Bardac Drives Catalog 2024

Issue 1
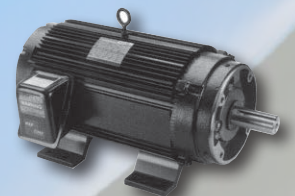

drive.web AUTOMATION

AC DRIVES

DC DRIVES
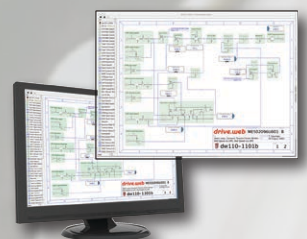
MOTORS

SERVICE

AutomationThings

Everything is...

... Internet accessible

... Ethernet workable, peer-to-peer

... Configurable from anywhere

... IIoT ready

AutomationThings.com

Everything normally in stock!

Since our founding in 1992 we have worked hard to build our reputation around key goals:

- Innovative technologies.
- Reliable products.
- Unrelenting customer support.
- All catalog items normally in stock.
- Competitive pricing.

Our Company President: Paul Crowhurst

Bardac ...the safe bet!

Seamlessly Integrated Automation

AC DRIVES

Vector Systems
To 400 HP - pages 36 - 38

ECO fan & pump
To 400 HP - pages 39 - 41

General Purpose
To 50 HP - pages 42 - 43

NEMA 4X (IP66)
To 30 HP - page 44

Single Phase
To 1.5 HP - page 46 - 47

CONTROLLERS

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Ethernet Distributed Control
pages 3 - 33

smarty
Universal Automation Controllers
with I/O - pages 14 - 19

speedy
Embedded & onboard Controllers
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Motion
smart motion controllers
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TOOLS

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Drive & controller configuration
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savvy-SFD
Signal Flow Diagram tools for
system design
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drive.web Apps
Pre-Engineered Apps
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device Apps
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third party drives - pages 26 - 33

HMI

savvyPanel
For industrial PC touch screens
pages 12 - 13

savvyPanel touch
Hi Res industrial touch screens
pages 12-13

savvyPanel mobile
HMI app for iPhone, & iPad
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DC DRIVES

Single Phase
To 10 HP - pages 48 - 50

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3-Phase Digital
To 2000+ HP - pages 52 - 57

Stack Controller
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Packaged Drives
Modulus pre-engineered
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POWER QUALITY ~ MOTORS ~ ENGINEERING ~ SERVICE ~ SUPPORT ~ TRAINING

pages 58 - 59

Specifications ... At the time of going to press we believe the information in this catalog to be accurate. However, the specifications of products may be amended at any time, so please check with us when ordering to ensure that such changes will not affect your requirements.

AC drives

ECO

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 400 HP at 460 volts
Up to 150 HP at 600 volts

IP20 package up to 400 HP - 50°C *
Optional NEMA 4X (IP66) to 40HP - 40°C *
NEMA 12 (IP55) 15 to 400 HP - 40°C *
* Approvals: UL, cUL, EAC, RCM

Closed loop speed better than 0.1%
150% overload, 60 secs (200%, 4 secs)
Up to 200% torque at zero speed
AC Induction, PM & Sync Rel motor modes
Built in brake transistor
EMC filter
Quiet - with switching up to 32KHz
Bright TFT display
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 and USB
EIP, ModbusTCP, ProfibusDP, DeviceNet
Remote keypad with TFT display
savvyPanel touch screen HMI

V3 Series - Energy Efficient Drives
For Fans & Pumps

Variable torque, fan & pump drive for:
  HVAC
  Water treatment
  Building systems
  Climate control
  Flow control
  Swimming pool control

Up to 100 HP at 230 volts
Up to 400 HP at 460 volts
Up to 175 HP at 600 volts

IP20 package up to 400 HP - 50°C *
NEMA 4X (IP66) to 40HP - 40°C (indoor) *
NEMA 12 (IP55) 15 to 400HP - 40°C *
* Approvals: UL, cUL, EAC, RCM

