



City of Manhattan Beach - Public Works/Utilities Variable Frequency Drive (VFD) Quote Analysis

ITEM NO.	DESCRIPTION	QTY	UNIT	Variable Speed Solutions		Industrial Technical Services		Honeywell		Control Concepts		Hunter Electrical Services	
				UNIT PRICE	TOTAL AMOUNT	UNIT PRICE	TOTAL AMOUNT	UNIT PRICE	TOTAL AMOUNT	UNIT PRICE	TOTAL AMOUNT	UNIT PRICE	TOTAL AMOUNT
1	Variable Frequency Drive (VFD)	1	EA	\$92,545.82	\$92,545.82	NO BID	NO BID	NO BID	NO BID	NO BID	NO BID	NO BID	NO BID
Total Bid Items 1 Through 16				\$92,545.82		NO BID			NO BID	NO BID		NO BID	

ALL QUOTES RECEIVED:

<u>CONTRACTOR</u>	<u>BASE QUOTE</u>
Variable Speed Solutions	\$ 92,545.82
Industrial Technical Services	NO BID
Honeywell	NO BID
Control Concepts	NO BID
Hunter Electrical Services	NO BID



16182 Gothard Street Unit I
Huntington Beach Ca.92647

Tel: 714-847-5957
Fax: 714-847-5958

PROPOSAL
Variable Frequency Drive

Date: August 11, 2021

City Of Manhattan Beach
Attn: Luo Vargas
1400 Highland Avenue
Manhattan Beach, CA. 90266

Quotation Number VSS-21- 5910250310
Quoted by Brian Pavloff

Thank you for your interest in Variable Speed Solutions. In accordance with your request, we propose to supply a UL Listed VFD Package per request and drawings.

Statement of Work

GENERAL

- Contractor should have any questions related to the VFD installation at the plant should reach plant maintenance personnel for assistance.
- Contractor workers will attend City safety training prior to starting work at plant.
- Contractor should notify maintenance personnel for any concerns onsite
- All installations shall comply with California Electrical Code (CEC) and National Electrical Code (NEC)
- Contractor is to provide schedule of project prior to work.
- Electrical and Equipment installations are performed by authorized-dealer

Power Off

- Coordinate with plant maintenance personnel prior to performing any work to existing Toshiba Variable Frequency Drive (VFD) and Distributed Control System (DCS).
- Apply Lock-out **AND** Tag-out (LOTO) to main service breakers
- Verify power is turned off and power cables and DSC control wiring are secured (Not Exposed)



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EQUIPMENT

- Provide qty. (1) M# ACQ580-01-414A-4 ABB Water 414 -amp 350 HP Drive features:

VFD Package

- UL 508a Listed Control Panel
- Free Standing NEMA 3R Enclosure
 - Carbon steel with Powder Coat Finish
 - Panel Major Components
 - Power and Soft Starter Bypass
 - Variable Speed Drive
 - Controls
 - Forced Air Cooling
- Type 1 Surge Protection w/status indicators
- Main CB Disconnect
- Control Power Transformer with primary/secondary fusing
- 24 Vdc Power Supply
- Motor Space Heater Circuit
- ACQ 580 350 HP
 - High Speed Fuses
- Dual Interlocked 350 HP rated Contactors -VFD & RVSS Bypass
- 350 HP Reduced Voltage Soft Starter with Integral Bypass Contactor
- Door Mounted Devices
 - Keypad
 - Soft Starter Keypad
 - AB "Full Size" 30 mm N4 Door Devices
 - Hand Off Auto Switch
 - Manual Speed Pot
 - 2 Position Selector Switch VFD-Bypass
 - Push Button Reset
 - Pilot Lights LED PTT
 - 2 Ea. Green Light
 - 2 Ea. Red Light
- 1 Lot of relays, terminal strips as required
- 1 Lot SCADA Interface Terminals



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VFD Installation – Prevailing Wages

- Provide ABB certified installation services to ensure proper installation of new system as detailed below:
 - Provide labor and materials to form and pour 68” by 25” by 4” concrete housekeeping pad for new VFD Package.
 - Provide required labor and rigging to set new VFD package on new housekeeping pad.
 - Provide required labor and materials to run new line, load, control conduits per job walk and details. All conduits shall be galvanized ridged conduit type.
 - Connect power cables and terminated into the new VFD per NEC.
 - Connect all DCS inputs, outputs and required low voltage SCADA interface.
 - Check complete installation
 - Coordinate with plant maintenance personnel prior to turn power on to remove LOTO for VFD prior to start-up of VFD.

Services for Start Up

- Provide ABB certified start-up services to ensure proper operation and calibration of new system as detailed below:
 - Complete system testing for all ranges of speed to include current and voltage data by phase.
 - Provide power quality meter testing with complete harmonics analysis throughout the speed ranges to ensure IEEE-519 compliance. NOTE: VFD is not a ULH and was not specified as one.
 - Provide complete thermal imaging after extended run time to test and verify proper wiring connections.
 - Provide complete written documentation of all data and start up comments.
 - Submit documentation of VFD including as-built, installation manuals, electrical Schematics, Technical manuals, Instructional manuals, Electrical drawings, and any other documentation specifically related to the VFD equipment and installations.
 - Factory train the site service personnel, so they are thoroughly familiar with the VFD This is to be completed the same day as start up.



