

Redundant H-Max HVAC enclosed drives

Reliability for the HVAC industry



The H-Max™ Series Redundant IntelliPass variable frequency drive is specifically designed to meet the critical application needs of the HVAC industry by offering a redundant drive package with leading HVAC software and hardware features. With a fault tolerant design that automatically switches from the faulted primary drive to the backup drive and an industry-leading energy-efficiency algorithm, it offers superior reliability and increased efficiency in a compact footprint.

The H-Max™ Series Redundant IntelliPass variable frequency drive comes standard with an integrated circuit breaker disconnect, drive isolation fusing and interlocked drive output contactors, and standard indicating lights as well as many other power and control options. In addition to the exceptional reliability provided by the redundant drive configuration, NEMA 1, NEMA 12, and NEMA 3R enclosure ratings are available for critical applications in most environments.

Product Range

- 1-75 hp, 208/230 Vac
- 2-150 hp, 480 Vac
- NEMA 1 / IP21
- NEMA 12 / IP54
- NEMA 3R / IP44

Benefits

- Reduces site installation costs
- Improves system reliability and minimizes downtime
- Automatically transfers on lead drive fault
- Compact integrated design
- Rated for indoor and outdoor applications

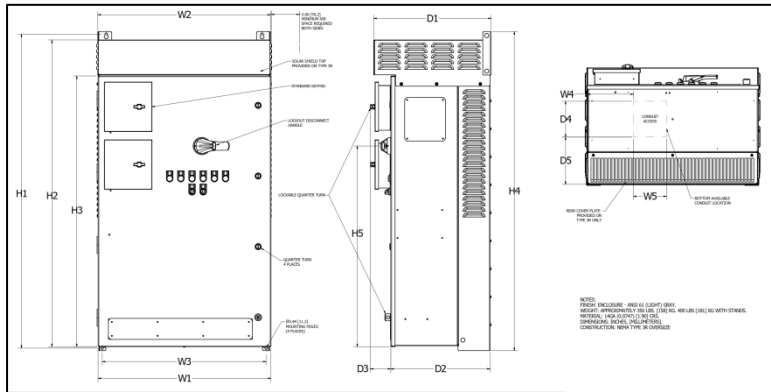
Features

- Redundant drives
- Door mounted controls
 - Drive selector switch
 - Start stop pushbuttons
 - HOA selector switch
 - Drive run and fault lights
 - External fault light
 - Keypad for each drive
- Optional
 - Lead / lag alternating switch
 - Multi-motor protection
- 65KAIC
- UL508A labeled

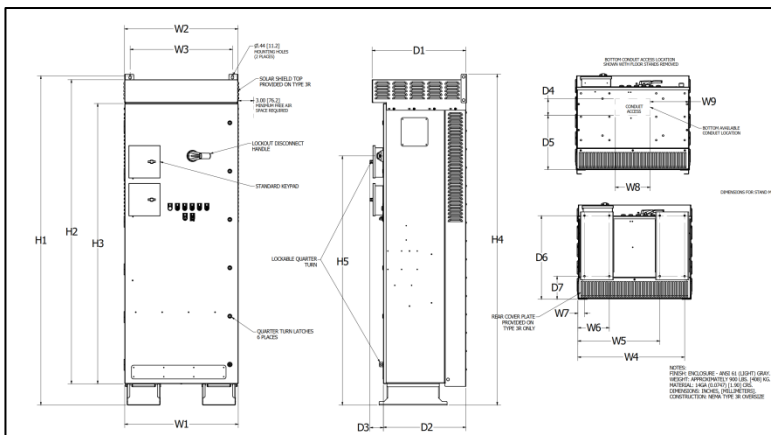
Enclosure Size by Voltage and Horsepower

Voltage (Vac)	208	230	480	208	230	480
Horsepower	1-20	1-20	2-40	25-75	25-75	50-150
Current (Amperes)	4.5-59.4	4.2-54	2.1-52	75-211	68-192	65-180
Enclosure Size	CX	CX	CX	DX	DX	DX

