



Altivar Drives & Soft Starters FAQs

ATV12

What are they?

Altivar machine ATV12 are compact variable speed drives used to control the speed of three - phase motors. Designed for simple applications like fans, pumps, and conveyors, they improve energy efficiency and are easy to install and use. Ideal for small machines, they support single-phase and three-phase power supplies.

What do they do?

Altivar Machine ATV12 regulate the speed and torque of electric motors to match the needs of the application. By adjusting motor performance, they improve energy efficiency, reduce mechanical wear, and offer better control for equipment like fans, pumps, and conveyors — all in a compact, easy-to-use solution.

Why would a customer buy one?

Because energy efficiency, performance, and simplicity matter.

The ATV12 is the ideal solution for customers who want to get more out of their machines without added complexity. By precisely controlling motor speed, it helps reduce energy consumption — often by 30% or more — lowering operating costs and supporting sustainability goals.

It also protects your equipment by minimizing mechanical stress, leading to less maintenance and longer lifespan. Compact and easy to install, the ATV12 is designed to get machines up and running quickly, with intuitive settings that save time during setup.

Whether you are upgrading an existing system or building new equipment, the ATV12 offers a smart, affordable way to improve performance, reliability, and efficiency.

Is there a particular type of customer that would buy these?

Yes — ATV12 drives are perfect for OEMs, panel builders, and system integrators looking for a compact, cost-effective drive for simple machines. They are ideal for customers in industries like packaging, HVAC, food & beverage, or small automation, where reliability, energy savings, and ease of use are key.

If you are building or maintaining equipment like fans, pumps, conveyors, or mixers, the ATV12 offers just the right balance of performance and simplicity — at the right price.

What types of machines are compatible with the ATV12?

The ATV12 is designed to control three-phase asynchronous motors up to 4 kW in both industrial and commercial environments. It is particularly well-suited for simple machines, such as:

Material handling: conveyors, automatic gates, rotating billboards

Wellness and fitness equipment: treadmills, medical beds, jacuzzis

Food processing: mixers, slicers, planetary mixers

Woodworking and textile machines: saws, lathes, knitting machines

Pumping and ventilation: centrifugal pumps, exhaust fans, boilers

Its wide compatibility is enhanced by built-in features like PID control, underload detection, and ramp switching, making it suitable for a broad range of applications.

Is the ATV12 compatible with Schneider Electric PLCs and HMIs?

Yes, the ATV12 integrates seamlessly with Schneider Electric systems:

PLCs: such as Twido and M340, via logic inputs or Modbus communication

HMIs: like Magelis, using the built-in RJ45 Modbus port

Accessories: compatible with Schneider tools like the Simple Loader, Multi Loader, and SoMove software

This ensures smooth integration into compact and efficient automation architectures.

What communication options are available for the ATV12?

The ATV12 offers several communication options:

Modbus RTU over RS485 (built-in RJ45 port)

SoMove software for PC configuration (via serial or Bluetooth connection)

LED remote keypad for local access

Simple Loader / Multi Loader for fast configuration duplication

These tools provide flexible setup and maintenance, whether locally or remotely.

What protections are built into the ATV12 to secure the installation?

The ATV12 includes multiple protection features to ensure safe operation:

Thermal protection for the motor (I^2t)

Overload and underload detection

Automatic restart after fault clearance

DC injection braking for fast stops

Catch on the fly for smooth restarts after power loss

These features ensure reliable operation even in demanding or unstable environments.

How do I choose the right ATV12 for my application?

To select the correct ATV12 model, consider the following:

Motor power: from 0.18 to 4 kW

Power supply type:

100–120 V single-phase → F1 models

200–240 V single-phase → M2 models

200–240 V three-phase → M3 models

Mounting type:

Heat sink: with integrated cooling

Base plate: for direct mounting or liquid cooling

Environment:

Residential or noise-sensitive → C1 EMC filter included

Industrial → robust design and advanced communication options

ATV320

What are they?

