

Power Relay F7 A Latching

- Magnetically latched, ISO plug-in relay
- One coil with set and reset function
- Pin assignment similar to ISO 7588 part 1
- Customized versions available (colour, parallel or serial components etc.)
- Mini version (40A with 6.3mm terminals) available on request

Typical applications

Cross carline, e.g. Power outlet switch off, start-stop, energy management



3D1361 fbw?

Contact Data

Contact arrangement	1 form A, 1 NO
Rated voltage	12VDC
Limiting continuous current	
23°C	80A
85°C	60A
125°C	35A
Limiting making current ¹⁾	300A
Limiting breaking current	70A
Limiting short-time current	
overload current, ISO 8820-3 ²⁾	1.35 x 50A, 1800s 2.00 x 50A, 5s 3.50 x 50A, 0.5s 6.00 x 50A, 0.1s
Contact material	Silver based
Min. recommended contact load ³⁾	1A at 5VDC
Initial voltage drop, NO contact at 10A, typ./max.	15/300mV
Frequency of operation at nominal load	6 ops./min (0.1Hz)
Set/reset time typ.	2/1ms
Electrical endurance	
at cyclic temperature -40/+23/+85°C,	
14VDC, 2s (on), 2s (off)	
capacitive load 300A (on)/ 30A (off)	>2x10 ⁵ ops
motor load L=0.2mH, 200A (on)/ 40A (off)	>1x10 ⁵ ops
Mechanical endurance	>1x10 ⁷ ops

Coil Data

Magnetic system	bistable (one coil system)			
Rated coil voltage	12VDC			
Min./Max. energization duration	10ms/100ms			
Polarity for set/reset energization	set pin 2	+	reset pin 1	+
		pin 1		pin 2
Max. coil temperature	155°C			

Coil versions, DC coil					
Coil code	Rated voltage VDC	Operate voltage VDC	Release voltage VDC	Coil resistance $\Omega \pm 10\%$	Imp. len. m
031	12	6	6	25	10-

Insulation Data

Insulation Data	
Initial dielectric strength	
between open contacts	500V _{rms}
between contact and coil	500V _{rms}
between adjacent contacts	500V _{rms}
Load dump test	
ISO 7637-1 (12VDC), test pulse 5	V _s =+86.5VDC
ISO 7637-2 (54VDC), test pulse 5	V _s =-86.5VDC

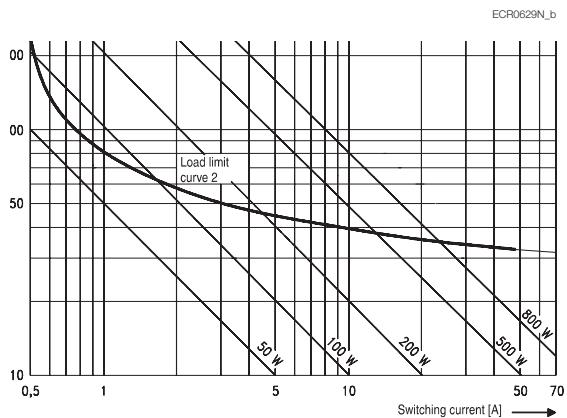
1) The values apply to a resistive or inductive load with suitable spark suppression and at maximum 14VDC for 12VDC load voltages. For a load current duration of maximum 3 s the values are valid at 14VDC.

for a make/break ratio of 1:10.

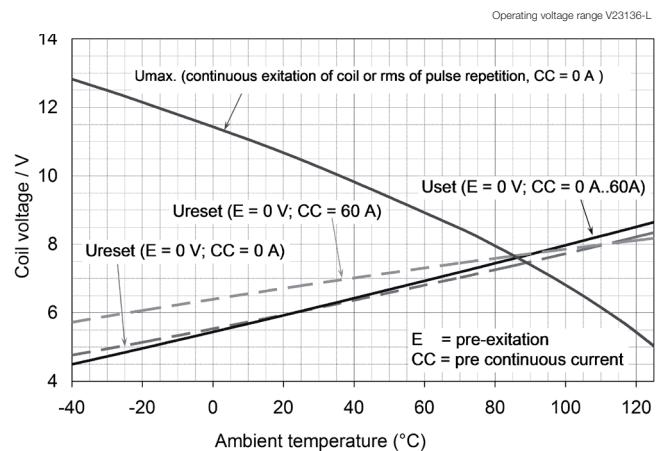
2) Current and time are compatible with circuit protection by a typical 50A automotive

