

- Miniature Industrial relays

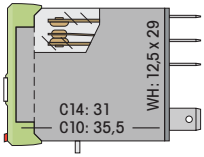
- Solid-state relays

CR 2 01

CR 2 Recommended application

		500A peak	Y	Y	Y	Y	Y	Y	Y	Y
10A										
6A										
5A										
3A										
10mA										
5mA										
1mA										
100µA										
Y	1	C7-W10	C10-A10 C14-A10		C10-T13	C10-T12				
	2		C7-A20		C7-T21	C7-T22	C12-A21 C15-A21	C12-A22	C9-R21	KR13
	4							C9-A41	C9-A42	
	1+1			C7-H23						
	2x 1									KR23
	3x 1									KR33

Y— Twin contacts; C9-R21: Remanence relay



1-pole miniature industrial relays

- Extreme stable terminal pins (Faston 4,8mm)

Test voltage: 5000V

T_{amb.} operation / storage: -20...+60 / -20...+100°C



Connection No. on socket →
Designation according to DIN/EN 50011 →

Connection with interface socket CS-106

μ = contact opening < 3mm

Data at T_{amb.} = 20°C (standard coil)

- Contact material
- Switching load AC1/DC1
- Peak inrush power
- Switching cycles mech./electr. (AC1)
- Operation voltage AC50Hz/DC
- Power consumption AC/DC
- Triggering delay / release time

Standard		AC ~ 50/60Hz
Standard		AC ~ 50/60Hz
Standard		DC = H 20%
Standard		DC = H 20%
FX		DC = H 20%
BX		UC ~ 50-400Hz / =

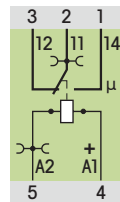
Power relays



C14-A10

Universal power relays 10A for AC- and DC-circuits ranging from 10 mA 10V. Without manual activation button and mechanical status display.

10A 250V~
10mA 10V



AgNi
2500 VA / ... 300 W // 10 A 30 V =
30 A (20 ms)
20 x 10⁶ / ≥ 10⁵
0,8...1,2 Un
1,1 VA / 700 mW
11 / 8 ms

24, 115, 230
C14-A10 / AC ... V

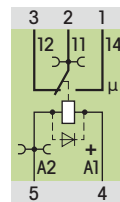
Power relays



C10-A10

Universal power relays 10A for AC- and DC-circuits ranging from 10 mA 10V. With lockable manual activation button and mechanical status display.

10A 250V~
10mA 10V



AgNi
2500 VA / ... 300 W // 10 A 30 V =
30 A (20 ms)
20 x 10⁶ / ≥ 10⁵
0,8...1,2 Un
1,1 VA / 700 mW
11 / 8 ms

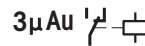
115, 230
C10-A10X / AC ... V

12, 24, 48, 110
C10-A10X / DC ... V

12, 110
C10-A10FX / DC ... V

24, 48
C10-A10BX / UC ... V

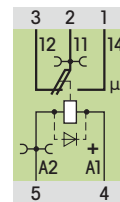
Control relays



C10-T13

Relay like ..A10, but with twin contacts 6A the control relay with highest switching reliability for control circuits ranging from 5 mA 5V. With lockable manual activation button and mechanical status display.

6A 250V~
5mA 5V



AgNi + 3μ Au
1500 VA / ... 150 W // 5 A 30 V =
15 A (20 ms)
20 x 10⁶ / ≥ 10⁵
0,8...1,2 Un
1,1 VA / 700 mW
11 / 8 ms

115, 230
C10-T13X / AC ... V

12, 24, 48, 110
C10-T13X / DC ... V

12, 110
C10-T13FX / DC ... V

24, 48
C10-T13BX / UC ... V

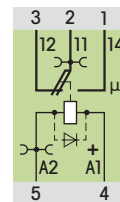
Signal relays



C10-T12

Relay like ..T13, but with 10μ gold plated twin change over contacts for highest switching reliability. Suitable for signal circuits ranging from 1 mA 5V. Recommended for applications up to 0,2A 30V. With lockable manual activation button and mechanical status display.

