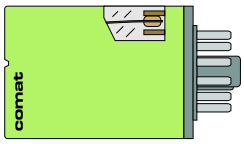
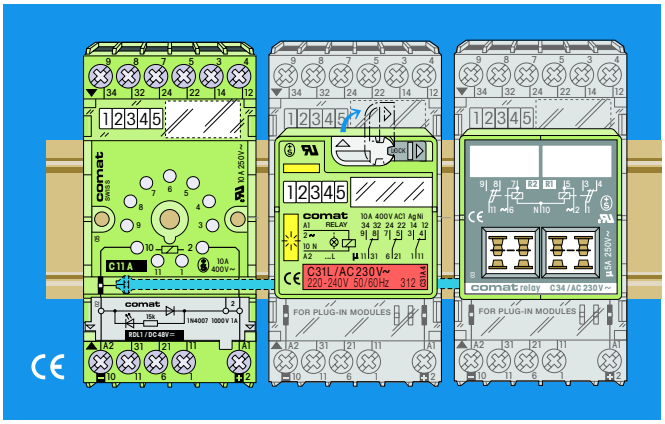
comat





- Industrial relays
  LONG LIFE ★★
- Solid-state relays

CR 5 01

★★ ≥ 100 Mio mechanical cycles
≥ 700 000 cycles at full load
(C21, C31)

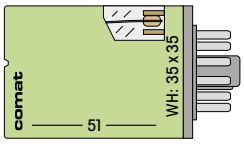
CR 5 Recommended application

10 A								
6/5 A								
10 mA								
5 mA								
1 mA								
2	C21	C22						
3	C31	C32						
2 x 1	C33	C34						
3 x 1		C39						

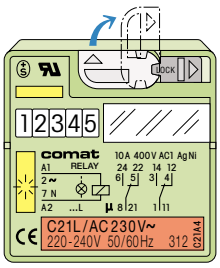
twin contacts

KÜHN

Kühn Controls S.L.
Vertriebsbüro Deutschland
Gräfenhäuser Str. 14
D-75305 Neuenbürg
Tel.: +49- (0)7082-940000
Fax: +49- (0)7082-940001
eMail: sales@kuehn-controls.de
www.multicomat.net

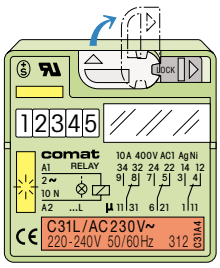


Power relay



Control relay

Power relay



Control relay

2- and 3-pole industrial relays according to IEC 67-1

- lockable manual operation
- mechanical flag indicator

Test voltage: 2500 V / 1500 V

$T_{amb.}$ operation/ storage: -40..+70/-40..+85°C

MAX
MIN

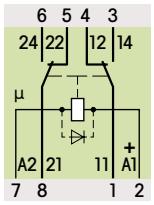
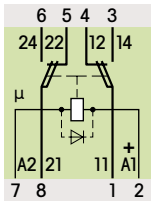
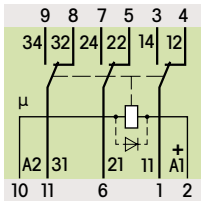
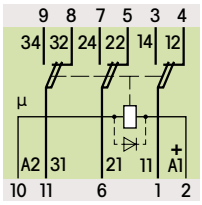
Connection No. on socket →

Designation according to DIN/EN 50011 →

Connection on sockets
EC-8 / EC-11, C11A, C12B

μ = contact opening < 3 mm

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

	C21	C22	C31	C32
	Universal power relay 10 A with 2 power changeover-contacts this is the robust relay for AC and DC circuits ranging from 10 mA 10 V.	**Relay like ..C21, but with twin contacts 6A** The control relay with highest switching reliablility for control and signal circuits ranging from 1 mA 5 V.	**Universal power relay 10 A** with 3 power changeover-contacts this is the robust relay for AC and DC circuits ranging from 10 mA 10 V.	**Relay like ..C31, but with twin contacts 6A** The control relay with highest switching reliablility for control and signal circuits ranging from 1 mA 5 V.
	10 A 400 V~	**6 A** 400 V~	**10 A** 400 V~	**6 A** 400 V~
	10 mA 10 V	1 mA 5 V	10 mA 10 V	1 mA 5 V
				