Low input harmonic current distortion
Compliant with EN61000-3-12
>98% drive efficiency
Low audible motor noise
Internal EMC filter
Smart energy optimization
Resonance avoidance
Sleep/wake functions
Intelligent maintenance intervals
110% overload, 60 secs
Motor flux braking
Quiet - with switching up to 32KHz
Power loss ride through
ModbusRTU, BACnet
Bright TFT display

Motor options: Standard Induction - PM AC - Brushless DC - Synchronous Reluctance

Pump Features

Pump blockage detect/clear/stir
Pump preheat anti-condensation mode
Pump cascade control
Dry run protection

Options
drive.web programmable control
Extended I/O and USB
EIP, ModbusTCP, ProfibusDP, DeviceNet
Remote keypad with TFT display
Power disconnect
savvyPanel touch screen HMI

Fan Features

Drive fault auto bypass
Sleep mode with auto-boost
Fire override mode

drive.web distributed Ethernet control
Internet accessibility
Ethernet peer-to-peer networking
USB programming port
IIoT ready

TOUGH DRIVES FOR INDUSTRY

E3 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 25 HP at 230 volts
To 50 HP at 460 volts

Sensorless vector control for:
High starting torque & accurate speed
Motors: Induction, PM, BLDC, SynRM

Standard IP20 - 50°C
Optional NEMA 4X (IP66) to 30 HP, 40°C
Approvals: UL, CE, RCM

Industrial, Pump & Fan control modes
150% overload, 60 secs (175%, 2 secs)
Spinstart into rotating motor
Built in brake transistor (sizes 2, 3 & 4)
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)
NEMA 4X

Options
drive.web programmable control
Extended I/O
EIP, ModbusTCP, ProfibusDP, DeviceNet
Remote keypad with TFT display
savvyPanel touch screen HMI

NEMA 4X - IP66 Series
For Harsh Environments

P2 Series Open/Closed Loop Vector Drives
E3 Series General Purpose VFDs
V3 Series Energy Efficient Drives
  Food processing
  Agricultural, water treatment
  Mining, cement, petrochemical

To 1.5 HP at 110V in, 230V 3Ø out (E3)
To 15 HP at 230 volts (E3, P2)
To 30 HP at 460 volts (E3, P2)

NEMA 4X (IP66) - 40°C
(outdoor rated)
Approvals: V3 - UL, cUL, EAC, RCM
              P2 - UL, cUL, EAC, RCM
              E3 - UL, CE, RCM

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 with TFT display
savvyPanel touch screen HMI

E3 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
(outdoor rated)

Approvals: UL, CE, RCM

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 with TFT display
savvyPanel touch screen HMI

P2 Series

SYSTEMS VECTOR DRIVES

• High performance
• Induction, PM & Sync Rel Motor Control
• 230, 460, 600 volts models
• IP20 units up to 400HP
• NEMA12 units 15 - 400HP
• NEMA 4X up to 40HP

1 TO 400HP

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 400HP
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
EMC Filters
Bright TFT Display
DC chokes in frame sizes 5 to 8
Single phase input up to 200HP
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 with bright TFT display
　2Khz output in V/Hz mode
　Through panel mount for NEMA 12 versions

Smart drives for high performance coordinated drive systems and precision machine control

• Printing presses
• Extrusion & coating lines
• Automated assembly
• Indexing & registration
• Winders & web tension
• Material handling
• Cranes & hoists
• Textiles & fibres
• Metals industry
• Paper & cement mills
• Mining

NEMA 4X washdown models - see page 44
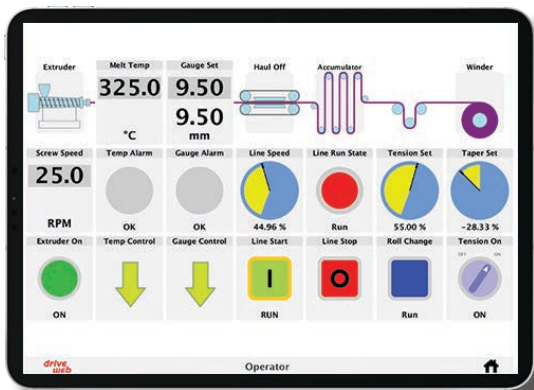
P2 very smart drives

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

savvyPanel touch

Easy, high resolution, NEMA4, touch screen operator stations.

