

Power Relay CHI14

1 Features

- For inrush currents up to 800 A: Switching of loads such as electronic control gears or switching power supplies for the latest generation of energy-saving lamps and LED
- Designed for fit in electric switchboards due to the high nominal current of 16 A and the housing with 45 mm norm front.
- Reduction of the inrush current and less wear thanks to switching while zero-crossing
- Suitable to use in living area: extremely low noise during operation
- Coil voltage AC and DC 24 ... 240 V



2 General description

The CHI14 is a power relay for all applications effecting high inrush currents up to 800 A such as electronic control gears of energy saving lamps, power supplies of the latest LED lights and switching supplies of industrial components. These loads show an inrush current up to 250 times of their nominal current. The CHI14 is equipped with a low noise operating N.O contact with a nominal current up to 16 A and complies with the applicable DIN standards 43880 with installation dimension of 17.5 mm (1 module width).

Technical specification is subject to change without previous notice

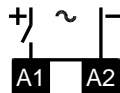
3 Order designation

Power Relay

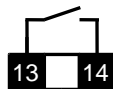
CHI14/UC24-240V

4 Connection diagram

Coil:



Output:



5 Specifications

5.1 General Data

5.1.1 Mechanical Data

Outside dimension	System DIN, W x H x D: 17.5 x 75 x 64 mm
Connector	Screw terminal 2.5 mm ²
Max. screw tightening torque	0.4 Nm
Protection	IP20
Case material	Lexan EXL9330
Weight	approx. 70 g
Fastening	TS35 DIN/EN 60715 or screw fastening M4

5.1.2 Ambient conditions

Storage temperature	-40 °C ... +85 °C
Operating temperature	-40 °C ... +60 °C
Relative humidity	10 % ... + 95 % (not condensed)

5.1.3 Life cycle

Life cycle	> 100 000 h (at 25 °C)
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(Relay contacts: see Point 5.4 Output circuit)

5.2 Electrical Data

5.2.1 Supply U_B (A1 – A2)

Nominal operating voltage (AC/DC)	24 ... 240 V
Operating voltage (AC/DC)	16.8 ... 250 V
Frequency range	16 ... 63 Hz
Current consumption	≤ 23 mA
Inrush current	≤ 2.5 A, τ = 100 μs
Power consumption	AC: ≤ 1.2 VA; DC: ≤ 430 mW

5.3 Time response

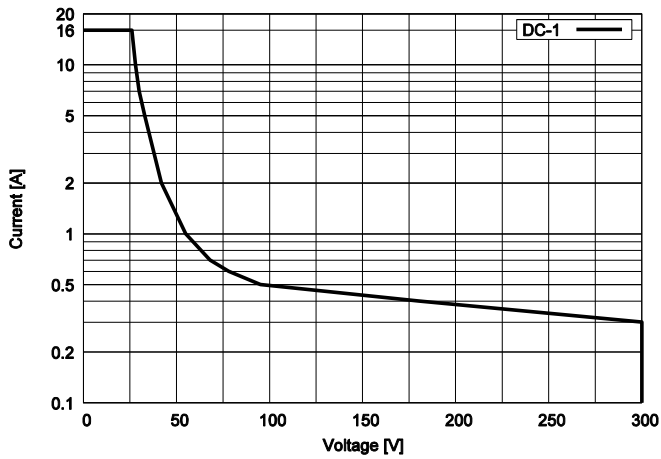
Start up delay max.	60 ms
Power supply protection min.	20 ms

5.4 Output circuit

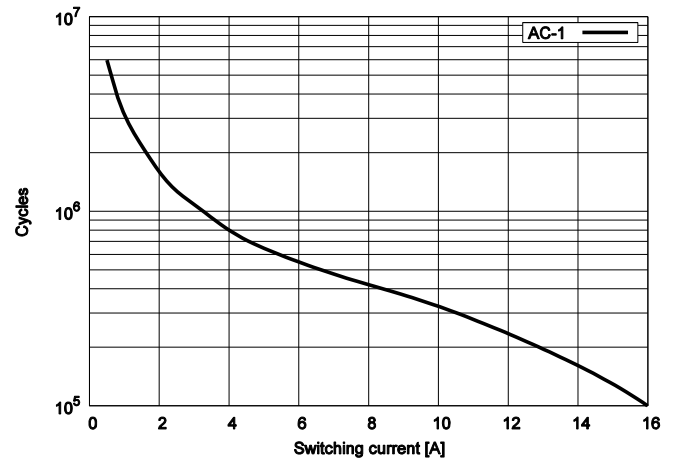
Output	N.O.
Commutation at zero crossing	Yes
Nominal current at 40 °C	16 A
Nominal current at 60 °C	13 A
Inrush current	165 A / 20 ms 800 A / 200 us
Nominal voltage	250 V
Contact material	W / AgSnO ₂
Recommended minimal load	100 mA / 12 V
Life time of contacts	5 x 10 ³ (16 A, 250 V AC-1)
Mechanical life time	5 x 10 ⁶
Voltage stability	Excitation – Contact 2.5 kV (RMS, 1 min.)