6A 250V~
1mA 5V



AgNi + 10μ Au
1500 VA / ... 150 W
15 A (20 ms)
20 x 10⁶ / ≥ 10⁵
0,8...1,2 Un
1,1 VA / 700 mW
11 / 8 ms

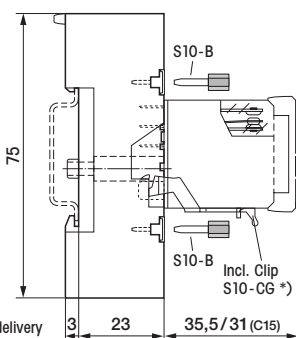
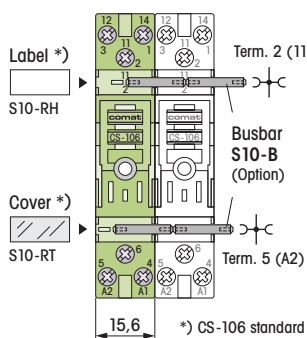
115, 230
C10-T12X / AC ... V

12, 24, 48, 110
C10-T12X / DC ... V

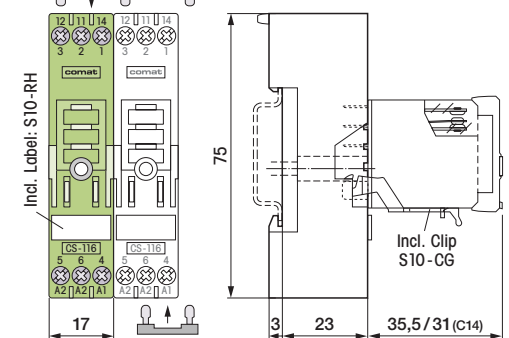
12, 110
C10-T12FX / DC ... V

24, 48
C10-T12BX / UC ... V

Interface socket CS-106



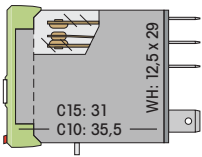
Interface socket CS-116



Option:
Conductor bridge refer to page 3.

Ordering example

- Relay C10-A10X/DC24V
- Socket CS-106 (clip incl.)
- Connector S10-B



2-pole miniature industrial relays

- Solide terminal pins
- Test voltage: \square 5000V \vee 3000V \vee
- T_{amb.} operation/storage: -20...+60/-20...+100°C



Connection No. on socket →
Designation according to DIN/EN 50011 →

Connection with interface socket CS-112

μ = contact opening < 3mm

Data at T_{amb.} = 20°C (standard coil)

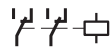
- Contact material: AgNi + 0,3μ Au
- Switching load AC1/DC1: 1250VA/...150W//5A 30V=
- Peak inrush power: 15A(20ms)
- Switching cycles mech./electr.(AC1): 10 x 10⁶/≥10⁵
- Operation voltage AC50Hz/DC: 0,8...1,2U_N
- Power consumption AC/DC: 1,1VA/700mW
- Triggering delay / release time: 10/8ms

Standard		AC ~ 50/60Hz
Standard		AC ~ 50/60Hz
Standard		DC = H 20%
Standard		DC = H 20%
FX		DC = H 20%
BX		UC ~ 50-400Hz/≡

Ordering example

- Relay C12-A21X/DC24V
- Socket CS-112 (clip incl.)
- Conductor bridge V40-B

Control relays

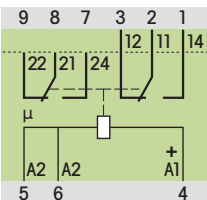


NEW

C15-A21

Universal-control relays 5A
With two change over contacts for AC- and DC- circuits ranging from 10mA 10V. Without manual activation button and mechanical status display.

5A 250V ~
10mA 10V



AgNi + 0,3μ Au
1250VA/...150W//5A 30V=
15A(20ms)
10 x 10⁶/≥10⁵

0,8...1,2U_N
1,1VA/700mW
10/8ms

24, 115, 230
C15-A21 / AC ... V

Control relays

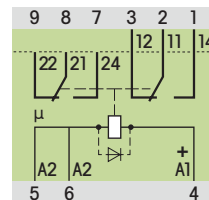


NEW

C12-A21

Universal-control relays 5A
With two change over contacts for AC- and DC- circuits ranging from 10mA 10V. With lockable manual activation button and mechanical status display.

5A 250V ~
10mA 10V



AgNi + 0,3μ Au
1250VA/...150W//5A 30V=
15A(20ms)
10 x 10⁶/≥10⁵

0,8...1,2U_N
1,1VA/700mW
10/8ms

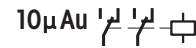
115, 230
C12-A21X / AC ... V

12, 24, 48, 110
C12-A21X / DC ... V

12, 110
C12-A21FX / DC ... V

24, 48
C12-A21BX / UC ... V

Signal relays

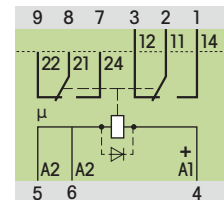


NEW

C12-A22

Signal relays 5A
With gold plated twin change over contacts for increased switching reliability. Suitable for AC- and DC- circuits ranging from 5mA 5V. With lockable manual activation button and mechanical status display.

