ALUMINATE™ VFD

Nema 3R Variable Frequency Drive

OILDYNAMICS
Lifting Energy

The **ALUMINATE™ VFD** combines an innovative aluminum design, intelligent controls, and advanced protection to deliver maximum reliability and efficiency for ESP systems. Engineered for durability and seamless integration, it ensures safer operation, lower downtime, and optimized production.

Specification

Enclosure Model: ES047
Dimensions: 1491 × 1350×2080 mm
Enclosure Material: Aluminium, 3mm
Input Voltage: 300 to 500 V
Output Frequency: 0 to 120 Hz
Temperature Rating: -20 to 50 °C
THDi:

- less than 5% (for AFE)
- ~35% (for 6-pulse)

Cooling System: Forced air cooling
Audible Noise Level: 83 dBA
Certifications:

- CE
- Type 3R, acc. to UL50E, UL50, CSA C22.2 N°94.2 and CSA C22.2 N°94.1

Artificial Lift Controls:

- 8×AI, 16×DI, 16×DO
- Safe torque off (ESD)
- Modbus TCP/IP



Highlights

- Integrated Operator Interface Box (Junction Box)
- Separate lockable control and power compartments
- Mounting rails for auxiliary equipment

Options

- Down Hole Sensor integration
- Cold Weather package
- Supply Line Monitor
- Remote Monitoring
- MODBUS RS-485 RTU
- Data Buffer for Brown Outs
- Hazardous Zone Barriers
- Auxiliary junction boxes

ALUMINATE AI 3R

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Key Features

Human Machine Interface(HMI): Advanced multi-function operator Interface

Full-color Touchscreen Display: Intuitive and responsive multi-color interface with full-text visualization

Multi-language Support: EN, DE, RO, UA, more on your request.

Communication Modes: Remote 2-Wire, 3-Wire, Network

Control Modes: PID, Duty Cycle, Rocking Start, I-Limit, Delta Pressure Mode.

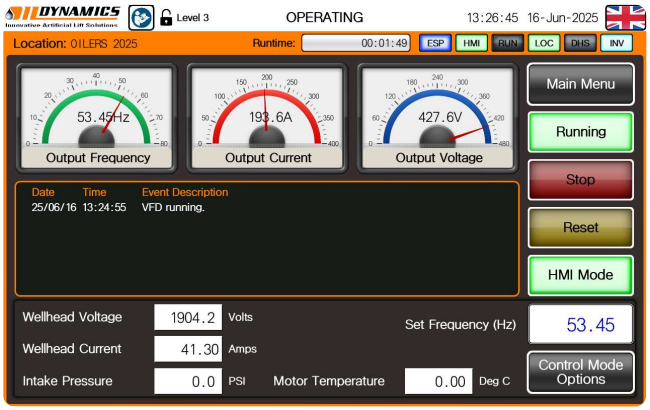
Smart Protection System: Overload, Underload, Stall prevention, under frequency protection.

Recovery Features: Auto-Restart after power up, automatic restart after minor trip.

Real-Time Monitoring & Logging: Wellhead voltage and current display, 32 Gb Internal Logging, programmable.

Applications

- ESP (Electrical Submersible Pump)
- HPS (Horizontal Pumping System)
- DHHC (Down Hole Heating Cable)
- PCP (Progressive Cavity Pump)
- ESPCP (Electrical Submersible PCP)



Ratings and Features

DRIVE CAPACITY, A(1)	66	156	260	361	481	610
DRIVE CAPACITY, kVA(2)	45/54	108/129	170/206	237/287	316/383	401/485
INPUT TYPE	AFE(3)		6-pulse			
INPUT FILTER	Integrated		Optional			
SINE WAVE FILTER	Integrated			Optional		
AIR CAPACITY, m^3/hr	1690	2535				
HEAT DISSIPATION, kW	1,2	4,2	4,9	4,8	6,2	7,9
WEIGHT, kg	400	500			600	

(1) – Other sizes available on demand. (2) – At 400/480 V input. (3) – Active Front End

Lighter Than Steel. Stronger Than Limits.

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