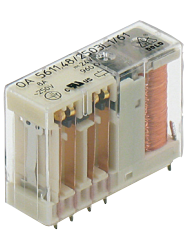
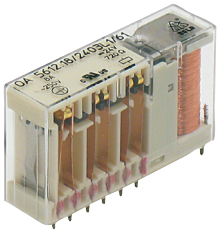
Safety relays
OA 5611, OA 5612

Translation of the original instructions

0277438



OA 5611



OA 5612

- According to DIN EN 61810-1, DIN EN 61810-3 (Type A)
- With forcibly guided contacts
- High switching reliability due to crown contacts
- Low rated power consumption
- High mechanical service life
- High temperature range - 40 ... + 85 °C
- High continiuous thermal current I_{th} = 8 A
- Compact size
- Optionally wash proof

Applications

- To be used in circuits for safety applications
- Escalators and walkways
- Elevators for men and load
- Railway technology

Approvals and Markings

Product Safety
TÜVRheinland CERTIFIED
www.tuv.com ID 0600000000
c UL us Canada / USA

Technical Data

Relay type		OA 5611	OA 5612
1.0	**Relay coil**		
1.1	Nominal voltage	DC 6, 12, 24, 48, 60, 110 V (others on request)	
1.2	Nominal consumption	0.6 W	0.8 W / 1.0 W [3]
1.11	Voltage range	0.7 ... 1.4 U_N	
1.13	Holding power (at 0.5 x U_N)	0.15 W	0.20 W / 0.24 W [3]
2.0	**Contacts**		
2.1	Contact arrangement (Type A)	2 NO / 2 NC 3 NO / 1 NC	2 NO / 4 NC 3 NO / 3 NC 4 NO / 2 NC 5 NO / 1 NC
2.2	Contact material	$AgSnO_2$ + 0.2 µm Au; AgNi + 0.2 µm Au, AgNi + 5 µm Au	
2.3	Rated insulation voltage	AC 250 V	
	Switching voltage min./max	AC/DC 10 V / DC 250 V, AC 400 V (AC/DC 2 V / 60 V) [1]	
2.4	Limit. contin. current I_{th} max.	3 x 8 A e.g. 5 x 8 A (see operating voltage limit curve)	
	Switching current min./max	> 10 mA[4] / 8 A (2 mA / 0.3 A) [1]	
2.5	Switching power min./max.	0.1 VA / 2000 VA (10 mVA / 12 VA) [1]	
	Switching power min./max	0.1 W [4] / 200 W (10 mW / 12 W) [1] (see limit curve for arc-free operation)	
2.6	Switching capacityto IEC/EN 60947-5-1		
	AC 15 [5]	NO: AC 250 V / 2 A	NC: AC 250 V / 1 A
	AC 15 [6]	NO: AC 250 V / 3 A	NC: AC 250 V / 2 A
	DC 13 [5]	NO: DC 24 V / 1 A	NC: DC 24 V / 1 A
	DC 13 [5] at 0.1 Hz	NO: DC 24 V / 4 A	NC: DC 24 V / 4 A
	to UL 508	B300	
2.7	Electrical life	At 1 s ON, 1 s OFF (see contacts service life)	
	at AC 230 V, 5 A, cosφ = 1	> 3 x 10^5 switching cycles $AgSnO_2$	> 2 x 10^5 switching cycles AgNi 10
	at AC 230 V, 8 A, cosφ = 1	> 1.5 x 10^5 switching cycles $AgSnO_2$	> 10^5 switching cycles AgNi 10
2.8	Switching frequency max.	10 switching cycles/s	
2.9	Response time / Release time	Typically 20 ms / Typically 6 ms	
2.10	Contact force	≥ 10 cN	
2.14	Contact gap	> 0.5 mm [2]	
3.0	**Other**		
3.1	Mechanical life	≥ 50 x 10^6 switching cycles	
3.2	Temperature range	- 40 ... + 85 °C	- 40 ... + 85 °C
3.3	Degree of protection	Solder line proof RT II as option wash proof RT III	
3.4	Test procedure	A (group mounting)	
3.5	Vibration resistance	10 ... < 60 Hz; 0,35 mm Amplitude IEC/EN 60068-2-6 60 ... 200 Hz, ≤ 5g (all contacts) IEC/EN 60068-2-6	
3.6	Climate resistance	40 / 085 / 04; A / B / D IEC/EN 60068-1	
3.7	Short circuit strength 1 kA / AC 250 V	$AgSnO_2$ NO: 10 A gG / gL / NC: 10 A gG / gL IEC/EN 60947-5-1 AgNi NO: 6 A gG / gL / NC: 6 A gG / gL IEC/EN 60947-5-1	

