



# E3 Series

AC Variable Speed Drive

**General Purpose Drive**  
Easy control for all motor types

**Easy to Use!**



0.5HP–50HP / 0.37kW–37kW  
110–480V Single & 3 Phase Input

IP20

NEMA 4X (IP66)

# E3 SERIES

## Easy to Use

### General Purpose Drive

Focused on ease of use, E3 Series drives provide unrivalled simplicity of installation, connection and commissioning, allowing the user to benefit from precise motor control and energy savings within minutes.



#### Simple Commissioning

With just 14 basic parameters and application macro functions providing rapid set up, the E3 Series minimizes start-up time.



#### Intuitive Keypad Control

Precise digital control at the touch of a button.



#### Application Macros

Switch between **Industrial**, **Pump & Fan** modes to optimize E3 Series drives for your application.

Industrial | Pump | Fan

See Page 6

## IP20

Up to 50HP

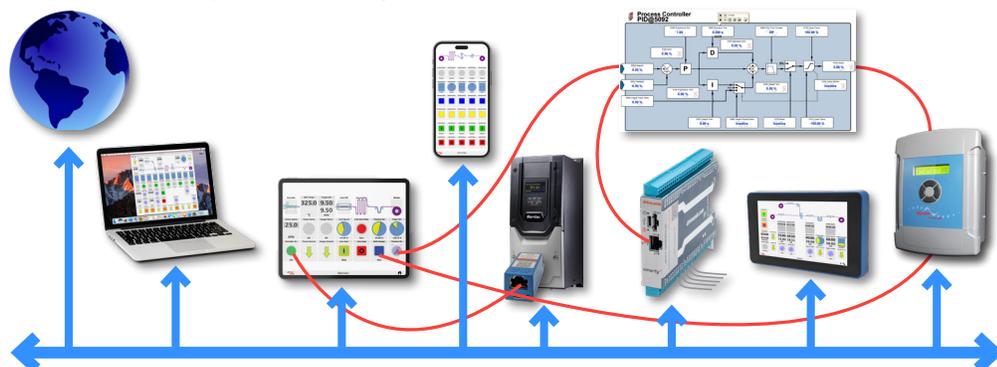
- ✓ Easy to use
- ✓ Compact & robust

See Page 4

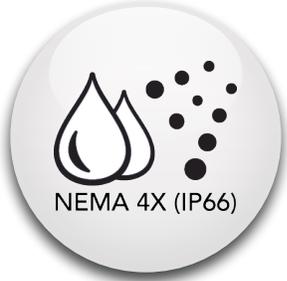


## All E3 Series drives are **drive.web ready**

**drive.web** uses distributed control over Ethernet to provide cost effective, high performance integration of drives and controls in systems of any size or complexity.



**NEMA 4X (IP66)**



Up to 30HP

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

See Page 5



**Key Features**

- ✓ Internal PI control
- ✓ Dynamic brake switch (Frame 2 and up)
- ✓ Dual analog inputs
- ✓ Operates up to 50°C
- ✓ Bluetooth connectivity
- ✓ Optional Internal Category C1 EMC filter
- ✓ Option for control of single phase motors (see Page 8)

**Modbus RTU**  
**CAN**  
on-board as standard



**Sensorless Vector Control for all Motor Types**

<p><b>IM</b> IE2 &amp; IE3 Induction Motors</p>	<p><b>PM</b> AC Permanent Magnet Motors</p>
<p><b>BLDC</b> Brushless DC Motors</p>	<p><b>SynRM</b> Synchronous Reluctance Motors</p>

Precise and reliable control for  
**IE2, IE3, & IE4 motors**

# E3 SERIES

**IP20**

Up to 50HP

Compact, robust and reliable general purpose drive for panel mounting

## Incredibly Easy to Use

- ✓ Built in PI control
- ✓ Dynamic brake switch (Frame 2 and up)
- ✓ Application macros for industrial, fan and pump operation
- ✓ Bluetooth connectivity
- ✓ Optional EMC filter (C1)

### Simple Installation

DIN rail and keyhole mounting options

### Fast Connection

5mm rising clamp terminals with captive screws

### Quick Reference

Integrated help card

Operates up to 122°F

**Modbus RTU**  
**CAN**

on-board as standard

### drive.web speedy

Ethernet & USB interface, Modbus TCP/IP, and adds extensive capability



### T3-STICK-IN

Rapid commissioning tool



Dual analog inputs

Motor supply connects at base

## Controls Multiple Motor Types

- ✓ IE2, 3, & 4
- ✓ IM, PM, BLDC and SynRM

5 sizes cover global supply ratings



## Simply Power Up

E3 Series drives provide precise motor control and energy savings using the factory settings. Simply power up and the drive can immediately deliver energy savings.

