Fincor Non-Regen Drives

Non-regenerative drives are typically used on applications which primarily motor in one direction and stopping is achieved through friction or infrequent use of a dynamic braking resistor. These drives may provide speed or torque control from a potentiometer or unidirectional (0-10 VDC or 4-20 mA) control signal. Reversing requires a switch or contact closure to initiate the change. Upon the reversing signal, the drive will allow the motor to coast to a stop (or perform a control stop under a decel ramp with control stop option) or utilize a dynamic braking resistor to pull it to a stop before switching the motor leads with a contactor and starting the motor in the opposite direction.

Fincor Series 2120

Fincor Series 2100 drives feature compact size and lowest pricing. Chassis units are dimensionally interchangeable with many competitive units and are ideal for the OEM or panel builder who builds a custom system by integrating the drive into an enclosure with special logic or auxiliary control devices. NEMA 1 enclosed units are complete self-contained packages ready for wall or machine mounting.

- **1/8 to 3 hp (115 -230V)**
- **Budget Priced**
- **Speed Control**
- **Current Limit**
- **UL Listed**

RATINGS: 1/8 TO 3 hp (115-230 VAC)

Series 2100 Non-Regenerative DC Drives								
Model	**Motor HP** [2]	**Input**		**Output**				**RUN-STOP**
		AC Volts	**Amps**	**DC Volts**		**Amps**		**Order Code**
				Arm	**Field**	**Arm**	**Field**	
Chassis[1]	1/8-1/2	115	8.7	90	50/100	5.4	1.0	2121
	1/8-1/2	115	8.7	90	50/100	5.4	1.0	2122
	1/2-1.0	230	8.8	180	100/200	5.5	1.0	
	1/8-1.0	115	15	90	50/100	10.5	1.0	2122H
	1/2-2.0	230	15.8	180	100/200	11.6	1.0	
	1/8-1.0	115	15	90	50/100	10.5	1.0	2123
	1/2-3.0	230	24	180	100/200	16	1.0	
NEMA 1 Enclosed	1/8-1/2	115	8.7	90	50/100	5.4	1.0	2121P1
	1/2-1.0	230	8.7	180	100/200	5.4	1.0	2122P1

(2) Units may be easily recalibrated using trimpots for any standard rating within the hp range.

Option Description	Order Code
Knob and Dial Plate Kit — This option provides a knob and a dial face graduated 0-100% for use with the potentiometer provided with Series 2120 chassis drives.	2067109
External Signal Follower/Isolation — For use with isolated or non isolated 4-20 mA DC, 0-10 VDC signals. Includes a scaling potentiometer for offset adjustment. Dimensions 1.5" (38) X 3.38" (86) X .75" (19).	106409401

Fincor Series 2120

SPECIFICATIONS:

Operating Conditions

Horsepower	1/8 thru 3 hp , Trim Pot Selectable
Line Voltage	115-230 VAC ±10%, Bi Voltage Input*
Rated Frequency	50/60 Hz ±2%
Enclosure	Chassis, NEMA 1
Ambient Temperature	0 – 40°C (32°F - 104°F) (*Enclosed*)
	0 – 55°C (32°F - 131°F) (*Chassis*)
Altitude	1000 m (3,300 ft)
Relative Humidity	95% Non condensing
Overload Capacity	150% for 1 minute

Standard Features

Regulator Function	Speed Regulated
Power Conversion	2 SCR plus Freewheeling Diode
Field Supply	Full Wave
Protection	MOV Voltage Transient Suppression High Interrupting Capacity Line Fuse
Speed Regulation	Armature or DC Tach Feedback*

Control

Control Logic Power	Common for Maintained Switch
Speed Potentiometer	5K Ohms, ½ Watt
Input Reference	0 – 10 VDC
Speed Regulation (95% Load Change)	2% with Armature Feedback 1% with Tachometer Feedback*

Adjustments

Maximum Speed	60% – 100% of Motor Base Speed
Minimum Speed	0% – 40% of Motor Base Speed
Current Limit	0 – 150% of Full Load
IR Compensation	0 – 100% Boost
Acceleration/Deceleration	0-4 Seconds*