5A 250V ~
5mA 5V



AgNi + 10μ Au
1250VA/...150W//5A 30V=
15A(20ms)
10 x 10⁶/≥10⁵

0,8...1,2U_N
1,1VA/700mW
10/8ms

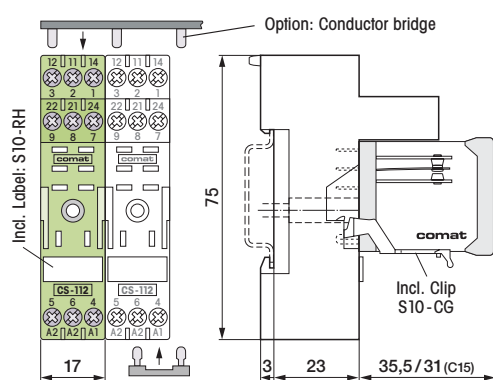
115, 230
C12-A22X / AC ... V

12, 24, 48, 110
C12-A22X / DC ... V

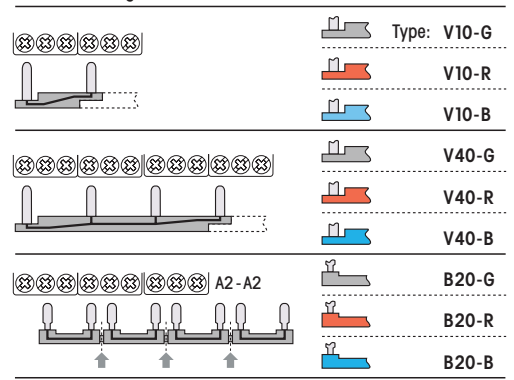
12, 110
C12-A22FX / DC ... V

24, 48
C12-A22BX / UC ... V

Interface socket CS-112



Conductor bridge for interface socket CS-112 und CS-116





Power relays



Control relays



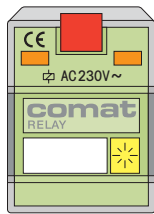
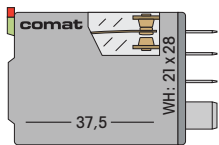
Signal relays



Power relays



High power Relays



2-pole miniature industrial relays

- lockable manual operation
- mechanical flag indicator

Test voltage: \square 2500V / 2500V \downarrow

T_{amb.} operation/storage:
-20 .. +60 / -40 .. +85 °C



Connection No. on socket →

Designation according to DIN/EN 50101 →

Connection with socket
CS-18

μ = contact opening < 3mm

Connection with socket
CS-109

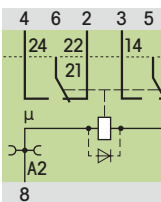
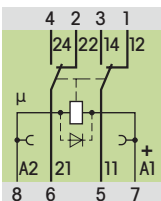
Data at T_{amb.} = 20 °C (standard coil)

- Contact material
- Switching power AC1
- Switching power DC1
- Peak inrush power
- Switch. cycles mech./electr. (AC1)
- Operation voltage AC50Hz/DC
- Power consumption AC/DC
- Triggering delay / release time

C7-A20

Universal power relay 10A with 2 power changeover-contacts this is a robust relay for AC and DC circuits ranging from 10mA 10V.

10A 250V ~
10mA 10V



Ag Ni
2500VA
... 250W
30A (20ms)
20x10⁶ / ≥ 3x10⁵

0,8...1,2Un
1,5VA/1W
16/8ms

Standard AC ~ 50/60Hz
24, 48, 115, 230
C7-A20 X / AC ... V

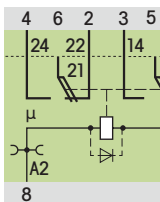
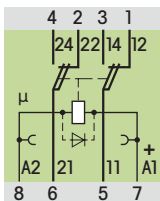
Standard DC = 10%
12, 24, 48, 110, 125
C7-A20 / DC ... V

D, DX DC = 10%
12, 24, 48, 110, 125
C7-A20D X / DC ... V

C7-T21

Relay like ..A20, but with twin contacts 6A the control relay with highest switching reliability for control and signal circuits ranging from 5mA 5V.

