

OPTIDRIVE™

Stock Drives Catalogue

Variable Speed Drives
& Accessories



Company Overview



UK Head Office
Welshpool

Invertek Drives

Invertek Drives is dedicated to the design and manufacture of sophisticated electronic variable speed drives, used to control motors in a wide variety of industrial and energy saving applications.

The Organisation

State of the art UK headquarters house specialist facilities for innovation, manufacturing and global marketing.

All operations, including innovation, are accredited to the exacting customer focused ISO 9001:2000 quality standard.

The company's products are sold globally by a network of specialist distributors in 80 different countries. Invertek Drives' unique and innovative Optidrive range is designed for ease of use and meets recognised international design standards for CE (Europe), UL (USA) and CTick (Australia).



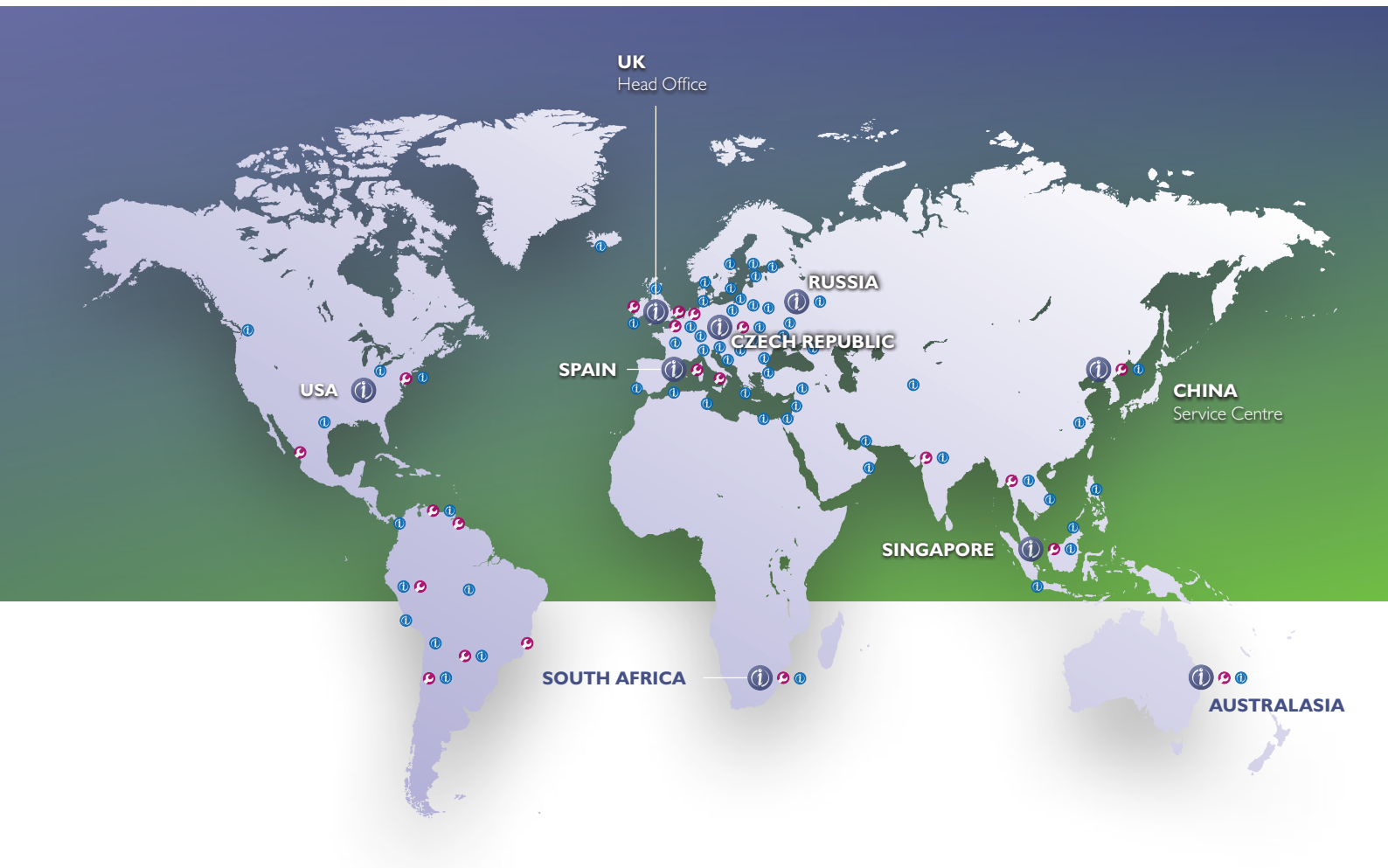
Innovative Products

- Easy to use variable speed drives
- Incredible performance
- Robust & reliable
- Low cost of installation & ownership
- Wide power range
0.37 – 250kW, 115V – 600V



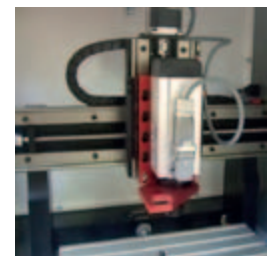
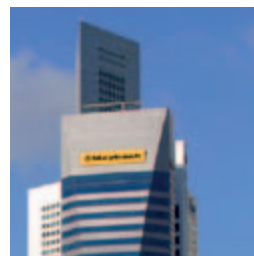
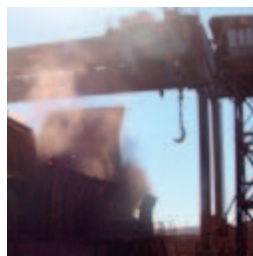


Global sales, service & application support
network **in over 80 countries**



Invertek Drives operate at the heart of automated systems
around the world

- Conveyors
- HVAC
- Machine Tools
- Manufacturing
- Pumping
- Process Control
- Elevators
- Cranes



Global Drive Solutions

OPTIDRIVE™

AC Variable Speed Drives



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AC Variable Speed Drives

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Product Range

P2

Previous Optidrive Version	Optidrive Plus
IP20 Supply / Power Range	200–240V, 1ph, 4.3 to 10.5A (0.75 to 2.2kW / 1.0 to 3.0HP) 200–240V, 3ph, 4.3 to 24A (0.75 to 5.5kW / 1.0 to 7.5HP) 380–480V, 3ph, 2.2 to 24A (0.75–11kW / 1.0 to 15HP)
IP40 Supply / Power Range	380–480V, 3ph, 370 to 450A (200 to 250kW / 300 to 350HP)
IP55 Supply / Power Range	200–240V, 3ph, 24 to 312A (5.5 to 90kW / 7.5 to 125HP) 380–480V, 3ph, 24 to 302A (11 to 160kW / 15 to 250HP)
IP66 Supply / Power Range	200–240V, 1ph, 4.3 to 10.5A (0.75 to 2.2kW / 1.0 to 3.0HP) 200–240V, 3ph, 4.3 to 18A (0.75 to 4.0kW / 1.0 to 5HP) 380–480V, 3ph, 2.2 to 18A (0.75 to 7.5kW / 1.0 to 10HP)
Operating Ambient Rating	IP20 : 50°C IP40 : 40°C IP55 : 40°C IP66 : 40°C
Control Modes	V/F, Energy Optimised, Sensorless & Closed Loop Vector, Open Loop Permanent Magnet
Maximum Output Hz	500
Linear / Variable Torque Control	Linear
Overload Capacity	150% - 60 Secs 200% - 3.75 Secs 250% - 1.8 Secs 300% (max) - 1.25 Secs
Internal EMC Filter Unit Available	All models provided with Internal EMC filter
Internal Brake Transistor	Standard Frame Sizes 2-5 Optional Frame Sizes 6 and above
I/O Connections	3 x Programmable Digital Inputs 2 x User-selectable Digital or Analog Inputs 2 x User-selectable Digital or Analog Outputs 2 x Programmable Relays (1 x change-over, 1 x single pole) Safe Torque Off inputs
Factory Fit Controls (Speed Potentiometer, FWD - 0 - REV, Power Isolator)	IP66 - Optional Factory Fit IP55: Power Isolator only (Option)
Frequency Set-point Input	Yes - Digital Input 3 (20kHz Max)
Power Supplies	24VDC @ 100mA 10VDC @ 10mA (for potentiometer)
Display Type	IP20: 7 Segment LED IP55 & IP66: Optional 7 Segment LED or OLED
Keypad	7-Seg = 5 button (start, stop, up, down, Navigate) OLED = 7 button (start, stop, up, down, Navigate, PLC1, PLC2)
Service/Maintenance Indication	Yes
PID Control	Yes (PID)
Energy Optimiser	Yes
Spin Start	Yes
Safe Torque Off Function	Yes
Pluggable Terminals	Yes
Fire Mode	No
Pump Cascade	No
Mains Power Disconnect	IP55: External Option IP66: Factory Fit Option
Bluetooth	Yes (Requires Optistick)
Parameter Copy Module	OptiStick
Communications	Modbus RTU / CANopen
PC Software	Optitools Studio
Simple PLC Functionality	Licensed Software Tool
PDA Software	Not Available
Remote Keypad	OPT-2-OPORT, OPTIPAD
Options	OPT-2-CASCD-IN OPT-2-ENCOD-IN OPT-2-EXTIO-IN OPT-2-PROFB-IN OPT-2-ETHNT-IN OPT-2-DEVNT-IN
Conformance	CE, UL, cUL



