

Manual Operating Mechanism Type HA 31-80

for High-Voltage Disconnectors and Earthing Switches
for Outdoor Installation

Publication No. 1HPL 700 003 En



HAPAM

Application

The manual-operated mechanism type HA 31-80 is designed for outdoor installations and used for the operation of high voltage disconnectors and earthing switches.

Design

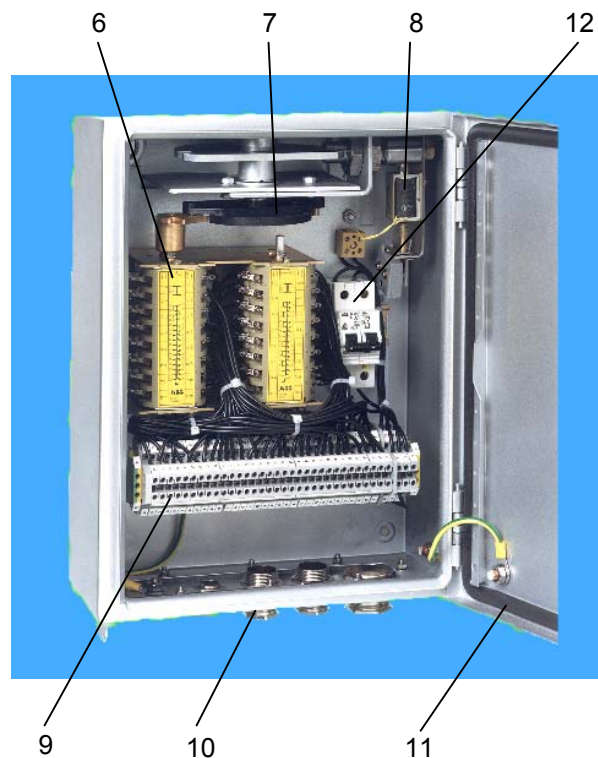
All components of the operating mechanism are assembled in an aluminium sheet housing with a door at the front. The control components are attached to mounting plate and wired to the terminal strip.

For connecting the control cables to the terminal strip is provided a clearance of approx. 10 cm.

The basic version of HA 31-80 includes the following:

- 8-pole pilot switch with 4 NC and 4 NO contacts (by removing the bridges and cancelling the series connection the number of pilot switch contacts can be increased up to: 8 NC and 8 NO contacts).
- Cross sectional area for all internal connections: TQ 1.5 mm², flexible, black.
- The incoming and outgoing cables are passed from below through a 2-mm-thick removable cable entry plate made of aluminium. Cable glands are not included in the standard scope of delivery, and must be provided by the customer. All bored holes (standard version: 1 x conduit thread 29, 2 x conduit thread 21) are closed with blanking plugs.
- For ventilation is provided a cable gland with a filter insert. It is located in the cable entry plate. In that plate is also located the connection angle with 13-mm bored hole for the earth coming in from outside.
- The earthing connection in the box between the door and the housing has a cross-sectional area of 6 mm².
- An anti-condensation heater connected to the voltage supply is permanently mounted onto the terminal unit

All devices are protected against accidental touching of electrical connections by means of appropriate constructional features or covers.



Optional Extras

(depending on customer's order)

- 1 Pilot switches** (maximum of 2 pilot switches can be installed)
 - 1.1 8-pole pilot switch 4NC and 4NO contacts (same design as included in basic version).
Switching capacity: 2 A at 220VDC, T=20ms.
By removing the bridges and cancelling the series installation the number of pilot switch contacts can be increased up to: 8NC and 8NO contacts.
In this case the switching capacity is:
1 A at 220 VDC, T = 20 ms or
4 A at 110 VDC, T = 40ms
 - 1.2 8-pole pilot switch with 3NC, 3NO, 1 lagging NC, 1 leading NO.
Switching capacity:
3NC, 3NO and 1 lagging NC contact:
2 A at 220 VDC, T = 20 ms or
4 A at 110 VDC. T = 40 ms
By removing the bridges and cancelling the series installation the number of pilot switch contacts can be increased up to:
6NC, 6NO, 2 lagging NC, 1 lagging NC, 1 leading NO.
In this case the switching capacity is:
1 A at 220 VDC, T = 20 ms or
4 A at 110 VDC, T = 40 ms
 - 1.3 8-pole pilot switch with 3NC, 2NO, 1 lagging NC 1 leading NO, 1 leading NO.
Switching capacity:
3NC, 3NO, 1 lagging NC, 1 leading NO, contact:
2 A at 220 VDC, T = 20 ms
By removing the bridges and cancelling the series installation the number of pilot switch contacts can be increased up to:
6NC, 4NO, 2 lagging NC, 2 leading NO,
the switching capacity is:
1 A at 220 VDC, T = 20 ms or
4 A at 110 VDC, T = 40 ms

- 2 Wiring of the pilot switches to the terminal strip:**

- 2.1 wires with marks

- 3 Blocking magnet for preventing maloperation**

- 4 Control device for heating**

- 4.1 thermostat adjusted

- 5 Device for locking the door:**

- 5.1 handle type "T"
- 5.2 handle type "T" with cylinder lock
- 5.3 padlock with prevent removal of the cover for emergency operation

Mode of operation

The manual operated mechanism is actuated by an operating lever which can be locked in both end positions by a padlock. The switching angle of an operating mechanism is 190 degree. Auxiliary switches are actuated by control disc fitted to the operating shaft. The optional blocking magnet prevents any operation of the manual operating mechanism if there is no actuating signal from the control room. In this case the movement of the manual operating lever is blocked. Unauthorised opening of the door can be prevented by optionally built-on padlock (special design)

Maintenance

The manual operating mechanism needs very little maintenance.

Under normal climatic conditions the inspection intervals are every 5 years or 1000 operations.

Technical Data

Technical Data of Manual Operating Mechanism	
Rated. torque required on the operating lever	500 Nm
Length of operating lever	1000 mm
Switching angle of the hand lever	190°
Heating capacity	approx. 25 W
Heating voltage	60,110,125 or 220V
Degree of protection against contact with live or moving parts ingress of foreign bodies and water	IP 54
Cross section of internal wiring	1,5 mm ²
Cross section of supply leads solid stranded (with end sleeve)	4,0 mm ² 2,5 mm ²
Weight	25 kg
Dimensions (cubicle) L x W x H	300x155x400 mm
Technical Data of Blocking Magnet	
Operating voltage	60, 110, 125 or 220 VDC 110, 125 or 220 VAC
Admissible deviation from the operating voltage	+ 10 / -15%
Rated power consumption of magnet coil	approx. 6 W
Duty cycle	100 %

HAPAM

HAPAM Poland Sp. z o.o.

22/24 ks. bp. W Tymienieckiego Street
90-349 Lodz, POLAND

Tel. +48 42 663 54 50

Fax. +48 42 663 54 97

www.hapam.pl