14 basic parameters allow simple adjustment for your application if required, with up to 50 parameters available in total for a highly flexible performance.



# E3 SERIES



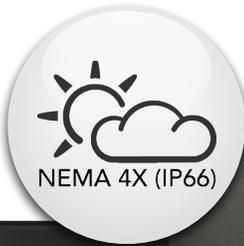
## NEMA 4X Outdoor

Up to 30HP

### Coated Heatsink as Standard

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

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



### Locally Customizable

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



Switched or non-switched

Conformal coating as standard

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

### Please Inquire about our new SunShade

While, your NEMA 4X E3 drive is ultra violet (UV) resistant; a SunShade can go a long way to keep the elements at bay.



### NEMA 4X (IP66) outdoor rated

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

### Washdown Ready

With a sealed ABS enclosure and corrosion resistant heatsink, E3 Series NEMA 4X drives are ideal for high-pressure washdown applications.

### Dust-Tight Design

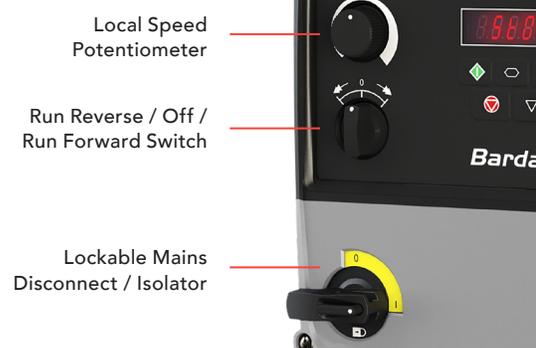
Install directly on your processing equipment and be sure of protection from dust and contaminants.

### Switched Models

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

Saving energy cannot be easier than this!

For ultimate ease of use



# E3 SERIES

## Application Macros

Switch modes at the touch of a button to optimize E3 Series drives for your application

Single parameter application macro selection



### Industrial Mode

**Industrial Mode** optimizes E3 Series drives for load characteristics of typical industrial applications.

**Applications include:**

- ✓ Conveyors
- ✓ Mixers
- ✓ Treadmills

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

**IP20**  
panel mount units or  
**NEMA 4X**  
for direct machine  
mounting



Rapid parameter cloning using  
**T3-STICK**



### Pump Mode

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

**Applications include:**

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

- Constant or variable torque
- Internal PI control



### Fan Mode

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

**Applications include:**

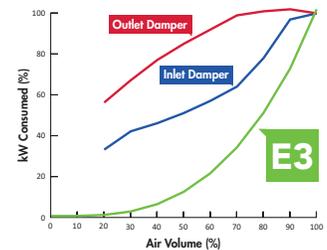
- ✓ Air Handling Units
- ✓ Ventilation Fans
- ✓ Circulating Fans
- ✓ Air Curtains
- ✓ Kitchen Extract



