

# PDB Range 2000VDC

(20kA to 160kA)

## Disconnectors

For more than 100 years, Mersen has been providing the market with safe, reliable and longer life time off-load disconnectors. These devices offer high performances and robustness for heavy duty requirements with very limited maintenance.

Mersen offers one of the largest product ranges on the market and is the global leader. Mersen has a switch solution that will meet your unique needs.

Our standard PBD High Current Switch product line is rigorously engineered to meet your technical specifications.

Operation : They can be operated manually, with a pneumatic piston or with an adapted motor (see list) up to 1000 cycles.

Signaling, Terminal Box or Locking system can be studied and customized.

Acceptable ripple current at 2%

Indoor in a currentless state

Ambient air should not exceed +40°C (otherwise please consult)

Altitude should not exceed 1000 m

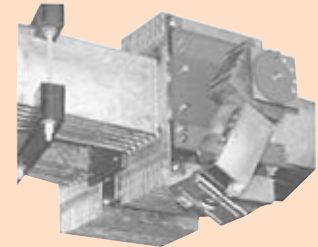
Relative humidity should not exceed 95%

## Features Benefits

- No Load operation
- Indoor Type - Horizontal axis mounting only offering very compact design
- Configuration with 1 pole. Upon request, two poles or change-over design by side association of two disconnectors
- Mechanical endurance 1000 cycles (with respect to maintenance instructions)
- Connexion plates in Aluminium
- Large customization possible with :
  - connexion plate (length, fixing holes)
  - Manual, motor or pneumatic drives
  - auxilaries switches, blocking magnets, locking devices
  - dimension fitting
- Typical temperature rise at nominal current 15°K above busbar (with 40°Cmax.)
- Temperature rise at nominal current is less than 65°K (with 40°C max. ambient temperature)
- Visible break by direct seeing of the mobile silver-plated copper contacts
- All contacts are fitted with solid silver, high temperature brazed (special process)
- Connections to busbar by welding and self-supporting (Busbar must be sized to withstand the disconnector additional weight)
- Electrical contact with silver to silver contact which offer high short-circuit current withstand and Low and constant voltage drop
- Large insulation and creepage distances using Fiberglass reinforced polyester insulators
- Ponctual temperature withstand without equipment damages 140°C
- Upon request, two poles or change-over design by side association of two disconnectors

## Applications

- Power conversion with the possible functions to disconnect, or to change-over.



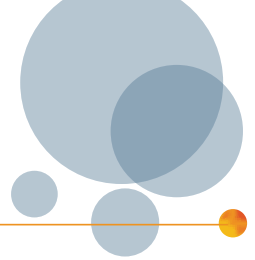
## Standards

IEC 60947-3 and IEC 60077-1



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## Technical data overview

Size per Standard	PBD 20kA to 160kA Aluminium
Speed/Characteristic	Around 1 sec with pneumatic operation Less than 20 seconds with motor operation (depend on the rating)
Number of Poles	1
Working Temperature	-20°C to +40°C

## Product range

### Technical Data

	PBD Range
Number of poles/phases	1
Degree of protection	IP 0
Rated voltage DC	2000 V
Voltage drop	60 mV
Design	motorized on the right with 3 microswitches
Temperature rise at rated current (°K)	65 ° K
Dielectric withstand between live parts and earth (50 Hz - 1 min)	10 kV
Dielectric withstand between live parts in open position (50 Hz - 1 min)	10 kV
Dielectric withstand between auxiliary contacts and earth (50 Hz - 1 min)	2.5 kV
Dielectric withstand between motor and earth (50 Hz - 1 min)	2 kV
Peak short-circuit current withstand - One pole configuration	8 x nominal current
Deformability (Long / Tran / Axially)	±10 / ±10 / ±10
Package	1

