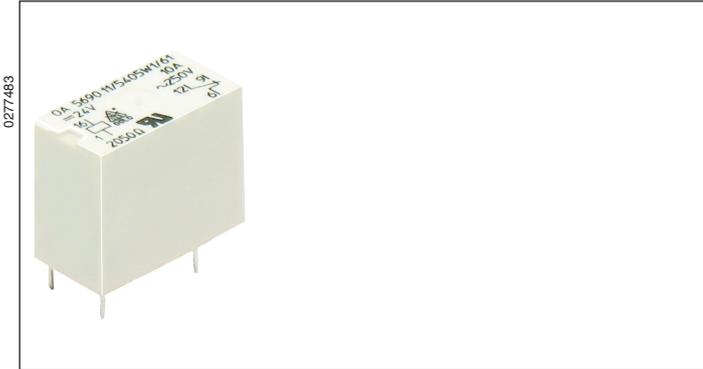


PCB Relays

DILAIS
Power Miniature Relay, monostable
OA 5690

Translation
of the original instructions



- According to DIN EN 61810-1, DIN EN 60664-1
- Safe separation according to IEC/EN 60335; IEC/EN 60730
- Clearance and creepage distances:
Contact - coil ≥ 8 mm
- Low rated power consumption
- High voltage resistance ≥ 4 kV
- High mechanical service life
- High continuous thermal current
- Large voltage range
- Low mutual capacitance
- High switching power
- Very small volume **DIL model**, can be plugged into standard IC-socket
- Different connection arrangements and contact materials
- Wash proof RT III

Applications

- Control technique
- Interface

Approvals and Markings



Technical Data

Relay type	Single contacts (10 A)	Single contacts (5 A)
1.0 Relay coil	Single contacts	
1.1 Nominal voltage	DC 4; 5; 6; 12; 20; 24; 48 V	
1.2 Nominal consumption		
1 NO contact	160 mW	135 mW
1 changeover contact	280 mW	250 mW
1.11 Voltage range	$0.75 \dots 1.8 U_N$	$0.75 \dots 2.0 U_N$
1.13 Holding power		
1 NO contact	40 mW	34 mW
1 changeover contact	70 mW	62.5 mW
2.0 Contacts	Single contacts	
2.1 Contact arrangement	1 NO contact, 1 changeover contact	
2.2 Contact material	AgSnO ₂ + 0.3 μ m Au	AgNi + 0.3 μ m Au ¹⁾
2.3 Rated insulation voltage	AC 250 V	
Switching voltage min./max.	AC/DC 10 V / DC 120 V, AC 400 V (AC/DC 2 V / AC/DC 60 V) ²⁾	
2.4 Limiting continuous current I_{th}	10 A	5 A
Switching current min./max.	$0.01 A$ ³⁾ / 10 A	$0.01 A$ ³⁾ / 5 A (1 mA / 0.3 A) ²⁾
2.5 Switching power min./max.	3 VA / 2500 VA	1 VA / 1250 VA
Switching power min./max.	3 W / 120 W	1 W / 120 W
2.6 Switching capacity to IEC/EN 60947-5-1	AC 15	
2.7 Electrical life	NC: AC 230 V / 2 A NO: AC 230 V / 5 A	
at AC 230 V, 5 A, $\cos\phi = 1$	At 1 s On, 1 s Off (see contacts service life)	
at AC 230 V, 10 A, $\cos\phi = 1$	1 x 10 ⁵ switching cycles	
2.8 Switching frequency max.	1 x 10 ⁵ switching cycles	
2.9 Pick-up / Reset time	20 switching cycles/s	
2.10 Contact force	≤ 6 ms (typically 4.5 ms) / ≤ 5 ms (typically 3 ms)	
2.14 Contact gap	NC approx. 8 cN; NO approx. 10 cN	
	≥ 0.3 mm	
3.0 Other		
3.1 Mechanical life	$> 50 \times 10^6$ switching cycles	
3.2 Temperature range	- 40 ... + 80 °C	
3.3 Degree of protection, housing	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	40 / 080 / 04 (climate category); A/B/D IEC/EN 60068-1	

¹⁾ As option AgNi + 5 μ m Au

²⁾ Values for AgNi 0.15 + 5 μ m Au

³⁾ Typical values

Technical Data

3.8	Insulation acc. to IEC 60664-1	
	Rated insulation voltage	AC 250 V
	Pollution degree	3
	Overtoltage category	III
	Test voltage	
	Contact - coil (1 min)	≥ AC 4 kV eff.
	Clearance and creepage distances	
	Contact - Coil	≥ 8 mm IEC/EN 60730, IEC/EN 60335
3.9	Weight	4 g
4.0 Packing		
4.1	On cardboard	100 pieces
4.2	In case package	800 pieces
5.0 Solder method		
5.1	Solder method /-temperature /-duration	Wave soldering / 260 °C / 5 s