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

### Instant Power Savings

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



**Modbus RTU**  
**CAN**

on-board as standard

# E3 SERIES

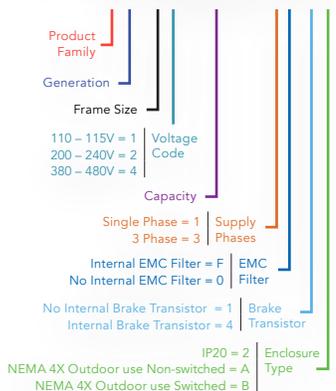


	HP	kW	Amps	Frame	Model Code	Product Family & Generation	Frame Size	Voltage Code	Output Currents x 10	Supply Phases	EMC Filter	Brake Transistor	Enclosure Option
										0	1	#	#
110 - 115V ± 10% 1 Phase Input	0.5	0.37	2.3	1	E3 - 1 1 1 0023	-	1	0	1	#			
	1	0.75	4.3	1	E3 - 1 1 1 0043	-	1	0	1	#			
	1.5	1.1	5.8	2	E3 - 2 1 1 0058	-	1	0	4	#			
200 - 240V ± 10% 1 Phase Input	0.5	0.37	2.3	1	E3 - 1 2 2 0023	-	1	#	1	#			
	1	0.75	4.3	1	E3 - 1 2 2 0043	-	1	#	1	#			
	2	1.5	7	1	E3 - 1 2 2 0070	-	1	#	1	#			
	2	1.5	7	2	E3 - 2 2 2 0070	-	1	#	4	#			
	3	2.2	10.5	2	E3 - 2 2 2 0105	-	1	#	4	#			
200 - 240V ± 10% 3 Phase Input	0.5	0.37	2.3	1	E3 - 1 2 3 0023	-	3	0	1	#			
	1	0.75	4.3	1	E3 - 1 2 3 0043	-	3	0	1	#			
	2	1.5	7	1	E3 - 1 2 3 0070	-	3	0	1	#			
	2	1.5	7	2	E3 - 2 2 3 0070	-	3	#	4	#			
	3	2.2	10.5	2	E3 - 2 2 3 0105	-	3	#	4	#			
	5	4	18	3	E3 - 3 2 3 0180	-	3	#	4	#			
	7.5	5.5	24	3	E3 - 3 2 3 0240	-	3	#	4	#			
	10	7.5	30	4	E3 - 4 2 3 0300	-	3	#	4	#			
	15	11	46	4	E3 - 4 2 3 0460	-	3	#	4	#			
380 - 480V ± 10% 3 Phase Input	1	0.75	2.2	1	E3 - 1 4 4 0022	-	3	#	1	#			
	2	1.5	4.1	1	E3 - 1 4 4 0041	-	3	#	1	#			
	2	1.5	4.1	2	E3 - 2 4 4 0041	-	3	#	4	#			
	3	2.2	5.8	2	E3 - 2 4 4 0058	-	3	#	4	#			
	5	4	9.5	2	E3 - 2 4 4 0095	-	3	#	4	#			
	7.5	5.5	14	3	E3 - 3 4 4 0140	-	3	#	4	#			
	10	7.5	18	3	E3 - 3 4 4 0180	-	3	#	4	#			
	15	11	24	3	E3 - 3 4 4 0240	-	3	#	4	#			
	20	15	30	4	E3 - 4 4 4 0300	-	3	#	4	#			
	25	18.5	39	4	E3 - 4 4 4 0390	-	3	#	4	#			
30	22	46	4	E3 - 4 4 4 0460	-	3	#	4	#				
40	30	61	5	E3 - 5 4 4 0610	-	3	#	4	#				
50	37	72	5	E3 - 5 4 4 0720	-	3	#	4	#				

