

## Submittal Summary

### FRENIC-HVAC Combination VFD - UL/NEMA Type 12

Project: \_\_\_\_\_

Engineer/Architect: \_\_\_\_\_

Contractor: \_\_\_\_\_

Submitted By: \_\_\_\_\_

Date: \_\_\_\_\_

Equip. Tag #	VFD Model #	Unit Ratings (Voltage, HP, Rated Current)



**FECA-SU-115**

Information subject to change without notice.

# General Specifications

## Environmental

Enclosure	UL/NEMA Type 12
Ambient Temperature	+14 to +104° F (-10 to +40° C)
Storage Temperature	+5 to +140° F (-15 to +60° C)
Humidity	5% to 95% with no condensation
Altitude	0 to 3,300 ft. (1,000 m) without derating, derate output current for higher altitudes per FRENIC-HVAC User's Manual

## Codes and Standards

UL, cUL Listed per UL508A
Conforms to applicable NEMA ICS, NFPA, IEC/EN & Additional UL standards

## Electrical

Input Voltage; Nominal - Phase	208VAC, 230VAC, 460VAC, 575VAC - 3 Phase
Input Voltage; Tolerance, Unbalance	+/-10%, ≤3%
Input Frequency	60Hz +/-5%
Displacement Power Factor	≥0.98 (@ rated load)
Output Voltage; Range - Phase	0 to maximum input voltage - 3 Phase
Output Frequency	0.1 to 120Hz
Motor Control Method	PWM drive output with selectable: V/f control or Dynamic Torque Vector control
PWM Switch Frequency	0.75 to 16kHz (1-25Hp @ 208/230V, 2-50Hp @ 460V, 2-50Hp @ 575V) See FRENIC-HVAC User's Manual for derating of output current per setting of switching frequency
Drive Overload Capacity	110% rated current for 1 min.
Motor Overload	Programmable (electronic)
Torque Boost	Programmable to provide additional starting torque if required
Speed Reference	0 to ±10VDC, 0/4 to 20mA, or Keypad (programmable inverse operation for analog signals)
Speed Reference Resolution	Analog setting: 1/3000 of maximum frequency Keypad setting: 0.01Hz (99.99Hz or less)
Acceleration/Deceleration Time	0 to 3600 seconds, with four user selectable patterns
Jump/Skip Frequencies	Qty 3 programmable frequency set points with adjustable jump bandwidth of 0 to 30Hz
Output Signals	Qty 1: N.O. dry contacts rated 0.3A @ 230V max, user selectable functionality Qty 1: Form C dry contacts rated 0.3A @ 230V max, user selectable functionality Qty 2: 0 to 10VDC or 0/4 to 20mA analog signals, user selectable type and functionality

