

# Change-over Disconnectors HUVS Range 12kV (630 to 6300Amp)

## Changeover switches 7.2kV to 40.5kV

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 HUVS Change-over High Switches are 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 50.000 cycles thanks to fixed cast copper connections.

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

Small making or braking capacity (on request)

Maximum frequency up to 175Hz

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%

List 2 following IEC 62271-1

### Features Benefits

- No Load Operation
- Indoor Type - Horizontal axis mounting (Vertical under study)
- Configuration with 1, 2, 3 poles (more on request)
- Mechanical endurance : 25.000 less or equal than 1kAmp and 50.000 cycles above 1kAmp (1 cycle = open + close) thanks to its fixed cast copper contacts
- Maximum temperature withstand at 130°C without damage to the switch
- Electrical contact by contact blades with pressed-on Hard Silver Contact Rivets and silver-plated
- Supporting insulators made of cast epoxy resin (fire classification according to UL94-V1)
- Large isolation air and creepage path
- Self-cleaning blade contacts
- True opening and visible distance
- Rugged anti-torsion construction
- Full customisation with :
  - Manual (handle or gear box), motor, pneumatic drives operation
  - Quantity of Auxillary switches, safety blocking magnet, locking devices
  - Dimensions of the disconnector and Fittings/connexions to the busbar
- Installation of the disconnector can be done on the floor, on the wall and at the ceiling as long as the operation axis must stays horizontal

### Applications

- Power Conversion, Power Generation, Power Transport (Oil&Gaz turbine, Hydro plants, braking, night pump storage, ...)



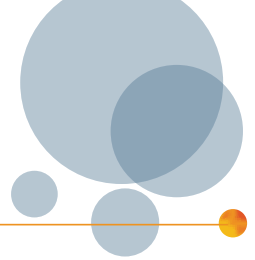
### Standards

According to IEC 62271-102



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(630 to 6300Amp)



## Technical data overview

|                      |   |
|----------------------|---|
| Size per Standard    | HUVS 630A to 6300A (higher ratings on request)  |
| Speed/Characteristic | Around 1 sec with pneumatic operation<br>3 to 4 seconds with motor operation (depend on the rating) |
| Number of Poles      | 1, 2, 3 or more under study   |
| Working Temperature  | -20°C to +40°C  |

## Product range

### HUVS Range 12kV

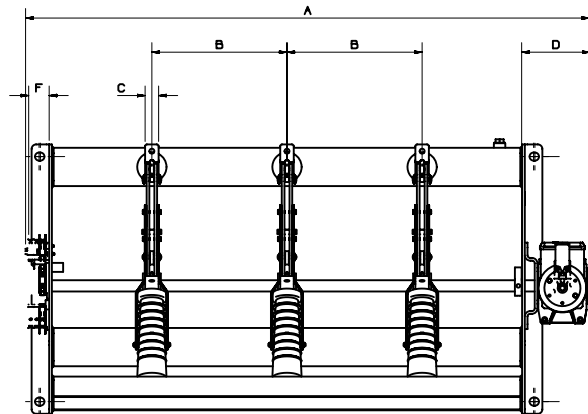
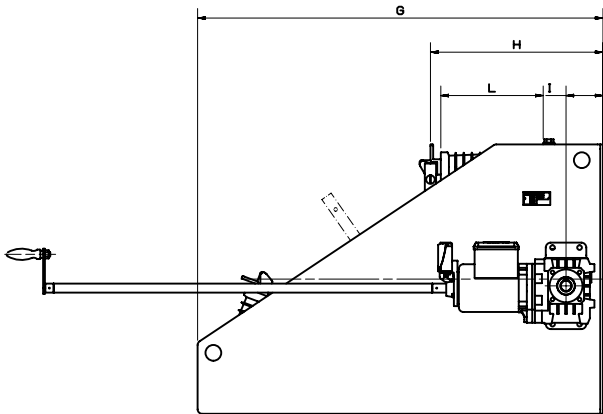
| Catalog number    | Rated current I <sub>n</sub> | Rated peak current | RMS 1 sec short-time withstand current | Voltage drop | Weight |
|-------------------|------------------------------|--------------------|--|--------------|--------|
| HUVS103P630A12KV  | 630 A                        | 50 kA              | 20 kA                                  | 30 mV        | 40 kg  |
| HUVS103P1000A12KV | 1000 A                       | 100 kA             | 40 kA                                  | 30 mV        | 60 kg  |
| HUVS103P1600A12KV | 1600 A                       | 130 kA             | 52 kA                                  | 30 mV        | 60 kg  |
| HUVS103P2000A12KV | 2000 A                       | 130 kA             | 52 kA                                  | 30 mV        | 90 kg  |
| HUVS103P3150A12KV | 3150 A                       | 177 kA             | 71 kA                                  | 35 mV        | 145 kg |
| HUVS103P4000A12KV | 4000 A                       | 177 kA             | 71 kA                                  | 35 mV        | 170 kg |
| HUVS103P6300A12KV | 6300 A                       | 214 kA             | 81 kA                                  | 35 mV        | 240 kg |

