VChRP-TM is a multipurpose adjustable frequency electric drive of alternating current for industrial loadings with power up to 17.5 MVA and rated output voltage of 3 kV, 6 kV and 10 kV. VChRP-TM works both with earlier installed and new asynchronous or synchronous motors.

Continuous operation of the electric drive at interruptions in power supply – up to 300 ms.

The VChRP-TM frequency converter generates small amount of harmonics both in a power line and in an electric motor supply circuit and, therefore, does not demand special technical solutions for connection to a power grid (harmonics or sine filters).

VChRP-TM keeps working operability at short-term voltage losses, and also at deep sags up to 10 seconds with picking-up of the rotating engine after power supply had been restored.

High efficiency - more than 97.5% (calculated value).

MAIN PROTECTIVE FUNCTIONS
- inverter overload on current or voltage
- undervoltage
- voltage loss
- ground fault of the motor
- overvoltage
- overheating processor fault

ADVANTAGES

- Highly reliable functioning with 100000 hours (12 years) of the estimated average time to failure of the drive based on practical operating experience of extensive world park of the installed equipment with the TMEIC technology.
- Lower level of harmonious distortions than it is required according to the GOST 32144 standard (before GOST 13109) without use of the harmonics filter.
- Control of the multi-engine system from one drive. With no current or torque surge of the engine upon connection or disconnection of the engine to a power grid.
- Uninterrupted operation at crucial loadings.
- Considerable decrease in electricity consumption, particularly because of pressure/consumption control.

VChRP-TM can be installed in a container type block-modular building (BMB) of full factory readiness.
TECHNICAL CHARACTERISTICS

Power grid and harmonics level:
- three-phase grid up to 11 kV, +10%/-15%
-125% drive overload during 60 sec. is allowed
- frequency of the power grid is 50 Hz, ±5%
- efficiency more than 97.5%
- power factor (PF): lagging 0.95
- real value of the PF: higher than 0.95 lagging
PF at speed range within 40-100%
- harmonics level is lower than specified by the GOST 32144 without filters

Rectifier type
- diode multi-pulse rectifier fed from the alternating current main with the phase-shifting transformer

Transformer
- dry type transformer with air cooling
- multiwinding at low-voltage part

Not using step-up transformer or sine-filter at the output of the frequency converter allows it to work in vector control mode of the motor both without speed sensor, and with it (using an encoder or a tachometer).

The Smooth sinusoid at the output is a result of implementing a multi-level PWM-regulation. The form of the output voltage and current curve is close to a clean sinusoid, and the heat losses caused by harmonics are very insignificant. Harmonic currents in the motor are minimized, therefore moment pulsations at the output are small, and the probability of resonant tortional fluctuations of loading is very small.