**FRENIC-HVAC Combination VFD**  
**UL/NEMA Type 12**  
**Drawing Number Selection Matrix**

**208/230VAC**

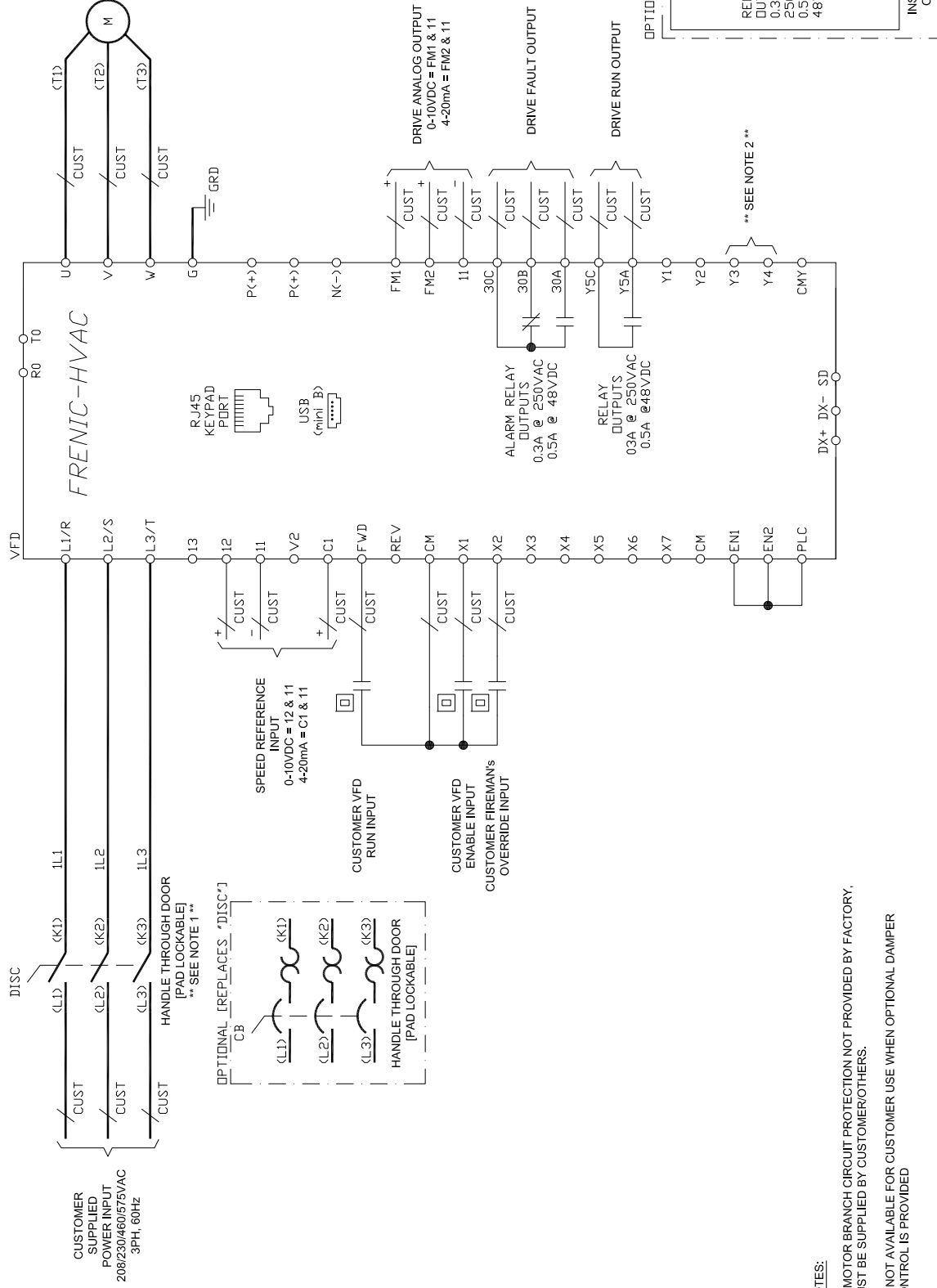
Hp Rating	Rated Output Current [A]	Outline Drawing Number	Electrical Drawing Number
1	4.6	ROA701175	ROA701174
2	7.5		
3	10.6		
5	16.7		
7.5	24.2	ROA701176	
10	30.8		
15	46.2		
20	59.4	ROA701177	
25	74.8		

**460VAC**

Hp Rating	Rated Output Current [A]	Outline Drawing Number	Electrical Drawing Number
1	2.1	ROA701175	ROA701174
2	3.4		
3	4.8		
5	7.6		
7.5	11		
10	14		
15	21	ROA701176	
20	27		
25	34		
30	40		
40	52	ROA701177	
50	65		

**575VAC**

Hp Rating	Rated Output Current [A]	Outline Drawing Number	Electrical Drawing Number
1	1.7	ROA701175	ROA701174
2	2.7		
3	3.9		
5	6.1		
7.5	9		
10	11		
15	17	ROA701176	
20	22		
25	27		
30	32		
40	41	ROA701177	
50	52		



**NOTES:**

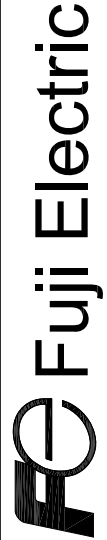
1 - MOTOR BRANCH CIRCUIT PROTECTION NOT PROVIDED BY FACTORY, MUST BE SUPPLIED BY CUSTOMER/OTHERS.