6A 250V ~
5mA 5V



Ag Ni + 0,2μAu
1200VA
... 150W
15A (20ms)
20x10⁶ / ≥ 2x10⁵

0,8...1,2Un
1,5VA/1W
16/8ms

Standard AC ~ 50/60Hz
24, 48, 115, 230
C7-T21 X / AC ... V

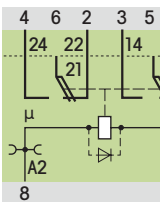
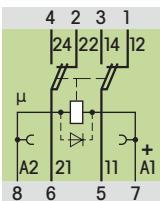
Standard DC = 10%
12, 24, 48, 110, 125
C7-T21 / DC ... V

D, DX DC = 10%
12, 24, 48, 110, 125
C7-T21D X / DC ... V

C7-T22

Relay like ..T21, but 10μ gold plated contacts the twin contact relay with highest switching reliability for signal circuits ranging from 1 mA 5V. Recommended upto 0,2A 30V.

6A 250V ~
1mA 5V



Ag Ni + 10μAu
1200VA
... 150W
15A (20ms)
20x10⁶ / ≥ 2x10⁵

0,8...1,2Un
1,5VA/1W
16/8ms

Standard AC ~ 50/60Hz
24, 48, 115, 230
C7-T22 X / AC ... V

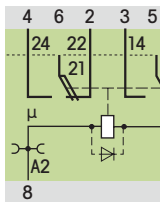
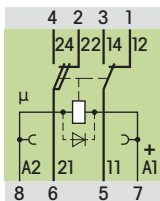
Standard DC = 10%
12, 24, 48, 110, 125
C7-T22 / DC ... V

D, DX DC = 10%
12, 24, 48, 110, 125
C7-T22D X / DC ... V

C7-H23

Power relay 10A with supplementary twin contact 6A (3μAu) for a secondary circuit switch, i.e. to ensure reliable signal of relay switch position to the central control, SPC, distribution system.

10/6A 250V ~
10mA 10V // 1mA 5V



Ag Ni // Ag Ni + 3μAu
2500VA // 1500VA
... 250W // ... 180W
30A // 15A (20ms)
20x10⁶ / ≥ 2x10⁵

0,8...1,2Un
1,4VA/1,1W
15/8ms (30ms "DX")

Standard AC ~ 50/60Hz
230
C7-H23X / AC ... V

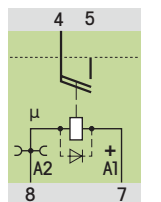
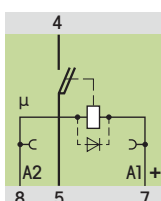
Standard DC = 10%
12, 24, 48, 110, 125
C7-H23 / DC ... V

D, DX DC = 10%
24
C7-H23DX / DC ... V

C7-W10

High performance relay for 500A switching with Wolfram special early make contact. Specially suitable for filament and halogen lamps, transformers, etc. No mechanical flag indicator.

10A 250V ~
10mA 10V



W/Ag
2500VA
... 250W
500A (2,5ms)
20x10⁶ / ≥ 3x10⁵

0,8...1,2Un
1,8VA/1,5W
20/10ms

Standard AC ~ 50/60Hz
24, 48, 115, 230
C7-W10 X / AC ... V

Standard DC = 10%
12, 24, 48, 110, 125
C7-W10 / DC ... V

D, DX DC = 10%
24
C7-W10D X / DC ... V

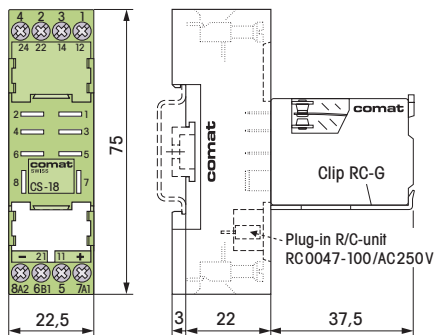
⊗ = Type X (option)