Easy to use, reliable products
with incredible performance



Pages 8–13



Pages 14–17



Pages 18–19



Pages 20–21

HVAC	E2	E2 Single Phase	PCE
Optidrive VTC 200–240V, 1ph, 4.3 to 10.5A (0.75 to 2.2kW / 1.0 to 3.0HP) 200–240V, 3ph, 4.3 to 24A (0.75 to 5.5kW / 1 to 7.5HP) 380–480V, 3ph, 2.2 to 24A (0.75–1.1kW / 1.0 to 15HP) 380–480V, 3ph, 370 to 450A (200 to 250kW / 300 to 350HP)	Optidrive E & EF 110–115V, 1ph, 2.3 to 5.8A (0.5 to 1.5HP) 200–240V, 1ph, 2.3 to 15A (0.37 to 4kW / 0.5 to 5HP) 200–240V, 3ph, 2.3 to 18A (0.37 to 4kW / 0.5 to 5HP) 380–480V, 3ph, 2.2 to 24A (0.75 to 1.1kW / 1 to 15HP)	Optidrive E1 & EF1 110–115V, 1ph, 7 to 10.5A (0.5 to 0.75HP) 200–240V, 1ph, 4.3 to 10.5A (0.37 to 1.1kW / 0.5 to 1.5HP)	None
200–240V, 3ph, 24 to 312A (5.5 to 90kW / 7.5 to 125HP) 380–480V, 3ph, 24 to 302A (11 to 160kW / 15 to 250HP)	110–115V, 1ph, 2.3 to 5.8A (0.5 to 1.5HP) 200–240V, 1ph, 2.3 to 10.5A (0.37 to 2.2kW / 0.5 to 3HP) 200–240V, 3ph, 2.3 to 18A (0.37 to 4kW / 0.5 to 5HP) 380–480V, 3ph, 2.2 to 18A (0.75 to 7.5kW / 1 to 10HP)	110–115V, 1ph, 7 to 10.5A (0.5 to 0.75HP) 200–240V, 1ph, 4.3 to 10.5A (0.37 to 1.1kW / 0.5 to 1.5HP)	200–240V, 1ph, 4.5 to 7A (0.75 to 1.5kW / 1 to 2HP) 380–480V, 3ph, 2.2 to 4.1A (0.75 to 1.5kW / 1 to 2HP)
200–240V, 1ph, 4.3 to 10.5A (0.75 to 2.2kW / 1.0 to 3.0HP) 200–240V, 3ph, 4.3 to 18A (0.75 to 4.0kW / 1.0 to 5HP) 380–480V, 3ph, 2.2 to 18A (0.75 to 7.5kW / 1.0 to 10HP)	110–115V, 1ph, 2.3 to 5.8A (0.5 to 1.5HP) 200–240V, 1ph, 2.3 to 15A (0.37 to 4kW / 0.5 to 5HP) 200–240V, 3ph, 2.3 to 18A (0.37 to 4kW / 0.5 to 5HP) 380–480V, 3ph, 2.2 to 18A (0.75 to 7.5kW / 1 to 10HP)	110–115V, 1ph, 7 to 10.5A (0.5 to 0.75HP) 200–240V, 1ph, 4.3 to 10.5A (0.37 to 1.1kW / 0.5 to 1.5HP)	
IP20 : 50°C IP40 : 40°C IP55 : 40°C IP66 : 40°C	IP20 : 50°C IP55 : 40°C IP66 : 40°C	IP20 : 50°C IP66 : 40°C	IP55 : 40°C
V/F Energy Optimised	V/F Energy Optimised	V/F	V/F, Energy Optimised, Sensorless Vector
120	500	120	500
Linear & Variable 110% - 60 Secs 125% - 7.5 Secs 150% - 3.9 Secs 165% (max) - 2.9S	Linear 150% - 60 Secs 175% - 2 Secs	Linear 150% - 60 Secs 175% - 2 Secs	Linear 150% - 60 Secs 175% - 2 Secs
All models provided with Internal EMC filter	110V not available with Filter All other models available with or without filter	110V not available with Filter All other models available with or without filter	All models available with or without filter
Not Available	Frame Sizes 2-3	Frame Size 2 Only	No
3 x Programmable Digital Inputs 2 x User-selectable Digital or Analog Inputs 2 x User-selectable Digital or Analog Outputs 2 x Programmable Relays (1 x change-over, 1 x single pole) Safe Torque Off inputs	2 x Programmable Digital Inputs 2 x User-selectable Digital or Analog Inputs 1 x User-selectable Digital or Analog Output 1 x Programmable Relay (single pole)	2 x Programmable Digital Inputs 2 x User-selectable Digital or Analog Inputs 1 x User-selectable Digital or Analog Output 1 x Programmable Relay (single pole)	2 x Programmable Digital Inputs 2 x User-selectable Digital or Analog Inputs 1 x Programmable Relay (single pole)
IP66: Power Isolator only (Optional Factory Fit) IP55: Power Isolator only (Option)	IP55: Optional Factory Fit IP66: Optional Factory Fit	IP66: Optional Factory Fit Note: Reverse not possible	Optional Factory Fit
No 24VDC @ 100mA 10VDC @ 10mA (for potentiometer)	No 24VDC @ 100mA 10VDC @ 10mA (for potentiometer)	No 24VDC @ 100mA 10VDC @ 10mA (for potentiometer)	No 24VDC @ 100mA
IP20: 7 Segment LED IP55 & IP66: OLED	7 Segment led	7 Segment LED	None
7-Seg = 5 button (start, stop, up, down, Navigate) OLED = 7 button (start, stop, up, down, Navigate, Hand, Auto)	5 button (start, stop, up, down, Navigate)	5 button (start, stop, up, down, Navigate)	Optional Remote
Yes	No	No	No
Yes (PID)	Yes (PI)	Yes (PI)	Yes (PID)
Yes	Yes	No	Yes
Yes	Yes, Frames 2-3	No	Yes
Yes	No	No	No
Yes	No	No	Yes
Yes	No	No	No
Yes	No	No	No
IP55: External Option IP66: Factory Fit Option	IP66: Factory Fit Option	IP66: Factory Fit Option	No
Yes (Requires Optistick)	Yes (Requires Optistick)	Yes (Requires Optistick)	No
OptiStick	OptiStick	OptiStick	No
Modbus RTU / BACnet	Modbus RTU	Modbus RTU	No
Optitools Studio	Optistore V3 OptiTools Studio (OTS)	Optistore V3 OptiTools Studio (OTS)	Optistore V3
Licensed Software Tool	No	No	No
Not Available	OptiWand	OptiWand	OptiWand
OPT-2-OPORT, OPTIPAD	OPT-OPORT, OPT-2-OPORT	OPT-OPORT, OPT-2-OPORT	OD-OPRTP
OPT-2-CASCD-IN OPT-2-EXTIO-IN OPT-2-BACNT-IN OPT-2-PROFB-IN OPT-2-ETHNT-IN OPT-2-DEVNT-IN	OPT-HVACO-IN ODP-2ROUT-IN OPT-LOGIP-11-IN OPT-LOGIP-23-IN	OPT-HVACO-IN ODP-2ROUT-IN OPT-LOGIP-11-IN OPT-LOGIP-23-IN	None Available
CE, UL, cUL	CE, UL, cUL, C-Tick, Gost	CE, UL, cUL, C-Tick, Gost	CE, UL, cUL, C-Tick, Gost

World Leading Motor Control

Controlling the latest generation of permanent magnet motors and standard induction motors

Optidrive P2 offers the perfect combination of high performance together with ease of use to allow even the most demanding applications to be tackled easily.

- Low ambient operation (–10°C)
- Dedicated Hoist Mode
- CAN and Modbus RTU communication as standard

High Performance

Sensorless Vector Control

Up to 200% torque from zero speed ensures reliable starting and accurate speed control under all load conditions.

PM Motor Control

Future proof. Allows upgrade to the latest generation of high efficiency permanent magnet motors.

I/O & Communications

Optidrive P2 supports a wide range of interfaces to machine control systems.

Low Cost Installation

Built-in EMC Filter

An internal filter in every Optidrive P2 saves cost and time for installation.

Integral Brake Transistor

Saves space, cost and time for installation.



IP55 / NEMA 12

Up to 160kW



IP66 / NEMA 4X

Up to 7.5kW

OptiTools Studio

Powerful PC based commissioning software

OptiTools Studio allows parameter upload, download and storage and access to Optidrive P2 Simple PLC functionality.

See Page 24

Bluetooth®



OPTISTICK

Fast parameter copying between drives

Manufacturing Conveyor Systems Processing Plants Chemical
 Pumping Machine Tools Rubber Elevators Cranes

150% overload for 60 seconds

200% overload for 4 seconds

Industrial heavy duty rating for every model



**Convenient
Help Card**



**Optional LED or OLED
(IP55 & IP66)**



**DIN Rail Mount
(IP20)**



**Pluggable
Terminals**

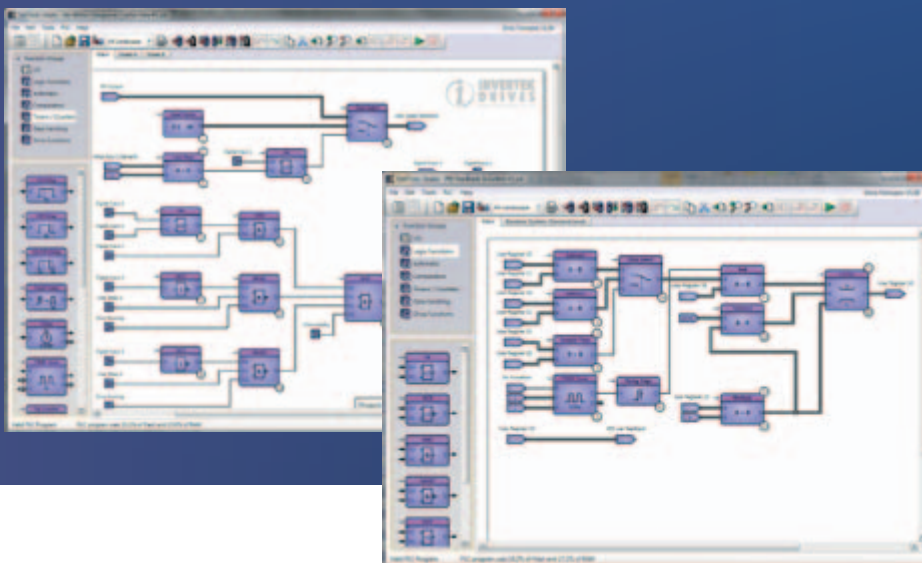


**High Quality
Long-life Fans**



High Performance | Easy to Use

Simple PLC Functionality



A wide range of function types available including:

- Programmable Logic Functions
- Comparators
- Timers
- Mathematical Functions
- Drive specific functions

All blocks can be easily combined to create flexible programs.

Programs can be protected to prevent unauthorised copying.

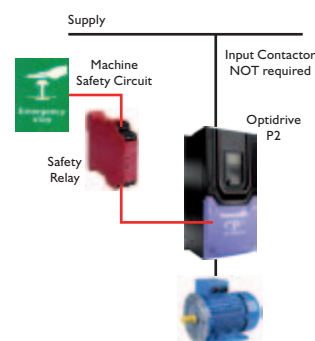
Complete control over the drive including all inputs and outputs.

Safe Torque Off (provided as standard)

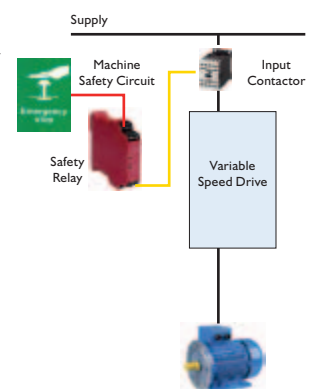
Optidrive P2 features a safe torque off function to allow simple integration into machine critical safety circuits.

- Simple machine design reduces component costs, saves panel space and minimises installation time
- Faster shut down and reset procedures reduce system maintenance time
- Better safety standard compared to mechanical solution
- Better motor connection. Single cable with no interruption.

With



Without



Advanced Motor Control

Invertek has developed advanced mathematical algorithms and uses the very latest hardware technology to ensure Optidrive P2 provides exceptional motor control with a simple interface to help users easily apply the benefits to their applications.



IP20

Panel mount units
available up to 11kW



IP55

Wall mount units
available up to 160kW



IP66

Wall mount units
available up to 7.5kW

Drive System Efficiency

With today's ever increasing energy costs, efficiency has long been a key factor in relation to drive system component selection. In many cases, an efficiency figure can be arrived at by simply multiplying the efficiencies of the various components together to find a combined efficiency figure, however this may not tell the whole story. The efficiency of components such as drives, motors and gearboxes can vary considerably with speed and load, hence simply combining the 'headline' efficiency figures can often be very misleading. In reality, the efficiency curves for the whole system should be overlaid, to provide a true efficiency figure for the system across the desired speed and load range.

