

Need more flexibility and performance  
from your motor control solution?

The Altivar and Altistart line  
of drives and soft starts deliver.

Make the most of your energy<sup>SM</sup>

**Schneider**  
Electric

# Performance you can count on from a single provider of AC drives and soft starts

## > Pump and fan applications

Ideal for office buildings, data centers, water wastewater plants and other industrial and commercial facilities.







### Altivar 212 Mid-featured AC Drives

Offering unmatched value in installed cost and functionality for centrifugal pump and fan applications, the Altivar™ 212 AC drive offers just the right solution for OEMs and control panel builders. The Altivar 212 AC drive has Reduced Harmonic Technology to mitigate harmonics. It also integrates Modbus™, BACnet®, Johnson Controls N2, and Apogee® P1 networks. LonWorks® is available as a separate option card. The Altivar 212 supports the Altivar LCD remote mount keypad.

### Altivar 61 Full-featured AC Drives

The Altivar 61 AC drive defines ease of use for variable speed drives used in centrifugal pump and fan applications offering the highest level of features, functions and flexibility. It is designed for OEMs, end-users and system integrators requiring a high level of functionality and customization. It provides connection options to LonWorks, BACnet, Johnson Controls N2 and Apogee P1, as well as other industrial networks. The Altivar 61 AC drive can be internally fitted with an option card to manage multiple pump installations and can also be fitted with the “Controller Inside” option board, which allows custom programming via the IEC 1131 programming methods.

### S-Flex Enclosed Drives

The Square D brand S-Flex™ enclosed drive features the Altivar 212 drive on the inside and provides 100 kAIC rating for commercial pump and fan applications. The S-Flex enclosed drive is an economical package that includes a circuit breaker disconnect and optional bypass contactors, drive input disconnect switch or line contactor. The S-Flex enclosed drive is rated as a NEMA Type 1 enclosure and is ideal for use in residential high rise and mixed-use buildings, commercial office buildings, schools and campus environments.

### E-Flex Enclosed Drives

The Square D™ by Schneider Electric brand E-Flex™ enclosed AC drive is a robust, industrial-grade enclosed solution for healthcare and industrial plant floor, pump and fan applications. The E-Flex enclosed drive features the Altivar 61 AC drive on the inside and provides 100 kAIC rating with a circuit breaker and with an option for bypass contactors. Built to conform to international building code (IBC) and ASCE seismic standards for ground and roof-level installations, the E-Flex enclosed drive meets both indoor and outdoor application requirements with Type 1, Type 12/12K and Type 3R enclosures.

### M-Flex and MCC Enclosed Drives

The Square D brand M-Flex™ and MCC enclosed drive controllers provide a robust, adjustable-speed solution for government, hospitals, pharmaceutical, industrial facilities and water/wastewater pumping applications. These enclosed packages feature the Altivar 61 or Altivar 71 AC drives and are available in Type 1 general purpose or Type 12/12K drip/dust-proof environmental enclosures in integrated or barriered designs. A wide selection of control options are available as well as the flexibility to provide custom control schemes.

### PowerGard 18-Pulse Enclosed Drives

Combining adjustable speed drives and power quality solutions for water and wastewater and industrial pumping applications, the Square D brand PowerGard™ Series C 18-Pulse enclosed drive controller features the Altivar 61 or 71 AC drives. They are ideal for installations specifying compliance with IEEE 519 guidelines for harmonic mitigation. PowerGard 18-Pulse enclosed drive are UL 508 listed and are available in Type 1 general purpose or with fan filter options.



## > Machine builder and industrial process applications

Defining ease of use, reliability and cost savings for OEMs, panel builders and system integrators and flexible, robust operation for end-user installations.



▲ Altivar 12

▲ Altivar 312

▲ Altivar 32

▲ Altivar 71

### Altivar 12 AC Nano-drives

The Altivar 12 variable speed AC drive combines best in class motor performance and an intuitive user interface in a design suitable for consumer and industrial machines. It features an integrated communications port, user-friendly navigation wheel on the faceplate, and an optional multi-loader that streamlines set-up by making programming quick and easy. All of this comes with the versatility to handle applications from simple to complex, across a wide variety of industries, even in harsh environments.

