

TECHNICAL DATA

ELECTROMECHANICAL SWITCHING RELAYS AND INSTALLATION CONTACTORS

Type	R12	R81/R91	XR12
Contacts			
Contact material/contact gap	AgSnO ₂ /3 mm	AgSnO ₂ /2 mm	AgSnO ₂ /3 mm ¹⁾
Spacing of control connections/contact	> 6 mm	> 6 mm	> 6 mm
Test voltage contact/contact	2000 V	2000 V	2000 V
Test voltage control connections/contact	4000 V	4000 V	4000 V
Rated switching capacity	16 A/250 V AC 10 A/400 V AC	10 A/250 V AC 6 A/400 V AC	25 A/250 V AC 16 A/400 V AC
Incandescent lamp and halogen lamp load 230 V ²⁾	2300 W	2300 W	2300 W
Fluorescent lamp load with KVG* in lead-lag circuit or non compensated	2300 VA	2300 VA	3600 VA
Fluorescent lamp load with KVG* shunt-compensated or with EVG*	500 VA	500 VA	1000 VA
Compact fluorescent lamps with EVG* and energy saving lamps ESL	I _{on} ≤ 140 A/10 ms ³⁾	I _{on} ≤ 70 A/10 ms ³⁾	I _{on} ≤ 140 A/10 ms ³⁾
HQL and HQL non compensated	500 W	-	500 W
Max. switching current DC1: 12 V/24 V DC	8 A	8 A	12 A
Life at rated load, cos φ = 1 or incandescent lamps 1000 W at 100/h	> 10 ⁵	> 10 ⁵	> 10 ⁵
Life at rated load, cos φ = 0.6 at 100/h	> 4x10 ⁴	> 4x10 ⁴	> 4x10 ⁴
Max. operating cycles	10 ³ /h	10 ³ /h	10 ³ /h
Closing time	10-20 ms	10-20 ms	10-20 ms
Opening time	5-15 ms	5-15 ms	5-15 ms
Switch position indication	yes	yes	yes
Manual control	yes	yes	yes
Maximum conductor cross-section	6 mm ²	4 mm ²	6 mm ²
Two conductors of same cross-section	2.5 mm ²	1.5 mm ²	2.5 mm ²
Screw head	slotted/crosshead, pozidriv	slotted/crosshead, pozidriv	slotted/crosshead, pozidriv
Type of enclosure/terminals	IP50/IP20	IP50/IP20	IP50/IP20
Solenoid System			
Time on	100% ⁴⁾	100%	100% ⁴⁾
Max./min. temperature at mounting location	+50°C/-5°C	+50°C/-5°C	+50°C/-5°C
Control voltage range	0.9 to 1.1 x rated voltage	0.9 bis 1,1 x rated voltage	0.9 to 1.1 x rated voltage
Coil power loss AC+DC ±20%	1- and 2-pole: 1.9 W 4-pole: 4 W	R81: 5 W R91: 2,5 W	1- and 2-pole: 1,9 W 4-pole: 4 W
Total power loss with continuous excitation at rated voltage and rated contact load	1-pole: 4 W, 2-pole: 6 W 4-pole: 12 W	1-pole: 7 W 2-pole: 9 W	1-pole: 4 W, 2-pole: 6 W 4-pole: 12 W
Max. parallel capacitance (length) of control lead	0.06 μF (ca. 200 m)	0.06 μF (ca. 200 m)	0.06 μF (ca. 200 m)
Max. voltage induced at the control inputs	0.2 x rated voltage	0.2 x rated voltage	0.2 x rated voltage

* EVG = electronic ballast units; KVG = conventional ballast units. ¹⁾ Contact distance of the NC contacts 1.2mm. ²⁾ Contact spacing of NC contacts 1.2 mm. ³⁾ A 40-fold inrush current must be calculated for electronic ballast devices. For steady loads of 1200 W or 600 W use the current-limiting relay SBR12 or SBR61. See chapter 14, page 14-8. ⁴⁾ Whenever several impulse switches are continuously energised make sure there is adequate ventilation as a function of the calculated power loss.

To comply with DIN VDE 0100-443 and DIN VDE 0100-534, a Type 1 or Type 2 surge protection device (SPD) must be installed.