Also run *savvyPanel* on PCs, Android or iOS devices

drive.web smart automation

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

P2 Specifications

Input Ratings	Supply Voltage	200 - 240 ± 10% 380 - 480 ± 10% 500-600V ± 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: 1-10 HP (0.75-7.5 kW) 230V, 3-ph in: 1-100 HP (0.75-75 kW) 400V, 3-ph in: 1-400 HP (0.75-250kW) 460V, 3-ph in: 1-400 HP (0.75-250kW)
	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 made
Ambient Ratings	Temperature	Storage: -40°C to 60°C Operating: -10°C to 40°C (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 - 6, & 8 IP55 (NEMA 12) - Frame sizes 4 - 8 IP66 (NEMA 4X) - Optional sizes 2 - 4
Programming	Keypad	Standard: built in keypad Optional: Remote keypad Optistick memory stick *drive.web savvy* software
	Display	Multi-language TFT Display (sizes 2 - 8)
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
	Preset Speeds	Up to 8
	Digital Setpoint Control	Keypad ModbusRTU CANopen
	Automation	Optional *drive.web* Ethernet distributed control + programmable control, extra I/O, operator stations
	Communications Options	*drive.web*, ModbusTCP, EIP, DeviceNet, Profibus
I/O Specification	Power Supply	24VDC, 100mA short protected 10VDC, 5mA for setpoint potentiometer
	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

AC drives
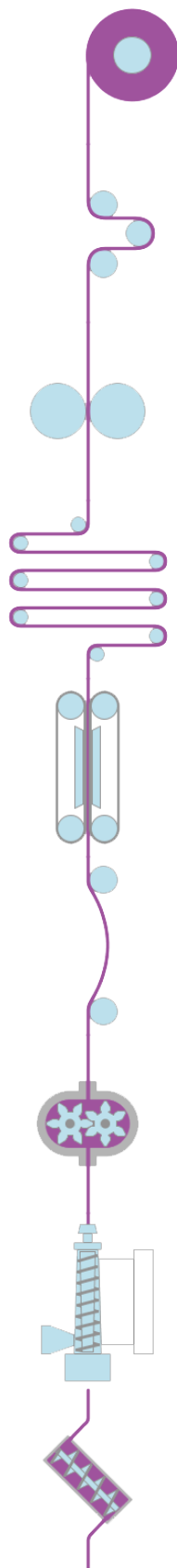
P2 Series Models & Ratings

Standard IP20 Packages
With EMC Filter & DB transistor

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

Model	HP	Amps	Size
P2-22010-1HF42-T	1	4.3	2
P2-22020-1HF42-T	2	7	2
P2-22030-1HF42-T	3	10.5	2

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

Model	HP	Amps	Size
P2-22010-3HF42-T	1	4.3	2
P2-22020-3HF42-T	2	7	2
P2-22030-3HF42-T	3	10.5	2
P2-32050-3HF42-T	5	18	3
P2-32075-3HF42-T	7.5	24	3

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

Model	HP	Amps	Size
P2-24010-3HF42-T	1	2.2	2
P2-24020-3HF42-T	2	4.1	2
P2-24030-3HF42-T	3	5.8	2
P2-24050-3HF42-T	5	9.5	2
P2-34075-3HF42-T	7.5	14	3
P2-34100-3HF42-T	10	18	3
P2-34150-3HF42-T	15	24	3

NEMA12 (IP55) Packages
With EMC Filter, DB transistor

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

Model	HP	Amps	Size
P2-42075-3HF4N-T ‡	7.5	24	4
P2-42100-3HF4N-T ‡	10	30	4
P2-42150-3HF4N-T ‡	15	46	4
P2-52020-3HF4N-T ‡	20	61	5
P2-52025-3HF4N-T ‡	25	72	5
P2-62030-3HF4N-T ‡	30	90	6
P2-62040-3HF4N-T ‡	40	110	6
P2-62050-3HF4N-T ‡	50	150	6
P2-62060-3HF4N-T ‡	60	180	6
P2-72075-3HF4N-T	75	202	7
P2-72100-3HF4N-T	100	248	7
P2-72125-3HF4N-T	125	302	7