### Altivar 312 Mini-drives

The Altivar 312 mid-featured AC drive is designed to make industrial and commercial machines more energy efficient while simplifying its integration into a single control system architecture. With the highest overtorque and the only drive with a remote graphic keypad in its class, the Altivar 312 mini-drive is ideally suited to the needs of material handling, packaging, food and beverage, and other OEM machines. It also comes standard with integrated communications port for Modbus and CANopen® networks, as well as optional cards for CANopen Daisy Chain, DeviceNet and Profibus DP.

### Altivar 71 Full-featured AC Drives

The Altivar 71 full-featured AC drive is designed for the control of three-phase asynchronous and synchronous motors in constant-torque applications. Offering increased functionality and industrial communication protocols, it simplifies the user interface with an easy-to-read display and navigation wheel that allows users to scroll through drop-down menus. The Altivar 71 AC drive simplifies complex applications with customizable capability and can be internally fitted with the “Controller Inside” option board, which allows custom programming via the IEC 1131 programming methods. Reliable, expandable and easy to control, it saves machine builders, panel builders and system integrators time and money.

### Altivar 32 Mid-featured AC Drives

The Altivar 32 variable speed drive provides a high degree of performance and connectivity while reducing panel space, improving uptime and maximizing machine performance. With its extra-slim, book-style design and the ability to directly attach a self-protected disconnect, the Altivar 32 allows users to mount it side-by-side and integrate it into tight spaces, minimizing wiring and machine costs.

The Altivar 32 has the capability to perform logic, counting and timing functions to replace external devices. It also incorporates safety certified functions such as Safe Torque Off and Safe Limited Speed. The logic and safety functions are configured using SoMove™ PC software.

The Altivar 32 is embedded with Bluetooth® technology to enable monitoring, viewing and performing machine diagnostics while keeping cabinet doors safely closed. It also includes a standard RJ45 connector for Modbus or CANopen networks, and onboard HMI and navigation wheel for easy adjustments. Optional communication modules are available for industrial network connections.

# > Pump, fan, and conveying applications

Discover economical soft start solutions for office buildings and industrial facilities.



▲ Altistart 01

▲ Altistart 22

▲ Altistart 48

▲ Enclosed Altistart 22

▲ Enclosed Altistart 48

▲ MCC Enclosed Softstarter

## Altistart 01, Altistart 22, Altistart 48, Enclosed 22 and 48 Soft Start

### Altistart 01 Soft Start

This mini soft start ensures a smooth and controlled motor and equipment start while providing torque surge suppression. This highly functional solution can decrease maintenance and increase up-time by preventing mechanical shocks.

### Altistart 22 Soft Start Motor Controller

Designed for commercial and light-duty industrial applications, it uses both voltage and torque control to provide a soft start and soft stop for three-phase asynchronous motors between 17 A and 590 A. The conformal-coated, printed circuit boards provide enhanced resistance to harsh environments, increasing the service life of installations and lowering maintenance costs.

### Altistart 48 Soft Start

A full-featured heavy duty soft start that offers unique torque control on starting and stopping. This patented torque control system reduces mechanical stress on equipment and reduces check value maintenance found in pumping systems. It is also EGSA Class 3 generator compliant for use on emergency/standby generators.

### Enclosed Altistart 22 Soft Start

A pre-engineered soft start/soft stop motor controller with an integrated circuit breaker disconnect and an Altistart 22 soft start in a stand-alone enclosure provides a cost-effective solution featuring a complete low voltage offering of horsepower ratings up to 400 hp at 480 V. The conformal-coated, printed circuit boards provide enhanced resistance to harsh environments, increasing the service life of installations and lowering maintenance costs.

### Enclosed 48 Soft Start

This enclosed version of the Altistart 48 soft start offers coordinated 100 kA short circuit current ratings with industry-leading seismic qualification for floor-mounted configurations and optional service entrance.

### MCC Enclosed Soft Start

Motor Control Center (MCC) Soft Start product offer provides a pre-engineered, integrated package consisting of a combination disconnect and soft start controller for reduced voltage starting. Seismic ratings in accordance with industry standards are available.

Options include circuit breaker or fused disconnect, input isolation contactor, reversing, full voltage bypass, IEC or NEMA rated contactors and severe duty ratings.