2 - NOT AVAILABLE FOR CUSTOMER USE WHEN OPTIONAL DAMPER CONTROL IS PROVIDED

**LEGEND**

/ CUST = CUSTOMER/FIELD WIRING

□ = PROVIDED BY OTHERS



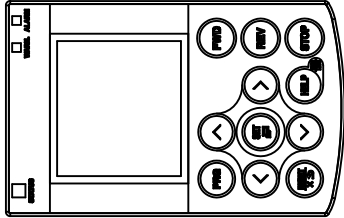
FRENIC-HVAC Combination VFD, UL/NEMA Type 12 - Electrical Data

Hp Rating	Rated Output Current [A]	Rated Input Current [A]	Standard Disconnect (DISC) Rating [A]	Additional Motor Branch Circuit Protection Maximum Amp Rating & Type Required ** To Be Provided By Customer/Others **	Complete Assembly SCCR w/ Disconnect & Proper Motor Branch Circuit Protection [kA]	Optional Circuit Breaker (CB) Rating [A]	Complete Assembly SCCR w/ Optional Circuit Breaker [kA]
208/230VAC, 60Hz, 3PH							
1	4.6	2.8	16	10A - Class J Time-Delay Fuses	65	15	65
2	7.5	5.3	16	10A - Class J Time-Delay Fuses	65	15	65
3	10.6	7.5	16	15A - Class J Time-Delay Fuses	65	15	65
5	16.7	12.9	16	25A - Class J Time-Delay Fuses	65	20	65
7.5	24.2	18.0	25	30A - Class J Time-Delay Fuses	65	25	65
10	30.8	24.2	63	50A - Class J Time-Delay Fuses	50	40	100
15	46.2	36.0	63	70A - Class J Time-Delay Fuses	50	50	100
20	59.4	48.6	63	100A - Class J Time-Delay Fuses	50	70	100
25	74.8	60.0	80	100A - Class J Time-Delay Fuses	50	100	100
460VAC, 60Hz, 3PH							
1	2.1	1.4	16	3A - Class J Time-Delay Fuses	65	15	35
2	3.4	2.7	16	6A - Class J Time-Delay Fuses	65	15	35
3	4.8	3.8	16	10A - Class J Time-Delay Fuses	65	15	35
5	7.6	6.5	16	15A - Class J Time-Delay Fuses	65	15	35
7.5	11	9.0	16	20A - Class J Time-Delay Fuses	65	15	35
10	14	12.1	16	25A - Class J Time-Delay Fuses	65	20	35
15	21	18.0	25	30A - Class J Time-Delay Fuses	65	25	35
20	27	24.3	63	50A - Class J Time-Delay Fuses	50	40	65
25	34	30.0	63	60A - Class J Time-Delay Fuses	50	50	65
30	40	35.8	63	70A - Class J Time-Delay Fuses	50	50	65
40	52	48.5	63	100A - Class J Time-Delay Fuses	50	70	65
50	65	60.4	80	100A - Class J Time-Delay Fuses	50	100	65
575VAC, 60Hz, 3PH							
1	1.7	1.2	16	3A - Class J Time-Delay Fuses	65	15 <sup>(1)</sup>	18
2	2.7	2.1	16	6A - Class J Time-Delay Fuses	65	15 <sup>(1)</sup>	18
3	3.9	3.0	16	6A - Class J Time-Delay Fuses	65	15 <sup>(1)</sup>	18
5	6.1	5.2	16	10A - Class J Time-Delay Fuses	65	15 <sup>(1)</sup>	18
7.5	9	7.2	16	15A - Class J Time-Delay Fuses	65	15 <sup>(1)</sup>	18
10	11	9.7	16	20A - Class J Time-Delay Fuses	65	15 <sup>(1)</sup>	18
15	17	14.4	25	25A - Class J Time-Delay Fuses	65	20 <sup>(1)</sup>	18
20	22	19.5	25	30A - Class J Time-Delay Fuses	65	30 <sup>(1)</sup>	18
25	27	24.0	63	40A - Class J Time-Delay Fuses	50	30 <sup>(1)</sup>	18
30	32	28.6	63	50A - Class J Time-Delay Fuses	50	40	35
40	41	38.8	63	70A - Class J Time-Delay Fuses	50	50	35
50	52	48.3	63	100A - Class J Time-Delay Fuses	50	60	35

