

FRENIC-EcoPAK

Fuji Electric's FRENIC-EcoPAK series provides a compliant and competitive packaged drive solution.



Submittal Summary



Fuji Electric Corp. of America (FECO) Variable Frequency Drives – HVAC Systems

Submittal Summary Data Form – NEMA 1 Non-Bypass Systems

Project: _____

Architect: _____ Engineer: _____

Contractor: _____

Submitted By: _____ Date: _____

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

Standard Features

- Type 1 enclosure with “Space-saving” footprint
- Metallic enclosures to reduce radio frequency interference (RFI)
- Integral main disconnect with branch circuit protection, including a padlockable through-the-door operator handle mechanically interlocked with the enclosure door
- 3% AC line reactor provided as standard below 100HP to minimize harmonics and provide transient voltage protection for the drive, with the option of a 5% AC line reactor. At 100HP and above, a DC link reactor is provided, with the option for adding a 3% or 5% AC line reactor
- Control power transformer with primary & secondary fusing
- Door mounted drive keypad with backlit LCD and LED displays for drive set-up, troubleshooting, local operation control, maintenance indication, and operational indication
- 0-10Vdc or 4-20mA customer supplied analog input for remote speed reference
- 0-10Vdc or 4-20mA analog output for indication (programmable)
- Safety Interlock, Run, Enable, and Fireman Override Inputs
- Damper Control Output Contacts
- Drive Run and Fault Status Outputs
- Built-in communications, user selectable between Modbus RTU, Metasys[®] N2, or APOGEE[®] FLN (P1), with additional communication drive options including; LonWorks[®], BACnet, DeviceNet, Profibus DP, and EtherNet
- UL/cUL Listed
- Enhanced Automatic Energy Savings, Reduces Power Consumption of Both the Motor *and* Drive
- LCD and LED Keypad, also Functions as a Copy Unit
- Quick-Start Programming Menu for Ease of Start-Up
- Power Monitoring from the Drive’s Keypad
- Built-in PID Control with Sleep Function

FECA-SU-107A

Information subject to change without notice.

Non-Bypass General Specifications

Environmental

Enclosure	Type 1
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 by 1% for each additional 330 ft (100m)

Codes and Standards

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

Electrical

Input Voltage; Nominal - Phase	208VAC, 230VAC, 460VAC - 3 Phase
Input Voltage; Tolerance, Unbalance	+/-10%, ≤3%
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, includes programmable "catch-a-spinning motor" function
PWM Switch Frequency	0.75 to 15kHz (2 to 25Hp for 208/230V and 2 to 30Hp for 460V) 0.75 to 10kHz (30 to 60Hp for 208/230V and 40 to 100Hp for 460V) 0.75 to 6kHz (125 to 200Hp for 460V)
Drive Overload Capacity	120% rated current for 1 min.
Motor Overload	Programmable (electronic)
Torque Boost	Programmable to provide additional starting torque if required
Speed Reference	0 to +10VDC, 4 to 20mA, or Keypad (programmable inverse operation for analog signals)
Speed Reference Resolution	Analog setting: 1/1000 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: Damper Control Qty 1: 0 to 10VDC or 4 to 20mA, user selectable programmable analog signal

