



Haimo Technologies Group Corp.
Xi'an Sitan Instruments Co.,Ltd.



V 5.0 2024-08



Xi'an Sitan Instruments Co.,Ltd.

Group Profile

Haimo Technologies Group Co., Ltd. is a multinational company dedicated to providing innovative technologies, products, and services for oilfield production enhancement, production optimization, and oil and gas reservoir management. We offer comprehensive solutions for the digital transformation of oilfields and related industries. Founded in 1994 and restructured into a joint-stock company in 2000, Haimo was listed on the Growth Enterprise Market of the Shenzhen Stock Exchange in May 2010 (stock abbreviation: Haimo Technologies, stock code: 300084).

As a member of Shanghai New Energy Holding Group, Haimo has 17 wholly-owned subsidiaries and 6 holding subsidiaries domestically and internationally, with nearly a thousand employees conducting business worldwide. The Haimo Research Institute is responsible for the company's technology development, high-end talent training, technology introduction and absorption, and the conversion of scientific and technological achievements, providing technical support for various business segments. Our products and services are sold to many countries in regions such as the Middle East, North Africa, Central Asia, South Asia, Southeast Asia, North America, and South America.

Focusing on niche segments within the oil and gas industry, Haimo is an international leader in multiphase metering and production optimization solutions for oilfields, the only domestic manufacturer of subsea multiphase flow meters, a manufacturer with core competitiveness in hydraulic ends of fracturing pumps, a leading domestic manufacturer of downhole measurement/testing tools and production enhancement instruments, and a technological leader in the digitalization of oilfields in China.

Since its establishment, Haimo has adhered to the path of "independent research and development, Made in China," holding a series of independent intellectual property rights in multiphase flow metering, intelligent completion, logging, and hydraulic ends of fracturing pumps. Over 130 of our R&D personnel hold bachelor's degrees or higher, with rich experience in electromechanical design, nuclear physics, mathematics, mechanics, petroleum engineering, and mechanical engineering.

Haimo has a high-quality, professional, and capable marketing and after-sales team, with 8 overseas branches or offices and 17 domestic offices, providing timely and attentive service to our customers.

Leveraging the resource advantages of Shanghai New Energy Holding Group, Haimo will continue to deepen its focus on the oilfield sector, actively explore the integration of new energy with oilfield equipment applications and strengthen the development and utilization of new energy. We aim to advance the integration of oilfield and new energy businesses, promoting diversification and continuously enhancing our comprehensive energy supply capability and green, low-carbon development level.



30

+30 years of experience in the oil and gas industry



17

Wholly-owned subsidiary companies



6

Holding subsidiaries



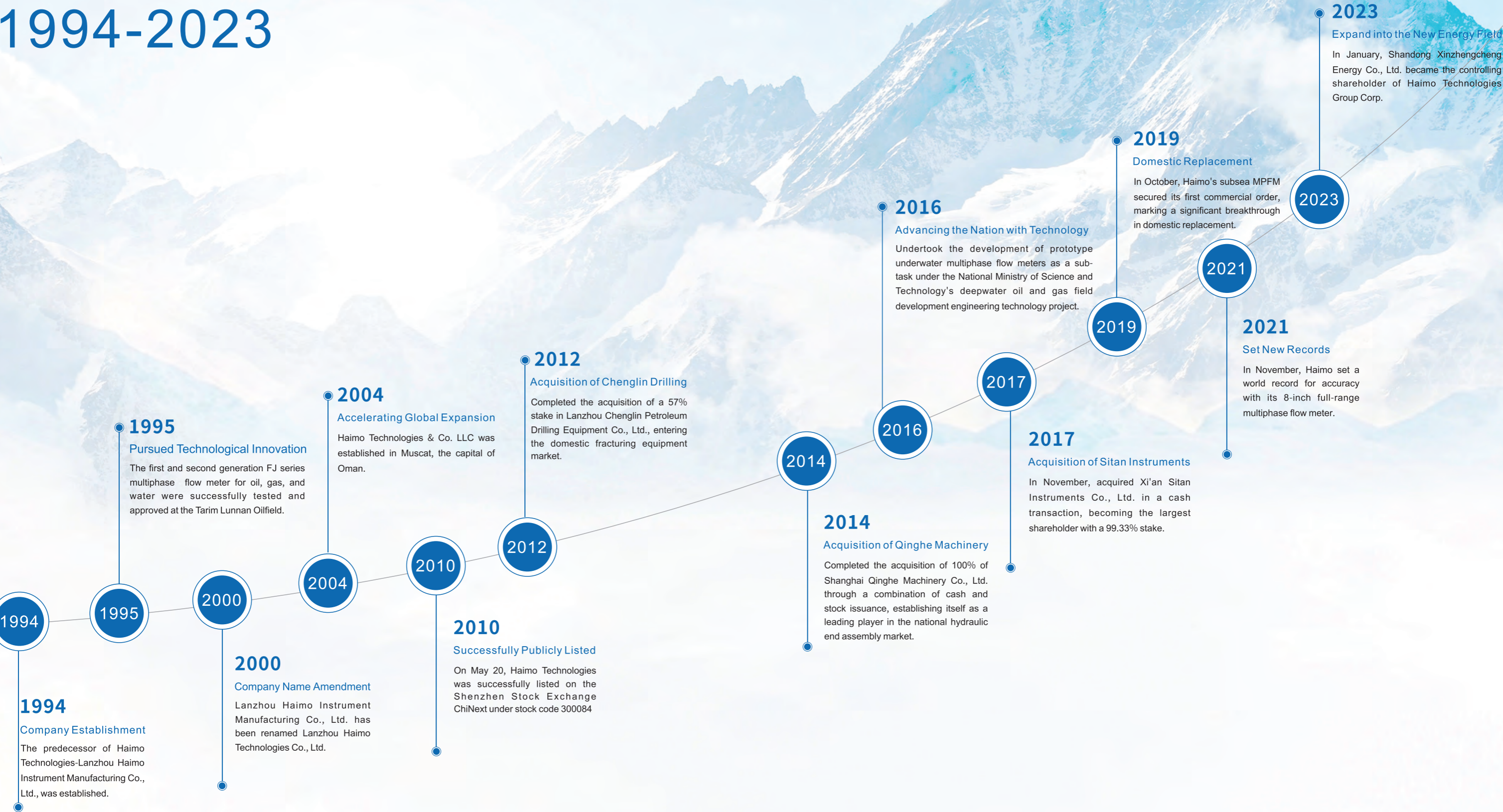
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Offices in China & overseas



Development History

1994-2023





30+
Years of experience in
the oil and gas industry

30+
Service team

20+
Sales and after service
offices

100+
R&D Persons

200+
Patents

6+
\$6 million investment of
calibration and testing
equipment

Qualifications and Honors

Company Profile

Since its establishment in 1991, Xi'an Sitan Instruments Co., Ltd. has developed vigorously for over three decades. It has evolved into a professional company that integrates R&D, production, and sales of Intelligent EOR solutions, oilfield well logging, well testing tools, and oilfield technical services.

Sitan's continuous innovation in solutions, products, and services is supported by a strong technical capability. The company has over 120 employees with master's degrees and above, with over 80% holding bachelor's degrees or higher in disciplines such as petroleum engineering, mechanical and electrical design, acoustics, nuclear physics, electrical methods, mathematics, mechanics, and software development. Sitan has established partnerships with several domestic universities. To date, it holds over 200 patents.

To ensure product quality, Sitan rigorously maintains quality standards in product design, production, testing, and inspection processes. It has set up two major production bases in Xi'an and Lanzhou, established a series of comprehensive production inspection equipment and calibration systems. The company has obtained certifications of API/ISO/QHSE management system certifications.



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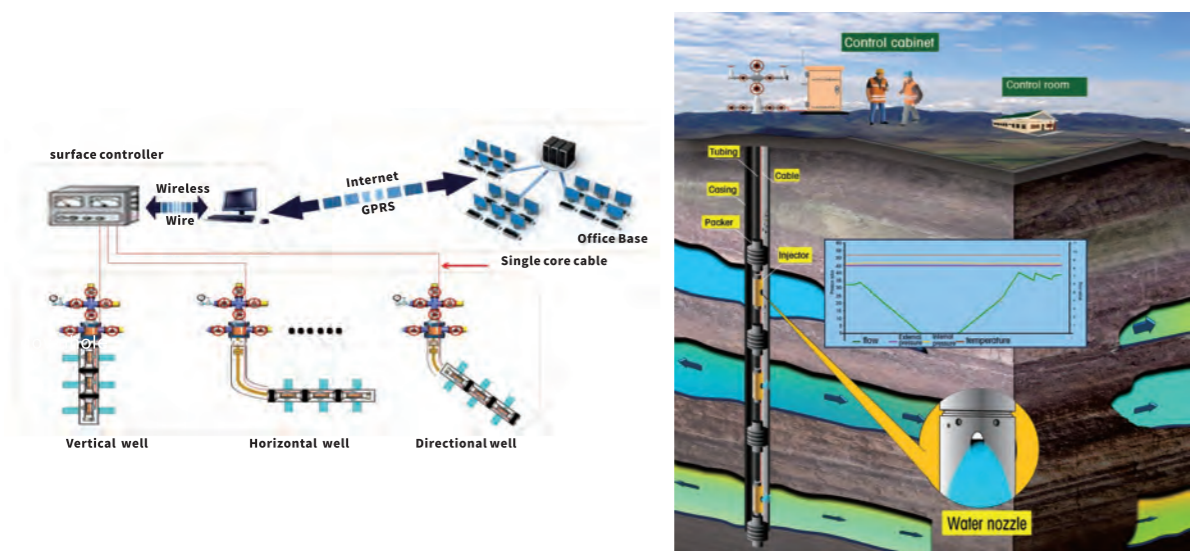
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Intelligent Layer Separate Injection System

System Composition



Values to Customers

Sitan ILSI system has been installed in >3000 wells. The longest runs are more than 5 years and max 8 individual layers in a well. With a single run success rate of 95% and injection success rate (injected quantity/quality and rate) of >90%. The following table illustrate the details.

