

DATASHEET

Contactors



Main Features

Reference	: CWBS
Product code	: 14340787
Rated current Ie AC-3 (Ue ≤ 440 V)	: 38 A
Main contacts (power)	: 3 NO
Auxiliary contacts	: 3 NO + 3 NC
Control voltage	: 24V 50/60Hz
Type of terminal	: Screw

Basic data

Rated utilization voltage Ue

- IEC / UL : 690 V / 600 V

Isolation voltage Ui (pollution degree 3)

- IEC / UL : 690 V / 600 V

Rated impulse withstand voltage Uimp

- Frequency limits [1] : 6 kV

- Mechanical lifespan

AC-operated contactor : 10 million

DC-operated contactor : 10 million

Electrical lifespan - Ie AC3 : 1,2 million

Number of coil terminals (AC Coil)

AC coil contactors : 2

- DC coil contactors : 2

Resistance to vibration (IEC 60068-2-6)

opened contactor : 4 g

closed contactor : 4 g

Resistance to mechanical shock (½ sinusoid = 11ms)

opened contactor : 10 g

closed contactor : 15 g

Installation

Degree of protection (IEC 60529) : DIN 35 mm (EN 50022)

Main circuit

: IP10

Control circuit

: IP20

Alternating current - control circuit

Isolation voltage Ui (pollution degree 3) : 690 V / 600 V

- IEC / UL

Standard voltages for 50/60 Hz : 12...550 V

Command circuit operation limits

- control circuit 60 Hz : 0,5...0,8xUs

- pick up : 0,2...0,6xUs

- drop out : 0,5...0,8xUs

- control circuit 50 Hz : 0,2...0,6xUs

- pick up

- drop out

- Average coil consumption

- operating at 60 Hz : 6...9 VA

- closed magnetic circuit : 0,27

- power factor ($\cos \varphi$) : 1,5...2,5 W

- Thermal power dissipated : 60...90 VA

- closing the magnetic circuit : 7,2...10,8 VA

- operating at 50 Hz : 0,24

- closed magnetic circuit : 1,5...2,5 W

- power factor ($\cos \varphi$) : 72...108 VA

- Thermal power dissipated

Average time of operation

- closing the NO contacts : 15...25 ms

- opening the NO contacts : 8...12 ms

Direct current - command circuit

- IEC / UL

Standard voltages

Command circuit operation limits

- pick up

- drop out

Average consumption

- closed magnetic circuit

- closing the magnetic circuit

Thermal power dissipated

Average time of operation

- closing the NO contacts

- opening the NO contacts

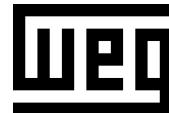
Main contacts (power)

Rated utilization current Ie

- AC-3 (Ue ≤ 440 V) : 38 A

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- AC-4 (Ue ≤ 440 V)	: 13,7 A
- AC-1 ($\theta \leq 55^\circ\text{C}$, Ue ≤ 690 V)	: 50 A
Rated utilization voltage Ue	: 690 V / 600 V
- IEC / UL	: 3 NO
Number of main contacts	: 550 A
Establishment capacity (IEC 60947)	
Breaking capacity (IEC/EN 60947)	
- Ue≤400V	: 550 A
- Ue=500V	: 450 A
- Ue=690V	: 350 A
Temporary permissible current (without previously current conduction during 15 min at $\theta \leq 40^\circ\text{C}$)	
- 1 sec	: 430 A
- 1 sec	: 310 A
- 1 sec	: 310 A
- 1 min	:
- 10 min	: 60 A
Protection against short circuit of the contacts main fuse (gL/gG)	
- @600V - UL/CSA	: 5 kA
- type 1 coordination	: 63 A
- type 2 coordination	: Not available
Average power dissipated per pole	
AC-1 ($\theta \leq 55^\circ\text{C}$, Ue ≤ 690 V)	: 5 W
AC-3 (Ue ≤ 440 V)	: 3 W

Utilization category AC-3

Rated current le ($\theta \leq 55^\circ\text{C}$)	
- Ue ≤ 440V	: 38 A
- Ue ≤ 500V	: 28,5 A
- Ue ≤ 690V	: 21 A
Maximum percentage (600 ops./h)	: 100 %

Orientative values of power (IEC)-three-phase induction motors (50/60 Hz)-IV poles-1800 rpm

Voltage	kW	cv or HP
220 / 240 V	9,2 kW	12,5 HP
380 / 400 V	18,5 kW	25 HP
415 / 440 V	18,5 kW	25 HP
500 V	18,5 kW	25 HP
660 / 690 V	18,5 kW	25 HP

Orientative values of power (UL)

Voltage	1 Phase	3 Phase
120 V	3	Not available
200 V	Not applicable	10
208 V	Not available	Not available
240 V	7,5	10
480 V	Not available	25
600 V	Not available	25

Utilization category AC-4

Rated current le ($\theta \leq 55^\circ\text{C}$)	
- Ue ≤ 440V	: 13,7 A
- Ue ≤ 500V	: 13,9 A
- Ue ≤ 690V	: 12,8 A

Orientative values of power (IEC)-three-phase induction motors (50/60 Hz)-IV poles-1800 rpm

Voltage	kW	cv or HP
220 / 240 V	4 kW	5,4 HP
380 / 400 V	7,5 kW	10,1 HP
415 / 440 V	7,5 kW	10,1 HP
500 V	9 kW	12,1 HP
660 / 690 V	11 kW	14,7 HP

Utilization category AC-1 (3 P/NA)

