OUTDOOR DOGBOX

A division of ACTOM (Pty) Ltd

ACTOM

Formerly ALSTOM South Africa

ACTOM OUTDOOR DOGBOX CIRCUIT BREAKER TYPE GDX

Technical details

The type GDX outdoor "Dog Box" circuit breaker is available in the following ratings:

- 11 kV 2500 A 25 kA 95 kV BIL
- 22 kV 1600 A 25 kA 150 kV BIL
- 36 kV 1600 A 25 kA 200 kV BIL
- Mild steel or 3CR12 option
- Protection relays, metering instruments; current and voltage transformers can be housed in the cubicle
- Circuit breakers and cubicles type tested to IEC 60056 at KEMA and by the SABS
- Developed and manufactured in the Republic of South Africa
- Used extensively by Eskom

Introduction

The Areva ORTHOFLUOR SF6 FP circuit breaker is the ideal circuit breaker for outdoor dog box applications.

ORTHOFLUOR circuit breakers are of the separate pole type. The pole units are supported on a common rigid frame which also supports the operating mechanism.

The separate pole unit structure enables the use of different frames and for different pole spacing. Each pole unit consists of an interrupting element housed in an epoxy resin enclosure.

The complete range is produced by combining different frames, enclosures and interrupting elements.

The interrupting element determines the performance in respect of:

- interruption over a given voltage range
- overcurrent withstand
- rated current carrying capacity

The dielectric performance between input and output and between

conductor and earth are determined by the enclosure. The dielectric properties between phases depend only on the pole spacing.

Endurance

The very high endurance originates in the minimum wear of the SF6 gas and of the contacts which are lightly stressed due to the low energy of the arc; this is due to:

- the intrinsic qualities of the SF6 gas,
- the limited arcing-time,
- smaller arc length,
- the instability of the arc roots thanks to the use of hollow tungsten alloy arcing contacts,
- full separation of arcing contacts and current carrying contacts

Safety

The circuit breakers operate under low pressure. The internal pressure rise, due to the SF6 gas compression and heating due to switching, remains low.

A safety membrane vents any excessive pressure that might arise, however improbable.

At atmospheric pressure, the circuit breaker maintains sufficient dielectric characteristics and ensures safe load switching.

The rapid gas recombination and the injection of fresh gas into the inter-electrode space ensures perfect breaking at TRV values higher than those recommended by the applicable IEC standard.

Easy installation

The design of the separate pole circuit breaker and the various possible arrangements make for fast and easy adaptation to many configurations of open units or in prefabricated cubicles.

Fast reclosing

The complete range of circuit breakers is fitted with the same operating mechanism. This device covers all the standardised cycles viz: o - 0.3 sec. - CO - 15 sec. - CO fast cycle.

Capacitive switching

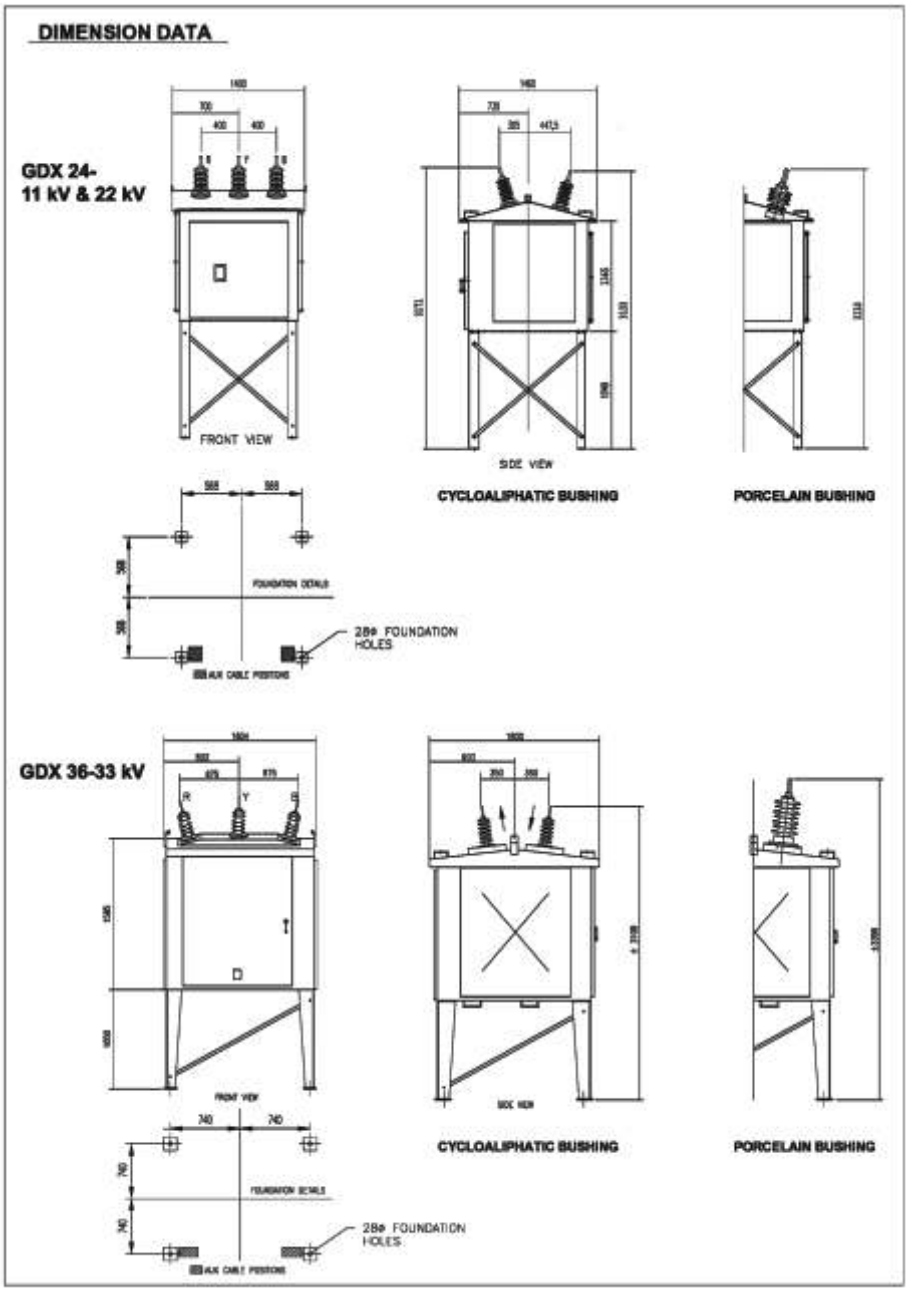
The SF6 technique, particularly well suited to capacitor bank switching and protection and precludes any overvoltages on breaking which would jeopardise the durability of the capacitor bank.

Maintenance

Each pole is designed into a gastight, sealed for life unit, which is not to be opened during the service life of the breaker. Maintenance is therefore limited to simple lubrication of the operating mechanism and to pole replacement on completion of their endurance limit.

Standards

ORTHOFLUOR circuit breakers meet the full requirements of all international standards such as UTE C64100, VDE 0670, BS 5311, IEC 56.



2 Magnet Road

Knights

1413

P O Box 13793

Witfield

1467

Tel: +27 (0)11 820-5111

Fax: +27 (0)11 823-9047

email: doug.thompson@actom.co.za