



Pump Control



# eco OPTIDRIVE™

AC Variable Speed Drive

## PUMP CONTROL

Energy efficient pumping with **OPTIFLOW™**



ASHRAE **BACnet**  
MS/TP  
built-in as standard

**Low Harmonic  
Design**  
EN 61000-3-12  
Compliant

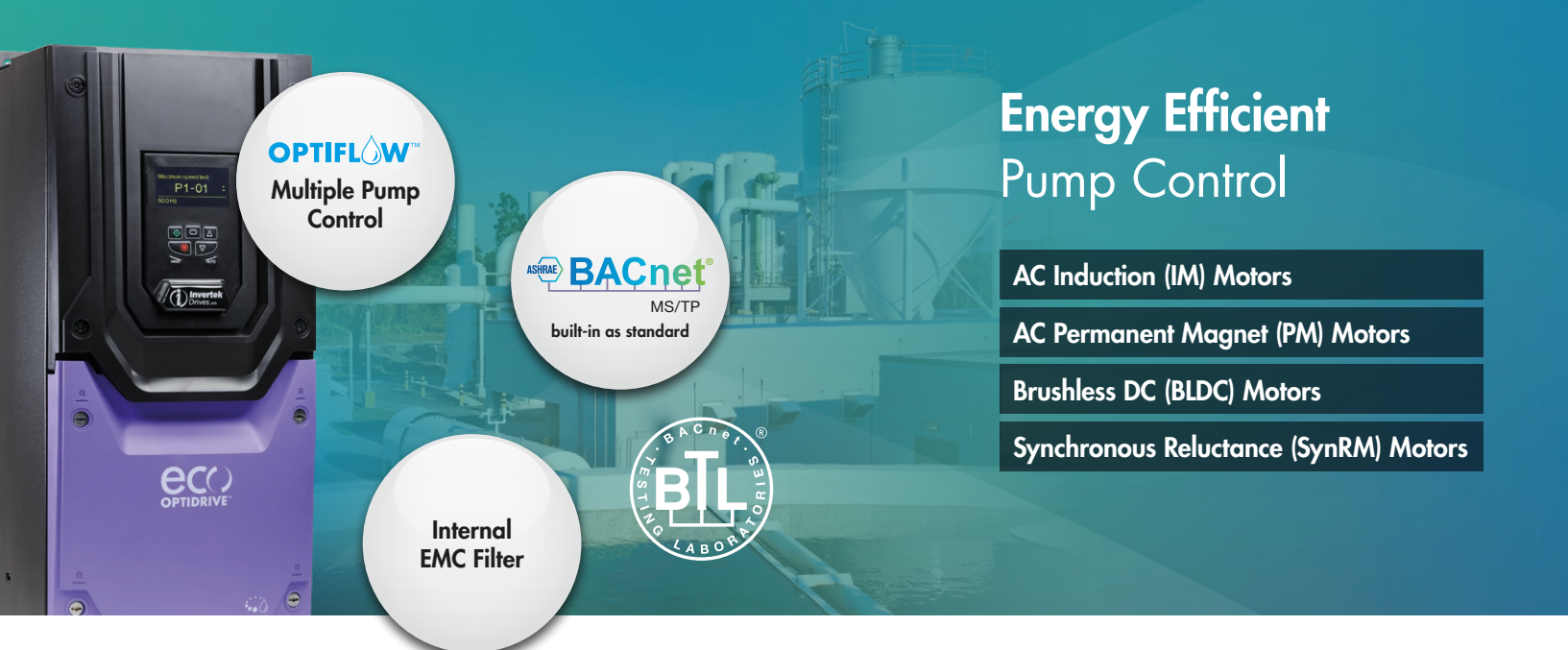


0.75kW – 250kW / 1HP – 350HP  
**200–600V** Single & 3 Phase Input



AC Variable Speed Drive

0.75 – 250kW / 1HP – 350HP  
**200 – 600V** Single & 3 Phase Input



## Energy Efficient Pump Control

- AC Induction (IM) Motors
- AC Permanent Magnet (PM) Motors
- Brushless DC (BLDC) Motors
- Synchronous Reluctance (SynRM) Motors

### Energy Efficient Pumping

When a pump or pump set is selected, it must be suitable for operation during periods of maximum flow demand. In many applications, this maximum flow level may be rarely required, and as such the pump may operate for long periods at less than maximum flow capacity. By varying the speed of the pump to match the actual flow demand, significant energy savings are possible.