# Panel mounted/open AC drive solutions

Type of motor control		Simple machines	Complex machines
Key application/market segment		<ul style="list-style-type: none"> <li>Conveyors</li> <li>Mixers</li> <li>Gate control</li> <li>Machine movement</li> </ul>	<ul style="list-style-type: none"> <li>Small pumps and fans</li> <li>Positive displacement pumps</li> <li>Material handling</li> </ul>
Drives		<p><b>Altivar 12</b></p> 	<p><b>Altivar 312</b></p> 
			<p><b>Altivar 32</b></p>
Distribution voltage ranges for 50/60 Hz line supply		Single-phase 100 V to 120 V Single-phase 200 V to 240 V Three-phase 200 V to 240 V	Single-phase 200 V to 240 V Three-phase 200 V to 240 V Three-phase 380 V to 500 V Three-phase 525 V to 600 V
Horsepower ratings for three-phase motors		<ul style="list-style-type: none"> <li>1/4 hp to 1 hp, 200 V/240 V single-phase input</li> <li>1/4 hp to 3 hp, 200 V/240 V single-phase input</li> <li>1/4 hp to 5 hp, 200 V/240 V</li> </ul>	<ul style="list-style-type: none"> <li>1/4 hp to 3 hp, 200 V/240 V single-phase input</li> <li>1/4 hp to 20 hp, 200 V/240 V</li> <li>1/2 hp to 20 hp, 380 V/500 V</li> <li>1 hp to 20 hp, 525 V/600 V</li> </ul>
Drive	Output frequency –	0.5 Hz to 400 Hz	0.5 Hz to 500 Hz
	Type of control: Asynchronous motor	Sensorless flux vector control quadratic ratio for pump and fan	Sensorless flux vector control, volts per hertz, Energy saving ratio
	Synchronous motor	–	–
	Transient overtorque	150% to 170% of nominal motor torque	170% to 200% of the nominal motor torque
Functions			
Number of functions		40	50
Number of I/O	Analog inputs	1	3
	Analog outputs	1	1
	Logic inputs	4	6
	Logic/Relay outputs	1 L.O. 1N.O./1 N.C. relay contacts	2: 1 N.O./1 N.C. and 1 N.O. relay contacts
Communication	Integrated	Modbus	Modbus and CANopen
	Available as an option	–	<p><b>Option cards:</b></p> <ul style="list-style-type: none"> <li>DeviceNet</li> <li>Profibus DP</li> <li>CANopen Daisy Chain</li> </ul> <p><b>Gateway options for:</b></p> <ul style="list-style-type: none"> <li>Ethernet TCP/IP</li> <li>Fipio</li> </ul>
Other option cards		–	–
Enclosure rating		IP20	IP20, Type 1 with optional kit, Type 12 available with ATV31C
Standards and certifications		IEC/EN 61800-5-1, IEC/EN 61800-3 (Environments 1 and 2, categories C1 and C3) CE, UL, CSA, C-Tick, NOM, Gost	EN 50178, EN 61800-3, EN 55011 – EN 55002: class A, class B with option, C-TICK, UL, N998, CE, CSA

