

All-new ACS550 AC drive line from ABB provides customers a quantum leap in easy installation, start-up and use

(With a control panel modeled after a cell-phone design, the 1-550 Hp AC drives are extremely intuitive and simple to set up; and packed inside -- a full complement of features that make precise motor control across all industry applications easier than ever before)

NEW BERLIN, Wis., September 2, 2003 . . . "We pooled our worldwide expertise, resources and technology to *make drives simple!*," said Joe Maloni, vice president – sales and marketing, ABB Inc., Drives, in describing the company's introduction of the all-new ACS550 Drive^{IT} Low Voltage AC Drive family. For drives users, he noted, "it is sophisticated technology made simple."

What Drives You, Drives Us

The new drives were created from scratch, based on "listening *very* closely to the needs of our customers – and they are the easiest motor drives to install, start and use, bar none," Maloni said.

Calling it a "native U.S. design," built using three-dimensional design tools, R&D and manufacturing engineers at ABB's facility in New Berlin, Wisconsin, led the design effort "that combines simplicity, convenience, fieldbus connectivity, harmonic mitigation and programmability to a degree we've not seen in drives before," said Maloni. The drives' 1 to 550 horsepower range and multiple modes of motor control provides users wide flexibility across the full range of general-purpose industrial applications and markets, he noted; "and this drive line complements and deepens an industrial drives product portfolio that already is very strong."

Simple Controls/Set-up

The all-new control panel is similar in look, feel *and* functionality to a mobile phone and features two soft keys, the functions of which change according to the operating state of the panel. A built-in HELP button and a real-time clock assist in fault diagnostics. This enables fast set-up, simple configuration and rapid fault diagnosis.

Start-up Assistant software built in as a standard tool "means, literally, that the start up and tuning of these drives can be accomplished faster than ever before," according to Mark Kenyon, product manager for the line. *Start-up Assistant* provides guided start up, step by step; no need to worry about which parameters to set, and no need to access complex parameter lists.

Convenient Operator Interface

Available for use in 12 languages (all resident in the control), the *Assistant*, via the control panel, asks users for motor nominal values, the I/O configuration and application-specific parameters (acceleration and deceleration). An on-line information system offers additional help at every step. Following this interaction, drives are ready for controlling the specified motor and process.

A built-in real-time clock also logs actual time of faults, easing diagnostics of drive performance. If a fault occurs, use of the *Diagnostic Assistant* will suggest ways to fix the fault.



The drive also monitors energy consumption, running hours or motor revolutions. Users can set their own limits for each of these items, so that the drive gives an alarm whenever these limits are reached, flagging when the drive, motor, or driven equipment should receive preventive maintenance.

Additional intuitive drive features available via the operator interface include audible noise optimization. And a controlled cooling fan operates only when necessary, further reducing audible drive noise, improving energy efficiency and extending fan life.

Fieldbus Control – Access To Automation Systems

Both a digital interface card and/or field bus adapters are available as options and mount quickly into an option slot inside the ACS550 drives -- providing connectivity to a wide variety of major automation systems. "Because drive users have a wide array of adapters to choose from, they can interface all of these built-in device benefits with virtually any automation system they have," according to Kenyon. "These drives accommodate users *where* they are, and do *not* dictate the automation system that must be used or installed."

Copy/Download Parameters

All programming of ABB's ACS550 drives can be carried out using the standard control panel; no special hardware or software programming tools are needed. "Programming should take only minutes, max," according to Kenyon, "and can be carried out on-site during start-up." The panel's multi-lingual plain-text, full-graphic display is easy to use with *Start-up Assistant* – as well as for drive monitoring and normal parameter setting.

A parameter copy feature also allows all drive features to be copied from one motor controller to another, to simplify start up. The copy feature is used regularly as a back up, in case of a drive failure, allowing the existing application -- including all the motor data attained during start-up -- to be downloaded to the new drive. This saves the need of a new start-up, and time spent repeating parameter settings.

EMI/RFI Protection

Through ABB's patent-pending "swinging choke" design, the ACS550 drive dramatically reduces harmonics and gives the new ACS550 drives the industry's lowest input current THD (Total Harmonic Distortion). The drive reduces harmonics at full and partial loads by up to 25%, when compared to conventional choke designs. This satisfies virtually all harmonic mitigation requirements for industrial applications, according to the company.

Reducing harmonics enables industrial users to avoid both potential harm to their own equipment and the penalties set by power companies for introducing harmonics into the supply grid.

A built-in EMC filter guarantees trouble-free operation of surrounding equipment and instrumentation and guarantees compliance to CE's 1st Environment – restricted distribution.

Programmable Software

Application macros permit users to easily select a pre-configured set of parameter values and I/O configurations. If none of the macros are suitable, the user can tailor parameter values and I/O configurations to suit specific application needs. "The capability of getting these inputs into the drive quickly and easily maximizes convenience and minimizes start-up time," notes Kenyon.

High Power Density

High horsepower in an extremely compact design delivers high power density to end users, OEMs, systems



integrators, and/or panel builders who need a full-featured drive in a small, flexible package. Available immediately in NEMA 1 or NEMA 12 enclosures, with supply voltages from 208V to 480V, the ACS550 drives “are distinguished visually with an unmistakable design that communicates quick, fast strike and delivery,” said Kenyon.

The high-density power-to-volume ratio in this sensor-less vector design, combined with two internal slots for options such as encoder feedback, 115/230V digital interface card, I/O expansion, or fieldbus adapters, gives the ACS550 line “a leg up on the competition, when it comes to customer ease of installation,” Kenyon said. “Drive usage has *never* been so easy.”

Everything Inside

Everything that is needed in an AC drive is inside the ACS550 drives – or can be mounted there. There is no need to mount and wire auxiliary devices externally -- saving substantial time, space and money.

An additional enclosure extension is added for drives in the 150 to 550 Hp range, to accommodate a standard fused disconnect switch.

“We continue to work very hard to see these drives through the eyes and needs of our customers and users,” said Maloni. “The goal is to *make drives simple* -- provide a common technology to drive motors across a wide range of applications, small to large.”

ABB Inc., Automation Technologies, Drives and Motors, is the world's largest manufacturer of electric motors and drives. In the USA, an integrated channel of sales representatives, distributors, and system integrators, allows ABB, New Berlin, Wisconsin, to supply a complete line of energy-efficient electric drives, motors and engineered drive systems to a wide range of industrial and commercial customers. Products manufactured include AC and DC variable speed drives for electric motors from 1/2 through 135,000 HP, large AC machines and drives, medium-voltage AC drives, power electronics and rectifier systems, AC & DC motors, and application-specific drive system solutions to meet diverse customer needs (<http://www.abb-drives.com>).

ABB (www.abb.com) is a leader in power and automation technologies that enable utility and industry customers to improve performance while lowering environmental impact. The ABB Group of companies operates in around 100 countries and employs about 133,000 people. The company's U.S. operations employ about 10,000 in manufacturing and other facilities in 40 states.



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