

Medium-Voltage 690V/1140V Inverter



With the application of professional electric power and electronic technologies applied to motor drive control, INVT adopts the state-of-the-art SVPWM optimized modulation method to apply the photoelectric isolation/transmission technology to the control and drive of inverters. With the combination of advanced electric and electronic components, INVT medium-voltage inverters feature state-of-the-art technology, stable performance, small size and low price.

At present, the inverter has found successful application in electrical submersible pumps and oil pumping machines in oilfields, fans (explosion-proof) and lifters in mines, and water pumps and water treatment equipment in waterworks. The model that finds the widest application is 1140V/55KW inverter.

CHV SERIES MEDIUM VOLTAGE INVERTER

- Power range: 22~2800kW
- Input voltage range: 690V/1140V $\pm 15\%$
- Adopt high voltage (3300V) IGBT as power module to improve reliability
- Soft start and soft stop for large power rating motor
- Use fiber optic to transmit PWM signal to eliminate interference
- High power factor, low harmonics
- Customized frame size to meet specific requirement
- Cooling method: Water-cooled or heat tube cooling
- Explosion-proof cabinet is optional
- Chassis/cubicle selectable

Typical Application

Belt transportation machine in mine, screed transportation machine, fan, water pump, oil pump

Product Features:

1. $\pm 20\%$ voltage fluctuation design, applicable to the power grid conditions of large industrial and mine enterprises in China;
2. The SVPWM optimized modulation technology in conjunction with the professional waveform processing circuit reduces the heat dissipation of the integrated equipment by over 1/3, to improve the stability and service life of the product.
3. The photoelectric isolation technology is applied to the control and drive circuit of the inverter, to achieve accurate signal collection and control as well as sensitive and accurate protection in case of any faults.
4. Multi-load operation control and protection, such as, overcurrent, overvoltage, overload, undervoltage, phase failure, short circuit, and so on;
5. Flexible control modes, such as, RS-485 control, PI regulation, multi-step speed, program control, proportional linkage, and free programmable setting of control terminal and analog signal terminal, for the convenience of the forming of multiple control systems;
6. Customizable water-cooling and explosion-proof inverters;

7. A warranty period of 12 months, and life-long maintenance;

Technical Features:

1. The open Y structure on one side of the transformer is changed to the edge-prolonged triangle structure with a closed loop, used to absorb the higher-order harmonic during frequency inversion. Thus, the higher-order harmonic at the high voltage side can be reduced to less than 1.6%/.
2. High voltage operation is reserved, but it operates at low voltage. The efficiency is equal to or greater than 95% after rebuilding, and the power factor is equal to or greater than 0.94.
3. This solution features high efficiency, high power factor, high reliability, low harmonic, short construction period and short investment return period. The cost is only half of a direct high-voltage inverter.
4. Supporting switchover between power frequency operation and variable frequency operation, to ensure seamless production;
5. Compared with high-voltage inverters (systems) in high-low-high mode used in energy-saving rebuilding of high-voltage motors, INVT high-low mode inverters feature high efficiency, high power factor, high reliability, simple installation & debugging and small occupation area.

High-voltage (3-10KV) motors suit medium and low-voltage (380V-1140V) frequency conversion & speed control by means of changing the inter-phase winding connection structure (Y shape, Δ shape and edge-prolonged triangle), inter-pole winding connection structure (tributary in serial and parallel connection) and inter-pole coil connection structure (loop in serial and parallel connection).

A special transformer is used to reduce the high voltage to the necessary low voltage, and then an INVT 380-1140V inverter matching the voltage range is used, in conjunction with a power frequency backup control loop, to complete the low-voltage frequency conversion and speed control system of high-voltage motors.