▼ Heating Ventilation Air Conditioning

Complex, high-power machines	Centrifugal pumps and fans	
<ul style="list-style-type: none"> <li>• Material handling</li> <li>• High performance movement and regulation</li> <li>• Lifts, cranes, hoists</li> <li>• Extruders, shredders</li> <li>• Presses</li> </ul>	<ul style="list-style-type: none"> <li>• Pumps</li> <li>• Fans</li> </ul>	
<p><b>Altivar 71</b></p> 	<p><b>Altivar 212</b></p>  <p>Building (HVAC)▼</p>	<p><b>Altivar 61</b></p> 
<p>Single-phase 230 V to 240 V  Three-phase 200 V to 240 V  Three-phase 380 V to 480 V  Three-phase 500 V to 690 V</p>	<p>Three-phase 200 V to 240 V  Three-phase 380 V to 480 V</p>	<p>Single-phase 230 V to 240 V  Three-phase 200 V to 240 V  Three-phase 380 V to 480 V  Three-phase 500 V to 690 V</p>
<ul style="list-style-type: none"> <li>• 1 hp to 30 hp, 230 V/240 V single-phase input</li> <li>• 1/2 hp to 100 hp, 200 V/240 V</li> <li>• 1 hp to 1800 hp, 380 V/480 V</li> <li>• 2 hp to 2100 hp, 500 V/690 V</li> </ul>	<ul style="list-style-type: none"> <li>• 1 hp to 40 hp, 200 V/240 V</li> <li>• 1 hp to 100 hp, 380 V/480 V</li> </ul>	<ul style="list-style-type: none"> <li>• 1 hp to 30 hp, 230 V/240 V single-phase input</li> <li>• 1 hp to 125 hp, 200 V/240 V</li> <li>• 1 hp to 2000 hp, 380 V/480 V</li> <li>• 2 hp to 2500 hp, 500 V/690 V</li> </ul>
<p>0.5 Hz to 599 Hz up to 50 hp  0.5 Hz to 500 Hz from 50 hp to 700 hp</p>	<p>0 Hz to 200 Hz</p>	<p>0.5 Hz to 1000 Hz up to 50 hp  0.5 Hz to 500 Hz from 50 hp to 900 hp</p>
<p>Sensorless flux vector control (with or without sensor), volts per hertz ratio (2 or 5 points), ENA system, synchronous motor vector control with or without speed feedback</p>	<p>Volts per hertz or sensorless flux vector control</p>	<p>Volts per hertz ratio (2 or 5 points) or sensorless flux vector control, energy-saving ratio</p>
<p>Vector control with or without speed feedback</p>	<p>—</p>	<p>—</p>
<p>220% of the nominal motor torque for 2 seconds 170% for 60 seconds</p>	<p>Transient overload: 110% of the nominal drive current for 60 seconds</p>	<p>Transient overload: 110% of the nominal drive current for 60 seconds</p>
<p>&gt; 150</p>	<p>50</p>	<p>&gt; 100</p>
<p>2-4</p>	<p>2</p>	<p>2-4</p>
<p>1</p>	<p>1</p>	<p>1</p>
<p>6-20</p>	<p>3</p>	<p>6-20</p>
<p>2-4</p>	<p>2: 1 N.O./1 N.C. and 1 N.O. relay contacts</p>	<p>2-4</p>
<p>Modbus and CANopen</p>	<p>Modbus, Apogee P1, BACnet, Metasys® N2</p>	<p>Modbus and CANopen</p>
<ul style="list-style-type: none"> <li>• DeviceNet</li> <li>• Modbus TCP/IP</li> <li>• Profibus DP [V1]</li> <li>• Ethernet IP</li> <li>• Modbus/Uni-Telway™</li> <li>• Modbus Plus</li> <li>• Interbus S</li> </ul>	<ul style="list-style-type: none"> <li>• LonWorks</li> </ul>	<ul style="list-style-type: none"> <li>• Apogee FLN ( P1)</li> <li>• BACnet</li> <li>• Modbus/Uni-Telway</li> <li>• LonWorks</li> <li>• Modbus TCP/IP</li> <li>• Ethernet IP</li> <li>• Modbus Plus</li> <li>• Interbus S</li> <li>• DeviceNet</li> <li>• Profibus DP [V1]</li> <li>• Metasys N2</li> </ul>
<p>Encoder interface cards, I/O extension cards, "Controller Inside" programmable card</p>	<p>—</p>	<p>I/O extension cards, "Controller Inside" programmable card, multi-pump cards</p>
<p>IP20, Type 1 with optional kit, Type 12 @480 Vac</p>	<p>IP20, Type 1 with optional kit, Type 12 @480 Vac</p>	<p>IP20, Type 1 with optional kit, Type 12 @480 Vac</p>
<p>IEC/EN 61800-5-1, IEC/EN 61800-3 (environments 1 and 2, C1 to C3), EN 55011, EN 55022, IEC/EN 61000-4-2/4-3/4-4/4-5/4-6/4-11, CE, UL, CSA, DNV, C-TICK, NOM 117, GOST, ABS</p>	<p>EN 50178, IEC/EN 61800-3, EN 55011, 55022: class A, class B with option, CE, UL, C-TICK, N998, UL 1995 Plenum-rated</p>	<p>IEC/EN 61800-5-1, IEC/EN 61800-3 (environments 1 and 2, C1 to C3), EN 55011, EN 55022, UL 1995 Plenum-rated, IEC/EN 61000-4-2/4-3/4-4/4-5/4-6/4-11, CE, UL, CSA, DNV, C-TICK, NOM 117, GOST, ABS</p>