Optidrive Eco Pump has been designed to maximise the energy savings potential in pumping applications, whilst also providing significant additional benefits

in reduced installation costs, maintenance costs and downtime. Throughout all this, Invertek's "Ease of Use" philosophy ensures that advanced features are simple to commission, without requiring extensive, in depth knowledge of a huge number of parameters. Optidrive Eco Pump has a simple menu structure, and provides just the right amount of parameters to allow flexibility without over complication.

Overall, this provides the perfect balance of Easy to Install, Easy to operate, Advanced Pump Control.



IP55 / NEMA 12



IP66 / NEMA 4X



### Energy Savings Calculator

Estimate your potential energy savings, CO<sub>2</sub> emissions and financial savings

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





Save Energy, Cut CO<sub>2</sub>



## Save Energy

**Eco vector operation**, based on Invertek's advanced motor control provides the most energy efficient operation of the pump, continually optimising the output to match the required flow with minimum energy consumption.

**Advanced sleep & wake functions** provide maximum energy savings by switching off the pump when not required

## Save Money

**OPTIFLOW™ technology** allows simple operation of multiple pump sets without the need for a PLC

**Pump blockage detection and cleaning** dramatically reduces pump maintenance requirements

**Built in PLC function** allows bespoke customised applications to be programmed directly in the drive

## Save Time

**Simple parameter set** allows fast commissioning of pump control systems

**Pump operating curve detection** automatically detects and monitors normal pump behaviour and is able to react when pumping conditions change

**Customisable OLED display** provides excellent visibility of drive status and operation in all conditions

### Key Features



#### ECO Vector Motor Control



#### Standard Induction Motors



Permanent Magnet AC Motors

Brushless DC Motors

Synchronous Reluctance Motors

#### Energy Optimised Design



#### Internal EMC Filter



#### Low Noise Operation



### Maximum Pumping Efficiency

#### Unique Eco Vector Sensorless Control

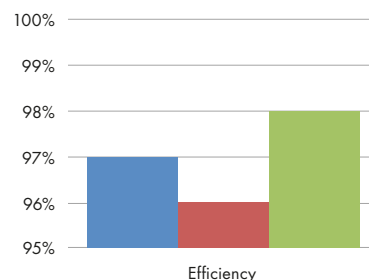
Optidrive Eco Pump uses advanced motor control technology, designed to provide the most energy efficient motor control possible. Operation with standard IM Motors, Permanent Magnet or Synchronous Reluctance motors is possible, all without requiring any feedback device or optional modules – simply change parameters to suit the connected motor, autotune and operate!

Eco Vector continuously adjusts in real time to provide the most efficient operating conditions for the load, typically reducing energy consumption by 2 – 3% compared to standard AC drives – providing similar long term costs savings to selecting a higher efficiency motor.

#### Energy Optimised Design

Optidrive Eco Pump up to frame size 5 are designed with film capacitors, replacing the traditional electrolytic capacitors used in the DC link. Film capacitors have lower losses, and also remove the need for AC, DC or swinging chokes, improving overall drive efficiency. Efficiency is improved by up to 4% compared to standard AC drives, whilst also reducing supply current total harmonic distortion (iTHD), improving the Real Power Factor and reducing total input current, leading to cost savings on installation through reduced cable and fuse ratings and smaller supply transformer rating.

Improved Efficiency, Reduced Lifetime Costs: e.g. for a 37kW load, operating 10 hours per day, 5 days per week, 50 weeks per year, improving the efficiency by just 1% will provide an energy saving > 900kWh per year.



Typical efficiency comparison for Optidrive Eco Pump vs other AC variable speed drives

Standard AC Variable Speed Drive  
 AC Variable Speed Drive + 4% Line Choke  
 Optidrive Eco Pump

# OPTIFLOW™ Multi-pump Control

Embedded control technology for multi-pump systems

## Flexible pump station control with no PLCs or pump control units

### Setpoint Control

A standard feature on all drives

Independent pump control system

Optiflow Communications

← Feedback signal

### Pump Prime Mode

#### Pump Prime with Burst Pipe Detection

Pump prime mode allows starting of the pump in a safely controlled manner, to ensure consistent filling and pressurisation of pipe work and systems. Low pressure warnings are ignored during priming to allow the system to prime correctly, whilst a failsafe timeout prevents the pump from continuing to run in the event of a failure to prime. This helps to prevent the effects of water hammering (such as bursting water pipes) or damage to fountain / sprinkler heads.

