DATASHEET
Contactors



Main Features

Reference	: CWBS
Product code	: 14280352
Rated current Ie AC-3 (Ue ≤ 440 V)	: 50 A
Main contacts (power)	: 3 NO
Auxiliary contacts	: 1 NO + 1 NC
Control voltage	: 24V 50/60Hz
Type of terminal	: Screw

Basic data

Rated utilization voltage Ue		
- IEC / UL		: 1000 V / 600 V
Isolation voltage Ui (pollution degree 3)		
- IEC / UL		: 1000 V / 600 V
Rated impulse withstand voltage Uimp		: 6 kV
- Frequency limits [1]		: 25 Hz ... 400 Hz
- Mechanical lifespan		
AC-operated contactor		: 6 million
DC-operated contactor		: 6 million
Electrical lifespan - Ie AC3		: 1.6 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		: Screw
Degree of protection (IEC 60529)		
Main circuit		: IP10
Control circuit		: IP20

Alternating current - control circuit

Isolation voltage Ui (pollution degree 3)		: 1000 V / 600 V
- IEC / UL		
Standard voltages for 50/60 Hz		: 12...550 V
Comand circuit operation limits		
- control circuit 60 Hz	- pick up	: 0,5...0,8xUs
	- drop out	: 0,2...0,6xUs
- control circuit 50 Hz	- pick up	: 0,5...0,8xUs
	- drop out	: 0,2...0,6xUs
- Average coil consumption		
- operating at 60 Hz	- closed magnetic circuit	: 14...21 VA
	- power factor (cos φ)	: 0.28
	- Thermal power dissipated	: 4...5,5 W
	- closing the magnetic circuit	: 148...222 VA
- operating at 50 Hz	- closed magnetic circuit	: 22...32 VA
	- power factor (cos φ)	: 0.25
	- Thermal power dissipated	: 5.5...7.8 W
	- closing the magnetic circuit	: 162...242 VA
Average time of operation		
- closing the NO contacts		: 10...15 ms
- opening the NO contacts		: 8...12 ms

Direct current - command circuit

- IEC / UL	
Standard voltages	:
Comand 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)	: 50 A

- AC-4 (Ue ≤ 440 V) : 18,5 A
- AC-1 (θ ≤ 55 °C, Ue ≤ 690 V) : 90 A

Rated utilization voltage Ue
- IEC / UL : 1000 V / 600 V

Number of main contacts : 3 NO
Establishment capacity (IEC 60947) : 1000 A
Breaking capacity (IEC/EN 60947)
- Ue≤400V : 1000 A
- Ue=500V : 880 A
- Ue=690V : 640 A

Temporary permissible current (without previously current conduction during 15 min at θ ≤ 40 ºC)
- 1 sec : 820 A
- 10 sec : 400 A
- 10 sec : 400 A
- 1 min :
- 10 min : 110 A

Protection against short circuit of the contacts main fuse (gL/gG)
- @600V - UL/CSA : 5 kA
- type 1 coordenation : 100 A
- type 2 coordenation : Not available

Average power dissipated per pole
AC-1 (θ ≤ 55 °C, Ue ≤ 690 V) : 13 W
AC-3 (Ue ≤ 440 V) : 4 W

Utilization category AC-3

Rated current Ie (θ ≤ 55 ºC)
- Ue ≤ 440V : 50 A
- Ue ≤ 500V : 45 A
- Ue ≤ 690V : 35 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	15 kW	20 cv
380 / 400 V	22 kW	29 cv
415 / 440 V	30 kW	40 cv
500 V	30 kW	40 cv
660 / 690 V	33 kW	44 cv

Orientative values of power (UL)		
Voltage	1 Phase	3 Phase
120 V	3	Not available
200 V	Not applicable	15
208 V	Not available	Not available
240 V	10	20
480 V	Not available	40
600 V	Not available	40

Utilization category AC-4

Rated current Ie (θ ≤ 55 ºC)
- Ue ≤ 440V : 18,5 A
- Ue ≤ 500V : 23,5 A
- Ue ≤ 690V : 18 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	5.5 kW	7.4 HP
380 / 400 V	11 kW	14.7 HP
415 / 440 V	11 kW	14,7 HP
500 V	15 kW	20.1 HP
660 / 690 V	15 kW	20.1 HP

