OPTIDRIVE E2 SINGLE PHASE

Single Phase Motor Control

AC Variable Speed Drive
0.37kW – 11kW (0.5 – 15HP)
110 – 240V

Variable speed drive for low power single phase motors

The Optidrive E2 Single Phase is the World's first fully digital, fully packaged variable speed drive for controlling low power single phase motors.

Designed to be cost effective and easy to use, the Optidrive E2 Single Phase is for use with PSC (Permanent Split Capacitor) or Shaded-Pole Single-Phase induction motors.

Optidrive E2 Single Phase uses a revolutionary motor control strategy to achieve reliable intelligent starting of single phase motors.

Optidrive E2 Single Phase has only 14 standard parameters to adjust in its basic form. The Optidrive's legendary ease of use ensures quick and easy drive commissioning. For the more advanced user the extended parameter set gives access to powerful additional functionality.

Typical Applications

Direct-drive fans and blowers with PSC (permanent-split capacitor) and shaded pole motors on single-phase power. These are typically applications with a starting torque of between 50 – 100% of motor full load rated torque.

Key Benefits

- 115V & 220V ratings
- Single phase input/single phase output
- Small mechanical envelope
- Rugged industrial operation 50°C ambient rating
- Simple mechanical & electrical installation
- Fast setup, and simple operation. Factory default settings okay for most applications, only 14 basic parameters
- Variable torque or constant torque
- Unique programmable boost feature to achieve intelligent starting
- Motor current and rpm indication
- Debugging using troubleshooting & P-00
- 150% overload for 60 secs (175% for 2 secs)
- Keypad control
- Integral RFI filter option
- Integral brake chopper (S2 only)
- Modbus RTU serial communications

Industry Sectors

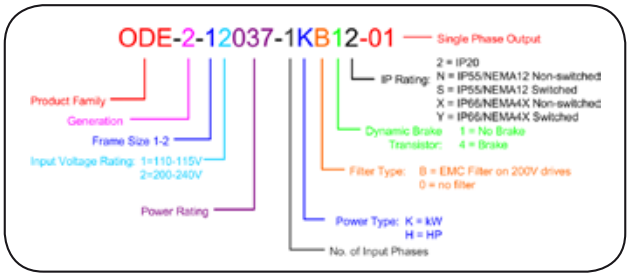
- Fan Control
- Food Processing
- Pumping
- Waste Water

OPTIDRIVE E2 SINGLE PHASE Dimensions

Size	Height (mm)	Width (mm)	Depth (mm)	Weight (kg)	Fixings
1	173	82	123	1.1	4 × M4
2	221	104	150	2.6	4 × M4

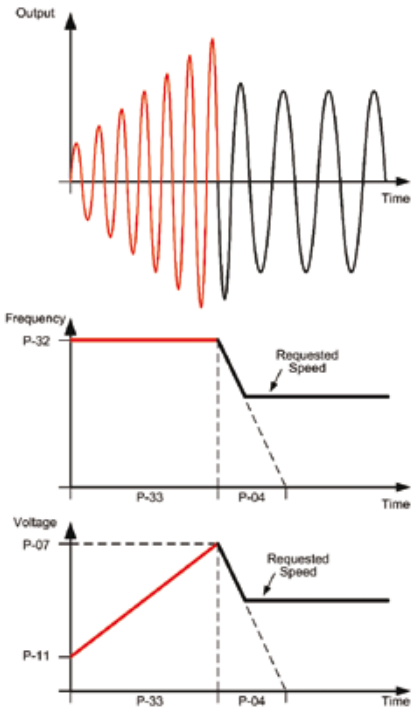
Specification		OPTIDRIVE E2 SINGLE PHASE
Output Ratings	Overload capacity	150% for 60 secs; 175% for 2 secs
	Frequency	0…120Hz
Input Ratings	Frequency	48–62Hz
	Voltage	110–115V ± 10% 1 Phase (0.5–1.5HP) 200–240V ± 10% 1 Phase (0.37–1.1kW / 0.5–1.5HP)
Ambient Conditions	Temperature	Operating: -10 to 50°C max; Storage: -40 to 60°C
	Altitude	0–2000m (derate 1% per 100m above 1000m)
	Ingress protection	IP20; Optional IP55/NEMA 12 & IP66/NEMA 4X
Programming	Keypad	Yes
	PDA	Yes
	Smartphone	Yes
Control Specification	Control method	V / F
	V/Hz ratio	Linear
	Boost	Automatic Boost Phase Operation
	Stop mode	Coast/Ramp/DC Brake
	Internal brake transistor	Yes (size 2 only); External resistor required
	Capacity	100% Drive Rated Power continuously
	Frequency setpoint control	0…10V DC 0…24V DC 4…20mA 0…20mA Digital–Keypad Modbus RTU
	Preset speeds	4
	PI control	Yes
	Spin start	Yes
	Acceleration	0…600 secs
	Deceleration	(2 ramps) 0…600 secs
	PC setup software	Optistore V3
Programmable I/O	Input 1	Programmable Digital Input
	Input 2 / Output 2	User-selectable Digital Input / Output
	Input 3	User-selectable Analogue / Digital Input
	Input 4	User-selectable Analogue / Digital Input
	Output 1	Programmable Analogue / Digital Output
	Relay 1	Relay Output (30V DC 5A, 250V AC 6A)
Keypad Display	Operating display	Output Frequency, Current, RPM and User Scalable values
	Remote mount	Optional Optiport E2 remote mounting keypad
Protective Functions	Inverter trip	Over voltage, over current, under voltage, external trip, motor overload, over temperature, short circuited, earth fault
	Memory	Last 4 trips stored
Bus Communication	Modbus RTU	Standard
	Profibus DP	via Gateway
	DeviceNet	via Gateway
	RS485 (Optibus)	Standard

OPTIDRIVE E2 SINGLE PHASE Part Number Designation



SPECIAL BOOST PHASE OPERATION

To ensure reliable starting, the Optidrive E2 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, see diagrams below.



Electrical Data in kW

with rfi filter fitted

200–240V 1 Phase	Motor Power (kW)	Output Current (A)	Frame Size
ODE-2-12037-1KB1#-01	0.37	4.3	1
ODE-2-12075-1KB1#-01	0.75	7	1
ODE-2-22110-1KB4#-01	1.1	10.5	2

Electrical Data in HP

without rfi filter fitted

110–115V 1 Phase	Motor Power (HP)	Output Current (A)	Frame Size
ODE-2-11005-1H01#-01	0.5	7	1
ODE-2-21007-1H04#-01	0.75	10.5	2

200–240V 1 Phase	Motor Power (HP)	Output Current (A)	Frame Size
ODE-2-12005-1H01#-01	0.5	4.3	1
ODE-2-12010-1H01#-01	1	7	1
ODE-2-22015-1H04#-01	1.5	10.5	2

Note: Substitute the # for the appropriate IP / NEMA rated product identifier.

Full product details and model numbers can be found online at **www.invertek.co.uk**