

# NOR Range 1500VDC

(4kA to 72kA)

## 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 NOR 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 20.000 cycles.

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

Power breaking capacity up to 100kA - 100V DC - L/R < 20msec. (on demand)

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

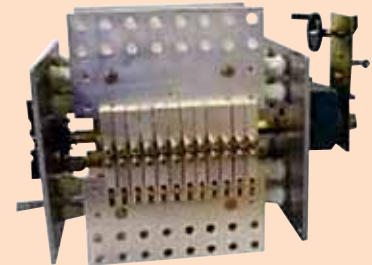
Relative humidity should not exceed 95%

## Features Benefits

- No Load operation
- Indoor Type - Horizontal or Vertical axis mounting offering very compact design
- Configuration with 1 or 2 poles, regular disconnector or change-over
- Mechanical endurance 20.000 cycles (with respect to maintenance instructions)
- Connexion plates in Aluminium or Copper or mix (one side Copper, one side Aluminium)
- Large customization possible with :
  - connexion plate (length, fixing holes)
  - Manual, motor or pneumatic drives
  - auxiliaries switches, blocking magnets, locking devices
  - dimension fitting
- Typical temperature rise at nominal current 15°K above busbar (with 40°C max.)
- 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
- Mechanically independant mobile contact arms with high pressure springs
- Easy connections to Copper busbar by bolting or 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
- Residual current breaking capacity 10 A - 1500 V DC
- Power breaking capacity up to 50kA - 15 V DC - L/R < 20 msec (upon request)
- Punctual temperature withstand without equipment damages 140°C
- Upon request, possible association of two devices on the same drive
- Operation mechanism by a toggle closed system (bichromate galvanized steel)

## Applications

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



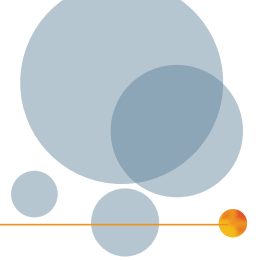
## Standards

IEC 60947-3 and IEC 60077-1



# NOR Range 1500VDC

(4kA to 72kA)



## Technical data overview

Size per Standard	NOR 4kA to 72kA Aluminium or Copper type
Speed/Characteristic	Around 1 sec with pneumatic operation 3 to 12 seconds with motor operation (depend on the rating)
Number of Poles	1 or 2
Working Temperature	-20°C to +40°C

