# DATASHEET
## Contactors



## Main Features

| | |
|---|---|
| Reference | : CWB |
| Product code | : 13860289 |
| Rated current Ie AC-3 (Ue ≤ 440 V) | : 50 A |
| Main contacts (power) | : 3 NO |
| Auxiliary contacts | : 1 NO + 1 NC |
| Control voltage | : 230V 50/60Hz |
| 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 | | : 6 kV |
| - Frequency limits [1] | | : 25 Hz ... 400 Hz |
| - Mechanical lifespan | | |
| AC-operated contactor | | : 6 million |
| DC-operated contactor | | : 6 million |
| Electrical lifespan - Ie AC3 | | : 1.6 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) | | : 1000 V / 600 V |
| - IEC / UL | | |
| Standard voltages for 50/60 Hz | | : 12...550 V |
| Comand 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 | : 14...21 VA |
| | - power factor (cos φ) | : 0.28 |
| | - Thermal power dissipated | : 4...5,5 W |
| | - closing the magnetic circuit | : 148...222 VA |
| - operating at 50 Hz | - closed magnetic circuit | : 22...32 VA |
| | - power factor (cos φ) | : 0.25 |
| | - Thermal power dissipated | : 5.5...7.8 W |
| | - closing the magnetic circuit | : 162...242 VA |
| Average time of operation | | |
| - closing the NO contacts | | : 10...15 ms |
| - opening the NO contacts | | : 8...12 ms |

**Direct current - command circuit**

| | |
|---|---|
| - IEC / UL | |
| Standard voltages | : |
| Comand 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) | : 50 A |

- AC-4 (Ue ≤ 440 V) : 18,5 A
- AC-1 (θ ≤ 55 °C, Ue ≤ 690 V) : 90 A

Rated utilization voltage Ue
- IEC / UL : 1000 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 ºC)
- 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 coordenation : 100 A
- type 2 coordenation : 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 ºC)
- Ue ≤ 440V : 50 A
- Ue ≤ 500V : 45 A
- Ue ≤ 690V : 35 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 | 15 kW | 20 cv |
| 380 / 400 V | 22 kW | 29 cv |
| 415 / 440 V | 30 kW | 40 cv |
| 500 V | 30 kW | 40 cv |
| 660 / 690 V | 33 kW | 44 cv |

| Orientative values of power (UL) | | |
|---|---|---|
| Voltage | 1 Phase | 3 Phase |
| 120 V | 3 | Not available |
| 200 V | Not applicable | 15 |
| 208 V | Not available | Not available |
| 240 V | 10 | 20 |
| 480 V | Not available | 40 |
| 600 V | Not available | 40 |

**Utilization category AC-4**

Rated current Ie (θ ≤ 55 ºC)
- Ue ≤ 440V : 18,5 A
- Ue ≤ 500V : 23,5 A
- Ue ≤ 690V : 18 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 | 5.5 kW | 7.4 cv |
| 380 / 400 V | 11 kW | 14.7 HP |
| 415 / 440 V | 11 kW | 14,7 HP |
| 500 V | 15 kW | 20.1 HP |
| 660 / 690 V | 15 kW | 20.1 cv |

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

Maximum percentage (600 ops./h) : 1

| Maximum power operation θ ≤ 55ºC (three resistors) | |
|---|---|
| Voltage | Power |
| 220 / 240 V | 34 kW |
| 380 / 400 V | 59 kW |
| 415 / 440 V | 68.5 kW |
| 500 V | 77 kW |
| 660 / 690 V | 100 kW |

**Auxiliary contacts**

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

| | |
|---|---|
| Rated utilization voltage Ue | |
| - IEC / UL | : 690 V / 690 V |
| Conventional thermal current Ith (θ ≤ 55ºC) | : 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 ≤ 690V 50/60Hz) | : 10 x Ie |
| Interruption capacity - (AC-15 and Ue ≤ 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 mΩ |

**Connection**

Main contacts

Type of the screw : M6 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 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 1...4 mm² | 1 x |
| | 2 x 1...4 mm² | 2 x |
| Flexible cable without terminal | 1 x 1...4 mm² | 1 x |
| | 2 x 1...4 mm² | 2 x |
| Flexible cable with terminal | 1 x 1...4 mm² | 1 x |
| | 2 x 1...2,5 mm² | 2 x |

Tightening torque (IEC/UL) : 1 Nm / 8.8 lb.in

**Direct current application**

Utilization category DC-1 (L/R ≤ 1 ms)

| | Rated utilization current (Ie) | | | |
|---|---|---|---|---|
| | Pole(s) in series | | | |
| Voltage | 1 | 2 | 3 | 4 |
| Ue ≤ 24V | 50 A | 50 A | 50 A | Not available |
| Ue ≤ 48V | 00019 | 50 A | 50 A | Not available |
| Ue ≤ 60V | 50 A | 50 A | 50 A | Not available |
| Ue ≤ 125V | 10 A | 50 A | 60 A | Not available |
| Ue ≤ 220V | 2 A | 10 A | 50 A | Not available |
| Ue ≤ 440V | 1 A | 2 A | 10 A | Not available |
| Ue ≤ 600V | Not available | 1 A | 2 A | Not available |

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

| | Rated utilization current (Ie) | | | |
|---|---|---|---|---|
| | Pole(s) in series | | | |
| Voltage | 1 | 2 | 3 | 4 |
| Ue ≤ 24V | 45 A | 45 A | 45 A | Not available |
| Ue ≤ 48V | 45 A | 45 A | 45 A | Not available |
| Ue ≤ 60V | 45 A | 45 A | 45 A | Not available |
| Ue ≤ 125V | 5 A | 45 A | 54 A | Not available |
| Ue ≤ 220V | 1 A | 5 A | 45 A | Not available |
| Ue ≤ 440V | Not available | 1 A | 5 A | Not available |
| Ue ≤ 600V | Not available | Not available | 1 A | Not available |

Operation category DC-5 (L/R ≤ 15ms)

| | Rated utilization current (Ie) | | | |
|---|---|---|---|---|
| | Pole(s) in series | | | |
| Voltage | 1 | 2 | 3 | 4 |
| Ue ≤ 24V | 45 A | 45 A | 45 A | Not available |
| Ue ≤ 48V | 45 A | 45 A | 45 A | Not available |
| Ue ≤ 60V | 45 A | 45 A | 45 A | Not available |
| Ue ≤ 125V | 5 A | 45 A | 54 A | Not available |
| Ue ≤ 220V | 1 A | 5 A | 45 A | Not available |
| Ue ≤ 440V | Not available | 1 A | 5 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 : 115 mm (4.53 in)
Width : 54 mm (2.13 in)
Depth : 120.7 mm (4.75 in)
Weight : 0.91 kg

**Standards**

IEC 60947-1
UL 508

**Certifications**

CE

**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).