CX Enclosure Outline Dimension Drawing (NEMA 3R rated shown)



DX Enclosure Outline Dimension Drawing (NEMA 3R rated shown)



Enclosure Dimensions

ENCLOSURE	CX		DX	
	NEMA 1 / 12	NEMA 3R	NEMA 1 / 12	NEMA 3R
H1	56.08	56.08	82.35	89.70
H2	54.77	54.77	N/A	82.84
H3	48.35	48.35	76.35	76.35
H4	56.96	56.96	82.85	90.14
H5	35.85	35.85	67.89	67.89
W1	30.92	30.92	30.92	30.92
W2	30.88	30.88	30.88	30.88
W3	29.30	29.30	29.30	27.88
W4	8.25	8.25	28.88	29.06
W5	5.90	5.90	22.12	22.30
W6	N/A	N/A	8.38	8.56
W7	N/A	N/A	1.62	1.80
W8	N/A	N/A	9.50	9.50
W9	N/A	N/A	10.50	10.50
D1	21.00	21.00	24.24	25.51
D2	17.76	17.76	22.48	22.48
D3	3.64	3.64	1.76	3.64
D4	6.40	6.40	4.5	4.50
D5	8.44	8.44	14.75	14.75
D6	N/A	N/A	22.56	22.81
D7	N/A	N/A	6.13	6.31

Input Ratings

Description	Specification
Input voltage (Vin)	208, 230, 480 Vac, ±10%
Input frequency (fin)	50/60 Hz (variation up to 47-66 Hz)
Connection to power	Once per minute or less (typical operation)
Short-circuit withstand rating	65 kAIC combination

Output Ratings

Description	Specification
Output voltage	0 to Vin/Uin line voltage in
Continuous output current	Ambient temperature maximum 104°F (40°C)
IL overload	1.1 x IL (1/10 minutes)
Overload current	110% (1/10 minutes)
Initial output current	150% for two seconds
Output frequency	0 to 320 Hz
Frequency resolution	0.01 Hz

Control Characteristics

Description	Specification
Control method	Frequency control (V/f) open loop sensorless vector control
Switching frequency	1-310A; adjustable with parameter 2.7.7; FS4-FS7: default 6 kHz
Frequency reference	Analog input: resolution 0.1% (10-bit), accuracy ±1%; Panel reference: resolution 0.01 Hz
Field weakening point	8 to 320 Hz
Acceleration time	0.1 to 3000 seconds
Deceleration time	0.1 to 3000 seconds

Ambient Conditions

Description	Specification
Ambient operating temperature	FS4-FS7: +14°F (-10°C), no frost to +104°F (+40°C) Drive can operate at +122°F (+50°C)
Storage temperature	40° to +158°F (40° to +70°C)
Relative humidity	0 to 95% RH, noncondensing, noncorrosive, no dripping water
Air quality	Chemical vapors: IEC 60721-3-3, unit in operation, Class 3C2 Mechanical particles: IEC 60721-3-3, unit in operation, Class 3S2
Altitude	100% load capacity (no derating) up to 3280 ft (1000m); 1% derating for each 328 ft (100m) above 3280 ft (1000m); maximum 9842 ft (3000m); 380-480V
Vibration	FS4-FS7: IEC 60068-2-6, 10-150 Hz; Displacement amplitude = 1 mm peak-to-peak, 10-15.8 Hz; Maximum acceleration amplitude = 1G peak, 15.8-150 Hz
Shock	FS4-FS7: IEC 60068-2-27, 15G peak acceleration at 11 ms duration, 1/2-sine, ISTA™ 1A Certified
Enclosure class	NEMA Type 1/IP21, NEMA Type 12/IP54 or NEMA 3R/IP44

Standards

Description	Specification
EMC	Immunity: Fulfills all EMC immunity requirements Emissions: EN 61800-3, LEVEL H (EMC C2)
Emissions	EMC level dependent — +EMC 2: EN61800-3 (2004) Category C2 Delivered with Class C2 EMC filtering as default