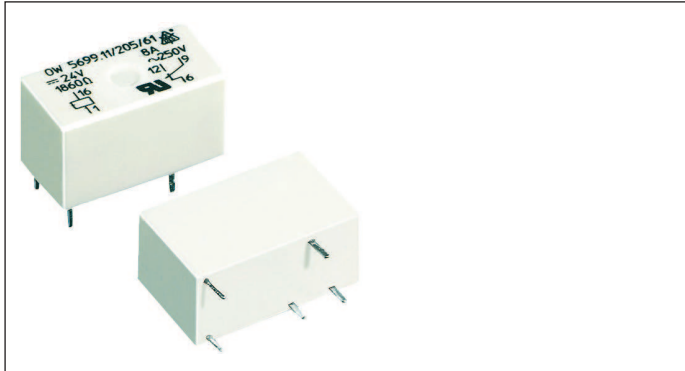


## DILAIS

Power Miniature Relays, monostable  
OW 5691, OW 5699



- According to DIN EN 61810-1, DIN EN 60664-1
- Clearance and creepage distances:  
Contact - coil  $\geq 8$  mm
- Low rated power consumption
- High dielectric strength  $\geq 4$  kV
- High mechanical service life
- High switching power
- High thermal continuous current
- Large voltage range
- Very small volume **DIL model**, can be plugged into standard IC-Sockets
- Different connection arrangements and contact materials
- Wash proof RT III

### Applications

- Control technique
- White goods

### Approvals and Markings



### Technical Data

Relay type	OW 5691 / OW 5699		OW 5699
<b>1.0 Relay coil</b>			
1.1 Nominal voltage	DC V	4, 5, 6, 12, 20, 24, 48	
1.2 Nominal consumption	mW	see table Technical Data	
1.11 Voltage range	$U_N$	0.75 ... 2.2	0.75 ... 1.6
1.13 Holding power	mW	see table Technical Data	
<b>2.0 Contacts</b>			
2.1 Contact arrangement	1 NO, 1 changeover contact		
2.2 Contact material	AgNi + 0.3 $\mu$ m Au <sup>1)</sup> ; optionally 3 $\mu$ m Au		
2.3 Rated insulation voltage	AC V	250	
Switching voltage min./max.	V	AC/DC 10 (AC/DC 2 / AC/DC 60) <sup>3)</sup> / DC 120, AC 250	
2.4 Limiting continuous current $I_{th}$	A	5	8
Switching current min./max.	A	0.01 <sup>2)</sup> / 5	0.01 <sup>2)</sup> / 8
2.5 Switching power min./max.	VA	0.1 / 1 250	0.1 / 2 000
Switching power min./max.	W	0.1 / 120	0.1 / 120
2.6 Switching capacity to IEC/EN 60947-5-1	NC: 230 / 1, NO: 230 / 3		
AC 15	AC V/A		
2.7 Electrical life	at 1 s On, 1 s Off (see contacts service life)		
at AC 230 V 5 A $\cos \varphi=1$	switching cycles	see characteristics of contact service life	
2.9 Response time	ms	( $I_{th}=5$ A) max. 8 (typically 5)	( $I_{th}=8$ A) max 5. (typically 2.2)
Release time	ms	max. 4 (typisch 2)	
Bouncing time (NC)	max. 10 (typically 6)		max. 8 (typically 3.5)
Bouncing time (NO)	(I <sub>th</sub> =5 A) max. 4 (typically 1.5)		(I <sub>th</sub> =8 A) max. 2 (typically 1)
2.10 Contact force	cN	approx. 8	approx. 10
<b>3.0 Other</b>			
3.1 Mechanical life	switching cycles	$\geq 10^8$	
3.2 Temperature range	$^{\circ}$ C	- 40 ... + 80	
3.3 Degree of protection	Wash proof RT III		
3.5 Vibration resistance	10 ... 55 Hz; 1.2 mm amplitude; 10 g max. IEC/EN 60068-2-6		
3.6 Climate resistance	20 / 080 / 04 (climate category); A / B / D IEC/EN 60068-1		

