

# Disconnectors HAS range 12kV

(630 to 12000Amp)

## Disconnectors 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 HAS High Power 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, ...)



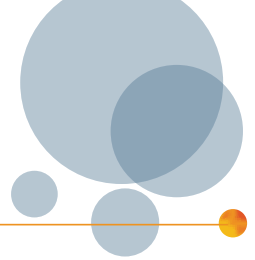
### Standards

According to IEC 62271-102



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## Technical data overview

Size per Standard	HAS 630A to 12000A (higher ratings on request)
Speed/Characteristic	Around 1 sec with pneumatic operation 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

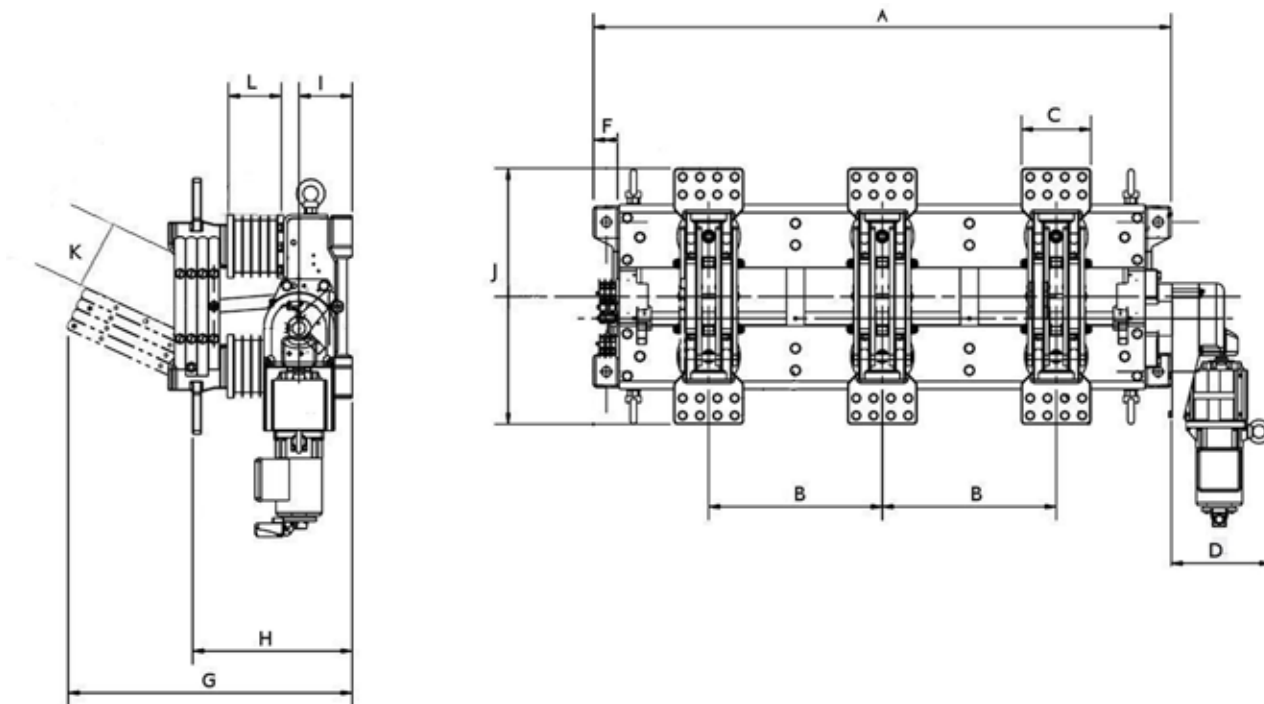
## Technical Data

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

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## Dimensions



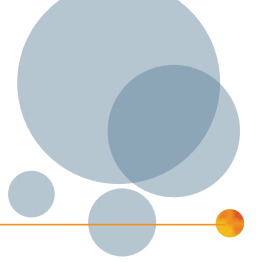
Rated current	A	B	C	D	F	G	H	I	J	K	L
630 A	955	200	40	105	59	450	253	70	340	140	130
1000 A	965	200	40	116	59	464	261	70	358	140	130
1600 A	1143	300	60	116	59	539	291	93	454	156	130
2000 A	1180	300	80	252	59	539	302	93	500	156	130
3150 A	1180	300	100	188	59	560	308	93	500	156	130
4000 A	1652	400	120	263	59	622	347	122	549	156	130
6300 A	1530	400	160	187	59	654	367	122	588	156	130
8000 A	1990	500	120	230	59	615	347	122	549	156	130
12000 A	2100	500	160	230	59	654	367	122	588	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

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## 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.



### Connection 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



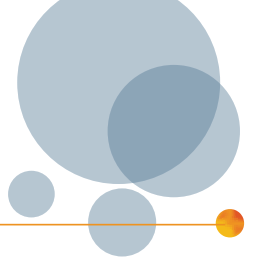
### Blocking magnets

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)

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## Functions



### Fast Closing

A spring system can enable the disconnector for a quick make for earthing applications for example



### 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

## Accessories



W110902

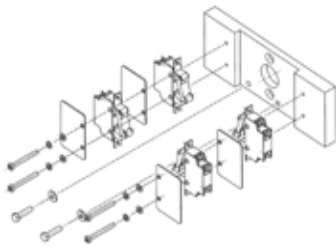
### Indication facilities

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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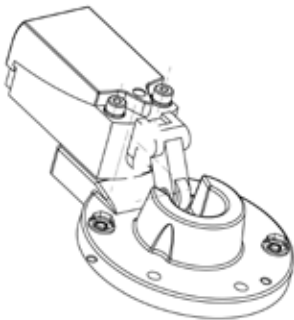
## Accessories



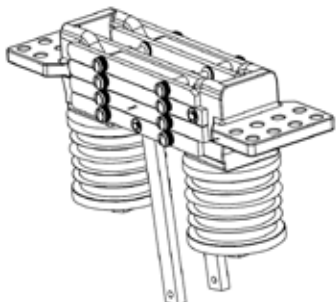
D1027229

### 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



D831890

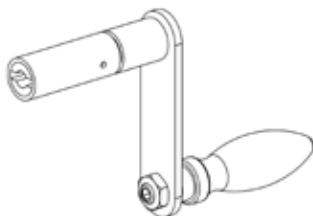
### Supplementary poles

Catalog number	Reference number	Rated current I <sub>n</sub>	Weight kg <sup>1)</sup>	Package
S/E POLE HAS 630A U54 HH	G835849	630 A	5,7	1 piece
S/E POLE HAS 1000A U54 HH	Q833143	1000 A	6,2	1 piece
S/E POLE HAS 1600A U54 HH	Q833902	1600 A	11	1 piece
S/E POLE HAS 2000A U54 HH	M835854	2000 A	13,5	1 piece
S/E POLE HAS 3150A U54 HH	J835506	3150 A	28	1 piece
S/E POLE HAS 4000A U54 HH	A1009930	4000 A	35	1 piece
S/E POLE HAS 6300A U54 HH	D831890	6300 A	45	1 piece

### Lubricants

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

### Removable handles for emergency manual operation



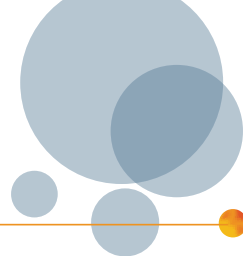
R817113

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

1) weight in kg per piece or set including package

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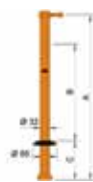
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## Accessories



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