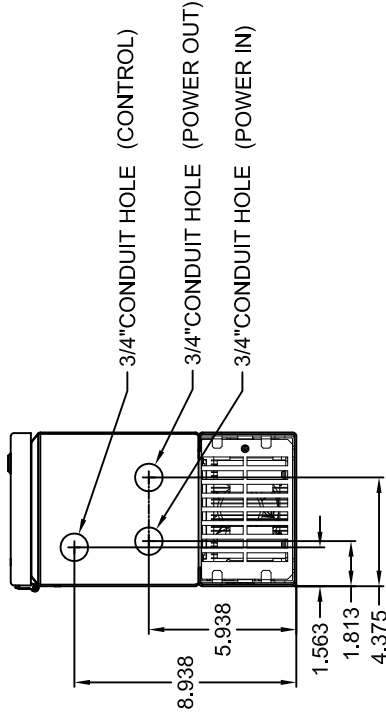
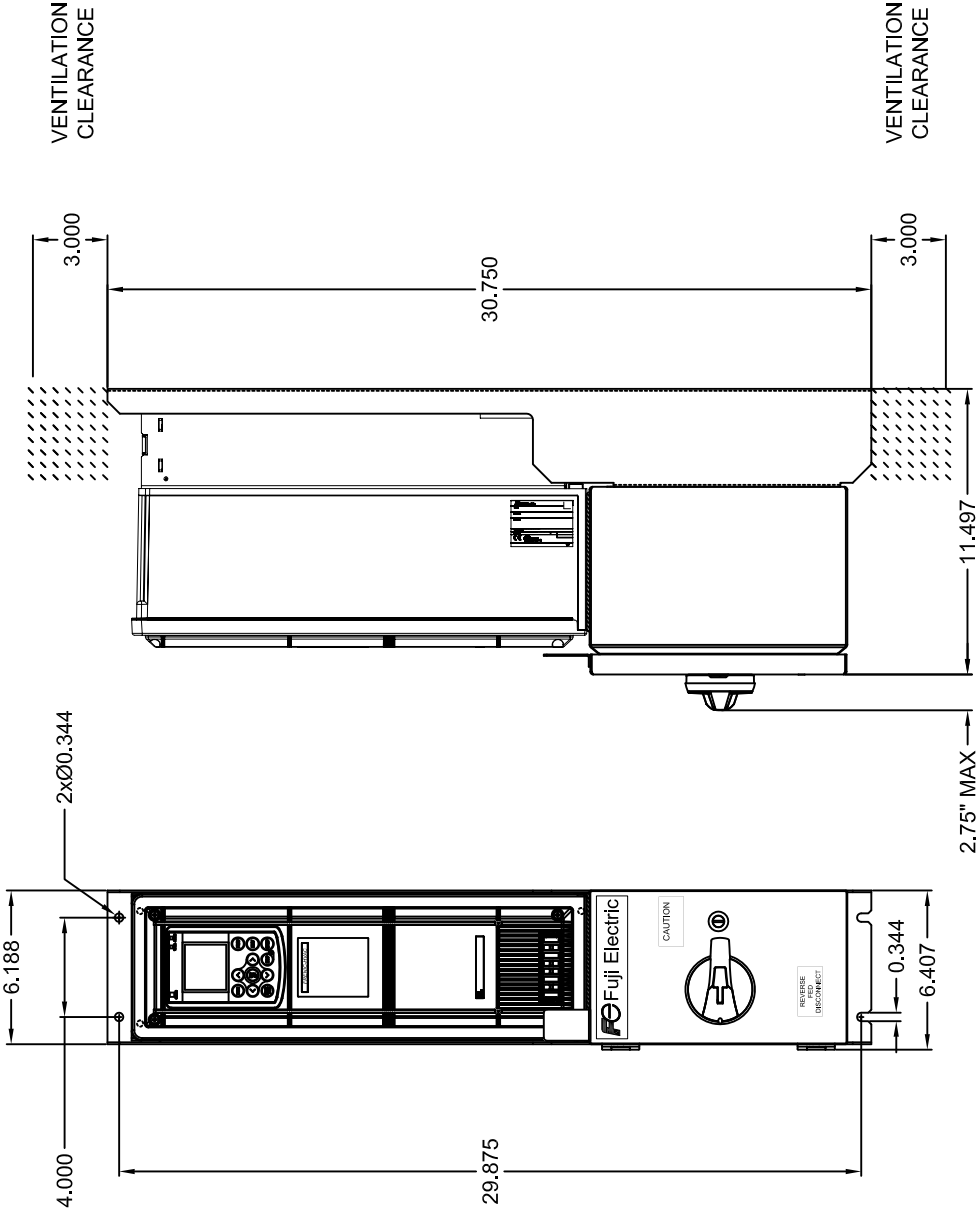
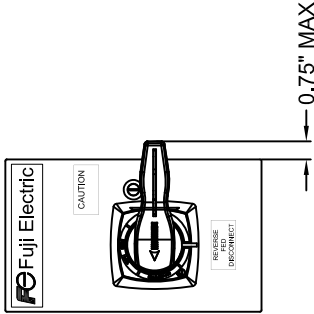
Notes:

(1) = Circuit Breaker is Rated for Connecting to Wye Power Distribution Systems ONLY

ENLARGED VIEW OF KEYPAD:



OPTIONAL CIRCUIT BREAKER HANDLE:



NOTES:  
1) IF LARGER CONDUIT IS  
REQUIRED PUNCH/CUTOUT TO  
DESIRED SIZE MAINTAINING  
SPECIFIED LOCATIONS

DIMENSIONS ARE IN INCHES  
DIMENSIONS PROVIDED FOR ESTIMATING PURPOSES ONLY



DESCRIPTION: FRENIC-HVAC COMBINATION VFD  
1-5Hp @ 208/230VAC, 1-10Hp @ 460VAC  
1-10Hp @ 575VAC I UL-TYPE 1 & 12  
INSTRUCTION BOOK: FECA-IN-117

DRN. BY: C. DEMORIER

DATE: 06/06/15

REV. REV. DATE: 10/08/15

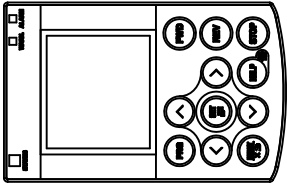
1 C. DEMORIER

DWG. NO:

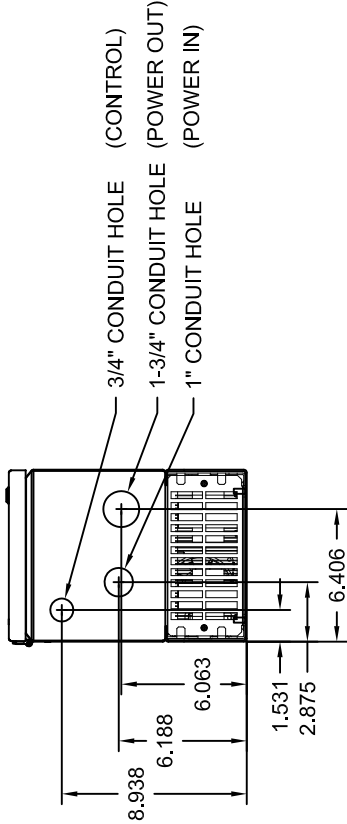
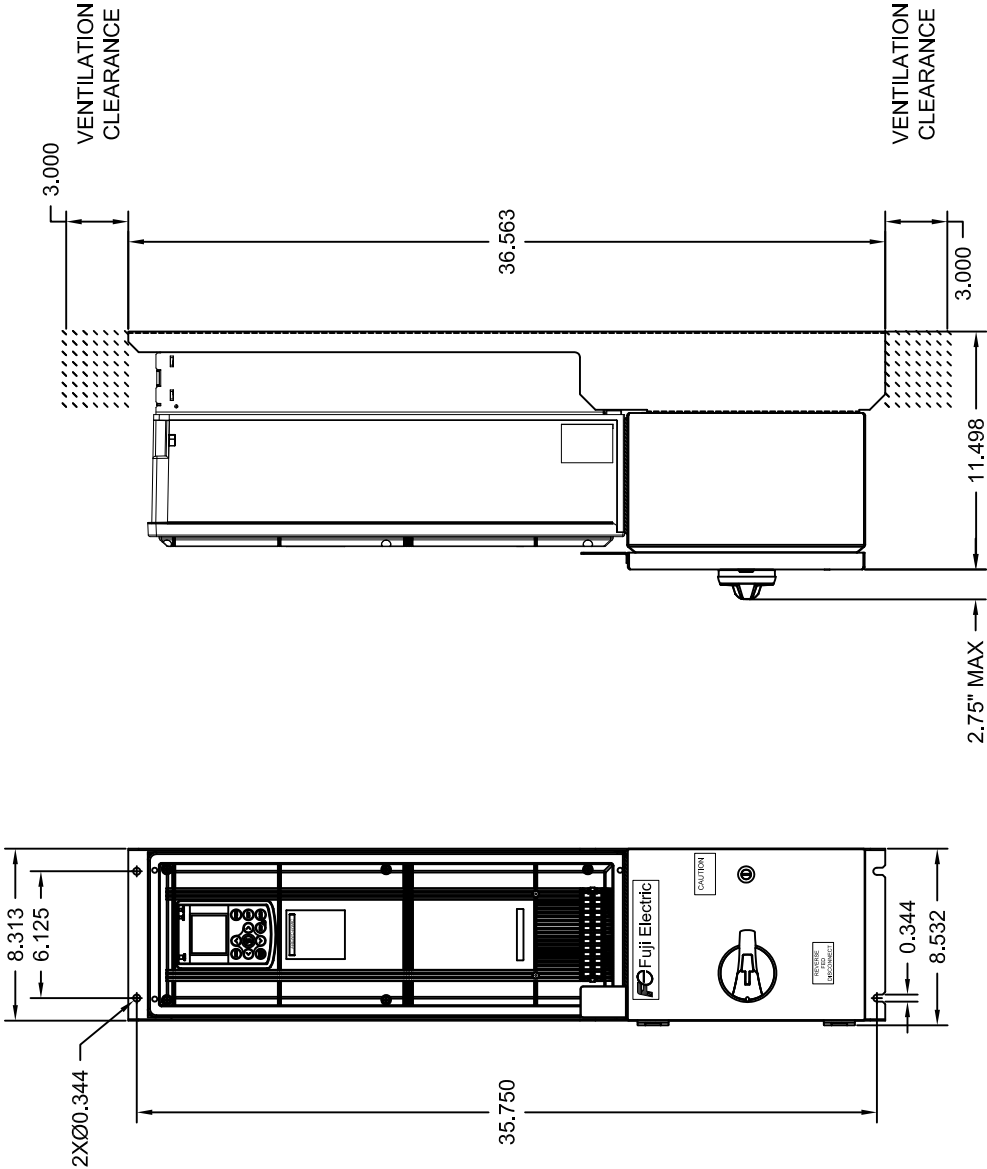
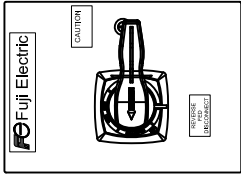
ROA701175

