



## P2 Series Closed Loop Vector

High performance coordinated drive for:  
 Process automation  
 Converting  
 Printing  
 Machine tools

Up to 100 HP at 230 volts  
 Up to 250 HP at 460 Volts

**IP20 package up to 15 HP - 50°C \***  
**Optional NEMA 4X (IP66) to 10HP - 40°C \***  
**NEMA12 (IP55) 15 to 250 HP - 40°C \***  
 \* Approvals: UL, CE, C-Tick

Closed loop speed better than 0.1%  
 150% overload, 60 secs (200%, 4 secs)  
 Up to 200% torque at zero speed  
 AC Induction & PM motor modes  
 Built in brake transistor  
 EMC filter  
 Quiet - with switching up to 32KHz  
 DC Bus sharing  
 Safe Torque Off function  
 (IEC61508 SIL 2 & IEC62062 SIL 2)  
 Modbus or CANopen port  
 Plug-in control terminals

### Options

**drive.web** programmable control  
 Extended i/o  
 EIP, ModbusTCP, ProfibusDP, DeviceNet  
 OLED display  
 Remote keypad  
**savvyPanel** touch screen HMI



## ODP Series Sensorless Vector

Constant torque, heavy duty drive for:  
 Material handling  
 Conveyors  
 Extruders  
 General purpose machine control

Up to 100 HP at 230 volts  
 Up to 250 HP at 460 Volts  
 Up to 60 HP at 575 Volts

**Standard IP20 - 50°C**  
**Optional NEMA12 (IP55) up to 7.5 HP - 40°C**  
**Approvals: UL, C-UL, CE, C-Tick**

Sensorless speed control better than 1%  
 150% overload, 60 secs  
 Built in brake transistor (not in size 1)  
 EMC filter  
 Quiet - with switching up to 32KHz  
 Power loss ride through  
 ModbusRTU port  
 Plug-in control terminals  
 Infra-red PDA programming port  
 Configurable i/o  
 Hours run log  
 Easy programming

### Options

**drive.web** programmable control  
 Extended i/o  
 EIP, ModbusTCP, ProfibusDP, DeviceNet  
 Remote keypad  
 Encoder feedback  
**savvyPanel** touch screen HMI



## V2 Series HVAC Variable Torque

Variable torque, fan & pump drive for:  
 HVAC  
 Water treatment  
 Climate control  
 Flow control

Up to 100 HP at 230 volts  
 Up to 350 HP at 460 Volts

**NEMA4X (IP66) to 15HP - 40°C (indoor) \***  
**NEMA12 (IP55) 15 to 250HP - 40°C \***  
 \* Approvals: UL, CE, C-Tick

Smart energy optimization  
 110% overload, 60 secs,(125%, 2 secs)  
 Motor flux braking  
 Quiet - with switching up to 32KHz  
 Power loss ride through  
 Drive fault auto bypass  
 Sleep mode with auto-boost  
 Fire override mode  
 Pump blockage detect/clear  
 Pump clean, dry & preheat modes  
 Pump cascade control  
 ModbusRTU, BACnet  
 OLED display

### Options

**drive.web** programmable control  
 Extended i/o  
 EIP, ModbusTCP, ProfibusDP, DeviceNet  
 Remote keypad  
 Power disconnect  
**savvyPanel** touch screen HMI

# TOUGH DRIVES FOR INDUSTRY



## E2 Series General Purpose VFD

Constant torque, heavy duty drive for:  
 General purpose machine control  
 Pumps and blowers  
 Conveyors  
 Mixers

To 1.5 HP at 110V in, 230V 3Ø out  
 To 5 HP at 230 volts  
 To 15 HP at 460 Volts

Standard IP20 - 50°C  
 Optional NEMA12 (IP55) to 10 HP, 40°C  
 NEMA 4X (IP66) to 10 HP, 40°C  
 Approvals: UL, C-UL, CE, C-Tick

150% overload, 60 secs (175%, 2 secs)  
 Spinstart into rotating motor  
 Built in brake transistor (sizes 2 & 3)  
 Motor flux braking  
 Adjustable skip frequency  
 Quiet - with switching up to 32KHz  
 Power loss ride through  
 ModbusRTU port  
 Configurable i/o  
 Simple programming  
 On board help card  
 DIN rail and foot mount (IP20) (size 1 & 2)

### Options

**drive.web** programmable control  
 Extended i/o  
 EIP, ModbusTCP, ProfibusDP, DeviceNet  
 Remote keypad  
**savvyPanel** touch screen HMI



## NEMA 4X - IP66 Series For Harsh Environments

**P2 Series Open/Closed Loop Vector Drives**  
**E2 Series General Purpose VFDs**  
 Food processing  
 Agricultural, water treatment  
 Mining, cement, petrochemical

To 1.5 HP at 110V in, 230V 3Ø out  
 To 5 HP at 230 volts  
 To 10 HP at 460 Volts

Standard NEMA 4X (IP66) - 40°C (indoor)

Approvals: UL, C-UL, CE, C-Tick

Open & closed loop vector or V/Hz  
 Washdown, dust tight  
 Chemical resistant ABS enclosure  
 Corrosion protected heat sink  
 Spinstart into rotating motor  
 Built in brake transistor (sizes 2 & 3)  
 Motor flux braking  
 Adjustable skip frequency  
 Quiet - with switching up to 32KHz  
 Power loss ride through  
 ModbusRTU port  
 Compact packaging

### Options

**drive.web** programmable control  
 Power isolator switch, speed pot, F/R switch  
 EIP, ModbusTCP, ProfibusDP, DeviceNet  
 Remote keypad  
**savvyPanel** touch screen HMI



## E2 Single Phase VFD For SP & PSC motors

Variable torque, fan & pump drive for:  
 Fans & blowers  
 Centrifugal pumps  
 Fume extractors  
 Air flow control

To 0.75 HP at 110 Volts  
 To 1.5 HP at 230 Volts

Standard IP20 - 50°C  
 Optional NEMA 4X (IP66) - 40°C(indoor)

Approvals: UL, C-UL, CE, C-Tick

For motor types:  
 Shaded Pole (SP)  
 Permanent Split Capacitor (PSC)  
 Built in brake transistor (size 2)  
 Motor flux braking  
 Adjustable skip frequency  
 Quiet - with switching up to 32KHz  
 Power loss ride through  
 ModbusRTU port  
 Innovative smart boost start  
 Simple programming  
 DIN rail and foot mount (IP20)

### Options

**drive.web** programmable control  
 Extended i/o  
 EIP, ModbusTCP, ProfibusDP, DeviceNet  
 Remote keypad  
**savvyPanel** touch screen HMI

## OPTIDRIVE P2

### CLOSED LOOP VECTOR DRIVES

- High performance
- Induction & PM Motor Control
- NEMA12 packaging 15 - 250HP  
with through panel mount option

## 0.5 TO 250 HP

### FEATURES

#### Multiple Modes:

- Closed Loop Vector for high performance
- Open loop PM Motor Control
- Sensorless vector & V/Hz control

Up to 200% torque at zero speed

Sensorless speed regulation better than 1%

Torque control

DC bus sharing

Safe Torque Off function

Output to 500Hz (V/F Mode), 100Hz (Vector Mode)

Built-in 100% rated DB transistor up to 350HP

Integral PI controller

**drive.web savvy** function block programming

Silent running with up to 32KHz switching

200% starting torque

Bipolar 12 bit analog input (isolated +/-10V or 4-20mA)

ModbusRTU, RS485 port

CANopen port

Filters & DC chokes 25-250 HP

Single phase input up to 125 hp

Power loss ride through

Process control options

Programmable i/o

Hours run log & trip log

Cartridge fans for easy maintenance (NEMA12 drives)

#### Options:

- Encoder feedback
- Additional basic & **smarty** i/o options
- EIP, Modbus TCP/IP, Profibus, DeviceNet, BACnet
- Memory stick with bluetooth interface
- Remote keypad
- 2Khz output in V/Hz mode
- OLED text display



NEMA 4X washdown models - see page 36

### STANDARDS

UL, CE, C-Tick  
on all models

Dimensions Size	2	3	4	5	6	7
Height (ins)	8.7"	10.3"	17.3"	21.3"	34.1"	50.4"
Height (mm)	221	261	440	540	865	1280
Width (ins)	4.4"	5.2"	6.8"	9.3"	13.0"	13.0"
Width (mm)	112	131	173	235	330	330
Depth (ins)	7.3"	8.1"	9.1"	10.6"	13.4"	14.6"
Depth (mm)	185	205	230	270	340	370

### P2 very smart drives

The **drive.web** automation technology uses distributed control over Ethernet to provide cost effective systems integration for systems of any size or complexity.