Design versions

Standard variant for switching current max. I = 5 A

U _N (DCV)	R _{Coil} Ω±10%		OA 5690 AgNi + 0,3 μm Au	
	1 S	1 W	.01/	.11/
4.5	155	78	5461	5441
6	315	155	5462	5442
12	1070	600	5463	5443
20	2960	1600	5464	5444
24	4300	2400	5465	5445
48	-	9200	-	5446

Standard variant for switching current max. I = 10 A

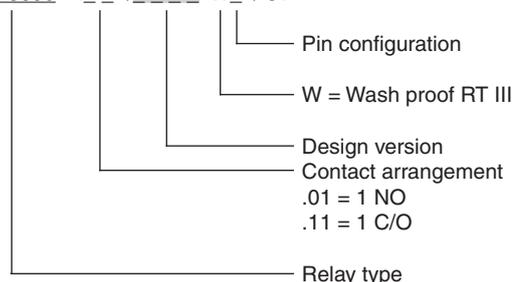
U _N (DCV)	R _{Coil} Ω±10%		OA 5690 AgSnO ₂ + 0,3 μm Au	
	1 S	1 W	.01/	.11/
4.5	130	78	5421	5401
6	225	130	5422	5402
12	900	510	5423	5403
20	2400	1450	5424	5404
24	3600	2050	5425	5405
48	-	6560	-	5406

Standard variant with goldplated contacts

U _N (DCV)	R _{Coil} Ω±10%		OA 5690 AgNi + 5 μm Au	
	1 S	1 W	.01/	.11/
4.5	155	78	5511	5491
6	315	155	5512	5492
12	1070	600	5513	5493
20	2960	1600	5514	5494
24	4300	2400	5515	5495
48	-	9200	-	5496

Ordering Example

OA 5690 . . . / W_ / 61*)

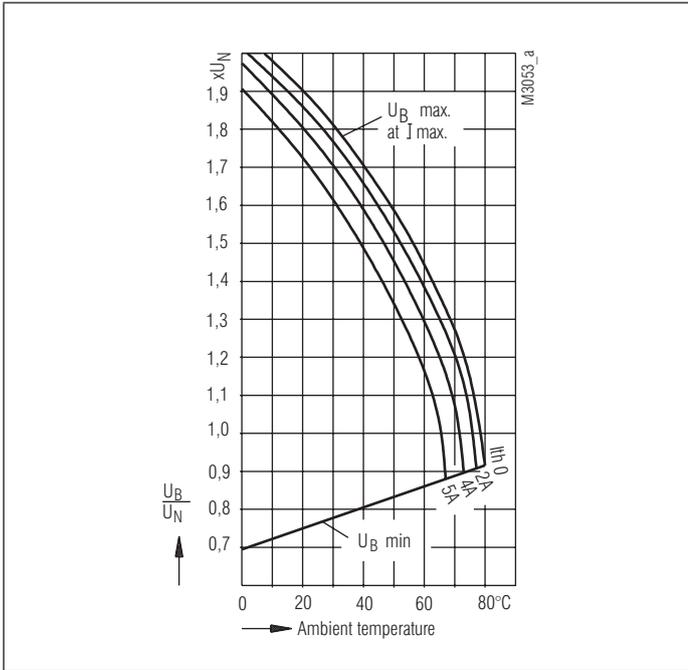


Notes

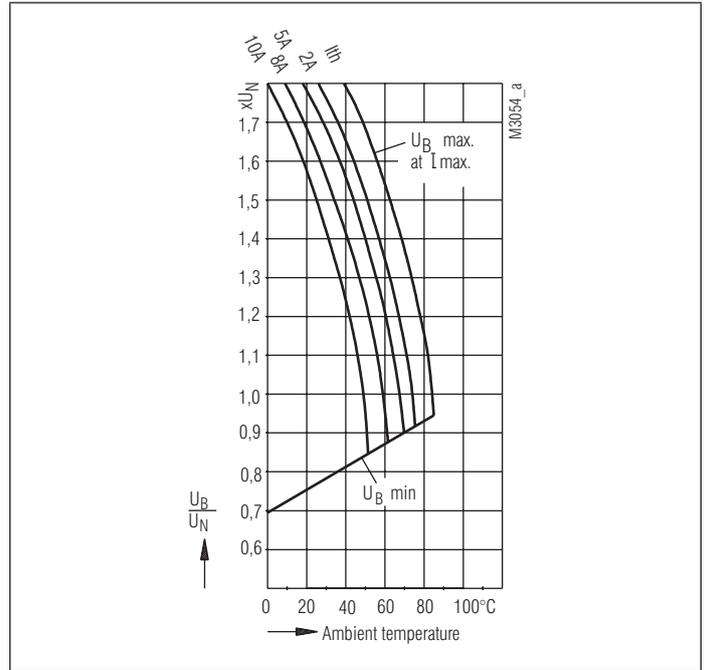
For the use and processing of our PCB relays, please refer to the **application and processing instructions** at www.dold.com