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

Model	HP	Amps	Size
P2-44150-3HF4N-T ‡	15	24	4
P2-44200-3HF4N-T ‡	20	30	4
P2-44250-3HF4N-T ‡	25	39	4
P2-44300-3HF4N-T ‡	30	46	4
P2-54040-3HF4N-T ‡	40	61	5
P2-54050-3HF4N-T ‡	50	72	5
P2-64060-3HF4N-T ‡	60	90	6
P2-64075-3HF4N-T ‡	75	110	6
P2-64120-3HF4N-T ‡	120	150	6
P2-64150-3HF4N-T ‡	150	180	6
P2-74175-3HF4N-T	175	202	7
P2-74200-3HF4N-T	200	240	7
P2-74250-3HF4N-T	250	302	7
P2-84300-3HF4N-T ‡	300	370	8
P2-84400-3HF4N-T ‡	400	480	8

Note:
Drives marked ‡ are also available in IP20 form. Please call for details, pricing, and availability.

For single phase supply derate to 50%

P2 Series 600 Volts Drives

600VAC DRIVES

Standard IP20 Packages to 20 HP
500-600V ± 10%, 3-ph in, 500-600V, 3-ph motor

Model	HP	Amps	Size
P2-26010-3H042-T	1	2.1	2
P2-26020-3H042-T	2	3.1	2
P2-26030-3H042-T	3	4.1	2
P2-26050-3H042-T	5	6.5	2
P2-26075-3H042-T	7.5	9	2
P2-36100-3H042-T	10	12	3
P2-36150-3H042-T	15	17	3
P2-36200-3H042-T	20	22	3

NEMA12 (IP55) Packages to 250 HP
500-600V ± 10%, 3-ph in, 500-600V, 3-ph motor

Model	HP	Amps	Size
P2-46200-3H04N-T ‡	20	22	4
P2-46250-3H04N-T ‡	25	28	4
P2-46300-3H04N-T ‡	30	34	4
P2-46400-3H04N-T ‡	40	43	4
P2-56050-3H04N-T ‡	50	54	5
P2-56060-3H04N-T ‡	60	65	5
P2-66075-3H04N-T ‡	75	78	6
P2-66100-3H04N-T ‡	100	105	6
P2-66125-3H04N-T ‡	125	130	6
P2-66150-3H04N-T ‡	150	150	6

P2 OPTIONS
T2-ENCOD-IN Encoder feedback module
T2-OPORT-IN Remote keypad & display
T3-OPPAD-IN Remote keypad w/TFT display

Dimensions

Size	2	3	4	5	6	7	8
Height (ins)	8.7"	10.3"	17.3"	21.3"	34.1"	50.4"	52.5"
Height (mm)	221	261	440	540	865	1280	1334
Width (ins)	4.4"	5.2"	6.8"	9.3"	13.0"	13.0"	17.5"
Width (mm)	112	131	173	235	330	330	444
Depth (ins)	7.3"	8.1"	9.1"	10.6"	13.4"	14.6"	16.7"
Depth (mm)	185	205	230	270	340	370	423
Weight (LBS)	4	7.7	25.4	49.6	111	177	440
Weight (KG)	1.8	3.5	11.5	22.5	50	80	200

NEMA 4X (IP66) Enclosed Drives

For harsh, wet & dirty environments

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

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

NEMA 4X (IP66) OUTDOOR RATED
E3 SERIES GENERAL PURPOSE VFD
*Outdoor Applications will require a Sun Shade (not included)