#### savvyPanel

Easy operator stations options with touch screen PCs or iOS devices such as iPad, iPhone

#### drive.web smart automation

- powerful programmable control functions
- peer-to-peer over Ethernet
- smart iPad or touch screen PC operation
- Easy system wide Internet access

## Models & Ratings

### Standard IP20 Packages

With EMC Filter & DB transistor

200-240V ± 10%, 1-ph in, 230V, 3-ph motor

Model	HP	Amps	Size
ODP2-22010-1HF42	1	4.3	2
ODP2-22020-1HF42	2	7	2
ODP2-22030-1HF42	3	10.5	2

200-240V ± 10%, 3-ph in, 230V, 3-ph motor

Model	HP	Amps	Size
ODP2-22010-3HF42	1	4.3	2
ODP2-22020-3HF42	2	7	2
ODP2-22030-3HF42	3	10.5	2
ODP2-32050-3HF42	5	18	3

380-480V ± 10%, 3-ph in, 460V, 3-ph motor

Model	HP	Amps	Size
ODP2-24010-3HF42	1	2.2	2
ODP2-24020-3HF42	2	4.1	2
ODP2-24030-3HF42	3	5.8	2
ODP2-24050-3HF42	5	9.5	2
ODP2-34075-3HF42	7.5	14	3
ODP2-34100-3HF42	10	18	3
ODP2-34150-3HF42	15	24	3

### NEMA12 (IP55) Packages

With EMC Filter, DB transistor, DC Chokes

200-240V ± 10%, 3-ph in, 230V, 3-ph motor

Model	HP	Amps	Size
ODP2-42075-3HF4N	7.5	24	4
ODP2-42100-3HF4N	10	30	4
ODP2-42150-3HF4N	15	46	4
ODP2-52020-3HF4N	20	61	5
ODP2-52025-3HF4N	25	72	5
ODP2-62030-3HF4N	30	90	6
ODP2-62040-3HF4N	40	110	6
ODP2-62050-3HF4N	50	150	6
ODP2-62060-3HF4N	60	180	6
ODP2-72075-3HF4N	75	202	7
ODP2-72100-3HF4N	100	248	7
ODP2-72120-3HF4N	120	312	7

380-480V ± 10%, 3-ph in, 460V, 3-ph motor

Model	HP	Amps	Size
ODP2-44150-3HF4N	15	24	4
ODP2-44200-3HF4N	20	30	4
ODP2-44250-3HF4N	25	39	4
ODP2-44300-3HF4N	30	46	4
ODP2-54040-3HF4N	40	61	5
ODP2-54050-3HF4N	50	72	5
ODP2-64060-3HF4N	60	90	6
ODP2-64075-3HF4N	75	110	6
ODP2-64120-3HF4N	120	150	6
ODP2-64150-3HF4N	150	180	6
ODP2-74175-3HF4N	175	202	7
ODP2-74200-3HF4N	200	240	7
ODP2-74250-3HF4N	250	302	7

For single phase supply derate to 50%

OPT2-ENCOD-IN Encoder feedback module  
OPT2-OPORT-IN Remote Keypad & Display

## Specifications

Input Ratings	Supply Voltage	200 - 240 ± 10% 380 - 480 ± 10%
	Supply Frequency	48 - 62 Hz
	Displacement PF	> 0.98
	Phase Imbalance	3% Maximum allowed
	Inrush Current	< Rated current
	Power Cycles	120 per hour max, evenly spaced
Output Ratings	Power Output	230V, 1-ph in: 1-3 HP (0.75-2.2 kW) 230V, 3-ph in: 1-120 HP (0.75-90 kW) 400V, 3-ph in: 0.75-160kW 460V, 3-ph in: 1-350 HP
	Overload Capacity	150% for 60 secs, 200% for 4 secs.
	Output Frequency	0-500Hz in V/Hz mode (0.1 Hz res) (optional 2KHz) 0-100Hz in vector mode
Ambient Ratings	Temperature	Storage: -40°C to 60°C Operating: -10°C to 40°C (IP40, IP55 & IP66) -10°C to 50°C (IP20)
	Altitude	Up to 1000m ASL without de-rating Up to 2000m Max UL Approved Up to 4000m Max (non UL) Above 1000m, de-rate 1% per 100m
	Humidity	95% non-condensing
Enclosures	Ingress Protection	IP20 - Frame sizes 2 & 3 IP40 (NEMA 1) - Frame size 8 IP55 (NEMA 12) - Frame sizes 4 to 7 IP66 (NEMA 4X) - Optional sizes 2 & 3
Programming	Keypad	Standard: built in keypad Optional: Remote keypad Optistick memory stick <b>drive.web savvy</b> software
	Display	Bright red LED (sizes 2 & 3) Bright Green OLED text (sizes 4 to 7)
Control	Control Modes	Closed Loop (encoder) speed control Closed Loop (encoder) torque control Open Loop PM vector control Sensorless vector speed control V/F Voltage vector Energy optimized V/F
	Modulation	4 - 32 kHz effective
	Stop Mode	Ramp to stop - adjustable 0.1-600 secs Safe Torque Off mode
	Braking	Motor flux braking (DC injection) Built in brake transistor
	Skip Frequency	Single point user adjustable
	Analog Setpoint Control	0-10v, 10-0v, ±10v 0-20mA, 20-0mA, 4-20mA, 20-4mA
	Digital Setpoint Control	Keypad ModbusRTU CANopen
	Automation	Optional <b>drive.web</b> Ethernet distributed control + programmable control, extra i/o, operator stations
	Communications Options	<b>drive.web</b> , ModbusTCP, EIP, DeviceNet, Profibus
	I/O Specification	Power Supply
Programmable Inputs		3 x Digital 10 to 30 VDC, response <4ms 2 x Analog/digital
Programmable outputs		2 x Analog, 0-10V, 0-20mA, 4-20mA 2 x Relay NO, 6A @ 250VAC, 5A @ 30VDC
Control & Monitoring	PID	Internal PID with feedback display
	Fault Memory	Last 4 trips stored with time stamp
	Data Logging	Current, temperature, DC Bus volts prior to trip
	Maintenance Indicator	Service life monitor with user adjustable interval
	Monitoring	Hours run Resettable and non-resettable kWh meters

## OPTIDRIVE PLUS SENSORLESS VECTOR DRIVES 0.5 TO 250 HP

### OPTIDRIVE PLUS FEATURES

- 3<sup>GV</sup> Technology Sensorless vector control
- 100% torque at zero speed
- Sensorless speed regulation better than 1%
- Encoder feedback speed regulation better than 0.1%
- Torque control
- Output to 500Hz (optional 2KHz)
- Output to 100Hz (Sensorless Vector Mode)
- Integral PI controller
- Rugged compact IP20 packaging
- Silent running with up to 32KHz switching
- 175% starting torque
- Built-in DB transistor available up to 250 hp
- Bipolar 12 bit analog input (isolated +/-10V or 4-20mA)
- ModbusRTU, RS485 port up to 115kbps
- Filters & line chokes available 25-250 hp
- Fiber optic & RS232/485 network options
- Optiwand optical programming tool
- Single phase input up to 60 hp
- Isolated control circuits
- Power loss ride through
- Process control options
- Programmable i/o
 

Digital inputs	2
Analog inputs	1
Analog/digital inputs	1
Analog Outputs	1
Relay contact output	1
- Hours run log
- 50°C ambient
- Options
  - Additional smarty i/o option
  - Ethernet, Modbus TCP/IP option
  - drive.web savvy** programming option
  - Encoder feedback option (better than 0.1%)

