



## **TECHNICAL SPECIFICATION**

### **TITLE: PURCHASE OF VARIABLE FREQUENCY DRIVE MOTOR CONTROLLER WITH COMPLETE ACCESSORIES AND FREE STANDING ENCLOSURE**

#### **1.0 SCOPE OF CONTRACT**

The scope shall be supply and delivery of brand new Variable Frequency Drive Motor Controller with complete accessories and free standing enclosure to General Santos City Water District (GSCWD).

#### **2.0 Variable Frequency Drive Motor Controller Operating Requirement**

<b>Particulars</b>	<b>Requirement</b>	<b>Statement of Compliance</b>
<b>Product or Component Type</b>	<b>Variable Frequency Drive</b>	
<b>Motor power, Hp (Kw)</b>	<b>150 (110)</b>	
<b>No. of units</b>	<b>1</b>	
<b>AC Voltage Range</b>	<b>380v – 500v</b>	
<b>Voltage % Tolerance</b>	<b>+10% -15%</b>	
<b>Total Harmonic Current Distortion (THDi)</b>	<b>&lt;3%</b>	
<b>Supply Number Of Phases</b>	<b>3 phases</b>	
<b>Efficiency at Nominal Power</b>	<b>98%</b>	
<b>Power Factor:</b>	<b>Unity</b>	





<b>Prospective line Isc (kAIC rating)</b>	<b>65 kA</b>	
<b>Nominal Current</b>	<b>180A</b>	
<b>Acceleration-Deceleration Ramps</b>	<b>0.01 – 9999s</b>	
<b>Speed Output Frequency</b>	<b>0.1 - 599Hz</b>	
<b>Enclosure Rating</b>	<b>IP55</b>	
<b>Digital Variable Frequency Drive with torque control system, heavy duty application. Graphical terminal display, SCADA ready, built pumping control system and integrated EMC filter. With provision for external reset, external start stop, external speed control. Complete protection against phase rotation, over/under voltage, thermal overcurrent, lock rotor, ground fault, under current, definite time overcurrent. Digital monitoring of voltage, current, frequency, energy, kW and fault history included.</b>		
<b>Voltage boost &amp; Powerloss Ride-Through</b>		
<b>Built-in Active Harmonics Filter</b>		
<b>With RS485 communication port.</b>		
<b>Local Control Panel with Mobilephone Bluetooth connectivity.</b>		

### 3.0 Other Motor Controller Operating Requirements

<b>Item No.</b>	<b>Requirements</b>	<b>Statement of Compliance</b>
1	Enclosure, <b>Free Standing</b> , IP42 ingress protection, gasketted with screened/louver ventilation and ventilation fan industrial type 220Vac, cable glands for supply power, motor supply and control cables.	
2	Molded Case circuit breaker, 3 Pole, 300Amp, 480Vac minimum operating voltage with built in shunt trip coil @ 440Vac.	
3	3 phase Over/Under Voltage relay with phase rotation and delay 380vac – 500Vac.	
4	3 pole, MCB, 10Amp, 480Vac, dinrail mount. (Two (2) pcs.)	
5	Transient Voltage surge suppressor (TVSS), 600Vac, 3 phase + N. 35Kaic with monitoring LED. <b>Nema Standard.</b>	





6	Dry type transformer, 480Vac to 220Vac/110Vac, 1 phase, center tap.	
7	LED Lamp. 220Vac with door limit switch.	
8	Illuminated push buttons, 220Vac, start, stop and reset.	
9	Local and remote selector switch. 3 positions, maintained.	
10	Liquid Level relay, high and low for well application and reservoir water level, stop at full tank and auto run at low water level. Also with a water level controller that regulates motor speed based on the water level in the reservoir. The motor speed decreases from 60 Hz to 40 Hz as the water level rises. If the water level falls below the point corresponding to 40 Hz, the motor stops.	
11	Control Panel must have installed <b>GSM SMS Alarm and Controller Unit</b> with one USB port, 2 relay Output, and 8 Digital Input. All digital input and relay output must be wired and terminated to terminal block.	

#### 4.0 TERMS AND CONDITIONS

Item No.	Requirements	Statement of Compliance
1	The scope of work shall be supply and delivery of Variable Frequency Drive Motor Controller to General Santos City Water District (GSCWD).	
2	All bidder is required to submit and include documents but not limited to manuals, data sheets, and <b>Manufacturers Certificate</b> in there bidding documents.	
3	Field testing shall be made once the units are ready for operation and when both the GSCWD and winning bidder have finished their scopes of work on the installed units. GSCWD engineers shall conduct field testing with the presence of winning bidder's representative.	
4	The winning bidder shall deliver the units within <b>Ninety (90)</b> calendar days upon receipt of Purchase Order (PO).	





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5	The winning bidder shall be subjected to Liquidated Damages (LD) for each day of delay as provided by the IRR of RA 9184.	
6	That the winning bidder shall issue a warranty certificate of not less than one (1) year and the warranty shall commence from the date of commissioning of the pumping equipment.	
7	That the winning bidder shall have an available qualified and trained technicians 24/7 with in Mindanao area in case of equipment failure.	

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