

# Safety relay

## OA / OW 5669



- according to EN 50 205, IEC/EN 60 255, IEC 60 664-1
- with positively driven contacts
- wash proof model as option
- **double and reinforced insulataion between contact sets according to EN 50 178**
- low rated power consumption
- high mechanical service life
- compact size, small height
- Approvals: UL, CSA, TÜV approval: R 9012316

### Applications:

ZH1/457 press controls  
Switchgear for safety technology



OA / OW 5669

## Technical data

Relay type	OA 5669		
<b>1. 0 Relay coil</b>			
1. 1 Nominal voltage	DC V	5, 6, 12, 20, 24, 48, 60, 110	
1. 2 Nominal consumption	W	0,7	
<b>2. 0 Contacts</b>			
2. 1 Contact arrangement	1 NC / 1NO 2 changeover contacts, 1 No and 1 changeover contact		
2. 2 Contact material	AgCdO + 0,2 µm Au; AgNi 10 + 0,2 µm Au optionally + 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) <sup>1)</sup>	
2. 4 Limiting continuous current	A	2 x 5 (see operating voltage limit curve)	
Switching current min./max.	A	10mA <sup>3)</sup> / 8 (1 mA / 0,3 A) <sup>1)</sup>	
2. 5 Switching power min./max.	VA	3 / 2 000 (1 mVA / 7 VA) <sup>1)</sup>	
Switching power min./max.	W	3 / 200 (1 mW / 7 W) <sup>1)</sup> (s. limit curve for arc-free operation)	
2. 6 Switching capacity			
to IEC/EN 60 947-5-1 AC 15	AC V/A	NC: 230 / 1	NO: 230 / 3
DC 13	DC V/A	NC: 24 / 2	NO: 24 / 2
2. 7 Electrical life <sup>2)</sup>	at 1 s On, 1 s Off (s. contacts service life)		
AC 230 V 6 A cos φ = 1	switching cycles	> 1 x 10 <sup>5</sup> AgNi 10	> 2 x 10 <sup>5</sup> AgCdO
2. 8 Switching frequency max.	switching cycles / s	10	
2. 9 Response time / Release time	ms	≤ 15 / ≤ 12	
2.10 Contact force NO / NC	cN	≥ 10 / ≥ 8	
<b>3. 0 Other</b>			
3. 1 Mechanical life	switching cycles	≥ 50 x 10 <sup>6</sup>	
3. 2 Temperature range	°C	- 40 ... + 60 mounted without distance (I <sub>th</sub> = 2 x 5 A)	
3. 3 Degree of protection, housing	IP40 / IP67 IEC/EN 60 529 wash proof		
3. 4 Housing	Thermoplast GF, PA		
3. 5 Vibration resistance	10 ... 55 Hz; 0,35 mm amplitude; 5 g max. IEC/EN 60 068-2-6		
3. 6 Climate resistance	40 / 060 / 04 (climate category); A/B/D IEC/EN 60 068-1		
3. 8 Insolation according to IEC 60 664-1, EN 50 178	<b>double and reinforced insulation</b>		
Rated insulation voltage	AC V	250	
Contamination level	2		
Overvoltage category	III		

<sup>1)</sup> Values for AgNi 10-contacts + 5 µm Au

<sup>2)</sup> 10 A total current at t = 20°C and coil voltage UN

<sup>3)</sup> Typical values

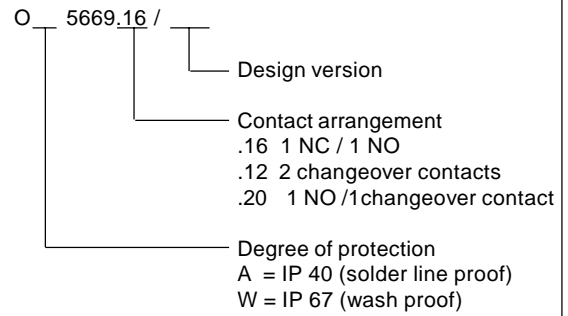
## Technical data

3. 8 Test voltage	contact-coil (1 min)	AC kV eff.	≥ 4
	contact-contact (1 min)	AC kV eff.	≥ 4
	Transient volt. contact-coil (1,2 - 50 μs)	kV	≥ 6
Clearance and creepage distances as per IEC/EN 60 730, IEC/EN 60 335			
3. 9 Weight	contact-coil	mm	≥ 8
	contact-contact:	mm	≥ 5,5
		g	15

