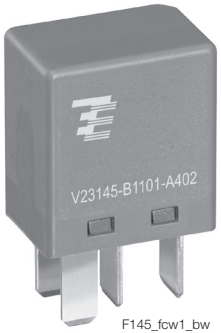
Micro Relay Low Noise

- **Noise level below 50dBA**
- **Pin assignment according to ISO 7588 part 3**
- **Plug-in terminals**
- **Customized versions on request**
  - **– Special marking**
  - **– Special covers (e.g. notches, release features)**



F145_fcw1_bw

Typical applications
Cross carline up to 20A for example: front and rear wiper, air condition, interior fan.

Contact Data

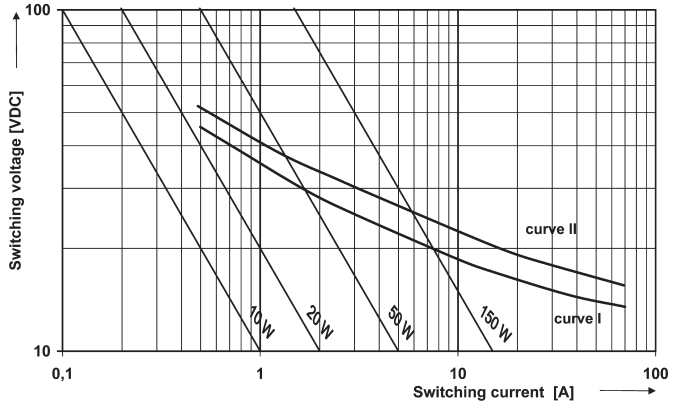
Contact arrangement	1 form A, 1 NO	1 form C, 1 CO
Rated voltage	12VDC	12VDC
Limiting continuous current		NO/NC
23°C	20A	20/15A
85°C	15A	15/10A
125°C	8A	8/5A
Limiting making current[1)]	100A	40A
Limiting breaking current[1)]	30A	30A
Limiting short-time current overload current, ISO 8820-3 [2)]	1.35 x 20A, 1800s 2.00 x 20A, 5s 3.50 x 20A, 0.5s 6.00 x 20A, 0.1s	
Jump start test	24VDC for 5min, conducting nominal current at 23°C	
Contact material	silver based	
Min. recommended contact load[3)]	1A at 5VDC	
Initial voltage drop		
NO contact at 10A, typ./max.	15/300mV	50/300mV
NC contact at 10A, typ./max.	-	50/300mV
Frequency of operation	6 ops./min (0.1Hz)	
Electrical endurance, resistive load at 14VDC		
15A	>1x10^5 ops.	
Mechanical endurance	typ. 10^6 ops.	

1) The values apply to a resistive or inductive load with suitable spark suppression and at maximum 13.5 VDC for 12VDC nominal voltages.
For a load current duration of maximum 3s for a make/break ratio of 1:10.

2) Current and time are compatible with circuit protection by a typical automotive fuse. Relay will make, carry and break the specified current.

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

Max. DC load breaking capacity



Load limit curve 1: arc extinguishes uring transit time.
Load limit curve 2: safe shutdown, no stationary arc.

Coil Data

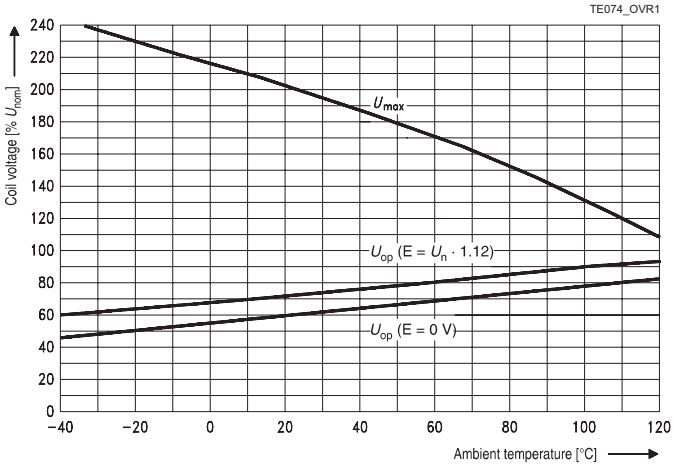
Rated coil voltage	12VDC

Coil versions, DC coil

Coil code	Rated voltage VDC	Operate voltage VDC	Release voltage VDC	Coil resistance[4)] Ω±10%	Rated coil power[4)] mW
*01-402	12	7.2	1.4	181	796
*01-403	12	7.2	1.4	254	567