Drawing Number Selection Matrix

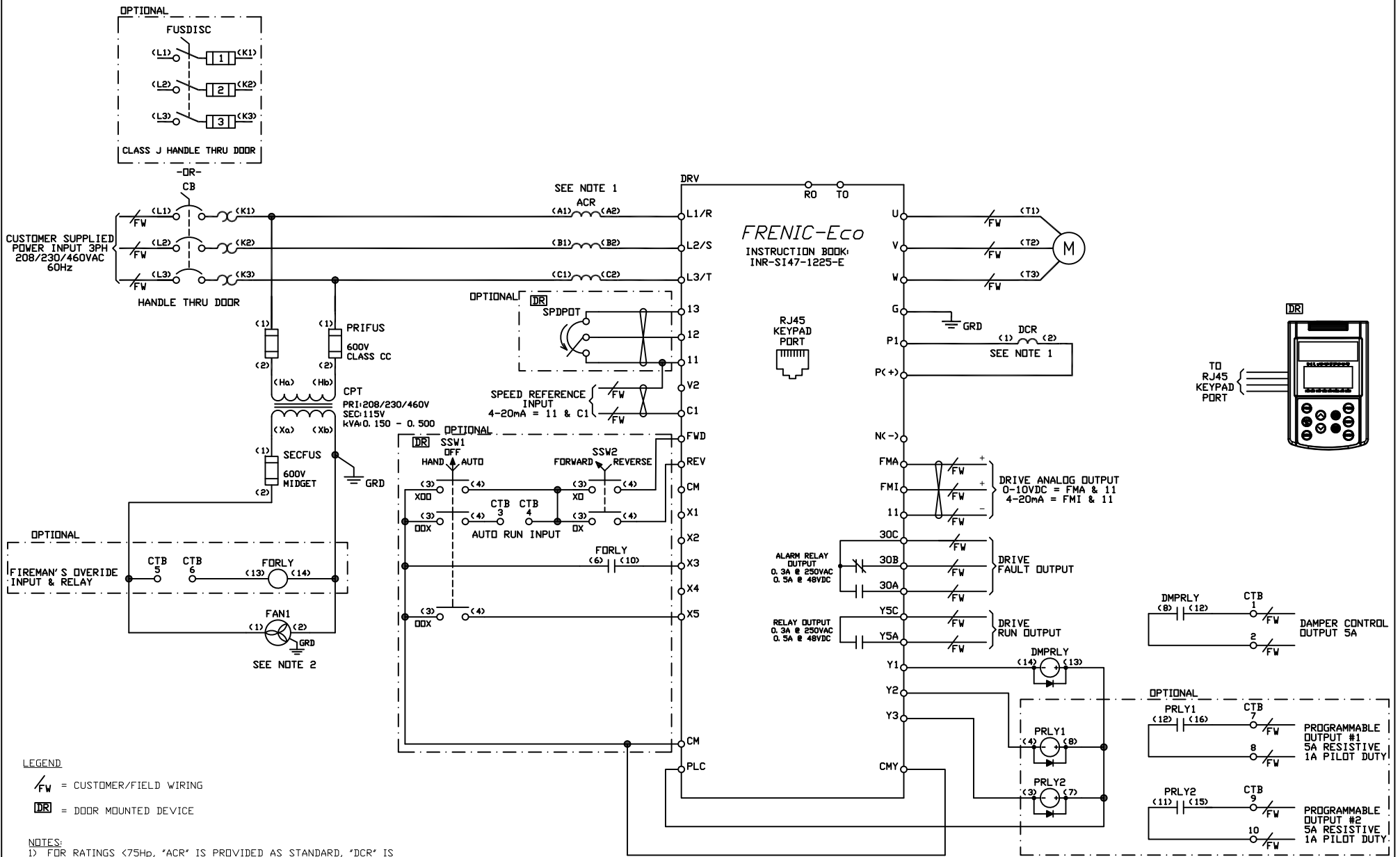
UL/NEMA Type 1 Non-Bypass

208/230V

HP	Current (A)	Electrical Drawing	Outline Drawing
2	7.5	ROA700270	ROA700256
3	10.6	ROA700270	ROA700256
5	16.7	ROA700270	ROA700256
7.5	24.2	ROA700270	ROA700256
10	30.8	ROA700270	ROA700256
15	46.2	ROA700270	ROA700257
20	59.4	ROA700270	ROA700257
25	74.8	ROA700270	ROA700258
30	88	ROA700270	ROA700259
40	114	ROA700270	ROA700260
50	143	ROA700270	ROA700260
60	169	ROA700270	ROA700261

460V

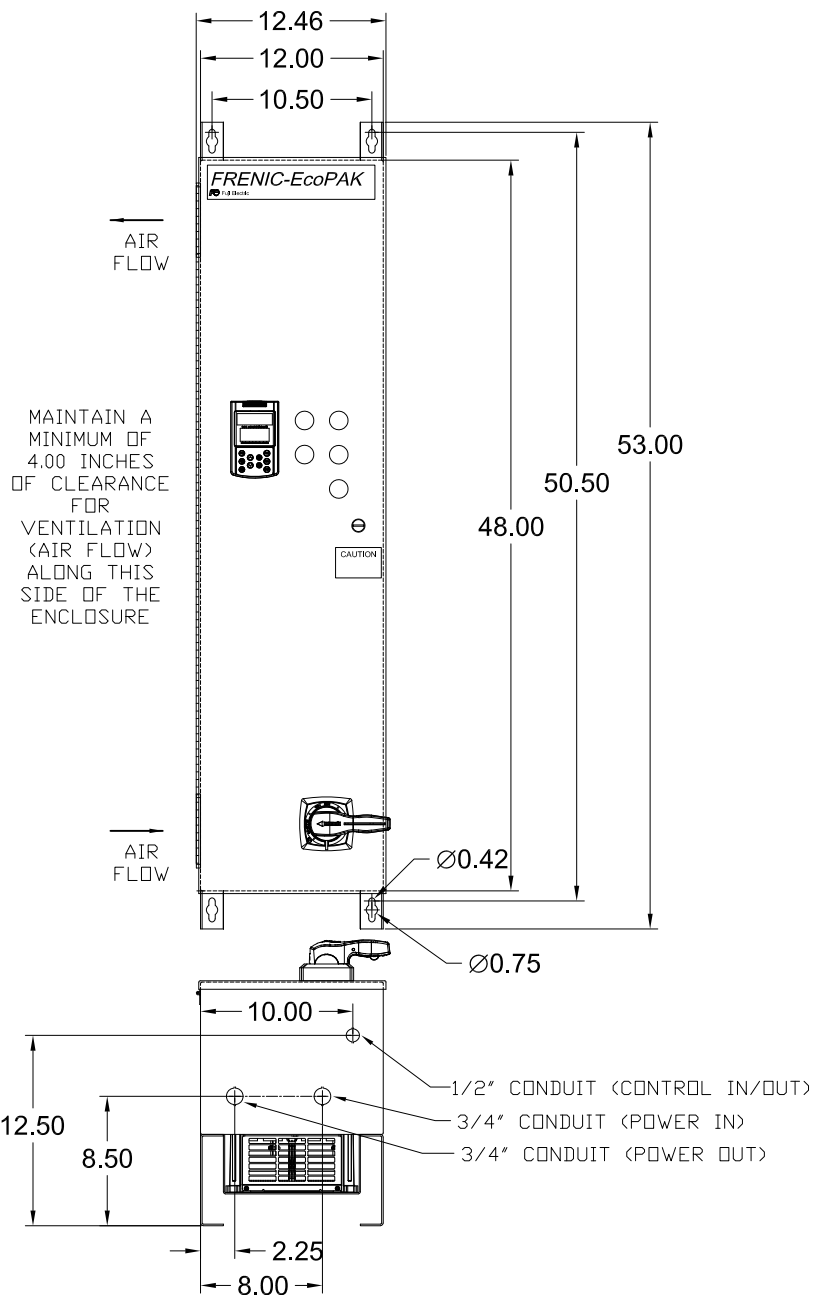
