

Packaged Drive Solution for Fan & Pump Applications

# ***FRENIC-HPAQ***



- **Multiple Configurations for Flexibility**

Available in Combination VFD and Bypass configurations with application specific bypass control logic for pumps & cooling tower fans or for ventilation fans.

- **Embedded Fan & Pump Functions**

Variety of Embedded Fan & Pump Functions, along with Customizable Logic Capability

- **Space Saving Design**

Space Saving, Narrow Form Factor Solution Utilizing Slim Type HVAC Series Drive

FRENIC-HPAQ series packaged drives are built upon Fuji Electric's powerful FRENIC-HVAC series drives which includes additional pump specific functionality within the drive to provide a robust pre-engineered packaged drive solutions for variable torque pump and fan applications.

## **Configurations**

- **Combination VFD**

Provides a local disconnecting means via a Non-Fusible Disconnect or Circuit Breaker for disconnecting means with integral motor branch circuit protection.

- **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, selectable 1 or 2 level priority safety inputs and selectable automatic bypass.

## **Features**

- UL Type 1 & UL Type 12 narrow form factor enclosures
- Built-in DC link reactor and EMC filter for harmonic and electrical noise mitigation
- Embedded Modbus RTU, BACnet and Metasys N2 communication protocols with LonWorks and EtherNet protocols available
- Real Time Clock
- Multi-function LCD Keypad for ease of commissioning
- Additional pump specific functionality including; Pipe Fill Mode, Initial/Final Ramp for submersible pumps, Dry Pump Detection, Slow Flowrate Start/Cycle Limitation, and more

Offering the most common required and specified features for variable torque fan and pump applications in commercial buildings as well as facilities for: health care, education, retail, hotel, and manufacturing; FRENIC-HPAQ is ideally suited for applications involving:

- Air Handling Units (Supply & Return Fans)
- Exhaust Fans
- Cooling Tower Fans
- Condenser Fans
- Chilled Water Pumps
- Hot Water Pumps
- Pressure Boosting Pumps

# FRENIC-HPAQ

## Specifications

S = Provided As Standard  
O = Optional

	Combination VFD	Bypass for Pumps	Bypass for Fans
<b>Ratings</b>			
Horsepower & Voltage	1-60Hp @ 208/230V 1-200Hp @ 460V 1-200Hp @ 575V	1-60Hp @ 208/230V 1-200Hp @ 460V 1-200Hp @ 575V	1-60Hp @ 208/230V 1-200Hp @ 460V 1-200Hp @ 575V
UL Type 1 Enclosure	S	S	S
UL Type 12 Enclosure	O	O	O
NEMA 12 Ventilated & Fans & Filters	O	O	O
UL Type 3R	Consult Factory	Consult Factory	Consult Factory
Ambient Temperature	-10°C to +40°C	-10°C to +40°C	-10°C to +40°C
<b>Features</b>			
Input Non-Fusible Disconnect	S	N/A	N/A
Input Circuit Breaker	O	S	S
Drive Input Isolation Contactor	N/A	S	S
Drive Output Contactor	N/A	S	S
Bypass Contactor	N/A	S	S
Class 20 Motor Overload Relay	N/A	S	S
DC Link Reactor	S	S	S
EMC Filter	S	S	S
Control Power Transformer w/ Fusing	N/A	S	S
Power On Indication	via Keypad	S	S
Drive Run Indication	via Keypad	via Keypad	via Keypad
Drive Fault Indication	via Keypad	via Keypad	via Keypad
Bypass Run Indication	N/A	S	S
Motor Overload Indication	via Keypad	S	S
Isolated - Normal Selector Switch	N/A	S	S
VFD - Off - Bypass Selector Switch	N/A	S	S
Hand - Off - Auto Selector Switch	N/A	S	N/A
Remote - Local (for VFD)	S	N/A	S
Remote - Local (for Bypass) Selector Switch	N/A	N/A	S
Enable Input	S	S	N/A
2 Level Priority Safety Inputs	N/A	N/A	S
Damper End Switch Input	Same As Enable Input	N/A	S
Fire Mode Input	S	N/A	S
Automatic Bypass Permissive	N/A	N/A	S
Run Command Input	S	S	S
Bypass Local Override Input	N/A	S	N/A
Drive Fault Output	S	S	S
Drive Run Output	S	S	S
Bypass Run Output	N/A	S	S
Damper Control Output	O	N/A	S
Analog Signal Inputs	0-10VDC 4-20mA	0-10VDC 4-20mA	0-10VDC 4-20mA
Analog Signal Outputs	0-10VDC 4-20mA	0-10VDC 4-20mA	0-10VDC 4-20mA
Customer Control I/O Terminal Strip	N/A	S	S
<b>Communication Protocols</b>			
Modbus RTU/Metasys N2/BacNET	S	S	S
LonWorks/Ethernet	O	O	O
<b>Codes &amp; Standards</b>			
UL/Applicable NEMA & NFPA Standards	S	S	S

