

R12-400
R12-100
R91-100



**ELECTROMECHANICAL SWITCHING RELAYS
AND INSTALLATION CONTACTORS - POLE
POSITION R**

Electromechanical switching relays and installation contactors

1-, 2- and 4-pole electromechanical switching relays R12	19 - 2
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1-, 2- AND 4-POLE ELECTROMECHANICAL SWITCHING RELAYS R12



R12-110-230V

Technical data page 19-5.

R12-100-/200-/110-/020-



1- and 2-pole 16 A/250 V AC

Modular devices for DIN 60715 TH35 rail mounting with manual control and switch position indicator.

1 module = 18 mm wide, 55 mm deep.

100% time on. Control power demand 1.9 W.

Contacts: 1 NO, 2 NO, 1 NO + 1 NC, 2 NC (closed-circuit current relay, 230 V only).

Contact gap 3 mm.

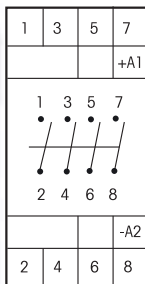
Contact/contact test voltage 2000 V and control connections/contact test voltage 4000 V.

25 A devices XR12, page 19-4. Retrofittable auxiliary contact KM12, page 18-3.

The pin-compatible ER12DX-UC, ER12-200-UC and ER12-110-UC electronic switching relays can also be used.

The universal control voltage UC covers the voltage ranges of 8 to 253 V AC at 50-60 Hz and 10 to 230 V DC.

R12-100-12V	1 NO 16 A	EAN 4010312200421	25,50 €/pc.
R12-100-230V	1 NO 16 A	EAN 4010312200445	25,50 €/pc.
R12-100-8V, 24V, 12V DC, 24V DC	1 NO 16 A		27,50 €/pc.
R12-200-12V	2 NO 16 A	EAN 4010312200506	32,50 €/pc.
R12-200-230V	2 NO 16 A	EAN 4010312200520	32,50 €/pc.
R12-200-8V, 24V, 12V DC, 24V DC	2 NO 16 A		34,10 €/pc.
R12-110-12V	1 NO + 1 NC 16 A	EAN 4010312200469	32,50 €/pc.
R12-110-230V	1 NO + 1 NC 16 A	EAN 4010312200483	32,50 €/pc.
R12-110-8V, 24V, 12V DC, 24V DC	1 NO + 1 NC 16 A		34,10 €/pc.
R12-020-230V	2 NC 16 A	EAN 4010312201572	32,40 €/pc.



R12-400-230V

Technical data page 19-5.

R12-400-/310-/220-



4-pole 16 A/250 V AC

Modular devices for DIN 60715 TH35 rail mounting with manual control and switch position indicator.

2 modules = 36 mm wide, 55 mm deep.

100% time on. Control power demand 4 W.

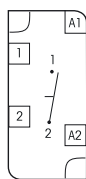
Contacts: 4 NO, 3 NO + 1 NC, 2 NO + 2 NC.

Contact gap 3 mm.

Contact/contact test voltage 2000 V and control connections/contact test voltage 4000 V.

25 A devices XR12, page 19-4. Retrofittable auxiliary contact KM12, page 18-3.

R12-400-230V	4 NO 16 A	EAN 4010312200643	48,50 €/pc.
R12-310-230V	3 NO + 1 NC 16 A	EAN 4010312200605	48,50 €/pc.
R12-220-230V	2 NO + 2 NC 16 A	EAN 4010312200568	48,50 €/pc.



R91-100-230V

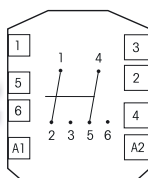
Technical data page 19-5.

R91-100-

1 NO contact 10 A/250 V AC

Built-in devices for installation and surface mounting.
 50 mm long, 26 mm wide, 32 mm deep.
 Time on 100%. Control power demand 2,5 W.
 Contact gap 2 mm.
 Contact/contact test voltage 2000 V and control connection/contact test voltage 4000 V.
 The ER61-UC electronic switching relay can also be used.
 The universal control voltage UC covers the voltage ranges of 8 to 253 V AC at 50-60 Hz and 10 to 230 V DC.

R91-100-230V	1 NO 10 A	EAN 4010312203125	26,30 €/pc.
R91-100-12V	1 NO 10 A	EAN 4010312203101	26,30 €/pc.
R91-100-8V	1 NO 10 A	EAN 4010312203095	29,70 €/pc.



R81-002-230V

Technical data page 19-5.

R81-002-

2 CO contacts 10 A/250 V AC

Built-in devices for installation and surface mounting.
 50 mm long, 42 mm wide, 32 mm deep.
 Time on 100%. Control power demand 5 W.
 Contact gap 2 mm.
 Contact/contact test voltage 2000 V and control connection/contact test voltage 4000 V.

R81-002-230V	2 CO 10 A	EAN 4010312203040	31,80 €/pc.
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Comparable electronic types	
ER12DX-UC	replaces terminal compatible the R12-100- , all control voltages
ER12-200-UC	replaces terminal compatible the R12-200- , all control voltages
ER12-110-UC	replaces terminal compatible the R12-110- , all control voltages
ER61-UC	replaces the R91-100- , all control voltages
ESR61M-UC	replaces partially the R81 , all control voltages

1-, 2- AND 4- POLE 25 A ELECTROMECHANICAL INSTALLATION CONTACTORS XR12



XR12-110-230V

Technical data page 19-5.

XR12-100-/200-/110-



1- and 2-pole, 25 A/250 V AC

Modular devices for DIN 60715 TH35 rail mounting with manual control and switch position indicator.

1 module = 18 mm wide, 55 mm deep.

100% time on. Control power demand 1.9 W.

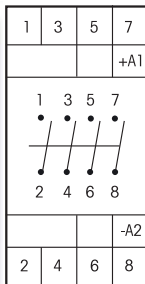
Contacts 1 NO, 2 NO, 1 NO + 1 NC.

Contact gap 3 mm.

Contact/contact test voltage 2000 V and control connection/contact test voltage 4000 V.

Retrofittable auxiliary contact KM12, page 18-3.

XR12-100-230V	1 NO 25 A	EAN 4010312201206	30,60 €/pc.
XR12-200-230V	2 NO 25 A	EAN 4010312201305	36,10 €/pc.
XR12-110-230V	1 NO + 1 NC 25 A	EAN 4010312201251	36,10 €/pc.



XR12-400-230V

Technical data page 19-5.

XR12-400-/310-/220-



4-pole, 25A/250V AC

Modular devices for DIN 60715 TH35 rail mounting with manual control and switch position indicator.

2 modules = 36 mm wide, 55 mm deep.

100% time on. Control power demand 4 W.

Contacts: 4 NO, 3 NO + 1 NC, 2 NO + 2 NC.

Contact gap 3 mm.

Contact/contact test voltage 2000 V and control connection/contact test voltage 4000 V.

Retrofittable auxiliary contact KM12, page 18-3.

XR12-400-230V	4 NO 25 A	EAN 4010312201374	51,00 €/pc.
XR12-310-230V	3 NO + 1 NC 25 A	EAN 4010312201428	51,00 €/pc.
XR12-220-230V	2 NO + 2 NC 25 A	EAN 4010312201473	51,00 €/pc.

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
230 V LED lamps	up to 200 W ⁵⁾	up to 200 W ⁵⁾	up to 200 W ⁵⁾
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.

⁵⁾ 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).

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.