SIZE	HP	AMPS	UNSWITCHED	SWITCHED
115V, SINGLE PHASE IN, 230V, 3-PHASE MOTOR				
1	0.5	2.3	E3-110023-101A	E3-110023-101B
1	1.0	4.3	E3-110043-101A	E3-110043-101B
2	1.5	5.8	E3-210058-104A	E3-210058-104B
230V, SINGLE PHASE IN, 230V, 3-PHASE MOTOR				
1	0.5	2.3	E3-120023-101A	E3-120023-101B
1	1	4.3	E3-120043-101A	E3-120043-101B
1	2	7	E3-120070-101A	E3-120070-101B
2	2	7	E3-220070-104A	E3-220070-104B
2	3	10.5	E3-220105-104A	E3-220105-104B
3	5	15.3	E3-320153-104A	E3-320153-104B
230V, 3-PHASE IN, 230V, 3-PHASE MOTOR				
1	0.5	2.3	E3-120023-301A	E3-120023-301B
1	1	4.3	E3-120043-301A	E3-120043-301B
1	2	7	E3-120070-301A	E3-120070-301B
2	2	7	E3-220070-304A	E3-220070-304B
2	3	10.5	E3-220105-304A	E3-220105-304B
3	5	18	E3-320180-304A	E3-320180-304B
3	7.5	24	E3-320240-304A	E3-320240-304B
4	10	30	E3-420300-304A	E3-420300-304B
4	15	46	E3-420460-304A	E3-420460-304B
380/460V, 3-PHASE IN, 380/460V, 3-PHASE MOTOR				
1	1	2.2	E3-140022-301A	E3-140022-301B
1	2	4.1	E3-140041-301A	E3-140041-301B
2	2	4.1	E3-240041-304A	E3-240041-304B
2	3	5.8	E3-240058-304A	E3-240058-304B
2	5	9.5	E3-240095-304A	E3-240095-304B
3	7.5	14	E3-340140-304A	E3-340140-304B
3	10	18	E3-340180-304A	E3-340180-304B
3	15	24	E3-340240-304A	E3-340240-304B
4	20	30	E3-440300-304A	E3-440300-304B
4	25	39	E3-440390-304A	E3-440390-304B
4	30	46	E3-440460-304A	E3-440460-304B

Ethernet networking & basic programmable control option dw228

NEMA 4X (IP66) OUTDOOR RATED
P2 OPEN/CLOSED LOOP VECTOR DRIVES
With EMC filter, brake transistor +/- DC bus

SIZE	HP	AMPS	UNSWITCHED	SWITCHED
230V, SINGLE PHASE IN, 230V, 3-PHASE MOTOR				
2	1	4.3	P2-22010-1HF4A	P2-22010-1HF4B
2	2	7	P2-22020-1HF4A	P2-22020-1HF4B
2	3	10.5	P2-22030-1HF4A	P2-22030-1HF4B
230V, 3-PHASE IN, 230V, 3-PHASE MOTOR				
2	1	4.3	P2-22010-3HF4A	P2-22010-3HF4B
2	2	7	P2-22020-3HF4A	P2-22020-3HF4B
2	3	10.5	P2-22030-3HF4A	P2-22030-3HF4B
3	5	18	P2-32050-3HF4A	P2-32050-3HF4B
380/460V, 3-PHASE IN, 380/460V, 3-PHASE MOTOR				
2	1	2.2	P2-24010-3HF4A	P2-24010-3HF4B
2	2	4.1	P2-24020-3HF4A	P2-24020-3HF4B
2	3	5.8	P2-24030-3HF4A	P2-24030-3HF4B
2	5	9.5	P2-24050-3HF4A	P2-24050-3HF4B
3	7.5	14	P2-34075-3HF4A	P2-34075-3HF4B
3	10	18	P2-34100-3HF4A	P2-34100-3HF4B
500/600V, 3-PHASE IN, 500/600V, 3-PHASE MOTOR				
2	1	2.1	P2-26010-3HF4A	P2-26010-3HF4B
2	2	3.1	P2-26020-3HF4A	P2-26020-3HF4B
2	3	4.1	P2-26030-3HF4A	P2-26030-3HF4B
2	5	6.5	P2-26050-3HF4A	P2-26050-3HF4B
2	7.5	9	P2-26075-3HF4A	P2-26075-3HF4B
3	10	12	P2-36100-3HF4A	P2-36100-3HF4B
3	15	17	P2-36150-3HF4A	P2-36150-3HF4B

Encoder feed back option T2-ENCOD-IN
Ethernet networking & smart programmable control option dw224-00

P2 Series NEMA 4X - Dimensions and Weight

Size	Height	Width	Depth	Weight
2	10.1" (257mm)	7.4" (188mm)	9.4" (239mm)	10.6lb (4.8kg)
3	12.2" (310mm)	8.3" (211mm)	10.5" (266mm)	17.0lb (7.7kg)

