

# FRENIC-HPAQ

## Bypass Submittal Summary – UL Type 1 / NEMA 12 Ventilated & UL Type 12

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

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

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

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

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

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

### Configurations

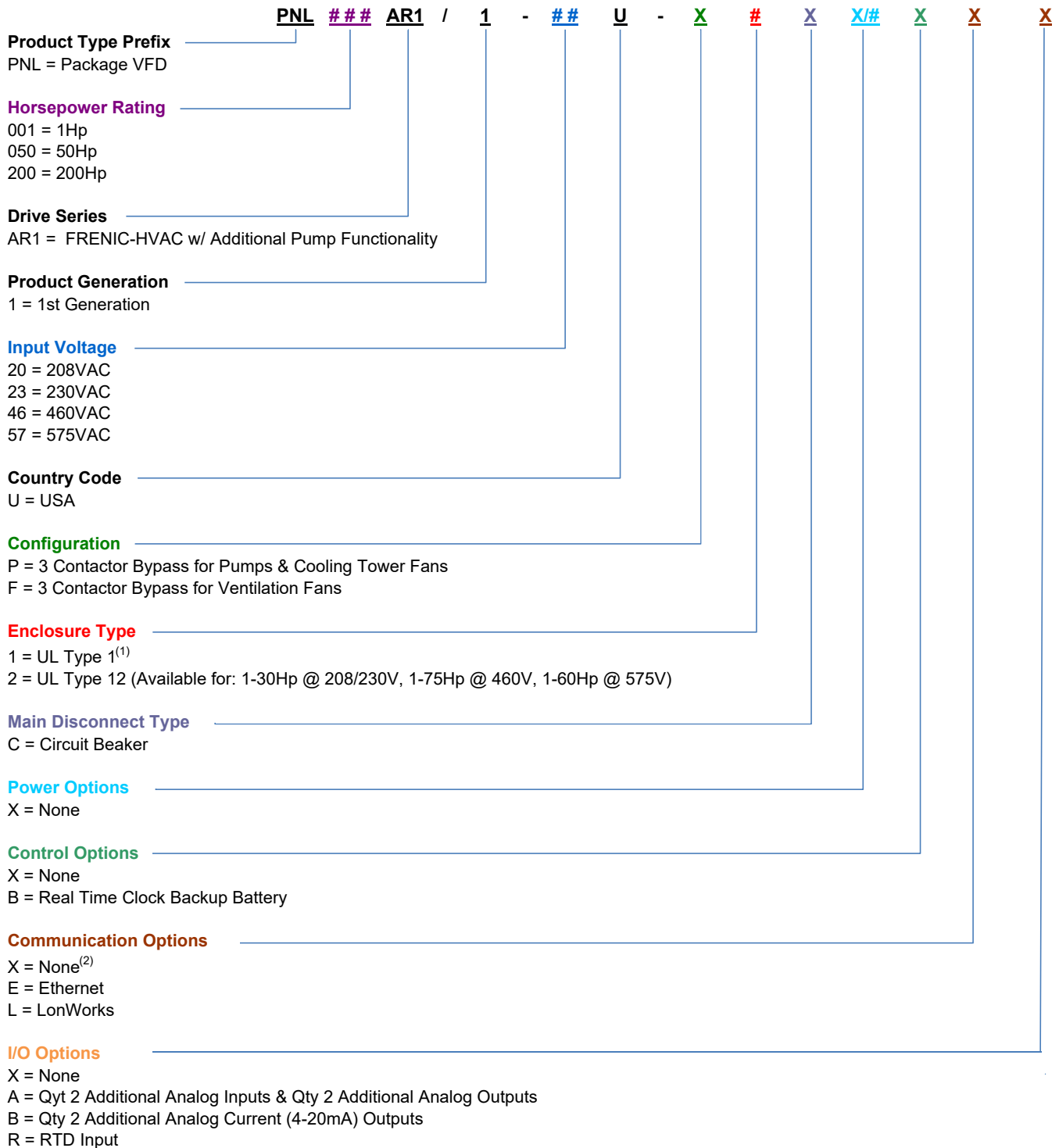
- **Bypass for Pumps & Cooling Tower Fans**  
3 Contactor bypass with Class 20 motor overload protection and input circuit breaker that provides simple manual bypass control logic.
- **Bypass for Ventilation Fans**  
3 Contactor bypass with Class 20 motor overload protection and input circuit breaker that provides a comprehensive set of control features including; damper control output, damper end switch input, fire mode input with selectable low or high level priority safety inputs and selectable automatic bypass.



**FECA-SU-120A**

Information subject to change without notice.

# FRENIC-HPAQ Bypass Model Numbering System Diagram



## Notes

(1) Enclosure meets NEMA 12 Ventilated (Gasketed & Filtered) requirements for:  
40-60Hp @ 208/230VAC, 100-200Hp @ 460VAC, & 75-200Hp @ 575VAC

(2) Modbus RTU, Johnson Metasys N2, and BACnet are provided as standard, selectable via parameter setting

# FRENIC-HPAQ Bypass Features

	Bypass for Pumps	Bypass for Fans
Features		
Input Circuit Breaker	S	S
Drive Input Isolation Contactor	S	S
Drive Output Contactor	S	S
Bypass Contactor	S	S
Class 20 Motor Overload Relay	S	S
DC Link Reactor	S	S
EMC Filter	S	S
Control Power Transformer w/ Fusing	S	S
Power On Indication	S	S
Drive Run Indication	via Keypad	via Keypad
Drive Fault Indication	via Keypad	via Keypad
Bypass Run Indication	S	S
Motor Overload Indication	S	S
Isolated - Normal Selector Switch	S	S
VFD - Off - Bypass Selector Switch	S	S
Hand - Off - Auto Selector Switch	S	S
Remote - Local (for Bypass) Selector Switch	N/A	S
Enable Input	S	N/A
2 Level Priority Safety Inputs	N/A	S
Damper End Switch Input	N/A	S
Fire Mode Input	N/A	S
Automatic Bypass Permissive	N/A	S
Run Command Input	S	S
Bypass Local Override Input	S	N/A
Drive Fault Output	S	S
Drive Run Output	S	S
Bypass Run Output	S	S
Damper Control Output	N/A	S
Analog Signal Inputs	0-10VDC 4-20mA	0-10VDC 4-20mA
Analog Signal Outputs	0-10VDC 4-20mA	0-10VDC 4-20mA
Customer Control I/O Terminal Strip	S	S
Communication Protocols		
Modbus RTU	S	S
Metasys N2	S	S
BACnet	S	S
LonWorks	O	O
EtherNet	O	O
Codes & Standards		
UL 508A	S	S
Applicable NEMA & NFPA Standards	S	S

S = Provided As Standard

O = Available Option

# FRENIC-HPAQ Bypass General Specifications

## Environmental

Enclosure	UL Type 1/NEMA 12 Ventilated, UL Type 12
Ambient Temperature	+14°F to +104°F (-10°C to +40°C)
Storage Temperature	+5°F to +140°F (-15°C 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 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% for 208VAC, 230VAC, & 460VAC -10% to 600V Maximum, ≤3% for 575VAC
Input Frequency	60Hz +/-5%
Displacement Power Factor	≥0.97
Output Voltage: Range - Phase	0 to maximum input voltage - 3 Phase
Output Frequency	0.1 to 120Hz
Motor Control Method	PWM drive output with V/f control, Dynamic Torque Vector control, or V/f control with Slip Compensation
PWM Switch Frequency	0.75 to 16kHz (1-25Hp @ 208/230V and 1-50Hp @ 460V/575V) 0.75 to 10kHz (30-60Hp @ 208/230V and 60-125Hp @ 460V/575V) 0.75 to 6kHz (150-200Hp @ 460V/575V)
Drive Overload Capacity	110% rated current for 1 min.
Motor Overload	Class 20 Protection
Torque Boost	Auto or Manual (0.0 to 20%) settings available
Speed Reference	0 to ±10VDC, 4 to 20mA, 0 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 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, functionality: Drive Run Qty 1: Form C dry contacts rated 0.3A @ 230V max, functionality: Drive Fault Qty 1: N.O. dry contacts rated 5A @ 230V max, functionality: Bypass Run Qty 1: N.O. dry contacts rated 5A @ 230V max, functionality: Damper Control ( <i>available only with bypass for fans</i> ) Qty 1: 0 to 10VDC, user selectable programmable analog signal Qty 1: 4 to 20mA, user selectable programmable analog signal

**FRENIC-HPAQ BYPASS for Pumps & Cooling Tower Fans**  
Drawing Number Selection Matrix

208/230VAC				
Hp Rating	Rated Output Current [A]	Outline Drawing Number	Electrical Drawing Number	Door Device Layout
1	4.6	ROA700202	ROA700206	ROA700200
2	7.5			
3	10.6			
5	16.7			
7.5	24.2	ROA700203		
10	30.8			
15	46.2	ROA700204		
20	59.4			
25	74.8	ROA700205		
30	88			
40	114	ROA700208	ROA700210	
50	143	ROA700209		
60	169			

460VAC				
Hp Rating	Rated Output Current [A]	Outline Drawing Number	Electrical Drawing Number	Door Device Layout
1	2.1	ROA700202	ROA700206	ROA700200
2	3.4			
3	4.8			
5	7.6			
7.5	11			
10	14			
15	21	ROA700203		
20	27			
25	34			
30	40			
40	52	ROA700204		
50	65			
60	77	ROA700205		
75	96			
100	127	ROA700208	ROA700210	
125	156	ROA700209		
150	180			
200	240			

575VAC				
Hp Rating	Rated Output Current [A]	Outline Drawing Number	Electrical Drawing Number	Door Device Layout
1	1.7	ROA700202	ROA700206	ROA700200
2	2.7			
3	3.9			
5	6.1			
7.5	9			
10	11			
15	17	ROA700203		
20	22			
25	27			
30	32			
40	41	ROA700204		
50	52			
60	62	ROA700205		
75	77			
100	99	ROA700208	ROA700210	
125	125	ROA700209		
150	144			
200	192			

**FRENIC-HPAQ BYPASS for Fans**  
Drawing Number Selection Matrix

208/230VAC				
Hp Rating	Rated Output Current [A]	Outline Drawing Number	Electrical Drawing Number	Door Device Layout
1	4.6	ROA700202	ROA700207	ROA700201
2	7.5			
3	10.6			
5	16.7			
7.5	24.2	ROA700203		
10	30.8			
15	46.2	ROA700204		
20	59.4			
25	74.8	ROA700205		
30	88			
40	114	ROA700208	ROA700211	
50	143	ROA700209		
60	169			

460VAC				
Hp Rating	Rated Output Current [A]	Outline Drawing Number	Electrical Drawing Number	Door Device Layout
1	2.1	ROA700202	ROA700207	ROA700201
2	3.4			
3	4.8			
5	7.6			
7.5	11			
10	14			
15	21	ROA700203		
20	27			
25	34			
30	40			
40	52	ROA700204		
50	65			
60	77	ROA700205		
75	96			
100	127	ROA700208	ROA700211	
125	156	ROA700209		
150	180			
200	240			

