

# CB 71 1250 to 2000 A



**2 types for each calibre:**

**AC poles**  
CBA 71 1250,  
CBA 71 1600,  
CBA 71 2000.

**DC poles**  
CBC 71 1250,  
CBC 71 1600,  
CBC 71 2000.



**CBA 71 2000 4.0**

## Standard versions

- 1 to 4 single pin main poles with copper contacts for calibre 1250 A (silver pad contact on request) and silver contacts for calibres 1600 and 2000 A.  
Arc-blowout coil operates only during opening.
- Closing electromagnet mounted on the right side of the poles (on request, it can be mounted on the left), solid iron magnetic circuit with 2 coils.
  - control circuit supplied from an AC source via a rectifier and power-saved coils (device mounted and cabled on the contactor).
  - control circuit supplied from a DC source with power-saved coils (device mounted and cabled on the contactor).
- Auxiliary contacts
  - two M type contact blocks with 3 contacts  
3 NO + 3 NC, instant contacts or form to be specified when you order.
  - number of M type contact blocks can be increased to reach 6 blocks.
- Mechanical locking
  - vertical type.

## Options

- Silver pad contact pins for calibre 1250 A.
- NO or NC delayed block TP 86 type (this one also includes 4 free instant contacts, i.e. 3 NO + 1 NF).
- More than 6 M type contact blocks can be mounted on the contactor by mounting them below the contactor to reduce its total dimensions.
- Device to hold the contactor closed in case of untimely micro-cuts for contactors that are not equipped with a mechanical latching.
- Mechanical latching with single or double electrical release (does not change the total dimensions of the contactor).
- Self-protective device for the release coil(s).
- Metallic support for «Ronis type» lock (lock not supplied).
- Horizontal or back-to-back mechanical locking.
- Poles of different calibres and supplied with different currents.
- Poles without magnetic blowout.
- Reinforced insulation.
- Double insulation for specific applications.
- Tropical treatment n° 2.



AC contactors  
Ue up to 1000 V 50/60 Hz

| Alternating current                                                |                         | CBA Type 71            |                       |      |      |                       |      |      |                       |      |      |      |
|--------------------------------------------------------------------|-------------------------|------------------------|-----------------------|------|------|-----------------------|------|------|-----------------------|------|------|------|
|                                                                    |                         | 1250                   |                       |      | 1600 |                       |      | 2000 |                       |      |      |      |
| Thermal nominal current <sup>(1)</sup> AC_1                        | A                       | 1250                   |                       |      | 1600 |                       |      | 2000 |                       |      |      |      |
|                                                                    | connecting section      | mm <sup>2</sup>        | 1000                  |      |      | 1400                  |      |      | 1600                  |      |      |      |
| Nominal insulating voltage                                         |                         | V                      | 1000                  |      |      | 1000                  |      |      | 1000                  |      |      |      |
| Nominal operating voltage 40 to 60 Hz <sup>(5)</sup>               |                         | V                      | 660                   | 1000 |      | 660                   | 1000 |      | 660                   | 1000 |      |      |
| Maximum controlled powers                                          |                         |                        |                       |      |      |                       |      |      |                       |      |      |      |
|                                                                    | voltage                 | V                      | 220                   | 380  | 500  | 220                   | 380  | 500  | 220                   | 380  | 500  |      |
|                                                                    | AC_2 - AC_3 duty cycles | kW                     | 370                   | 630  | 630  | 470                   | 700  | 700  | 600                   | 1000 | 1000 |      |
|                                                                    | AC_23 duty cycles       | kVA                    | 490                   | 840  |      | 620                   | 930  |      | 800                   | 1330 |      |      |
| Maximum operating current                                          |                         |                        |                       |      |      |                       |      |      |                       |      |      |      |
|                                                                    | continuous duty         | A                      | 1250                  |      |      | 1600                  |      |      | 2000                  |      |      |      |
| Short-time current t ≤ 40°C                                        |                         |                        |                       |      |      |                       |      |      |                       |      |      |      |
|                                                                    | 1 s                     | kA                     | 41                    |      |      | 30                    |      |      | 65                    |      |      |      |
|                                                                    | 5 s                     | kA                     | 20                    |      |      | 15                    |      |      | 30                    |      |      |      |
|                                                                    | 10 s                    | kA                     | 13.5                  |      |      | 10.9                  |      |      | 21                    |      |      |      |
|                                                                    | 15 s                    | kA                     | 11.8                  |      |      | 8.7                   |      |      | 17.9                  |      |      |      |
|                                                                    | 30 s                    | kA                     | 7.9                   |      |      | 6                     |      |      | 12                    |      |      |      |
|                                                                    | 1 min                   | kA                     | 5.5                   |      |      | 4.5                   |      |      | 8.5                   |      |      |      |
|                                                                    | 3 min                   | kA                     | 3.3                   |      |      | 3                     |      |      | 5                     |      |      |      |
|                                                                    | 10 min                  | kA                     | 2                     |      |      | 2.2                   |      |      | 3.2                   |      |      |      |
| Thermal nominal current under 400 Hz                               |                         | A                      | 938                   |      |      | 1200                  |      |      | 1500                  |      |      |      |
| Allowable overcurrent / time                                       |                         | kAeff/s                | 25/3                  |      |      | 25/1.6                |      |      | 25/7                  |      |      |      |
| Current switch-off rating <sup>(2)</sup>                           |                         |                        |                       |      |      |                       |      |      |                       |      |      |      |
|                                                                    | voltage                 | V                      | 220/380/440           |      |      | 1100                  |      |      | 220/380/440           |      |      | 1100 |
|                                                                    | cos φ = 0.3             | kA eff                 | 25                    |      |      | 12                    |      |      | 25                    |      |      | 12   |
| Current-switch-on rating                                           |                         | cos φ = 0.3            | 23                    |      |      | 12                    |      |      | 23                    |      |      | 12   |
| CBA poles inductance                                               |                         | H                      | 2.94 10 <sup>-7</sup> |      |      | 2.38 10 <sup>-7</sup> |      |      | 2.82 10 <sup>-7</sup> |      |      |      |
| CBA poles resistance                                               |                         |                        |                       |      |      |                       |      |      |                       |      |      |      |
|                                                                    | cold                    | Ω                      | 5.25 10 <sup>-5</sup> |      |      | 7.19 10 <sup>-5</sup> |      |      | 4.01 10 <sup>-5</sup> |      |      |      |
|                                                                    | hot                     | Ω                      | 5.96 10 <sup>-5</sup> |      |      | 7.55 10 <sup>-5</sup> |      |      | 4.72 10 <sup>-5</sup> |      |      |      |
| Number of openings on load at nominal current                      |                         |                        | 50000                 |      |      | 100000                |      |      | 50000                 |      |      |      |
| Number of openings on load under 380 V before contact replacement: |                         |                        |                       |      |      |                       |      |      |                       |      |      |      |
|                                                                    | for I = 1250 A          |                        | 50000                 |      |      | 150000                |      |      | 150000                |      |      |      |
|                                                                    | for I = 1600 A          |                        | 35000                 |      |      | 100000                |      |      | 100000                |      |      |      |
|                                                                    | for I = 2000 A          |                        |                       |      |      | 50000                 |      |      | 50000                 |      |      |      |
| Mechanical endurance                                               |                         | millions of operations | 1                     |      |      | 1                     |      |      | 1                     |      |      |      |

Control circuit

|                                    |                                  |                     |                                                      |        |  |          |        |  |          |        |  |  |
|------------------------------------|----------------------------------|---------------------|------------------------------------------------------|--------|--|----------|--------|--|----------|--------|--|--|
| Nominal voltage                    |                                  |                     |                                                      |        |  |          |        |  |          |        |  |  |
|                                    | AC 50 Hz                         | V                   | 24 - 48 - 110 - 127 - 220 - 380 - 500 <sup>(4)</sup> |        |  |          |        |  |          |        |  |  |
|                                    | DC                               | V                   | 24 - 48 - 110 - 127 - 220 - 380 - 500 <sup>(4)</sup> |        |  |          |        |  |          |        |  |  |
| Maximum consumptions               |                                  | inrush/hold         |                                                      |        |  |          |        |  |          |        |  |  |
| AC*                                | 1P                               | VA                  | 180/14                                               |        |  | 180/14   |        |  | 180/14   |        |  |  |
|                                    |                                  | VA                  | 380/24                                               |        |  | 380/24   |        |  | 380/24   |        |  |  |
|                                    |                                  | VA                  | 860/50                                               |        |  | 860/50   |        |  | 860/50   |        |  |  |
|                                    |                                  | VA                  | 1700/88                                              |        |  | 1700/88  |        |  | 1700/88  |        |  |  |
| DC                                 | 1P                               | W                   | 165/17.5                                             |        |  | 165/17.5 |        |  | 165/17.5 |        |  |  |
|                                    |                                  | W                   | 360/35                                               |        |  | 360/35   |        |  | 360/35   |        |  |  |
|                                    |                                  | W                   | 836/55                                               |        |  | 836/55   |        |  | 836/55   |        |  |  |
|                                    |                                  | W                   | 1600/110                                             |        |  | 1600/110 |        |  | 1600/110 |        |  |  |
| Constant L/R rate of electromagnet |                                  | open/closed         | ms                                                   | 118/41 |  |          | 118/41 |  |          | 118/41 |  |  |
| Closing time <sup>(6)</sup>        |                                  |                     |                                                      |        |  |          |        |  |          |        |  |  |
|                                    | at Un                            | ms                  | 180                                                  |        |  | 180      |        |  | 180      |        |  |  |
|                                    | at 0.85 Un                       | ms                  | 215                                                  |        |  | 215      |        |  | 215      |        |  |  |
| Opening time <sup>(6)</sup>        |                                  | at Un               | ms                                                   |        |  |          |        |  |          |        |  |  |
|                                    |                                  | between command and |                                                      |        |  |          |        |  |          |        |  |  |
|                                    | - separation of contacts         | ms                  | 60                                                   |        |  | 60       |        |  | 60       |        |  |  |
|                                    | - total opening of electromagnet | ms                  | 82                                                   |        |  | 82       |        |  | 82       |        |  |  |
|                                    | - complete opening               | ms                  | 300                                                  |        |  | 300      |        |  | 300      |        |  |  |

