

DATASHEET

Contactors



Main Features



Reference	: CWC0
Product code	: 13232105
Rated current Ie AC-3 (Ue ≤ 440 V)	: 9 A
Main contacts (power)	: 3 NO
Auxiliary contacts	: 1 NC
Control voltage	: 20V 50Hz/24V 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	: 4 kV
- Frequency limits [1]	: 25 Hz ... 400 Hz
- Mechanical lifespan	
AC-operated contactor	: 10 million
DC-operated contactor	: 12 million
Electrical lifespan - Ie AC3	: 1,3 million
Number of coil terminals (AC Coil)	
AC coil contactors	: 2
- DC coil contactors	: 2
Resistance to vibration (IEC 60068-2-6)	
opened contactor	: 2 g
closed contactor	: 3 g
Resistance to mechanical shock (½ sinusoid = 11ms)	
opened contactor	: 6 g
closed contactor	: 6 g
Installation	: DIN 35 mm (EN 50022)
Degree of protection (IEC 60529)	
Main circuit	: IP20
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...660 V
Command circuit operation limits	
- control circuit 60 Hz	- pick up : 0,4...0,76xUs
	- drop out : 0,25...0,65xUs
- control circuit 50 Hz	- pick up : 0,4...0,76xUs
	- drop out : 0,25...0,65xUs
- Average coil consumption	
- operating at 60 Hz	- closed magnetic circuit : 2,5...3,5 VA
	- power factor (cos φ) : 0,28
	- Thermal power dissipated : 1 W
	- closing the magnetic circuit : 35 VA
- operating at 50 Hz	- closed magnetic circuit : 2,5...3,5 VA
	- power factor (cos φ) : 0,28
	- Thermal power dissipated : 1 W
	- closing the magnetic circuit : 35 VA
Average time of operation	
- closing the NO contacts	: 8...20 ms
- opening the NO contacts	: 5...15 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)	: 9 A

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- AC-4 (Ue ≤ 440 V)	: 3,5 A
- AC-1 (θ ≤ 55 °C, Ue ≤ 690 V)	: 20 A
Rated utilization voltage Ue	
- IEC / UL	: 690 V / 600 V
Number of main contacts	: 3 NO
Establishment capacity (IEC 60947)	: 90 A
Breaking capacity (IEC/EN 60947)	
- Ue≤400V	: 72 A
- Ue=500V	: 72 A
- Ue=690V	: 54 A
Temporary permissible current (without previously current conduction during 15 min at θ ≤ 40 °C)	
- 1 sec	: 250 A
- 10 sec	: 95 A
- 10 sec	: 95 A
- 1 min	:
- 10 min	: Not available
Protection against short circuit of the contacts main fuse (gL/gG)	
- @600V - UL/CSA	: 5 kA
- type 1 coordination	: 35 A
- type 2 coordination	: 20 A
Average power dissipated per pole	
AC-1 (θ ≤ 55 °C, Ue ≤ 690 V)	: 2,4 W
AC-3 (Ue ≤ 440 V)	: 0,5 W
Utilization category AC-3	
Rated current Ie (θ ≤ 55 °C)	
- Ue ≤ 440V	: 9 A
- Ue ≤ 500V	: 7,5 A
- Ue ≤ 690V	: 5,5 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	2,2 kW	3 HP
380 / 400 V	4 kW	5,4 HP
415 / 440 V	4,5 kW	6 HP
500 V	4,5 kW	6 HP
660 / 690 V	4 kW	5,4 HP

Orientative values of power (UL)		
Voltage	1 Phase	3 Phase
120 V	0.5	1
200 V	Not applicable	Not available
208 V	1	2
240 V	1	3
480 V	Not available	5
600 V	Not available	7.5

Utilization category AC-4

Rated current Ie (θ ≤ 55 °C)	
- Ue ≤ 440V	: 3,5 A
- Ue ≤ 500V	: Not available
- Ue ≤ 690V	: Not available

