

Micro Relay A

- Pin assignment according to ISO 7588 part 3
- Customized versions on request
 - 24VDC versions with special contact gap
 - Integrated components (e.g. diode)
 - Customized marking
 - Special covers (e.g. notches, release features)
 - For low noise version refer to Micro Relay Low Noise
 - For high current version refer to High Current Micro Relay



Typical applications

Cross carline up to 30A for example: ABS control, blower fans, cooling fan, door control, door lock, fuel pump, heated front screen, immobilizer, interior lights, seat control, seatbelt pretensioner, sun roof, trunk lock, valves, window lifter, wiper control.

Contact Data

Contact arrangement	1 form A, 1 NO	1 form C, 1 CO
Rated voltage	12VDC/24VDC	12VDC/24VDC ¹⁾
Maximum switching voltage	16VDC/32VDC	16VDC/32VDC
Limiting continuous current	NO	NO/NC
23°C	30A	30/20A
85°C	25A	25/15A
125°C	10A	10/8A
Limiting short time current		
overload current	1.35 x 25A, 600s	1.35 x 25A/15A, 600s
ISO 8820-3 ²⁾ (2015-09)	2.00 x 25A, 5s 3.50 x 25A, 0.5s 6.00 x 25A, 0.1s	2.00 x 25A/15A, 5s 3.50 x 25A/15A, 0.5s 6.00 x 25A/15A, 0.1s
Contact material	silver alloy	silver alloy
Min. contact load ³⁾	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 ⁴⁾	typ. 6ms	typ. 6ms
Release time ⁴⁾	typ. 3ms	typ. 3ms
Mechanical endurance	>1x10 ⁶ ops.	>1x10 ⁶ ops.

Electrical Endurance 12VDC Coil

Load voltage/ coil voltage	Load type		Load current			On / off ratio	Electrical endurance ⁵⁾	
			1 form A	1 form C ⁶⁾			Coil suppression	
				NO	NO		NC	Resistor ⁷⁾
14VDC	resistive ⁸⁾	make	25A	25A	15A	2s/2s	>1x10 ⁵ ops.	on request
		break	25A	25A	15A			
	capacitive ^{9,9)}	make	100A	100A	--	2s/2s	>1x10 ⁵ ops.	on request
		break	20A	20A	--			
	inductive ⁹⁾ L=0,44mH (NO) L=0,9mH (NC)	make	40A	40A	20A	2s/2s	>1x10 ⁵ ops.	on request
		break	20A	20A	10A			

Electrical Endurance 24VDC Coil

28VDC	resistive ¹⁰⁾	make	15A	15A	10A	2s/2s	>1x10 ⁵ ops.	on request
		break	15A	15A	10A			
	resistive ¹⁰⁾	make	10A	10A	5A	2s/2s	>5x10 ⁵ ops.	>5x10 ⁴ ops.
		break	10A	10A	5A			
	capacitive ¹¹⁾	make	77A	77A	--	2s/2s	>3x10 ⁵ ops.	on request
		break	6A	6A	--			

1) Not applicable for polarity reverse loads like power windows.

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

4) 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.

5) According Weibull

6) NO & NC contacted tested independently

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

8) Cyclic temperature -40°C to 125°C

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

10) Room temperature

11) Cyclic temperature -40°C to 85°C

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. $\pm 10\%$ [Ω]	Rated coil power [W]
1001	12	7.2	1.6	119	680	101	1.42
2001	12	7.2	1.6	119	--	119	1.21
1002	24	14.4	3.6	430	1800	347	1.66
2002	24	14.4	3.6	430	--	430	1.34

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}

Other Data

EU RoHS/ELV compliance	compliant
Ambient temperature	-40 to +125°C
Protection to heat and fire	UL94-HB or better ¹²⁾
Rapid change of temperature (thermal shock), IEC 60068-2-14 (2009-01)	
Na	100 cycles, -40°C / +125°C
Damp heat cyclic, IEC 60068-2-30 (2005-08)	
Db, Variant 1	6 cycles, upper air temp. 55°C
Degree of protection IEC 60529 (2013-08)	IP54
Vibration resistance (functional) ISO 16750-3 (2012-12)	10 to 1000Hz, 2.71g eff. ¹³⁾
Test IV	No change of switching state >10 μ s
Shock resistance (functional) IEC 60068-2-27 (2008-02)	min. 20g 11ms ¹³⁾
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 ¹⁴⁾
Weight	approx. 20g (0.7oz)
Packaging unit	480 pcs.

12) Refers to used material.

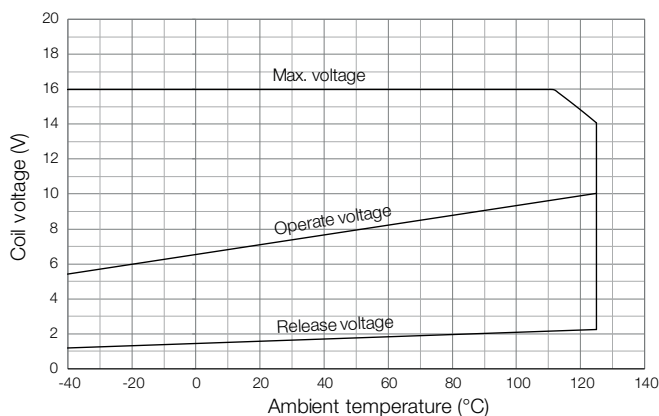
13) Valid for NC contacts, NO contact values significantly higher.

