

# Introduction

***As an industry leader in motor control, Benshaw is known for their offering of standard and custom engineered drive packages. If an off-the-shelf unit does not meet your needs, our dedicated team can design the drive solution you need.***

Benshaw now offers a complete range of low voltage variable speed drive solutions ... from multi-purpose micro drives and high performance industrial drives to IEEE 519 clean power drives, NEMA 4X washdown duty drives and custom configured packaged drive solutions.

**Benshaw GM2 Series** is a sensorless vector, variable frequency drive. This micro-drive may be small...but don't let looks fool you. The GM2 Series offers enhanced performance and reliable operation in a robust, yet compact, user-friendly design. Powerful, yet small...it is the ideal choice for cost sensitive OEM or end user requirements. And it is the ideal drive for Benshaw distributors to keep in stock because of its versatility.

The **Benshaw S Series** is a compact yet powerful AC drive designed for the most demanding applications. Available in 'normal duty' ratings up to 15HP and 'heavy duty' ratings up to 10HP, the S Series puts you in control. Whether your application calls for V/Hz control, Sensorless Vector Control or Torque Control, the S Series has you covered. Modbus RTU is standard with optional communication protocols available.

The **Benshaw SW Series** NEMA 4X Washdown Drives are heavy duty rated for applications from 0.5-30HP. Designed for high pressure washdown, all SW Series drives feature a rugged UL Type 4X (IP66) indoor rated polycarbonate enclosure that exceeds NEMA 1, 12, 4 and 4X standards. A convenient built-in power disconnect switch, 4 digit, 7-segment display and an optional remote LCD Display/Keypad with a Quick Start menu, make it easy to program and control.

The **Benshaw H2 Series** sets the new standard for variable frequency drives. It can be used as a general purpose industrial drive with V/hz or Vector control (with ratings for normal or heavy duty applications from 5-800HP). For fan and pumps applications, simply use the built-in macros designed to meet the basic requirements of the water/wastewater, irrigation and HVAC industries. Built in communication protocols include Modbus-RTU, BACnet and Metasys-N2.



## H2 SERIES - MULTI-PURPOSE DRIVE

The Benschaw H2 Series sets the new standard for variable frequency drives. It can be used as a general purpose industrial drive with V/hz or Vector control (with ratings for normal or heavy duty applications from 5-800HP). For fan and pumps applications, simply use the built-in macros designed to meet the basic requirements of the water/wastewater, irrigation and HVAC industries.

This multi-purpose drive complies with industries standards including UL/cUL, CE and has built-in EMC filters (standard in all 480V models). Compact, yet full-featured...the H2 Series is the ideal choice for OEMs, panel builders and end users.



### STANDARD FEATURES - HARDWARE

- Dual rating - Normal and Heavy Duty
- 240V: 7.5HP~125HP (ND), 5HP~100HP (HD)
- 480V: 7.5HP~800HP (ND), 5HP~600HP (HD)
- 575V: 7.5HP~125HP (ND), 5HP~100HP (HD)
- Protected Chassis IP20
- LCD Display/Keypad
- EMC Filter
- Internal Brake IGBT (240V all, 480V  $\leq$  40HP)
- Single Phase Input (derating required)
- Plenum Rated (with Conduit Option)
- Built in DC Reactor

### STANDARD FEATURES - SOFTWARE

- Quick Start Menu on Power Up
- Control - V/Hz, Sensorless Vector Control, Slip Compensation
- Auto Tuning
- Macro Selection - Pump, Fan, or Constant Torque
- Torque Limits
- PID Control
- Regen Avoidance
- Kinetic Energy Buffering(KEB), Ride Through
- Decel Brake Control

### H2 SERIES PUMP / FAN SOFTWARE - STANDARD FEATURES

- PID control with sleep and wake-up, broken pipe and under load detection
- Multi Motor Control - One drive to control the starting and stopping of up to 5 auxiliary motors
- Lead/lag and alternating control
- Pre-fill and Soft-fill
- Standard BACnet and Metasys-N2
- Fire mode input
- Start and End Ramp - settings for quicker accel/decel times when below minimum speeds
- Decel Valve Ramp - Separate decel ramp frequency and time settings when stopping
- Time Event Scheduling - Program run times for 7 days operation
- Flow Compensation - Compensate for losses in long pipe lengths
- Backspin Timer
- Pump Clean Operation
- Load Tuning
- Drive Output Level Detection - Set warning/trip limits (current, power, others) to detect drive operation beyond limits
- Energy Saving Operation
- Oil Pump Starter Control ( compressor systems)

### COMMUNICATIONS

Standard: RS-485 Modbus-RTU, BACnet, Metasys-N2

Options: Ethernet/IP, Modbus-TCP, Lonworks

**WinDRIVE** - PC Based Software for Commissioning and Monitoring

## H2 SERIES - PRICING

240V	Normal Duty 110/120% OL/1 min.		Heavy Duty 150% OL/1 min.		Dimensions (inches)			Degree of Protection*	Weight (lbs)	DC Link Reactor	Dynamic Braking	List Price
	HP	Amps	HP	Amps	H	W	D					
VFD-RSI-007-H2-2C	7.5	22	5	17	9.13	6.30	7.13	IP20	7.3	No	Internal IGBT	\$1,731
VFD-RSI-010-H2-2C	10	30	7.5	24	9.13	6.30	7.13	IP20	7.3	No	Internal IGBT	\$1,972
VFD-RSI-015-H2-2C	15	42	10	32	9.13	6.30	7.13	IP20	7.3	No	Internal IGBT	\$2,171
VFD-RSI-020-H2-2C	20	56	15	46	11.42	7.09	8.08	IP20	10.1	No	Internal IGBT	\$3,040
VFD-RSI-025-H2-2C	25	69	20	60	13.78	8.66	8.79	IP20	15.7	No	Internal IGBT	\$3,763
VFD-RSI-030-H2-2C	30	82	25	68	17.72	10.83	11.18	IP20	55.8	No	No	\$5,444
VFD-RSI-040-H2-2C	40	110	30	81	20.08	12.80	11.18	IP20	72.5	No	No	\$7,085
VFD-RSI-050-H2-2C	50	142	40	106	21.65	12.80	12.17	IP20	86.4	No	No	\$9,099
VFD-RSI-060-H2-2C	60	169	50	136	21.65	12.80	12.17	IP20	90.6	No	No	\$11,064
VFD-RSI-075-H2-2C	75	223**	60	169	27.80	11.81	15.20	IP20	118.2	No	No	\$13,768
VFD-RSI-100-H2-2C	100	264**	75	195	27.80	11.81	15.20	IP20	121.9	No	No	\$15,489
VFD-RSI-125-H2-2C	125	325**	100	255	27.76	14.96	15.59	IP20	159.2	No	No	\$16,093

