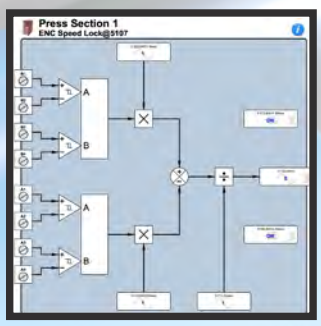
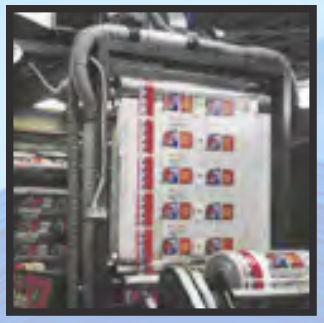
drive.web
automation Catalog 2023
issue 1





Automation Things for the IIoT

Smart devices

Internet accessible

Ethernet, peer-to-peer

Configurable from anywhere

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 350 HP - pages 36 - 38

ECO fan & pump
To 350 HP - pages 39 - 41

General Purpose
To 30 HP - pages 42 - 43

NEMA 4X (IP66)
To 15 HP - page 44

Single Phase
To 1.5 HP - page 46 - 47

CONTROLLERS

drive.web
Ethernet Distributed Control
pages 3 - 33

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

speedy
Embedded & onboard Controllers
pages 20 - 22

Motion
smart motion controllers
pages 30 - 31

TOOLS

savvy
Drive & controller configuration
pages 8 - 9

savvy-SFD
Signal Flow Diagram tools for system design
pages 10 - 11

drive.web Apps
Pre-Engineered Apps
pages 26 - 33

device Apps
Pre-Engineered interfaces for third party drives - pages 26 - 33

HMI

savvyPanel
For industrial PC touch screens
pages 12 - 13

savvyPanel touch
Hi Res industrial touch screens
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savvyPanel mobile
HMI app for iPhone, & iPad
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DC DRIVES

Single Phase
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DC Servo
Up to 12 A, 48VDC - page 51

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

Stack Controller
6 & 12 pulse - page 56

Packaged Drives
Modulus pre-engineered
page 58

POWER QUALITY ~ MOTORS ~ ENGINEERING ~ SERVICE ~ SUPPORT ~ TRAINING

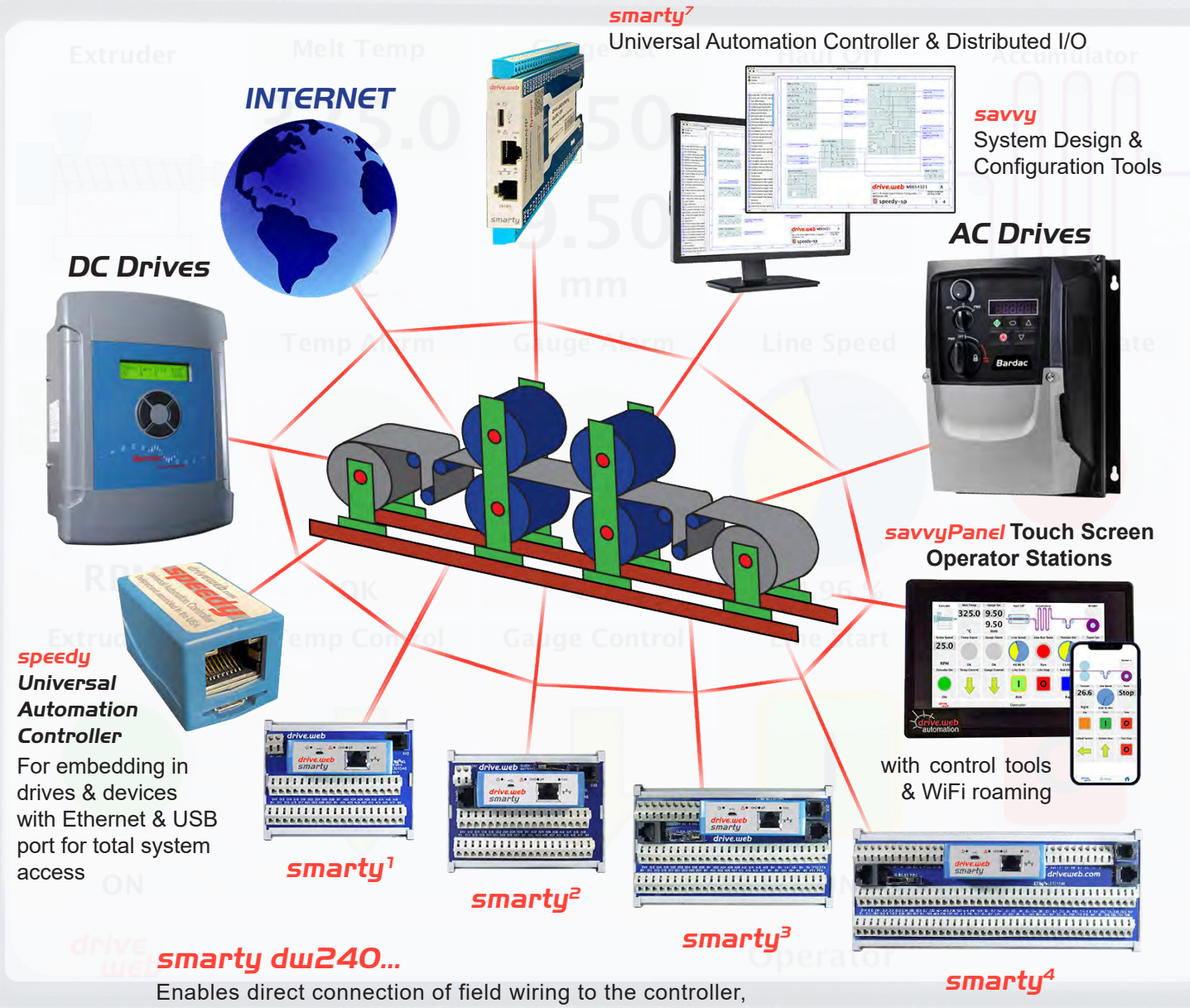
pages 58 - 59

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.

drive.web

SMART AUTOMATION

Configure, connect & control everything ... in one environment
Internet accessible, peer-to-peer Ethernet with savvy tools
Cost effective for systems of any size or complexity



smarty dw240...
Enables direct connection of field wiring to the controller, and thereby to all other *drive.web* distributed devices.
(see pages 15 - 17 for more information)

Automation Things ... smart ... connected ... IIoT ready

drive.web automation

total connectivity

enterprise management - machine operators - system engineering

drive.web

A Unique Architecture

1 ***drive.web*** devices connect peer-to-peer over ethernet to form a completely homogenous control environment.

2 ***drive.web*** devices provide a full featured programmable control environment. Each device processor contributes to the total system processing capacity so that as the system gets bigger it's capacity increases.

3 An unlimited number of ***drive.web*** devices can be incorporated into a system to provide an unlimited amount of processing capacity and I/O with undiminished performance.

4 The ***drive.web*** devices store **all** the device and complete system configuration data including touch screen PC, iOS & Android display data - everything!

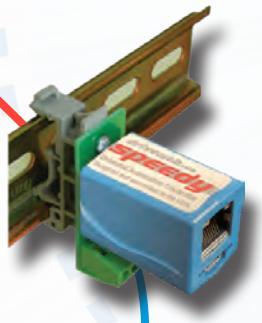
5 A ***speedy*** embedded in a drive takes over the entire drive; its setup, control, & memory management. It becomes an integral part of the drive and now looks just like the drive. Any actions from the drive keypad or terminals or serial ports are instantly synchronized.

6 ***savvyPanel*** touch screen PC, iOS & Android display graphics and configuration data all resides in the ***drive.web*** devices so that you can roam to any WiFi location with your iPad and view a system (subject to access permission).

7 Easily create a graphical interface to almost any control device to bring it into your unique, homogenous, ***drive.web*** environment.

Vector Drives
Easy setup & full featured, programmable control onboard drives

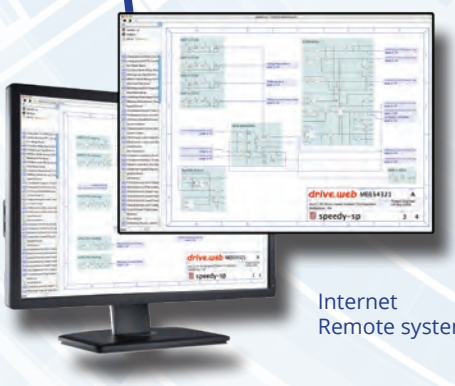
USB Port
- Easy drive configuration
- Plug & play drive interface
- System wide programming access



Sensors

Meters & Displays

Instrmumentation



savvy
Graphical, function black tools
1. Easy drive configuration
2. Powerful systems design & integration
3. Trend charts
4. Signal flow diagrams
5. Internet access
6. Intuitive system navigation tools

Internet
Remote system access

smart automation

production control - maintenance - tech support

speedy
Universal Automation Controllers

- Embedded available
- Easy gateway to instrumentation
- Fast data collection
- Mount anywhere DIN option

DC Regen Drives

save time

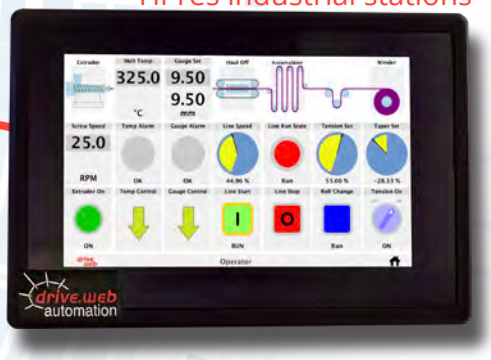
speedy
Integrated Universal Automation Controller

- provides easy coordination of ECO drives in building energy systems
- easily interfaces to existing third party drives & controls
- add ethernet and USB device access
- boost network performance
- add full featured programmable control

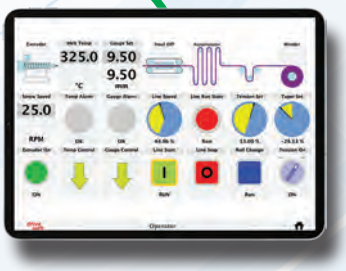
High efficiency ECO drives

save energy

savvyPanel touch
Hi-res industrial stations



NEW! smarty7



savvyPanel
Integrated touch screen HMI technology

For touch screen PC, Android or iOS devices

smarty
Universal Automation Controllers

- Easy sensor interface
- Precision analog I/O
- Fast logic I/O with powerful state machine programming
- 16 precision analog & logic I/O
- Encoder I/O for indexing, registration, and shaft lock
- Multiple communications options
- Unlimited expansion with no loss of system bandwidth

drive.web

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

FROM THE INITIAL CONCEPT, THROUGH PLANNING, DESIGN, CONSTRUCTION, TESTING, INSTALLATION, AND OPERATION, THE DRIVE.WEB SAVVY TOOLS PROVIDE ALL THE VISION, INSIGHT, AND HELP YOU NEED FOR A SUCCESSFUL PROJECT!