Efficiency

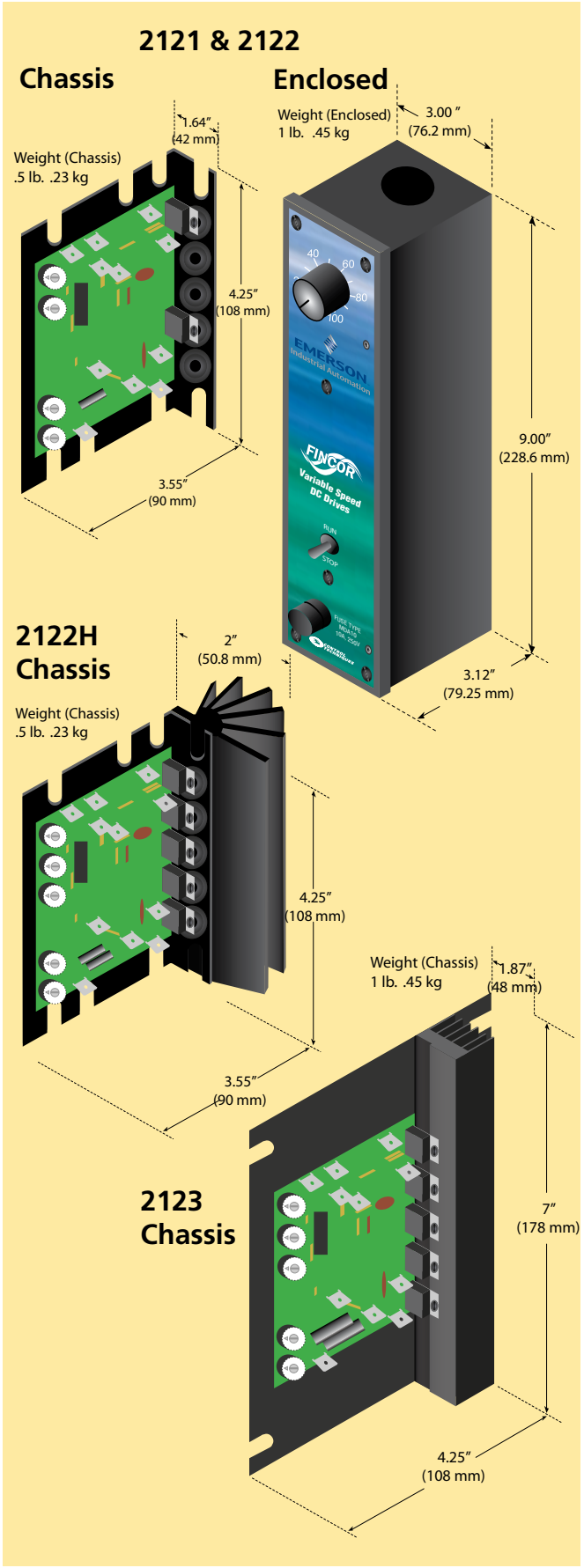
Controller (only)	98%
With Motor (typical)	85%

Approvals & Listings

UL and cUL

* The 2121, 2121P1 and 2122P1 are single input voltage (115, 115 & 230 VAC respectively), do not offer DC Tach Feedback, and have fixed acceleration and deceleration rates.

DIMENSIONS

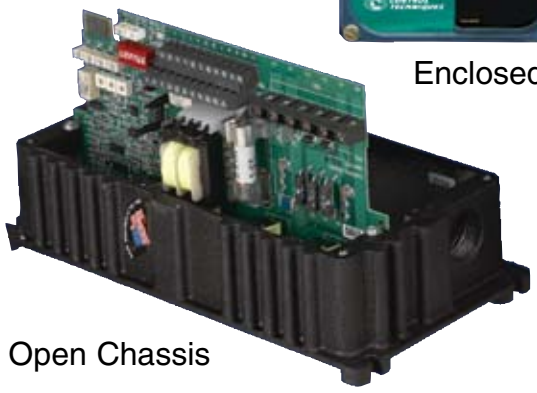


Fincor Series 2330

Fincor Series 2330 drives features a fully isolated regulator using surface mount technology. It includes an isolated customer run contact, low voltage operator control circuitry, and full wave power conversion.

Bookcase

Enclosed



Open Chassis

- **1/8 to 5 hp (115-230V)**
- **Fully Isolated Regulator**
- **Speed or Torque Control**
- **0-10 VDC or 4-20 mA Input Signal**
- **Fused Input**
- **Line Start (Auto Restart)**
- **Dual Field Supply**
- **Tachometer Input standard**

RATINGS: 1/8 TO 5 hp (115-230 VAC)

Series 2330 Non-Regenerative DC Drives

Model	Motor HP	Input		Output				Run-Stop, (Basic)	Run-Stop, Arm. Cont. DB	Run-Stop, Arm. Cont., Rev. & DB
		AC Volts	Amps	DC Volts		Amps		Order Code	Order Code	Order Code
				Arm	Field	Arm	Field			
Chassis w/o Operator Controls	1/8-1.0	115	15.8	90	50/100	10.5	1.0	2331	2331B	2331A
	1/2-2.0	230	15.8	180	100/200	11.6	1.0			
	1/8-1.0	115	15.8	90	50/100	10.5	1.0	2332	2332B	2332A
	1/2-3.0	230	22	180	100/200	15.1	1.0			
Bookcase w/o Operator Controls	1/8-1.0	115	15.8	90	50/100	10.5	1.0	2335	2235B	2235A
	1/2-2.0	230	15.8	180	100/200	11.6	1.0			
	1/8-1.0	115	15.8	90	50/100	10.5	1.0	2336	2336B	2336A
	1/2-3.0	230	22	180	100/200	15.1	1.0			
NEMA 4/12 w/o Operator Controls	1/8-1.0	115	15.8	90	50/100	10.5	1.0	2331P0	2331BP0	2331AP0
	1/2-2.0	230	15.8	180	100/200	11.6	1.0			
NEMA 4/12 with Integral Operator Controls	1/8-1.0	115	15.8	90	50/100	10.5	1.0	2331P1*	2331BP1*	2331AP3
	1/2-2.0	230	15.8	180	100/200	11.6	1.0			
	1/8-1.0	115	15.8	90	50/100	10.5	1.0			2331P2*
	1/2-2.0	230	15.8	180	100/200	11.6	1.0			