### DIMENSIONS & WEIGHTS

#### STANDARD IP20 ENCLOSED DRIVES

SIZE	HIGH	WIDE	DEEP	LBS	
1	6.1"	3.15"	5.1"	2.5	(150, 80, 130mm, 1.1kg)
2	10.25"	3.95"	6.9"	5.9	(260, 100, 175mm, 2.6kg)
3	10.25"	6.75"	6.9"	12	(260, 171, 175mm, 5.3kg)
4	20.5"	13.4"	8.7"	63	(520, 340, 220mm, 28kg)
Size 5, up to 150 amps	41.2"	13.4"	8.7"	151	(1045, 340, 220mm, 67kg)
Size 5, 180 amps & over,	41.2"	13.4"	13"	151	(1045, 340, 220mm, 67kg)
6	44.5"	13.4"	13"	153	(1130, 340, 330mm, 68kg)
Size 6 Ext Choke	9.5", 9.8", 9.1"				(240, 250, 230mm)

#### NEMA 12 DRIVES

1	7.9"	5.5"	6.4"	5.4	(200, 140, 162mm, 2.4kg)
2	12.2"	6.5"	6.9"	10.3	(310, 164, 176mm, 4.6kg)



Standard IP20 enclosed drives



NEMA12 (IP55) enclosed drives for harsh & dirty environments

Standards: UL, C-UL, CE C-Tick

## Automation Options



### savvyPanel

Easily add smart, graphical, operator stations with an iPad, iPhone or touch screen PC.

### drive.web smarty

The **smarty** option provides **drive.web** Internet accessible distributed control technology over Ethernet together with powerful programmable automation features

# ODP - SENSORLESS VECTOR DRIVE STANDARD IP20 ENCLOSED DRIVES

## 220/240V, SINGLE PHASE IN, 230V, 3-PHASE OUT

SIZE	MODEL	SPECIAL FEATURES	HP	AMPS
1	ODP -12005-US	Filter	0.5	2.3
1	ODP -12010-US	Filter	1.0	4.3
1	ODP -12020-US	Filter	2.0	7.0
2	ODP -22020-US	Filter, Brake Transistor	2.0	7.0
2	ODP -22030-US	Filter, Brake Transistor	3.0	10.5

## 220/240V, 3-PH IN (1-PH 50% DERATE), 230V, 3-PH OUT

SIZE	MODEL	SPECIAL FEATURES	HP	AMPS
3	ODP -32040-US	Filter, Brake Transistor	4	14
3	ODP -32050-US	Filter, DC Chokes, Brake Transistor	5	18
3	ODP -32075-US	Filter, DC Chokes, Brake Transistor	7.5	24
4	ODP -42100-US	Filter, Line Chokes, Brake Transistor	10	39
4	ODP -42150-US	Filter, Line Chokes, Brake Transistor	15	46
4	ODP -42200-US	Filter, Line Chokes, Brake Transistor	20	61
4	ODP -42250-US	Filter, Line Chokes, Brake Transistor	25	72
5	ODP -52300-US	Filter, Line Chokes, Brake Transistor	30	90
5	ODP -52400-US	Filter, Line Chokes, Brake Transistor	40	110
5	ODP -52600-US	Filter, Line Chokes, Brake Transistor	60	150
6	ODP -62750-US	Filter, External Line Chokes, Brake Transistor	75	240
6	ODP -62100-US	Filter, External Line Chokes, Brake Transistor	100	300

## 380/480V, 3 PH IN (1-PH 50% DERATE), 380/460V, 3-PH OUT

SIZE	MODEL	SPECIAL FEATURES	HP @ 460V	AMPS
2	ODP -24010-US	Filter, Brake Transistor	1	2.2
2	ODP -24020-US	Filter, Brake Transistor	2	4.1
2	ODP -24030-US	Filter, Brake Transistor	3	5.8
2	ODP -24050-US	Filter, Brake Transistor	5	9.5
3	ODP -34075-US	Filter, Brake Transistor	7.5	14
3	ODP -34100-US	Filter, DC Chokes, Brake Transistor	10	18
3	ODP -34150-US	Filter, DC Chokes, Brake Transistor	15	24
3	ODP -34200-US	Filter, DC Chokes, Brake Transistor	20	29.5 *
4	ODP -44250-US	Filter, Line Chokes, Brake Transistor	25	39
4	ODP -44300-US	Filter, Line Chokes, Brake Transistor	30	46
4	ODP -44400-US	Filter, Line Chokes, Brake Transistor	40	61
4	ODP -44500-US	Filter, Line Chokes, Brake Transistor	50	72
5	ODP -54600-US	Filter, Line Chokes, Brake Transistor	60	88
5	ODP -54750-US	Filter, Line Chokes, Brake Transistor	75	110
5	ODP -54100-US	Filter, Line Chokes, Brake Transistor	100	150
5	ODP -54150-US	Filter, Line Chokes, Brake Transistor	150	180
6	ODP -64160-US	Filter, External Line Chokes, Brake Transistor	160	202
6	ODP -64200-US	Filter, External Line Chokes, Brake Transistor	200	240
6	ODP -64250-US	Filter, External Line Chokes, Brake Transistor	250	300

\* Not UL Listed at this rating

## 500/600V, 3 PH IN, 500/600V, 3-PH OUT

SIZE	MODEL	SPECIAL FEATURES	HP @ 575V	AMPS
2	ODP-25010-US	Filter, Brake Transistor - needs choke (CO502628)	1	1.7
2	ODP-25020-US	Filter, Brake Transistor - needs choke (CO502628)	2	3.1
2	ODP-25030-US	Filter, Brake Transistor - needs choke (CO502628)	3	4.1
		External 600V Line choke required for above drives		
2	ODP-25050-US	Filter, Brake Transistor - needs choke (CO502629)	5	6.1
2	ODP-25075-US	Filter, Brake Transistor - needs choke (CO502629)	7.5	9.0
		External 600V Line choke required for above drives		
3	ODP-35100-US	Filter, DC Chokes, Brake Transistor	10	14
3	ODP-35150-US	Filter, DC Chokes, Brake Transistor	15	18
3	ODP-35200-US	Filter, DC Chokes, Brake Transistor	20	24
4	ODP-45300-US	Filter, Line Chokes, Brake Transistor	30	39
4	ODP-45400-US	Filter, Line Chokes, Brake Transistor	40	46
4	ODP-45600-US	Filter, Line Chokes, Brake Transistor	60	62

## NEMA 12 - ODP SERIES SENSORLESS VECTOR i55

### 220/240V, 1PH IN, 230V, 3-PH MOTOR

SIZE	HP	AMPS	UNSWITCHED	SWITCHED
1	0.5	2.3	ODP-12005-US-i	ODP-12005-US-iS
1	1.0	4.3	ODP-12010-US-i	ODP-12010-US-iS
2	2.0	7.0	ODP-22020-US-i	ODP-22020-US-iS
2	3.0	10.5	ODP-22030-US-i	ODP-22030-US-iS

### 380/460V, 3 PH IN, 380/460V, 3-PH MOTOR

SIZE	HP	AMPS	UNSWITCHED	SWITCHED
2	1.0	2.2	ODP-24010-US-i	ODP-24010-US-iS
2	2.0	4.1	ODP-24020-US-i	ODP-24020-US-iS
2	3.0	5.8	ODP-24030-US-i	ODP-24030-US-iS
2	5.0	9.5	ODP-24050-US-i	ODP-24050-US-iS

### 500/600V, 3 PH IN, 500/600V, 3-PH MOTOR

SIZE	HP	AMPS	UNSWITCHED	SWITCHED
2	1.0	1.7	ODP-25010-US-**	ODP-25010-US-iS
2	2.0	3.1	ODP-25020-US-**	ODP-25020-US-iS
2	3.0	4.1	ODP-25030-US-**	ODP-25030-US-iS
2	5.0	5.8	ODP-25050-US-**	ODP-25050-US-iS
OD-IL163-US-i55			NEMA 12, 3-phase, line inductor required for 1 to 5HP, 600V drives above	
2	7.5	9.0	ODP-25075-US-**	ODP-25075-US-iS
OD-IL263-US-i55			NEMA 12, 3-phase, line inductor required for 7.5HP, 600V drive above	

