

- DIN-Relays
- Interface modules

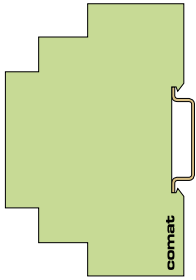
CR 7 01



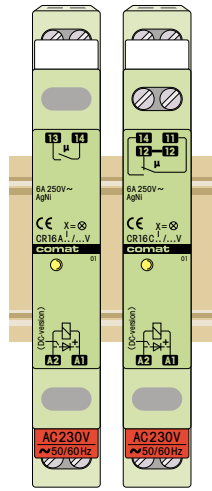
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 Gräfenhäuser Str. 14
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 Tel.: +49- (0)7082-940000
 Fax: +49- (0)7082-940001
 eMail: sales@kuehn-controls.de
 www.multicomat.net

CR 7 Recommended application

6/5A							
3A							
2A							
1A							
10mA							
1mA							
100µA			10 mV				10 µA
I	1	CR 16...		C103.01			C103.06
	2		CR11C	C133.01			
2x	1	CR23A		C203.01	C203.04		C203.06
	3x	1	CR33A			C301.04	
1	CRS1C						
		Twin contacts		CRS1C: Step-on step-off relay			



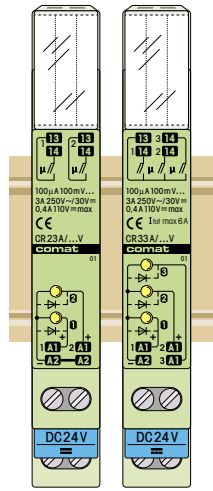
Power relays



CR16AX CR16CX

6A 250V~
10mA 12V

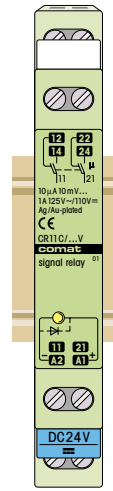
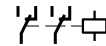
Control relays



CR23A CR33A

3A 250V~
100 μA 100mV

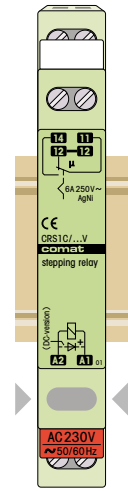
Signal relays



CR11C

1A 250V~
100 μA 10mV

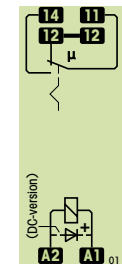
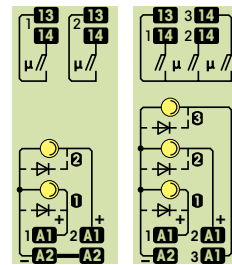
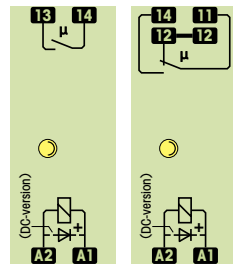
Step-on step-off relays



CRS1C

6A 250V~
10mA 12V

13mm



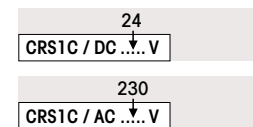
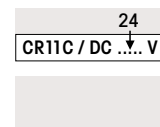
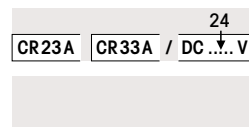
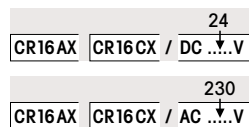
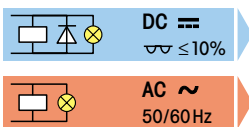
- Contact material
- Switching load AC1/DC1
- Peak inrush power
- Switching cycles mech./electr. (AC1)
- Operation voltage AC50Hz/DC
- Power consumption AC/DC
- Triggering delay / release time
- Test voltage
- Tamb. operation/storage

Ag Ni
1500VA/...180W
15A/20ms
30x10⁶ / ≥ 1,5x10⁵
AC -20%+10%/DC ±15%
2,5VA/0,25W
10ms/20ms
⊜ 2000V ⊘ 2000V ⊘
-20..+60/-40..+85°C