Example of ILSI performance in one oilfield

Area Name	Area Characteristics	Result
Midwest	Close well spacing, rapid changingintakebehavior	Targeted injection ratet by 13.8%
North Transition	Multiple thin layers, low net pay, widevarying absorption rates	Effective intake thickness ↑ by 6%
Xing 6-E	Complexinterferences between layers	Injection volume ↓ by 200m³/d (~5%), whilemaintaining oil production rate
xing 10-E	Rapid production decline	Production decline rate ↓ by 2.32%

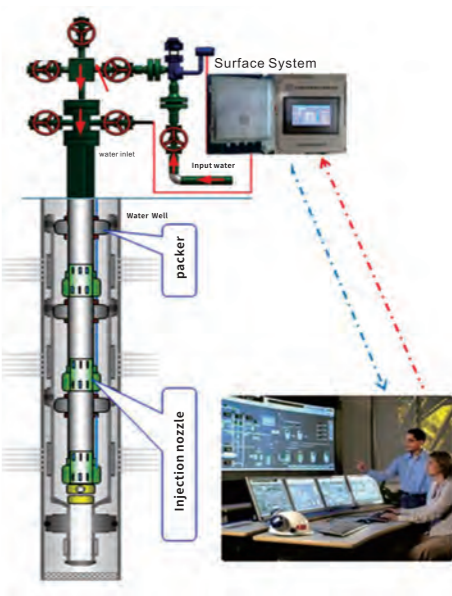
Intelligent Layer Separate Injection System

Functions

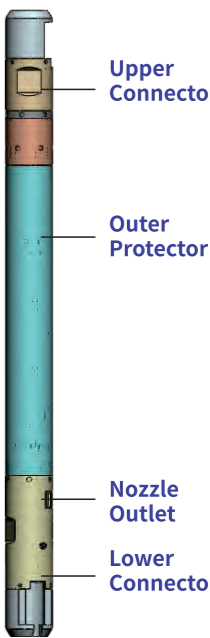
- Layer-separate water distributor is installed in each injection layer separated by packers.
- Real-time monitoring of flow, temperature, injection & formation pressures, and cumulative injection for each layer.
- Real-time packer seal test to ensure isolation.
- Real-time control of injected water by opening/closing of nozzle to obtain desired injection for each layer.
- Subsurface ↔ surface systems ↔ base-office communications, realizing real-time injection control and reset.
- Downhole operation parameters calibrated at regular intervals by wellhead self-tester.

Features

- Two flow-path design for best flow measurement resolution. Based on flow measurements, one can select flow path.
- A 3.8cm cased injection profile logging tool can pass thru and measure natural gamma, casing collar, fluid temperature, pressure and flow rate.
- Highly reliable, the system has been successfully deployed in China, Chad and Niger.

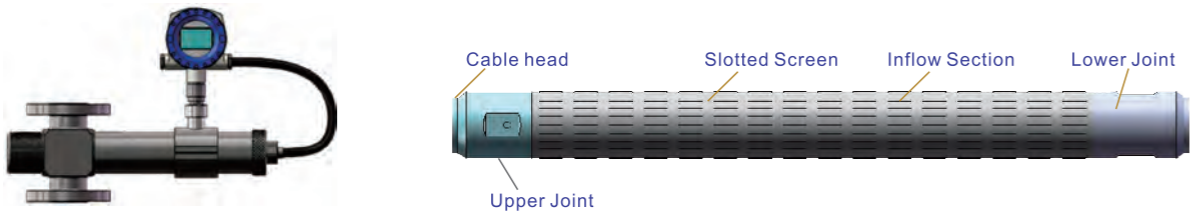


Downhole Unit (water distributor)	
OD	11.6cm(4.566in)
ID	4.4cm(1.732in)
Length	≤2m
Connector	2 -7/8in EUB
Max Op. Temp	125°C(257 °F)
Max Op. Pres	8700psi/60MPa
Pres Meas.	0-8700psi (±0.1%FS)
Temp Meas.	0°C-125 °C(32°F-257 °F) (±1.8°F/1°C)
Ind. Layer FlowMeas. (customizable)	1600 - 6300 bbl/d (±2%FS) 350 - 1800 bbl/d (±2%FS)
	2-14bbl/d 5-32bbl/d 29-127bbl/d Optional
Max Pres Diff	5000psi/30MPa
Surface Controller	
Op. Temp	-35°C-70°C(-31°F-158 °F)
Power Input/Output	AC220V±15% , 50Hz /30-135V DC 40-100V DC
Interface	Rs485
Expl-Proof Class	ExdIIBT4 Gb
IP Class	Explosion-proof IP 65 Common IP 55 Customized



Intelligent Layer Separate Production System

Introduction

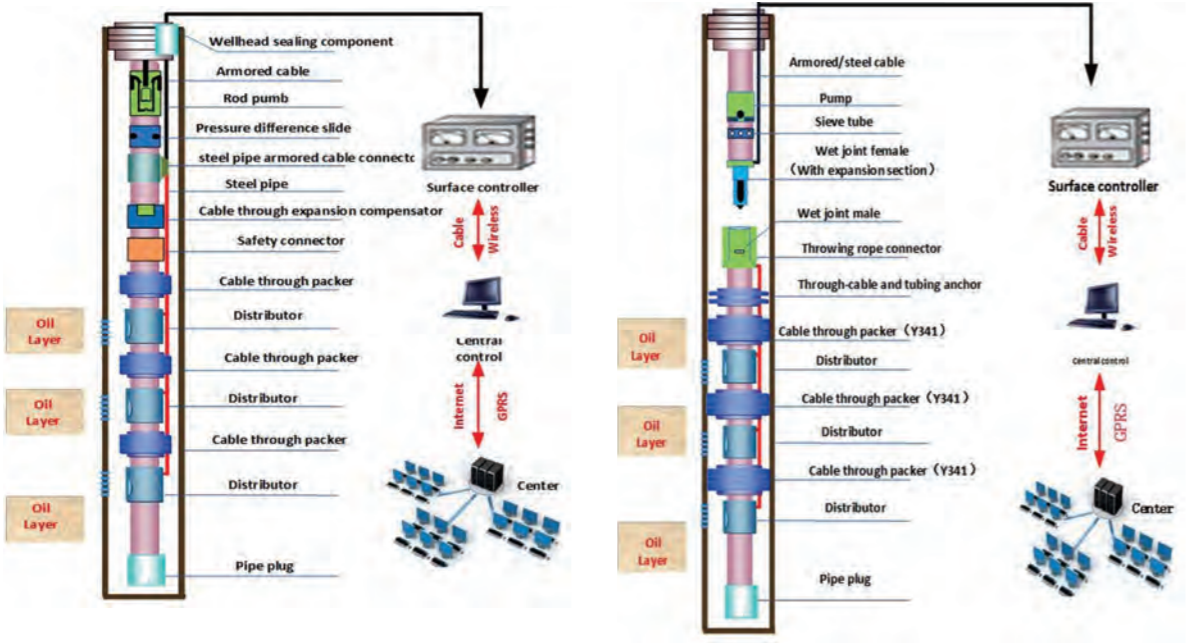


Features

- A controllable production nozzle/valve in each pay (layer).
- Long-term & real-time monitoring of individual pay flow rate, water cut, temperature, tubing and formation pressures.
- Real-time control of individual pay nozzle opening, including detection and shut-down of water production.
- Communication with back office to view pay (layer) production parameters and to test packer seals.
- Combined with wellhead multiphase flow meter, individual pay zone/layer multiphase flow rates can be determined.
- Conduct individual pay (layer) pressure build-up/decline tests.

Specifications

Downhole Unit (distributor)	
OD	73mm(2.87in)/114mm (4.49in)(measuring Temp, Flow,Pi & Po)
IdI	32mm(1.26in)/34mm(1.34in) (equivalent)
Max. working temp.	125°C(257°F)
Max. working pressure	60MPa (static pressure)
Pressure range	0-60MPa Accuracy ±0.1%FS
Temperature range	0°C-125 °C Accuracy ±1°C
Single-layer flow rate	1-60m³/d
Single-layer flow rate accuracy	Accuracy±5%FS
Maximum Regulating Pressure Difference	25MPa(3626psi) (Pressure Difference)

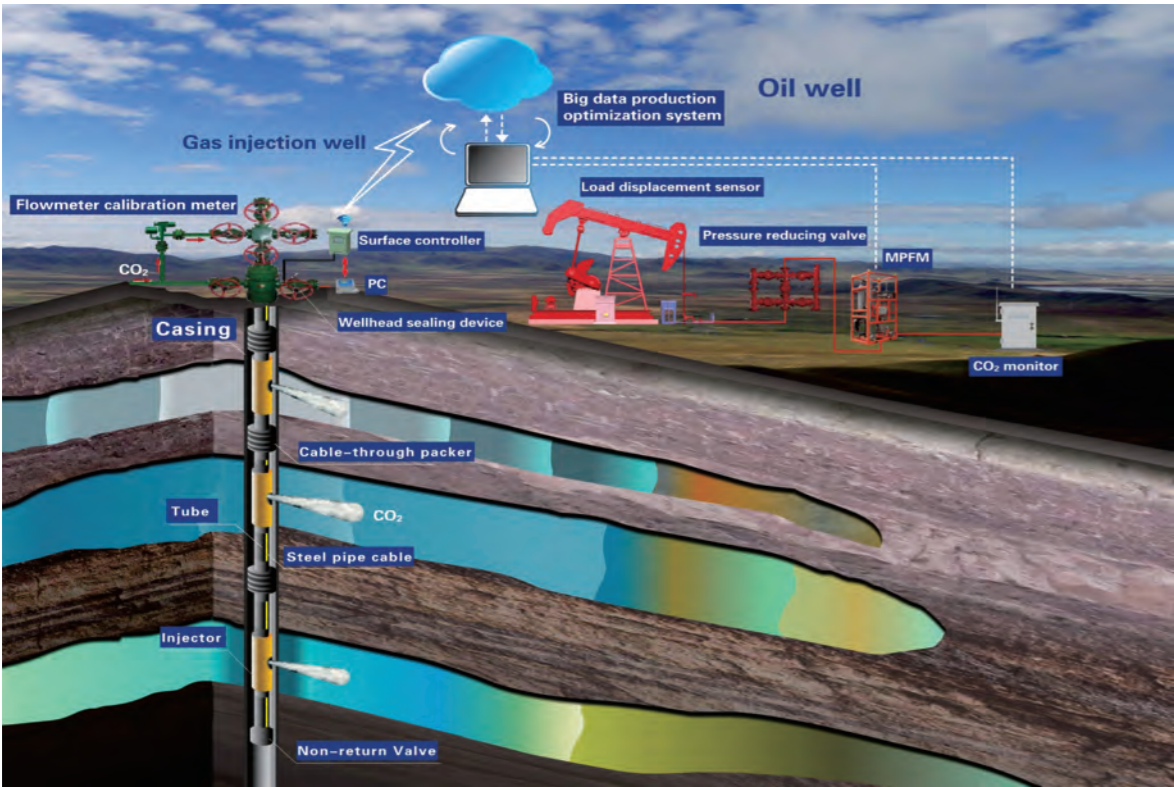


For Beam Pump System

For ESP System

Intelligent Layer Separate Gas Injection System

Intelligent Layer Separate Gas Injection System



System Components

Intelligent gas distributor, Surface controller, cable, cable-through packer;

Functions

- **Monitoring:**
Hierarchical monitoring involves real-time measurement of parameters such as carbon dioxide injection flow rate, temperature, pressure, and formation pressure for each layer, with data transmitted to the surface through cables.
- **Adjustment:**
Intelligently adjusts the gas injection volume for each layer based on the established production scheme.
- **Remote data transmission:**
Enables integration with oilfield digitalization or remote communication and control using GPRS signals.

