

# Dayton®

## AC Drive

Hybrid Drive™ – A Digital Drive with Analog Interface

**Rugged Die-Cast Aluminum NEMA 4X / IP 65 Enclosure with Hinged Cover**

### Primary Features

Horsepower 1/8 to 5 HP, Jumper Selectable

Input 115/230/460 VAC - 1ph & 3ph

Output 230/460 VAC - 3ph

Starting Torque 200%

Diagnostic LED Status Indicators

FDA Approved Finish\*

### Benefits

**Saves Time**

Easy to Install and Simple to Operate does not require programming or commissioning

*Up and running in less than 10 minutes.*

**Motors Last Longer**

**Proprietary CL Software**

*Provides overload protection, prevents motor burnout and eliminates nuisance tripping. UL approved as electronic overload protector for motors.*

### Energy Saving

Uses only the power the application requires

*Replacing constant speed with variable speed will significantly reduce energy costs.*



\*White case only.

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## Additional Features

### Sensorless Flux Vector Control

Flux Vector Compensation with Static Auto-Tune provides excellent speed regulation with high torque loads throughout the entire speed range. Auto energy saving at light loads. Smooth motor torque.

### Electronic Inrush Current Limit (EICL™) Protection

Eliminates harmful inrush AC line current during power up.

### Run/Fault Relay

Can be used to turn equipment on or off, to signal a warning if the drive is put into "Stop" mode, or to signal if a fault has occurred.

### Start/Stop Switch

Provides electronic "Start" and "Stop" functions.

### Ride-Through

Provides smooth recovery to the previous set speed during a momentary power loss.

### Holding Torque at Zero Speed

Resists motor shaft rotation when the drive is in "Stop" mode.

### Regeneration Protection

Eliminates tripping due to high bus voltage caused by rapid deceleration of high inertial loads.

### Undervoltage and Overvoltage Protection

Shuts down the drive if the AC line input voltage goes above or below the operating range.

### Short Circuit Protection

Shuts down the drive if a short circuit occurs at the motor (phase-to-phase).

### Trimpot Adjustments

Min. Speed, Max. Speed, Accel, Decel, DC Injection Brake, Current Limit, Boost, Jog, Slip Comp.

### Jumper Selections

AC Line Input Voltage, Horsepower, Auto Ride-Through, 50Hz/60Hz Motor Frequency, 1X/2X Motor RPM, Boost Mode, Brake Mode, Run/Fault Output Relay, NO/NC Stop Contact, Constant/Variable Torque Mode, Constant/Variable Torque I<sup>2</sup>t.

## Drive Options

### On/Off AC Line Switch

Disconnects the AC line.

### Forward-Stop-Reverse Switch

Provides motor reversing and stop functions.

### Signal Isolator with Auto/Manual Switch Kit

Provides isolation between a non-isolated signal source and the drive. When used with the Signal Isolator, the Auto/Manual Switch selects the remote process signal or the Main Speed Potentiometer.

### Liquidtight Fittings

Provides a liquid-tight seal for wiring the drive. Kit includes necessary liquidtight fittings.

