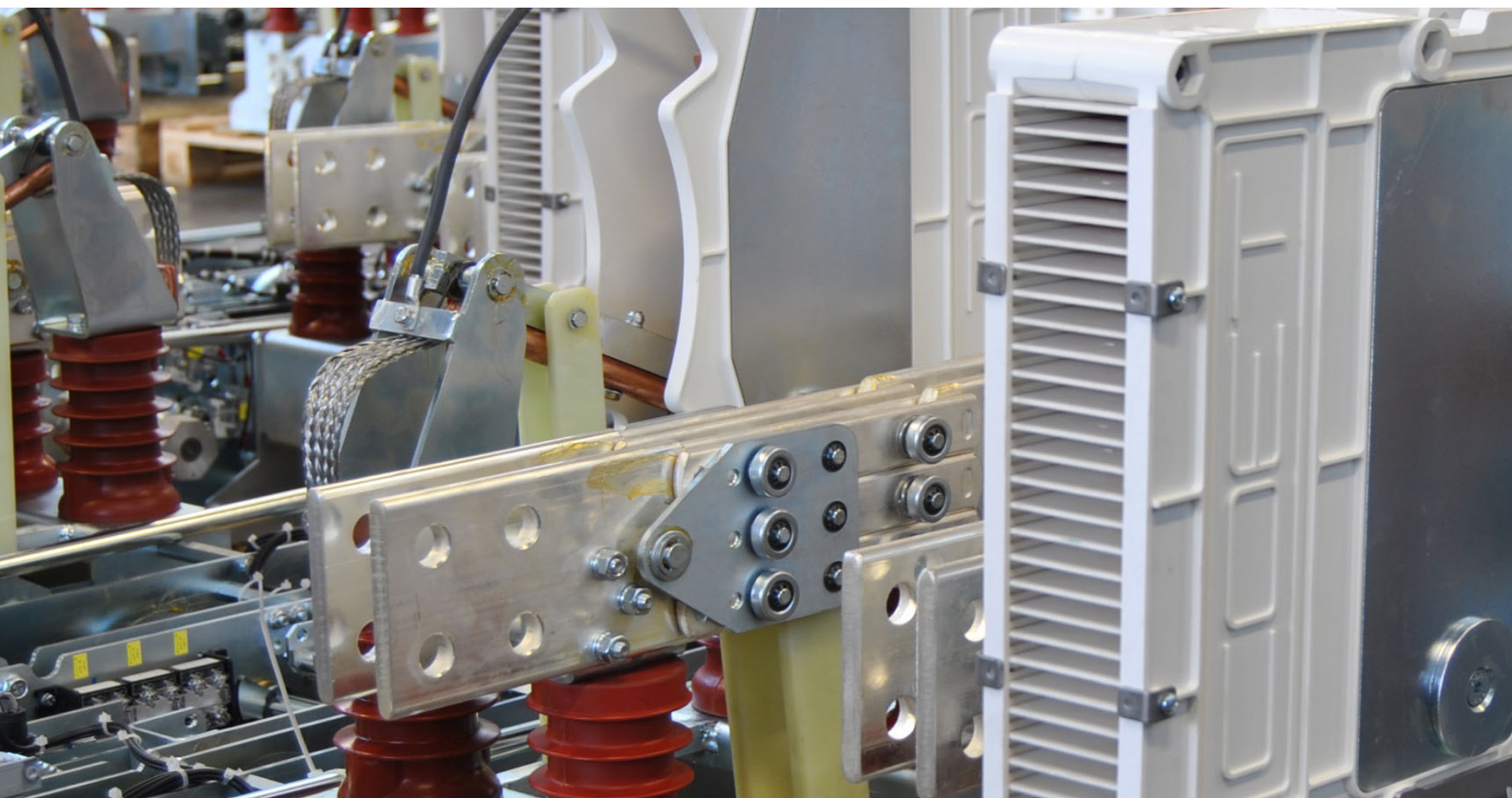




# LB-LBS-LBSH

**DC SWITCH DISCONNECTORS**

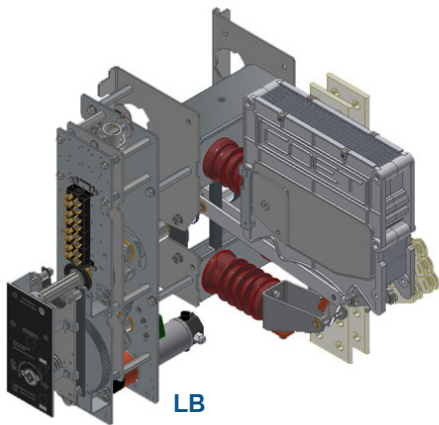
INTERRUTTORI DI MANOVRA-SEZIONATORI



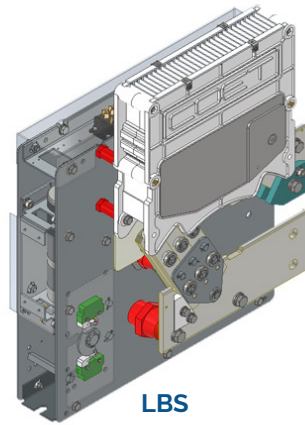


# DC SWITCH DISCONNECTORS

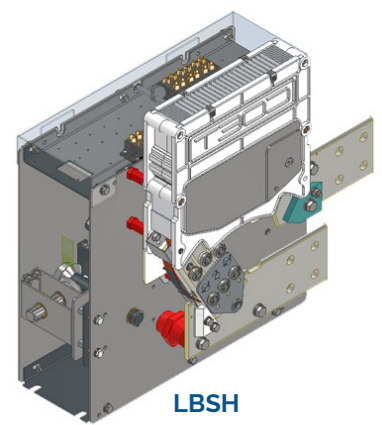
## INTERRUTTORI DI MANOVRA-SEZIONATORI



For heavy traction applications /  
Per trazione pesante



For light rail applications /  
Per trazione leggera



A DC Load Break Switch is normally used as main and/or bypass on-load disconnecter in DC Power Supply systems for:

- isolating a line for safety or maintenance purpose
- connecting two adjacent sections of the same line in the event of failure of one or more feeders
- switching a line from one feeder to the other in case of failure of one of them

On-load operation guarantees a very high level of service continuity as requested by the modern substations design. A switch disconnecter can be of two types:

- motor driven type;
- manual type;

Two Lines of load break switch are available:

- LB: for heavy traction applications
- LBS / LBSH: for light rail applications

L'interruttore di manovra-sezionatore è normalmente utilizzato in impianti in corrente continua come sezionamento della linea principale e/o come apparecchio di by-pass per:

- isolare la linea per ragioni di sicurezza o manutenzione
- collegare due sezioni adiacenti della stessa linea in caso di fuori servizio di uno o più alimentatori.
- commutare fra due alimentazioni in caso di guasto di una di essa.

La manovrabilità sottocarico garantisce un elevato livello di continuità di servizio come richiesto dalla moderna tecnica delle sottostazioni.