575VAC				
Hp Rating	Rated Output Current [A]	Outline Drawing Number	Electrical Drawing Number	Door Device Layout
1	1.7	ROA700202	ROA700207	ROA700201
2	2.7			
3	3.9			
5	6.1			
7.5	9			
10	11			
15	17	ROA700203		
20	22			
25	27			
30	32			
40	41	ROA700204		
50	52			
60	62	ROA700205		
75	77			
100	99	ROA700208	ROA700211	
125	125	ROA700209		
150	144			
200	192			

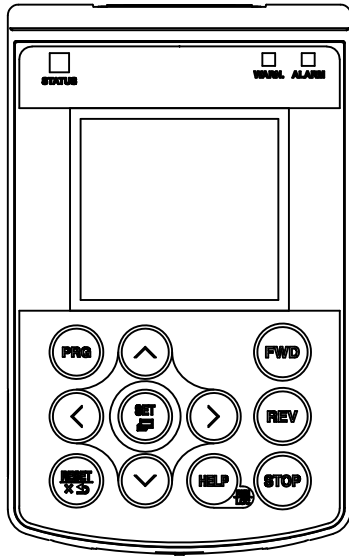
FRENIC-HPAQ Bypass

ELECTRICAL DATA					MECHANICAL DATA			
Hp Rating	Rated Output Current [A]	Rated Input Current [A]	Input Circuit Breaker Rating [A] (F) = Frame Size (T) = Trip Setting	VFD Input Fuses [A] <sub>UL</sub> [V]	Complete Assembly SCCR [kA]	Overall Dimensions - Height x Width x Depth [inches]	Estimated Max. Weight [lbs]	Estimated Watts Loss [W]
208/230VAC, 60Hz, 3PH								
1	4.6	5.1	15	8A, 600V - Class J Time-Delay Fuses	65	48.00 x 6.19 x 15.69	70	119
2	7.5	8.0	15	10A, 600V - Class J Time-Delay Fuses				152
3	10.6	11.1	20	12A, 600V - Class J Time-Delay Fuses				190
5	16.7	17.2	30	20A, 600V - Class J Time-Delay Fuses		307		
7.5	24.2	24.7	40	30A, 600V - Class J Time-Delay Fuses		364		
10	30.8	31.3	50	40A, 600V - Class J Time-Delay Fuses		447		
15	46.2	46.7	70	60A, 600V - Class J Time-Delay Fuses		591		
20	59.4	59.9	90	80A, 600V - Class J Time-Delay Fuses		792		
25	74.8	75.3	125	100A, 600V - Class J Time-Delay Fuses		835		
30	88	88.8	150	250A, 700V - Semiconductor Fuses		441		
40	114	118	250(F)/175(T)	350A, 700V - Semiconductor Fuses	791	1676		
50	143	147	300(F)/255(T)	250A, 600V - Class J Time-Delay Fuses	100	90.00 x 36.00 x 27.06 <sup>(2)</sup>	1133	1586
60	169	173	300(F)/300(T)	300A, 600V - Class J Time-Delay Fuses				1839
460VAC, 60Hz, 3PH								
1	2.1	2.4	15	3A, 600V - Class J Time-Delay Fuses	35	48.00 x 6.19 x 15.69	70	108
2	3.4	3.7	15	6A, 600V - Class J Time-Delay Fuses				125
3	4.8	5.1	15	8A, 600V - Class J Time-Delay Fuses				147
5	7.6	7.9	15	12A, 600V - Class J Time-Delay Fuses				202
7.5	11	11.3	20	15A, 600V - Class J Time-Delay Fuses				257
10	14	14.3	30	20A, 600V - Class J Time-Delay Fuses				340
15	21	21.3	40	30A, 600V - Class J Time-Delay Fuses		435		
20	27	27.3	50	40A, 600V - Class J Time-Delay Fuses		545		
25	34	34.3	60	50A, 600V - Class J Time-Delay Fuses		562		
30	40	40.3	70	60A, 600V - Class J Time-Delay Fuses		723		
40	52	52.3	80	80A, 600V - Class J Time-Delay Fuses	65	67.00 x 11.50 x 16.76	158	940
50	65	65.3	100	100A, 600V - Class J Time-Delay Fuses				1061
60	77	77.4	125	250A, 700V - Semiconductor Fuses		64.31 x 24.25 x 22.10	441	1175
75	96	96.4	150	250A, 700V - Semiconductor Fuses				1232
100	127	124	250(F)/203(T)	350A, 700V - Semiconductor Fuses		90.00 x 36.00 x 27.06 <sup>(2)</sup>	791	1606
125	156	159	300(F)/255(T)	250A, 600V - Class J Time-Delay Fuses				2028
150	180	183	300(F)/300(T)	300A, 600V - Class J Time-Delay Fuses		90.00 x 48.00 x 27.05 <sup>(2)</sup>	1202	2318
200	240	243	400(F)/400(T)	350A, 600V - Class J Time-Delay Fuses				3053
575VAC, 60Hz, 3PH								
1	1.7	2.0	15	3A, 600V - Class J Time-Delay Fuses	18 <sup>(1)</sup>	48.00 x 6.19 x 15.69	70	92
2	2.7	3.0	15	6A, 600V - Class J Time-Delay Fuses				103
3	3.9	4.2	15	6A, 600V - Class J Time-Delay Fuses				114
5	6.1	6.4	15	10A, 600V - Class J Time-Delay Fuses				147
7.5	9	9.3	15	12A, 600V - Class J Time-Delay Fuses				180
10	11	11.3	20	15A, 600V - Class J Time-Delay Fuses				225
15	17	17.3	30	25A, 600V - Class J Time-Delay Fuses		54.00 x 8.31 x 15.69	103	281
20	22	22.3	40	30A, 600V - Class J Time-Delay Fuses				349
25	27	27.3	50	35A, 600V - Class J Time-Delay Fuses				408
30	32	32.3	50	40A, 600V - Class J Time-Delay Fuses				464
40	41	41.3	70	60A, 600V - Class J Time-Delay Fuses	35	67.00 x 11.50 x 16.76	158	642
50	52	52.3	80	70A, 600V - Class J Time-Delay Fuses				751
60	62	62.4	100	175A, 700V - Semiconductor Fuse		64.31 x 24.25 x 22.10	433	1123
75	77	79	150(F)/127(T)	250A, 700V - Semiconductor Fuses				1425
100	99	101	250(F)/175(T)	250A, 700V - Semiconductor Fuses		90.00 x 36.00 x 27.06 <sup>(2)</sup>	791	1814
125	125	127	250(F)/203(T)	200A, 600V - Class J Time-Delay Fuses				2426
150	144	146	300(F)/221(T)	250A, 600V - Class J Time-Delay Fuses		90.00 x 48.00 x 27.05 <sup>(2)</sup>	1278	2817
200	192	194	400(F)/310(T)	300A, 600V - Class J Time-Delay Fuses	35			3700

Notes:

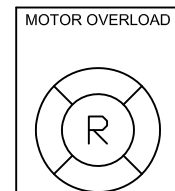
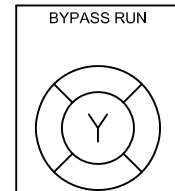
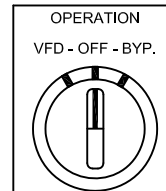
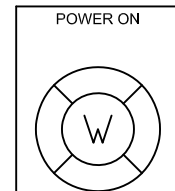
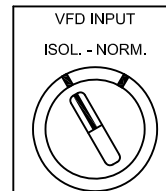
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(2) = Top Exhaust Ventilation Cover Adds 6.10in to Height

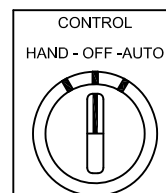


VFD KEYPAD  
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FOR LOCATION]

## DOOR DEVICES FOR PUMP CONTROL



22mm HOLE PLUG



[SEE OUTLINE DRAWING  
FOR LOCATION]



DESCRIPTION:  
FRENIC-HPAQ BYPASS DOOR DEVICES &  
KEYPAD FOR PUMP CONTROL LOGIC

DRN. BY:  
C. DEMORIER

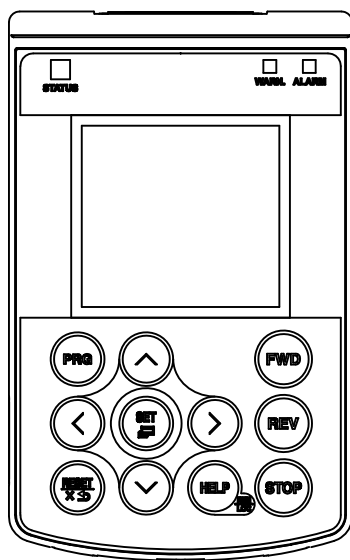
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08/19/18

DATE:  
03/16/18

REV. BY:  
T. WEBB

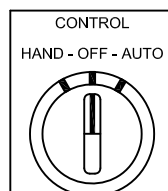
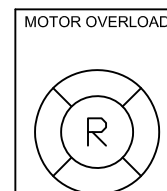
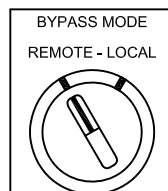
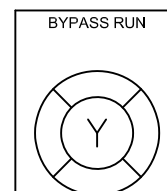
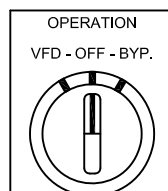
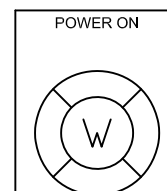
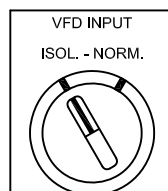
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VFD KEYPAD  
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## DOOR DEVICES FOR FAN CONTROL



[SEE OUTLINE DRAWING  
FOR LOCATION]



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FRENIC-HPAQ BYPASS DOOR DEVICES &  
AND KEYPAD FOR FAN CONTROL LOGIC

