



Pole Position R

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1-, 2- and 4-pole Electromechanical Switching Relays R12

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



R12-110-230V



1- and 2-pole, 16A/250V 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 1.9W.

Contacts: 1 NO, 2 NO, 1 NO + 1 NC, 2 NC (closed-circuit current relay, 230V only).
Contact gap 3 mm.

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

25A devices XR12, page K4. Retrofittable auxiliary contact KM12, page J3.

* **Non-standard control voltages:** 42, 48, 60, 110V/50Hz or 110, 115, 127 and 220V/60Hz as well as 6, 8, 42, 48, 60, 110 and 220V DC.

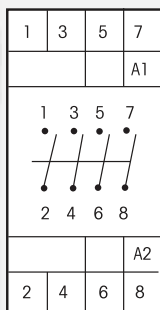
Technical data page K5.

R12-100-12V	1 NO 16A	EAN 4010312200421	21,30 €/pc.
R12-100-230V	1 NO 16A	EAN 4010312200445	21,30 €/pc.
R12-100-8V, 24V, 12V DC, 24V DC	1 NO 16A		23,00 €/pc.
R12-100-*	1 NO 16A		24,70 €/pc.
R12-200-12V	2 NO 16A	EAN 4010312200506	26,70 €/pc.
R12-200-230V	2 NO 16A	EAN 4010312200520	26,70 €/pc.
R12-200-8V, 24V, 12V DC, 24V DC	2 NO 16A		28,50 €/pc.
R12-200-*	2 NO 16A		30,60 €/pc.
R12-110-12V	1 NO + 1 NC 16A	EAN 4010312200469	26,70 €/pc.
R12-110-230V	1 NO + 1 NC 16A	EAN 4010312200483	26,70 €/pc.
R12-110-8V, 24V, 12V DC, 24V DC	1 NO + 1 NC 16A		28,50 €/pc.
R12-110-*	1 NO + 1 NC 16A		30,60 €/pc.
R12-020-230V	2 NC 16A	EAN 4010312201572	26,70 €/pc.

R12-400-/310-/220-



R12-400-230V



4-pole, 16A/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 4W.

Contacts: 4 NO, 3 NO + 1 NC, 2 NO + 2 NC.
Contact gap 3 mm.

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

25A devices XR12, page K4. Retrofittable auxiliary contact KM12, page J3.

* **Non-standard control voltages:** 8, 12, 24, 42, 48, 60 and 110V/50Hz or 110, 115, 127 and 220V/60Hz as well as 6, 8, 12, 24, 42, 48, 60, 110 and 220V DC.

Technical data page K5.

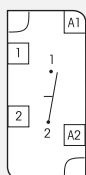
R12-400-230V	4 NO 16A	EAN 4010312200643	40,70 €/pc.
R12-400-*	4 NO 16A		46,80 €/pc.
R12-310-230V	3 NO + 1 NC 16A	EAN 4010312200605	40,70 €/pc.
R12-310-*	3 NO + 1 NC 16A		46,80 €/pc.
R12-220-230V	2 NO + 2 NC 16A	EAN 4010312200568	40,70 €/pc.
R12-220-*	2 NO + 2 NC 16A		46,80 €/pc.

Recommended retail prices excluding VAT.

R91-100-



R91-100-230V



1 NO contact 10A/250V AC

Built-in devices for installation and surface mounting.
50mm long, 26mm wide, 32mm deep.

Time on 100%. Control power demand 4-5W.

Contact gap 2mm.

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

* **Non-standard control voltages:** 8, 24, 42, 48, 60 and 110V/50Hz or 110, 115, 127 and 220V/60Hz as well as 6, 8, 12, 24, 42, 48, 60, 110 and 220V DC.

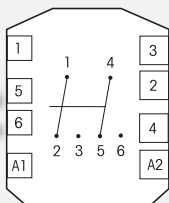
Technical data page K5.

R91-100-12V	1 NO 10A	EAN 4010312203101	22,00 €/pc.
R91-100-230V	1 NO 10A	EAN 4010312203125	22,00 €/pc.
R91-100-*	1 NO 10A		25,60 €/pc.

R81-001-/002-



R81-002-230V



1 or 2 CO contacts 10A/250V AC

Built-in devices for installation and surface mounting.
50mm long, 42mm wide, 32mm deep.

Time on 100%. Control power demand 5-5.5W.

Contact gap 2mm.

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

* **Non-standard control voltages:** 8, 24, 42, 48, 60 and 110V/50Hz or 110, 115, 127 and 220V/60Hz as well as 6, 8, 12, 24, 42, 48, 60, 110 and 220V DC.

Technical data page K5.

