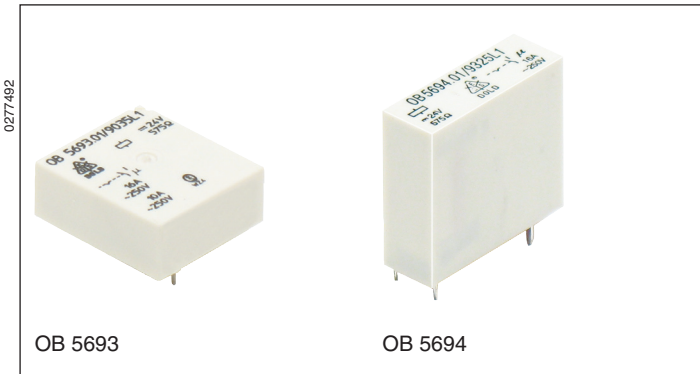


PCB Relays

Printed Circuit Board Relay bistable OB 5693, OB 5694



- According to DIN EN 61810-1, IEC/EN 60669-1
- Switching reliability according to IEC/EN 60669-2-2
- Safe separation according to IEC/EN 61140, IEC/EN 60335
- OB 5693: horizontal model
- OB 5694: vertical model
- Bistable, mechanical latching of contact
- For impulse operation, at failure operation 100 % ED possible
- Same pulse (energy and direction) for both switching positions
- AC and DC - model
- Patent on function principle
- On request wash proof

Application

- Remote switch
- Switching of sockets

Technical Data

Relay type

1.0 Coil

1.1	Nominal voltage	AC V	12, 24, 42, 230	50/60 Hz
		DC V	6, 12, 15, 24, 48, 60, 110	
1.2	Nominal consumption	W / VA	1 / 1.4	

2.0 Contacts

2.1	Contact arrangement	1 changeover contact or 1 NO		
2.2	Contact material	AgSnO ₂ ; AgNi + 0,2 µm Au (goldplated contacts ³⁾ on request)		
2.3	Rated insulation voltage	AC V	250	
	Switching voltage min./max.	V	10 / 400	
2.4	Limiting continuous current I _m	A	16	
	Switching current min./max.	A	10 mA ¹⁾ / 50 (20 ms)	
2.5	Switching power min./max.	VA	3 / 4000	
	Switching power min./max.	W	35 / 300	
	Incandescent lamp load	W	1500	
2.7	Electrical life	switching cycles	at 1 s On, 1 s Off (see contact service life)	
	at AC 250 V 16 A cos φ = 1	switching cycles	≥ 5 x 10 ⁴	
2.8	max. switching frequency	switching cycles /s	5	
2.10	Contact force	cN	≥ 8	
2.14	Contact gap	mm	≥ 0.5	

3.0 Other

3.1	Mechanical life	switching cycles	DC ≥ 10 x 10 ⁶ , AC ≥ 1 x 10 ⁵	
3.2	Temperature range	°C	- 40 ... + 75	
3.3	Degree of protection	Solder line proof RT II		
3.5	Vibration resistance	5 g, bis max. 100 Hz		
3.6	Climate resistance	40 / 075 / 04 (climate category); A / B / D IEC/EN 60068-1		

¹⁾ Typical values ²⁾ Only valid for the stated temperature range (≅ EN 61 810) different values (derating) see operating voltage limit curve

³⁾ for AC/DC 10 mW ... 12 W; at 2 ... 60 V / 2 ... 300 mA

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	
Transient voltage			
contact-coil (1.2 - 50 μs)	kV	≥ 6	
Clearance and creepage distances			
contact-coil	mm	≥ 8	
3.9 Weight	g	approx. 15	
4.0 Packing			
4.1 on cardboard	Stück	OB 5693: 32;	OB 5694: 56
4.2 in case package	Stück	OB 5693: 320;	OB 5694: 280
5.0 Solder method			
5.1 Solder method /-temperature /-duration	°C / s	Wave soldering / 260 / 5	