[1] Values for AgNi 10-Contacts + 5 µm Au
[2] Over entire service life acc. to DIN EN 61810-3
[3] OA 5612.50 (2 NO / 4 NC)
[4] Typical values for $AgSnO_2$ and AgNi
[5] Values for AgNi-Contacts
[6] Values for $AgSnO_2$-Contacts

All technical data in this list relate to the state at the moment of edition.
We reserve the right for technical improvements and changes at any time.

Technical Data

3.8	Insulation acc. to IEC 60664-1, EN 50178		
	Rated insulation voltage	AC 250 V	
	Pollution degree	3	
	Overvoltage category	III	
	Test voltage		
	Contact - Coil (1 min)	≥ AC 4 kV eff.	
	Contact - Contact (1min)	≥ AC 2.5 kV eff.	
	Contact open (1 min)	≥ AC 1.5 kV eff.	
	Transient voltage		
	Contact - Coil (1,2 - 50 µs)	≥ 6 kV	
	Clearance and creepage distances		
	Contact - Coil	≥ 8 mm	
	Contact side-Contact side	≥ 4.5 mm	
	Contact - Contact	≥ 4.5 mm	
3.9	Weight	Approx. 35 g	Approx. 38 g

4.0	**Packing**		
4.1	On cardboard	30 pieces	20 pieces
4.2	In case package	150 pieces	100 pieces

5.0	**Solder method**	
5.1	Solder method /-temperature /-duration	Wave soldering / 260 °C / 5 s

Design versions

		OA 5611			OA 5612					
U_N (DC V)	Voltage range (DC V)	R_{Coil} Ω ± 10%	.48 3NO, 1NC	.52 2NO, 2NC	R_{Coil} Ω ± 10%	.18 3NO, 3NC	.54 4NO, 2NC	.60 5NO, 1NC	R_{Coil} Ω ± 10%	.50 2NO, 4NC
AgSnO-contacts + 0.2 µm Au										
6	4.2 ... 8.4	56	2491	2521	45	2401	2461	2571	36	2431
12	8.4 ... 16.8	240	2492	2522	180	2402	2462	2572	145	2432
24	16.8 ... 33.6	960	2493	2523	720	2403	2463	2573	600	2433
48	33.6 ... 67.2	3840	2494	2524	2880	2404	2464	2574	2300	2434
60	42.0 ... 84.0	6000	2495	2525	4500	2405	2465	2575	3600	2435
110	77.0 ... 154.0	20150	2496	2526	15125	2406	2466	2576	12100	2436
AgNi-contacts + 0.2 µm Au										
6	4.2 ... 8.4	56	2501	2531	45	2411	2471	2581	36	2441
12	8.4 ... 16.8	240	2502	2532	180	2412	2472	2582	145	2442
24	16.8 ... 33.6	960	2503	2533	720	2413	2473	2583	600	2443
48	33.6 ... 67.2	3840	2504	2534	2880	2414	2474	2584	2300	2444
60	42.0 ... 84.0	6000	2505	2535	4500	2415	2475	2585	3600	2445
110	77.0 ... 154.0	20150	2506	2536	15125	2416	2476	2586	12100	2446
AgNi-contacts + 5 µm Au										
6	4.2 ... 8.4	56	2511	2541	45	2421	2481	2591	36	2451
12	8.4 ... 16.8	240	2512	2542	180	2422	2482	2592	145	2452
24	16.8 ... 33.6	960	2513	2543	720	2423	2483	2593	600	2453
48	33.6 ... 67.2	3840	2514	2544	2880	2424	2484	2594	2300	2454
60	42.0 ... 84.0	6000	2515	2545	4500	2425	2485	2595	3600	2455
110	77.0 ... 154.0	20150	2516	2546	15125	2426	2486	2596	12100	2456