Modern AC inverters will typically have an electrical efficiency of around 98%, which represents the difference between the electrical output power compared to electrical input power only. A further factor that is often overlooked is the efficiency of the motor control strategy employed by the drive. This can have a significant effect on the overall system efficiency, and is often not considered when energy saving calculations are made.

Optidrive P2 has been designed to work with both standard induction motors, which typically meet the IE2 efficiency standards currently in place in Europe, and the latest generation of high efficiency PM motors designed to meet the future IE4 requirements. This means that an efficient drive can be purchased now, allowing for a future update of the motor without requiring a change to the installed drive.

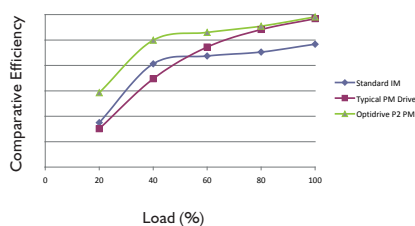
Furthermore, Optidrive P2 has been designed and developed to work with all PM motors, and control them with Optimum efficiency, providing the most efficient PM motor control available.

The graphs below clearly demonstrate these two factors:

- The overall efficiency of the system varies with speed and load and is not a constant
- Motor control efficiency significantly affects overall system efficiency

The graphs are generated by measuring the electrical power drawn from the mains supply compared to the torque generated at the output shaft. These are based on a system requirement of 2.2kW motor power.

Improvement in Efficiency at
100% Rated Speed Output



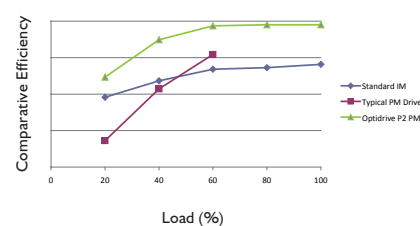
The **blue line** represents what will be considered a "high efficiency" solution using an efficient IM motor, a modern AC drive and efficient gearbox.

The **red line** represents efficiency of a typical PM motor and drive solution. Efficiency is improved at high speeds and loads, however it is actually reduced at very low loads, and output torque cannot be maintained at low speeds.

The **green line** represents the Optidrive P2 controlling the same PM motor. Efficiency is improved at all speeds and loads.

In simple terms, Optidrive P2 PM motor control produces the maximum amount of output shaft torque per electrical kW consumed across all speed and torque ranges.

Improvement in Efficiency at
10% Rated Speed Output





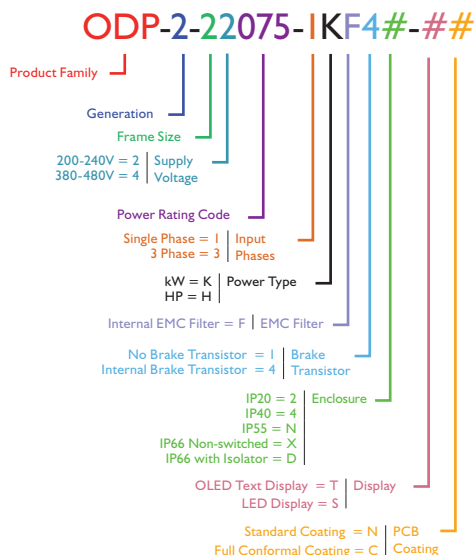
Drive Specification

Input Ratings	Supply Voltage	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	230V 1 Phase Input: 0.75–2.2kW (1–3HP) 230V 3 Phase Input: 0.75–75kW (1–100HP) 400V 3 Phase Input: 0.75–250kW 460V 3 Phase Input: 1–350HP
	Overload Capacity	150% for 60 seconds
	Output Frequency	0 – 500Hz, 0.1Hz resolution
	Typical Efficiency	98%
	Ambient Conditions	Temperature: Storage : –40 to 60°C Operating : –10 to 40°C
	Altitude	Up to 1000m ASL without derating Up to 2000m maximum UL Approved Up to 4000m maximum (non UL) Above 1000m : Derate by 1% per 100m
Enclosure	Humidity	95% Max, non-condensing
	Ingress Protection	IP20 (Size 2, 3) IP40 (Size 8) IP55 (Size 4, 5, 6, 7) IP66 (Size 2, 3)

Programming	Keypad	Built-in Keypad as standard Optional remote mountable keypad
	Display	Optional OLED or LED display (OLED Display Multi Language)
Control Specification	PC	OptiTools Studio
	Control Method	V/F Voltage Vector Energy Optimised V/F Sensorless Vector Speed Control Sensorless Vector Torque Control Closed Loop (Encoder) Speed Control Closed Loop (Encoder) Torque Control Open Loop PM Vector Control
PWM Frequency	PWM Frequency	4 – 32kHz Effective
	Stopping Mode	Ramp to Stop : User Adjustable 0.1 – 600 seconds Coast to Stop
Braking	Braking	Motor Flux Braking Built-in Braking Transistor (Optional for frame sizes 6 & 7)
	Skip Frequency	Single point, user adjustable
Setpoint Control	Analog Signal	0 to 10 Volts 10 to 0 Volts –10 to 10 Volts 0 to 20mA 20 to 0mA 4 to 20mA 20 to 4 mA
	Digital	Motorised Potentiometer (Keypad) Modbus RTU CANopen
Optional	Optional	Profibus DP, DeviceNet, EthernetIP

I/O Specification	Power Supply	24 Volt DC, 100mA, Short Circuit Protected 10 Volt DC, 5mA for Potentiometer
	Programmable Inputs	5 Total as standard (Optional additional 3) 3 Digital (Optional additional 3) 2 Analog / Digital Selectable
	Digital Inputs	10 – 30 Volt DC, internal or external supply, NPN Response time : < 4ms
	Analog Inputs	Resolution : 12 bits Response time : < 4ms Accuracy : < 1% full scale Parameter adjustable scaling and offset
	Programmable Outputs	4 Total (Optional additional 3) 2 Analog / Digital 2 Relays (Optional additional 3)
	Relay Outputs	Maximum Voltage : 250 VAC, 30 VDC Switching Current Capacity : 6A AC, 5A DC
Control Features	Analog Outputs	0 to 10 Volt 0 to 20mA 4 to 20mA
	Hoist Operation	Dedicated Hoist Operation Mode
Maintenance & Diagnostics	PID Control	Internal PID control with feedback display
	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
	Maintenance Indicator	Maintenance Indicator with user adjustable maintenance interval Onboard service life monitoring
	Monitoring	Hours Run Meter Resettable & Non Resettable kWh meters
	Standards Compliance	EN 61800-3:2004 Adjustable speed electrical power drive systems. EMC requirements.

Model Code Guide



Connection Diagram



Function	Default Setting
12 Volt DC Output, 100mA max / 24 Volt DC Input	
Digital Input 1	Drive Enable
Digital Input 2	Forward / Reverse Select
Digital Input 3	Preset Speed 1 Select
+10 Volt Power Supply 5mA	
Analog Input 1	Speed Reference 0–10 Volt
0 Volt	
Analog Output 1	Motor Speed
0 Volt	
Analog Input 2	
Analog Output 2	Motor Current
Safe Torque Off Input	
Safe Torque Off Input	
Output Relay 1	Drive Healthy / Fault
Output Relay 2	Drive Running

OPTIDRIVE™ HVAC

AC Variable Speed Drive

0.75kW – 250kW / IHP – 350HP
200 – 480V Single & 3 Phase Input

Energy Efficient Fan & Pump Control

from a reliable, compact range of drives dedicated to pumping and HVAC systems



Key Features

- Dedicated HVAC drive for centrifugal fan and pump applications
- Built-in EMC Filter as standard
- IP55 Enclosed
- Multi Language Plain Text OLED display
- Energy optimisation maximises operating efficiency
- BACnet and Modbus RTU provided as standard
- Built-in Hours Run kWh meters
- Bi-directional Fire Mode overrides the drive control providing ventilation in emergencies
- Built-in PID controller allows setpoint pressure or temperature to be accurately maintained
- Advanced software application functions reduce commissioning time and provide optimum performance
- Up to 32kHz output switching frequency for quiet motor operation
- Built-in Sleep and Wake functions ensure operation only when required



IP55 / NEMA 12

Up to 160kW



IP66 / NEMA 4X

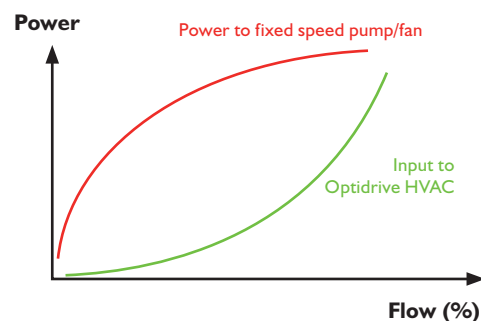
Up to 7.5kW

Energy Savings Calculator

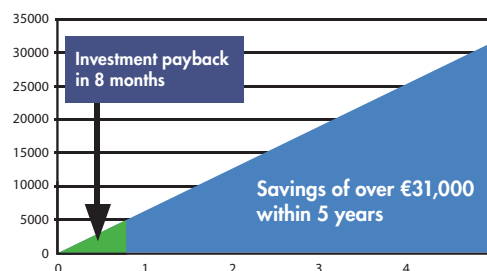
Visit www.invertek.co.uk to estimate your potential energy savings, CO₂ emissions and financial savings using our free software.

Optidrive HVAC Power Savings

With variable speed control, Optidrive HVAC provides instant savings.



Example savings based on a 45kW load



Using Optidrive HVAC compared to direct on-line control, an estimated 20% reduction in speed results in potential energy savings of 50%.

Calculation based on a typical estimated factory working week and energy costs, including estimated component and installation costs.

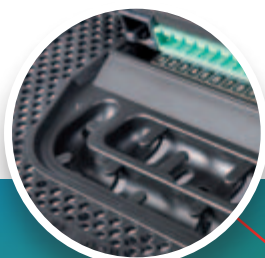


**Hand/Auto
Selection**

**Service
Indicator**



**Multi Language
OLED Display**



**Integrated Cable
Management**



**High Quality
Long-life Fans**



Fire Override Mode

Fire override mode ignores signals and alarms, keeping the Optidrive HVAC operating for as long as possible.

This feature is crucial for ensuring smoke extraction from buildings in the event of a fire.

Selectable logic means that the Optidrive HVAC can be easily configured to the signal produced by your fire management system.

With an independently set speed for fire mode operation, selectable as either forward or reverse direction, the Optidrive HVAC has the flexibility to match the needs of your fire control system.

PID Control

The Optidrive HVAC has a PID controller built in that is fully integrated with both HVAC and energy efficient features and is packaged in a user friendly way to ensure ease of use and fast commissioning.

Stairwell Pressurisation

In the event of a fire, stairwells are often essential escape routes.

Optidrive HVAC can be used to control air flow and pressure to help keep stairwells clear of smoke to allow safe evacuation and give firefighters safe access to buildings.

Improved Fan Efficiency

Energy Optimisation and Monitoring

The advanced optimisation function intelligently matches energy usage to the driven load to ensure your fan operates at maximum efficiency. The in-built energy consumption meters allow energy consumption to be clearly displayed and savings to be calculated.