E3 Series NEMA 4X - Dimensions and Weight

Size	Height	Width	Depth	Weight
1	9.1" (232mm)	6.4" (161mm)	6.4" (162mm)	5.5lb (2.5kg)
2	10.1" (257mm)	7.4" (188mm)	7.2" (182mm)	7.7lb (3.5kg)
3	12.2" (310mm)	8.3" (211mm)	9.4" (238mm)	15.4lb (7.0kg)
4	14.2" (360mm)	9.5" (240mm)	10.8" (275mm)	20.9lb (9.5kg)

AC Drive Options

ITEM	DESCRIPTION	P2	V3	E3
Touch Screen Programmable Operator Stations				
dw230	*savvyPanel touch*, programmable NEMA 4 diaplay	✓	✓	✓
Remote Keypads				
T2-OPORT-IN	Remote Keypad (with cable)	✓	✓	✓
T3-OPPAD-IN	Remote keypad with TFT display (with cable)	✓	✓	✓
Communications				
speedy dw22X-00	ModbusTCP/IP Interface Module	✓	✓	✓
speedy dw22X-1121	Onboard controller w/EIP/PCCC Ethernet, *savvyPanel*	✓	✓	✓
T2-DEVNT-IN	DeviceNet Interface Module	✓	✓	
T2-PFNET-IN	ProfiNET Interface Module	✓	✓	
T2-PROFB-IN	Profibus DPV-1 Interface Module	✓	✓	
T2-BNTIP-IN	Bacnet IP Interface Module		✓	
T2-BNTSP-IN	Bacnet RJ45 connector		✓	
LA503846	Through-Door Ethernet Coupler RJ45-RJ45	✓	✓	✓
Programming Interface				
speedy dw21X	USB Interface Module	✓	✓	✓
T3-STICK-IN	Optistick parameter copying stick with Bluetooth	✓	✓	✓
Encoder Feedback				
T2-ENCOD-IN	5v Encoder feedback module for P2	✓		
T2-ENCHT-IN	24v Encoder feedback module for P2	✓		
EMC Filters				
T2-E3300-00	Optifilter, EMC input filter, 3-phase, 300A, IP00	✓		
Brake Resistors (Case Type)				
OD-BR100-IN	DB Resistor, drive size 2 & 3, IP20, 100Ω, 200W	✓		✓
OD-BRES4-IN	DB Resistor, drive size 4 & 5, IP20, 33Ω, 500W	✓		✓
Brake Resistors (Enclosed, ventilated with over temp switch)				
Intermittent duty 10%, 10 sec				
CX503554	1 HP 230VAC, 190Ω, 12"x5"x5"	✓		
CX503068	2 HP 230VAC, 95Ω, 12"x5"x5"	✓		✓
CX503069	3 HP 230VAC, 63Ω, 12"x5"x5"	✓		✓
CX503070	5 HP 230VAC, 38Ω, 12"x5"x5"	✓		✓
CX503071	7.5 HP 230VAC, 19Ω, 12"x7"x5"	✓		✓
CX503072	10 HP 230VAC, 19Ω, 12"x7"x5"	✓		✓
CX503073	15 - 20 HP 230VAC, 12.6Ω, 12"x10"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"	✓		
CX503080	1 HP 460VAC, 750Ω, 12"x5"x5"	✓		
CX503081	2 HP 460VAC, 375Ω, 12"x5"x5"	✓		✓
CX503082	3 HP 460VAC, 250Ω, 12"x5"x5"	✓		✓
CX503083	5 HP 460VAC, 150Ω, 12"x7"x5"	✓		✓
CX503084	7.5 HP 460VAC, 100Ω, 12"x7"x5"	✓		✓
CX503085	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"	✓		
CX503095	125 - 150 HP 460VAC, 6Ω, 28"x10"x10"	✓		
Output Filters				
T2-M3008-20	Output filter, 8A, IP20	✓	✓	✓
T2-M3008-66	Output filter, 8A, IP66	✓	✓	✓
T2-M3012-20	Output filter, 12A, IP20	✓	✓	✓
T2-M3012-66	Output filter, 12A, IP66	✓	✓	✓
T2-M3018-66	Output filter, 18A, IP66	✓	✓	✓
T2-M3030-20	Output filter, 30A, IP20	✓	✓	
T2-M3075-20	Output filter, 75A, IP20	✓	✓	
T2-M3180-00	Output filter, 180A, IP00	✓	✓	
T2-M3300-00	Output filter, 300A, IP00	✓	✓	
RJ45 Data Cables & Splitters				
T-J4505-IN	Data cable, 0.5M, (RJ45 - RJ45)	✓	✓	✓
T-J4510-IN	Data cable, 1M, (RJ45 - RJ45)	✓	✓	✓
T-J4530-IN	Data cable, 3M, (RJ45 - RJ45)	✓	✓	✓
T-J45SP-IN	Data cable 3-way splitter (RJ45)	✓	✓	✓
T2-BNTSP-IN	RJ45 BacNet connector		✓	
I/O Boards				
T-LOGIP-11	110VAC logic input isolator			✓
T-LOGIP-23	230VAC logic input isolator			✓
T3-2ROUT-IN	Relay output module			✓
T2-CASCD-IN	Cascade control plug in option board	✓	✓	
T2-EXTIO-IN	Extended I/O, plug in option 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
400	LMAC34400	500	0.05