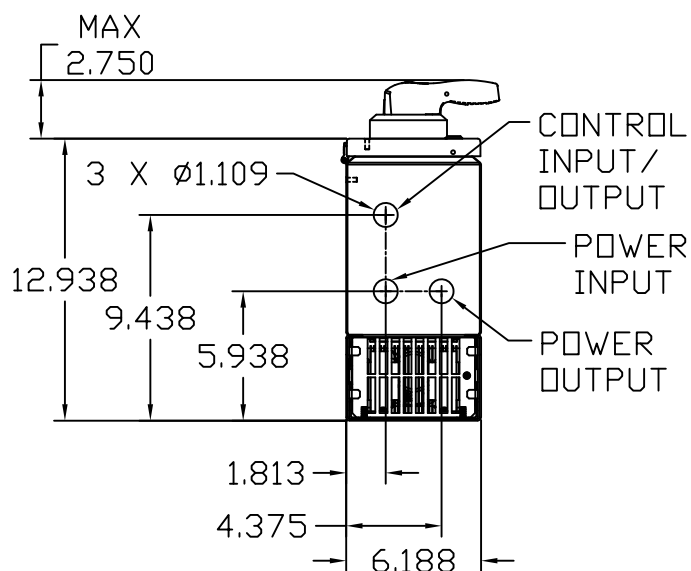
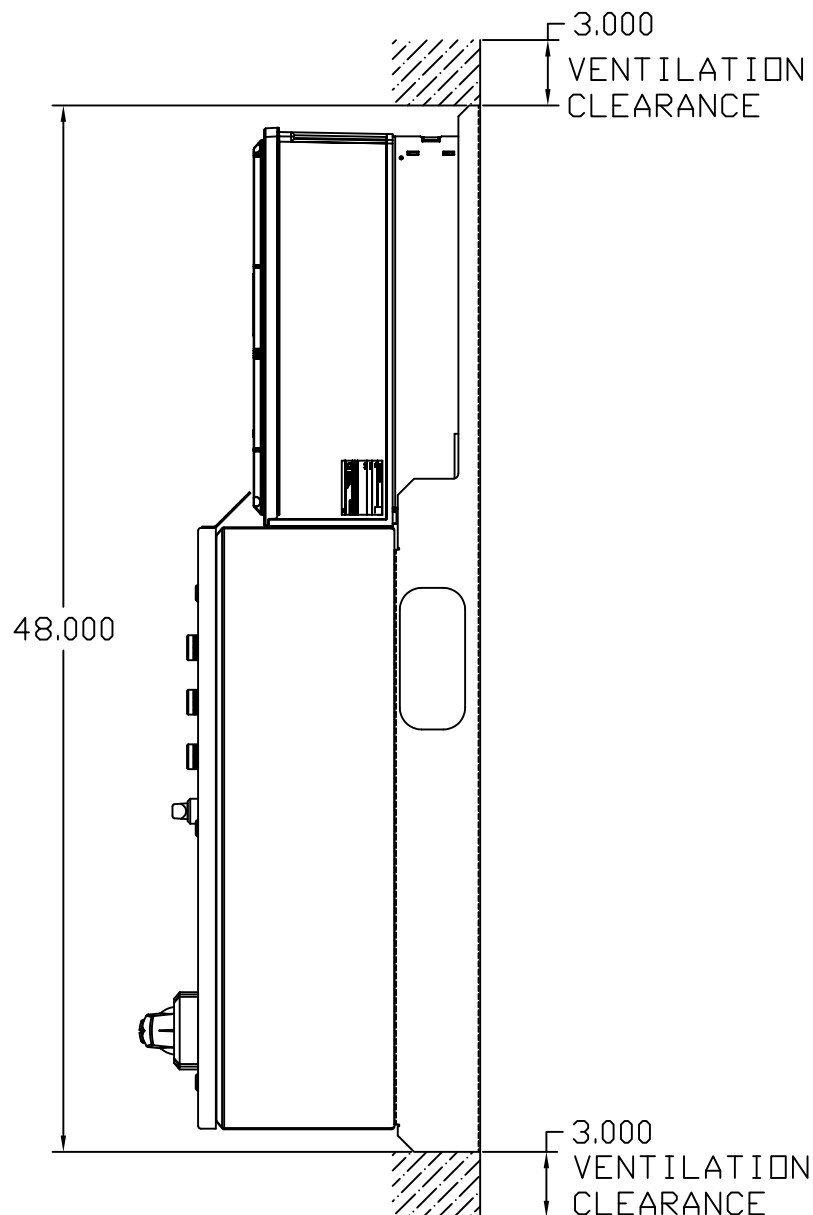
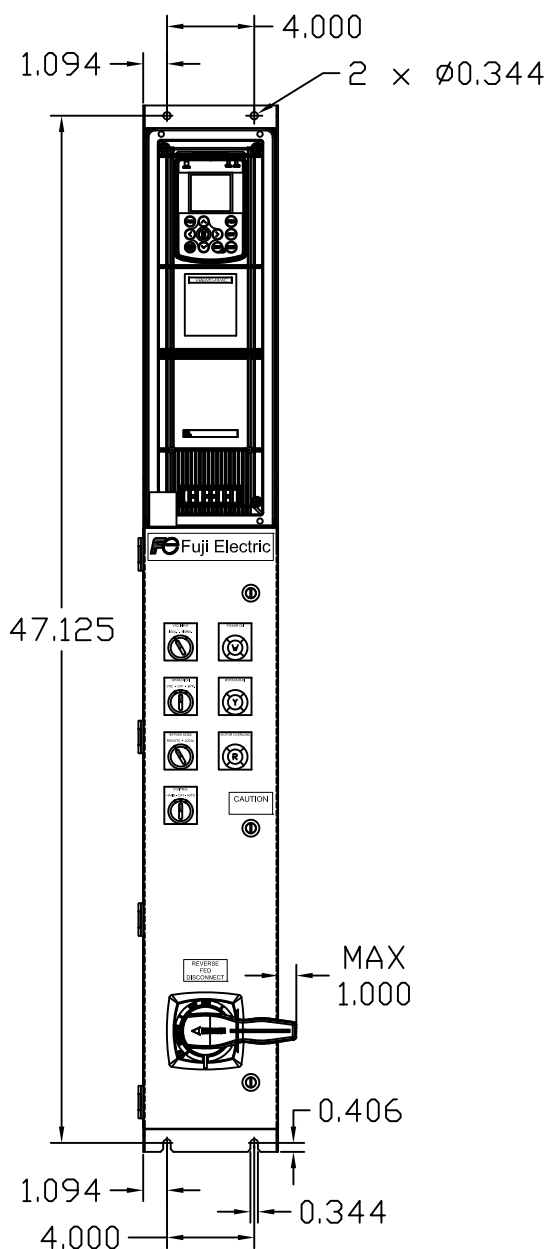
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C. DEMORIER

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DATE:  
03/16/18

REV. BY:  
C. DEMORIER

DWG. NO.:  
ROA700201  
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**NOTES:**

- 1) ALL DIMENSIONS ARE IN INCHES
- 2) ALLOW A MINIMUM OF 3.00 INCHES TOP AND BOTTOM OF ASSEMBLY FOR PROPER VENTILATION



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FRENIC-HPAQ BYPASS OUTLINE DRAWING  
1-5Hp @ 208/230V, 1-10Hp @ 460/575V

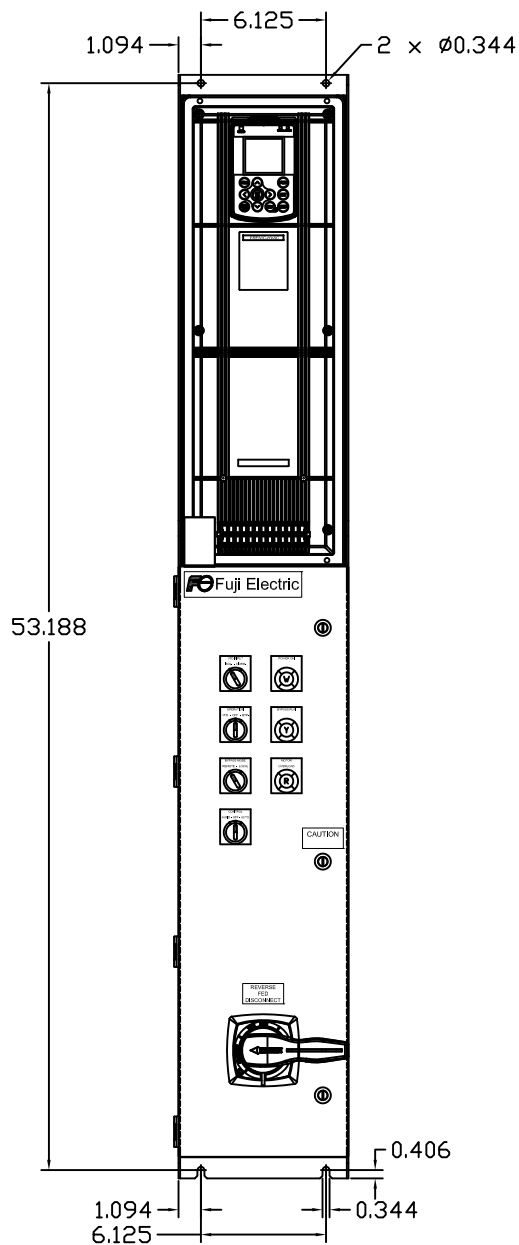
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C. DEMORIER

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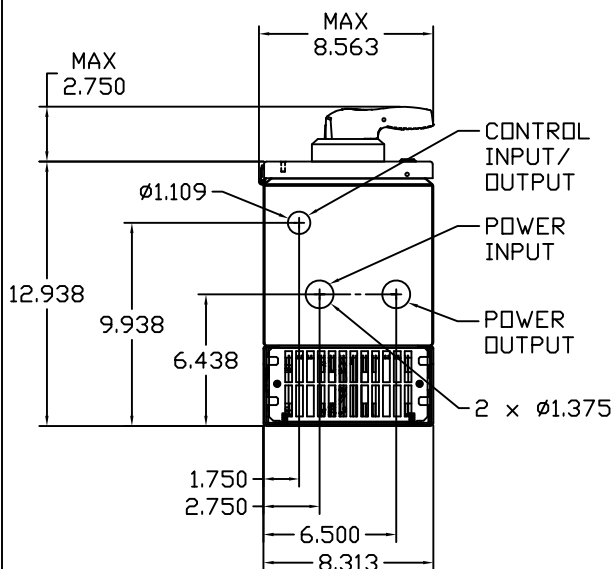
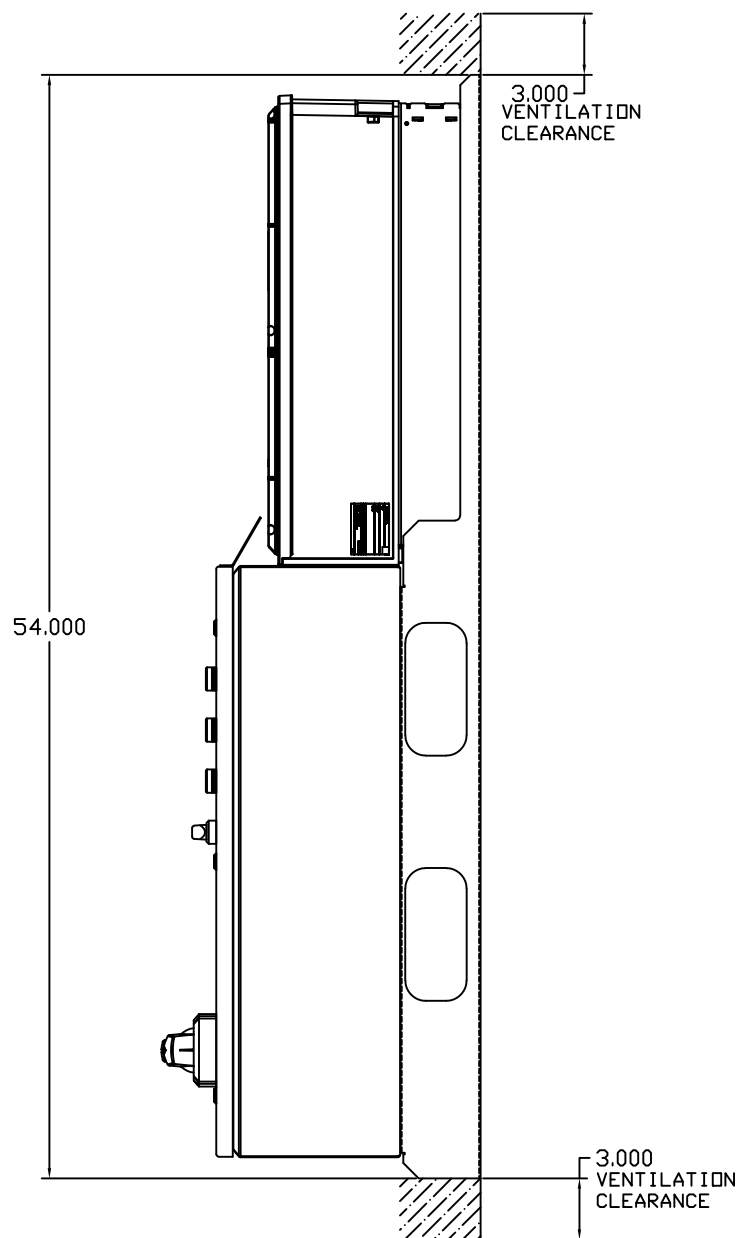
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T. WEBB

