# Disconnectors FA range 750VDC 250 to 2000Amp 

ON BOARD DISCONNECTOR SWITCH

## 750VDC ON BOARD DISCONNECTORS SWITCH



For more than 100 years, Mersen have been providing the market with safe, reliable and longer life time off-load disconnectors and change-overs. These devices offer high performances and robustness for heavy duty and railway requirements with very limited maintenance.
Mersen offers one of the largest product ranges on the market for On-Board applications under 85VDC, 750VDC, 1.500VDC, 3.000VDC and 25 kVAC .
Mersen has a switch solution that will meet your unique needs.
Our standard On-Board FA disconnector range is rigorously engineered to meet your technical specifications in different configurations (Disconnector, Change-over or Earthing) which can be installed in vertical or horizontal position.
These devices offers High short-circuit currents withstand and Visible break by direct seeing of the mobile silver-plated copper contacts moreover a large isolation air and creepage distance

Operation is easy and flexible: They can be operated manually or with an adapted motor (see list) and easily connected to the circuit using Copper busbar by bolting and self-supporting also they offer Self-cleaning blade contacts, ideal for polluted environments.

This range can be studied and customised with Phase to Phase distance adaptation, Signalling, Terminal Box or Locking system functions.

Indoor use in a current less state
The Mechanical endurance is 25.000 cycles minimum warrantied for a device maintained according to the maintenance recommendations.

## FEATURES \& BENEFITS

- No Load operation
- Indoor Type equipment
- This technology offer various configurations
- Disconnector or

Change-over or Earthing - 1 to 4 different positions - up to 6 poles offering different ratings

-     - Quick acting operation
- manual or motorized operation
- with or without locking system


## APPLICATIONS

- Main Traction circuit Change over (dual voltage) or isolation of Power Converter and traction motors
- Power control with the possible functions to disconnect, to change-over or to earth the power source of rolling stock applications (Train, Tramway, Metro)

STANDARDS

- IEC 60077-1
- IEC 60077-2
- IEC 61373
- EN 50124


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TECHNICAL DATA OVERVIEW

| Size per Standard | On Board Disconnectors FA <br> 250 to 2000 Amp for DC under 750VDC |
| :--- | :--- |
| Speed/Characteristic | Around 5 seconds with motor operation (depend on configuration) |
| Working Temperature | $-40^{\circ} \mathrm{C}$ to $+70^{\circ} \mathrm{C}$ |
| Number of Poles | 1 to 6 poles with same or different current ratings (for more poles <br> please consult) |

## PRODUCT RANGE

On-board FA 750VDC

| Catalog <br> number | Rated peak current | RMS 20 ms short-time withstand <br> current | Voltage drop |
| :--- | :--- | :--- | :--- |
| 250 Amp 750 VDC | 50 kA | 30 kA | 10 mV |
| 500 Amp 750 VDC | 50 kA | 30 kA | 10 mV |
| 800 Amp 750 VDC | 50 kA | 30 kA | 10 mV |
| 1250 Amp 750 VDC | 50 kA | 30 kA | 10 mV |
| 2000 Amp 750 VDC | 50 kA | 30 kA | 10 mV |

## DIMENSIONS

FA 750VDC Disconnector: 5 POLES - 3 POSITIONS 1-0 (Open - Closed) MANUAL OPERATION WITH FRONT PANEL 1x1200Amp; 4x500Amp;
dwg 1035699


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## DIMENSIONS

FA 750VDC Disconnector : 3 POLES - 2 POSITIONS 1-O (Open - Closed) with Quick Acting Spring System Manual Dwg 1019401


FA 750VDC Disconnector : 1 POLE - 3 POSITIONS 1-0-2 (Circuit1 - Open - Circuit2) Motorized operation Dwg 1026317


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## DIMENSIONS

FA 750VDC Change_over : 1 POLE - 3 POSITIONS 1-3-2 (circuit 1 - Circuit 2 - Circuit 3) Manual Operation dwg 1029801


FA 750VDC Change_over : 1 POLE-2 POSITIONS 1-2 (circuit 1 - Circuit 2) Manual Operation dwg 1042606


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## MOTORS

| Motor types | Motor voltage rating |
| :--- | :--- |
| DC | 72VDC |
|  | 110VDC |
|  | 220 VDC |

## FUNCTIONS



## Salty / Laden atmosphere

All the FA Disconnector range can withstand 96h00 (inside and outside) under salty atmosphere (more time withstand under request).