480V	Normal Duty 110/120% OL/1 min.		Heavy Duty 150% OL/1 min.		Dimensions (inches)			Degree of Protection*	Weight (lbs)	DC Link Reactor	Dynamic Braking	List Price
	HP	Amps	HP	Amps	H	W	D					
VFD-RSI-007-H2-4C	7.5	12	5	8	9.13	6.30	7.13	IP20	7.3	No	Internal IGBT	\$1,770
VFD-RSI-010-H2-4C	10	16	7.5	12	9.13	6.30	7.13	IP20	7.3	No	Internal IGBT	\$1,846
VFD-RSI-015-H2-4C	15	24	10	15	9.13	6.30	7.13	IP20	7.4	No	Internal IGBT	\$2,026
VFD-RSI-020-H2-4C	20	30	15	22	11.42	7.09	8.08	IP20	10.1	No	Internal IGBT	\$2,750
VFD-RSI-025-H2-4C	25	38	20	28	11.42	7.09	8.08	IP20	10.6	No	Internal IGBT	\$3,330
VFD-RSI-030-H2-4C	30	45	25	35	13.78	8.66	8.79	IP20	16.5	No	Internal IGBT	\$3,835
VFD-RSI-040-H2-4C	40	61	30	41	13.78	8.66	8.79	IP20	16.5	No	Internal IGBT	\$4,052
VFD-RSI-050-H2-4C	50	75	40	55	17.72	10.83	11.18	IP20	57	Yes	External***	\$5,789
VFD-RSI-060-H2-4C	60	91	50	67	20.08	12.80	11.18	IP20	77	Yes	External***	\$7,236
VFD-RSI-075-H2-4C	75	107	60	81	20.08	12.80	11.18	IP20	77	Yes	External***	\$7,670
VFD-RSI-100-H2-4C	100	142	75	106	21.67	12.80	12.17	IP20	95	Yes	External***	\$9,697
VFD-RSI-125-H2-4C	125	169	100	136	21.67	12.80	12.17	IP20	95	Yes	External***	\$10,854
VFD-RSI-150-H2-4C	150	223**	125	169	27.80	11.81	15.20	IP20	123	Yes	External***	\$14,473
VFD-RSI-200-H2-4C	200	264**	150	195	27.80	11.81	15.20	IP20	123	Yes	External***	\$15,340
VFD-RSI-250-H2-4C	250	325**	200	255	27.76	14.96	15.59	IP20	165	Yes	External***	\$18,740
VFD-RSI-300-H2-4C	300	370**	250	303	27.76	14.96	15.59	IP20	165	Yes	External***	\$21,621
VFD-RSI-400-H2-4C	400	481**	300	375	36.34	16.77	17.32	IP00	265	Yes	External***	\$31,837
VFD-RSI-500-H2-4C	500	613**	400	478	39.37	23.62	19.69	IP00	409	Yes	External***	\$51,445
VFD-RSI-650-H2-4C	650	770**	500	591	39.37	23.62	19.69	IP00	409	Yes	External***	\$57,522
VFD-RSI-800-H2-4C	800	962**	600	740	41.50	30.55	19.67	IP00	584	Yes	External***	\$69,028

\* For UL type 1 add conduit box option.

\*\* Normal Duty 110%.

\*\*\* Requires External Braking (DBU and DBR), Consult Factory.

Price Effective July 1, 2025

## H2 SERIES - PRICING

575V	Normal Duty 110% OL/1 min.		Heavy Duty 150% OL/1min.		Dimensions (inches)			Degree of Protection*	Weight (lbs)	DC Link Reactor	Dynamic Braking	List Price
	Model Number	HP	Amps	HP	Amps	H	W					
VFD-RSI-007-H2-61	7.5	9	5	6.6	18.90	7.09	8.08	UL Type 1	20.9	In condit	Internal IGBT	\$2,517
VFD-RSI-010-H2-61	10	12	7.5	9	18.90	7.09	8.08	UL Type 1	21.2	In condit	Internal IGBT	\$2,690
VFD-RSI-015-H2-61	15	17	10	12	18.90	7.09	8.08	UL Type 1	21.9	In condit	Internal IGBT	\$2,980
VFD-RSI-020-H2-61	20	23	15	17	18.90	7.09	8.08	UL Type 1	22.1	In condit	Internal IGBT	\$3,219
VFD-RSI-025-H2-61	25	27	20	23	18.90	7.09	8.08	UL Type 1	22.4	In condit	Internal IGBT	\$3,543
VFD-RSI-030-H2-61	30	34	25	27	21.65	8.66	8.79	UL Type 1	31.5	In condit	No	\$4,212
VFD-RSI-040-H2-61	40	43	30	34	21.65	8.66	8.79	UL Type 1	32.3	In condit	No	\$4,374
VFD-RSI-050-H2-6C	50	55	40	43	17.72	10.83	11.18	IP00/UL Open	55.1	Yes	No	\$6,690
VFD-RSI-060-H2-6C	60	64	50	55	20.08	12.80	11.18	IP00/UL Open	74.1	Yes	No	\$8,147
VFD-RSI-075-H2-6C	75	80	60	64	20.08	12.80	11.18	IP00/UL Open	74.3	Yes	No	\$8,956
VFD-RSI-100-H2-6C	100	104	75	80	21.65	12.80	12.09	IP00/UL Open	96.1	Yes	No	\$11,405
VFD-RSI-125-H2-6C	125	128	100	104	21.65	12.80	12.09	IP00/UL Open	96.4	Yes	No	\$12,214

## H2 SERIES - OPTIONS AND ACCESSORIES

### Option Cards

Model Number	Description	List Price
PC-100096-00	Lonworks Option Card	\$464
PC-100097-00	Extended I/O Card	\$294
PC-100098-00	Ethernet/IP, Modbus-TCP Option, Dual Port	\$525

### Fins Out Mounting

Model Number	Description	List Price
BRKT-100770-03	Mounting Flange, 240V : 7.5~15HP / 480V: 7.5~15HP	\$198
BRKT-100794-00	Mounting Flange, 240V : 20HP / 480V : 20~25HP	\$118
BRKT-100794-01	Mounting Flange, 240V : 25HP / 480V : 30~40HP	\$111
BRKT-100794-02	Mounting Flange, 240V: 30HP / 480V: 50HP / 575V: 50HP	\$69
BRKT-100794-03	Mounting Flange, 240V: 40HP / 480V : 60~75HP / 575V: 60~75HP	\$69
BRKT-100794-04	Mounting Flange, 240V: 50~60HP / 480V: 100~25HP / 575V: 100~125HP	\$69
BRKT-100794-05	Mounting Flange, 240V: 75~100HP / 480V : 150~200HP	\$1,174
BRKT-100794-06	Mounting Flange, 240V: 125HP / 480V : 250~300HP	\$1,109
BRKT-100794-07	Mounting Flange, 480V : 400HP	\$1,300
BRKT-100794-08	Mounting Flange, 480V : 500~650HP	\$1,411
BRKT-100794-09	Mounting Flange, 480V : 800HP	\$1,624

### Conduit Box

Model Number	Description	List Price
EN-101040-00	Conduit Box, 240V : 20HP/ 480V : 20~25HP	\$90
EN-101040-01	Conduit Box, 240V : 25HP/480V : 30~40HP	\$90
EN-101040-02	Conduit Box, 240V: 30HP / 480V : 50HP / 575V: 50HP	\$120
EN-101040-03	Conduit Box, 240V: 40HP / 480V : 60~75HP / 575V: 60~75HP	\$120
EN-101040-04	Conduit Box, 240V: 50~60HP / 480V: 100~125HP / 575V: 100~125HP	\$151
EN-101040-05	Conduit Box, 240V: 75~100HP/ 480V : 150~200HP	\$508
EN-101040-06	Conduit Box, 240V: 125HP / 480V : 250~300HP / 575V: 150~300HP	\$603
EN-101040-07	Conduit Box, 480V : 400HP / 575V: 300~400HP	\$668
EN-101040-08	Conduit Box, 480V : 500~650HP	\$1,111
EN-101040-09	Conduit Box, 480V : 800HP	\$1,289
EN-101040-10	Conduit Box, 240V : 7.5HP~15HP / 480V : 7.5HP~15HP	\$69

### Keypad / LCD Display Items

Model Number	Description	List Price
KP-100003-00	Keypad Blank Insert (at VFD when Remote Mounting LCD)	CF
VFD-2M-RE-CABLE-H2	Bezel & Cable, RJ45, 2M, S/SW/H2 Series VFD, for Remote Mounting	\$44
VFD-3M-RE-CABLE-H2	Bezel & Cable, RJ45, 3M, S/SW/H2 Series VFD, for Remote Mounting	\$63
CV-100017-00	LCD Cover, Remote Mounting, NEMA 4X, S, SW & H2 Series VFD	\$278
LCD-100003-00	LCD Keypad/Display, H2 Series VFD (Spare Part)	\$174

