High Power Switches

Disconnectors / Change over disconnectors

MF Range
0.5 Hz - 3 000 Hz

Applications

- Disconnection and switching of AC power circuits of induction furnaces
- Isolation of installations requiring a withstand to very high short-circuit currents
- Isolation of installations with a dirty surrounding
- Dividing of a source towards 2 applications (ex. : 2 induction furnaces)
- Outdoor use, under cover

Main technical characteristics

Range

- Disconnectors (1 - 0)
- Change over disconnectors (1-2) with 2 positions. Warning : When reversing, the isolation between terminals 1 and 2 is not ensured.
- Change over disconnects (1 - 0 - 2) with 3 positions.
- Position 0 locked (manual driving by lever).
- The isolation of terminal A is ensured in comparison with terminals 1 and 2 when the device is in position 0.

Electrical Data

- OFF-load operation.
- Rated operating voltage
  - Withstand voltage to earth between poles and on the isolating distance... 3 kV AC, DC
  - dielectric (20 kV upon request)
  - shock : 20 kV 1.2/50µs.
  - Voltage drop at the plates terminals : 35 mV approximately.
  - Dielectric withstand voltage : 2500 V 50 Hz 1mm between microswitches and earth.
- Rated thermal current Ith at 50 Hz defined according to the IEC 129 and 694 (paragraph 4.4) recommendations, i.e. mainly a maximum temperature rise of contacts of 65° with suitable connections.

Mechanical Data

- Mechanical endurance : 60 000 cycles minimum warranted for a device maintained according to the maintenance recommendations.
- Maximum operation frequency (limited by motor heating) : 20 operations per hour.
- Total duration of opening, closing and reversing : 2 to 20 seconds according to the devices.

Accessories :

- Manual operation by lever or hand wheel plus reduction gear (number of turns to complete the manoeuvre : 15 to 20).
- Electrical operation by three phase geared motor 220/380 V 50 Hz usable at 260/440 V 60 Hz and emergency remote hand wheel (protection index : IP 44).
- Two sealed pre-isolating or position microswitches per position (standard assembly).
- Reversers without NO + NC
- Type TELEMECANIQUE XCK P118 in compliance with standards VDE 0660 part 2, CSA 22.2 no. 14 and DEMKO - NEMKO - SEMKO recognitions : 220 V 50 Hz 10 A resistive circuit
  220 V 0 Hz 2.8 A inductive circuit.

Technology

- Visible break as the opening of movable contacts can actually be seen
- Devices entirely non-magnetic
- Tropicalized equipment
- Connecting plates and movable contacts in silvered copper
- Contacts with self-cleaning ensured by copper/silver bimetal rivets on thick silver-plating
- Pressure of each rivet ensured by an individual spring in stainless steel
- Driving mechanism consisting of a non-magnetic shaft fitted on bearings, actuating the movable contacts by means of insulating rods (laminated - glass - epoxy)
- Fixing flange in duralinox
**High Power Switches**

**Gamme / Range / Lieferprogramm**

Maximum continuous permissible current per pole at 40°C according to the frequency:
(Above 175 Hz, bars must be sandwiched.
Above 3000 Hz, please consult us.)

**Technologie / Technology / Technologie**

| Maximum number of poles | 12 in single sided technology, 10 in double sided technology. |

**Derating in accordance with ambient temperature:**

\[ K = \sqrt{\frac{110 - \Theta}{70}} \]

**Solution:**

\[ \sqrt{\frac{110 - 50}{70}} = 0.92 \]

therefore the use of device with a maximum permissible current of 7200 A / 0.92 = 7826 A is required, i.e.:

MF 200 (1-0) with 6 single sided poles sandwiched RSRSR*, 3 poles for each phase. In mum current per phase of 2650 X 3 = 7950 A (higher than 7826 A, therefore correct).

**Example of selection:**

Circuit 500 Hz - 7200 A - 2250 V, Single phased.
Ambient 50 °C - isolation of go and back ways.

<table>
<thead>
<tr>
<th>Fréquences / Frequencies / Frequenzen</th>
<th>0.5 Hz</th>
<th>50 Hz</th>
<th>250 Hz</th>
<th>500 Hz</th>
<th>1000 Hz</th>
<th>2000 Hz</th>
<th>3000 Hz</th>
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