# PDB Range 2000VDC

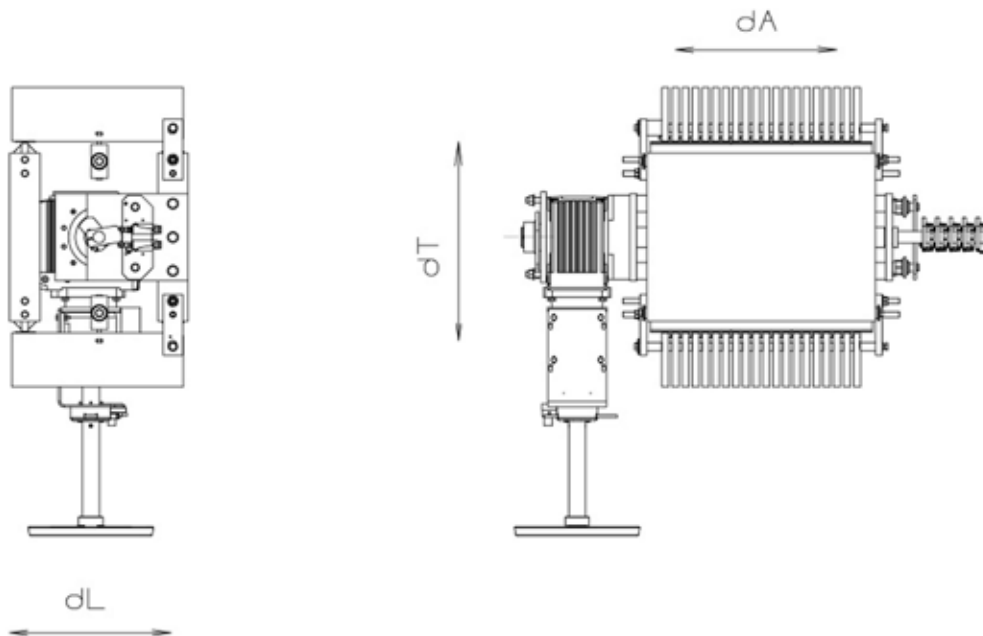
(20kA to 160kA)

## Dimensions

PBD : DEFORMABILITY ILLUSTRATION

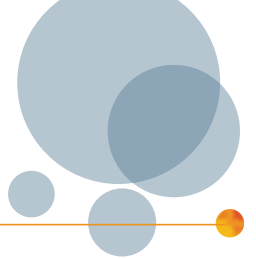
AXIAL - TRANSVERSAL - LONGITUDINAL

Max deformability  $dT \pm 10\text{mm}$  -  $dL \pm 10\text{mm}$  -  $dA \pm 10\text{mm}$



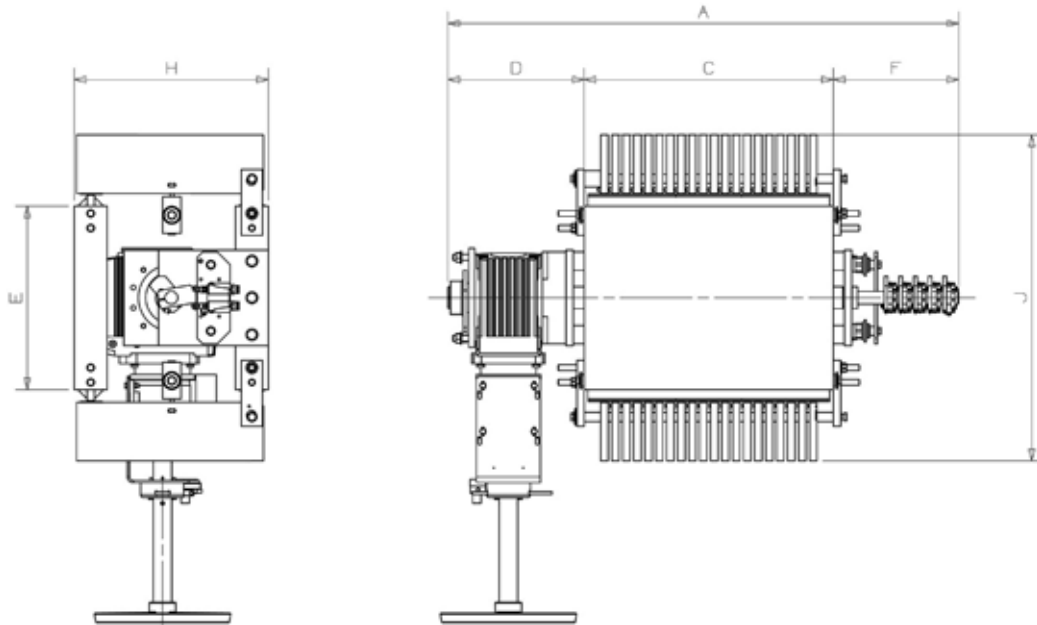
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(20kA to 160kA)