(1) in open air.  
 (2) arcing time < 15 ms.  
 (3) diodes are warranted up to an overload of 3 Un efficient.  
 (4) for other voltages, please consult us.  
 (5) if nominal operation voltage > 1000 V, please consult us.  
 (6) closing time is measured from the supply of the closing coil until contact of main poles. Opening time is measured from the supply of the tripping coil until the separation of main poles.

\* control circuit:  
 Equipments commanded with alternating current are rectified<sup>(3)</sup> and power-saved.

• Temperature factor to be applied to the poles or the current controlled according to the ambient temperature (around the contactor):

|      |               |
|------|---------------|
| 1.04 | 40 < t < 45°C |
| 1.08 | 45 < t ≤ 50°C |
| 1.12 | 50 < t ≤ 55°C |
| 1.19 | 55 < t ≤ 60°C |

• Factor to be applied to the contactor for poles connected in parallel, this factor already includes a safety margin:

|    | 2 poles in parallel   | 3 poles in parallel    |
|----|-----------------------|------------------------|
| AC | I.th 1 pole x 2 x 0.7 | I.th 1 pole x 3 x 0.66 |

• The current switch-off rating of poles connected in parallel remains the same as for a single pole.



DC contactors

U<sub>e</sub>: 600 and up to 2000 V<sub>DC</sub>

| Direct current                                                    |                                  | CBC Type 71                                            |                    |                     |                       |                    |                     |                       |                    |                     |
|-------------------------------------------------------------------|----------------------------------|--------------------------------------------------------|--------------------|---------------------|-----------------------|--------------------|---------------------|-----------------------|--------------------|---------------------|
|                                                                   |                                  | 1250                                                   |                    |                     | 1600                  |                    |                     | 2000                  |                    |                     |
| Thermal nominal current <sup>(1)</sup> DC <sub>1</sub>            | A                                | 1250                                                   |                    |                     | 1600                  |                    |                     | 2000                  |                    |                     |
|                                                                   | connecting section               | mm <sup>2</sup>                                        | 1000               |                     |                       | 1400               |                     |                       | 1600               |                     |
| Nominal insulating voltage <sup>(7)</sup>                         | V                                | 1000                                                   |                    |                     | 1000                  |                    |                     | 1000                  |                    |                     |
| Nominal operating voltage <sup>(5)</sup>                          | V                                | 600                                                    | 700 <sup>(2)</sup> | 1000 <sup>(2)</sup> | 600                   | 700 <sup>(2)</sup> | 1000 <sup>(2)</sup> | 600                   | 700 <sup>(2)</sup> | 1000 <sup>(2)</sup> |
| Maximum operating current                                         |                                  |                                                        |                    |                     |                       |                    |                     |                       |                    |                     |
| permanent duty                                                    | A                                | 1250                                                   |                    |                     | 1600                  |                    |                     | 2000                  |                    |                     |
| 8 hours duty                                                      | A                                | 1250                                                   |                    |                     | 1600                  |                    |                     | 2000                  |                    |                     |
| temporary duty without openings on load                           | 10 minutes                       | 2000                                                   |                    |                     | 2400                  |                    |                     | 3500                  |                    |                     |
|                                                                   | 30 minutes                       | 1400                                                   |                    |                     | 1700                  |                    |                     | 2500                  |                    |                     |
|                                                                   | 60 minutes                       | 1250                                                   |                    |                     | 1600                  |                    |                     | 2000                  |                    |                     |
| temporary duty with openings on load                              | 10 minutes                       | 2400                                                   |                    |                     | 2400                  |                    |                     | 3500                  |                    |                     |
|                                                                   | 30 minutes                       | 1700                                                   |                    |                     | 1700                  |                    |                     | 2500                  |                    |                     |
|                                                                   | 60 minutes                       | 1500                                                   |                    |                     | 1600                  |                    |                     | 2000                  |                    |                     |
| continuous duty                                                   | A                                | 1250                                                   |                    |                     | 1600                  |                    |                     | 2000                  |                    |                     |
| Short-time current t ≤ 40°C                                       |                                  |                                                        |                    |                     |                       |                    |                     |                       |                    |                     |
| 1 s                                                               | kA                               | 41                                                     |                    |                     | 30                    |                    |                     | 65                    |                    |                     |
| 5 s                                                               | kA                               | 20                                                     |                    |                     | 15                    |                    |                     | 30                    |                    |                     |
| 10 s                                                              | kA                               | 13.5                                                   |                    |                     | 10.9                  |                    |                     | 21                    |                    |                     |
| 15 s                                                              | kA                               | 11.8                                                   |                    |                     | 8.7                   |                    |                     | 17.9                  |                    |                     |
| 30 s                                                              | kA                               | 7.9                                                    |                    |                     | 6                     |                    |                     | 12                    |                    |                     |
| 1 min                                                             | kA                               | 5.5                                                    |                    |                     | 4.5                   |                    |                     | 8.5                   |                    |                     |
| 3 min                                                             | kA                               | 3.3                                                    |                    |                     | 3                     |                    |                     | 5                     |                    |                     |
| 10 min                                                            | kA                               | 2                                                      |                    |                     | 2.2                   |                    |                     | 3.2                   |                    |                     |
| Allowable overcurrent / time                                      | kA/s                             | 25/3                                                   |                    |                     | 25/1.6                |                    |                     | 25/7                  |                    |                     |
| Current switch-off rating                                         |                                  |                                                        |                    |                     |                       |                    |                     |                       |                    |                     |
| voltage                                                           | V                                | 550                                                    | 700                | 1000                | 550                   | 700                | 1000                | 550                   | 700                | 1000                |
| one-pole                                                          | kA                               | 23                                                     | 18                 |                     | 23                    | 18                 |                     | 23                    | 18                 |                     |
| bipolar <sup>(2)</sup>                                            | kA                               |                                                        | 23                 | 19                  |                       | 23                 | 19                  |                       | 23                 | 19                  |
| voltage                                                           | V                                | 1500                                                   |                    | 2000                | 1500                  |                    | 2000                | 1500                  |                    | 2000                |
| tripolar <sup>(2)</sup>                                           | kA                               | 19                                                     |                    | 8                   | 19                    |                    | 8                   | 19                    |                    | 8                   |
| tetrapolar <sup>(2)</sup>                                         | kA                               |                                                        |                    | 19                  |                       |                    | 19                  |                       |                    | 19                  |
| Current switch-on rating                                          | L/R = 15 ms                      | kA 25/550 V                                            |                    |                     | 25/550 V              |                    |                     | 25/550 V              |                    |                     |
| Poles inductance                                                  | H                                | 2.94 10 <sup>-7</sup>                                  |                    |                     | 2.38 10 <sup>-7</sup> |                    |                     | 2.82 10 <sup>-7</sup> |                    |                     |
| Poles resistance                                                  | cold                             | Ω 5.25 10 <sup>-5</sup>                                |                    |                     | 7.19 10 <sup>-5</sup> |                    |                     | 4.01 10 <sup>-5</sup> |                    |                     |
|                                                                   | hot                              | Ω 5.96 10 <sup>-5</sup>                                |                    |                     | 7.55 10 <sup>-5</sup> |                    |                     | 4.72 10 <sup>-5</sup> |                    |                     |
| Number of openings on load at nominal current                     |                                  | 50000                                                  |                    |                     | 100000                |                    |                     | 50000                 |                    |                     |
| Number of openings on load under 440 V before contact replacement | for I = 1250 A                   | 50000                                                  |                    |                     | 150000                |                    |                     | 150000                |                    |                     |
|                                                                   | for I = 1600 A                   | 35000                                                  |                    |                     | 100000                |                    |                     | 100000                |                    |                     |
|                                                                   | for I = 2000 A                   |                                                        |                    |                     | 50000                 |                    |                     | 50000                 |                    |                     |
| Mechanical endurance                                              | millions of operations           | 1                                                      |                    |                     | 1                     |                    |                     | 1                     |                    |                     |
| Control circuit                                                   |                                  |                                                        |                    |                     |                       |                    |                     |                       |                    |                     |
| Nominal voltage                                                   | AC 50 Hz                         | V 24 - 48 - 110 - 127 - 220 - 380 - 500 <sup>(4)</sup> |                    |                     |                       |                    |                     |                       |                    |                     |
|                                                                   | DC                               | V 24 - 48 - 110 - 127 - 220 - 440 - 500 <sup>(4)</sup> |                    |                     |                       |                    |                     |                       |                    |                     |
| Maximum consumptions                                              |                                  | inrush/hold                                            |                    |                     |                       |                    |                     |                       |                    |                     |
| AC*                                                               | 1P                               | VA 180/14                                              |                    |                     | 180/14                |                    |                     | 180/14                |                    |                     |
|                                                                   | 2P                               | VA 380/24                                              |                    |                     | 380/24                |                    |                     | 380/24                |                    |                     |
|                                                                   | 3P                               | VA 860/50                                              |                    |                     | 860/50                |                    |                     | 860/50                |                    |                     |
|                                                                   | 4P                               | VA 1700/88                                             |                    |                     | 1700/88               |                    |                     | 1700/88               |                    |                     |
| DC                                                                | 1P                               | W 165/17.5                                             |                    |                     | 165/17.5              |                    |                     | 165/17.5              |                    |                     |
|                                                                   | 2P                               | W 360/35                                               |                    |                     | 360/35                |                    |                     | 360/35                |                    |                     |
|                                                                   | 3P                               | W 836/55                                               |                    |                     | 836/55                |                    |                     | 836/55                |                    |                     |
|                                                                   | 4P                               | W 1600/110                                             |                    |                     | 1600/110              |                    |                     | 1600/110              |                    |                     |
| Constant L/R rate of electromagnet                                | open/closed                      | ms 118/41                                              |                    |                     | 118/41                |                    |                     | 118/41                |                    |                     |
| Closing time <sup>(6)</sup>                                       | at Un                            | ms 180                                                 |                    |                     | 180                   |                    |                     | 180                   |                    |                     |
|                                                                   | at 0.85 Un                       | ms 215                                                 |                    |                     | 215                   |                    |                     | 215                   |                    |                     |
| Opening time <sup>(6)</sup>                                       | at Un                            | ms                                                     |                    |                     |                       |                    |                     |                       |                    |                     |
|                                                                   | between command and              |                                                        |                    |                     |                       |                    |                     |                       |                    |                     |
|                                                                   | - separation of contacts         | ms 60                                                  |                    |                     | 60                    |                    |                     | 60                    |                    |                     |
|                                                                   | - total opening of electromagnet | ms 82                                                  |                    |                     | 82                    |                    |                     | 82                    |                    |                     |
| - complete opening                                                | ms 300                           |                                                        |                    | 300                 |                       |                    | 300                 |                       |                    |                     |

