MULTISWITCH MK5

A Comprehensive range of 3 Phase Load-Break Switches incorporating a spring close or trip free mechanism and many other features for 12-24kV distribution systems.

- New South African Design
- Cycloaliphatic, Silicone or Porcelain Insulators
- 630Amp Load Break Switching
- Spring Closing Mechanism / Motor Actuator
- 25kA fault make capacity
- Trip-Free Mechanism
- Pull-to-Open and Pull-to-Close hook stick operation
- Current Transformers/Sectionaliser Logic
- TRIP-ALL-PHASE Fuse/Switches with D/O or H.R.C fuse

McWade
LINEGEAR 2000

We are an 'ISO 9001 2000' registered company
The multi switch MK5

The new MK5 range of switchgear products has been created by LINEGEAR 2000 to consolidate the wide range of products which has been developed over the 15 years.

The key feature of this new design is a selection of insulators that all have the same size and fixing arrangements and creepage distances up to 750mm (equal to 31mm / kV at 24kV) for extreme coastal conditions.

The increasing use of these products outside the usual local delivery area has also prompted the need to reduce shipping volumes, and some innovative changes have been made to the framework of the products to facilitate easier assembly and provide customer selected phase positions.

The switch is suitable for rated voltages of 12 to 24kV, the 12kV unit having a shorter cross-arm and more compact phase spacing than the 24kV unit.

The terminal insulators remain in the well-establishment LINEGEAR 2000 standard of the "V" formation, with a long rod contact drive insulator, used in compression and driven by an over-toggle linkage, which automatically holds the contacts in the secure closed position. The design does not need a low level operating mechanism to hold the contacts closed, as is the case with most other manufacturers products.

Insulators

The terminal insulators can be supplied as cycloaliphatic resin or silicone composite type with the silicone shed profile moulded onto a fiberglass or epoxy resin stem. Solid Core brown glazed porcelain are also available.

The low mass of the contact drive insulator, which can be cycloaliphatic resin or silicone composite, is a key factor in minimising the operating energy required to provide the high closing speed, which is attainable when using a spring close actuator as described later.

The high level spring operated closing actuator is charged during the opening stroke of the switch and provides a high speed, independent movement of the contacts during the closing stroke. A new trip-free mechanism is now included in this range, which allows tripping by a drop-out or an H.R.C. striker-pin fuse, or a trip coil to open all three phases of the switch.

The standard arrangement is designed for operating by a Linesman's portable insulating operating rod hook-stick, with a downward movement for both opening and closing operations. This "PULL-TO-CLOSE", "PULL-TO-OPEN" action eliminates all problems associated with ground level actuators and the attendant cost and risks in earth mats and their connections.

To minimise the chance of inadvertent operation, an automatic safety catch can be fitted to the CLOSE lever. The safety catch is released by lifting with the fuse fitting on the hook-stick, until the fitting can be engaged with the open eye on the end of the operating lever. In this position the safety catch is disengaged and the lever can be pulled down to operate the switch.

For permanent locking, a portable locking device with insulated insert can be supplied to the operating lever to lock in either position. This device is applied to the operating lever with the hook stick, and the chain can then be padlocked to the pole.

Low level actuator

When a padlockable low level operating actuator is an essential operating requirement, with permanent operating rods and safety insulator it can be provided as an optional extra. This mechanism incorporates a special feature, which enables it to be used with the TRSWITCH spring-close mechanism to provide independent closing speed, without being restrained by the operating lever.

We are an ISO 9001 2000 registered company.
Fuse switch combination unit with silicone insulators for highly polluted coastal applications on 36kV systems, with 52kV rated voltage characteristics

- New South African Design
- Silicone Insulators with 1440mm Creepage
- 630Amp Load Break Switching
- Integral Isolating Distance
- Spring Closing Mechanism
- Low level mechanism operation
- TRIP-ALL-PHASE option available

LINEGEAR
2000

WE ARE AN 'ISO 9002' REGISTERED COMPANY
The new FUSE SWITCH COMBINATION has been created to accommodate the latest demand from customers for arduous service conditions, reflecting the need for silicone insulators.

The FUSE SWITCH COMBINATION can incorporate drop-out fuses or H.R.C. fuses, which is a format widely adopted by many power companies through-out the world, but the combinations described offer a much more cost effective solution than older products.

The new technology offers a much more attractive solution for the protection of small medium sized 36KV transformers. The design concept was based upon the well known principle of a load break switch in combination with fuses.

The terminal insulators are in the well-established Linnetar 2000 standard of the 11KV formation, with a low-mass contact drive insulator, used in compression and driven by an over-trigger linkage which automatically holds the contacts in the locked closed position against short circuit currents. This design does not need a low level operating mechanism to hold the contacts closed, as is the case with most other manufacturers products and can therefore be used with a hook-stick operated lever.

Insulators
The terminal insulators are supplied as silicone composite type with the silicone shed profile moulded on to a fibreglass or epoxy resin stem, or as solid core brown glazed porcelain.

The low mass of the contact drive silicone composite insulator, is a key factor in the minimising the operating energy required and this results in the high closing speed, which is attained while using a spring close actuator as described later.

Contacts
The contact system is has been KEMA tested for a short time current rating of 25A for 1 and 3 seconds. The contact design is of the latest extractions, with four independently sprung high pressure, front aligning, silver plated (25 microns) copper contacts, and stainless steel contact pressure springs are used, which are adjusted to match the 4A rating.

Load breaking performance
The FUSE SWITCH COMBINATION is provided with a fully enclosed arc control device, in which the arc is extinguished in a tubular air-flow chamber, in which the tubular liner produces a gas due to the heat of the arc, which helps to interrupt the current.

Linnetar 2000 use the "KEARNEY Reliabreak" interrupters, which have a rating of 630 amps at 36KV.

The interrupter is a moulded body, which incorporates an integral spring mechanism, which is charged by the initial movement of the switch as it opens. At this point the load current passes through the interrupter contacts, enabling the main contacts to open off load. When a safe isolating distance has been established, the spring mechanism operates the contact plunger inside the tubular body at high speed and the arc is extinguished.

When closing the circuit, an extra contact is provided, which closes before the Haslabreak device, so that no current passes through it when switching on the circuit.

Fig 1 Contact arrangement

Low level mechanism
When a paid tokable low level operating mechanism is an essential operating requirement, with permanent operating rods and safety insulator such an arrangement can be provided.

This mechanism incorporates a special feature, which enables it to be used with the FUSE SWITCH COMBINATION spring-close mechanism to provide independent closing repeats even from slow movement of the operating lever.

The pivoted operating lever has been strengthened to contend with the higher forces associated with the spring operation and has a hole to receive the stainless steel drive pin of the lower rod which gives a "down-to-open" action. The fastening nuts for this pin are TIG welded to prevent disconnection of the drive rods.

The drive rods comprise 2m long sections of galvanised pipe threaded ¾ inch BSP, according to the mounting height of the switch. There are coupling fittings on a safety insulator, which is provided to protect the operator against dangerous ground voltages in the event of pole-top faults. The mechanism frame has a lug suitable for making an earth connection.

Rod guides are provided for fixing to the Poles at suitable points according to the length of the rods.