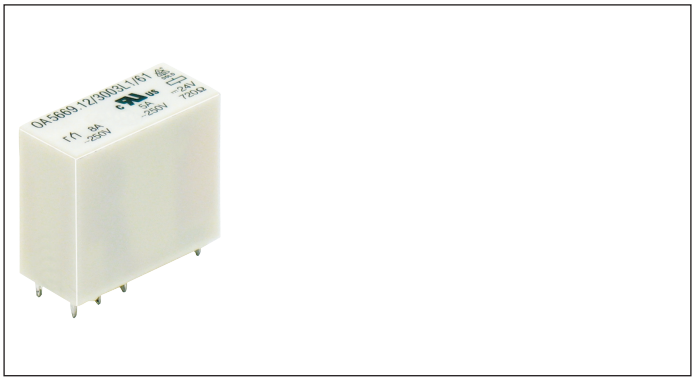
PCB relays

Safety relay
monostable
OA / OW 5669



- According to EN 50205, IEC/EN 60255, IEC 60664-1
- With forcibly guided contacts
- Wash proof model as option
- **Double and reinforced insulation between contact sets according to EN 50178**
- Low rated power consumption
- High mechanical service life
- Compact size, small height

Application

- Switchgear for safety technology
- Escalators and walkways
- Elevators for men and load
- Press controls
- Railway technology

Approvals and Markings

CE · TÜVRheinland CERTIFIED · Type Approved · www.tuv.com ID 0004000000 · cULus Canada / USA

Technical Data

	Relay type		OA/OW 5669
1.0	**Relay coil**		
1.1	Nominal voltage	DC V	6, 12, 20, 24, 48, 60, 110 (other on request)
1.2	Nominal consumption	W	0.7
1.11	Voltage range	U_N	0.8 ... 1.6
1.3	Holding power (at 0.5 x U_N)	W	0.18
2.0	**Contacts**		
2.1	Contact arrangement		1 NC / 1NO 2 changeover contacts
2.2	Contact material		$AgSnO_2$ + 0.2 µm Au; AgNi + 0.2 µm Au, AgNi + 5 µm Au
2.3	Rated insulation voltage	AC V	250
	Switching voltage min./max.	V	AC/DC 10 / DC 250, AC 400 (AC/DC 100 mV / 60 V) [1]
2.4	Limiting continuous current I_{th}	A	2 x 5 (see operating voltage limit curve)
	Switching current min./max.	A	10 mA[3] / 8 (1 mA / 0.3 A)[1]
2.5	Switching power min./max.	VA	3 / 2 000 (1 mVA / 7 VA)[1]
	Switching power min./max.	W	3 / 200 (1 mW / 7 W)[1] (see limit curve for arc-free operation)
2.6	Switching capacity		
	to IEC/EN 60947-5-1 AC 15 [4]	AC V/A	NO: 250 / 2 NC: 250 / 1
	to IEC/EN 60947-5-1 AC 15 [5]	AC V/A	NO: 250 / 3 NC: 250 / 2
	to IEC/EN 60947-5-1 DC 13 [4]	DC V/A	NO: 24 / 2 NC: 24 / 1
	at 0.1 Hz DC 13 [4]	DC V/A	NO: 24 / 4 NC: 24 / 4
	to UL 508		R300
2.7	Electrical life [2]		at 1 s On, 1 s Off (see contacts service life)
	AC 230 V 6 A cos φ = 1	switching cycles	> 1 x 10^5 AgNi > 2 x 10^5 $AgSnO_2$
2.8	Switching frequency max.	switching cycles / s	10
2.9	Response time / Release time	ms	≤ 15 / ≤ 12
2.10	Contact force	cN	≥ 10 / ≥ 8
3.0	**Other**		
3.1	Mechanical life	switching cycles	≥ 50 x 10^6
3.2	Temperature range	°C	- 40 ... + 70 mounted without distance (I_{th} = 2 x 5 A)
3.3	Degree of protection		Solder line proof RT II as option wash proof RT III
3.5	Vibration resistance		10 ... 200 Hz; NC 2 g; NO 10 g; IEC/EN 60068-2-6
3.6	Climate resistance		40 / 070 / 04 (Klimakategorie); A/B/D IEC/EN 60068-1
3.7	Short circuit strength 1 kA / AC 250 V	$AgSnO_2$ AgNi	10 A gL EN 60947-5-1 6 A gL EN 60947-5-1

[1] Values for AgNi-contacts + 5 µm Au
[2] 10 A total current at t = 20°C and coil voltage UN
[3] Typical values
[4] Values for AgNi-contacts
[5] Values for $AgSnO_2$-contacts

