

TECHNICAL DATA MAINS MONITORING RELAYS, CURRENT RELAY AND CURRENT-LIMITING RELAYS

Type	BZR12DDX	NR12	AR12DX/FR12	FR61
Contacts				
Contact material	AgSnO ₂ /0.5 mm	AgSnO ₂ /0.5 mm	AgSnO ₂ /0.5 mm	AgSnO ₂ /0.5 mm
Spacing of control connections/contact	3 mm	>6 mm	-, AR12DX: >6 mm	-
Test voltage contact to contact	2000 V	-, NR12-002: 2000 V	-	-
Test voltage control connection to contact	-	4000 V	-, AR12DX: 4000 V	-
Rated switching capacity	10 A/250 V AC	10 A/250 V AC	16 A/250 V AC	10 A/250 V AC
230 V LED lamps	up to 200 W ⁵⁾ I on ≤ 120 A/5 ms	up to 200 W ⁵⁾ I on ≤ 30 A/20 ms	up to 200 W ⁵⁾ I on ≤ 30 A/20 ms	up to 200 W ⁵⁾ I on ≤ 30 A/20 ms
Incandescent lamp and halogen lamp load ¹⁾ 230 V, I on ≤ 70 A/10 ms	2000 W	2000 W	2300 W	1000 W
Fluorescent lamp load with KVG* in lead-lag circuit or non compensated	1000 VA	1000 VA	1000 VA	1000 VA
Fluorescent lamp load with KVG* shunt-compensated or with EVG*	500 VA	500 VA	500 VA	500 VA
Compact fluorescent lamps with EVG* and energy saving lamps ESL	15x7 W, 10x20 W ³⁾	I on ≤ 70 A/10 ms ²⁾	FR12: I on ≤ 70 A/10ms ²⁾ AR12DX: 15x7 W, 10x20 W ³⁾	I on ≤ 70 A/10 ms ²⁾
Max. switching current DC1: 12 V/24 V DC	8 A	8 A	-	-
Life at rated load, cos φ = 1 at 100/h and incandescent lamps 1000 W at 100/h	>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
Switching position indication/voltage indication	display	LED	LED	-
Maximum conductor cross-section	6 mm ²	6 mm ²	6 mm ²	4 mm ²
Two conductors of same cross-section	2.5 mm ²	2.5 mm ²	2.5 mm ²	1.5 mm ²
Screw head	slotted/crosshead, pozidriv	slotted/crosshead, pozidriv	slotted/crosshead, pozidriv	slotted/crosshead, pozidriv
Type of enclosure/terminals	IP50/IP20	IP50/IP20	IP50/IP20	IP30/IP20
Electronics				
Time on	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
Control voltage range	0.9 to 1.1x rated voltage	180-250 V/50-60 Hz	0.9 to 1.1x rated voltage	0.9 to 1.1x rated voltage
Stand by loss (active power) 230 V	0.5 W	0.8 W	0.8 W	0.8 W
Stand by loss (active power) 12 V ⁴⁾	0.05 W	-	-	-
Max. parallel capacitance (length) of control lead	0.06 μF (200 m)	0.06 μF (200 m)	0.06 μF (200 m)	0.06 μF (200 m)

* EVG = electronic ballast units; KVG = conventional ballast units

¹⁾ Applies to lamps with max. 150 W. ²⁾ A 40-fold inrush current must be expected for electronic ballast devices. ³⁾ When using DX types close attention must be paid that zero passage switching is activated! ⁴⁾ Standby loss at 24 V approx. two times greater than at 12 V. ⁵⁾ Usually applies for dimmable 230 V LED lamps and dimmable energy saving 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.