



Main Features

Reference	: CWM
Product code	: 10409928
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	: 1000 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	: 12 million
Electrical lifespan - Ie AC3	: 1,5 million
Number of coil terminals (AC Coil)	
AC coil contactors	: 4
- DC coil contactors	: 4
Resistance to vibration (IEC 60068-2-6)	
opened contactor	: 3 g
closed contactor	: 3 g
Resistance to mechanical shock (½ sinusoid = 11ms)	
opened contactor	: 8 g
closed contactor	: 12 g
Installation	: Not available
Degree of protection (IEC 60529)	
Main circuit	: IP20
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	: 0,4...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	: 5,5...9,3 VA
	- power factor (cos φ)	: 0,28
	- Thermal power dissipated	: 2,6 W
	- closing the magnetic circuit	: 70 VA
- operating at 50 Hz	- closed magnetic circuit	: 5,5...9,3 A
	- power factor (cos φ)	: 0,28
	- Thermal power dissipated	: 2,6 W
	- closing the magnetic circuit	: 70 VA
Average time of operation		
- closing the NO contacts		: 8...20 ms
- opening the NO contacts		: 6...13 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

DATASHEET

Contactors



- AC-4 ($U_e \leq 440$ V)	: 5 A
- AC-1 ($\theta \leq 55$ °C, $U_e \leq 690$ V)	: 25 A
Rated utilization voltage U_e	
- IEC / UL	: 690 V / 600 V
Number of main contacts	: 3 NO
Establishment capacity (IEC 60947)	: 300 A
Breaking capacity (IEC/EN 60947)	
- $U_e=400$ V	: 250 A
- $U_e=500$ V	: 250 A
- $U_e=690$ V	: 130 A
Temporary permissible current (without previously current conduction during 15 min at $\theta \leq 40$ °C)	
- 1 sec	: 455 A
- 10 sec	: 144 A
- 10 sec	: 144 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	: 50 A
- type 2 coordination	: 25 A
Average power dissipated per pole	
AC-1 ($\theta \leq 55$ °C, $U_e \leq 690$ V)	: 1,5 W
AC-3 ($U_e \leq 440$ V)	: 0,2 W
Utilization category AC-3	
Rated current I_e ($\theta \leq 55$ °C)	
- $U_e \leq 440$ V	: 9 A
- $U_e \leq 500$ V	: 7,5 A
- $U_e \leq 690$ V	: 7 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	5,5 kW	7,5 HP

Orientative values of power (UL)		
Voltage	1 Phase	3 Phase
120 V	0.75	Not available
200 V	Not applicable	3
208 V	Not available	Not available
240 V	1.5	3
480 V	Not available	5
600 V	Not available	7.5

Utilization category AC-4

Rated current I_e ($\theta \leq 55$ °C)

- $U_e \leq 440$ V	: 5 A
- $U_e \leq 500$ V	: Not available
- $U_e \leq 690$ V	: 5 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	1,1 kW	1,5 HP
380 / 400 V	2,2 kW	3 HP
415 / 440 V	2,2 kW	3 HP
500 V	3 kW	4 HP
660 / 690 V	3 kW	4 HP

Utilization category AC-1 (3 P/NA)

Maximum percentage (600 ops./h)

: 1

Maximum power operation $\theta \leq 55$ °C (three resistors)	
Voltage	Power
220 / 240 V	9,5 kW
380 / 400 V	16,5 kW
415 / 440 V	18 kW
500 V	21,5 kW
660 / 690 V	28.5 kW

Auxiliary contacts

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

DATASHEET

Contactors



Rated utilization voltage U_e
 - IEC / UL : 690 V / 600 V
 Conventional thermal current I_{th} ($\theta \leq 55^\circ\text{C}$) : 20 A
 Rated current I_e - IEC 60947-5-1/AC-15
 - 220 / 240 V : 10 A
 - 380 / 440 V : 5 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 : 0,35 A
 Establishment capacity - (AC-15 and $U_e \leq 690\text{V } 50/60\text{Hz}$) : 10 x I_e
 Interruption capacity - (AC-15 and $U_e \leq 400\text{V } 50/60\text{Hz}$) : 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 : 1,5 ms
 Impedance per pole : 1.28 m Ω

Connection

Main contacts

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...6 mm ²	1 x
	2 x 0,5...6 mm ²	2 x
Flexible cable without terminal	1 x 1...6 mm ²	1 x
	2 x 2,5...6 mm ²	2 x
Flexible cable with terminal	1 x 0,5...4 mm ²	1 x
	2 x 0,5...2,5mm ²	2 x

Tightening torque (IEC/UL) : 1...1.5 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 0,5...4 mm ²	1 x
	2 x 0,5...2,5 mm ²	2 x
Flexible cable without terminal	1 x 1...4 mm ²	1 x
	2 x 1...2,5 mm ²	2 x
Flexible cable with terminal	1 x 0,5...4 mm ²	1 x
	2 x 0,5...2,5 mm ²	2 x

Tightening torque (IEC/UL) : 0,8...1,1 Nm / 10 lb.in

Direct current application

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

Voltage	Rated utilization current (I_e)			
	Pole(s) in series			
	1	2	3	4
$U_e \leq 24\text{V}$	18 A	25 A	25 A	25 A
$U_e \leq 48\text{V}$	15 A	25 A	25 A	25 A
$U_e \leq 60\text{V}$	12 A	25 A	25 A	25 A
$U_e \leq 125\text{V}$	6 A	18 A	25 A	25 A
$U_e \leq 220\text{V}$	0.8 A	7.5 A	25 A	25 A
$U_e \leq 440\text{V}$	0,4 A	0.8 A	8 A	15 A
$U_e \leq 600\text{V}$	Not available	0,4 A	4 A	8 A

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

Voltage	Rated utilization current (I_e)			
	Pole(s) in series			
	1	2	3	4
$U_e \leq 24\text{V}$	12 A	18 A	18 A	Not available
$U_e \leq 48\text{V}$	9 A	18 A	18 A	Not available
$U_e \leq 60\text{V}$	7.5 A	18 A	18 A	Not available
$U_e \leq 125\text{V}$	2 A	10 A	15 A	Not available
$U_e \leq 220\text{V}$	0,6 A	2 A	12 A	Not available
$U_e \leq 440\text{V}$	Not available	0,3 A	1,5 A	Not available
$U_e \leq 600\text{V}$	Not available	Not available	0,8 A	Not available

DATASHEET

Contactors



Operation category DC-5 ($L/R \leq 15\text{ms}$)

Voltage	Rated utilization current (I_e)			
	Pole(s) in series			
	1	2	3	4
$U_e \leq 24\text{V}$	12 A	18 A	18 A	18 A
$U_e \leq 48\text{V}$	9 A	18 A	18 A	18 A
$U_e \leq 60\text{V}$	7.5 A	18 A	18 A	18 A
$U_e \leq 125\text{V}$	0,8 A	5 A	15 A	15 A
$U_e \leq 220\text{V}$	Not available	0,8 A	3 A	10 A
$U_e \leq 440\text{V}$	Not available	Not available	0.4 A	1.5 A
$U_e \leq 600\text{V}$	Not available	Not available	Not available	0.5 A

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 : 81 mm (3.19 in)

Width : 45 mm (1.77 in)

Depth : 87 mm (3.43 in)

Weight : 300 g

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 ($0.90 \times 0.80 \times I_e$ and U_i) and from 4000 to 5000 m ($0.80 \times 0.75 \times I_e$ and U_i).