

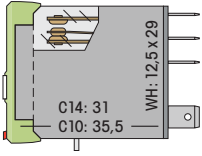
- Miniature Industrial relays
- Solid-state relays

CR 2 01

CR 2 Recommended application

		500A peak								
10A										
6A										
5A										
3A										
10mA										
5mA										
1mA										
100µA										
I	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

Twin contacts; C9-R21: Remanence relay



1-pole miniature industrial relays

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

Test voltage: \square 5000V /

Tamb. operation / storage: -20...+60/-20...+100°C



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

Connection with interface socket CS-106

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 AC50Hz/DC
Power consumption AC/DC
Triggering delay / release time

Standard AC ~
50/60Hz

Standard AC ~
50/60Hz

Standard DC =
ϕ ≤ 20%

Standard DC =
ϕ ≤ 20%

FX DC =
ϕ ≤ 20%

BX UC ~
50-400Hz / ϕ =

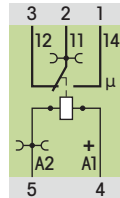
Power relays



C14-A10

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

10A 250V ~
10mA 10V



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

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

24, 48, 110
C14-A10 / DC ... V

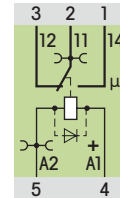
Power relays



C10-A10

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

10A 250V ~
10mA 10V



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

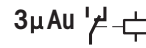
115, 230
C10-A10X / AC ... V

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

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

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

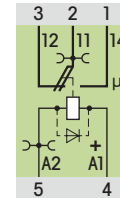
Control relays



C10-T13

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

6A 250V ~
5mA 5V



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

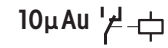
115, 230
C10-T13X / AC ... V

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

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

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

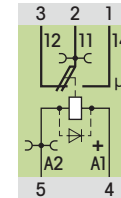
Signal relays



C10-T12

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

6A 250V ~
1mA 5V



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

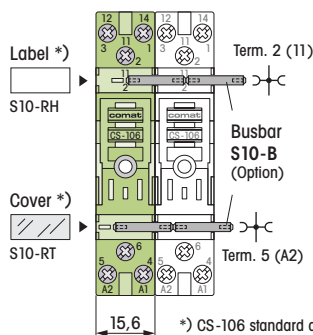
115, 230
C10-T12X / AC ... V

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

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

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

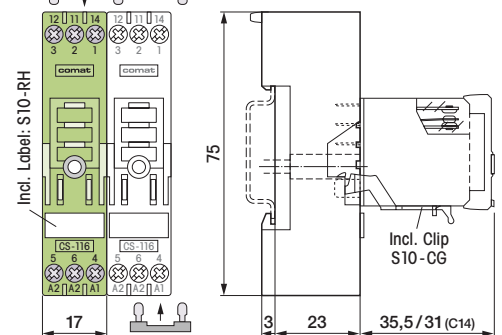
Interface socket CS-106



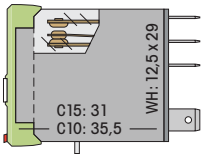
Ordering example

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

Interface socket CS-116



Option: Conductor bridge refer to page 3.



2-pole miniature industrial relays

- Solide terminal pins
- Test voltage: \square 5000V / 3000V }
- Tamb. 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

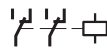
Data at Tamb. = 20°C (standard coil)

- 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 = ≤ 20%
Standard		DC = ≤ 20%
FX		DC = ≤ 20%
BX		UC ~ 50-400Hz/≈

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

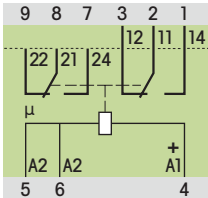
Control relays



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.