### CF Consult Factory

Price Effective July 1, 2025

# H2 SERIES - INPUT AND OUTPUT SPECIFICATIONS

## 240V, 7.5HP - 25HP (5.5 - 18.5 kW)

RSI-XXX-H2-2C			007	010	015	020	025
<b>240V, w/3Ø Input</b>	Normal Duty 120% OL	HP	7.5	10	15	20	25
		kW	5.5	7.5	11	15	18.5
		Amps	22	30	42	56	69
	Heavy Duty 150% OL	HP	5	7.5	10	15	20
		kW	3.7	5.5	7.5	11	15
		Amps	17	24	32	46	60
<b>240V, w/1Ø Input</b>	Normal Duty 120% OL	HP	3.0	5.0	7.5	10.0	-
		Amps	11	16	23	30	37
Rated Capacity (kVA)			8.4	11.4	16.0	21.3	26.3
Output frequency			0-400Hz (V/Hz, Slip Compensation) 0-120Hz (IM Sensorless) 0-180Hz (PM Sensorless)				
Output voltage (V)			3-Phase 0-240 V				
<b>Rated Input</b>	Voltage (V)	Three-Phase	3-Phase 200-240 VAC (- 15% +- 10%)				
		Single-Phase	1-Phase 240 VAC (- 5% +- 10%)				
	Input frequency	Three-Phase	50-60Hz (+/- 5%)				
		Single-Phase	60Hz (+/- 5%) only				
Rated Current (A)			23.7	32.7	46.4	62.3	77.2
Weight lbs (kg)	lbs		7.3	7.3	7.3	10.1	15.6
	(kg)		(3.3)	(3.3)	(3.3)	(4.6)	(7.1)
Heat Dissipation (W)			180	248	330	451	600
Degree of Protection			UL Open Type (IP20), UL Type 1 achieved with optional conduit box				

## 240V, 30HP -125HP (22 kW - 90 kW)

RSI-XXX-H2-2C			030	040	050	060	075*	100*	125*
<b>240V, w/3Ø Input</b>	Normal Duty 110% * / 120% OL	HP	30	40	50	60	75	100	125
		kW	22	30	37	45	55	75	90
		Amps	82	110	142	169	223	264	325
	Heavy Duty 150% OL	HP	25	30	40	50	60	75	100
		kW	18.5	22	30	37	45	55	75
		Amps	68	81	106	136	169	195	255
<b>240V, w/1Ø Input</b>	Normal Duty 110% * / 120% OL	HP	15	20	25	30	40	50	60
		Amps	45	58	78	92	122	145	178
ND Rated Capacity (kVA)			31.2	41.9	54.1	64.4	85	100.6	123.8
Output frequency			0-400Hz (V/Hz, Slip Compensation)						
Output voltage (V)			3-Phase 0-240 V						
<b>Rated Input</b>	Voltage (V)	Three-Phase	3-Phase 200-240 VAC (- 15% +- 10%)						
		Single-Phase	1-Phase 240 VAC (- 5% +- 10%)						
	Input frequency	Three-Phase	50-60Hz (+/- 5%)						
		Single-Phase	60Hz (+/- 5%) only						
Rated Current (A)			74.8	101	131.2	159	211.1	251.4	313.2
Weight lbs (kg)	lbs		55.8	72.5	86.4	90.6	118.2	121.9	159.2
	(kg)		(25.3)	(32.9)	(39.2)	(41.1)	(53.6)	(55.3)	(72.2)
Heat Dissipation (W)			893	1245	1480	1814	2150	2963	3438
Degree of Protection			UL Open Type (IP20), UL Type 1 achieved with optional conduit box						

## H2 SERIES - INPUT AND OUTPUT SPECIFICATIONS

### 480V, 7.5HP - 30HP (5.5 - 22 kW)

RSI-XXX-H4-4C			007	010	015	020	025	030
<b>480V, w/3Ø Input</b>	Normal Duty 120% OL	HP	7.5	10	15	20	25	30
		kW	5.5	7.5	11	15	18.5	22
		Amps	12	16	24	30	38	45
	Heavy Duty 150% OL	HP	5.0	7.5	10	15	20	25
		kW	3.7	5.5	7.5	11	15	18.5
		Amps	8	12	15	22	28	35
<b>480V, w/1Ø Input</b>	Normal Duty 120% OL	HP	3-5	5	10	10	15	20
		Amps	6.8	9.2	14	17	22	26
Rated Capacity (kVA)			9.1	12.2	18.3	23.0	29.0	34.3
Output frequency		0-400Hz (V/Hz, Slip Compensation) 0-120Hz (IM Sensorless) 0-180Hz (PM Sensorless)						
Output voltage (V)		3-Phase 0-480 V						
<b>Rated Input</b>	Voltage (V)	Three-Phase	3-Phase 380-480 VAC (- 15% - + 10%)					
		Single-Phase	1-Phase 480 VAC (- 5% - + 10%)					
	Input frequency	Three-Phase	50-60Hz (+/- 5%)					
		Single-Phase	60Hz (+/- 5%) only					
Rated Current (A)			12.2	17.5	26.5	33.4	42.5	50.7
Weight lbs (kg)		lbs	7.3	7.3	7.5	10.1	10.6	16.5
		(kg)	(3.3)	(3.3)	(3.4)	(4.6)	(4.8)	(7.5)
Heat Dissipation (W)			172	237	322	451	615	740
Degree of Protection		UL Open Type (IP20), UL Type 1 achieved with optional conduit box						

## H2 SERIES - INPUT AND OUTPUT SPECIFICATIONS

### 480V, 40 HP -125 HP (30 - 90 kW)

RSI-XXX-H2-4C			040	050	060	075	100	125
<b>480V, w/3Ø Input</b>	Normal Duty 120% OL	HP	40	50	60	75	100	125
		kW	30	37	45	55	75	90
		Amps	61	75	91	107	142	169
	Heavy Duty 150% OL	HP	30	40	50	60	75	100
		kW	22	30	37	45	55	75
		Amps	41	55	67	81	106	136
<b>480V, w/1Ø Input</b>	Normal Duty 120% OL	HP	25	30	30	40	50-60	60
		Amps	36	39	47	55	73	86
Rated Capacity (kVA)			46.5	57.1	69.4	82.0	108.2	128.8
Output frequency			0-400Hz (V/Hz, Slip Compensation) 0-120Hz (IM Sensorless) 0-180Hz (PM Sensorless)					
Output voltage (V)			3-Phase 0-480V					
<b>Rated Input</b>	Voltage (V)	Three-Phase	3-Phase 380-480 VAC (- 15% - + 10%)					
		Single-Phase	1-Phase 480 VAC (- 5% - + 10%)					
	Input frequency	Three-Phase	50-60Hz (+/- 5%)					
		Single-Phase	60Hz (+/- 5%) only					
Rated Current (A)			69.1	69.3	84.6	100.1	133.6	160.0
Weight lbs (kg)	lbs	16.5	57.3	77.2	77.2	94.8	94.8	
	(kg)	(7.5)	(26)	(35)	(35)	(43)	(43)	
Heat Dissipation (W)			880	1170	1443	1710	2090	2775
Degree of Protection			UL Open Type (IP20), UL Type 1 achieved with optional conduit box					

### 480V, 150 HP -800 HP (110 - 500 kW)

RSI-XXX-H2-4C			150	200	250	300	400	500	650	800
<b>480V, w/3Ø Input</b>	Normal Duty 110% OL	HP	150	200	250	300	400	500	650	800
		kW	110	132	160	185	250	315	400	500
		Amps	223	264	325	370	481	613	770	962
	Heavy Duty 150% OL	HP	125	150	200	250	300	400	500	600
		kW	90	110	132	160	185	250	315	375
		Amps	169	195	255	303	375	478	591	740
Rated Capacity (kVA)			170	201	248	282	367	467	587	733
Output frequency			0-400Hz (V/Hz, Slip Compensation) 0-120Hz (IM Sensorless)							
Output voltage (V)			3-Phase 0-480V							
<b>Rated Input</b>	Voltage (V)	Three-Phase	3-Phase 380-480 VAC (- 15% - + 10%)							
	Input frequency	Three-Phase	50-60Hz (+/-5%)							
	Rated Current (A)			215.1	254.6	315.3	358.9	469.3	598.1	751.3
Weight lbs (kg)	lbs	123	123	164.7	164.7	264.6	409	409	584	
	(kg)	(55.8)	(55.8)	(74.7)	(74.7)	(120)	(185.5)	(185.5)	(265)	
Heat Dissipation (W)			3960	4752	5600	6475	8500	10.4k	13.2k	16k
Degree of Protection			7.5HP~300HP (0.75 kW~185 kW): UL Open (IP20), UL Type 1 achieved with optional conduit box 400HP~800HP (250 kW~500 kW): UL Open (IP00), UL Type 1 achieved with optional conduit box							