Ordering Example

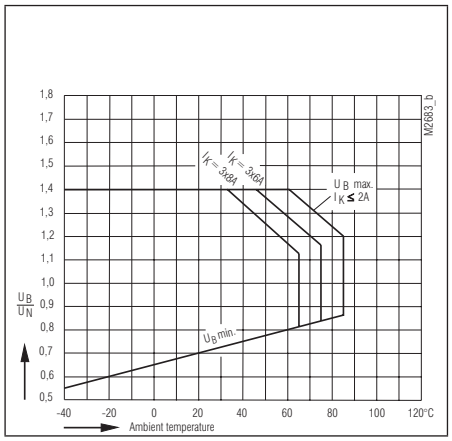
OA 5611 ._ _ /_ _ _ _ _ _ / 61*)

- Pin configuration
- L = Solder line proof RT II
  W = Wash proof RT III
- Design version
- Contact arrangement (Type A)
  .48 3 NO, 1 NC
  .52 2 NO, 2 NC
  .28 1 NO, 3 NC
- Relay type

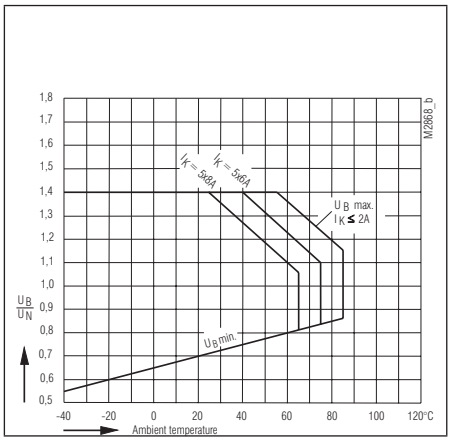
*) / 61 cURus approval

Notes

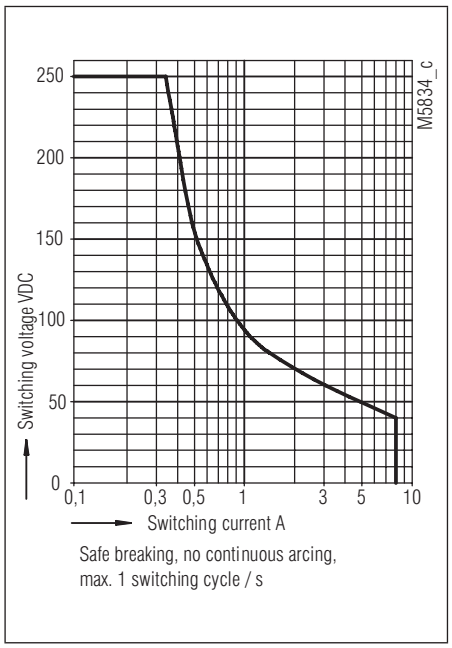
For the use and processing of our PCB relays, please refer to the **application and processing instructions** at www.dold.com