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ROA700202  
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BOTTOM VIEW  
CONDUIT LOCATIONS



NOTES:

- 1) ALL DIMENSIONS ARE IN INCHES
- 2) ALLOW A MINIMUM OF 3.00 INCHES TOP AND BOTTOM OF ASSEMBLY FOR PROPER VENTILATION



DESCRIPTION:  
FRENIC-HPAQ BYPASS OUTLINE DRAWING  
7.5-10Hp @ 208/230V, 15-30Hp @ 460/575V

DRN. BY:  
C. DEMORIER

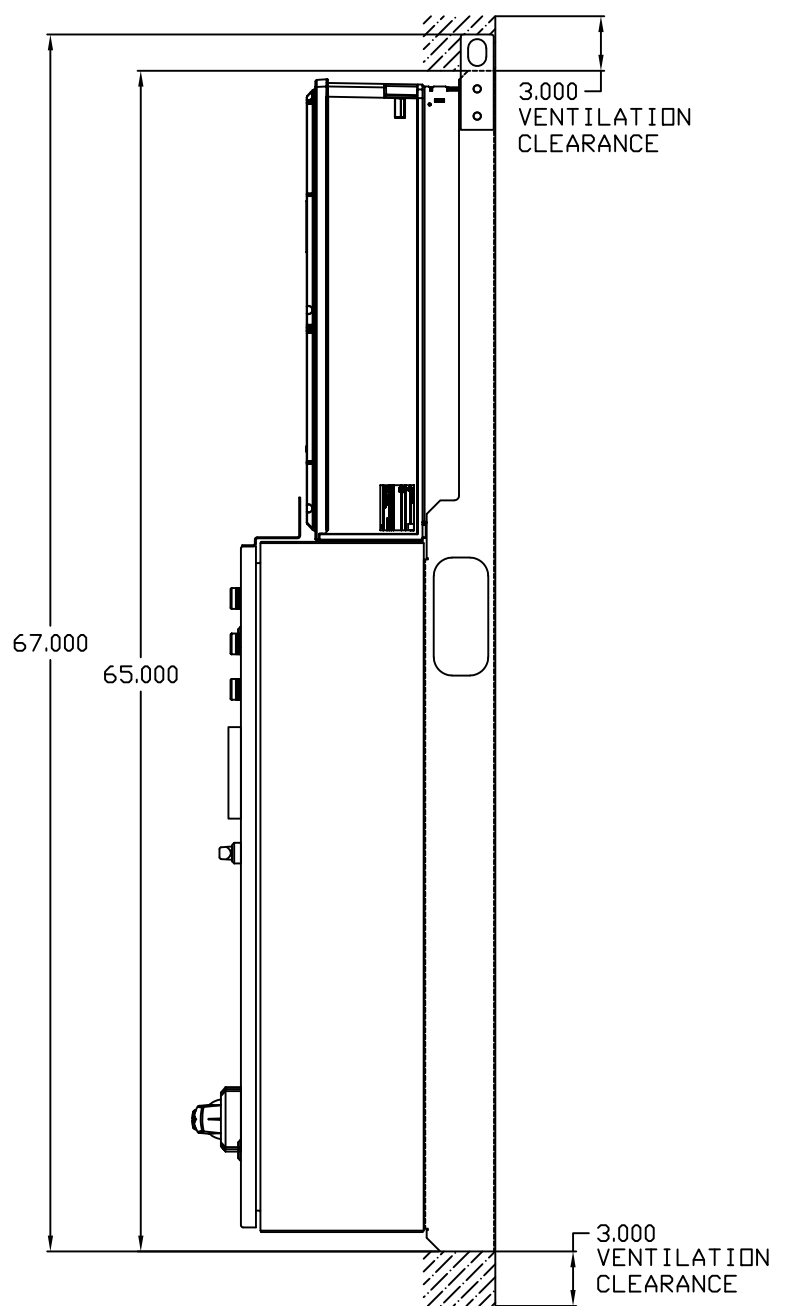
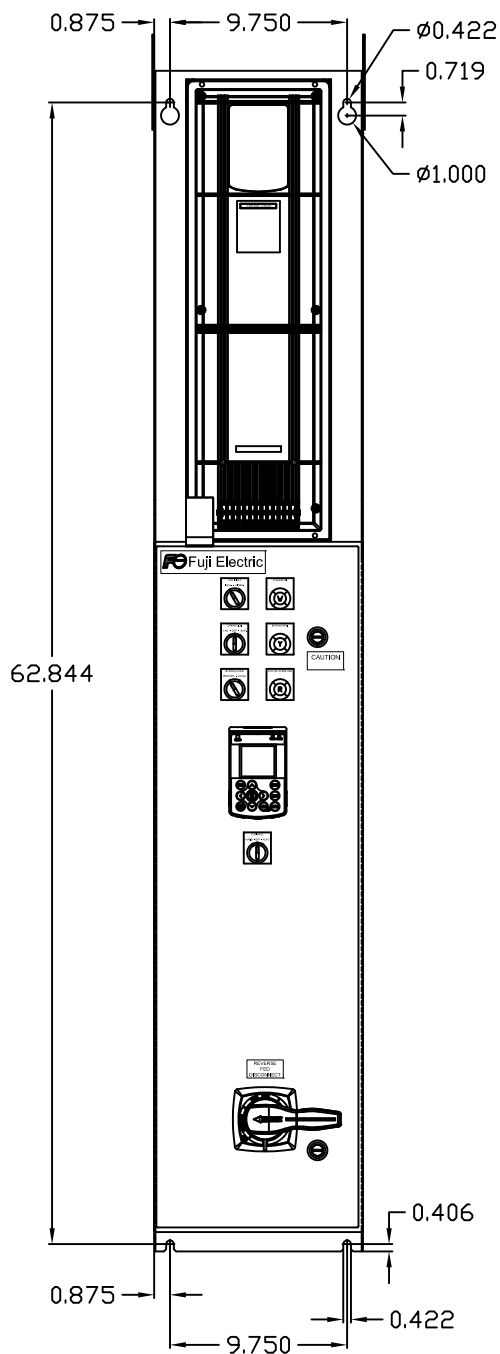
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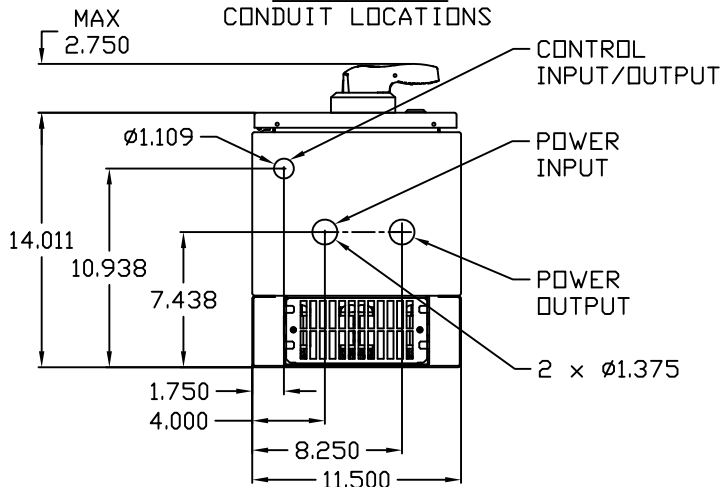
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REV. BY:  
T. WEBB