UNSWITCHED drives have Nema 12 keypad and display

SWITCHED drives have additional power isolator switch, FWD/REV switch & speed pot

- Heavy duty, 150%, 60 sec., 50°C rating
- Full torque at zero speed
- Open loop speed regulation better than 1%
- Nema 12 versions up to 7.5HP
- Hours run & KWh store
- RS485 up to 115Kbps
- 12 bit bipolar analog inputs
- Plug-in control terminals
- Spin start



## ENCODER OPTIONS

### ODP-ENCOD-US

Encoder feedback option  
For precision speed control

### RTX

Encoder retransmit option provides  
secure buffered encoder pulse output  
from the encoder feedback module

## V2 SERIES HVAC



### VARIABLE TORQUE FAN & PUMP DRIVES



Dedicated HVAC and centrifugal pump controller  
Built in EMC filter standard  
DC bus chokes built in, sizes 4 - 7  
Multi-language, plain text OLED display for ease of use  
Energy optimization for maximum efficiency  
BACnet and ModbusRTU as standard  
Built-in hours run and kWh meters  
Built-in PID controller  
Advanced application functions for easy programming  
High frequency switching (up to 32kHz) for quiet running  
Built-in sleep and wake functions for on demand use  
Built-in motor flux braking  
Programmable i/o  
Optistick plug-in programming tool  
Power loss ride through  
40°C ambient  
HVAC functions:  
    Bi-directional Fire Mode for emergency ventilation  
Pump functions:  
    Blockage detection  
    Adjustable cleaning cycle  
    Multi-pump cascade control  
    Pump stir mode  
Standards - UL, CE, C-Tick on all models

Options:  
**drive.web savvy** smart programmable automation  
**savvyPanel** graphical, touch screen operator technology  
Easy, off site Internet access to the complete system  
Ethernet peer to peer networking  
Ethernet ModbusTCP and EIP  
3 additional relay outputs for cascade control  
Additional **smarty** i/o option  
Built in power isolator switch sizes 2 & 3

## 0.5 TO 250 HP

- Fan & pump features
- NEMA 4X (IP66) to 10 HP
- NEMA 12 (IP55) to 250 HP
- BACnet & ModbusRTU

### smart drives

Use the easy **drive.web** option to build smart controls schemes and iOS or PC graphical touch screen operator stations with roaming access, diagnostics and event driven email.



### drive.web smart automation

- powerful programmable control functions
- peer-to-peer over Ethernet
- smart iPad or touch screen PC operation
- Internet access



The **drive.web speedy** Ethernet interface and automation controller mounts inside the drive enclosure for protected, reliable operation. It includes a USB port for easy system wide programming.

## Models & Ratings

### NEMA 4X, NEMA12 & NEMA 1

#### 200-240V ± 10%, 1-ph in, 230V, 3-ph motor

Model	HP	Amps	Size	NEMA
size 2 with EMC Filter:				
ODV2-22010-1HF1X or D	1	4.3	2	4X
ODV2-22020-1HF1X or D	2	7	2	4X
ODV2-22030-1HF1X or D	3	10.5	2	4X

#### 200-240V ± 10%, 3-ph in, 230V, 3-ph motor

Model	HP	Amps	Size	NEMA
sizes 2 & 3 with EMC Filter:				
ODV2-22010-3HF1X or D	1	4.3	2	4X
ODV2-22020-3HF1X or D	2	7	2	4X
ODV2-22030-3HF1X or D	3	10.5	2	4X
ODV2-32050-3HF1X or D	5	18	3	4X
sizes 4-7 with EMC filter & DC choke:				
ODV2-42075-3HF1N	7.5	24	4	12
ODV2-42100-3HF1N	10	30	4	12
ODV2-42150-3HF1N	15	46	4	12
ODV2-52020-3HF1N	20	61	5	12
ODV2-52025-3HF1N	25	72	5	12
ODV2-52030-3HF1N	30	90	5	12
ODV2-62040-3HF1N	40	110	6	12
ODV2-62050-3HF1N	50	150	6	12
ODV2-62060-3HF1N	60	180	6	12
ODV2-62075-3HF1N	75	202	6	12
ODV2-72100-3HF1N	100	248	7	12
ODV2-72120-3HF1N	120	312	7	12

#### 380-480V ± 10%, 3-ph in, 460V, 3-ph motor

Model	HP	Amps	Size	NEMA
sizes 2 & 3 with EMC Filter:				
ODV2-24010-3HF1X or D	1	2.2	2	4X
ODV2-24020-3HF1X or D	2	4.1	2	4X
ODV2-24030-3HF1X or D	3	5.8	2	4X
ODV2-24050-3HF1X or D	5	9.5	2	4X
ODV2-34075-3HF1X or D	7.5	14	3	4X
ODV2-34100-3HF1X or D	10	18	3	4X
sizes 4-7 with EMC filter & DC choke:				
ODV2-44150-3HF1N	15	24	4	12
ODV2-44200-3HF1N	20	30	4	12
ODV2-44250-3HF1N	25	39	4	12
ODV2-44300-3HF1N	30	46	4	12
ODV2-54040-3HF1N	40	61	5	12
ODV2-54050-3HF1N	50	72	5	12
ODV2-54060-3HF1N	60	90	5	12
ODV2-64075-3HF1N	75	110	6	12
ODV2-64120-3HF1N	120	150	6	12
ODV2-64150-3HF1N	150	180	6	12
ODV2-64175-3HF1N	175	202	6	12
ODV2-74200-3HF1N	200	240	7	12
ODV2-74250-3HF1N	250	302	7	12

#### Dimensions

Size	2	3	4	5	6	7
Height (ins)	10.1"	12.2"	17.3"	21.3"	34.1"	50.4"
Height (mm)	257	310	440	540	865	1280
Width (ins)	7.4"	8.3"	6.8"	9.3"	13.0"	13.0"
Width (mm)	188	211	173	235	330	330
Depth (ins)	9.4"	10.1"	9.1"	10.6"	13.4"	14.6"
Depth (mm)	238	256	230	270	340	370

## Specifications

Input Ratings	Supply Voltage	200 - 240 ± 10% 380 - 480 ± 10%
	Supply Frequency	48 - 62 Hz
	Displacement PF	> 0.98
	Phase Imbalance	3% Maximum allowed
	Inrush Current	< Rated current
	Power Cycles	120 per hour max, evenly spaced
Output Ratings	Power Output	230V, 1-ph in: 1-3 HP (0.75-2.2 kW) 230V, 3-ph in: 1-120 HP (0.75-90 kW) 400V, 3-ph in: 0.75-160kW 460V, 3-ph in: 1-250 HP
	Overload Capacity	110% for 60 secs, 125% for 2 secs.
	Output Frequency	0-120Hz, 0.1 Hz resolution
Ambient Ratings	Temperature	Storage: -40°C to 60°C Operating: -10°C to 40°C
	Altitude	Up to 1000m ASL without de-rating Up to 2000m Max UL Approved Up to 4000m Max (non UL) Above 1000m, de-rate 1% per 100m
	Humidity	95% non-condensing
Enclosures	Ingress Protection	NEMA4X (indoor) sizes 2, 3; NEMA12 sizes 4 to 7
Programming	Keypad	Standard: built in keypad Optional: Remote keypad Optistick memory stick <b>drive.web savvy</b> software
	Display	Standard: Bright Green OLED
Control	Control Modes	Variable torque V/F Variable torque Energy optimized V/F
	Modulation	4 - 32 kHz effective
	Stop Mode	Ramp to stop - adjustable 0.1-600 secs Coast to stop
	Braking	Motor flux braking (DC injection)
	Skip Frequency	Single point user adjustable
	Analog Setpoint Control	0-10V, 10-0V, ±10V 0-20mA, 20-0mA, 4-20mA, 20-4mA
	Digital Setpoint Control	Keypad ModbusRTU BACnet
	Automation	Optional <b>drive.web</b> Ethernet distributed control + programmable control, extra i/o, operator stations
	Communications Options	<b>drive.web</b> , ModbusTCP, EIP, DeviceNet, Profibus
	I/O Specification	Power Supply
Programmable Inputs		3 x Digital 10 to 30 VDC, response <4ms 2 x Analog/digital
Programmable outputs		2 x Analog, 0-10V, 0-20mA, 4-20mA 2 x Relay NO, 6A @ 250VAC, 5A @ 30VDC
Control & Monitoring	PID	Internal PID with feedback display
	Fault Memory	Last 4 trips stored with time stamp
	Data Logging	Current, temperature, DC Bus volts prior to trip
	Maintenance Indicator	Service life monitor with user adjustable interval
	Monitoring	Hours run Resettable and non-resettable kWh meters
	Application functions	HVAC Functions
	Pump functions	Pump blockage detection Pump cleaning cycles Multi-pump cascade control Pump stir mode

