

EQUIPMENT & PROJECT SUPPORT

Pumping systems. Built around your well.

Electric submersible pumping equipment for geothermal energy and oil & gas production.



Equipment. Selection. Support.

A compact guide to the equipment portfolio, selected technical reference data and the information needed to start your project.

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01 / PORTFOLIO

Two applications. One clear portfolio.

All nine equipment families are available for Geothermal and Oil & Gas applications. The need, configuration and operating limits are confirmed for each project.

Equipment family	Geothermal	Oil & Gas
ESP pumps	Yes	Yes
Submersible motors	Yes	Yes
Protectors & seal sections	Yes	Yes
Gas handling	Yes	Yes
Intake sections	Yes	Yes
Cable systems	Yes	Yes
Downhole monitoring	Yes	Yes
Variable speed drives	Yes	Yes
Corrosion-resistant coatings	Yes	Yes

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02 / GEOTHERMAL PUMPS

Four pump families.

Single-stage reference operating points. TP diffusers are assembled inside a housing; QJ uses bolted diffusers without a continuous outer housing.

Series	Hz	rpm	Flow m ³ /h	Head m/stage	Power kW/stage	Range m ³ /h
TP 677	50	2910	165	15.9	12.9	125-208
TP 677	60	3500	200	23	22.4	150-250
TP 740*	50	2910	250	11.5	10.7	170-290
TP 740	60	3500	300	16.6	18.7	210-360
TP 905	50	2910	405	26.3	30.1	330-520
TP 905	60	3500	490	38	52.3	400-625
QJ 1047	50	2910	350	38.8	51.6	208-455
QJ 1047	60	3500	425	56.2	89.8	250-550

* TP 740 at 50 Hz: this operating point is pending confirmation. Request confirmed performance data before equipment selection.

Construction and materials

Item	Selected options
Pump outside diameter	TP 677: 172 mm; TP 740: 188 mm; TP 905: 230 mm; QJ 1047: 266 mm
Stage assembly	FLT floater; PKT packet; CPM compression
Stages	Ni-resist cast iron; stainless powder-alloy option
Shaft	High-strength corrosion-resistant steel; Alloy 925 (718) options
Radial bearings	VK8-V hard alloy
Abrasion-resistant options	AR1: up to 500 mg/L solids; AR2: up to 1,000 mg/L solids

Head and power values above apply to one stage at the listed operating point. They are not the total head or power of a complete multistage pump.

03 / GEOTHERMAL MOTORS

728-series permanent magnet motors.

Housing outside diameter: 185 mm. Model codes below retain their catalogue designation.
Power and voltage depend on rated speed.

Model	kW 3000 / 3600	V 3000 / 3600	A	Length mm	Weight kg	Min. flow m/s
728-326HP	200 / 240	2800 / 3360	45	3937	592	0.20
728-408HP	250 / 300	3300 / 3960	48	4353	665	0.25
728-489HP	300 / 360	3100 / 3720	61	4769	738	0.30
728-570HP	350 / 420	3500 / 4200	63	5185	811	0.40
728-652HP	400 / 480	3100 / 3720	81	5601	884	0.40
728-734HP	450 / 540	3500 / 4200	81	6017	958	0.40
728-815HP	500 / 600	3300 / 3960	97	6017	958	0.45
728-897HP	550 / 660	3800 / 4560	92	6433	1030	0.45
728-978HP	600 / 720	3900 / 4680	98	7265	1176	0.45
728-1060HP	650 / 780	4500 / 5400	90	7681	1249	0.50
728-1142HP	700 / 840	3800 / 4560	117	8097	1322	0.50
728-1224HP	750 / 900	4000 / 4800	119	8513	1395	0.55
728-1305HP	800 / 960	4700 / 5640	106	8929	1468	0.60

Thermal configuration

Standard	HT	UHT
120 °C fluid	160 °C fluid	200 °C fluid

Select the motor rating, fluid-temperature class and cooling-flow velocity together. Corrosion-resistant options include coated housings and stainless-steel end parts, depending on the selected model configuration.

04 / OIL & GAS

Pumps and downhole drives.

Modular centrifugal pumps and submersible motors are selected together with the protector, power cable and surface drive.

Oilfield pump series

Series	Housing outside diameter	Stage assembly
362	92 mm / 3.62 in	FLT / PKT
400	103 mm / 4.06 in	FLT / PKT
512	130 mm / 5.12 in	FLT / PKT

The reference oilfield portfolio spans approximately 315-3,144 BPD. Final pump model, stage count, materials and operating range are confirmed against the well conditions.

Performance data for your duty

Request the head, power and efficiency curves for the selected pump model and operating speed. Include flow, required head, fluid temperature, gas content and solids in your enquiry.

Induction or permanent magnet

Drive type	Configuration
Induction	Three-phase, oil-filled, two-pole squirrel-cage motor for continuous S1 service. The reference family lists a synchronous-speed range of 2,100-4,200 rpm.
Permanent magnet	Submersible permanent-magnet motor selected with a compatible variable speed drive and the required operating-speed range.