## Product range

### Technical Data

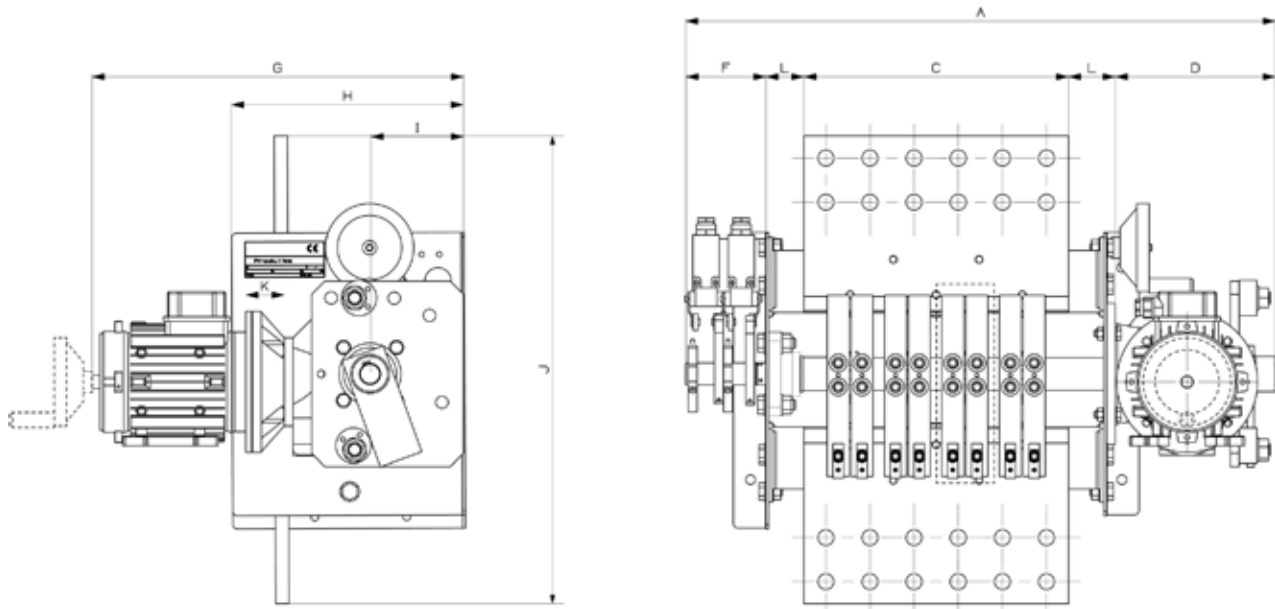
	NOR Range
Number of poles/phases	1 or 2
Degree of protection	IP 0
Rated voltage DC	1500 V
Voltage drop	30 mV
Design	motorized on the right with 3 microswitches
Temperature rise at rated current (°K)	65 ° K
Dielectric withstand between live parts and earth (50 Hz - 1 min)	10 kV
Dielectric withstand between 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	10 x nominal current
Peak short-circuit current withstand - Two poles configuration	5 x nominal current
Deformability (Long / Tran / Axially)	0 / 0 / 0
Package	1

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(4kA to 72kA)

## Dimensions

NOR : 1 POLE - 1 FACE - COPPER



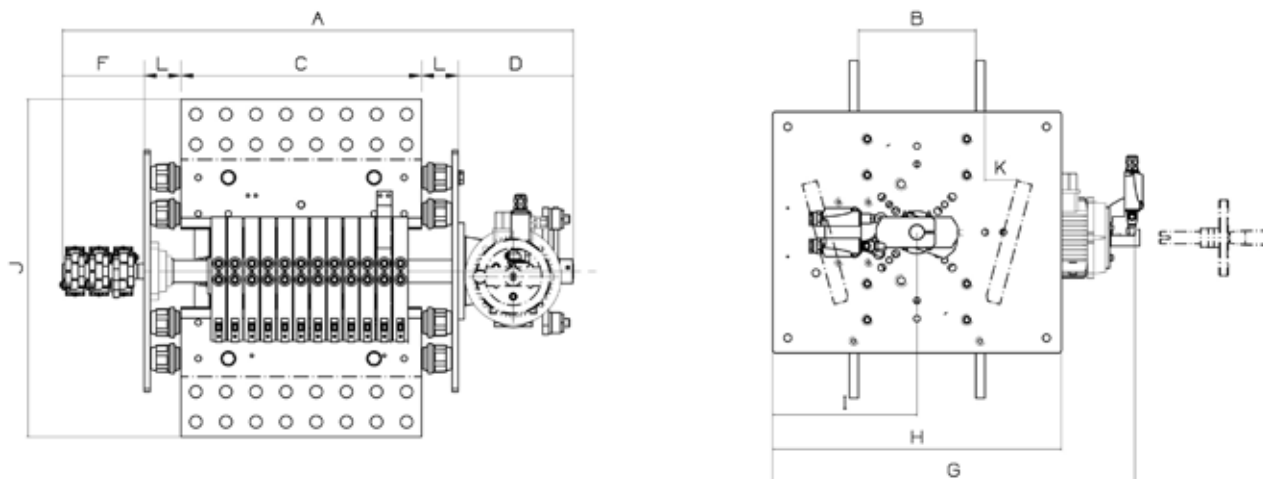
Rated current	A	B	C	D	F	G	H	I	J	K	L
4,000 one pole; one face	270	-	150	197	140	400	220	107	530	85	43
6,000 one pole; one face	370	-	250	197	140	400	220	107	530	85	43
8,000 one pole; one face	520	-	300	197	140	400	220	107	530	85	43
10,000 one pole; one face	470	-	350	197	140	400	220	107	530	85	43
12,500 one pole; one face	570	-	400	197	140	400	220	107	530	85	43
16,000 one pole; one face	420	-	450	197	140	400	220	107	530	85	43
For Higher Current Rating please ask	-	-	-	-	-	-	-	-	-	-	-

