

Safety relay

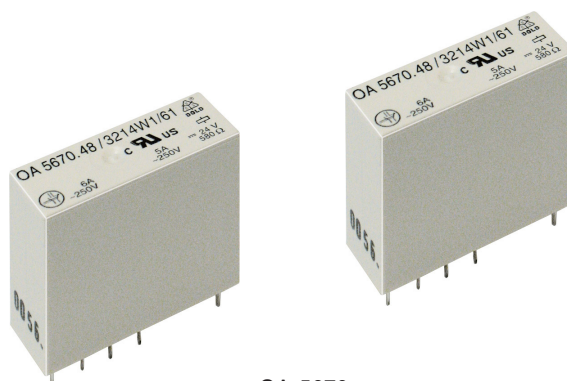
OA 5670



- acc. to DIN EN 50 205, DIN EN 61 810-1, DIN EN 60 664-1
- with positively driven contacts
- **double and reinforced insulation between contact sets according to EN 50 178**
- high dielectric strength
- high mechanical service life
- high switching reliability
- compact size
- high thermal continuous current
- high voltage range
- Approvals: **TUV** **cULus**

Applications:

ZH1/457 press controls
Switchgear for safety technology



OA 5670

Technical data

Relay type			OA 5670	
1. 0 Relay coil				
1. 1	Nominal voltage	DC V	6, 12, 20, 24, 48, 60, 110 others on request	
1. 2	Nominal consumption	W	approx. 1,0	
2. 0 Contacts				
2. 1	Contact arrangement		2 NO and 2 NC 3 NO und 1 NC	
2. 2	Contact material		AgSnO ₂ + 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) ¹⁾	
2. 4	Limiting continuous current I _{th}	A	3 x 6 (see operating voltage limit curve)	
	Switching current min./max.	A	10 mA ³⁾ / 6 (1 mA / 0,3 A) ¹⁾	
2. 5	Switching power min./max.	VA	3 / 1 500 (1 mVA / 7 VA) ¹⁾	
	Switching power min./max.	W	3 / 160 (1 mW / 7 W) ¹⁾ (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
	to UL 508		B300 / R300	
2. 7	Electrical life ²⁾		at 1 s On, 1 s Off (s. contacts service life)	
	AC 230 V 6 A cos φ = 1	switching cycles	> 1,2 x 10 ⁵ AgNi 10	
	DC 24 V 6 A ohmsch	switching cycles	> 1,2 x 10 ⁵ AgNi 10	
2. 8	Switching frequency max.	switching cycles	10 / s	
2. 9	Response time / Release time	ms	typically 11 / typically 6	
2.10	Contact force NO / NC	cN	≥ 10	
3. 0 Other				
3. 1	Mechanical life	switching cycles	≥ 50 x 10 ⁶	
3. 2	Temperature range	°C	- 40 ... + 75	
3. 3	Degree of protection, housing		IP40 IEC/EN 60 529 solder line proof	
3. 4	Housing		Thermoplast GF, PA	
3. 5	Vibration resistance		10 ... 200 Hz; 0,35 mm amplitude; NC 5 g; NO 10 g (failure criterion > 10µs) 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	Insulation according to IEC 60 664-1, EN 50 178		double and reinforced insulation	
	Rated insulation voltage	AC V	250	
	Contamination level		3	
	Overvoltage category		III	

¹⁾ Values for AgNi 10-Contacts + 5 µm Au

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

³⁾ Typical values

¹⁾ Values for AgNi 10-Contacts + 5 µm Au

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

³⁾ Typical values

Technical data

3. 8 Test voltage	Contact-Coil (1 min)	AC kV eff.	≥ 4
	left contact-right contact (1 min)	AC kV eff.	≥ 4
	Contact-Contact (1 min)	AC kV eff.	≥ 3
	Transient volt. Contact-Coil (1,2 - 50 µs)	kV	≥ 6
Clearance and creepage distances as per IEC/EN 60 730, IEC/EN 60 335			
	Contact-Coil:	mm	≥ 8
	left contact-right contact:	mm	≥ 5,5
	Contact-Contact:	mm	≥ 4,5
3. 9 Weight		g	approx. 20