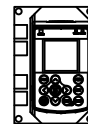
SHT. 01 OF 01



#### BOTTOM VIEW CONDUIT LOCATIONS



OPTIONAL VFD  
KEYPAD COVER FOR  
UL TYPE/NEMA 12  
ENCLOSURE



#### NOTES:

- 1) ALL DIMENSIONS ARE IN INCHES
- 2) ALLOW A MINIMUM OF 3.00 INCHES TOP AND BOTTOM OF ASSEMBLY FOR PROPER VENTILATION



DESCRIPTION:  
FRENIC-HPAQ BYPASS OUTLINE DRAWING  
15-20Hp @ 208/230V, 40-50Hp @ 460/575V

DRN. BY:  
C. DEMORIER

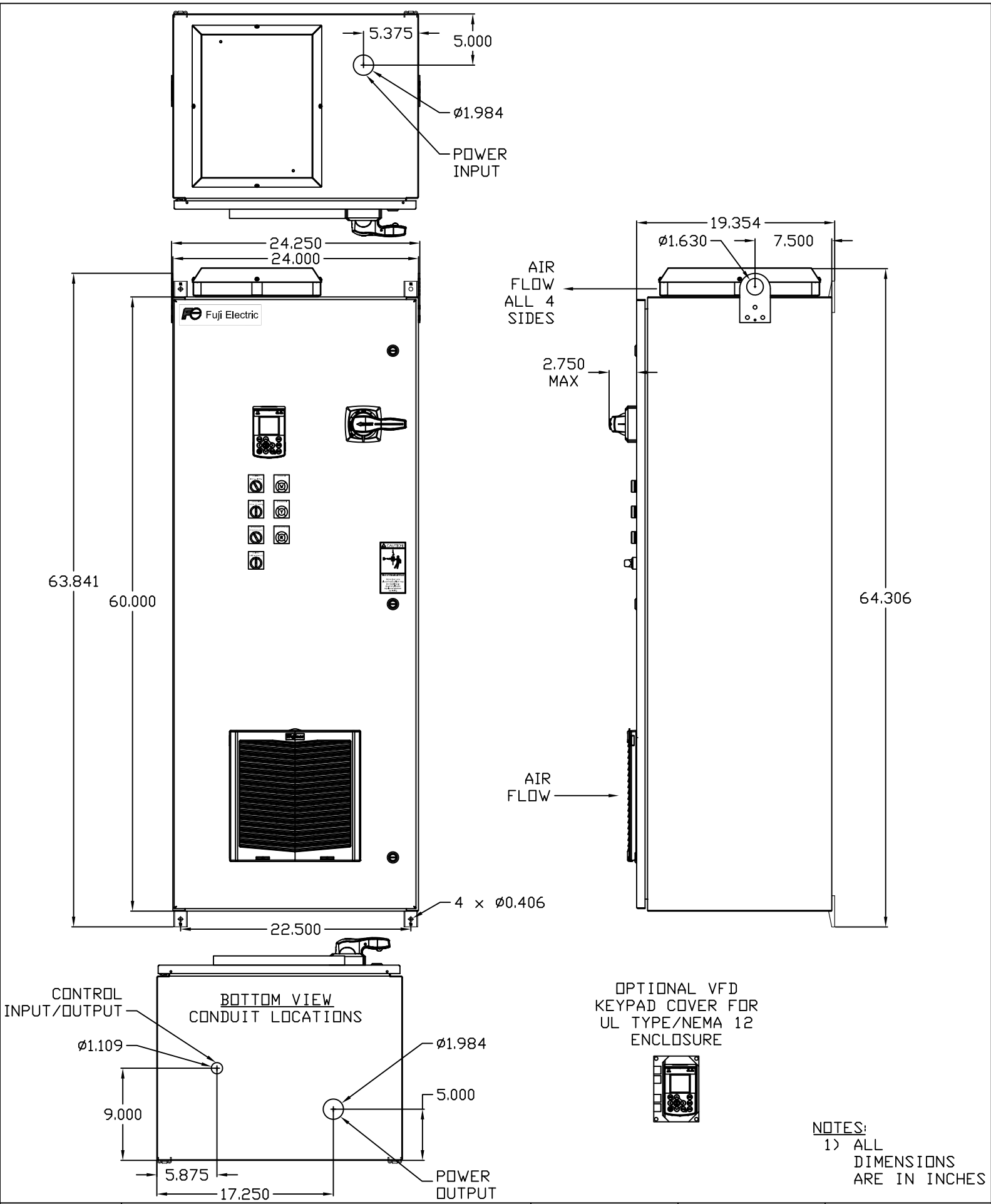
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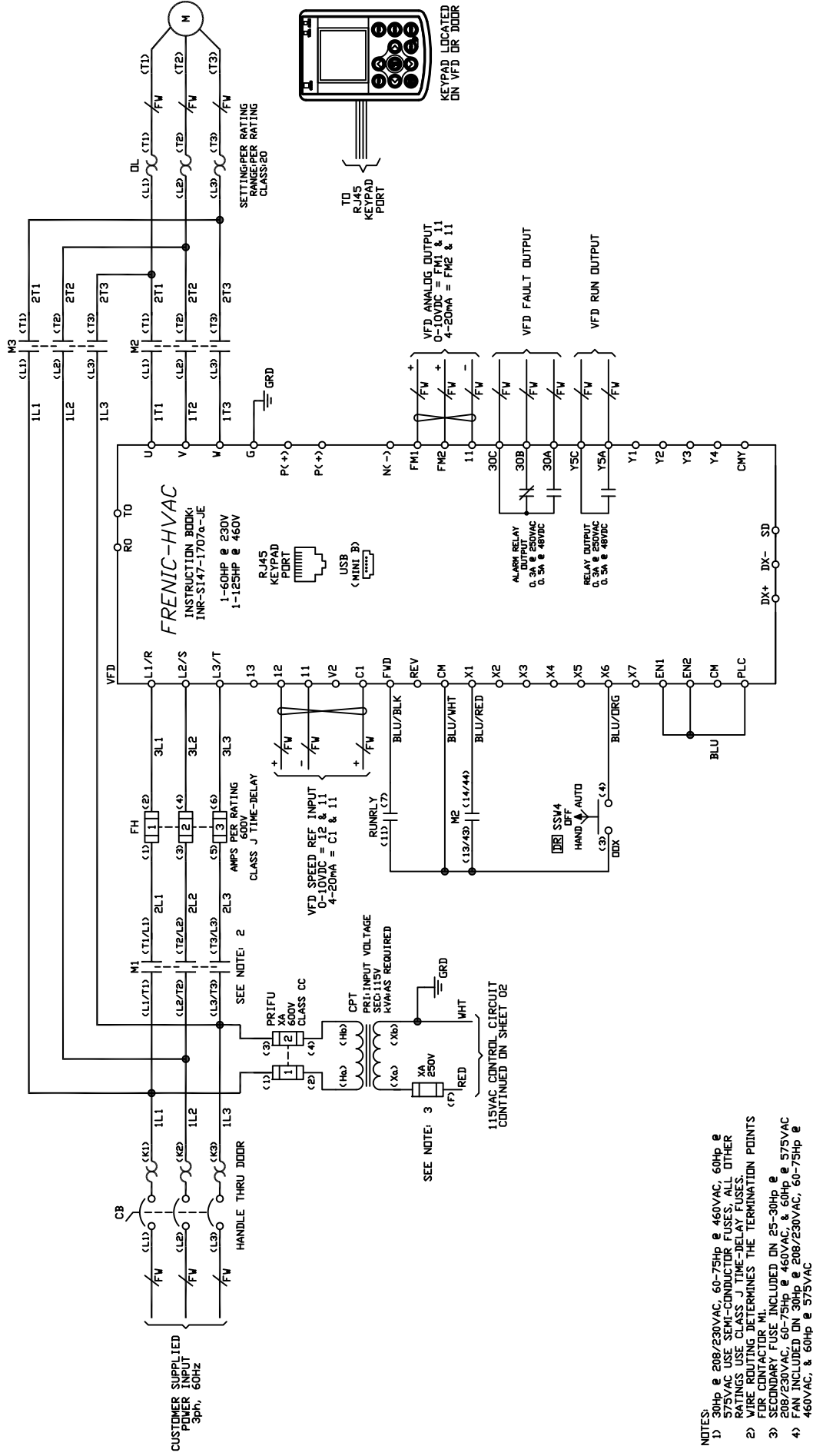
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NOTES:  
1) ALL DIMENSIONS ARE IN INCHES

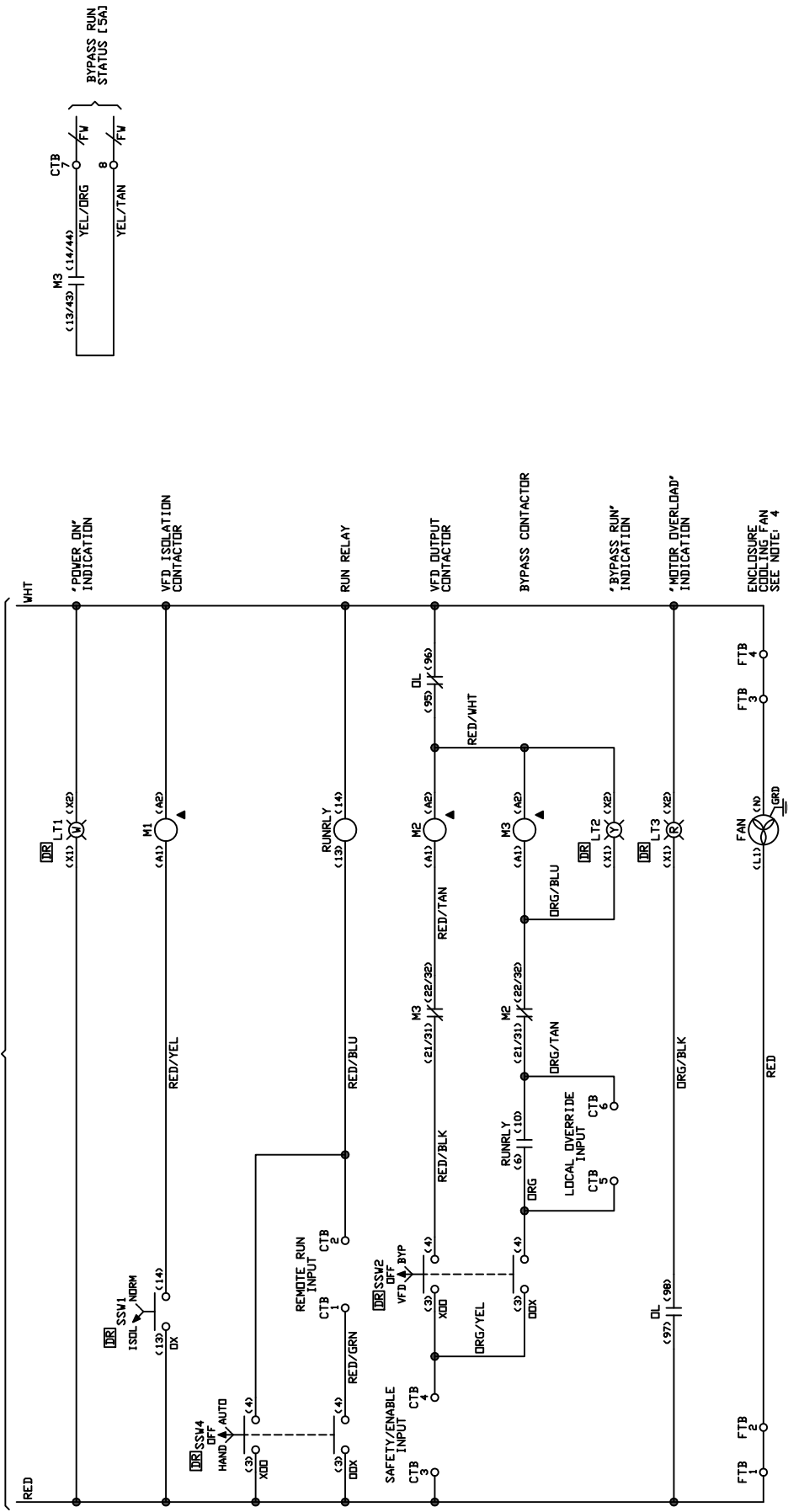
	DESCRIPTION: FRENIC-HPAQ BYPASS OUTLINE DRAWING 25-30Hp @ 208/230V, 60-75Hp @ 460V 60Hp @ 575V		DRN. BY: C. DEMORIER		DATE: 03/16/18		DWG. NO.: ROA700205
			REV. 1	REV. DATE: 08/19/18	REV. BY: T. WEBB		

