VARIABLE SPEED DRIVE

MANUFACTURED BY RIMERA, VARIABLE SPEED DRIVE (VSD-A) SUPPLIED WITH A HIGHLY RELIABLE STATION CONTROLLER ENABLING EFFICIENT MONITORING AND PROTECTING A SUBMERSIBLE PUMP EQUIPPED WITH AN INDUCTION OR PM MOTOR.

RIMERA

BENEFITS

CONTROL
a large graphic LCD and keyboard make it easier to receive information or configure the VSD

SERVICING
a modular design makes it possible to service and repair the VSD at the place of operation

DME AND ENERGY METERING
support downhole monitoring equipment and energy meters of various manufacturers

EASY-TO-READ DATA
- by using the remote control and monitoring systems, including LTE;
- log reading using a USB flash drive

UPDATE
the possibility of expanding the scope of functional parameters by updating the VSD controller in the field

All VSD doors have special key locks and a tight seal. When the cabinet door is open, energized elements are covered with insulating safety shields and alarm-activating features.

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CONTROL FUNCTIONS

- **VSD control mode:**
  - manual;
  - automatic;
  - programmable (Set up of operating time and idle time, work in a cyclic mode).
- **Remote control of VSD operation parameters through modem;**
- **Adjusting motor speed to a programmed frequency;**
- **The built-in PID controller maintains the process parameters of the pump unit;**
- **Consumed active & reactive electricity measurement with or without energy meters:**
  - automatic optimization of the U/F characteristics when changing the Motor load;
  - the PWM modulation change mode ensures reduced power losses in the frequency converter in the loaded state, while lowering the level of harmonics at the output of the control VSD.
- **Direct or remote control of the submersible motor:**
  - smooth acceleration and braking;
  - jogging start-up mode;
  - shaking mode start-up;
  - motor speed control;
  - changing the motor starting torque;
  - changing the direction of rotation;
  - delayed motor restart when protections are triggered;
  - start blocking after exceeding the number of restarts.
- **Smart back spin lock and rotation revers mode;**
- **Smart pump unit wedging mode;**
- **Smart mode for pumping and removing gas lock;**
- **Shaking mode with a set shaking period and frequency (prevention of scaling on the pump impellers);**
- **VSD output voltage automatic optimization mode;**
- **VSD output current limiting mode.**

VSD SPECIFICATIONS

	VSD-A 250A	VSD-A 400A	VSD-A 630A	VSD-A 800A
Current rating	250 A	400 A	630 A	800 A
Total power output: - at 380В - at 480В	 150 kVA 200 kVA	 240 kVA 320 kVA	 380 kVA 500 kVA	 480 kVA 650 kVA
Speed control range: - PMM - induction motor	1 - 250 Hz with 0.1 Hz increments 1 - 70 Hz with 0.1 Hz increments			
Supply voltage	~ 380 V at 50 Hz, 480V at 60 Hz			
Supply voltage frequency	50 ± 2 Hz, 60 ± 2 Hz			
Voltage deviation range, from rated value	-50 … +25%			
Output voltage generation method	3 … 6 kHz PWM, U/F characteristics. 5 points			
Measuring input and output voltage in three phases	0 – 500 V			
Current measurement in output power circuit	0 – 3,200 A		0 – 6,400 A	
Active power consumption measurement	0 – 1,342 hp (0 – 1,000 kW)			
Output filter	built-in output sine wave filter			
Operating system	OC Linux (over 15 years of service)			
Memory capacity	528 MHz, 128 MB DDR-3 RAM, 128 MB NAND-FLASH (additional memory expansion possible)			
Efficiency of the VSD at nominal operation mode, not less than with an integrated output filter	95%			
Overload current, from rated value (within 300 seconds)	125%			
Total harmonic distortion of output current and voltage, no more than with an integrated output filter	5%			
VSD degree of environmental protection	NEMA3, NEMA4, IP 43, IP54			
Ambient temperature	-76…122°F			
Air relative humidity	up to 100% at a temperature of +77°F (+25°C)			
Interfaces	RS-232 (1 pcs.). USB. RS-485 (2 pcs.). Ethernet. CAN (system)			
Protocols	GPRS. ModbusRTU (Region 2000, Region 3.0, Telescope memory cards)			
Overall dimensions: [height x width x depth]	6.349 x 3.314 x 3.560 feet (1,935 x 1,010 x 1,085 mm)		6.283 x 3.215 x 3.609 feet (1,915 x 980 x 1,100 mm)	
Weight	970 lbs (440 kg)	1,125 lbs (510 kg)	1,499 lbs (680 kg)	1,610 lbs (730 kg)

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