# NOR Range 1500VDC

(4kA to 72kA)

## Dimensions

NOR : 1 POLE - 2 FACES - COPPER (Compact Version)



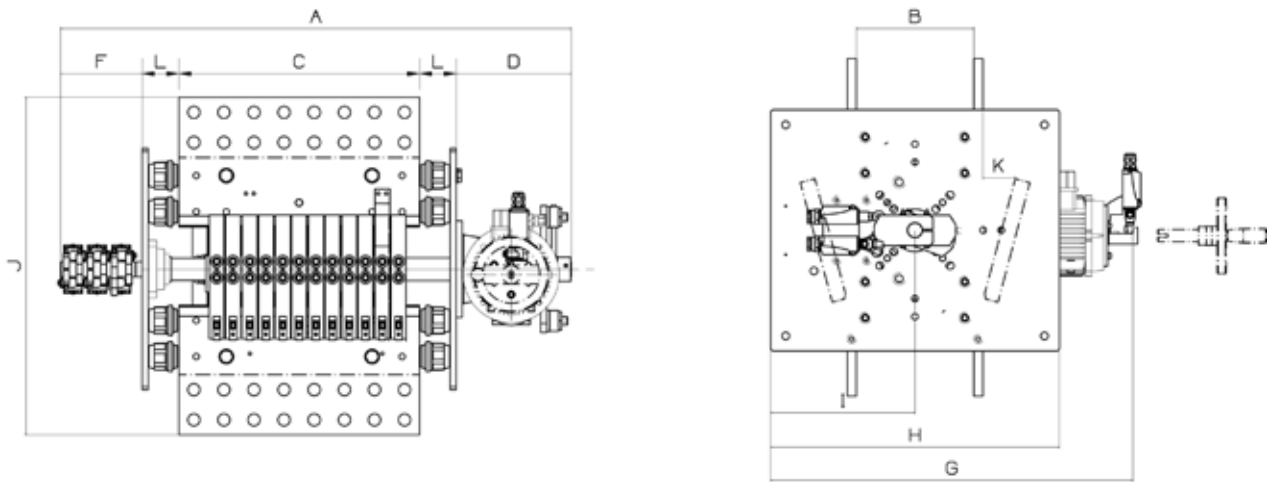
Rated current	A	B	C	D	F	G	H	I	J	K	L
8.000 one pole; 2 faces	272	225	150	197	140	616	480	240	560	85	61
10.000 one pole; 2 faces	322	225	200	197	140	616	480	240	560	85	61
12.000 one pole; 2 faces	372	225	250	197	140	616	480	240	560	85	61
16.000 one pole; 2 faces	422	225	300	197	140	616	480	240	560	85	61
20.000 one pole; 2 faces	472	225	350	197	140	616	480	240	560	85	61
25.000 one pole; 2 faces	522	225	400	197	140	616	480	240	560	85	61
32.000 one pole; 2 faces	572	225	450	197	140	616	480	240	560	85	61
35.000 one pole; 2 faces	622	225	500	197	140	616	480	240	560	85	61
40.000 one pole; 2 faces	672	225	550	197	140	616	480	240	560	85	61
45.000 one pole; 2 faces	722	225	600	197	140	616	480	240	560	85	61
48.000 one pole; 2 faces	822	225	700	197	140	616	480	240	560	85	61
56.000 one pole; 2 faces	972	225	850	197	140	616	480	240	560	85	61
65.000 one pole; 2 faces	1072	225	950	197	140	616	480	240	560	85	61
For Higher Current rating please ask	-	-	-	-	-	-	-	-	-	-	-