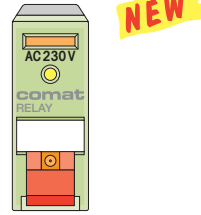
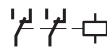
5A 250V ~
10mA 10V



AgNi + 0,3μ Au
1250VA/...150W//5A 30V==
15A (20ms)
10 x 10⁶/≥10⁵
0,8...1,2Un
1,1VA/700mW
10/8ms

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

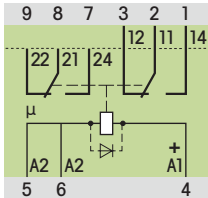
Control relays



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...1,2Un
1,1VA/700mW
10/8ms

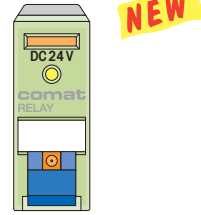
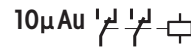
115, 230
C12-A21X / AC ... V

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

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

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

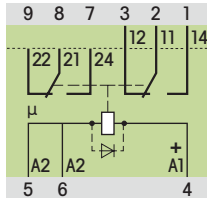
Signal relays



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...1,2Un
1,1VA/700mW
10/8ms

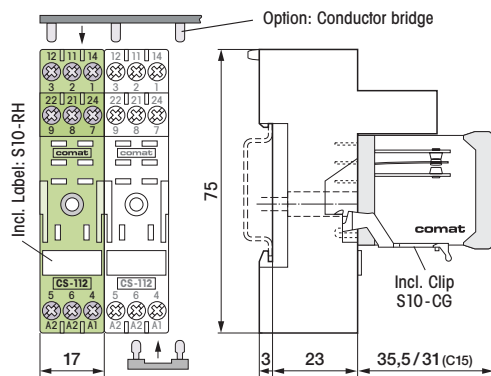
115, 230
C12-A22X / AC ... V

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

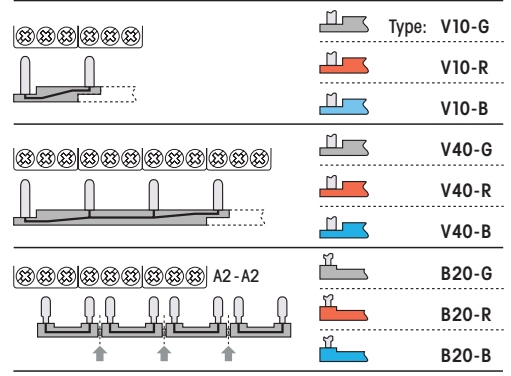
12, 110
C12-A22FX / DC ... V

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

Interface socket CS-112

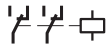


Conductor bridge for interface socket CS-112 und CS-116

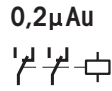




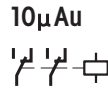
Power relays



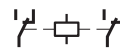
Control relays



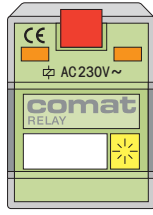
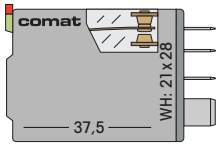
Signal relays



**Power relays
Signal relays**



**High power
Relays**



2-pole miniature industrial relays
 • lockable manual operation
 • mechanical flag indicator