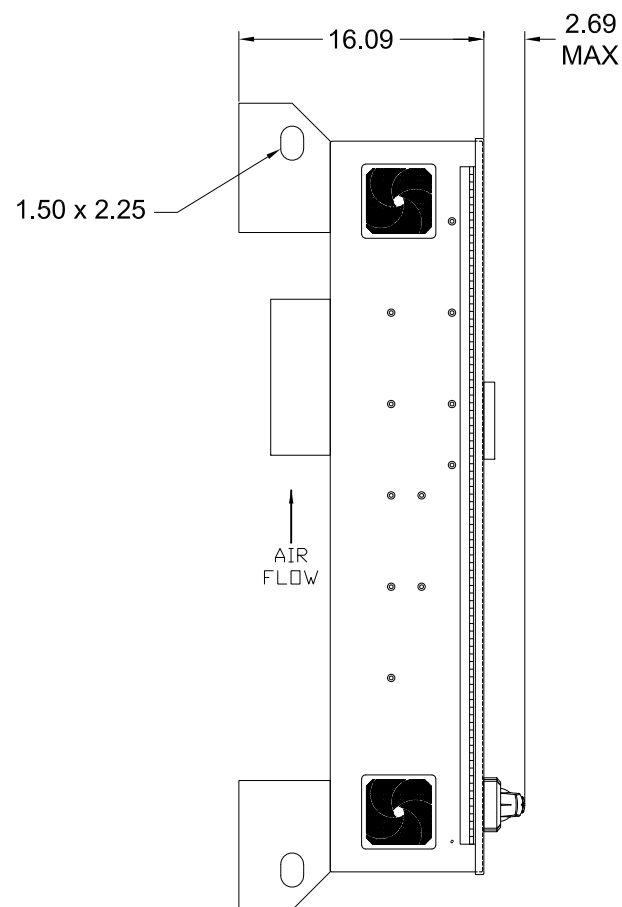
HP	Current (A)	Electrical Drawing	Outline Drawing
2	3.4	ROA700270	ROA700256
3	4.8	ROA700270	ROA700256
5	7.6	ROA700270	ROA700256
7.5	11	ROA700270	ROA700256
10	14	ROA700270	ROA700256
15	21	ROA700270	ROA700256
20	27	ROA700270	ROA700256
25	34	ROA700270	ROA700257
30	40	ROA700270	ROA700257
40	52	ROA700270	ROA700257
50	65	ROA700270	ROA700258
60	77	ROA700270	ROA700258
75	96	ROA700270	ROA700259
100	124	ROA700270	ROA700260
125	156	ROA700270	ROA700260
150	180	ROA700270	ROA700261
200	240	ROA700270	ROA700261