For induction motors, synchronous speed is the rotating-field speed. Actual shaft speed depends on slip and load. Model-specific electrical ratings and dimensions are provided with the motor selection.

Provide these selection inputs

Pump shaft load and speed; casing diameter and installation geometry; fluid temperature and cooling flow; available voltage and drive; cable length; protector interface and monitoring requirements.

Power cables by application

Select the cable construction together with the motor and well conditions.

Geothermal | REPN-FX / REPN-QX

Parameter	REPN-FX	REPN-QX
Rated voltage	5 kV	5 kV
Conductors	3 × 33.5 mm ² / 2 AWG	3 × 33.5 mm ² / 2 AWG
Cable designation	REPN-FX-5KV	REPN-QX-5KV
Temperature rating	232 °C	204 °C
Insulation	Polyimide film + FEP	Polyimide film + EPDM
Core sheath	FEP	Lead
Armour	Stainless steel tape	Stainless steel tape
Maximum overall size	14.1 × 35.7 mm	17.4 × 44.5 mm

Oil & Gas | EPR / lead reference construction

Parameter	Specification
Rated voltage / frequency	5 kV AC / 50 Hz
Conductor sizes	3 × 10 / 13.3 / 16 / 21.15 / 25 / 33.6 / 35 mm ²
Conductor temperature	Maximum continuous 230 °C
Insulation / core sheath	EPR / lead
Armour options	Galvanized steel; corrosion-resistant steel or Monel alloy
Hydrostatic pressure	Maximum 40 MPa for this reference construction

Detailed dimensions, fluid limits and oilfield current ratings are provided in the ESP cable data sheet. The ratings of different cable constructions are not interchangeable.

06 / DOWNHOLE ASSEMBLY

Protection and fluid handling.

Match each component to the pump, motor, fluid and operating range.

Protectors and seal sections

Application	Configuration overview
Geothermal	Tandem labyrinth and diaphragm arrangements. Housing OD 172 mm; shaft diameter 43 mm; oil capacity 30 L. Axial-load options: 2,300 / 3,200 kgf.
Oil & Gas	Modular single-housing and tandem arrangements, with standard, reinforced or tilting-pad thrust-bearing options.
Selection	Confirm chamber sequence, thermal configuration, shaft and connection dimensions, and thrust capacity together with the drive assembly.

Gas separation and dispersion

Hydrocyclone separators remove free gas ahead of the pump. Dispersing stages produce a more homogeneous gas-liquid mixture. Combined modules provide both functions.

Oilfield reference module	Intake gas content	Separation ratio
Hydrocyclone separator	≤ 70%	≤ 87%
Separator-dispersant	≤ 75%	≤ 87%
Upgraded dispersing unit	≤ 80%	≤ 87%
Double upgraded unit / dynamic gas outlet	≤ 90%	≤ 90%

Values apply only to the described oilfield module configurations. Selection depends on intake gas content and the full fluid properties.

Geothermal: Gas handling is available where the duty requires it. The need and configuration are assessed using intake gas content, fluid properties and pump duty. Contact REPN-FZCO for an application-specific review and confirmed operating limits.

Intakes and corrosion protection

Intake sections: Integrated pump intakes and separate modules are available for geothermal systems. Request configuration options, connection dimensions and mechanical ratings from REPN-FZCO. Oilfield options include corrosion-resistant housings and hard-alloy radial bearings.

Corrosion-resistant coatings: Available for both applications. Material, process and thickness are defined for the selected component and environment. Contact REPN-FZCO for coating options and technical specifications for your application.

Selected oilfield CR2C seal sections use HVOF metallic coating with a minimum thickness of 150 µm. This rating is specific to that option and is not a general geothermal specification.

07 / CONTROL & SUPPORT

From equipment to the project.

Surface equipment, downhole monitoring and service scope are defined around the selected pumping system.

Variable speed drives for both applications

Oilfield ESP systems use the same types of control stations as geothermal installations, generally at lower power ratings. Select the drive together with motor type, electrical supply and pump duty.

Parameter	Geothermal reference specification
Input voltage / frequency	380 / 480 V AC; 47-63 Hz
Output frequency	5-500 Hz; 0.1 Hz resolution
Short-term overload	120% for 1 minute
Communications	RS485 / Modbus, SCADA and I/O
Filtering	Sine-wave filter

The table describes the geothermal reference configuration. Oilfield electrical ratings and functions are confirmed for the selected drive.

Downhole monitoring

Geothermal: The reference configuration includes environment temperature and pressure and motor-oil temperature. Pump-outlet temperature, pressure and flow are optional measurements, subject to the selected sensor and surface system.

Oil & Gas: Downhole monitoring is available and is often essential in modern oilfield operation. Required measurements, sensor ratings and surface-system compatibility are defined with the selected motor and ESP configuration.

Project and service support

Engineering and equipment selection · Installation and commissioning support · Monitoring and troubleshooting · Inspection and failure analysis · Repair and testing · Replacement and optimization.

Service scope is agreed for the individual project. Share equipment details, operating history and the outcome you need.

Discuss your application.

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REPN-FZCO · Established August 2024