## Technical Data

|  | HUVS Range 12kV                             |
|--|---|
| Number of poles/phases   | 3   |
| Degree of protection   | IP 0  |
| Rated voltage AC   | 12000 V                                     |
| Rated impulse withstand voltage BIL<br>Phase to earth and between poles    | 85 kV                                       |
| Rated impulse withstand voltage BIL<br>across the insulating distance      | 75 kV                                       |
| Dielectric withstand voltage 1min/50Hz<br>Phase to earth and between poles | 28 kV                                       |
| Dielectric withstand voltage 1min/50Hz<br>Across the isolating distance    | 32 kV                                       |
| Design   | motorized on the right with 3 microswitches |
| Temperature rise at rated current (°K)                                     | 60 ° K                                      |
| Package  | 1   |

# Change-over Disconnectors HUVS Range 12kV (630 to 6300Amp)

## Dimensions



| Rated current | A   | B   | C  | D   | F  | G   | H   | I  | J   | K   | L   |
|---------------|-----|-----|----|-----|----|-----|-----|----|-----|-----|-----|
| 630 A         | 710 | 200 | 40 | 160 | 59 | 535 | 253 | 70 | 340 | 140 | 130 |
| 1000 A        | 740 | 200 | 40 | 160 | 59 | 535 | 261 | 70 | 358 | 140 | 130 |
| 1600 A        | 740 | 300 | 60 | 160 | 59 | 539 | 291 | 93 | 454 | 156 | 130 |
| 2000 A        | 740 | 300 | 80 | 160 | 59 | 670 | 302 | 93 | 500 | 156 | 130 |

## Motors

| Motor types | Code        | Motor voltage rating |
|-------------|-------------|----------------------|
| AC Mono     | Code A 50Hz | 230VAC               |
|             | Code B 60Hz | 220VAC               |
| AC 3 phases | Code C 50Hz | 400VAC               |
|             | Code D 60Hz | 400VAC               |
| DC          | Code G      | 110VDC               |
|             |             | 220VDC               |

## 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).

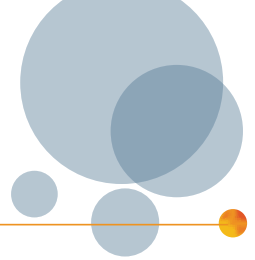


### Tropicalized version

This range can be designed to be installed in salty atmospheres and in tropical geographical zones using stainless steel and a tropicalized version of motor or microswitches and special paints.

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## Functions



### Connetion plate adaptation

To adapt the disconnector to the Busbar, we can adapt the orientation of the connecting plates (Vertically or Horizontally)



### 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

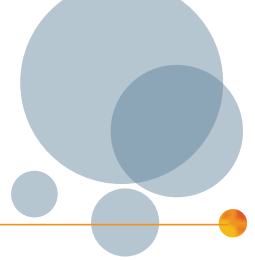
This Disconnector range can be equipped with a wiring connection terminal or connection box.