5.5 Typical performance characteristics

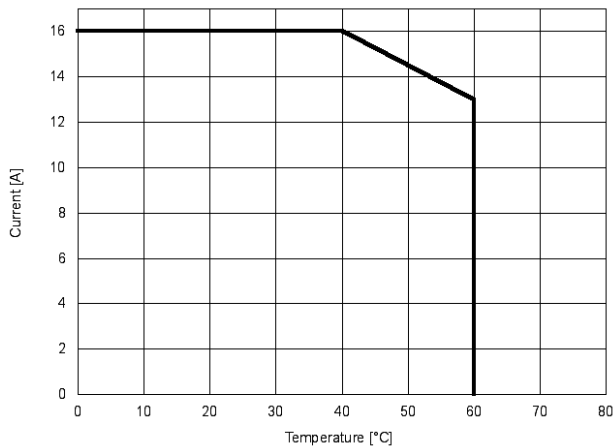
CHI14 - Breaking capacity



CHI14 - Electrical endurance



CHI14 - Output current



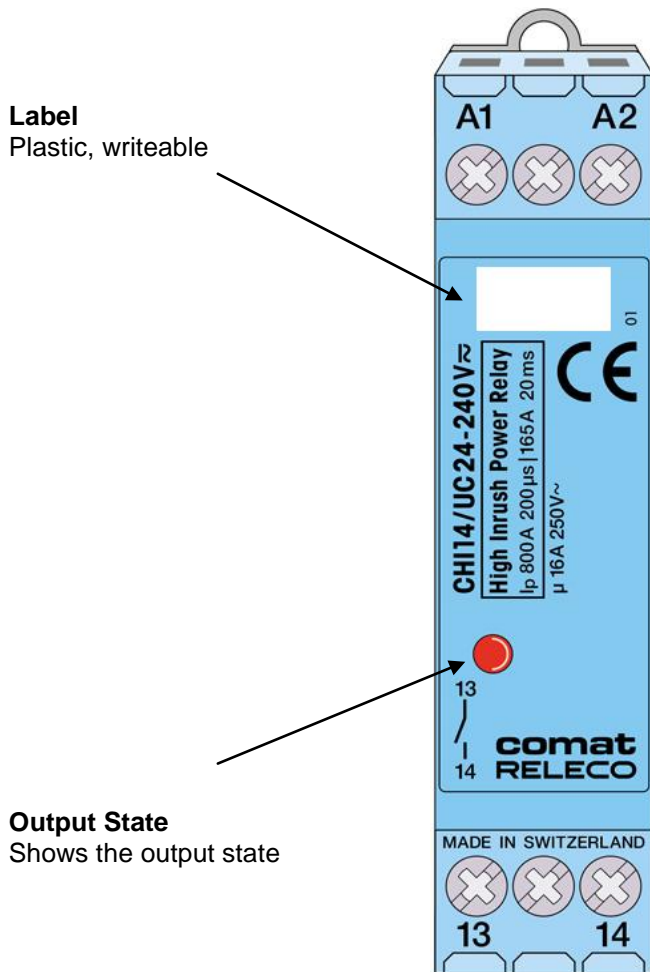
5.5.1 Lamp loads

Maximum number of lamps per contact at 230V. Utilization category AC-5a.
The following information applies to 100 000 cycles.