The time limit, set for pump prime mode to complete, means that the pressure in the system must reach the minimum level within the set time. Failure of the system to pressurise would indicate a leak or burst pipe within the pump system and result in the Optidrive Eco Pump shutting down the pump. During normal operation the system pressure is still continuously monitored against the minimum level so that a burst pipe during normal operation will likewise result in the drive tripping 'low pressure' and shutting the pump down.

### Total Control

A single 'Master' drive acts to control and monitor system operation. Control connections are made to this drive only, saving installation time and reducing costs.

### Simple Connection

Additional drives connected on the system require a single RJ45 connection and basic commissioning, leading to time savings and simplified installation.

### Flexible Solution

The system can operate with up to five pumps in any configuration, e.g. Jockey Pump / Duty / Assist / Standby. Duty pumps are automatically rotated, ensuring maximum service life and system efficiency.



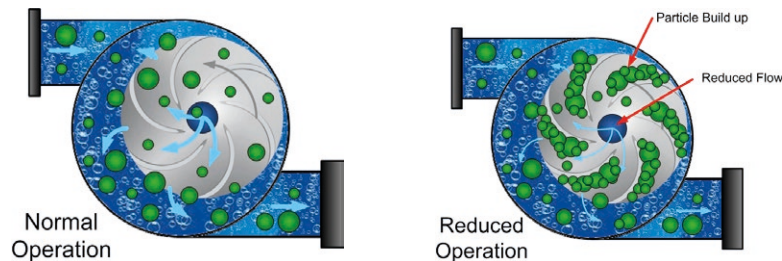
## See OPTIFLOW™ in action

Scan to watch the video or visit  
<http://youtu.be/9QQ89bQYdfs>

### Avoid Pump Downtime

#### Blockage Detect/Clear

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



#### Dry Run Protection

Optidrive Eco Pump 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.

#### Motor Preheat Function

Optidrive Eco Pump 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.

#### Pump 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.

### Summary

- All drives operate at variable speed for maximum energy efficiency.
- Operating time (Hours Run) is automatically balanced and duty pumps rotated
- 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.

### Consistent Flow

The required pressure and flow levels are maintained regardless of how many pumps are required. When demand increases, additional pumps are automatically brought on stream to assist and are switched off again when not required.

### Reduced Downtime

In the event of a fault, or if a pump needs to be isolated for maintenance, the system will automatically continue to operate with the remaining available pumps. The mains power can even be completely isolated from the Master drive without affecting operation of the Slave drives.

# Drive Features

A compact and robust range of drives dedicated to pump control



**Internal EMC Filter**  
Compliant with global EMC Standards

Time left to next service  
**20 hrs**

Maintenance interval timer and service indication

Select Language  
Español  
Deutsch  
▶ English

Multi Language OLED Display



Hand / Auto Keypad



Pluggable terminals



Integrated cable management



Long Life, Dual Ball Bearing Fans

## Enclosure Options



**IP66** with optional mains disconnect



## OLED Display

Installed as standard on all IP55 & IP66 models

- Clear multi-line text display
- Operates -10 to 50°C
- Wide viewing angle, effective in dark and light conditions
- Customisable display
- Multi-language selection

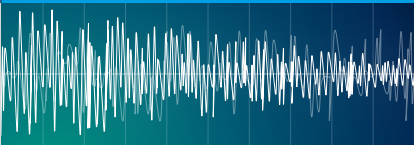




Energy efficient pumping with **OPTIFLOW™**



**Noise Reduction**



**Quiet Motor Operation**

High switching frequency selection (up to 32kHz) ensures motor noise is minimised.

**Quiet System Mechanics**

Simple skip frequency selection avoids stresses and noise caused by mechanical resonance in pipework.

**Quiet Drive Operation**

Long Life Dual Ball Bearing Fans provide quiet operation in addition to extended fan life.

**Noise Reduction through Speed Control**

Optimising motor speed gives significant energy savings and reduces motor noise.