L'interruttore di manovra-sezionatore (IMS) può essere di due tipi:

- tipo motorizzato;
- tipo manuale;

Sono disponibili due linee di interruttori di manovra sezionatori:

- LB: per trazione pesante
- LBS / LBSH: per trazione leggera

# MAIN TECHNICAL DATA

## DATI TECNICI PRINCIPALI

|                                                                                             |                                                                                                   |             |             |
|---------------------------------------------------------------------------------------------|---------------------------------------------------------------------------------------------------|-------------|-------------|
| Reference standards<br>Standard di riferimento                                              | EN 50122-1/2<br>EN 50123-1/2/3/5/6/7<br>EN 50124-1/2<br>EN 50163<br>EN 60529                      |             |             |
|                                                                                             | 750 V                                                                                             | 1500 V      | 3000 V      |
| Nominal voltage<br>Tensione nominale ( $U_n$ )                                              | 750 V                                                                                             | 1500 V      | 3000 V      |
| Highest permanent voltage<br>Tensione permanente massima ( $U_{max1}$ )                     | 900 V                                                                                             | 1800 V      | 3600 V      |
| Highest non-permanent voltage<br>Tensione non permanente massima ( $U_{max2}$ )             | 1 kV                                                                                              | 1,95 kV     | 3,9kV       |
| Rated insulation voltage<br>Tensione di isolamento di targa ( $U_{Nm}$ )                    | 1,8kV                                                                                             | 3kV         | 4,8kV       |
| Rated impulse voltage<br>Tensione di tenuta ad impulso ( $U_{NI}$ ):                        |                                                                                                   |             |             |
| - to earth and between the poles<br>verso terra e tra i poli                                | 15kV                                                                                              | 20kV        | 40kV        |
| - across the isolating distance<br>sulla distanza di sezionamento                           | 18kV                                                                                              | 24kV        | 48kV        |
| Power frequency withstand voltage level<br>Tensione a frequenza industriale ( $U_a$ ):      |                                                                                                   |             |             |
| - to earth and between poles<br>verso terra e tra i poli                                    | 6,9kV                                                                                             | 9,2kV       | 18,5kV      |
| - across the isolating distance<br>sulla distanza di sezionamento                           | 8,3kV                                                                                             | 11kV        | 22,2kV      |
| - auxiliary circuits<br>circuiti ausiliari                                                  | 2kV                                                                                               | 2kV         | 2kV         |
| Nominal current<br>Corrente nominale ( $I_n$ )                                              | 2000 A - 4000 A - 6000 A - 8000 A                                                                 |             |             |
| Short-time withstand current<br>Corrente ammissibile di breve durata ( $I_{ncw} 0,25s$ )    | up to 140kA                                                                                       | up to 140kA | up to 140kA |
| Short-circuit current peak<br>Valore di picco della corrente di corto circuito ( $i_{ss}$ ) | up to 200kA                                                                                       | up to 200kA | up to 200kA |
| Operation Type<br>Tipo di comando                                                           | Manual/Manuale<br>Motorised/Motorizzato                                                           |             |             |
| Coil characteristics<br>Caratteristiche della bobina                                        | Under voltage coil /Bobina di sgancio minima tensione<br>Shunt trip coil/Bobina a lancio corrente |             |             |
| Power Supply<br>Tensione di alimentazione ausiliaria                                        | 24 Vdc - 48 Vdc - 60 Vdc- 110 Vdc- 125 Vdc - 132 Vdc<br>220/230Vdc- 220 Vdc                       |             |             |
| Number of Poles<br>Numero di Poli                                                           | 1<br>2                                                                                            |             |             |

# TECHNICAL NOTE (CEI EN 50123-3)

## NOTA TECNICA (CEI EN 50123-3)

COET produces DISCONNECTORS and LOAD BREAK SWITCHES in according to following table  
COET produce SEZIONATORI e SEZIONATORI SOTTO CARICO secondo la seguente tabella

| Category<br>Categoria                                  | Making<br>Chiusura | Breaking<br>Apertura | Short-time withstand current<br>Corrente ammissibile di breve durata | Duration<br>Durata |
|--------------------------------------------------------|--------------------|----------------------|----------------------------------------------------------------------|--------------------|
| I: Disconnectors<br>Sezionatori                        | 0                  | 0                    | INcw / INcwe                                                         | 0.25 s             |
| II: ON-LOAD Disconnectors<br>Sezionatori sotto carico  | 0                  | INe                  | INcw                                                                 | 0.25 s             |
| III: ON-LOAD Disconnectors<br>Sezionatori sotto carico | INe                | INe                  | INcw                                                                 | 0.25 s             |
| IV: ON-LOAD Disconnectors<br>Sezionatori sotto carico  | 3 INe              | 3 INe                | INcw                                                                 | 0.25 s             |
| V: Disconnectors<br>Sezionatori                        | INss               | 0                    | INcw / INcwe                                                         | 0.25 s             |
| VI: ON-LOAD Disconnectors<br>Sezionatori sotto carico  | INss               | 3 INe                | INcw                                                                 | 0.25 s             |

## MAIN FEATURES

### CARATTERISTICHE PRINCIPALI

- The LB switch includes a robust metal frame also available in the withdrawable execution. Active parts are mounted on epoxy resin insulators with increased creepage distance. The incoming and outgoing terminals are properly sized to carry the nominal current
- The control device has been designed for a high mechanical endurance and an easy maintenance.
- The motor operated version includes the manual emergency operation with key locks.
- Each pole is composed of one (or more) main contact sized to the nominal current and one breaking contact (or two connected in series). Breaking contact includes the arc chute with magnetic blow out system for arc extinguishing.  
The arc chute, with compact and sturdy design, it can be easily replaced without any specific tools.

- L'interruttore LB include un robusto telaio metallico disponibile anche nell'esecuzione estraibile. Le parti attive sono montate su isolatori in resina epossidica con una linea di fuga maggiorata. I terminali di ingresso e di uscita sono dimensionati correttamente per il valore della corrente nominale d'impiego.
- Il dispositivo di manovra è stato progettato con un'elevata resistenza meccanica e una facile manutenzione.
- La versione motorizzata include l'operazione manuale di emergenza con serrature a chiave.
- Ogni polo principale è composto da uno o più contatti del circuito principale dimensionati per la corrente nominale, e il contatto d'arco formato da uno o due contatti in serie. Il contatto d'arco comprende la rampa d'arco con sistema di soffaggio magnetico per l'estinzione dell'arco.

La camera ad arco, dal design compatto e robusto, può essere facilmente sostituita senza attrezzi specifici.

# LB CONFIGURATIONS

## CONFIGURAZIONI LB

- $I_{th}$ : Conventional free-air thermal current [A] / Corrente convenzionale termica in aria libera [A]
- $I_{int}$ : Highest breaking current [kA] / Max corrente di interruzione [kA]
- $\hat{I}_{ch}$ : Highest peak making current [kA] / Max corrente di picco di chiusura [kA]
- $I_{Ne}$ : Rated service current [A] / Corrente nominale di impiego [A]
- $I_{NSS}$ : Rated short circuit current [kA] / Corrente di cortocircuito di targa
- $I_{NCW}$ : Rated short-time withstand current (0,25s) [kA] / Corrente di breve durata (0,25s) [kA]
- $\hat{I}_{NCW}$ : Peak value of  $I_{NCW}$  [kA] / Valore di picco della  $I_{NCW}$  [kA]

### 750 Vdc

| Type<br>Tipo | Main Poles<br>Poli Principali | Breaking poles<br>Poli di interruzione | $I_{th}$<br>[A]<br><br>$I_{Ne}$<br>[A] | $I_{int}$<br>[kA] | $\hat{I}_{ch}$<br>[kA] | $I_{NSS}$<br>[kA] | $I_{NCW}$<br>[kA] | $\hat{I}_{NCW}$<br>[kA] | Category<br>Categoria |
|--------------|-------------------------------|----------------------------------------|----------------------------------------|-------------------|------------------------|-------------------|-------------------|-------------------------|-----------------------|
| LB120n       | 1                             | 1                                      | 2000                                   | 12                | 70                     | 50                | 85                | 120                     | VI                    |
| LB122n       | 2                             | 2                                      | 2000                                   | 24                | 70                     | 50                | 85                | 120                     | VI                    |
| LB130n       | 1                             | 1                                      | 3000                                   | 12                | 100                    | 70                | 100               | 142                     | VI                    |
| LB132n       | 2                             | 2                                      | 3000                                   | 24                | 100                    | 70                | 100               | 142                     | VI                    |
| LB140n       | 1                             | 1                                      | 4000                                   | 12                | 125                    | 88                | 120               | 170                     | VI                    |
| LB142n       | 2                             | 2                                      | 4000                                   | 24                | 125                    | 88                | 120               | 170                     | VI                    |
| LB160n       | 1                             | 1                                      | 6000                                   | 18                | 142                    | 100               | 140               | 200                     | VI                    |
| LB161n       | 1                             | 2                                      | 6000                                   | 24                | 142                    | 100               | 140               | 200                     | VI                    |