Features

- Using nickel-based alloys, super 13Cr, and other corrosion-resistant materials, it can be used long-term in high-temperature and high-pressure carbon dioxide environments.

- The sealing employs an imported fluoroelastomer ring and metal seal dual design to meet air tightness requirements.
- Flow measurement is conducted using the differential pressure method, and it can calculate the density of carbon dioxide in a supercritical state, compensating for flow to enhance metering accuracy.

Specifications

Downhole Unit (gas distributor)	
Max Pressure	60MPa(8702psi)
OD	95mm(3.74in) (Customized)
Max. Temp.	125°C(257°F)
Single-layer gas injection volume	Standard condition: 5000-20000m³/d(Customized)
Total well gas injection volume	30000m³/d
Co ₂ injection measurement accuracy	15%FS
Pressure measurement range	0-60MPa
Co ₂ wellhead injection pressure	20MPa (CO ₂)
Temp. measurement range	-30°C-125°C
Communication distance	>4000m
Maximum Regulating Pressure Difference	25MPa(3626psi) (Pressure Difference)
Max Layer	6

Application

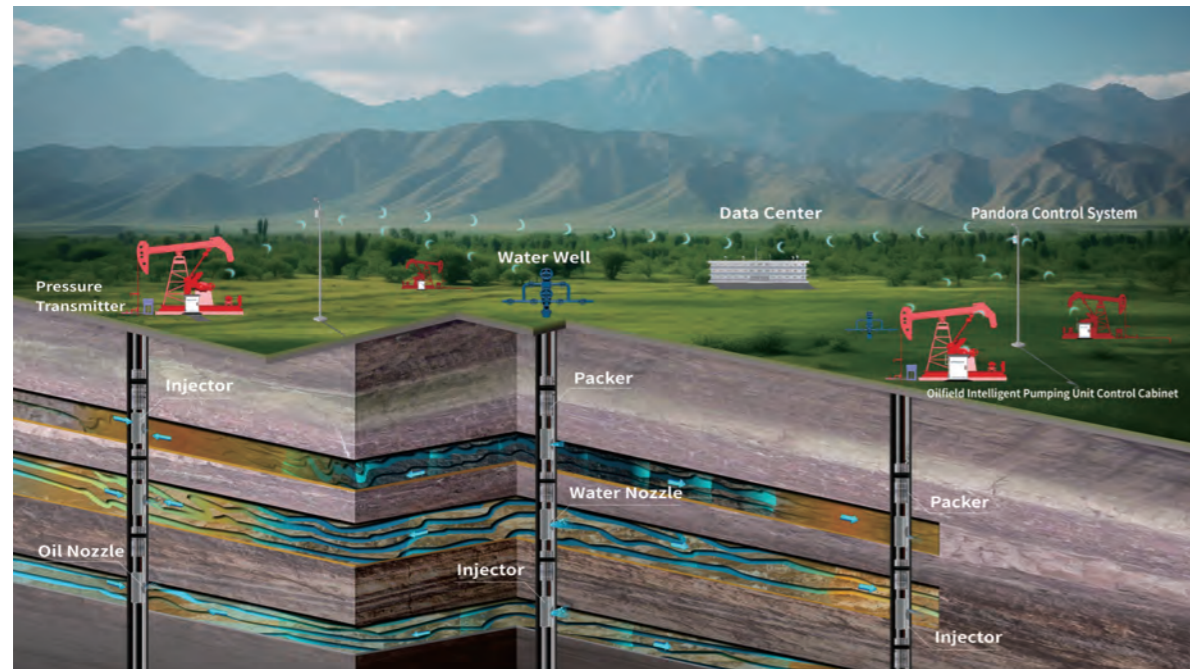
After the Changqing shale oil carbon dioxide pre-fracturing, with 18 horizontal well segments, a total of 3600 m³ of liquid carbon dioxide was injected. Following the well shut-in, a monitoring pipeline for online carbon dioxide detection was connected. The well was opened for production until gas was visible, initiating real-time online monitoring. Simultaneously, monitoring was conducted on seven neighboring wells. About 32 days after production commenced, the injection well showed minimal carbon dioxide output, while only ppm-level carbon dioxide production was detected in two nearby wells (negligible). Approximately 1080 m³ of carbon dioxide was extracted from the group of wells.

Carbon dioxide storage efficiency = (3600 - 1080) / 3600 * 100% = 70%.

Data Pandora Production Optimization System

Introduction

Based on the Intelligent Layer Separate Injection System, Intelligent Layer Separate Production System, and Pandora intelligent terminal, the note-collection linkage system utilizes big data and artificial intelligence technologies to achieve refined and intelligent management of every oil layer between oil and water wells, optimize production management systems, increase oilfield production and recovery rates, while simultaneously reducing oil extraction costs, maximizing oilfield profits.

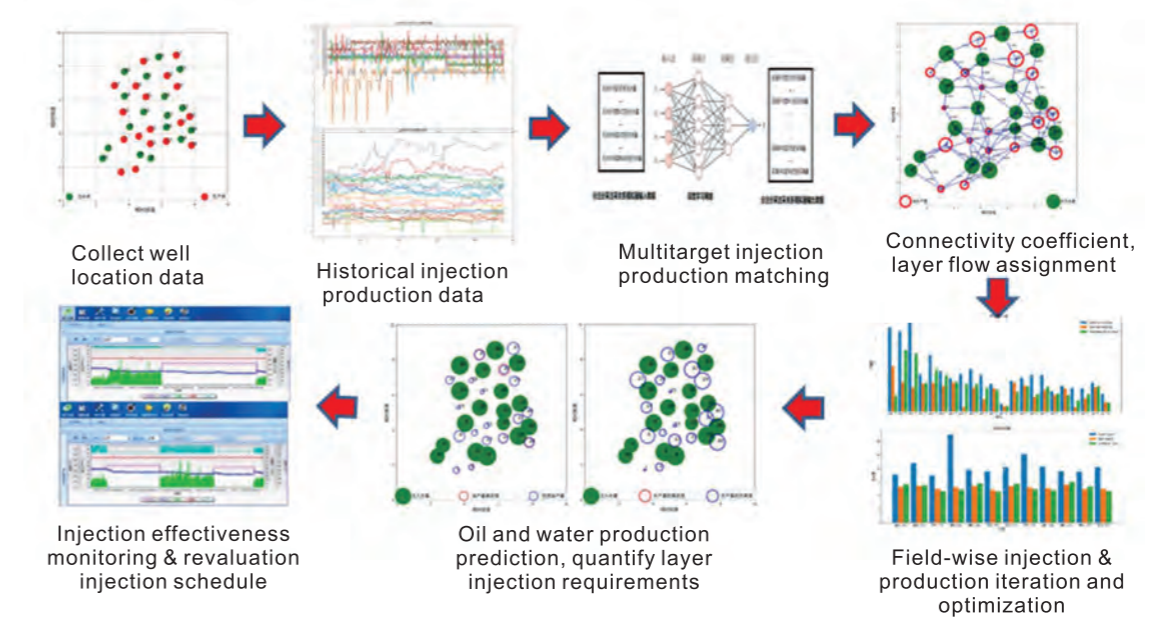


Features

- Establish a deep learning algorithm model based on monitoring data between oil and water wells to intelligently calculate the interconnection coefficient of oil and water wells and the injection-production relationship of each layer in the well group, automatically identify the dominant water flow channel, and guide water flooding and plugging measures.
- Analyze the change patterns in monitoring data between oil and water wells, dynamically predict geological production conditions of oil reservoirs, combine intelligent early warning algorithms with production system optimization models to prevent abnormal conditions such as formation water flooding and large channel breakthroughs.

Data Pandora Production Optimization System

- Issue alerts for various abnormal conditions in the formation (such as layering, interlayer interference, planar contradictions, one-way water injection advancement, etc.) and seek solutions based on this.
- Utilize big data analysis techniques on testing data like electric power diagrams, dynamometer cards, liquid levels, etc., to achieve pump operating condition monitoring, intermittent pumping optimization, measurement of single-well liquid and oil production volumes.
- Realize big data modeling of reservoirs between each oil and water well, optimize production systems, and automatically control water allocation and production tools to achieve optimal system production.



Gas Well Production Enhancement Robot

Introduction



Wellhead gathering facilities serve as the eyes of the robot, observing and collecting surrounding information.

Terminal devices



The built-in edge intelligent AI algorithm in the computing box is like the mouth of the robot, transforming the collected information into executable instructions.

Edge AI computing box



Valve-opening devices and other equipment in terminal devices act as the limbs of the robot, working together to achieve the goal of gas well production enhancement.

Automatic control linear globe valve

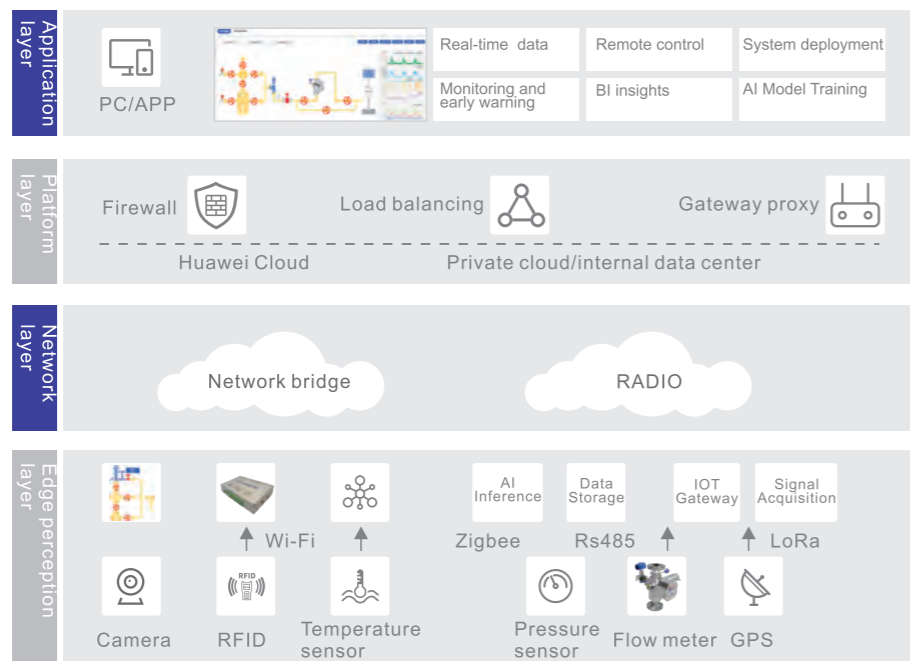


Similar to the robot's brain, the cloud platform analyzes and integrates the collected data, providing decision support for users.

Cloud platform

Gas Well Production Enhancement Robot is an efficient solution that integrates terminal devices, edge AI computing box, and cloud platform in one. It aims to increase gas well production and reduce energy consumption. This robot has unique functionalities, with its various components being compared to the eyes, mouth, limbs, and brain of a robot.