## Quick Acting pole- Tumbler

The disconnectors can be equipped with quick acting system named tumbler based on spring compression.
This system enable to close on residual current and garantee the position of the knifes even if the manual or motorized operation is uncomplete.


## Connection plate adaptation

To adapt the disconnector connexion to the Busbar or cables.


## Customized signaling

This range can be equipped with micro switches offering 10 Amp under 400VAC (or AC15 230VAC 1Amp; 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).

## FUNCTIONS



## Motorized Operation 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


## Manual Operation locking

The Manual Operation disconnectors can have their position secured in Open or in Closed positions using padlocking systems ( $3 \times$ diam 10mm) for complete security while maintenance operations.


#### Abstract

or connection box.


## 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.

## Work shop Plug

Work shop plug can be installed and wired to enable your teams to supply energy to your vehicles during maintenance times.

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## Colour

Mersen can paint the metal Front Panel and Cubicles to the color specified, as per the RAL chart, under your special painting process for protection and cosmetic reasons.


## Training and technical support

All around the world, Mersen technical team can help you for technical support and can offer you customized training sessions for your Maintenance team.

## LCC; RAMS; Type tests

Mersen teams can supply Life Cycle Costs (LCC), Reliability Availability Maintainability Safety (RAMS), and Failure Mode and Effect Analysis (FMEA) studies. They can operate Qualification type tests.

## ACCESSORIES

Indication facilities


| Catalog <br> number | Item number | Length | Package | Weight |
| :--- | :--- | :--- | :--- | :--- |
| MECHANICAL OPERATION COUNTER | W110902 | 63 mm | 1 piece | 0.5 kg |

## Microswitches

| Catalog <br> number | Item number | Package | Weight |
| :--- | :--- | :--- | :--- |
| Microswitches |  |  |  |
| ON BOARD AUXILARY SWITCH (NO+NC) | C1037578 | 1 piece | 40 g |

## Lubricants

| Catalog <br> number | Item number | Package | Weight |
| :--- | :--- | :--- | :--- |
| Copper Grease | L108501 | 1 piece | 1 kg |

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## ACCESSORIES



R817113


G1042090

## Removable handles for emergency manual operation

| Catalog <br> number | Item number | Length | Package | Weight |
| :--- | :--- | :--- | :--- | :--- |
| ARB FLEX SSB-7 1043 | P1013646 | 1.043 m | 1 piece | 0.5 kg |
| LIMITING TORQUE MAN D10 L170 | Z819305 | 0.17 m | 1 piece | 0.46 kg |
| S/E MANIVELLE D10.2 170 | R817113 | 0.17 m | 1 piece | 0.27 kg |
| S/E MANIVELLE D10.2 170 Tropical | N827782 | 0.17 m | 1 piece | 0.27 kg |
| S/E MANIVELLE D10.2 300 | Z817143 | 0.3 m | 1 piece | 0.29 kg |
| S/E MANIVELLE D10.2 480 | Q822103 | 0.48 m | 1 piece | 0.33 kg |
| S/E MANIVELLE D10.2 600 | E834168 | 0.6 m | 1 piece | 0.6 kg |
| S/E MANIVELLE D10.2 1000 | L827688 | 1 m | 1 piece | 0.6 kg |
| S/E SGN CDE SECOURS FLEX 1043 | W1013652 | 1.043 m | 1 piece | 0.7 kg |

## Manual operation handles

| Catalog <br> number | Item number | Length | Package | Weight |
| :--- | :--- | :--- | :--- | :--- |
| ON BOARD MANUAL HANDLE | G1042090 | 300 mm | 1 piece | 2 kg |