Technical Data

3.8	Insulation acc. to IEC 60664-1, EN 50178		**double and reinforced insulation**
	Rated insulation voltage	AC V	250
	Contamination level		2
	Overvoltage category		III
	Test voltage		
	Contact-coil (1 min)	AC kV eff.	≥ 4
	Contact-contact (1min)	AC kV eff.	≥ 4
	Open contact acc. to DIN EN 61810-1	AC kV eff.	1.5
	Transient voltage		
	Contact-coil (1.2 - 50 µs)	kV	≥ 6
	Clearance and creepage distances		
	Contact-coil	mm	≥ 8
	Contact-contact	mm	≥ 5.5
3.9	Weight	g	approx. 19
4.0	**Packing**		
4.1	on cardboard in slipcase	piece	56
4.2	in case package	piece	280
5.0	**Solder method**		
5.1	Solder method /-temperature /-duration	°C / s	Wafe soldering / 260 / 5

Design versions

U_N DC V	Voltage range V	Resistance Ω (± 10%)	AgNi - contacts + 0.2 µm Au			AgNi - contacts + 5 µm Au		$AgSnO_2$ - contacts + 0.2 µm Au	
			OA5669.12	OA5669.16		OA5669.12	OA5669.16	OA5669.12	OA5669.16
6	4.8 ... 9.6	50	981	992	462	691	771	581	
12	9.6 ... 19.2	210	982	993	463	692	772	582	553
20	16.0 ... 32.0	580	987	998	468	697	777	587	558
24	19.2 ... 38.4	820	983	994	464	693	773	583	554
48	38.4 ... 76.8	3200	984	995	465	694	774	584	555
60	48.0 ... 96.0	5200	985	996	466	695	775	585	556
110	88.0 ... 176.0	18000	986	997	467	696	776	586	557
				1)	2)		1)		1)

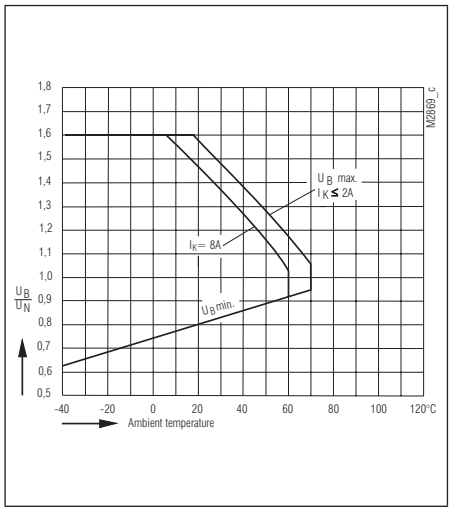
1) = Pin configuration standard
2) = Pin configuration reverse

Ordering example

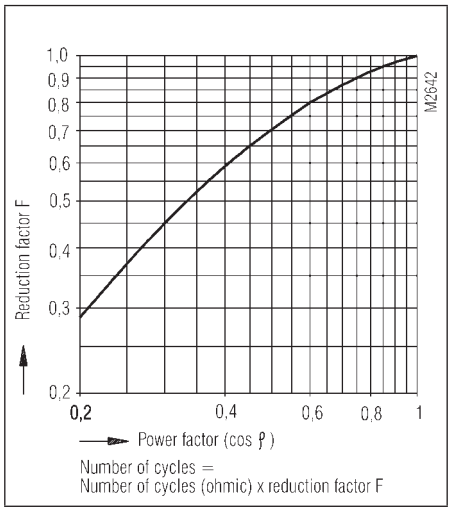
O_ 5669._ _ / _ _ _ / 61*)

- Design version
- Pin configuration
  - .16 1 NC / 1 NO
  - .12 2 changeover contacts
  - .20 1 NO /1changeover ontact
- Degree of protection
  - A = Solder line proof RT II
  - W = Wash proof RT III