ATV320 (ATV320) drives are robust, versatile variable speed drives designed to control three-phase motors in demanding industrial environments. Built for performance, they combine advanced motor control with safety features and flexibility — making them ideal for complex machines in manufacturing, packaging, material handling, and more.

What do they do?

ATV320 drives control the speed and torque of three-phase motors with precision and reliability. They adapt motor performance to the application's real needs — helping reduce energy use, improve machine performance, and protect mechanical components. With built-in safety functions and a wide range of communication options, they are designed to optimize productivity while ensuring operator and equipment safety.

Why would a customer need one?

Because modern machines demand smart, efficient, and reliable motor control.

The ATV320 is designed for customers who need more than just basic speed control — it delivers advanced performance, built-in safety (SIL3/PLe), and seamless integration into automation systems. It supports a wide range of motors (asynchronous, synchronous, permanent magnet), making it future-ready and flexible.

Whether you are building machines for packaging, material handling, or manufacturing, the ATV320 helps reduce energy consumption, improve equipment lifespan, and ensure consistent performance even in harsh industrial environments. Plus, its compact design and multiple mounting options make it easy to integrate, saving time and space in your panels.

In short: it is a smart investment to increase productivity, reduce downtime, and stay competitive.

Is there a particular type of customer that would buy these?

Yes. The ATV320 is ideal for machine builders, system integrators, and industrial manufacturers who need flexible, reliable motor control with advanced safety features. It is perfect for sectors like packaging, material handling, HVAC, and general automation where precise motor management and integration into larger control systems are essential.

Customers looking to improve machine performance, reduce energy costs, and ensure operator safety will find the ATV320 a highly effective solution.

What types of machines are compatible with the ATV320?

The ATV320 is designed for both simple and complex machine applications, offering reliable control for asynchronous and synchronous motors from 0.18 to 22 kW. It is ideal for:

Material handling: conveyors, hoists, automated storage systems

Packaging and processing: bagging, labeling, food & beverage machinery

Textile and material working: cutting, shaping, spinning

Pumps, fans, and mixers: with energy-efficient motor control algorithms

Its robust design, flexible mounting options, and integrated safety features make it suitable for harsh industrial environments and smart machine architectures.

Is the ATV320 compatible with Schneider Electric PLCs and HMIs?

Yes. The ATV320 is fully integrated into Schneider Electric's MachineStruxure™ automation platform and supports:

Embedded protocols: Modbus RTU and CANopen

Optional communication cards: Modbus TCP, Ethernet/IP, Profinet, EtherCAT, Powerlink, Profibus DP, DeviceNet

SoMove software: for configuration, diagnostics, and safety setup (via USB, Bluetooth, or Ethernet)

PLCopen-compliant function blocks: for seamless integration with Schneider PLCs such as Modicon M221, M241, and M251

This ensures fast commissioning, real-time diagnostics, and easy integration across automation layers.

What communication options are available for the ATV320?

The ATV320 offers a wide range of connectivity options to fit various automation architectures:

Embedded: Modbus RTU, CANopen

Optional communication cards:

Ethernet-based: Modbus TCP, Ethernet/IP, Profinet, EtherCAT, Powerlink

Serial-based: Profibus DP, DeviceNet

CANopen daisy chain: for multi-drive topologies

I/O-based control: for standalone or basic applications

Web server: available via optional Ethernet cards, for remote diagnostics and monitoring

This flexibility allows integration into both legacy and modern industrial networks.

What protections are built into the ATV320 to secure the installation?

The ATV320 includes integrated safety functions compliant with the Machinery Directive 2006/42/EC and IEC 61800-5-2 standards:

STO (Safe Torque Off) – SIL3 / PL e (standard on all models)

SS1 (Safe Stop 1), SLS (Safe Limited Speed), SMS (Safe Maximum Speed) – SIL2 / PL d (available on selected models or via optional safety modules)

GDL (Guard Door Lock) – typically implemented externally, not embedded in the drive

The drive also features a rugged design with 3C3/3S2 conformal coating, allowing operation in environments up to 60°C without external cooling (with derating if needed).