1

Concept & Planning
From your initial sketches and notes create *drive.web savvy* "Phantoms" offline to identify all your drives, remote I/O, MMI interfaces, gateways, etc.

2

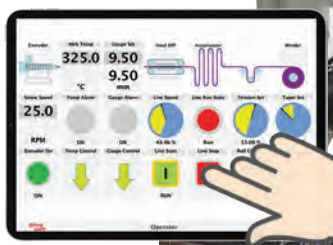
Design & Configuration
Place any control function blocks you need then drag & drop between parameters in your "Phantoms" to make all your device interconnections. The *savvy* Signal Flow Diagrams and powerful navigation aids give you a clear intuitive view of your work. Information and help is always on the spot with hover text, links to the manual, and contextual menus.

3

Construction & Testing
Simply connect all your drives and devices together over Ethernet and load your complete design into the devices from just one location. The System immediately comes alive for testing and monitoring.

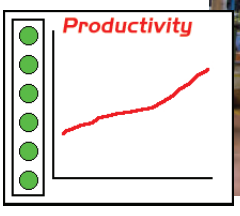
4

Installation & Operation
Use *drive.web savvy* to provide real time monitoring and control of your entire system from any location. No running from drive to drive to check the setup or operational state! Use *savvyPanel* operator station technology to provide smart touch and roaming control from anywhere.



5

Management & Maintenance
Use *savvy* utilities to setup system performance criteria and monitor your productivity, machine state, and process trends locally or remotely over the internet.



smart automation

The innovative *drive.web* technology provides total control in one homogeneous environment with the entire system database resident in the *drive.web* devices.

- Configure & control individual drives & devices
- Design and operate complete drive systems
- Provide fast, peer-to-peer networking over ethernet
- Create clear, graphical signal flow system documentation
- Easily interface to most other drives, MMIs, PLCs, etc.
- Build cost effective systems of any size or complexity
- Add internet accessibility to your system
- Support worldwide enterprise integration

products

savvy Tools

Intuitive, graphical system design and device configuration tools with powerful navigation features, drag & drop connections, trend charting, online help.

savvyPanel Touch Screens

Innovative, touch screen operator station technology that runs on PC or iOS (iPad, iPhone, etc.) & Android. Build clear machine graphics, buttons, switches, meters, and instrumentation and link to your control scheme. Provides multi-user, multi-level, password protected access via WiFi from anywhere to any system.

smarty Universal Controller

A range of DIN mount *drive.web* programmable controllers with peer-to-peer networking over ethernet or stand alone capability and a wide range of I/O and communications options. Intuitive, easy function block configurations are stored on board for instant field access.

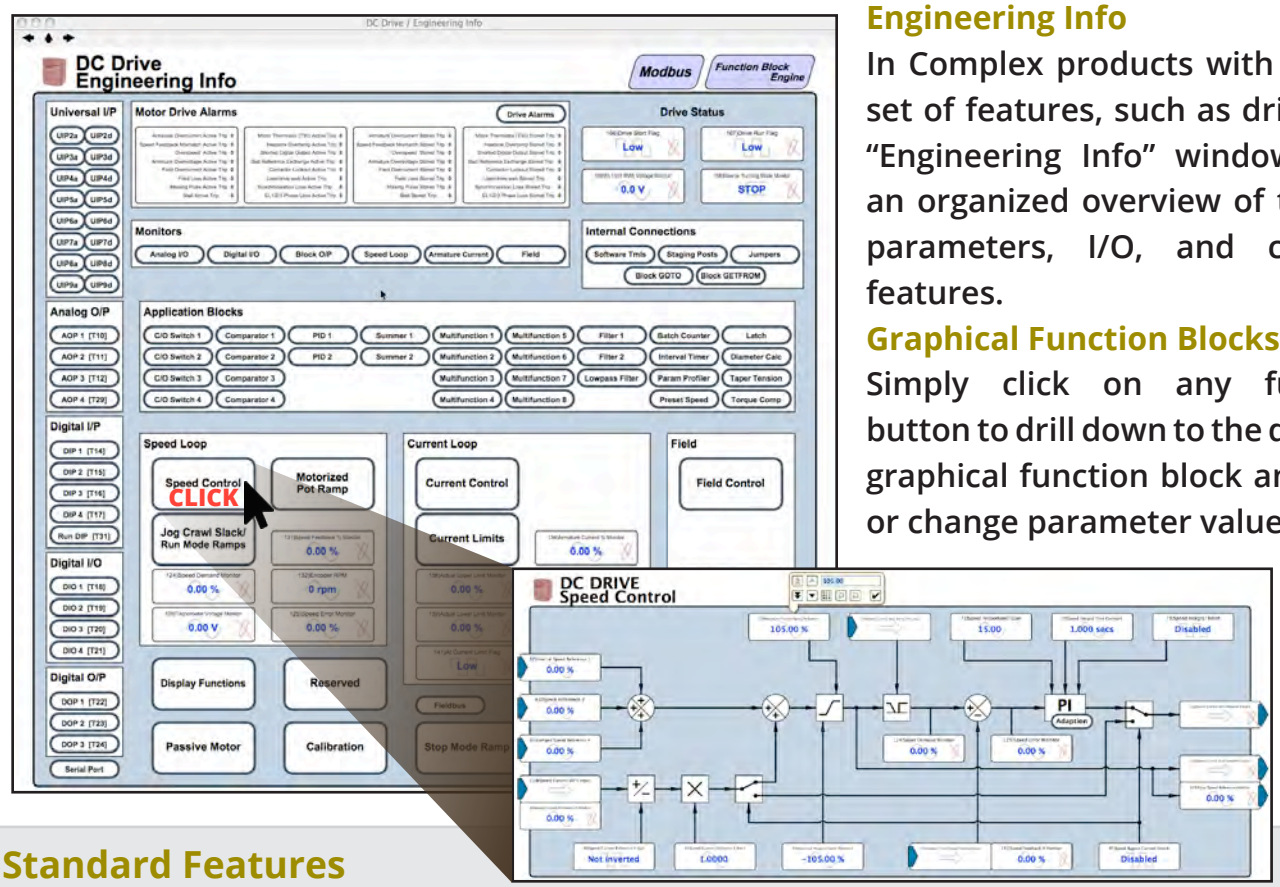
speedy Embedded Controller

Miniature, low cost, *drive.web*, programmable controllers for easy embedding in drives & devices. Includes peer-to-peer networking over Ethernet & USB port.

Only 0.91"W x 0.83"H x 1.42"D!

savvy... the smart automation tool.

- Configure drives, controllers & operator stations
- Design & build complete systems of any size or complexity
- Network & operate drives & systems over ethernet
- Provide multi-user, system wide access from anywhere



Engineering Info

In Complex products with a fixed set of features, such as drives, an "Engineering Info" window gives an organized overview of the key parameters, I/O, and controls features.

Graphical Function Blocks

Simply click on any function button to drill down to the detailed graphical function block and view or change parameter values.

Standard Features

- Online or offline design of drive systems using intuitive tools with pre-engineered function blocks.
- Internet access to drives and systems for remote configuration, monitoring, and process training.
- Provides easy import, export, and cloning of device configurations.
- Dynamic graphics show real time state of switches, indicators, parameter values,etc.
- Low cost, full featured, distributed control capability with peer-to-peer networking.
- Multiple users, local or remote, can have concurrent real-time access to drives or systems.
- Function Block Libraries for winder controls, PID, drive synchronization, arithmetic, logic, etc.
- Deterministic connections provide high performance links between drives, PLCs, Operator Stations, SCADA computer, and other control products.
- "drag & drop" techniques make easy parameter connections between drives, control devices, etc.
- "Dock" feature enables key system parameters to be monitored and trended from one location.
- Powerful navigation features include drill down (to detail layers in drives and controllers), search, connection tags, jump, browse, pan, and zoom for easy visual system comprehension.
- VPN (Virtual Private Networking) for secure Internet connectivity is supported.
- Password protection is provided at many levels for secure use.

Get *savvy* free online: www.driveweb.com

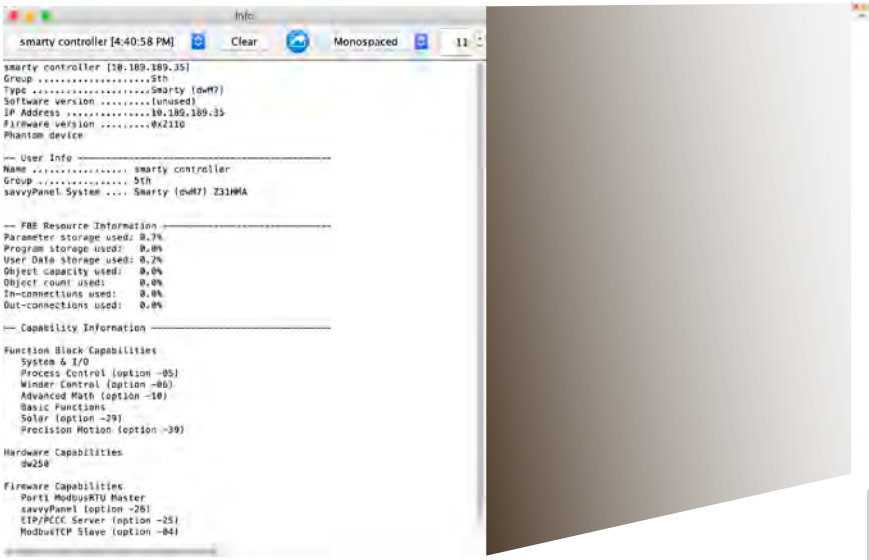
The *savvy* tools and utilities are platform independent and run on Windows, macOS, Unix, Linux, and Solaris and they are all automatically updated as new features before release.