R81-001-12V	1 CO 10A	EAN 4010312203064	21,90 €/pc.
R81-001-230V	1 CO 10A	EAN 4010312203088	21,90 €/pc.
R81-001-*	1 CO 10A		25,40 €/pc.
R81-002-12V	2 CO 10A	EAN 4010312203026	26,70 €/pc.
R81-002-230V	2 CO 10A	EAN 4010312203040	26,70 €/pc.
R81-002-*	2 CO 10A		30,60 €/pc.

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

XR12-100-/200-/110-



1- and 2-pole, 25A/250V 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 2000V and control connection/contact test voltage 4000V.

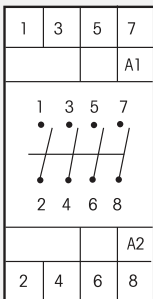
Retrofittable auxiliary contact KM12, page J3.

Technical data page K5.

XR12-110-230V

XR12-100-12V	1 NO 25A	EAN 4010312201183	27,00 €/pc.
XR12-100-24V	1 NO 25A	EAN 4010312201190	27,00 €/pc.
XR12-100-230V	1 NO 25A	EAN 4010312201206	25,10 €/pc.
XR12-100-12V DC	1 NO 25A	EAN 4010312203422	27,00 €/pc.
XR12-100-24V DC	1 NO 25A	EAN 4010312201213	27,00 €/pc.
XR12-200-12V	2 NO 25A	EAN 4010312201282	32,20 €/pc.
XR12-200-24V	2 NO 25A	EAN 4010312201299	32,20 €/pc.
XR12-200-230V	2 NO 25A	EAN 4010312201305	29,60 €/pc.
XR12-200-12V DC	2 NO 25A	EAN 4010312203446	32,20 €/pc.
XR12-200-24V DC	2 NO 25A	EAN 4010312201312	32,20 €/pc.
XR12-110-12V	1 NO + 1 NC 25A	EAN 4010312201237	32,20 €/pc.
XR12-110-24V	1 NO + 1 NC 25A	EAN 4010312201244	32,20 €/pc.
XR12-110-230V	1 NO + 1 NC 25A	EAN 4010312201251	29,60 €/pc.
XR12-110-12V DC	1 NO + 1 NC 25A	EAN 4010312203439	32,20 €/pc.
XR12-110-24V DC	1 NO + 1 NC 25A	EAN 4010312201268	32,20 €/pc.

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

Retrofittable auxiliary contact KM12, page J3.

Technical data page K5.

XR12-400-230V

XR12-400-12V	4 NO 25A	EAN 4010312201350	46,30 €/pc.
XR12-400-24V	4 NO 25A	EAN 4010312201367	46,30 €/pc.
XR12-400-230V	4 NO 25A	EAN 4010312201374	40,70 €/pc.
XR12-400-12V DC	4 NO 25A	EAN 4010312202913	46,30 €/pc.
XR12-400-24V DC	4 NO 25A	EAN 4010312201381	46,30 €/pc.
XR12-310-12V	3 NO + 1 NC 25A	EAN 4010312201404	46,30 €/pc.
XR12-310-24V	3 NO + 1 NC 25A	EAN 4010312201411	46,30 €/pc.
XR12-310-230V	3 NO + 1 NC 25A	EAN 4010312201428	40,70 €/pc.
XR12-310-12V DC	3 NO + 1 NC 25A	EAN 4010312203217	46,30 €/pc.
XR12-310-24V DC	3 NO + 1 NC 25A	EAN 4010312201435	46,30 €/pc.
XR12-220-12V	2 NO + 2 NC 25A	EAN 4010312201459	46,30 €/pc.
XR12-220-24V	2 NO + 2 NC 25A	EAN 4010312201466	46,30 €/pc.
XR12-220-230V	2 NO + 2 NC 25A	EAN 4010312201473	40,70 €/pc.
XR12-220-12V DC	2 NO + 2 NC 25A	EAN 4010312202906	46,30 €/pc.
XR12-220-24V DC	2 NO + 2 NC 25A	EAN 4010312201480	46,30 €/pc.

Recommended retail prices excluding VAT.

Contacts	R12	R81/R91	XR12
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 Test voltage control connections/contact	2000 V 4000 V	2000 V 4000 V	2000 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 ¹⁾ 230 V	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 ²⁾	I _{on} ≤ 70 A/10 ms ²⁾	I _{on} ≤ 140 A/10 ms ²⁾
HQL and HQI 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	> 4 x 10 ⁴	> 4 x 10 ⁴	> 4 x 10 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% ³⁾	100% ³⁾	100% ³⁾
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 to 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 (approx. 200 m)	0.06 μF (approx. 200 m)	0.06 μF (approx. 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 spacing of NC contacts 1.2 mm.

²⁾ A 40-fold inrush current has to be calculated for electronic ballast devices. For steady loads of 1200 W or 600 W use the current-limiting relay SBR12 or SBR61. Product group G, page G4.

³⁾ Whenever several impulse switches are continuously energised make sure there is adequate ventilation as a function of the calculated power loss.