## 1500 Vdc

| Type<br>Tipo | Main Poles<br>Poli Principali | Breaking poles<br>Poli di interruzione | $I_{th}$<br>[A]<br>$I_{Ne}$<br>[A] | $I_{int}$<br>[kA] | $\hat{I}_{ch}$<br>[kA] | $I_{Nss}$<br>[kA] | $I_{NCW}$<br>[kA] | $\hat{I}_{NCW}$<br>[kA] | Category<br>Categoria |
|--------------|-------------------------------|----------------------------------------|------------------------------------|-------------------|------------------------|-------------------|-------------------|-------------------------|-----------------------|
| LB220c       | 1                             | 1                                      | 2000                               | 12                | 50                     | 35                | 85                | 120                     | VI                    |
| LB222c       | 2                             | 2                                      | 2000                               | 18                | 50                     | 35                | 85                | 120                     | VI                    |
| LB230c       | 1                             | 1                                      | 3000                               | 12                | 100                    | 70                | 100               | 142                     | VI                    |
| LB232c       | 2                             | 2                                      | 3000                               | 18                | 100                    | 70                | 100               | 142                     | VI                    |
| LB240c       | 1                             | 1                                      | 4000                               | 12                | 125                    | 88                | 120               | 70                      | VI                    |
| LB242c       | 2                             | 2                                      | 4000                               | 18                | 125                    | 88                | 120               | 170                     | VI                    |
| LB260c       | 1                             | 1                                      | 6000                               | 12                | 142                    | 100               | 140               | 200                     | III                   |
| LB261c       | 1                             | 2                                      | 6000                               | 18                | 142                    | 100               | 140               | 200                     | VI                    |

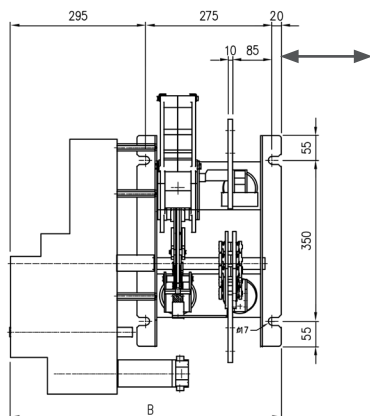
## 3000 Vdc

| Type<br>Tipo | Main Poles<br>Poli Principali | Breaking poles<br>Poli di interruzione | $I_{th}$<br>[A]<br>$I_{Ne}$<br>[A] | $I_{int}$<br>[kA] | $\hat{I}_{ch}$<br>[kA] | $I_{Nss}$<br>[kA] | $I_{NCW}$<br>[kA] | $\hat{I}_{NCW}$<br>[kA] | Category<br>Categoria |
|--------------|-------------------------------|----------------------------------------|------------------------------------|-------------------|------------------------|-------------------|-------------------|-------------------------|-----------------------|
| LB320c       | 1                             | 1                                      | 2000                               | 4                 | 50                     | 35                | 85                | 120                     | III                   |
| LB321c       | 1                             | 2                                      | 2000                               | 9                 | 50                     | 35                | 85                | 120                     | VI                    |
| LB322c       | 2                             | 2                                      | 2000                               | 9                 | 50                     | 35                | 85                | 120                     | VI                    |
| LB330c       | 1                             | 1                                      | 3000                               | 4                 | 100                    | 70                | 100               | 142                     | III                   |
| LB331c       | 1                             | 2                                      | 3000                               | 9                 | 100                    | 70                | 100               | 142                     | VI                    |
| LB332c       | 2                             | 2                                      | 3000                               | 9                 | 100                    | 70                | 100               | 142                     | VI                    |
| LB340c       | 1                             | 1                                      | 4000                               | 4                 | 100                    | 70                | 120               | 170                     | III                   |
| LB341c       | 1                             | 2                                      | 4000                               | 9                 | 100                    | 70                | 120               | 170                     | III                   |
| LB342c       | 2                             | 2                                      | 4000                               | 9                 | 100                    | 70                | 120               | 170                     | III                   |
| LB361c       | 1                             | 2                                      | 6000                               | 9                 | 142                    | 100               | 140               | 200                     | III                   |

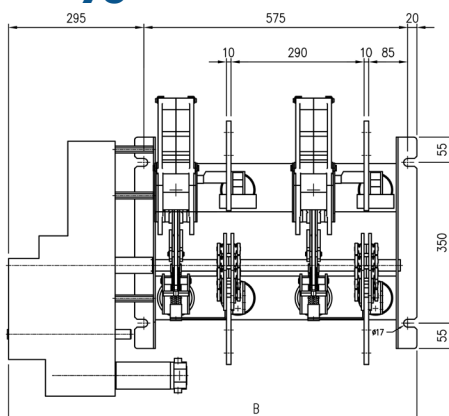
# LB OVERALL DIMENSIONS

## DIMENSIONI PRINCIPALI LB

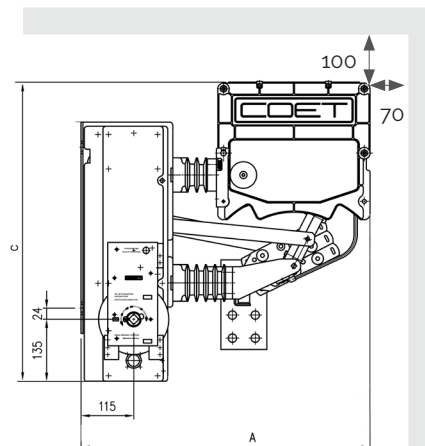
### 750 Vdc - 2000 A



**LB120n**  
One pole  
Unipolare



**LB122n**  
Two poles  
Bipolare

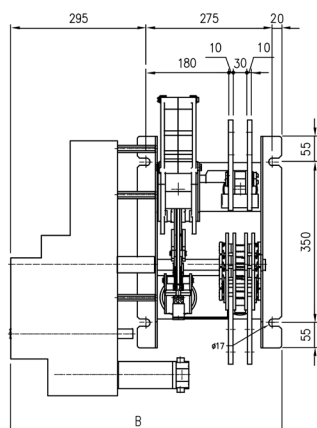


Front view / Vista frontale +  
Minimum distances from walls to ground /  
Minime distanze da pareti a massa

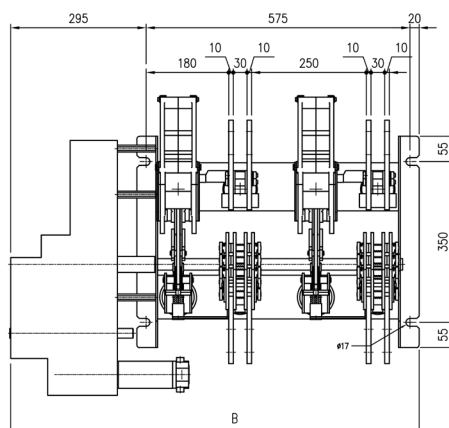
#### Type / Tipo

| Type / Tipo | A   | B   | C   |
|-------------|-----|-----|-----|
| LB120n      | 630 | 590 | 649 |
| LB122n      | 630 | 890 | 649 |
| LB130n      | 630 | 590 | 649 |
| LB132n      | 630 | 890 | 649 |

