

LEESON AC ADJUSTABLE SPEED DRIVES

SM2 SERIES SUB-MICRO INVERTERS

SM2 SERIES FLUX VECTOR DRIVE

With its price, its flexibility and a power range of up to 25 Hp, the SM2 SERIES FLUX VECTOR drive excels in environments where inverter technology was once considered too costly, including packaging machinery, food processing machinery, material handling/conveying systems and HVAC systems.



The SM2 SERIES FLUX VECTOR carries all the features required by demanding applications including four modes of operation (V/Hz, Enhanced V/Hz, Vector Speed, and Torque), high starting torque, auto-tuning, advanced low-speed control, and dynamic speed regulation.

General Specifications:

- **Horsepower:** 1 to 25HP (0.75 to 18.5kW)
- **Supply Power:**
 - Single Phase: 120, 208, 220 or 240VAC
 - Three Phase: 208, 240, 400, 480 or 600VAC
 - 50 / 60 Hz

Motors: Designed for operation with vector duty rated induction motors rated for 120, 200, 230, 400, 460 or 575VAC from 0 to 240Hz.

Enclosure: NEMA1, IP21, -10 to 55°C, 2.5% derate per °C above 40°C

Standard Features: Easy Set-up and Operation: Program the Vector control in one of four convenient ways:

- From the front of the drive
- The optional remote keypad
- A PC Using TechLink Software (Available free from www.leeson.com)
- The innovative EPM Programmer.

Modes of operation:

- Open Loop Flux Vector (Speed or Torque)
- V/Hz (constant or variable)
- Enhanced V/Hz with Auto-tuning

Easy to Use Keypad & Display 6-Button Interface:

- Start
- Stop
- Forward/Reverse
- Scroll Up
- Scroll Down
- Enter/Mode

Vivid Illumination:

- 4 digit LED display
- Easy to read from a distance
- Movable Decimal Point

Acceleration/Deceleration Profiles:

- Two Independent Accel Ramps
- Two Independent Decel Ramps
- Linear or S-Type
- Auxiliary Ramp-to-Stop

Output Frequency:

- 500 Hz Std., 1000 Hz Optional

Selectable Logic Assertion:

- Positive Logic Input (PNP current sourcing)
- Negative Logic Input (NPN current sinking)

Multiple Braking Functions

Loss of Follower Management

Speed Commands: Keypad, Jog, Floating Point Control

Voltage: Scalable 0-10 VDC,
Current: Scalable 4-20 mA, Potentiometer,
8 Preset Speeds

Process Control: PID Modes: Direct or Reverse Acting, PID Sleep Mode

SINGLE PHASE INPUT/THREE PHASE OUTPUT

115-230 Volts	HP	Output Amps 230 VAC	Input Voltage	Catalog Number	App. Wgt.(lbs.)	Dimension H x W x D (in.)
	1/3	1.7	115/230	174603.00	2.9	7.5 x 3.9 x 4.35
1/2	2.4	115/230	174604.00	3.0	7.5 x 3.9 x 4.35	
1	4.2	115/230	174605.00	3.2	7.5 x 3.9 x 4.35	
1.5	6.0	115/230	174651.00	5.0	7.5 x 3.9 x 5.45	

SINGLE OR THREE PHASE INPUT/THREE PHASE OUTPUT

208-240 Volts	HP	Output Amps 230 VAC	Input Voltage	Catalog Number	App. Wgt.(lbs.)	Dimension H x W x D (in.)
	1/3	1.7	208/240	174606.00	2.5	7.5 x 3.9 x 4.35
1/2	2.4	208/240	174607.00	2.9	7.5 x 3.9 x 4.35	
1	4.2	208/240	174608.00	3.2	7.5 x 3.9 x 4.35	
1 1/2	6.0	208/240	174609.00	3.7	7.5 x 3.9 x 5.45	
2	7.0	208/240	174610.00	3.7	7.5 x 3.9 x 5.45	
3	9.6	208/240	174611.00	3.9	7.5 x 3.9 x 5.45	

∂ LEESON model 174606 is single-phase input only

THREE PHASE INPUT/OUTPUT

200-240 Volts	HP	Output Amps 230 VAC	Input Voltage	Catalog Number	App. Wgt.(lbs.)	Dimension H x W x D (in.)
	1 1/2	6.0	200/240	174612.00	3.7	7.5 x 3.9 x 5.45
2	7.0	200/240	174613.00	3.7	7.5 x 3.9 x 5.45	
3	9.6	200/240	174614.00	3.8	7.5 x 3.9 x 5.45	
5	16.5	200/240	174615.00	4.2	7.5 x 3.9 x 5.8	
7 1/2	23.0	200/240	174616.00	7.3	9.83 x 5.12 x 6.3	
10	29.0	200/240	174617.00	7.3	9.83 x 5.12 x 6.3	
15	42.0	200/240	174618.00	20	12.33 x 6.88 x 8.08	
20	54.0	200/240	174619.00	20	12.33 x 6.88 x 8.08	
400-480 Volts	1/2	1.1	400/480	174620.00	3.0	7.5 x 3.9 x 4.35
	1	2.1	400/480	174621.00	3.2	7.5 x 3.9 x 4.35
	1 1/2	3.0	400/480	174622.00	3.6	7.5 x 3.9 x 5.45
	2	3.5	400/480	174623.00	3.7	7.5 x 3.9 x 5.45
	3	4.8	400/480	174624.00	3.7	7.5 x 3.9 x 5.45
	5	8.2	400/480	174625.00	4.3	7.5 x 3.9 x 5.8
	7 1/2	11.0	400/480	174626.00	7.3	9.83 x 5.12 x 6.3
	10	14.0	400/480	174627.00	7.3	9.83 x 5.12 x 6.3
	15	21.0	400/480	174628.00	20	12.33 x 6.88 x 8.08
	20	27.0	400/480	174629.00	20	12.33 x 6.88 x 8.08
480-590 Volts	25	35.0	400/480	174630.00	20	12.33 x 6.88 x 8.08
	1	1.7	480/590	174631.00	3.2	7.5 x 3.9 x 4.35
	2	2.7	480/590	174632.00	3.7	7.5 x 3.9 x 5.45
	3	3.9	480/590	174633.00	3.8	7.5 x 3.9 x 5.45
	5	6.1	480/590	174634.00	4.2	7.5 x 3.9 x 5.8
	7 1/2	9.0	480/590	174635.00	7.3	9.83 x 5.12 x 6.3
	10	11.0	480/590	174636.00	7.3	9.83 x 5.12 x 6.3
	15	17.0	480/590	174637.00	20	12.33 x 6.88 x 8.08
	20	22.0	480/590	174638.00	20	12.33 x 6.88 x 8.08
	25	27.0	480/590	174639.00	20	12.33 x 6.88 x 8.08

Voltage Monitoring

Current Monitoring

Real Time Monitoring: 8 register fault history, Software Version Drive Network ID, DC Bus Voltage (V), Motor Voltage (V), Output Current (%) Motor Current (A), Motor Torque (%), Power (kW) Energy Consumption (kWh), Heatsink Temperature (°C), 0-10 VDC Input (User Defined), 4-20 mA Input (User Defined) PID

Feedback (User Defined), Analog Output (% Load, % Torque, kW), Network Speed (baud rate), Terminal Continuity, Keypad Status,

Elapsed Run Time (hours), Elapsed Power on Time (hours)

Standards: UL (USA), cUL (Canada), CE (Europe), GOST (Russia/Ukraine) C-Tick (Australia/New Zealand)

PDF file of Manual available at www.leeson.com/Technical Information

Specifications are subject to change without notice