

**IP66**

**Up to 22kW**

- ✓ Outdoor rated
- ✓ Dust-tight
- ✓ Washdown ready

See **Page 5**



## Key Features

- ✓ Internal Category C1 EMC filter
- ✓ Internal PI control
- ✓ Internal brake chopper
- ✓ Dual analogue inputs
- ✓ Operates up to 50°C
- ✓ Bluetooth® connectivity
- ✓ Option for control of single phase motors (see **Page 8**)

**Modbus RTU**  
**CAN**

on-board as standard

## Internal Category C1 EMC Filter

An internal filter in every Optidrive E3 saves cost and time for installation.

Cat C1 according to EN61800-3:2004



# OPTIDRIVE™ E<sup>3</sup>

**IP66 Outdoor**

**Up to 22kW**

## Coated Heatsink as Standard

Ideal for hygiene based operations requiring washdown — such as food and beverage

Outdoor rated enclosed drives for direct machine mounting, dust tight and ready for washdown duty



IP66 / NEMA 4X

## Locally customisable

Flat front to terminal cover with mounting points for switches and an internal PCB.



Switched or non-switched

Conformal coating as standard



- 1** 2 x RJ45 ports  
eliminate the need for a splitter.
- 2** Easily accessible EMC disconnect
- 3** Easy to wire  
due to the large, accessible chamber and removeable gland plate.

## IP66/Nema 4X outdoor rated

Built with tough polycarbonate plastics specifically chosen to withstand degradation by ultra violet (UV), greases, oils and acids. Also robust enough not to be brittle at -20°C.

## Dust-Tight Design

Install directly on your processing equipment and be sure of protection from dust and contaminants.

## Washdown Ready

With a sealed ABS enclosure and corrosion resistant heatsink, the Optidrive E3 IP66 is ideal for high-pressure washdown applications.

## Switched models

Simply wire up the drive, turn the inbuilt potentiometer and the motor will start running – allowing immediate energy savings.

Saving energy cannot be easier than this!

For ultimate ease of use

Local Speed Potentiometer

Run Reverse / Off / Run Forward Switch

Lockable Mains Disconnect / Isolator



# Application Macros

Switch modes at the touch of a button to optimise Optidrive E3 for your application

Single parameter application macro selection



## Industrial Mode

**Industrial Mode** optimises Optidrive E3 for load characteristics of typical industrial applications.

### Applications include:

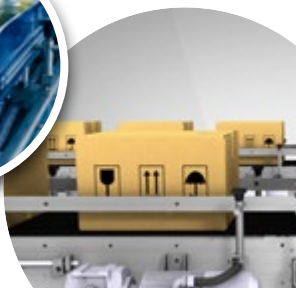
- ✓ Conveyors
- ✓ Mixers
- ✓ Treadmills

**Sensorless Vector** provides high starting torque and excellent speed regulation

**IP20** panel mount units or **IP66** for direct machine mounting



Rapid parameter cloning using **OPTISTICK** Smart



## Pump Mode

**Pump Mode** makes energy efficient pump control easier than ever.

### Applications include:

- ✓ Dosing Pumps
- ✓ Borehole Pumps
- ✓ Transfer Pumps
- ✓ Swimming Pools
- ✓ Spas
- ✓ Fountains

- Constant or variable torque
- Internal PI control



## Fan Mode

**Fan Mode** (inc. fire operation) makes air handling a breeze, ideal for simple HVAC systems.

### Applications include:

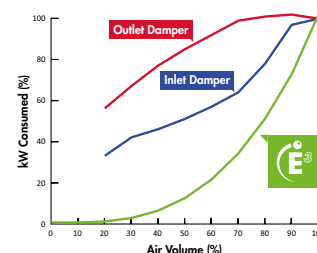
- ✓ Air Handling Units
- ✓ Ventilation Fans
- ✓ Circulating Fans
- ✓ Air Curtains
- ✓ Kitchen Extract



- High efficiency **variable torque** motor control
- Flying start capability
- Mains loss ride through
- PI control

## Instant Power Savings

The graph below shows the incredible efficiency of Optidrive E3 for controlling airflow compared to traditional damper control methods.