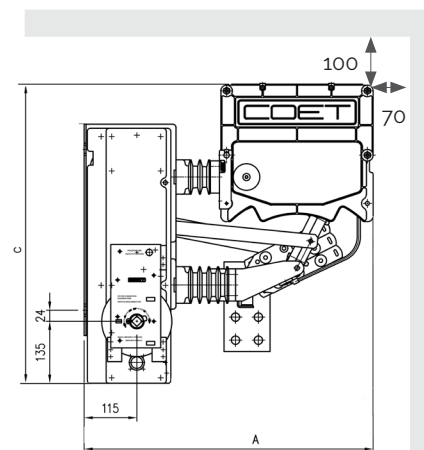
### 750 Vdc - 3000 A



**LB130n**  
One pole  
Unipolare



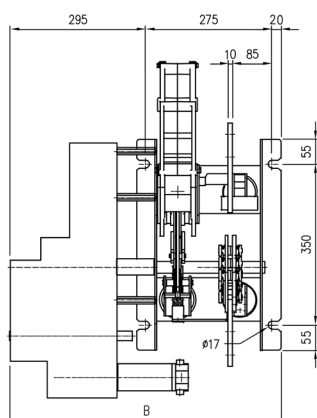
**LB132n**  
Two poles  
Bipolare



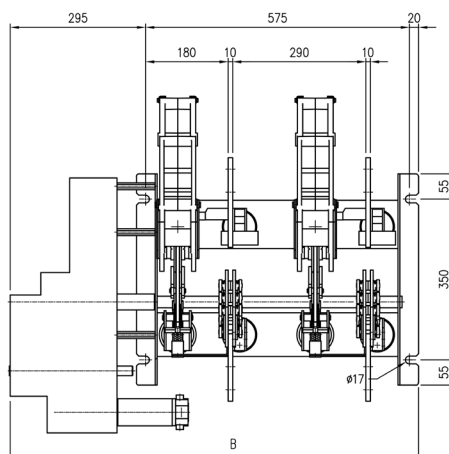
Front view / Vista frontale +  
Minimum distances from walls to ground /  
Minime distanze da pareti a massa



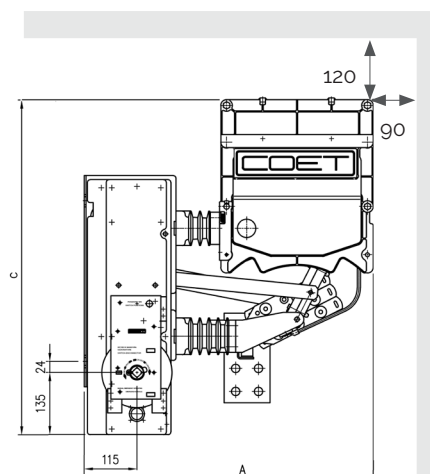
## 1500 Vdc - 2000 A



**LB220c**  
One pole  
Unipolare



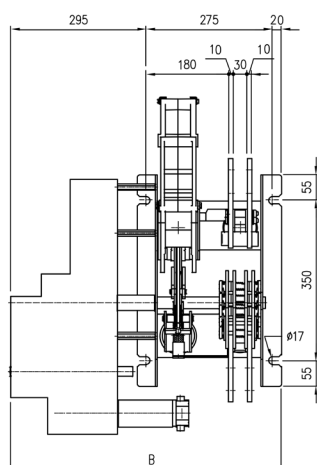
**LB222c**  
Two poles  
Bipolare



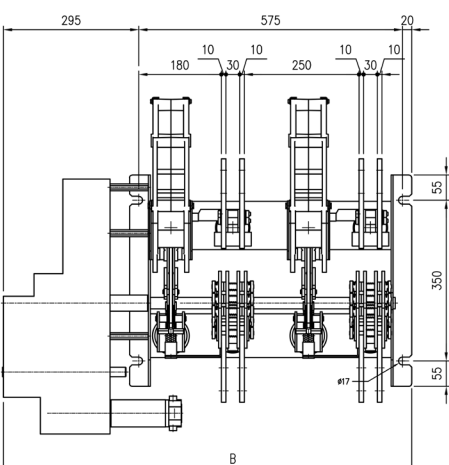
Front view / Vista frontale +  
Minimum distances from walls to ground /  
Minime distanze da pareti a massa

| Type / Tipo | A   | B   | C   |
|-------------|-----|-----|-----|
| LB220c      | 630 | 590 | 729 |
| LB222c      | 630 | 890 | 729 |
| LB230c      | 630 | 590 | 729 |
| LB232c      | 630 | 890 | 729 |

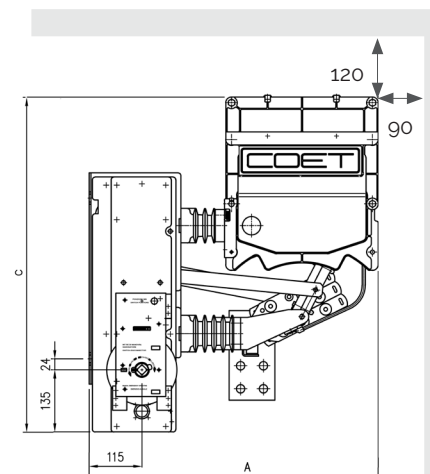
## 1500 Vdc - 3000 A



**LB230c**  
One pole  
Unipolare

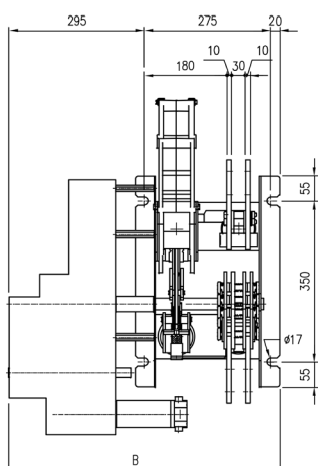


**LB232c**  
Two poles  
Bipolare

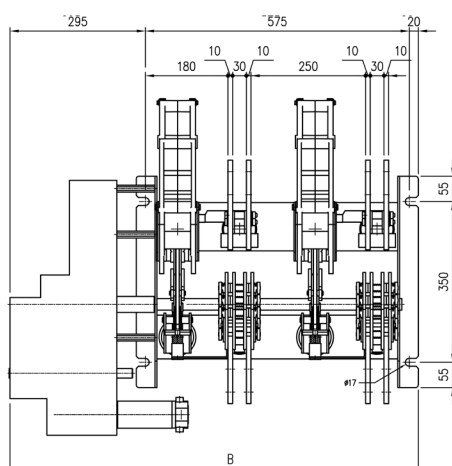


Front view / Vista frontale +  
Minimum distances from walls to ground /  
Minime distanze da pareti a massa

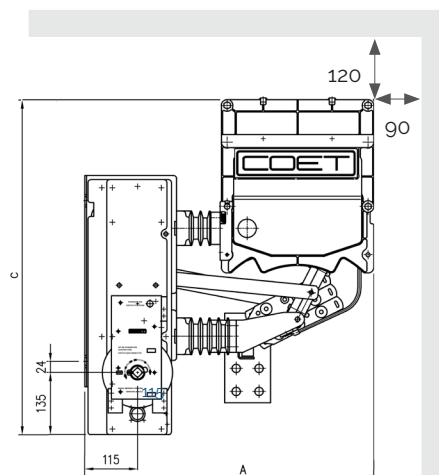
## 1500 Vdc - 4000 A



**LB240c**  
One pole  
Unipolare



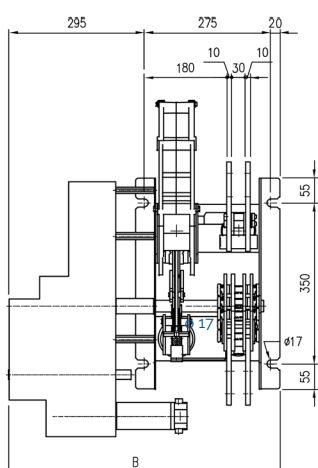
**LB242c**  
Two poles  
Bipolare



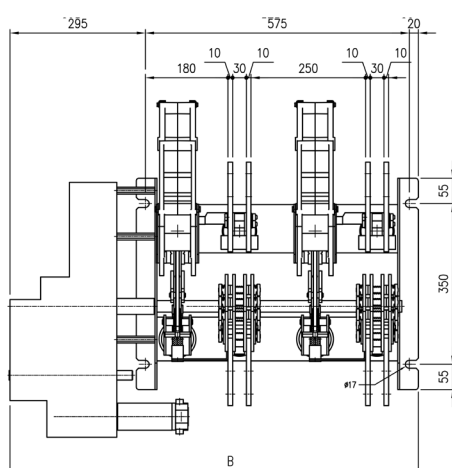
Front view / Vista frontale +  
Minimum distances from walls to ground /  
Minime distanze da pareti a massa

| Type / Tipo | A   | B   | C   |
|-------------|-----|-----|-----|
| LB240c      | 630 | 590 | 729 |
| LB242c      | 630 | 890 | 729 |
| LB260c      | 630 | 665 | 729 |
| LB261c      | 690 | 765 | 774 |