Ag-alloy/Au3μm
750VA/...90W
—
20x10⁶ / ≥ 1,5x10⁵
—/DC ±20%
0,25W
6ms/4ms
⊜ 2000V ⊘ 2000V ⊘
-20..+60/-40..+85°C

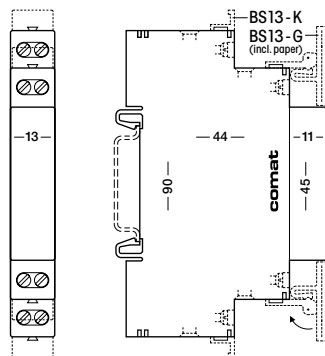
Ag-alloy/Au5μm
65VA/...30W
—
200x10⁶ / ≥ 10⁵
—/DC ±25%
0,25W
3ms/4ms
⊜ 2000V ⊘ 2000V ⊘
-20..+60/-40..+85°C

Ag Ni
1500VA/...180W
15A/20ms
DC: 10x10⁶; AC: 10⁵ / ≥ 10⁵
AC ±15%/DC ±15%
2VA/1,5W
Recomm. triggering time ≥ 50ms
⊜ 2000V ⊘ 2000V ⊘
-20..+60/-40..+85°C

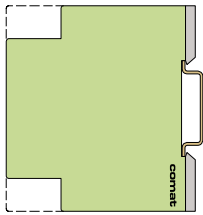


Ordering example

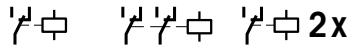
- Relay CRS1C/AC230V



Data at Tamb 20°C (⊜ standard)
μ = contact opening < 3mm



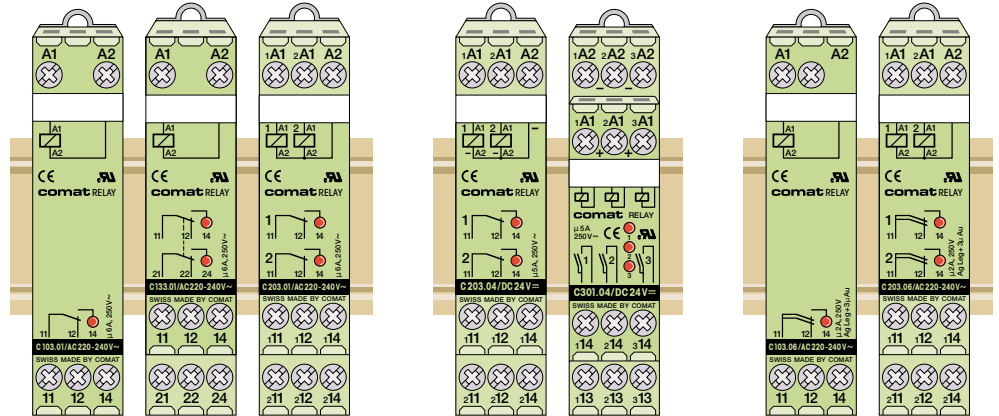
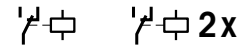
Power relays



Control relays



Signal relays



C103.01 C133.01 C203.01

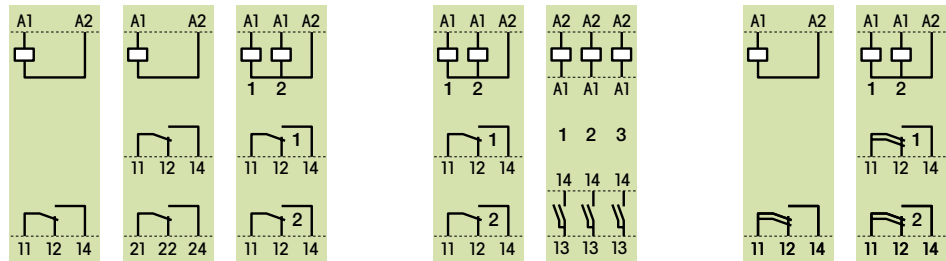
6 A 250V~
10mA 24V

C203.04 C301.04

5 A 250V~
1mA 0,1V

C103.06 C203.06

2 A 125V~
10 μA 10mV

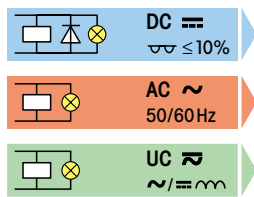


- Contact material
- Switching load AC1/DC1
- Peak inrush power
- Switching cycles mech./electr. (AC1)
- Operation voltage AC 50 Hz/DC
- Power consumption AC/DC
- Triggering delay / release time
- Test voltage
- Tamb. operation/storage