<sup>1)</sup> on request: AgSnO<sub>2</sub> + 0.3  $\mu$ m Au

<sup>2)</sup>Typical values

## Technical Data

3.8	Insulation according to IEC 60664-1		
	Rated insulation voltage	AC V	250
	Pollution degree		3
	Overtoltage category		III
	Test voltage		
	Contact-coil (1 min)	AC kV eff.	≥ 4
	Clearance and creepage distances		
	Contact-coil	mm	≥ 5.5 (safe separation acc. to EN 50178)
3.9	Weight	g	approx. 5
<b>4.0 Packing</b>			
4.1	on cardboard in slipcase	piece	100
4.2	in case package	piece	1000
<b>5.0 Solder method</b>			
5.1	Solder method /-temperature /-duration	°C / s	Wafe soldering / 260 / 5

## Design Versions

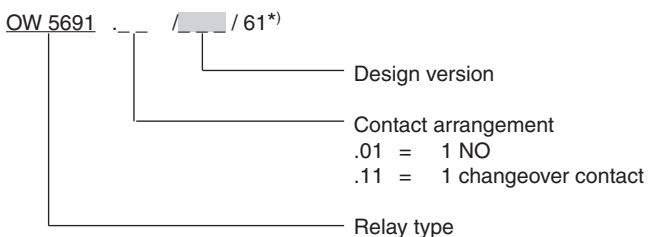
### 1 changeover contact

	Nominal volatage U <sub>N</sub>	V DC						
			4.5	6	12	20	24	48
I <sub>th</sub> = 5 A	Design version	AgNi 0.15	911	912	913	916	914	915
	Type OW 5691.11	Au-Contact	081	082	083	086	084	085
	Design version	AgNi 0.15	171	172	173	176	174	175
	Type OW 5699.11	Au-Contact	191	192	193	196	194	195
	Resistance at 20°C	Ω	78	155	600	1 600	2 400	9 216
	Nominal consumption	mW	260	233	240	250	240	250
	Holding power	mW	65	58	60	62.5	60	62.5
	Response voltage	V DC	3.3	4.5	9	14.5	17.5	36
I <sub>th</sub> = 8 A	Design version	AgSnO <sub>2</sub>	201	202	203	204	205	206
	Type OW 5699.11							
	Resistance at 20°C	Ω	65	115	465	1 250	1 860	6 310
	Nominal consumption	mW	311	313	310	320	310	365
	Holding power	mW	77.75	78.25	77.5	80	77.5	91.25
Response voltage	V DC	3.3	4.5	9	15	18	36	

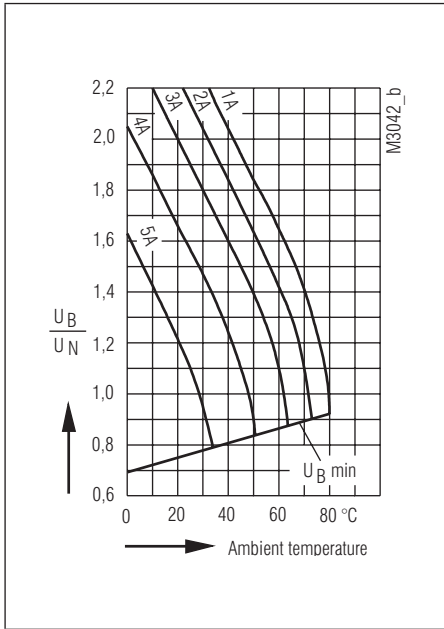
### 1 NO contact

	Nominal volatage U <sub>N</sub>	V DC						
			4.5	6	12	20	24	48
I <sub>th</sub> = 5 A	Design version	AgNi 0.15	921	922	923	926	924	
	Type OW 5691.01	Au-Contact	091	092	093	096	094	
	Design version	AgNi 0.15	181	182	183	186	184	
	Type OW 5699.01	Au-Contact	231	232	233	236	234	
	Resistance at 20°C	Ω	155	315	1 070	2 960	4 350	
	Nominal consumption	mW	131	114	135	135	132	
	Holding power	mW	32.75	28.5	33.75	33.75	33	
	Response voltage	V DC	3	4.3	8	13	16	
I <sub>th</sub> = 8 A	Design version	AgSnO <sub>2</sub>	221	222	223	224	225	226
	Type OW 5699.01							
	Resistance at 20°C	Ω	78	155	600	1 600	2 400	9 200
	Nominal consumption	mW	260	233	240	250	240	250
	Holding power	mW	65	58.25	60	62.5	60	62.5
Response voltage	V DC	3.3	4.5	9	14	17	32	

