

ACTOM OUTDOOR AIS DISCONNECTORS



ACTOM CMM 400 Motor Operating
Mechanism

HIGH VOLTAGE EQUIPMENT
A division of ACTOM (Pty) Ltd



ACTOM

MOTOR OPERATING MECHANISM TYPE ACTOM (CMM)

DESIGNED FOR SAFETY AND RELIABILITY

The ACTOM Motor Drive mechanisms also provide signalisation of the movement of the equipment, as well as the necessary operational interlocking functions.

TYPE

ACTOM CMM 400:

Manufactured to IEC 62271-102 - High voltage alternating current Disconnectors and Earth switches.

Main Uses and applicable range:

CMM series motor operating mechanism used to operate high voltage Disconnectors and Earthing Switches.

The unit can be operated either electrically, remote control, or local control, or without power manual handle.

SERVICE CONDITION

- Ambient Temperature -50°C --+50°C
- Altitude above sea level 2000m (max)
- Wind Speed 34m/s (max)
- Iced Thickness 10mm (max)
- Earthquake Shock intensity 9 °
- Solar radiation intensity 1000W/m² (midday on sunshine day)
- Variation range of power line Voltage 85% to 110% of Rated Voltage

MAINTENANCE

ACTOM uses only the Highest quality corrosion resistant materials available. The casing is made from 316 Stainless Steel and all other metal parts are Hot dip Galvanized. The mechanism has a sealing tightness rating of IP54. This ensures a high mechanical strength and corrosion resistance. The gears are lubricated for life and therefore do not require any maintenance or greasing. The main worm gear assembly which provides the operating torque and

supports the weight of the mechanism, is bolted to the supporting structure allowing the housing to serve only as a weatherproof covering. Air vents and an internal heater are used to prevent condensation and to ensure trouble free operation of low voltage relays and switches. Only minimum maintenance is required, depending on the environment that the unit is installed.

EASY INSTALLATION

The side panels are easily removable for access to terminals for easy on site wiring and fault finding.

All mechanisms are factory wired to the terminal blocks.

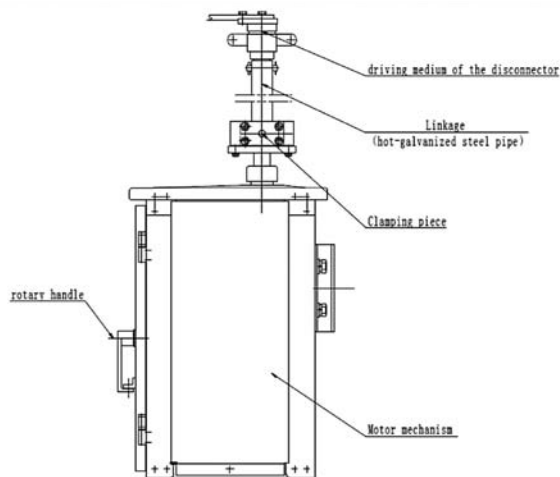
SAFETY

- The manual operating crank handle is attached to the inside of the door.
- The Motor mechanism may be manually operated by opening the door and inserting the crank handle in the access hole provided for emergency operations.
- This manual operation turns the same gearbox as the motor operation.
- The mechanism is fitted with an auxilliary switch inside the mechanism to ensure direct and reliable correspondence between the mechanism and the disconnector position.
- The rotary switch is designed with cams that operate knife like contacts.
- The operation force by both motor and manual is transmitted by a non-reversible reduction worm gear which prevents the disconnector from changing its final position due to environmental conditions i.e. wind, seismic or any electrodynamic forces. It also eliminates that there is no reverse force during the operation of the hand crank.

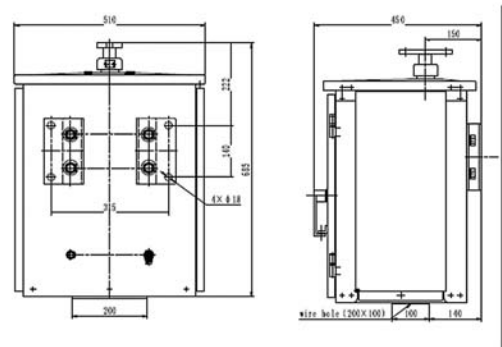
- The motor drive is fitted with an electro-mechanical inter lock system that needs to be energised prior to the inserting of the manual crank handle and this will interlock the manual operation with other devices when required (I.e. Circuit Breaker) and override the motor operation when the crank is inserted.
- The manual drive electro-mechanical padlock also requires energising before operation.
- The motor is always fed from The MCB.
- MM series mechanism makes use of advanced, reliable, and maintenance free electronic motor protector which is designed according to the operating characteristics of motor mechanism for disconnector and has provided reliable protection functions to the symmetry fault (e.g. Overload, blocked etc.) and asymmetric fault (e.g. phase failure, current imbalance, etc).

MAIN DESIGN OF THE PRODUCT

- The mechanism is fitted with a 24 Pole auxilliary switch. The configuration of the switch can be ordered according to customer requirements. It is installed inside the motor mechanism.
- It is operated by the drive shaft and mechanically linked to show the open and closed position.
- CMM series mechanism is designed with removable sides for easy access during installation and maintenance .
- The front door is designed with hinges and has a handle locking system.
- Interlocking facility available for use with mechanical keys.
- The motor drive is fitted with a thermostatically controlled anti-condensation heater 400W 220V AC
- The CMM series mechanism has a low sound operating motor which drives a worm and gearbox which in turn operates the main shaft of the mechanism.
- The CMM series mechanism has limit switches which disconnect the electrical operation during the opening and closed positions
- The mounting of the mechanism must be designed in such a way that during operation there should be no flexibility and it should withstand a maximum torque of 2000Nm.
- The mechanism is installed with 4 off M16 bolts, washers and nuts. During installation the mechanism needs to be levelled and the drive shaft aligned (horizontally and vertically) with the vertical shaft of the equipment.
- The mechanism is provided with a coupling clamp to connect the drive shaft with vertical shaft of the disconnecter.
- The mechanism has an open and closed, on or off indicator on the drive shaft coupling device.
- The disconnecter should be tested and found reliable, tested at opening and closing at 85% to 110% of rated operation voltage.
- Not to be used for locations with large quantities of conducting gas, dust or places where the electrical specification will be decreased . Also not to be used in explosive and dangerous areas. Frequent heavy shock, no explosive substances (inflammables or caustic soda).



Drawing for installation of motor mechanism and disconnector



Outline Dimension Drawing of Motor mechanism

BASIC MAINTENANCE

- After the product is put into operation, check the following parts periodically each year.
- Routine inspection and maintenance must be carried out in accordance with preventative maintenance.
- Operate mechanism with crank to check if rotation parts are flexible and auxilliary switch are switched normally.
- All fastening parts should not be loose.
- There should be no damage to parts such as positive speed gearbox, stop block and locations.
- Wipe on grease lubricant to all friction surfaces after checking and adjusting.

ACTOM High Voltage Equipment

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