



**NOVA PETROLEUM**  
S e r v i c e s



**L  
E  
S  
P** **LINEAR  
ELECTRICAL  
SUBMERSIBLE  
UMPS**

# LINEAR ELECTRIC SUBMERSIBLE PUMP INSTALLATION

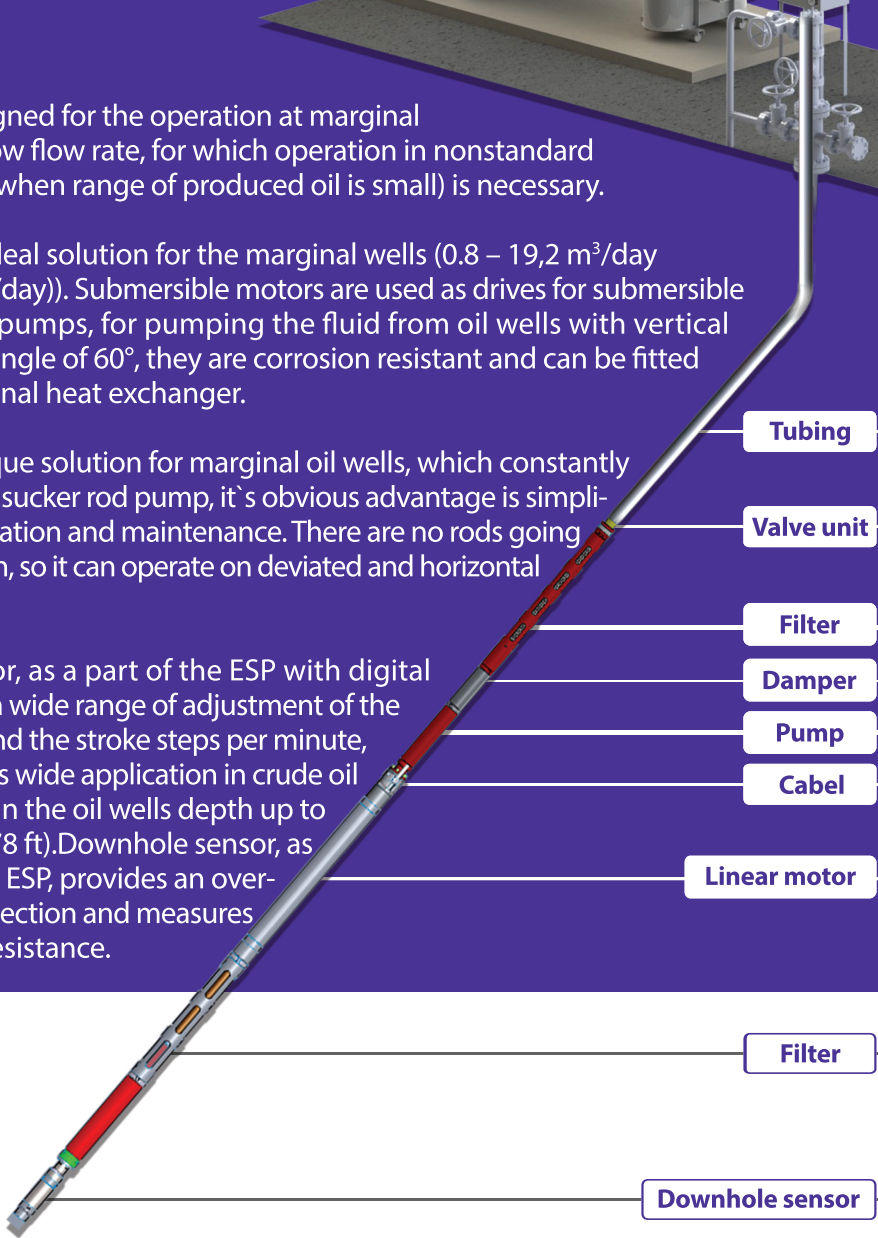


LESP is designed for the operation at marginal wells with low flow rate, for which operation in nonstandard conditions (when range of produced oil is small) is necessary.

This is the ideal solution for the marginal wells (0.8 – 19,2 m<sup>3</sup>/day (5 – 120 bbl/day)). Submersible motors are used as drives for submersible centrifugal pumps, for pumping the fluid from oil wells with vertical inclination angle of 60°, they are corrosion resistant and can be fitted with additional heat exchanger.

ESP is a unique solution for marginal oil wells, which constantly replaces the sucker rod pump, it's obvious advantage is simplicity of installation and maintenance. There are no rods going up and down, so it can operate on deviated and horizontal oil wells.

Linear motor, as a part of the ESP with digital control has a wide range of adjustment of the axial force and the stroke steps per minute, it provides its wide application in crude oil production in the oil wells depth up to 2828 m (9278 ft). Downhole sensor, as a part of the ESP, provides an over-heating protection and measures insulation resistance.