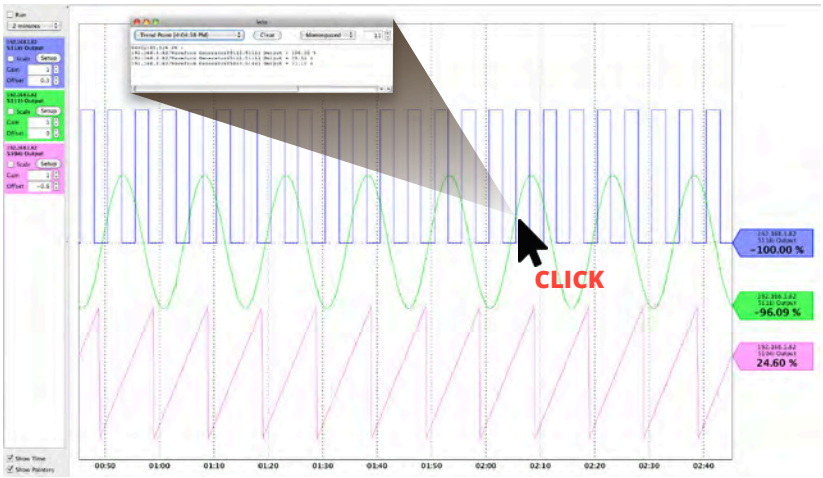
Drives, programmable controllers, operator stations, and complete systems are configured by making simple drag & drop connections between graphical function blocks.

Engineering Info

Anywhere in the system you will have easy instant access to the information you need with several different types of resource...

- Right click on any active object such as a device, connection, parameter, or function block to open the contextual menu.
- "Hover" over any active object and see its key data appear at the top of the window.
- "Hover" over a button to see its function described.
- Look for the information button. This will jump you to the relevant location in the user manual.
- The "Help" menu links you to the full user manual, and other getting started guides.



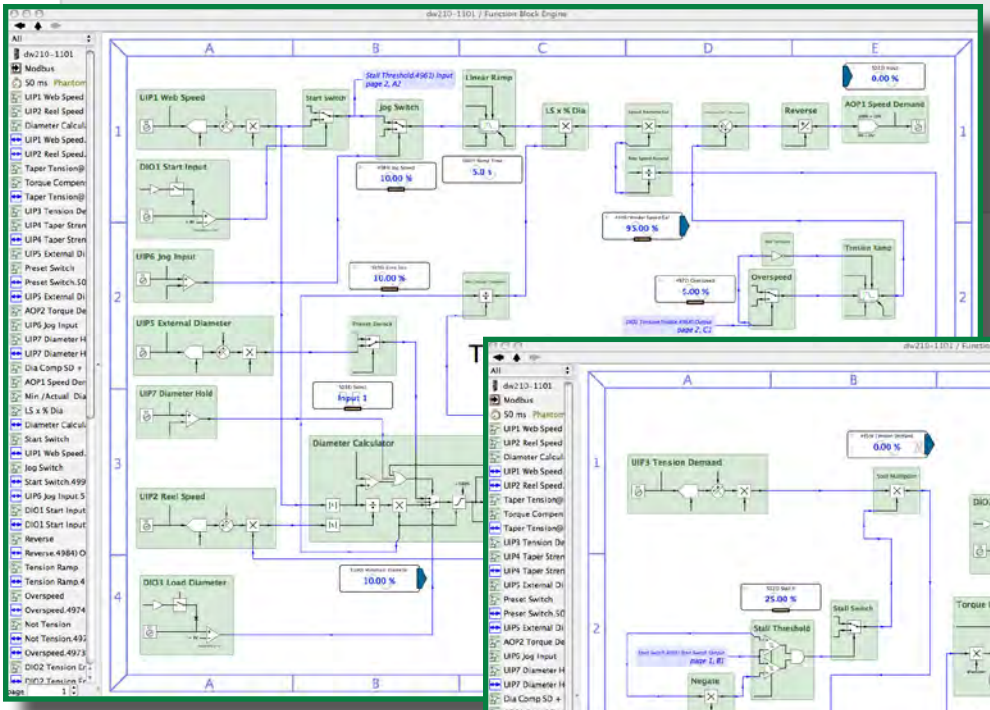


Trend Charting

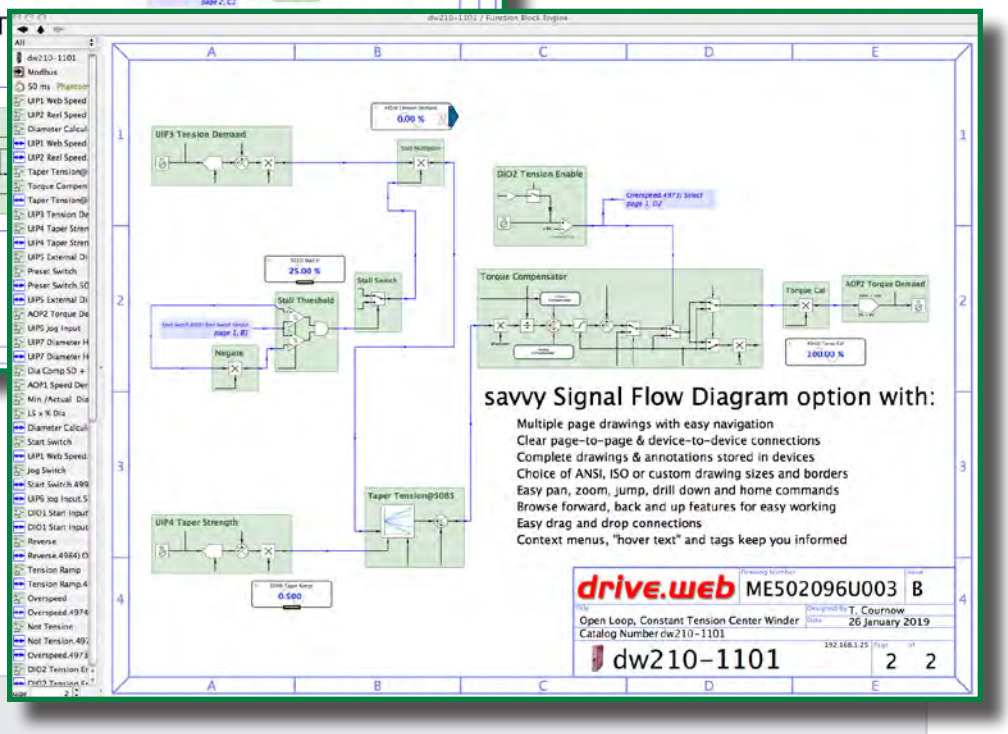
You can collect any parameters of interest in a "dock" window and display as a trend chart. The trend time scale can be adjusted from 10 seconds to 2 days and the data can be exported in a .csv format for separate spreadsheet analysis. Click on a point of interest to get the instantaneous, time stamped data values.

savvy-SFD ... Signal Flow Diagram

The *savvy-SFD* option provides a powerful, graphical, Signal Flow Diagram interface with enhanced system wide navigation and the ability to produce clear, annotated, device and system documentation.



Use *savvy* “phantoms” to create systems which can be downloaded later into the real devices.



savvy - easy, very smart

savvy-SFD features

- Basic *savvyPanel* operator station functions included
- Create your own customized drawing sheets with choice of ISO or ANSI formats
- Signal flow diagrams provide a clear vision of your control scheme and its functionality
- Tags clearly specify the source, destination and location of connections between multiple pages.
- Entire drawing is stored in the *drive.web* devices for instant access in the field.
- Key parameters can be shown at the Signal Flow Diagram level for enhanced monitoring and control
- Connections are “rubber banded” so that function blocks can be moved on pages or between pages
- Drag and drop connections can be made between any parameter anywhere in a system.
- Drawings can be user annotated.
- Powerful navigation features ensure fast searches and that you will never get lost.
- Password protection is provided at many levels for secure use.

savvy programming

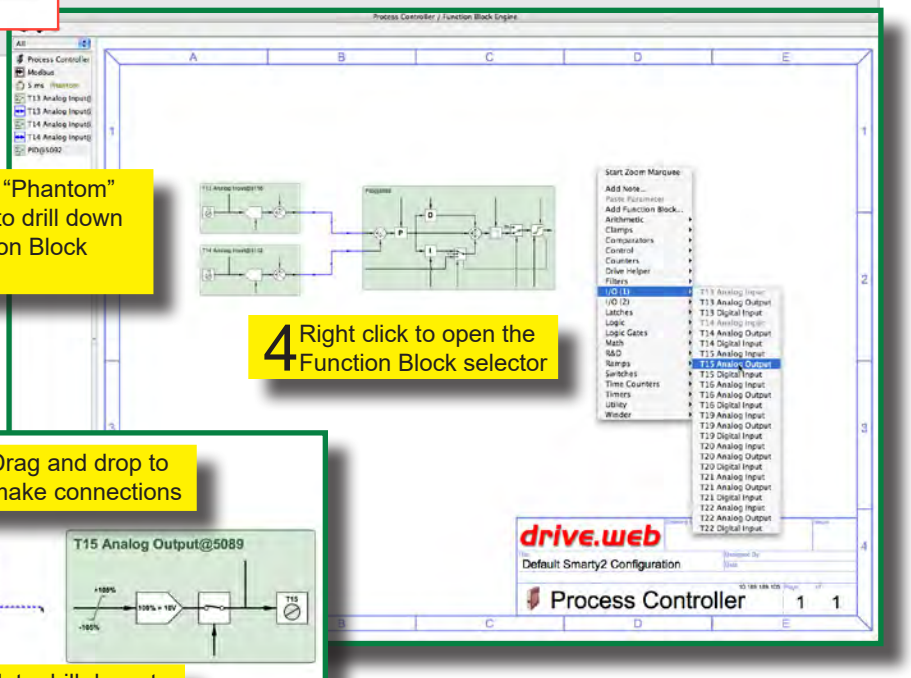
It could not be easier, whether simply configuring a drive or designing a complete integrated system.