System framework



Gas Well Production Enhancement Robot

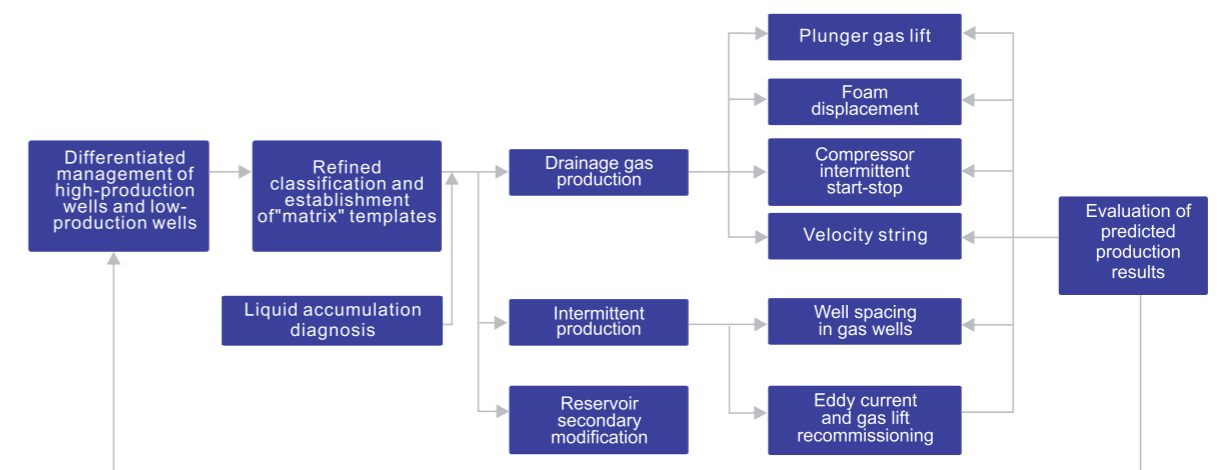
The system operation of the robot is as follows: Various sensors and instruments at the wellhead collect wellhead conditions and production data. The edge computing capability of the wellhead computer's data Pandora box is utilized to run various AI inference models. This enables predictive maintenance of instrumentation equipment and optimization decision-making for gas well production, achieving intelligent operation of gas well production. Through public or private networks and advanced IoT technology, these digitized intelligence and gas wells are interconnected to perform field-level production optimization, ultimately achieving the intelligence of the entire gas field.

The internal system of the robot adopts an architecture that combines edge, terminal, and cloud. At the wellhead terminal, the system provides rich interface adaptability to accommodate various gas well instruments and sensor signals. At the edge, intelligent control and optimization of gas well production are achieved through the data Pandora box. In the cloud or the user's central control room, deep exploration of data value, data insights, and visualization are realized.

System Composition

AI Intelligent Algorithms

The most important parts inside the robot are the "mouth" and the "brain," where they run edge intelligent AI algorithms, calculate and issue the final process instructions. Our company has developed three drainage gas production process model algorithms: intelligent intermittent gas lifting, intelligent plunger gas lift, and intelligent foam displacement gas production, tailored to the requirements of existing gas field environments.



Adopt a refined and effective gas well management approach: "One zone, one block, one policy, one well, one method, one process."

Gas Well Production Enhancement Robot

Edge AI computing box



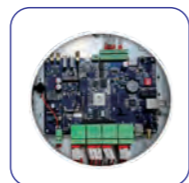
Convenient installation

Input voltage: 220V/24VPower consumption <50W (can provide power to instruments)Protection level: IP66



Diverse interfaces

Supports various hardware interfacessuch as Ethernet, RS485/422, RS232, USB2.0, etc Supports multiple protocol access, such as MQTT, Modbus, BACnet, IEC101/104, etc



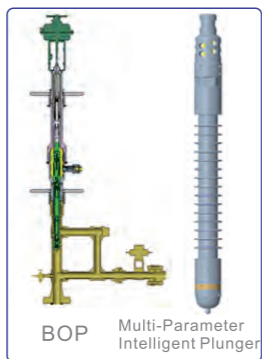
Hardware serialization

For different scenarios (large-scale computing, device integration), supports the selection of different edge hardware, including low-end ARM-M3, mid-range IMx6Q, high-end A53, etc

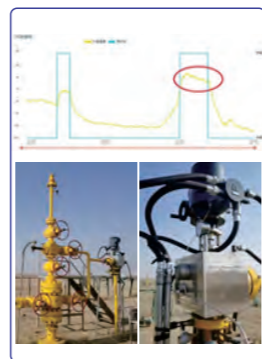
Terminal devices



Automatic control linear globe valve



Intelligent Multi-parameter Plunger gas lift



Gas well heating device

Cloud platform

Intermittent Gas Recovery&Plunger Lift Gas Recovery&Foam Assisted Gas Recovery

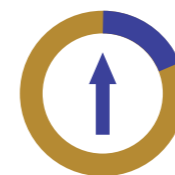
- **Online data**
Digitally display real-time production data of gas wells
- **System analysis**
Comparative analysis of historical executed systems
- **Historical curves**
Analyze and view all historical data of gas production status
- **System deployment**
Multiple systems (intelligent deployment, timer deployment, pressure deployment, constant on/off)
- **Workbench**
Intelligent approval, expert approval



Gas Well Production Enhancement Robot

Products Value

Maximizing gas well production; Increase individual well production and management efficiency.



5%-15%

Single well production



30%-50%

Management efficiency of gas well

Application

The product was installed and tested in the "Sulige" gasfield blocks X1, X2, etc. in December 2022. It operated steadily for six months during which the AI model A automatically adjusted the system. Model A dynamically controlled the system based on factors such as pressure difference, gas production, water production, temperature, and time. After implementing this technology, both instantaneous and oil pressure fluctuations significantly increased. Well 1 recorded a production increase of 260,000 cubic meters in six months, while X2#4 achieved a production increase of 150,000 cubic meters in four months. The production enhancement effect was remarkable, providing a reliable technical guarantee for rational drainage gas production and intelligent production increase in intermittent production wells.



Memory Pressure Gauge

Introduction



YL-19 Pressure Gauge



YL-22 Pressure Gauge



YL-36 Pressure Gauge

The YL series Memory Pressure Gauge is universal high-precision memory pressure and temperature gauge, capable of adapting to various harsh underground environments such as high temperature, high pressure, high vibration, and high corrosion. It is widely used in various downhole pressure testing operations like static pressure, flow pressure, and pressure detection. This series of instruments feature high measurement accuracy, simple and convenient operation, easy maintenance, and have obtained a national utility model patent certificate. SITAN Memory Pressure Gauge consists of three parts: sensor, recording, and power supply. The sensor part includes pressure sensor and temperature sensor, which are used to convert downhole pressure and temperature into electrical signals. The single-chip calculator and memory constitute the recording part, sampling and storing the signals generated by the sensor. The power supply uses high-temperature, high-energy batteries imported from the United States.

Features

- YL series Memory Pressure Gauge utilizes imported high integration IC chips and components, implementing multiple safety measures and WATCHDOG technology in the microcontroller software, significantly reducing the number of discrete components in the circuit, ensuring high long-term stability and reliability of the instrument.
- The pressure sensor employs high-end pressure sensors from Switzerland and the United States, characterized by minimal zero drift, excellent temperature drift repeatability, consistent performance, high sensitivity, low hysteresis, and high measurement accuracy.
- All components and pressure sensors undergo rigorous temperature shock tests during production to ensure the long-term stability of the instrument's operation.
- The connection threads feature the popular Acme trapezoidal thread structure internationally, providing strong coupling force and preventing jamming in harsh environments, suitable for use in oil field conditions.

Memory Pressure Gauge

Specifications

YL Memory Pressure Gauge	
Sensor type	Silicon-Sapphire
Pressure range	10Mpa(1500psi) / 60Mpa(9000psi) / 80Mpa(12000psi)/ 100Mpa(15000psi)
Pressure accuracy	0.1%FS, 0.05%FS
Pressure resolution	0.0003%FS
Max operating temperature	150°C(302°F) 2years/177°C(351°F) 2 months
Temperature accuracy	±0.5°C
Temperature resolution	0.01°C
Power supply	Well known brand lithium thionyl chloride high-energy, high-temperature battery
Interface	USB to serial port
Data format	Time/Pressure/Temperature
Data storage capacity	100,000 data points, larger storage capacity optional
OD	19mm(0.75in) / 22mm(0.87in) / 32mm(1.25in)/ 36mm(1.42in)
Length	304mm/465mm/465mm/476mm
Operating mode	Memory
Outer tube material	17-4PH/TC4
Corrosion resistance	Oil and water wells
Sampling interval	1 second to 18 hours per point, customizable
Sensor type	<0.04mA during operation, <15mA

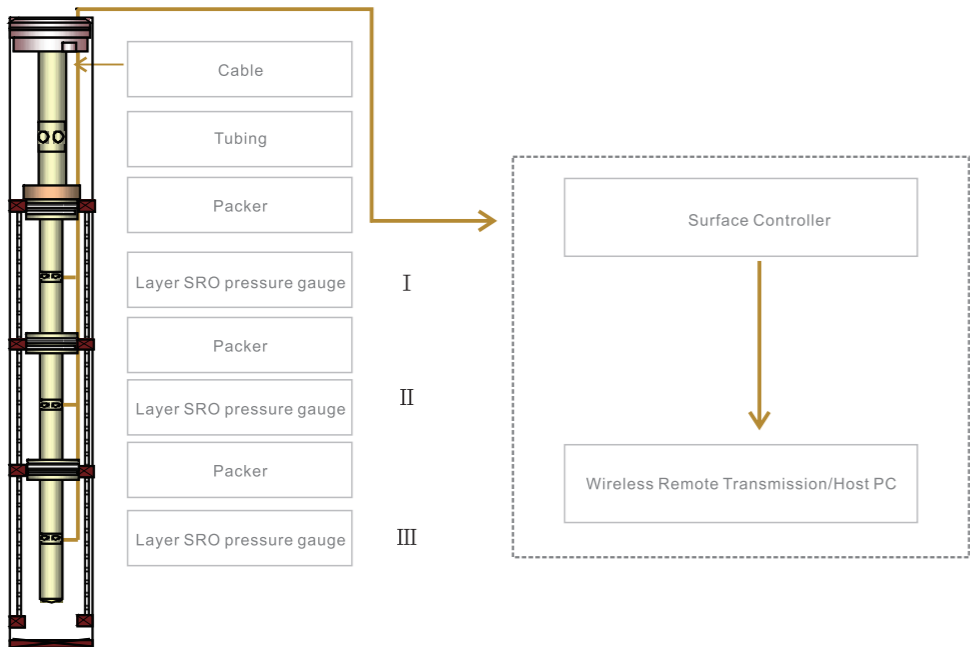
The SRO Layered Permanent Pressure Gauge

Introduction



The SRO Layered Quartz Pressure Measuring System is suitable for long-term downhole pressure and temperature monitoring. It can record data such as flow pressure and temperature during normal production of multilayer oil or water wells, achieve real-time monitoring of the working status of oil or water wells, and work continuously for more than two years. It can also perform various project tests such as pressure recovery, systemic well testing, interference well testing, and boundary exploration testing.