**Reduced Harmonic Current Distortion**

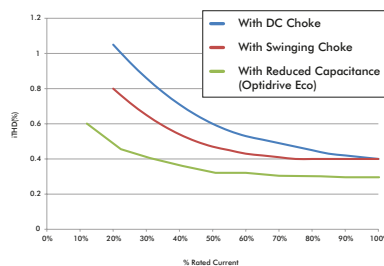
Optidrive Eco Pump uses innovative design to improve overall efficiency whilst minimising the harmonic distortion levels. All drives designed for 3 phase power supply operation<sup>1</sup> up to frame size 5 utilise film capacitor in the DC link, providing exceptionally low harmonic current distortion without compromising efficiency. Frame size 6 and above include DC chokes and traditional electrolytic capacitors.

Optidrive Eco Pump product range complies with the requirements of EN61000-3-12.

**Optidrive Eco Pump delivers**

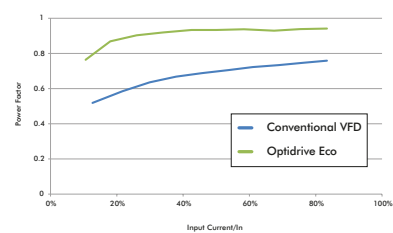
- Improved Efficiency, Reduced Lifetime Costs: e.g. for a 37kW load, operating 10 hours per day, 5 days per week, 50 weeks per year, improving the efficiency by just 1% will provide an energy saving > 900kWh per year
- Improved True Power Factor – No additional charges etc.
- Lower Mains Supply Current

**Typical iTHD values at full and part load**



It can be clearly seen that the reduced DC link capacitance significantly reduces the total harmonic distortion at full load, and has a much greater benefit at part load compared to a conventional DC choke or swinging choke. This results in reduced overall input current and reduced transformer heating effect.

**Power factor comparison**



Optidrive Eco offers improved power factor over conventional VFDs under all loads.

<sup>1</sup> 200V and 400V

# Options & Accessories

Peripherals to help integrate Optidrive Eco Pump with your pumping systems



## Optistick Smart



NFC  
Bluetooth®

### Rapid Commissioning Tool

- Allows copying, backup and restore of drive parameters
- Provides Bluetooth interface to a PC running OptiTools Studio or the OptiTools Mobile app on a smartphone
- Onboard NFC (Near Field Communication) for rapid data transfer

**OPT-3-STICK-IN**

## Optipad



### Remote Keypad & OLED Display

IP55 panel mount operator interface.

- Clear multi-line text display
- Multiple language select
- Customisable displays

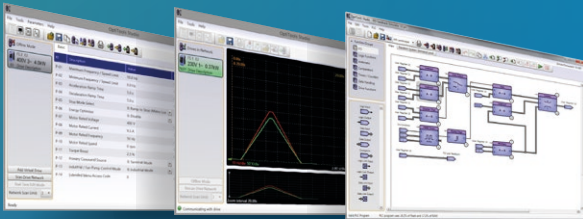
**OPT-3-OPPAD-IN**





Energy efficient pumping with **OPTIFLOW™**

# OptiTools Studio



## Powerful PC Software

Drive commissioning and parameter backup

- Real-time parameter editing
- Drive network communication
- Parameter upload, download and storage
- Simple PLC function programming
- Real-time scope function and data logging
- Real-time data monitoring

## Compatible with:

- Windows XP
- Windows Vista
- Windows 7
- Windows 8
- Windows 8.1
- Windows 10

### Fieldbus Interfaces



**BACnet/IP**  
OPT-2-BNTIP-IN



**PROFIBUS DP**  
OPT-2-PROFB-IN



**DeviceNet**  
OPT-2-DEVNT-IN



**EtherNet/IP**  
OPT-2-ETHNT-IN



**Modbus TCP**  
OPT-2-MODIP-IN



**PROFINET**  
OPT-2-PFNET-IN



**EtherCAT**  
OPT-2-ETCAT-IN



### Plug-in Options



**Extended I/O**  
OPT-2-EXTIO-IN

- Additional 3 Digital Inputs
- Additional Relay Output

#### Cascade Control

OPT-2-CASCD-IN

Additional 3 Relay Outputs

BACnet MS/TP & Modbus RTU on board as standard

### Mains Isolator



#### Mains Isolator Option

Frame Sizes 2 & 3 can be factory ordered with a built in lockable isolator. An optional bolt on isolator is available for Frame Sizes 4 & 5.