Design Version OB 5693

Nominal voltage U _N		Voltage range ²⁾ V	Resistance Ω (±10%)	AgSnO ₂		Ag Ni + 0.2 μm Au	
DC V	AC V			.01/	.11/	.01/	.11/
6		4.8 ... 6.6	38	9031	9001	9141	9121
12		9.6 ... 13.2	150	9032	9002	9142	9122
15		12 ... 16.5	220	9033	9003	9143	9123
20		16 ... 22	410	9034	9004	9144	9124
24		19.2 ... 26.4	575	9035	9005	9145	9125
48		38.4 ... 52.8	2 500	9036	9006	9146	9126
60		48 ... 66	3 600	9037	9007	9147	9127
110		88 ... 121	12 100	9038	9008	9148	9128
	12	9.6 ... 13.2	65	9182	9152	9232	9222
	24	19.2 ... 26.4	250	9181	9151	9231	9221
	42	33.6 ... 46.2	830	9183	9153	9233	9223
	230	184 ... 253	25 000	9187	9157	9235	9225

Design Version OB 5694

Nominal voltage U _N		Voltage range ²⁾ V	Resistance Ω (±10%)	AgSnO ₂		Ag Ni + 0.2 μm Au	
DC V	AC V			.01/	.11/	.01/	.11/
6		4.8 ... 6.6	38	9321	9301	9331	9311
12		9.6 ... 13.2	150	9322	9302	9332	9312
15		12 ... 16.5	220	9323	9303	9333	9313
20		16 ... 22	410	9324	9304	9334	9314
24		19.2 ... 26.4	575	9325	9305	9335	9315
	12	9.6 ... 13.2	65	9422	9402	9432	9412
	24	19.2 ... 26.4	250	9423	9403	9433	9413
	42	33.6 ... 46.2	830	9424	9404	9434	9414
	230	184 ... 253	25 000	9425	9405	9435	9415

Ordering example

OB 569... / ...