(1) in open air.  
 (2) for applications under voltages > 600 Vdc, please consult our technical department.  
 (3) diodes are warranted up to an overload of 3 Un efficient.  
 (4) for other voltages, please consult us.  
 (5) if nominal operating voltage > 1000 V, please consult us.  
 (6) closing time is measured from the supply of the closing until the contact of main poles. Opening time is measured from the supply of the tripping coil until the separation of main poles.  
 (7) dielectric testing voltage related to a given insulation voltage can reach 8 kV for specific applications.  
 \* control circuit:  
 Equipments commanded with alternating current are rectified<sup>(3)</sup> and power-saved.  
 •The current switch-off rating of poles connected in parallel remains the same as for a single pole.

•Temperature factor to be applied to the poles or the current controlled according to the ambient temperature (around the contactor):

|      |               |
|------|---------------|
| 1.04 | 40 < t < 45°C |
| 1.08 | 45 < t ≤ 50°C |
| 1.12 | 50 < t ≤ 55°C |
| 1.19 | 55 < t ≤ 60°C |

•Factor to be applied to the contactor for poles connected in parallel, this factor already includes a safety margin:

|    |                                  |                                   |
|----|----------------------------------|-----------------------------------|
|    | 2 poles in parallel              | 3 poles in parallel               |
| DC | I <sub>th</sub> 1 pole x 2 x 0.8 | I <sub>th</sub> 1 pole x 3 x 0.75 |

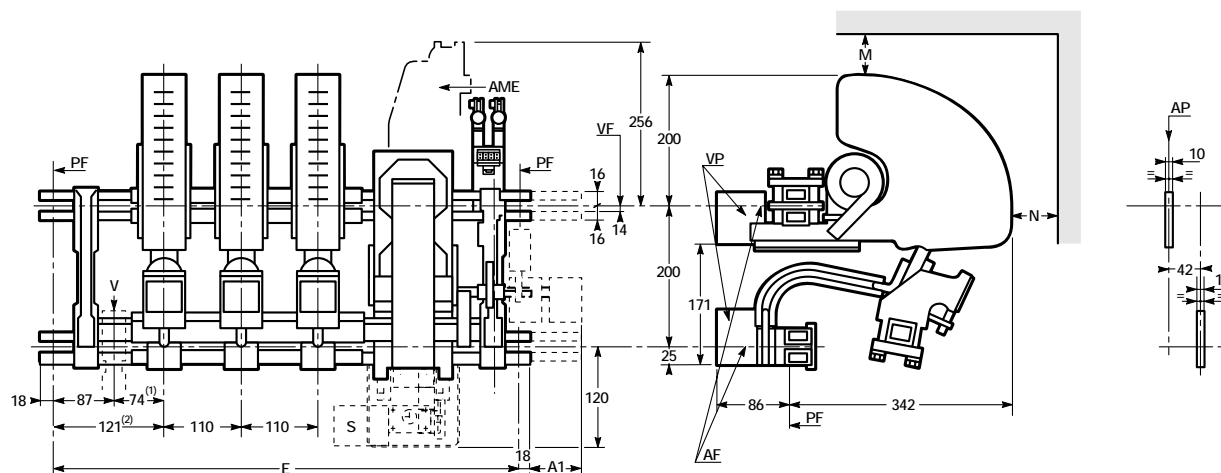
For technical features of opening poles, see p. 70.



AC & DC contactors

CBC:  $U_e$  up to 600 V --- - CBA :  $U_e$  up to 1000 V 50/60 Hz

23. CBA - CBC 71 - 1250 to 2000 x.0<sup>(4)</sup>



1) E attachment centre-to-centre distance

| Number of poles | Locking possibility |        |
|-----------------|---------------------|--------|
|                 | without             | with   |
| 1               | 419 mm              | 459 mm |
| 2               | 529 mm              | 569 mm |
| 3               | 639 mm              | 679 mm |
| 4               | 749 mm              | 789 mm |

2) Protrusion A1

| Number of TR delayed blocks | Number of M blocks <sup>(3)</sup> |        |
|-----------------------------|-----------------------------------|--------|
|                             | 0                                 | 2      |
| 0                           | 3                                 | 48 mm  |
| 0                           | 4                                 | 60 mm  |
| 0                           | 5                                 | 100 mm |
| 0                           | 6                                 | 100 mm |
| 1                           | 1                                 | 21 mm  |
| 1                           | 2                                 | 48 mm  |
| 1                           | 3                                 | 70 mm  |
| 1                           | 4                                 | 110 mm |
| 1                           | 5                                 | 110 mm |

AF: attachment axis.  
AME: mechanical latching with single electrical release (option: double electrical release).  
AP: pole axis.  
PF: attachment plane.  
S: metallic support for "Ronis type" lock for locking the contactor at rest (lock not supplied).  
V: possible mechanical locking, attachment centre-to-centre distance between two superimposed contactors: 625 mm  
VF: attachment screws.  
VP: see connecting sections.

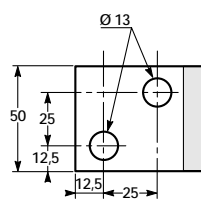
(1) with mechanical locking.  
(2) dimension without locking device.  
(3) block with 2 or 3 contacts.  
(4) x is the number of closing poles.

