

# DATASHEET

## Contactors



### Main Features

|                                    |                |
|------------------------------------|----------------|
| Reference                          | : CWB          |
| Product code                       | : 12945215     |
| Rated current Ie AC-3 (Ue ≤ 440 V) | : 18 A         |
| Main contacts (power)              | : 3 NO         |
| Auxiliary contacts                 | : 1 NO + 1 NC  |
| Control voltage                    | : 120V 50/60Hz |
| 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               | : 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                       | : 00015                |
| 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            | : 12...550 V                                 |
| Command 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 : 6...9 VA         |
|   | - power factor (cos φ) : 0.27                |
|   | - Thermal power dissipated : 1,5...2,5 W     |
|   | - closing the magnetic circuit : 60...90 VA  |
| - operating at 50 Hz                      | - closed magnetic circuit : 7,2...10,8 VA    |
|   | - power factor (cos φ) : 0.24                |
|   | - Thermal power dissipated : 1,5...2,5 W     |
|   | - closing the magnetic circuit : 72...108 VA |
| Average time of operation                 |  |
| - closing the NO contacts                 | : 15...25 ms                                 |
| - opening the NO contacts                 | : 8...12 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)          | : 18 A |

# DATASHEET

## Contactors



|  |                 |
|--|-----------------|
| - AC-4 (Ue ≤ 440 V)  | : 8,5 A         |
| - AC-1 (θ ≤ 55 °C, Ue ≤ 690 V)   | : 32 A          |
| Rated utilization voltage Ue   |                 |
| - IEC / UL   | : 690 V / 600 V |
| Number of main contacts  | : 3 NO          |
| Establishment capacity (IEC 60947)   | : 300 A         |
| Breaking capacity (IEC/EN 60947)   |                 |
| - Ue≤400V  | : 300 A         |
| - Ue=500V  | : 250 A         |
| - Ue=690V  | : 180 A         |
| Temporary permissible current (without previously current conduction during 15 min at θ ≤ 40 °C) |                 |
| - 1 sec  | : 240 A         |
| - 1 sec  | : 145 A         |
| - 1 sec  | : 145 A         |
| - 1 min  | :               |
| - 10 min   | : 40 A          |
| Protection against short circuit of the contacts main fuse (gL/gG)                               |                 |
| - @600V - UL/CSA   | : 5 kA          |
| - type 1 coordination  | : 35 A          |
| - type 2 coordination  | : Not available |
| Average power dissipated per pole  |                 |
| AC-1 (θ ≤ 55 °C, Ue ≤ 690 V)   | : 2,5 W         |
| AC-3 (Ue ≤ 440 V)  | : 0,8 W         |
| <b>Utilization category AC-3</b>   |                 |
| Rated current Ie (θ ≤ 55 °C)   |                 |
| - Ue ≤ 440V  | : 18 A          |
| - Ue ≤ 500V  | : 15,8 A        |
| - Ue ≤ 690V  | : 12,8 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 | 4,5 kW | 6 HP     |
| 380 / 400 V | 7,5 kW | 10 HP    |
| 415 / 440 V | 9,2 kW | 12,5 HP  |
| 500 V       | 10 kW  | 13,4 HP  |
| 660 / 690 V | 11 kW  | 15 HP    |

Orientative values of power (UL)

| Voltage | 1 Phase        | 3 Phase       |
|---------|----------------|---------------|
| 120 V   | 1              | Not available |
| 200 V   | Not applicable | 5             |
| 208 V   | Not available  | Not available |
| 240 V   | 3              | 5             |
| 480 V   | Not available  | 10            |
| 600 V   | Not available  | 15            |