## Modbus RTU CAN

on-board as standard

## How much energy could you save?

Estimate potential energy savings, CO<sub>2</sub> emissions and financial savings for your application with the Invertek Drives **Energy Savings Calculator** app.



[www.invertekdrives.com/calculator](http://www.invertekdrives.com/calculator)

	kW	HP	Amps	Frame	Model Code	Product Family	Generation	Frame Size	Voltage Code	Output Current x 10	Supply Phases	EMC Filter	Brake Transistor	Enclosure Option
110–115V ± 10% 1 Phase Input	0.37	0.5	2.3	1	ODE - 3 - 1 1 0023 - 1	0	1	#						
	0.75	1	4.3	1	ODE - 3 - 1 1 0043 - 1	0	1	#						
	1.1	1.5	5.8	2	ODE - 3 - 2 1 0058 - 1	0	4	#						
200–240V ± 10% 1 Phase Input	0.37	0.5	2.3	1	ODE - 3 - 1 2 0023 - 1	#	1	#						
	0.75	1	4.3	1	ODE - 3 - 1 2 0043 - 1	#	1	#						
	1.5	2	7	1	ODE - 3 - 1 2 0070 - 1	#	1	#						
	1.5	2	7	2	ODE - 3 - 2 2 0070 - 1	#	4	#						
	2.2	3	10.5	2	ODE - 3 - 2 2 0105 - 1	#	4	#						
	4	5	15.3	3	ODE - 3 - 3 2 0153 - 1	0	4	#						
200–240V ± 10% 3 Phase Input	0.37	0.5	2.3	1	ODE - 3 - 1 2 0023 - 3	0	1	#						
	0.75	1	4.3	1	ODE - 3 - 1 2 0043 - 3	0	1	#						
	1.5	2	7	1	ODE - 3 - 1 2 0070 - 3	0	1	#						
	1.5	2	7	2	ODE - 3 - 2 2 0070 - 3	#	4	#						
	2.2	3	10.5	2	ODE - 3 - 2 2 0105 - 3	#	4	#						
	4	5	18	3	ODE - 3 - 3 2 0180 - 3	#	4	#						
	5.5	7.5	24	3	ODE - 3 - 3 2 0240 - 3	#	4	#						
	7.5	10	30	4	ODE - 3 - 4 2 0300 - 3	#	4	#						
	11	15	46	4	ODE - 3 - 4 2 0460 - 3	#	4	#						
	15	20	61	5	ODE - 3 - 5 2 0610 - 3	F	4	2						
	18.5	25	72	5	ODE - 3 - 5 2 0720 - 3	F	4	2						
380–480V ± 10% 3 Phase Input	0.75	1	2.2	1	ODE - 3 - 1 4 0022 - 3	#	1	#						
	1.5	2	4.1	1	ODE - 3 - 1 4 0041 - 3	#	1	#						
	1.5	2	4.1	2	ODE - 3 - 2 4 0041 - 3	#	4	#						
	2.2	3	5.8	2	ODE - 3 - 2 4 0058 - 3	#	4	#						
	4	5	9.5	2	ODE - 3 - 2 4 0095 - 3	#	4	#						
	5.5	7.5	14	3	ODE - 3 - 3 4 0140 - 3	#	4	#						
	7.5	10	18	3	ODE - 3 - 3 4 0180 - 3	#	4	#						
	11	15	24	3	ODE - 3 - 3 4 0240 - 3	#	4	#						
	15	20	30	4	ODE - 3 - 4 4 0300 - 3	#	4	#						
	18.5	25	39	4	ODE - 3 - 4 4 0390 - 3	#	4	#						
	22	30	46	4	ODE - 3 - 4 4 0460 - 3	#	4	#						
	30	40	61	5	ODE - 3 - 5 4 0610 - 3	F	4	2						
	37	50	72	5	ODE - 3 - 5 4 0720 - 3	F	4	2						

Replace # in model code with colour-coded option

## Enclosure Types

A



**IP66**  
Outdoor Use  
Non-switched

B



**IP66**  
Outdoor Use  
Switched

2



**IP20**

## EMC Filter

F

Internal EMC Filter

0

No Internal EMC Filter

## IP20

Size	1	2	3	4	5
mm Height	173	221	261	420	486
mm Width	83	110	131	171	222
mm Depth	123	150	175	212	226
kg Weight	1.0	1.7	3.2	9.1	18.1
Fixings	4xM5	4xM5	4xM5	4xM8	4xM8