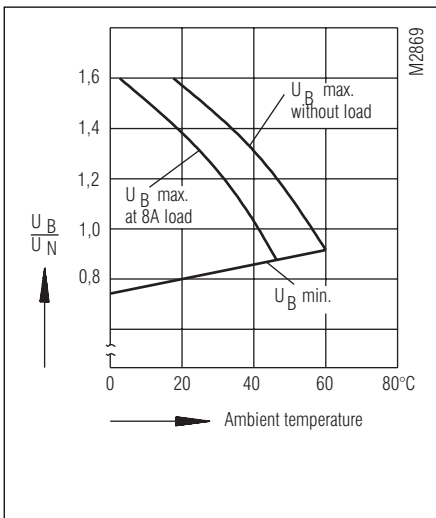
## Standard variants

U <sub>N</sub> DC V	Voltage range DC V	Resistance at 20°C Ω	Design version OA / OW		
			.16	.16	.12
5	4,0...8,0	36	461	991	980
6	4,8...9,6	50	462	992	981
12	9,6...19,2	210	463	993	982
20	16,0...32,0	580	468	998	987
24	19,2...38,4	820	464	994	983
48	38,4...76,8	3 200	465	995	984
60	48,0...96,0	5 200	466	996	985
110	88,0...176	18 000	467	997	986

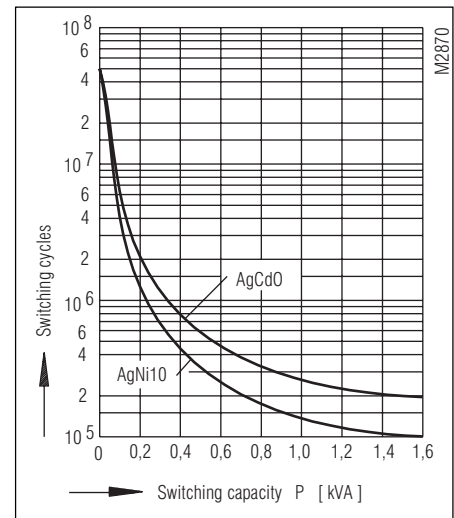
## Ordering example



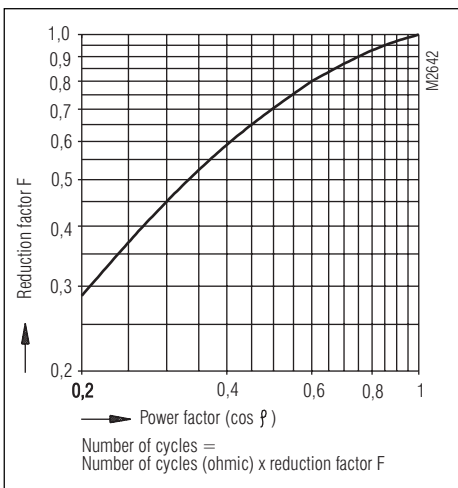
## Characteristics



Operating voltage limit curve

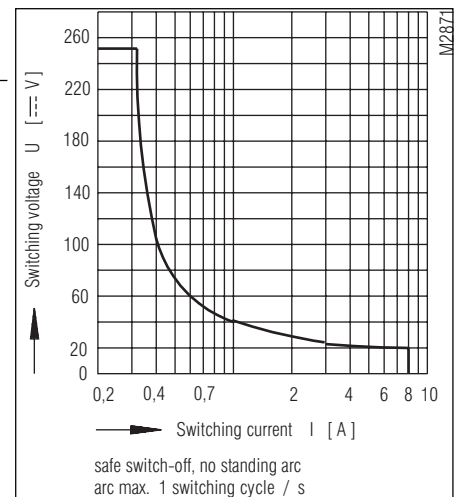


Contact service life (at  $t_u = 20^\circ\text{C}$ )