Units shipped calibrated for desired hp rating but jumpers can be adjusted for others. Units shipped ready for 230VAC but may be reconnected for 115VAC.

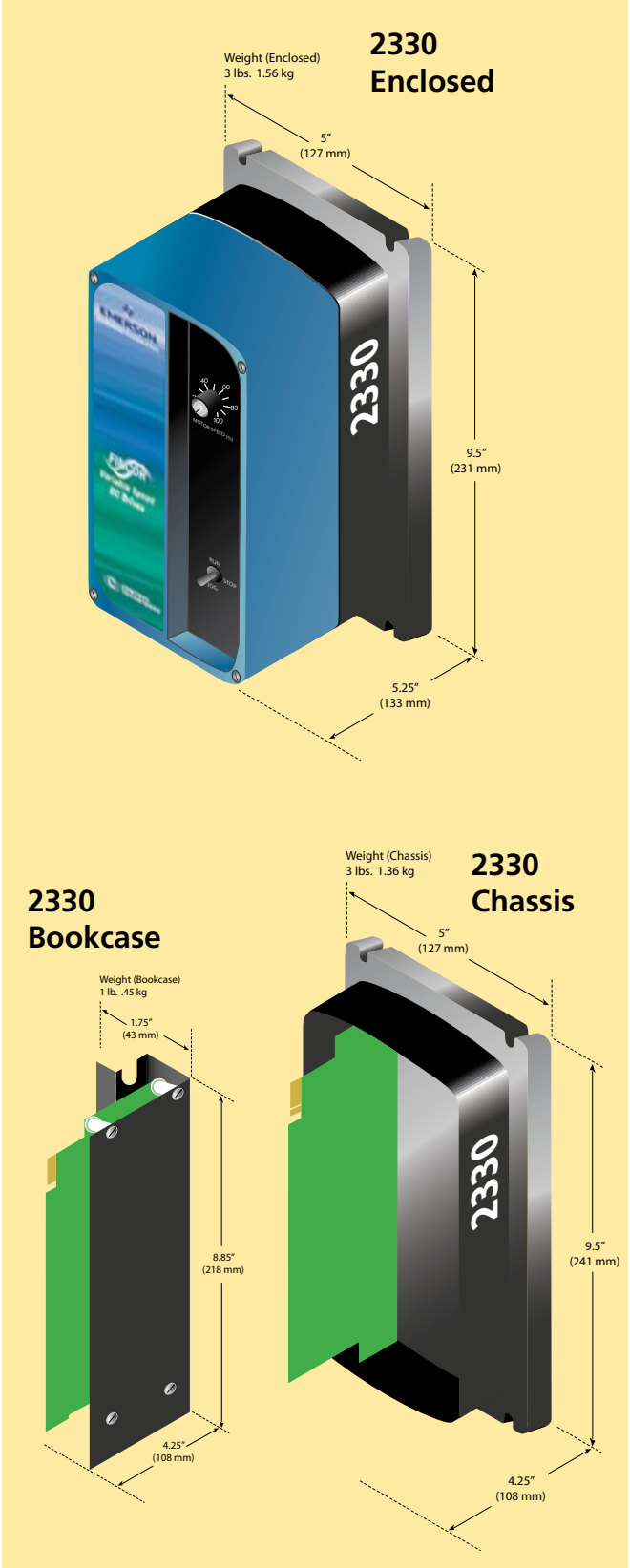
* P1, BP1, & P2 have additional Jog controls. 2331P2 includes switch reversing (not contactor) without DB.