# H2 SERIES - INPUT AND OUTPUT SPECIFICATIONS

## 575V, 7.5HP -30HP (5.5 kW - 22 kW)

VFD-RSI-XXX-H2-61			007	010	015	020	025	030
<b>575V, w/3Ø Input</b>	Normal Duty 110% OL	HP	7.5	10	15	20	25	30
		kW	5.5	7.5	11	15	18.5	22
		Amps	9	12	17	23	27	34
	Heavy Duty 150% OL	HP	5	7.5	10	15	20	25
		kW	3.7	5.5	7.5	11	15	18.5
		Amps	6.6	9	12	17	23	27
<b>Rated Output</b>	ND Rated Capacity (kVA)		9	12	16.9	22.9	26.9	33.9
	Output frequency		0–120 Hz (V/Hz, Slip Comp., IM Sensorless)					
	Output voltage (V)		3-Phase 0–600 V					
<b>Rated Input</b>	Voltage (V)	Three-Phase	3-Phase 525-600 VAC (-15%–+10%)					
	Input frequency	Three-Phase	60 Hz (+/-5%)					
	ND Rated Current (A)		8	10.7	15.3	20.9	25	30.8
	HD Rated Current (A)		6.5	8.9	12	17.2	23.5	27
Weight lbs (kg)		lbs	20.86	21.21	21.87	22.09	22.35	31.53
		(kg)	(9.46)	(9.62)	(9.92)	(10.02)	(10.14)	(14.3)
Heat Dissipation (W)			224	282	376	527	644	773
Degree of Protection			UL Type 1 with installed conduit box					
<ul style="list-style-type: none"> <li>The horse power rating is based on a standard 4-pole motor rating.</li> <li>The KVA rating is based on the Normal Duty rating and 575 V for 575 V inverters.</li> <li>The rated output current is limited based on the carrier frequency set at CON-04.</li> </ul>								

## 575V, 40HP -125HP (30 kW - 90 kW)

VFD-RSI-XXX-H2-6C			040	050	060	075	100	125
<b>575V, w/3Ø Input</b>	Normal Duty 110% OL	HP	40	50	60	75	100	125
		kW	30	37	45	55	75	90
		Amps	43	55	64	80	104	128
	Heavy Duty 150% OL	HP	30	40	50	60	75	100
		kW	22	30	37	45	55	75
		Amps	34	43	55	64	80	104
<b>Rated Output</b>	ND Rated Capacity (kVA)		42.8	54.8	63.7	79.7	103.6	127.5
	Output frequency		0–120 Hz (V/Hz, Slip Comp., IM Sensorless)					
	Output voltage (V)		3-Phase 0–600 V					
<b>Rated Input</b>	Voltage (V)	Three-Phase	3-Phase 525-600 VAC (-15%–+10%)					
	Input frequency	Three-Phase	60 Hz (+/-5%)					
	ND Rated Current (A)		40.2	52	60	74	102	123
	HD Rated Current (A)		35.2	45	57	65	87	110
Weight lbs (kg)		lbs	32.32	55.07	74.12	74.25	96.12	96.43
		(kg)	(14.66)	(24.98)	(33.62)	(33.68)	(43.60)	(43.74)
Heat Dissipation (W)			992	1245	1496	1848	2553	2942
Degree of Protection			UL Open (IP20), UL Type 1 achieved with optional conduit box					
<ul style="list-style-type: none"> <li>The horse power rating is based on a standard 4-pole motor rating.</li> <li>The KVA rating is based on the Normal Duty rating and 575 V for 575 V inverters.</li> <li>The rated output current is limited based on the carrier frequency set at CON-04.</li> </ul>								

## H2 SERIES - PRODUCT SPECIFICATION DETAILS

Items		Description		
Control	Control method	V/F control, Slip Compensation, Sensorless Vector (IM* and PM**) with Torque Limits (240V and 480V only) * IM Sensorless does not apply to 240V, 30HP~125HP. ** PM Sensorless does not apply to 240V, 30HP~125, 480V, 150HP~800HP and all 575V inverters.		
	Frequency setting	Digital command: 0.01Hz		
	Frequency accuracy	1% of maximum output frequency		
	V/F pattern	Linear, Square Reduction, User V/F		
	Overload capacity (Normal Duty)	240V, 7.5 HP ~ 60HP	120% / 1 min.	
		240V, 75 HP ~ 125 HP	110% / 1 min.	
		480V, 7.5 HP ~ 125 HP	120% / 1 min.	
		480V, 150 HP ~ 800 HP	110% / 1 min.	
		575V, 7.5 HP ~ 125 HP	110% / 1 min.	
	Overload Capacity (Heavy Duty)	240V, 5.0 HP ~ 100 HP	150% / 1 min.	
480V, 5.0 HP ~ 600 HP		150% / 1 min.		
575V, 5.0 HP ~ 100 HP		150% / 1 min.		
Torque boost	Manual torque boost, automatic torque boost			
Operation	<b>Operation Type</b>			
	Start/Stop	Keypad, Terminal strip, Communications		
	Frequency (Speed) settings	Analog Input: (1) 0–10 V, (1) 0/4–20 mA, Switch selectable to 0–10 Vdc		
		Digital Inputs: Keypad, Fixed Speed, Pulse Train		
		Communication: RS-485 (Modbus), Metasys-N2, BACnet, Fieldbus Options		
	Functions	<b>Basic</b>	<b>Advanced</b>	
		Quick Start Menu	Sensorless Vector Control*	
		Start/Stop Operation	IM* and PM** motors	
		Start/Stop Modes	Auto Tuning	
		Frequency Reference Sources	Torque Limits	
		Auxiliary Frequency Reference	PID Control	
		Multi-Step Speeds	Slip Compensation	
		Multi-Step Accel/Decel Times	Event Timer (RTC)	
		2nd Source (HOA)	Energy Save Mode	
		Accel/Decel Times	Regen Avoidance	
		Accel/Decel Patterns	VFD Fan Control	
		Dwell Frequency Operation		
		Jog	<b>Other</b>	
		Auto Start	Timer Relay Input/Output Function	
		Auto Reset/Restart	Pre Heat	
Jog and Jog Start		Oil Pump Starter Control		
FWD/REV Run Prevention		Damper Monitor and Control		
Frequency Limits				
Jump Frequencies		<b>Loss of Power</b>		
3-Wire Control		Ride Through (KEB)		
Fire Mode	Safe Stop			
	Speed Search			