# FRENIC-HPAQ BYPASS FOR PUMPS & COOLING TOWER FANS

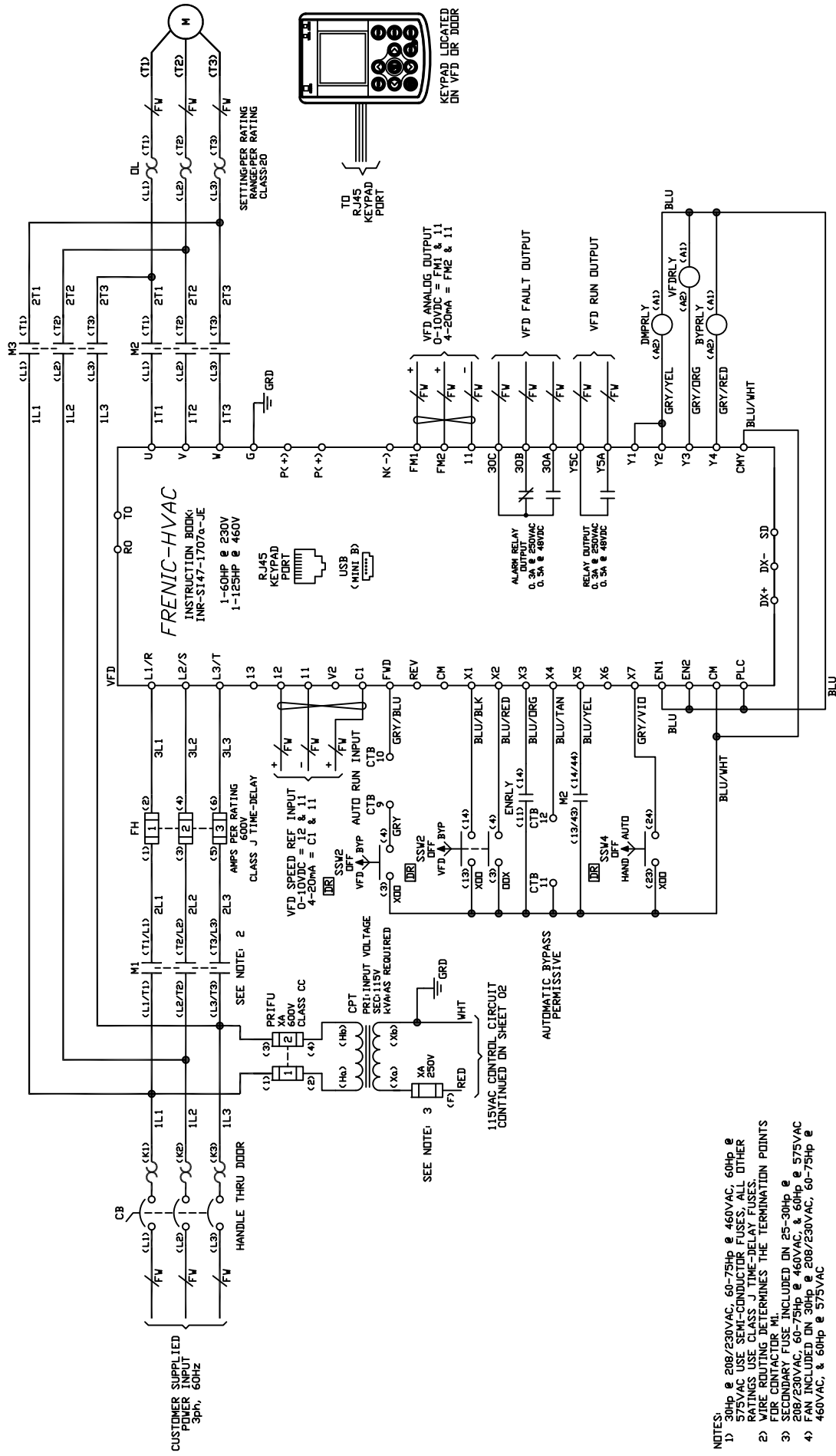


	DESCRIPTION: 1-30hp @ 208/230V 1-75hp @ 460V 1-60hp @ 575V		DRN. BY: C. DEMORIER	DATE: 03/19/18	DWG. NO.: R0A700206
	INSTRUCTION BOOK:		REV. 1	REV. DATE: 07/08/18	
				BY: T. WEBB	SHT. 01 OF 02

115VAC CONTROL CIRCUIT  
CONTINUED FROM SHEET 01



# FRENIC-HPAQ BYPASS FOR FANS



## LEGEND

/  $E_v$  = CUSTOMER/FIELD WIRING

▲ = COIL SUPPRESSOR

**[DR] = DOOR MOUNTED DEVICE**

NOTES:

- 1) 30HP @ 208/230VAC, 60-75HP @ 460VAC, 60HP @ 575VAC USE SEMI-CONDUCTOR FUSES, ALL OTHER RATINGS USE CLASS J TIME-DELAY FUSES.
- 2) WIRE ROUTING DETERMINES THE TERMINATION POINTS FOR CONTRACTOR M1.
- 3) SECONDARY FUSE INCLUDED ON 25-30HP @ 208/230VAC, 60-75HP @ 460VAC, & 60HP @ 575VAC
- 4) FAN INCLUDED ON 30HP @ 208/230VAC, 60-75HP @ 460VAC, & 60HP @ 575VAC

**FE** Fuji Electric

DESCRIPTION: 1-30Hp @ 208/230V  
1-75Hp @ 460V  
1-60HP @ 575V

DESCRIPTION:	1-30
	1-75
	1-60
INSTRUCTION BOOK:	

DRN.	BY:	DATE:
C.	DEMORIER	03/19/18
REV.	REV.	DATE
1	07/08/18	T. WEBB

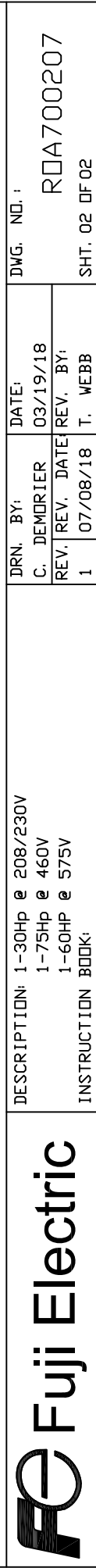
DWG. NO. :  
R0A700207  
SHT. 01 OF 02



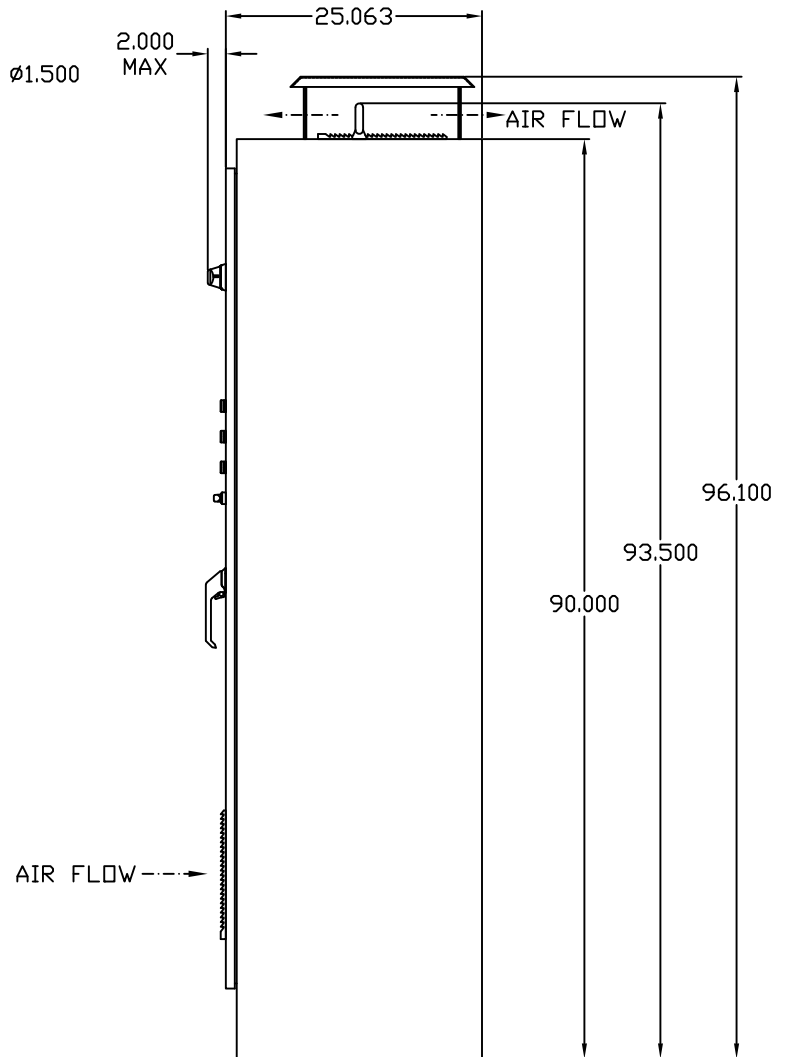
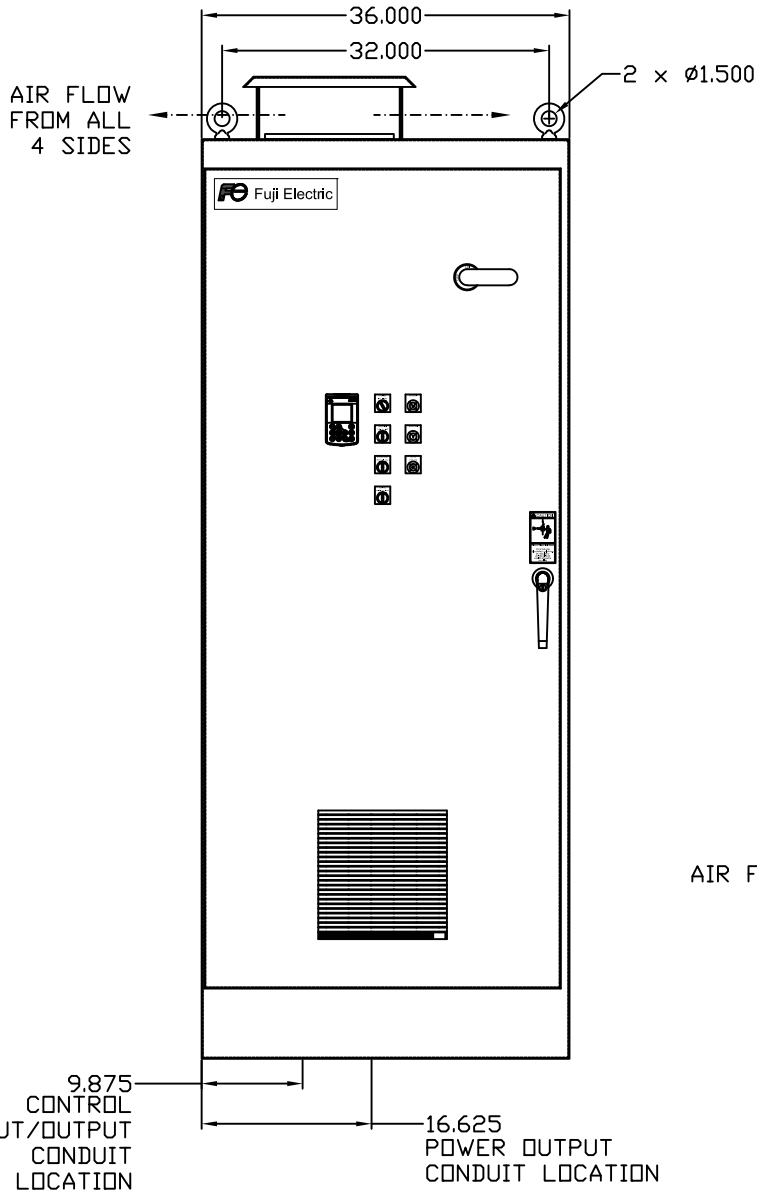
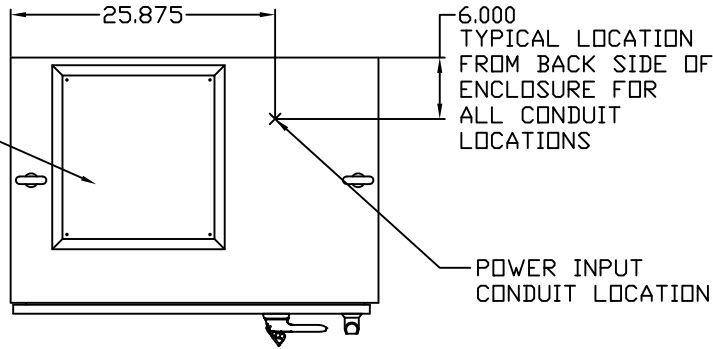
This diagram is a detailed electrical schematic for a VFD system, showing the interconnection of various components and their control logic. The main power lines are labeled at the top: RED, WHT, and BLK. The control lines are labeled on the right: RED, WHT, and BLK.