SHT. 1 OF 1

ENLARGED VIEW OF KEYPAD:



OPTIONAL CIRCUIT BREAKER HANDLE:



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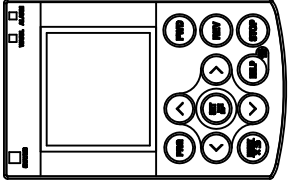
DIMENSIONS ARE IN INCHES  
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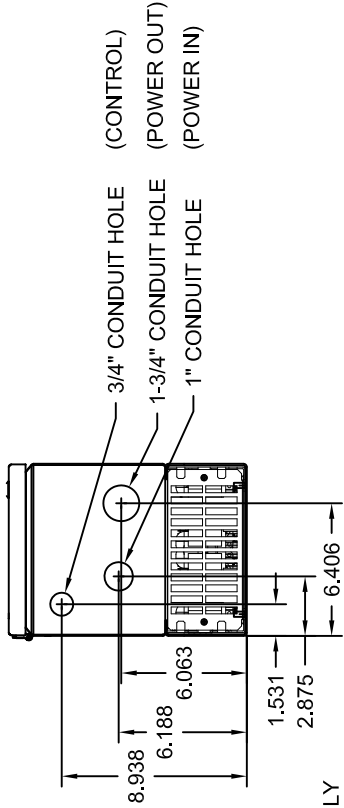
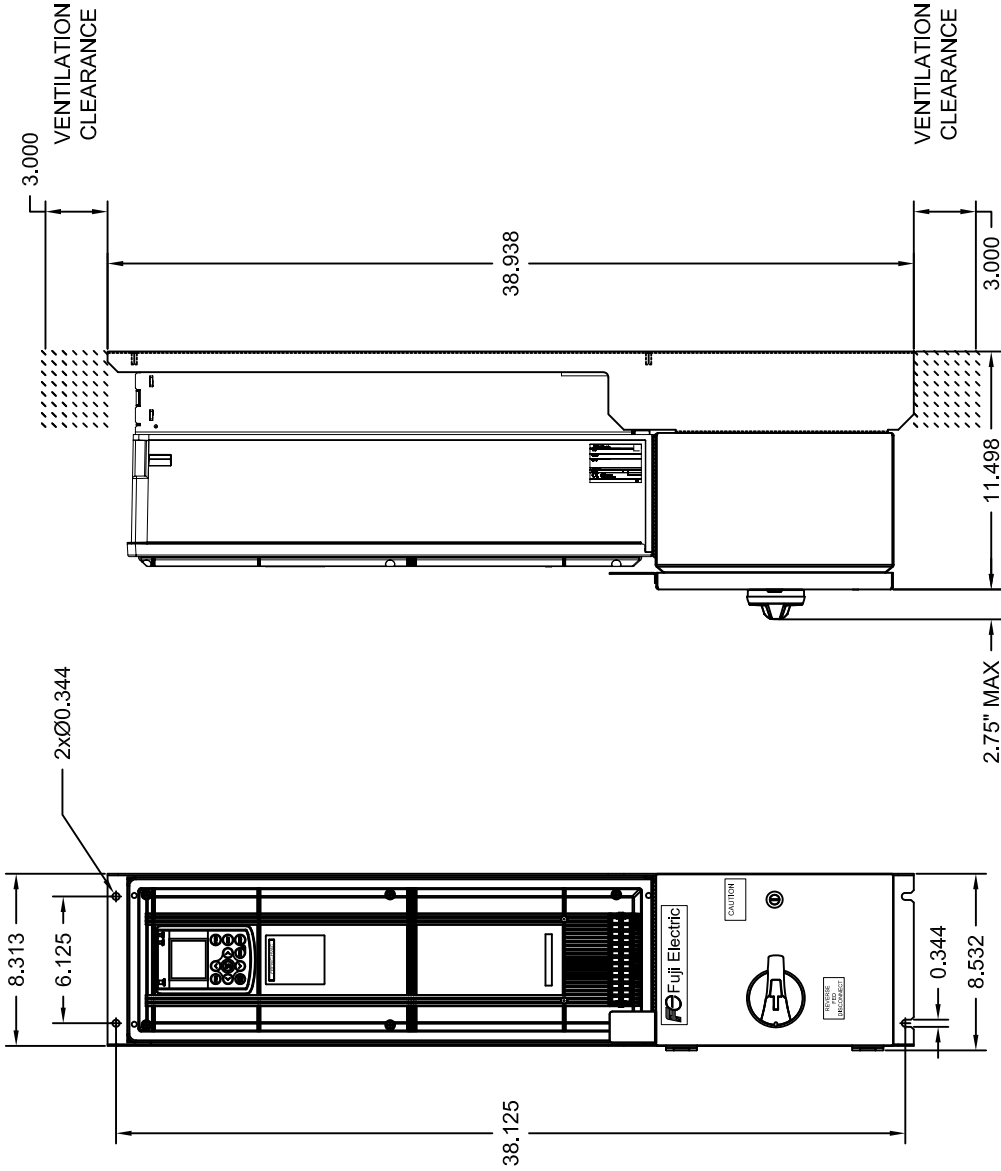
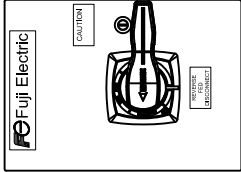
DESCRIPTION: FRENIC-HVAC COMBINATION VFD  
7.5-15Hp @ 208/230VAC, 15-30Hp @ 460VAC,  
15-30Hp @ 575VAC I UL TYPE 12  
INSTRUCTION BOOK: FECA-IN-117