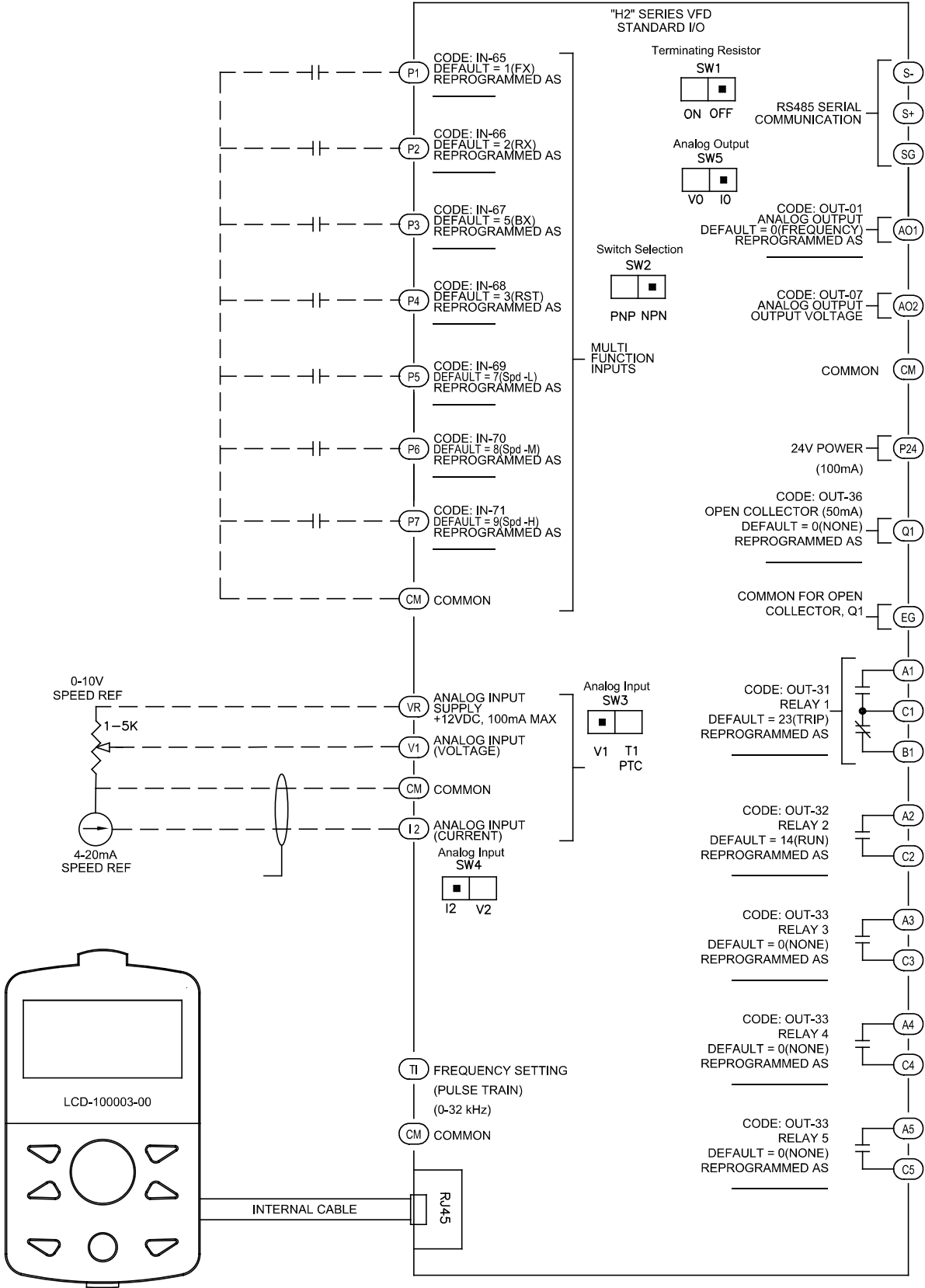
## H2 SERIES - PRODUCT SPECIFICATION DETAILS

Items		Description		
Operation	Functions	<b>V/Hz. Control Pattern</b>	<b>Braking</b>	
		Linear, Squared, User V/Hz	DC Injection Braking	
		Torque Boost	Stall Prevention	
			Power Braking	
			Flux Braking	
			External Brake Control	
		<b>H2 Pump Software</b>		
		Lead/Lag and Alternating	Broken Pipe Detection	
		Jockey Pump Control	BACnet and Metasys-N2	
		MMC - Multi-Motor Control	Pump Load Tuning	
	Pre-Fill, Soft Fill	Decel Valve Ramp		
	Start and End Ramp	Time Event Scheduling		
	Backspin Timer	Flow Compensation		
	Pump Clean Operation	Energy Saving Operation		
		Analog	(1) 0-10 V, (1) 0/4-20 mA, Switch selectable to 0-10 Vdc	
	Input	Digital inputs	(7), Select PNP (Source) or NPN (Sink) mode. NO/NC selectable. Functions of the digital inputs are set with parameters IN-65 through IN-71.	
		Functions	Forward/Reverse Operation	2nd Source - HOA/LOR
			Reset	Up/Down Operation
			External Trip	Analog Hold
			Emergency Stop	PID Disable
			Output Disable (Bx)	Jog Start FWD/REV
			Jog	Pre-Excite
			Fixed Speed - Step Freq's	Timer Input
			Run Enable/Disable (Safety)	Fire Mode
			3-Wire Control Select	Event Timer
			Damper Monitor and Control	Pre-Heat
			Pulse train	0-30 kHz, Low Level: 0-0.8 V, High Level: 3.5-12 V
Output	(1) Fault relay (Form C)	N.O. : Less than AC 250V, 2A, DC 30V, 3A N.C.: Less than AC 250V, 1A, DC 30V, 1A		
	(4) Programmable relays (Form A)	N.O. (A-C): Less than 250V, 5A Less than DC 30V, 5A		
	(1) Open collector terminal	Less than DC 26V, 50 mA		
	(2) Analog Outputs	AO1: 0(4) - 20mA, Switch selectable to 0-10 VDC		
		AO2: 0-10VDC		
	Pulse train	Maximum 32 kHz, 0-12V		

## H2 SERIES - PRODUCT SPECIFICATION DETAILS

Items		Description	
Protection Functions	Trip	Motor Over Load	Fan Trip
		Under Load	Internal Fan Trip
		Over Current 1	Motor Over Heat (PTC Input)
		Over Voltage	Lost Keypad
		Low Voltage	Fuse Open
		Low Voltage 2	Pipe Broken
		Ground Fault	Broken Belt
		E-Thermal	Lost Speed Reference
		Out Phase Open	I/O Board Trip
		In Phase Open	
		Inverter Over Load	<b>Fan/Pump related trips</b>
		No Motor Trip	Damper Trip
		Inverter over Heat	Level Detect Trip
		Over Current 2	Pump Cleaning Trip
		External Trip	
	Hardware Diagnostic		
	Alarm	Overload/underload, Lost Command, Inverter overload, DB (braking) rate	
Instantaneous Power	Less than 8 ms: Continue Operation		
Structure / working environment	Cooling type	Force fan cooling structure	
	Protection structure	UL Open, IP 20: 7.5 HP ~ 300 HP (5.5 kW ~ 185 kW) UL Open, IP00: 400 HP ~ 800 HP (250 kW ~ 500kW) UL Type 1 with conduit box (option) installation (up to 800 HP).	
	Ambient temperature	14°F~104°F (-10°C~40°C)	
	Ambient humidity	Relative humidity less than 95% RH (to avoid condensation)	
	Storage temperature	-4°F~149°F (-20 °C~65°C)	
	Environment	Prevent contact with corrosive gases, flammable gases, oil stains, dust, and other pollutants. 7.5 HP ~ 800 HP (5.5 kW ~ 500 kW) Pollution Degree 2	
	Altitude	Maximum 3,280 ft (1,000m) above sea level for standard operation. Above derate the drive rated voltage and the rated output current by 1% for every 328 ft (100m) up to 13,123 ft (4,000) max.	
	Vibration	Less than 1.0 G (9.8m/sec <sup>2</sup> ).	
	Pressure	10 ~ 15 PSI (70-106 kPa)	