Drive Specification		
<b>Input Ratings</b>	Supply Voltage	110 - 115V ± 10% 200 - 240V ± 10% 380 - 480V ± 10%
	Supply Frequency	48 - 62Hz
	Displacement Power Factor	> 0.98
	Phase Imbalance	3% Maximum allowed
	Inrush Current	< rated current
	Power Cycles	120 per hour maximum, evenly spaced
<b>Output Ratings</b>	Output Power	110V 1 Ph Input: 0.5 - 1.5HP (230V 3 Ph Output) 230V 1 Ph Input: 0.5 - 10HP (0.37 - 4kW) 230V 3 Ph Input: 0.5 - 20HP (0.37 - 15kW) 400V 3 Ph Input: 0.75 - 22kW 460V 3 Ph Input: 1 - 50HP
	Overload Capacity	150% for 60 seconds 175% for 2.5 seconds
	Output Frequency	0 - 500Hz, 0.1Hz resolution
	Acceleration Time	0.01 - 600 seconds
	Deceleration Time	0.01 - 600 seconds
	Typical Efficiency	>98%
<b>Ambient Conditions</b>	Temperature	<b>IP20:</b> Storage: -40 to 140°F Operating: 14 to 122°F <b>NEMA 4X:</b> Storage: -40 to 140°F Operating: 14 to 104°F
	Altitude	Up to 1000m ASL without derating Up to 2000m maximum UL approved Up to 4000m maximum (non UL)
	Humidity	95% Max, non condensing
	Vibration	Conforms to EN61800-5-1
	Ingress Protection	IP20, NEMA 4X (IP66)
<b>Enclosure</b>	Key pad	Built-in keypad as standard Optional remote mountable keypad
	Display	7 Segment LED
	Computer	<a href="#">drive.web.savvy-SFD software</a>
<b>Control Specification</b>	Control Method	Sensorless Vector Speed Control PM Vector Control BLDC Control Synchronous Reluctance
	PWM Frequency	4 - 32kHz Effective
	Stopping Mode	Ramp to stop: User Adjustable 0.1 - 600 secs Coast to Stop
	Braking	Motor Flux Braking Built-in braking transistor (not frame size 1)
	Skip Frequency	Single point, user adjustable
	Setpoint Control	Analog Signal 0 to 10 Volts 10 to 0 Volts 0 to 20mA 20 to 0mA 4 to 20mA 20 to 4mA Digital Motorized Potentiometer (Keypad) MODBUS RTU CANopen EtherNet/IP
<b>Fieldbus</b>	Built-in	CANopen 125 - 1000 kbps Modbus RTU 9.6 - 115.2 kbps selectable
	<b>I/O Specification</b>	Power Supply 24 Volt DC, 100mA, Short Circuit Protected 10 Volt DC, 10mA for Potentiometer
<b>Application Features</b>	Programmable Inputs	4 Total 2 Digital 2 Analog / Digital selectable
	Digital Inputs	8 - 30 Volt DC, internal or external supply Response time < 4ms
	Analog Inputs	Resolution: 12 bits Response time: < 4ms Accuracy: ± 2% full scale Parameter adjustable scaling and offset
	Programmable Outputs	2 Total 1 Analog / Digital 1 Relay
	Relay Outputs	Maximum Voltage: 250 VAC, 30 VDC Switching Current Capacity: 6A AC, 5A DC
<b>Maintenance &amp; Diagnostics</b>	Analog Outputs	0 to 10 Volt
	PI Control	Internal PI Controller Standby / Sleep Function
	Fire Mode	Bidirectional Selectable Speed Setpoint (Fixed / PI / Analog / Fieldbus)
	Fault Memory	Last 4 Trips stored with time stamp
<b>Standards Compliance</b>	Data Logging	Logging of data prior to trip for diagnostic purposes: Output Current Drive Temperature DC Bus Voltage
	Monitoring	Hours Run Meter
	Low Voltage Directive	Adjustable speed electrical power drive systems. EMC Requirements
	EMC Directive	2014/30/EU Cat C1 according to EN61800-3:2004
Machinery Directive	2006/42/EC	
Conformance	CE, UL, RCM	

## Model Code Guide:

E3-120043-3F12



IP20		Size 1	Size 2	Size 3	Size 4	Size 5
in Height	mm Height	6.8	8.7	10.3	16.6	19.13
in Width	mm Width	3.3	4.4	5.2	6.7	8.74
in Depth	mm Depth	4.9	5.9	6.9	8.4	8.9
lb Weight	kg Weight	2.2	3.8	7.1	20.1	39.9
Mounting		4xM5	4xM5	4xM5	4xM8	4xM8



NEMA 4X		Size 1	Size 2	Size 3	Size 4
in Height	mm Height	9.1	10.1	12.2	14.2
in Width	mm Width	6.4	7.4	8.3	9.5
in Depth	mm Depth	6.4	7.2	9.4	10.8
lb Weight	kg Weight	5.5	7.7	15.4	20.9
Mounting		4xM4	4xM4	4xM4	4xM4

# E3 SERIES

For Single Phase Motors

IP20

NEMA 4X (IP66)

