

TAP CHANGER TYPE PG

TECHNICAL DETAILS

PG type OLTC is a double compartment design with a separate diverter switch and a tap selector. The Tap-changer is suitable for mounting inside the transformer tank. The design is based on modular principle, so that divertors of various voltages and current ratings can be combined with the selectors of different positions, sizes and current carrying capacity. This OLTC works on the principle of high speed transition resistance and is suitable for star and delta connected transformers with linear or change over (coarse fine/reverser) type tapping arrangement. The diverter switch operating sequence follows the flag cycle and thus the tap-changer is suitable for bi-directional flow of power. The tap-changer has a maximum current and voltage rating of 500A and 220kV respectively. It may be used on transformers up to 200MVA rating. The tap changer provides a maximum of 35 operating positions, when connected with a change-over switch. The modular construction principle enables to design a most appropriate tap-changer for application specific to any transformer design.

CONSTRUCTION DETAILS

The tap-changer is constructed as a vertical column; tap selector (1) mounted below the diverter switch compartment (2) is suspended from a tap-changer head (3). The tap-changer is driven by a motor drive mounted externally & coupled through a bevel gear & worm gear

Diverter Switch

The diverter switch is mounted inside a fiber glass compartment which can be inserted & removed for inspection and servicing purpose. The switch is driven by an insulated drive tube coupled to the worm gear mounted on the top cover plate. The switch comprises of stored energy unit, fixed & moving contacts, transition resistors and mechanical tap position indicator. The release of stored energy from

the spring performs the tap change operation. The diverter switch is available for 4 different voltage classes and accordingly the height of the compartment varies.

Tap Selector

The tap selectors are available for all types of tapping arrangement i. e. linear, reversing & coarse/fine. 5 standard design having 10,12,14,16,& 18 operating positions for linear regulation makes the design versatile for application up to 35 positions with change-over selector arrangement. The tap selectors are available in different sizes for different levels of voltage withstand between various live parts of tap-changer. Vertical central drive coupled to Geneva mechanism ensures precise positioning of the moving contacts.

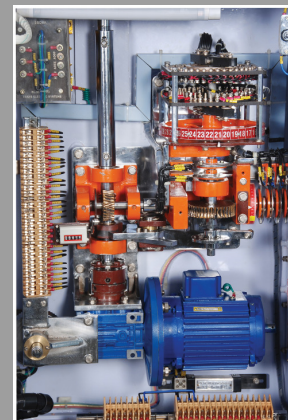
Motor Drive Unit

A motor drive mechanism is coupled to the tap changer unit by external drive shafts and the bevel gear. The drive mechanism is housed in a sheet metal enclosure and comprises of a motor reduction gear, dial switch for tap position indication, limit switches for stopping the motor at end positions, operation counters, and hand drive for emergency operations.

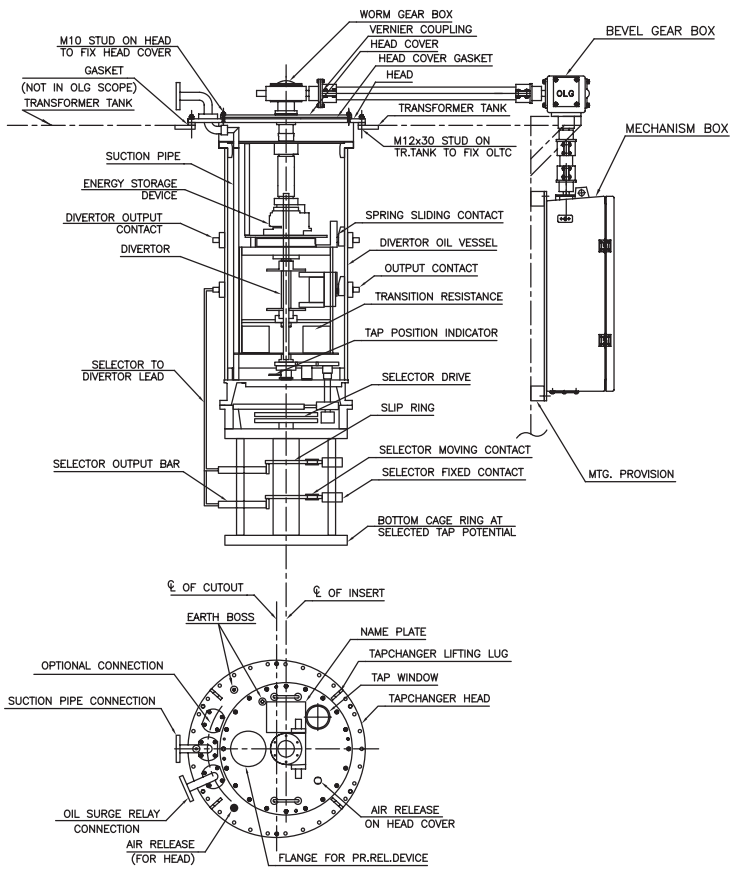
Mounting On Transformer

The tap changer is mounted inside the transformer tank; either hanged from tank cover or supported on end frame for bell type tank construction. The tapping leads from the transformer winding is directly connected to the fixed contact terminals of the tap selector.

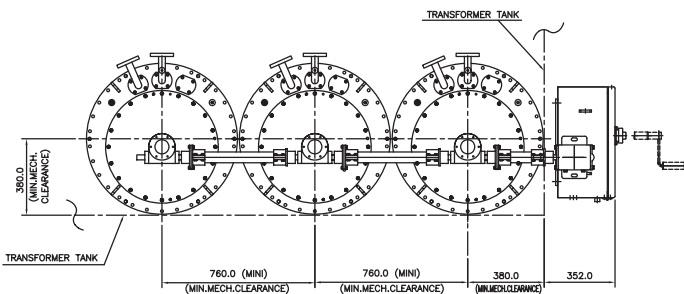
Protection: The tap-changer is protected by an oil surge protection relay, supplied along with the tap changer.



General Arrangement of Tapchanger Type PG



Drive Arrangement of Tap Changer Type 3 X PG1 (Viewed from Top)



TECHNICAL DATA

Contents	PG I	PG III 200Y
Voltage class	33kV,66kV	33kV,66kV,
KV	132kV,220kV	132kV,220kV
No of poles and Application	1 (Line end of Auto Transformer)	3 (Neutral Point)
Current rating	200A,500A	200A
A	800A, 1200A	
Operating Positions	Without change-over selector: max of 18 With change-over selector: max of 35	
Rated short	PGIII500 : 8kA for 3 secs	
Circuit current	PGI1200: 25 kA for 3 secs	

Contents	PG III 200D	PG III 500 D	PG III 500Y
Voltage class	33kV,66kV	33kV,66kV	33kV,66kV
KV	132kV	132kV, 220kV	132kV, 220kV
No of poles and Application	3 (At any point On the winding)	3 (At any point On the winding)	3 (neutral point)
Current rating	200A	500A	500A

TESTING

All type tests are successfully performed in this On-load tap-changer as per IEC 60214 and IS 8468.



ON LOAD GEARS

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