Tubing

Valve unit

Filter

Damper

Pump

Cabel

Linear motor

Filter

Downhole sensor

# GENERAL TECHNICAL DATA OF INSTALLATION

## Linear Electric Submersible Pump Installation Data

Plunger pump type	NPG-32-1200-1
Plunger diameter, mm (in)	31.8 (1.25)
Stroke length, m (ft)	1.2 (3.94)
Double strokes per minute	0-20
Head, m H <sub>2</sub> O (ft H <sub>2</sub> O)	1787 -2828 (5860-9275)
Flow, m <sup>3</sup> /day (bbl/day)	19.2-1.1(120.76-6.92)
Operating temperature, °C (°F)	0...150 (32...300)
VSD type	AK06-250 LL (with 400Amps IGBT module)
Transformer type	250 kVA; 1100 - 3811 V; 136 - 39 A

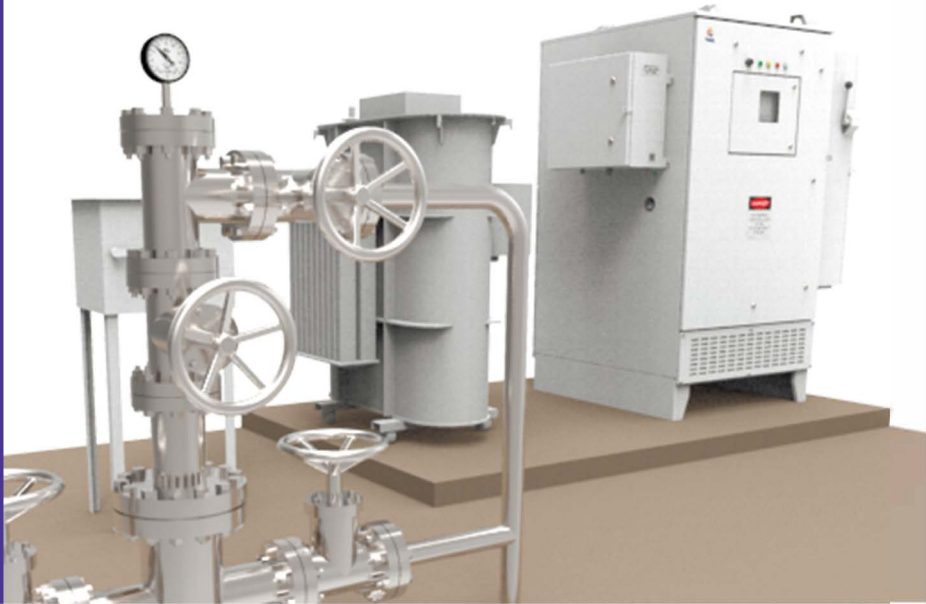
## Downhole sensor TM01-03 Specifications

ESP temperature, °C (°F)	0...200 (32...392) ±1.5 %
Base oil temperature, °C (°F)	0...150 (32...302) ±1.5 %
Pressure, at. (Mpa)	0...400 (0...40)
Vibration, m/s <sup>2</sup> (ft/s <sup>2</sup> )	0...30 (98) ± 5 %
Insulation resistance, kOhm	10...10000



## MAIN ADVANTAGES

- Possibility of installing on marginal wells
- Quick system installation
- Customizable parameters according to the well characteristics
- Possibility of the setting regulations during operation
- Remote status and operation monitoring of all units installed at the field
- Maintaining optimum stock level for prompt deliveries to end Customers
- Spare parts warehouse (Linear motor, VSD, pump, transformer) for self-assembly and operational equipment repairs
- Customer specialist training to operate LESP
- 24/7 Support Service
- Customer participation in the product development
- Commissioning of idle wells
- Ability to work in vertical and deviated wells with a total angle of 60°
- Price for LESP installation is about 50% cheaper than SRP
- Higher reliability due to the absence of rods
- Compliance to ecological oversight
- No ground pumping unit, only VSD and transformer on the surface
- Commissioning of idle wells
- Getting lost income



NOVA Linear electric submersible pump is an innovative product that combines the advantages of the traditional oil production methods. Its fit for the production of the low volume wells, slant wells, cluster wells, horizontal wells etc. NOVA LESP solves the difficulties of the production of thin and bad oil either low permeability oil. The pumps do not use any sucker rod thus eliminate the problems of the wear of tubing and sucker rod, eliminates gas lock, decreases the sand plug, reduced trips for pump checks, save energy, decrease the cost of production, decrease the footprint of the well site.

- Complete solution for marginal wells;
- High efficiency;
- Effective work in marginal wells and wells with viscous oil;
- Faultless operation in deviated, horizontal and curved trunk wells;
- Increased reliability due to the minimal number of moving parts;
- Occupies smaller area at the wellhead;
- Low installation cost;
- Integrated hydroprotection and downhole sensor;
- A large range of operating modes, individual approach to the mode selection based on oil well parameters to ensure optimum efficiency;
- Variable speed drive provides the optimal control algorithms and considerable energy savings.

# ABOUT US

NOVA Petroleum Services is a US based company with an office in Tunis that was created to solve the technical problems of production by offering the latest technologies and support through partnership with a trusted network of manufacturers around the world. NOVA's founders have over 30 years of experience in the Artificial lift world including EPS.



## CONTACTS

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