How do I choose the right ATV320 for my application?

To select the appropriate ATV320 model, consider the following criteria:

Motor type: asynchronous or synchronous

Power rating: from 0.18 to 22 kW

Voltage class:

200–240 V single-phase → M2

200–240 V three-phase → M3

380–500 V three-phase → N4

525–600 V three-phase → S6

Form factor:

Book: for side-by-side mounting in narrow enclosures

Compact: for shallow cabinets or direct machine integration

Environmental conditions:

For harsh environments, choose models with 3C3/3S2 coating

For dusty or washdown areas, consider IP65/IP66 versions

Communication needs:

Select models with appropriate embedded protocols or optional fieldbus cards based on your network architecture

ATV600

What are they?

Altivar Process ATV600 (ATV600) drives are high-performance variable speed drives designed for demanding industrial applications. They offer advanced motor control, high power range, and built-in safety functions, making them ideal for complex machines and processes requiring precision, efficiency, and reliability.

Why would a customer need one?

Because in energy-intensive and process-critical environments, performance and efficiency make all the difference.

The ATV600 is designed for customers who need reliable, high-power motor control with advanced features tailored for process applications — like HVAC systems, water and wastewater management, or infrastructure projects.

It helps reduce energy costs significantly through intelligent motor control and energy monitoring. Its built-in application functions, like pump management and flow regulation, simplify setup and reduce the need for external components. With robust connectivity (Ethernet, Modbus, BACnet, etc.) and integrated safety features, the ATV600 makes it easy to integrate into modern automation systems.

For any business looking to boost process efficiency, extend equipment lifespan, and cut operational costs, the ATV600 is a powerful and future-ready solution.

Is there a particular type of customer that would buy these?

Yes. Altivar Process ATV600 drives are designed for professionals managing complex, energy-intensive systems. They are ideal for OEMs, facility managers, and system integrators in sectors like water and wastewater, HVAC, building management, mining, and infrastructure.

Customers who need high reliability, smart energy management, and seamless integration into industrial control systems will benefit most from the ATV600. It's a perfect fit for those who want to optimize large-scale operations while reducing downtime and energy costs.

What types of applications are compatible with the Altivar Process ATV600?

The ATV600 is designed for fluid and HVAC process applications in industrial and utility environments. It supports:

Pumps (clean water, wastewater, irrigation, chemical dosing)

Fans (cooling towers, ventilation, air handling units)

Compressors (air, gas)

Blowers, centrifuges, and mixers

Energy-intensive infrastructure (district heating, desalination, oil & gas)

It supports asynchronous, synchronous, and special motors from 0.75 kW to 800 kW (up to 1.5 MW in some variants), making it ideal for demanding process control.

Is the ATV600 compatible with Schneider Electric automation systems?

Yes. The ATV600 is fully integrated into EcoStruxure™ Plant and Process architectures. It supports:

Embedded protocols: Modbus TCP, Ethernet/IP, CANopen, Modbus RTU

Optional communication modules: Profibus DP, Profinet, EtherCAT, BACnet/IP, DeviceNet

Integration with PLCs: Modicon M340, M580, and SCADA systems

SoMove and EcoStruxure Control Expert: for configuration, diagnostics, and commissioning

This ensures seamless integration into both new and existing automation infrastructures.

What communication options are available for the ATV600?

The ATV600 offers advanced connectivity:

Standard embedded:

Ethernet (Modbus TCP, Ethernet/IP)

Serial (Modbus RTU, CANopen)

Optional modules:

Profibus DP, Profinet, EtherCAT, BACnet/IP, DeviceNet

Web server: for remote diagnostics and monitoring

Bluetooth and USB: for local configuration via SoMove

This makes it highly adaptable to modern industrial networks and IoT-ready environments.

What protections and services are built into the ATV600?