Options:
230 VAC ratings
NEMA 1 & NEMA 4X enclosed units — **Consult Factory**

drive.web smart drives

Add a *drive.web* Universal Automation Controller to any drive for unlimited automation capability (see pages 3-33):
- Powerful programmable control functions
- Peer-to-peer networking over Ethernet
- Smart iPad/Android or touch screen PC operation
- Internet access
- Unlimited additional I/O

	E3	P2
smarty2	dw248-DM-C2CD	dw244-DM-C2CD
smarty3	dw248-DM-C3CD	dw244-DM-C3CD
smarty4	dw248-DM-C4CD	dw244-DM-C4CD
smarty7	dw258-DM-S7PD	dw254-DM-S7PD

Smart Control + Peer-to-Peer Networking + ModbusTCP/IP
dw228 *drive.web speedy* interface for E3 models
dw223 *drive.web speedy* interface for ODP models
dw224 *drive.web speedy* interface for P2 models
dw226 *drive.web speedy* interface for V3 models
  Pack-1 Opt-1121 ModbusTCP/IP, EthernetIP, Process Lib, *savvyPanel*
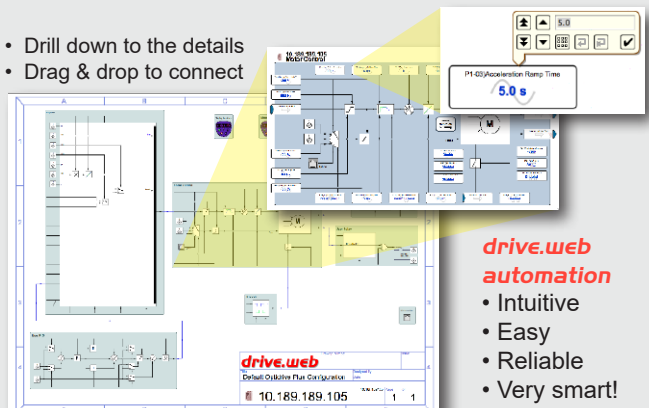 Pack-2 Opt-1122 Pack 1 + Winder & Motion FB Libraries

savvyPanel touch -
5" dw230-050 operator station
7" dw230-070 operator station
9.7" dw230-097 operator station

Get *savvySFD* Signal Flow Diagram design tools
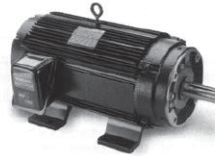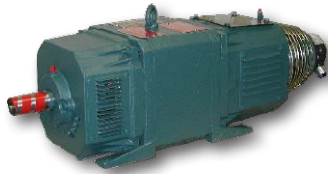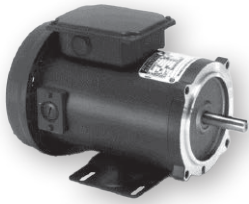
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- Drill down to the details
- Drag & drop to connect

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

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Modulus Packaged Drives

Modulus solutions are a range of standard, pre-engineered drive packages with a selection of options for wide range common applications.