# Soft Start solutions

Type of motor control	Simple machines	Light-duty machines	Heavy-duty machines	
Key application/market segment	<ul style="list-style-type: none"> <li>Conveyors</li> <li>Mixers</li> <li>Gate control</li> <li>Machine movement</li> <li>Small pumps and fans</li> <li>Positive displacement pumps</li> </ul>	<ul style="list-style-type: none"> <li>Pumps</li> <li>Fans</li> <li>Turbines</li> <li>Compressors</li> <li>Conveyors</li> <li>Conveyor belts</li> <li>Lifting screws</li> <li>Escalators</li> </ul>	<ul style="list-style-type: none"> <li>Pumps</li> <li>Fans</li> <li>Punch presses</li> <li>Band saws</li> <li>Crushers</li> <li>Centrifuges</li> <li>Conveyors (high inertia loads)</li> </ul>	
Soft starts	<b>Altistart 01</b> 	<b>Altistart 22</b> 	<b>Altistart 48</b>  Soft start/soft stop units	
Distribution voltage ranges for 50/60 Hz line supply	Single-phase 110 V to 240 V Three-phase 110 V to 480 V	Three-phase 208-600 Vac	Three-phase 230 V to 415 V Three-phase 208 V to 690 V	
Horsepower ratings for three-phase motors	<ul style="list-style-type: none"> <li>1/4 hp to 2 hp, 110 V/240 V single-phase motor</li> <li>1/2 hp to 10 hp, 208 V/230 V</li> <li>1/2 hp to 20 hp, 400 V/480 V</li> </ul>	<ul style="list-style-type: none"> <li>3 hp to 200 hp, 208 V/240 V</li> <li>10 hp to 400 hp, 460 V/480 V</li> <li>15 hp to 500 hp, 575 V/600 V</li> </ul>	<ul style="list-style-type: none"> <li>3 hp to 450 hp, 208 V/240 V</li> <li>10 hp to 1000 hp, 460 V/480 V</li> <li>15 hp to 1200 hp, 575 V/600 V</li> </ul>	
Drive	Output frequency –	Equals input frequency	–	Equals input frequency
	Type of control: Asynchronous motor	Reduced voltage start	Controlled starting and stopping, via voltage and torque	Reduced voltage start and Reduced voltage start and torque control stop
	Synchronous motor	–	–	–
	Typical starts per hour rating	4	6	10
<b>Functions</b>				
Number of functions	1	29	36	
Number of I/O	Analog inputs	–	1 PTC probe	1 PTC probe
	Logic inputs	3	3	4
	Relay outputs	1	2 (N.O./N.C.)	1
Communication	Integrated	–	Embedded Modbus	Modbus
	Available as an option	<ul style="list-style-type: none"> <li>Combined with TeSys™ U-Line self-protected starter</li> </ul>	–	<b>Gateway options for:</b> <ul style="list-style-type: none"> <li>DeviceNet</li> <li>Ethernet TCP/IP</li> <li>Fipio</li> <li>Profibus DP</li> </ul>
Other option cards	–	–	–	–
Enclosure rating	IP20	IP 00, IP20	IP20	IP20
Standards and certifications	IEC/EN 60947-4-2, C-TICK, CSA, UL, CE, CCC	UL, CSA, CE, GOST, C-TICK, CCC AND RoHS directive	IEC/EN 60947-4-2, EMC class A and B, DNV, C-TICK, GOST, CCIB, NOM, UL, CE, CCC, CSA	
▼ Heating Ventilation Air Conditioning				