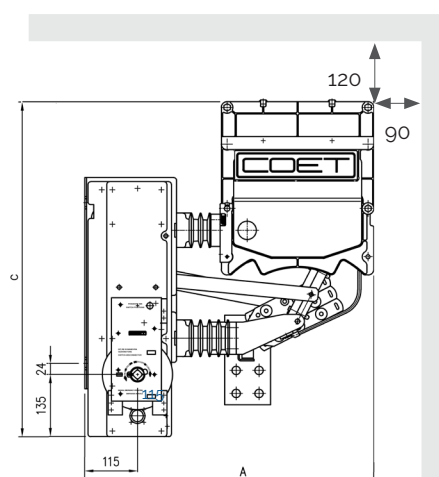
## 1500 Vdc - 6000 A



**LB260c**  
One pole  
Unipolare

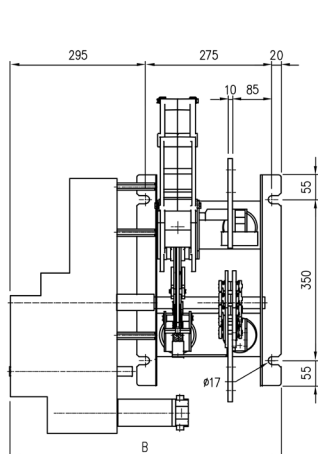


**LB261c**  
One main pole with two  
breaking poles /  
Unipolare  
doppia interruzione

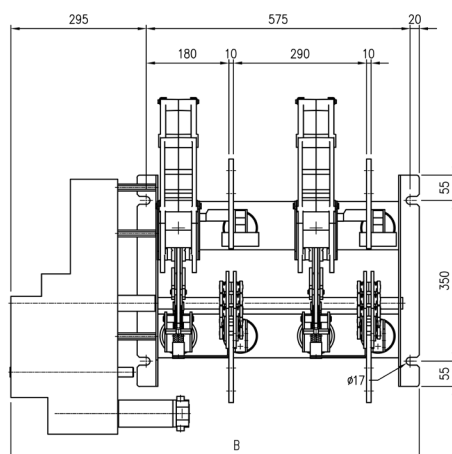


Front view / Vista frontale +  
Minimum distances from walls to ground /  
Minime distanze da pareti a massa

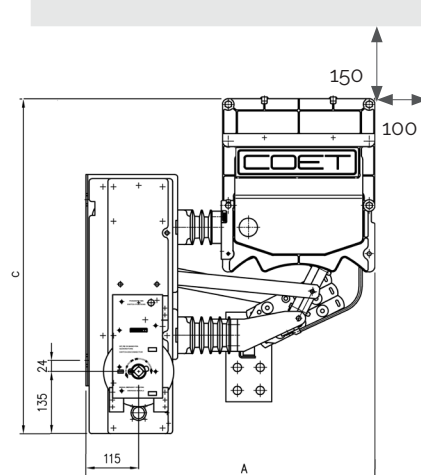
## 3000 Vdc - 2000 A



**LB320c**  
One pole  
Unipolare

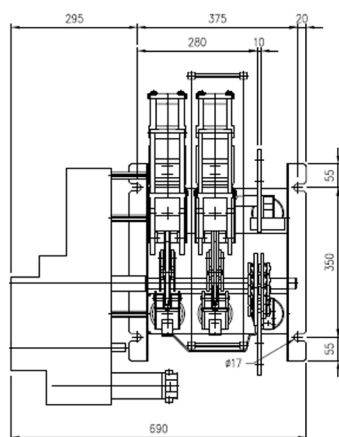


**LB322c**  
Two poles  
Bipolare

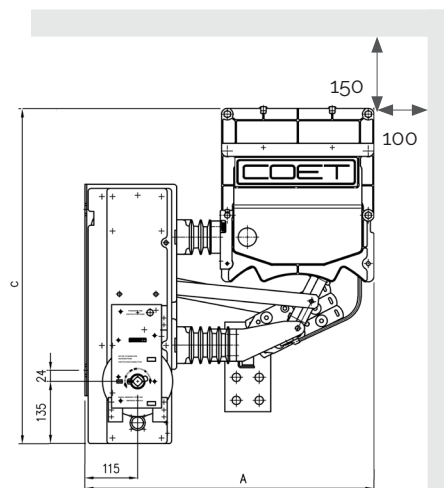


Front view / Vista frontale +  
Minimum distances from walls to ground /  
Minime distanze da pareti a massa

| Type / Tipo                                                        | A   | B   | C   |
|--------------------------------------------------------------------|-----|-----|-----|
| LB320c                                                             | 630 | 590 | 729 |
| LB321c (Unipolare doppia interruzione/Single pole double breaking) | 690 | 690 | 774 |
| LB322c                                                             | 630 | 890 | 729 |

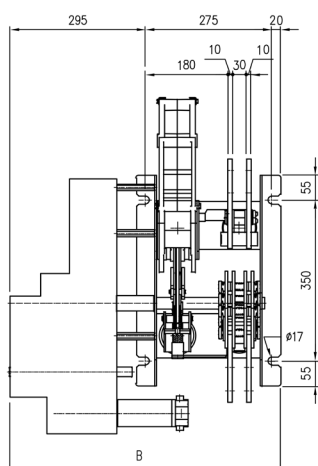


**LB321c**  
One main pole with two  
breaking poles /  
Unipolare  
doppia interruzione

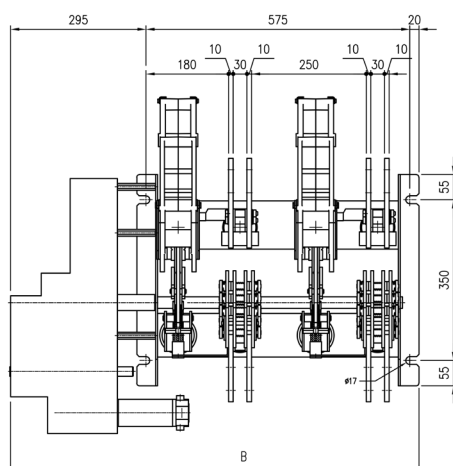


Front view / Vista frontale +  
Minimum distances from walls to ground /  
Minime distanze da pareti a massa

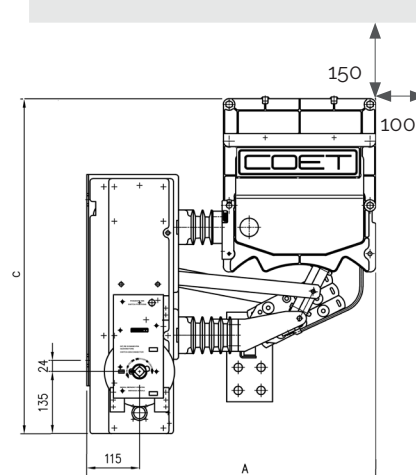
## 3000 Vdc - 3000 A



**LB330c**  
One pole  
Unipolare

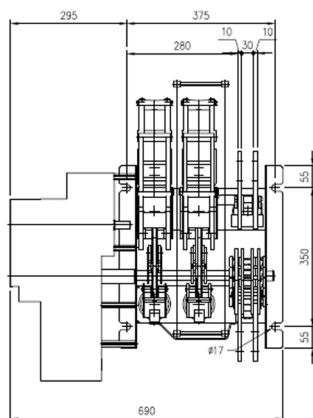


**LB332c**  
Two poles  
Bipolare

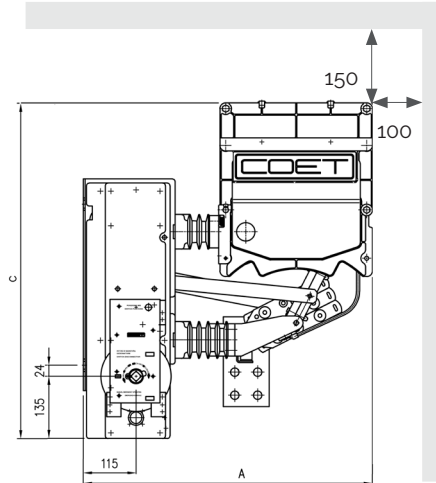


Front view / Vista frontale +  
Minimum distances from walls to ground /  
Minime distanze da pareti a massa

| Type / Tipo                                                        | A   | B   | C   |
|--------------------------------------------------------------------|-----|-----|-----|
| LB330c                                                             | 630 | 590 | 729 |
| LB331c (Unipolare doppia interruzione/Single pole double breaking) | 690 | 690 | 774 |
| LB332c                                                             | 630 | 890 | 729 |