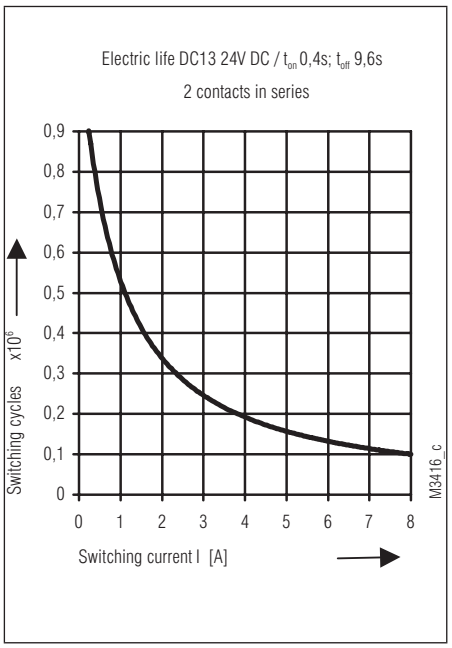
Operating voltage limit curve OA 5611



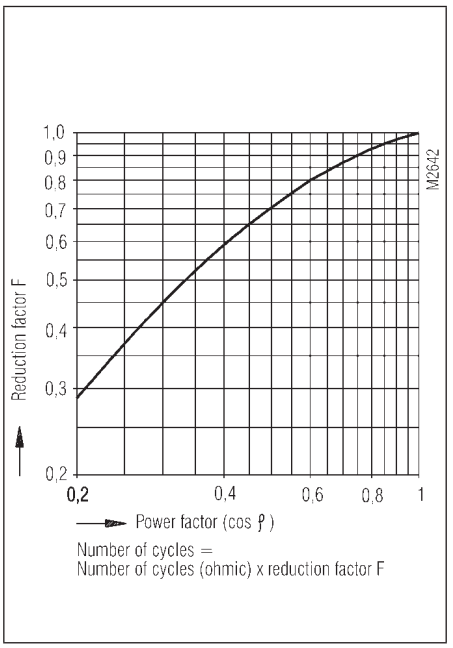
Operating voltage limit curve OA 5612



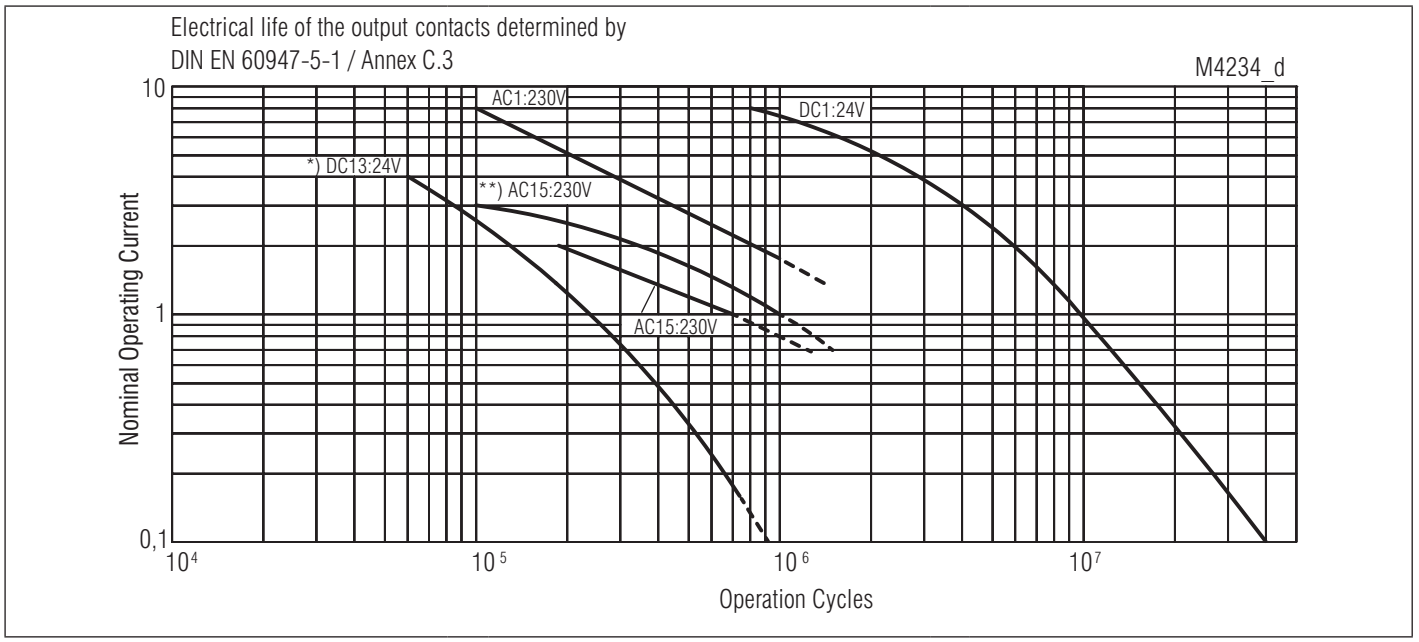
Arc limit curve
(load limit curve)



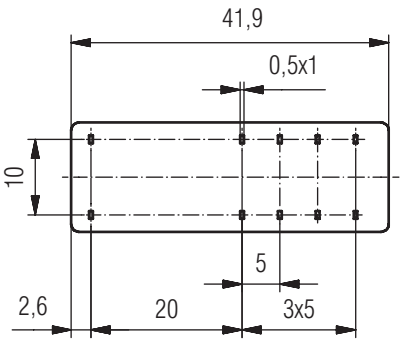
Electric life

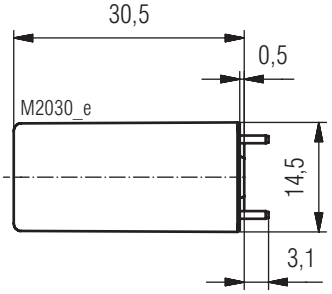


Reduction factor for inductive loads



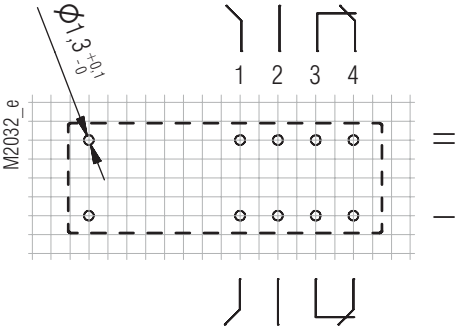
Electrical life for contact material AgNi
*) ≤ 1 A with 1 Hz
> 1 A ... 4 A with 0.1 Hz
**) for $AgSnO_2$



