

Standard Features:

- **Motor Overload Protection****
- **200% Starting Torque**
- **Electronic Inrush Current Limit**
- **Short Circuit Protection**
- **Regeneration Protection**
- **Slip Compensation with Boost**
- **Ride Through Power Interruptions**
- **Diagnostic LEDs**
- **100% Holding Torque at 0 RPM**
- **Barrier Terminal Block**
- **NEMA-4X / IP-65 Enclosure**



Notes: **UL approved as an electronic overload protector for motors.

The NIKKISO HydroDrive™ AC Variable Frequency Drive is a variable speed control in a NEMA-4X / IP-65 washdown, watertight enclosure. It is designed to operate 208-230 Volt 3-phase AC induction motors through 3.6 Amps RMS. The sine wave coded Pulse Width Modulated (PWM) output operates at a frequency of 16Hz which provides high torque and high efficiency at a low noise level.

Due to its ergonomic engineering, the NIKKISO HydroDrive™ AC is easy to install and operate. Tailoring to specific applications is accomplished via selectable jumpers and trimpot adjustments, which eliminate the computer-like programming required on other drives. However, for most reciprocating pump applications no adjustments are necessary.

Main features include adjustable RMS Current Limit with Motor Overload protection. In addition, adjustable Slip Compensation provides excellent load regulation. Power Start™ delivers over 200% motor torque to ensure startup of all pump designs. Electronic Inrush Current Limit eliminates harmful AC line inrush current and adjustable Linear Acceleration and Deceleration make the drive suitable for soft start/stop applications. The Ride Through feature provides a smooth recovery to the previous set speed during a momentary power loss and Regeneration Protection eliminates tripping due to the cyclic loading of reciprocating pumps.

Standard front panel features include Diagnostic LEDs, Manual Speed Potentiometer, Auto/Manual Switch, Start/Stop Switch, and a Power On/Off Switch. Other features include a barrier terminal block to facilitate field wiring, adjustable performance trimpots, modular circuit board, as well as electrical and optical signal isolation.

Specifications	
Input Voltage (VAC ±10%, 50/60Hz)	115 or 208/230
Maximum Load (% for 2 Minutes)	150
Switching Frequency at Motor (kHz)	16
Signal Following Input Voltage (VDC)	0 - 5
Signal Following Input Resolution (Bits)	8
Maximum Speed Range (% of Base)	70 - 110
Minimum Speed Range (% of Base)	0 - 40
Acceleration Range (Seconds)	0.3 - 20
Deceleration Range (Seconds)	0.3 - 20
Slip Compensation Range (Volts/Hz/Amp)	0 - 3
Current Limit Range (% Range Setting)	0 - 200
Boost Range for 50 Hz Output	0 - 70
Boost Range for 60 Hz Output	0 - 35
Motor Horsepower (HP)	1/4, 1/2, 3/4, 1
Output Frequency (Hz)	0 - 50, 0 - 60
Frequency Multiplier (1X, 2X)	1, 2
Minimum Operating Frequency at Motor (Hz)	1
Speed Regulation (% Base Speed @ 30:1)	2.5
VFD Speed Range (Ratio)	60:1
Operating Temperature Range (C)	0 - 45

NIKKISO HYDRODRIVE™ AC Variable Frequency Drive

TRIMPOT ADJUSTMENTS

- **Minimum Speed (MIN)**
- **Acceleration (ACCEL)**
- **Slip Compensation (COMP)**
- **Maximum Speed (MAX)**
- **Deceleration (DECEL)**
- **Current Limit (CL)**
- **Boost (BOOST)**

