

Main Features



Reference	: CWBS
Product code	: 13793578
Rated current Ie AC-3 (Ue ≤ 440 V)	: 38 A
Main contacts (power)	: 3 NO
Auxiliary contacts	: 3 NO + 3 NC
Control voltage	: 24V DC
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	: 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	: DIN 35 mm (EN 50022)
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	:
Command circuit operation limits	
- control circuit 60 Hz	
- pick up	:
- drop out	:
- control circuit 50 Hz	
- pick up	:
- drop out	:
- Average coil consumption	
- operating at 60 Hz	
- closed magnetic circuit	:
- power factor (cos φ)	:
- Thermal power dissipated	:
- closing the magnetic circuit	:
- operating at 50 Hz	
- closed magnetic circuit	:
- power factor (cos φ)	:
- Thermal power dissipated	:
- closing the magnetic circuit	:
Average time of operation	
- closing the NO contacts	:
- opening the NO contacts	:

Direct current - command circuit

- IEC / UL	
Standard voltages	: 12...500 V
Command circuit operation limits	
- pick up	: 0,5...0,8xUs
- drop out	: 0,1...0,4xUs
Average consumption	
- closed magnetic circuit	: 5...7 W
- closing the magnetic circuit	: 5...7 W
Thermal power dissipated	: 5...7 W
Average time of operation	
- closing the NO contacts	: 35...45 ms
- opening the NO contacts	: 8...12 ms

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 (θ ≤ 55 °C, Ue ≤ 690 V)	: 50 A
Rated utilization voltage Ue	
- IEC / UL	: 690 V / 600 V
Number of main contacts	: 3 NO
Establishment capacity (IEC 60947)	: 550 A
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 θ ≤ 40 °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 (θ ≤ 55 °C, Ue ≤ 690 V)	: 5 W
AC-3 (Ue ≤ 440 V)	: 3 W
Utilization category AC-3	
Rated current Ie (θ ≤ 55 °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 Ie (θ ≤ 55 °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 θ ≤ 55°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 U_e
 - IEC / UL : 690 V / 690 V
 Conventional thermal current I_{th} ($\theta \leq 55^\circ\text{C}$) : 10 A
 Rated current I_e - 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 I_e - 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 $U_e \leq 690\text{V}$ 50/60Hz) : 10 x I_e
 Interruption capacity - (AC-15 and $U_e \leq 400\text{V}$ 50/60Hz) : 1 x I_e
 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
 Type of the screw : M4 Flat/Phillips
 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
 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

Direct current application

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

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

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

Voltage	Rated utilization current (I_e)			
	Pole(s) in series			
	1	2	3	4
$U_e \leq 24\text{V}$	36 A	36 A	36 A	Not available
$U_e \leq 48\text{V}$	36 A	36 A	36 A	Not available
$U_e \leq 60\text{V}$	36 A	36 A	36 A	Not available
$U_e \leq 125\text{V}$	3 A	36 A	36 A	Not available
$U_e \leq 220\text{V}$	0,5 A	3 A	36 A	Not available
$U_e \leq 440\text{V}$	Not available	0,5 A	3 A	Not available
$U_e \leq 600\text{V}$	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 : 141.1 mm (5.56 in)

Weight : 600 g

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).