

# DATASHEET

## Contactors



### Main Features



Reference	: CWM
Product code	: 10451872
Rated current Ie AC-3 (Ue ≤ 440 V)	: 105 A
Main contacts (power)	: 3 NO
Auxiliary contacts	: No auxiliary contacts
Control voltage	: 20V 50Hz/24V 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	: 8 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 million
Number of coil terminals (AC Coil)	
AC coil contactors	: 3
- DC coil contactors	: 3
Resistance to vibration (IEC 60068-2-6)	
opened contactor	: 3 g
closed contactor	: 3 g
Resistance to mechanical shock (½ sinusoid = 11ms)	
opened contactor	: 6 g
closed contactor	: 10 g
Installation	: Not available
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...660 V
Command circuit operation limits		
- control circuit 60 Hz	- pick up	: 0,5...0,76xUs
	- drop out	: 0,25...0,6xUs
- control circuit 50 Hz	- pick up	: 0,5...0,76xUs
	- drop out	: 0,25...0,6xUs
- Average coil consumption		
- operating at 60 Hz	- closed magnetic circuit	: 16,8...25 VA
	- power factor (cos φ)	: 0,32
	- Thermal power dissipated	: 8 W
	- closing the magnetic circuit	: 295 VA
- operating at 50 Hz	- closed magnetic circuit	: 16,8...25 VA
	- power factor (cos φ)	: 0,32
	- Thermal power dissipated	: 8 W
	- closing the magnetic circuit	: 295 VA
Average time of operation		
- closing the NO contacts		: 15...30 ms
- opening the NO contacts		: 9...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)	: 105 A

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- AC-4 (U <sub>e</sub> ≤ 440 V)	: 50 A
- AC-1 (θ ≤ 55 °C, U <sub>e</sub> ≤ 690 V)	: 140 A
Rated utilization voltage U <sub>e</sub>	
- IEC / UL	: 1000 V / 600 V
Number of main contacts	: 3 NO
Establishment capacity (IEC 60947)	: 1280 A
Breaking capacity (IEC/EN 60947)	
- U <sub>e</sub> ≤400V	: 1050 A
- U <sub>e</sub> =500V	: 1050 A
- U <sub>e</sub> =690V	: 950 A
Temporary permissible current (without previously current conduction during 15 min at θ ≤ 40 °C)	
- 1 sec	: 3300 A
- 1 sec	: 1050 A
- 1 sec	: 1050 A
- 1 min	:
- 10 min	: Not available
Protection against short circuit of the contacts main fuse (gL/gG)	
- @600V - UL/CSA	: 10 kA
- type 1 coordination	: 250 A
- type 2 coordination	: 200 A
Average power dissipated per pole	
AC-1 (θ ≤ 55 °C, U <sub>e</sub> ≤ 690 V)	: 14.9 W
AC-3 (U <sub>e</sub> ≤ 440 V)	: 8.4 W
<b>Utilization category AC-3</b>	
Rated current I <sub>e</sub> (θ ≤ 55 °C)	
- U <sub>e</sub> ≤ 440V	: 105 A
- U <sub>e</sub> ≤ 500V	: 85 A
- U <sub>e</sub> ≤ 690V	: 67 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	30 kW	40 cv
380 / 400 V	55 kW	75 cv
415 / 440 V	59 kW	79 cv
500 V	59 kW	79 cv
660 / 690 V	65 kW	90 cv

Orientative values of power (UL)

Voltage	1 Phase	3 Phase
120 V	10	Not available
200 V	Not applicable	30
208 V	Not available	Not available
240 V	20	30
480 V	Not available	75
600 V	Not available	75

### Utilization category AC-4

Rated current I<sub>e</sub> (θ ≤ 55 °C)

- U <sub>e</sub> ≤ 440V	: 50 A
- U <sub>e</sub> ≤ 500V	: Not available
- U <sub>e</sub> ≤ 690V	: 50 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	11 kW	15 HP
380 / 400 V	22 kW	30 HP
415 / 440 V	30 kW	40 HP
500 V	30 kW	40 HP
660 / 690 V	30 kW	40 HP