#### Product Codes:

Frame Size 4 = OPT-2-ISOL4-IN  
Frame Size 5 = OPT-2-ISOL5-IN

Replace # in model code with enclosure/display option

	Frame Size			kW	HP	Amps	Model Code	Product Family	Generation	Frame Size	Voltage Code	Output Rating	Supply Phases	EMC Filter	Quadrant	IP20 LED Display	IP20 TFT Display	IP55 OLED Display	IP66 NEMA4X OLED Display	IP66 NEMA4X OLED Display with Disconnect	
	IP20	IP55	IP66																		
200–240V ± 10% 1 Phase Input	2	2		0.75	1	4.3	ODV - 3 - 2 2 0043 - 1 F 1 #									2-SN			X-TN	D-TN	
	2	2		1.5	2	7	ODV - 3 - 2 2 0070 - 1 F 1 #									2-SN			X-TN	D-TN	
	2	2		2.2	3	10.5	ODV - 3 - 2 2 0105 - 1 F 1 #									2-SN			X-TN	D-TN	
200–240V ± 10% 3 Phase Input	2	2		0.75	1	4.3	ODV - 3 - 2 2 0043 - 3 F 1 #									2-SN			X-TN	D-TN	
	2	2		1.5	2	7	ODV - 3 - 2 2 0070 - 3 F 1 #									2-SN			X-TN	D-TN	
	2	2		2.2	3	10.5	ODV - 3 - 2 2 0105 - 3 F 1 #									2-SN			X-TN	D-TN	
	3	3		4	5	18	ODV - 3 - 3 2 0180 - 3 F 1 #									2-SN			X-TN	D-TN	
	3	3		5.5	7.5	24	ODV - 3 - 3 2 0240 - 3 F 1 #									2-SN			X-TN	D-TN	
	4	4		7.5	10	30	ODV - 3 - 4 2 0300 - 3 F 1 #										2-MN	N-TN			
	4	4		11	15	46	ODV - 3 - 4 2 0460 - 3 F 1 #										2-MN	N-TN			
	5	5		15	20	61	ODV - 3 - 5 2 0610 - 3 F 1 #										2-MN	N-TN			
	5	5		18.5	25	72	ODV - 3 - 5 2 0720 - 3 F 1 #										2-MN	N-TN			
	5	5		22	30	90	ODV - 3 - 5 2 0900 - 3 F 1 #										2-MN	N-TN			
	6A	6		30	40	110	ODV - 3 - 6 2 1100 - 3 F 1 #										2-MN	N-TN			
	6A	6		37	50	150	ODV - 3 - 6 2 1500 - 3 F 1 #										2-MN	N-TN			
	6B	6		45	60	180	ODV - 3 - 6 2 1800 - 3 F 1 #										2-MN	N-TN			
	6B			55	75	202	ODV - 3 - 6 2 2020 - 3 F 1 #										2-MN				
		7		55	75	202	ODV - 3 - 7 2 2020 - 3 F 1 #											N-TN			
		7		75	100	240	ODV - 3 - 7 2 2400 - 3 F 1 #											N-TN			
	380–480V ± 10% 3 Phase Input	2	2		0.75	1	2.2	ODV - 3 - 2 4 0022 - 3 F 1 #									2-SN			X-TN	D-TN
2		2		1.5	2	4.1	ODV - 3 - 2 4 0041 - 3 F 1 #									2-SN			X-TN	D-TN	
2		2		2.2	3	5.8	ODV - 3 - 2 4 0058 - 3 F 1 #									2-SN			X-TN	D-TN	
2		2		4	5	9.5	ODV - 3 - 2 4 0095 - 3 F 1 #									2-SN			X-TN	D-TN	
3		3		5.5	7.5	14	ODV - 3 - 3 4 0140 - 3 F 1 #									2-SN			X-TN	D-TN	
3		3		7.5	10	18	ODV - 3 - 3 4 0180 - 3 F 1 #									2-SN			X-TN	D-TN	