Maximum percentage (600 ops./h)	: 1
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Maximum power operation $\theta \leq 55^\circ\text{C}$ (three resistors)

Voltage	Power
220 / 240 V	19 kW
380 / 400 V	33 kW
415 / 440 V	38 kW
500 V	43 kW
660 / 690 V	57 kW

Auxiliary contacts

Standards compliance	: IEC 600947-5-1
Insulation voltage Ui	
- IEC / UL	: 1000 V / 600 V

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Rated utilization voltage Ue

- IEC / UL : 690 V / 690 V

Conventional thermal current Ith ($\theta \leq 55^\circ\text{C}$) : 10 A

Rated current le - IEC 60947-5-1/AC-15

- 220 / 240 V : 10 A

- 380 / 440 V : 4 A

- 500 V : 2,5 A

- 660 / 690 V : 1,5 A

Rated current le - IEC 60947-5-1/DC-13

- 24 V : 4 A

- 48 V : 2 A

- 110 V : 0,7 A

- 220 V : 0,3 A

- 440 V : 0,15 A

Establishment capacity - (AC-15 and Ue $\leq 690\text{V}$ 50/60Hz) : 10 x le

Interruption capacity - (AC-15 and Ue $\leq 400\text{V}$ 50/60Hz) : 1 x le

Protection against short circuit of the contacts main fuse (gL/gG) : 10 A

Control circuit reliability : 17/5 V/mA

Electrical lifespan : 1 Million

Mechanical lifespan : 10 million

Non-overlapping time between NO and NC contacts : 1,5 ms

Impedance per pole : 2,5 m Ω

Connection

Main contacts

: M4 Flat/Phillips

Type of the screw

Section of the conductors

Type of the conductor	Section (IEC)	Section (UL)
Rigid cable	1 x 2,5...10 mm ²	1 x
	2 x 2,5...10 mm ²	2 x
Flexible cable without terminal	1 x 2,5...10 mm ²	1 x
	2 x 2,5...10 mm ²	2 x
Flexible cable with terminal	1 x 1,5...10 mm ²	1 x
	2 x 1,5...6 mm ²	2 x

Tightening torque (IEC/UL) : 2.5 Nm / 22 lb.in

Control circuit

: M3,5 Flat/Phillips

Section of the conductors

Type of the conductor	Section (IEC)	Section (UL)
Rigid cable	1 x 1...4 mm ²	1 x
	2 x 1...4 mm ²	2 x
Flexible cable without terminal	1 x 1...4 mm ²	1 x
	2 x 1...4 mm ²	2 x
Flexible cable with terminal	1 x 1...4 mm ²	1 x
	2 x 1...2,5 mm ²	2 x

Tightening torque (IEC/UL) : 1 Nm / 8.8 lb.in

Direct current application

Utilization category DC-1 (L/R $\leq 1\text{ ms}$)

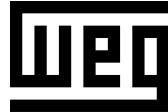
Voltage	Rated utilization current (le)			
	Pole(s) in series			
1	2	3	4	
Ue $\leq 24\text{V}$	40 A	40 A	40 A	Not available
Ue $\leq 48\text{V}$	40 A	40 A	40 A	Not available
Ue $\leq 60\text{V}$	40 A	40 A	40 A	Not available
Ue $\leq 125\text{V}$	7 A	40 A	40 A	Not available
Ue $\leq 220\text{V}$	1 A	7 A	40 A	Not available
Ue $\leq 440\text{V}$	0,5 A	1 A	7 A	Not available
Ue $\leq 600\text{V}$	Not available	0,5 A	1 A	Not available

Utilization category DC-3 (L/R $\leq 2,5\text{ ms}$)

Voltage	Rated utilization current (le)			
	Pole(s) in series			
1	2	3	4	
Ue $\leq 24\text{V}$	36 A	36 A	36 A	Not available
Ue $\leq 48\text{V}$	36 A	36 A	36 A	Not available
Ue $\leq 60\text{V}$	36 A	36 A	36 A	Not available
Ue $\leq 125\text{V}$	3 A	36 A	36 A	Not available
Ue $\leq 220\text{V}$	0,5 A	3 A	36 A	Not available
Ue $\leq 440\text{V}$	Not available	0,5 A	3 A	Not available
Ue $\leq 600\text{V}$	Not available	Not available	1,5 A	Not available

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Operation category DC-5 (L/R ≤ 15ms)

Voltage	Rated utilization current (Ie)			
	Pole(s) in series			
1	2	3	4	
Ue ≤ 24V	36 A	36 A	36 A	Not available
Ue ≤ 48V	36 A	36 A	36 A	Not available
Ue ≤ 60V	36 A	36 A	36 A	Not available
Ue ≤ 125V	3 A	36 A	36 A	Not available
Ue ≤ 220V	Not available	3 A	36 A	Not available
Ue ≤ 440V	Not available	Not available	3 A	Not available
Ue ≤ 600V	Not available	Not available	Not available	Not available

Ambient temperature

Operation : -25 °C ... +55 °C
Storage : -55 °C ... +80 °C

Maximum altitude with no change of rated values [2] : 3000 m

Dimensions

Height : 85 mm (3.35 in)
Width : 45 mm (1.77 in)
Depth : 131.9 mm (5.19 in)
Weight : 0.55 kg

Standards

IEC 60947-1

UL 508

Certifications

CE, UL and EAC

Notes

1) Values above 60 Hz should have current reduction;

2) For altitudes of 3000 to 4000 m ($0.90 \times 0.80 \times Ie$ and Ui) and from 4000 to 5000 m ($0.80 \times 0.75 \times Ie$ and Ui).