### Utilization category AC-1 (3 P/NA)

Maximum percentage (600 ops./h)

: 1

Maximum power operation θ ≤ 55°C (three resistors)

Voltage	Power
220 / 240 V	53 kW
380 / 400 V	92 kW
415 / 440 V	106.5 kW
500 V	121 kW
660 / 690 V	160 kW

### Auxiliary contacts

Standards compliance	: Not available
Insulation voltage U <sub>i</sub>	
- IEC / UL	: Not available / Not available

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Rated utilization voltage  $U_e$   
 - IEC / UL : Not available / Not available  
 Conventional thermal current  $I_{th}$  ( $\theta \leq 55^\circ\text{C}$ ) : Not available  
 Rated current  $I_e$  - IEC 60947-5-1/AC-15  
 - 220 / 240 V : Not available  
 - 380 / 440 V : Not available  
 - 500 V : Not available  
 - 660 / 690 V : Not available  
 Rated current  $I_e$  - IEC 60947-5-1/DC-13  
 - 24 V : Not available  
 - 48 V : Not available  
 - 110 V : Not available  
 - 220 V : Not available  
 - 440 V : Not available  
 Establishment capacity - (AC-15 and  $U_e \leq 690\text{V}$  50/60Hz) : Not available  
 Interruption capacity - (AC-15 and  $U_e \leq 400\text{V}$  50/60Hz) : Not available  
 Protection against short circuit of the contacts main fuse (gL/gG) : Not available  
 Control circuit reliability : Not available  
 Electrical lifespan : Not available  
 Mechanical lifespan : Not available  
 Non-overlapping time between NO and NC contacts : Not available  
 Impedance per pole : Not available

### Connection

Main contacts  
 Type of the screw : M10 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 contain	2 x
Flexible cable with terminal	1 x Not contain	1 x
	2 x Not contain	2 x

Tightening torque (IEC/UL) : 5...6.5 Nm / 60 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 0,5...4 mm <sup>2</sup>	1 x
	2 x 0,5...2,5 mm <sup>2</sup>	2 x
Flexible cable without terminal	1 x 1...4 mm <sup>2</sup>	1 x
	2 x 1...2,5 mm <sup>2</sup>	2 x
Flexible cable with terminal	1 x 0,5...4 mm <sup>2</sup>	1 x
	2 x 0,5...2,5 mm <sup>2</sup>	2 x

Tightening torque (IEC/UL) : 0,8...1,1 Nm / Not available

### 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
$U_e \leq 24\text{V}$	80 A	140 A	140 A	Not available
$U_e \leq 48\text{V}$	70 A	140 A	140 A	Not available
$U_e \leq 60\text{V}$	65 A	140 A	140 A	Not available
$U_e \leq 125\text{V}$	16 A	110 A	140 A	Not available
$U_e \leq 220\text{V}$	2 A	20 A	140 A	Not available
$U_e \leq 440\text{V}$	0.8 A	2 A	15 A	Not available
$U_e \leq 600\text{V}$	Not available	1 A	7.5 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
$U_e \leq 24\text{V}$	65 A	105 A	105 A	Not available
$U_e \leq 48\text{V}$	45 A	105 A	105 A	Not available
$U_e \leq 60\text{V}$	35 A	105 A	105 A	Not available
$U_e \leq 125\text{V}$	3 A	85 A	105 A	Not available
$U_e \leq 220\text{V}$	0.8 A	7 A	95 A	Not available
$U_e \leq 440\text{V}$	Not available	1 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	65 A	105 A	105 A	Not available
Ue ≤ 48V	45 A	105 A	105 A	Not available
Ue ≤ 60V	35 A	105 A	105 A	Not available
Ue ≤ 125V	1.2 A	80 A	95 A	Not available
Ue ≤ 220V	0.5 A	4 A	7 A	Not available
Ue ≤ 440V	Not available	Not available	1 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 : 117 mm (4.61 in)

Width : 75 mm (2.95 in)

Depth : 126 mm (4.96 in)

Weight : 1.46 kg

### Standards

IEC 60947-1

UL 508

### Certifications

CE, UL, UL-NOM, IRAM, BUREAU VERITAS 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).