## Dimensions

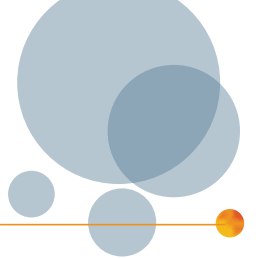
### PBD : 1 POLE - SINGLE ASSEMBLY - ALUMINIUM



Rated current	A	C	D	E	F	G	H	J	K
20.000	830	290	372	500	302	616	560	890	85
25.000	890	350	372	500	302	616	560	890	85
30.000	920	380	372	500	302	616	560	890	85
35.000	1000	440	372	500	302	616	560	890	85
40.000	1060	500	372	500	302	616	560	890	85
45.000	1120	560	372	500	302	616	560	890	85
50.000	1180	620	372	500	302	616	560	890	85
55.000	1240	680	372	500	302	616	560	890	85
60.000	1300	740	372	500	302	616	560	890	85
70.000	1350	800	372	500	302	-	560	890	85
E : standard = 500mm (600 or 700mm as option)	-	-	-	-	-	-	-	-	-

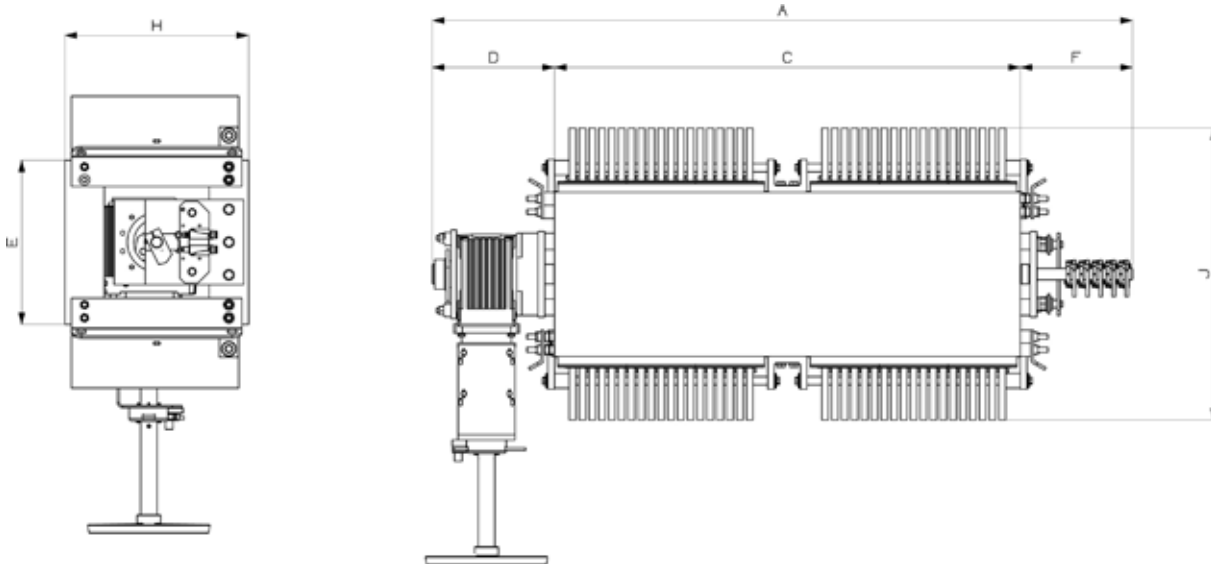
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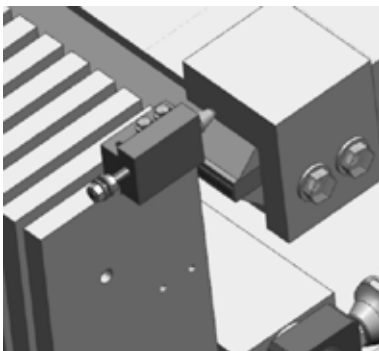
## Dimensions

### PBD : 1 POLE - DOUBLE ASSEMBLY - ALUMINIUM



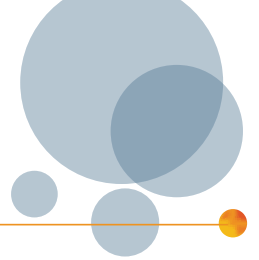
Rated current	A	C	D	E	F	G	H	J	K
80.000	1660	1120	197	500	302	616	480	890	85
90.000	1790	1240	197	500	302	616	480	890	85
100.000	1850	1300	197	500	302	616	480	890	85
110.000	1970	1420	197	500	302	616	480	890	85
120.000	2030	1480	197	500	302	616	480	890	85
130.000	2150	1600	197	500	302	616	480	890	85
140.000	2210	1720	197	500	302	616	480	890	85
150.000	2390	1840	197	500	302	616	480	890	85
160.000	2450	1900	197	500	302	616	480	890	85
E : standard = 500mm (600 or 700mm as option)	-	-	-	-	-	-	-	-	-