A few simple steps are all that is needed to build a complete control scheme with signal flow documentation that is clear and easy to understand. Powerful navigation tools ensure that you will never get lost!

1 Create “phantom” devices or find real devices in your system in the “Device Directory” window

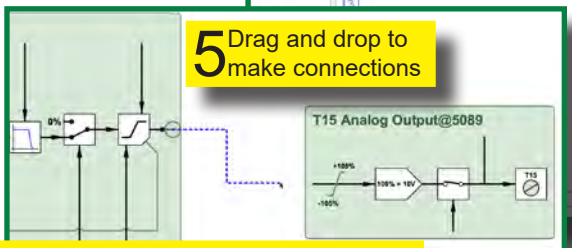
2 Right click on any device or object to open its contextual menu and get information, change names, import/export data, etc.

3 Click on a “Phantom” or device to drill down to the “Function Block Engine”

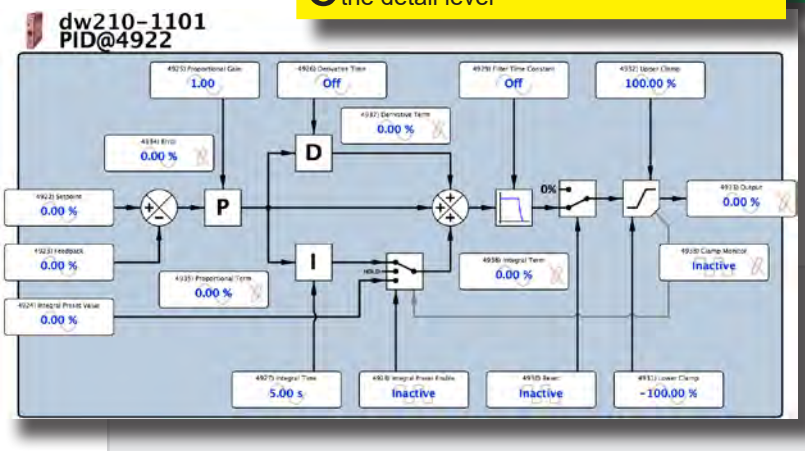


4 Right click to open the Function Block selector

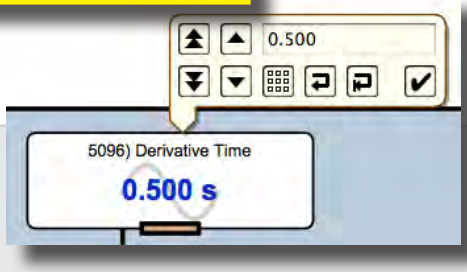
5 Drag and drop to make connections



6 Click on a Function Block to drill down to the detail level



7 Click on a parameter to change its value or state



Function Blocks are complete engineered system components. Their graphics are dynamic so that objects such as switches, indicators, etc., show their instantaneous state. A function block such as the PID above includes all the presets, resets, scaling, filters, clamps, etc., that you need for reliable implementation in the real world.

savvy is your smart friend! With a few simple clicks you can build a system, set up a drive and document your work in a thoroughly professional manner - there is no equal!

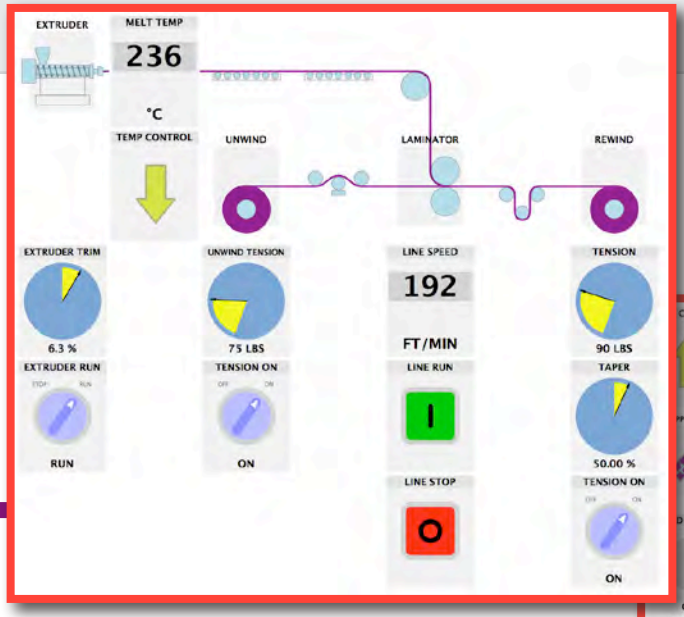
savvyPanel

Smart, touch screen operator station technology

Provides unprecedented flexibility in instrumentation, control and monitoring.

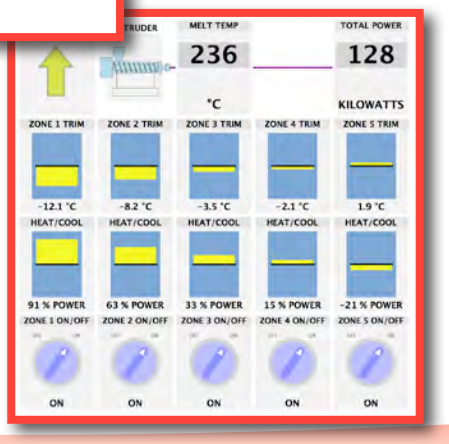
- Runs native on a ***savvyPanel station*** high resolution, touch screen display.
- Also runs on any full featured, touch screen PC, Android, and iOS devices (iPad, iPhone, etc.)
- Extensive library of objects such as pushbuttons, switches, meters, indicators, lamps, buzzers, etc.
- Extensive library of graphical image “tiles” to build smart machine and process graphics.
- Machine graphic “tiles” can be linked to detail control screens.
- Full ***savvyPanel*** configuration is stored in the ***drive.web*** devices for instant WiFi roaming access.
- Supports multiple screens with multiple pages.
- Provides hierarchal access to system groups, individual systems and multiple operator levels.
- Powerful multi-level password protection.

Example - Extrusion Coating Line



Master System Control Station
Easily build your graphics and controls and link them to any location in your drives or process control system.

Operator Screen
Touch a graphic tile such as the “EXTRUDER” to drill down to the detail screen



Total Control
Touch an arrow link such as the “TEMP CONTROL” tile to drill down to the temperature control system

Touch the “MELT TEMP” tile in any screen to set the master temperature setpoint.

savvyPanel touch

Color Touch Screens

dw230-050
5" - 800x480p
5.9"x4.4"1.1"

dw230-070
7" - 1024x600p
8.1"x5.5"x1.2"

dw230-097
9.7" - 1024x768p
9.9"x8.1"x1.3"

- Plug & Play, ***drive.web*** natively
- Competitively priced
- Easy setup
- Crisp, high visibility graphics
- IP65, NEMA 4 splash-proof front
- IP20 rear
- 1 Ethernet port 10/100baseTX
- Power supply 24VDC
- Working Temp: -20°C to 70°C
- Connect directly to any single ***drive.web*** device or to multiple devices with an Ethernet switch

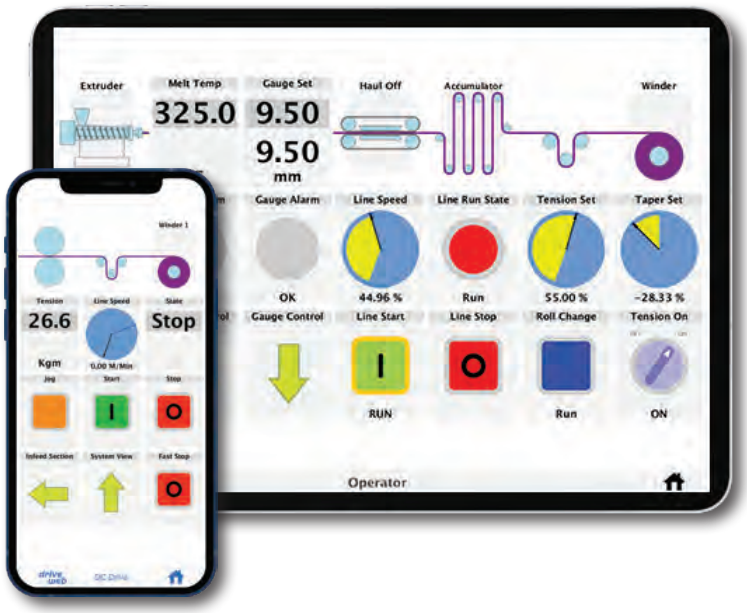
savvy programing

No separate ***savvyPanel*** programming required.
The ***savvyPanel touch*** display configuration resides in the ***drive.web*** drives or automation controllers. Everything is set up and accessed from the ***drive.web*** network using the intuitive ***savvy*** tools.

enclosure for savvyPanel touch

- Impact resistant, flame retardant, polycarbonate industrial enclosure
- NEMA 4 (IP65), light gray.

Dimensions:
5" model dwOPTION-54-052 — 8.4x5.8x2.2" (213x142x56mm)
7" model dwOPTION-54-070 — 9.5x6.3x3.6" (241x160x92mm)
9.7" model dwOPTION-54-097 — 11.8x9.05x3.4" (300x230x86mm)



savvyPanel

app for iOS & Android

Go mobile
Get secure machine access anywhere
Try it out now!

Download ***savvyPanel*** free from the Apple App Store or Google Play Store and get immediate access to a real, live drive system in Stevensville, Maryland, USA.

- ☞ Touch the "Roll Change" button to reset the length to zero
- ☞ Turn on all the section "On/Off" switches
- ☞ Touch the "Line Start" button - see the line run its auto cycle
- ☞ Touch the "Set Speed" indicator to change the line speed
  - Touch the parameter name to get info
  - Touch the square display symbol to close the setter

drive.web device apps

These apps can be installed in ***drive.web speedy*** and ***smarty*** Universal Automation Controllers to provide a plug & play interface to the key features of "*other*" drives or devices. The ***smarty*** or ***speedy*** then brings those "*other*" drives alive with:

- Full featured programmable control functions
- Ethernet networking
- USB port access

"Other" devices include almost any device that has a ModbusRTU port, including:

• AC drives • DC Drives • PLCs • Process Controllers •
• Temperature Controllers • Smart I/O • Power Controllers •

drive apps come complete with a user guide and application notes.