	Ag (AgCuNi)	Ag (AgCuNi)	Ag (AgCuNi)	Ag (AgCuNi)
Contact material	2500 VA/...300 W	1500 VA/...200 W	2500 VA/...300 W	1500 VA/...200 W
Switching power AC1/DC1	40 A (20 ms)	15 A (20 ms)	40 A (20 ms)	15 A (20 ms)
Peak inrush power	$100 \times 10^6 / \geq 7 \times 10^5$	$100 \times 10^6 / \geq 1{,}5 \times 10^5$	$100 \times 10^6 / \geq 7 \times 10^5$	$100 \times 10^6 / \geq 1{,}5 \times 10^5$
Switching cycles mech./electr. (AC1)				
Operation voltage AC 50 Hz/DC	0,8...1,2/0,8...1,25 U_N	0,8...1,2/0,8...1,25 U_N	0,8...1,2/0,8...1,25 U_N	0,8...1,2/0,8...1,25 U_N
Power consumption	2,5 VA/1,2 W	2,5 VA/1,2 W	2,5 VA/1,2 W	2,5 VA/1,2 W
Triggering delay / release time	15/⎓8, ~15 ms	15/⎓8, ~15 ms	15/⎓8, ~15 ms	15/⎓8, ~15 ms
Standard AC ~ 50/60 Hz	24, 48, 115, 230	24, 48, 115, 230	24, 48, 115, 230	24, 48, 115, 230
	C21 L / AC V	C22 L / AC V	C31 L / AC V	C32 L / AC V
Standard DC ⎓ ≤10%	12, 24, 48, 110, 220	12, 24, 48, 110, 220	12, 24, 48, 110, 220	12, 24, 48, 110, 220
	C21 / DC V	C22 / DC V	C31 L / DC V	C32 / DC V
D, DL DC ⎓ ≤10%	12, 24, 48, 110, 220	12, 24, 48, 110, 220	12, 24, 48, 110, 220	12, 24, 48, 110, 220
	C21D L / DC V	C22D L / DC V	C31D L / DC V	C32D L / DC V

⊗ = Type "L" (option)

Option L = with ⊗

Option L = with ⊗

Ordering example

- Relay C21/AC230V
- Socket EC-8

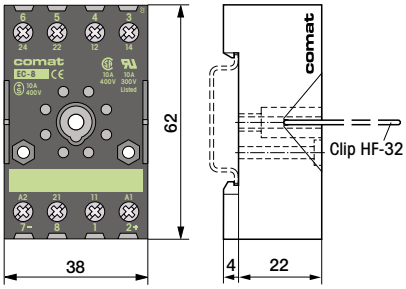
- Retaining clip HF-32 (opt.)

Ordering example

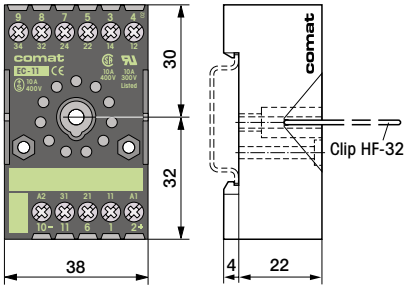
- Relay C31/AC230V
- Socket EC-11 or C11A

- Retaining clip HF-32 (opt.)