## Functions



### Sacrificial contact

Sacrificial contact for residual current up to 10 Amp as total under 1'500 VDC



## Functions



### Customized signaling

This range can be equipped with micro switches offering 10 Amp under 400VAC (or DC13 110VDC 0,5Amp) and 10 million cycles operation. These microswitches are used to signal the switch position and also to cut the power of the motor when it arrives at the end of its operation. The disconnectors can be equipped with 1, 2, 3 microswitches (more under study).



### Manual operation locking

The disconnector in this range have their position secured in Open and Closed (or both) positions using various locking systems for complete security.

- Padlocking (1 padlock diam 6mm)
- Key locking using preferably a Ronis Lock
- Blocking Magnets



### Blocking magnets

Blocking magnets are used to guarantee electromechanically the position of the Disconnector using remote control. This operation can be done for one or both position (open and closed).

Blocking magnet can be used missing Voltage or Voltage can be 24VDC, 48VDC, 110VDC, 230VDC and 230VAC (consumption GE40; TGN15; TGN17 between 20 to 45W)



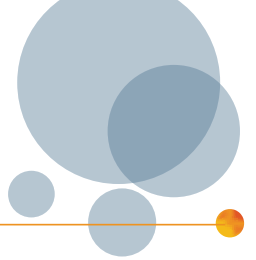
### Connection box, Connection Terminal

This Disconnector range can be equipped with a wiring connection terminal or connection box.



### Control box

This Disconnector range can be equipped with a control box to operate the disconnector (open and close).

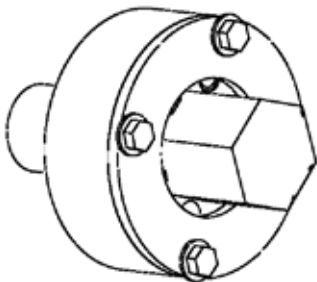


## Functions



### Mechanical Operation Counter

This Disconnector can be equipped with a mechanical operation counter (one complete cycle (open and close) = 1) to watch maintenance operations



### Mechanical fuse

Disconnectors can be protected by torque limiting systems to save the mechanism in case of faulty operation. This system is based on "Mechanical fuse"



### Remote Control

Possibility to operate the Disconnector with remote motor with or without cardan pivot joint upon request

## Accessories



W110902

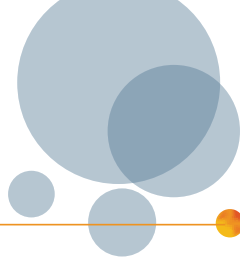
### Indication facilities

Catalog number	Reference number	Length	Weight kg <sup>1)</sup>	Package
MECHANICAL OPERATION COUNTER	W110902	63 mm	0,50	1 piece

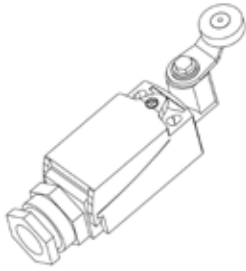
1) weight in kg per piece or set including package

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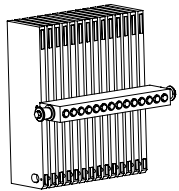
## Accessories



J828422

### Microswitches

Catalog number	Reference number	Weight kg <sup>1)</sup>	Package
AUXILARY LIMIT SWITCH (NO+NC)	J828422	1,00	1 piece
AUXILARY SWITCH (NO+NC) CONTROL POSITION SAFETY	W907714	1,00	1 piece



### Supplementary poles

Catalog number	Reference number	Description	Rated current I <sub>n</sub>	Weight kg <sup>1)</sup>	Package
S/E PBD	To be defined	Set of Knives pre-assembled	-	-	1 piece
PBD KNIFE	T824567	-	1400 A	4,4	1 piece



T824567

### Removable handles for emergency manual operation

Catalog number	Reference number	Length	Weight kg <sup>1)</sup>	Package
S/E VOLANT EQUIPE PBD AC	C881638	105 mm	3,0	1 piece

1) weight in kg per piece or set including package