no stationary arc

Pin assignment

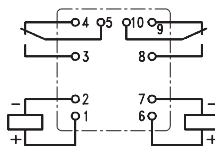
2 changeover contacts/
2 form C

PCB terminals
standard version



ECR1651-J

silent version



silent

Double mini relays DMR and DMR-S

Coil data	Coil 002	Coil 001
Available for nominal voltages	VDC (other coils on request)	
Nominal power consumption of the unsuppressed coil at nominal voltage	0.81 W	0.56 W
Test voltage winding/contact	500 VAC _{rms}	
Upper limit temperature for the coil	155 °C	
Maximum ambient temperature range ¹⁾	-40 to + 85 °C	
Max. switching rate without contact loading	20 Hz	
Typ. operate time ²⁾ , typ.	3 msec	
Typ. release time ²⁾ , typ.	1.3	

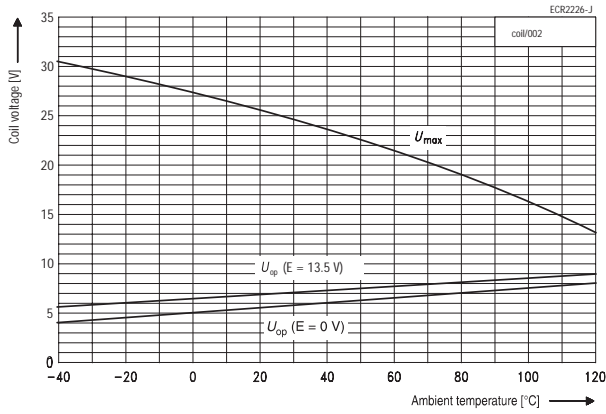
¹⁾ See also operating voltage diagram

²⁾ Measured at nominal voltage without coil suppression unit

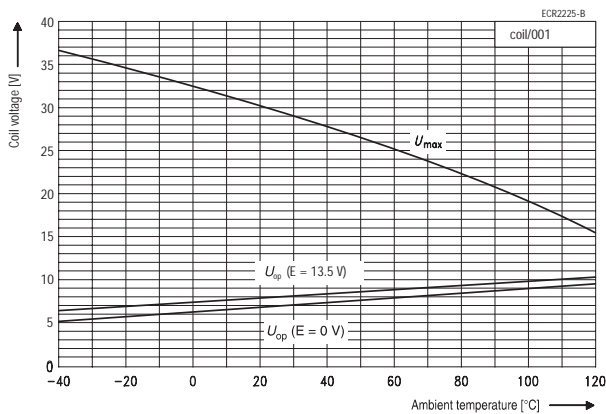
N.B.

A low resistive device in parallel to the relay coil slows down the armature movement 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				
cyclic	IEC 68-2-30	Db, variant 2	6 cycles / 40 °C	25 °C / 55 °C / 93% rh
constant	IEC 68-2-3	Method Ca	95% rh / 56 days	40 °C / 95% rh
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 µsec
Shock resistance	IEC 68 - 2 - 29 (half-sine)		6 msec 30 g	No change in the switching state > 10 µsec
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 sec	10 sec ± 1 sec 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

Ordering information

Part number (Replace * with "Coil designator") DMR	Contact arrangement	Contact material	Enclosure	Terminals
V23084-C2*-A403	2 Form C	AgSnO ₂	Immersion cleanable	Standard, printed circuit terminals
V23084-C2*-A303	2 Form C	AgNiO.15	Immersion cleanable	Standard, printed circuit terminals
V23084-S2*-A403	2 Form C	AgSnO ₂	Immersion cleanable	Silent, printed circuit terminals
V23084-S2*-A303	2 Form C	AgNiO.15	Immersion cleanable	Silent, printed circuit terminals

Coil versions

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

¹⁾ Allowable overdrive is stated with no load current flowing through the relay contacts and minimum coil resistance.

Standard delivery pack (orders in multiples of delivery pack)

Standard version: 600 pieces
Silent version: 600 pieces