

DATASHEET

Contactors



Main Features

Reference	: CWBN
Product code	: 14400378
Rated current Ie AC-3 (Ue ≤ 440 V)	: 18 A (N0)
Main contacts (power)	: 3 NO
Auxiliary contacts	: 1 NO + 1 NC
Control voltage	: 480V 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	: 6 kV
- Frequency limits [1]	: 25 Hz ... 400 Hz
- Mechanical lifespan	
AC-operated contactor	: 10 million
DC-operated contactor	: 10 million
Electrical lifespan - Ie AC3	: 00015
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)	
Main circuit	: IP10
Control circuit	: IP20

Alternating current - control circuit

Isolation voltage Ui (pollution degree 3)	
- IEC / UL	: 690 V / 600 V
Standard voltages for 50/60 Hz	: 12...550 V
Command 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 : 6...9 VA
	- power factor (cos φ) : 0.27
	- Thermal power dissipated : 1,5...2,5 W
	- closing the magnetic circuit : 60...90 VA
- operating at 50 Hz	- closed magnetic circuit : 7,2...10,8 VA
	- power factor (cos φ) : 0.24
	- Thermal power dissipated : 1.5...2.5 W
	- closing the magnetic circuit : 72...108 VA
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)	: 18 A (N0)

DATASHEET

Contactors



- AC-4 (Ue ≤ 440 V)	: 18,5 A
- AC-1 (θ ≤ 55 °C, Ue ≤ 690 V)	: 90 A
Rated utilization voltage Ue	
- IEC / UL	: 690 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 °C)	
- 1 sec	: 820 A
- 1 sec	: 400 A
- 1 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 coordination	: 100 A
- type 2 coordination	: 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 °C)	
- Ue ≤ 440V	: 18 A (N0)
- Ue ≤ 500V	: 15,8 A
- Ue ≤ 690V	: 12,8 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	4,5 kW	6 HP
380 / 400 V	7,5 kW	10 HP
415 / 440 V	9,2 kW	12,5 HP
500 V	10 kW	13,4 HP
660 / 690 V	11 kW	15 HP

Orientative values of power (UL)		
Voltage	1 Phase	3 Phase
120 V	1	Not available
200 V	Not applicable	3
208 V	Not available	Not available
240 V	2	3
480 V	Not available	5
600 V	Not available	5

Utilization category AC-4

Rated current Ie (θ ≤ 55 °C)	
- Ue ≤ 440V	: 18,5 A
- Ue ≤ 500V	: 7,5 A
- Ue ≤ 690V	: 5,4 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	2,2 kW	2,9 HP
380 / 400 V	4 kW	5,4 HP
415 / 440 V	3,7 kW	5 HP
500 V	5 kW	6,7 HP
660 / 690 V	5 kW	6,7 HP

Utilization category AC-1 (3 P/NA)

Maximum percentage (600 ops./h)	: 1
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Maximum power operation θ ≤ 55°C (three resistors)	
Voltage	Power
220 / 240 V	12 kW
380 / 400 V	21 kW
415 / 440 V	24,5 kW
500 V	27,5 kW
660 / 690 V	36,5 kW

Auxiliary contacts

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

DATASHEET

Contactors



Rated utilization voltage Ue	
- IEC / UL	: 690 V / 690 V
Conventional thermal current Ith ($\theta \leq 55^\circ\text{C}$)	: 10 A
Rated current Ie - 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 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 \leq 690V 50/60Hz)	: 10 x Ie
Interruption capacity - (AC-15 and Ue \leq 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 m Ω

Connection

Main contacts	
Type of the screw	: M4 Flat/Phillips
Section of the conductors	

Type of the conductor	Section (IEC)	Section (UL)
Rigid cable	1 x 1...6 mm ²	1 x
	2 x 1...6 mm ²	2 x
Flexible cable without terminal	1 x 1...6 mm ²	1 x
	2 x 1...6 mm ²	2 x
Flexible cable with terminal	1 x 1...6 mm ²	1 x
	2 x 1...4 mm ²	2 x

Tightening torque (IEC/UL)	: 1.7 Nm / 15 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 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
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Direct current application

Utilization category DC-1 (L/R \leq 1 ms)

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

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

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

DATASHEET

Contactors



Operation category DC-5 (L/R ≤ 15ms)

Voltage	Rated utilization current (Ie)			
	Pole(s) in series			
	1	2	3	4
Ue ≤ 24V	Not available	Not available	Not available	Not available
Ue ≤ 48V	Not available	Not available	Not available	Not available
Ue ≤ 60V	Not available	Not available	Not available	Not available
Ue ≤ 125V	Not available	Not available	Not available	Not available
Ue ≤ 220V	Not available	Not available	Not available	Not available
Ue ≤ 440V	Not available	Not available	Not available	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 : 78,4 mm (3.09 in)
 Width : 45 mm (1.77 in)
 Depth : 134.6 mm (5.30 in)
 Weight : 0.465 kg

Standards

IEC 60947-1
 UL 508

Certifications

CE and UL

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).