## Size 2 & 3 drives model number suffix X or D

X = no disconnect switch

D = with power disconnect switch



# AC drives

# OPTIDRIVE E2

General purpose drives with all purpose features

Up to 15 HP

Basic or NEMA 4X (IP66)

Basic or full featured systems drive

3-Phase & single phase motor versions

Basic or loaded, the new E2 is designed to give you the very best in value, performance and ease of use. The innovative design incorporates flexibility, expandability and convenience that will work in many different applications throughout your plant.

NEMA 4X versions see Page 36

Expandable  
Economical  
Easy  
Enduring  
Efficient



**speedily**  
Programmable control  
& Ethernet networking

**OPTISTICK**  
Plug-in upload/download  
configuration memory stick

**OPT2-O-PORT-IN**  
Remote keypad/display



### KEY FEATURES

- Compact packaging
- Simple mechanical and electrical installation
- 50°C ambient rating
- 150% rating for 60 seconds, 175% for 2 seconds
- Simple 14 parameter basic set up
- Integral RFI filter option
- Integral brake transistor, sizes 2 & 3 (100% continuous rated)
- ModbusRTU serial port

### Options:

- Remote keypad and display
- OPTISTICK plug in unit for fast up/down load of parameters
- smarty** remote i/o, programmable control & Ethernet networking
- speedily** programmable control & Ethernet networking
- savvyPanel** smart touch screen operator station technology

### Standards:

- UL, C-UL, CE, C-Tick

## STANDARD IP20 DRIVES

Model	Supply	Motor	Power	Amps	Size
ODE2-11005-1H012	1Ø, 115V	3Ø, 230V	0.5HP	2.3	1
ODE2-11010-1H012	1Ø, 115V	3Ø, 230V	1.0HP	4.3	1
ODE2-21015-1H042	1Ø, 115V	3Ø, 230V	1.5HP	5.8	2
ODE2-12005-1H012	1Ø, 230V	3Ø, 230V	0.5HP	2.3	1
ODE2-12010-1H012	1Ø, 230V	3Ø, 230V	1HP	4.3	1
ODE2-12020-1H012	1Ø, 230V	3Ø, 230V	2HP	7	1
ODE2-22020-1H042	1Ø, 230V	3Ø, 230V	2HP	7	2
ODE2-22030-1H042	1Ø, 230V	3Ø, 230V	3HP	10.5	2
ODE2-12005-3H012	3Ø, 230V	3Ø, 230V	0.5HP	2.3	1
ODE2-12010-3H012	3Ø, 230V	3Ø, 230V	1HP	4.3	1
ODE2-12020-3H012	3Ø, 230V	3Ø, 230V	2HP	7	1
ODE2-22020-3H042	3Ø, 230V	3Ø, 230V	2HP	7	2
ODE2-22030-3H042	3Ø, 230V	3Ø, 230V	3HP	10.5	2
*ODE2-32050-1H042	1Ø, 230V	3Ø, 230V	5HP	18	3
ODE2-32050-3H042	3Ø, 230V	3Ø, 230V	5HP	18	3
ODE2-14010-3H012	3Ø, 460V	3Ø, 460V	1HP	2.2	1
ODE2-14020-3H012	3Ø, 460V	3Ø, 460V	2HP	4.1	1
ODE2-24020-3H042	3Ø, 460V	3Ø, 460V	2HP	4.1	2
ODE2-24030-3H042	3Ø, 460V	3Ø, 460V	3HP	5.8	2
ODE2-24050-3H042	3Ø, 460V	3Ø, 460V	5HP	9.5	2
ODE2-34075-3H042	3Ø, 460V	3Ø, 460V	7.5HP	14	3
ODE2-34100-3H042	3Ø, 460V	3Ø, 460V	10HP	18	3
ODE2-34150-3H042	3Ø, 460V	3Ø, 460V	15HP	24	3

\* This unit not UL Listed  
Models in blue are stocked in limited quantities  
Please call +410-604-3400 for availability

### DIMENSIONS & WEIGHT

Size	Height	Width	Depth	Weight
1	6.8" (173mm)	3.3" (82mm)	4.9" (123mm)	2.5lbs (1.1kg)
2	8.7" (221mm)	4.1" (104mm)	5.9" (150mm)	5.9lbs (2.6kg)
3	10.3" (261mm)	5.2" (131mm)	6.9" (175mm)	9lbs (4.0kg)

## SPECIFICATION

Output	Frequency	0 to 500Hz	
	Supply options	Frequency	48 - 62 Hz
	Voltage/Phases	100 - 132 volts max, single phase (0.5 - 1.5HP) 180 - 264 volts max, 1-phase (0.5 - 3HP) 180 - 264 volts max, 3-phase (0.5 - 5HP) 342 - 528 volts max, 3-phase (1 - 15HP)	
Environment	Temperature	Operating, -10 to 50°C max, storage, -40 to 60°C	
	Altitude	0-2000M, derate 1% per 100M above 1000M	
	Humidity	up to 95%, non condensing	
Control	Ingress Protection	Basic IP20, Optional IP55 (NEMA12)	
	Mode	Voltage vector	
	PWM frequency	4 to 32KHz (effective)	
Configurable i/o	V/Hz ratio	Linear	
	Boost	Yes	
	Stop modes	Coast / ramp / DC brake	
	Skip frequency	One point, adjustable frequency band	
	Setpoint reference	0-10VDC, 4-20mA, 20-4mA, 0-20mA, Keypad, Modbus	
	Pre-set speeds	8	
	PI control	Direct & analog input trim	
	Spin start	Starts safely into rotating motor	
	Accel/Decel	0 - 600 seconds + Ramp stop decel 0 - 600 seconds	
	Input 1	Programmable digital input	
	Input 2	Programmable digital input	
Input 3	Configurable analog or digital input		
Input 4	Configurable analog or digital input		
Output 1	Configurable analog or digital output		
Output 2	Normally open relay contact 30VDC 5A, 250VAC 6A		
Protection	Drive trip	Over/under volts, over current, external trip,	
	Motor	Overload, over temperature, short circuit, ground fault	
	Trip memory	Last 4 trips stored	



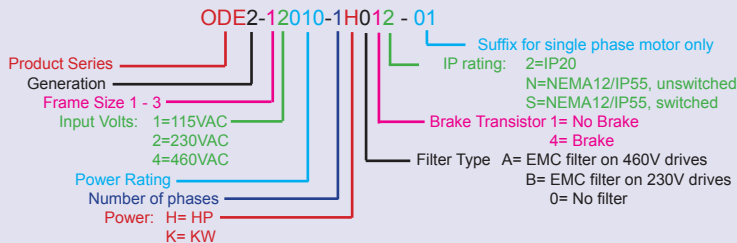
### drive.web smart automation

- powerful programmable control functions
- peer-to-peer over Ethernet
- smart iPad or touch screen PC operation
- Internet access



**savvyPanel** operator station technology runs on iPad, iPhone or touch screen PC

## MODEL NUMBERING



## INDUSTRIAL NEMA 12 / IP55 DRIVES

### For harsh & dirty environments

# = **S** Switched with keypad, display, speed pot, fwd/rev switch & power isolator switch  
# = **N** Unswitched with keypad & display