The ATV600 includes embedded services and protection features designed for process reliability:

Embedded energy monitoring and asset management

Motor and drive protection: thermal, overload, short-circuit, phase loss

Conformal coating (3C3/3S2) for harsh environments

Safe Torque Off (STO) as standard

Optional safety modules for extended safety functions (SIL2/SIL3)

It also supports predictive maintenance and condition monitoring, reducing downtime and improving operational efficiency.

How do I choose the right ATV600 for my application?

To select the correct ATV600 model, consider:

Motor type: asynchronous, synchronous, or special

Power rating: from 0.75 kW to 800 kW (up to 1.5 MW in some cases)

Voltage class:

380–480 V

500–690 V

Application type: pump, fan, compressor, etc.

Environment:

Harsh or corrosive → choose models with 3C3/3S2 coating

High IP protection available for outdoor or washdown areas

Control needs:

Basic speed control or advanced process control

Safety requirements (STO, SS1, etc.)

Communication protocols for integration

💡 Schneider Electric provides a Product Selector and SoMove software to help configure and size the right drive.

ATV900

What are they?

Altivar Process ATV900 drives are high-performance variable speed drives designed for complex, mission-critical industrial applications. They deliver advanced motor control, high precision, and full system integration capabilities — ideal for demanding sectors like heavy industry, oil & gas, mining, and large-scale manufacturing.

What do they do?

ATV900 drives control the speed, torque, and dynamics of motors with extreme precision. They adapt motor performance in real time, improving productivity, machine safety, and energy efficiency. With high computing power, integrated safety (SIL3), and connectivity to major industrial networks, they enable smarter, faster, and more flexible operations.

Why would a customer need one?

Because high-performance processes require high-performance control.

ATV900 drives are built for customers who need to push the limits of motor control — from dynamic torque response to real-time process adjustments. They support a wide range of motor types and provide detailed diagnostics, predictive maintenance features, and cybersecurity protection.

With ATV900, customers benefit from reduced downtime, optimized energy use, and full visibility of their operations. Whether for critical machines or continuous processes, it is the go-to solution for performance, precision, and peace of mind.

Is there a particular type of customer that would buy these?

Yes. ATV900 drives are aimed at industrial customers operating in high-stakes environments: system integrators, process engineers, and manufacturers in heavy industries such as oil & gas, metals, mining, and chemicals.

These customers need advanced control, operational continuity, and seamless integration into SCADA, MES, and automation platforms — and ATV900 delivers exactly that.

What types of applications are compatible with the Altivar Process ATV900?

The ATV900 is designed for demanding industrial process applications requiring high performance, precision, and connectivity. It supports:

Pumps and fans in water, wastewater, HVAC, and energy

Compressors and blowers in oil & gas, mining, and chemicals

Centrifuges, mixers, and extruders in food & beverage, pharma, and heavy industry

Master/slave configurations for multi-motor systems

It supports asynchronous and synchronous motors from 0.75 kW to 800 kW, with advanced control for torque, speed, and energy optimization.

Is the ATV900 compatible with Schneider Electric automation systems?

Yes. The ATV900 is fully integrated into EcoStruxure™ Plant and Process and supports:

Embedded protocols: Modbus TCP, Ethernet/IP, CANopen, Modbus RTU

Optional modules: Profibus DP, Profinet, EtherCAT, DeviceNet, CANopen

Integration with PLCs: Modicon M340, M580, and SCADA systems

SoMove and EcoStruxure Control Expert: for configuration, diagnostics, and safety setup

It also includes a web server and data logging for remote diagnostics and maintenance.

What communication options are available for the ATV900?

The ATV900 offers extensive connectivity:

Standard embedded:

Ethernet: Modbus TCP, Ethernet/IP

Serial: Modbus RTU, CANopen

Optional communication cards:

Profibus DP, Profinet, EtherCAT, DeviceNet, CANopen daisy chain

Web server: for real-time monitoring and diagnostics

USB and Bluetooth: for local configuration via SoMove

This makes it ideal for integration into modern industrial networks and IIoT environments.