Up to 1.5HP

## Single Phase Motor Control for PSC & Shaded-Pole Motors

### Key Features

- ✓ 110–115V and 200–240V models
- ✓ Small mechanical envelope
- ✓ Rugged industrial operation
- ✓ Fast setup, and simple operation with 14 basic parameters
- ✓ Unique motor control strategy optimized for single phase motors
- ✓ Motor current and rpm indication
- ✓ Built in PI control
- ✓ Dynamic brake switch (Frame 2 and up)
- ✓ Application macros for industrial, fan and pump operation
- ✓ Bluetooth connectivity
- ✓ Optional EMC filter (C1)

### Modbus RTU CAN

on-board as standard

150% overload for 60 secs  
(175% for 2 secs)



Pump control in swimming pools & spas

Simple airflow control

### Dedicated to Single Phase Motor Control

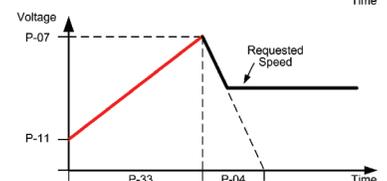
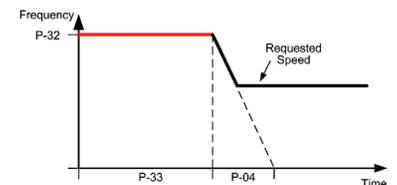
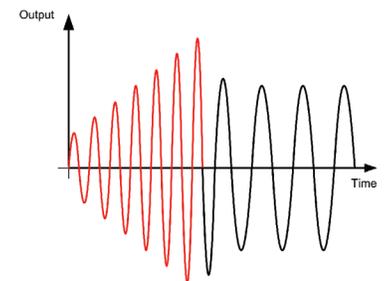
Designed to be cost effective and easy to use, the E3 Series for Single Phase Motors is for use with PSC (Permanent Split Capacitor) or Shaded-Pole Single Phase induction motors. Only for use in variable torque applications such as pumps and fans.

The E3 Series for Single Phase Motors uses a revolutionary motor control strategy to achieve reliable intelligent starting of single phase motors.

- Removes the need for 3 phase supply wiring
- Provides the same performance features as the 3 phase E3 Series
- The ideal energy saving solution where high starting torque is not required — typically including fans, blowers, centrifugal pumps, fume extractors and air flow controllers

### Special Boost Phase

To ensure reliable starting of single phase motors, the drive initially ramps the motor voltage up to rated voltage while maintaining a fixed starting frequency, before reducing the frequency and voltage to the desired operating point.



# E3 SERIES



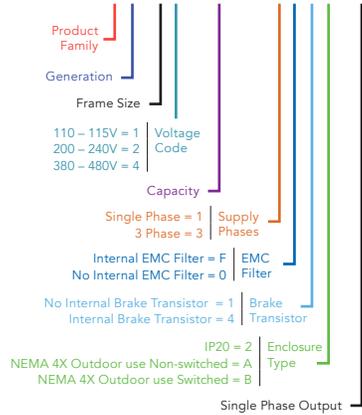
HP	kW	Amps	Frame
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Input	0.5 HP	0.37 kW	7 A	1	Model Code
110–115V ± 10% 1 Phase Input	0.5	0.37	7	1	E3 - 1 1 0070 - 1 # 1 # - 01
	0.75	0.55	10.5	2	E3 - 2 1 0105 - 1 # 4 # - 01
200–240V ± 10% 1 Phase Input	0.5	0.37	4.3	1	E3 - 1 2 0043 - 1 # 1 # - 01
	1	0.75	7	1	E3 - 1 2 0070 - 1 # 1 # - 01
	1.5	1.1	10.5	2	E3 - 2 2 0105 - 1 # 4 # - 01

## Model Code Guide:

**E3-120043-1012-01**



Replace # in model code with color-coded option as seen below

## Enclosure Types

- A** NEMA 4X Outdoor Use Non-switched
- B** NEMA 4X Outdoor Use Switched
- 2** IP20

## EMC Filter

- F** Internal EMC Filter
- 0** No Internal EMC Filter

IP20		1	2
in	Height	6.8	8.7
mm	Height	173	221
in	Width	3.3	4.4
mm	Width	83	110
in	Depth	4.9	5.9
mm	Depth	123	150
lb	Weight	2.2	3.8
kg	Weight	1.0	1.7
	Mounting	4xM5	4xM5

