

Power miniature relay

dilais® OW 5691, OW 5699

- acc. to DIN EN 61 810-1, DIN EN 60 664-1
- very small volume **DIL model**, can be plugged into standard IC-Sockets
- safe separation $L + K \geq 5,5$ mm, EN 50 178
- high dielectric strength between coil and contact ≥ 4 kV
- low rated power consumption
- large voltage range
- high switching power
- high thermal continuous current
- different contact materials
- different connection arrangements, also for SMD
- high life
- wash proof, degree of protection IP 67
- Approvals:



Technical data

Relay type	OW 5691 / OW5699	OW 5699
1. 0 Relay coil		
1. 1 Nominal voltage	DC V	4,5; 6; 12; 20; 24; 48
1. 2 Nominal consumption	mW	see table Technical data
2. 0 Contacts		
2. 1 Contact arrangement	1 NO, 1 changeover contact	
2. 2 Contact material	AgSnO ₂ + 0,3 µm Au; AgNi 0,15 + 0,3 µm Au ¹⁾ ; optionally 3µm Au	
2. 3 Rated insulation voltage	AC V	250
Switching voltage min./max.	V	AC/DC 10 / DC 120, AC 250
2. 4 Limiting continuous current I_{th}	A	5
Switching current min./max.	A	0,01 ²⁾ / 5
2. 5 Switching power min./max.	VA	0,1 / 1 250
Switching power min./max.	W	0,1 / 120
2. 6 Switching capacity at IEC/EN 60 947-5-1 AC 15	AC V/A	NC: 230 / 1, NO: 230 / 3
2. 7 Electrical life at AC 230 V 5 A $\cos \varphi=1$	switching cycles	see contacts service life
2. 9 Response time	ms	
OW 5691 / 99, $I_{th} = 5$ A / OW 5699 $I_{th} = 8$ A		max. 8 (typically 5) / max 5. (typically 2,2)
Release time	ms	max. 4 (typically 2)
Bouncing time (NO) OW 5691 / 99, $I_{th}=5$ A / OW 5699 $I_{th}=8$ A		max. 10 (typically 6) / max. 8 (typically 3,5)
Bouncing time (NC) OW 5691 / 99, $I_{th}=5$ A / OW 5699 $I_{th}=8$ A		max. 4 (typically 1,5) / max. 2 (typically 1)
2.10 Contact force	cN	ca. 8 ca. 10
3. 0 Other		
3. 1 Mechanical life	switching cycles	$\geq 10^8$
3. 2 Temperature range	°C	- 40 ... + 80
3. 3 Degree of protection, Housing / Connect.	IP 67 / IP 00 IEC/EN 60 529 , wash proof as per Qc 2 IEC/EN 60 068-2-17	
3. 4 Housing	Thermoplast PBT GF	
3. 5 Vibration resistance	10 ... 55 Hz; 1,2 mm amplitude; 10 g max. IEC/EN 60 068-2-6	
3. 6 Climate resistance	20 / 080 / 04 (climate category); A/B/D IEC/EN 60 068-1	
3. 8 Insulation according to IEC 60 664-1		
Rated insulation voltage	AC V	250
Contamination level		3
Overvoltage category		III
Test voltage		
Contact-coil (1 min)	AC kV eff.	≥ 4
3. 9 Weight	g	approx. 5

¹⁾ on request: AgSnO₂ + 0,3 µm Au

²⁾ Typical values

Technical data

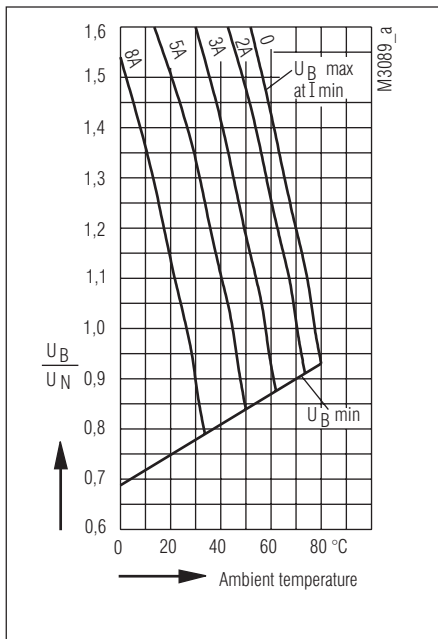
Control side 1 changeover contact

$I_{th} = 5\text{ A}$	Nominal voltage	V DC	4,5	6	12	20	24	48
	Design version	AgNi 0,15	911	912	913	916	914	915
Typ OW 5691.11	Au-contact	081	082	083	086	084	085	
Design version	AgNi 0,15	171	172	173	176	174	175	
Typ OW 5699.11	Au-contact	191	192	193	196	194	195	
Coil resistance at 20°C	Ω	78	155	600	1 600	2 400	9 216	
Nominal consumption	mW	260	233	240	250	240	250	
Pick-up voltage	V DC	3,3	4,5	9	14,5	17,5	36	
$I_{th} = 8\text{ A}$	Design version	AgSnO ₂	201	202	203	204	205	206
	Typ OW 5699.11							
Coil resistance at 20°C	Ω	65	115	465	1 250	1 860	6 310	
Nominal consumption	mW	311	313	310	320	310	365	
Pick-up voltage	V DC	3,3	4,5	9	15	18	36	