The configurations can easily be edited and additional drive parameters can be added using only the ***savvy*** tools.

Current *"Other"* device app list includes:

dwOPTION -4001 for Yaskawa A1000 Drives (with dwOPTION-1121)
dwOPTION -4002 for Yaskawa V1000 Drives (with dwOPTION-1121)
dwOPTION -4003 for V2 Series Fan & Pump Drives
dwOPTION -4004 for Schneider Altivar 312 Series Drives
dwOPTION -4005 for ABB ACS310 Series Drives
dwOPTION -4006 for Sanyo Denki Stepper Drives
dwOPTION -4007 for Thermal Edge Temperature Controllers
dwOPTION -4008 for V3 Series Eco Drives
dwOPTION -4009 for Fuji Frenic Mega Vector Drives
dwOPTION -4011 for Yaskawa A1000 (with dwOPTION-1124)
dwOPTION -4012 for ABB ACS310
dwOPTION -4013 for Fairford Electronics Synergy Soft Start

These ***drive.web device apps*** are easy for us to create, so don't hesitate to contact if you have a new request.

Please call +410-604-3400 for the latest list or a new *"other"* app.

speedy device app

Connect a ***speedy*** to your "other" device via its ModbusRTU port to provide immediate ***drive.web savvy*** access to all its key parameters. Add any additional parameters you require to make ***savvy*** the only tool you need for your "other" drive configuration, control, systems integration and monitoring. The ***speedy*** is so small (about half the size of your thumb!) that it can easily be mounted unobtrusively onboard almost any drive or device.

smarty device app

Connect a ***smarty*** to your "other" device via its ModbusRTU port to provide immediate ***drive.web savvy*** access to all its key parameters together with 16 extra precision I/O (configurable analog or digital), and with options such as encoder inputs, (see the options lists on pages 23 - 25). Add any additional parameters you require to make ***savvy*** the only tool you need for your drive configuration, control and monitoring.

drive.web

One easy, homogeneous solution for systems integrators!

drive.web apps

CONFIGURED OPTIONS FOR smarty & speedy

These options are pre-programmed units with generic solutions for key applications. The packages are a great design aid.

These generic configurations are easily edited to suit your specific installation using ***savvy*** with the ***SFD*** Signal Flow Diagram option and include the following features:

- detail signal flow diagram documentation
- ***savvyPanel*** touch screen PC, iOS & Android operator station configuration
- basic wiring drawing

ADD CONFIGURED OPTIONS

		smarty	speedy						
		dw210	dw220	dw221	dw222	dw223	dw224	dw225	dw228	dw229
-1101	Open loop constant tension center winder (with option 1122)	X	X	X		X	X	X		
-1102	Closed loop dancer controlled winder (with option 1122)	X	X	X		X	X	X		
-1103	Closed loop load cell controlled winder (with option 1122)	X	X	X		X	X	X		
-1104	Slip core winder controller (with option 1122)	X	X	X		X	X	X		
-1105	Speed lock w/encoder feedback (with option 1124)	X								
-1106	Coordinated drive, line master controller (with option 1121)	X	X	X		X	X	X		
-1107	Controller with networking for analog drives (with option 1121)	X								
-1109	Phase lock, line shaft with registration (with option 1124)	X								
-1110	Three PID Controllers with integral reset and hold (with option 1121)	X								
-1113	2 channel pulse train follower (with options 05, 26, 27)	X								
-1117	Encoder cyclic position/indexing (with option 1124)	X								
-1118	Sun tracking for solar energy (with opts 05, 11, 16, 26, 29, 42 & 45 or 46)	X								
-1131	Encoder analog out, T13, Calibrated 1024PPR @1800RPM = 10V	X								

Please call +410-604-3400 for dw240 & dw250 pre-engineered solutions

c UL us LISTED CE UKCA FC 47 CFR §15 IC ES -003

drive.web accessories

- **Industrial Ethernet switches**
- **Interconnection cables, connectors**
- **Touch screen PCs**
- **Wireless access points**
- **Communications gateways**
- ***drive.web*** **software & firmware upgrade vouchers**

Please call +410-604-3400 for details

drive.web automation

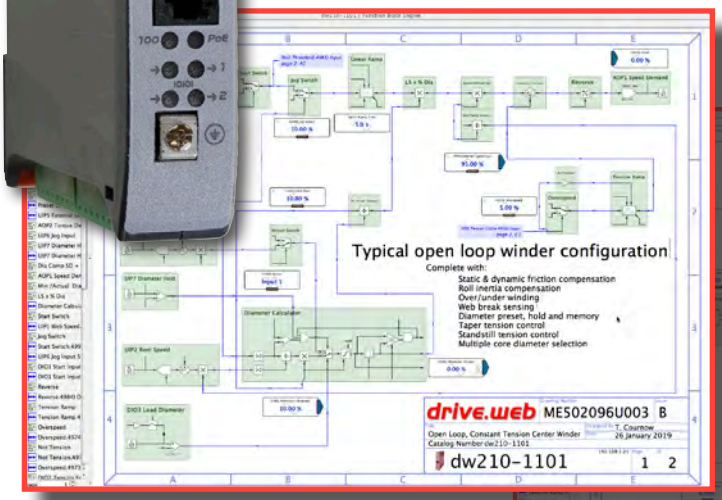
drive.web apps

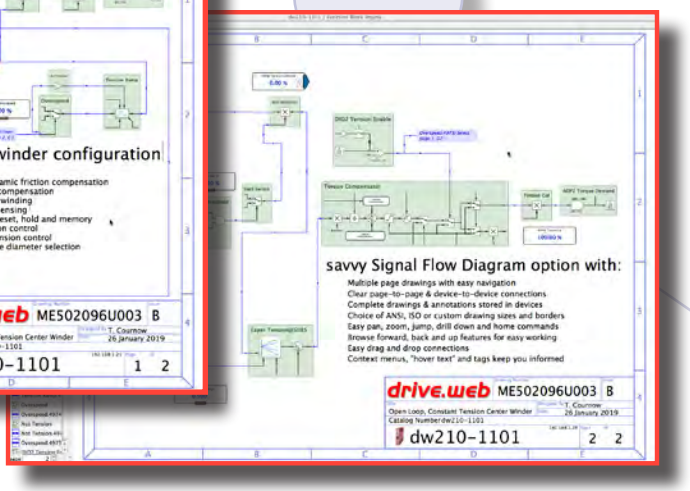
WINDERS & UNWINDERS

smarty automation controllers use the *drive.web* distributed control technology to bring easy, cost effective intelligence to high performance drive systems.

smarty apps are pre-configured generic packages for common applications:

- *smarty* OPTION-1101 Open Loop Constant Tension Center Winder
- *smarty* OPTION-1102 Closed Loop Dancer Controlled Center Winder
- *smarty* OPTION-1103 Closed Loop Load Cell Controlled Center Winder
- *smarty* OPTION-1104 Closed Loop Slip Core Winder

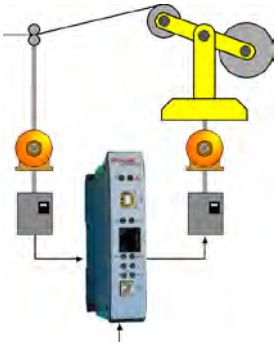




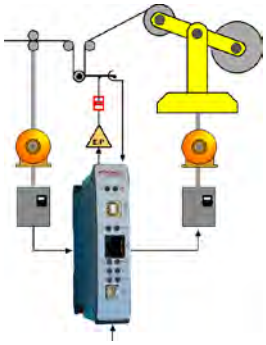
web handling excellence

These generic configurations can easily be edited by the intuitive *drive.web savvy* graphical tools to suit the particular application. The clear signal flow diagrams are stored in the controllers for reliable access in the field.

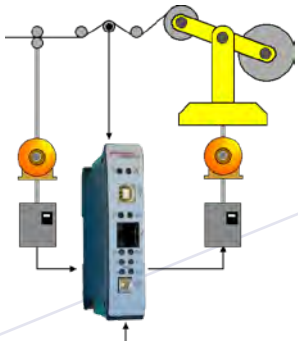
smarty OPTION-1101 OPEN LOOP CENTER WINDER



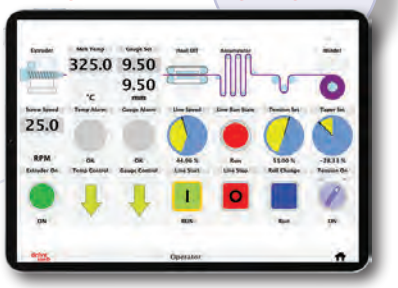
smarty OPTION-1102 DANCER CONTROLLED CENTER WINDER



smarty OPTION-1103 LOAD CELL CONTROLLED CENTER WINDER



savvyPanel touch screen control

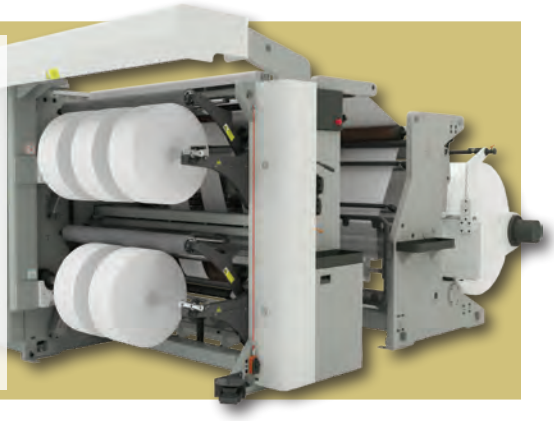


Standard features include:

- Fully editable configurations and drawings
- Drive Interface either serial port or analog
- Process control & winder function block libraries
- Web break sensing
- Diameter calculation, memory, preset and hold
- Linear or hyperbolic taper tension
- Friction, inertia & torque compensation
- Multiple core presets
- Integral reset
- Adaptive control for high speed systems
- Standstill tension mode
- Jog/run/slack take up modes
- Turret indexing mode
- Anti-reverse clamps
- Core speed matching