Pin configuration

L = solder line proof RT II
W = wash proof RT III

Design version

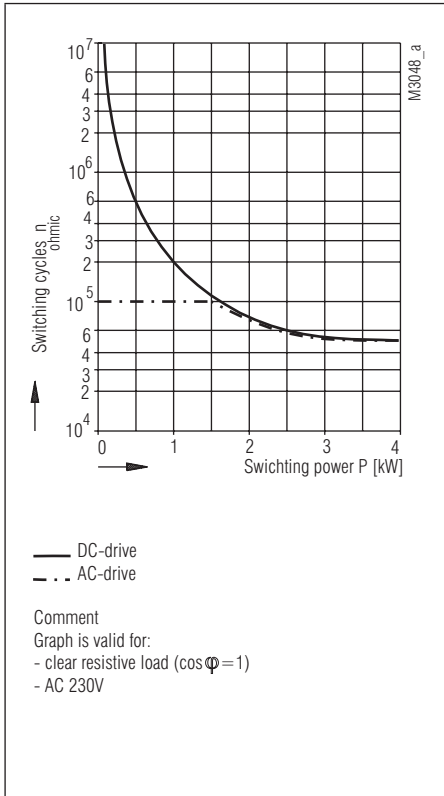
01 = NO
11 = C/O

3 = horizontal model
4 = vertical model

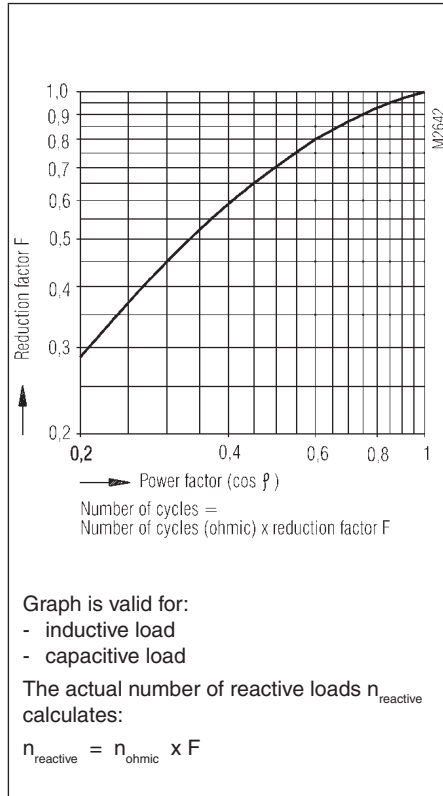
Note

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

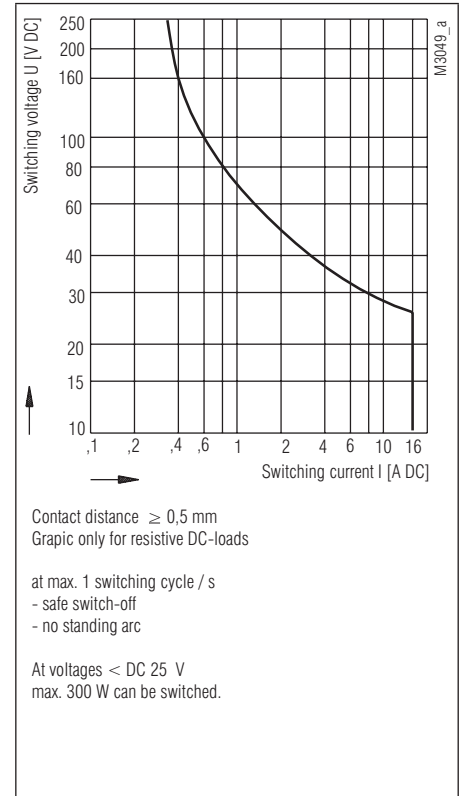
Characteristics



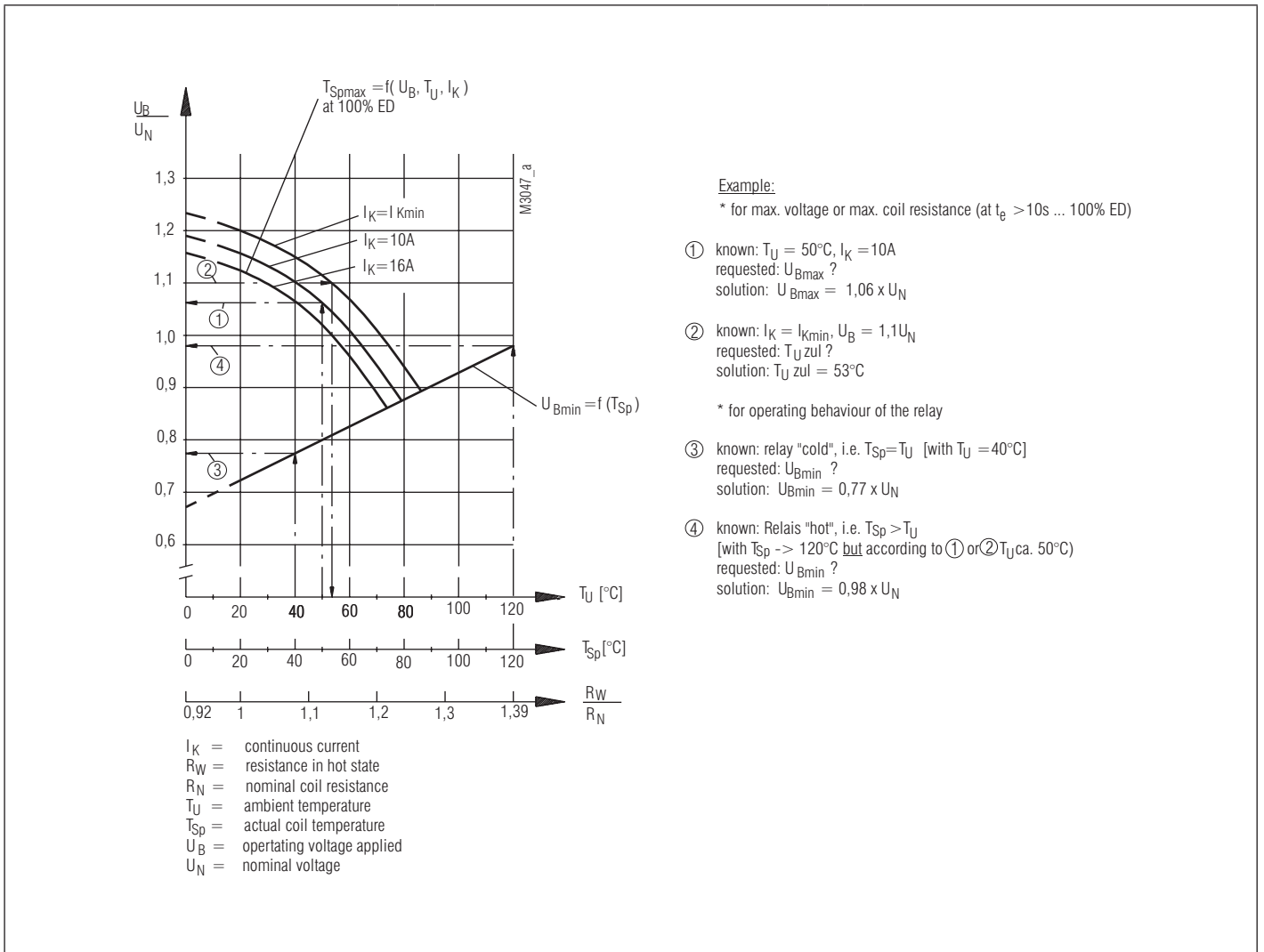
Contact service life



Reduction factor for reactive loads

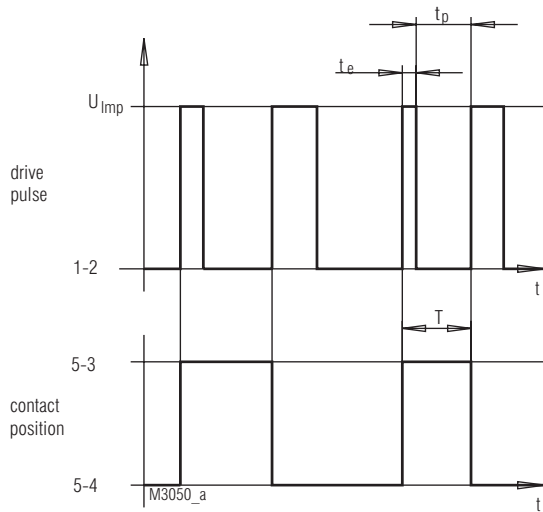


Arc limit curve



Operating voltage limit curve

Function Diagram



Notes:

1.) Safe function for pulse operation
at $0,8x U_N < U_{imp} < 1,1x U_N$

$t_e \text{ min} = 20 \text{ ms}$
 $t_p \text{ min} = 180 \text{ ms}$

2.) Safe thermal operation
at $1,1x U_N < U_{imp}$
(voltage increase at pulse operation)

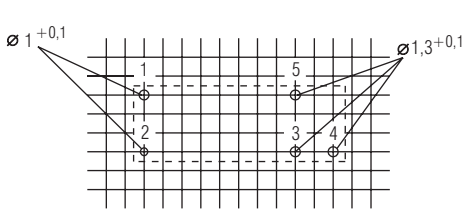
$$U_{imp} = U_{Bmax} \times \sqrt{\frac{T}{t_e}}$$

with: $t_e \leq 10s$

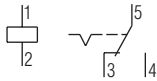
for: $t_e > 10s \dots 100\% \text{ ED}$
see operating voltage limit curve