Orientative values of power (IEC)-three-phase induction motors (50/60 Hz)-IV poles-1800 rpm		
Voltage	kW	cv or HP
220 / 240 V	0,75 kW	1 HP
380 / 400 V	1,1 kW	1.5 HP
415 / 440 V	1,5 kW	2 HP
500 V	1,5 kW	2 HP
660 / 690 V	1,5 kW	2 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	7,5 kW
380 / 400 V	13 kW
415 / 440 V	14.5 kW
500 V	16,5 kW
660 / 690 V	22 kW

Auxiliary contacts

Standards compliance	: IEC 600947-5-1
Insulation voltage Ui	
- IEC / UL	: 690 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 : 6 A
 - 500 V : 4 A
 - 660 / 690 V : 2 A
 Rated current I_e - IEC 60947-5-1/DC-13
 - 24 V : 6 A
 - 48 V : 4 A
 - 110 V : 2 A
 - 220 V : 0,7 A
 - 440 V : Not available
 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) : 10 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 : Not available
 Impedance per pole : Not available

Connection

Main contacts
 Type of the screw : M3 Flat/Phillips
 Section of the conductors

Type of the conductor	Section (IEC)	Section (UL)
Rigid cable	1 x 0,5...2,5 mm ²	1 x
	2 x 0,5...2,5 mm ²	2 x
Flexible cable without terminal	1 x 0,75...2,5 mm ²	1 x
	2 x 0,75...2,5 mm ²	2 x
Flexible cable with terminal	1 x 0,5...2,5 mm ²	1 x
	2 x 0,5...1,5 mm ²	2 x

Tightening torque (IEC/UL) : 1.1 Nm / 10 lb.in
 Control circuit
 Type of the screw : M3 Flat/Phillips
 Section of the conductors

Type of the conductor	Section (IEC)	Section (UL)
Rigid cable	1 x 0,5...2,5 mm ²	1 x
	2 x 0,5...2,5 mm ²	2 x
Flexible cable without terminal	1 x 0,75...2,5 mm ²	1 x
	2 x 0,75...2,5 mm ²	2 x
Flexible cable with terminal	1 x 0,5...2,5 mm ²	1 x
	2 x 0,5...1,5 mm ²	2 x

Tightening torque (IEC/UL) : 1,1 Nm / 10 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
$U_e \leq 24\text{V}$	10 A	15 A	15 A	Not available
$U_e \leq 48\text{V}$	10 A	15 A	15 A	Not available
$U_e \leq 60\text{V}$	8 A	15 A	15 A	Not available
$U_e \leq 125\text{V}$	4 A	8 A	12 A	Not available
$U_e \leq 220\text{V}$	0,6 A	5 A	9 A	Not available
$U_e \leq 440\text{V}$	0,2 A	0,6 A	3,5 A	Not available
$U_e \leq 600\text{V}$	Not available	0,2 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
$U_e \leq 24\text{V}$	9 A	12 A	15 A	Not available
$U_e \leq 48\text{V}$	8 A	12 A	15 A	Not available
$U_e \leq 60\text{V}$	5 A	10 A	14 A	Not available
$U_e \leq 125\text{V}$	1,5 A	5,5 A	10 A	Not available
$U_e \leq 220\text{V}$	0,4 A	1,5 A	7 A	Not available
$U_e \leq 440\text{V}$	Not available	0,2 A	1 A	Not available
$U_e \leq 600\text{V}$	Not available	Not available	0,6 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	8 A	12 A	15 A	Not available
Ue ≤ 48V	8 A	12 A	15 A	Not available
Ue ≤ 60V	5 A	10 A	14 A	Not available
Ue ≤ 125V	1,5 A	5,5 A	9 A	Not available
Ue ≤ 220V	0,4 A	0,7 A	2,5 A	Not available
Ue ≤ 440V	Not available	Not available	0,3 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 : 58 mm (2.28 in)

Width : 45 mm (1.77 in)

Depth : 52 mm (2.05 in)

Weight : 194 g

Standards

IEC 60947-1

UL 508

Certifications

CE, UL, UL-NOM, IRAM 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).