3) Insulation distance (safety perimeter)

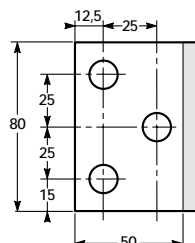
|                 | DC                     |       |       |       |         |       |       |     | AC      |     |         |  |
|-----------------|------------------------|-------|-------|-------|---------|-------|-------|-----|---------|-----|---------|--|
|                 | ≤ 220 V                |       |       |       | < 220 V |       |       |     | ≤ 220 V |     | > 220 V |  |
|                 | Currents to switch-off |       |       |       |         |       |       |     |         |     |         |  |
|                 | ≤ 15 kA                |       |       |       | ≤ 25 kA |       |       |     |         |     |         |  |
| 1 P             |                        | 2 P   |       | 1 P   |         | 2 P   |       | 1 P |         | 2 P |         |  |
| M = N           | M = N                  | M = N | M = N | M = N | M = N   | M = N | M = N | M   | N       | M   | N       |  |
| Metallic walls  | 250                    |       | 400   |       | 400     |       |       | 150 | 150     | 180 | 200     |  |
| Insulated walls | 120                    | 200   | 120   | 250   | 120     | 250   | 120   | 80  | 80      | 90  | 100     |  |

Connecting sections

■ CBA - CBC 1250



■ CBA - CBC 1600/2000

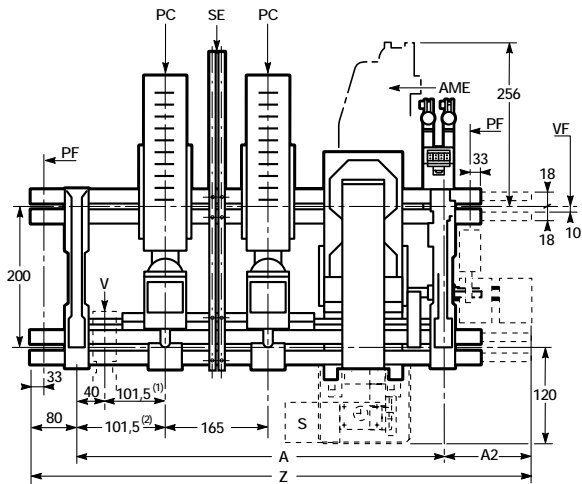


Control circuit: for connection drawings, see p. 144.

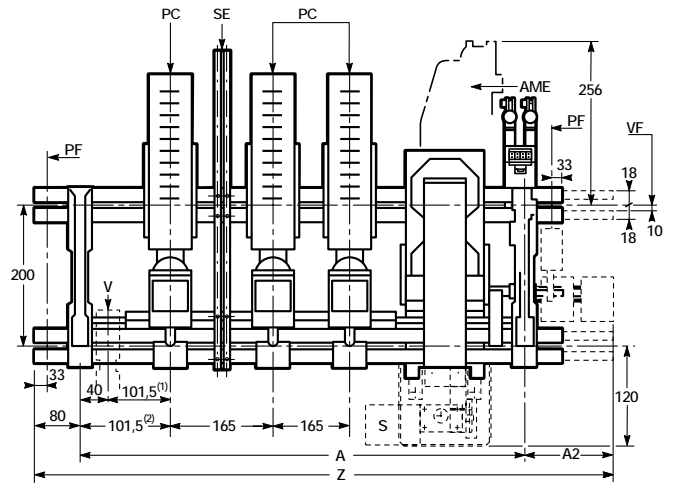


DC contactors CBC Ue: 1000 V  
Double insulation

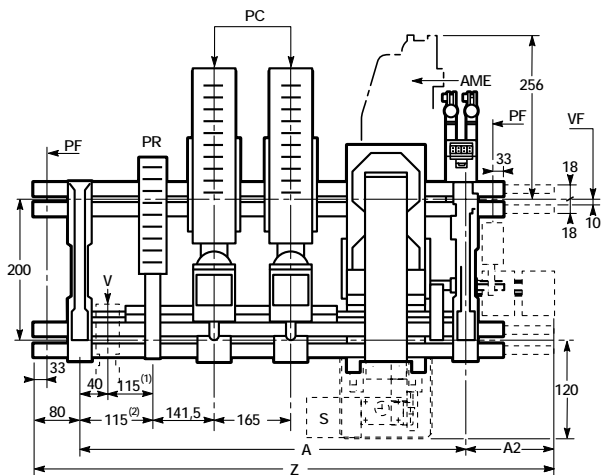
CBC 71 - 1250 to 2000 2.0



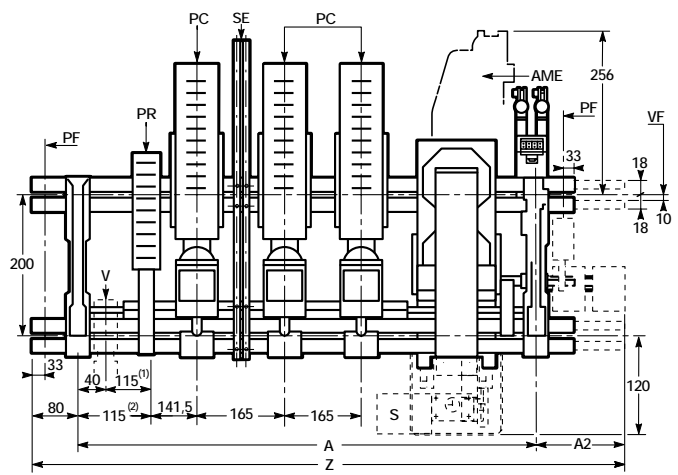
CBC 71 - 1250 to 2000 3.0



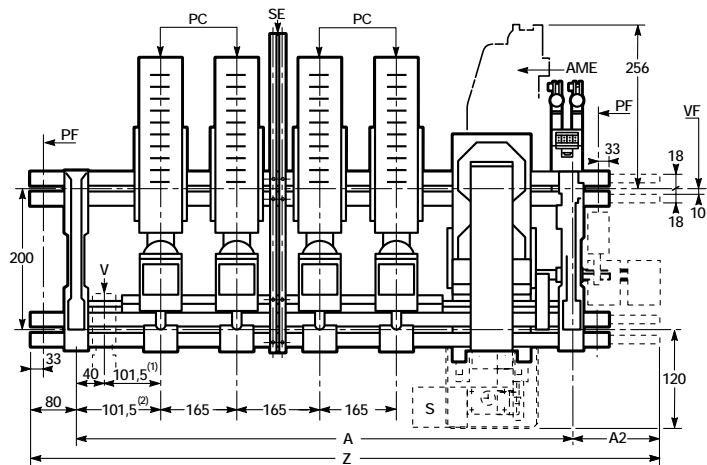
CBC 71 - 1250 to 2000 2.1



CBC 71 - 1250 to 2000 3.1



CBC 71 - 1250 to 2000 4.0



AME: mechanical latching with single electrical release (option: double electrical release).  
PC: closing pole.

PR: rupturing pole 500 A, for calibre 800 and 1000, please consult us.

S: metallic support for "Ronis type" lock for locking the contactor at rest (lock not supplied).

SE: separator.

V: possible mechanical locking, attachment centre-to-centre distance between two superimposed contactors: 625 mm.

VF: attachment screws.

Z: total length of attachment bars  $Z = A + A2 + 80$  mm. On request, length can be increased, in that case, please advise the position of the contactor on the bars.

(1) with possibility of mechanical latching.

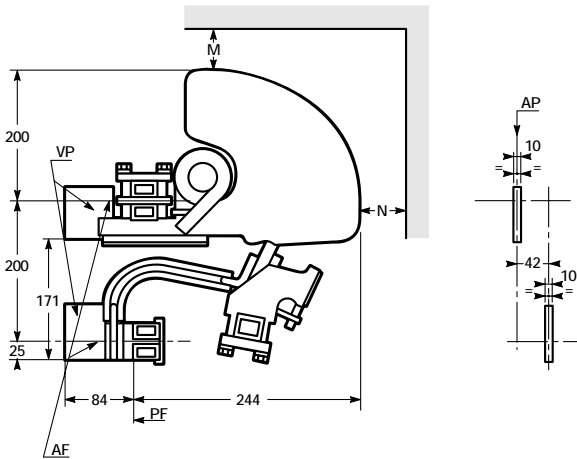
(2) without possibility of mechanical latching.

Control circuit: for connection drawings, see p. 144.



DC contactors Ue: 1000 V  $\overline{\text{---}}$   
Double insulation

PC pole



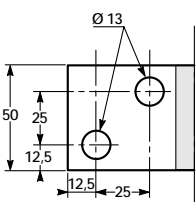
AF: attachment axis.  
AP: pole axis.  
PC: closing pole.  
PF: attachment plane.  
PR: rupturing pole 500 A, for calibre 800 and 1000, please consult us.  
VP: see connecting sections.

Safety perimeter

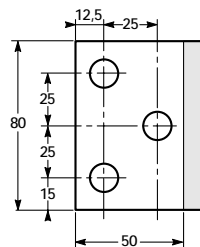
|                 | M   | N   |
|-----------------|-----|-----|
| Metallic walls  | 180 | 200 |
| Insulated walls | 120 | 120 |

Connecting sections

■ CBC 1250

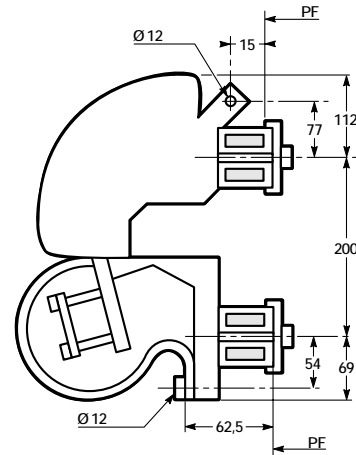


■ CBC 1600/2000



Nota: All these contactors have a double insulation, dielectric testing voltage: 80 kV, 50 Hz for 1 min (for other ratings, consult us).