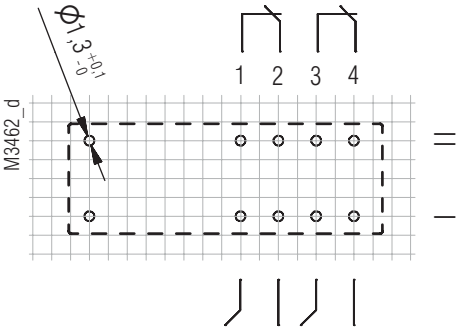


Drilling plan (solder side)

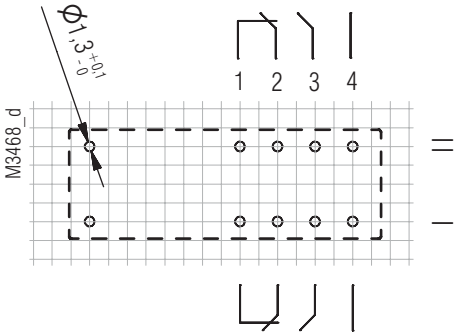
Pin arrangements OA 5611.52/...L1 2S / 2Ö
Pin arrangements OA 5611.52/...W1+W3 2S / 2Ö



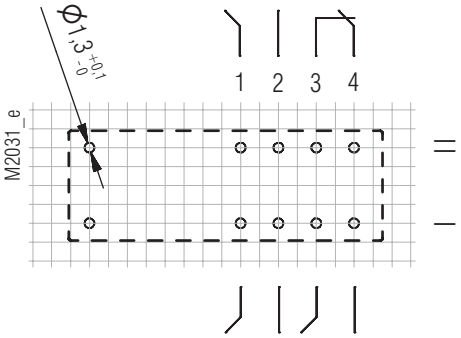
Pin arrangements OA 5611.52/...L4 2S / 2Ö
Pin arrangements OA 5611.52/...W4 2S / 2Ö



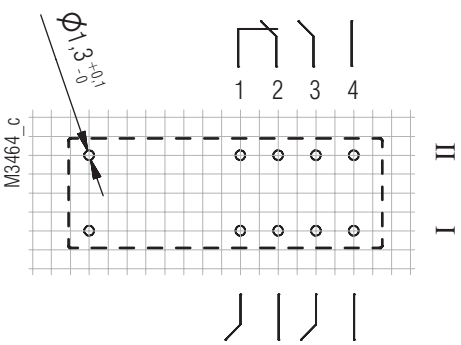
Pin arrangements OA 5611.52/...L5 2S / 2Ö
Pin arrangements OA 5611.52/...W5 2S / 2Ö



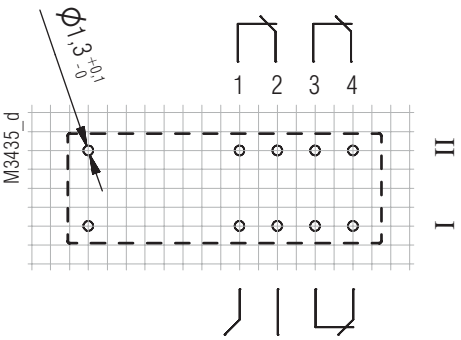
Pin arrangements OA 5611.48/...L1 3S / 1Ö
Pin arrangements OA 5611.48/...W1+W3 3S / 1Ö



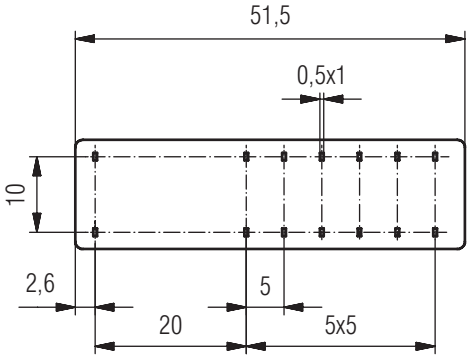
Pin arrangements OA 5611.48/...L4 3S / 1Ö
Pin arrangements OA 5611.48/...W4 3S / 1Ö