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PRICING

EQUIPMENT and MATERIALS COST:	\$53,156.00
Sales Tax @ 9.5%	\$5,049.82
ESTIMATED FREIGHT	\$1,800.00
INSTALLATION COST:	\$29,740.00
START UP COST:	<u>\$2,800.00</u>
TOTAL PROJECT COST:	\$92,545.82
OPTIONAL ADD COST TO SUBSTITUTE ALLEN BRADLEY IN LIEU OF ABB Allen Bradley Adder	\$15,974.00 INT. _____

- Allen Bradley Power Flex 755 VFD rated at 350 HP Normal Duty
- Allen Bradley Soft Starter WITH INTEGRAL BYPASS CONTACTOR

FOB: Dallas

Lead Time:

- 4-5 weeks for submittals
- 12-14 weeks after approved submittals

NOTE: Delivery times are estimated only and will be confirmed after Notice to Proceed

EXCLUSIONS

- Overtime Labor
- Existing power, transformer, or structures
- Existing controls
- Existing power and controls cabling
- Bonding of any kind
- IEEE-519 compliance
- Liquidated Damages
- Any item not specifically mentioned in the above proposal

TERMS AND CONDITIONS OF SALE

All sales by and purchases from Variable Speed Solutions Inc., (Seller) are governed by the following terms and conditions:



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1. All purchases and credits occurring after the closing date of a month will appear on the periodic statement for the next month. Payment shall be made to the Seller in U.S. currency at its offices in Huntington Beach, Orange County, California.
2. Orders regularly entered, whether verbal or written, can only be cancelled in writing by the Buyer upon terms that will compensate the Seller against loss for actual costs incurred to date. Any additional paperwork furnished at the Buyer's request, such as sketches, drawings and specification sheets will be charged at Seller's cost.
3. Any claim for defects, damages or shortages of an order delivered must be made by the Buyer in writing and delivered to Seller within a period of ten (10) days after delivery. Failure to make such claim within the specified time constitutes an acceptance and admission that the order fully complies with the terms, conditions and specifications required. The Seller's liability shall be limited to the stated selling price of any defective goods and shall in no event include special or consequential damages, including profits (or profits lost).
4. The Buyer bears the risk of loss of or damage to or destruction of the goods from the time of delivery. The Seller retains title to the goods until the Buyer pays the entire purchase price as specified plus any interest thereon. If requested by Seller, Buyer shall execute a security agreement and financing statement evidencing Seller's security interest in the goods delivered to Buyer
5. If the credit of Buyer in the judgment of the Seller becomes impaired at any time, the Seller has the right to require payment in advance before making further shipments, and to demand immediate performance of the Buyer of all obligations imposed upon him by this agreement.
6. If there is any breach of or default under this agreement and if the same is placed in the hands of an attorney for collection, or if collected by lawsuit or through the probate or bankruptcy court, or if any action of foreclosure be had hereunder, Buyer shall be liable for reasonable attorney's fees incurred by the Seller. In the event of default by Buyer, Seller may immediately proceed to enforce payment of Buyer's obligation and exercise all the rights and remedies provided by the Business and Commerce Code of the State of California, or the Uniform Commercial Code, as well as any other rights and remedies afforded to Seller by law. Should Buyer be in default, Seller may require Buyer to return all goods previously delivered to Buyer by Seller, and any subsequent expenses for retaking, holding, preparing for sale, and reselling of such goods shall be at Buyer's expense. Funds realized from such resale shall be credited to Buyer's unpaid account.
7. The Seller, or any credit bureau or investigating agency employed by the Seller, is hereby authorized to investigate the references herein listed or statements or other data obtained from the Buyer or from any other persons pertaining to the Buyer's credit or financial responsibility. The Buyer has read and understands the foregoing terms and conditions of this application for credit and has signed the same as an indication of intent to enter into an agreement with Seller for the future purchase of goods and services from time to time. The Buyer also understands that upon acceptance of this application by the Seller, this document constitutes an agreement between the Buyer and the Seller for payment of debts owed to the



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Seller in return for the delivery of goods ordered or performance of services requested by Buyer.

- 8. The terms herein contained shall be governed by the statutes of the State of California and specifically the Business and Commerce Code of the State of California and the Uniform Commercial Code. In the event that any account owing by Buyer to Seller becomes delinquent, and legal proceedings are instituted for collection of said account or indebtedness, such legal proceedings may be instituted and prosecuted against Buyer and its guarantors, if any, in any Court in Orange County, California, and the undersigned expressly agrees that venue for such proceeding shall be in Orange County, CA, even if the principal offices of the Buyer are located in another county within this state or outside of this state.**
- 9. SELLER DISCLAIMS ANY WARRANTIES, EXPRESS OR IMPLIED, REGARDING THE MERCHANTABILITY OF THE GOODS DELIVERED TO BUYER NOR THE FITNESS OF SUCH GOODS FOR A PARTICULAR USE UNLESS A WRITTEN WARRANTY IS GIVEN TO BUYER BY SELLER AT TIME OF DELIVERY.**
- 10. The terms contained herein may be modified only by written agreement signed by Buyer and an officer of Seller, VARIABLE SPEED SOLUTIONS INC**

PAYMENT TERMS: All Purchase Orders are subject to acceptance at factory in Dallas, Texas. Receipt of production deposit, verification of acceptable credit, and confirmation of order are required before production. to be billed upon satisfactory completion of startup net 30.

Sincerely,

Brian Pavloff

Brian Pavloff
President

Accepted:

Signature

Date