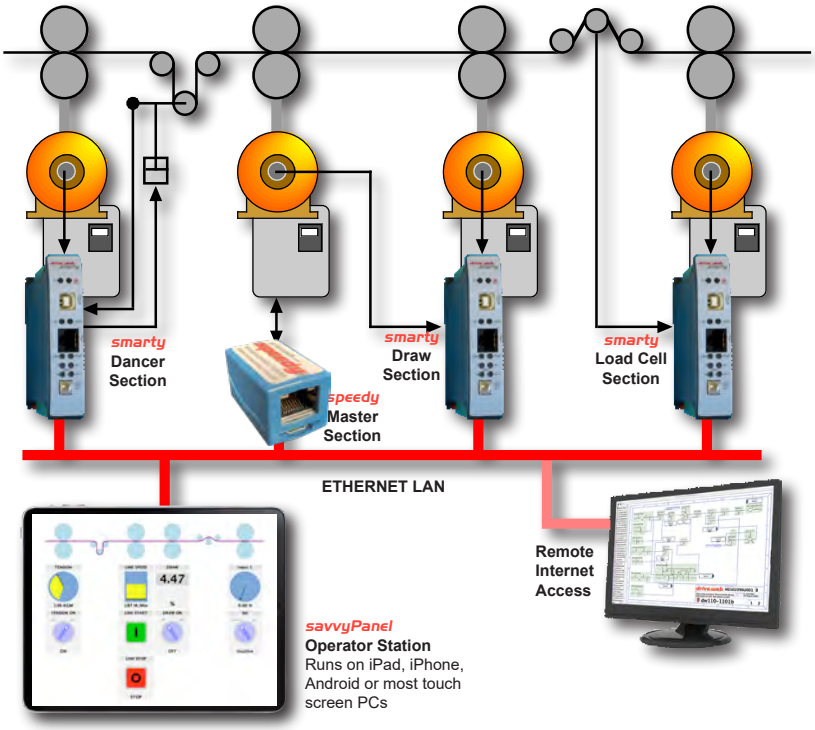
Optional features include:

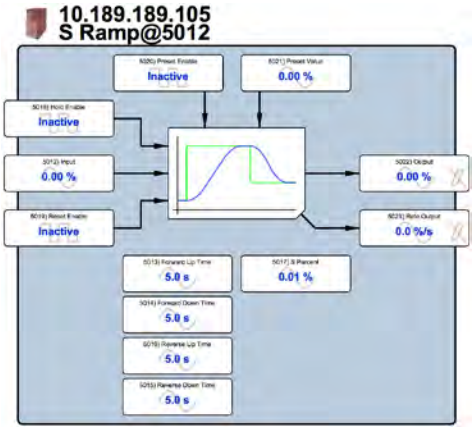
- Over/under winding
- Line drive coordination
- Manual or auto-splicing modes
- Turret indexing
- Air pressure control
- Length & mass calculation
- Edge guide control
- Encoder inputs
- ModbusTCP/IP over Ethernet
- Serial communications
- ... and more.



smarty app OPTION-1106 Process Line Coordination

Standard function blocks used in combinations of *smartys* and *speedys* can be easily configured to provide line drive coordination in systems of any size or complexity.

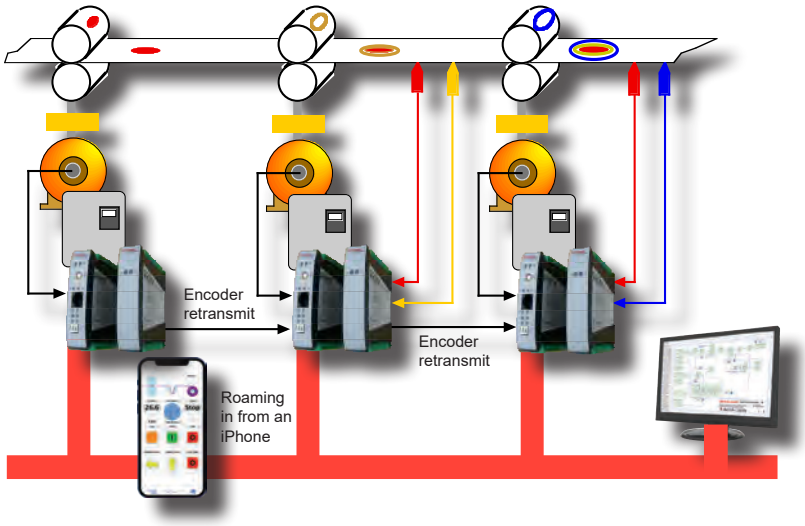


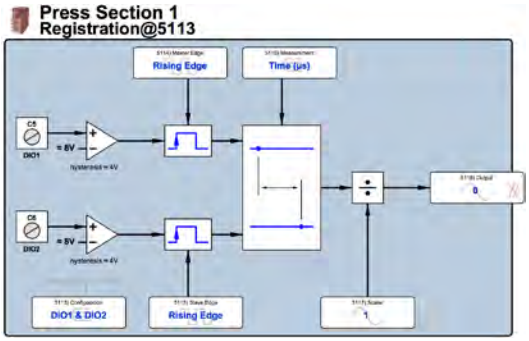


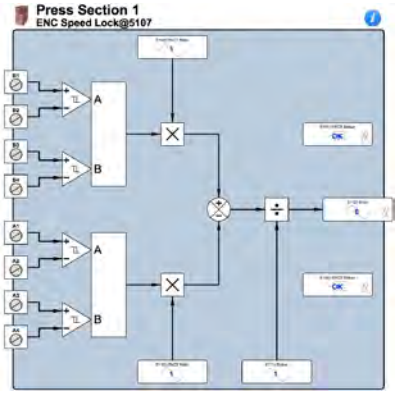
- Functions such as linear, S and hyperbolic ramps are used to provide master references.
- Programmable logic and switch functions are used to provide line run, line jog, local jog, interlocks, etc.
- PIDs, profilers, registration, indexing, phase lock and arithmetic blocks provide precise section control.

smarty app OPTION-1109 Registration & Electronic Line Shaft

The Registration & Electronic Line Shaft package is designed for applications such as print registration, synchronized component handling, position control, cut-to-length, etc., where precision drive coordination and spindle orientation are required.







Standard graphical function blocks for registration and speed locking make these complex processes quick and easy to configure and use.

The encoder retransmit option provides buffered encoder signals for secure use in multiple locations.

drive.web automation

drive.web apps

motion control OPTION-36 Motion Control Function Block Library

For multi-axis motion control of all types of drives - AC drives, DC drives, servos, steppers, hydraulic, linear actuator, etc., in a wide variety of general industrial position control applications including:

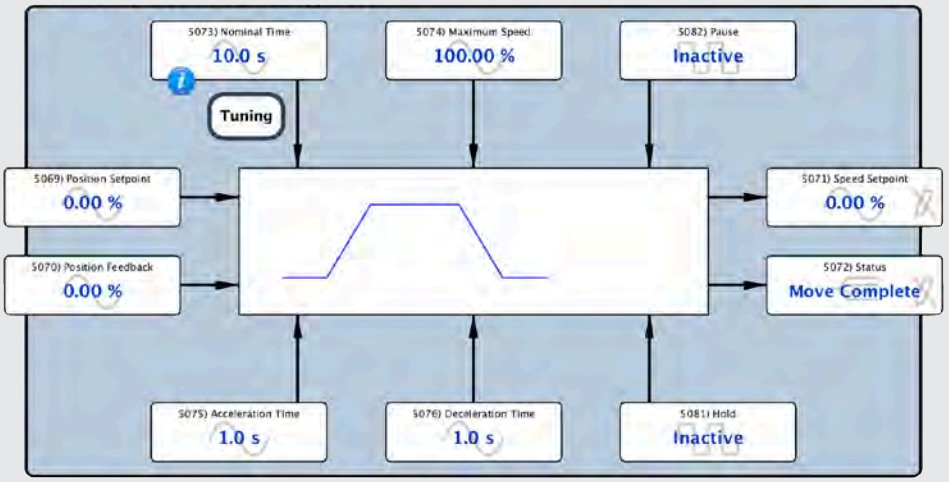
- Pick & place machines
- Packaging machines
- Painting robots
- Cut to length
- Automated assembly processes

Trapezoidal Motion

A key requirement for numerous machine controls

Key Features:

- Continuous target recalculation
- Easy system set up
- Easy performance optimization
- Pause with controlled accel/decel
- Hold with fast stop

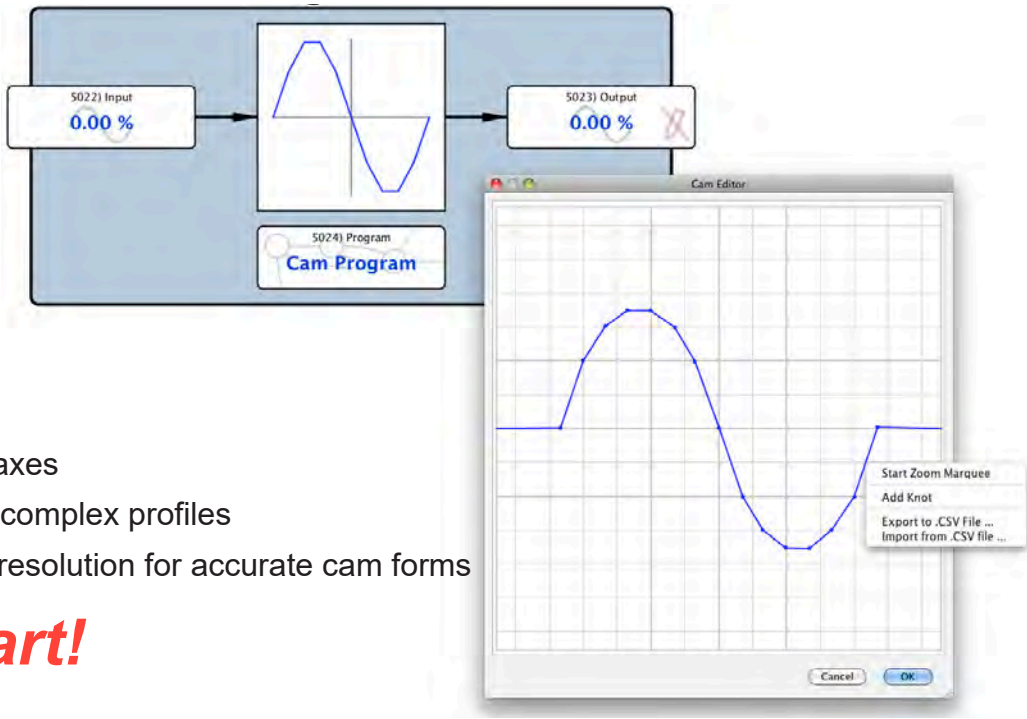


Cam Profile

A key requirement for numerous machine controls

Key Features:

- Easy graphical profile editor
- Optional .csv file import
- Easy .csv file export
- Easy system set up
- Easy integration with multiple axes
- Up to 100 “knots” or points for complex profiles
- 16 bit signed input and output resolution for accurate cam forms



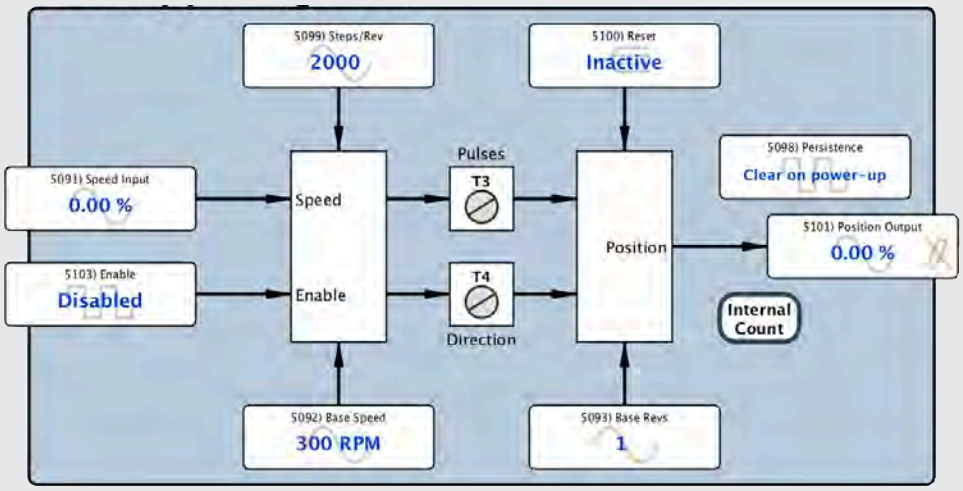
very smart!

motion control Stepper Drive Controllers

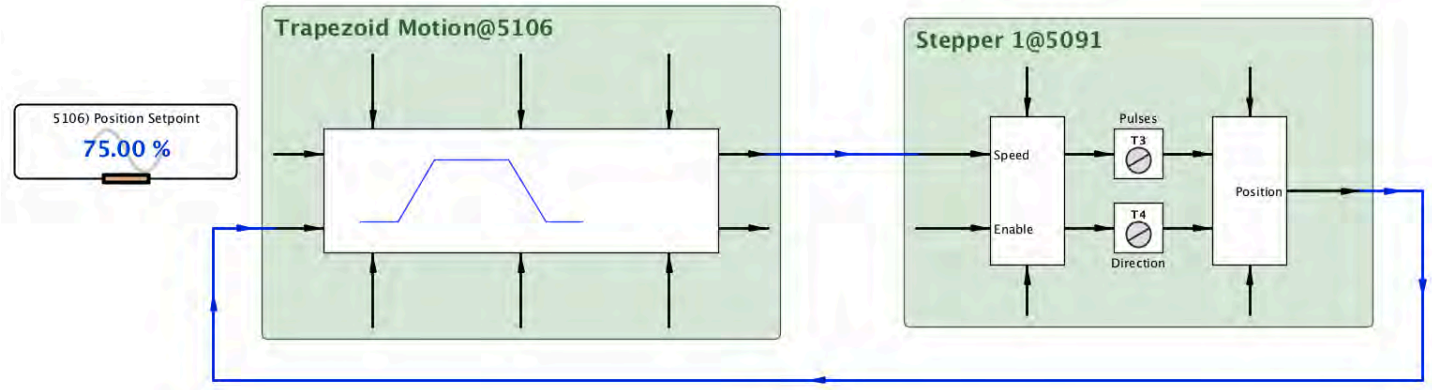
These stepper drive controller options are available for most versions of the ***smarty*** (see option selection table, page 23).

Both options include:

- 2 channels of pulse & direction
- 2 fast event inputs for count reset
- 64 bit pulse counts
- Automatic datum reset
- Easy set up
- Selectable count persistence with "clear on power up"

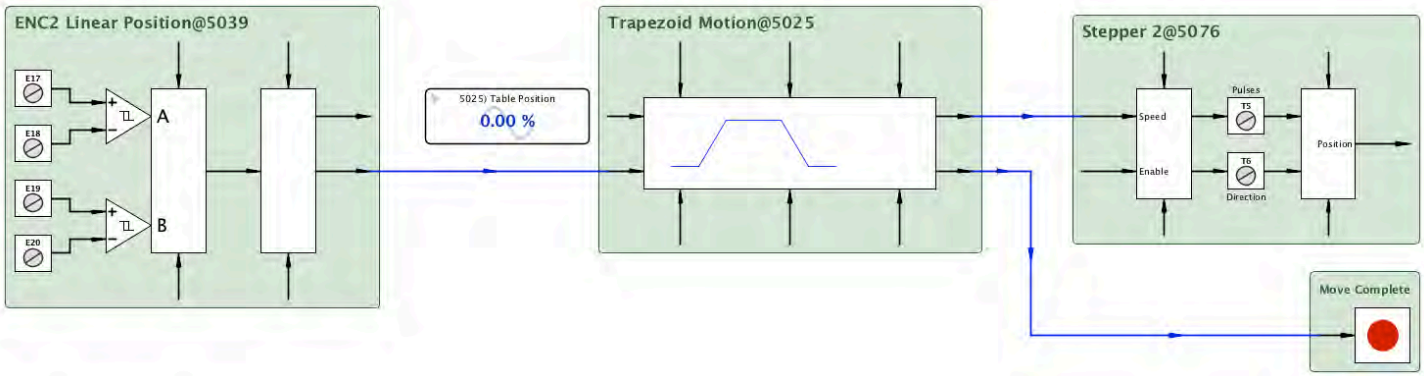


dwOPTION -37 Open Loop Stepper Drive Controller



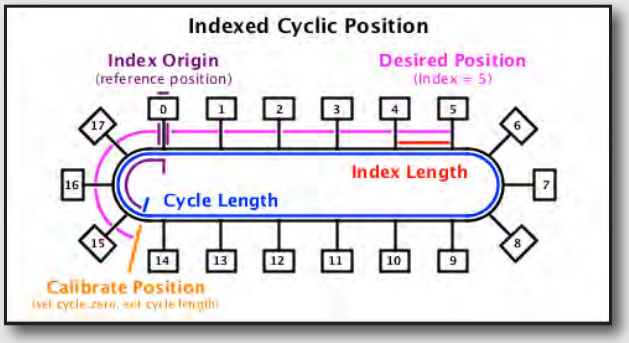
In a typical open loop stepper drive application the "Position" parameter (derived from the pulse count) can be used to close the position control loop.

dwOPTION -38 Closed Loop Stepper Drive Controller



In a typical closed loop stepper drive application the position feedback can be provided by an encoder. The dwOPTION-42-45 encoder module also has two fast event inputs for auto count reset.

smarty app OPTION-1117 Indexing & Cyclic Positioning

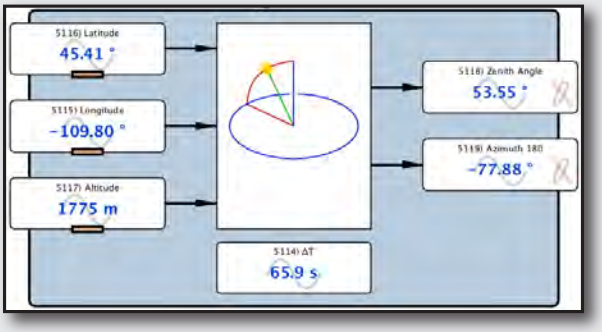


The optional Encoder Function Block Library available in the *smarty* includes a set of engineered function blocks for use in precision positioning applications such as packaging machines, machine center tool loaders, inventory carousels, stackers, etc.

Key Features

- Auto origin checking
- Auto index calculation
- Auto calculation of shortest move from point to point
- 64-bit encoder counts

smarty app OPTION-1118 Sun Position Calculator



The Solar Function Block Library provides precise calculation of the sun zenith and azimuth angles in solar energy systems. It can be synchronized with the SNTP server time and date and include a ∂T input parameter to compensate for the difference between UTC and Terrestrial Time for precise positioning of solar concentrators.

Key Features

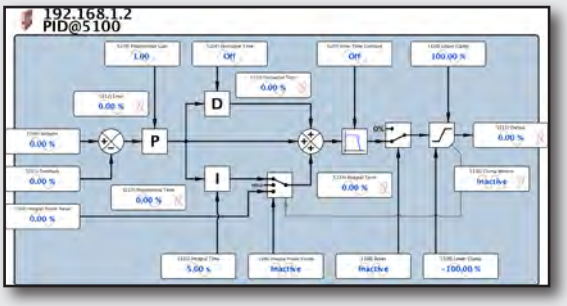
- Set up for any latitude, longitude and altitude.
- Fast calculation for use in mobile systems.
- SNTP synchronization support.
- Terrestrial Time correction input.

smarty app OPTION-1115 Temperature Measurement & Control

smarty controllers provide up to 4 temperature measurement or control loops using standard IEC751, Class A, 100Ω RTD temperature sensors. Both 2 and 3-wire configurations are supported with programmable calibration, linearization, and filtering features. Use Application Note HG503599. Please call for other RTD or thermocouple options.

savvyPanel touch screens provide both your temperature control interface and your complete machine control functions.

smart function blocks

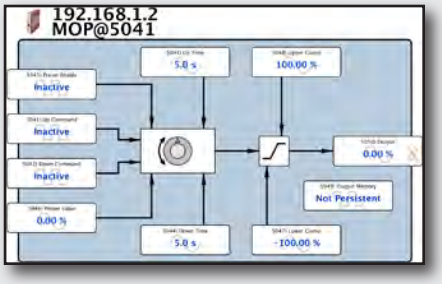


smart PID

One of the most commonly required functions in industrial control.

