

TAIFANS OEM inverter to replace SIEMENS, ABB, TRIOL famous brand & Customize

TAIFANS Technology Co.ltd company, Professional R&D Research and Development and manufacture of special inverters and provide OEM/OED VFD frequency Converter/ inverter machines to replace Siemens S120 G120 S130 G130 S150 G150 and 6SE70 series inverter machine and ABB ACS800 ACS880 ACS850 ACS580 VFD inverter and TRIOL AK06-UD INVERTER.

TAIFANS TECHNOLOGY CO.LTD is also engaged in professional R&D and manufacturing of special frequency converters. TAIFANS company provides research and development (R&D), design, produce and customize, sales and maintenance services of electrical transmission and control equipment in the field of industrial automation such as fracturing frequency converters, Explosion-proof inverter, special frequency converters, electrical control and power supply products. Used in high-end transmission equipment of coal or mining, oil and gas, construction machinery, port, chemical industry, shipbuilding, cement, shale oil, tank rotating turret, mine traction equipment, mine wide-body mine car, submarine oil and gas gathering station and high-end metallurgical industry Transmission equipment and other fields.

The 9600KW/3600V, Variable Frequency Fracturing Integrated Pumping and Speed Control Equipment, specially application for shale oil exploitation, fracturing frequency converter. If the customer needs special frequency converter requirements, we can also customize it according to his project. At present, our company develops and promotes the key Fracturing frequency converter---used for the exploitation of shale oil, and can also provide subsea frequency converters used in ships/tank rotating turrets/mine traction equipment/mine wide-body mine vehicles/seabed oil and gas gathering and transportation stations.

Explosion-proof inverters/converters (VFD) are application for underground coal mine operations and main customers are Mining company, Railway company, .

Our advantages are: privately customized inverters, which can achieve the best cooperation, the most reasonable structure, the highest quality, the fastest delivery speed and the best price according to the needs of customers.



1. TAIFANS provide the 9600KW/3600V Variable Frequency Fracturing Integrated Pumping and Speed Control Equipment for the Shale Oil Fracturing Application which is High Voltage Frequency Converter.



Frequency Conversion Fracturing Integrated Pumping and Speed Regulating Equipment Introduction

● Technical Background

Fracturing pumping equipment is essential equipment for oil and gas field development. Traditional fracturing equipment generally uses a diesel engine to drive the fracturing pump through a transmission box. The speed of the fracturing pump is adjusted by changing the speed of the diesel engine and the gear of the transmission box. Ultimately the traditional equipment controls the discharge volume of the fracturing fluid injected into the well. With the expansion of shale gas exploitation in recent years, it has become a trend to substitute diesel engines and transmission boxes with electric machines to directly drive fracturing pumps. However, a technical flaw is that the current electric drive fracturing equipment usually requires separate transportation and layout of the power distribution room and VFD room, which covers a large area. All pieces of equipment take up too much space because they exist independently, including the input cabinet, output cabinet, rectifier and filter cabinet, motor, and inverter. The traditional electric drive is

separated from the frequency converter, and each operates in its state, and all pieces of equipment cannot be integrated as a whole. As a result, it requires more space on site, generating cluttered cable rope, high electromagnetic harmonic interference, creating inconvenience to setup high-protection, and difficulty in equipment maintenance.

● **Electric Drive Fracturing Inverter Solution**

The integrated frequency conversion device is a speed control device for fracturing pumping equipment, which solves problems of the current electric fracturing equipment requiring separate transportation and layout of the power distribution room and VFD room.

The electric drive fracturing frequency converter is a core power control component in the electric drive fracturing system.

Product Advantage:

- Advanced performance, safety, and reliability
- Strong anti-interference ability
- Reasonable layout
- Simple operation and easy maintenance
- High torque at low speed for high voltage electric drive inverter fracturing equipment
- Wide environmental adaptability

By optimizing the electric drive fracturing inverter solution, the high voltage inverter speed control device can achieve high energy conversion efficiency, strong transport performance, lightweight, excellent system integration, good heat dissipation, convenient communication, and other practical functions.



● Structural Design

The integrated inverter device utilizes a high-speed data processing chip to achieve inverter control function and Integral modular design. The entire inverter control device is an independent module with an integrated design and compact installation space, which can be installed on the fracturing equipment skid. Hence, there is no need for an additional transport distribution room and VFD room to a work site, significantly reducing harmonic interference caused by variable frequency drive mode, flexible assembly, and efficiency in transportation, protection, and maintenance. The overall design of the inverter effectively improves the reliability of the system.

● Technical Design

The control system of an integrated frequency conversion fracturing pumping equipment includes a high-voltage electric input unit, an integrated container, a frequency conversion integrated machine, and peripheral equipment.