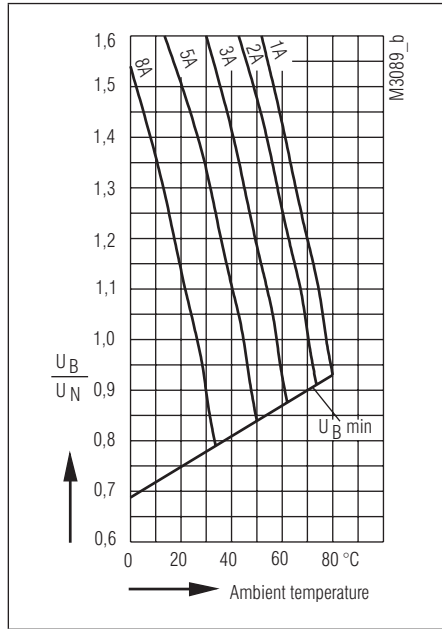
## Ordering Example



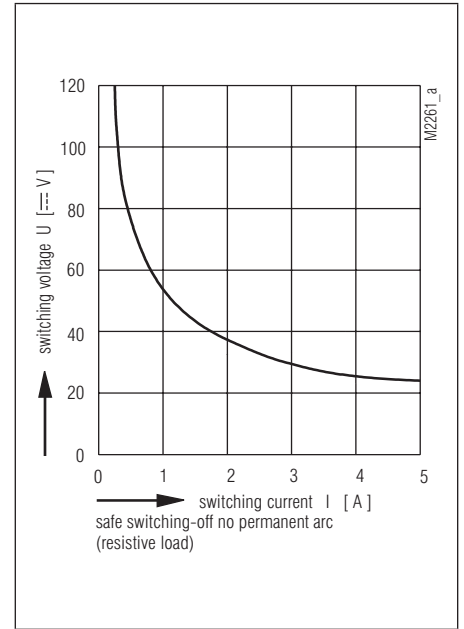
\*) /61 cURus approval



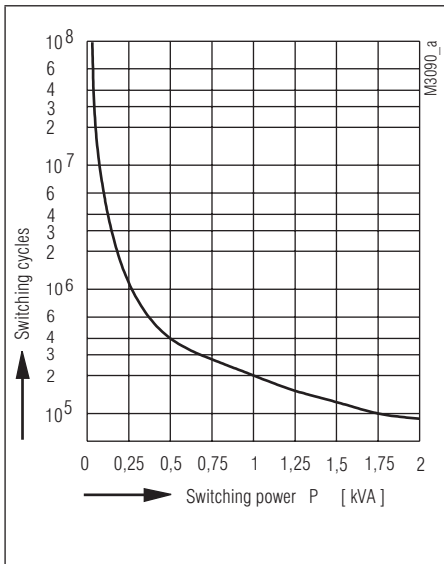
Operating voltage limit curve for OW 5691 and OW 5699 with  $I_m \leq 5$  A



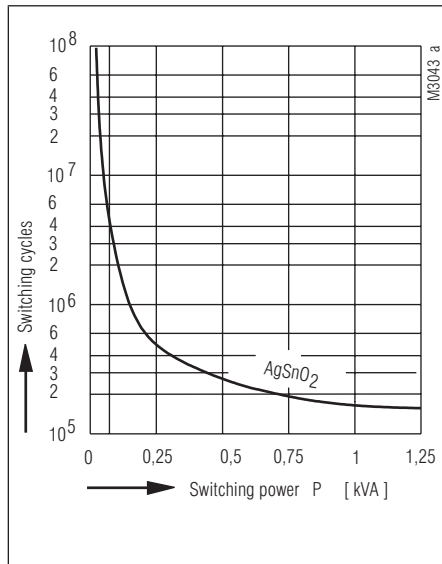
Operating voltage limit curve for OW 5699 with  $I_m \leq 8$  A