Fincor Series 2330

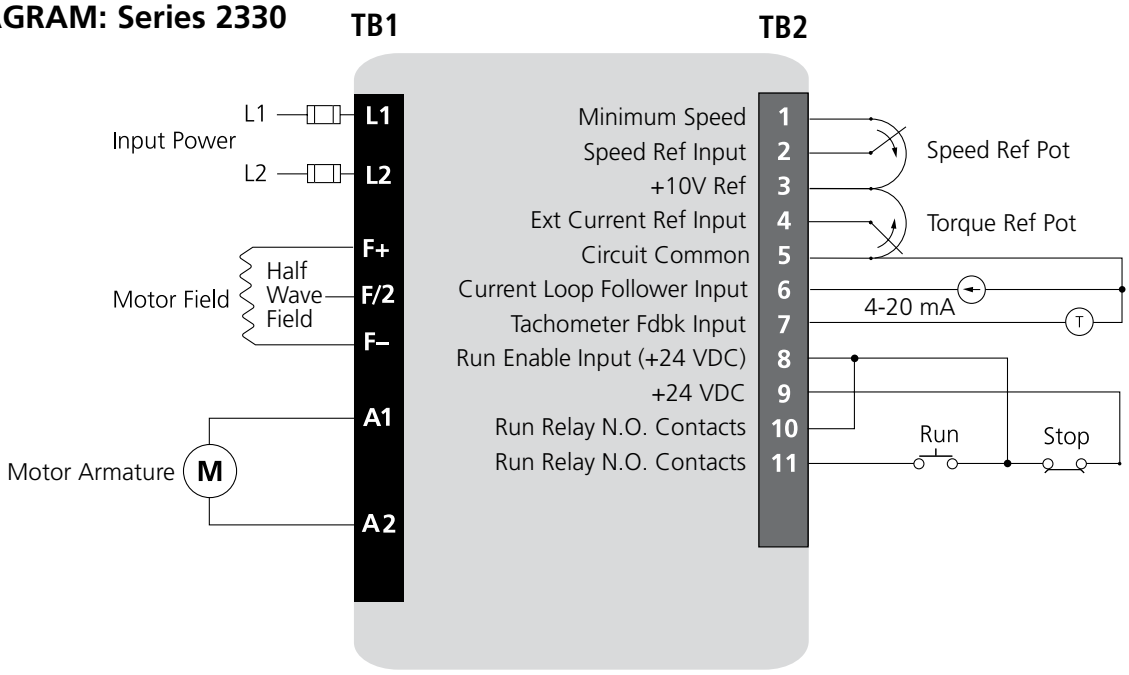
SPECIFICATIONS:

Operating Conditions	
Horsepower	1/8 thru 3 hp, Jumper Selectable
Line Voltage	115-230 VAC ±10%, Jumper Selectable
Rated Frequency	50/60 Hz ±2%
Enclosure	Chassis, Bookcase, NEMA 4/12
Ambient Temperature	0 – 40°C (32°F - 104°F) (*Enclosed*)
	0 – 55°C (32°F - 131°F) (*Chassis*)
Altitude	1000 m (3,300 ft)
Relative Humidity	95% Non condensing
Overload Capacity	150% for 1 minute (UL Listed Motor Overload Protection) (120% Timing Threshold)
Standard Features	
Isolated Regulator Circuit	Grounded I/O signals possible
Regulator Function	Speed or Torque selectable
Power Conversion	4 SCR plus Freewheeling Diode
Field Supply	Full or Half Wave
Protection	MOV Voltage Transient Suppression High Interrupting Capacity Line Fuse
Speed Regulation	Armature or DC Tach Feedback
Line Start	Selectable for Auto Restart
Diagnostic LED	Green Normal – Red Current Limit
Option Connector	Connects Additional Option Boards
Control	
Control Logic Power	24 VDC for Maintained Switch or Push button Operation
Speed Potentiometer	5 KOhms, ½ Watt
Input Reference	0 – 10 VDC or 4 – 20 mA
Speed Regulation (95% Load Change)	2% with Armature Feedback 0.5% with Tachometer Feedback
Adjustments	
Maximum Speed	50% – 100% of Motor Base Speed
Minimum Speed	0% – 40% of Motor Base Speed
Current Limit	0 – 150% of Full Load
IR Compensation	0 – 100% Boost
Acceleration/Deceleration	0.2 – 30 Seconds
Efficiency	
Controller (only)	98%
With Motor (typical)	85%
Approvals & Listings	
UL and cUL	

DIMENSIONS



TERMINAL DIAGRAM: Series 2330



TERMINAL DESCRIPTION

TB1

Pin#	Type	Notes
L1	Line Voltage Input	115 or 230 VAC J1 Selectable
L2	Line Voltage Input	115 or 230 VAC J1 Selectable
F+	Field Voltage Output	+100 VDC @ 115 VAC or +200 VDC @230 VAC Input
F/2	Field Voltage (Half-Wave) Output	+50 VDC @ 115 VAC or +100 VDC @230 VAC Input
F-	Field Voltage Output	Field Minus Output
A1	Armature + Output	0 to +90 VDC @ 115 VAC or 0 to +180 VDC @ 230 VAC Input
A2	Armature - Output	Armature Minus Output

TB2

Pin#	Type	Notes
1	Speed Reference Pot '0' End	With On-board Min Speed Pot Active
2	Speed Reference Input	200 KΩ Input Resistance
3	+10V Reference Output	5mA max
4	External Current Reference Input FWD	Refer to DIP Switch SW3-
5	Circuit Common	Isolated From Line – Can be connected to Earth
6	Current Loop Follower Input	Refer to DIP Switch SW3-2 (1 – 5 mA, 4 – 20 mA, 5 – 50 mA)
7	Tachometer Input (Speed Feedback)	Polarity Insensitive for Reversing Applications (3-30 Vdc, 31-175 VDC)
8	Enable Input (+24 VDC) – Run Relay	24 VDC @ 6ma Input
9	+24 VDC	For drive enable use only
10	Run Relay N.O. Contacts	Form A Contact Rated 0.5 A @ 115 VAC or 2 A @ 30 VDC
11	Run Relay N.O. Contacts	

Fincor Series 2610

Fincor Series 2610 drives feature a fully isolated regulator using surface mount technology. It includes additional inputs and outputs with advanced control capabilities.

