

Micro Relay Latching

- Magnetically latched ISO plug-in relay
- Two coils with set and reset function
- Pin assignment according to ISO 7588 part 3
- Plug-in terminals
- Customized versions on request
 - Special marking
 - Special covers (e.g. notches, release features)

Typical applications

Active power management, disconnection of power outlets, security systems.

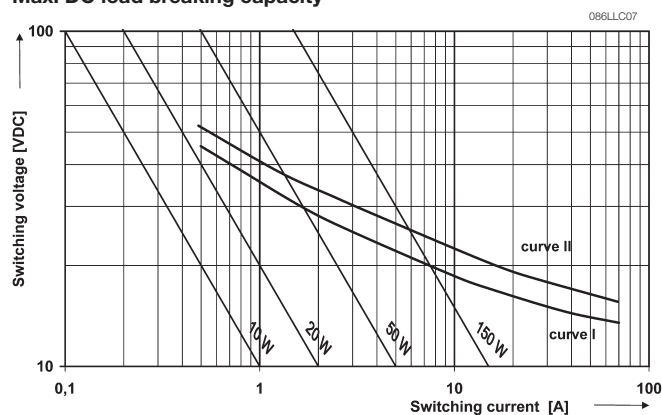


F145L_fw1_bw

Contact Data

Contact arrangement	1 form A, 1 NO
Rated voltage	12VDC
Limiting continuous current	
23°C	25A
85°C	20A
125°C	8A
Limiting making current ¹⁾²⁾	50A
Limiting breaking current	30A
Limiting short-time current overload current, ISO 8820-3 ³⁾	27A, 1800s 40A, 5s 70A, 0.5s 120A, 0.1s
Contact material	silver based
Min. recommended contact load ⁴⁾	1A at 5VDC
Initial voltage drop at 10A, typ./max.	50/300mV
Frequency of operation	6 ops./min (0.1Hz)
Electrical endurance	
20A resistive load, 14VDC	>1x10 ⁵ ops.
25A inductive (L=0.6mH), 14VDC	>1x10 ⁵ ops.
Mechanical endurance	typ. 10 ⁶ ops.

Max. DC load breaking capacity



Load limit curve I: arc extinguishes during transit time (form C, CO contact).
Load limit curve II: safe shutdown, no stationary arc (form A, NO contact).
Load limit curves measured with low inductive/ resistors verified for 1000 switching events.

- 1) The values apply to a resistive or inductive load with suitable spark suppression and at maximum 13.5VDC for 12VDC Voltages.
- 2) For a load current duration of maximum 3s for a make/break ratio of 1:10.
- 3) Current and time are compatible with circuit protection by a typical automotive fuse. Relay will make, carry and break the specified current.
- 4) See chapter Diagnostics of Relays in our Application Notes or consult the internet at <http://relays.te.com/appnotes/>

Coil Data

Magnetic system	bistable (two coil system)
Coil voltage range	12VDC
Min./max. energization duration (set pulse width)	5ms/1s
Polarity for energizing/deenergizing	set reset
	+ - + -
	pin 4 pin 1 pin 4 pin 2

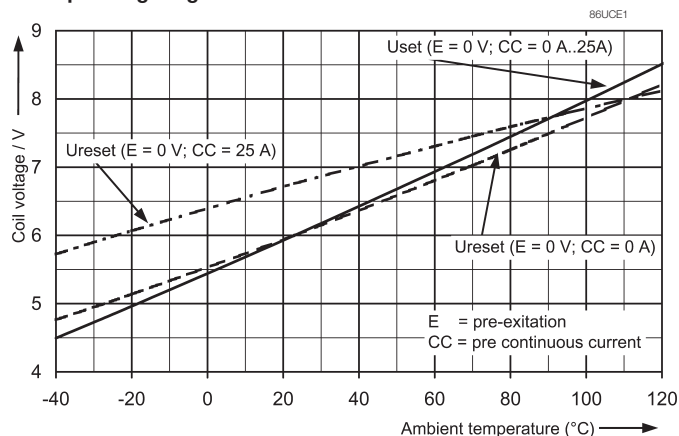
Coil versions, bistable 2 coils

Coil code	Rated voltage VDC	Set voltage VDC	Reset voltage VDC	Coil resistance $\Omega \pm 10\%$	Rated coil power W ⁵⁾
101	12	6	6	set/reset 75	1.9

5) Set pulse 10ms < pulse width < 100ms.