NEMA 4X		1	2
in	Height	9.1	10.1
mm	Height	232	257
in	Width	6.4	7.4
mm	Width	161	188
in	Depth	6.4	7.2
mm	Depth	162	182
lb	Weight	5.5	7.7
kg	Weight	2.5	3.5
	Mounting	4xM4	4xM4

## Drive Specification

<b>Input Ratings</b>	Supply Voltage	110 – 115V ± 10% 200 – 240V ± 10%	<b>Control Specification</b>	Control Method	V/F Voltage Energy Optimised V/F	<b>Application Features</b>	PI Control	Internal PI Controller Standby / Sleep Function		
	Supply Frequency	48 – 62Hz		PWM Frequency	4–32kHz Effective		Fire Mode	Selectable Speed Setpoint (Fixed / PI / Analog / Fieldbus)		
	Displacement Power Factor	> 0.98		Stopping Mode	Ramp to stop: User Adjustable 0.1–600 secs Coast to stop		<b>Maintenance &amp; Diagnostics</b>	Fault Memory	Last 4 Trips stored with time stamp	
	Phase Imbalance	3% Maximum allowed		Braking	Motor Flux Braking Built-in braking transistor (frame size 2)			Data Logging	Logging of data prior to trip for diagnostic purposes: Output Current Drive Temperature DC Bus Voltage	
	Inrush Current	< rated current		Skip Frequency	Single point, user adjustable			Monitoring	Hours Run Meter	
	Power Cycles	120 per hour maximum, evenly spaced		<b>Setpoint Control</b>	Analog Signal		0 to 10 Volts 10 to 0 Volts 0 to 20mA 20 to 0mA 4 to 20mA 20 to 4mA	<b>Standards Compliance</b>	Low Voltage Directive	Adjustable speed electrical power drive systems. EMC requirements
	<b>Output Ratings</b>	Output Power					110V 1 Ph Input: 0.5–0.75HP 230V 1 Ph Input: 0.5–1.5HP (0.37–1.1kW)		Digital	Motorised Potentiometer (Keypad) Modbus RTU CANopen EtherNet/IP
Overload Capacity		150% for 60 Seconds 175% for 2.5 seconds	<b>Fieldbus</b>	Built-in	CANopen	125–1000 kbps	Machinery Directive		2006/42/EC	
Output Frequency		0 – 500Hz, 0.1Hz resolution			Modbus RTU	9.6–115.2 kbps selectable	Conformance		CE, UL, RCM	
Acceleration Time	0.01 – 600 seconds	<b>Ambient Conditions</b>	<b>I/O Specification</b>	Power Supply	24 Volt DC, 100mA, Short Circuit Protected 10 Volt DC, 10mA for Potentiometer	<b>Programming</b>	Keypad	Built-in keypad as standard Optional remote mountable keypad		
Deceleration Time	0.01 – 600 seconds			Programmable Inputs	4 Total 2 Digital 2 Analog / Digital selectable		Display	7 Segment LED	Computer	drive.web savvy-SFD software
Typical Efficiency	> 98%			Digital Inputs	8 – 30 Volt DC, internal or external supply Response time < 4ms		Relay Outputs	Maximum Voltage: 250 VAC, 30 VDC Switching Current Capacity: 6A AC, 5A DC		
<b>Enclosure</b>	Ingress Protection	IP20, NEMA 4X (IP66)	Resolution: 12 bits Response time: < 4ms Accuracy: ± 2% full scale Parameter adjustable scaling and offset	Programmable Outputs	2 Total 1 Analog / Digital 1 Relay		Analog Outputs	0 to 10 Volt		
			Humidity	95% Max, non condensing	Vibration		Conforms to EN61800-5-1			
								Altitude	Up to 1000m ASL without derating Up to 2000m maximum UL approved Up to 4000m maximum (non UL)	

# drive.web automation

**drive.web** uses distributed control over Ethernet to provide cost effective, high performance integration of drives and controls in systems of any size or complexity.