Test voltage: \square 2500V / 2500V /

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

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

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

C7-T22

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

6A 250V~
 1mA 5V

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

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

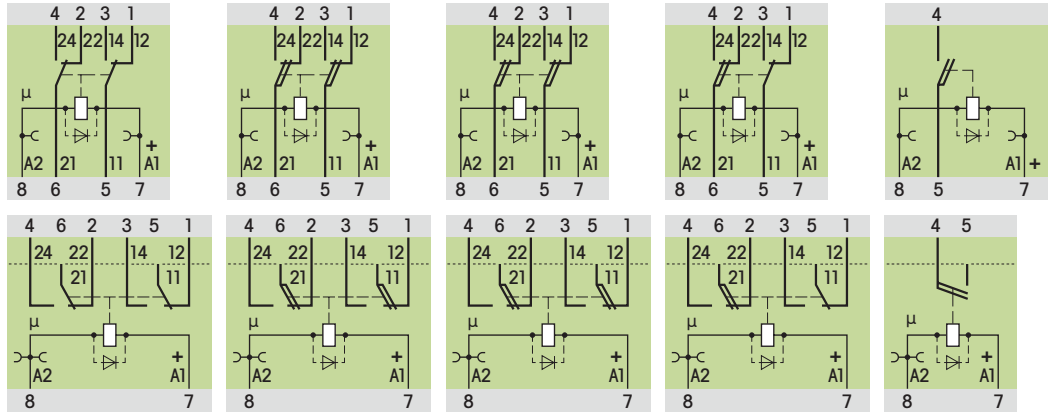


Connection No. on socket →
 Designation according to DIN/EN 50011 →

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

AgNi 2500VA ...250W 30A(20ms) 20x10 ⁹ /≥3x10 ⁵	AgNi+0,2μAu 1200VA ...150W 15A(20ms) 20x10 ⁹ /≥2x10 ⁵	AgNi+10μAu 1200VA ...150W 15A(20ms) 20x10 ⁹ /≥2x10 ⁵	AgNi // AgNi+3μAu 2500VA // 1500VA ...250W // ...180W 30A // 15A(20ms) 20x10 ⁹ /≥2x10 ⁵	W/Ag 2500VA ...250W 500A(2,5ms) 20x10 ⁹ /≥3x10 ⁵
0,8...1,2Un 1,5VA/1W 16/8ms	0,8...1,2Un 1,5VA/1W 16/8ms	0,8...1,2Un 1,5VA/1W 16/8ms	0,8...1,2Un 1,4VA/1,1W 15/8ms (30ms "DX")	0,8...1,2Un 1,8VA/1,5W 20/10ms

Standard AC ~ 50/60Hz

24, 48, 115, 230	24, 48, 115, 230	24, 48, 115, 230	230	24, 48, 115, 230
C7-A20 X / AC ... V	C7-T21 X / AC ... V	C7-T22 X / AC ... V	C7-H23X / AC ... V	C7-W10 X / AC ... V

Standard DC ≡ U_{DC} ≤ 10%

12, 24, 48, 110, 125	12, 24, 48, 110, 125	12, 24, 48, 110, 125		12, 24, 48, 110, 125
C7-A20 / DC ... V	C7-T21 / DC ... V	C7-T22 / DC ... V		C7-W10 / DC ... V

D, DX DC ≡ U_{DC} ≤ 10%

12, 24, 48, 110, 125	12, 24, 48, 110, 125	12, 24, 48, 110, 125	24	12, 24, 48, 110, 125
C7-A20D X / DC ... V	C7-T21D X / DC ... V	C7-T22D X / DC ... V	C7-H23DX / DC ... V	C7-W10D X / DC ... V

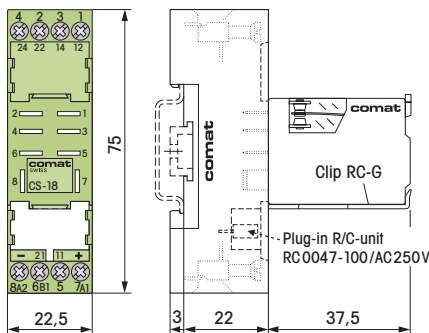
⊗ = Type X (option)

Option X = with ⊗

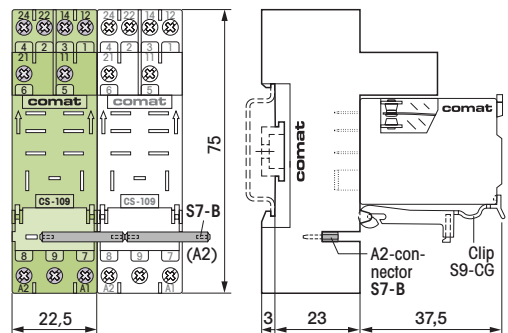
Ordering example

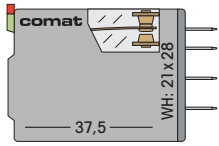
- Relay C7-A20X/AC230V
- Socket CS-18
- Retaining clip RC-G (option)
- Socket CS-109 (clip incl.)
- A2-connector S7-B (option)
- Socket S7-P (page 5*)
- Retaining clip RC-G (option)

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 < 3 mm

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

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

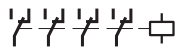
Standard **AC ~**
50/60Hz

Standard **DC**
≤ 10%

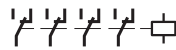
D, DX **DC**
≤ 10%

⊗ = Type **X** (Option)