# NOR Range 1500VDC

(4kA to 72kA)

## Dimensions

NOR : 2 POLES - 2 FACES - COPPER



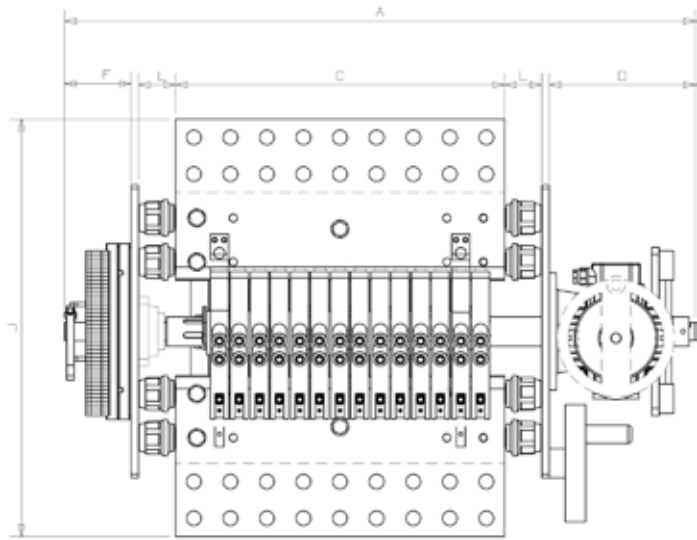
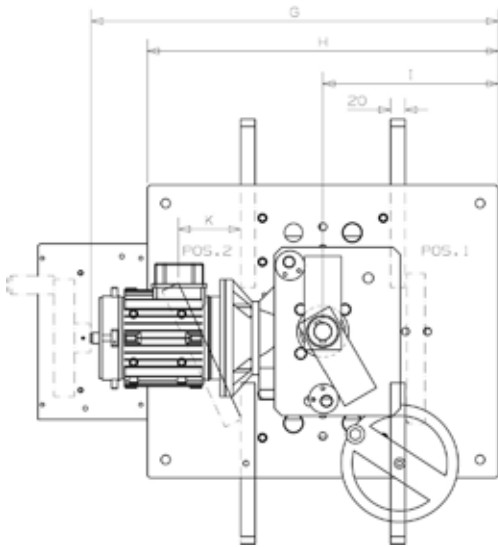
Rated current	A	B	C	D	F	G	H	I	J	K	L
4,000 2 poles; 2 faces	272	225	150	197	140	616	480	240	560	85	61
6,000 2 poles; 2 faces	372	225	250	197	140	616	480	240	560	85	61
8,000 2 poles; 2 faces	422	225	300	197	140	616	480	240	560	85	61
10,000 2 poles; 2 faces	472	225	350	197	140	616	480	240	560	85	61
12,500 2 poles; 2 faces	522	225	400	197	140	616	480	240	560	85	61
16,000 2 poles; 2 faces	572	225	450	197	140	616	480	240	560	85	61
18,000 2 poles; 2 faces	622	225	500	197	140	616	480	240	560	85	61
20,000 2 poles; 2 faces	672	225	550	197	140	616	480	240	560	85	61
22,000 2 poles; 2 faces	722	225	600	197	140	616	480	240	560	85	61
25,000 2 poles; 2 faces	822	225	700	197	140	616	480	240	560	85	61
28,000 2 poles; 2 faces	972	225	850	197	140	616	480	240	560	85	61
32,000 2 poles; 2 faces	1072	225	950	197	140	616	480	240	560	85	61
For Higher Current Rating please ask	-	-	-	-	-	-	-	-	-	-	-
Available in 2 Poles and 1 single face	-	-	-	-	-	-	-	-	-	-	-

# NOR Range 1500VDC

(4kA to 72kA)