- **1/8 to 5 hp (115 – 230 VAC)**
- **Fully Isolated Regulator**
- **Speed or Torque Control**
- **0 – 10 VDC or 4 – 20 mA input signal**
- **PID / Speed Trim Control**
- **Monitoring Output (0 – 10 VDC or 4 – 20 mA)**
- **Line Start /Auto Restart Enable/Disable**
- **Dual Field Supply**
- **DC-Tachometer Input**

2610 Enclosed

Open Chassis

RATINGS: 1/8 TO 5 hp (115-230 VAC)

Series 2610 Non-Regenerative DC Drives										
Model	**Motor HP**	**Input**		**Output**				**Run-Stop, (Basic)**	**Run-Stop, Arm. Cont. DB**	**Run-Stop, Arm. Cont., Rev. & DB**
		AC Volts	**Amps**	**DC Volts**		**Amps**		**Order Code**	**Order Code**	**Order Code**
				Arm	**Field**	**Arm**	**Field**			
Chassis	1/8-1.0	115	15.8	90	50/100	10.5	1.0	2611	2611B	2611A
	1/2-2.0	230	15.8	180	100/200	11.6	1.0			
	1/8-1.0	115	15.8	90	50/100	10.5	1.0	2612	2612B	2612A
	1/2-3.0	230	22	180	100/200	15.1	1.5			
	1/8-1.0	115	15.8	90	50/100	10.5	1.0	2613	2613B	2613A
	1/2 -5.0	230	32	180	100/200	25	2.0			
Bookcase w/o Operator Controls	1/8-1.0	115	15.8	90	50/100	10.5	1.0	2615	2615B	2615A
	1/2-2.0	230	15.8	180	100/200	11.6	1.0			
NEMA 4/12 w/o Integral Operator Controls	1/8-1.0	115	15.8	90	50/100	10.5	1.0	2611P0	2611BP0	2611AP0
	1/2-2.0	230	15.8	180	100/200	11.6	1.0			
	1/8-1.0	115	15.8	90	50/100	10.5	1.0	2613P0	2613BP0	2613AP0
	1/2-5.0	230	32	180	100/200	25	2.0			
NEMA 4/12 with Integral Operator Controls	1/8-1.0	115	15.8	90	50/100	10.5	1.0	2611P1*	2611BP1*	2611AP3*
	1/2-2.0	230	15.8	180	100/200	10.5	1.0			
	1/8-1.0	115	15.8	90	50/100	10.5	1.0	2613P1*	2613BP1	2613AP3*
	1/2-5.0	230	32	180	100/200	25	2.0			
	1/8-1.0	115	15.8	90	50/100	10.5	1.0			2611P2*
	1/2-2.0	230	15.8	180	100/200	11.6	1.0			
	1/8-1.0	115	15.8	90	50/100	10.5	1.0	2611P7	2611BP7	Manual / Auto Switch.
	1/2-2.0	230	22	180	100/200	15.1	1.5			
	1/8-1.0	115	15.8	90	50/100	10.5	1.0	2613P7	2613BP7	
	1/2-5.0	230	32	180	100/200	25	2.0			

Units shipped calibrated for desired hp rating but jumpers can be adjusted for others. Units shipped ready for 230 VAC but may be reconnected for 115 VAC.

* P1, PB1, AP3, P2 have additional Jog controls. 2611P2 includes switch reversing (not contactor) without DB.

Fincor Series 2610

SPECIFICATIONS:

Operating Conditions

Horsepower	1/8 thru 5 hp, Jumper Selectable
Line Voltage	115-230 VAC ±10%, Jumper Selectable
Rated Frequency	50/60 Hz ±2%
Enclosure	Chassis, Bookcase, NEMA 4/12
Ambient Temperature	0 – 40°C (32°F - 104°F) (*Enclosed*) 0 – 55°C (32°F - 131°F) (*Chassis*)
Altitude	1000 m (3,300 ft)
Relative Humidity	95% Non condensing
Overload Capacity	150% for 1 minute (UL Listed Motor Overload Protection – File # E184521) (120% Timing Threshold)

