

TECHNICAL DATA ELECTRONIC SWITCHING RELAYS, CONTROL RELAYS AND COUPLING RELAYS

Type	ESR12NP-230V+UC	ESR12DDX-UC ^{b)} ER12DX-UC ^{a)} 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: 4000 V 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⁾	10 A/250 V AC ETR61: 5 A/250 V AC	–	6 A/250 V AC	16 A/250 V AC
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⁾
230 V LED lamps	up to 200 W ⁵⁾ I on ≤ 30 A/20 ms	up to 200 W ⁵⁾ I on ≤ 120 A/5 ms	up to 200 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 500 W ⁵⁾ I on ≤ 500 A/2 ms
Max. switching current DC: 12 V/24 V DC	–	8 A	8 A (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%					
Max./min. temperature at mounting location	+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+ ETR61NP: 10 mA/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)	0.06 μF (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 energy saving lamps and dimmable 230 V LED lamps. Due to differences in the lamps electronics, there may be a restriction on the maximum number of lamps; especially if the connected load is very low (for 5W-LEDs).

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.