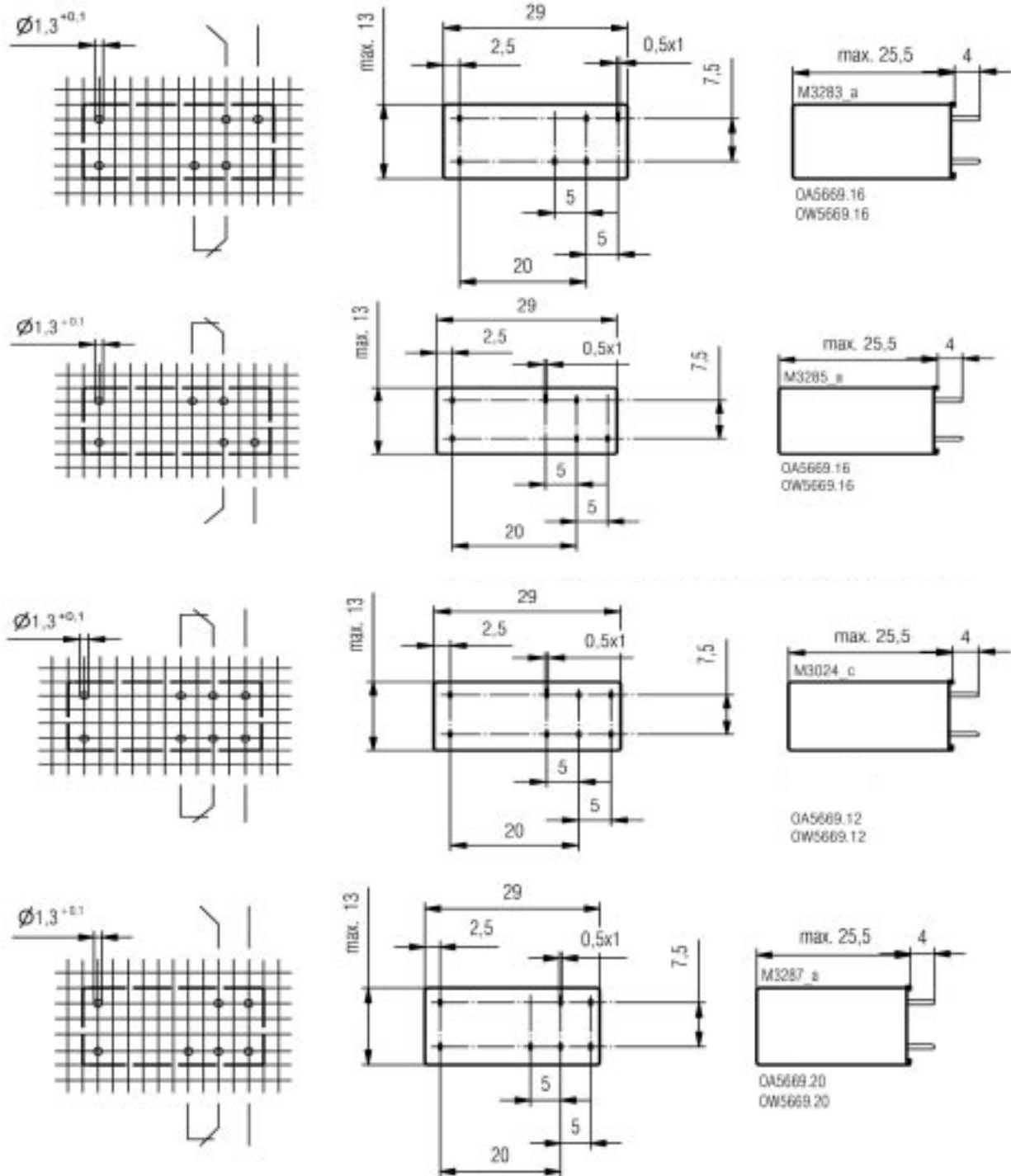
Reduction factor for inductive loads

Contact material  
AgNi



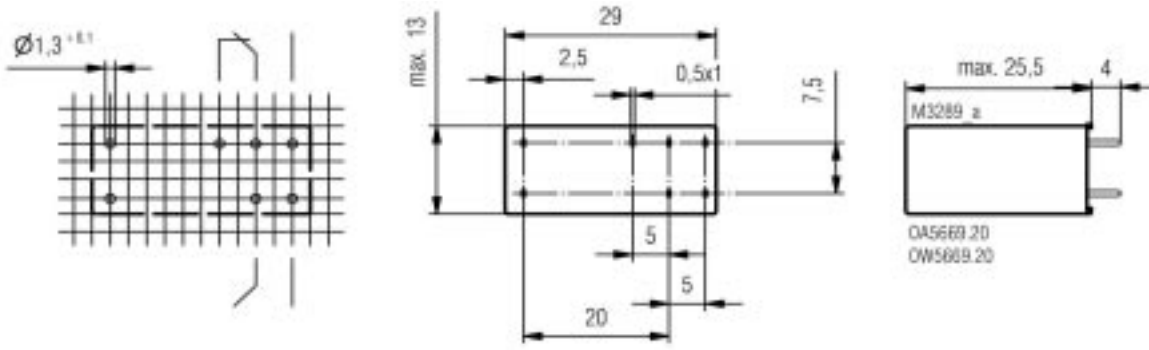
Limit curve for arc-free operation  
(at  $t_u = 20^\circ\text{C}$ )

## Dimensions, pin configuration, connection diagrams



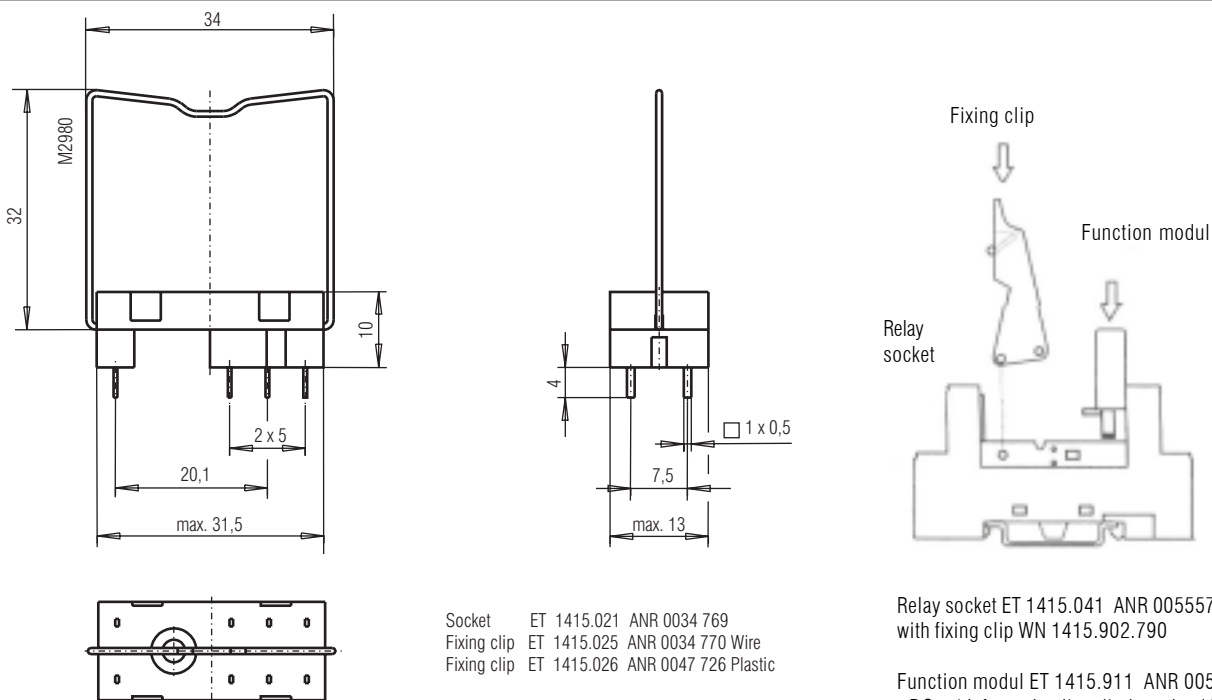
Connection for basic grid dimensions 2,5 mm as well as 2,54 mm according to IEC/EN 60 097 and IEC 60 326 average

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## Accessories



Socket ET 1415.021 ANR 0034 769  
 Fixing clip ET 1415.025 ANR 0034 770 Wire  
 Fixing clip ET 1415.026 ANR 0047 726 Plastic

Relay socket ET 1415.041 ANR 0055571  
 with fixing clip WN 1415.902.790

Function modul ET 1415.911 ANR 0055909  
 - DC, with free-wheeling diode and red LED

Function modul ET 1415.912 ANR 0055910  
 - AC/DC with green LED