Economy socket EC-8

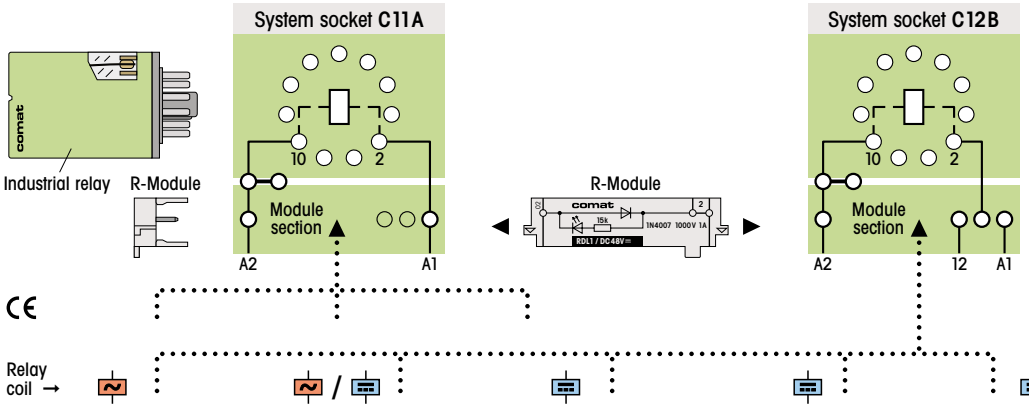


Economy socket EC-11



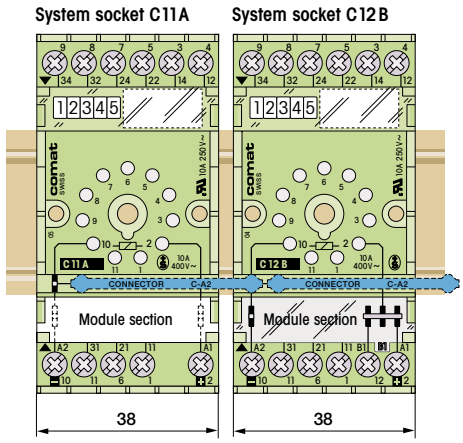
Plug-in coil wirings for 3-pole industrial relays C31, C32

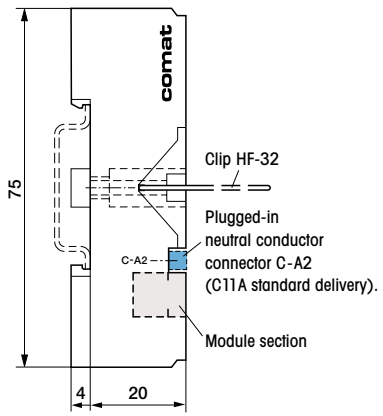
Relay modules indicate the relay's switch mode and/or help limiting cutoff voltage peaks in the control circuit by means of a diode or a RC module. The types R..2/3 are equipped with additional diodes for signal or OR-circuits.
For parallel or serial connections the relay modules are simply plugged in the sockets C11A or C12B.



Relay coil →

Illuminated displays ⊗	**RL1/AC 110-240 V~** 10 150k 2 A2 A1	**RL1/UC 12-24 V≂** 10 6k8 2 A2 A1	see RL1/UC...V	With additional diode output (12), e.g. for collective alarm messages.	With additional diode input (12), e.g. as logical addition.
Suppressing units ⊣⊢ ▷|	see RC1/UC...V	**RC1/UC 110-240 V≂** 10 470E 0,1 µF 2 A2 A1 **RC1/UC 12-48 V≂** 10 47E 0,47 µF 2 A2 A1	**RD1/DC 12-220 V⎓** 10 2 A2 47E A1	**RD2/DC 12-220 V⎓** 10 2 A2 47E 12 A1	**RD3/DC 12-220 V⎓** 10 2 A2 47E 12 A1
Suppressing units with illuminated displays ⊗ ⊣⊢ ▷|	**RCL1/AC 110-240 V~** 10 470E 0,1 µF 2 A2 A1	**RCL1/UC 24 V≂** 10 47E 0,47 µF 2 A2 10k A1 **RCL1/UC 48 V≂** 10 47E 0,47 µF 2 A2 22k A1	**RDL1/DC 12-24 V⎓** 10 2 A2 6k8 A1 **RDL1/DC 48 V⎓** 10 2 A2 15k A1	**RDL2/DC 12-24 V⎓** 10 2 A2 6k8 12 A1	**RDL3/DC 12-24 V⎓** 10 2 A2 6k8 12 A1
Current types Triggering	~ N L	~ / ⎓ N(–) (+)L	⎓ – +	⎓ – +	⎓ – + +





Ordering example

- Module RCL1/UC48V
- Socket C11A

- Relay, type C31/32
- Clip HF-32 (option)

Jack on the socket
Plug pin on the R-module

comat

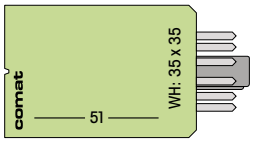
C33, 34, 39

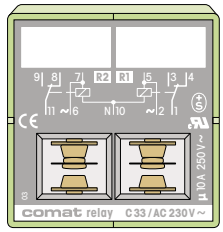
11

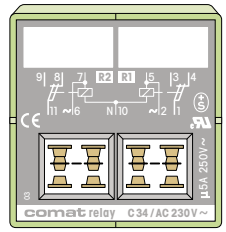
Power relay 2x

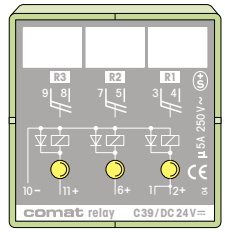
Control relay 2x

Control and signal relay 3x









Double and triple industrial relays

Solid-state relays (page 5)

2- and 3-channel industrial relays according to IEC 67-1

- Single or twin contacts
- Front contact inspection window or LED display (C39)