14) 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

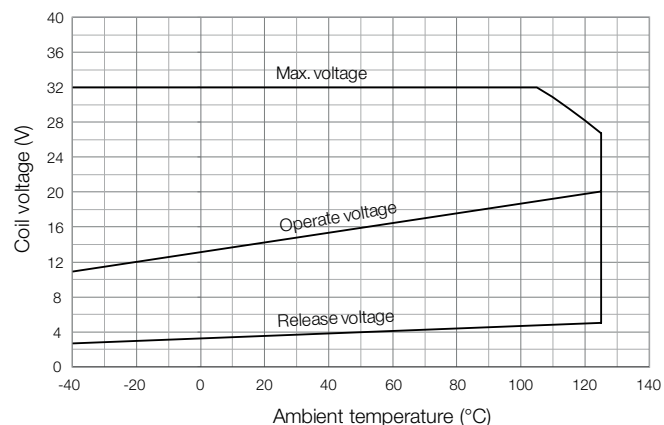
For details see datasheet	Connectors for Micro ISO Relays
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Coil operating range coil 001



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

Coil operating range coil 002

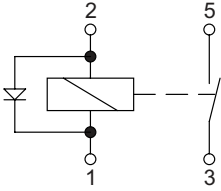


Does not take into account the temperature rise due to the contact current

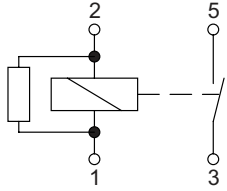
Micro Relay A (Continued)

Terminal Assignment

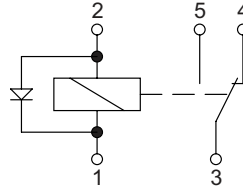
NOD
1 form A, 1 NO with diode



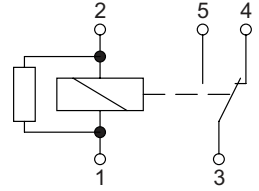
NOR
1 form A, 1 NO with resistor



COD
1 form C, 1 CO with diode

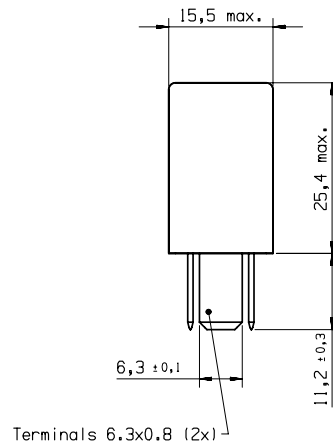
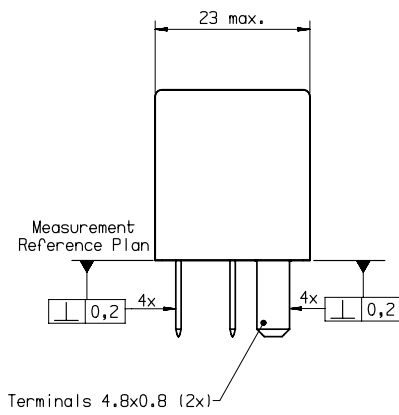


COR
1 form C, 1 CO with resistor

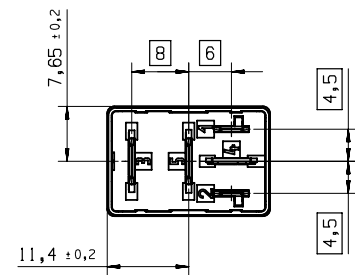


Dimensions

External dimensions



View of the terminals (bottom view)



Quick connect terminal similar to ISO 8092-1.

Micro Relay A (Continued)

Product Code Structure		Typical product code		V23074	-A	1	001	-A4	02
Type		Micro Relay A							
Version		A Standard							
Coil suppression		1 Resistor		2 Diode					
Coil		001 12VDC		002 24VDC					
Contact material		-A4 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 ¹⁵⁾	Coil	Part Number
V23074-A1001-A402	1 form A, 1 NO	Resistor 680Ω	NOR	12VDC	4-1904124-2
V23074-A1001-A403	1 form C, 1 CO		COR		4-1904124-3
V23074-A2001-A402	1 form A, 1 NO	Diode	NOD		5-1393292-8
V23074-A2001-A403	1 form C, 1 CO		COD		6-1419137-4
V23074-A1002-A402	1 form A, 1 NO	Resistor 1800Ω	NOR	24VDC	2359392-1
V23074-A1002-A403	1 form C, 1 CO		COR		3-1393292-8
V23074-A2002-A402	1 form A, 1 NO	Diode	NOD		2359393-1
V23074-A2002-A403	1 form C, 1 CO		COD		6-1393292-3

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 ¹⁵⁾	Coil	Part Number
V23074-A1001-A402	1 form A, 1 NO	Resistor 680Ω	NOR	12VDC	1393292-5
V23074-A1001-A403	1 form C, 1 CO		COR		8-1393292-4
V23074-A2001-A402	1 form A, 1 NO	Diode	NOD		2-1904111-7
V23074-A2001-A403	1 form C, 1 CO		COD		9-1904105-7
V23074-A1002-A402	1 form A, 1 NO	Resistor 1800Ω	NOR	24VDC	8-1393292-9
V23074-A1002-A403	1 form C, 1 CO		COR		9-1904105-4
V23074-A2002-A402	1 form A, 1 NO	Diode	NOD		6-1393292-2
V23074-A2002-A403	1 form C, 1 CO		COD		2354263-1

Other types on request.

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

15) See terminal assignment diagrams.