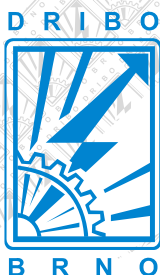
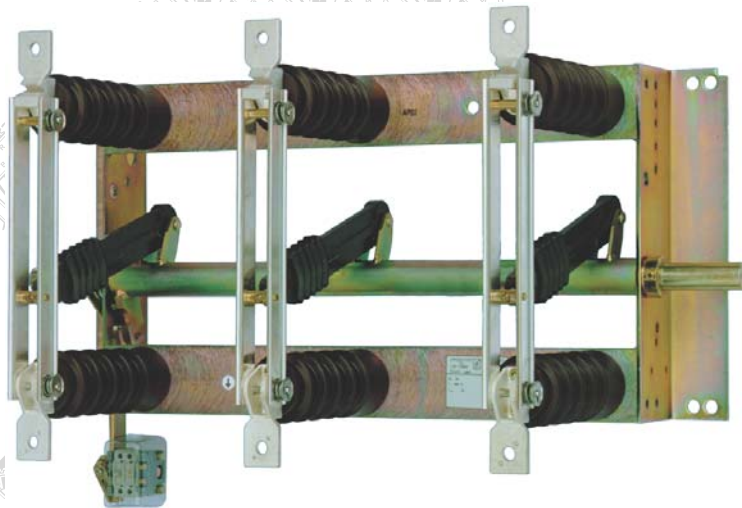


Instructions for assembly, operation and maintenance of indoor disconnectors and earthing switches

single- and three-pole design
rated voltage 12, 25 and 38.5 kV
rated current 630 – 6300 A

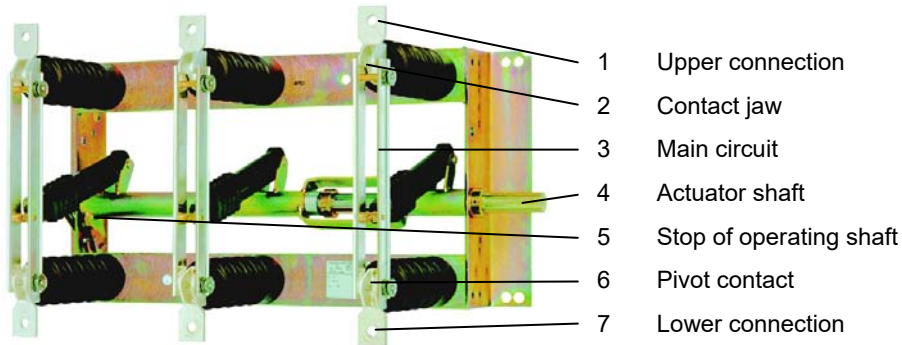


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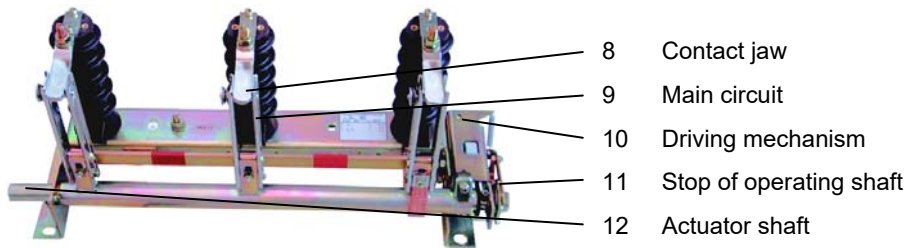
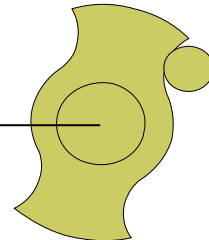
Indoor disconnectors and earthing switches



Indoor Disconnector (630 A)

- 1 Upper connection
- 2 Contact jaw
- 3 Main circuit
- 4 Actuator shaft
- 5 Stop of operating shaft
- 6 Pivot contact
- 7 Lower connection

5,11 Side view



Earthing Switch

- 8 Contact jaw
- 9 Main circuit
- 10 Driving mechanism
- 11 Stop of operating shaft
- 12 Actuator shaft

Handling and storage

Unpack the disconnector upon arrival. Check for damages caused during the transport. Any damage should be reported immediately to the supplier. After unpacking remove all remaining packaging material from the switching device and accessories.

Lift the disconnector by holding it at the base frame, only. Use never current-carrying path as a component for lifting up the switching device. During the storage protect the device from damages, humidity and dirt.

Operating conditions

The disconnector is intended for operation under normal conditions as defined by the EN 62271-1 standard, class „minus 15, indoor use“. Highest ambient temperature: 40°C; average temperature during 24 hours is not allowed to exceed 35 °C.

Assembly

The switching devices are designed for vertical mounting. Devices for horizontal mounting are modified and identified accordingly.

Assembly of the disconnector

Screws are to be tightened up in a way to prevent the occurrence of deformation or stress in the disconnector base frame (use shim blocks if needed).

Connection of busbars or cable terminals

When making connections take care of incoming terminals of the disconnector (1,7) which have to be kept away from stresses. Fix the connecting bolts with 70 Nm torque (using another key in opposite position).