PR pole



| Number of TR delayed blocks | Number of M blocks <sup>(3)</sup> | A2  |
|-----------------------------|-----------------------------------|-----|
| 0                           | 2                                 | 85  |
| 0                           | 3                                 | 128 |
| 0                           | 4                                 | 140 |
| 0                           | 5                                 | 180 |
| 0                           | 6                                 | 180 |
| 1                           | 1                                 | 101 |
| 1                           | 2                                 | 128 |
| 1                           | 3                                 | 150 |
| 1                           | 4                                 | 190 |
| 1                           | 5                                 | 190 |

(3) block with 2 or 3 contacts.

| Type of contactor           | A<br>Locking possibility |      |
|-----------------------------|--------------------------|------|
|                             | without                  | with |
| CBC 71 - 1250/1600/2000 2.0 | 545                      | 585  |
| CBC 71 - 1250/1600/2000 3.0 | 710                      | 750  |
| CBC 71 - 1250/1600/2000 4.0 | 875                      | 915  |
| CBC 71 - 1250/1600/2000 2.1 | 700                      | 740  |
| CBC 71 - 1250/1600/2000 3.1 | 865                      | 905  |

CBC 71 1250 to 2000 x.x

x.x: 1st figure represents the number of closing poles and 2nd figure the number of opening poles.  
2.0: two-pole break.  
3.0: two-pole break in series on the positive polarity and single-pole break on the negative polarity.  
4.0: two-pole break in series on the positive and negative polarities.  
2.1: two-pole break and rupturing pole 500 A without overlapping between the poles.  
3.1: two-pole break in series on the positive polarity, single-pole break on negative polarity and rupturing pole 500 A without overlapping between poles.

Poles to be connected in series by the customer.

Control circuit: for connection drawings, see p 144.

# Auxiliary contacts

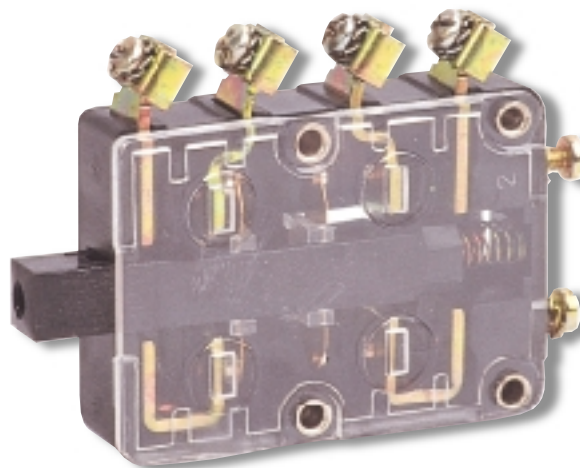


*As for the main poles, the number of auxiliary contacts can vary in a significant way. 3 types of auxiliary contacts blocks exist:*

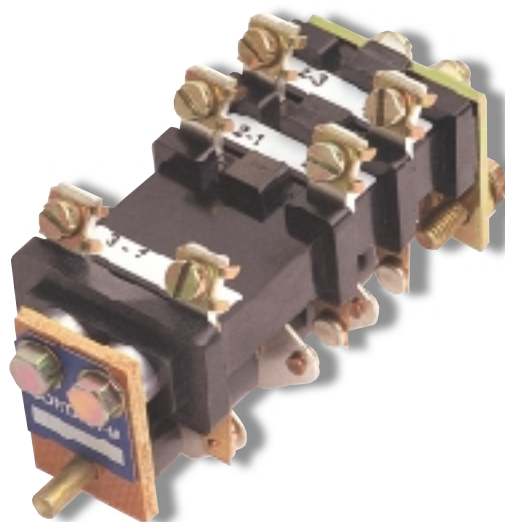
**D type**  
Available only on the 80 to 1000 A range.

**M type**  
Available on all our range of contactors; several configurations are possible to meet all the requirements.

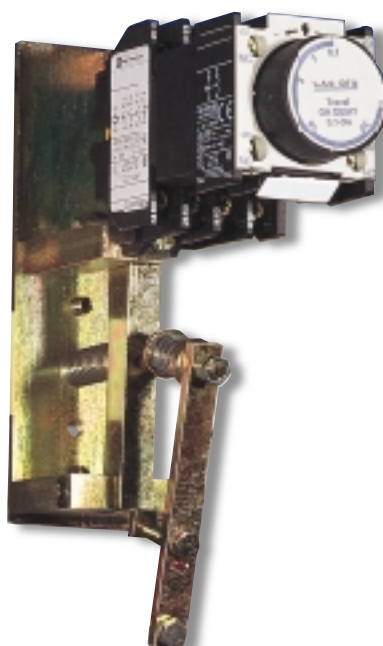
**TP 86 type**  
Delayed blocks available on all our range of contactors:  
-A: delayed at rest,  
-C: delayed at work.



D type block



M type block

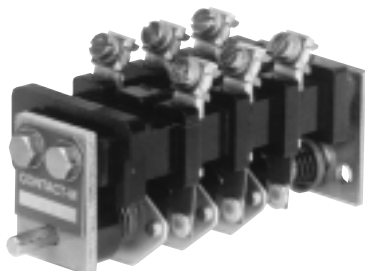


Delayed block



## M type blocks

### 1. Instantanés Type M



Block of 5 (M5) silver pad contacts with double break on closing or opening for 1250 to 5000 A range, on request.

#### Use

On all modular contactors from 80 to 6200 A.

#### Description

- Block of 2 (M2) or 3 (M3) silver pad contacts with double break on closing or opening.
- The flexibility of the fixed support causes a self-cleaning action on the contacts allowing use for low control voltages (24 and 48 V) without risk of failure.

#### Technical features

##### Maximum operating voltage

|    |   |     |
|----|---|-----|
| AC | V | 500 |
| DC | V | 600 |

##### Thermal nominal current

|   |    |
|---|----|
| A | 15 |
|---|----|

##### Current switch-on rating 500 VAC or 600 VDC

|   |    |
|---|----|
| A | 60 |
|---|----|

##### Current switch-off rating under a voltage of

|    |     |     |     |     |     |
|----|-----|-----|-----|-----|-----|
| V  | 110 | 220 | 440 | 500 | 600 |
| AC | A   | 15  | 15  | 15  | 15  |
| DC |     |     |     |     |     |

on resistive circuit

|                      |   |    |    |      |      |     |
|----------------------|---|----|----|------|------|-----|
| 1 contact            | A | 15 | 5  | 1    | 0.75 | 0.6 |
| 2 contacts in series | A |    | 15 | 3.25 | 3    |     |
| 3 contacts in series | A |    |    | 5    | 4.5  |     |

on inductive circuit

L/R = 15 ms

|                      |   |    |     |      |     |     |
|----------------------|---|----|-----|------|-----|-----|
| 1 contact            | A | 7  | 1   | 0.5  | 0.4 | 0.3 |
| 2 contacts in series | A | 15 | 1.5 | 0.75 | 0.7 |     |
| 3 contacts in series | A |    | 8   | 2    | 1.2 |     |

on inductive circuit

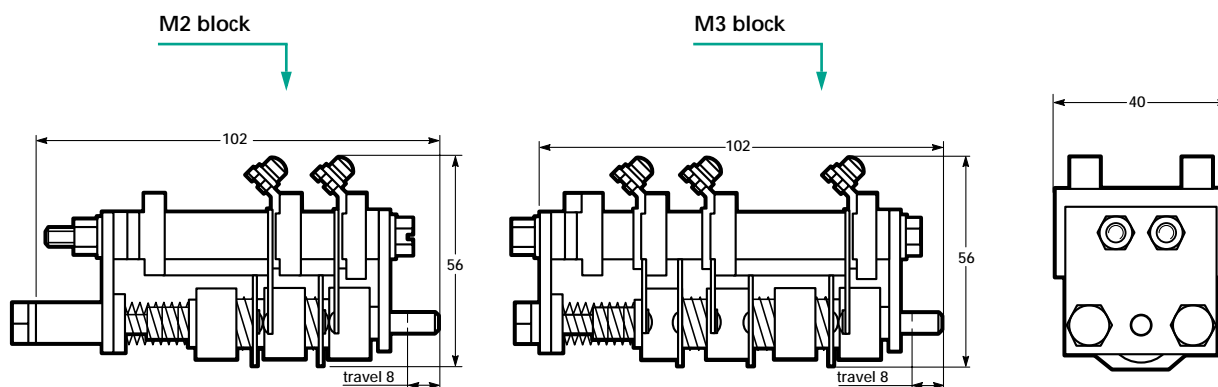
L/R = 40 ms

|                      |   |    |     |      |      |  |
|----------------------|---|----|-----|------|------|--|
| 1 contact            | A | 3  | 0.4 | 0.15 | 0.14 |  |
| 2 contacts in series | A | 15 | 0.7 | 0.6  | 0.4  |  |
| 3 contacts in series | A |    | 2.5 | 0.7  | 0.6  |  |