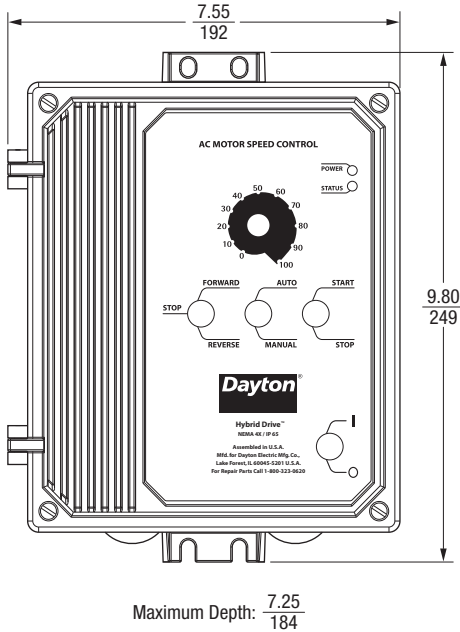


## Applications

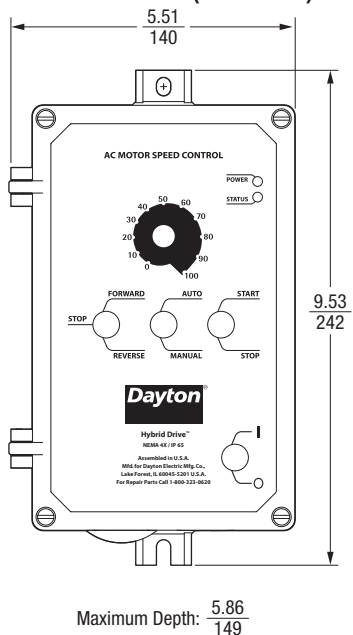
- Actuators • Air Cleaners • Amusement Rides
- Ball Pitching Machines • Blowers • Boat Lifts
- Bowling Alley Lane Cleaners • CNC • Conveyors
- Door and Gate Openers • Drilling • Duct Cleaners
- Dumbwaiters • Elevators and Hoists
- Exercise Equipment • Fabric Processing • Fans
- Feeders • Film Processing • Floor Cleaning
- Food Processing • Garment Cutting
- Grinding and Polishing • Hoppers • Horse Walkers
- HVAC • Indexers • Irrigation • Laminating
- Lift Station Pumps • Machine Tools
- Medical • Milling • Mixers • Oven Conveyors
- Packaging • Paint Blenders, Shakers, and Sprayers
- Paper Handling • Portable Equipment Used with GFCIs
- Pottery Wheels • Printing
- Pumps • Range Hoods • Sandblasting • Saws
- Sewing • Stretch Wrap • Textile • Treadmills
- Therapeutic Vibrators • Washing Machines
- Wave Soldering • Web Processing • Wheelchair Lifts
- Whole House Vacuums and Attic Fans
- Wire Feeders • Wood and Metal Lathes and Cutters
- Winders and Unwinders

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### Case "B" – (Inches/mm)



### Case "A" – (Inches/mm)



## Ratings

### 115/230 VAC 1-Phase Input • 230 VAC 3-Phase Output

| Part No. |        | Ratings   |      | Net Weight |     | Case |
|----------|--------|-----------|------|------------|-----|------|
| Gray     | White* | HP, (kW)  | Amps | Lbs.       | kg  |      |
| 13E632   | 13E633 | 1, (0.75) | 3.6  | 5.9        | 2.7 | A    |
| 13E634   | 13E635 | 2, (1.5)  | 6.7  | 10.3       | 4.7 | B    |

### 230 VAC 1-Phase Input • 230 VAC 3-Phase Output

| Part No. |        | Ratings   |      | Net Weight |     | Case |
|----------|--------|-----------|------|------------|-----|------|
| Gray     | White* | HP, (kW)  | Amps | Lbs.       | kg  |      |
| 13E636   | 13E637 | 3, (2.25) | 9.0  | 10.3       | 4.7 | B    |

### 230 VAC 1 and 3-Phase Input • 230 VAC 3-Phase Output

| Part No. |          | Ratings   |      | Net Weight |     | Case |
|----------|----------|-----------|------|------------|-----|------|
| Gray     | White*   | HP, (kW)  | Amps | Lbs.       | kg  |      |
| 13E638** | 13E639** | 3, (2.25) | 9.0  | 10.3       | 4.7 | B    |

### 460 VAC 3-Phase Input • 460 VAC 3-Phase Output

| Part No. |        | Ratings   |      | Net Weight |     | Case |
|----------|--------|-----------|------|------------|-----|------|
| Gray     | White* | HP, (kW)  | Amps | Lbs.       | kg  |      |
| 13E640   | 13E641 | 3, (2.25) | 4.6  | 10.3       | 4.7 | B    |
| 13E642   | 13E643 | 5, (3.75) | 8.3  | 10.3       | 4.7 | B    |

\*FDA approved (white case only). \*\* Rated 2 HP, 6.7 Amps w/ 1-Phase Input.