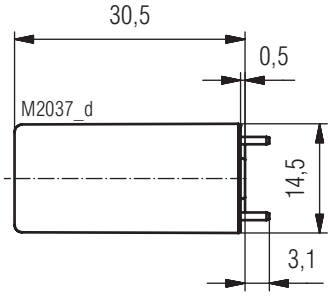


Pin arrangements OA 5611.28/...L1 1S / 3Ö
Pin arrangements OA 5611.28/...W1+W3 1S / 3Ö



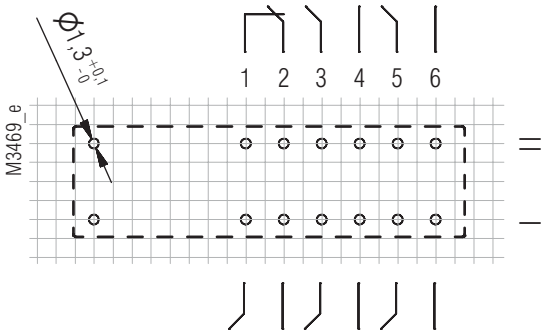
Connection for basic grid divensions 2.5 mm as well as 2.54 mm according to IEC/EN 60097 and IEC 60326 average





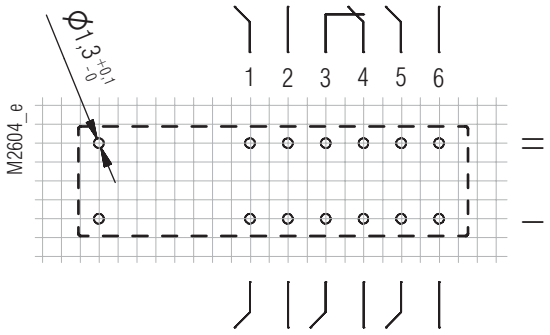
Drilling plan (solder side)

Pin arrangements OA 5612.60/...L4 5S / 1Ö
Pin arrangements OA 5612.60/...W4 5S / 1Ö

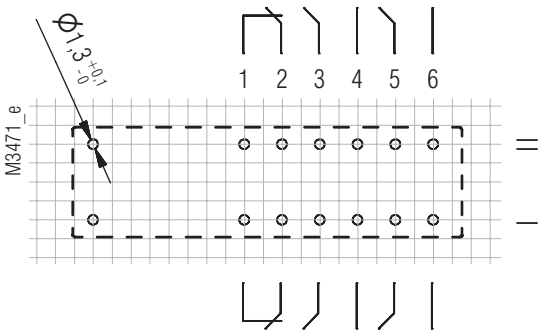


Drilling plan (solder side)

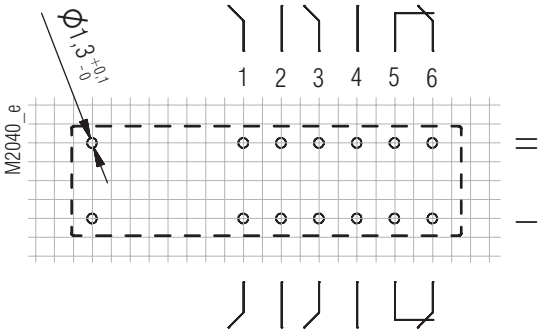
Pin arrangements OA 5612.60/...L1 5S / 1Ö
Pin arrangements OA 5612.60/...W1+W3 5S / 1Ö



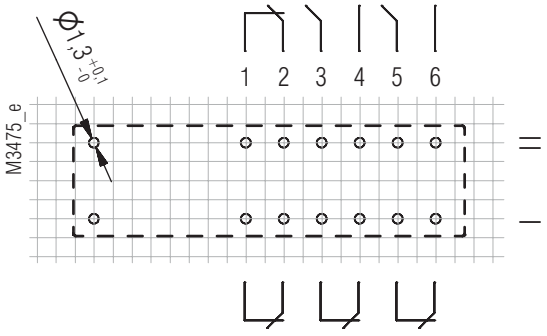
Pin arrangements OA 5612.54/...L4 4S / 2Ö
Pin arrangements OA 5612.54/...W4 4S / 2Ö