DRN. BY:	DATE:
C. DEMORIER	06/06/15
REV. REV. DATE:	REV. BY:
1 10/14/15	C. DEMORIER

ENLARGED VIEW OF KEYPAD:



OPTIONAL CIRCUIT BREAKER HANDLE:



NOTES:  
1) IF LARGER CONDUIT IS  
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DESIRED SIZE MAINTAINING  
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DIMENSIONS PROVIDED FOR ESTIMATING PURPOSES ONLY



**FRENIC-HVAC Combination VFD**  
UL/NEMA Type 12 - Mechanical Data

Hp Rating	Overall Dimensions - Height x Width x Depth [inches]	Estimated Max. Weight [lbs]	Estimated Max. Watts Loss [W]
208/230VAC, 60Hz, 3PH			
1	30.75 x 6.41 x 14.25	41	67
2			99
3			136
5			247
7.5	36.56 x 8.53 x 14.25	65	301
10		67	380
15			518
20	38.94 x 8.53 x 14.25	78	681
25			735
460VAC, 60Hz, 3PH			
1	30.75 x 6.41 x 14.25	41	54
2			69
3			89
5			139
7.5			189
10			265
15	36.56 x 8.53 x 14.25	65	352
20		67	452
25			467
30			613
40	38.94 x 8.53 x 14.25	78	814
50			927
575VAC, 60Hz, 3PH			
1	30.75 x 6.41 x 14.25	41	46
2			57
3			67
5			99
7.5			130
10			173
15	36.56 x 8.53 x 14.25	65	222
20		67	285
25			340
30			392
40	38.94 x 8.53 x 14.25	78	546
50			650