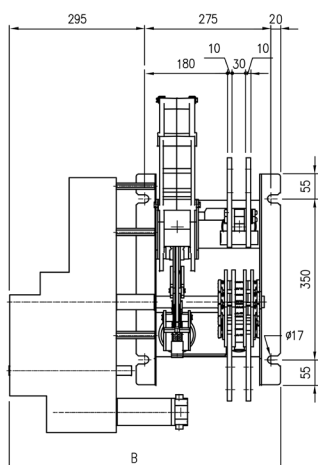


**LB331c**  
One main pole with two  
breaking poles /  
Unipolare  
doppia interruzione

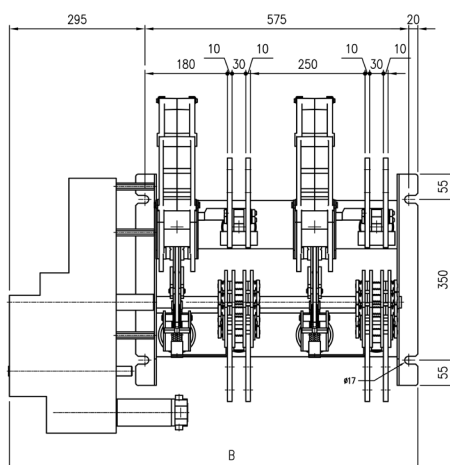


Front view / Vista frontale +  
Minimum distances from walls to ground /  
Minime distanze da pareti a massa

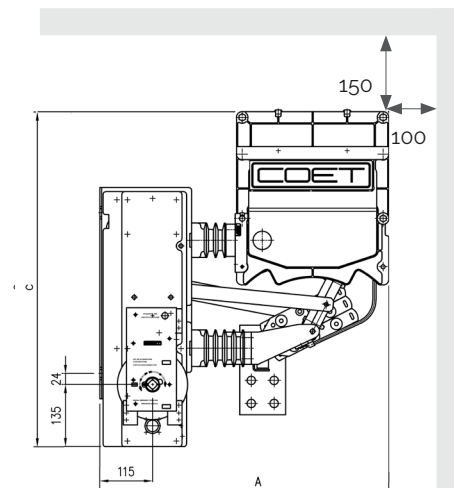
## 3000 Vdc - 4000 A



**LB340c**  
One pole  
Unipolare

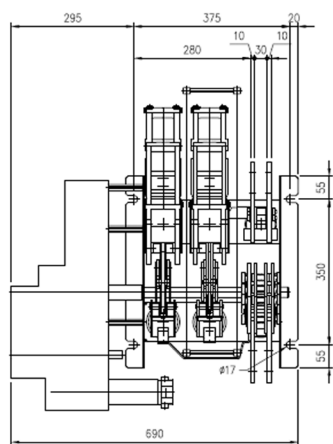


**LB342c**  
Two poles  
Bipolare

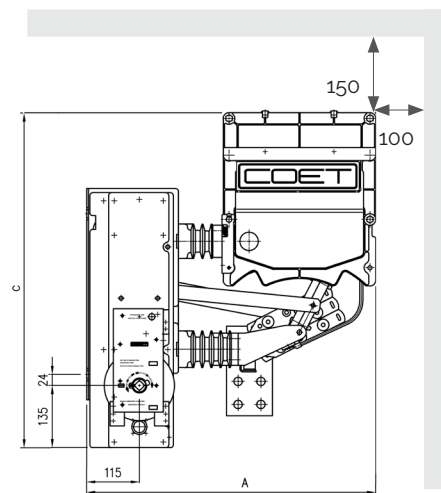


Front view / Vista frontale +  
Minimum distances from walls to ground /  
Minime distanze da pareti a massa

| Type / Tipo                                                        | A   | B   | C   |
|--------------------------------------------------------------------|-----|-----|-----|
| LB340c                                                             | 630 | 590 | 729 |
| LB341c (Unipolare doppia interruzione/Single pole double breaking) | 690 | 690 | 774 |
| LB342c                                                             | 630 | 890 | 729 |

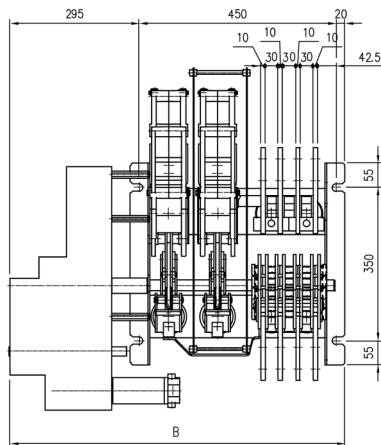


**LB341c**  
One main pole with two  
breaking poles /  
Unipolare  
doppia interruzione

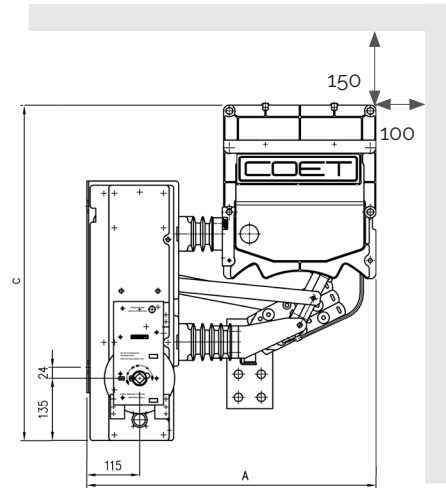


Front view / Vista frontale +  
Minimum distances from walls to ground /  
Minime distanze da pareti a massa

## 3000 Vdc - 6000 A



**LB361c**  
One main pole with two  
breaking poles /  
Unipolare  
doppia interruzione



Front view / Vista frontale +  
Minimum distances from walls to ground /  
Minime distanze da pareti a massa

| Type / Tipo                                                        | A   | B   | C   |
|--------------------------------------------------------------------|-----|-----|-----|
| LB361c (Unipolare doppia interruzione/Single pole double breaking) | 690 | 765 | 774 |

# LBS CONFIGURATIONS

## CONFIGURAZIONI LBS

- $I_{th}$ : Conventional free-air thermal current [A] / Corrente convenzionale termica in aria libera [A]
- $I_{int}$ : Highest breaking current [kA] / Max corrente di interruzione [kA]
- $\hat{I}_{ch}$ : Highest peak making current [kA] / Max corrente di picco di chiusura [kA]
- $I_{Ne}$ : Rated service current [A] / Corrente nominale di impiego [A]
- $I_{Nss}$ : Rated short circuit current [kA] / Corrente di cortocircuito di targa
- $I_{NCW}$ : Rated short-time withstand current (0,25s) [kA] / Corrente di breve durata (0,25s) [kA]
- $\hat{I}_{NCW}$ : Peak value of  $I_{NCW}$  [kA] / Valore di picco della  $I_{NCW}$  [kA]