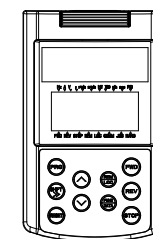
FRENIC-EcoPAK, UL/NEMA Type 1 Non-Bypass - Electrical Data

Hp Rating	Rated Output Current	Rated Input Current	Circuit Breaker (CB) Amp Rating	Circuit Breaker (CB) AIC Rating	Complete Assembly AIC Rating w/ CB	Fusible Disconnect Amp Rating	Input Fuses Amp Rating	Fusible Disc. w/ Fuses AIC Rating	Complete Assembly AIC Rating w/ Fusible Disc.	DC Reactor		Low Z AC Line Reactor		High Z AC Line Reactor	
										Part Number	Ratings Amps / Inductance	Part Number	Ratings Amps / Inductance	Part Number	Ratings Amps / Inductance
208/230VAC, 60Hz, 3PH															
2	7.5	8	15	65k	65k	30	15	200k	100k	See High Z AC Line Reactor		High Z Line Reactor Included as Standard on 208 VAC	LR3 24-6/10	10A/2.2mH	
3	10.6		11.1	20	65k	65k	30	20	200k	100k	See High Z AC Line Reactor		LR3 24-6/16	16A/1.38mH	
5	16.7		17.2	30	65k	65k	30	30	200k	100k	See High Z AC Line Reactor		LR3 24-6/20	20A/1.1mH	
7.5	24.2	24.7	40	65k	65k	60	45	200k	100k	See High Z AC Line Reactor			LR3 24-6/30	30A/.74mH	
10	30.8	31.3	50	65k	65k	60	50	200k	100k	See High Z AC Line Reactor			LR3 24-6/35	35A/.63mH	
15	46.2	46.7	70	65k	65k	100	80	200k	100k	See High Z AC Line Reactor			LR3 24-6/50	50A/.44mH	
20	59.4	59.9	90	65k	65k	100	100	200k	100k	See High Z AC Line Reactor			LR3 24-6/63	63A/.350mH	
25	74.8	75.3	125	65k	65k	200	125	200k	100k	See High Z AC Line Reactor			LR3 24-6/80	80A/.270mH	
30	88	88.8	150	65k	65k	200	150	100k	100k	See High Z AC Line Reactor			LR3 24-6/90	90A/.245mH	
40	114	115	200	65k	65k	200	200	100k	100k	See High Z AC Line Reactor			LR3 24-6/115	115A/.193mH	
50	143	145	250	65k	65k	400	225	100k	100k	See High Z AC Line Reactor			LR3 24-6/160	160A/.138mH	
60	169	171	300	65k	65k	400	300	200k	100k	See High Z AC Line Reactor			LR3 24-6/180	180A/.123mH	
460VAC, 60Hz, 3PH															
2	3.4	4	15	35k	35k	30	8	200k	100k	See Low Z AC Line Reactor		LR3 48-3/6	6A/3.700mH	LR3 48-5/6	6A/6.200mH
3	4.8	5.5	15	35k	35k	30	10	200k	100k	See Low Z AC Line Reactor		LR3 48-3/8	8A/2.750mH	LR3 48-5/8	8A/4.600mH
5	7.6	8.5	15	35k	35k	30	15	200k	100k	See Low Z AC Line Reactor		LR3 48-3/10	10A/2.200mH	LR3 48-5/10	10A/3.680mH
7.5	11	11.5	20	35k	35k	30	20	200k	100k	See Low Z AC Line Reactor		LR3 48-3/16	16A/1.380mH	LR3 48-5/16	16A/2.300mH
10	14	15	30	35k	35k	30	25	200k	100k	See Low Z AC Line Reactor		LR3 48-3/16	16A/1.380mH	LR3 48-5/16	16A/2.300mH
15	21	22	40	65K	65K	60	40	200k	100k	See Low Z AC Line Reactor		LR3 48-3/25	25A/.880mH	LR3 48-5/25	25A/1.470mH
20	27	28	50	65k	65k	60	50	200k	100k	See Low Z AC Line Reactor		LR3 48-3/30	30A/.740mH	LR3 48-5/30	30A/1.23mH
25	34	35	60	65k	65k	60	60	200k	100k	See Low Z AC Line Reactor		LR3 48-3/35	35A/.630mH	LR3 48-5/35	35A/1.05mH
30	40	41	70	65k	65k	100	70	200k	100k	See Low Z AC Line Reactor		LR3 48-3/45	45A/.490mH	LR3 48-5/45	45A/.817mH
40	52	53	90	65k	65k	100	90	200k	100k	See Low Z AC Line Reactor		LR3 48-3/50	50A/.440mH	LR3 48-5/50	50A/.735mH
50	65	67	100	65k	65k	100	100	200k	100k	See Low Z AC Line Reactor		LR3 48-3/70	70A/.315mH	LR3 48-5/70	70A/.525mH
60	77	78	125	65k	65k	200	125	200k	100k	See Low Z AC Line Reactor		LR3 48-3/80	80A/.27mH	LR3 48-5/80	80A/.46mH
75	96	100	150	65k	65k	200	175	100k	100k	See Low Z AC Line Reactor		LR3 48-3/100	100A/.22mH	LR3 48-5/100	100A/.368mH
100	124	118	200	65k	65k	200	200	100k	100k	DCR4-75C	178A / 0.231mH	LR3 48-3/125	125A/.177mH	LR3 48-5/125	125A/.294mH
125	156	144	250	65k	65k	400	250	100k	100k	DCR4-90C	214A / 0.2mH	LR3 48-3/160	160A/.138mH	LR3 48-5/160	160A/.23mH
150	180	176	300	65k	65k	400	300	200k	100k	DCR4-110C	261A / 0.166mH	LR3 48-3/180	180A/.123mH	LR3 48-5/180	180A/.204mH
200	240	239	400	65k	65k	400	400	200k	100k	DCR4-132C	313A / 0.148mH	LR3 48-3/250	250A/.088mH	LR3 48-5/250	250A/.147mH

