



## Clean power to maximize ESP run life

The SPECTRUM ESP power cable family is the result of a rigorous in-house design process that ensures clean and efficient power is supplied to the submersible motor, reducing electrical stresses and maximizing ESP run life. Designed to exceed the IEEE 1018.2013 specification, SPECTRUM power cables offer reliability in harsh down-hole environments and are available in a multitude of configurations to suit all operating conditions and customer requests.

Alkhorayef offers over 350 different configuration options, ensuring each cable is best designed to fit the specific requirements of the application.

## High protection design

Each cable consists of a highly conductive copper conductor that is fully annealed and can be coated with tin or lead alloy for greater corrosion resistance. Insulation is selected on downhole temperatures and can be enhanced with protective layers to avoid oil swelling, and, in gassy applications, expansion and rupture. Mechanical protection is provided by the jacket and armor, with application-specific options including double layers or heavier armor material.

For wells that require continuous chemical treatment, an optional cable design includes an integrated capillary tube. Protected within the cable armor, the hydraulic line simplifies the installation process, reducing the risk of damage while running into the well.

A similarly constructed instrumentation and control line option for additional monitoring and completion tools can also be provided.

Alkhorayef offers five power cable product lines, each series rated to 5kV and available in round or flat in a range of conductor gauge sizes.

## APPLICATIONS

- Configurable to suit all operating environments – 350+ configurable options
- Integrated capillary tubing option for wells requiring continuous chemical treatment
- Instrumentation & control cable options available

## BENEFITS

- Robust design, exceeds IEEE 1018.2013 & IEEE 1019.2013
- Product line designed for challenging oilfield environments
- Enhanced design flexibility, configurable according to operating temperature and pressure, gas/oil & corrosion

## FEATURES

- 5kV voltage rating
- Optional double armor layers  
Heavier, thicker armor available in galvanized steel, stainless steel and Monel
- Above standard zinc coating levels
- Solid & 8% compacted stranded conductors as standard bearing

## SPECIFICATIONS

Cable group	Max temp °F (°C)	Profile	Voltage rating (kV)	Insulation	Jacket	Well ref.	Application
1F180 1R180	180 (82)	R/F	5	Polypropylene	Polyethylene	1	Light duty, shallow water wells Low gas & oil vapor
2F205 2R205	205 (96)	R/F	5	Polypropylene	EPDM/Nitrile	2	General duty, shallow sweet oil Low corrosion
3F290 3R290	400 (205)	R/F	5	EPDM	EPDM/Nitrile	3	Moderate duty, increased depth, gas & oil vapor, increased corrosion
4F400 4R400	5.62 (142.75)	R/F	5	EPDM	EPDM	4	Enhanced duty, increased well depth, increased gas & oil vapor, increased corrosion
5F450 5R450	450 (232)	R/F	5	EPDM	EPDM/Lead	5	Severe duty, deep oil wells with severe gas & oil vapor, high temperatures & severe corrosion