Option X = with ⊗

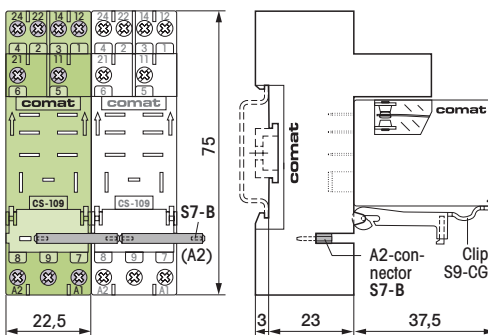
Ordering example

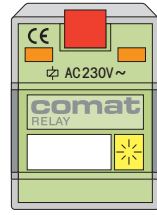
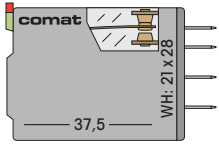
- Relay C7-A20X/AC230V
- Socket CS-18
- Retaining clip RC-G (option)
- Socket CS-109 (clip incl.)
- A2-connector S7-B (option)
- Socket S7-P (page 5*)
- Retaining clip RC-G (option)

System socket CS-18 (connections 5 and 6 on bottom)



Interface socket CS-109 (all connections on top)





4-pole miniature industrial relays

- lockable manual operation
- mechanical indication

Test voltage: \square 2500V / 1000V

T_{amb.} operation/storage:
-20...+60/-40...+85°C



Connection No. on socket →

Designation according to DIN/EN 50011 →

Connection with socket
CS-114

μ = contact opening < 3mm

Data at T_{amb.} = 20°C (standard coil)

- Contact material
- Switching power AC1/DC1
- Peak inrush power
- Switching cycles mech./electr. (AC1)
- Operation voltage AC 50Hz/DC
- Power consumption AC/DC
- Triggering delay / release time

Standard AC ~
50/60Hz

Standard DC =
H 10%

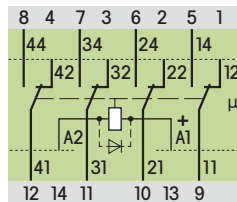
D, DX DC =
H 10%

⊗ = Type X (Option)

C9-A41

Universal control relay
with 4 changeover contacts
for AC and DC circuits ranging
from 10mA 10V.

5A 250V~
10mA 10V



AgNi+0,2μAu
700VA/...75W
15A(10ms)
20x10⁶/≥10⁵
0,8...1,2Un
1,5VA/1W
10/6ms

24, 48, 115, 230
C9-A41 X / AC ... V

12, 24, 48, 110, 125
C9-A41 / DC ... V

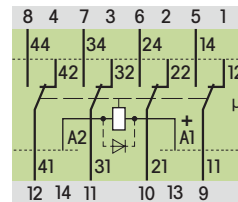
12, 24, 48, 110, 125
C9-A41 D X / DC ... V

Option X = with ⊗

C9-A42

**Relay like ..A41, but with
10μ gold plated contacts**
for control and signal circuits
ranging from 5mA 5V.
Recommend. upto 0,2A 30V.

5A 250V~
5mA 5V



AgNi+10μAu
700VA/...75W
15A(10ms)
20x10⁶/≥10⁵
0,8...1,2Un
1,5VA/1W
10/6ms

24, 48, 115, 230
C9-A42 X / AC ... V

12, 24, 48, 110, 125
C9-A42 / DC ... V

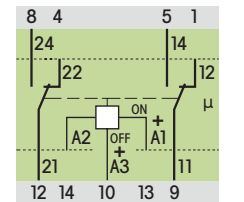
12, 24, 48, 110, 125
C9-A42 D X / DC ... V

C9-R21

**Remanence relay
with AC or DC coil**
A1(13) = ON; A3(10) = OFF.
Minim. triggering time 50ms,
permanent triggering admis-
sible.
Test voltage / 2500V.

Without option X.

5A 250V~
10mA 10V



AgNi+0,2μAu
700VA/...75W
15A(10ms)
20x10⁶/≥10⁵
0,8...1,2Un
ON: 1,2VA/W; OFF: 0,3VA/W
10/8ms (τ > 50ms)

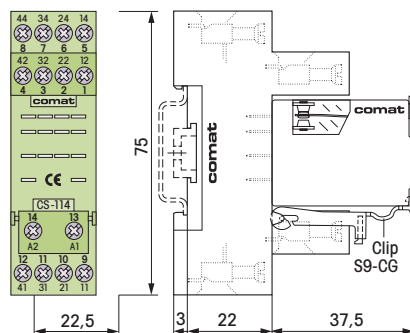
24, 48, 115, 230
C9-R21 / AC ... V

12, 24, 48
C9-R21 / DC ... V

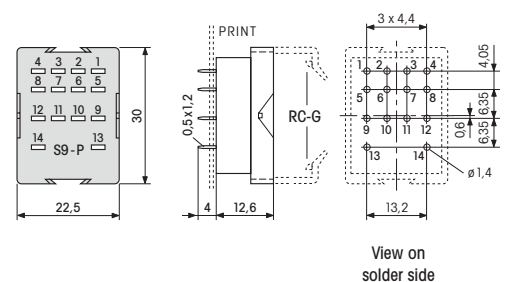
Ordering example

- Relay C9-A41 X/AC230V
- Socket CS-114 (clip incl.)
- Socket S9-P
- Retaining clip RC-G (option)