## IP66

Size	1	2	3	4
mm Height	232	257	310	360
mm Width	161	188	210.5	240
mm Depth	162	182	238	275
kg Weight	2.5	3.5	7.0	9.5
Fixings	4xM4	4xM4	4xM4	4xM4

## Drive Specification

Input Ratings	Supply Voltage	110 – 115V ± 10% 200 – 240V ± 10% 380 – 480V ± 10%
	Supply Frequency	48 – 62Hz
	Displacement Power Factor	> 0.98
	Phase Imbalance	3% Maximum allowed
	Inrush Current	< rated current
	Power Cycles	120 per hour maximum, evenly spaced
Output Ratings	Output Power	110V 1 Ph Input: 0.5–1.5HP (230V 3 Ph Output) 230V 1 Ph Input: 0.37–4kW (0.5–5HP) 230V 3 Ph Input: 0.37–11kW (0.5–15HP) 400V 3 Ph Input: 0.75–22kW 460V 3 Ph Input: 1–30HP
	Overload Capacity	150% for 60 Seconds 175% for 2.5 seconds
	Output Frequency	0 – 500Hz, 0.1Hz resolution
	Acceleration Time	0.01 – 600 seconds
	Deceleration Time	0.01 – 600 seconds
	Typical Efficiency	> 98%
	Ambient Conditions	Temperature: Storage: –40 to 60°C Operating: –20 to 50°C Altitude: Up to 1000m ASL without derating Up to 2000m maximum UL approved Up to 4000m maximum (non UL) Humidity: 95% Max, non condensing Vibration: Conforms to EN61800-5-1
	Enclosure	Ingress Protection: IP20, IP66

Programming	Keypad	Built-in keypad as standard Optional remote mountable keypad
	Display	7 Segment LED
	PC	OptiTools Studio
Control Specification	Control Method	Sensorless Vector Speed Control PM Vector Control BLDC Control Synchronous Reluctance
	PWM Frequency	4–32kHz Effective
	Stopping Mode	Ramp to stop: User Adjustable 0.1–600 secs Coast to stop
	Braking	Motor Flux Braking Built-in braking transistor (not frame size 1)
	Skip Frequency	Single point, user adjustable
	Setpoint Control	Analog Signal: 0 to 10 Volts 10 to 0 Volts 0 to 20mA 20 to 0mA 4 to 20mA 20 to 4mA Digital: Motorised Potentiometer (Keypad) Modbus RTU CANopen EtherNet/IP
Fieldbus	Built-in	CANopen: 125–1000 kbps Modbus RTU: 9.6–115.2 kbps selectable

I/O Specification	Power Supply	24 Volt DC, 100mA, Short Circuit Protected 10 Volt DC, 10mA for Potentiometer
	Programmable Inputs	4 Total 2 Digital 2 Analog / Digital selectable
	Digital Inputs	8 – 30 Volt DC, internal or external supply Response time < 4ms
	Analog Inputs	Resolution: 12 bits Response time: < 4ms Accuracy: ± 2% full scale Parameter adjustable scaling and offset
	Programmable Outputs	2 Total 1 Analog / Digital 1 Relay
	Relay Outputs	Maximum Voltage: 250 VAC, 30 VDC Switching Current Capacity: 6A AC, 5A DC
Application Features	Analog Outputs	0 to 10 Volt
	PI Control	Internal PI Controller Standby / Sleep Function
	Fire Mode	Bidirectional Selectable Speed Setpoint (Fixed / PI / Analog / Fieldbus)
Maintenance & Diagnostics	Fault Memory	Last 4 Trips stored with time stamp
	Data Logging	Logging of data prior to trip for diagnostic purposes: Output Current Drive Temperature DC Bus Voltage
	Monitoring	Hours Run Meter
Standards Compliance	Low Voltage Directive	Adjustable speed electrical power drive systems. EMC requirements
	EMC Directive	2014/30/EU Cat C1 according to EN61800-3:2004
	Machinery Directive	2006/42/EC
Conformance		CE, UL, RCM