### 750 Vdc

| Type<br>Tipo | Main Poles<br>Poli Principali                                                     | $I_{th}$<br>[A]<br><br>$I_{Ne}$<br>[A] | $I_{int}$<br>[kA] | $\hat{I}_{ch}$<br>[kA] | $I_{Nss}$<br>[kA] | $I_{NCW}$<br>[kA] | $\hat{I}_{NCW}$<br>[kA] | Category<br>Categoria |
|--------------|-----------------------------------------------------------------------------------|----------------------------------------|-------------------|------------------------|-------------------|-------------------|-------------------------|-----------------------|
| LBS120n      | 1                                                                                 | 2000                                   | 6                 | 50                     | 35                | 50                | 70                      | VI                    |
| LBS122n      | 2                                                                                 | 2000                                   | 12                | 50                     | 35                | 50                | 70                      | VI                    |
| LBS130n      | 1                                                                                 | 3000                                   | 9                 | 70                     | 50                | 70                | 100                     | VI                    |
| LBS132n      | 2                                                                                 | 3000                                   | 12                | 70                     | 50                | 70                | 100                     | VI                    |
| LBS140n      | 1                                                                                 | 4000                                   | 12                | 80                     | 56                | 85                | 120                     | VI                    |
| LBS142n      | 2                                                                                 | 4000                                   | 18                | 80                     | 56                | 85                | 120                     | VI                    |
| LBS161h      | 1*<br>with n.2 poles connected in parallel<br>con n.2 poli collegati in parallelo | 6000                                   | 12                | 120                    | 85                | 100               | 142                     | III                   |

### 1500 Vdc

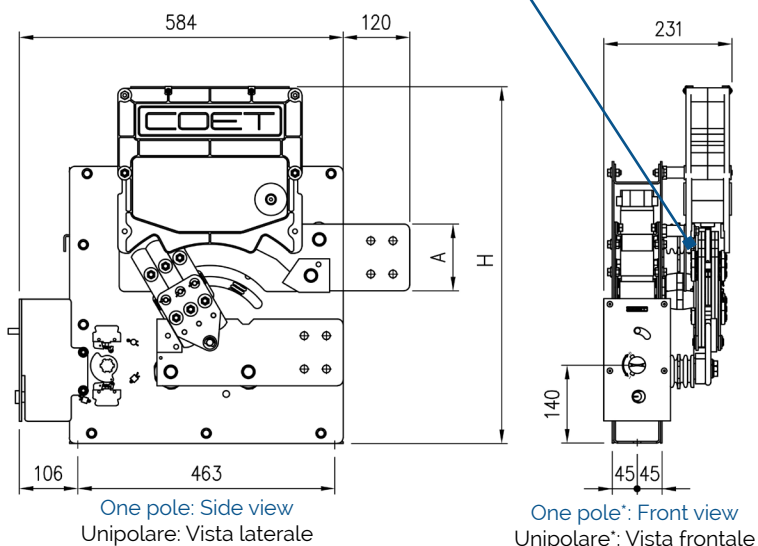
| Type<br>Tipo | Main Poles<br>Poli Principali                                                     | $I_{th}$<br>[A]<br><br>$I_{Ne}$<br>[A] | $I_{int}$<br>[kA] | $\hat{I}_{ch}$<br>[kA] | $I_{Nss}$<br>[kA] | $I_{NCW}$<br>[kA] | $\hat{I}_{NCW}$<br>[kA] | Category<br>Categoria |
|--------------|-----------------------------------------------------------------------------------|----------------------------------------|-------------------|------------------------|-------------------|-------------------|-------------------------|-----------------------|
| LBS220c      | 1                                                                                 | 2000                                   | 6                 | 50                     | 35                | 50                | 70                      | VI                    |
| LBS222c      | 2                                                                                 | 2000                                   | 9                 | 50                     | 35                | 50                | 70                      | VI                    |
| LBS230c      | 1                                                                                 | 3000                                   | 9                 | 70                     | 50                | 70                | 100                     | VI                    |
| LBS232c      | 2                                                                                 | 3000                                   | 12                | 70                     | 50                | 70                | 100                     | VI                    |
| LBS240c      | 1                                                                                 | 4000                                   | 9                 | 80                     | 50                | 85                | 120                     | III                   |
| LBS242c      | 2                                                                                 | 4000                                   | 12                | 80                     | 50                | 85                | 120                     | VI                    |
| LBS261c      | 1*<br>with n.2 poles connected in parallel<br>con n.2 poli collegati in parallelo | 6000                                   | 9                 | 120                    | 85                | 100               | 142                     | III                   |

# LBS OVERALL DIMENSIONS

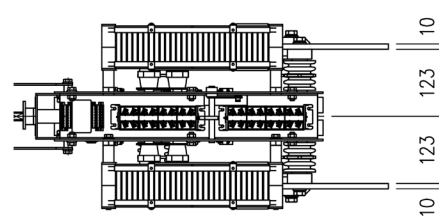
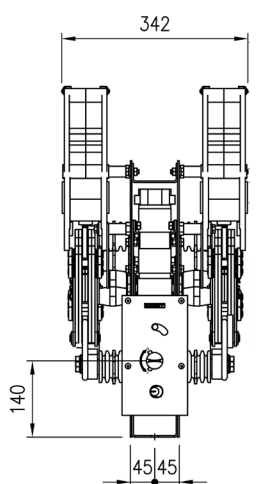
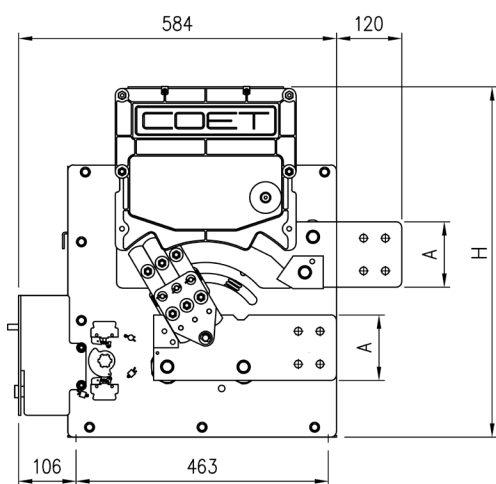
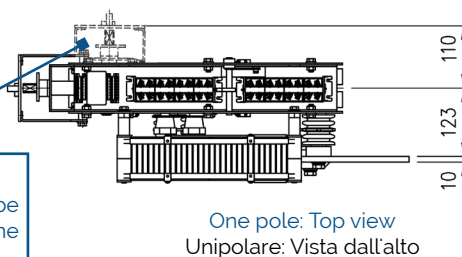
## DIMENSIONI PRINCIPALI LBS

| Type<br>Tipo | A        | H   |
|--------------|----------|-----|
| LBS120n      | 100x10   | 650 |
| LBS122n      | 100x10   | 650 |
| LBS130n      | 120 x 10 | 650 |
| LBS132n      | 120 x 10 | 650 |
| LBS140n      | 150 x 10 | 650 |
| LBS142n      | 150 x 10 | 650 |
| LBS161h      | 120 x 10 | 650 |
| LBS220c      | 100x10   | 730 |
| LBS222c      | 100x10   | 730 |
| LBS230c      | 120 x 10 | 730 |
| LBS232c      | 120 x 10 | 730 |
| LBS240c      | 150 x 10 | 730 |
| LBS242c      | 150 x 10 | 730 |
| LBS261c      | 120 x 10 | 730 |

\*On request the pole can be provided on the left side  
\*A richiesta il polo può essere previsto sul lato sinistro



\*On request manual control can be provided on the side opposite to the pole  
\*A richiesta il comando manuale può essere montato sul lato opposto al polo



Auxiliary Contacts  
Contatti Ausiliari

Max (4NO+4NC) Open Position - Posizione di aperto  
(4NO+4NC) Closed position - Posizione di chiuso



# LBSH CONFIGURATIONS

## CONFIGURAZIONI LBSH

- $I_{th}$ : Conventional free-air thermal current [A] / Corrente convenzionale termica in aria libera [A]
- $I_{int}$ : Highest breaking current [kA] / Max corrente di interruzione [kA]
- $\hat{I}_{ch}$ : Highest peak making current [kA] / Max corrente di picco di chiusura [kA]
- $I_{Ne}$ : Rated service current [A] / Corrente nominale di impiego [A]
- $I_{Nss}$ : Rated short circuit current [kA] / Corrente di cortocircuito di targa
- $I_{NCW}$ : Rated short-time withstand current (0,25s) [kA] / Corrente di breve durata (0,25s) [kA]
- $\hat{I}_{NCW}$ : Peak value of  $I_{NCW}$  [kA] / Valore di picco della  $I_{NCW}$  [kA]