DIMENSIONS PROVIDED FOR ESTIMATING PURPOSES ONLY



ENLARGED VIEW OF DRIVE KEYPAD



DIMENSIONS ARE IN INCHES

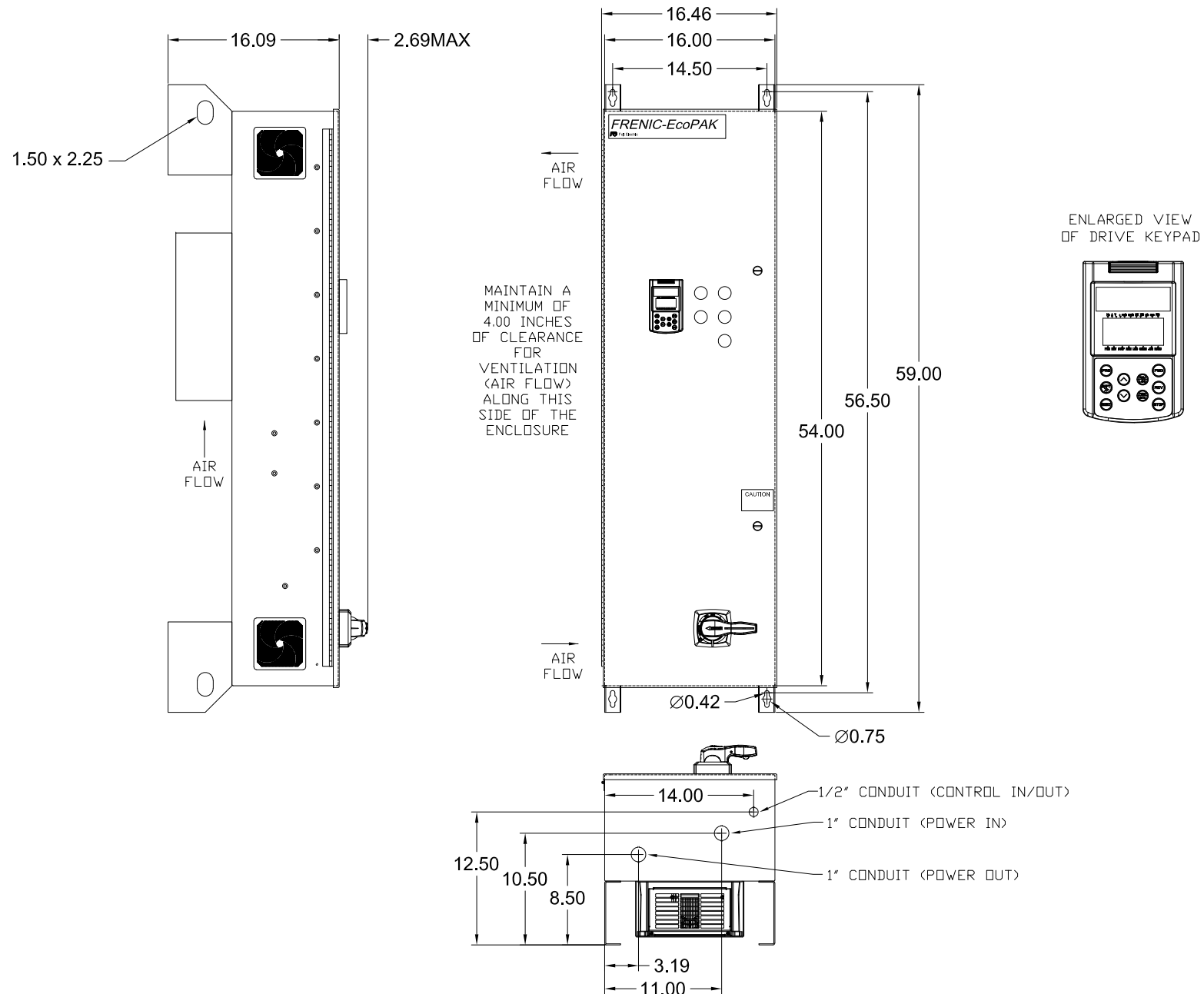


DESCRIPTION: FRENIC-EcoPAK - NON-BYPASS
2-10Hp @ 208/230V | 2-20Hp @ 460V
NEMA 1
INSTRUCTION BOOK: FECA-IN-106

DRN. BY: R. MONTES
DATE: 11/29/19
REV. REV. DATE REV. BY:
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DWG. NO.: R0A700256
SHT. 1 OF 1

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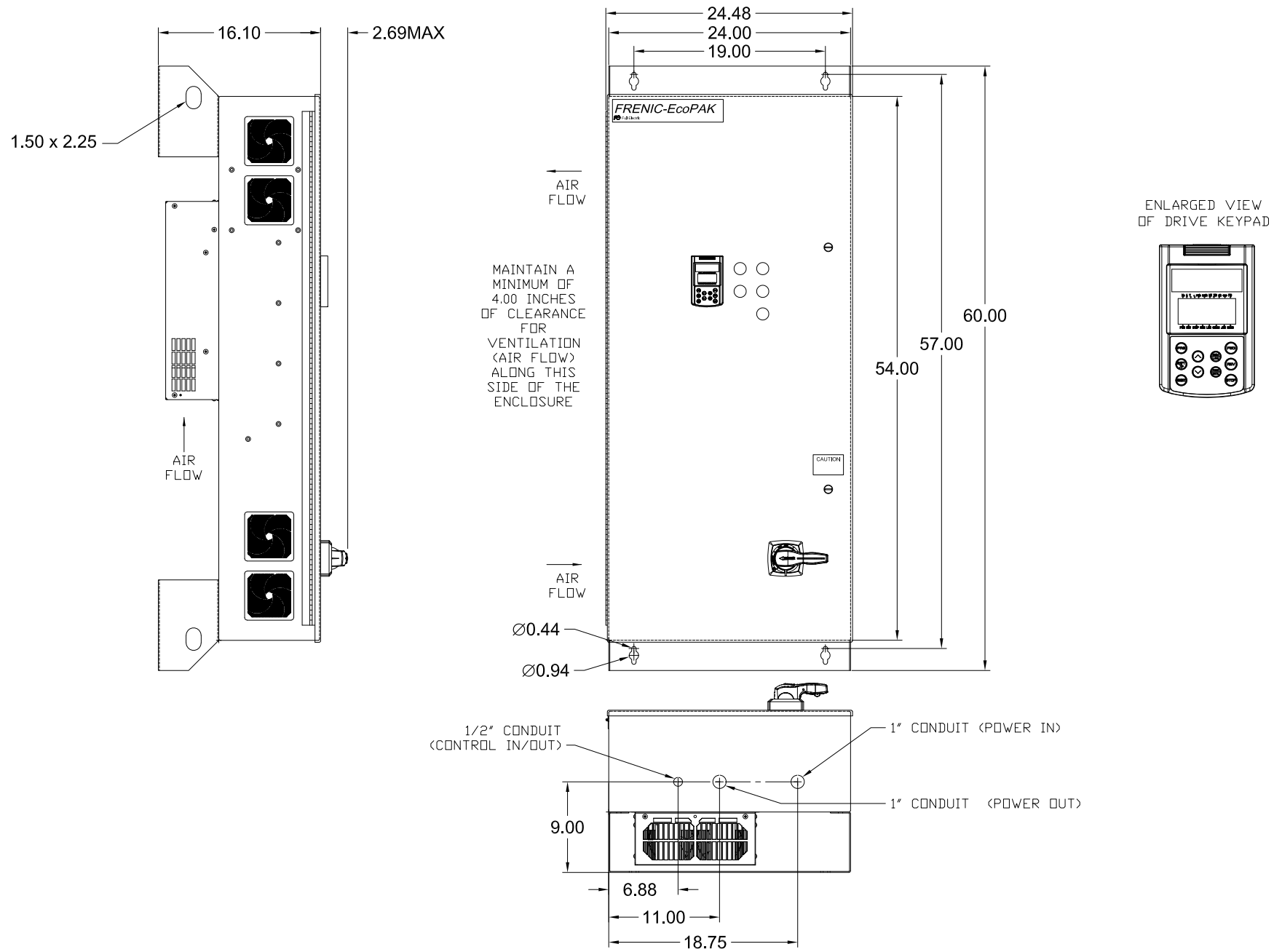