# Enclosed and MCC packaged products

Type of motor control	Soft starts commercial and industrial		Softstarts in MCCs
<b>Key application/ market segment</b>	<ul style="list-style-type: none"> <li>• Pumps</li> <li>• Fans</li> <li>• Conveyors</li> <li>• Centrifuges</li> </ul>	<ul style="list-style-type: none"> <li>• Agitators</li> <li>• Mixers</li> <li>• Grinders</li> <li>• Crushers</li> <li>• Presses</li> </ul>	<ul style="list-style-type: none"> <li>• Pumps</li> <li>• Fans</li> <li>• Agitators</li> <li>• Mixers</li> <li>• Grinders</li> <li>• Crushers</li> <li>• Presses</li> <li>• Space-saving construction</li> </ul>
<b>Packaged products</b>  Integrated controls protected within enclosures, optimized with disconnect means, circuit breakers, push buttons, selector switches, control logic, communication and miscellaneous options designed to meet application requirements.	<b>Enclosed 22</b>  	<b>Enclosed 48</b>  	<b>MCC 22 or 48</b>  
<b>Product platform</b>		Altistart 48	Altistart 22 or Altistart 48
<b>Distribution voltage ranges for 50/60 Hz line supply</b>	208 VAC, 230 VAC, 460 VAC, 575 VAC	208 VAC, 240 VAC, 480 VAC, 600 VAC	208 VAC, 240 VAC, 480 VAC, 600 VAC
<b>Horsepower ratings</b>	<p><b>Type 1 and Type 12:</b></p> <ul style="list-style-type: none"> <li>• 3–150 hp @ 208 V</li> <li>• 5–200 hp @ 230 V</li> <li>• 10–400 hp @ 460 V</li> <li>• 15–500 hp @ 575 V</li> </ul> <p><b>Type 3R or 50 °C Rated:</b></p> <ul style="list-style-type: none"> <li>• 3–125 hp @ 208 V</li> <li>• 5–150 hp @ 230 V</li> <li>• 10–400 hp @ 460 V</li> <li>• 15–500 hp @ 575 V</li> </ul>	<ul style="list-style-type: none"> <li>• 3 hp to 200 hp, 208 V</li> <li>• 5 hp to 250 hp, 230 V</li> <li>• 10 hp to 500 hp, 480 V</li> <li>• 15 hp to 600 hp, 575 V</li> </ul>	<ul style="list-style-type: none"> <li>• 3 hp to 200 hp, 208 V</li> <li>• 5 hp to 250 hp, 230 V</li> <li>• 10 hp to 500 hp, 460 V</li> <li>• 15 hp to 600 hp, 575 V</li> </ul>
<b>Configurable options</b>	<ul style="list-style-type: none"> <li>• Basic Shunt Trip</li> <li>• Full Featured Shunt Trip</li> <li>• Non-reversing Isolation</li> <li>• Reversing Isolation</li> <li>• Integral Full-Voltage Bypass</li> </ul>	<p>Customizable product</p> <ul style="list-style-type: none"> <li>• Non-reversing</li> <li>• Reversing</li> <li>• Shunt trip</li> </ul> <p>Extensive options</p>	<p>Customizable product</p> <ul style="list-style-type: none"> <li>• Input isolating contactor</li> <li>• Reversing</li> <li>• Shunt trip</li> <li>• Integrated full-voltage emergency starter</li> </ul> <p>Extensive options</p>
<b>Enclosure ratings</b>	Type 1 General Purpose, Type 12 Industrial use, Dust-Tight/Drip-Tight, Type 3R Outdoor Use	Type 1 general purpose, Type 12 dust/drip proof, Type 3R outdoor service entrance	Type 1 general purpose, Type 12 dust/drip proof, Type 3R outdoor service entrance, Type 1 gasketed
<b>Communication</b>	<ul style="list-style-type: none"> <li>• Embedded Modbus</li> </ul>	<ul style="list-style-type: none"> <li>• Modbus (native)</li> <li>• Modbus Plus</li> <li>• Ethernet TCP/IP (gateway)</li> <li>• DeviceNet (gateway)</li> </ul>	<ul style="list-style-type: none"> <li>• Modbus (native)</li> <li>• Ethernet TCP/IP (gateway)</li> <li>• DeviceNet (gateway)</li> <li>• PROFIBUS (gateway)</li> <li>• CANOpen (gateway)</li> </ul>
<b>Standards and certifications</b>	Service Entrance Rating, UL Listed per UL 508 under category NKJH., Conforms to applicable NEMA ICS, NFPA, and IEC standards, Manufactured under ISO 9001 standards, Factory modification E10 provides Canadian cUL certification per C22.2 No.14, Seismic qualification	UL 508, cUL/CSA, Seismic qualification ICC ES AC156 acceptance test protocol, ABS	UL 845, CSA, NOM, Seismic qualification ICC ES AC156 acceptance test protocol, ABS, OSHPD seismic certification

▼ Heating Ventilation Air Conditioning, \* Available with Altivar 61 based product