3) See chapter Diagnostics of Relays in our Application Notes or consult the internet at <http://relays.ti.com/appnotes/>

Max. DC load breaking capacity



Coil operating range



Power Relay F7 A Latching (Continued)
Other Data

EU RoHS/ELV compliance	compliant
Protection to heat and fire according UL94	HB or better ⁴⁾
Climatic cycling with condensation	
EN ISO 6988	6 cycles, storage 8/16h
Temperature cycling	
IEC 60068-2-14, Nb	10 cycles, -40/+85°C (5°C/min)
Damp heat cyclic	
IEC 60068-2-30, Db, Variant 1	6 cycles, upper air temp. 55°C
Damp heat constant, IEC 60068-2-3, Ca	56 days
Category of environmental protection,	
IEC 61810	RT I – dustproof
Degree of protection, IEC 60529	IP54 – dustproof
Vibration resistance (functional)	
IEC 60068-2-6 (sine sweep)	10 to 500Hz, min. 10g ⁵⁾
Shock resistance (functional)	
IEC 60068-2-27 (half sine)	6ms, min. 30g ⁵⁾
Drop test, free fall, IEC 60068-2-32	1m onto concrete ⁶⁾

Other Data (continued)

Terminal type	Plug-in, QC
Cover retention	
axial force	150N
pull force	200N
push force	200N
Terminal retention ⁸⁾	
pull force	100N
push force	100N
Weight	approx. 35g (1.2oz)

4) Refers to used materials

5) No change in the switching state >10μs. Valid for NC contacts, NO contact values significantly higher.

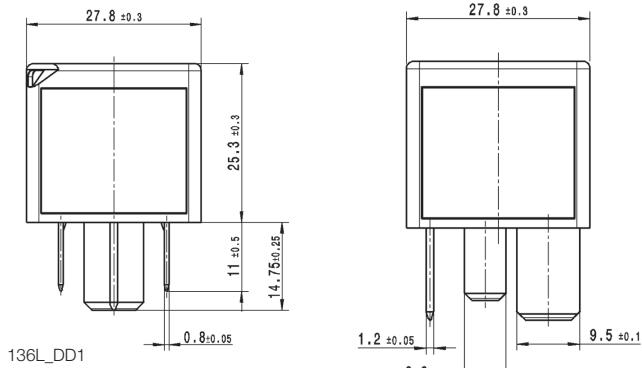
6) Contact status can change due to drop

8) Values apply 2mm from the end of the terminal. When the force is removed, the terminal must not have moved by more than 0.3mm.

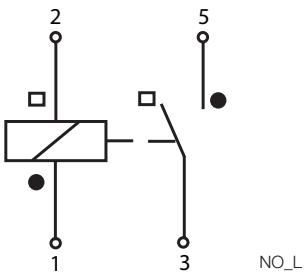
Accessories

For details see datasheet

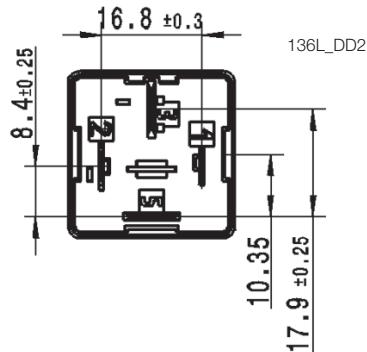
Connector for Maxi ISO Relays

Dimensions

Terminal Assignment

1 form A, NO latching



View of the terminals (bottom view)



Power Relay F7 A Latching (Continued)

Product code structure

 Typical product code **V23136** -L **0** **031** **-D642**
Type
V23136 Power Relay F7 A

Feature
L Latching

Cover
0 Standard

Coil
031 12VDC

Terminal/arrangement
D642 Standard version
Xnnn Customized version

Other types on request.

Product code	Arrangement	Feature	Cover	Circuit	Coil	Contact material	Terminals	Part number
V23136-L0031-D642	1 form A, 1 NO	Latching	Standard	NOL	12VDC	Silver based	Plug-in, QC	4-1904060-6

Other types on request.

Mouser Electronics

Authorized Distributor

Click to View Pricing, Inventory, Delivery & Lifecycle Information:

[TE Connectivity:](#)

[V23136L0031D642-EV-CBOX](#)