3		3		11	15	24	ODV - 3 - 3 4 0240 - 3 F 1 #									2-SN			X-TN	D-TN	
4		4		15	20	30	ODV - 3 - 4 4 0300 - 3 F 1 #										2-MN	N-TN			
4		4		18.5	25	39	ODV - 3 - 4 4 0390 - 3 F 1 #										2-MN	N-TN			
4		4		22	30	46	ODV - 3 - 4 4 0460 - 3 F 1 #										2-MN	N-TN			
5		5		30	40	61	ODV - 3 - 5 4 0610 - 3 F 1 #										2-MN	N-TN			
5		5		37	50	72	ODV - 3 - 5 4 0720 - 3 F 1 #										2-MN	N-TN			
5		5		45	60	90	ODV - 3 - 5 4 0900 - 3 F 1 #										2-MN	N-TN			
6A		6		55	75	110	ODV - 3 - 6 4 1100 - 3 F 1 #										2-MN	N-TN			
6A		6		75	100	150	ODV - 3 - 6 4 1500 - 3 F 1 #										2-MN	N-TN			
6B		6		90	150	180	ODV - 3 - 6 4 1800 - 3 F 1 #										2-MN	N-TN			
6B				110	175	202	ODV - 3 - 6 4 2020 - 3 F 1 #										2-MN				
		7		110	175	202	ODV - 3 - 7 4 2020 - 3 F 1 #											N-TN			
		7		132	200	240	ODV - 3 - 7 4 2400 - 3 F 1 #											N-TN			
		7		160	250	302	ODV - 3 - 7 4 3020 - 3 F 1 #											N-TN			
	8		200	300	370	ODV - 3 - 8 4 3700 - 3 F 1 #										2-MN					
	8		250	350	450	ODV - 3 - 8 4 4500 - 3 F 1 #										2-MN					
500–600V ± 10% 3 Phase Input	2	2		0.75	1	2.1	ODV - 3 - 2 6 0021 - 3 0 1 #									2-SN			X-TN	D-TN	
	2	2		1.5	2	3.1	ODV - 3 - 2 6 0031 - 3 0 1 #									2-SN			X-TN	D-TN	
	2	2		2.2	3	4.1	ODV - 3 - 2 6 0041 - 3 0 1 #									2-SN			X-TN	D-TN	
	2	2		4	5	6.5	ODV - 3 - 2 6 0065 - 3 0 1 #									2-SN			X-TN	D-TN	
	2	2		5.5	7.5	9	ODV - 3 - 2 6 0090 - 3 0 1 #									2-SN			X-TN	D-TN	
	3	3		7.5	10	12	ODV - 3 - 3 6 0120 - 3 0 1 #									2-SN			X-TN	D-TN	
	3	3		11	15	17	ODV - 3 - 3 6 0170 - 3 0 1 #									2-SN			X-TN	D-TN	
	3			15	20	22	ODV - 3 - 3 6 0220 - 3 0 1 #									2-SN					
		4		15	20	22	ODV - 3 - 4 6 0220 - 3 0 1 #											N-TN			
	4	4		18.5	25	28	ODV - 3 - 4 6 0280 - 3 0 1 #										2-MN	N-TN			
	4	4		22	30	34	ODV - 3 - 4 6 0340 - 3 0 1 #										2-MN	N-TN			
	4	4		30	40	43	ODV - 3 - 4 6 0430 - 3 0 1 #										2-MN	N-TN			
	5	5		37	50	54	ODV - 3 - 5 6 0540 - 3 0 1 #										2-MN	N-TN			
	5	5		45	60	65	ODV - 3 - 5 6 0650 - 3 0 1 #										2-MN	N-TN			
		6		55	75	78	ODV - 3 - 6 6 0780 - 3 0 1 #											N-TN			
		6		75	100	105	ODV - 3 - 6 6 1050 - 3 0 1 #											N-TN			
		6		90	125	130	ODV - 3 - 6 6 1300 - 3 0 1 #											N-TN			
		6		110	150	150	ODV - 3 - 6 6 1500 - 3 0 1 #											N-TN			