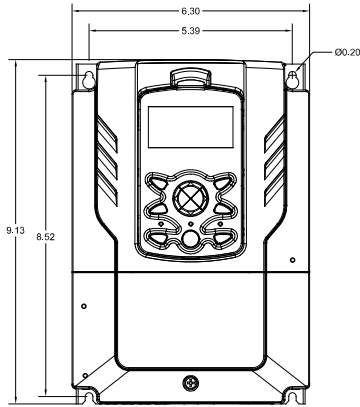
# H2 SERIES - WIRING



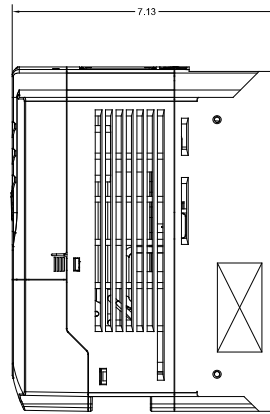
## H2 SERIES - DRAWINGS

**240V, 7.5 HP - 15 HP**

**480V, 7.5 HP - 15 HP**



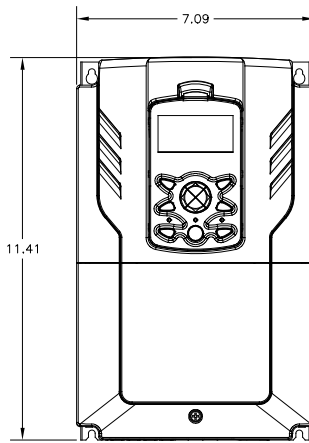
FRONT VIEW



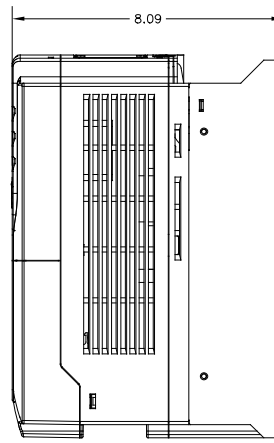
RIGHT SIDE VIEW

**240V, 20 HP**

**480V, 20 HP - 25 HP**



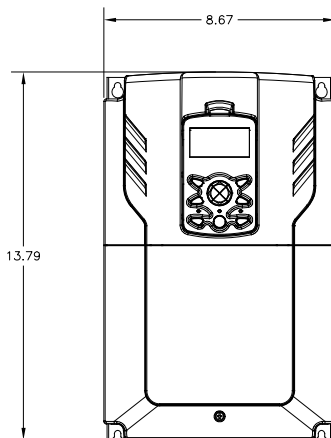
FRONT VIEW



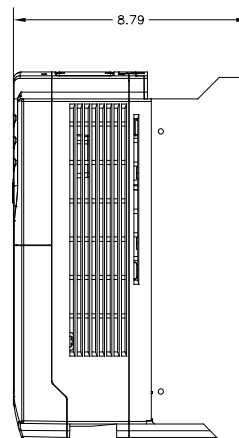
RIGHT SIDE VIEW

**240V, 25 HP**

**480V, 30 HP - 40 HP**



FRONT VIEW



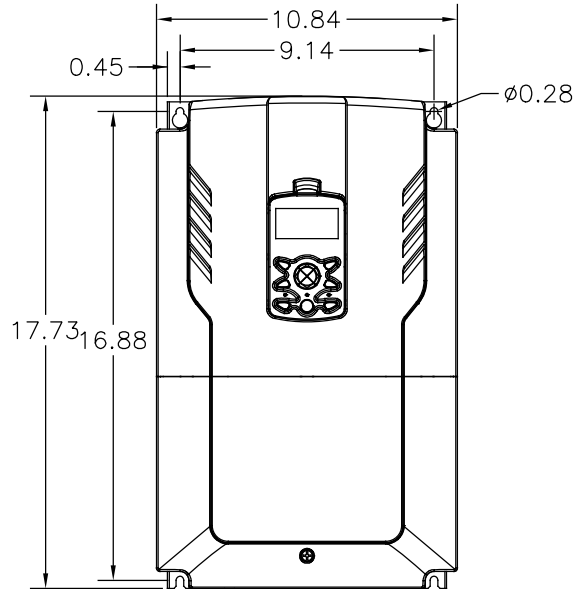
RIGHT SIDE VIEW

# H2 SERIES - DRAWINGS

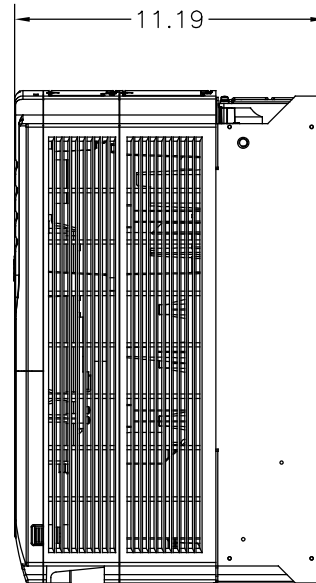
**240V, 30HP**

**480V, 50 HP**

**575V, 50HP**



FRONT VIEW

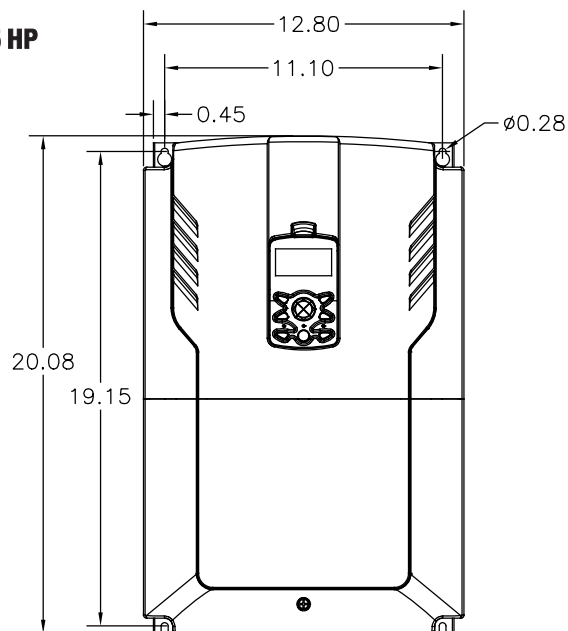


RIGHT SIDE VIEW

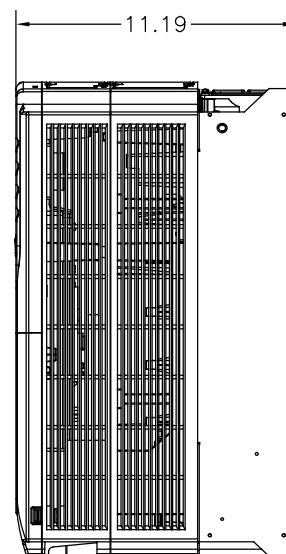
**240V, 40 HP**

**480V, 60 HP - 75 HP**

**575V, 60 HP - 75 HP**



FRONT VIEW



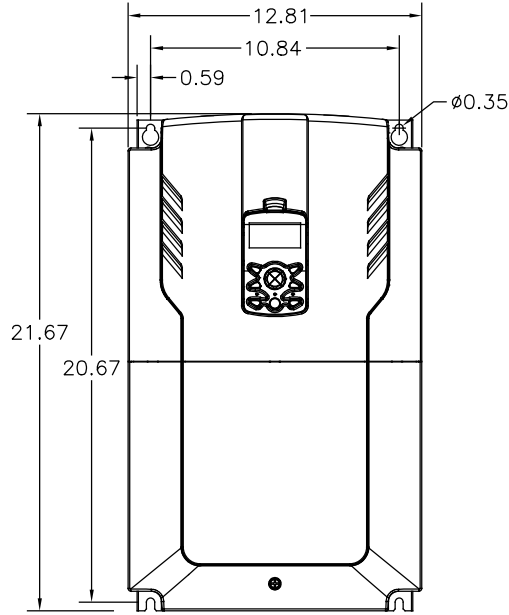
RIGHT SIDE VIEW

## H2 SERIES - DRAWINGS

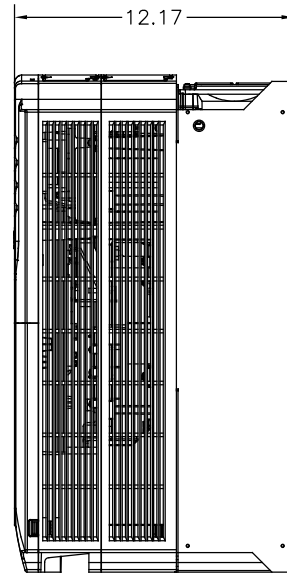
**240V, 50 HP - 60 HP**

**480V, 100 HP - 125 HP**

**575V, 100 HP - 125 HP**



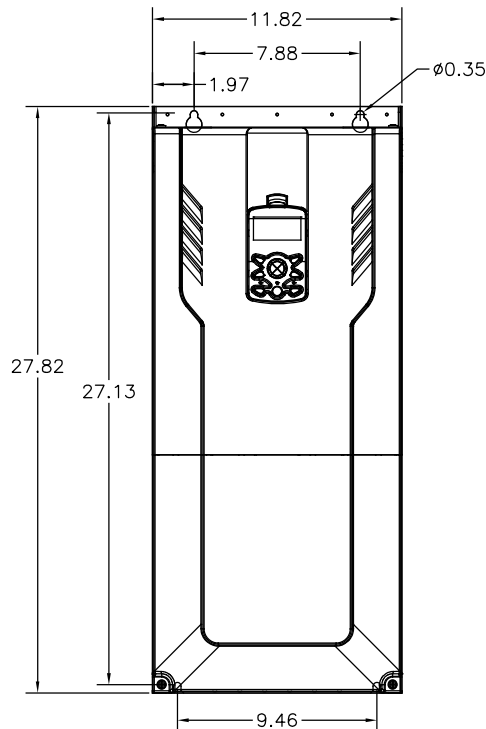
FRONT VIEW



RIGHT SIDE VIEW

**240V, 75 HP - 100 HP**

**480V, 150 HP - 200 HP**



FRONT VIEW

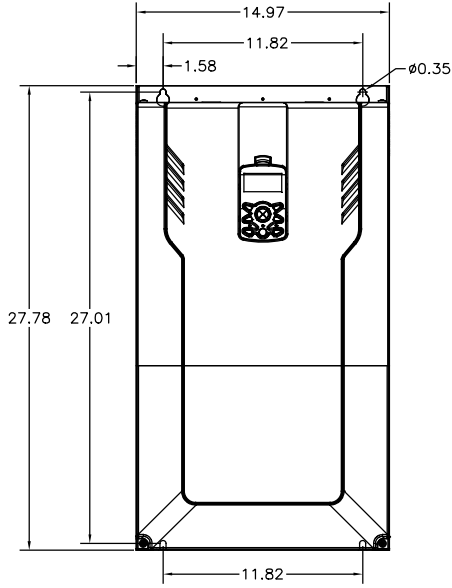


RIGHT SIDE VIEW

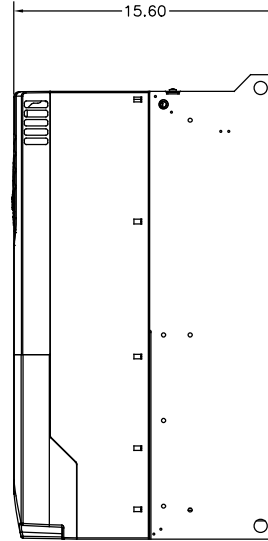
## H2 SERIES - DRAWINGS

**240V, 125 HP**

**480V, 250 HP - 300 HP**

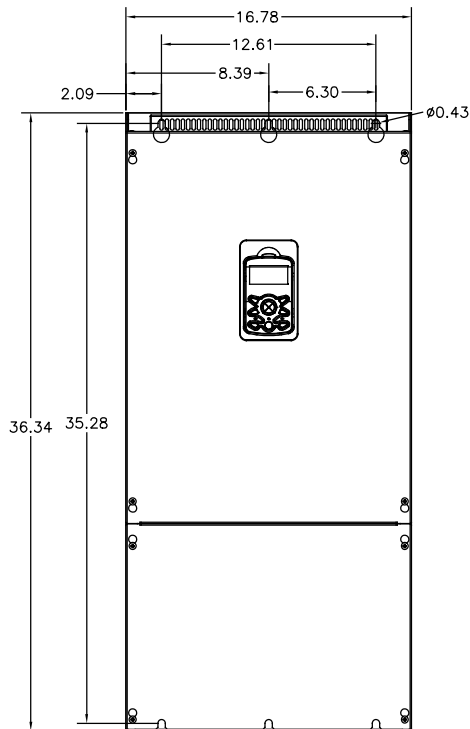


FRONT VIEW

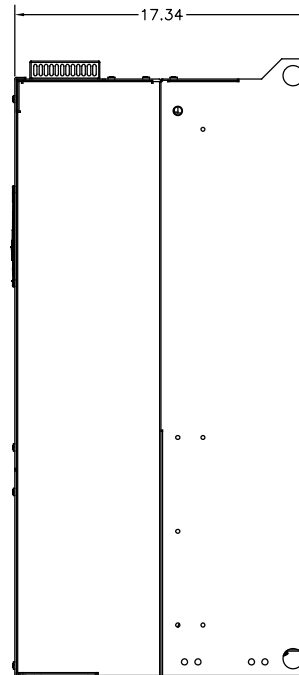


RIGHT SIDE VIEW

**480V, 400 HP**



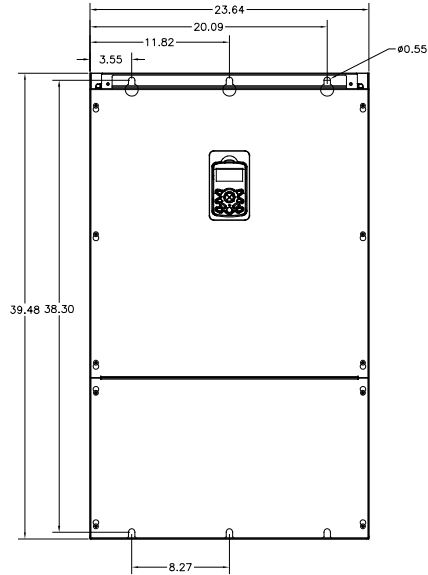
FRONT VIEW



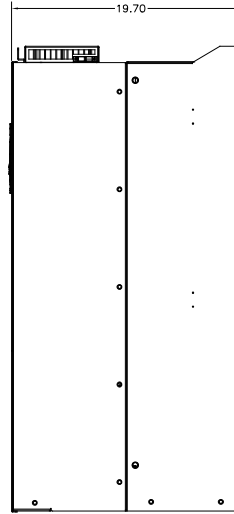
RIGHT SIDE VIEW

## H2 SERIES - DRAWINGS

### 480V, 500 HP - 650 HP

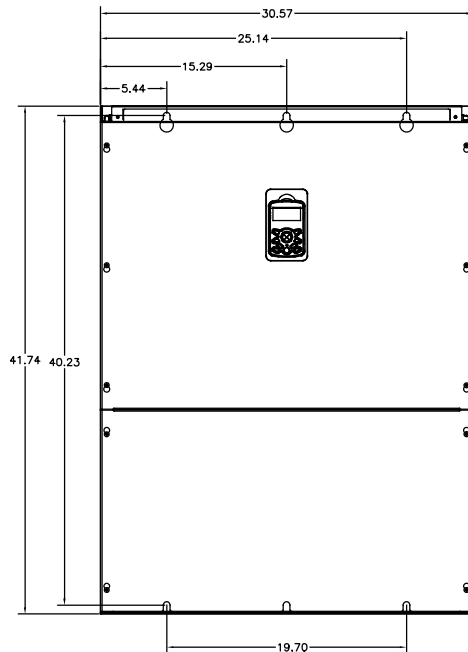