Model	Supply	Motor	Power	Amps	Size
ODE2-11005-1H01#	1Ø, 115V	3Ø, 230V	0.5HP	2.3	1
ODE2-11010-1H01#	1Ø, 115V	3Ø, 230V	1.0HP	4.3	1
ODE2-21015-1H04#	1Ø, 115V	3Ø, 230V	1.5HP	5.8	2
ODE2-12005-1H01#	1Ø, 230V	3Ø, 230V	0.5HP	2.3	1
ODE2-12010-1H01#	1Ø, 230V	3Ø, 230V	1HP	4.3	1
ODE2-12020-1H01#	1Ø, 230V	3Ø, 230V	2HP	7	1
ODE2-22020-1H04#	1Ø, 230V	3Ø, 230V	2HP	7	2
ODE2-22030-1H04#	1Ø, 230V	3Ø, 230V	3HP	10.5	2
*ODE2-32050-1H04#	1Ø, 230V	3Ø, 230V	5HP	18	3
ODE2-32050-3H04#	3Ø, 230V	3Ø, 230V	5HP	18	3
ODE2-14010-3H01#	3Ø, 460V	3Ø, 460V	1HP	2.2	1
ODE2-14020-3H01#	3Ø, 460V	3Ø, 460V	2HP	4.1	1
ODE2-24020-3H04#	3Ø, 460V	3Ø, 460V	2HP	4.1	2
ODE2-24030-3H04#	3Ø, 460V	3Ø, 460V	3HP	5.8	2
ODE2-24050-3H04#	3Ø, 460V	3Ø, 460V	5HP	9.5	2
ODE2-34075-3H04#	3Ø, 460V	3Ø, 460V	7.5HP	14	3
ODE2-34100-3H04#	3Ø, 460V	3Ø, 460V	10HP	18	3

\* This unit not UL Listed

### DIMENSIONS & WEIGHT

Size	Height	Width	Depth	Weight
1	7.9" (200mm)	5.5" (140mm)	6.4" (162mm)	5.4lbs (2.4kg)
2	12.2" (310mm)	6.5" (164mm)	6.9" (176mm)	10.3lbs (4.6kg)
3	12.2" (310mm)	8.3" (211mm)	9.6" (243mm)	16.6lbs (7.4kg)

**Tough drives  
for rough jobs**



## NEMA 4X (IP66) Enclosed Drives

### For harsh, wet & dirty environments



Embed a **speedy** in the drive to provide Ethernet networking & programmable control

**Switched** version with keypad, display, speed pot, forward/off/reverse switch & power isolator switch.

**Unswitched** version with keypad & display.

#### Key Features

- 40°C ambient temperature
- Conduit cable entry
- Padlockable power switch
- ModbusRTU port
- ABS moldings & corrosion resistant heat sink
- All standard drive features included
- Brake standard on sizes 2 & 3
- Optional internal Ethernet size 2 & 3

#### Standards

UL, C-UL, CE, C-Tick

#### NEMA 4X (IP66) INDOOR RATED ODP2 OPEN/CLOSED LOOP VECTOR DRIVES

With EMC filter, brake transistor +/- DC bus

SIZE	HP	AMPS	UNSWITCHED	SWITCHED
<b>230V, SINGLE PHASE IN, 230V, 3-PHASE MOTOR</b>				
2	1	4.3	ODP2-22010-1HF4X	ODP2-22010-1HF4Y
2	2	7	ODP2-22020-1HF4X	ODP2-22020-1HF4Y
2	3	10.5	ODP2-22030-1HF4X	ODP2-22030-1HF4Y
<b>230V, 3-PHASE IN, 230V, 3-PHASE MOTOR</b>				
2	1	4.3	ODP2-22010-3HF4X	ODP2-22010-3HF4Y
2	2	7	ODP2-22020-3HF4X	ODP2-22020-3HF4Y
2	3	10.5	ODP2-22030-3HF4X	ODP2-22030-3HF4Y
3	5	18	ODP2-32050-3HF4X	*ODP2-32050-3HF4Y
<b>380/460V, 3-PHASE IN, 380/460V, 3-PHASE MOTOR</b>				
2	1	2.2	ODP2-24010-3HF4X	ODP2-14010-3HF4Y
2	2	4.1	ODP2-24020-3HF4X	ODP2-24020-3HF4Y
2	3	5.8	ODP2-24030-3HF4X	ODP2-24030-3HF4Y
2	5	9.5	ODP2-24050-3HF4X	ODP2-24050-3HF4Y
3	7.5	14	ODP2-34075-3HF4X	ODP2-34075-3HF4Y
3	10	18	ODP2-34100-3HF4X	ODP2-34100-3HF4Y

Encoder feed back option OPT2-ENCOD-IN

Ethernet networking & basic programmable control option dw224-00  
(for more smart control options see pages 18-21)

#### DIMENSIONS & WEIGHT

Size	Height	Width	Depth	Weight
2	10.1" (257mm)	7.4" (188mm)	9.4" (239mm)	10.8lbs (4.8kg)
3	12.2" (310mm)	8.3" (211mm)	9.9" (251mm)	16.5lbs (7.5kg)

#### NEMA 4X (IP66) INDOOR RATED ODE2 SERIES GENERAL PURPOSE VFD

SIZE	HP	AMPS	UNSWITCHED	SWITCHED
<b>115V, SINGLE PHASE IN, 230V, 3-PHASE MOTOR</b>				
1	0.5	2.3	ODE2-11005-1H01X	ODE2-11005-1H01Y
1	1.0	4.3	ODE2-11010-1H01X	ODE2-11010-1H01Y
2	1.5	5.8	ODE2-21015-1H04X	ODE2-21015-1H04Y
<b>230V, SINGLE PHASE IN, 230V, 3-PHASE MOTOR</b>				
1	0.5	2.3	ODE2-12005-1H01X	ODE2-12005-1H01Y
1	1	4.3	ODE2-12010-1H01X	ODE2-12010-1H01Y
1	2	7	ODE2-12020-1H01X	ODE2-12020-1H01Y
2	2	7	ODE2-22020-1H04X	ODE2-22020-1H04Y
2	3	10.5	ODE2-22030-1H04X	ODE2-22030-1H04Y
3	5	18	*ODE2-32050-1H04X	*ODE2-32050-3H04Y
* This unit not UL Listed				
<b>230V, 3-PHASE IN, 230V, 3-PHASE MOTOR</b>				
3	5	18	ODE2-32050-3H04X	ODE2-32050-3H04Y
<b>380/460V, 3-PHASE IN, 380/460V, 3-PHASE MOTOR</b>				
1	1	2.2	ODE2-14010-3H01X	ODE2-14010-3H01Y
1	2	4.1	ODE2-14020-3H01X	ODE2-14020-3H01Y
2	2	4.1	ODE2-24020-3H04X	ODE2-24020-3H04Y
2	3	5.8	ODE2-24030-3H04X	ODE2-24030-3H04Y
2	5	9.5	ODE2-24050-3H04X	ODE2-24050-3H04Y
3	7.5	14	ODE2-34075-3H04X	ODE2-34075-3H04Y
3	10	18	ODE2-34100-3H04X	ODE2-34100-3H04Y

#### DIMENSIONS & WEIGHT

Size	Height	Width	Depth	Weight
1	9.1" (232mm)	6.4" (161mm)	6.9" (175mm)	6.2lbs (2.8kg)
2	10.1" (257mm)	7.4" (188mm)	7.4" (187mm)	10.1lbs (4.6kg)
3	12.2" (310mm)	8.3" (211mm)	9.6" (243mm)	16.3lbs (7.4kg)