DESCRIPTION: FRENIC-EcoPAK - NON-BYPASS
15-20Hp @ 208/230V | 25-40Hp @ 460V
NEMA 1
INSTRUCTION BOOK: FECA-IN-106

DRN. BY: R. MONTES
DATE: 11/29/19
REV. REV. DATE REV. BY:
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DWG. NO.: R0A700257
SHT. 1 OF 1

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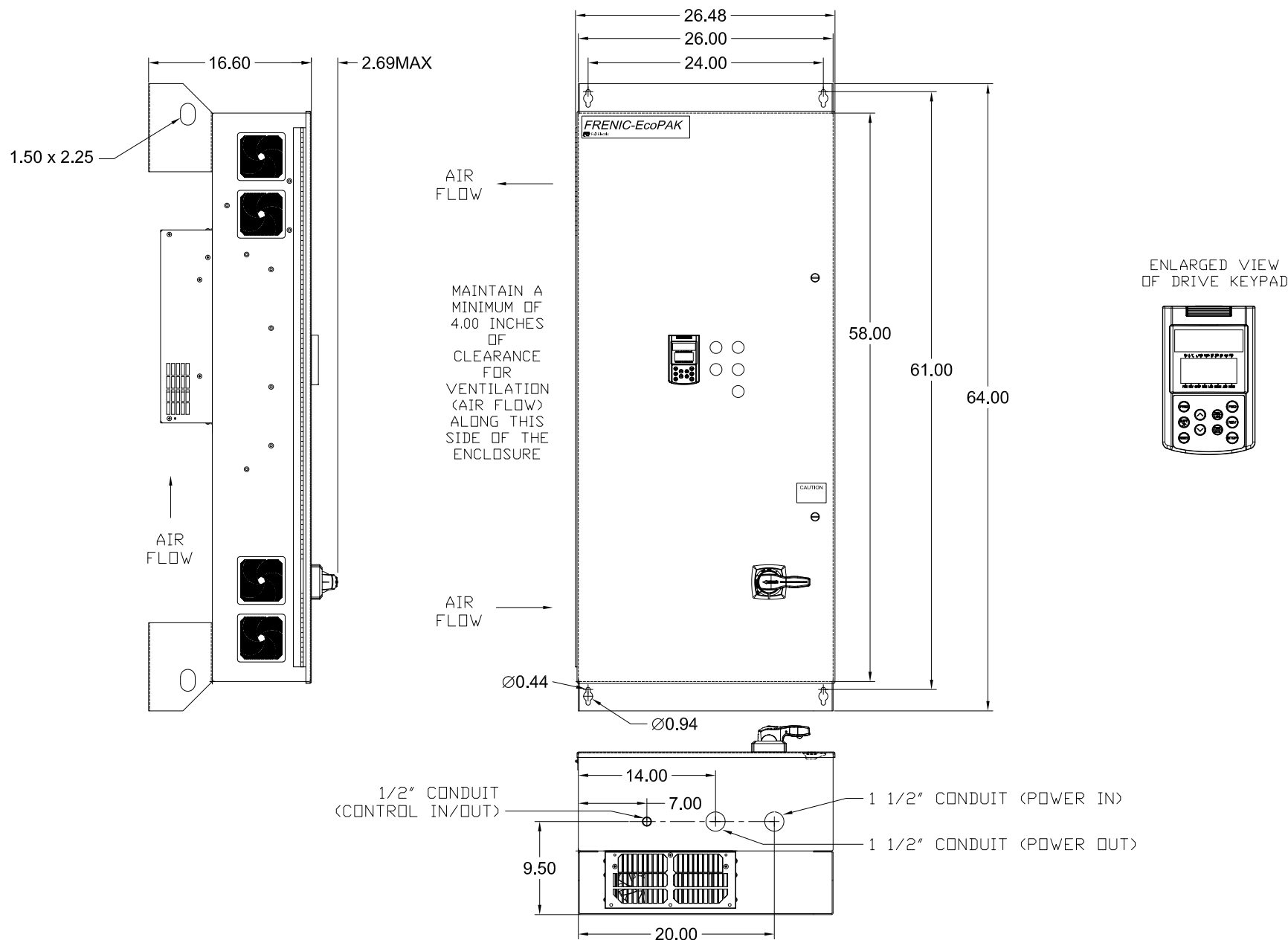


DESCRIPTION: FRENIC-EcoPAK - NON-BYPASS
 25Hp @ 208/230V | 50-60Hp @ 460V
 NEMA 1
 INSTRUCTION BOOK: FECA-IN-106

DRN. BY:	R. MONTES	DATE:	11/29/19
REV.	0	REV. DATE:	
REV. BY:		REV. DATE:	