Utilization category AC-1 (3 P/NA)

Maximum percentage (600 ops./h) : Not available

Maximum power operation θ ≤ 55ºC (three resistors)	
Voltage	Power
220 / 240 V	21.6 kW
380 / 400 V	36 kW
415 / 440 V	39.4 kW
500 V	45 kW
660 / 690 V	62.1 kW

Auxiliary contacts

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

Rated utilization voltage Ue
- IEC / UL : 690 V / 690 V
Conventional thermal current Ith (θ ≤ 55ºC) : 10 A
Rated current Ie - IEC 60947-5-1/AC-15
- 220 / 240 V : 6 A
- 380 / 440 V : 4 A
- 500 V : 2,5 A
- 660 / 690 V : 1,5 A
Rated current Ie - 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 ≤ 690V 50/60Hz) : 10 x Ie
Interruption capacity - (AC-15 and Ue ≤ 400V 50/60Hz) : 1 x Ie
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 : 6 million
Non-overlapping time between NO and NC contacts : 1,5 ms
Impedance per pole : 2,5 mΩ

Connection

Main contacts
Type of the screw : M6 internal hexagonal
Section of the conductors

Type of the conductor	Section (IEC)	Section (UL)
Rigid cable	1 x Not available	1 x
	2 x Not available	2 x
Flexible cable without terminal	1 x Not available	1 x
	2 x Not avaliable	2 x
Flexible cable with terminal	1 x Not contain	1 x
	2 x Not contain	2 x

Tightening torque (IEC/UL) : 5 Nm / 45 lb.in
Control circuit
Type of the screw : M3,5 Flat/Phillips
Section of the conductors

Type of the conductor	Section (IEC)	Section (UL)
Rigid cable	1 x 1...4 mm²	1 x
	2 x 1...4 mm²	2 x
Flexible cable without terminal	1 x 1...4 mm²	1 x
	2 x 1...4 mm²	2 x
Flexible cable with terminal	1 x 1...4 mm²	1 x
	2 x 1...2,5 mm²	2 x

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

Direct current application

Utilization category DC-1 (L/R ≤ 1 ms)

	Rated utilization current (Ie)			
	Pole(s) in series			
Voltage	1	2	3	4
Ue ≤ 24V	90 A	90 A	90 A	Not available
Ue ≤ 48V	90 A	90 A	90 A	Not available
Ue ≤ 60V	90 A	90 A	90 A	Not available
Ue ≤ 125V	15 A	90 A	90 A	Not available
Ue ≤ 220V	2 A	10 A	50 A	Not available
Ue ≤ 440V	1 A	2 A	10 A	Not available
Ue ≤ 600V	Not available	1 A	2 A	Not available

Utilization category DC-3 (L/R ≤ 2.5 ms)

	Rated utilization current (Ie)			
	Pole(s) in series			
Voltage	1	2	3	4
Ue ≤ 24V	45 A	45 A	45 A	Not available
Ue ≤ 48V	45 A	45 A	45 A	Not available
Ue ≤ 60V	45 A	45 A	45 A	Not available
Ue ≤ 125V	5 A	45 A	54 A	Not available
Ue ≤ 220V	1 A	5 A	45 A	Not available
Ue ≤ 440V	Not available	1 A	5 A	Not available
Ue ≤ 600V	Not available	Not available	1 A	Not available

Operation category DC-5 (L/R ≤ 15ms)

	Rated utilization current (Ie)			
	Pole(s) in series			
Voltage	1	2	3	4
Ue ≤ 24V	45 A	45 A	45 A	Not available
Ue ≤ 48V	45 A	45 A	45 A	Not available
Ue ≤ 60V	45 A	45 A	45 A	Not available
Ue ≤ 125V	5 A	45 A	54 A	Not available
Ue ≤ 220V	1 A	5 A	45 A	Not available
Ue ≤ 440V	Not available	1 A	5 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 : 115 mm (4.53 in)
Width : 54 mm (2.13 in)
Depth : 123.3 mm (4.85 in)
Weight : 0.91 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 x 0.80 x Ie and Ui) and from 4000 to 5000 m (0.80 x 0.75 x Ie and Ui).