Test voltage: ⏍ 2000 V / 2000 V

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

CE

μ MAX MIN

Connection No. on socket →

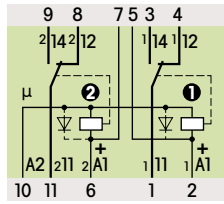
Designation according to DIN/EN 50011 →

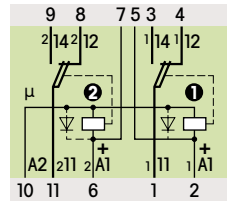
Connection on sockets **EC-11, C11A, C12B**

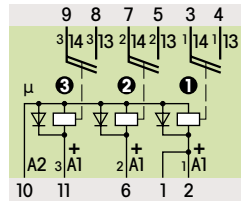
μ = contact opening < 3 mm

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

	C33	C34	C39
	Double-channel power relay 10 A With 2x1 power changeover-contacts this is a robust relay for AC and DC circuits ranging from 10 mA 12 V. Width per channel: 17,5 mm.	**Relay like C33, but with twin contacts 5 A** The control relay with highest switching reliability for control and signal circuits ranging from 1 mA 6 V. Width per channel: 17,5 mm.	**Triple-channel twin contact relay 5 A** with 3x1 No contact it is ideal for interface applications ranging from 10 mA 100 mV. LED display for each channel. Width per channel: 11,7 mm.
	10 A 250 V~	**5 A** 250 V~	**5 A** 250 V~
	10 mA 12 V	1 mA 6 V	1 mA 100 mV

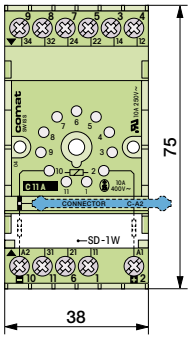


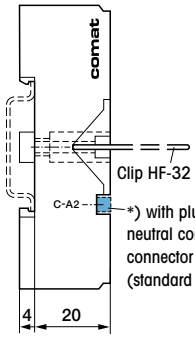




	C33	C34	C39
Contact material	AgCdO	AgNi	Ag-alloy
Switching power AC1/DC1	2500 VA/...300 W	1250 VA/...200 W	1250 VA/...150 W
Peak inrush power	40 A (16 ms)	20 A (16 ms)	10 A (20 ms)
Switching cycles mech./electr. (AC1)	$20x10^6$ / ≥ 10^5	$20x10^6$ / ≥ 10^5	$50x10^6$ / ≥ $1,5x10^5$
Operation voltage AC 50 Hz/DC	0,8...1,15 U_N	0,8...1,15 U_N	0,8...1,2 U_N
Power consumption per channel	1,3 VA/0,55 W	1,3 VA/0,55 W	0,25 W
Triggering delay / release time	15/25 ms	15/25 ms	8/12 ms
AC ~ 50/60 Hz	24, 48, 115, 230 **C33 / AC .... V**	24, 48, 115, 230 **C34 / AC .... V**	
DC ⎓ ≤10% (C39)	12, 24, 48, 110 **C33 / DC .... V**	12, 24, 48, 110 **C34 / DC .... V**	12, 24, 48 **C39 / DC .... V**

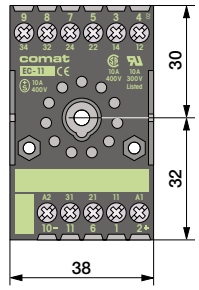
System socket C11A *)

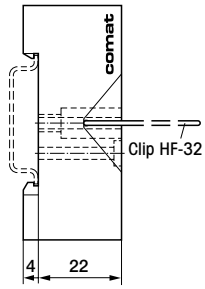




*) with plugged-in neutral conductor connector C-A2 (standard delivery).

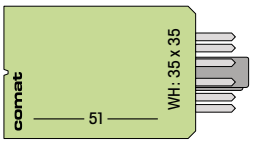
Economy socket EC-11





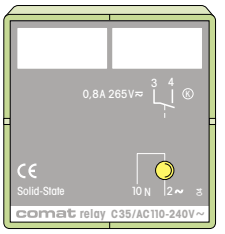
Ordering example

- Relay C34/AC230V
- Socket EC-11 or C11A
- Retaining clip HF-32 (opt.)



Solid-state relay

UC ≂



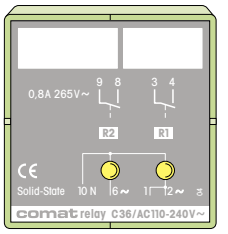
C35

Universal solid-state relay for AC or DC load
Highest switching frequency virtually limitless due to solid-state operation.
No external protective wiring required.