Principle



The SRO Layered Permanent Pressure Gauge

Specifications

Pressure Gauge	
Sensor Type	Quartz
OD	26mm(1.0in)
Pressure range	0-16kpsi
Pressure accuracy	±0.02% FS psi
Pressure resolution	0.00006%FS psi
Pressure drift	<0.02%FS/year
Temperature range	0°C-125°C (32°F-257°F)
Temperature rating	±0.5°C
Temperature resolution	0.005°C
Surface readout	Yes
Sampling Rate	1s single layer
Housing Material	718
Continuous Working Time	>2years



Pressure Carrier: Customized

Surface Controller	
Temperature range	-35°C-70°C(-31°F-158°F)
Power Supply	220V AC
Can connect pressure gauge	8pcs
Maximum transmission distance	5000m
Interface	rs485, DTU

SRO Artificial Lift Downhole Monitoring System (SRO ALDMS)

Introduction



Surface System



SRO Artificial Lift Downhole Monitoring System



Carrier

SITAN SRO Artificial Lift Downhole Monitoring System (SRO ALDMS) can be used for long-term, real-time monitoring of downhole pump conditions in oil, water, and gas wells. The system can measure parameters such as pump inlet pressure, pump outlet pressure, suction inlet temperature, pump vibration, etc. By monitoring these parameters, diagnostics can be performed on electric pumps and well conditions, providing improvement suggestions. This facilitates analysis by reservoir engineers to increase production, enhance pump and well operating time, reduce inter-well interference, improve pump conditions, and optimize the operational sequence of oil wells.

SRO Artificial Lift Downhole Monitoring System (SRO ALDMS)

SITAN SRO Artificial Lift Downhole Monitoring System consists of several parts, including a surface system, surface communication cables, downhole cables, downhole pressure gauge carrier, downhole PT gauge, downhole cable protector, and wellhead (four-way) penetration device. It is suitable for long-term monitoring of downhole pressure, temperature, and vibration. It can operate continuously for more than 2 years under designed environmental temperatures and pressures.

The surface system powers, collects, and stores data signals from downhole sensors; with an IP65 protection level, it can be used for outdoor installations. The power supply can be AC 24VDC/110VAC/220VAC, with an internal transformer and optional solar power connection. Data transmission uses MODBUS RS485 or RS232. Various communication methods can connect to field instruments and SCADA control systems at the wellsite.

Application

- ▶ Suitable for continuous monitoring, displaying, and transmitting parameters such as downhole pressure, temperature, and vibration for oil, water, and gas wells.
- ▶ Can be used in high well temperatures and pressure condition.
- ▶ Can operate continuously for up to two years.
- ▶ The surface system is suitable for outdoor field installations.
- ▶ Transmission distance greater than 5000 meters.

Features

- All components in the printed circuit board are military-grade packaged. Pressure sensors and temperature sensors use high-performance.
- All components undergo strict high-temperature aging screening, and each instrument undergoes stability testing at high temperatures.
- The pressure gauge and casing are designed with anti-corrosion materials to ensure long-term reliability underground.
- Data collected by downhole instruments can be stored in the memory card of the surface controller or saved in real-time on a computer via a USB connection port.

SRO Artificial Lift Downhole Monitoring System (SRO ALDMS)

Specifications

Parameter(Downhole)	ALDMS-125	ALDMS-175
OD	26mm(1.0in)	
Pressure &Temp. sensor	Sapphire	
Pressure range	0-6000psi/0-10000psi/0-15000psi	
Pressure resolution	≥0.1psi	
Pressure accuracy	±0.1%FS	
Temperature range and working life	0°C-125°C/2 years 150°C/90 days	0°C-175°C/2 years 200°C/90 days
Temperature resolution	0.1°C	
Temperature accuracy	±1°C	
Vibration range (horizontal + vertical)	0-50G	
Vibration resolution	0.1G	
Vibration accuracy	±1G	
Material	Inconel 718	
Logging rate	all parameters/1 second	
Sealing	Two-stage sealing	
Length	712mm	
Weight	2.5kg	

SRO Artificial Lift Downhole Monitoring System (SRO ALDMS)

Specifications

Surface Controller	
Minimum sampling rate	ALL parameters/1 second
Memory	4GB
Saving rate	Each Layer 4 seconds
Display	Provide On-Screen Data Charting/trending at well site
Pump	Can provide pressure temperature vibration and other signals for the pump control system to complete the system control like Alarm and Trip relays
Connection interface	Portable computer systems (Laptops) using Ethernet Interface Cable
Communication	MOBUS RS485 or RS232 can suitable the SCADA system
Panel enclosure rating	IP 55
Working temperature	-30°C-75°C (-22°F-167°F)
Dimension	HxWxD: 585x470x340mm

Electromagnetic Flowmeter Tool

Introduction



Electromagnetic Flowmeter Tool

Electromagnetic flowmeter tool is mainly used to measure the flowrate, pressure and temperature parameters of water injection wells , polymer injection wells ,product wells(≥90% water rate), drilling mud flow test and the coal mine flooding .

The measurement method is external electromagnetic type. When the conductive fluid passes, the conductive fluid cuts the magnetic field lines and generates an induced electromotive force. The induced voltage is detected through two electrodes in direct contact with the liquid. When the inner diameter of the measuring tube and the magnetic induction intensity of the magnetic field are constant, the induced electromotive force is in a fixed proportion to the instantaneous volume flow, and has nothing to do with other physical parameters. Therefore, the flow rate of the fluid can be obtained by measuring the induced voltage at both ends of the electrode.

Features

- The memory type electromagnetic flowmeter tools is composed of housing, battery, circuit part, sensor part, centralizer and so on.
- It has the characteristics of strong seismic resistance, high sensitivity, good stability and low power consumption.
- Suitable for high-precision detection of fluid flow rates such as polymer, water, sewage, acids, alkalis and other fluids with conductivity greater than 5μS/cm.

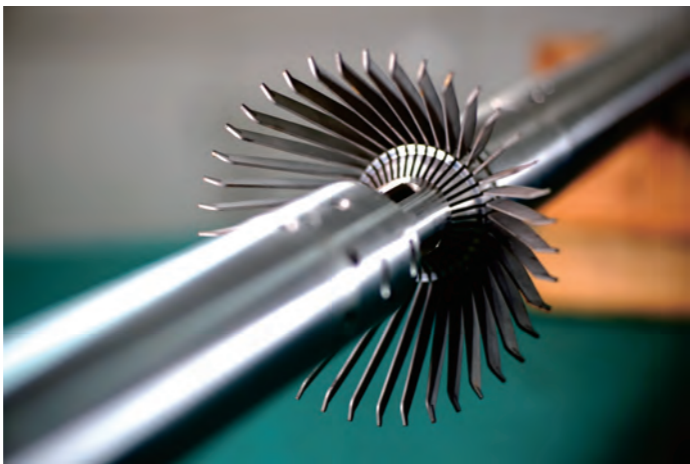
Electromagnetic Flowmeter Tool

Specifications

Electromagnetic Flowmeter Tool	
Instrument outside diameter	50mm
Environment temperature	-40℃~+150℃
Flow measurement range	(1~ 1200) m³ / d
Flowmeter accuracy	≤±2%FS
Temperature range	0℃ ~ 150℃
Temperature Accuracy	±1℃
Pressure resistance	0-100MPa
Pressure measurement accuracy	±0.2%FS
Working Mode	Memory
Work Time	8/22h
Material	Stainless steel 17-4

Multi-finger Caliper Tool(MFC)

Introduction



The Sitan Multi-Finger Caliper(MFC) series includes 24 Arm Multi-Finger Caliper, 40 Arm Multi-Finger Caliper and 60 Arm Multi-Finger Caliper. The Multi-Finger Caliper evaluate casing damage such as distortion, dislocation, holes, cracks and inner wall corrosion by measuring diameter (radius).

Features

- Each arm corresponds to an independent sensor, providing high resolution in the circumferential direction.
- Hydrogen sulfide resistance version is available.
- Can connect with various logging tools like EMDS, MTT ,GR/TEMP./CCL, and Gyro Inclinator, enabling multiple data acquisitions in a single run.
- Integrated Memory and SRO operation modes.
- Compatible with WARRIOR system.

Multi-finger Caliper Tool(MFC)

Specifications

Multi-Finger Caliper			
Fingers	24	40	60
Voltage	18V DC		
Current	30±5mA		
Temperature	-30°C-175°C(-22°F-347°F)		
Max Pressure	100MPa (15000psi)		
OD	43mm(1.69in)	70mm(2.76in)	100mm(3.94in)
Length	1.42m	1.36m	1.44m
Measuring Accuracy	±1mm		
Resolution	0.1mm		
Rotation accuracy	±3°(Inclination>10°)		
Rotation range	0-360°		
Deviation accuracy	0-90°		
Max logging speed	800m/h		
Detection finger Measuring Range	Normal finger:45~140mm Extension finger:45~180mm	Normal finger:80~180mm Extension finger:80~254mm	Normal finger:105~254mm Extension finger:105~340mm

Electromagnetic Defect System (EMDS)

Introduction



Electromagnetic Detection System (EMDS)

SITAN Electromagnetic Detection System (EMDS) is used to detect the casing thickness, corrosion, deformation, cracks etc. in the oil tubing, indicating downhole tubular structure, tool location and detecting the ferromagnetic material (such as casing centralizers, surface casing, etc.) outside casing.

Features

- Comprehensive Features: Obtain defects, thickness, temperature, and natural gamma of both oil pipes and casings in a single downhole running.
- Convenient Maintenance: Simple mechanical structure for easy disassembly and maintenance.
- Versatile Operating Modes: Can work independently or connect with other logging tools such as MFC to complete the logging jobs.
- Integrated Memory and SRO operation modes.
- Compatible with WARRIOR system.

Electromagnetic Defect System (EMDS)

Specifications

Electromagnetic Detection System (EMDS)	
Maximum temperature	175°C(347°F)
Maximum pressure	100MPa(15000psi)
OD	43mm(1.69in)
Operating voltage	18V DC
Operating current	(135±10)/(550±50)mA
Maximum logging speed	300m/h
Measuring range of pipe diameter	62-324mm (2.44in-12.75in)
Measuring range of single pipe thickness	3-12mm (0.11in-12.75in)
Total maximum thickness of double pipes	25 mm (0.98in)
Measuring error of single pipe thickness	0.5mm (0.019in)
Measuring error of casing through tubing	1.5mm(0.059in)
Minimum length of longitudinal damage	50mm(1.96in) 2.5in single pipe 70mm(2.75in)5.5in single pipe 150mm(5.90in)5.5in casing through tubing
Minimum length of transversal damage	1/4 circumference
Minimum diameter hole damage	30mm (1.18in)
Measuring range of Gamma	0cps-2000cps
Gamma sensitivity	1cps
Measuring range of temperature	-40°C-175°C(-40°F-347°F)
Temperature resolution	0.1°C
Temperature accuracy	±1°C
Housing material	TC4

Magnetic Thickness Tool (MTT)

Introduction



Magnetic Thickness Tool (MTT)

SITAN Magnetic Thickness Tool (MTT) is used to measure the thickness of metal pipe body in it, which can reflect the degree of corrosion of casing. The sensor array of SITAN magnetic thickness tool is composed of 16 (12) independent sensors. Each sensor can get a curve of casing thickness, which can measure both the thickness and damage of the inner tube and thickness of the outer tube.