FRONT VIEW

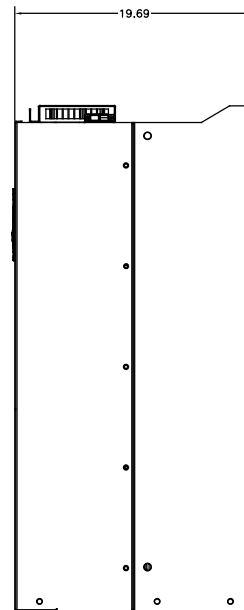


RIGHT SIDE VIEW

### 480V, 800 HP



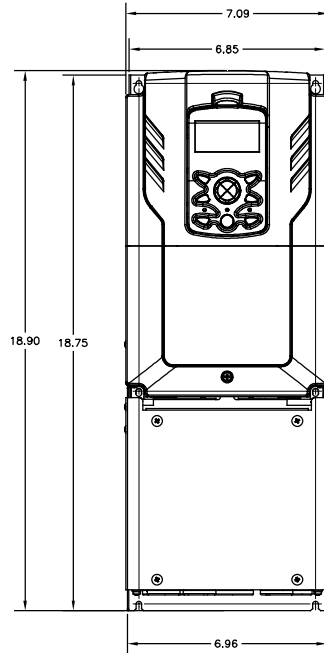
FRONT VIEW



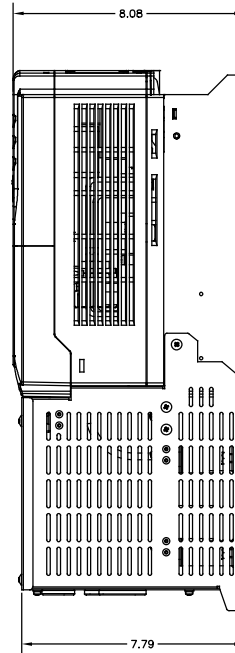
RIGHT SIDE VIEW

## H2 SERIES - DRAWINGS

**575V, 7.5 HP - 25 HP**

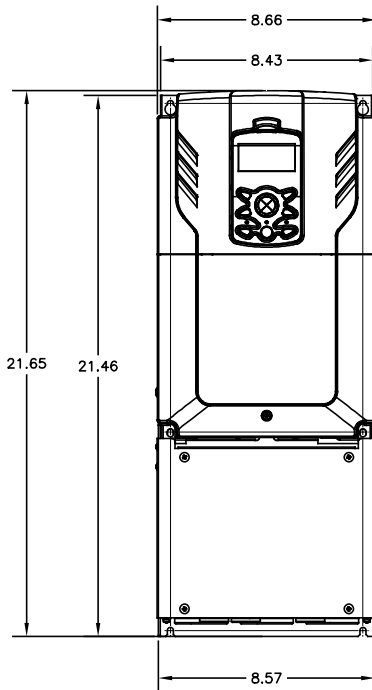


FRONT VIEW

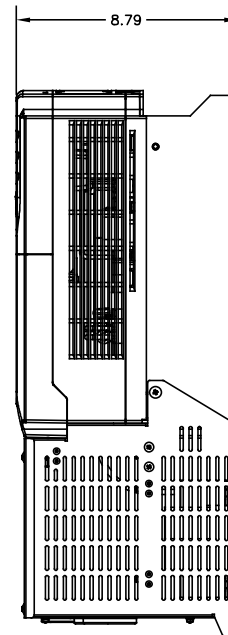


RIGHT SIDE VIEW

**575V, 30 HP - 40 HP**



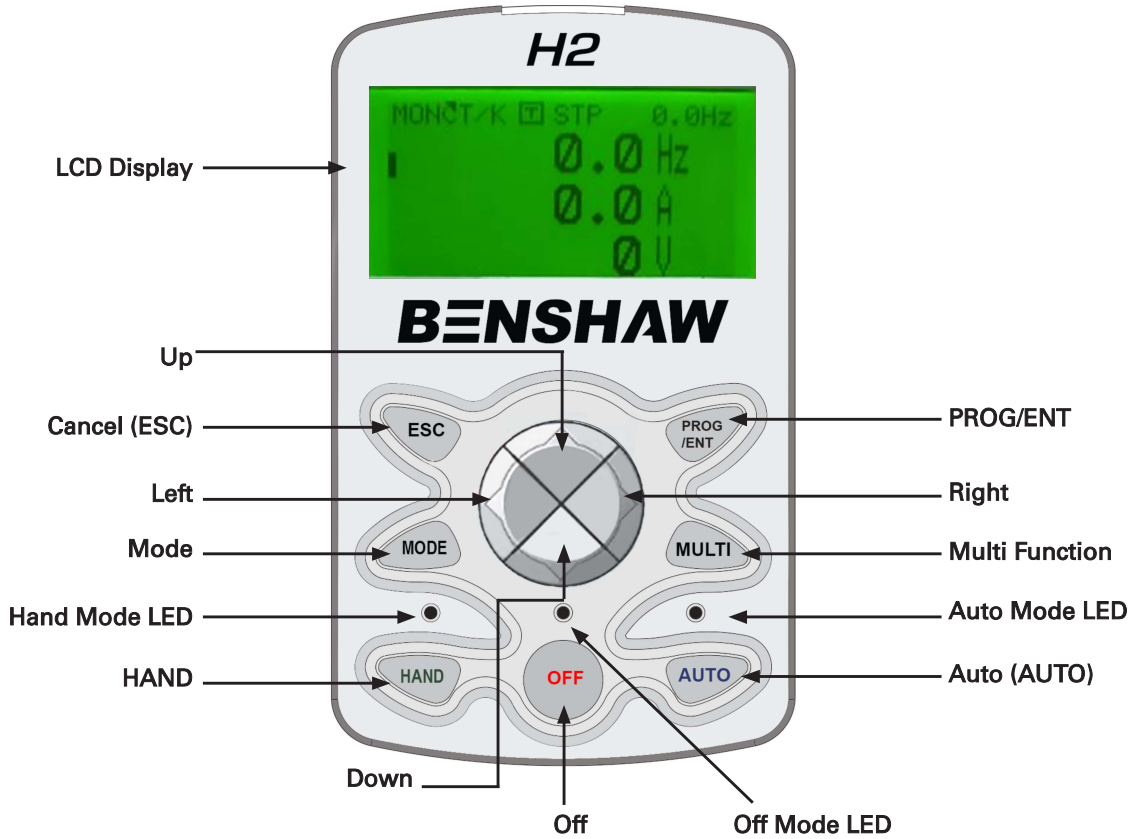
FRONT VIEW



RIGHT SIDE VIEW

# H2 SERIES - PROGRAMMING

## H2 Series - LCD Display/Keypad



Key	Description
LCD Display	<ul style="list-style-type: none"> <li>Displays Operating Modes and Parameter Groups</li> <li>Command Source</li> <li>Operating Status and four (4) monitor items</li> </ul>
Cancel (ESC)	<ul style="list-style-type: none"> <li>While in the Edit state, reverts back to previously saved value</li> <li>When pressed while switching codes within the group, it is switched to the first parameter of the group</li> </ul>
Program (PROG/ENT)	<ul style="list-style-type: none"> <li>When pressed once, enter the Program mode (Parameter Edit mode).</li> <li>When pressed again, after changes, changed data is saved.</li> </ul>
Left/Right	<ul style="list-style-type: none"> <li>Move between PAR groups and move the cursor when in PROG Mode</li> </ul>
Up/Down	<ul style="list-style-type: none"> <li>Move between parameters and increase/decrease parameter values when in PROG Mode</li> </ul>
Hand (HAND)	<ul style="list-style-type: none"> <li>It is used to select Keypad (HAND) operation</li> </ul>
OFF	<ul style="list-style-type: none"> <li>Off and Fault Reset</li> </ul>
Multifunction (MULTI)	<ul style="list-style-type: none"> <li>Can be used to assign User Group parameters</li> </ul>
