

NEW DRIVES PACK A LOT OF PUNCH FOR A LITTLE PACKAGE

By Ken Graber, ABB, LV Products

“Enough muscle in a 7”x7”x10” box to power a 25 horsepower motor.”

Five years ago that would have been a preposterous statement. That is how far motor drives have come.

The ACS350 general machinery drives are designed and built to make it extremely easy for volume machine builders to increase average throughput time via an average two-second programming time per unit. ABB has just extended ratings of the drives to 20 and 25 HP, at 480 volts. “This is more horsepower in a very compact R4-frame drive that offers extremely fast replication of parameter sets across units – and they are offered at very competitive pricing,” said Michael Mikolajczak, product line manager for the ACS350 drive line. The R0-R4 frame drives also accommodate easy, repeatable installation, with unified height and depth across the horsepower range, he said. “All that varies as the horsepower increases is that the drives get slightly wider,” he noted.

The units are RoHS-compliant, with coated boards, and are ideal for a wide range of machinery applications in the food processing, material handling, textiles, printing, rubber and plastics, semiconductor, automotive and woodworking industries.

The new 25 HP units are 7.13 inches high, 6.65 inches deep, and 10.24 inches wide. Such uniform measurements make it easy to arrange cable tunnels in straight runs, to power the units, and control motors.

ABB’s FlashDrop technology makes parameter selection and setting as easy as operating a TV remote control. Important parameters can be downloaded and uploaded in less than three (3) seconds into a “non-powered” drive, using a hand-held FlashDrop MFDT-01 unit. To program the drive in a panel, OSHA Personal Protective Equipment is not necessary, since the drive or panel are not powered.

The unit can store up to 20 different machine parameter sets and, for extra convenience, each set can be named to clearly show the associated end-user or



ABB’s ACS350 drive line is now extended to 25 HP.

application. An especially useful feature is that parameter setting is done, “flashed in,” without a power connection to the drive; in fact, it is not even necessary to fully unpack the drive.

These PLC-like programs are sufficient for many basic applications in which the drive controls the motor, using signals from sensors and limit switches. This helps to reduce external PLC capacity requirements, facilitating less complex motor control systems, and lower costs.

“This also makes it easy for distributors to pre-configure drives before delivery, and helps high-volume OEMs to streamline the commissioning process,”

Mikolajczak said.

FlashDrop allows the menu structure to be customized. Parameters can be set and hidden, changing the appearance of the menu for faster set up and configuration. It also enables users to copy parameters readily between drives: they simply are uploaded into the FlashDrop unit and then downloaded into a second drive. The FlashDrop unit can be connected to a PC for additional storage capacity, and parameter sets also can be created or edited using the DrivePM (Parameter Manager) PC interface. FlashDrop is quick and convenient to use, and no specialized drive knowledge is required.

Sequence programming provides a straightforward way to create pre-set sequences of operations, without any drive options. These PLC-like programs are sufficient for many basic applications in which the drive controls the motor, using signals from sensors and limit switches. This helps to reduce external PLC capacity requirements, facilitating less complex motor control systems, and lower costs. Additional programming features include Speed Compensation Stop and Programmable Delayed Stop –

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New Drives

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ideal for material handling applications that require precise stopping independent of process-speed variations.

FLEXIBLE USER INTERFACE

The user interface of the new general machinery drives are also designed to give users greater flexibility – and the possibility to cut costs. The control panel only is needed for commissioning or troubleshooting, and no panel is included with the drive as standard. Users who require a panel can select between two types: basic and advanced. Both are detachable, so an end-user could acquire a single panel to swap between, and use across, a number of drives.

CABINET-COMPATIBLE HARDWARE

With an EMC filter and built-in brake chopper, the new drives are very well equipped. At the same time, the drives are extremely compact: the 480 V drives over 1 HP are the smallest avail-

able in their category. And only the width of the drives increases with increasing power, which facilitates easy installation into cabinets, or stand-alone configurations. Cable tunnels can be arranged in a straight run, and all screw holes can be drilled in a line.

DIN-rail mounting of the all ACS350 units also is provided for, and the drives can be mounted side-by-side, without the need for air gaps. When cabinet depth is very limited, the drives even can be mounted with one side to the back of the cabinet. At only 9.7 lbs, handling and installation of the 25 HP units is easy. The drives' own housing provides IP20 protection.

HIGH-SPEED COMMUNICATIONS AND COMPREHENSIVE CONTROL CONNECTIONS

The drives have comprehensive con-

trol connections: there are two bipolar analog and five digital inputs (of which one can be configured for pulse train), and one analog, one relay and one digital output. The drives feature a totally new generation of Fieldbus, with small, enclosed, plug-in adapters offering high-speed communications. The drives feature embedded Modbus RTU including several small, enclosed, plug-in Fieldbus adapters offering high speed communications such as DeviceNet, PROFIBUS-DP and CANopen. Several additional options are available including Potentiometer, Pulse Encoder Interface, Cabinet Panel Mounting NEMA12 or NEMA 4X and Programming Software.

ABB's general machinery drives are available in single-phase (240 V) rated up to 3 HP; three-phase (240 V) up to 5 HP; three-phase (480 V) up to 25 HP. And, in Quarter 3, 2008, three-phase (240V) will extend to 15 HP and three-phase (480 V) up to 30 HP.

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