- Ag Ni
- 1500VA/...300W
- 15A/20ms
- 20 x 10⁶ / ≥ 10⁵
- 0,85...1,15Un
- 0,5W
- 10ms/10ms
- 2000V / 2000V
- 20...+60/-40...+85°C

- Ag-alloy
- 1250VA/...150W
- 10A/20ms
- 50 x 10⁶ / ≥ 1,5 x 10⁵
- 0,8...1,2Un
- 0,25W
- 6ms/30ms
- 2000V / 2000V
- 20...+60/-40...+85°C

- Ag-alloy/Au 3μm
- 250VA/...60W
-
- 100 x 10⁶ / ≥ 10⁵
- 0,8...1,2Un
- 0,25W
- 10ms/20ms
- 2000V / 2000V
- 20...+60/-40...+85°C



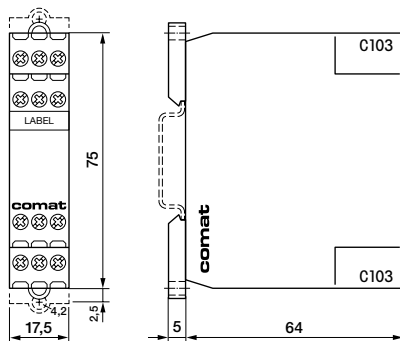
			12, 24
C103.01	C133.01	C203.01	/ DC ... V
C103.01	C133.01	C203.01	/ AC ... V
C103.01	C133.01	C203.01	/ UC ... V

		12-15, 24, 48
C203.04	C301.04	/ DC ... V

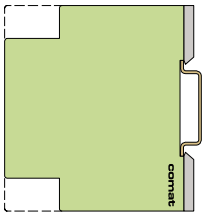
		12, 24
C103.06	C203.06	/ DC ... V
C103.06	C203.06	/ AC ... V
C103.06	C203.06	/ UC ... V

Ordering example

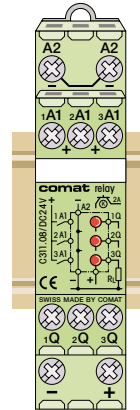
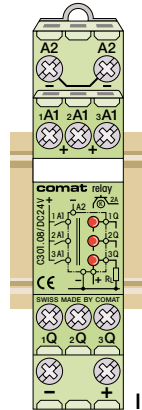
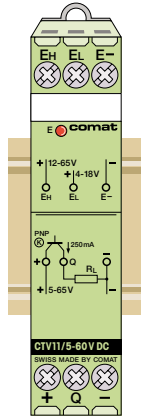
- Relay C301.04/DC24V==



Data at Tamb 20°C (≙ standard)
μ = contact opening < 3mm



Solid-state relays



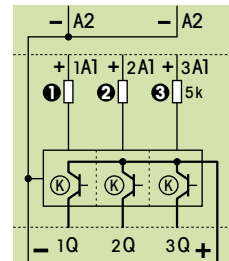
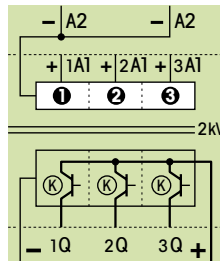
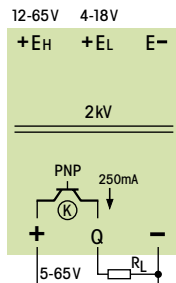
I-O = 2kV

CE Switching current/voltage

CTV11
250 mA 5...60 V=

C301.08
2 A 10...30 V=

C311.08
2 A 10...30 V=



- Admissible peak current
- Residual current
- Voltage drop / ON-rheostat
- Control voltage (Unom)
- Ripple
- Triggering OUT
- Control current on A1
- Switching delay

0,75A (20ms)
<100µA
<1V
EH 15-60V / EL 5-15V
≤10% @10V
EL ≤ 2,5V / EH ≤ 5V
Typ. 10mA
ON 200µs / OFF 400µs