Intelligent Standby

To reduce energy used by slow-running fans, Optidrive HVAC has an intelligent standby/sleep function to shut off output from the drive until demand for air flow increases.

Broken Belt Detection

Optidrive HVAC intelligently monitors current/speed to provide immediate warning of broken belts between motors and ventilation fans.

Resonance Avoidance

Optidrive HVAC can be easily configured to avoid frequencies that cause resonance in ventilation systems, preventing unnecessary noise and mechanical damage to motors and fans.

Energy Efficient Pump Control

OPTIFLOW™

Co-ordinated pump station control, built into each Optidrive HVAC as standard, allows independent control of multiple pump applications.

- All drives operate as variable speed for maximum energy saving.
- Equal run time sharing across every pump.
- Automatic system reconfiguration in the event of a pump fault (including the master pump).
- Continued system operation when drives are individually powered off (including the master drive).
- Communication and +24V control voltage shared between drives via a standard RJ45 patch lead.
- Independent maintenance indicators for each pump.
- Any pump can be switched to Hand operation at the touch of a button, and will automatically rejoin the network when switched back to Auto.
- For waste water applications each pump can be set for blockage/ragging detection and activate an automatic de-ragging/pump cleaning cycle.
- Optional mains isolator with lock-off for safe pump maintenance.
- Optiflow function configured through simple parameter set-up and intelligent drive self configuration.

Setpoint Control

OPTIFLOW™

A standard feature on every Optidrive HVAC

Independent pump system control

OptiFlow Communications

← Feedback signal





Pump Efficiency

In-built Sleep Mode with Auto-boost

Sleep mode saves energy by detecting when a pump is running inefficiently and producing little useful work. Optidrive HVAC can be programmed to enter into a sleep/disabled mode until the demand increases. To help prevent sleep mode oscillation, Optidrive HVAC can automatically initiate a boost cycle to increase pressure on starting or stopping.

Drive Controlled Bypass

Intelligent features within the Optidrive HVAC allow a bypass circuit to be implemented. Activation of Bypass mode can be determined intelligently by the Optidrive HVAC drive based on a command from the building management system. The drive can be set to automatically select bypass mode when entering into a trip condition ensuring minimal disruption to service.

Avoid Pump Downtime

Blockage Detect/Clear

Optidrive HVAC can detect pump blockages and trigger a programmed cleaning cycle to automatically clear them, preventing downtime.

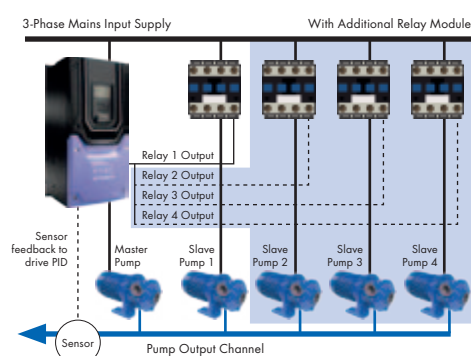
Pump Clean/Stir Cycle

Triggered by a settable period of inactivity, a configurable cleaning cycle can be run to clear sediment, ensuring the pump is ready to run when needed.

Dry Run Protection

Optidrive HVAC can evaluate a pump's speed/power and shut it off or warn when the pump starts to run dry, protecting it from heat/friction damage.

Relay Cascade Control (requires optional cascade module)



Variable speed duty pump with up to 4 assist pumps

Optidrive HVAC can provide automatic operating time monitoring and balancing for assist pumps to share duty cycle. Run time clocks for all fixed speed assist pumps are maintained and visible within the Optidrive HVAC for integration into the pump system maintenance schedules.

Motor Preheat Function

Optidrive HVAC features a motor preheat function to help ensure moisture is not permitted to collect on the motor in periods of inactivity and prior to motor start up. In addition, the motor preheat function can be used to keep condensation from developing on the motor as the motor cools down immediately following a stop. The feature is fully configurable, meaning the pump can be always available the instant it is required.

				kW Model Code										HP Model Code										Factory Build Options											
				kW	HP	Amps	Size	kW Model Code							HP Model Code							Factory Build Options													
								Product Range	Generation	Frame Size	Supply Voltage	Power Rating	Input Phases	Power Type	Brake	Factory Build Options	Product Range	Generation	Frame Size	Supply Voltage	Power Rating	Input Phases	Power Type	Brake	Factory Build Options	Enclosure	IP20	IP55	IP66	IP66 with Isolator	Display	7 Segment LED	PCB Coating	Standard Coating	Full Conformal
200–240V ± 10% 1 Phase Input	0.75	1	4.3	2	ODV-2-2-2 075-1 K F I	#-##	ODV-2-2-2 010-1 H F I	#-##	2			X	D	S	T	N	C																		
	1.5	2	7	2	ODV-2-2-2 150-1 K F I	#-##	ODV-2-2-2 020-1 H F I	#-##	2			X	D	S	T	N	C																		
	2.2	3	10.5	2	ODV-2-2-2 220-1 K F I	#-##	ODV-2-2-2 030-1 H F I	#-##	2			X	D	S	T	N	C																		
200–240V ± 10% 3 Phase Input	0.75	1	4.3	2	ODV-2-2-2 075-3 K F I	#-##	ODV-2-2-2 010-3 H F I	#-##	2			X	D	S	T	N	C																		
	1.5	2	7	2	ODV-2-2-2 150-3 K F I	#-##	ODV-2-2-2 020-3 H F I	#-##	2			X	D	S	T	N	C																		
	2.2	3	10.5	2	ODV-2-2-2 220-3 K F I	#-##	ODV-2-2-2 030-3 H F I	#-##	2			X	D	S	T	N	C																		
	4	5	18	3	ODV-2-3-2 040-3 K F I	#-##	ODV-2-3-2 050-3 H F I	#-##	2			X	D	S	T	N	C																		
	5.5	7.5	24	3	ODV-2-3-2 055-3 K F I	2-##	ODV-2-3-2 075-3 H F I	2-##	2					S	T	N	C																		
	5.5	7.5	24	4	ODV-2-4-2 055-3 K F I	N-T#	ODV-2-4-2 075-3 H F I	N-T#				N			T	N	C																		
	7.5	10	30	4	ODV-2-4-2 075-3 K F I	N-T#	ODV-2-4-2 100-3 H F I	N-T#				N			T	N	C																		
	11	15	46	4	ODV-2-4-2 110-3 K F I	N-T#	ODV-2-4-2 150-3 H F I	N-T#				N			T	N	C																		
	15	20	61	5	ODV-2-5-2 150-3 K F I	N-T#	ODV-2-5-2 020-3 H F I	N-T#				N			T	N	C																		
	18.5	25	72	5	ODV-2-5-2 185-3 K F I	N-T#	ODV-2-5-2 025-3 H F I	N-T#				N			T	N	C																		
	22	30	90	6	ODV-2-6-2 022-3 K F I	N-T#	ODV-2-6-2 030-3 H F I	N-T#				N			T	N	C																		
	30	40	110	6	ODV-2-6-2 030-3 K F I	N-T#	ODV-2-6-2 040-3 H F I	N-T#				N			T	N	C																		
	37	50	150	6	ODV-2-6-2 037-3 K F I	N-T#	ODV-2-6-2 050-3 H F I	N-T#				N			T	N	C																		
	45	60	180	6	ODV-2-6-2 045-3 K F I	N-T#	ODV-2-6-2 060-3 H F I	N-T#				N			T	N	C																		
	55	75	202	7	ODV-2-7-2 055-3 K F I	N-T#	ODV-2-7-2 075-3 H F I	N-T#				N			T	N	C																		
	75	100	248	7	ODV-2-7-2 075-3 K F I	N-T#	ODV-2-7-2 100-3 H F I	N-T#				N			T	N	C																		
380–480V ± 10% 3 Phase Input	0.75	1	2.2	2	ODV-2-2-4 075-3 K F I	#-##	ODV-2-2-4 010-3 H F I	#-##	2			X	D	S	T	N	C																		
	1.5	2	4.1	2	ODV-2-2-4 150-3 K F I	#-##	ODV-2-2-4 020-3 H F I	#-##	2			X	D	S	T	N	C																		
	2.2	3	5.8	2	ODV-2-2-4 220-3 K F I	#-##	ODV-2-2-4 030-3 H F I	#-##	2			X	D	S	T	N	C																		
	4	5	9.5	2	ODV-2-2-4 400-3 K F I	#-##	ODV-2-2-4 050-3 H F I	#-##	2			X	D	S	T	N	C																		
	5.5	7.5	14	3	ODV-2-3-4 055-3 K F I	#-##	ODV-2-3-4 075-3 H F I	#-##	2			X	D	S	T	N	C																		
	7.5	10	18	3	ODV-2-3-4 075-3 K F I	#-##	ODV-2-3-4 100-3 H F I	#-##	2			X	D	S	T	N	C																		
	11	15	24	3	ODV-2-3-4 110-3 K F I	2-##	ODV-2-3-4 150-3 H F I	2-##	2					S	T	N	C																		
	11	15	24	4	ODV-2-4-4 110-3 K F I	N-T#	ODV-2-4-4 150-3 H F I	N-T#				N			T	N	C																		
	15	20	30	4	ODV-2-4-4 150-3 K F I	N-T#	ODV-2-4-4 200-3 H F I	N-T#				N			T	N	C																		
	18.5	25	39	4	ODV-2-4-4 185-3 K F I	N-T#	ODV-2-4-4 250-3 H F I	N-T#				N			T	N	C																		
	22	30	46	4	ODV-2-4-4 220-3 K F I	N-T#	ODV-2-4-4 300-3 H F I	N-T#				N			T	N	C																		
	30	40	61	5	ODV-2-5-4 300-3 K F I	N-T#	ODV-2-5-4 040-3 H F I	N-T#				N			T	N	C																		
	37	50	72	5	ODV-2-5-4 370-3 K F I	N-T#	ODV-2-5-4 050-3 H F I	N-T#				N			T	N	C																		
	45	60	90	5	ODV-2-5-4 450-3 K F I	N-T#	ODV-2-5-4 060-3 H F I	N-T#				N			T	N	C																		
	55	75	110	6	ODV-2-6-4 055-3 K F I	N-T#	ODV-2-6-4 075-3 H F I	N-T#				N			T	N	C																		
	75	120	150	6	ODV-2-6-4 075-3 K F I	N-T#	ODV-2-6-4 120-3 H F I	N-T#				N			T	N	C																		
	90	150	180	6	ODV-2-6-4 090-3 K F I	N-T#	ODV-2-6-4 150-3 H F I	N-T#				N			T	N	C																		
	110	175	202	6	ODV-2-6-4 110-3 K F I	N-T#	ODV-2-6-4 175-3 H F I	N-T#				N			T	N	C																		
	132	200	240	7	ODV-2-7-4 132-3 K F I	N-T#	ODV-2-7-4 200-3 H F I	N-T#				N			T	N	C																		
	160	250	302	7	ODV-2-7-4 160-3 K F I	N-T#	ODV-2-7-4 250-3 H F I	N-T#				N			T	N	C																		
	200	300	370	8	ODV-2-8-4 200-3 K F I	4-T#	ODV-2-8-4 300-3 H F I	4-T#				4			T	N	C																		
	250	350	450	8	ODV-2-8-4 250-3 K F I	4-T#	ODV-2-8-4 350-3 H F I	4-T#				4			T	N	C																		
kW Models: Factory Settings				HP Models: Factory Settings				Replace # in model code with colour-coded option																											
Motor Rated Frequency: 50Hz				Motor Rated Frequency: 60Hz				IP20 units are available with 7 Segment LED Display only																											
Motor Rated Voltage: 400V				Motor Rated Voltage: 460V																															

kW Models: Factory Settings

Motor Rated Frequency: 50Hz
Motor Rated Voltage: 400V

HP Models: Factory Settings

Motor Rated Frequency: 60Hz
Motor Rated Voltage: 460V

Replace # in model code with colour-coded option
IP20 units are available with 7 Segment LED Display only