Auto (AUTO)	<ul style="list-style-type: none"> <li>It is used to select AUTO operation</li> </ul>
MODE	<ul style="list-style-type: none"> <li>Monitor Mode -&gt; Parameter Mode -&gt; Configure Mode</li> </ul>

# COMPARISON CHART - H2 SERIES AND H2 PUMP

Series	H2	H2 Pump
<b>Features</b>		
LCD Keypad with Hand/Auto/Off modes and Read/Write/Save	•	•
Quick Start Menu for easy basic commissioning	•	•
Constant Torque Macro for Quick Setup	•	
Pump and Fan Macros for Quick Setup	•	•
Single VFD, Multi-Motor/Pump Control (ATL Contactor based)		•
Multi-VFD, Multi-Motor/Pump Control (Lead/Lag, Alternating, Jockey Pump Control)		•
User Defined Parameter Lists for custom applications	•	•
PID Control	•	•
V/Hz control: Linear, Squared, or User Defined	•	•
Sensorless Vector for Induction* or PM** motors		
* SVC IM Motor Control	•	
240 max. 25 HP		
** SVC PM Motor Control	•	
240V max 25 HP		
480V max 125 HP		
575V not applicable		
Torque Limiting Functions	•	
Slip Compensation	•	
Auto-Tuning: Stationary and Rotating	•	
Auto and Manual Torque Boost	•	•
Dwell Operation	•	•
Motor Brake Control	•	•
On/Off Delay Timers for Digital Inputs	•	•
Regen Prevention for cyclical regenerative loads	•	•
Flow Compensation	•	•
Lube Pump Operation	•	•
Pump Clean Operation	•	•
Start and End Ramp Optimization	•	•
Load Tuning	•	•
Level Detection	•	•
Pipe Break Detection	•	•
Pre-Heating Function	•	•
Timed Event Scheduling	•	•
Kinetic Energy Buffering/Power Loss Ride Through	•	•
Anti-Resonance/Skip Frequency	•	•
Fire Mode	•	•
Energy Save Mode	•	•
Speed Search/Flying Start	•	•
Auto-Restart/Auto-Fault Reset	•	•
Backspin Delay Start	•	•

**NOTE: H2 Pump does not apply to 575V inverters.**