SITAN Magnetic Thickness Tool (MTT) is used to detect the thickness of downhole metal pipes, reflecting the corrosion level of the casing. The tool's sensor array consists of 16 (12) independent sensors, each capable of measuring a wall thickness curve of a pipe sleeve, enabling the measurement of the inner pipe thickness and damage status, as well as the measurement of the outer casing thickness

Features

- Ideal for inspecting damages to pipelines and casings, when combined with MFC for distinguishing between external or internal wall damage.
- Capable of measuring the absolute thickness of casings.
- Detects casing corrosion and gradual damages.
- Sector-based testing for high sensitivity.
- Integrated Memory and SRO operation modes.
- Compatible with WARRIOR system.

Magnetic Thickness Tool (MTT)

Specifications

Magnetic Thickness Tool (MTT)		
Model	DCH43- 101D	DCH70- 201D
Temperature rating	175°C(347°F)	
Pressure rating	100 MPa (15000 psi)	
OD	43mm (1.69in)	70mm (2.75in)
Length	2352mm	2162mm
Weight	12kg	30kg
Measuring point	1210mm	1110mm
Voltage	18V DC	
Max logging speed	300m/h	
Measuring range	89mm-177.8mm	114.3mm-244.5mm
Sensor number	12	16
Thickness measuring accuracy	≤15% Wall thickness (undamaged pipe)	
Housing material	Anti-corrosion	

Continuous Gyro Inclinometer Tool

Introduction



MEMS Continuous Gyro Inclinometer

Sitan MEMS Continuous Gyro Inclinometer is the new generation of integrated SRO&Memory gyro inclinometer. The instrument uses high-precision, high-reliability MEMS gyroscopes and MEMS accelerometers at a world-leading level of technology. The three-axis MEMS gyroscope measures the angular motion of the instrument, while the three-axis MEMS accelerometer measures the linear acceleration of the instrument. Internal compensation for zero position, scale factor, non-orthogonal error, and acceleration-related terms across all temperature ranges enables the instrument to maintain high measurement accuracy over extended periods. Mainly for wellbore trajectory measurement, directional perforation, Sidetracking, and other operations. It can also be combined with the MFC, RBT, and other logging tools for providing absolute orientation information.

Features

- Advanced MEMS inertial sensors with enhanced shock resistance and vibration capabilities to adapt to various harsh conditions.
- Smaller size, lower power consumption, and higher temperature resistance compared to fiber optic gyro sensors;
- Automatic zero velocity correction algorithm for higher measurement accuracy and stability.
- Capable of conducting three-dimensional full-attitude azimuthal measurements to meet horizontal well logging requirements.
- Compact outer diameter suitable for slimhole casing sidetracking operations.
- High self-azimuthal accuracy eliminates the need for initial alignment at the wellhead, simplifying logging operations for user convenience.
- Logging software displays "three graphs and one chart" for more intuitive logging results.

Continuous Gyro Inclinometer Tool

Specifications

Continuous Gyro Inclinometer Tool	
Working pressure	100 MPa (15000 psi)
Instrument temperature	120°C(248°F)/175°C(347°F) (thermos bottle 8h)
Instrument diameter	43mm(1.69in)/48mm(1.89in) thermos
Instrument length	1000mm
Measurement method	continuous/point measurement
Vibration resistance	6g (1/2sin)
Impact resistance	1000g (10ms)
Angle measurement range	0-180°
Angle measurement accuracy	±0.15°
Azimuth measurement range	0-180°
Azimuth measuring accuracy	±1.5° (well inclination >3°) ±3.0° (well inclination ≤3°)
Tool face angle measurement range	0~180°
Tool face Angle measurement accuracy	±1.0° (well inclination >3°) ±2.5° (well inclination ≤3°)

Noise Logging Tool

Introduction



Noise Logging Tool

SITAN Noise Logging Tool is a non-emission acoustic logging device, which is developed based on hydrodynamic turbulence theory and fluid acoustics. According to the measured sound frequency and amplitude, the instrument can judge casing channeling, cementing quality, and qualitatively determine the location of casing water and gas formation. It does not need to contact the casing, no pollution, no radiation, only need to measure the frequency and amplitude of sound, casing leakage, pipe channeling analysis.

Application

- ▶ Determine the location of casing channeling.
- ▶ Determine the leakage points of casing or tubing.
- ▶ Determine of leaking substances (water, gas, oil) in the well.
- ▶ Analysis of cementing quality.
- ▶ In SRO (Surface Read Out) mode, it can be logged with MFC, EMDS, differential thermometers and other logging tools.

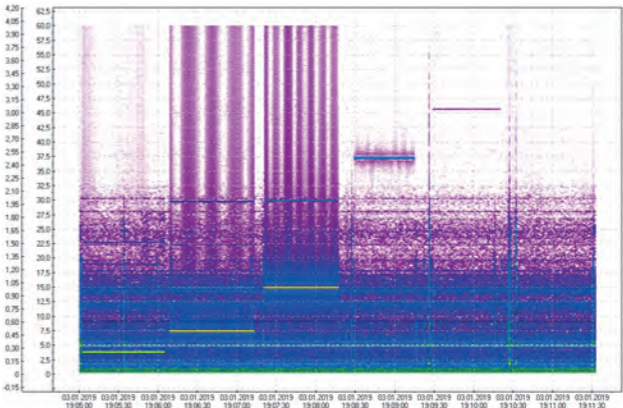
Feature

- Available for SRO mode and memory mode.
- Digital signal, easier to connect with other instruments.
- Available for running with MFC, differential well temperature and other logging tools to measure the actual situation of the well more comprehensively.

Noise Logging Tool

Logging curve and interpretation pictures

Memory mode curve: (horizontal coordinate is time, vertical coordinate is frequency)



Specifications

Noise Logging Tool	
Operating temperature	0°C - 175°C (-32°F-350°F)
Max. working pressure	90 MPa (13000 psi)
Power supply	14-20V DC
Receiving sensitivity of noise sensor	-190dB re 1V/Pa
Recommended speed measurement	Spot measurement
Vibration resistance	3g, 3D, 5 - 100 - 5Hz
Impact resistance	10g
Signal transmission mode	AMI coding compatible with MPYC series remote transmission
Output signal amplitude	±1V
Communication baud rate	500Kbps
Data reading mode	Direct reading or storage
OD	35mm(1.38in) /43mm(1.69mm)
Length	≤750mm(29.5in)
Weight	≤15kg(33.1pounds)
Spectrum channel	128 channels
Frequency measurement range	100Hz-60KHz
Dynamic range	80dB
Storage capacity	1Gbyte (8Gbit)

Gamma/Temperature/CCL Tool

Introduction



Gamma/Temperature/CCL Tool

SITAN Gamma/Temperature/CCL Tool is used to measure gamma rays from various downhole formations, real-time temperature changes, and depth information of casing collar. Gamma data is obtained by measuring natural gamma rays from formations, whose curves can analyze and evaluate geological information. CCL data detects the positions of casing collar in the well, enabling precise location of casing depths when combined with gamma data. At perforation locations, production from oil reservoirs at higher temperatures can cause significant or abnormal temperature variations, serving as qualitative indicators for estimating oil and gas well productivity and production positions. The Gamma Wellbore Temperature and Magnetic Locator can also be connected with other logging instruments (such as MFC,EMDS,MTT) to provide casing depth information.

Features

- Connected with other logging tools such as MFC, MTT, Gyroscope Inclinator etc. to perform depth calibration for other tools.
- Adopt special armored high accuracy platinum temperature sensor to guarantees high accuracy, high resolution and high sensitive. Time lag is less than 1s.
- Available for SRO mode and memory mode.
- Digital signal, easier to connect with other instruments.

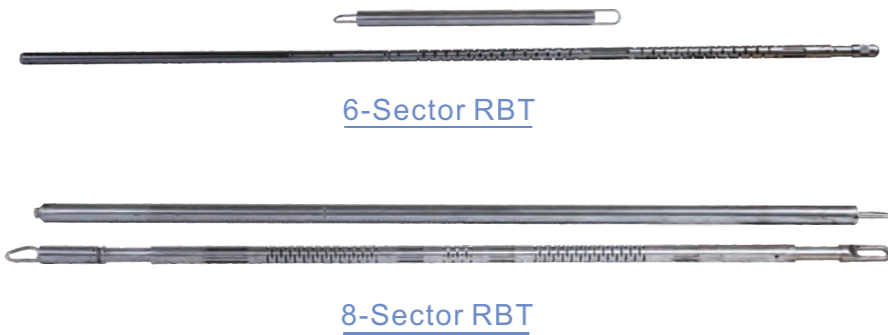
Gamma/Temperature/CCL Tool

Specifications

Gamma/Temperature/CCL Tool	
Max temperature	175 °C(347°F)
Max pressure	100 MPa (15000 psi)
OD	43mm(1.69in)/70mm(2.75in)
Voltage	+ 18V DC
Current	(50±5) mA
Max logging speed	600m/h
Gamma zero length	1043mm
Gamma measuring range	20000cps
Gamma measuring accuracy	± 1cps
Well temperature zero length	124mm
Well temperature measuring resolution	0.05°C
Well temperature measuring accuracy	±1°C
Well temperature measuring range	-35°C-175°C(-31°F-347°F)
CCL zero length	338.5mm
CCI SNR(Signal to Noise Ratio)	≥3

Radial Bond Tool (RBT)

Introduction



SITAN 6-sector and 8-sector Radial Bond Tool is designed with integrated SRO and memory modes. It consists of CBL signal, sector signal and VDL signal. CBL reflects the condition of the first cementing surface. The sector signal assists CBL in determining the location, size and distribution of channels and holes on the first cementing surface. VDL supplements the analysis of the condition of the first cementing surface and can also qualitatively explain the second cementing surface.

Features

- Applied to high-angle wells, horizontal wells, and re-entry wells.
- Integrated Memory and SRO operation modes.
- Compatible with WARRIOR system.
- Highly integrated, modular design.
- Simultaneously measure multiple curves like CCL/GR/CBL/VDL/sector amplitude.
- Sector profile in logging data visually displays positions, sizes, and distributions of the first interface channels and cavities.
- Digitalized acoustic signals eliminate cable interference on the sound wave signals.
- Pressure balance device employs bellows and pistons, enhancing pressure resistance performance.

