

# OPTIDRIVE™

For Single Phase Motors



IP20

IP66

Up to 1.1kW

Single Phase Motor Control for PSC & Shaded-Pole Motors

## Key Features

- ✓ 110–115V and 200–240V models
- ✓ Small mechanical envelope
- ✓ Rugged industrial operation
- ✓ Fast setup, and simple operation with 14 basic parameters
- ✓ Unique motor control strategy optimised for single phase motors
- ✓ Motor current and rpm indication
- ✓ Built in PI control, EMC filter (C1) & brake chopper
- ✓ Application macros for industrial, fan and pump operation
- ✓ Bluetooth® connectivity

Modbus RTU

CANopen

on-board as standard

150% overload for 60 secs  
(175% for 2 secs)



Pump control in swimming pools & spas

Simple airflow control

## Dedicated to Single Phase Motor Control

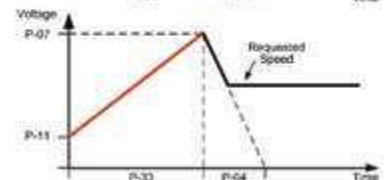
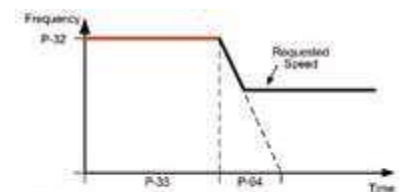
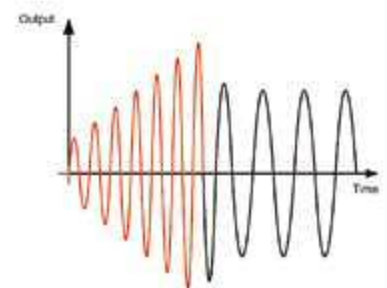
Designed to be cost effective and easy to use, the Optidrive E3 for Single Phase Motors is for use with PSC (Permanent Split Capacitor) or Shaded-Pole Single Phase induction motors.

Optidrive E3 for Single Phase Motors uses a revolutionary motor control strategy to achieve reliable intelligent starting of single phase motors.

- Removes the need for 3 phase supply wiring
- Provides the same performance features as the 3 phase Optidrive E3
- The ideal energy saving solution where high starting torque is not required — typically including fans, blowers, centrifugal pumps, fume extractors and air flow controllers

## Special Boost Phase

To ensure reliable starting of single phase motors, the drive initially ramps the motor voltage up to rated voltage whilst maintaining a fixed starting frequency, before reducing the frequency and voltage to the desired operating point.



# OPTIDRIVE™ E<sup>3</sup>

For Single Phase Motors

Model Code	Product Family	Generation	Frame Size	Voltage Code	Capacity	Supply Phases	EMC Filter	Brake Transistor	Enclosure Type	Single Phase Output
110-115V ± 10% 1 Phase Input	0.37	0.5	7	1	ODE - 3 - 1 1 0070 - 1	# 1	# -	01		
	0.55	0.75	10.5	2	ODE - 3 - 2 1 0105 - 1	# 4	# -	01		
200-240V ± 10% 1 Phase Input	0.37	0.5	4.3	1	ODE - 3 - 1 2 0043 - 1	# 1	# -	01		
	0.75	1	7	1	ODE - 3 - 1 2 0070 - 1	# 1	# -	01		
	1.1	1.5	10.5	2	ODE - 3 - 2 2 0105 - 1	# 4	# -	01		

Replace # in model code with colour-coded option

### Enclosure & Display Types

<b>X</b>		<b>IP66 Non-switched</b>
<b>Y</b>		<b>IP66 Switched</b>
<b>2</b>		<b>IP20</b>