The frequency conversion machine includes a detection, temperature control system, and frequency converter. The distribution of the power supply in the integrated equipment consists include input cabinet, output cabinet, transformer, rectifier filter unit, and power unit, which converts high-voltage AC power into low-voltage smooth DC power for the power unit, and the power unit inverts into AC power to drive the motor.

The main interface is a touch screen, a real-time display of monitoring data, and related operations. The main interface will automatically switch windows when entering the corresponding operating mode. The main interface is installed on the integrated inverter, which displays or sets the inverter status parameters.

The central controller ensures the real-time of the system, enhances the system response speed, and effectively resolves the signal and analyzes the data. The central controller adopts an ARM9 chip-embedded motherboard to control the parameters and functions of the inverter.

Overall, the frequency conversion integrated machine integrates the detection system, temperature control system, and frequency converter.

● Technical difficulties of medium voltage variable frequency drive system

Compared with low-voltage ($\leq 600V$) drives, medium-voltage drives have higher technical requirements and challenges in many aspects. Some insignificant or even non-existent problems in low-voltage is a critical issue that must be resolved in medium-voltage transmission. These technical difficulties include the technical requirements related to the power quality of the rectifier on the network side, the technical challenges associated with the motor-side inverter design switching device limitations, and the overall requirements of the drive system.

Generally speaking, medium voltage transmission covers power levels from 0.4 to 40MW and voltage levels from 2.3 to 13.8KV. However, its power range can exceed a maximum of 100MW, and the installed medium voltage transmission systems are mainly concentrated in the range of 1 to 4MW and 3.3 to 6.6kV levels. Compared with low voltage ($\leq 600V$) transmission, the technical difficulties of medium voltage transmission include technical requirements related to the network side rectifier, technical difficulties related to motor-side inverter design, limitations of switching devices, challenges related to motor-side inverter design, limitations of switching devices and overall requirements of the transmission system.

The overall requirements for MV drive systems include high efficiency, low cost, small form factor, high reliability, adequate fault protection, easy installation, self-testing, and minimal downtime.

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Some special applications may also require high dynamic performance, regenerative braking, or four-quadrant operation.

- **Specifications** for different power of Frequency conversion fracturing integrated pumping and speed regulating equipment:

Input voltage	10KV	10KV	10KV
Output voltage	6.6KV	3.3KV	3.3KV
Output power	4500KW*2	3350KW*3	1900KW
Drive load	7000HP*3	4500HP*3	2300HP
Load type	fracturing pump	fracturing pump	fracturing pump
Size dimension (L*D*H)mm	10000*3000*3000	9000*3000*3000	4200*2438*2596

2. TAIFANS provide the Explosion-proof frequency converter is application for coal mine underground operation from TAIFANS company. Pls click the link for Vedio, <https://youtube.com/shorts/2WbJaFFmbw4> 防爆变频器.



Why need the Explosion-proof frequency converter or VFD inverter?

Explosion-proof frequency converter is the application of frequency conversion technology and microelectronics technology to control the power transmission components of AC motors by changing the frequency and amplitude of the motor's working power supply. Because the coal industry has a higher risk factor, there are a lot of flammable and explosive gases, dust and other dangerous gases underground. A small mistake during operation can lead to a massive explosion. In order to ensure the smooth progress of underground operations and be responsible to coal miners, the equipment used in the coal industry must be non-dangerous, and explosion-proof is the primary condition. The explosion-proof inverter has its own voltage detection function during



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the output process, and at the same time automatically adjusts the output voltage to protect the machine motor. When the motor voltage is lower than 90% of the normal voltage, the explosion-proof frequency converter will automatically stop to protect the motor. The explosion-proof inverter can not only protect the motor through voltage protection, but also through current protection. When the motor current exceeds 150/3 seconds of the rated value, the explosion-proof frequency converter will stop to protect the motor. When the load on the drive system suddenly becomes lighter during operation, it means that an accident has occurred in the work of the production machinery. At this time, the explosion-proof frequency converter will stop working immediately to prevent accidents. The frequency converter is equipped with a dedicated grounding protection wire. If an accident occurs, the frequency converter will immediately call the police. When the output of the inverter is short-circuited, it will inevitably lead to over-current. At this time, the explosion-proof frequency converter will be shut down in a short time to protect the motor. We cannot avoid dangerous work, but at least we can reduce its risk factor as much as possible. Therefore, the explosion-proof frequency converter still has a great effect.

3. TAIFANS produce the perfectly matching and replacing VFD inverters for ACS800/ACS880/ACS850/ACS580 series inverters.

The advantages of TAIFANS inverters are: higher cost performance, better hardware materials, more reasonable structure, longer warranty period (one and a half years) and faster delivery time.

