

High Current Micro Relay A

- Pin assignment according to ISO 7588 part 3
- Customized versions on request
 - High Current Micro A with limiting continuous current up to 30A/20A at 85°C

Typical applications

Horn, wiper, water pump, fuel pump, A/C clutch, low beam, high beam and others



Contact Data

Contact arrangement	1 form A, 1NO	1 form C, 1 CO
Rated voltage	12VDC	12VDC
Maximum switching voltage	16VDC	16VDC
Limiting continuous current	NO	NO/NC
23°C	35A	35/25A
85°C	30A	30/20A
125°C	15A	15/10A
Limiting short time current		
overload current	1.35 x 30A, 600s	1.35 x 30/20A, 600s
ISO 8820-3 ¹⁾ (2015-09)	2.00 x 30A, 5s	2.00 x 30/20A, 5s
	3.50 x 30A, 0.5s	3.50 x 30/20A, 0.5s
	6.00 x 30A, 0.1s	6.00 x 30/20A, 0.1s
Contact material	silver alloy	silver alloy
Min. contact load ²⁾	1A 5VDC	1A 5VDC
Initial voltage drop		
NO contact at 10A, typ./max.	15mV/200mV	15mV/200mV
NC contact at 10A, typ./max.		20mV/250mV
Operate time ³⁾	typ. 6ms	typ. 6ms
Release time ³⁾	typ. 3ms	typ. 3ms
Mechanical endurance	> 1x10 ⁶ ops.	> 1x10 ⁶ ops.

Electrical Endurance 12VDC Coil

Electrical Endurance 14VDC 50%							
Load voltage / coil voltage	Load type		Load current			On / off ratio	Electrical endurance ⁴⁾
			1 form A	1 form C ⁵⁾			Coil supression
	NO	NO	NC	Resistor ⁶⁾			
14VDC	resistive	make	35A	35A	20A	2s/2s	>1.5x10 ⁵ ops.
		break	35A	35A	20A		
	capacitive ⁷⁾	make	120A	120A	--	3s/3s	>2x10 ⁵ ops.
		break	20A	20A	--		
	inductive L=0.5mH	make	90A	90A	--	3s/5s	>2x10 ⁵ ops.
		break	25A	25A	--		

All tests performed with cyclic temperature -40 to 125°C

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

2) See Definitions for automotive relays <https://relays.te.com/definitions/> and chapter Diagnostics of Relays in our Application Notes at <https://relays.te.com/appnotes/>

3) At rated voltage and 23°C for a relay coil with suppression resistor. A suppression diode will influence the switching behaviour and reduce the service life.

4) According Weibull

5) NO & NC contacted tested independently

6) Any diode or pn-junction parallel to the coil (internal or external) will significantly decrease the electrical lifetime, especially when used for inductive loads.

7) Max. inrush peak-current at 250 ... 350µs

High Current Micro Relay A (Continued)

Coil Data

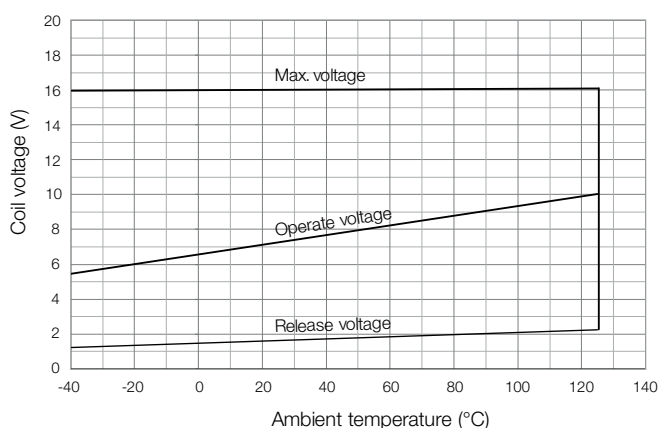
Coil code	Rated voltage [VDC]	Must Operate voltage [VDC]	Must Release voltage [VDC]	Coil resist. [Ω]	Suppr. resist. [Ω]	Total resist. [Ω] $\pm 10\%$	Rated coil power [W]
1005	12	7.2	1.6	144	1000	126	1.14

