

OPTIDRIVE E1

Digital control for single phase motors

AC Variable Speed Drive 0.37-1.1kW

The Optidrive E1 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 E1 is for use with PSC (Permanent Split Capacitor) or Shaded-Pole Single-Phase induction motors.

Optidrive E1 uses a revolutionary motor control strategy to achieve reliable intelligent starting of single phase motors.

Optidrive E1 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.

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
- Simple operation, powerful features & easy to use
- Fast setup, factory default settings ok for most applications, only 14 basic parameters (40 max)
- 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



Key Physical Features

- Easy access key slots for simple installation
- Easy access contactor style power terminals for intuitive easy wiring
- Help card for basic parameter description and terminal layout
- Easy to use keypad with bright LED display
- IP20
- 5 mm pitch, rising clamp control terminals

Key Control I/O Features

- Programmable I/O for flexible control
- Analogue input 12 bit resolution for accuracy
- Positive logic digital inputs (active high)
- Galvanically isolated and short circuit proof

Key Programming Features

- Silent motor running with 32kHz ultra-quiet switching
- 4 preset speeds
- Mains dip ride through
- Skip frequencies
- Last 4 trips stored
- Parameter lock
- Hours run meter
- Speed scaling factor for master - slave arrangements
- Ten selectable V/f curves



LISTED 2A00
Power Conversion Equipment
E226333

ELECTRICAL DATA

OPTIDRIVE E1 SIZE 1

Model	ODE1-xxxxx-IN	-	12037	12075
Motor output rating	kW	-	0.37	0.75
Model	ODE1-xxxxx-USA	11050	12050	12100
Motor output rating	HP	0.5	0.5	1.0
Supply voltage/ phases	V +/- 10%	110-115/ 1Ø		220-240/ 1Ø
Supply fuse or MCB rating	A	7.0	10.0	20
Output voltage/ phases	V	0-115/ 1Ø		0-240/ 1Ø
Output current	A	4.3	4.3	7.0
Max motor cable length	m	25		

OPTIDRIVE E1 SIZE 2

Model	ODE1-xxxxx-IN	-	22110
Motor output rating	kW	-	1.1
Model	ODE1-xxxxx-USA	21075	22150
Motor output rating	HP	0.75	1.5
Supply voltage/ phases	V +/- 10%	110-115/ 1Ø	
Supply fuse or MCB rating	A	20	20
Output voltage/ phases	V +/- 10%	0-115/ 1Ø	
Output current	A	10.5	10.5
Max motor cable length	m	100	

OPTIDRIVE DIMENSIONS (mm)

	Size 1	Size 2
Length	155	260
Width	80	100
Depth	130	175
Weight (kg)	1.1	2.6
Fixings	2 * M4	
Power terminal torque settings	1 Nm	1 Nm

ENCLOSURE - NON VENTED DIMENSIONS (mm)

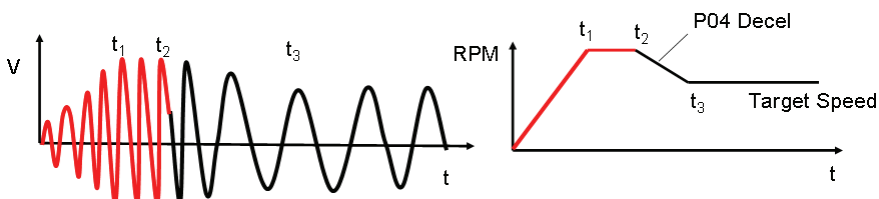
DRIVE RATING	SEALED UNIT		
	W	H	D
Size 1 All ratings	300	400	200
Size 2 All ratings	450	600	300

ENCLOSURE - VENTED DIMENSIONS (mm)

DRIVE RATING	VENTED UNIT			FORCE VENTED/ WITH FAN			
	W	H	D	W	H	D	Air Flow
Size 1 All ratings	300	400	150	200	300	150	>15m ³ /h
Size 2 All ratings	400	600	250	300	400	250	>45m ³ /h

SPECIAL BOOST PHASE OPERATION

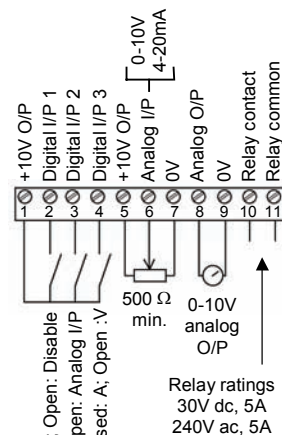
To ensure reliable starting, the Optidrive E1 initially ramps the motor voltage up to rated frequency and voltage, before reducing the frequency and voltage to the desired operating point, see diagrams below.



SPECIFICATION

- Supply frequency 48 to 62 Hz
- Max. ambient temperature 50°C
- Max. altitude 2000 m
- Derate above 1000 m, 1% / 100 m
- Derate output current 5%/°C above max. ambient temp up to 50°C
- I x t protection above 100% output current
- 150% overload protection for 60 sec
- 175% overload allowable for 2 sec
- Storage temperature -40 to +60°C
- Options:
 - Optifilter
 - Input Chokes & Output Filters
 - 2ANIN, dual analogue input
 - 2ROUT, dual relay output
 - PICON, feedback control (PI)
 - HVACO, HVAC relay output

Control Terminal Arrangement (default)



Size 2