##### Weight

|    |    |       |
|----|----|-------|
| M2 | kg | 0.210 |
| M3 | kg | 0.260 |

### Dimensions





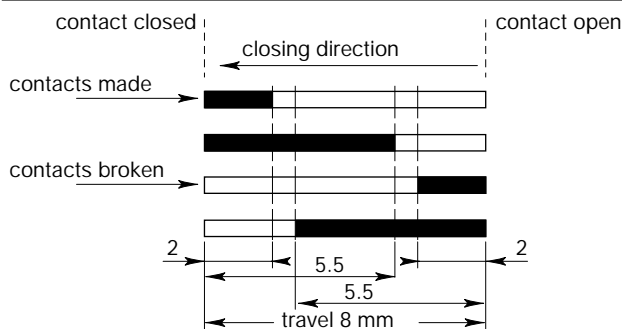


## M type blocks

### Operating diagrams (instant M type)

| Items                         | Diagrams                | Schematics | Items    | Diagrams                | Schematics |
|-------------------------------|-------------------------|------------|----------|-------------------------|------------|
| <b>M type with 2 contacts</b> |                         |            |          |                         |            |
| O2 - Z                        | NO  1<br>NO  2          |            | O2 - Y   | NO  1<br>NO  2          |            |
| F2 - Z                        | NC  1<br>NC  2          |            | F2 - Y   | NC  1<br>NC  2          |            |
| F101 - Z                      | NC  1<br>NO  2          |            | F101 - Y | NC  1<br>NO  2          |            |
| F101 - X                      | NC  1<br>NO  2          |            | F101 - W | NC  1<br>NO  2          |            |
| <b>M type with 3 contacts</b> |                         |            |          |                         |            |
| O3 - Z                        | NO  1<br>NO  2<br>NO  3 |            | O3 - Y   | NO  1<br>NO  2<br>NO  3 |            |
| F3 - Z                        | NC  1<br>NC  2<br>NC  3 |            | F3 - Y   | NC  1<br>NC  2<br>NC  3 |            |
| F102 - Z                      | NC  1<br>NO  2<br>NO  3 |            | F102 - Y | NC  1<br>NO  2<br>NO  3 |            |
| F201 - Z                      | NC  1<br>NC  2<br>NO  3 |            | F201 - Y | NC  1<br>NC  2<br>NO  3 |            |
| F201 - X                      | NC  1<br>NC  2<br>NO  3 |            | F201 - W | NC  1<br>NC  2<br>NO  3 |            |
| F102 - X                      | NC  1<br>NO  2<br>NO  3 |            | F102 - W | NC  1<br>NO  2<br>NO  3 |            |

### Contact representation:



| Use        |                        | Marks |
|------------|------------------------|-------|
| instant NC | locking                | 1     |
| instant NO | hold                   | 2     |
| delayed NC | power-saving - overlap | 3     |
| delayed NO | overlap                | 4     |

# Auxiliary contacts

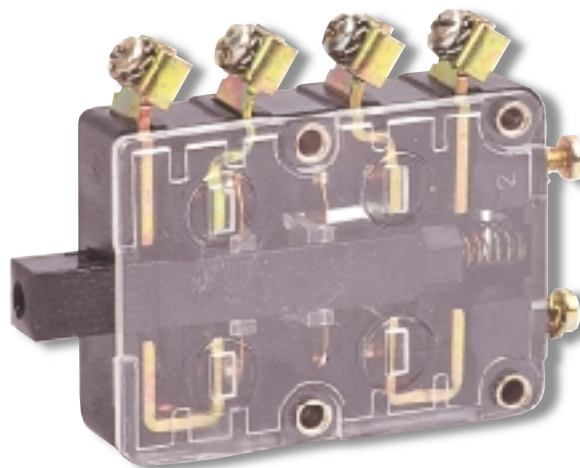


*As for the main poles, the number of auxiliary contacts can vary in a significant way. 3 types of auxiliary contacts blocks exist:*

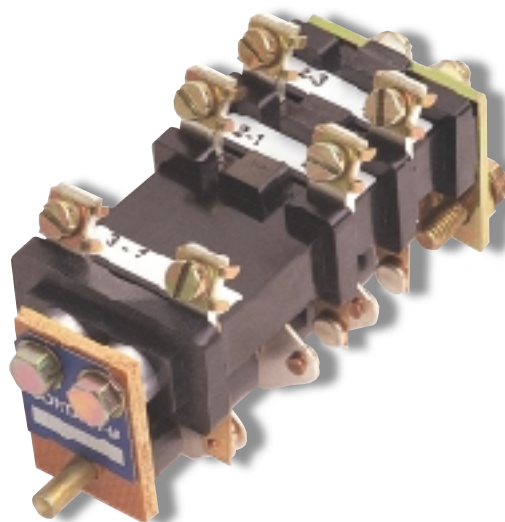
**D type**  
Available only on the 80 to 1000 A range.

**M type**  
Available on all our range of contactors; several configurations are possible to meet all the requirements.

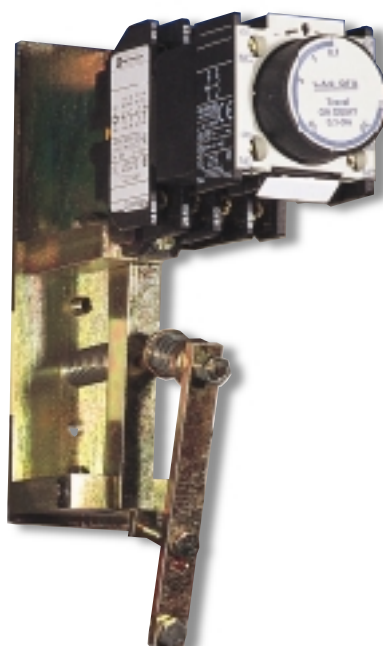
**TP 86 type**  
Delayed blocks available on all our range of contactors:  
-A: delayed at rest,  
-C: delayed at work.



D type block



M type block

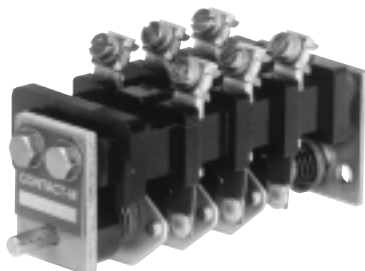


Delayed block



## M type blocks

### 1. Instantanés Type M



Block of 5 (M5) silver pad contacts with double break on closing or opening for 1250 to 5000 A range, on request.

#### Use

On all modular contactors from 80 to 6200 A.

#### Description

- Block of 2 (M2) or 3 (M3) silver pad contacts with double break on closing or opening.
- The flexibility of the fixed support causes a self-cleaning action on the contacts allowing use for low control voltages (24 and 48 V) without risk of failure.

#### Technical features

##### Maximum operating voltage

|    |   |     |
|----|---|-----|
| AC | V | 500 |
| DC | V | 600 |

##### Thermal nominal current

|   |    |
|---|----|
| A | 15 |
|---|----|

##### Current switch-on rating 500 VAC or 600 VDC

|   |    |
|---|----|
| A | 60 |
|---|----|

##### Current switch-off rating under a voltage of

|    |     |     |     |     |     |
|----|-----|-----|-----|-----|-----|
| V  | 110 | 220 | 440 | 500 | 600 |
| AC | A   | 15  | 15  | 15  | 15  |
| DC |     |     |     |     |     |

on resistive circuit

|                      |   |    |    |      |      |     |
|----------------------|---|----|----|------|------|-----|
| 1 contact            | A | 15 | 5  | 1    | 0.75 | 0.6 |
| 2 contacts in series | A |    | 15 | 3.25 | 3    |     |
| 3 contacts in series | A |    |    | 5    | 4.5  |     |

on inductive circuit

L/R = 15 ms

|                      |   |    |     |      |     |     |
|----------------------|---|----|-----|------|-----|-----|
| 1 contact            | A | 7  | 1   | 0.5  | 0.4 | 0.3 |
| 2 contacts in series | A | 15 | 1.5 | 0.75 | 0.7 |     |
| 3 contacts in series | A |    | 8   | 2    | 1.2 |     |