Standard Features

Isolated Regulator Function	Grounded I/O signals possible
Regulator Function	Speed or Torque selectable
Power Conversion	4 SCR plus Freewheeling Diode
Field Supply	Full or Half Wave
Protection	MOV Voltage Transient Suppression High Interrupting Capacity Line Fuse
Speed Regulation	Armature or DC Tach Feedback
Line Start	Selectable for Auto-Restart
Controlled Stop	Provides ramp to stop function
Zero Speed Indication	Open Collector – Active Low
Speed Regulation Node	External PID Input or Speed Trim
Speed Outputs	0 – 10 VDC and 4 – 20 mA
Torque Outputs	0 – 10 VDC and 4 – 20 mA
Diagnostic LED	Green Normal – Red Current Limit
Option Connector	Connects Additional Option Boards

Control

Control Logic Power	24 VDC for Maintained Switch or Push button Operation
Speed Potentiometer	5 kOhms, ½ Watt
Input Reference	0 – 10 VDC or -10 – +10 VDC
Speed Regulation (95% Load Change)	2% with Armature Feedback 0.5% with Tachometer Feedback

Adjustments

Maximum Speed	50% – 100% of Motor Base Speed
Minimum Speed	50% – 40% of Motor Base Speed
Current Torque Limit	0% – 150% of Full Load
IR Compensation	0 – 10% Boost
Acceleration/Deceleration	0.1 – 30 Seconds
Voltage (Speed) Stability	Speed Gain Fine Tune
Current (Torque) Stability	Current Gain Fine Tune

Efficiency

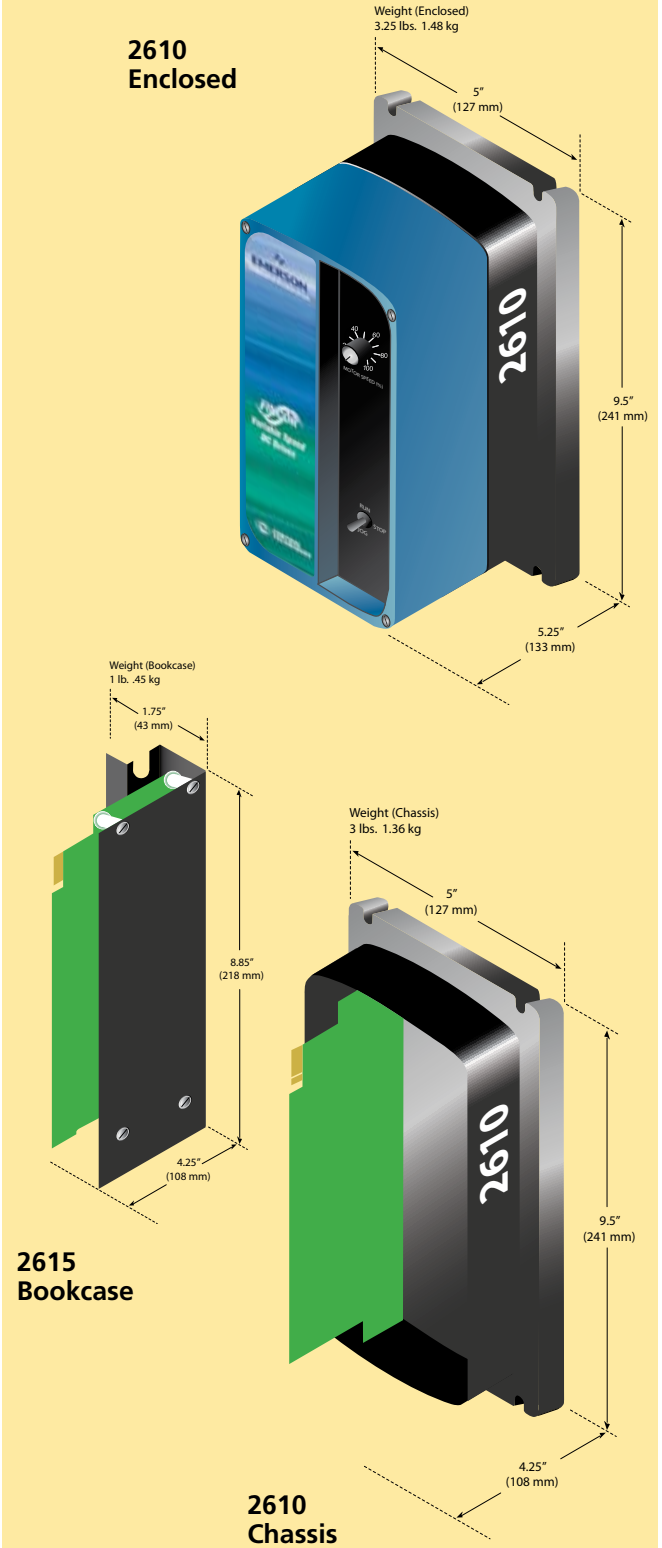
Controller (only)	98%
With Motor (typical)	85%

Approvals & Listings

UL and cUL

DIMENSIONS

2613Px Enclosed and
2613 Chassis see page 293



Fincor Series 2613 & 2233 5 hp drive dimensions

NEW

The new 5 hp rating in the 2613 non-regenerative series and the 2233 regenerative series combine industry leading Fincor electronics with the Control Techniques Focus series enclosure to achieve more customer value.