### Control box

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

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## 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

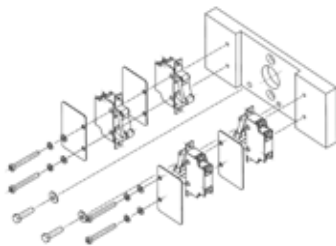
## Accessories



W110902

### Indication facilities

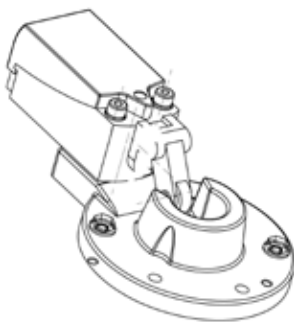
| Catalog number               | Reference number | Length | Weight kg <sup>1)</sup> | Package |
|------------------------------|------------------|--------|-------------------------|---------|
| MECHANICAL OPERATION COUNTER | W110902          | 63 mm  | 0,50                    | 1 piece |



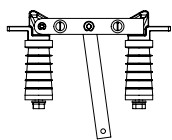
D1027229

### Microswitches

| Catalog number             | Reference number | Weight kg <sup>1)</sup> | Package |
|----------------------------|------------------|-------------------------|---------|
| S/E SGN 2 CA SW11          | D1030058         | 0,3                     | 1 piece |
| S/E SGN 4 CA SW11          | D1027229         | 0,35                    | 1 piece |
| S/E SGN 6 CA SW11          | L1027489         | 0,4                     | 1 piece |
| S/E SGN 8 CA SW11          | B1028952         | 0,5                     | 1 piece |
| S/E SGN CDE DE SECOURS HAS | H820486          | 0,3                     | 1 piece |



H820486



W831837

### Supplementary poles

| Catalog number            | Reference number | Rated current I <sub>n</sub> | Weight kg <sup>1)</sup> | Package |
|---------------------------|------------------|------------------------------|-------------------------|---------|
| S/E POLE HUVS 1000 U54 HH | W831837          | 1000 A                       | 50                      | 1 piece |
| S/E POLE HUVS 2000 U54 HH | G1022609         | 2000 A                       | 50                      | 1 piece |

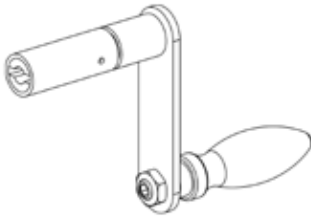
1) weight in kg per piece or set including package

# Change-over Disconnectors HUVS Range 12kV (630 to 6300Amp)

## Accessories

### Lubricants

| Catalog number | Reference number | Weight kg <sup>1)</sup> | Package |
|----------------|------------------|-------------------------|---------|
| Copper Grease  | L108501          | 1                       | 1 piece |



R817113

### Removable handles for emergency manual operation

| Catalog number                   | Reference number | Length  | Weight kg <sup>1)</sup> | Package |
|----------------------------------|------------------|---------|-------------------------|---------|
| ARB FLEX SSB-7 1043              | P1013646         | 1.043 m | 0,50                    | 1 piece |
| LIMITING TORQUE MAN D10 L170     | Z819305          | 0.17 m  | 0,46                    | 1 piece |
| S/E MANIVELLE D10.2 170          | R817113          | 0.17 m  | 0,27                    | 1 piece |
| S/E MANIVELLE D10.2 170 Tropical | N827782          | 0.17 m  | 0,27                    | 1 piece |
| S/E MANIVELLE D10.2 300          | Z817143          | 0.3 m   | 0,29                    | 1 piece |
| S/E MANIVELLE D10.2 480          | Q822103          | 0.48 m  | 0,33                    | 1 piece |
| S/E MANIVELLE D10.2 600          | E834168          | 0.6 m   | 0,60                    | 1 piece |
| S/E MANIVELLE D10.2 1000         | L827688          | 1 m     | 0,60                    | 1 piece |
| S/E SGN CDE SECOURS FLEX 1043    | W1013652         | 1.043 m | 0,70                    | 1 piece |



H821728



V908380

### Manual operation handles

| Catalog number             | Reference number | Length  | Weight kg <sup>1)</sup> | Package |
|----------------------------|------------------|---------|-------------------------|---------|
| S/E EYE LEVER D30/30 L450  | H821728          | 450 mm  | 0,70                    | 1 piece |
| ISOLATING STICK L1120 20KV | L820190          | 1120 mm | 0,85                    | 1 piece |
| ISOLATING STICK L1520 45KV | V908380          | 1520 mm | 1,00                    | 1 piece |
| ISOLATING STICK L2020 60KV | W908381          | 2020 mm | 1,25                    | 1 piece |

1) weight in kg per piece or set including package