*) /61 cURus approval

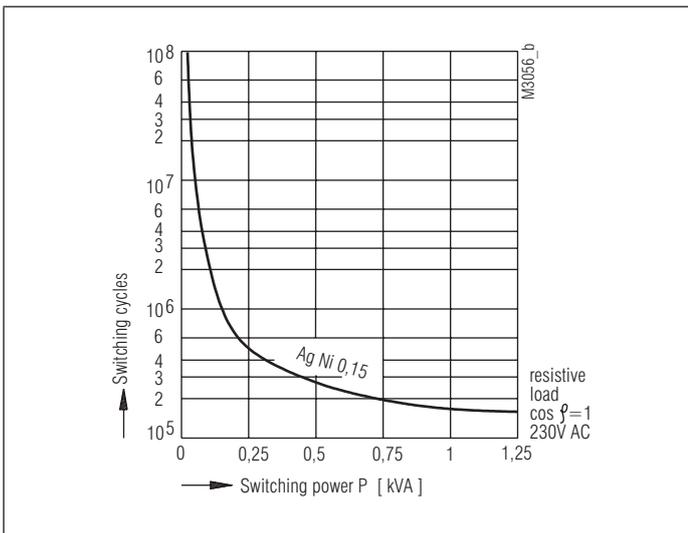
Characteristics



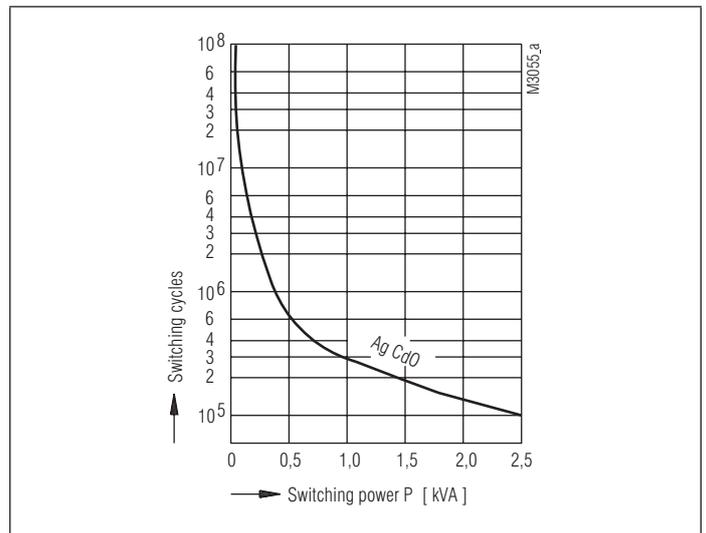
Operating voltage limit curve
OA 5690.11 5 A - model



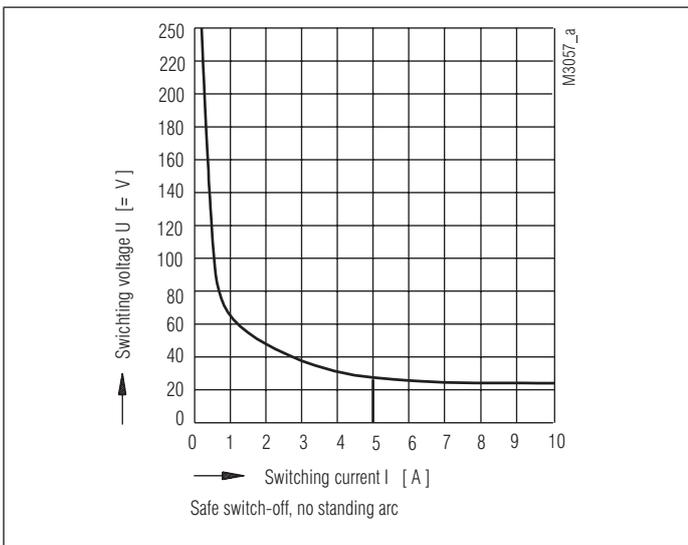
Operating voltage limit curve
OA 5690.11 10 A - model