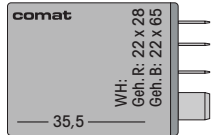
System socket CS-114



Socket for print mounting S9-P



Control and signal relays (Au)



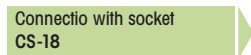
Miniature industrial relays

- 1- to 3-channel
- for control and signal circuits
- only 250mW per channel

Test voltage: $\text{⏏} 2000\text{V} / 1000\text{V}$
 Tamb. operation/storage:
 -20...+60/-40...+85°C



Connection No. on socket →
 Designation according to DIN/EN 50111 →

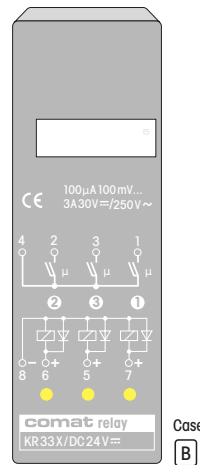
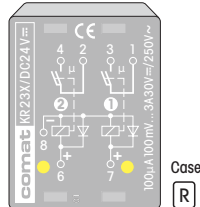
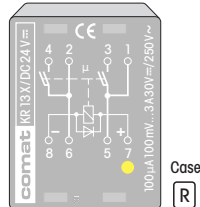


μ = contact opening < 3mm

Data at Tamb. = 20°C (standard coil ⏏)

- Contact material
- Switching load AC1/DC1
- Peak inrush power
- Switching cycles mech./electr. (AC1)
- Operation voltage
- Power consumption per channel
- Triggering delay / release time

A		DC ⏏
		H 20%
X		DC ⏏
		H 20%

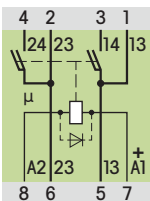


KR13

Universal gold plated twin contact relay

1-channel, totally encapsulated.
 For highest switching reliability in control and signal circuits ranging from 100μA 100mV.

3A 250V~//110V=
 100μA 100mV



Ag - alloy + 3.5 μAu
 750 VA / ... 90 W // 3A 30V=
 6A (20 ms)
 20 x 10⁶ / ≥ 10⁵
 0,8...1,2 Un
 350 mW
 6/4 ms (X: 6 ms)

12, 24, 48
 KR13A / DC ... V

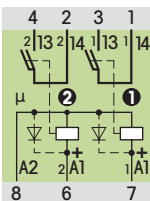
12, 24, 48
 KR13X / DC ... V

KR23

Relay like KR13, but 2-channel

with a width of 11 mm per channel this relay is especially space-saving and cost-effective.

3A 250V~//110V=
 100μA 100mV



Ag - alloy + 3.5 μAu
 750 VA / ... 90 W // 3A 30V=
 6A (20 ms)
 20 x 10⁶ / ≥ 10⁵
 0,8...1,2 Un
 250 mW
 6/4 ms (X: 6 ms)

12, 24, 48
 KR23A / DC ... V

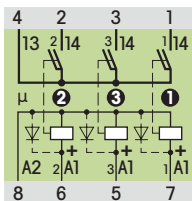
12, 24, 48
 KR23X / DC ... V

KR33

Relay like KR13, but 3-channel

with a width of 7,3 mm per channel this relay is especially space-saving and cost-effective.

3A 250V~//110V=
 100μA 100mV



Ag - alloy + 3.5 μAu
 750 VA / ... 90 W // 3A 30V=
 6A (20 ms)
 20 x 10⁶ / ≥ 10⁵
 0,8...1,2 Un
 250 mW
 6/4 ms (X: 6 ms)