NOT TO SCALE

Size	2	2	3	3	4	5	6	7	8
Enclosure	IP20	IP66	IP20	IP66	IP55	IP55	IP55	IP55	IP40
Height (mm)	221	257	261	310	440	540	865	1280	2000
Width (mm)	112	188	131	211	173	235	330	330	516
Depth (mm)	185	239.5	205	251.5	230	270	340	370	500
Weight (kg)	1.8	4.8	3.5	7.3	11.5	22.5	50	80	270

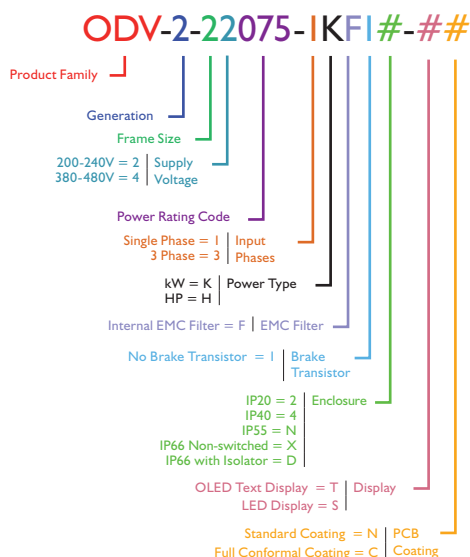


Drive Specification

Input Ratings	Supply Voltage	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	230V 1 Phase Input: 0.75–2.2kW (1–3HP) 230V 3 Phase Input: 0.75–75kW (1–100HP) 400V 3 Phase Input: 0.75–250kW 460V 3 Phase Input: 1–350HP
	Overload Capacity	110% for 60 seconds
	Output Frequency	0 – 120Hz, 0.1Hz resolution
	Typical Efficiency	98%
Ambient Conditions	Temperature	Storage : –40 to 60°C Operating : –10 to 40°C
	Altitude	Up to 1000m ASL without derating Up to 2000m maximum UL approved Up to 4000m maximum (non UL) Above 1000m : Derate by 1% per 100m
	Humidity	95% Max, non-condensing
Enclosure	Ingress Protection	IP20 (Frame sizes 2 & 3) IP66 (Frame sizes 2 & 3; up to 7.5kW) IP55 (Frame sizes 4 – 7) IP40 (Frame size 8)
Programming	Keypad	Built-in keypad as standard Optional remote mountable keypad
	Display	Built-in multi language OLED display (except IP20) LED display (IP20 only)
	PC	OptiTools Studio

Control Specification	Control Method	Variable Torque V/F Variable Torque Energy Optimised V/F
	PWM Frequency	4–32kHz Effective
	Stopping Mode	Ramp to Stop : User Adjustable 1 – 600 seconds Coast to Stop
	Braking	Motor Flux Braking
	Skip Frequency	Single point, user adjustable
	Setpoint Control	0 to 10 Volts 10 to 0 Volts –10 to +10 Volts 0 to 20mA 20 to 0mA 4 to 20mA 20 to 4 mA
I/O Specification	Power Supply	24 Volt DC, 100mA, Short Circuit Protected 10 Volt DC, 5mA for Potentiometer
	Programmable Inputs	5 Total as standard (Optional additional 3) 3 Digital (Optional additional 3) 2 Analog / Digital Selectable
	Digital Inputs	10 – 30 Volt DC, internal or external supply, NPN Response time : < 4ms
Control Features	Fire Mode	Selectable direction Selectable speed reference
	Broken Belt Detection	Under load monitoring with autotune configuration
	PID Control	Internal PID control with feedback display
Pump Control Features	Pump Blockage Detection	Pump load monitoring with autotune function, user configurable
	Pump Cleaning	Adjustable Pump Cleaning Cycle operation
	Multi-pump Control	Control of fixed speed assist pumps via optional cascade control module Control of Duty, Assist and Standby variable speed pumps via internal Master – Slave network
	Pump Stir	Automatic pump stir function
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
	Maintenance Indicator	Maintenance Indicator with user adjustable maintenance interval Onboard service life monitoring
	Monitoring	Hours Run Meter Resettable & Non Resettable kWh meters
Standards Compliance	EN 61800-3:2004	Adjustable speed electrical power drive systems. EMC requirements.

Model Code Guide



Connection Diagram



Function	Default Setting
12 Volt DC Output, 100mA max / 24 Volt DC Input	
Digital Input 1	Drive Enable
Digital Input 2	Analog / Preset Speed 1 Select
Digital Input 3	Local / Remote Reference Select
+10 Volt Power Supply 5mA	
Analog Input 1	Local Speed Reference
0 Volt	
Analog Output 1	Motor Speed
0 Volt	
Analog Input 2	Remote Speed Reference
Analog Output 2	Motor Current
Safe Torque Off Input	
Safe Torque Off Input	
Output Relay 1	Drive Healthy / Fault
Output Relay 2	Drive Running

General Purpose

Dedicated to low power applications, Optidrive E2 combines innovative technology, reliability, robustness and ease of use in a range of compact IP20 & IP66 enclosures

Key Features

- ✓ **Intuitive Keypad Control**
Precise digital control at the touch of a button.
- ✓ **Simple Commissioning**
12 parameter basic setup. Default settings suitable for most applications. Contactor style connection for simple wiring.
- ✓ **Integral RFI Filter**
Options for built-in and external filters for full EMC compliance.
- ✓ **Modbus RTU**
Easy integration with your control & monitoring systems.
- ✓ **Compact Enclosures**
Small mechanical envelopes to help minimise your space requirements.
- ✓ **Brake Chopper (Sizes 2 & 3)**
Dynamic & compact options with heatsink mounted resistor.
- ✓ **High Overload Capability**
150% overload for 60 seconds.
175% overload for 2 seconds.
- ✓ **Industrial Ambient Ratings**
IP20 Enclosure: 50°C
IP66 Enclosure: 40°C



Bottling Processing Plants Chemical Woodworking Conveyor Systems
Pumping HVAC Baggage Handling Agricultural Mining

IP20

Available up to 11kW

IP66

Available up to 7.5kW



**Convenient
Help Card**



**EMC & Varistor
Disconnect**



**Optistick
Programming**



DIN Rail Mount



**Optional Braking
Resistor**

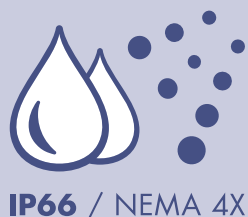


				kW Model Code										HP Model Code										Factory Build Options									
				Product Range	Generation	Frame Size	Supply Voltage	Power Rating	Input Phases	Power Type	EMC Filter	Brake Transistor	Enclosure	Product Range	Generation	Frame Size	Supply Voltage	Power Rating	Input Phases	Power Type	EMC Filter	Brake Transistor	Enclosure	EMC Filter	Low Voltage Filter	High Voltage Filter	No EMC Filter	Enclosure	IP20	IP66 Switched	IP66 Non-switched		
kW	HP	Amps	Size																														
110–115V ± 10% (230V 3 Phase Output) 1 Phase Input	–	0.5	2.3	1											ODE-2-1-1-005-1-H-0-1-#																		
	–	1	4.3	1											ODE-2-1-1-010-1-H-0-1-#																		
	–	1.5	5.8	2											ODE-2-2-1-015-1-H-0-4-#																		
200–240V ± 10% 1 Phase Input	0.37	0.5	2.3	1		ODE-2-1-2-037-1-K-#-1-#									ODE-2-1-2-005-1-H-#-1-#											B	0	2	X	Y			
	0.75	1	4.3	1		ODE-2-1-2-075-1-K-#-1-#									ODE-2-1-2-010-1-H-#-1-#										B	0	2	X	Y				
	1.5	2	7	1		ODE-2-1-2-075-1-K-#-1-#									ODE-2-1-2-011-1-H-#-1-#										B	0	2	X	Y				
	1.5	2	7	2		ODE-2-2-2-150-1-K-#-4-#									ODE-2-2-2-020-1-H-#-4-#										B	0	2	X	Y				
	2.2	3	10.5	2		ODE-2-2-2-220-1-K-#-4-#									ODE-2-2-2-030-1-H-#-4-#										B	0	2	X	Y				
200–240V ± 10% 3 Phase Input	0.37	0.5	2.3	1		ODE-2-1-2-037-3-K-0-1-#									ODE-2-1-2-005-3-H-0-1-#											B	0	2	X	Y			
	0.75	1	4.3	1		ODE-2-1-2-075-3-K-0-1-#									ODE-2-1-2-010-3-H-0-1-#											B	0	2	X	Y			
	1.5	2	7	1		ODE-2-1-2-150-3-K-0-1-#									ODE-2-1-2-020-3-H-0-1-#											B	0	2	X	Y			
	1.5	2	7	2		ODE-2-2-2-150-3-K-#-4-#									ODE-2-2-2-020-3-H-#-4-#											B	0	2	X	Y			
	2.2	3	10.5	2		ODE-2-2-2-220-3-K-#-4-#									ODE-2-2-2-030-3-H-#-4-#											B	0	2	X	Y			
	4	5	18	3		ODE-2-3-2-040-3-K-#-4-#									ODE-2-3-2-050-3-H-#-4-#											B	0	2	X	Y			
380–480V ± 10% 3 Phase Input	0.75	1	2.2	1		ODE-2-1-4-075-3-K-#-1-#									ODE-2-1-4-010-3-H-#-1-#											A	0	2	X	Y			
	1.5	2	4.1	1		ODE-2-1-4-150-3-K-#-1-#									ODE-2-1-4-020-3-H-#-1-#											A	0	2	X	Y			
	1.5	2	4.1	2		ODE-2-2-4-150-3-K-#-4-#									ODE-2-2-4-020-3-H-#-4-#											A	0	2	X	Y			
	2.2	3	5.8	2		ODE-2-2-4-220-3-K-#-4-#									ODE-2-2-4-030-3-H-#-4-#											A	0	2	X	Y			
	4	5	9.5	2		ODE-2-2-4-400-3-K-#-4-#									ODE-2-2-4-050-3-H-#-4-#											A	0	2	X	Y			
	5.5	7.5	14	3		ODE-2-3-4-055-3-K-#-4-#									ODE-2-3-4-075-3-H-#-4-#											A	0	2	X	Y			
	7.5	10	18	3		ODE-2-3-4-075-3-K-#-4-#									ODE-2-3-4-100-3-H-#-4-#											A	0	2	X	Y			
	11	15	24	3		ODE-2-3-4-110-3-K-#-4-2									ODE-2-3-4-150-3-H-#-4-2											A	0	2	X	Y			
kW Models: Factory Settings										HP Models: Factory Settings										Replace # in model code with colour-coded option													
Motor Rated Frequency: 50Hz										Motor Rated Frequency: 60Hz																							
Motor Rated Voltage: 400V										Motor Rated Voltage: 460V																							

kW Models: Factory Settings
Motor Rated Frequency: 50Hz
Motor Rated Voltage: 400V

HP Models: Factory Settings
Motor Rated Frequency: 60Hz
Motor Rated Voltage: 460V

Replace # in model code
with colour-coded option



Switched and Non-switched IP66 models available.