**Key Components and Connections:**

- Control Inputs:**
  - LOW PRIORITY SAFETY INPUT (CTB 1)
  - HIGH PRIORITY SAFETY INPUT (CTB 5)
  - DAMPERS END SWITCH (CTB 6)
  - CTB 3, 4, 7, 8
  - CTB 9 (FIRE MODE)
  - CTB 10 (FIRE MODE)
  - CTB 11 (FIRE MODE)
  - CTB 12 (FIRE MODE)
  - CTB 13 (FIRE MODE)
  - CTB 14 (FIRE MODE)
  - CTB 15 (FIRE MODE)
  - CTB 16 (FIRE MODE)
  - CTB 17 (FIRE MODE)
  - CTB 18 (FIRE MODE)
  - CTB 19 (FIRE MODE)
  - CTB 20 (FIRE MODE)
  - CTB 21 (FIRE MODE)
  - CTB 22 (FIRE MODE)
  - CTB 23 (FIRE MODE)
  - CTB 24 (FIRE MODE)
  - CTB 25 (FIRE MODE)
  - CTB 26 (FIRE MODE)
  - CTB 27 (FIRE MODE)
  - CTB 28 (FIRE MODE)
  - CTB 29 (FIRE MODE)
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  - CTB 50 (FIRE MODE)
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  - CTB 85 (FIRE MODE)
  - CTB 86 (FIRE MODE)
  - CTB 87 (FIRE MODE)
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  - CTB 90 (FIRE MODE)
  - CTB 91 (FIRE MODE)
  - CTB 92 (FIRE MODE)
  - CTB 93 (FIRE MODE)
  - CTB 94 (FIRE MODE)
  - CTB 95 (FIRE MODE)
  - CTB 96 (FIRE MODE)
  - CTB 97 (FIRE MODE)
  - CTB 98 (FIRE MODE)
  - CTB 99 (FIRE MODE)
  - CTB 100 (FIRE MODE)
- Control Outputs:**
  - POWER ON INDICATION (WHT)
  - ENABLE RELAY (WHT)
  - VFD ISOLATION CONTACTOR (WHT)
  - VFD OUTPUT CONTACTOR (WHT)
  - BYPASS CONTACTOR (WHT)
  - \*BYPASS RUN\* INDICATION (WHT)
  - \*MOTOR OVERLOAD\* INDICATION (WHT)
  - FIRE MODE RELAY (WHT)
  - ENCLOSURE FAN (WHT)
- Interlocks and Safety:**
  - SSW1 (ISOL) and SSW2 (BYP) are used for safety interlocks.
  - SSW3 (LOCAL) and SSW4 (REMOTE) are used for control interlocks.
  - DL (DIFFERENTIAL) is used for fault detection.
  - FTB (FIRE TRIP) is used for fire safety.



EXHAUST COVER  
IS SHIPPED  
LOOSE AND MUST  
BE INSTALLED  
AFTER THE  
ENCLOSURE IS  
SET INTO PLACE



NOTES:  
1) ALL DIMENSIONS  
ARE IN INCHES



DESCRIPTION:  
FRENIC-HPAQ BYPASS OUTLINE DRAWING  
40Hp @ 208/230V, 100Hp @ 460V  
75-100Hp @ 575V

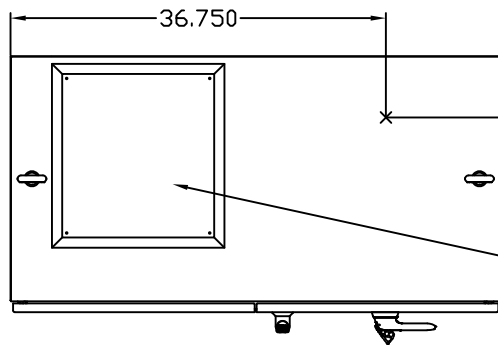
DRN. BY:  
T. WEBB

REV. 0

DATE:  
08/19/18

REV. BY:

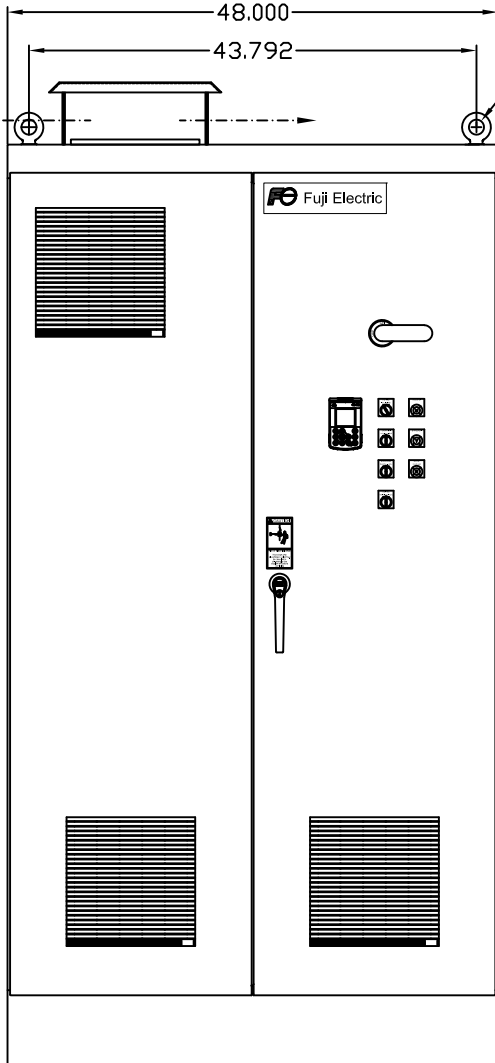
DWG. NO.:  
ROA700208  
SHT. 01 OF 01



6.000  
TYPICAL LOCATION  
FROM BACK SIDE OF  
ENCLOSURE FOR ALL  
CONDUIT LOCATIONS

EXHAUST COVER IS SHIPPED LOOSE  
AND MUST BE INSTALLED AFTER THE  
ENCLOSURE IS SET INTO PLACE

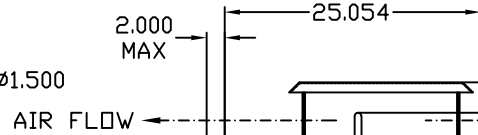
AIR FLOW  
FROM ALL  
4 SIDES



4.250  
CONTROL  
INPUT/OUTPUT  
CONDUIT  
LOCATION

30.000  
POWER OUTPUT  
CONDUIT LOCATION

2.000  
MAX



AIR FLOW

AIR FLOW

96.100  
93.124  
90.000

NOTES:  
1) ALL DIMENSIONS  
ARE IN INCHES



DESCRIPTION:  
FRENIC-HPAQ BYPASS OUTLINE DRAWING  
50-60Hp @ 208/230V, 125-200Hp @ 460V  
125-200Hp @ 575V

DRN. BY:  
T. WEBB

REV. 0 REV. DATE:

DATE:  
08/19/18

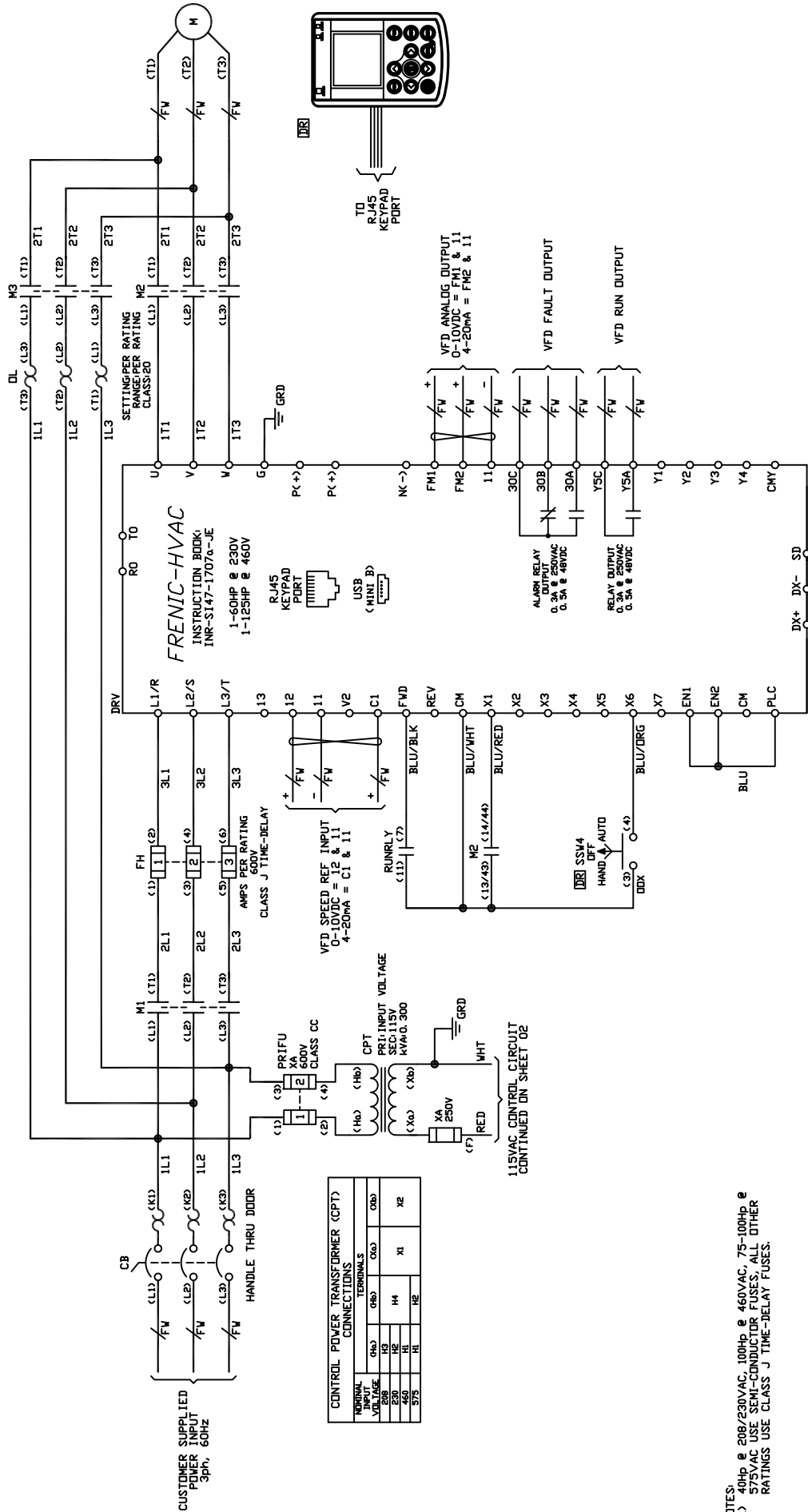
REV. BY:

DWG. NO.:

ROA700209

SHT. 01 OF 01

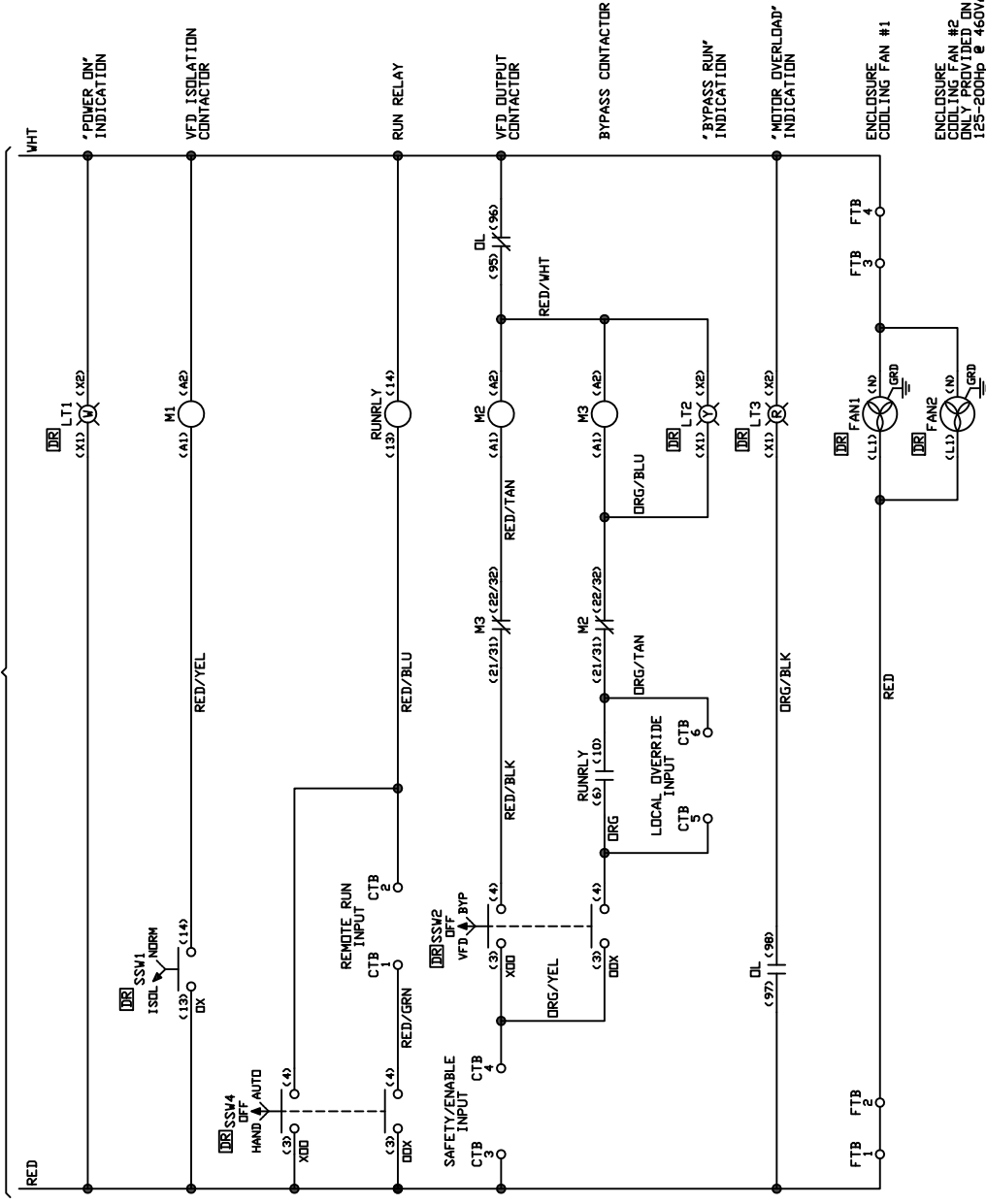
FRENIC-HPAQ BYPASS FOR PUMPS & COOLING TOWER FANS



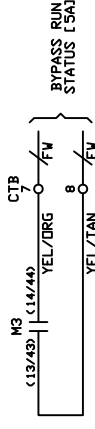
NOTES:  
1) 40HP @ 208/230VAC, 100HP @ 460VAC, 75-100HP @ 575VAC USE SEMI-CONDUCTOR FUSES, ALL OTHER RATINGS USE CLASS J TIME-DELAY FUSES.

LEGEND:  
FV = CUSTOMER/FIELD WIRING  
DOOR = DOOR MOUNTED DEVICE

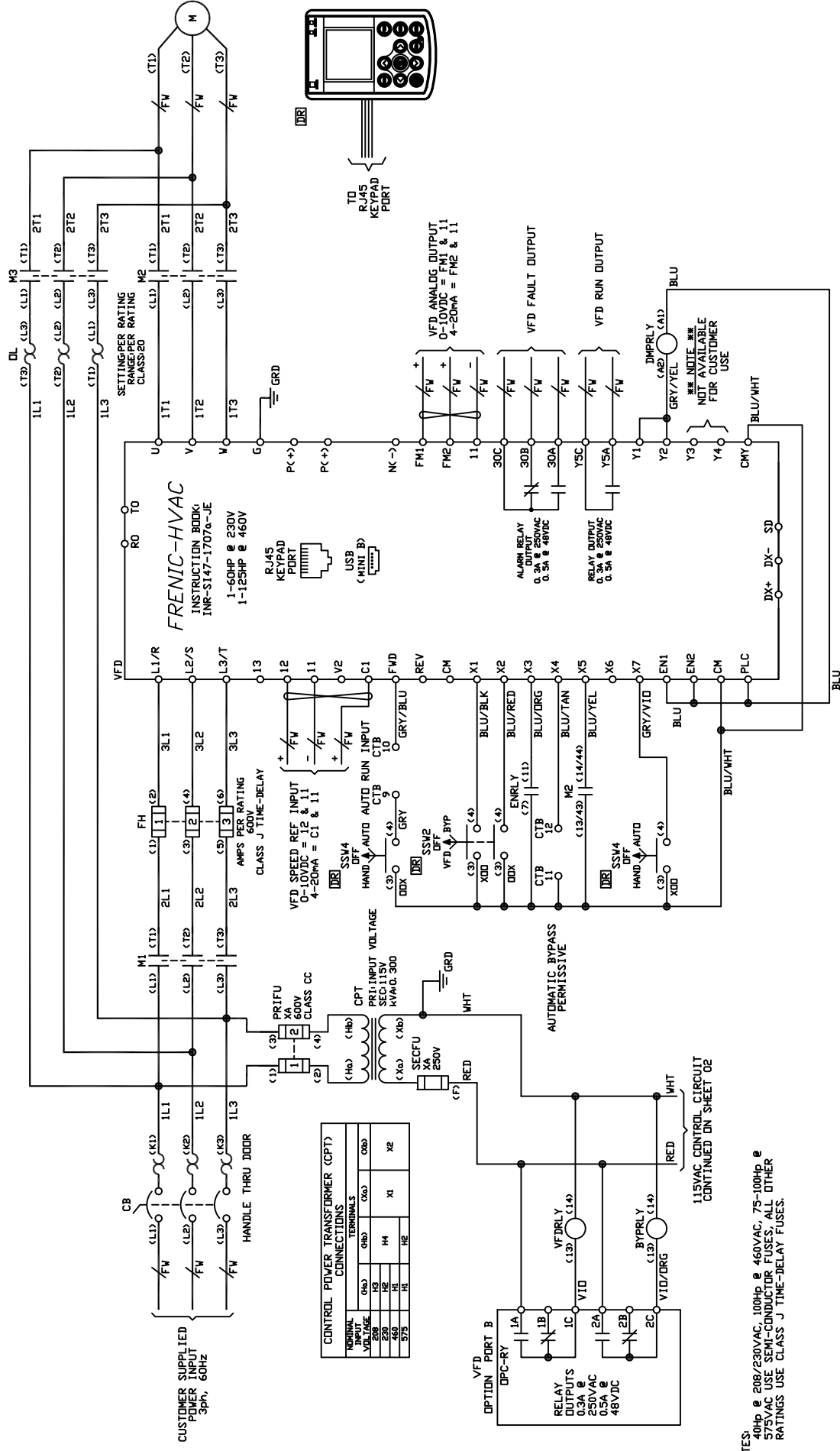
115VAC CONTROL CIRCUIT  
CONTINUED FROM SHEET 01



ENCLOSURE COOLING FAN #2  
ONLY PROVIDED ON 50-60HP @ 208/230VAC,  
125-200HP @ 460VAC, & 125-200HP @ 575VAC



# FRENIC-HPAQ BYPASS FOR FANS



NOTES:  
1) 40Hp @ 208/230VAC, 100Hp @ 460VAC, 75-100Hp @ 575VAC USE SEMI-CONDUCTOR FUSES, ALL OTHER RATINGS USE CLASS J TIME-DELAY FUSES.

### **LEGEND**

**/C.V. = CUSTOMER/FIELD WIRING**

**[DR] = DOOR MOUNTED DEVICE**

**FE** Fuji Electric

DESCRIPTION: 40-60Hp @ 208/230V  
100-200Hp @ 460V  
75-200HP @ 575V

DESCRIPTION:	40-6
	100-
	75-2
INSTRUCTION BOOK:	

DRN. BY:

DRN. BY:	DATE:
T. WEBB	08/19/18

DWG, NO. :

R0A700211

SHT. 01 DF 02

Wiring diagram for the enclosure cooling fan system. The diagram shows a power supply (RED) connected to various components including a damper end switch, priority safety inputs, a fire mode input, and a fire mode relay. It also shows a bypass contactor, a VFD output contactor, and a VFD isolation contactor. The system is controlled by a microcontroller (M1) and a fire mode relay (M2). The diagram includes a legend for the enclosure cooling fan system, indicating that the fan is only provided on 125-200hp @ 460V.

**Legend:**

- ENCLOSURE COOLING FAN #1
- ENCLOSURE COOLING FAN #2
- ONLY PROVIDED ON 125-200hp @ 460V

ENCLOSURE  
COOLING FAN #2  
ONLY PROVIDED ON 50-60Hp @ 208/230VAC  
125-200Hp @ 460VAC, & 125-200Hp @ 575VAC