# AC Drive Options

ITEM	DESCRIPTION	MODEL			
		P	P2	V2	E2
<b>Remote Keypads</b>					
OD-OPRTP-US	Remote keypad	✓			
OPT2-OPORT-IN	Remote Keypad	✓	✓	✓	✓
OPT2-OPFB-IN	Remote keypad with OLED display	✓	✓	✓	✓
<b>Communications Options</b>					
speedy dw21X-04	ModbusTCP/IP Interface Module	✓	✓	✓	✓
speedy dw21X-25	EIP/PCCC Interface Module	✓	✓	✓	✓
OPT2-DEVNT-IN	DeviceNet Interface Module	✓	✓		
OPT2-PROFB-IN	Profibus DP Interface Module	✓	✓		
<b>Programming Interface Options</b>					
speedy dw21X	USB Interface Module	✓	✓	✓	✓
OPT-STICK-IN	Optistick parameter copying stick with IR interface	✓	✓		✓
OPT2-STICK-IN	Optistick parameter copying stick with Bluetooth	✓	✓		✓
<b>Encoder Feedback Options</b>					
ODP-ENCOD-US	Encoder feedback unit, DIN rail mounting	✓			
OPTION-RTX	Encoder pulse buffered retransmit	✓			
OPT2-ENCOD-IN	Encoder feedback module for P2	✓			
<b>EMC Filters</b>					
OD-F1121-US	Optifilter, drive size 1, 230V, 1-phase	✓	✓	✓	✓
OD-F2121-US	Optifilter, drive size 2, 230V, 1-phase	✓	✓	✓	✓
OD-F1341-US	Optifilter, drive size 1, 230/480V, 3-phase	✓	✓	✓	✓
OD-F2341-US	Optifilter, drive size 2, 230/480V, 3-phase	✓	✓	✓	✓
OD-F3341-US	Optifilter, drive size 3, 230/480V, 3-phase	✓	✓	✓	✓
<b>Brake Resistors (Case Type)</b>					
OD-BR100-IN	DB Resistor, drive size 2, 100Ω, 200W	✓			✓
OD-BR050-IN-i55	DB Resistor, drive size 2, IP55 50Ω, 200W	✓			✓
OD-BRES4-IN	DB Resistor, drive size 4, 33Ω, 500W	✓			
<b>Brake Resistors (Enclosed, ventilated with over temp switch)</b>					
Intermittent duty 10%, 10 sec					
CX503069	1 - 3 HP 230VAC, 63Ω, 12"x5"x5"	✓	✓	✓	✓
CX503070	5 HP 230VAC, 38Ω, 12"x5"x5"	✓	✓	✓	✓
CX503072	7.5 - 10 HP 230VAC, 19Ω, 12"x7"x5"	✓	✓	✓	✓
CX503073	15 HP 230VAC, 12.6Ω, 12"x10"x5"	✓	✓	✓	✓
CX503074	20 HP 230VAC, 9.6Ω, 12"x13"x5"	✓	✓	✓	✓
CX503075	25 HP 230VAC, 7.5Ω, 12"x16"x5"	✓	✓	✓	✓
CX503076	30 HP 230VAC, 6.3Ω, 19"x10"x5"	✓	✓	✓	✓
CX503077	40 HP 230VAC, 4.9Ω, 19"x10"x5"	✓	✓	✓	✓
CX503078	50 HP 230VAC, 3.9Ω, 19"x10"x5"	✓	✓	✓	✓
CX503079	60 HP 230VAC, 3.3Ω, 19"x13"x5"	✓	✓	✓	✓
CX503082	1 - 3 HP 460VAC, 250Ω, 12"x5"x5"	✓	✓	✓	✓
CX503085	5 - 10 HP 460VAC, 75Ω, 12"x7"x5"	✓	✓	✓	✓
CX503086	15 HP 460VAC, 50Ω, 12"x10"x5"	✓	✓	✓	✓
CX503087	20 HP 460VAC, 38Ω, 12"x13"x5"	✓	✓	✓	✓
CX503088	25 HP 460VAC, 30Ω, 12"x16"x5"	✓	✓	✓	✓
CX503089	30 HP 460VAC, 25Ω, 19"x10"x5"	✓	✓	✓	✓
CX503090	40 HP 460VAC, 19Ω, 19"x13"x5"	✓	✓	✓	✓
CX503091	50 HP 460VAC, 15Ω, 19"x13"x5"	✓	✓	✓	✓
CX503092	60 HP 460VAC, 12.6Ω, 19"x13"x5"	✓	✓	✓	✓
CX503093	75 HP 460VAC, 10Ω, 26.5"x10"x5"	✓	✓	✓	✓
CX503094	100 HP 460VAC, 7.5Ω, 26.5"x16"x5"	✓	✓	✓	✓
CX503096	125 - 150 HP 460VAC, 6Ω, 28"x10"x10"	✓	✓	✓	✓
<b>Input Line Reactors</b>					
OD-IL121-IN	Input inductor, drive size 1, 220/240V, 1-ph, 10A	✓	✓	✓	✓
OD-IL221-IN	Input inductor, drive size 2, 220/240V, 1-ph, 25A	✓	✓	✓	✓
OD-IL143-IN	Input inductor, drive size 1, 380/480V, 3-ph, 6A	✓	✓	✓	✓
OD-IL243-IN	Input inductor, drive size 2, 380/480V, 3-ph, 10A	✓	✓	✓	✓
OD-IL343-IN	Input inductor, drive size 3, 380/480V, 3-ph, 36A	✓	✓	✓	✓
<b>Output Filters</b>					
OD-OUTF1-US	Output sine filter, drive size 1, 480V, 10A	✓	✓	✓	✓
OD-OUTF2-US	Output sine filter, drive size 2, 480V, 12A	✓	✓	✓	✓
OD-OUTF3-US	Output sine filter, drive size 3, 480V, 30A	✓	✓	✓	✓
OD-OUTF4-US	Output sine filter, drive size 4, 480V, 75A	✓	✓	✓	✓
OD-OUTF5-US	Output sine filter, drive size 5, 480V, 180A	✓	✓	✓	✓
OD-OUTF6-US	Output sine filter, drive size 6, 480V, 250A	✓	✓	✓	✓
<b>DIN Rail Mounts</b>					
OD-DINPL-01	DIN rail mount kit for drive size 1	✓			
OD-DINPL-02	DIN rail mount kit for drive size 2	✓			
<b>Data Cables &amp; Splitters</b>					
OD-48503-US	RS485 data cable, 0.3M, (RJ11 - RJ11)	✓			
OD-48510-US	RS485 data cable, 1M, (RJ11 - RJ11)	✓			
OD-48530-US	RS485 data cable, 3M, (RJ11 - RJ11)	✓			
OPT-J4505-IN	RS485 data cable, 0.5M, (RJ45 - RJ45)	✓	✓	✓	✓
OPT-J4510-IN	RS485 data cable, 1M, (RJ45 - RJ45)	✓	✓	✓	✓
OPT-J4530-IN	RS485 data cable, 3M, (RJ45 - RJ45)	✓	✓	✓	✓
OD-485SP-US	RS485 data cable 3-way splitter (RJ11)	✓	✓	✓	✓
OPT-J45SP-IN	RS485 data cable 3-way splitter (RJ45)	✓	✓	✓	✓
<b>i/o Boards</b>					
OPT-LOGIP-11	110VAC logic input isolator	✓			✓
OPT-LOGIP-23	230VAC logic input isolator	✓			✓
ODP-3ROUT-IN	3-Relay output board	✓			

# 3-Phase Line Reactors for AC Drives

460 volts, 3% impedance, open construction for mounting in a protected enclosure

HP	Model	Amps	mH
1	LMAC341	2	12
2	LMAC342	4	6.5
5	LMAC345	8	3
7.5	LMAC347.5	12	2.5
10	LMAC3410	18	1.5
15	LMAC3415	25	1.2
25	LMAC3425	35	0.8
30	LMAC3430	45	0.7
40	LMAC3440	55	0.5
75	LMAC3475	100	0.3
100	LMAC34100	130	0.2
150	LMAC34150	200	0.11
200	LMAC34200	250	0.09
250	LMAC34250	320	0.075
300	LMAC34300	400	0.06
350	LMAC34350	500	0.05