Optidrive E2 IP66

Environmentally protected, the Optidrive E2 IP66 can be mounted directly on your processing equipment.

Dust-tight Design

Install in-situ and be sure of protection from dust and contaminants.

Washdown Ready

With a sealed ABS enclosure and corrosion resistant heatsink, the Optidrive E2 IP66 is ideal for high-pressure washdown applications.

On-drive Control

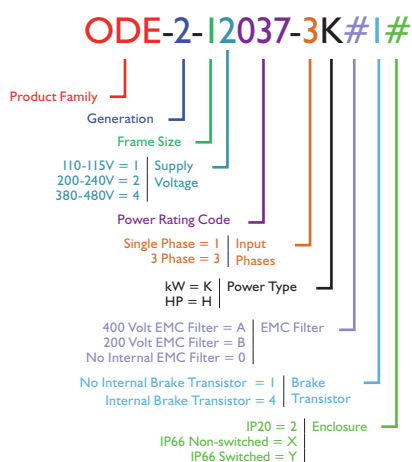
IP66 models feature optional, convenient controls for speed control, REV/OFF/FWD and Power ON/OFF, complete with safety lock.

IP66

Recommended for:

- Paper
- Petroleum
- Food Processing
- Aggregate / Cement
- Mining
- Textile
- Horticultural
- Chemical
- Agricultural

Model Code Guide



Drive Specification

Input Ratings	Supply Voltage	110 – 115V ± 10% 200 – 240V ± 10% 380 – 480V ± 10%
	Supply Frequency	48 – 62Hz
Output Ratings	Displacement Power Factor	> 0.98
	Phase Imbalance	3% Maximum allowed
	Inrush Current	< rated current
	Power Cycles	120 per hour maximum, evenly spaced
	Output Power	110V 1 Phase Input: 0.5–1.5HP (230V 3 Phase Output) 230V 1 Phase Input: 0.75–4kW (1–5HP) 230V 3 Phase Input: 0.75–4kW (1–5HP) 400V 3 Phase Input: 0.75–11kW 460V 3 Phase Input: 1–15HP
Ambient Conditions	Overload Capacity	150% for 60 seconds, 175% for 2 seconds
	Output Frequency	0 – 500Hz, 0.1Hz resolution
	Temperature	Storage : –40 to 60°C Operating : –10 to 40°C
Enclosure	Altitude	Up to 1000m ASL without derating Up to 2000m maximum UL Approved Up to 4000m maximum (non UL) Above 1000m : Derate by 1% per 100m
	Humidity	95% Max, non-condensing
Programming	Ingress Protection	IP20 IP66 (Excluding 11kW)
	Keypad	Built-in Keypad as standard Optional remote mountable keypad
	Display	Built-in LED display
Control Specification	Programming	OptiTools Studio / OPTISTICK
	Control Method	V/F Voltage Vector Energy Optimised V/F
I/O Specification	PWM Frequency	4 – 32kHz Effective
	Stopping Mode	Ramp to Stop : User Adjustable 0.01 – 600 seconds Coast to Stop
	Braking	Motor Flux Braking Built-in Braking Transistor (Frames 2 & 3)
	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 4 mA Digital: Motorised Potentiometer (Keypad) Modbus RTU Optional Gateway: Profibus DP, DeviceNet, EthernetIP
Control Features	Power Supply	24 Volt DC, 100mA, Short Circuit Protected 10 Volt DC, 5mA for Potentiometer
	Programmable Inputs	4 Total as standard 2 Digital 2 Analog / Digital Selectable
	Digital Inputs	10 – 30 Volt DC, internal or external supply, NPN Response time : < 4ms
	Analog Inputs	Resolution : 12 bits Response time : < 4ms Accuracy : < 1% full scale Parameter adjustable scaling and offset
	Programmable Outputs	2 Total 1 Analog / Digital 1 Relay
Maintenance & Diagnostics	Relay Outputs	Maximum Voltage : 250 VAC, 30 VDC Switching Current Capacity : 6A AC, 5A DC
	Analog Outputs	0 to 10 Volt
	Fault Memory	Last 4 Trips stored with time stamp
Standards Compliance	Data Logging	Logging of data prior to trip for diagnostic purposes : Output Current, Drive Temperature, DC Bus Voltage
	Monitoring	Hours Run Meter Energy Consumption meter
Standards Compliance	EN 61800-3:2004	Adjustable speed electrical power drive systems. EMC requirements.

NOT TO SCALE



Size	1	2	3	1	2	3
Enclosure	IP20	IP20	IP20	IP66	IP66	IP66
Height (mm)	173	221	261	232	257	310
Width (mm)	82	104	131	161	188	210.5
Depth (mm)	123	150	175	175	187	243
Weight (kg)	1.1	2.6	4	2.8	4.6	7.4
Fixings	4 x M4	4 x M4	4 x M4	4 x M4	4 x M4	4 x M4

OPTIDRIVE™ E² Single Phase

AC Variable Speed Drive

0.37kW – 1.1kW / 0.5HP – 1.5HP
110 – 240V

Single Phase Motor Control

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



Key Features

- 115V & 220V ratings
- Single phase input /single phase output
- Small mechanical envelope
- Rugged industrial operation:
IP20: 50°C ambient rating
IP66: 40°C ambient rating
- Simple mechanical & electrical installation
- Fast setup, and simple operation.
Factory default settings okay for most applications, only 12 basic parameters
- 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

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.

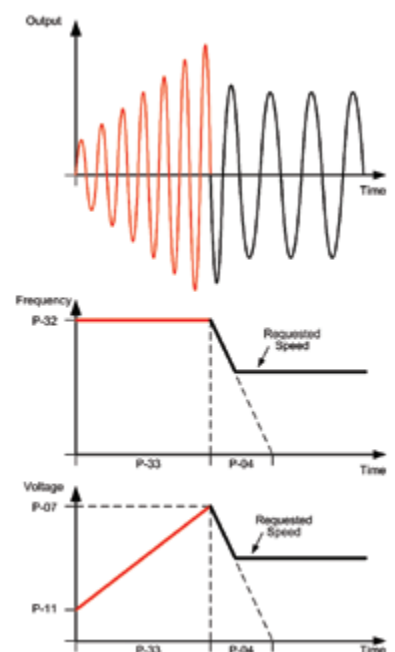
Optidrive E2 Single Phase has only 12 standard parameters to adjust in its basic form. The Optidrive's legendary ease of use ensures quick and easy drive commissioning. For the more advanced user the extended parameter set gives access to powerful additional functionality.

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.

Special Boost Phase

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.



OPTIDRIVE™ ⁱ²

Single Phase

	kW	HP	Amps	Size	Product Range	Generation	Frame Size	Supply Voltage	Power Rating	Input Phases	Power Type	EMC Filter	Brake Transistor	Enclosure	Output Phases
110-115V ± 10% 1 Phase Input	–	0.5	7	1											
	–	0.75	10.5	2											
200-240V ± 10% 1 Phase Input	0.37	0.5	4.3	1	ODE - 2 - 1 2 037 - 1 K # 1 # -01										
	0.75	1	7	1	ODE - 2 - 1 2 075 - 1 K # 1 # -01										
	1.1	1.5	10.5	2	ODE - 2 - 2 2 110 - 1 K # 4 # -01										

kW Models: Factory Settings
Motor Rated Frequency: 50Hz
Motor Rated Voltage: 400V

HP Models: Factory Settings
Motor Rated Frequency: 60Hz
Motor Rated Voltage: 460V

Factory Build Options

EMC Filter
Low Voltage Filter
No EMC Filter

Enclosure
IP20
IP66 Switched
IP66 Non-switched

	0	2	X	Y
	0	2	X	Y
B	0	2	X	Y
B	0	2	X	Y
B	0	2	X	Y

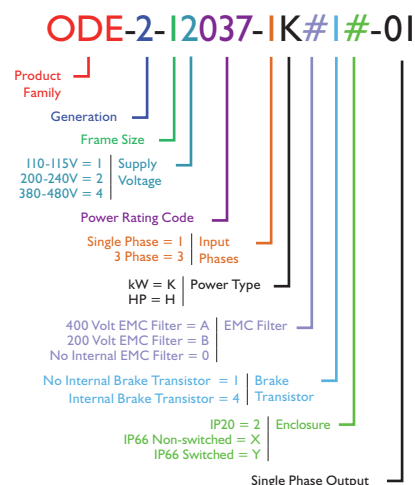
Replace # in model code with colour-coded option

NOT TO SCALE



Size	1	2	1	2
Enclosure	IP20	IP20	IP66	IP66
Height (mm)	173	221	232	257
Width (mm)	82	104	161	188
Depth (mm)	123	150	175	187
Weight (kg)	1.1	2.6	2.8	4.6
Fixings	4 x M4	4 x M4	4 x M4	4 x M4