## **smarty** dw250 series

controllers with a wide range of I/O

Used for all programmable control, peer-to-peer Ethernet networking and system integration tasks.

- DIN mount controllers with flexible analog, logic, and encoder I/O
- 60 points of high resolution I/O
- Includes gateway to ModbusTCP/IP, ModbusRTU, EIP/PCCC, etc.
- USB port for easy system-wide programming



## **smarty** dw210 series

controllers with a wide range of I/O

Used for all programmable control, peer-to-peer Ethernet networking and system integration tasks.

- DIN mount controllers with flexible analog, logic, and encoder I/O
- 16 points of high resolution I/O
- Includes gateway to ModbusTCP/IP, ModbusRTU, EIP/PCCC, etc.
- USB port for easy system-wide programming



## **speedy** dw270 series

miniature, full-featured controllers

Tiny, full-featured, programmable controllers for embedding into drives, sensors, HMIs, etc.

- The easiest, affordable way to get all your drives & devices up onto peer-to-peer Ethernet
- Includes gateway to ModbusTCP/IP, ModbusRTU, EIP/PCCC, etc.
- USB port for easy system-wide programming

# E3 SERIES

## Installation & Peripheral Options

A range of external EMC Filters, Brake Resistors, Input Chokes and Output Filters are available, to suit all installation requirements



### savvy



*the smart automation tool*  
Smart, intuitive graphical tools for device programming, system design, and monitoring.



*smart, touch screen operator station technology*

Provides unprecedented flexibility in instrumentation, control, and monitoring.

Available on iOS and Android, and PC, Mac, and Linux.

### Remote Keypads



- T3-OPPAD-IN**  
Remote Keypad & TFT Display
- T2-OPPORT-IN**  
Remote Keypad & LED Display

### RJ45 Accessories



Ideal for simple and fast connection of Modbus RTU/CAN networks

- T2-J4505** RJ45 Cable 0.5m
- T2-J4510** RJ45 Cable 1.0m
- T2-J4530** RJ45 Cable 3.0m
- T2-J455P** RS485 3 Way Data Cable Splitter RJ45

### Ancillary Support Products



Communication Interfaces, Input and Output Reactors, DB resistors, EMC Filters, and Motors are available!

Please visit [bardac.com](http://bardac.com) or call (410) 604-3400

# E3 SERIES

## E3 Series - AC Variable Speed Drive

### ✓ Low Power Applications

Dedicated to low power applications, E3 Series drives combine innovative technology, reliability, robustness and ease of use in a range of compact IP20 & NEMA 4X enclosures.

### ✓ Simple Commissioning

14 parameter basic setup. Default settings suitable for most applications. Contactor style connection for simple wiring.

### ✓ E3 Series NEMA 4X

Environmentally protected, NEMA 4X rated models can be mounted directly on your processing equipment.



### ✓ Washdown Ready

With a sealed ABS enclosure and corrosion resistant heatsink, E3 Series NEMA 4X models are ideal for high-pressure washdown applications.

### ✓ On-drive Control

NEMA 4X models feature optional, convenient controls for speed control, REV/OFF/FWD and Power ON/OFF, complete with safety lock.

### ✓ Single Phase Motor Control

E3 Series drives for Single Phase Motors provides accurate speed control of single phase PSC or shaded pole motors. Special boost phase ensures reliable starting, initially ramping the motor voltage up to rated voltage while maintaining a fixed starting frequency, before reducing the frequency and voltage to the desired operating point.

The Bardac factory is located on Kent Island, MD



## About Bardac Drives

Since our founding in 1992, Bardac has worked hard to build our reputation around key goals:

- Innovative technologies
- Reliable products
- Focus on automation; Distributed Control, AC Drives, DC Drives, and Motors
- All catalog items normally in stock
- Competitive pricing
- Unrelenting customer support



For more about the E3 Series:  
[bardac.com/e3-series/](http://bardac.com/e3-series/)

### Bardac Drives

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Stevensville, MD 21666  
bardac.com

Tel: (410) 604-3400  
Fax: (410) 604-3500  
Email: [info@bardac.com](mailto:info@bardac.com)