Standard variants

U _N DC V	Voltage range DC V	Resistance at 20°C Ω ± 10 %	Design version	
			OA 5670	
			2NO/2NC	3NO/1NC
AgNi10 + 0,2 µm Au-contacts				
6	4,2 ... 8,4	36	3201	3211
12	8,4 ... 16,8	150	3202	3212
20	14,0 ... 28,0	400	3203	3213
24	16,8 ... 33,6	580	3204	3214
48	33,6 ... 67,2	2 300	3205	3215
60	42,0 ... 84,0	3 600	3206	3216
110	77,0 ...154,0	12 100	3207	3217
AgSnO ₂ + 0,2 µm Au-contacts				
6	4,2 ... 8,4	36	3221	3231
12	8,4 ... 16,8	150	3222	3232
20	14,0 ... 28,0	400	3223	3233
24	16,8 ... 33,6	580	3224	3234
48	33,6 ... 67,2	2 300	3225	3235
60	42,0 ... 84,0	3 600	3226	3236
110	77,0 ...154,0	12 100	3227	3237
AgNi10 + 5 µm Au-contacts				
6	4,2 ... 8,4	36	3241	3251
12	8,4 ... 16,8	150	3242	3252
20	14,0 ... 28,0	400	3243	3253
24	16,8 ... 33,6	580	3244	3254
48	33,6 ... 67,2	2 300	3245	3255
60	42,0 ... 84,0	3 600	3246	3256
110	77,0 ...154,0	12 100	3247	3257

Ordering example

OA 5670. / - - - - /61*)

Pin configuration

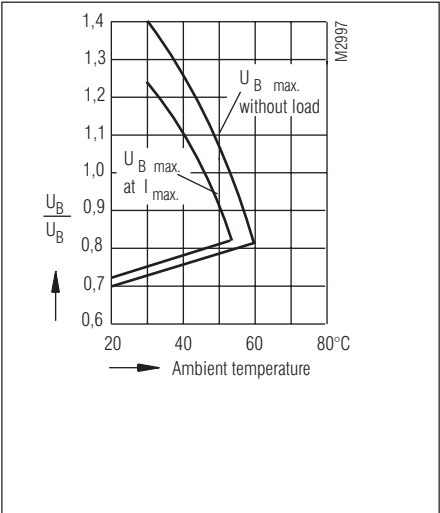
L = standard, solder line proof (IP 40)
W = wash proof (IP 67)

Design version

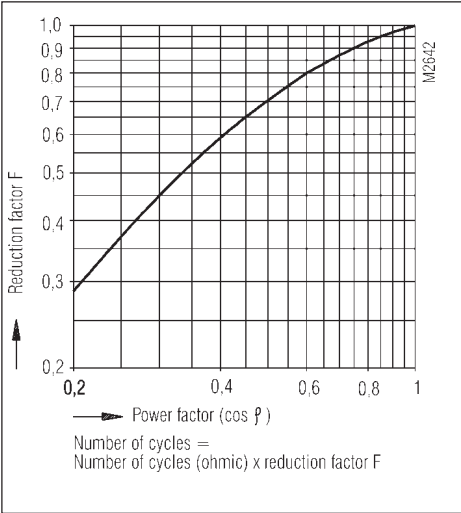
Contact arrangement
.52 2 NO, 2 NC
.48 3 NO, 1 NC