Using the flexible *drive.web* programmable automation technology it is possible to adapt a small range of hardware configurations to a wide range of applications thereby keeping design and manufacturing costs to a minimum.

Modulus drives are available either as packages mounted on an open panel, **Modulus P**, or as assemblies installed in an enclosure, **Modulus E**, to suit the type of operating environment and the control scheme required.

Every **Modulus** project is accompanied by a detailed, 50-point, Quality Control Report covering every facet of the product, its design, construction, testing and shipping.

User manuals for all products are available from www.bardac.com

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Internet

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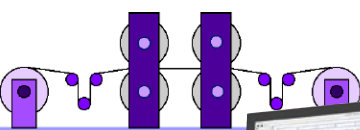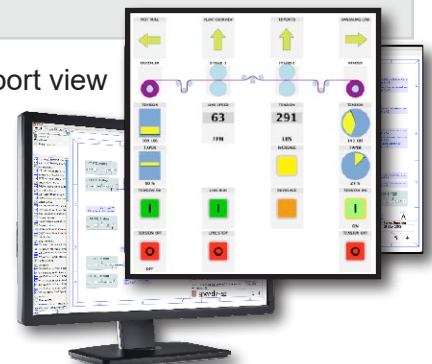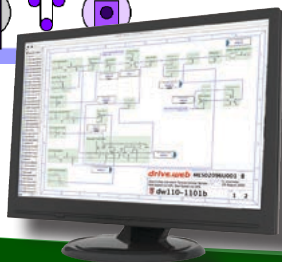
Online Training

Online product training courses are scheduled every week with options for users of all levels of interest and ability.

Level 1 - drive.web introductory seminar - 1$^1/_2$ hours - Free!

This provides an overview of the *drive.web* automation technology. Learn how to connect to drives, create drive "phantoms", navigate systems, create signal flow diagrams and system drawings, find information, identify object attributes, make connections, show trend charts, build *savvyPanel* operator stations, etc.

Level 2 - drive.web design technology course - 3 hours (Level 1 is a prerequisite)

Covers configuration of drives, basic system design concepts, Ethernet networking, password protection, system safety

Level 3 - drive.web system design and application courses (Level 2 is a prerequisite)

3a) Drive and device interfaces - 2 hours

Covers the use of "Templates" and "Helpers" for documented drives, generic ModbusRTU master interfaces to third party drives, operator stations, etc.

3b) Winder Control Systems - 3 hours

Covers standard solutions for open loop CTCW winders, closed loop dancer controlled winders and closed loop load cell controlled winders.

3c) Encoder Control Systems - 3 hours

Covers applications such as "electronic line shaft", spindle orientation, registration and position control.

3d) Advanced Ethernet, Internet Access and Security - 3 hours

Covers local and wide area network configuration, IP addressing, user access and device and system password protection.

For course details, registration, international training options and charges please call us at 1-888-667-7333 (toll free USA 888-ON SPEED) or international at +410-604-3400. Alternatively please contact training@driveweb.com

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Complete Terms & Conditions of Sale are shown at www.bardac.com. Net 30 day credit terms are available subject to prior approval. Credit card payments are only accepted for payments made at the time of service or shipment of products and will be subject to a 4% surcharge.

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Rates for the Continental United States

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a. Basic Rate - Field Service, Training & Start-up Assistance - up to 8 hours daily Monday to Friday, 7am to 6pm	$190 per hour
b. Standard Overtime - Weekdays 6pm to 7am & all day Saturday - Total work time not to exceed 12 hrs in any 24 hrs	$285 per hour
c. Special Overtime - Sundays, Holidays and excess of 8 hours on Saturday	$380 per hour
d. Overnight - Includes meals, and hotel accommodation	$280 per night
e. Auto Travel - Covering cost of use of company or personal cars, distance to and from the local office	$0.67 per mile
f. Public Transport - Rental cars, Air fares, etc.	At Cost
g. Holdover & Standby Time	Same as service
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