on inductive circuit

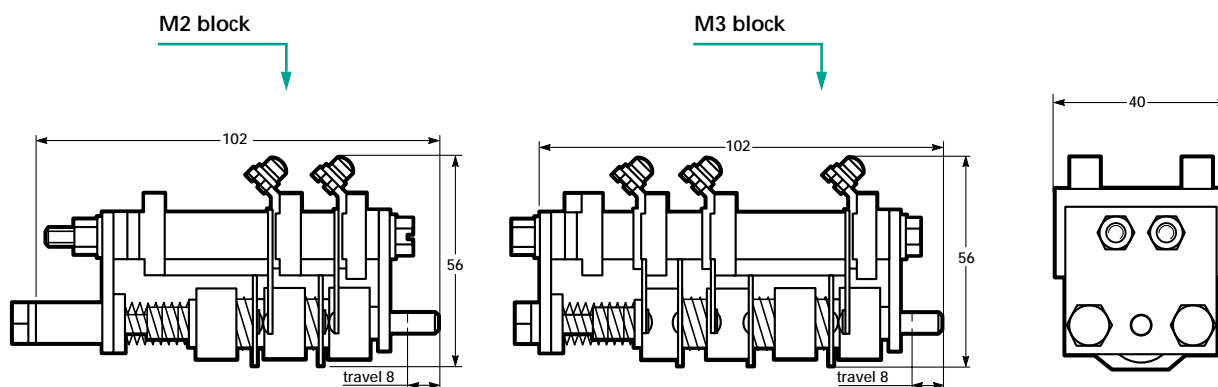
L/R = 40 ms

|                      |   |    |     |      |      |  |
|----------------------|---|----|-----|------|------|--|
| 1 contact            | A | 3  | 0.4 | 0.15 | 0.14 |  |
| 2 contacts in series | A | 15 | 0.7 | 0.6  | 0.4  |  |
| 3 contacts in series | A |    | 2.5 | 0.7  | 0.6  |  |

##### Weight

|    |    |       |
|----|----|-------|
| M2 | kg | 0.210 |
| M3 | kg | 0.260 |

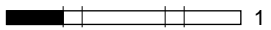
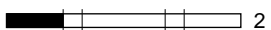
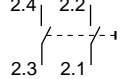
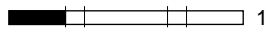

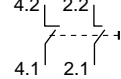
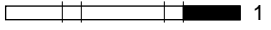
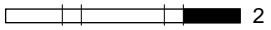
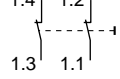

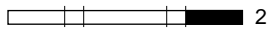
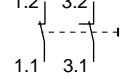
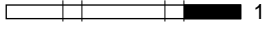
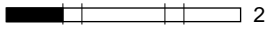
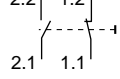

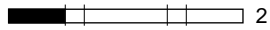
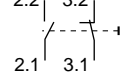


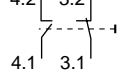
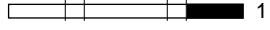

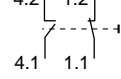
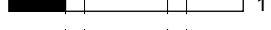
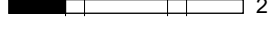
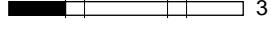
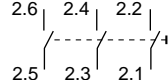
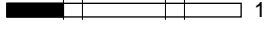
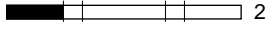

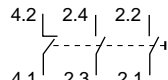

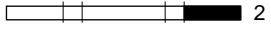
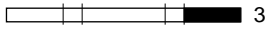
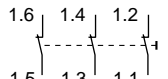

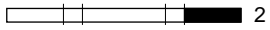
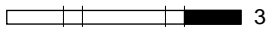
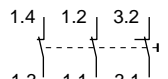
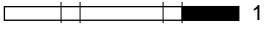
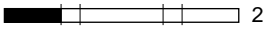
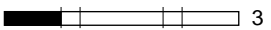
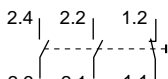

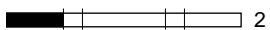

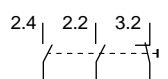
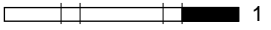
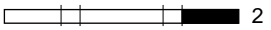
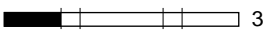
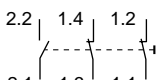

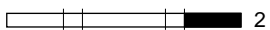
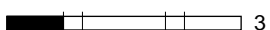
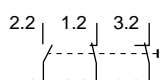

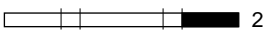

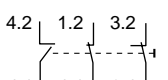
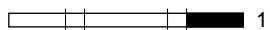
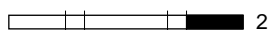

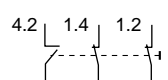

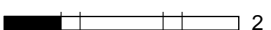

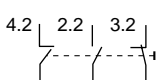
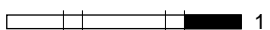


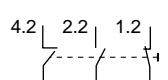
### Dimensions



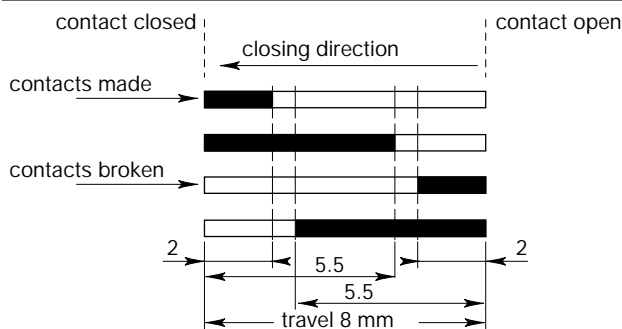


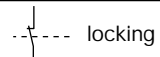
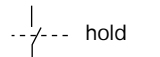
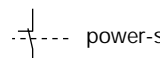
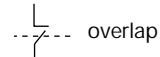
## M type blocks

### Operating diagrams (instant M type)

| Items                         | Diagrams                                                                                                                                                                                                                                                                         | Schematics                                                                          | Items    | Diagrams                                                                                                                                                                                                                                                                               | Schematics                                                                            |
|-------------------------------|----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-------------------------------------------------------------------------------------|----------|----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|---------------------------------------------------------------------------------------|
| <b>M type with 2 contacts</b> |                                                                                                                                                                                                                                                                                  |                                                                                     |          |                                                                                                                                                                                                                                                                                        |                                                                                       |
| O2 - Z                        | NO  1<br>NO  2                                                                                                 |    | O2 - Y   | NO  1<br>NO  2                                                                                                   |    |
| F2 - Z                        | NC  1<br>NC  2                                                                                                 |    | F2 - Y   | NC  1<br>NC  2                                                                                                   |    |
| F101 - Z                      | NC  1<br>NO  2                                                                                                 |    | F101 - Y | NC  1<br>NO  2                                                                                                   |    |
| F101 - X                      | NC  1<br>NO  2                                                                                                 |    | F101 - W | NC  1<br>NO  2                                                                                                   |    |
| <b>M type with 3 contacts</b> |                                                                                                                                                                                                                                                                                  |                                                                                     |          |                                                                                                                                                                                                                                                                                        |                                                                                       |
| O3 - Z                        | NO  1<br>NO  2<br>NO  3    |   | O3 - Y   | NO  1<br>NO  2<br>NO  3    |   |
| F3 - Z                        | NC  1<br>NC  2<br>NC  3 |  | F3 - Y   | NC  1<br>NC  2<br>NC  3 |  |
| F102 - Z                      | NC  1<br>NO  2<br>NO  3 |  | F102 - Y | NC  1<br>NO  2<br>NO  3 |  |
| F201 - Z                      | NC  1<br>NC  2<br>NO  3 |  | F201 - Y | NC  1<br>NC  2<br>NO  3 |  |
| F201 - X                      | NC  1<br>NC  2<br>NO  3 |  | F201 - W | NC  1<br>NC  2<br>NO  3 |  |
| F102 - X                      | NC  1<br>NO  2<br>NO  3 |  | F102 - W | NC  1<br>NO  2<br>NO  3 |  |

### Contact representation:

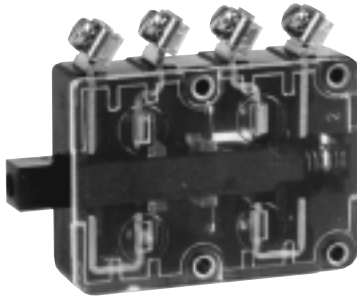


| Use        |                                                                                                              | Marks |
|------------|--------------------------------------------------------------------------------------------------------------|-------|
| instant NC |  locking                | 1     |
| instant NO |  hold                   | 2     |
| delayed NC |  power-saving - overlap | 3     |
| delayed NO |  overlap                | 4     |



## D type blocks and delayed blocks

### 2. D type instant contacts



#### Use

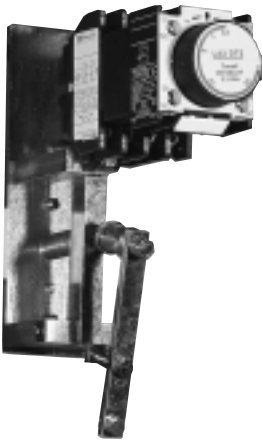
On 80 to 1000 A bar contactors.