Radial Bond Tool (RBT)

Specifications

Radial Bond Tool (RBT)		
Model	6- sector RBT	8-sector RBT
OD	43mm (1.69in)	70mm (2.75in)
Length	4379mm	5118mm
Well range	2-7/8in-5-1/2in	4-1/2in-9-5/8in
Max working temperature	175°C(347°F)	
Max working pressure	140MPa(20000psi)	
Power	18V DC/ (100±10) mA	18V DC/ (110±10) mA
CBL amplitude	±5%	
CBL propagation time	±2μsec	
Max logging speed	800m/h	

Memory&SRO Integrated Open Hole Logging System

Introduction



Poteclinometer Tool



Battery section



High Definition Sonic Logging Tool



Array Induction Logging Tool



Dual Lateral Logging Tool



Dual Induction Eight Lateral Logging Tool



Natural Gamma Logging Tool



Four-arm Caliper Logging Tool



CCL Logging Tool

Well Logging Tool

Memory&SRO Integrated Open Hole Logging System



Surface logging System

SITAN ST9600 is a new generation of Memory and SRO (Surface Read Out) integrated fast logging platform. It includes wireline surface system, memory surface system, memory and wireline integrated conventional logging instruments and imaging instruments.

Wireline Logging System

Wireline Logging System mainly completes the logging construction of conventional and imaging logging tools, and can complete the measurement of conventional logging items such as Dual Laterolog / Dual Induction Eight Lateral Logging / Array Induction Logging , Sonic Logging , Gamma Logging , Poteclinometer Logging , Caliper Micro-electrode Logging in one run.Expanded Litho-Density Logging, Compensated Neutron Logging, Natural Gamma Spectroscopy Logging and Cross Dipole Logging.

Memory Logging System

Memory Logging System is a set of horizontal logging instruments suitable for drill pipe pushing, which can meet the requirements of logging construction of large deviated wells, horizontal wells and complex well conditions. The system can completeDual Laterolog / Dual Induction Eight Lateral Logging / Array Induction Logging , Sonic Logging , Gamma Logging , Poteclinometer Logging , Caliper Micro-electrode Logging in one run without wireline. It can also be expanded with Litho-Density Logging,Compensated Neutron Logging, Natural Gamma Spectroscopy Logging and Cross Dipole Logging.

Cementing , Radioactive and Magnetic Logging System

The ST9600 Fast Logging Platform can complete cementing, radioactive and magnetic logging regardless of SRO or memory mode.

Well Logging Tool

Memory&SRO Integrated Open Hole Logging System

Specifications

Memory & SRO Integrated Open Hole Logging System			
Surface System		Downhole Logging Tools	
Case size	19 inch,3U standard case	Max. working temperature	175°C(347°F)
Input power supply	110V AC/220V AC	Voltage	140MPa(20000psi)
Data interface	High-speed 485 bus	OD	92mm(3.62in)
Bus rate	5Mbps@200m	Communication bus	800Kbps
Riser pressure sensor		Storage capacity	32Gbit
Supply voltage	12-30V DC	Rated battery capacity	58Ah
Output signal	4-20mA	Rated output voltage	40V
Measurement range	0-40MPa	Poteclinometer Tool	
Winch sensor		Length	1380mm(54.3in)
Supply voltage	5-24V DC	Deviation measurement range	0°-180°
Output signal	4-20mA current pulse, AB signal		
Number of teeth coded disk	12	Deviation measurement accuracy	±0.2°
Hook load sensor		Azimuth measurement range	0°-360°
Supply voltage	12-30V DC	Azimuth measurement accuracy	±1.5°(7°≤ deviation ≤173°) ±5°(inclination <7° or 173°<inclination< 179°) For reference only (inclination <1° or inclination >179°)
Output signal	4-20mA		
Measurement range	0-7MPa		
Martin Decker			
Supply voltage	12-30VDC	Output signal	AB differential signal
Resolution		256p/s	
Gamma ray			
Instrument length	1640mm	Measuring range	0-2500API
Measurement accuracy	±5%	Bus rate	5Mbps@200m

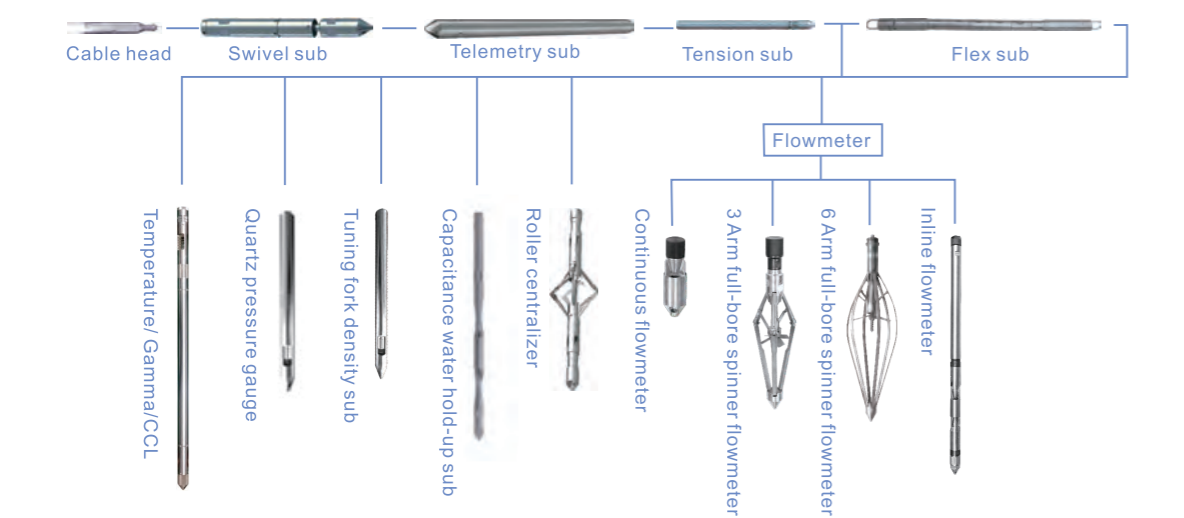
Memory&SRO Integrated Open Hole Logging System

Specifications

Memory & SRO Integrated Open Hole Logging System			
Dual Induction Eight Lateral Logging Tool		High Definition Sonic Logging Tool	
Length	8000mm(315in)	Length	4200mm(165.4in)
Measurement dynamic range	ILD:(0.2-2000)Ω·m, ILM:(0.2-2000)Ω·m	Detector type	Piezoelectric ceramics, 4 receiving crystals, 1 emitting crystal
	LL8:(1.0-1000)Ω·m, SP:(-80 - +200)mV DC	Receiving crystal source spacing	Receiver spacing is 6.0in, source spacing is 5ft
Practical measuring range	Both ILD,ILM are (0.2-200)Ω·m	Transmitting crystal bandwidth	2-18KHz
	LL8:(1.0-100)Ω·m,	Receiving crystal bandwidth	1-25KHz
Measurement accuracy	±7% or ±2mS/m (Low resistance is defined by percentage error, high resistance is defined by absolute error)	Measurement accuracy	±0.5us
Repeatability	±5%	Repeatability	±1%
Depth of detection	ILD:1.6m, ILM:0.8m, LL8:0.33m	Vertical resolution	0.5ft
Sensitivity	ILD,ILM,LL8/1V/mho	Borehole measurement rangemeasurement	114mm-444mm
Dual Lateral Logging Tool			
Instrument length		4050mm	
Measuring range		0.2-40000Ωm	
Measurement accuracy		5% (1≤Rt<2000), 10% (2000≤Rt<5000) 20% (0.2≤Rt<1), 30% (5000≤Rt<40000)	
Depth of detection		Deep side: 2.54m, shallow side: 0.76m	
Layer thickness		0.74m	

Multi-Parameters Combination Production Logging Tool

Introduction



The Multi-Parameters Combination Production Logging Tool is mainly used for the injection and production profile logging. It can get the data including gamma, casing joint , fluid temperature, pressure, density, flowrate and water holding.

Features

- Both SRO mode and memory mode are available.
- Be compatible with Warrior system.

Specifications

Multi-Parameters Combination Production Logging Tool			
Working temperature	-30°C-175°C(-22°F-347°F)	Pressure sensitivity	0.008psi
Working pressure	≤103.4MPa	Pressure accuracy	0.02% full scale(Quartz)
OD	43mm (1.69in)	Collar signal to noise ratio	>5
Bus rate	50, 71, 100Kbits	Water holdup measurement range	0-100%
Channel quantity	62Nos. instruments (Max.)	Water holdup accuracy	5%
Tension measurement range	-400kg-1200kg	Density measurement range	0-1.25g/cc
Tension resolution	±0.4%	Density resolution	0.01g/cc
Tension accuracy	±1%FS	Density accuracy	0.03g/cc
Gamma range	0cps-10000cps	Temperature accuracy	±1°C
Statistical fluctuation	≤7%	Response time	<0.5s

350°C PTS Tool

Introduction



SITAN 350°C Memory PTS Tool can be used in the most challenging geothermal wells environments. It can continue working in 350°Cand 40MPa geothermal wells for 4 hours. 5 parameters can be acquired, including nature gamma, well temperature, well pressure, CCL, and flow rate.

SITAN 350°C PTS Tool adopts advanced dewar technology to ensure reliability and efficiency. Memory working mode, the logging data is stored in downhole tool, no need expensive and special equipment, the logging operation is simple.

Application

- Geothermal wells surveys.
- Pressure Transient Surveys.
- Flowrate monitor.
- Temperature testing.
- Reservoir Characterization.



Specifications

350°C PTS Tool			
OD	35mm(1.38in)	Max. working temperature	350°C (4 hours)
Max. working pressure	≤5800psi (≤40MPa)	Power supply	15.6V DC
Gamma measurement range	(0-10000) cps	Gamma resolution	1cps
Gamma data recording stability	≤7%	Temperature measurement range	-40°C-350°C
Temperature measurement accuracy	±1°C	Temperature resolution	0.01°C
Pressure measurement range	0MPa-40MPa(0psi-5800psi)	Pressure measurement accuracy	≤0.1%FS
Pressure resolution	0.01MPa	CCL measurement range	2in-7in
Flow measurement range	25m³/day-1000m³/day	Flow measurement accuracy	≤2%FS
Minimum flow	≤25m³/day	Time measurement	±2 second/day
Sampling interval	1s		

Well Tractor

Introduction



Well Tractor

The Well Tractor is a downhole convey tool for casing horizontal wells and high-angle wells. Compared to drill pipe transportation, it can save construction time, reduce labor intensity, lower operational risks, and does not require a derrick; Compared to coiled tubing transportation, it can transport over longer distances unaffected by well depth. SITAN Stractor is the advanced well tractor with super power motion, its design is base fully research on both mechanical and pure hydraulic tractor. Stractor is composed with multiple independent identical trailing subs. Each module has 1 motor with 1 pair of wheels. Hydraulic sub can control the wheel open and close, and also can push the wheel against casing wall. Wheels are driven by gears instead of hydraulic transmission; Multiple trailing modules can be freely assembled, according to the job requirements.