Control relay

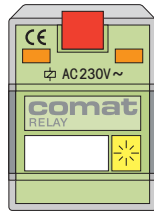
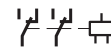


Signal relay



10μAu

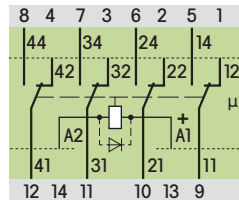
Remanence relay



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

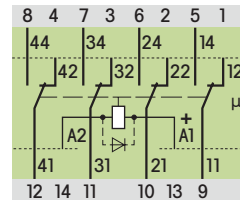
12, 24, 48, 110, 125
C9-A41 / DC ... V

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

C9-A42

**Relay like ..A41, but with
10μ gold plated contacts**
for control and signal circuits
ranging from 5 mA 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

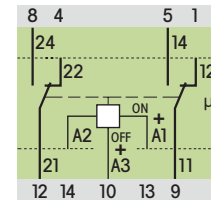
12, 24, 48, 110, 125
C9-A42 D **X** / DC ... V

C9-R21

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

Without option X.

5A 250V~
10mA 10V

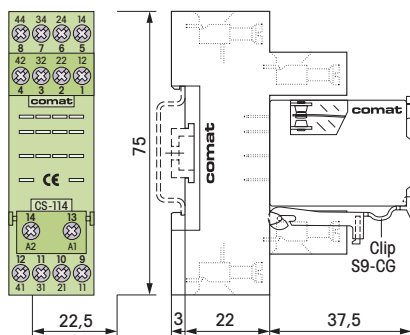


AgNi+0,2μAu
700VA/...75W
15A(10ms)
20x10⁶/≥ 10⁵
0,8...1,2Un
ON: 1,2VA/W; OFF: 0,3VA/W
10/8ms (τ_L > 50ms)

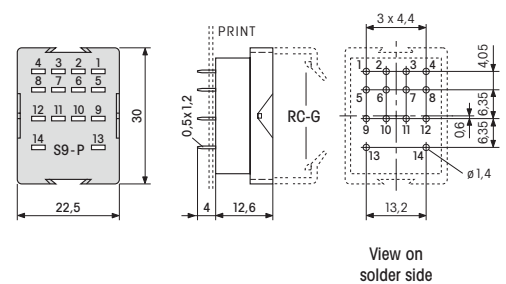
24, 48, 115, 230
C9-R21 / AC ... V

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

System socket CS-114



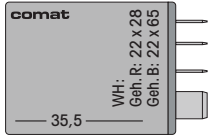
Socket for print mounting S9-P



Ordering example

- Relay C9-A41 X/AC 230V
- Socket CS-114 (clip incl.)
- Socket S9-P
- Retaining clip RC-G (option)

Control and signal relays (Au)



Miniature industrial relays

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

Test voltage: \square 2000V / 1000V /
 Tamb. operation/storage:
 -20...+60/-40...+85°C



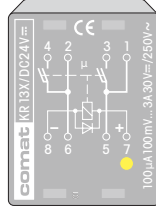
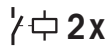
Connection No. on socket →
 Designation according to DIN/EN 50111 →

Connectio with socket
CS-18

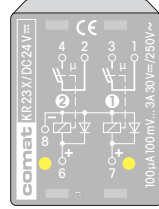
μ = contact opening < 3mm

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

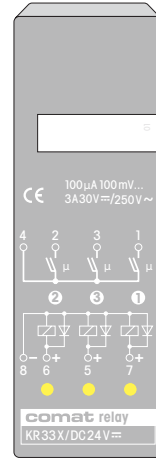
- Contact material
- Switching load AC1/DC1
- Peak inrush power
- Switching cycles mech./electr. (AC1)
- Operation voltage
- Power consumption per channel
- Triggering delay / release time



Case R



Case R



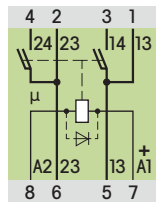
Case B

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



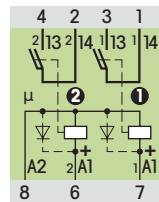
Ag-alloy+3..5 μAu
 750VA/...90W//3A 30V=
 6A(20ms)
 20x10⁶/≥10⁵
 0,8...1,2Un
 350mW
 6/4 ms (X: 6 ms)

12, 24, 48
 KR13A / DC V

KR23

Relay like KR13, but 2-channel with a width of 11mm per channel this relay is especially space-saving and cost-effective.