DWG. NO.:	ROA700258
SHT. 1	OF 1

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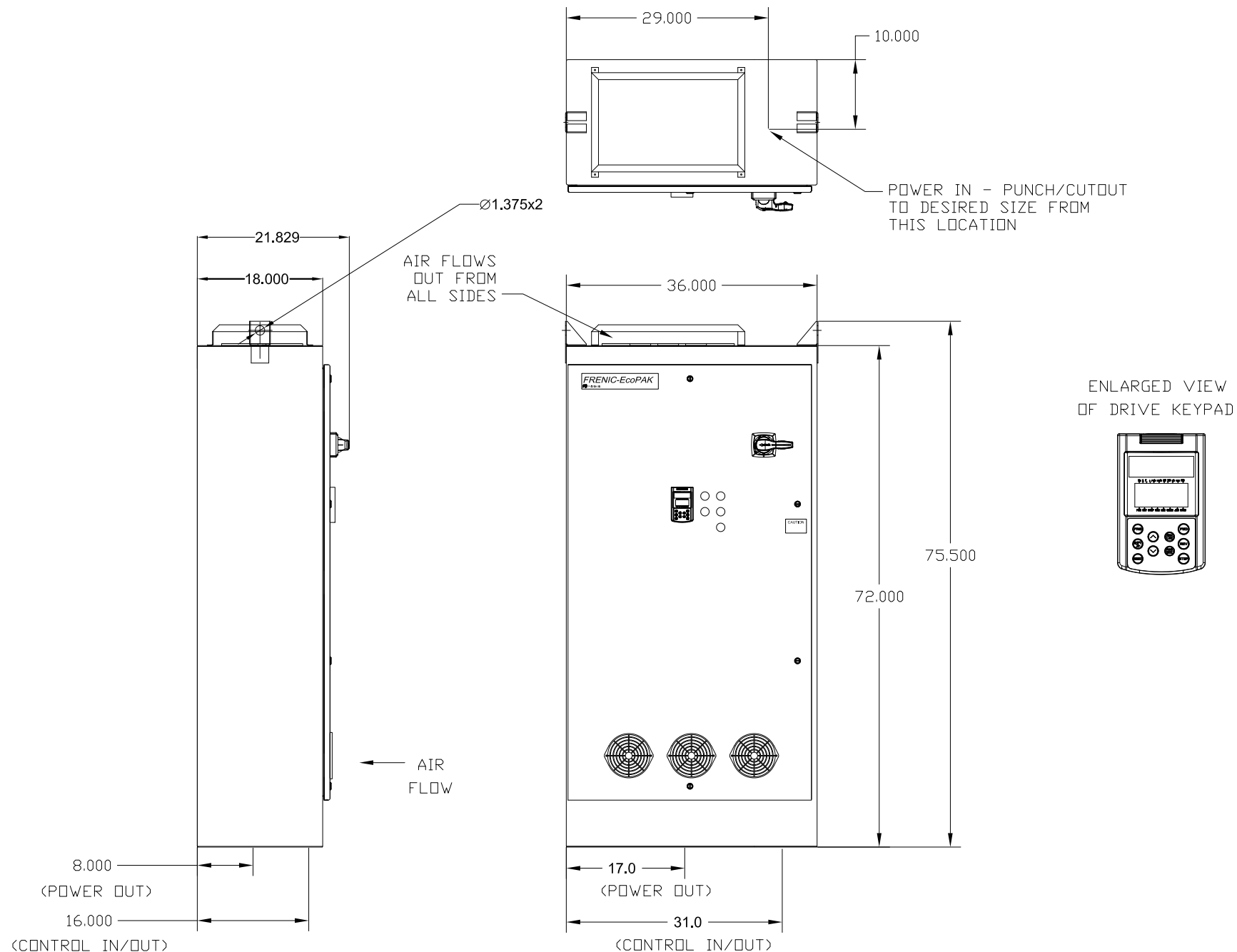


DESCRIPTION: FRENIC-EcoPAK - NON-BYPASS
 30Hp @ 208/230V | 75Hp @ 460V
 NEMA 1
 INSTRUCTION BOOK: FECA-IN-106

DRN. BY: R. MONTES		DATE: 11/29/19
REV. BY: O	REV. DATE:	REV. BY:

DWG. NO.:	ROA700259
SHT. 1 OF 1	

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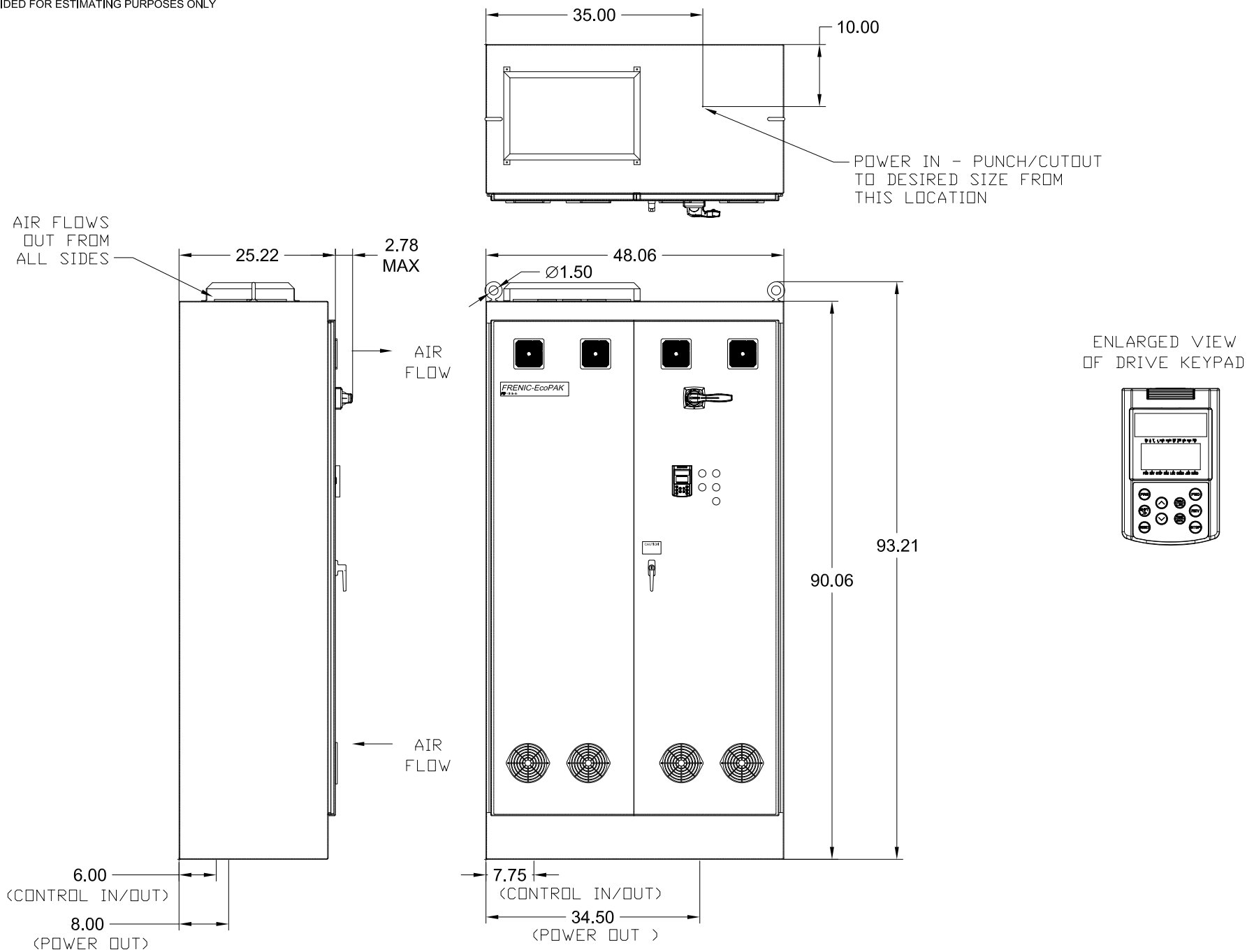


DESCRIPTION: FRENIC-EcoPAK - NON-BYPASS
 40-50Hp @ 208/230V | 100-125Hp @ 460V
 NEMA 1/12 VENT.
 INSTRUCTION BOOK: FECA-IN-106

DRN. BY: R. MONTES
 DATE: 11/29/19
 REV. REV. DATE: REV. BY:

DWG. NO.: R0A700260
 SHT. 1 OF 1

DIMENSIONS PROVIDED FOR ESTIMATING PURPOSES ONLY



DIMENSIONS ARE IN INCHES



DESCRIPTION: FRENIC-EcoPAK - NON-BYPASS
 60Hp @ 208/230V | 150-200Hp @ 460V
 NEMA 1/12 VENT.
 INSTRUCTION BOOK: FECA-IN-106

DRN. BY: R. MONTES		DATE: 11/29/19
REV. BY: O	REV. DATE:	REV. BY:

DWG. NO.:	ROA700261
SHT. 1 OF 1	

FRENIC-EcoPAK, Non-Bypass - Mechanical Data

Hp Rating	Overall Dimensions - Height x Width x Depth [inches]	Estimated Max. Weight [lbs]	Estimated Max. Watts Loss
208/230VAC, 60Hz, 3PH NEMA 1			
2	53.00 x 12.46 x 18.78	94	207
3	53.00 x 12.46 x 18.78	94	252
5	53.00 x 12.46 x 18.78	99	339
7.5	53.00 x 12.46 x 18.78	105	510
10	53.00 x 12.46 x 18.78	111	633
15	59.00 x 16.46 x 18.78	131	807
20	59.00 x 16.46 x 18.78	146	1100
25	60.00 x 24.48 x 18.79	180	1211
30	64.00 x 26.48 x 19.29	255	1439
40	75.50 x 36.00 x 21.83	394	1878
50	75.50 x 36.00 x 21.83	627	1860
60	93.21 x 48.06 x 28.00	1156	2399
460VAC, 60Hz, 3PH NEMA 1			
2	53.00 x 12.46 x 18.78	94	178
3	53.00 x 12.46 x 18.78	94	236
5	53.00 x 12.46 x 18.78	94	375
7.5	53.00 x 12.46 x 18.78	97	403
10	53.00 x 12.46 x 18.78	105	609
15	53.00 x 12.46 x 18.78	105	727
20	53.00 x 12.46 x 18.78	117	887
25	59.00 x 16.46 x 18.78	146	1028
30	59.00 x 16.46 x 18.78	147	1160
40	59.00 x 16.46 x 18.78	161	1485
50	60.00 x 24.48 x 18.79	205	1763
60	60.00 x 24.48 x 18.79	207	2035
75	64.00 x 26.48 x 19.29	311	2109
100	75.50 x 36.00 x 21.83	641	2512
125	75.50 x 36.00 x 21.83	667	2601
150	93.21 x 48.06 x 28.00	1194	3238
200	93.21 x 48.06 x 28.00	1255	3916