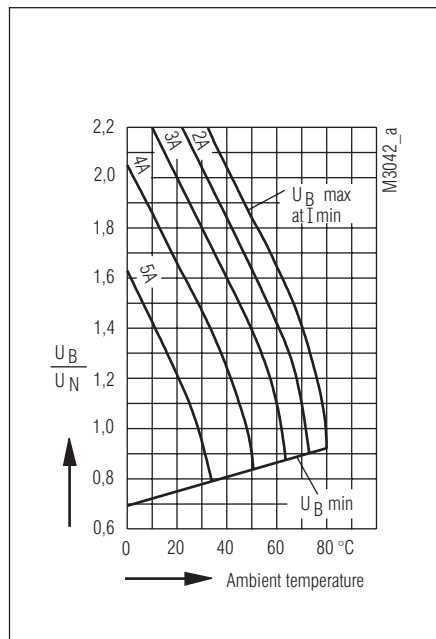
1 NO

$I_{th} = 5\text{ A}$	Nominal voltage	V DC	4,5	6	12	20	24	48
	Design version	AgNi 0,15	921	922	923	926	924	925
Typ OW 5691.01	Au-contact	091	092	093	096	094	095	
Design version	AgNi 0,15	181	182	183	186	184	185	
Typ OW 5699.01	Au-contact	231	232	233	236	234	235	
Coil resistance at 20°C	Ω	155	315	1 070	2 960	4 350	14 620	
Nominal consumption	mW	131	114	135	135	132	158	
Pick-up voltage	V DC	3	4,3	8	13	16	32	
$I_{th} = 8\text{ A}$	Design version	AgSnO ₂	221	222	223	224	225	226
	Typ OW 5699.01							
Coil resistance at 20°C	Ω	78	155	600	1 600	2 400	9 200	
Nominal consumption	mW	260	233	240	250	240	250	
Pick up voltage	V DC	3,3	4,5	9	14	17	32	

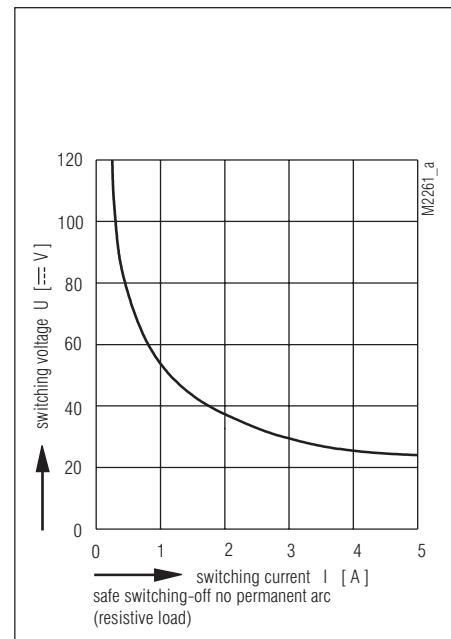
Characteristics



Operating voltage limit curve for OW 5699 with $I_{th} \leq 8\text{ A}$

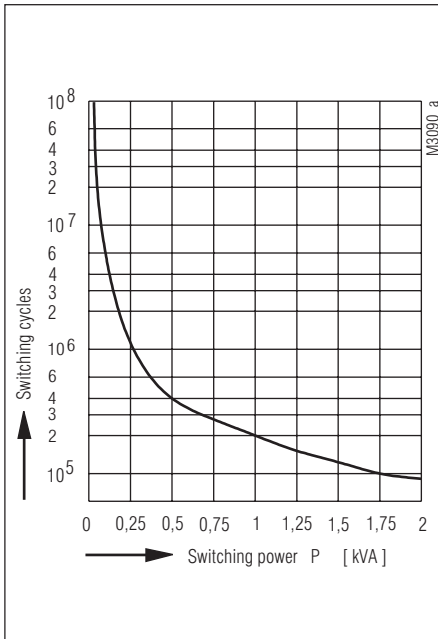


Operating voltage limit curve for OW 5691 and OW 5699 with $I_{th} \leq 5\text{ A}$