Following is the pictures for ABB ACS800/ACS880/ACS850/ACS580 series inverters.



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Belows is the photos for popular and hot sell ABB inverter ACS800-704-0910-7+F250+V992 and TAIFANS can provide the perfectly replacement OEM VFD inverter for it.



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TAIFANS provide the Substitute Inverter perfectly with following pictures for ABB frequency converter/Inverter for ACS800/ACS880/ACS850/ACS580 series inverters and hot & popular ACS800-704-0910-7+F250+V992. Below is the Youtube video link of TAIFANS replacement inverter.

Please check the Youtube video link,

<https://youtube.com/shorts/m20QT2Q1sdw>



4. TAIFANS provide the OEM inverter to replace TRIOL inverters.

The medium-voltage frequency converters we produce for the petroleum industry which are perfect for matching and replacing TRIOL, perfectly replace TRIOL brand frequency converters, and have been delivered to oil fields in batches. TAIFANS can provide a full range of perfect benchmarking TRIOL machines with various powers. Such as, TRIOL AK06-UD inverter VFD machine, this is a medium-voltage inverter produced by Ukraine's TRIOL company. It is application for the oil industry. Their products have a large market and are widely used, but now the supply chain is blocked and they cannot provide the Inverter machines. The pictures for TRIOL AK06-UD inverters as following,

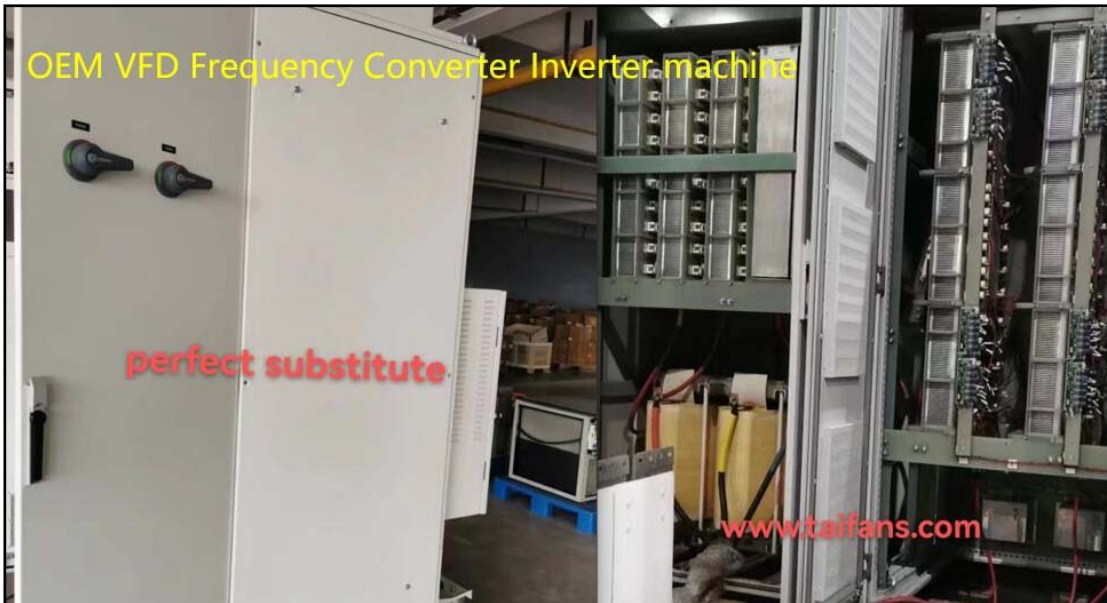


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TAIFANS provide perfect replacement VFD inverters to substitute for TRIOL inverter such as TRIOL AK06-UD inverter. PIs check the Youtube Vedio link, <https://youtube.com/shorts/ILhZ343uxC4> and <https://youtube.com/shorts/CRzYusZCRF8>



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5. TAIFANS provide the OEM inverter to replace Siemens S120 G120 S130 G130 S150 G150 and 6SE70 Series inverters.

Here is the photos for S120 G120 S130 G130 S150 G150 series Siemens Brand inverters and drive machines. And Taifans can provide the OEM inverter to match and replace them perfectly.



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Following photos is the Siemens 6SE70 Series inverter and internal structure of 6SE70 Siemens VFD inverter. TAIFANS can provide the OEM inverters to replace it.



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The following photos show inverters and motherboards produced by Taifans that completely match and replace Siemens' 6SE70 series,



Taifans Technology co.ltd, Provide OEM inverters with TIFANS brand or customize inverters of the brand according to customers' needs. It is also possible to customize frequency converter for end customers according to the work environment and project requirements. Welcome to consult and contact us, website www.taifans.com.