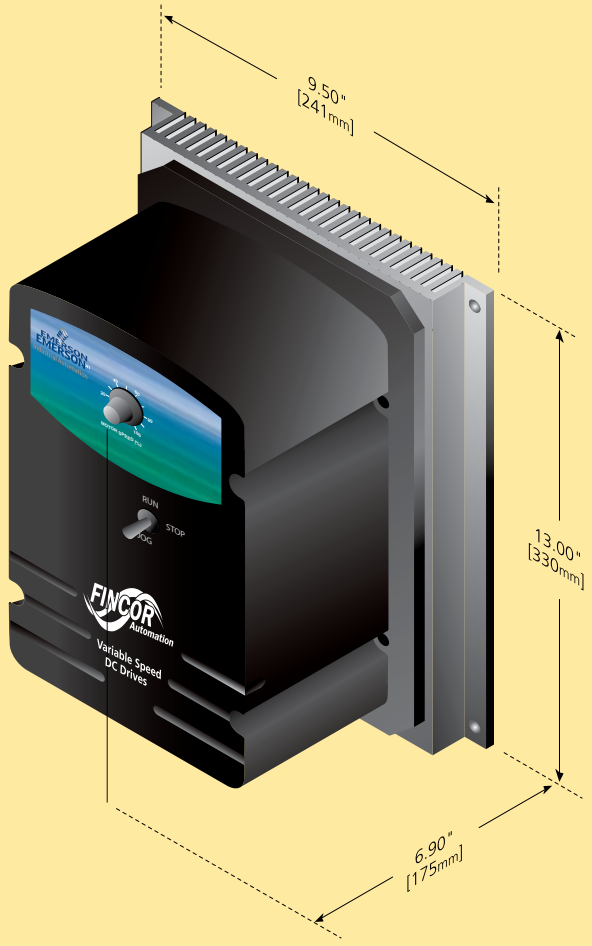
Standard features include a fully isolated circuit board using surface mount technology, speed or torque control, PID/Speed Trim control, Monitoring Output, and DC Tachometer Input.

Please see the respective 2610 series and 2230 series sections for specifications and more details regarding these drives..