### 750 Vdc

| Type<br>Tipo | Main Poles<br>Poli Principali                                                     | $I_{th}$<br>[A]<br><br>$I_{Ne}$<br>[A] | $I_{int}$<br>[kA] | $\hat{I}_{ch}$<br>[kA] | $I_{Nss}$<br>[kA] | $I_{NCW}$<br>[kA] | $\hat{I}_{NCW}$<br>[kA] | Category<br>Categoria |
|--------------|-----------------------------------------------------------------------------------|----------------------------------------|-------------------|------------------------|-------------------|-------------------|-------------------------|-----------------------|
| LBSH120n     | 1                                                                                 | 2000                                   | 6                 | 80                     | 55                | 70                | 100                     | VI                    |
| LBSH122n     | 2                                                                                 | 2000                                   | 12                | 80                     | 55                | 70                | 100                     | VI                    |
| LBSH130n     | 1                                                                                 | 3000                                   | 9                 | 80                     | 55                | 100               | 142                     | VI                    |
| LBSH132n     | 2                                                                                 | 3000                                   | 12                | 80                     | 55                | 100               | 142                     | VI                    |
| LBSH140n     | 1                                                                                 | 4000                                   | 12                | 100                    | 70                | 100               | 142                     | VI                    |
| LBSH142n     | 2                                                                                 | 4000                                   | 18                | 100                    | 70                | 100               | 142                     | VI                    |
| LBSH160n     | 1*<br>with n.2 poles connected in parallel<br>con n.2 poli collegati in parallelo | 6000                                   | 12                | 120                    | 85                | 125               | 180                     | III                   |

### 1500 Vdc

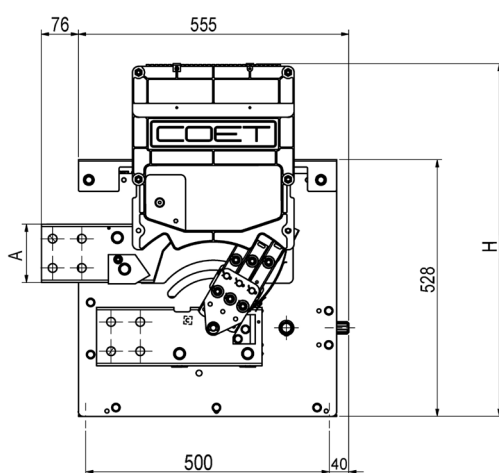
| Type<br>Tipo | Main Poles<br>Poli Principali                                                     | $I_{th}$<br>[A]<br><br>$I_{Ne}$<br>[A] | $I_{int}$<br>[kA] | $\hat{I}_{ch}$<br>[kA] | $I_{Nss}$<br>[kA] | $I_{NCW}$<br>[kA] | $\hat{I}_{NCW}$<br>[kA] | Category<br>Categoria |
|--------------|-----------------------------------------------------------------------------------|----------------------------------------|-------------------|------------------------|-------------------|-------------------|-------------------------|-----------------------|
| LBSH220c     | 1                                                                                 | 2000                                   | 6                 | 80                     | 55                | 70                | 100                     | VI                    |
| LBSH222c     | 2                                                                                 | 2000                                   | 9                 | 80                     | 55                | 70                | 100                     | VI                    |
| LBSH230c     | 1                                                                                 | 3000                                   | 9                 | 80                     | 55                | 100               | 142                     | VI                    |
| LBSH232c     | 2                                                                                 | 3000                                   | 12                | 80                     | 55                | 100               | 142                     | VI                    |
| LBSH240c     | 1                                                                                 | 4000                                   | 9                 | 100                    | 70                | 100               | 142                     | III                   |
| LBSH242c     | 2                                                                                 | 4000                                   | 12                | 100                    | 70                | 100               | 142                     | VI                    |
| LBSH261c     | 1*<br>with n.2 poles connected in parallel<br>con n.2 poli collegati in parallelo | 6000                                   | 9                 | 120                    | 85                | 125               | 180                     | III                   |

# LBSH OVERALL DIMENSIONS

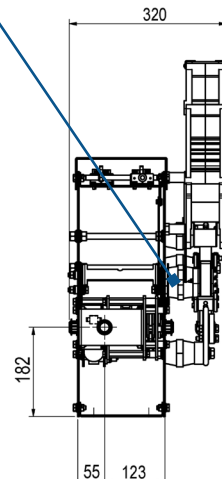
## DIMENSIONI PRINCIPALI LBSH

| Type<br>Tipo | A        | H   |
|--------------|----------|-----|
| LBSH120n     | 100x10   | 650 |
| LBSH122n     | 100x10   | 650 |
| LBSH130n     | 120 x 10 | 650 |
| LBSH132n     | 120 x 10 | 650 |
| LBSH140n     | 150 x 10 | 650 |
| LBSH142n     | 150 x 10 | 650 |
| LBSH160n     | 120 x 10 | 650 |
| LBSH220c     | 100x10   | 730 |
| LBSH222c     | 100x10   | 730 |
| LBSH230c     | 120 x 10 | 730 |
| LBSH232c     | 120 x 10 | 730 |
| LBSH240c     | 150 x 10 | 730 |
| LBSH242c     | 150 x 10 | 730 |
| LBSH261c     | 120 x 10 | 730 |

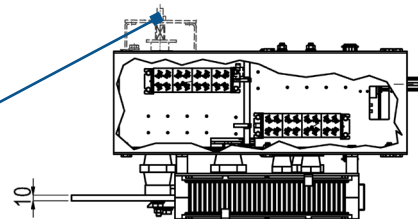
\*On request the pole can be provided on the left side  
\*A richiesta il polo può essere previsto sul lato sinistro



One pole: Side view  
Unipolare: Vista laterale

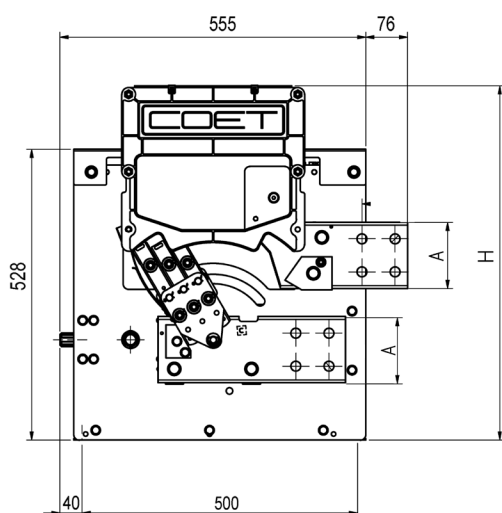


One pole\*: Front view  
Unipolare\*: Vista frontale

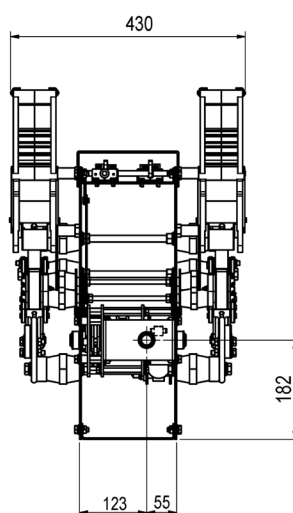


One pole: Top view  
Unipolare: Vista dall'alto

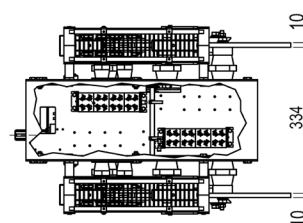
\*On request manual control can be provided on the side opposite to the pole  
\*A richiesta il comando manuale può essere montato sul lato opposto al polo



Two poles: Side view  
Bipolare: Vista laterale



Two poles: Front view  
Bipolare: Vista frontale



Two poles: Top view  
Bipolare: Vista dall'alto

Auxiliary Contacts  
Contatti Ausiliari

Max (4NO+4NC) Open Position - Posizione di aperto  
(4NO+4NC) Closed position - Posizione di chiuso





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