## Enclosed and MCC packaged products (cont.)

Type of motor control	Adjustable speed drives commercial HVAC and retrofits	Adjustable speed drives commercial and industrial HVAC
Key application/ market segment	<ul style="list-style-type: none"> <li>• Pumps</li> <li>• Fans</li> </ul>	<ul style="list-style-type: none"> <li>• Pumps</li> <li>• Fans</li> </ul>
<b>Packaged products</b>  Integrated controls protected within enclosures, optimized with disconnect means, circuit breakers, push buttons, selector switches, control logic, communication and miscellaneous options designed to meet application requirements.	<b>S-Flex</b>  	<b>E-Flex</b>  
Product platform	Altivar 212	Altivar 61 (variable torque)
Distribution voltage ranges for 50/60 Hz line supply	208 VAC, 240 VAC, 480 VAC	208 VAC, 240 VAC, 480 VAC
Horsepower ratings	<b>Variable torque:</b> <ul style="list-style-type: none"> <li>• 1 hp to 40 hp, 200 V/230 V</li> <li>• 1 hp to 100 hp, 460 V</li> </ul>	<b>Variable torque:</b> <ul style="list-style-type: none"> <li>• 1 hp to 100 hp, 460 V</li> <li>• 1 hp to 50 hp, 208 V/230 V</li> </ul>
Configurable options	Configurable product <ul style="list-style-type: none"> <li>• Drive with isolation/bypass</li> <li>• Non-bypass</li> <li>• Drive input disconnect switch</li> <li>• Line contactor</li> </ul> Communication options	Configurable product <ul style="list-style-type: none"> <li>• Drive with disconnect means</li> <li>• Drive with isolation/bypass</li> <li>• Optional 3% line reactor</li> </ul> Limited options
Enclosure ratings	Type 1 general purpose	Type 1 general purpose Type 12/12K dust/drip proof Type 3R outdoor
Communication	<ul style="list-style-type: none"> <li>• Modbus RJ45 (included as standard)</li> <li>• BACnet (embedded)</li> <li>• LonWorks (option card)</li> <li>• Metasys N2 (embedded)</li> <li>• Apogee FLN (P1) (embedded)</li> </ul>	<ul style="list-style-type: none"> <li>• Apogee FLN (P1)*</li> <li>• BACnet*</li> <li>• Ethernet TCP/IP</li> <li>• LonWorks</li> <li>• Metasys N2*</li> <li>• Modbus Plus*</li> <li>• Profibus DP</li> </ul>
Standards and certifications	UL 508C, Seismic qualification ICC ES AC156 acceptance test protocol	UL 508C, cUL, Seismic qualification ICC ES AC156 acceptance test protocol, ABS

▼ Heating Ventilation Air Conditioning, \* Available with Altivar 61 based product