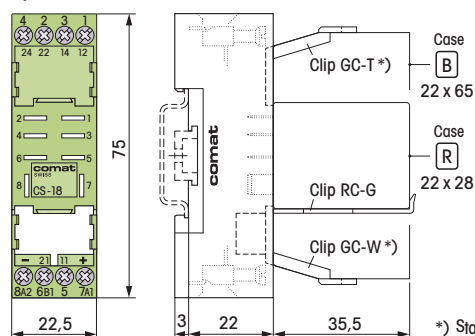
12, 24
 KR33A / DC ... V

12, 24, 48
 KR33X / DC ... V

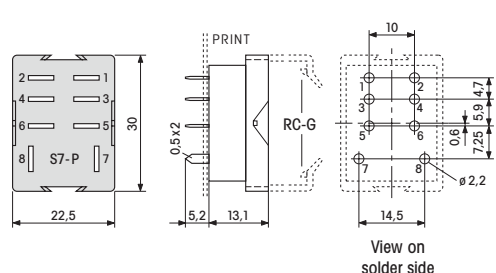
Ordering example

- Relay KR23X/DC24V
- Socket CS-18 or S7-P
- Retaining clip RC-G (option)

System socket CS-18

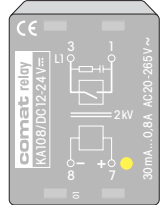
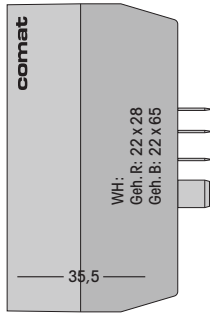


Socket for print mounting S7-P

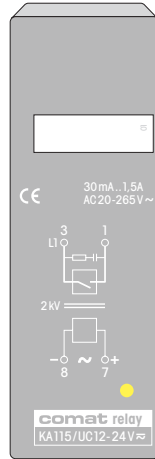


*) Standard delivery with relay (Case B)

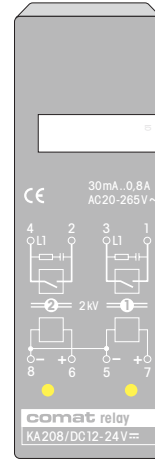
AC ~ Solid-state relays



Case **R**



Case **B**



Case **B**

AC Solid-state relays

- 1- and 2-channel
- galvanically separated triggering (2kV)
- crossover switching
- each channel indicated by LED

Tamb. operation/storage:
-25...+60/-40...+85°C

KA108

Universal AC solid-state
1-channel, 0,8A/AC240V.
Triac output with RC wiring protection.

0,8A 20...265V~
30mA

KA115

Universal AC solid-state
1-channel, 1,5A/AC240V.
Triac output with RC wiring protection.

1,5A 20...265V~
30mA

KA208

Universal AC solid-state
2-channel, 0,8A/AC240V
(2x0,5A).
Triac outputs RC wiring protection.
Width per channel: 11mm.

0,8A 20...265V~
30mA

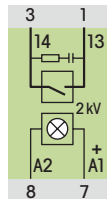


Connection No. on socket →
Designation according to DIN/EN 50011 →

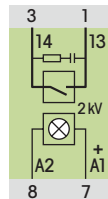
Connection with socket **CS-18**

Data at Tamb. = 20°C

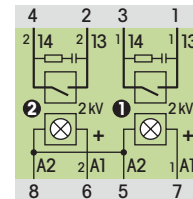
- Peak inrush power
- Residual current
- Frequency range
- Voltage drop
- Control voltage
- Triggering OFF
- Switching delay
- Control current



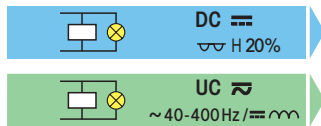
8A (20ms)
3mA
50/60Hz
≤1,5V
DC10...30V≐
UA1: ≤6V
12ms
10mA (24V)



20A (20ms)
3mA
50/60Hz
≤1,5V
UC10...30V≐
UA1: ≤6V
12ms
10mA (24V)



8A (20ms)
3mA
50/60Hz
≤1,5V
DC10...30V≐
UA1: ≤6V
12ms
10mA (24V)



KA108 / DC12-24V

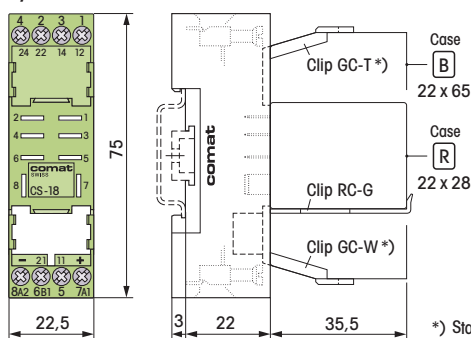
KA115 / UC12-24V

KA208 / DC12-24V

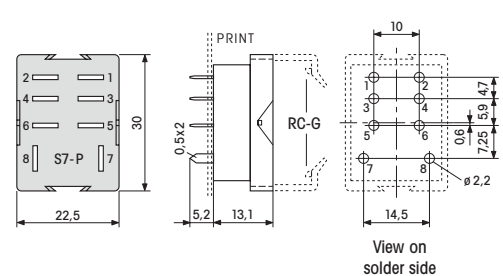
Ordering example

- Relay KA115/UC12-24V
- Socket CS-18 or S7-P
- Retaining clip RC-W (option)