DIMENSIONS

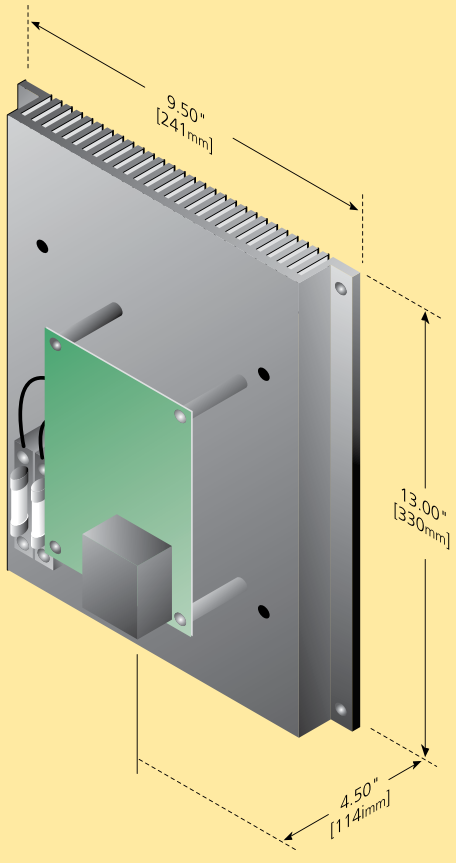
2613
2233
Enclosed

Weight (Enclosed)
14 lbs., 6.4 kg

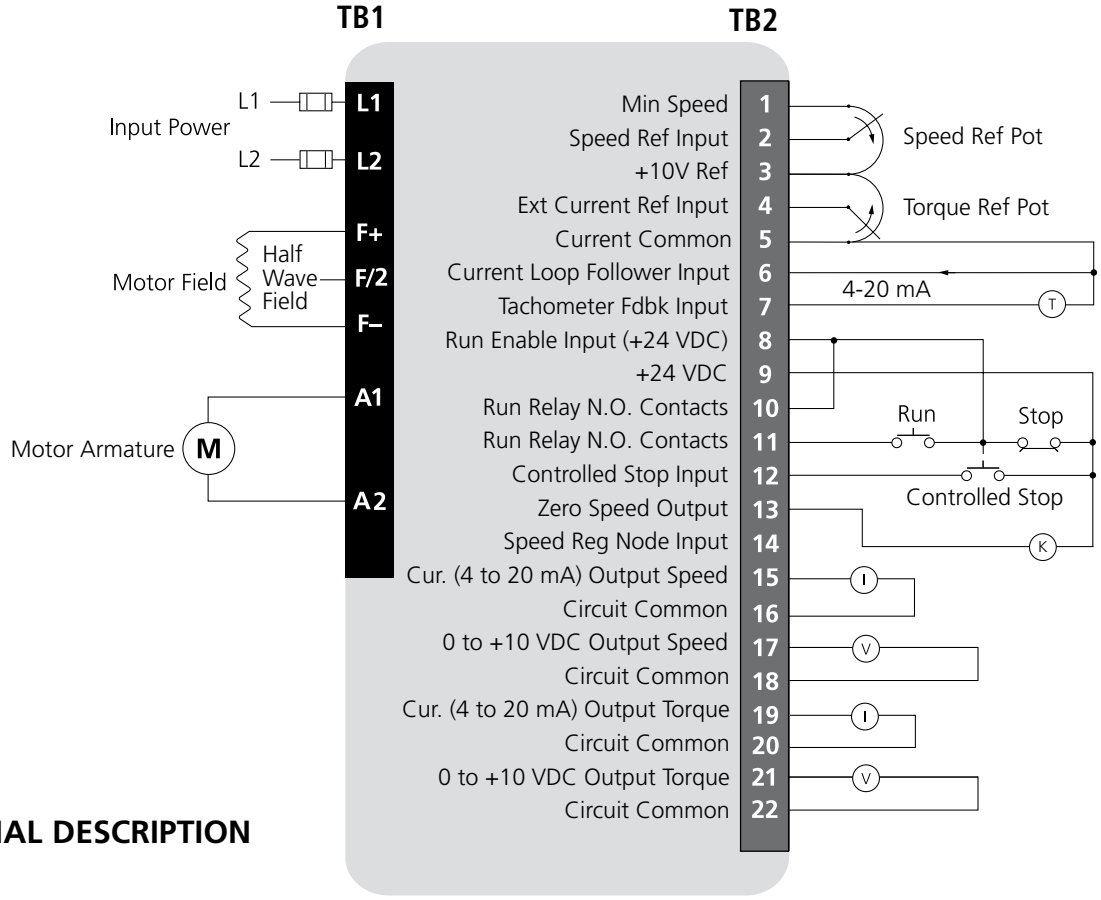


2613
2233
Chassis

Weight (Chassis)
12 lbs., 5.4 kg



TERMINAL DIAGRAM: Series 2610



TERMINAL DESCRIPTION

TB1

Pin#	Type	Notes
L1	Line Voltage Input	115 or 230 VAC J1 Selectable
L2	Line Voltage Input	115 or 230 VAC J1 Selectable
F+	Field Voltage Output	+100 VDC @ 115 VAC or +200 VDC @230 VAC Input
F/2	Field Voltage (Half-Wave) Output	+50 VDC @ 115 VAC or +100 VDC @230 VAC Input
F-	Field Voltage Output	Field Minus Output
A1	Armature + Output	0 to +90 VDC @ 115 VAC or 0 to +180 VDC @ 230 VAC Input
A2	Armature - Output	Armature Minus Output

TB2

Pin#	Type	Notes
1	Speed Reference Pot '0' End	With On-board Min Speed Pot Active
2	Speed Reference Input	200 KΩ Input Resistance
3	+10V Reference Output	5ma max
4	External Current Reference Input	Refer to DIP Switch SW3-2 (1 – 5 mA, 4 – 20 mA, 5 – 50 mA)
5	Circuit Common	Isolated From Line – Can be connected to Earth
6	Current Loop Follower Input	Refer to DIP Switch SW3-2 (1 – 5 mA, 4 – 20 mA, 5 – 50 mA)
7	Tachometer Input (Speed Feedback)	Polarity Insensitive for Reversing Applications (3-30 VDC, 31-175 VDC)

TB2 Continued

Pin#	Type	Notes
8	Enable Input (+24 VDC) – Run Relay	24 VDC @ 6 mA Input
9	+24 VDC	For drive enable use only
10	Run Relay N.O. Contacts	Form A Contact Rated 0.5A @ 115 VAC or 2A @ 30 VDC
11	Run Relay N.O. Contacts	
12	Controlled Stop Input (+24 VDC)	Momentary +24 VDC Input to Initiate Controlled (Ramp) to Stop
13	Zero Speed Indication Output	Open Collector, Active Low, Rated 24 VDC @ 50 mA
14	Speed Regulator Node Input	Speed Trim or External PID Input (Bypasses Accel/Decel Ramps)
15	Current Loop Output	4 to 20 mA – Speed (Arm Volts)
16	Current Loop Output	4 to 20 mA – Speed (Arm Volts)
17	Voltage Output	0 to 10 VDC – Speed (Arm Volts)
18	Voltage Output Common	Isolated From Line – Can be connected to Earth
19	Current Loop	Output 4 to 20 mA – Torque (Arm Amps)
20	Current Loop	
21	Voltage Output	0 to 10 VDC – Load (Arm Amps)
22	Voltage Output Common	Isolated From Line – Can be connected to Earth