What protections and services are built into the ATV900?

The ATV900 includes a wide range of embedded services and protection features:

Safe Torque Off (STO) as standard

Optional safety functions: SS1, SLS, SMS, GDL (SIL2/SIL3 compliant)

Energy dashboard and process monitoring

Asset and drift monitoring

Stop & Go function to reduce energy consumption

Conformal coating (3C3/3S2) for harsh environments

Integrated EMC filter and IP21/IP54 options

These features ensure high availability, safety, and energy efficiency.

How do I choose the right ATV900 for my application?

To select the correct ATV900 model, consider:

Motor type: asynchronous or synchronous

Power rating: from 0.75 kW to 800 kW

Voltage class:

380–480 V

500–690 V

Application type: pump, fan, compressor, extruder, etc.

Environment:

Harsh or corrosive → choose models with 3C3/3S2 coating

IP21 or IP54 depending on installation

Control and safety needs:

Basic STO or extended safety functions

Communication protocols for integration

Master/slave or multi-motor control

ATS430

What are they?

ATS430 is a range of soft starters designed to manage the smooth start and stop of three-phase asynchronous motors. Built for fixed-speed applications, they reduce mechanical stress and electrical peaks, making them ideal for pumps, fans, and compressors in industrial environments.

What do they do?

ATS430 soft starters gradually ramp up motor speed at startup and gently slow it down at stop. This controlled acceleration reduces wear on belts, gearboxes, and couplings, extends equipment life, and limits inrush current — helping protect both the motor and the power supply network.

Why would a customer need one?

Because starting motors the right way protects your investment.

ATS430 soft starters are perfect for customers who want to improve the reliability and efficiency of their installations without the complexity of variable speed drives. They help reduce downtime, lower maintenance costs, and ensure smooth operation of pumps, fans, and compressors.

They also support energy efficiency strategies by limiting current peaks and protecting electrical infrastructure — all in a compact, easy-to-configure solution.

Is there a particular type of customer that would buy these?

Yes. ATS430 is ideal for panel builders, OEMs, and industrial operators in sectors like water treatment, HVAC, building infrastructure, and general industry. It's the right choice for customers who need a robust and simple solution to reduce electrical and mechanical stress during motor startup — without the need for speed variation.

What types of applications are compatible with the ATS430?

The ATS430 is designed for standard industrial machines using asynchronous motors. It is ideal for:

Pumps (water, wastewater, irrigation)

Fans and blowers

Compressors

Conveyors

Mixers and agitators

It supports motors from 4 to 400 kW, with supply voltages from 208 to 600 V AC, and is optimized for smooth starting and stopping of motors while reducing mechanical stress and energy consumption

Is the ATS430 compatible with Schneider Electric automation systems?

Yes. The ATS430 integrates easily into Schneider Electric's EcoStruxure™ architecture and supports:

Modbus RTU communication (embedded)

Optional remote HMI (plain text or graphical display)

Condition monitoring and system diagnostics

Cybersecurity best practices for secure integration

It can be used alongside Schneider PLCs, HMIs, and SCADA systems for full process control.

What communication and monitoring features are available?

The ATS430 includes:

Embedded Modbus RTU for integration into automation networks

Advanced monitoring of motor, application, power, and energy

Accuracy >95% for energy and performance data

Optional remote display (IP65/IP43) for door mounting

Event and fault logging for diagnostics and maintenance

These features help reduce downtime and improve operational visibility.

What protections and services are built into the ATS430?

The ATS430 includes:

Torque control for smooth acceleration and deceleration

Thermal and overload protection

Phase loss and imbalance detection

High resistance to electrical and mechanical stress

Efficiency rating of 99.5%

Conformal coating (3C3/3S2) for harsh environments

Eco-designed with recycled and bio-based materials

It complies with IEC/EN 60947-4-2 and is certified CE, cULus, UKCA, RCM, and CCC

How do I choose the right ATS430 for my application?