4) Without components in parallel.
All figures are given for coil without pre-energization, at ambient temperature +23°C.

Coil operating range



Does not take into account the temperature rise due to the contact current
E = pre-energization.

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 Low Noise (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 – dustproof
Degree of protection, IEC 60529	IP54
Corrosive gas	
IEC 60068-2-42	10±2cm³/m³ SO_2, 10 days
IEC 60068-2-43	1±0.3cm³/m³ H_2S, 10 days
Vibration resistance (functional)	
IEC 60068-2-6 (sine sweep)	10 to 500Hz min.5g[5]
Shock resistance (functional)	
IEC 60068-2-27 (half sine)	min. 30g 6ms[5]
Drop test, free fall, IEC 60068-2-32	1m onto concrete

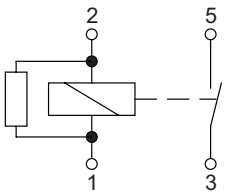
Other Data (continued)	
Terminal type	plug-in, QC
Cover retention	
axial force	150N
pull force	150N
push force	200N
Terminal retention	
pull force	100N
push force	100N
resistance to bending	10N[6]
force applied to side	10N[6]
torque	0.3Nm
Weight	approx. 15g (0.5oz)
Packaging unit	240 pcs.

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

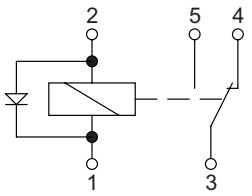
Accessories	
For details see datasheet	Connectors for Micro ISO Relays

Terminal Assignment

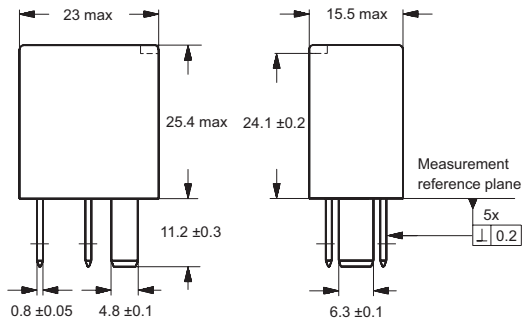
NOR
1 form A, NO with resistor



COD
1 form C, 1 CO with diode

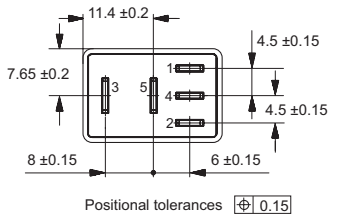


Dimensions



Quick connect terminal similar to ISO 8092-1

View of the terminals (bottom view)



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Micro Relay Low Noise (Continued)

Product code structure Typical product code **V23145 -A 1 1 01 -A 4 02**

Type
V23145 Micro Relay Low Noise

Form
A 1 form C, 1 CO **B** 1 form A, 1 NO

Design
1 Standard

Coil suppression
1 Standard suppression

Coil
01 12 VDC

Version
A Standard

Contact material
4 Silver based

Contact arrangement
02 1 form A, 1 NO **03** 1 form C, 1 CO

Product code	Arrangement	Coil suppr.	Circuit[1)]	Coil	Version	Cont. material	Terminals	Part number
V23145-B1101-A402	1 form A, 1 NO	Resistor	NOR	12VDC	Standard	Silver based	Plug-in, QC	3-1414773-5
V23145-A1101-A403	1 form C, 1 CO	Diode	COD					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.

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