Dimensions, Pin Configuration, Connection Diagrams

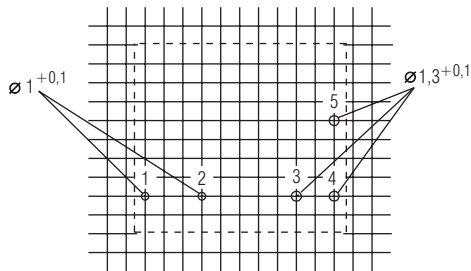
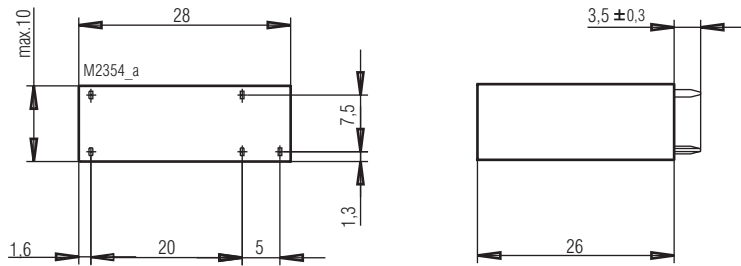
Drilling plan (solder side)



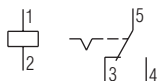
OB 5694.11



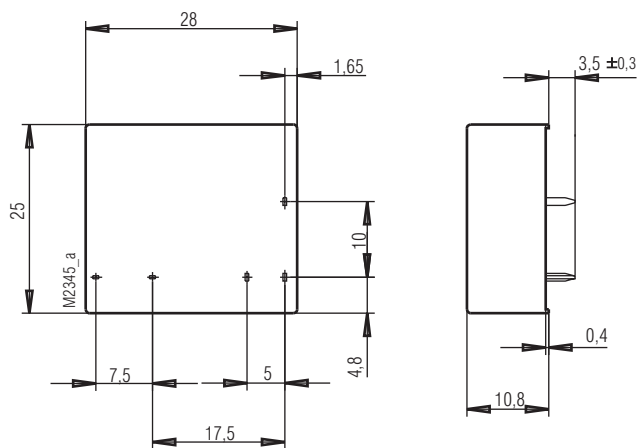
OB 5694.01



OB 5693.11

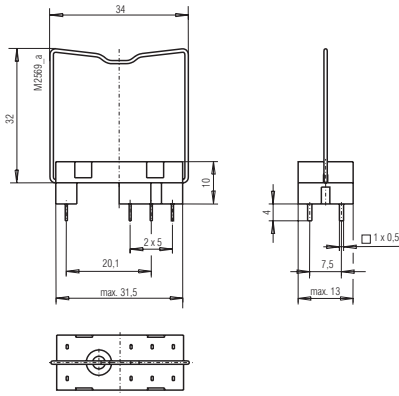


OB 5693.01



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

Relay socket incl. fixing clip



Relay socket ET 1415.021 Fixing clip ET 1415.025

Article number:: 0034769

Fixing clip (wire):
Article number: 0034770

Fixing clip (plastic):
Article number: 0047726

Packing: 100 Stück

Function modules

ET1415.913: DC 24 V, with free-wheel diode and green LED
Article number: 0056828

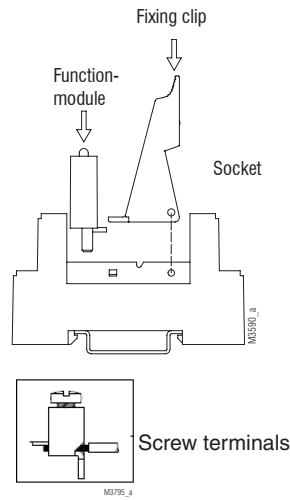
ET1415.911: DC 24 V, with free-wheel diode and red LED
Article number: 0055909