To select the correct ATS430 model, consider:

Motor power: from 4 to 400 kW

Supply voltage: 208–600 V AC

Control voltage: 110–230 V AC

Application type: pump, fan, compressor, etc.

Environment:

Harsh or dusty → choose models with 3C3/3S2 coating

Optional IP65/IP43 remote display for panel integration

Monitoring needs: energy, torque, and fault diagnostics

ATS490

What are they?

The ATS490 is a range of advanced soft starters designed for high-power, heavy-duty industrial motors. It provides smooth motor starting and stopping, protects mechanical and electrical systems, and is built to handle demanding applications in harsh environments.

What do they do?

ATS490 soft starters gradually increase motor voltage to ensure a smooth start and reduce mechanical shocks. They limit inrush current and mechanical stress, helping protect motors, pumps, gearboxes, and the electrical network. With advanced thermal protection, built-in monitoring, and communication options, they offer safe, efficient, and reliable motor control for critical applications.

Why would a customer need one?

Because in heavy industry, equipment protection and operational continuity are critical. The ATS490 is made for customers who need robust motor control without the complexity of a variable speed drive. It helps reduce unplanned downtime, lower maintenance costs, and extend the life of motors and connected equipment.

Thanks to its advanced features — like torque control, motor preheating, and fieldbus connectivity — it integrates easily into modern automation systems and meets the needs of process-critical environments.

Is there a particular type of customer that would buy these?

Yes. ATS490 is ideal for system integrators, OEMs, and industrial operators working in water & wastewater, mining, oil & gas, energy, and infrastructure. It's the perfect fit for customers needing a rugged, high-performance soft starter to ensure reliable motor operation in demanding conditions — especially where high torque and high power are required.

What types of applications are compatible with the ATS490?

The ATS490 is designed for demanding industrial and infrastructure applications using asynchronous motors. It is ideal for:

Pumps (clean water, wastewater, irrigation)

Fans and blowers

Compressors

Conveyors, mixers, crushers, grinders

Cutters and agitators

It supports motors from 4 to 900 kW, with supply voltages from 208 to 690 V AC, and is optimized for smooth motor starting and stopping, reducing mechanical stress and energy use

Is the ATS490 compatible with Schneider Electric automation systems?

Yes. The ATS490 is fully integrated into EcoStruxure™ and supports:

Native Ethernet (Modbus TCP, EtherNet/IP)

Modbus RTU (serial)

Optional communication modules for extended protocols

Remote HMI (IP65) for door mounting

Condition monitoring and cybersecurity features

It works seamlessly with Schneider PLCs, HMIs, and SCADA systems, enabling advanced motor and energy management.

What communication and monitoring features are available?

The ATS490 includes:

Native Ethernet port (Modbus TCP, EtherNet/IP)

Modbus RTU serial link

Integrated condition monitoring for motor, application, power, and energy

Data accuracy >95%

Event and fault logging

Optional IP65 remote display for panel integration

These features support predictive maintenance and reduce downtime.

What protections and services are built into the ATS490?

The ATS490 includes:

Safe Torque Off (STO) – certified

Torque control for smooth acceleration/deceleration

Thermal, overload, phase loss, and imbalance protection

Efficiency of 99.5%

Conformal coating (3C3/3S2) for harsh environments

Cybersecurity certification

Eco-designed with recycled and bio-based materials

It complies with IEC/EN 60947-4-2 and is certified CE, cULus, UKCA, RCM, CCC, and DNV

How do I choose the right ATS490 for my application?

To select the correct ATS490 model, consider:

Motor power: from 4 to 900 kW

Supply voltage: 208–690 V AC

Control voltage: 110–230 V AC

Application type: pump, fan, compressor, etc.

Environment:

Harsh or dusty → choose models with 3C3/3S2 coating

Optional IP65 remote display for panel integration

Monitoring and safety needs:

Energy, torque, and fault diagnostics

STO and condition monitoring