Model Code Guide



Drive Specification

Input Ratings	Supply Voltage	110 – 115V ± 10% 200 – 240V ± 10%	Programming	Keypad	Built-in Keypad as standard Optional remote mountable keypad		I/O Specification	Power Supply	24 Volt DC, 100mA, Short Circuit Protected 10 Volt DC, 5mA for Potentiometer						
	Supply Frequency	48 – 62Hz		Display	Built-in LED display			Programmable Inputs	4 Total as standard 2 Digital 2 Analog / Digital Selectable						
	Displacement Power Factor	> 0.98		Programming	OptiTools Studio / OPTISTICK			Digital Inputs	10 – 30 Volt DC, internal or external supply, NPN Response time : < 4ms						
	Phase Imbalance	3% Maximum allowed		Control Method	Single Phase V/F with Starting Boost			Analog Inputs	Resolution : 12 bits Response time : < 4ms Accuracy : < 1% full scale Parameter adjustable scaling and offset						
	Inrush Current	< rated current		PWM Frequency	4 – 32kHz Effective			Programmable Outputs	2 Total 1 Analog / Digital 1 Relay						
	Power Cycles	120 per hour maximum, evenly spaced		Stopping Mode	Ramp to Stop : User Adjustable 0.1 – 600 seconds Coast to Stop			Relay Outputs	Maximum Voltage : 250 VAC, 30 VDC Switching Current Capacity : 6A AC, 5A DC						
Output Ratings	Output Power	110V 1 Phase Input: 0.5–0.75HP 230V 1 Phase Input: 0.75–1.1kW (1–1.5HP)	Control Specification	Braking	Motor Flux Braking Built-in Braking Transistor (Size 2 only)		Control Features	Analog Outputs	0 to 10 Volt						
	Overload Capacity	150% for 60 seconds, 175% for 2 seconds		Skip Frequency	Single point, user adjustable			PID Control	Internal PID control with feedback display						
	Output Frequency	0 – 120Hz, 0.1Hz resolution		Setpoint Control	Analog Signal	0 to 10 Volts 10 to 0 Volts 0 to 20mA 20 to 0mA 4 to 20mA 20 to 4 mA		Maintenance & Diagnostics	Fault Memory	Last 4 Trips stored with time stamp					
Ambient Conditions	Temperature	Storage : –40 to 60°C Operating : –10 to 40°C				Digital			Motorised Potentiometer (Keypad) Modbus RTU		Data Logging	Logging of data prior to trip for diagnostic purposes : Output Current, Drive Temperature, DC Bus Voltage			
	Altitude	Up to 1000m ASL without derating Up to 2000m maximum UL Approved Up to 4000m maximum (non UL) Above 1000m : Derate by 1% per 100m							Optional Gateway	Profibus DP, DeviceNet, EthernetIP		Monitoring	Hours Run Meter Energy Consumption meter		
	Humidity	95% Max, non-condensing								Standards Compliance	EN 61800-3:2004		Adjustable speed electrical power drive systems. EMC requirements.		
Enclosure	Ingress Protection	IP20 IP66													

OPTIDRIVE™

AC Variable Speed Drive



Up to 1.5kW / 2HP
200 – 240V 1 Phase Input
380 – 480V 3 Phase Input

The Integrated Drive Solution

Compact yet powerful, Optidrive PCE is the ideal solution for convenient motor control



Key Features

- High performance drive suitable for direct motor mounting
- Sensorless vector control — up to 200% torque from zero speed
- IP55 enclosure protects against dust and fluid ingress
- Available with local Potentiometer and forward / reverse selection
- Suitable for motor power ratings up to 1.5kW/2HP
- Supplied with universal adaptor plates



Model Reference

200–240V ± 10% 1 Phase Input

Switched Version		Non-switched Version		Output Current (A)
With EMC Filter	Without Filter	With EMC Filter	Without Filter	
OPC-I-12075-IKBIS	OPC-I-12075-IK0IS	OPC-I-12075-IKBIN	OPC-I-12075-IK0IN	4.5
OPC-I-12150-IKBIS	OPC-I-12150-IK0IS	OPC-I-12150-IKBIN	OPC-I-12150-IK0IN	7

380–480V ± 10% 3 Phase Input

Switched Version		Non-switched Version		Output Current (A)
With EMC Filter	Without Filter	With EMC Filter	Without Filter	
OPC-I-14075-3KAIS	OPC-I-14075-3K0IS	OPC-I-14075-3KAIN	OPC-I-14075-3K0IN	2.2
OPC-I-14150-3KAIS	OPC-I-14150-3K0IS	OPC-I-14150-3KAIN	OPC-I-14150-3K0IN	4.1

Switched & Non-switched Units Available

Local potentiometer for speed control

Programmable switch:

Drive REV/OFF/FWD
or:
Hand/OFF/Auto

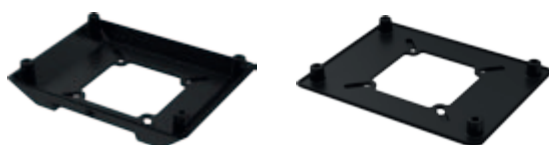


Switched

Non-switched

Universal Adaptor Plates

Supplied with adaptor plates for direct fitting on most motors.



Deep adaptor plate

Shallow adaptor plate

Drive Specification

Input Ratings	Supply Voltage	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	230 Volt 1 Phase Input : 0.75 – 1.5kW (1 – 2HP) 400 Volt 3 Phase Input : 0.75 – 1.5kW (1 – 2HP)
	Overload Capacity	150% for 60 seconds, 175% for 2 seconds
	Output Frequency	0 – 500Hz, 0.1Hz resolution
Ambient Conditions	Temperature	Storage : –40 to 60°C Operating : –10 to 40°C
	Altitude	Up to 1000m ASL without derating Up to 2000m maximum UL Approved Up to 4000m maximum (non UL) Above 1000m : Derate by 1% per 100m
	Humidity	95% Max, non-condensing
Enclosure	Ingress Protection	IP55
	Programming	Keypad : Optional remote mountable keypad PC : Optistore V3
Control Specification	Control Method	V/F Voltage Vector Energy Optimised V/F Sensorless Vector Speed Control Sensorless Vector Torque Control
	PWM Frequency	4 – 32kHz Effective
	Stopping Mode	Ramp to Stop : User Adjustable 0.1 – 600 seconds Coast to Stop
	Braking	Motor Flux Braking
	Skip Frequency	Single point, user adjustable
	Setpoint Control	Analog 0 to 10 Volts 10 to 0 Volts 0 to 20mA 20 to 0mA 4 to 20mA 20 to 4 mA
		Digital : Motorised Potentiometer (Keypad)
	Digital Frequency	0 to 10 Volts 10 to 0 Volts 0 to 20mA 20 to 0mA 4 to 20mA 20 to 4 mA
I/O Specification	Power Supply	24 Volt DC, 100mA, Short Circuit Protected
	Programmable Inputs	4 Total as standard 2 Digital 2 Analog / Digital Selectable
	Digital Inputs	10 – 30 Volt DC, internal or external supply, NPN Response time : < 4ms
	Analog Inputs	Resolution : 12 bits Response time : < 4ms Accuracy : < 1% full scale Parameter adjustable scaling and offset
	Programmable Outputs	1 Relay
	Relay Output	Maximum Voltage : 250 VAC, 30 VDC Switching Current Capacity : 6A AC, 5A DC
Control Features	PID Control	Internal PID control with feedback display
Maintenance & Diagnostics	Fault Memory	Last 4 Trips stored with time stamp
	Monitoring	Energy Consumption meter
Standards Compliance	EN 61800-3:2004	Adjustable speed electrical power drive systems. EMC requirements.

Plug-in Modules

Extend functionality or communication options



Mains Isolator Option



Expansion Modules

Encoder Feedback

Product Code: OPT-2-ENCOD-IN

- Compatible with Incremental Encoders up to 4096ppr
- 5 Volt Power Supply built-in
- Inputs suitable for 5 – 24 Volt DC
- Encoder Frequency up to 500kHz

Extended I/O

Product Code: OPT-2-EXTIO-IN

- Additional 3 Digital Inputs
- Additional Relay Output

Extended Relay/Cascade Control

Product Code: OPT-2-CASCD-IN

- Additional 3 Relay Outputs

Fieldbus Interfaces



Product Code: OPT-2-ETHNT-IN



Product Code: OPT-2-DEVNT-IN



Product Code: OPT-2-PROFB-IN



BACnet/IP

Product Code: OPT-2-BACNT-IN

Compatibility

A mains isolator can be used with IP55 size 4–7 Optidrive P2 & Optidrive HVAC units.

For IP55 Frame Size 4

Product Code: OPT-2-ISOL4

For IP55 Frame Size 5

Product Code: OPT-2-ISOL5

For IP55 Frame Size 6

Product Code: OPT-2-ISOL6

For IP55 Frame Size 7

Product Code: OPT-2-ISOL7

OPTIPOINT 2

Remote Keypad & LED Display

Product Code: OPT-2-OPOINT-IN



OPTIPAD

Remote Keypad & OLED Display

Product Code: OPT-2-OPPAD



Optipoint 2 and Optipad units act as the remote keypad and display for the Optidrive on the network which has the same serial address. The physical layout and the operation of the Optipoint keypad and display mimic the Optidrive exactly.

Specification

OPTIPOINT 2

- Real-time keypad and display operation mimics Optidrive
- Single electrical interface for power and data
- Communicates with any compatible drive across a network
- Easy keypad switching to other network addresses
- IP54 rated when through panel mounted
- Bright LED Display
- Membrane keypad
- Parameter lock function available
- 3m Data Cable included

OPTIPAD

In addition to Optipoint 2 features, Optipad benefits from:

- Multi-language OLED Display
- IP55 rated

- Simple plug in RJ45 connection
- 24 Volt DC Power provided directly by the Optidrive
- RS485 2 Wire Signal Interface
- Operating Temperature: -10°C to $+50^{\circ}\text{C}$
- Storage Temperature: -40°C to $+60^{\circ}\text{C}$

Compatible with:

Optidrive E2
Optidrive P2
Optidrive HVAC

Configuration

Depending on the requirement of the application, Optipoint 2 and Optipad keypads can be used in the following different ways:

1 keypad with 1 drive



1 keypad with multiple Optidrives (up to 63 max)



2 keypads with one drive



2 keypads with multiple Optidrives (up to 63 max)



OptiTools Studio

OPTISTICK

Rapid Commissioning Tool

Product code: OPT-2-STICK-IN

Powerful PC Software

Drive commissioning and parameter backup



 **Bluetooth®**



- Powerful PC based commissioning and programming software
- Multi Drive Network Support
- Supports two key functions
- Drive Programming & Commissioning
 - Parameter Upload, Download & Storage
 - Changed Parameter Highlighting
 - Parameter List Printing
- Provides Access to Optidrive P2 & HVAC PLC programming function
 - Function Blocked Based PLC Logic Programming
 - Advanced Drive Control Functions
 - Multiple Functions can be easily combined to produce powerful solutions
 - Program protection to prevent unauthorised copying

- Allows rapid copying of parameters between multiple drives
- Provides Bluetooth wireless interface to a PC running OptiTools Studio
- Backup and restore of drive parameters

Compatible with:

Windows XP, Windows Vista & Windows 7

Compatible with:

Optidrive E2, Optidrive P2, Optidrive HVAC



485AD

PC Connection Kit

Product code: OD-485AD



485AD PC Connection Kit is an isolated USB to RS485 communications adaptor designed for use with OptiTools Studio

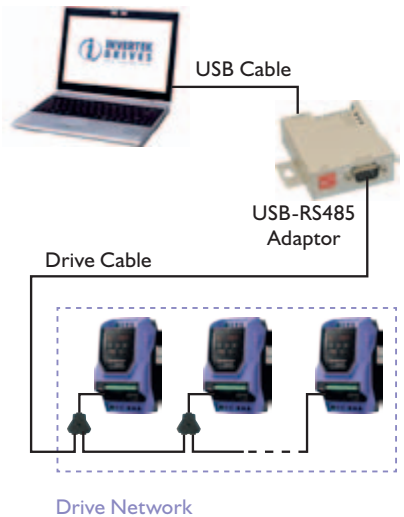
Key Benefits

- To provide interface between PC and drive
- For use with OptiTools Studio PC software
- Panel mount possibility
- Provides electrical isolation between PC and drive network

Components in this package

- USB-485 adaptor
- User and Installation guides
- USB cable
- DB9 – RJ11 cable
- DB9 – RJ45 cable
- Windows driver CD

Configuration



485SP

RS485 Data Cable Splitter

Product code: OPT-RJ45SP (RJ45 1 - 2 way)

RS485 data cable splitter is an RS45 1 to 2-way connection block



DATA CABLES

RJ45 to RJ45 RS485 Data Cable, 0.5m length, Blue
Product code: OPT-J4505

RJ45 to RJ45 RS485 Data Cable, 1.0m length, Blue
Product code: OPT-J4510

RJ45 to RJ45 RS485 Data Cable, 3.0m length, Blue
Product code: OPT-J4530



Invertek Drives provides a range of filters, braking resistors and chokes to complement the Optidrive range:

OPTIFILTER

RFI Line Filters

All Optidrive products are manufactured as standard with an internal EMC filter, unless specified by the customer. In general, this internal filter will provide compliance with international standard requirements for the majority of industrial installations and applications.

