



FHP Series

Single and Dual Voltage AC Drives

Features and Benefits

- **Compact size** – (4.30" x 3.70") Easy to mount in small spaces.
- **Convenient mounting** – Industry standard mounting hole pattern.
- **Dual voltage models can double the output** – Enables the use of a 230VAC motor with a 115VAC power supply.
- **Can be used with induction, permanent split capacitor, shaded pole, synchronous and single-phase motors** – Quickly and easily change trimmer pot ranges for 1/15 to 1 hp motors.
- **On board trim pot adjustments for boost, maximum speed, acceleration, deceleration and torque limit** – Allows for easy calibration and set-up.
- **Torque 'foldback' feature** – Allows up to 200% torque for short periods to overcome intermittent peak loads, then reduces the torque to a (preset) safe level.
- **16kHz switching frequency, with option to change between 4 and 16kHz in the field** – A high switching frequency results in quiet motor operation. Adjustments to a lower frequency if desired, can be done in the field.
- **Adjustable torque boost for startup** – Up to 200% additional torque for loads with high inertia or friction.
- **Color-coded on-board LEDs for Power, Fault and Torque Limit** – The status of the drive can be easily observed.
- **Enable and Direction terminal connections** – Allows for easy start/stop and direction control.
- **Accepts speed reference from 0-5VDC isolated signal or wired in speed potentiometer** – Easy integration into various applications.
- **Plug-in isolation card option** – Creates on-board isolation and accepts 0-5VDC, 0-10VDC or 4-20mA input. Order LEESON kit no. 175324.
- **Operate up to eight motors with one VFD** – Ensures uniform operation between multiple motors.
- **UL listed**



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The Volts/Hertz FHP Series has several models in the 1/4 - 1 hp range that accepts 115VAC and 230VAC power.

The cost-conscious and compact chassis design of the FHP Series maintains the industry standard for mounting hole location. Color coded LEDs enable easy visual determination of drive status.

The dual voltage versions have a jumper that causes the drive to output double the voltage. This allows the use of 230VAC motors when only a 115VAC power supply is available!

Setting the speed reference is easy with either the provided manual speed potentiometer or with a 0-5VDC isolated reference signal. For non-isolated signals, the optional plug-in isolation board is available as a kit.

The unique torque "foldback" feature protects your motor and equipment. The FHP Series will allow 200% torque for a period of time (to overcome intermittent peak loads), then it acts to reduce the output current (or torque) to a preset, safe value which has been set by the TQ LIMIT trim pot. This results in eliminating potential equipment damage by a continuous 200% torque input.

The FHP Series includes additional features such as an adjustable carrier frequency of 4-16kHz, an output frequency range of 0-120Hz and an adjustable torque boost for start up. Enable and Direction terminals are included for easy start/stop and direction control.

With its compact size, standard features and application flexibility, the FHP Series is an excellent choice for most 1 hp and under AC applications.





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Technical Data

PARAMETER	MODEL							
	175318	175319	175320	175321	175310	175322 [‡]	175323 [‡]	175311 [‡]
Input voltage ± 10%, 1-phase	230VAC	115 or 230VAC	115VAC	230VAC	115 or 230VAC	115VAC	230VAC	115 or 230VAC
Nominal output voltage	0 - 230V	0 - 230V	0 - 115V	0 - 230V	0 - 230V	0 - 115V	0 - 230V	0 - 230V
Max continuous output current	1.2A rms	1.2A rms	2.4A rms	2.4A rms	2.4A rms	4.0A rms	4.0A rms	4.0A rms
Max horsepower	1/4	1/4	1/2	1/2	1/2	1	1	1
Output 'doubler' included	No	Yes	No	No	Yes	No	No	Yes
Accepts plug-in isolator card (-PCM)	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes

[‡] Includes heat sink, which is required when continuous current is greater than 3 amps or if ambient temperature is above 40°C.

PARAMETER	SPECIFICATIONS COMMON FOR ALL FHP MODELS
Max load	150% for 5 minutes
Output frequency	0-120Hz
Output type	6 step PWM
Switching frequency	4-16kHz range* with 16kHz as factory default
Speed regulation and range	±3% of base speed; up to 50:1 (speed range dependent on motor)
On-board adjustable trim pots	Maximum speed, acceleration, deceleration, boost & torque limit
Adjustable maximum frequency range	32-120Hz
Adjustable acceleration and deceleration time range	1-12 seconds
Torque boost range	0-200%
LED indicators	Power (green), Fault [‡] (red), Torque Limit (yellow)
Instantaneous over-current trip time	3 µsec
Analog reference input and impedance	0-5VDC isolated, ~100Kohm
Plug-in PCM isolator card input	0-5 VDC, 0-10VDC, 4-20mA
Ambient temperature range	0-40°C
Weight	1.2 lbs.
Vibration	0.5G max (20-50Hz); 0.1G max (>50Hz)
Approvals	UL, cUL

* Plug-in capacitor kit available for field adjustments to less than 16khz. - LEESON Kit No. 175325

[‡] Faults are Over-voltage, Under-voltage and Instantaneous Over Current Trip.



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