Well Tractor

Application

- ▶ Convey the following tools in horizonta wells and high-angle wells.
- ▶ Well logging tools.
- ▶ Perforation tools.
- ▶ Well completion tools.

Features

- Adapt to single-core or 7-core logging cables.
- High safety.
- Strong continuous working capability.
- Strong load capacity.
- Suitable for perforation operations.
- Modular design.

Specifications

Well Tractor			
OD	54mm(2.12in)	70mm(2.75in)	84mm(3.30in)
Max. working temp.	150°C(302°F)		175°C(347°F)
Max. working pressure	100MPa(15000psi)		140MPa(20000psi)
Length	6.1m(3-drive)	7.2m(3-drive)	7.8m(4-drive)
Weight	100kg(3-drive)	145kg(3-drive)	180kg(3-drive)
Input voltage	220V AC		
Input current	10A		20A
Max. traction speed	1000m/h	600m/h	1000m/h
Max. load	450kg(3-drive)	550kg(3-drive)	900Kg(3-drive)
Casing size	2-7/8in-7in	4in-9in	4.5in-9-5/8in
Traction direction	two-way(push-pull)		
Cable	Single core/3-core	Single core/7-core	8mm single core/7-core

Rotation Section

Introduction

Rotation section improves the reliability between cable head and tool string tip, reducing the risk of dropping between cable head and tool string. Rotation section also benefits the connection of long tool string before dropping down into the well, prevents the rotation of the tools, makes data interpretation easier.



Rotation Section

Features

- Preventing tool rotation when cable rotates, improving reliability.
- Reducing dropping risk between cable head and tool string in case of long tool string.
- Making connection of long tool string easier.

Specifications

Rotation Section	
OD	43mm (1.69in)
Maximum pressure	100MPa (15000psi)
Maximum temperature	-30°C-175°C(-22°F-347°F)
Length	354.5mm
Material	Common material/ Sulfur protection material Optional
Weight	3Kg
Conductance	< 0.5Ω
Insulation resistance	< 20MΩ

Tension Section

Introduction

Blocking and getting stuck often occurs while the instrument is put down or lifted up in actual logging, and it is hard to tell whether cable or instrument gets stuck. If incorrect measures are taken, cable will be pulled off or instrument will drop into well. As a result, logging can't finish smoothly and logging cost will increase. It is of great significance for improving logging efficiency and lowering logging cost to judge whether cable or instrument gets stuck.



Tension Section

Features

- Truly reflects force condition of down hole instrument in real time.
- Can be combined with several kinds of instruments to log.
- Can be used in the well of high temperature and pressure.
- Maximum tension range can reach 1200kg.
- Measuring accuracy is up to 1%FS.

Specifications

Tension Section		
OD	43mm(1.69in)	70mm(2.75in)
Length	792mm	1032mm
Operating Temperature Range	-30°C-175°C(-22°F-347°F)	
Max operating Pressure	100Mpa (15000psi)	
Measuring Range	-2000kg-2000kg	-12000kg-12000kg
Working Voltage	DC 90V/18V	DC 18V
Measuring Accuracy	±1% FS	±1%FS

Telemetry Section

Introduction



Telemetry Section

SITAN Telemetry Sub is used to control the communication of the downhole tool string. It collects data from connected instruments and transmits them to the data acquisition system through digital coding.

Features

- Transfer data of downhole tool string to data acquisition system.
- Receive commands from the data acquisition system and then transfer them to corresponding instruments.
- Coordinate communication of connected instruments.
- Addressable up to 62 kinds of instruments.
- Can connect with: Multi Finger Caliper, Electromagnetic Detection System, Magnetic Thickness Tool, Gamma/Temperature/CCL, Radial Bond Tool, Gyro Inclinator, 8-parameter PLT, etc.

Specifications

Telemetry Section	
OD	43mm(1.69in)
Length	≤600mm
Net weight	≤3.5Kg(7.7lb)
Woking temperature	175°C(350°F)
Working pressure	140MPa(20000PSI)
Input voltage	120-250V DC
Output voltage	18V±2V DC
Output current (max)	2500mA
Signal mode	AMI
Anti-H ₂ S	Common material/ Sulfur protection material Optional
Line bus uplink Baud	50/71/100/142Kbps
Line bus downlink Baud	500Kbps

Memory Section

Introduction



Memory Section

The Memory Section is mainly used to connect the engineering logging instruments for memory mode logging operation. The Memory Section can be equipped with Siton Multi Finger Caliper, Electromagnetic Detection System, Magnetic Thickness Tool, Radial Bond Tool, Gamma/Temperature/CCL, Pressure Gauge, Tuning Fork, Flowmeter, X-Y Caliper, etc.

Features

- Used for wire or coiled tubing logging.
- Used for drilling pipe pushing logging.
- Used for downhole tractor logging.

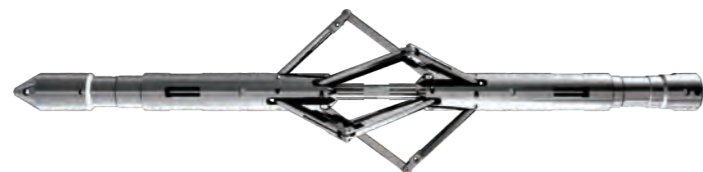
Specifications

The Memory Section	
OD	43 mm(1.69in)/70mm(2.76in)
Tool length	546.5mm/1.79ft
Max. working temperature	175°C(347°F)
Max. working pressure	140 Mpa (20000psi)
Weight	6.8Kg (15 lbs)/14kg(31lbs)
Voltage	(18±4)V DC
Working current	40mA±50mA
Storage capacity	2GB
Socket	
The upper end	7-pin socket
The lower end	Single pin socket
Connection thread	1 3/16-12UN (male / female)/others
Anti-H ₂ S	Common material/ Sulfur protection material Optional

Roller Centralizer

Introduction

SITAN 6 arm roller centralizer is designed to center logging tools in the vertical well, a high-angle well or even a horizontal well. There are 6 pairs of centralized arms in one centralizer and one roller is equipped in each pair of centralized arms.



6- Arm Roller Centralizer

Features

- The six pairs of centralized arms are installed in the axial direction, and three pairs as one group staggered in the axial direction, which not only can accurately center in the casing, but also ensure that the centralizer does not get stuck when the passing the CCL.
- The rollers are made of cemented carbide and are not only flexible but also highly resistant to wear. The large spring force is installed in a spring chamber filled with high-temperature grease to minimize the friction during the movement and ensure flexible movement.

Specifications

Roller Centralizer		
OD	43mm(1.69in)	60mm(2.36in)
Operation temp	-30°C-175°C(-86°F-347°F)	
Max. Pressure	100MPa(15000psi)	
Weight	6.5Kg (14lb)	12.5Kg (27.5lb)
Net length	713mm (28.071in)	892.5mm(35.138in)
Centralized force	15-20Kg(33-44lb)	15-50Kg(33-110lb)
Open range	50-180mm(2-5.5in)	80-270mm (3.125-10.5in)
Through resistance	< 0.5Ω	
Conductor resistance to housing	> 20MΩ	
Anti-H ₂ S version is available		

Universal Battery Section

Introduction



Universal Battery Section

Universal battery section is used to power downhole instruments. Six "DD" lithium batteries are installed inside the battery sub to form a battery pack. Users can choose the following three different temperature levels of battery pack models: MPDCZ-85°C,MPDCZ-150°C, MPDCZ-165°C.

Appliacion

- ▶ Slickline or coiled tubing logging operations.
- ▶ Drilling pipe push logging operation.
- ▶ Wireline tractor logging operation.

Specifications

Universal Battery Section	
OD	43 mm(1.69in)
length	863.5mm/2.83ft
work temperature	175 °C(347°F)
Max work pressure	140 Mpa (20000psi)
Weight	5Kg (11lbs)
Voltage output	21.6V DC
Battery capacity	25Ah

SCL Surface System

Introduction



SCL-200 Portable Surface System



SCL-B Single Cabinet Surface System



SCL-C Dual Cabinet Surface System

SITAN SCL Surface System includes functions such as injection, production profiling logging, engineering logging, perforation, and water well deployment.

The hardware and software design of the SCL system adopts advanced technology, characterized by high reliability and easy scalability. Currently, the SCL series CNC logging surface system is widely used in major domestic oil fields.

This series of portable systems include: SCL-200 portable surface system, SCL-B single cabinet surface system, SCL-C double cabinet surface system.

Functions

- The system interface communicates with the host using Ethernet (100M/1000M).
- Software with adaptive decoding for easy expansion.
- Multiple data format outputs.
- Operating systems: WIN7/XP.
- User interfaces in Chinese and English.
- Transmission rate: (5.729 - 100) Kbps.
- Compatibility with multiple transmission protocols.
- Can connect to various types of domestic and foreign casing logging tools.
- Injection profile logging.
- Casing/cement bond logging.
- Multi-level perforation/core retrieval operations.
- Residual oil and residual saturation logging behind casing.
- Flow measurement and adjustment.

Specifications

SCL Surface System

Surface System			
Model	SCL-200	SCL-200S	SCL-300
Working temperature	-15°C-50°C(5°F-122°F)		
Cabinet height	392 mm	392mm	133mm
Cabinet width	517mm	517mm	450mm
Cabinet length	480mm	480mm	470.5mm
Weight	50kg	50kg	16kg
Power supply	220V AC		
Power supply current	2A		
Protection	Fuse		
Downhole instrument power supply			
Output voltage	(0-300)V DC adjustable		
Output current	1A/2.8A optional		
Display	Output voltage display / Output current display		
Polarity	Positive/negative polarity selectable		
Protection	Protection overcurrent/Short circuit protection		
Codec module			
Modulation	MII, AMI, duplex		
Upstream rate	(5.729-100)kbps programmable		
Downstream rate	300bps		
Indication	Signal strength, synchronization, error code		
SCL Single/Dual Cabinet Surface System			
Model	SCL-B	SCL-C	
Working temperature	-40°C-70°C(-40°F-158°F)		
Cabinet height	1699.5mm	1699.5mm	
Cabinet width	555mm	1110mm	
Cabinet length	555mm	555mm	
Weight	200kg	400kg	
Power supply	220V AC/380V AC		
Power supply current	10A/7A		
Power output	220VAC(2000VA online UPS)		
Protection	Fuse		
Dual Power Supply of Downhole Tools			
Output voltage	(0-300)V DC Adjustable		
Output current	1A/2.8A Optional		
Display	Output voltage display	Output current display	
Polarity	Positive/negative polarity selectable		
Protection	Protection overcurrent/Short circuit protection		
Codec Module			
Modulation	MII, AMI, dual		
Upstream rate	(5.729-100)kbps programmable		
Downstream rate	300bps		
Indication	Signal strength, synchronization, error code		

Domestic and International Sales and After-Sales Service Network

Memo.