*) /61 cURus approval

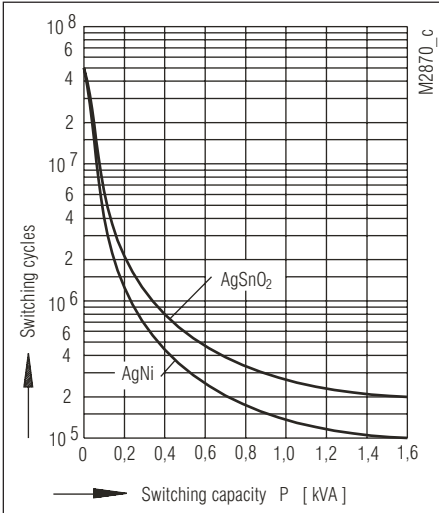
Characteristics



Operating voltage limit curve

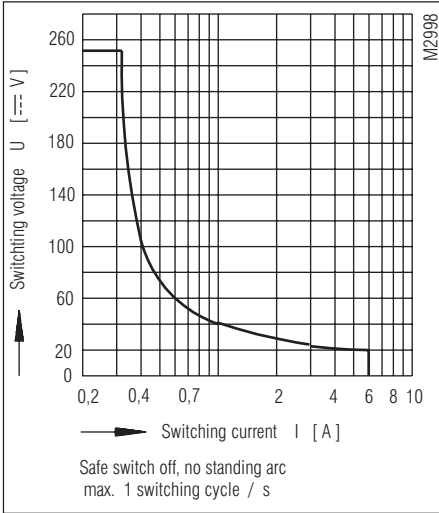


Reduction factor for inductive loads



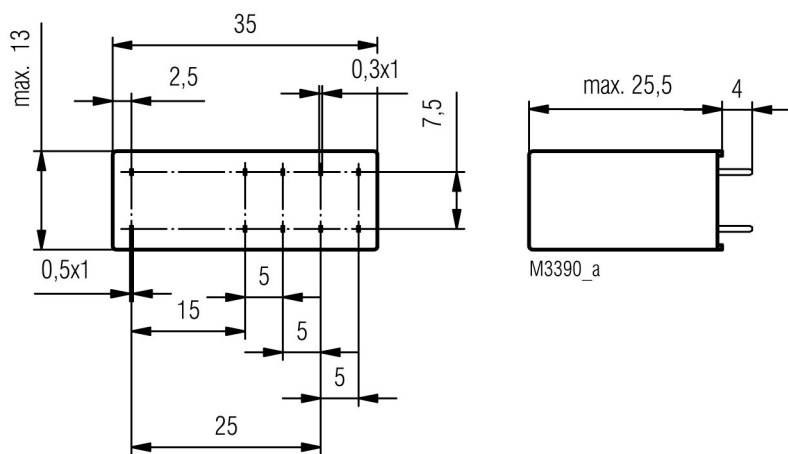
Contact service life (at t_u = 20°C)

Contact material
AgNi

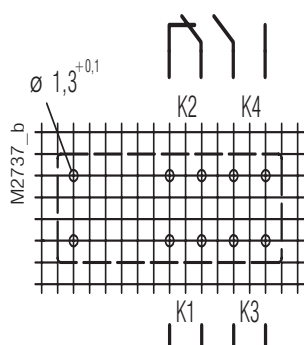


Limit curve for arc-free operation
(at t_u = 20°C)

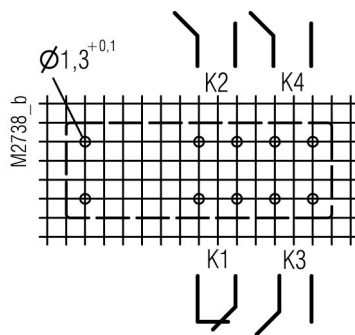
Dimensions, pin configuration, connection diagrams



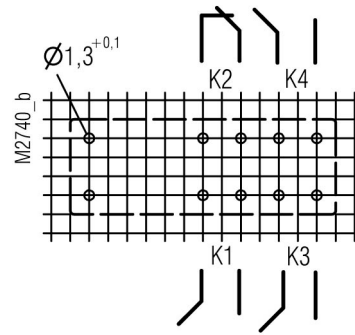
Drilling plan (solder side)



OA5670.52__L1 2NO/2NC



OA5670.48__L1 3NO/1NC



OA5670.48__L2 3NO/1NC

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