In most PLCs you get the basics but you are left to sweat the details required to make it work reliably in the real world. We cover the bases by including, integral preset, reset and hold, output filter, upper and lower clamps.

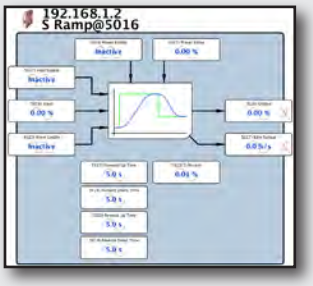
Saves a lot of time and heartache!



Motorized Pot

This MOP block makes short work of figuring out all the functions you need for raise/lower push button control

No sweat!



S-Ramps

Ever tried to create an S-Ramp that works predictably in a typical PLC? We make it easy, intuitive and reliable!

No problem!

smart function blocks State Machine Logic

Logic made easy and reliable!

This powerful, Intuitive, 21st. century technology takes the stress out of logic programming. It's very simple ..

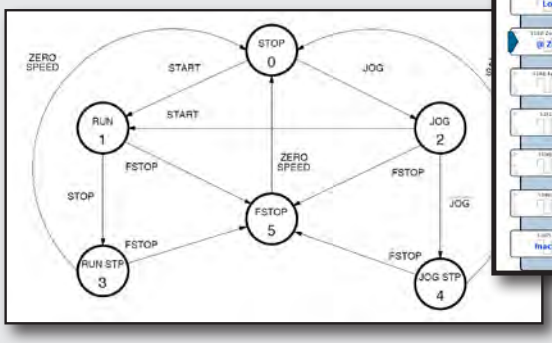
1. Define your machine states such as STOP, RUN, JOG, FAST STOP, etc.
2. Define the transitions that get you from one state to another, for example:
   START button gets you from STOP state to RUN state
   JOG button takes you from STOP state to JOG state
   FAST STOP button takes you from any state to FSTOP state (this can then look for a transition to ZERO SPEED before returning you to the STOP state)

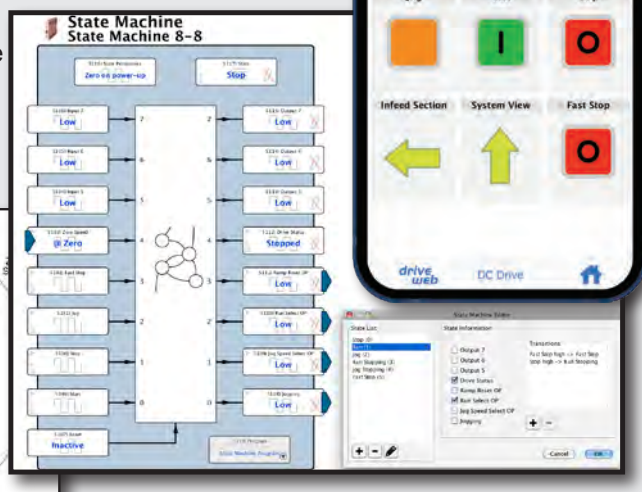
It's that simple! No more sweating over relay interlocks, contact races, etc!

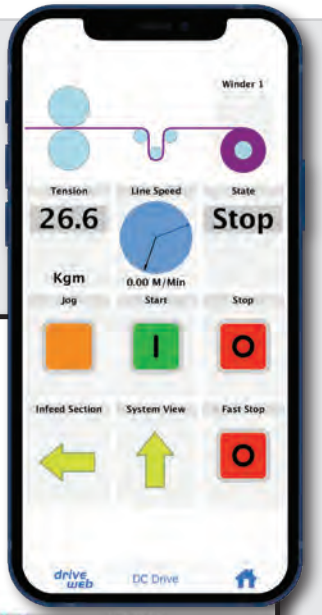
So obvious!

So smart!

So easy!







smart utilities event email

The E-Mail function block available in every ***drive.web*** device enables you to send alerts, event notices, status reports, etc., to management, quality controllers, plant engineers in any location.

It is easy to set up and it ensures that key process issues are delivered to the right place at the right time.

drive.web smart ideas

WiFi Roaming Interface

There are many inexpensive third party WiFi routers that when plugged into a ***drive.web*** Ethernet network provide secure, robust, roaming system access in an industrial environment using iOS or Android smart devices.

Enterprise Integration

The powerful system wide access inherent in the ***drive.web*** technology provides a great backbone on which to build integrated solutions in your entire global enterprise without additional complex data processing requirements. Multilevel password protection enables safe access for offsite accountants, production controllers and corporate management.

Online Training & System Support

The IP addressing capability in every ***drive.web*** device ensures easy support for field service and live online training for machine operators, system designers and plant maintenance engineers. If an internet connection is available near your machine or process it takes less than 1 minute to set up a live connection to our engineers or any other off site location. ***drive.web*** provides system wide access from any single location on your LAN - very smart, very easy!

Engineering & Support




AC and DC motors from fractional to over 2000 HP

All speed ranges, duties, enclosures and voltages complete with a full range of accessories such as encoders, tachs, thermal protection, brakes, blowers, filters, brushes and slide bases. Please call for details and competitive pricing.

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.

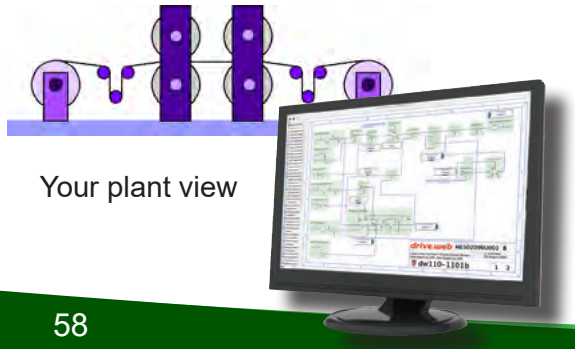
Every ***Modulus*** project is accompanied by a detailed, 50-point, Quality Control Report covering every facet of the product, its design, construction, testing and shipping.

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

Online Product Support

Using innovative, interactive, Internet online technologies we can provide either product training or product support through your browser from the comfort of your desk! Simply connect via your browser and get live interactive support where ever you are - with savvy running on your computer call +410-604-3400 and in less than a minute an engineer will be able to see your system live and give you the support you need.

... it's as easy as that!



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 - 1½ 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

Terms of Sale & Payment

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.

Field Service, Service Center Repair, Training and Start-up - Call +410-604-3400
Rates for the Continental United States

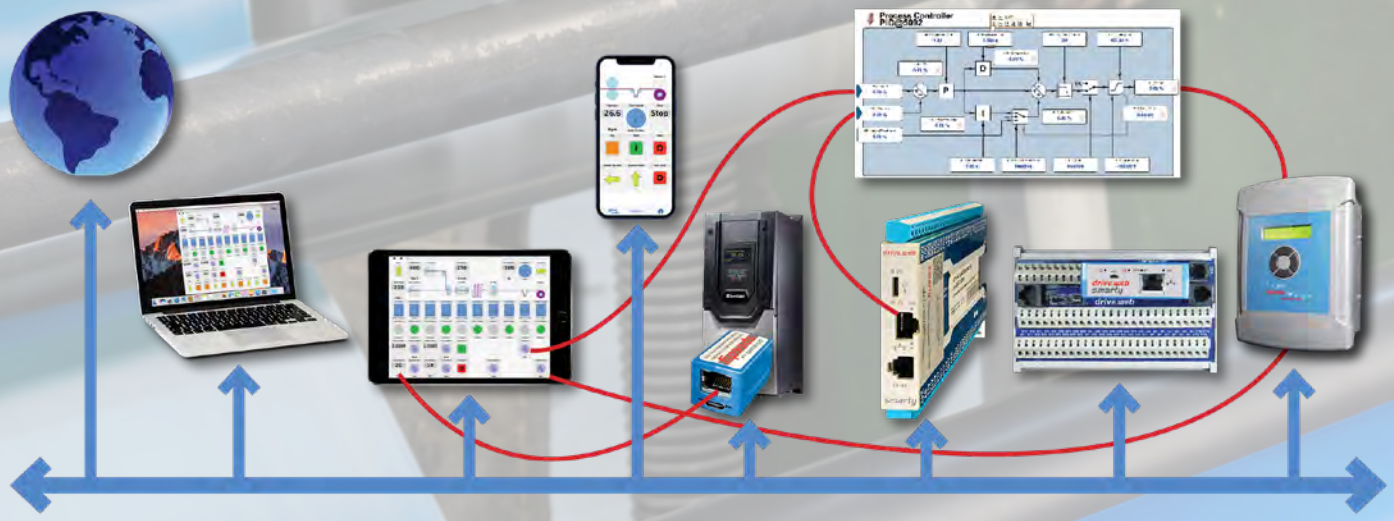
Charge Basis	Rates (US$)
a. Basic Rate - Field Service, Training & Start-up Assistance - up to 8 hours daily Monday to Friday, 7am to 6pm	$190 per hour
b. Standard Overtime - Weekdays 6pm to 7am & all day Saturday - Total work time not to exceed 12 hrs in any 24 hrs	$285 per hour
c. Special Overtime - 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	$0.655 per mile
f. Public Transport - Rental cars, Air fares, etc.	At Cost
g. Holdover & Standby Time	Same as service
h. Travel Time - Time taken from Bardac to job site and return	Same as service
i. Basic Rate - Service Center Repair charges - Diagnosis & repair time	$130 per hour + parts
j. Design or application engineering services	$220 per hour

Notes:
1. Minimum service billing is 4 hours for field services, 1 hour for service center services.
2. Parts, materials, special visas, duties, and extraordinary expenses will be charged extra.
3. Warranty credits will be identified on the Daily Field Service Report.

For rates and availability of sales and service outside the US, please call +410-604-3400

24/7 Tech Support

During normal business hours basic tech support will be provided free of charge
Outside normal business hours call +410-604-3535. Tech support will be provided at $340/hour (minimum of 1/2 hour per call) and this must be paid for with a credit card at the time of service.



drive.web automation

~ distributed control over Ethernet
~ full featured programmable control
~ intuitive graphical programming tools
~ Internet accessible
~ cost effective systems any size or complexity
~ configure, connect & control
... everthing from anywhere

Everything normally in stock!

drive.web automation
from Bardac Corporation

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drive.web catalog 2023.1

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