Adjustable speed drives commercial, industrial, water wastewater, strategic accounts	Adjustable speed drives (18-Pulse) industrial, water wastewater, strategic accounts	Adjustable speed drives industrial, water wastewater, strategic accounts
<ul style="list-style-type: none"> <li>• Aggregates</li> <li>• Government</li> <li>• Healthcare</li> <li>• Schools</li> <li>• Industrial facilities</li> <li>• Manufacturing process</li> <li>• Municipal pumping</li> <li>• Pharmaceutical</li> </ul>	<ul style="list-style-type: none"> <li>• Clean power technology</li> <li>• High horsepower</li> <li>• Process control applications</li> <li>• Fans</li> </ul>	<ul style="list-style-type: none"> <li>• Space -saving construction</li> <li>• Pumps</li> <li>• Fans</li> <li>• Intelligent networking</li> </ul>
<p><b>M-Flex</b></p>  <p>Altivar 61 (variable torque) Altivar 71 (constant torque)</p>	<p><b>PowerGard Series C</b></p>  <p>Altivar 61 (variable torque) Altivar 71 (constant torque)</p>	<p><b>Model 6 Motor Control Center</b></p>  <p>Altivar 61 (variable torque) Altivar 71 (constant torque)</p>
208 VAC, 240 VAC, 480 VAC	480 VAC	208 VAC, 240 VAC, 480 VAC, 600 VAC
<p><b>Variable torque:</b></p> <ul style="list-style-type: none"> <li>• 1 hp to 500 hp, 460 V</li> <li>• 1 hp to 50 hp, 208 V/230 V</li> </ul> <p><b>Constant torque:</b></p> <ul style="list-style-type: none"> <li>• 1 hp to 450 hp, 460 V</li> <li>• 1 hp to 40 hp, 208 V/230 V</li> </ul>	<p><b>Variable torque:</b></p> <ul style="list-style-type: none"> <li>• 50 hp to 500 hp, 460 V</li> </ul> <p><b>Constant torque:</b></p> <ul style="list-style-type: none"> <li>• 40 hp to 450 hp, 460 V</li> </ul>	<p><b>Variable torque:</b></p> <ul style="list-style-type: none"> <li>• 1 hp to 500 hp, 460 V</li> <li>• 1 hp to 50 hp, 208 V/230 V</li> <li>• 3 hp to 350 hp, 575 V</li> </ul> <p><b>Constant torque:</b></p> <ul style="list-style-type: none"> <li>• 1 hp to 450 hp, 460 V</li> <li>• 1 hp to 40 hp, 208 V/230 V</li> <li>• 2 hp to 350 hp, 575 V</li> </ul>
<p>Customizable product</p> <ul style="list-style-type: none"> <li>• Drive with disconnect means</li> <li>• Drive with integrated bypass</li> <li>• Drive with barriered bypass</li> <li>• Drive with reduced voltage bypass</li> <li>• Drive with soft start bypass</li> </ul> <p>Extensive options</p>	<p>Customizable product</p> <ul style="list-style-type: none"> <li>• Drive with disconnect means</li> <li>• Drive with integrated bypass</li> <li>• Drive with barriered bypass</li> <li>• Drive with reduced voltage bypass</li> <li>• Drive with soft start bypass</li> <li>• Soft start with options</li> </ul> <p>Extensive options</p>	<p>Customizable product</p> <ul style="list-style-type: none"> <li>• Drive with disconnect means</li> <li>• Drive with integrated bypass</li> <li>• Drive with barriered bypass</li> <li>• Drive with reduced voltage bypass</li> <li>• Drive with soft start bypass</li> <li>• PowerGard (18-Pulse) MCC unit</li> </ul> <p>Extensive options</p>
Type 1 general purpose Type 1G general purpose with gasketing Type 12/12K dust/drip proof	Type 1 general purpose Type 1B general purpose with fan filters	Type 1 general purpose, Type 1 gasketed Type 12/12K dust/drip proof Type 3R outdoor
<ul style="list-style-type: none"> <li>• Apogee FLN (P1)*</li> <li>• BACnet*</li> <li>• DeviceNet</li> <li>• EtherNet TCP/IP</li> <li>• Modbus Plus</li> <li>• Profibus DP</li> <li>• LonWorks*</li> <li>• Metasys N2*</li> <li>• Modbus/Unitelway</li> <li>• Interbus S</li> </ul>	<ul style="list-style-type: none"> <li>• Apogee FLN (P1)*</li> <li>• BACnet*</li> <li>• DeviceNet</li> <li>• Ethernet TCP/IP</li> <li>• Modbus Plus</li> <li>• Profibus DP</li> <li>• LonWorks*</li> <li>• Metasys N2*</li> <li>• Modbus/Uni-Telway</li> <li>• Interbus S</li> </ul>	<ul style="list-style-type: none"> <li>• Apogee FLN (P1)*</li> <li>• BACnet*</li> <li>• DeviceNet</li> <li>• Ethernet TCP/IP</li> <li>• Modbus Plus</li> <li>• Profibus DP</li> <li>• LonWorks*</li> <li>• Metasys N2*</li> <li>• Modbus/Uni-Telway</li> <li>• Interbus S</li> <li>• Ethernet IP</li> </ul>
UL 508A, UL 508C, cUL, Seismic qualification ICC ES AC156 acceptance test protocol, ABS	UL 508A, UL 508C, cUL, Seismic qualification ICC ES AC156 acceptance test protocol	UL 845, CSA, NOM, Seismic qualification ICC ES AC156 acceptance test protocol ABS, OSHPD seismic certification

# Talk to someone you can trust



The Altivar family of variable speed AC drives and the Altistart family of soft starts presents the most advanced and user-friendly solutions in the marketplace. Featuring proprietary motor control algorithms to achieve optimal reaction times and complete scalability to match your application requirements for speed, size and protection, the complete line of Altivar and Altistart products provides the flexibility and performance to:

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