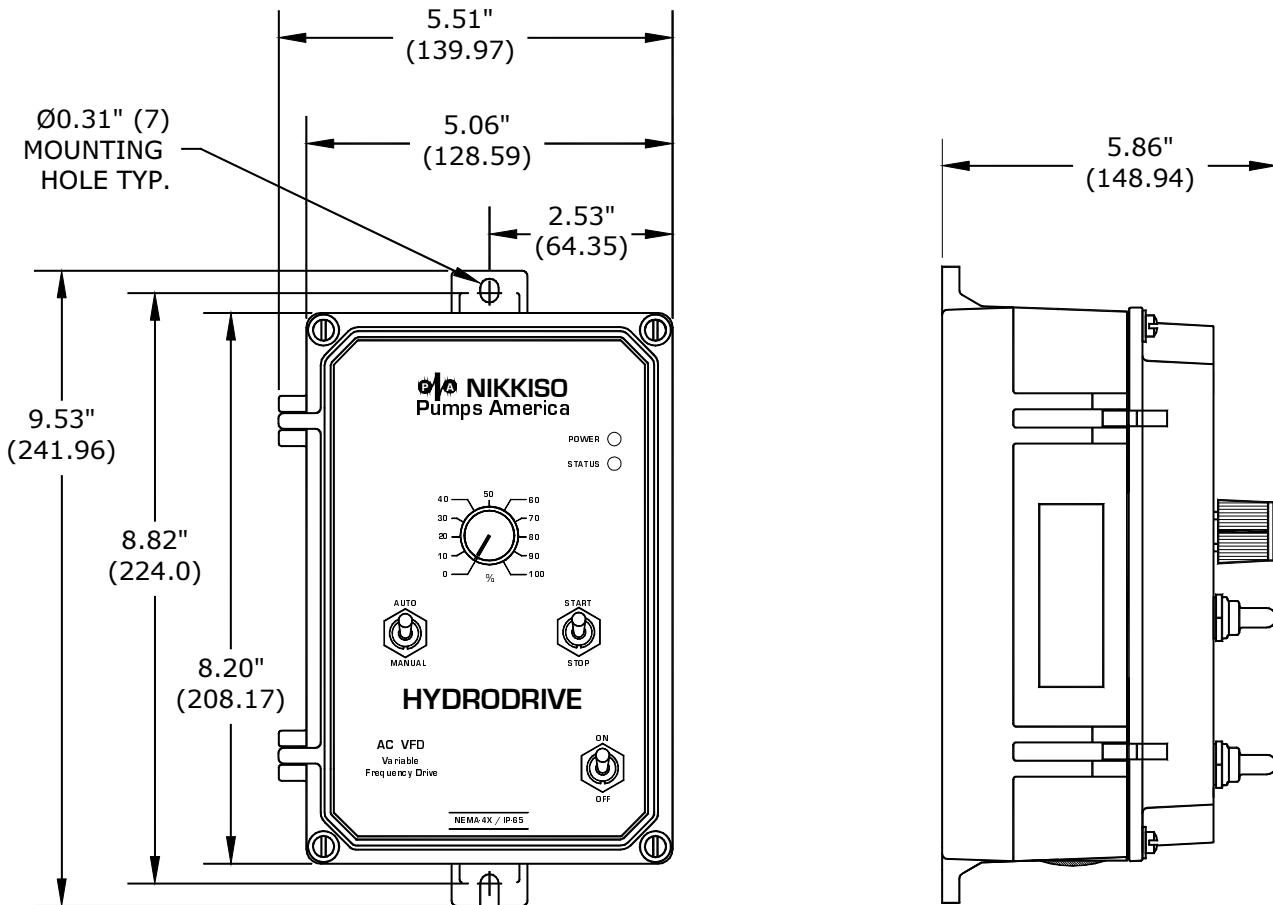
OPTIONAL ACCESSORY

- **Multi Speed Board:** Provides multi speed operation through a PLC.

JUMPER SELECTABLE FEATURES

- **J1/J2 (115V/230V):** Selects incoming power voltage.
- **J3 (1/4, 1/2, 3/4, 1):** Selects motor horsepower.
- **J4 (Auto/Man):** Selects automatic or manual reset mode.
- **J5 (50Hz/60Hz):** Selects motor frequency.
- **J6 (1X/2X):** Selects motor frequency multiplier.
- **J7 (FIX/ADJ):** Selects fixed or adjustable boost.

Dimensions: (inches/meters)



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Printed in U.S.A. 05/02

Bulletin 24310.20