### Utilization category AC-4

Rated current Ie (θ ≤ 55 °C)

|             |         |
|-------------|---------|
| - Ue ≤ 440V | : 8,5 A |
| - Ue ≤ 500V | : 7,5 A |
| - Ue ≤ 690V | : 5,4 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 | 2,2 kW | 2,9 HP   |
| 380 / 400 V | 4 kW   | 5,4 HP   |
| 415 / 440 V | 3,7 kW | 5 HP     |
| 500 V       | 5 kW   | 6,7 HP   |
| 660 / 690 V | 5 kW   | 6,7 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 | 12 kW   |
| 380 / 400 V | 21 kW   |
| 415 / 440 V | 24,5 kW |
| 500 V       | 27,5 kW |
| 660 / 690 V | 36,5 kW |

### Auxiliary contacts

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

# DATASHEET

## Contactors



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 $\Omega$

### 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 1...6 mm <sup>2</sup> | 1 x          |
|                                 | 2 x 1...6 mm <sup>2</sup> | 2 x          |
| Flexible cable without terminal | 1 x 1...6 mm <sup>2</sup> | 1 x          |
|                                 | 2 x 1...6 mm <sup>2</sup> | 2 x          |
| Flexible cable with terminal    | 1 x 1...6 mm <sup>2</sup> | 1 x          |
|                                 | 2 x 1...4 mm <sup>2</sup> | 2 x          |

Tightening torque (IEC/UL) : 1.7 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 1...4 mm <sup>2</sup>   | 1 x          |
|                                 | 2 x 1...4 mm <sup>2</sup>   | 2 x          |
| Flexible cable without terminal | 1 x 1...4 mm <sup>2</sup>   | 1 x          |
|                                 | 2 x 1...4 mm <sup>2</sup>   | 2 x          |
| Flexible cable with terminal    | 1 x 1...4 mm <sup>2</sup>   | 1 x          |
|                                 | 2 x 1...2,5 mm <sup>2</sup> | 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             |
| $U_e \leq 24\text{V}$  | 25 A                                | 25 A  | 25 A | Not available |
| $U_e \leq 48\text{V}$  | 25 A                                | 25 A  | 25 A | Not available |
| $U_e \leq 60\text{V}$  | 25 A                                | 25 A  | 25 A | Not available |
| $U_e \leq 125\text{V}$ | 4 A                                 | 25 A  | 25 A | Not available |
| $U_e \leq 220\text{V}$ | 1 A                                 | 4 A   | 25 A | Not available |
| $U_e \leq 440\text{V}$ | 0,4 A                               | 1 A   | 4 A  | Not available |
| $U_e \leq 600\text{V}$ | Not available                       | 0,4 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             |
| $U_e \leq 24\text{V}$  | 22 A                                | 22 A          | 22 A  | Not available |
| $U_e \leq 48\text{V}$  | 22 A                                | 22 A          | 22 A  | Not available |
| $U_e \leq 60\text{V}$  | 22 A                                | 22 A          | 22 A  | Not available |
| $U_e \leq 125\text{V}$ | 2 A                                 | 22 A          | 22 A  | Not available |
| $U_e \leq 220\text{V}$ | 0,5 A                               | 2 A           | 22 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 ≤ 15ms)

| Voltage   | Rated utilization current (Ie) |               |               |               |
|-----------|--------------------------------|---------------|---------------|---------------|
|           | Pole(s) in series              |               |               |               |
|           | 1                              | 2             | 3             | 4             |
| Ue ≤ 24V  | 22 A                           | 22 A          | 22 A          | Not available |
| Ue ≤ 48V  | 22 A                           | 22 A          | 22 A          | Not available |
| Ue ≤ 60V  | 22 A                           | 22 A          | 22 A          | Not available |
| Ue ≤ 125V | 2 A                            | 22 A          | 22 A          | Not available |
| Ue ≤ 220V | Not available                  | 2 A           | 22 A          | Not available |
| Ue ≤ 440V | Not available                  | Not available | 1,5 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 : 78,4 mm (3.09 in)

Width : 45 mm (1.77 in)

Depth : 86,9 mm (3.42 in)

Weight : 372 g

### Standards

IEC 60947-1

UL 508

### Certifications

CE, UL, UL-NOM 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).