APOGEE is a registered trademark of Siemens Building Technologies, Inc.  
LonWorks is a registered trademark of Echelon Corporation.

Metasys is a registered trademark of Johnson Controls, Inc.

Figure I

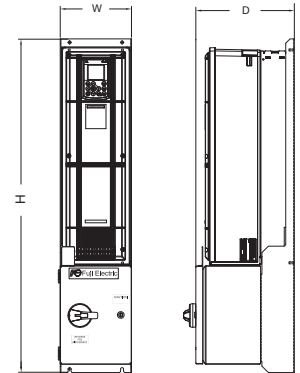


Figure II

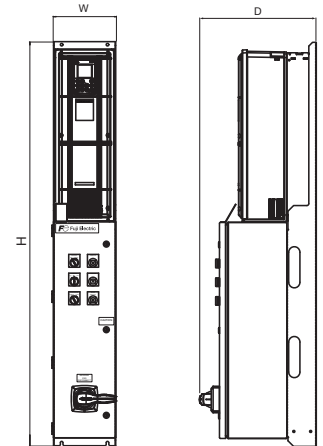
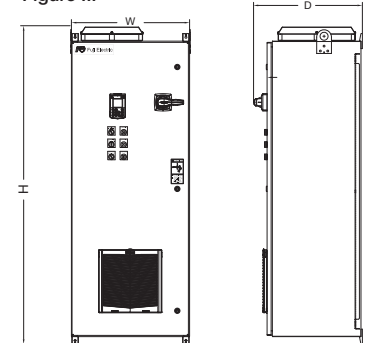


Figure III



## Dimensions

### Bypass - UL Type 1 & 12

Frame	Figure	HP Ratings			Dimensions (in.)		
		208/230V	460V	575V	Height	Width	Depth
1B	II	1-5Hp	1-10Hp	1-10Hp	48.00	6.19	15.69
2B	II	7.5-10Hp	15-30Hp	15-30Hp	54.00	8.31	15.69
3B	II	15-20Hp	40-50Hp	40-50Hp	67.00	11.50	16.76
4B	III	25-30Hp	60-75Hp	60Hp	64.31	24.00	22.10
5B*	III	40-50Hp	100-125Hp	75-100Hp	96.00	36.00	24.00
6B*	III	60Hp	150-200Hp	125-200Hp	96.00	48.00	24.00

\* For 5B and 6B, refer to the submittal documentation for additional information

\*\* For UL Type 12, see your Fuji Electric Representative for additional information

### Combination VFD - UL Type 1 & 12

Frame	Figure	HP Ratings			Dimensions (in.)		
		208/230V	460V	575V	Height	Width	Depth
1B	I	1-5Hp	1-10Hp	1-10Hp	30.75	6.19	14.25
2B	I	7.5-15Hp	15-30Hp	15-30Hp	36.56	8.31	14.13**
3B	I	20-25Hp	40-50Hp	40-50Hp	38.94	8.31	14.13**
4B	III	30Hp	60-75Hp	60Hp	64.31	24.00	22.10
5B*	III	40-50Hp	100-125Hp	75-125Hp	78.00	36.00	24.00
6B*	III	60Hp	150-200Hp	150-200Hp	96.00	48.00	24.00