ET1415.912: AC/DC 24 V, with varistor and green LED
Article number: 0055910

ET1415.924: DC 60 V, with free-wheel diode and red LED
Article number: 0062552

Packing: 20 pieces

Socket ET 1415.041 incl. fixing clip - Screw terminals -



Article number:: 0055571

Temperature range: - 25 ... + 70 °C

Clearance and creepage distance

Rated impulse voltage /
degree of protection

Input / output: 6 kV / 2 IEC 60664-1

Output / output: 4 kV / 2 IEC 60664-1

Overvoltage category: III

Degree of protection: IP 20 IEC/EN 60529

Wire connection

Solid / stranded: 0.5 - 2.5 mm² (20-14 AWG)

Sleeved end: 0.14 - 2.5 mm² (26-14 AWG)

Stripping length 7 mm

Wire fixing: Screw terminals

Mounting: DIN-rail IEC/EN 60715

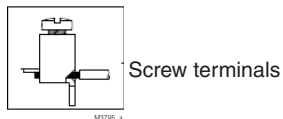
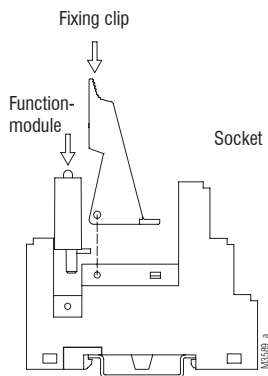
Weight: Approx. 38.5 g

Packing: 10 pieces

Dimensions

Width x height x depth: 15.8 x 75 x 69.0 mm

Socet ET 1415.044 incl. fixing clip - Screw terminals -



- Incl. safe separation between coil and contacts according to DIN EN 60947-1, DIN EN 61140

Article number: 0059274

Temperature range: - 25 ... + 70 °C

Clearance and creepage distance

Rated impulse voltage / degree of protection

Input / output: 6 kV / 2 IEC 60664-1

Output / output: 4 kV / 2 IEC 60664-1

Overvoltage category: III

Degree of protection: IP 20 IEC/EN 60529

Wire connection

Solid / stranded: 0.5 - 2.5 mm² (20-14 AWG)

Sleeved end: 0.14 - 2.5 mm² (26-14 AWG)

Stripping length 7 mm

Wire fixing: Screw terminals

Mounting: DIN-rail IEC/EN 60715

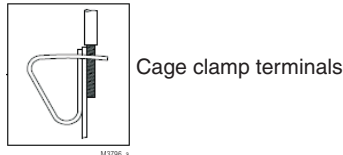
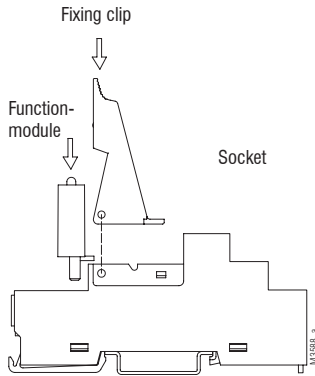
Weight: Approx. 43.5 g

Packing: 10 pieces

Dimensions

Width x height x depth: 15.8 x 75 x 75.0 mm

Socet ET 1415.047 incl. fixing clip - Cage clamp terminals -



Article number: 0059270

Temperature range: - 25 ... + 70 °C

Clearance and creepage distance

Rated impulse voltage / degree of protection

Input / output: 6 kV / 2 IEC 60664-1

Output / output: 4 kV / 2 IEC 60664-1

Overvoltage category: III

Degree of protection: IP 20 IEC/EN 60529

Wire connection

2 x Solid / stranded: 0,5 - 1,5 mm² (20-16 AWG)

2 x Sleeved end: 0,14 - 1,5 mm² (26-16 AWG)

Stripping length 11 mm

Wire fixing: Cage clamp terminals

Mounting: DIN-rail IEC/EN 60715

Weight: Approx. 42.0 g

Packing: 10 pieces

Dimensions

Width x height x depth: 15.8 x 97 x 75.5 mm