Last	Power [W]	Current [I]	Number of Lamps [n]
Compact fluorescent lamps with internal ballasts	7	0.08	64
	9	0.10	50
	11	0.12	41
	13	0.14	35
	18	0.20	25
	26	0.27	17
Fluorescent lamps with external electronic ballasts	18	0.09	39
	2x18	0.17	21
	21	0.11	32
	2x21	0.22	16
	28	0.14	25
	2x28	0.27	13
	35	0.17	21
	2x35	0.34	10
	54	0.26	13
	2x54	0.52	7
	58	0.25	14
	2x58	0.48	7
	80	0.40	9
2x80	0.76	5	
LED-Lamps / Power supplies for LED n: Number of lamps or power supplies I _n : Current consumption per lamp or power supply	-	-	$n = 4 A / I_n$

6 Application hints

Front view

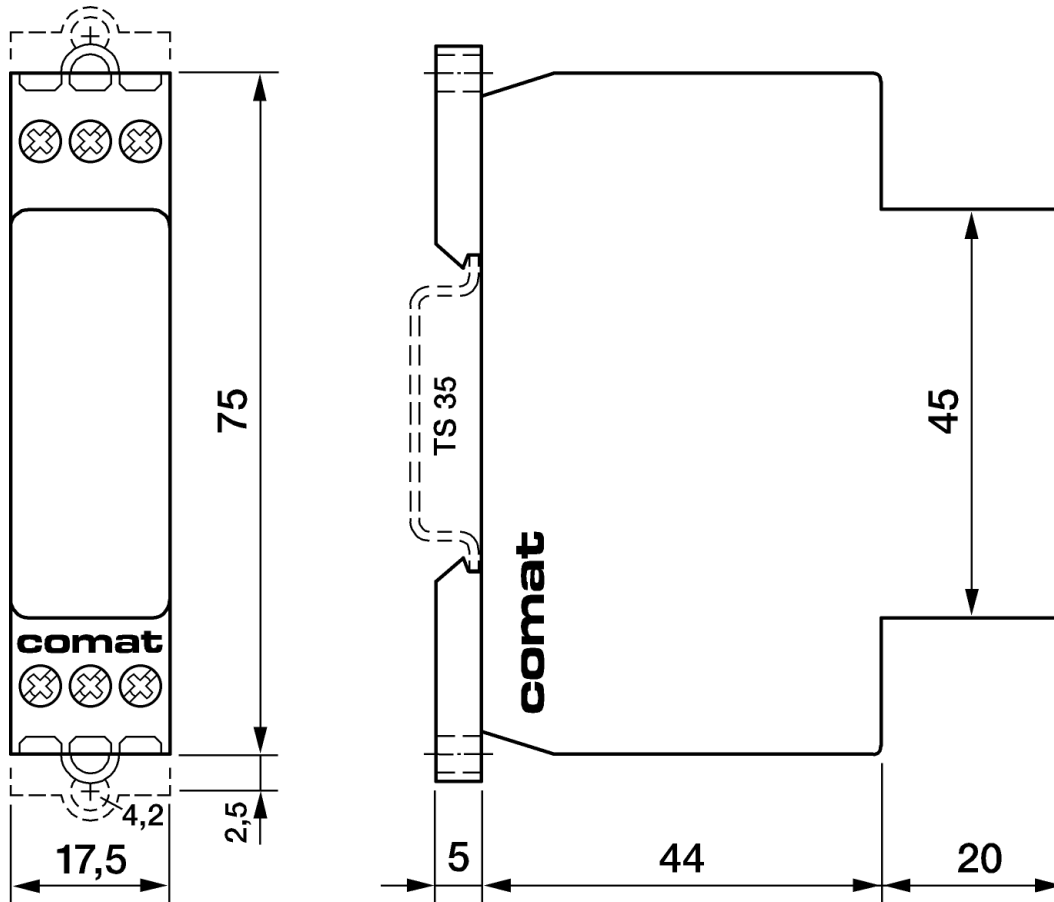


6.1 Switching state display

The state of the output relay.

LED		Relay
Not glowing	_____	Off
Glowing constantly	On

7 Dimensions



8 Standards

Interference immunity

EN 61000-6-2:2005
EN 61000-4-2:2001 Level 3 (Air: 8 kV)
EN 61000-4-4:2004 Level 3 (2 kV)
EN 61000-4-5:2006 Level 3 (2 kV)

Interference emission

EN 61000-6-3:2007
EN 55022:2006 Class B

Safety

EN 60730-1:2000
EN 61812-1:1996+A11:1999
EN 50155:2007

Approvals

UL recognized

Conformities, Identification

CE

9 Revision history

Version	Revision date	Responsible	Modifications
55060-005-57-001	22.07.2014	Mi	Initial release
55060-005-57-002	11.08.2015	Mi	UL recognized, Chapter 5.5.1