Putting the blocking system into operation

In order to reduce the probability of damage to the switching knife contacts both the disconnectors and the earthing switches are transported in ON switching position. Consequently, the blocking system is not operative during the transport.

Prior putting the device into operation the blocking system is to be enabled. This is done using the following steps:

1. Switch the disconnector OFF.
2. Using a torque wrench tighten special cut-in M10x25 bolt in the blocking segment with a torque of 55 Nm.
3. Check the proper function of the blocking mechanism.

Operation test before putting the device in operation

Checking the end position of the disconnecter and the earthing switch.

In the course of handling with both the manual and motor operated drive the switching shaft (4) must abut against the end block (5). If the disconnecter is equipped with earthing switch also the earthing switch shaft (12) must reach the end positions.

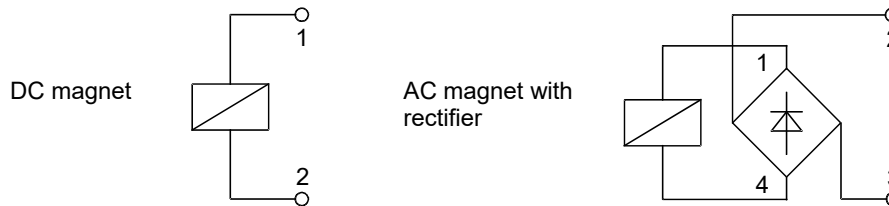
Checking the current-carrying path

The knife contacts (3) must approach the fixed contact in a symmetrical way.

Checking the blocking magnets

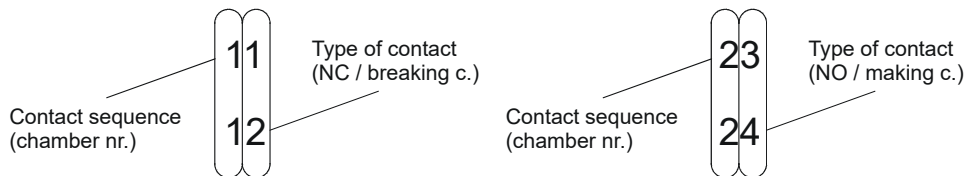
Switching of devices equipped with blocking magnets can take place only if voltage is connected to the magnet. In no-voltage state the switching device is blocked by magnet. The magnet is designed for 100 % of load capacity.

Connecting the blocking magnets to the power:

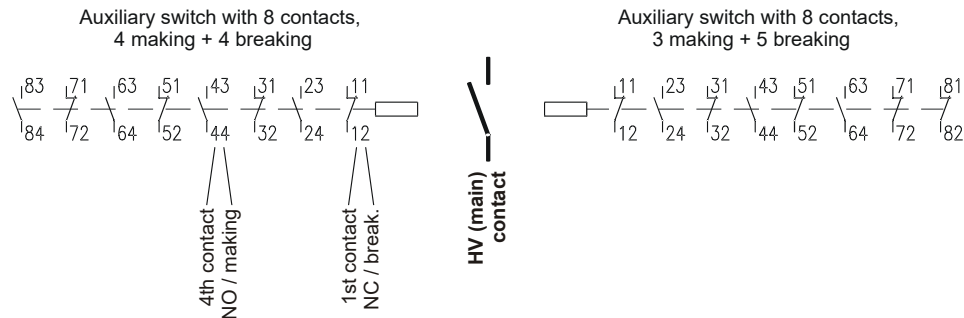


Checking the auxiliary switches

The adjustment of auxiliary switches takes place at the manufacturer's, in accordance with the stipulations of standards, and has not be changed without the consent of the suppliers. Contact terminals of auxiliary switches are marked with numbers, depending on the sequence and type of contact:



The numbering starts always from the shaft (see the following example of contact description). The first contact is a NC contact followed with NO contact. In such a way the contacts are alternating until the required number of one specific type of contact runs out. The remaining contacts of one specific type are grouped at the end. Switching devices are equipped with auxiliary switches containing always even number of contacts. Examples of description and the arrangement of contacts:



Maintenance

Under normal operating conditions maintenance works are to be carried out every 10 years. During the maintenance the following works are carried through:

Cleaning

- insulators
- insulated switching pull rod
- switching knife-type contacts (in OFF position)
- switching springs
- earthing contacts

Lubrication

- all bearings, friction lodgement and hinges (on mechanical parts of the base frame) shall be treated with oil applied by spraying (see table below)
- surfaces of the main contacts may be greased with specified greasing agent, only, with a very thin layer of grease applied
- after having been cleaned the earthing switch contacts are treated with grease

| To be applied to | Lubricating means prescribed |
|--------------------------|--|
| main contact surfaces | disconnectors up to 630 A: Rivolta S.K.D. 4002 grease disconnectors 1250A – 6300A: Barrierta L55/1 grease |
| all bearings | Omnigliss spray or other spray containing Molykote |
| earthing switch contacts | Barrierta L55/1 grease |

Make a few switching operations after the termination of maintenance works.