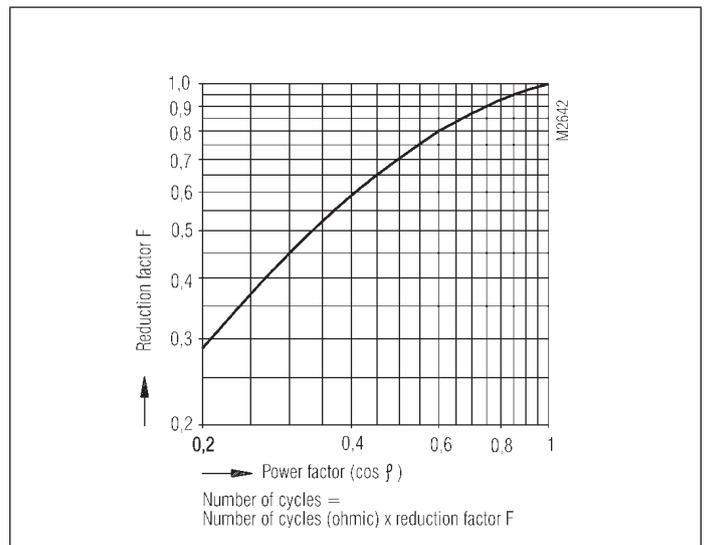
Contact service life OA 5690.11 5 A - model



Contact service life OA 5690.11 10 A - model



Arc limit curve

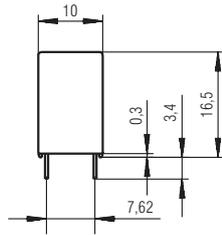
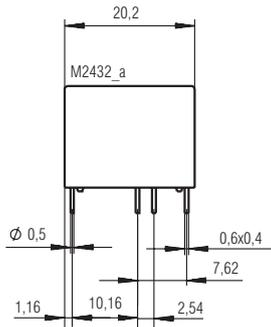


Reduction factor for inductive loads

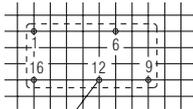
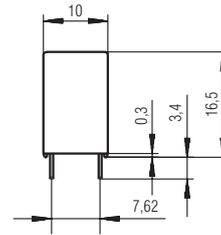
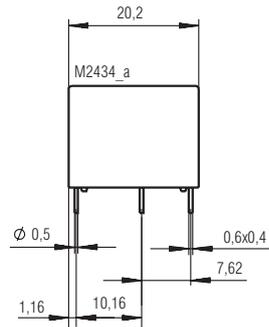
Drilling plan (solder side)

Pin variant 1, pin compatible to OW 5699

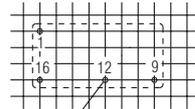
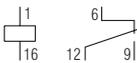
OA 5690.11 / _____ 1



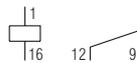
OA 5690.01 / _____ 1



Ø 0.8^{+0.1}

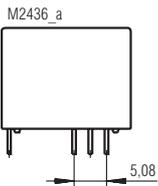


Ø 0.8^{+0.1}

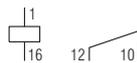
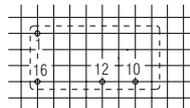
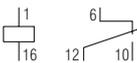
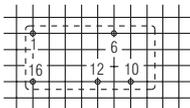
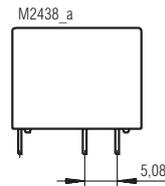


Pin variant 2, pin compatible to OW 5691

OA 5690.11 / _____ 2

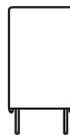
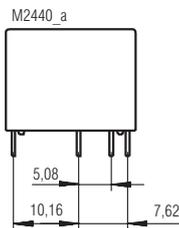


OA 5690.01 / _____ 2

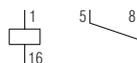
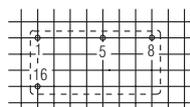
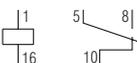
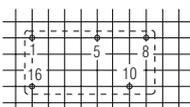
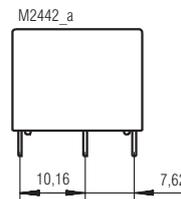


Pin variant 3, pin compatible to various competitors relays

OA 5690.11 / _____ 3



OA 5690.01 / _____ 3



Connections for basic grid dimensions 2.5 mm as well as 2.54 mm according to IEC/EN 60097 and IEC 60326 average. Pin distance tolerance measured at the pin ends ± 0.3 mm. Dimensions are valid for untinned state.