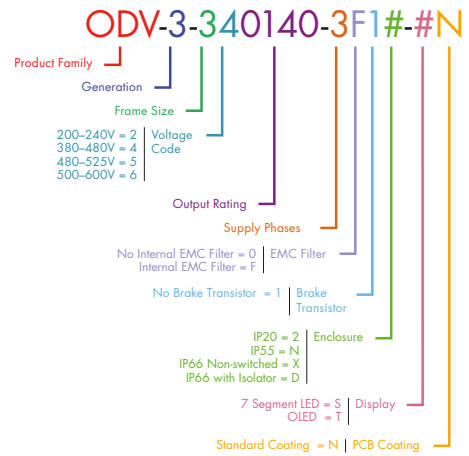
### Enclosure & Display Types

- IP20** With LED Display 
- 2-SN** With TFT Display 
- IP20** With TFT Display 
- 2-MN** With TFT Display 
- IP66 NEMA4X** Non-switched With OLED Display 
- X-TN** Non-switched With OLED Display 
- IP66 NEMA4X** Switched With OLED Display With Disconnect 
- D-TN** Switched With OLED Display With Disconnect 
- IP55 NEMA12** With OLED Display 
- N-TN** With OLED Display 

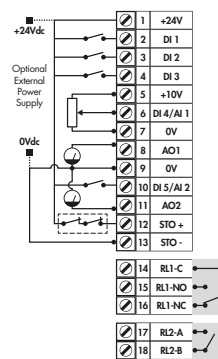
## Drive Specification

Input Ratings	Supply Voltage	200 – 240V ± 10% 380 – 480V ± 10% 500 – 600V ± 10%	I/O Specification	Power Supply	24 Volt DC, 100mA, Short Circuit Protected 10 Volt DC, 10mA for Potentiometer
	Supply Frequency	48 – 62Hz		Programmable Inputs	5 Total as standard (optional additional 3) 3 Digital (optional additional 3) 2 Analog / Digital selectable
	Displacement Power Factor	> 0.98		Digital Inputs	Opto - Isolated 8 – 30 Volt DC, internal or external supply Response time < 4ms
	Phase Imbalance	3% Maximum allowed		Analog Inputs	Resolution: 12 bits Response time: < 4ms Accuracy: < 1% full scale Parameter adjustable scaling and offset
	Inrush Current	< rated current		PTC Input	Motor PTC / Thermistor Input Trip Level: 3kΩ
	Power Cycles	120 per hour maximum, evenly spaced		Programmable Outputs	2 Total 1 Analog / Digital 1 Relay
Output Ratings	Output Power	230V 1Ph. Input: 0.75–2.2kW (1–3HP) 230V 3Ph. Input: 0.75–7.5kW (1–10HP) 400V 3Ph. Input: 0.75–250kW 460V 3Ph. Input: 1–350HP 575V 3Ph. Input: 0.75–110kW (1–150HP)	Relay Outputs	Maximum Voltage: 250 VAC, 30 VDC Switching Current Capacity: 5A	
	Overload Capacity	110% for 60 seconds 165% for 4 seconds	Analog Outputs	0 to 10 Volts / 10 to 0 Volts 0 to 20mA / 20 to 0mA 4 to 20mA / 20 to 4mA	
	Output Frequency	0 – 250Hz, 0.1Hz resolution	Application Features	PID Control Internal PID Controller Multi-setpoint Select Standby / Sleep Mode Boost Function	
	Typical Efficiency	> 98%	Fire Mode	Bidirectional Selectable Speed Setpoint (Fixed / PID / Analog / Fieldbus)	
Ambient Conditions	Temperature	Storage: –40 to 60°C Operating: –10 to 50°C	Load Monitoring	Over Torque Protection (Fan / Bump Blocked) Under Torque Protection (Broken Belt / Shaft) Pump Blockage Detection with Cleaning	
	Altitude	Up to 1000m ASL without derating Up to 2000m maximum UL approved Up to 4000m maximum (non UL)	Duty / Assist / Standby	Built-in Multi-Pump Support Automatic Changeover on Fault Automatic Changeover on Time Fully Redundant	
	Humidity	95% Max, non condensing	Pump Control Features	Pump Blockage Detection Pump load monitoring with autotune function, user configurable	
	Vibration	Conforms to EN61800-5-1 2007, IEC 60068-2-6	Pump Cleaning	Adjustable Bi-directional Pump Cleaning Cycle operation	
Enclosure	Ingress Protection	IP20, IP55, IP66	Multi-Pump Control	Control of fixed speed assist pumps (with cascade control module) Control of Duty, Assist and Standby variable speed pumps via internal Master – Slave network	
	Programming	Keypad Built-in keypad as standard Optional remote mountable keypad Display Built-in multi language OLED (IP55 & IP66) 7 Segment LED (IP20) PC OptiTools Studio	Pump Stir	Automatic pump stir to prevent sediment build-up	
Control Specification	Control Method	Eco Sensorless Vector Open Loop Permanent Magnet Vector Open Loop BLDC Vector Open Loop Synchronous Reluctance Vector	Maintenance & Diagnostics	Fault Memory Last 4 Trips stored with time stamp	
	PWM Frequency	4 – 32kHz Effective	Data Logging	Logging of data prior to trip for diagnostic purposes: Output Current Drive Temperature DC Bus Voltage	
	Slipping Mode	Ramp to stop: User Adjustable 0.1–600 secs Coast to stop	Maintenance Indicator	Maintenance Indicator with user adjustable maintenance interval Onboard service life monitoring	
	Braking	AC Flux Braking	Monitoring	Hours Run Meter Resettable & Non-Resettable kWh meters Cooling Fan Run Time	
Fieldbus Connectivity	Built-in	BACnet MS/TP	Low Voltage Directive	2014/35/EU	
		Modbus RTU	EMC Directive	2014/30/EU	
	Optional	BACnet/IP	Additional Conformance	UL, cUL, EAC, RCM	
		Other	Harmonic Currents	IEC61000-3-12	
Standards Compliance	Environmental Conditions	Designed to meet IEC 60721-3-3, in operation: IP20 Drives: 3S2/3C2 IP55 & 66 Drives: 3S3/3C3			