3A 250V~//110V==
 100μA 100mV



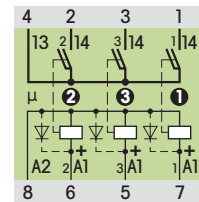
Ag-alloy+3..5 μAu
 750VA/...90W//3A 30V=
 6A(20ms)
 20x10⁶/≥10⁵
 0,8...1,2Un
 250mW
 6/4 ms (X: 6 ms)

12, 24
 KR23A / DC V

KR33

Relay like KR13, but 3-channel with a width of 7,3mm per channel this relay is especially space-saving and cost-effective.

3A 250V~//110V==
 100μA 100mV



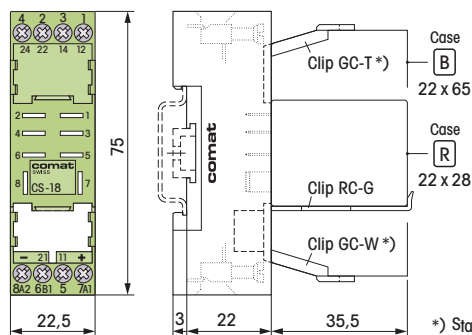
Ag-alloy+3..5 μAu
 750VA/...90W//3A 30V=
 6A(20ms)
 20x10⁶/≥10⁵
 0,8...1,2Un
 250mW
 6/4 ms (X: 6 ms)

12, 24
 KR33A / DC V

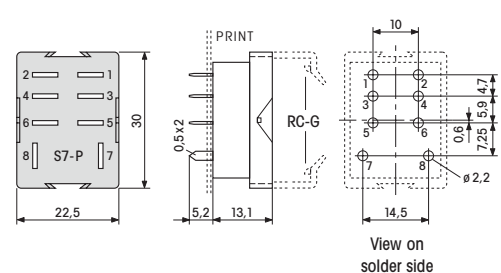
Ordering example

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

System socket CS-18

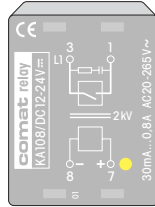
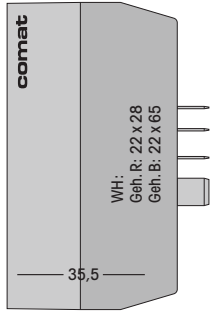


Socket for print mounting S7-P

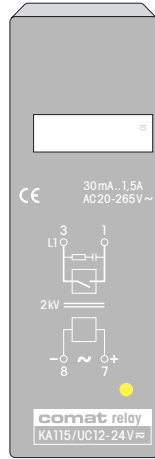


*) Standard delivery with relay (Case B)

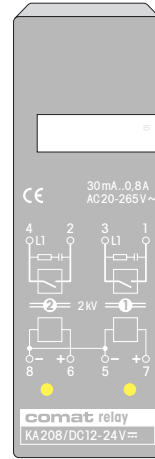
AC ~ Solid-state relays



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

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



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

Connection with socket **CS-18**

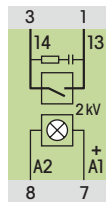
Data at T_{amb.} = 20°C

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

KA108

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

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



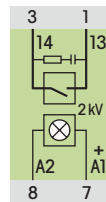
- 8A (20ms)
- 3mA
- 50/60Hz
- ≤1,5V
- DC10...30V≐
- U_{A1}: ≤6V
- 12ms
- 10mA (24V)

KA108 / DC12-24V

KA115

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

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



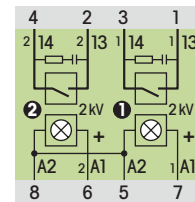
- 20A (20ms)
- 3mA
- 50/60Hz
- ≤1,5V
- UC10...30V≐
- U_{A1}: ≤6V
- 12ms
- 10mA (24V)

KA115 / UC12-24V

KA208

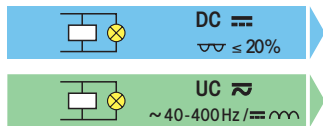
Universal AC solid-state
2-channel, 0,8A/AC240V
(2x0,5A).
Triac outputs RC wiring protection.
Width per channel: 11mm.