0,8A 10...265V≂

Solid-state relay

2x AC ~



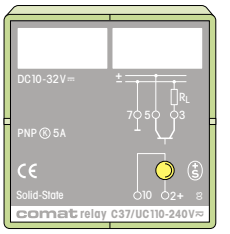
C36

AC solid-state relay double-channel
Triac output, crossover switching. Built-in RC wiring protection.
Especially for bulb-loads and high switching frequencies.
- Minimum load: 30mA

0,8A 20...265V~

Solid-state relay

DC ⎓



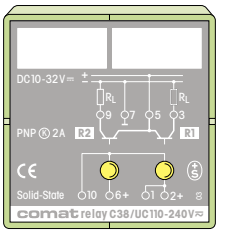
C37

DC solid-state single-channel
Bounce-free and non wearing for DC loads (inductive/capacitive).
Short-circuit/overload proof.
No external wiring protection required.

5A 10...32V⎓

Solid-state relay

2x DC ⎓



C38

DC solid-state relay double-channel
Construction, characteristics and application like C37, but double-channel.
2A constant current per channel.

2A 10...32V⎓

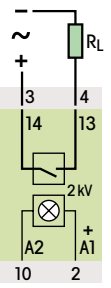
1- and 2-channel solid-state relays according IEC 67-1
- galvanically decoupled control (2kV)
- LED display for each channel

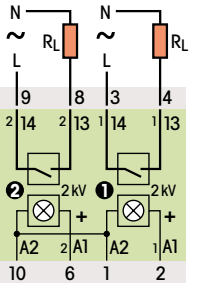
Operation voltage range 0,8..1,1U_N
$T_{amb.}$ operation/
storage: -25..+60/-40..+85°C

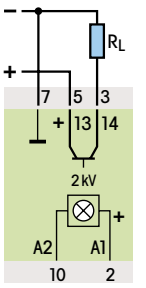
CE

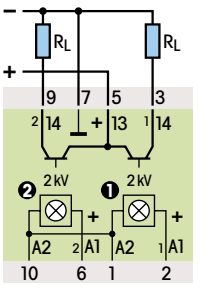
Connection No. on socket →
Designation according to DIN/EN 50011 →

Connection on sockets
EC-11, C11A, C12B







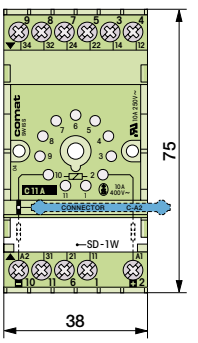


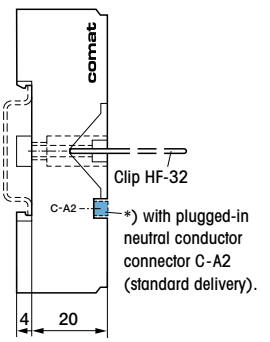
Data at $T_{amb.}$ = 20°C

	C35	C36	C37	C38
Peak inrush power	1,5A/1s	8A/20ms	15A/1s	15A/1s
Voltage drop	≤3V	≤1,5V	≤0,2V	≤0,2V
Residual current	≤100µA	≤3mA	≤100µA	≤100µA
Short-circuit proof Ⓚ	≤12A/200µs	—	≤70A/150µs	≤70A/150µs
Control voltage	110-240V / 24-48V	110-240V / 24V	110-240V / 24-48V	110-240V / 24-48V
Frequency range	50..60Hz / 40..400Hz	50..60Hz / 50..60Hz	40..60Hz / 40..400Hz	40..60Hz / 40..400Hz
Control current	≤35mA / ≤20mA	≤17mA / ≤12mA	≤5mA / ≤6mA	≤5mA / ≤6mA
Triggering delay	≤20ms / ≤20ms	≤30ms / ≤30ms	≤30ms / ≤20ms	≤30ms / ≤20ms
Off delay	≤80ms / ≤80ms	≤40ms / ≤80ms	≤30ms / ≤30ms	≤30ms / ≤20ms
AC ~ 50/60Hz	110-240 C35 / AC ...V	110-240 C36 / AC ...V		
UC ≂ ~/⎓	24-48 C35 / UC ...V	C36 / UC 24 V	24-48, 110-240 C37 / UC ...V	24-48, 110-240 C38 / UC ...V

Ordering example
- Relay C37/UC110-240V
- Socket EC-11 or C11A
- Retaining clip HF-32 (opt.)

System socket C11A *)





*) with plugged-in neutral conductor connector C-A2 (standard delivery).

Economy socket EC-11