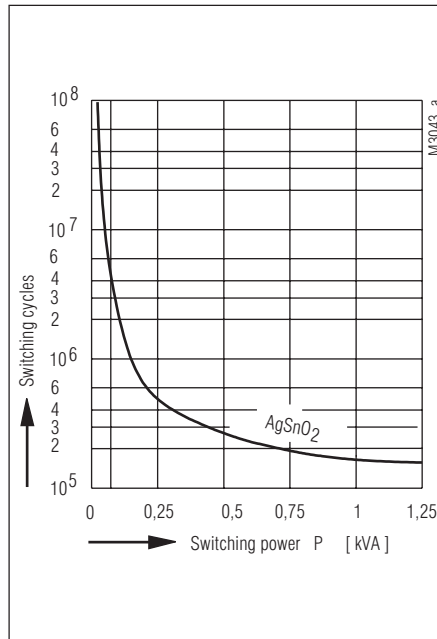


Limit curve for arc-free operation (at $t_u = 20^\circ\text{C}$) for OW 5691 and OW 5699

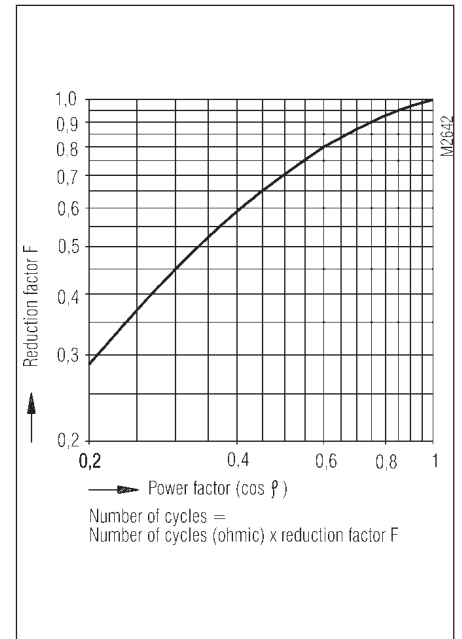
Characteristics



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



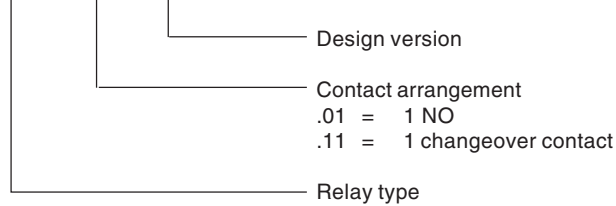
Contact service life for OW 5691 and OW 5699 with $I_m \leq 5$ A (NO contact)



Reduction factor for inductive loads

Ordering example

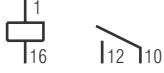
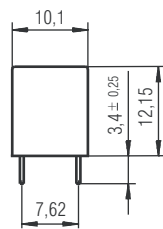
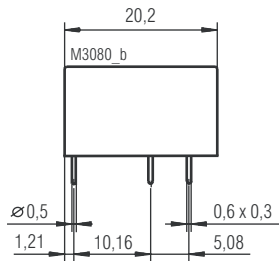
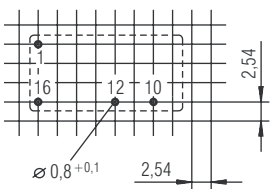
OW 5691 . . . / . . . /61*)



*) /61 cURus approval

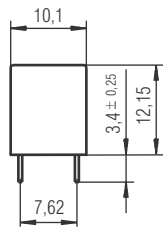
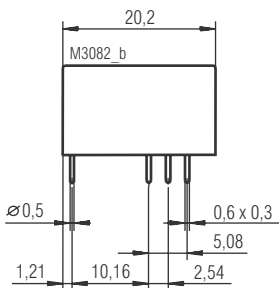
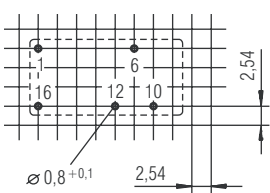
Dimensions, pin configuration, connection diagrams

Pin arrangement (bottom view)



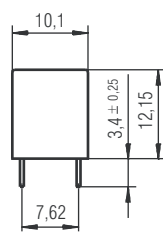
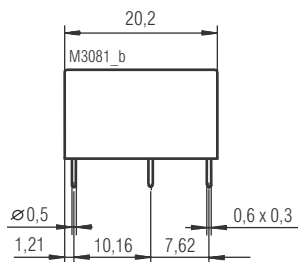
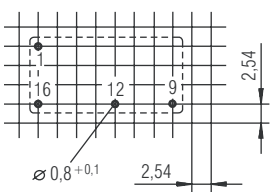
OW 5691.01

Pin arrangement (bottom view)



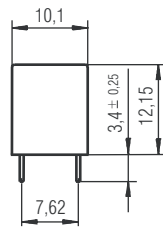
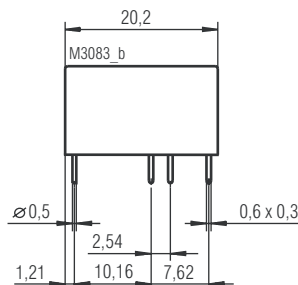
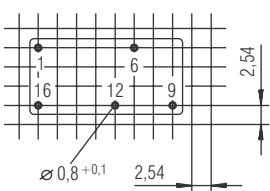
OW 5691.11

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.