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

Insulation Data

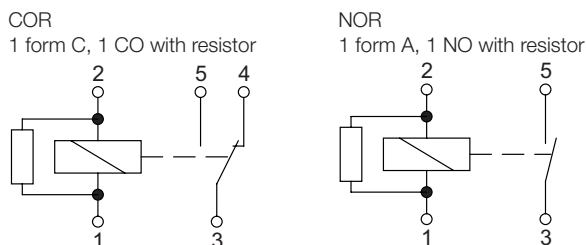
Initial dielectric strength	
between open contacts	500VAC _{rms}
between contact and coil	500VAC _{rms}

Coil operating range



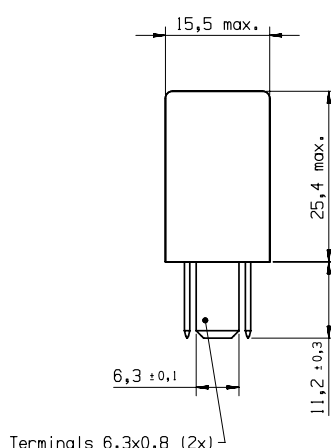
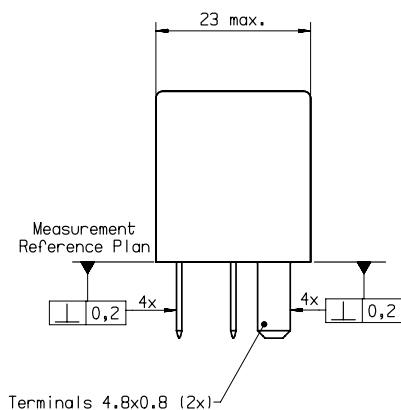
Does not take into account the temperature rise due to the contact current

Terminal Assignment

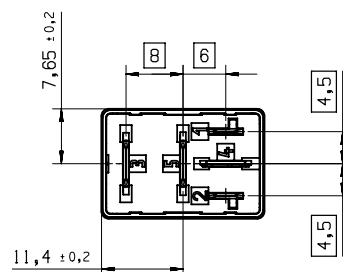


Dimensions

External dimensions



View of the terminals (bottom view)



Quick connect terminal similar to ISO 8092-1.

Other Data

EU RoHS/ELV compliance	compliant
Ambient temperature	-40 to +125°C
Protection to heat and fire	UL94-HB or better ⁸⁾
Rapid change of temperature (thermal shock), IEC 60068-2-14 (2009-01)	100 cycles, -40°C / +125°C
Damp heat cyclic, IEC 60068-2-30 (2005-08)	6 cycles, upper air temp. 55°C
Db, Variant 1	
Degree of protection	IP54
IEC 60529 (2013-08)	
Vibration resistance (functional) ISO 16750-3 (2012-12)	10 to 1000Hz, 2.71g eff. ⁹⁾
Test IV	No change of switching state >10 μ s
Shock resistance (functional) IEC 60068-2-27 (2008-02)	min. 20g 11ms ⁹⁾
half sine	No change of switching state >10 μ s
Drop test, free fall IEC 60068-2-31 (2008-05)	1m onto concrete
Terminal type	Plug-in, QC
Cover retention	
pull	150N
push	200N
Terminal retention	
pull	100N
push	100N
resistance to bending	10N ¹⁰⁾
Weight	approx. 20g (0.7oz)
Packaging unit	480 pcs.

8) Refers to used material.

9) Valid for NC contacts, NO contact values significantly higher.

10) 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

High Current Micro Relay A (Continued)

Product Code Structure

Typical product code **V23074 -H 1 005 -A5 02**

Type	V23074	Micro Relay A
Version	H	H for high current version
Coil suppression	1	Resistor
Coil	005	12VDC for high current version
Contact material	-A5	Silver alloy
Contact arrangement	02	1 form A, 1 NO
	03	1 form C, 1 CO

Production in Europe (only)

Product Code	Arrangement	Coil Suppr.	Circuit ¹¹⁾	Coil	Part Number
V23074-H1005-A502	1 form A, 1 NO	Resistor 1000Ω	NOR	12VDC	4-1904124-4
V23074-H1005-A503	1 form C, 1 CO		COR		tbd

Other types on request.

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

Production in Asia (only)

Product Code	Arrangement	Coil Suppr.	Circuit ¹¹⁾	Coil	Part Number
V23074-H1005-A502	1 form A, 1 NO	Resistor 1000Ω	NOR	12VDC	2-1414971-4
V23074-H1005-A503	1 form C, 1 CO		COR		tbd

Other types on request.

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

11) See terminal assignment diagrams.