15A (20ms)
<100µA
50mΩ
DC24V (10...30V)=
≤10% @10V
UA1: ≤ 6V
4 mA @ 24V
2,5 ms

15A (20ms)
<100µA
50mΩ
DC24V (10...30V)=
≤10% @10V
UA1: ≤ 6V
4 mA @ 24V
2,5 ms



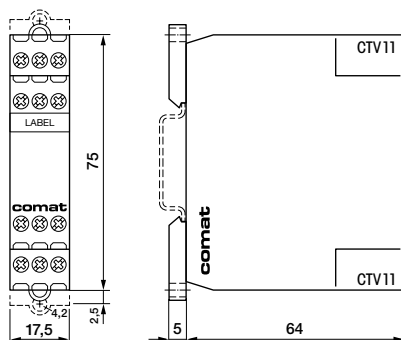
5-60
CTV11 / DC ... V

24
C301.08 / DC ... V

24
C311.08 / DC ... V

Ordering example

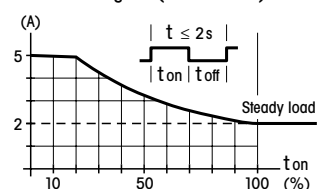
- Solid-state relay C301.08/DC24V



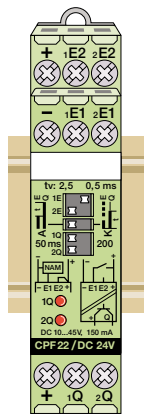
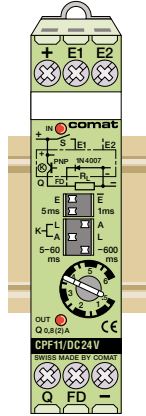
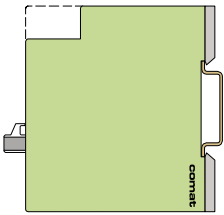
Note on use C300

The 3 channels can be connected parallel in any desired arrangement (I_{max.} = 6A). The outputs are self-resetting after thermal overload. Self-resetting after short-circuit (>17A/150µs): Triggering OFF.

Limit load diagram (resistive load)



Pulse shaper



CPF pulse shapers

with time functions K, L and A are special devices for the lengthening and limitation of control pulses. The fully electronic execution allows connection of NAMUR-sensors and is therefore the ideal interface module in modern control systems. Wherever fast processes, high revolutions, i.e. the shortest pulses have to be analysed, the most cost-effective solution is: CPF Pulse shapers.

CPF11

Single channel pulse shaper

- Input reversible (E- \bar{E})
- Input and output times separately settable
- 3 (6) functions to choose
- Built-in free wheel diode 1A
- LED display for E and Q
- Settable functions:



Settable times:
input pulse $\geq 1/5$ ms output pulse $5 \div 600$ ms

CPF22

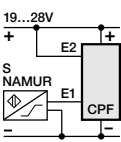
Double channel pulse shaper

- Input/output galvanically isolated 4kV
- Input and output times separately settable
- 2 functions to choose
- LED output display for each channel
- Settable functions:

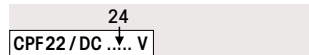
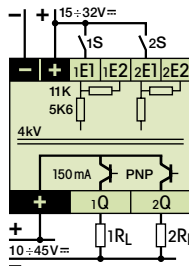
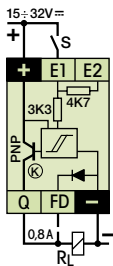
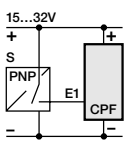


Settable times:
input pulse $\geq 0,5/2,5$ ms output pulse $50/200$ ms

NAMUR sensor



Three-wire sensor



K Pulse shaping



S (pulse or continuous contact) \Rightarrow R on for t
S $\bar{\bar{}}$ no influence on R and t

L Pulse shaping retriggerable (subsequ. time operation from 0)



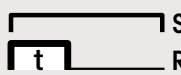
S (pulse or continuous contact) \Rightarrow R on for t
S on for t = t_{RESET}

A Off delay



S \Rightarrow R on
SOFF \Rightarrow R off with delay

W One shot leading edge



S \Rightarrow R on for t
SOFF \Rightarrow R off (pulse clipping)

Example of order

- Pulse shaper CPF11/DC24V