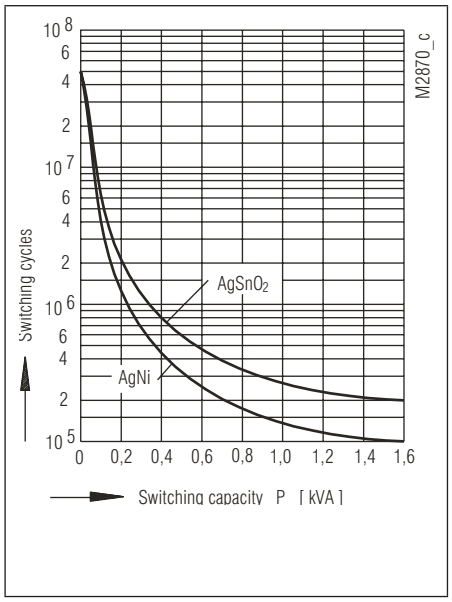
*) /61 cURus approval



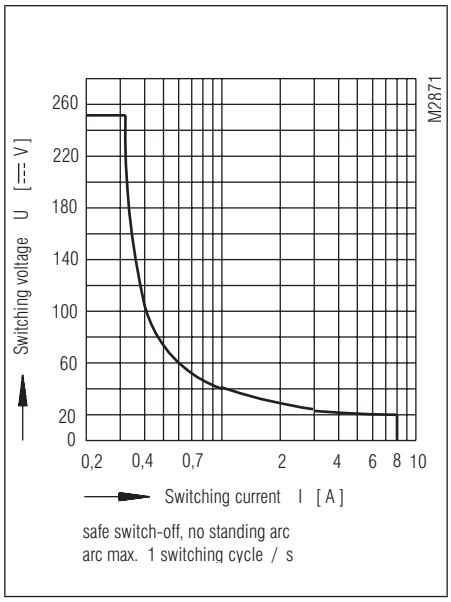
Operating voltage limit curve



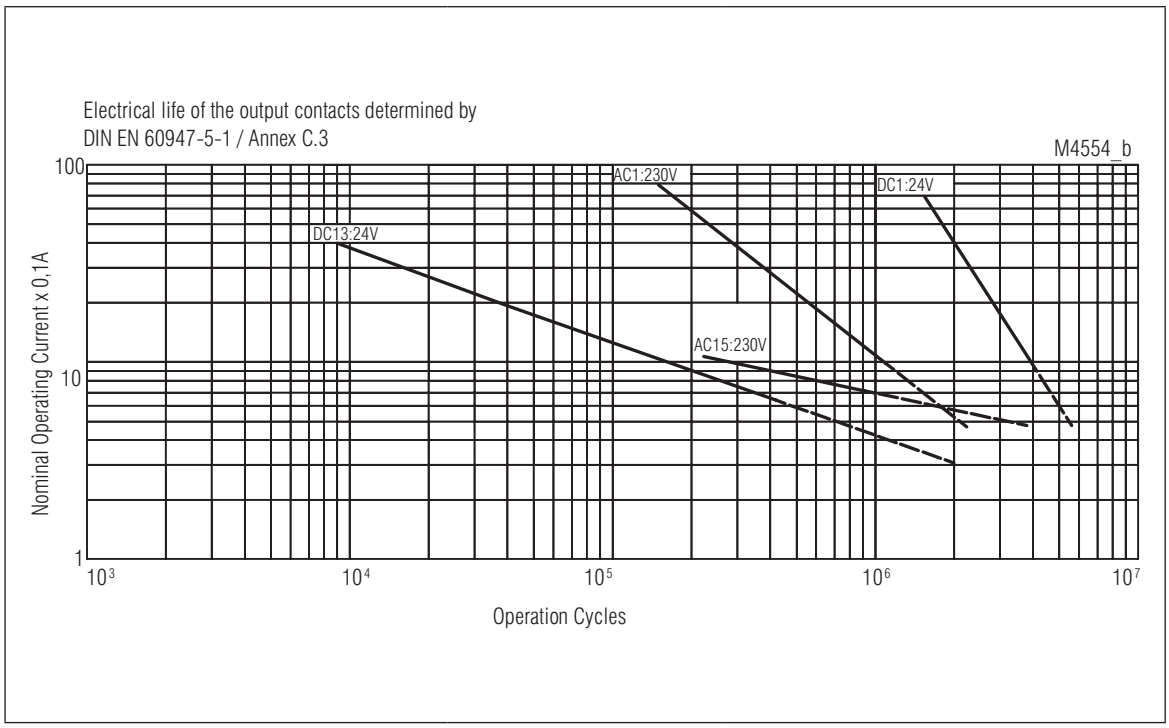
Reduction factor for reactive loads



Contact service life (at t_u = 20°C)



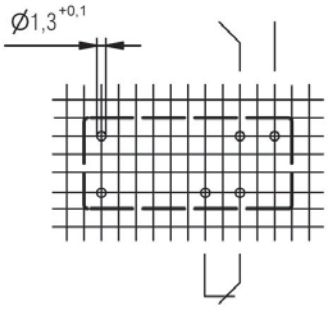
Limit curve for arc-free operation (at t_u = 20°C)
Contact material AgNi