### EMC Filter

<b>F</b>	Internal EMC Filter
<b>0</b>	No Internal EMC Filter

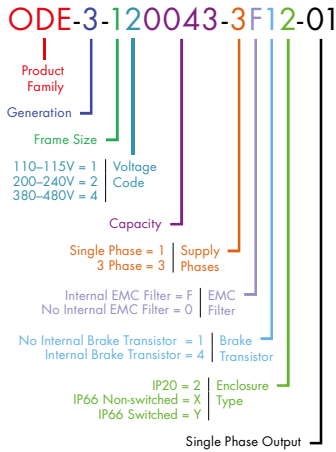
### IP20

Size	1	2
mm Height	173	221
mm Width	83	110
mm Depth	123	150
kg Weight	1.0	1.7
Fixings	4 x M5	4 x M5

### IP66

Size	1	2
mm Height	232	257
mm Width	161	188
mm Depth	179	187
kg Weight	3.1	4.1
Fixings	4 x M4	4 x M4

### Model Code Guide:



## Drive Specification

Input Ratings	Supply Voltage	110 – 115V ± 10% 200 – 240V ± 10%	Control Specification	Control Method	V/F Voltage Energy Optimised V/F	Application Features	PI Control	Internal PI Controller Standby / Sleep Function	
	Supply Frequency	48 – 62Hz		PWM Frequency	4–32kHz Effective		Fire Mode	Selectable Speed Setpoint (Fixed / PI / Analog / Fieldbus)	
	Displacement Power Factor	> 0.98		Stopping Mode	Ramp to stop: User Adjustable 0.1 – 600 secs Coast to stop		Maintenance & Diagnostics	Fault Memory	Last 4 Trips stored with time stamp
	Phase Imbalance	3% Maximum allowed		Braking	Motor Flux Braking Built-in braking transistor (frame size 2)			Data Logging	Logging of data prior to trip for diagnostic purposes: Output Current Drive Temperature DC Bus Voltage
	Inrush Current	< rated current		Skip Frequency	Single point, user adjustable		Monitoring	Hours Run Meter	
	Power Cycles	120 per hour maximum, evenly spaced		Setpoint Control	Analog Signal		0 to 10 Volts 10 to 0 Volts 0 to 20mA 20 to 0mA 4 to 20mA 20 to 4mA	Standards Compliance	Low Voltage Directive
Output Ratings	Output Power	110V 1 Ph Input: 0.5–0.75HP 230V 1 Ph Input: 0.37–1.1kW (0.5–1.5HP)	Digital		Motorised Potentiometer (Keypad) Modbus RTU CANopen EtherNet/IP	EMC Directive	2004/108/EC 230V 1Ph, Filtered Units : Cat C1 according to EN61800-3:2004		
	Overload Capacity	150% for 60 Seconds 175% for 2.5 seconds	Fieldbus		Built-in	CANopen	125–1000 kbps		
	Output Frequency	0 – 500Hz, 0.1Hz resolution				Modbus RTU	9.6–115.2 kbps selectable		
	Acceleration Time	0.01 – 600 seconds	I/O Specification	Power Supply	24 Volt DC, 100mA, Short Circuit Protected 10 Volt DC, 5mA for Potentiometer	Machinery Directive	2006/42/EC		
Deceleration Time	0.01 – 600 seconds	Programmable Inputs		4 Total 2 Digital 2 Analog / Digital selectable	Conformance	CE, UL, RCM			
Ambient Conditions	Temperature	Storage: –40 to 60°C Operating: –10 to 50°C	Digital Inputs	8 – 30 Volt DC, internal or external supply Response time < 4ms	Programming	Keypad	Built-in keypad as standard Optional remote mountable keypad		
	Altitude	Up to 1000m ASL without derating Up to 2000m maximum UL approved Up to 4000m maximum (non UL)	Analog Inputs	Resolution: 12 bits Response time: < 4ms Accuracy: ± 2% full scale Parameter adjustable scaling and offset		Display	7 Segment LED		
	Humidity	95% Max, non condensing	Programmable Outputs	2 Total 1 Analog / Digital 1 Relay		PC	OptiTools Studio		
	Vibration	Conforms to EN61800-5-1	Relay Outputs	Maximum Voltage: 250 VAC, 30 VDC Switching Current Capacity: 6A AC, 5A DC					
Enclosure	Ingress Protection	IP20, IP66	Analog Outputs	0 to 10 Volt					