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



- 8A (20ms)
- 3mA
- 50/60Hz
- ≤1,5V
- DC10...30V≐
- U_{A1}: ≤6V
- 12ms
- 10mA (24V)

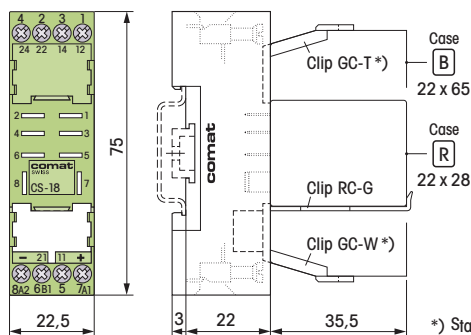
KA208 / DC12-24V



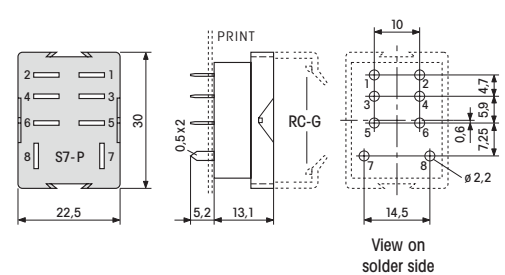
Ordering example

- 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



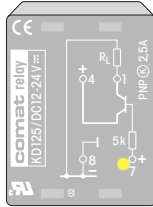
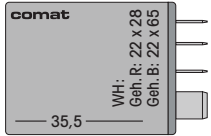
*) Standard delivery with relay (Case B)



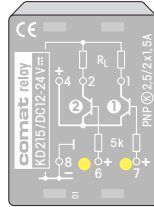
2x

3x

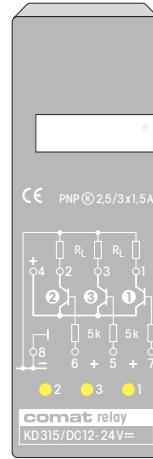
DC Solid-state relays



Case R



Case R



Case B

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

KD125

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

KD215

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

KD315

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



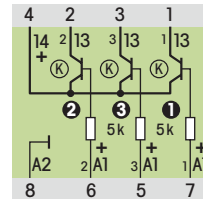
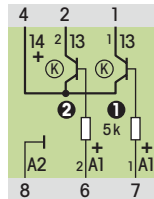
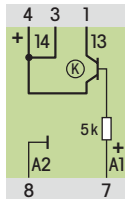
2,5A 10...32V=

1,5A 10...32V=

1,5A 10...32V=

Connection No. on socket →
Designation according to DIN/EN 50 011 →

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 mΩ
DC 5...18V/10...32V=
UA1-2: ≤ 3V/≤ 6V
2,5ms
4 mA (24V)

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

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

DC =
≤ 20%

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

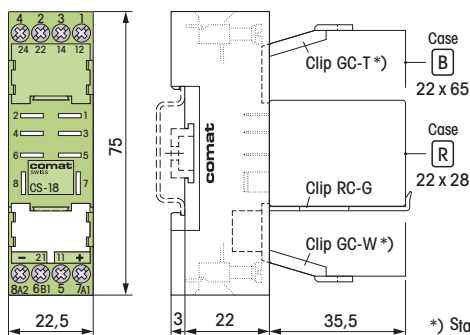
KD215 / DC12-24 V

KD315 / DC12-24 V

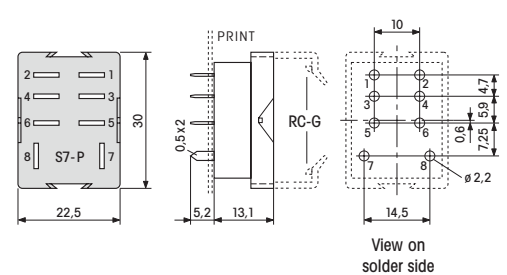
Ordering example

- 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)