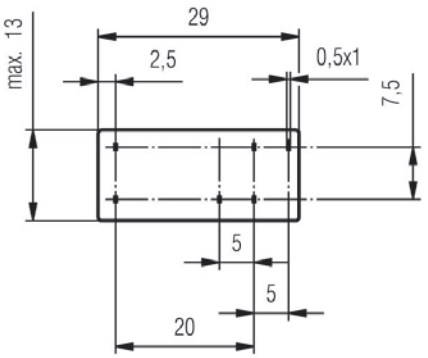


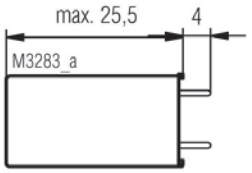
Electrical life

Dimensions, Pin Configuration, Connection Diagrams

Drilling plan (solder side)

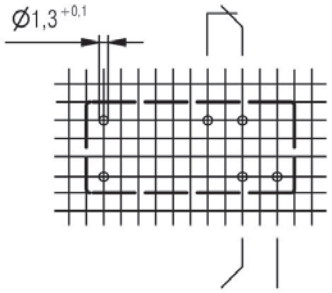


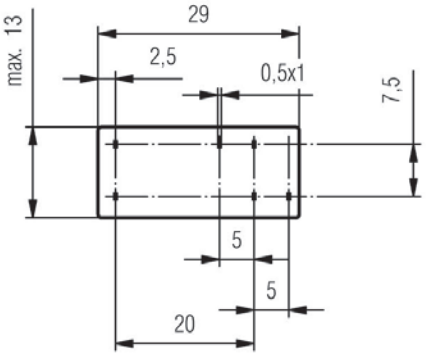


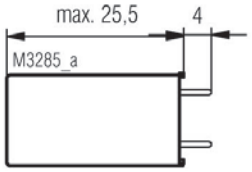


OA5669.16/9_ _
OW5669.16/9_ _

Pin configuration standard

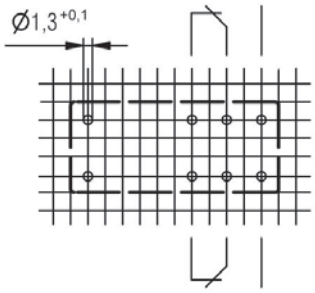


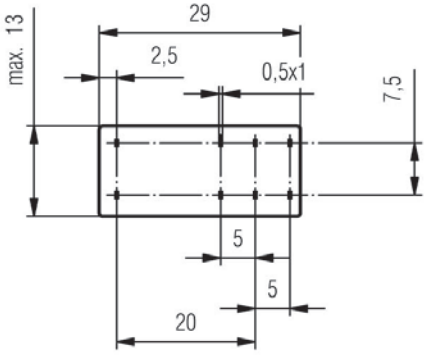


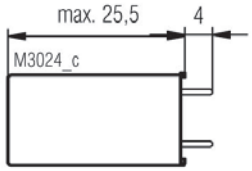


OA5669.16/4_ _
OW5669.16/4_ _

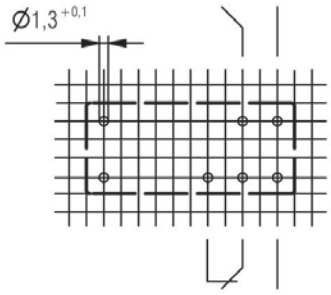
Pin configuration reverse

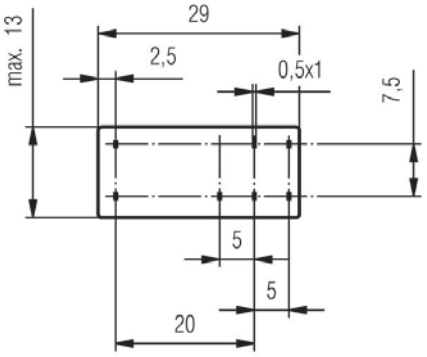


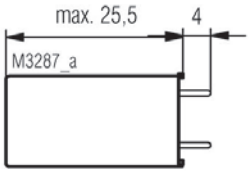




OA5669.12
OW5669.12





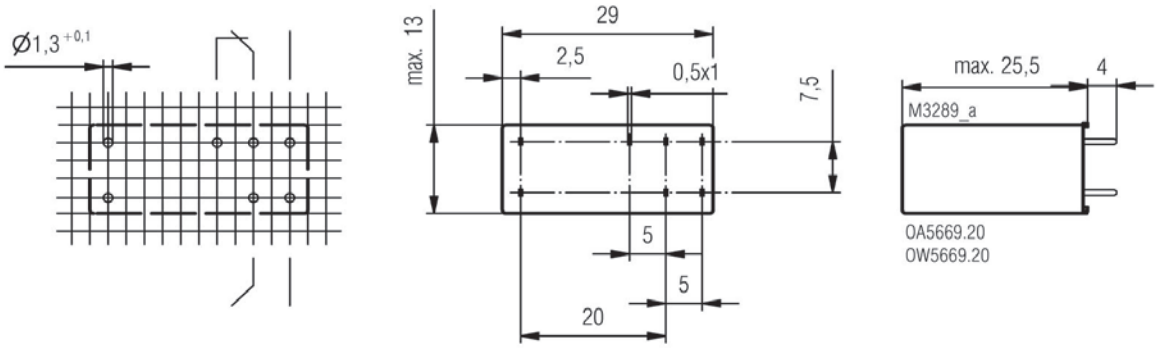


OA5669.20
OW5669.20

Connection for basic grid divensions 2.5 mm as well as 2.54 mm according to IEC/EN 60097 and IEC 60326 average

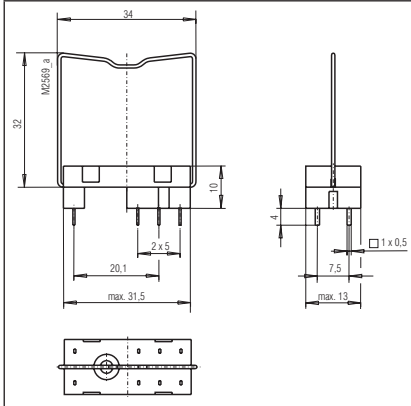
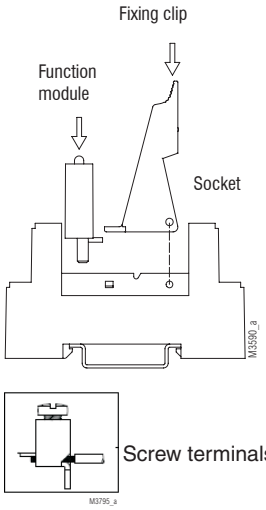
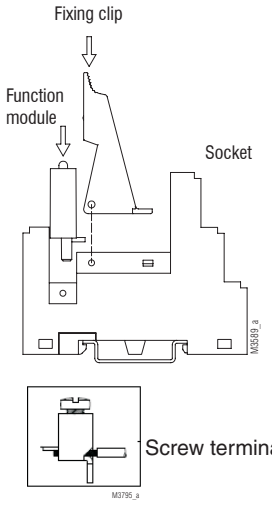
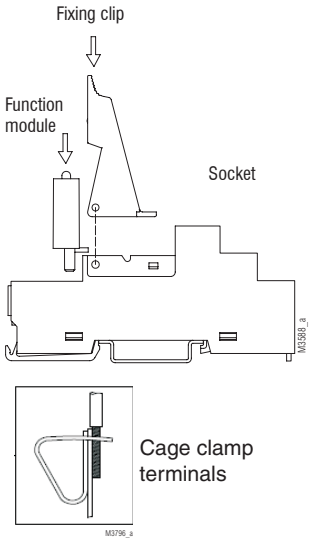
Dimensions, Pin Configuration, Connection Diagrams

Drilling plan (solder side)



Connection for basic grid divensions 2.5 mm as well as 2.54 mm according to IEC/EN 60097 and IEC 60326 average

Accessories

Socket ET 1415.021 Fixing clip ET 1415.025	Socket ET 1415.041	Socket ET 1415.044	Socket ET 1415.047
	• Socket for DIN-rail • incl. fixing clip	• Socket for DIN-rail • incl. fixing clip	
		• incl. safe separation between coil and contacts according to DIN EN 60947-1, DIN EN 61140, DIN EN 60204	
			
Article number: 0034769	Article number: 0055571	Article number: 0059274	Article number: 0059270
Fixing clip (wire): 0034770 Fixing clip (plastic): 0047726	**Function modules** **ET1415.913:** DC 24 V, with free-wheel diode and green LED Article number: 0056828 **ET1415.911**: DC 24 V, with free-wheel diode and red LED Article number: 0055909 **ET1415.924:** DC 60 V, with free-wheel diode and red LED Article number: 0062552 **ET1415.912:** AC/DC 24 V, with varistor and green LED Article number: 0055910		