Where a higher standard of EMC compliance is desired or required, Invertek Drives can provide a range of suitable filters to ensure that an EMC compliant solution for all possible applications can be realised.



Product Codes

OPT-2-E1016-00
OPT-2-E1030-00
OPT-2-E3006-00
OPT-2-E3016-00
OPT-2-E3030-00

OPTIBRAKE

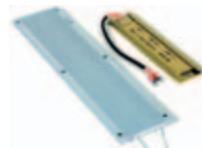
Dynamic Braking Resistors

Optibrake dynamic braking resistors are designed specifically for the Optidrive range. For use with high inertia loads which need to be stopped rapidly. Optibrake dynamic braking resistors assist the Optidrive in managing the electrical energy returned from the motor during braking by converting it to heat energy.



Product Codes

OD-BR100-IN
OD-BRES4-IN



INPUT CHOKES

Reduce supply harmonic current distortion and increase protection against mains voltage spikes and notches

Input chokes can be used to reduce the supply line harmonic currents and voltage distortion generated by almost all inverter drives on the market today. Invertek Drives have selected a range of chokes matched to the Optidrive range to provide the best reduction in supply current harmonics whilst also providing enhanced protection for the Optidrive against transient voltages ('spikes') or other mains borne interference.

Input chokes are available for the complete range of Optidrive products, and are recommended for use in all installations and in particular:

- where the local mains supply quality may be poor or unknown
- where high current switching loads such as large DC drives or soft starts are operating
- where the mains supply impedance is low
- in remote areas prone to lightning strikes

Product Codes

OPT-2-L1016-00
OPT-2-L1025-00
OPT-2-L1035-00
OPT-2-L3010-00
OPT-2-L3016-00
OPT-2-L3036-00
OPT-2-L3050-00
OPT-2-L3090-00
OPT-2-L3200-00
OPT-2-L3300-00

OUTPUT FILTERS

Output filters improve the quality of the output waveform.

In most applications, the unfiltered output from an inverter drive gives satisfactory performance but to improve system functionality, reliability and longevity, output filtering is strongly recommended in some applications.



Product Codes

OPT-2-M3008-00
OPT-2-M3012-00
OPT-2-M3024-00
OPT-2-M3048-00
OPT-2-M3090-00
OPT-2-M3200-00
OPT-2-M3300-00

Optidrive Compatibility

	Product Code	Description	P2	HVAC	E2	Plus	VTC	PCE
P2 & HVAC I/O Options	OPT-2-EXTIO-IN	Optidrive P2 / HVAC Extended IO Option	•	•				
	OPT-2-ENCOD-IN	Optidrive P2 Incremental (Line) Encoder Feedback Interface	•					
	OPT-2-CASCD-IN	Optidrive HVAC Cascade Control Option (3 Relay Output)	•	•				
Fieldbus Interface Options	OPT-2-DEVNT-IN	Optidrive P2 / HVAC DeviceNet Interface	•	•				
	OPT-2-PROFB-IN	Optidrive P2 / HVAC Profibus DP Interface	•	•				
	OPT-2-ETHNT-IN	Optidrive P2 / HVAC EtherNet/IP Interface	•	•				
	OD-PROFB-IN	PROFIBUS GATEWAY	•	•	•	•	•	
	OD-DEVNET-IN	DEVICENET GATEWAY	•	•	•	•	•	
	OD-ETHNET-IN	ETHERNET GATEWAY	•	•	•	•	•	
Mains Isolator Options	OPT-2-ISOL4	Mains Isolator IP55 Frame Size 4	•	•				
	OPT-2-ISOL5	Mains Isolator IP55 Frame Size 5	•	•				
	OPT-2-ISOL6	Mains Isolator IP55 Frame Size 6	•	•				
	OPT-2-ISOL7	Mains Isolator IP55 Frame Size 7	•	•				
Remote Keypad & Display Options	OPT-2-OPPAD	Optipad Remote OLED Display	•	•	•			
	OPT-2-OPORT-IN	OPTIPORT 2 Remote LED Keypad	•	•	•			
	OD-OPRTP-IN	OPTIPORT 1 Remote LED Keypad (Optidrive Plus & VTC Only)				•	•	•
Optistick	OPT-2-STICK-IN	Bluetooth Optistick Optidrive E2 / P2 / HVAC Compatible	•	•	•			
RJ45 Cables & Connectors	OPT-J4505-IN	RJ45 DATA CABLE, 0.5m	•	•	•			
	OPT-J4510-IN	RJ45 DATA CABLE, 1.0m	•	•	•			
	OPT-J4530-IN	RJ45 DATA CABLE, 3.0m	•	•	•			
	OPT-J45SP-IN	RJ45 1 TO 2 WAY DATA CABLE SPLITTER	•	•	•			
RJ11 Cables & Connectors	OD-48503-IN	RJ11 DATA CABLE, 0.3m			•	•		
	OD-48510-IN	RJ11 DATA CABLE 1.0m			•	•		
	OD-48530-IN	RJ11 DATA CABLE, 3.0m			•	•		
	OD-485SP-IN	RJ11 1 TO 2 WAY DATA CABLE SPLITTER			•	•		
	OD-485AD-IN	RS485 TO USB ADAPTER & RJ11 CABLE TO CONNECT TO DRIVE			•	•		
EMC Filters	OD-F1121-IN	OPTIFILTER, SIZE 1, 200-240V, 1 PHASE, RFI		•	•	•	•	•
	OD-F2121-IN	OPTIFILTER, SIZE 2, 200-240V, 1 PHASE, RFI	•	•	•	•	•	
	OD-F1341-IN	OPTIFILTER, SIZE 1, 200-480V, 3 PHASE, RFI	•	•	•	•	•	•
	OD-F2341-IN	OPTIFILTER, SIZE 2, 200-480V, 3 PHASE, RFI	•	•	•	•	•	
	OD-F3341-IN	OPTIFILTER, SIZE 3, 200-480V, 3 PHASE, RFI	•	•	•	•	•	
Brake Resistors	OD-BR100-IN	BRAKE, SIZE 2, 100R, 200W	•		•	•	•	
	OD-BRES4-IN	BRAKE, SIZE 4, 33R, 500W	•		•	•	•	
Input Chokes	OD-IL121-IN	INPUT CHOKE, 16A, 250V, 1 PHASE, IP00	•	•	•	•	•	•
	OD-IL221-IN	INPUT CHOKE, 25A, 250V, 1 PHASE, IP00	•	•	•	•	•	
	OD-IL143-IN	INPUT CHOKE, 6A, 500V, 3 PHASE, IP00	•	•	•	•	•	•
	OD-IL243-IN	INPUT CHOKE, 10A, 500V, 3 PHASE, IP00	•	•	•	•	•	
	OD-IL343-IN	INPUT CHOKE, 36A, 500V, 3 PHASE, IP00	•	•	•	•	•	
	OD-IL121-IN-I55	INPUT CHOKE, 16A, 250V, 1 PHASE, IP55	•	•	•	•	•	•
	OD-IL221-IN-I55	INPUT CHOKE, 25A, 250V, 1 PHASE, IP55	•	•	•	•	•	
	OD-IL163-IN-I55	INPUT CHOKE, 6A, 600V, 3 PHASE, IP55	•	•	•	•	•	•
	OD-IL263-IN-I55	INPUT CHOKE, 10A, 600V, 3 PHASE, IP55	•	•	•	•	•	
	OD-IL363-IN-I55	INPUT CHOKE, 18A, 600V, 3 PHASE, IP55 (7.5kW MAXIMUM)	•	•	•	•	•	
Output Chokes	OD-OUTF1-IN	OUTPUT FILTER, 8A, 480V, IP00	•	•	•	•	•	•
	OD-OUTF2-IN	OUTPUT FILTER, 12A, 480V, IP00	•	•	•	•	•	
	OD-OUTF3-IN	OUTPUT FILTER, 30A, 480V, IP00	•	•	•	•	•	
	OD-OUTF4-IN	OUTPUT FILTER, 75A, 480V, IP00	•	•		•	•	
	OD-OUTF5-IN	OUTPUT FILTER, 150A, 480V, IP00	•	•		•	•	
	OD-OUTF6-IN	OUTPUT FILTER, 250A, 480V, IP00	•	•		•	•	
	OD-OPF63-IN	OUTPUT FILTER, 300A, 480V, IP00	•	•		•	•	
	OD-OUTF1-IN-I55	OUTPUT FILTER, 8A, 600V, IP55	•	•	•	•	•	•
	OD-OUTF2-IN-I55	OUTPUT FILTER, 12A, 600V, IP55	•	•	•	•	•	
	OD-OUTF3-IN-I55	OUTPUT FILTER, 18A, 600V, IP55	•	•	•	•	•	
ODE-2 I/O Options	OPT-HVACO-IN	HVAC RELAY OUTPUT			•	•	•	
	ODP-2ROUT-IN	DUAL RELAY OUTPUT			•	•	•	
	ODP-3ROUT-IN	3 RELAY OUTPUT				•	•	
	OPT-LOGIP-11-IN	110V INPUT CARD			•	•	•	
	OPT-LOGIP-23-IN	220V INPUT CARD			•	•	•	
	OD-LOCMO-IN	LOCAL CONTROL CARD			•	•	•	
	ODP-ENCOD-IN	EXTERNAL ENCODER MODULE (ODP ONLY)				•		



UK Head Office, Welshpool

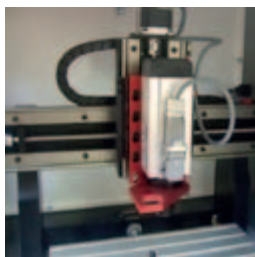
Global Drive Solutions

Invertek Drives operate at the heart of automated systems around the world



Crane Control

Demanding application
at South African mine



Machine Tool OEM

UK machine tool supplier
specifies Optidrive



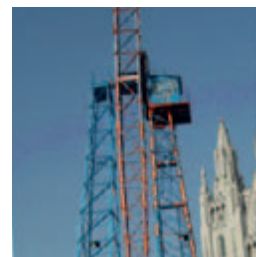
Manufacturing

IP66 washdown duty
drives in Singapore



Food Processing

Precision conveyor
control in Spain



Amusement Parks

Reliable control of
difficult loads in Spain

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