## Dimensions

NOR : 1 POLE - CHANGE OVER - COPPER



Rated current	A	B	C	D	F	G	H	I	J	K	L
8,000 CHANGE OVER	472	225	150	197	140	616	480	240	560	85	61
10,000 CHANGE OVER	572	225	200	197	140	616	480	240	560	85	61
12,000 CHANGE OVER	672	225	250	197	140	616	480	240	560	85	61
16,000 CHANGE OVER	772	225	300	197	140	616	480	240	560	85	61
20,000 CHANGE OVER	872	225	350	197	140	616	480	240	560	85	61
25,000 CHANGE OVER	972	225	400	197	140	616	480	240	560	85	61
32,000 CHANGE OVER	1072	225	450	197	140	616	480	240	560	85	61
For Higher Current rating please ask	-	-	-	-	-	-	-	-	-	-	-

## Functions

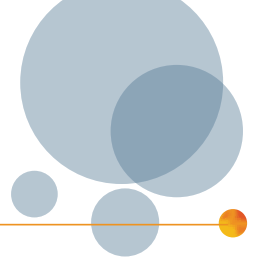


### Sacrificial contact

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

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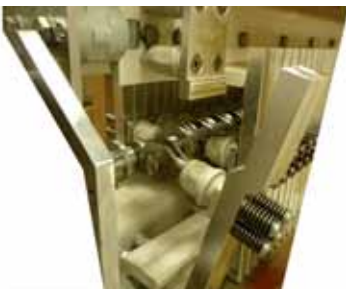


## Functions



### Load Breaking contacts

Load Breake capacity contacts up to 50'000 Amp under 15 V DC max (please consult)



### Earthing contacts

Earthing contacts to have a earthing position (NOR Aluminium Only)



### 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).



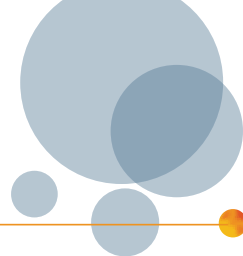
### Manual operation locking

The disconnecter 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

# NOR Range 1500VDC

(4kA to 72kA)



## Functions



### 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).



### Mechanical Operation Counter

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

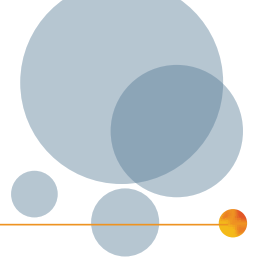
### In a Cubicle

Disconnectors can be protected in made to mesure cubicles or under roofs



# NOR Range 1500VDC

(4kA to 72kA)



## Functions



### Torque Limiting system

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



### Remote Control

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

## Accessories



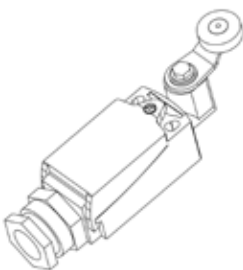
W110902

### Indication facilities

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

### 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



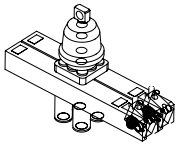
J828422

1) weight in kg per piece or set including package

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## Accessories



J912280

### Supplementary poles

Catalog number	Reference number	Rated current $I_n$	Weight kg <sup>1)</sup>	Package
S/E NOR CONTACT FINGERS (x2)	J912280	2000 A	5,0	1 piece
S/E NOR SACRIFICIAL CONTACT	M1039220	2000 A	3,0	1 piece



D989141

### Removable handles for emergency manual operation

Catalog number	Reference number	Length	Weight kg <sup>1)</sup>	Package
VOLANT D=100/14	D989141	100 mm	2,0	1 piece
S/E VOLANT EQUIPE PBD AC	C881638	105 mm	3,0	1 piece

### Manual operation handles



J986984

Catalog number	Reference number	Length	Weight kg <sup>1)</sup>	Package
MANUAL LEVER NOR 400	A984400	400 mm	1,8	1 piece
MANUAL LEVER NOR 600	J986984	600 mm	2,0	1 piece

1) weight in kg per piece or set including package