All figures are given for coil without pre-energization, at ambient temperature +23°C.

Coil operating range



Insulation Data

Initial dielectric strength	
between open contacts	500VAC _{rms}
between contact and coil	500VAC _{rms}
Load dump test	
ISO 7637-1 (12VDC), test pulse 5	Vs=+86.5VDC

Micro Relay Latching (Continued)
Other Data

EU RoHS/ELV compliance	compliant
Ambient temperature	-40 to +125°C
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 – dust proof
Degree of protection, IEC 60529	IP54
Corrosive gas	
IEC 60068-2-42	10±2cm³/m³ SO₂, 10 days
IEC 60068-2-43	1±0.3cm³/m³ H₂S, 10 days
Vibration resistance (functional) IEC 60068-2-6 (sine sweep)	10 to 500Hz min 5g ⁶⁾
Shock resistance (functional) IEC 60068-2-27 (half sine)	min 30g 6ms ⁶⁾
Drop test, free fall, IEC 60068-2-32	1m onto concrete
Terminal type	plug-in, QC
Cover retention	
axial force	150N
pull force	150N
push force	200N
Terminal retention	
pull force	100N
push force	100N
resistance to bending	10N ⁷⁾
force applied to side	10N ⁷⁾
torque	0.3Nm
Weight	approx. 15g (0.5oz)
Packaging unit	on request

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

7) 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.

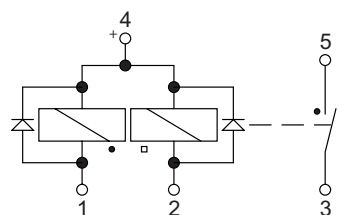
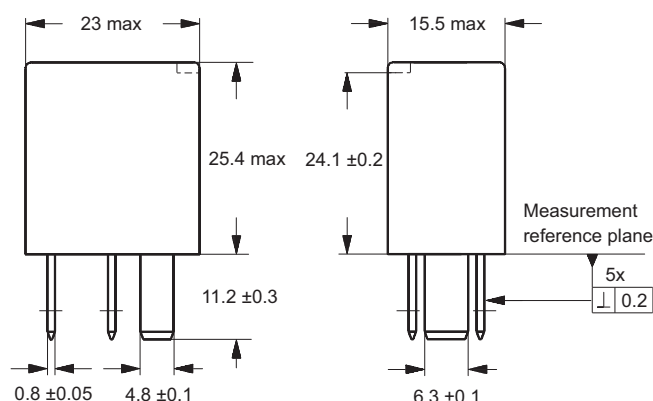
Accessories

For details see datasheet

Connectors for Micro ISO Relays

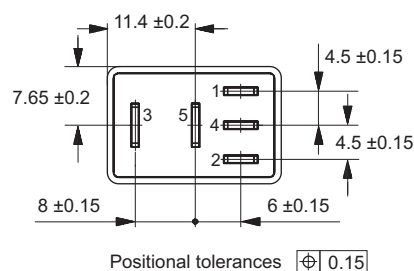
Terminal Assignment

NO2D
1 form A, NO with 2 diodes


Dimensions


Quick connect terminal similar to ISO 8092-1

View of the terminals (bottom view)



145_DD_2

Micro Relay Latching (Continued)

Product code structure

Typical product code

V23145 -L 1 1 01 -A 4 02

Type	V23145 Micro Relay Latching
Feature	L Latching
Design	1 Standard
Coil suppression	1 Standard suppression
Coil	01 12VDC
Version	A Standard
Contact material	4 Silver based
Contact arrangement	02 1 form A, 1 NO

Product code	Arrangement	Coil suppr.	Circuit ¹⁾	Coil	Version	Cont. material	Terminals	Part number
V23145-L1101-A402	1 form A, 1 NO	2 diodes	NO2D	12VDC	Standard	Silver based	Plug-in, QC	on request

¹⁾ See terminal assignment diagrams.

Other types on request.

This list represents the most common types and does not show all variants covered by this datasheet.