## Model Code Guide



## Connection Diagram



Function	Default Setting
24 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

NOT TO SCALE



Size		IP20						
		2	3	4	5	6A	6B	8
mm	Height	221	261	418	486	614	726	995
mm	Width	110	131	160	222	286	330	482
mm	Depth	185	205	240	260	320	320	480
kg	Weight	1.8	3.5	8.1	17	32	43	128

Size		IP66		IP55			
		2	3	4	5	6	7
mm	Height	257	310	450	540	865	1280
mm	Width	188	211	171	235	330	330
mm	Depth	239	266	252	270	330	360
kg	Weight	4.8	7.7	11.5	23	55	89

## Optidrive Eco Pump

### ✓ Saving Energy / Reducing CO<sub>2</sub>

With large scale increases in global energy costs and the introduction of taxes and legislation relating to the industrial production of CO<sub>2</sub> gases the need to reduce energy consumption and save money has never been greater. Optidrive Eco Pump can be used with environmental sensors to reduce pump speed in pumping applications without compromising the required output of the system.

### ✓ Easy Installation

Compact and modern design utilising the latest available technology have accumulated in a robust Eco Pump drive with small dimensions and innovative mounting and cabling features.

### ✓ Simple Set-up & Rapid Commissioning

Optidrive Eco Pump was developed from concept for ease of use. A handful of parameters configure the drive for basic pump applications. A short, concise product data means the drive is running in seconds. Advanced powerful functionality is equally easily accessible.

### ✓ Imaginative Enclosure Design

With a selection of IP55 and IP66 enclosures, Optidrive Eco Pump is well suited to harsh environments, or where cabinet and cabling costs need to be reduced.

### ✓ Advanced Pump Control Functions

The key pump control functionality required for your application is inbuilt into Optidrive Eco Pump and packaged to be both quick and simple to activate. Added to this is the drive's own PLC programming flexibility that makes drive functionality virtually limitless.

### ✓ Options for Flexibility

Optidrive Eco Pump combines both peripheral and factory built options to ensure you get the right drive, scaled to suit your application. With inbuilt BACnet and Modbus, and a host of communication options the Optidrive can integrate easily into your industrial network of choice.



UK Headquarters, Welshpool

Inverter Drives Ltd is dedicated to the design, manufacture and marketing of electronic variable speed drives. The state of the art UK headquarters houses specialist facilities for research & development, manufacturing and global marketing. The company pledges to implement and operate the ISO 14001 Environmental Management System to enhance environmental performance.

All company operations are accredited to the exacting customer focused ISO 9001:2008 quality standard. The company's products are sold globally in over 80 different countries. Inverter Drives' unique and innovative drives are designed for ease of use and meet with recognised international design standards.

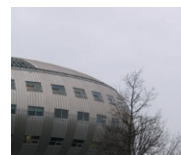
## Global Pump Solutions

Inverter Drives operate at the heart of pumping systems around the world



#### IRELAND

Maintaining pressure at pumping stations



#### HOLLAND

Hot water pumping across district network



#### ITALY

Cooling loop flow & temperature control



#### AUSTRALIA

Improved reliability & running costs



Inverter Drives USA LLC  
1840 Industrial Drive  
Suite 130  
Libertyville  
IL 60048

Tel: 847-549-3669

[www.inverterdrives.com/pump-control](http://www.inverterdrives.com/pump-control)

**INVERTEK DRIVES LIMITED** UK Headquarters

Offa's Dyke Business Park  
Welshpool, Powys, UK  
SY21 8JF

**Tel:** +44 (0)1938 556868  
**Fax:** +44 (0)1938 556869  
**Email:** sales@inverterdrives.com