#### Description

Block of 2 contacts (NO + NC).

| Thermal nominal current                            |   | A  | 10 |     |     |     |     |  |
|----------------------------------------------------|---|----|----|-----|-----|-----|-----|--|
| Under                                              |   |    |    |     |     |     |     |  |
| AC voltage of                                      | V | 24 | 48 | 127 | 220 | 380 | 500 |  |
| DC voltage of                                      | V | 24 | 48 | 110 | 220 |     |     |  |
| Operating current                                  |   |    |    |     |     |     |     |  |
| AC                                                 | A | 10 | 10 | 7   | 5   | 3   | 2.5 |  |
| DC resistive circuit                               | A | 5  | 3  | 1   | 0.5 |     |     |  |
| DC inductive circuit L/R = 15 ms                   | A | 5  | 2  | 0.8 | 0.3 |     |     |  |
| Occasional current switch-on and switch-off rating |   |    |    |     |     |     |     |  |
| AC                                                 | A | 20 | 20 | 15  | 12  | 8   | 5   |  |
| DC resistive circuit                               | A | 20 | 15 | 4   | 0.8 |     |     |  |
| DC inductive circuit L/R = 15 ms                   | A | 20 | 15 | 3   | 0.6 |     |     |  |

### 3. TP 86 type delayed contacts



#### Use

On 80 to 6200 A modular contactors

#### Description

Block includes:

- 4 instantaneous auxiliary contacts 3 NO + 1 NC.
- 2 auxiliary contacts, 1 NO + 1 NC delayed; delay adjustable from 0 to 30 seconds.

#### 2 different blocks:

**TP 86 A:** delayed block counting from contactor closing.

**TP 86 C:** delayed block counting from contactor opening.

#### Technical features

| Thermal nominal current                            |    | A    | 10   |         |       |       |       |       |
|----------------------------------------------------|----|------|------|---------|-------|-------|-------|-------|
| Nominal voltage                                    |    | V    | 660  |         |       |       |       |       |
| Insulating voltage                                 |    | V    | 750  |         |       |       |       |       |
| Under                                              |    |      |      |         |       |       |       |       |
| AC voltage of                                      | V  |      | 48   | 110/127 | 220   | 380   | 440   | 660   |
| DC voltage of                                      | V  | 24   | 48   | 110     | 220   |       | 440   | 600   |
| Operating power                                    |    |      |      |         |       |       |       |       |
| 1 million operations                               |    |      |      |         |       |       |       |       |
| AC                                                 | VA |      | 300  | 500     | 600   | 520   | 500   | 390   |
| DC                                                 | W  | 120  | 90   | 75      | 68    |       | 61    | 58    |
| 3 million operations                               |    |      |      |         |       |       |       |       |
| AC                                                 | VA |      | 160  | 300     | 330   | 300   | 280   | 190   |
| DC                                                 | W  | 70   | 50   | 38      | 33    |       | 28    | 27    |
| 10 million operations                              |    |      |      |         |       |       |       |       |
| AC                                                 | VA |      | 70   | 100     | 110   | 100   | 100   | 80    |
| DC                                                 | W  | 25   | 18   | 14      | 12    |       | 10    | 9     |
| Occasional current switch-on and switch-off rating |    |      |      |         |       |       |       |       |
| AC                                                 | VA |      | 3000 | 7000    | 12000 | 15000 | 14000 | 13000 |
| DC                                                 | W  | 1000 | 700  | 400     | 260   |       | 220   | 170   |

On request, TP 86 type blocks can be delivered with adjustable delay:

- from 0.1 to 3 seconds,

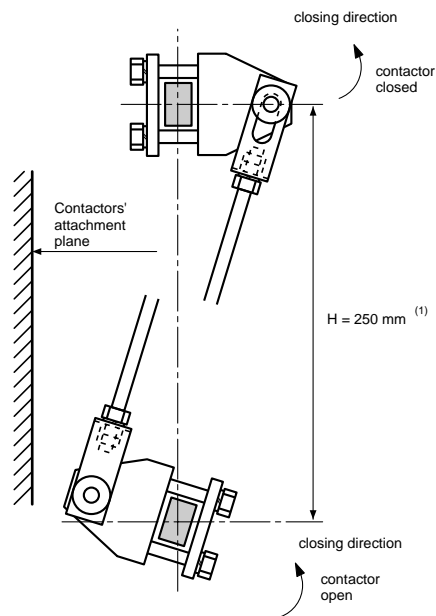
- from 0.1 to 180 seconds

# Vertical mechanical locking

## 80 to 200 A range

- CBA 55,
- CBPA 57,
- CBFC 55,
- CBC 57B 80 - 150 - 200.

Horizontal or «vis-à-vis» mechanical locking available on request.

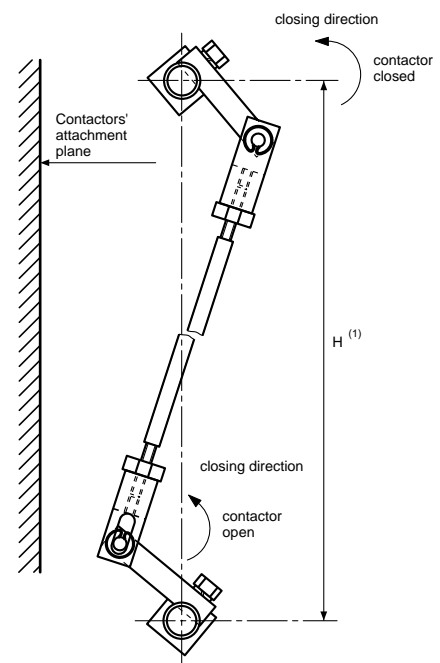
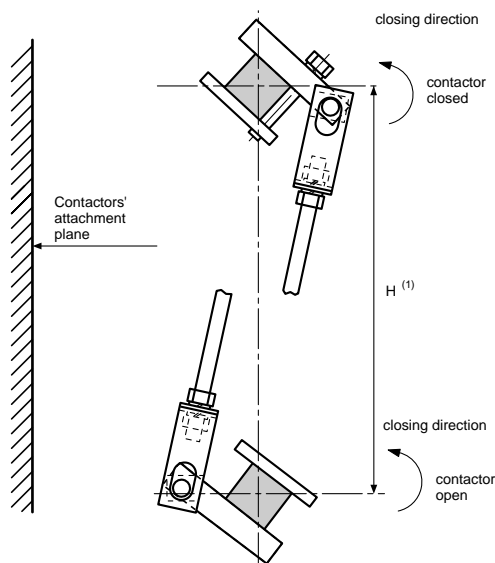


## 400 to 1000 A range

- CBA 75,
- CBFC 75 400 - 500 - 630 - 800 - 1000.

Locking on the hold generation moving shaft or

Standard locking at the end of the moving shaft.



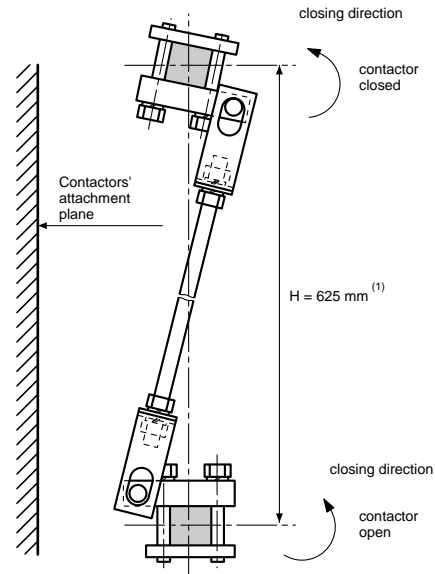
| Calibre (A) | H (mm) |
|-------------|--------|
| 400         | 400    |
| 500         | 400    |
| 630         | 400    |
| 800         | 575    |
| 1000        | 575    |

(1) for other length, consult us  
Horizontal or «vis à vis» mechanical locking available and request.

# Vertical mechanical locking

## 1250 to 5000 A range

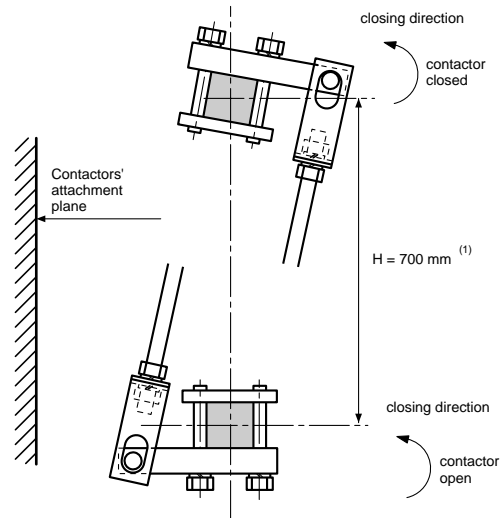
- CBA 75, CBFC 75
  - CBA - CBC 71 1250 - 1600 - 2000.
- Horizontal or «vis à vis» mechanical locking available on request.
- CBA - CBC 98 2560 à 5000.



## 2500 to 5000 A range

- CBA 54 2500,
- CBC 54 3000,

- CBA 60 4000,
- CBC 60 5000.



(1) for other length, consult us.  
Horizontal or «vis à vis» mechanical locking available on request.