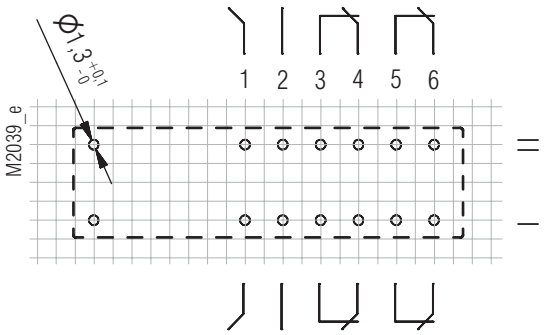
Pin arrangements OA 5612.54/...L1 4S / 2Ö
Pin arrangements OA 5612.54/...W1+W3 4S / 2Ö



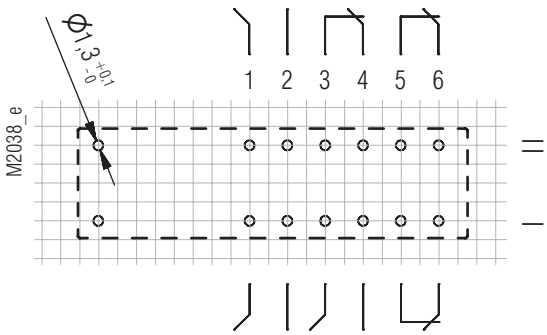
Pin arrangements OA 5612.50/...L4 2S / 4Ö
Pin arrangements OA 5612.50/...W4 2S / 4Ö



Pin arrangements OA 5612.50/...L1 2S / 4Ö
Pin arrangements OA 5612.50/...W1+W3 2S / 4Ö

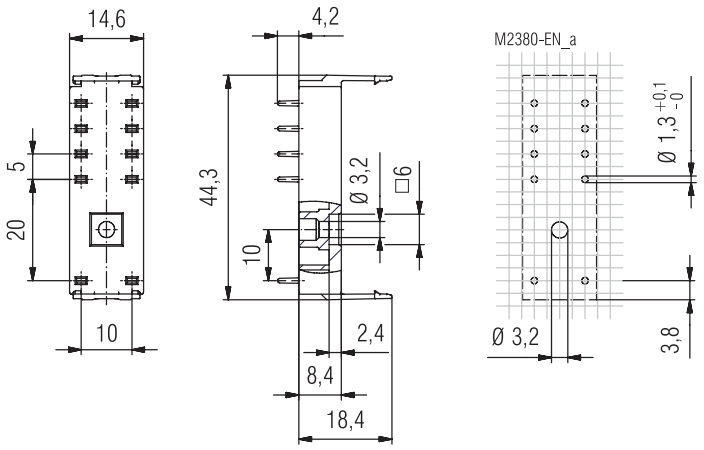


Pin arrangements OA 5612.18/...L1 3S / 3Ö
Pin arrangements OA 5612.18/...W1+W3 3S / 3Ö



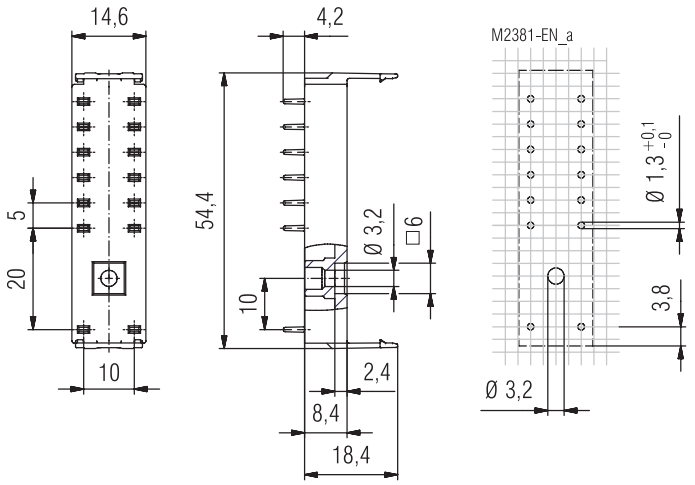
Connection for basic grid divensions 2.5 mm as well as 2.54 mm according to IEC/EN 60097 and IEC 60326 average

Relay socket ET 1415.031/61 for OA 5611
Article number: 0049512



When using a metal screw
observe the clearance and creepage distances.

Relay socket ET 1415.032/61 for OA 5612
Article number: 0049513



When using a metal screw
observe the clearance and creepage distances.