System socket CS-18

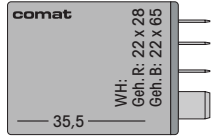


Socket for print mounting S7-P



*) Standard delivery with relay (Case B)

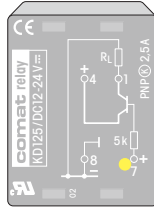
DC ≡ Solid-state relays



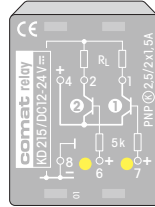
AC Solid-state relays

- 1- and 3-channel
- overload/short-circuit proof
- limiting inductive voltage
- each channel indicated by LED

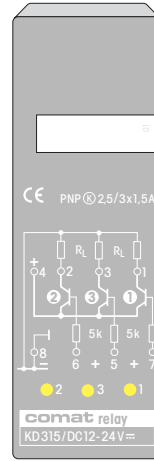
T_{amb.} operation/storage:
-25...+60/-40...+85 °C



Case **R**



Case **R**



Case **B**

KD125

Universal DC solid-state
1-channel.
2,5A/DC24V.

2,5A 10...32V≡

KD215

Solid-state relay like KD125, but 2-channel
2,5A/2x1,5A/DC24V.
Width per channel: 11 mm.

1,5A 10...32V≡

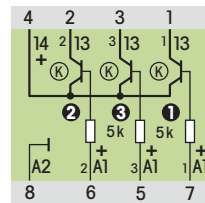
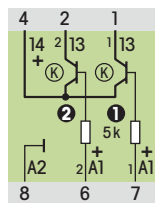
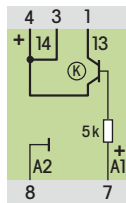
KD315

Solid-state relay like KD125, but 3-channel
2,5A/3x1,5A/DC24V.
Width per channel: 7,3 mm.

1,5A 10...32V≡

Connection No. on socket →
Designation according to DIN/EN 50011 →

Connection with socket **CS-18**



Data at T_{amb.} = 20 °C

- Output
- Current peak
- Residual current
- ON-resistance
- Control voltage
- Triggering OFF
- ON-OFF-switching delay
- Control current

1 PNP (noc)
15A (20ms)
< 100 μA
50 mP
DC 5...18V/10...32V≡
UA1-2: ≤ 3V/≤ 6V
2,5 ms
4 mA (24V)

2x1 PNP (noc)
15A (20ms)
< 100 μA
50 mP
DC 10...32V≡
UA1-2: ≤ 3V/≤ 6V
2,5 ms
4 mA (24V)

3x1 PNP (noc)
15A (20ms)
< 100 μA
50 mP
DC 10...32V≡
UA1-2: ≤ 3V/≤ 6V
2,5 ms
4 mA (24V)



6-12, 12-24
KD125 / DC ... V

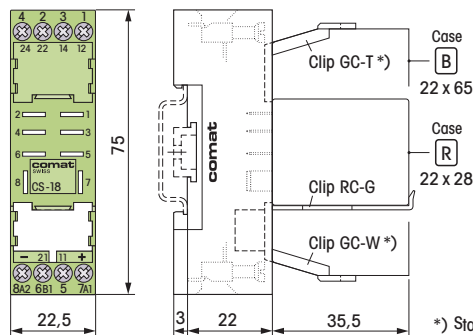
KD215 / DC12-24 V

KD315 / DC12-24 V

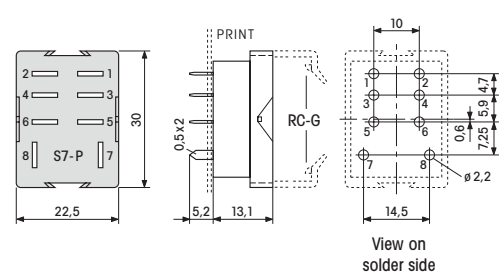
Ordering example

- Relay KD215/DC12-24 V
- Socket CS-18 or S7-P
- Retaining clip RC-G (option)

System socket CS-18



Socket for print mounting S7-P



*) Standard delivery with relay (Case B)