TECHNICAL DATA ELECTRONIC SWITCHING RELAYS, CONTROL RELAYS AND COUPLING RELAYS

Type	ESR12NP-230V+UC	ESR12DDX-UC [b] ER12DX-UC [a] ER12DX/110-240V ER12-200-UC [a] ER12-110-UC [a] ER12-001-UC [a] ER12-002-UC [a]	ESR61NP-230V+UC [b] ESR61M-UC [a] ETR61-230V ETR61NP-230V ER61-UC [a]	ER12SSR-UC ESR61SSR-230V	KR09 -12V UC, -24V UC, -230V	KRW12DX-UC [a]
Contacts						
Contact material/contact gap	$AgSnO_2$/0.5 mm			Opto Triac	$AgSnO_2$/0.5 mm	W+$AgSnO_2$/0.5 mm
Spacing of control connections/contact	3 mm	6 mm	6 mm, ER61: 3 mm		6 mm	6 mm
Spacing of control connections C1-C2 or A1-A2/contact	6 mm	6 mm	ESR61NP+M: 6 mm	–	–	–
Test voltage contact/contact	–	ESR12DDX, ER12-200/110: 2000 V	ESR61M: 2000 V	–	–	–
Test voltage control connections/contact Test voltage C1-C2 or A1-A2/contact	2000 V 4000 V	4000 V –	2000 V ESR61NP+M+ETR61NP: 4000 V	–	4000 V –	4000 V –
Rated switching capacity	16 A/250 V AC	16 A/250 V AC [4] ER12-001-UC: NC contact 10 A, NO contact 16 A. ER12-002-UC: NC contact 10 A, NO contact 16 A.	10 A/250 V AC ETR61: 5 A/250 V AC	–	6 A/250 V AC	16A/250V AC
230 V LED lamps	up to 600 W [5] I on ≤ 30 A/20 ms	up to 200 W [5] with DX up to 600 W [5] I on ≤ 120 A/5 ms	up to 200 W [5] ESR61NP: up to 600 W [5] I on ≤ 120 A/5 ms	up to 400 W [5] I on ≤ 120 A/20 ms	up to 50 W [5] I on ≤ 10 A/10 ms	up to 600 W [5] I on ≤ 500 A/2 ms
Incandescent lamp and halogen lamp load [1] 230 V, I on ≤ 70 A/10 ms	2300 W	2000 W	2000 W ETR61: 1000 W	up to 400 W	500 W	3300 W
Fluorescent lamp load with KVG* in lead-lag circuit or non compensated	1000 VA	1000 VA	1000 VA	–	600 VA	1000 VA
Fluorescent lamp load with KVG* shunt-compensated or with EVG*	500 VA	500 VA	500 VA	up to 400 VA [5]	300 VA	500 VA
Compact fluorescent lamps with EVG* and energy saving lamps ESL	15x7 W 10x20 W [5]	I on ≤ 70 A/10 ms [2] When using DX types: 15x7 W 10x20 W [3][5]	I on ≤ 70 A/10 ms [2] ESR61NP: 15x7 W, 10x20 W [5]	up to 400 W [5]	52 W	I on ≤ 500 A/2 ms [2]
Max. switching current DC1: 12 V/24 V DC	–	8A	8A (not ESR)	–	6 A	–
Life at rated load, cos φ = 1 or for incandescent lamps 1000 W at 100/h	$>10^5$	$>10^5$	$>10^5$	∞	$>10^5$	$>10^5$
Life at rated load, cos φ = 0.6 at 100/h	$>4x10^4$	$>4x10^4$	$>4x10^4$	–	–	$>4x10^4$
Max. operating cycles	10^3/h	10^3/h	10^3/h	10^3/h	10^4/h	10^3/h
Contact position indication	LED (not series 61)					
Maximum conductor cross-section	series 12: 6 mm^2 (3-fold terminal 4 mm^2), series 61: 4 mm^2					
Two conductors of same cross-section	series 12: 2.5 mm^2 (3-fold terminal 1.5 mm^2), series 61: 1.5 mm^2					
Screw head	series 12: slotted/crosshead, pozidriv, series 61: slotted/crosshead					
Type of enclosure/terminals	series 12: IP50/IP20, series 61: IP30/IP20					
Electronics						
Time on	100%	100%	100%	100%	100%	100%
Max./min. temperature at mounting location	+50°C/-20°C	+50°C/-20°C	+50°C/-20°C	+50°C/-20°C	+50°C/-20°C	+50°C/-20°C
Stand by loss (active power)	0.5 W	– ESR12DDX: 0.4 W	– ESR61NP: 0.7 W, ETR61+ ETR61NP: 0.5 W	– ESR61SSR: 0.3 W	–	–
Control current 230 V control input local ±20%	10 mA	–	10 mA, ER61 and ESR61M: –	1 mA	–	–
Control current universal control voltage all control voltages mA ± 20%	–	4 (not ESR12DDX)	ER61: 2, ESR61M: 4	4	–	4
Control current at 8/12/24/230 V (<10 s) mA ± 20%	2/4/9/5(100)	only ESR12DDX: 2/3/7/3(50) mA	only ESR61NP: 2/4/9/5(100) only ETR61+ ETR61 NP: 10mA/24 V DC	-	–/15/10/11	–
Max. parallel capacitance (approx. length) of control lead at 230 V AC	ES: 0.3 µF (1000 m) ER: 3 nF (10 m) C1-C2: 15 nF (50 m)	0.06 µF (200 m) ESR12DDX: 0.3 µF (1000 m)	0.06 µF (200 m)	30 nF (100 m)	0.06 µF (200 m)	0.06µF (200 m)

* EVG = electronic ballast units; KVG = conventional ballast units [a] Bistable relay as relay contact. The relay contact can be open or closed when putting into operation. It will be synchronised at first operation. [b] Bistable relay as relay contact. The switched consumer may not be connected to the mains before the short automatic synchronisation after installation has terminated. [1] For lamps with 150 W max. [2] A 40-fold inrush current must be expected for electronic ballast devices. For steady loads of 1200 W or 600 W use the currentlimiting relay SBR12 or SBR61. See chapter 14, page 14-8. [3] When using DX types close attention must be paid that zero passage switching is activated! [4] For ER12-200 maximum current across both contacts 16 A for 230 V. [5] Usually applies for dimmable 230 V LED lamps and dimmable energy saving lamps. Due to different lamp electronics and depending on the manufacturer, the maximum number of lamps may be limited, especially if the wattage of the individual lamps is very low (e.g. with 2 W LEDs). [6] Up to $2x10^4$ switching cycles at 1s on & 9 s off.

To comply with DIN VDE 0100-443 and DIN VDE 0100-534, a Type 2 or Type 3 surge protection device (SPD) must be installed.

Compliance with: EN 61000-6-3, EN 61000-6-1 and EN 60 669