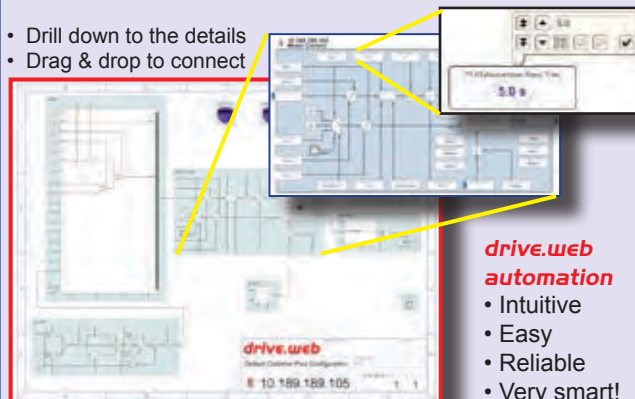
## drive.web smart drives

Add a **drive.web** Universal Automation Controller to any drive for unlimited automation capability (see pages 3-25):

- Powerful programmable control functions
- Peer-to-peer networking over Ethernet
- Smart iPad or touch screen PC operation
- Internet access
- Unlimited additional i/o

ITEM	DESCRIPTION	MODEL			
		P	P2	V2	E2
<b>Smart Programmable Control + Peer-to-Peer Networking + Extra i/o</b>					
dw212	<b>drive.web smarty</b> interface for E2 models w/16 extra i/o				✓
dw213	<b>drive.web smarty</b> interface for ODP models w/16 extra i/o	✓			
dw214	<b>drive.web smarty</b> interface for P2 models w/16 extra i/o		✓		
dw216	<b>drive.web smarty</b> interface for V2 models w/16 extra i/o			✓	✓
-04 OPTION	ModbusTCP/IP	✓	✓	✓	✓
-05 OPTION	Function Block Library 1, Process Control	✓	✓	✓	✓
-06 OPTION	Function Block Library 2, Winder Control	✓	✓	✓	✓
-10 OPTION	Function Block Library 3, Advanced Math	✓	✓	✓	✓
-15 OPTION	Encoder input	✓	✓	✓	✓
For additional options see page 14					
<b>Smart Programmable Control + Peer-to-Peer Networking</b>					
dw22X	<b>drive.web speedy</b> interface modules	✓	✓	✓	✓
With Ethernet ModbusTCP/IP & basic function blocks - see page 14					
-05 OPTION	Function Block Library 1, Process Control	✓	✓	✓	✓
-06 OPTION	Function Block Library 2, Winder Control	✓	✓	✓	✓
-10 OPTION	Function Block Library 3, Advanced Math	✓	✓	✓	✓

- Drill down to the details
- Drag & drop to connect



- drive.web automation**
- Intuitive
  - Easy
  - Reliable
  - Very smart!

## OPTIDRIVE E2 SINGLE PHASE Single Phase Motor Controller

For Shaded Pole (SP) & Permanent Split Capacitor (PSC) motors used in variable torque, fan and pump type applications only



The innovative E2 Single Phase motor controller, uses a unique control algorithm that ensures reliable starting and control.

These drives are designed only for use on Shaded Pole (SP) or Permanent Split Capacitor (PSC) type motors in variable torque, direct drive fan and centrifugal pump applications.

They use high frequency switching to provide near silent running which is most desirable in applications such as:

- Commercial and residential HVAC
- Fume extraction
- Laboratories
- Quiet locations.

Like the other E2 products it is expandable, versatile and economical in all its forms:

Basic or NEMA12 versions

Basic or full featured systems drive

Basic or peer-to-peer networking over Ethernet

### SPECIFICATION

Output	Frequency	0 to 120Hz
Supply options	Frequency	48 - 62 Hz
	Volts/Phases	100 - 132 volts max, single phase (0.5 - 1.0HP)
		180 - 264 volts max, 1-phase (0.5 - 1.5HP) 180 - 264 volts max, 3-phase (0.5 - 1.5HP, special order)
Environment	Temperature	Operating, -10 to 50°C max, storage, -40 to 60°C
	Altitude	0-2000M, derate 1% per 100M above 1000M
	Humidity	up to 95%, non condensing
	Ingress	Basic IP20, Optional IP55 (NEMA12)
Control	Mode	V/F
	PWM Hz	4 to 32KHz (effective)
	V/Hz ratio	Linear
	Boost	Automatic boost phase operation
	Stop modes	Coast / ramp / DC brake
	Setpoint ref	0-10VDC, 4-20mA, 0-20mA, Keypad, Modbus
	Presets	8 preset speeds
	PI control	Direct & analog input trim
	Accel/Decel	0 - 600 secs + Ramp stop decel 0 - 600 secs
	Configurable i/o	Input 1
Input/output 2		Selectable digital input / output
Input 3		Configurable analog or digital input
Input 4		Configurable analog or digital input
Output 1		Configurable analog or digital output
Relay 1		Normally open relay contact 30VDC 5A, 250VAC 6A
Protection	Drive trip	Over/under volts, over current, external trip,
	Motor	Overload, over temp, short circuit, ground fault
	Trip memory	Last 4 trips stored

### THE BASICS

Compact packaging  
Simple mechanical and electrical installation  
50°C ambient rating  
150% rating for 60 seconds, 175% for 2 seconds  
Simple basic set up  
Integral brake transistor (size 2, 100% rated)  
ModbusRTU serial port  
Remote keypad and display option  
OPTISTICK plug-in for easy parameter up/down load  
Standards: UL, C-UL, CE, C-Tick

# E2 Single Phase IP20

Single phase motor controller for use only with Shaded Pole (SP) or Permanent Split Capacitor (PSC) type motors on variable torque, direct drive fans and centrifugal pumps



## STANDARD E2 1Ø IP20 DRIVES

Model	Supply	Motor	Power	Amps	Size
ODE2-11005-1H012-01	1Ø, 115V	1Ø, 115V	0.5HP	7.0	1
ODE2-21007-1H042-01	1Ø, 115V	1Ø, 115V	0.75HP	10.5	2
ODE2-12005-1H012-01	1Ø, 230V	1Ø, 230V	0.5HP	4.3	1
ODE2-12010-1H012-01	1Ø, 230V	1Ø, 230V	1HP	7.0	1
ODE2-22015-1H042-01	1Ø, 230V	1Ø, 230V	1.5HP	10.5	2

### DIMENSIONS & WEIGHT

Size	Height	Width	Depth	Weight
1	6.8" (173mm)	3.3" (82mm)	4.9" (123mm)	2.5lbs (1.1kg)
2	8.7" (221mm)	4.1" (104mm)	5.9" (150mm)	5.9lbs (2.6kg)



## E2 SINGLE PHASE, NEMA 4X (IP66)

Single phase motor controller for use only with Shaded Pole (SP) or Permanent Split Capacitor (PSC) type motors in variable torque, fan and centrifugal pump applications

**Switched** version with keypad, display, speed pot, forward/off switch & power isolator switch

**Unswitched** version with keypad & display



### For harsh, dirty indoor environments

- 40°C ambient temperature
- Conduit cable entry
- Padlockable power switch
- Wash down duty
- ModbusRTU port
- Compact packaging
- All standard drive features included
- Brake standard on 230V, size 2
- Optional internal Ethernet
- Optional internal [drive.web](http://drive.web)

### NEMA 4X / IP66 DRIVES

Model	Supply	Motor	Power	Amps	Size
ODE2-11005-1H01#-01	1Ø, 115V	1Ø, 115V	0.5HP	7.0	1
ODE2-21007-1H04#-01	1Ø, 115V	1Ø, 115V	0.75HP	10.5	2
ODE2-12005-1H01#-01	1Ø, 230V	1Ø, 230V	0.5HP	4.3	1
ODE2-12010-1H01#-01	1Ø, 230V	1Ø, 230V	1HP	7.0	1
ODE2-22015-1H04#-01	1Ø, 230V	1Ø, 230V	1.5HP	10.5	2

# X = Unswitched, Y = Switched

### DIMENSIONS & WEIGHT

Size	Height	Width	Depth	Weight
1	9.1" (232mm)	6.4" (161mm)	6.9" (175mm)	6.2lbs (2.8kg)
2	10.1" (257mm)	7.4" (188mm)	7.4" (187mm)	10.1lbs (4.6kg)