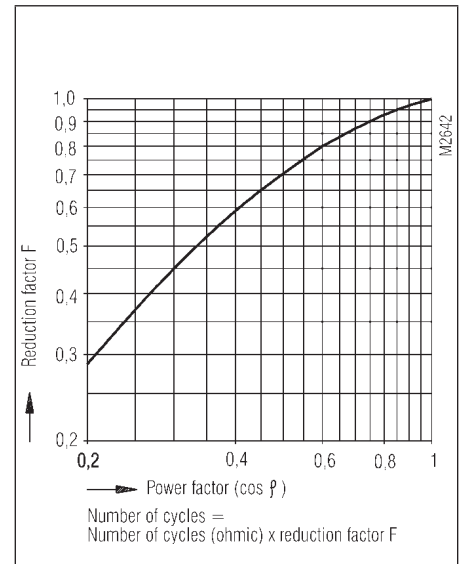
Limit curve for arc-free operation at  $t_v = 20^\circ\text{C}$ ) for OW 5691 and OW 5699 (resistive load)



Contact service life for OW 5699 with  $I_m \leq 8$  A (NO contact)



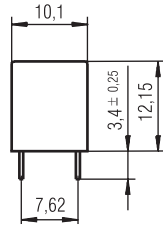
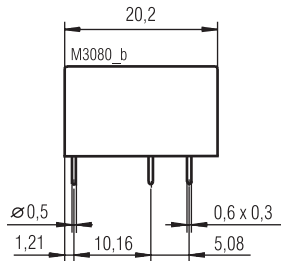
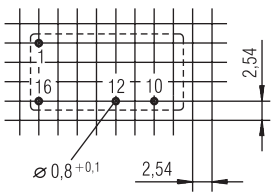
Contact service life for OW 5691 and OW 5699 with  $I_m \leq 5$  A (NO contact)



Reduction factor for inductive loads

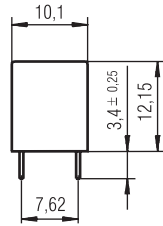
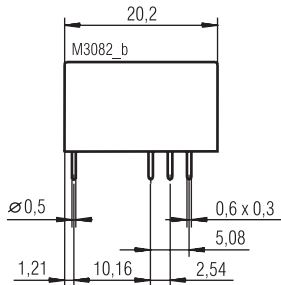
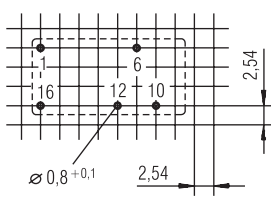
## Dimensions, Pin Configuration, Connection Diagrams

Pin arrangement (bottom view)



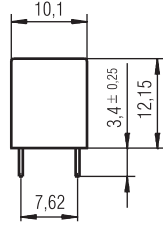
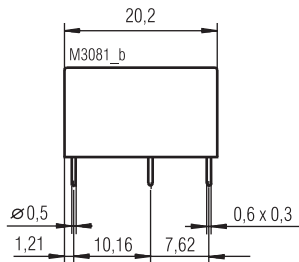
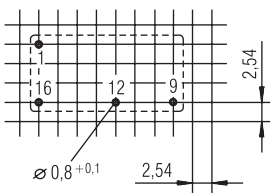
OW 5691.01

Pin arrangement (bottom view)



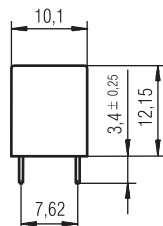
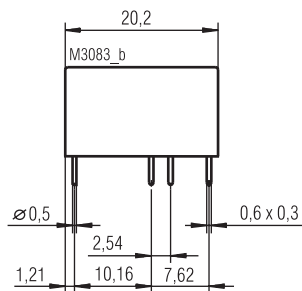
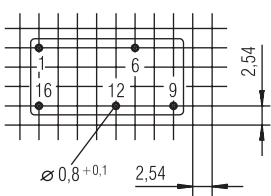
OW 5691.11

Pin arrangement (bottom view)



OW 5699.01

Pin arrangement (bottom view)



OW 5699.11

Connections for basic grid dimensions 2.5 mm as well as 2.54 mm according to IEC/EN 60 097 and IEC 60 326 average.  
Pin distance tolerance measured at the pin ends  $\pm 0.3$  mm. Dimensions are valid for untinned state.