Schlumberger

High-Efficiency Power Unit

Upgrades operating envelope and enables remote monitoring for NATCO DUAL FREQUENCY treaters

Input power:
Three-phase, 380 to 480 V AC at 50 or 60 Hz

Temperature rating:
–20 to 55 degC [–4 to 131 degF]†

Applications

- Upstream crude oil processing facilities onshore and offshore
- Refineries

How it improves performance

The high-efficiency power unit for NATCO DUAL FREQUENCY* electrostatic treaters improves facility opex by increasing treater reliability and reducing maintenance. The high-efficiency power unit upgrades treater power and temperature flexibility while adding capability for optional remote, real-time health monitoring and life-of-asset collaboration through Process Live* data-enriched performance service.

How it works

With the same footprint of the standard power unit, the high-efficiency power unit enables rapid plug-and-play upgrades of older NATCO DUAL FREQUENCY treaters to the new power and temperature specifications. The new unit eliminates the LRC-II panel and fuse box and adds an AgoraGateway* ruggedized edge computing device. Each AgoraGateway device can control up to nine high-efficiency power units, enabling savings and complexity reduction for facilities that have multiple treaters.

Unlike older power units that must be removed from the treater and drained of oil before maintenance can be performed, the new power unit can be serviced in place. Furthermore, to extend equipment reliability, new sensors in the high-efficiency unit monitor trends in the health of key components, enabling warnings before and during an upset condition. To accelerate root cause analysis and improve maintenance intervals, the unit adds the ability to connect to the Process Live service, a cloud-enabled condition-based monitoring service that accelerates support response time to keep facility processes optimized.

The high-efficiency power unit upgrades NATCO DUAL FREQUENCY treaters to manage higher temperatures and wider power variations with optional access to cloud-enabled remote monitoring and optimization.

What it replaces

Older power units with smaller operating ratings, more complicated maintenance requirements, and limited connectivity for time-saving remote monitoring and firmware updates.

High-Efficiency Power Unit Specifications	
Chopper and inverter power section	75-kW rating and dry electronics
Input power	Three-phase, 380 to 480 V AC (±5%) at 127 to 101 A AC at 50 or 60 Hz
Output power	Dual 6-in rectified DC power up to 25,000 V DC at 3 A DC and 800 to 1,600 base frequency, 1- to 20-Hz modulation frequency, and skew of 0.1–0.9
Modulation shapes	Sinusoidal, inverse circular, trapezoidal, and sawtooth
Base frequency synchronization	Standard
No load output tap	Available
Temperature rating	–20 to 55 degC [–4 to 131 degF]†
Hazard classifications	ATEX, CSA, and UL certifications for Class I, Zone 2 hazardous area for use in NEC 505 Class 1, Zone 2, Group IIC Temperature Class T4 or IEC Zone 2, Ex oc pzc IIC T4 Gc
Health monitoring instrumentation	Compatible with Process Live service
Arc testing and imbalance load testing	Standard
Automatic parameter adjustments	Adaptive for arc sensing and ramp recovery
Fiber-optic module	Multimode fiber with subscriber connector (SC)
Unit weight	4,500 lbm [2,041 kg]
Oil capacity	235 galUS [890 L]; mineral oil or silicone fluid also available
Sunshade	Standard
Four-coat paint system options	White RAL 9010, reseda green, light green, and gray
Stainless steel tank	SS316
Output bellows flanges	Standard

All specifications are subject to change without notice.
† Standard offering with white paint.