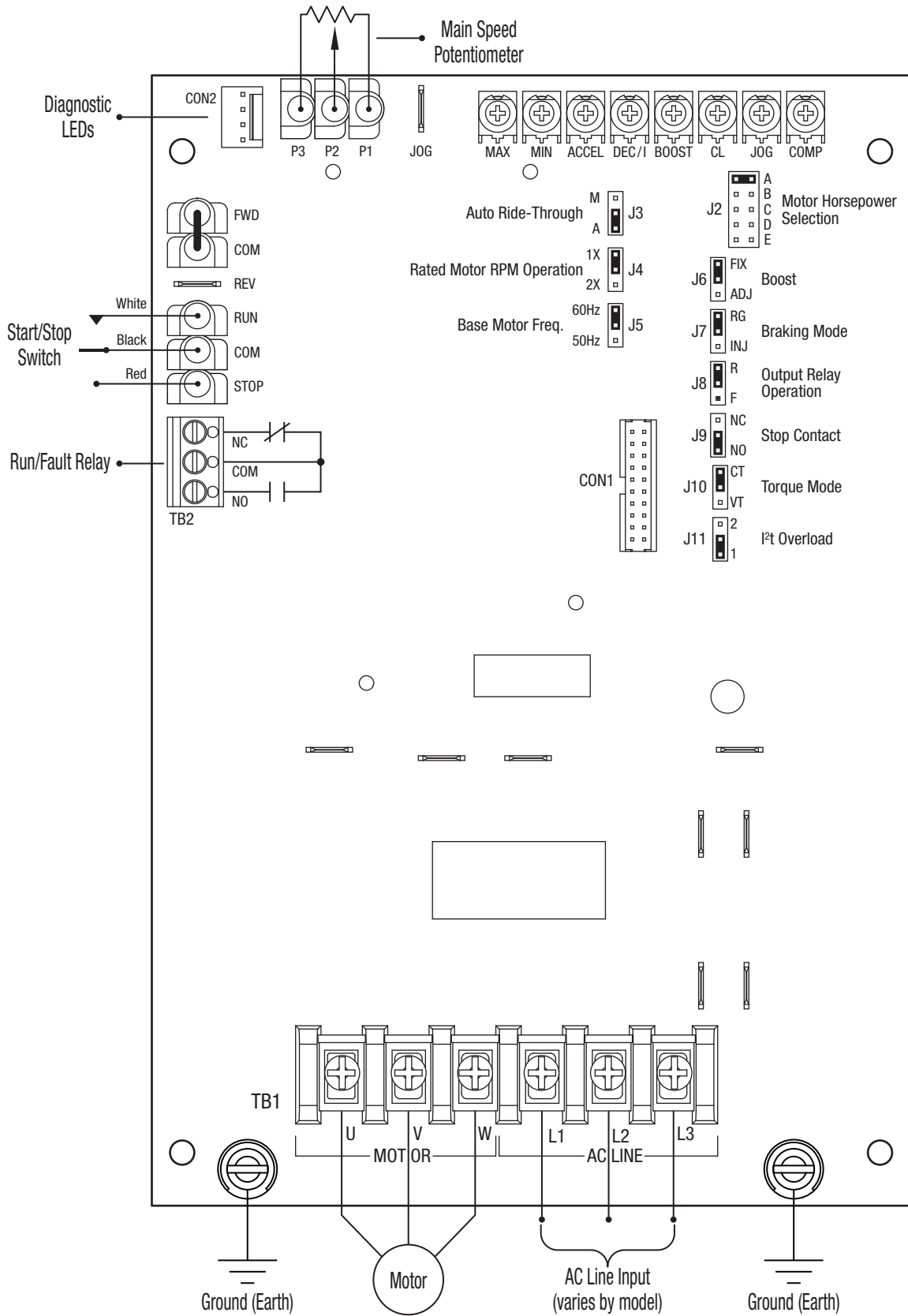
## Specifications

|   |                        |
|---|------------------------|
| Maximum Load (% of Current Overload for 2 Minutes)                | 150                    |
| Carrier, Switching Frequency (kHz)                                | 16, 8                  |
| Output Frequency Resolution (Hz)                                  | 0.06                   |
| Minimum Output Frequency to Motor (Hz)                            | 0.3                    |
| Acceleration Time (Seconds)                                       | 0.3 – 20               |
| Deceleration Time (Seconds)                                       | 0.3 – 20               |
| Speed Range (Ratio)   | 60:1                   |
| Speed Regulation (30:1 Speed Range, 0 – Full Load) (% Base Speed) | 2.5                    |
| Stalled Motor Trip Time (Seconds)                                 | 6                      |
| Braking   | Regenerative*          |
| Operating Temperature Range (°C / °F)                             | 0 – 40 / 32 – 104      |
| Storage Temperature (°C / °F)                                     | -25 – +85 / -13 – +185 |

\*DC Injection Braking – Jumper selectable.

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# Control Layout



Find it at Grainger.

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