

# Onload Tap Changer Life Extension Equipment

## Why Online Tap Changer Filtration?

The effect of Onload Tap Changer switching operation is a direct accumulation of Carbon contamination in insulating oil. Temperature and other variables cause the formation of Condensation of water in insulating oil. Both Carbon and Water mix with insulating oil decreasing Dielectric Strength of oil to an extent resulting in catastrophic failure of tap changer and in turn transformer also.

## Function of TPF

Automatic Online Tap Changer filtration system TPF is developed with technical know how from Velcon Systems USA. This automatic online filtration system, filters insulating oil by removing carbon particles, dissolved water and free water, maintaining the insulating oil at super clean level. This helps in maintaining high dielectric constant of insulating oil and Carbon coking at contacts avoiding Tap Changer failure.

## Applications

The Velcon TPF is suggested for installation on Tap changers that:

- Frequently require attention
- Consistently exhibit sludging conditions
- The tap-to-tap voltage difference is high
- Perform a high number of tap changing operations

## Benefits

- Increase in the tap changer's life
- Consistent High Dielectric strength of the oil
- Extends the oil life
- Contact wear and coking becomes reduced.
- Maintenance and Inspection requirements becomes reduced.
- Reduction of contact erosion reduces restrikes during tap change.
- Expensive downtime due to equipment failure will be minimized.
- Cost saving due to reduced maintenance and extended oil life.



**Online**  
**Tap Changer**  
**Filter System**  
**TPF**

## Description

Conventional LTC filters are only effective in removing particulate solids contamination over the course of their service life. In a free breathing LTC compartment, moisture levels of the oil are often in excess of 40 ppm total water. This moisture, combined with normal operating heat, cause oil breakdown to occur at accelerated rates. Consistent removal of dissolved water extends service life of the oil and increases the benefits of LTC filtration systems.

## Features

Special Cartridge for LTC Filtration Systems

Utilizes Patented Superdri<sup>®</sup> Dissolved Water Removal Technology Along with Ultra High Efficiency Filtration

Reduces Moisture Content to < 15 PPM Total Water

Increases ASTM D-1816 Dielectric to >30 KV

0.3 Micron Nominal Rated Filter Reduces Particulate Solids Content to < 1.0 MG/L

**Self Draining** - Reversible pump allows quick, no mess, filter changeout. No tools required.

**Automatic Shut-off** - Pressure switch turns the system off when filter is plugged. Relay can be wired to remote alarm or indicator light.

**Oil Make-up** - LTC reservoir can be topped off using valve oil make-up port.

**Flexible Operation** - Timer can be programmed for two different operating sequences. Battery pack keeps program in memory during power loss.

**Hour Meter** - Records run time of system to assure user of consistent operation. (Option)

**Temperature Controlled** - Cabinet heaters and fans keep extreme temperatures from affecting services and prevent condensation build up (Option)

## Cartridge Application

Use SD-718P3 cartridges to maintain dielectric strength of LTC oil in new condition

Install SD-718P3 in new LTC filtration systems

Retrofit existing LTC filter systems with SD-718P3 cartridges

Replace standard 618/718 sized filter cartridges with SD-718P3 cartridges.

## Specifications

**Flow rate:** 1GPM to 3 GPM

**Enclosure:** IP56 NEMA 4 with piping, pressure switch with control panel and overload relay

**Electrical:** 0.5 HP 3 phase 415VAC 50 Hz.

**Dimension:** Depth 300mm. Width 800mm. Height 1000mm. Weight : 140 Kgs. Shipping Weight 250 Kgs.

## Ordering Information

TPF - Online Tap Changer Filter System (Unit without Cartridge)

Cartridges Part Number SD - 718P3 Superdri<sup>®</sup> (Carbon & Dissolved Water)

AC-718½ (Free Water and Carbon)

FO - 718 (Only Carbon)



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