



# Altivar Process customized drive solutions

Low and medium voltage drive systems ready-to-use from 0.75 kW – 20 MW



[se.com/drives](https://se.com/drives)

Life Is On





# What will you get with a drive system solution?

Whatever you need — simple compact drives or complex drive solutions adapted to your requirements — Schneider Electric Altivar Process drive systems cover all your needs.

## We listen closely.

Working with our expert drive specialists, you can refine your requirements:

- Application characteristics and necessary motor performance
- Environmental conditions and requested standards
- Integration into control systems and safety concept to save energy and reduce costs

## We provide an optimized solution.

You receive a comprehensive proposal:

- Detailed and fast quotation, including mechanical and electrical documentation
- On-site analysis by measurement and simulation
- Identification of opportunities to save energy and reduce costs

## We deliver your customized drive systems ready to use.

- You will receive your drive solution on schedule and manufactured according to your specifications
- Fully tested, with parameters adapted to the integrated functions
- Short lead time thanks to the modular design
- Fast and simple commissioning

## Flexibility

to build drives according to your needs.

## Up to 30%

reduced planning time thanks to modular assembly system.





# Benefits

**Altivar Process drive systems** are tailor-made to meet the needs of your industry.



## Mining, Minerals & Metals

- Highest level of protection for harsh environments
- Ambient temperature up to 55 °C
- Lower maintenance costs
- Smooth motor start reduces mechanical stress
- Low noise level



## Oil & Gas

- Low harmonic drive systems for weak power supply systems
- Safe operation, even in explosive atmospheres (ATEX)
- Low-voltage solutions for medium-voltage applications
- Solutions for installations with very long motor cables



## Energy

- Complete integration into the plant control network processes
- Wide range of fieldbus connections
- Better cost control of energy-intensive applications
- Replaces older hydraulic and mechanical controls



## Water & Wastewater

- Reduced energy consumption
- Accurate flow, pressure, and level control
- Reduced life cycle costs
- Extended equipment life
- Integrated pump curves
- Monitoring of pump efficiency



## Hoisting

- Common DC-bus structure
- Energy feedback into the power supply system
- Torque boost, even at zero speed, for accurate brake control
- Extended lifetime thanks to specialized, smooth hoisting functions



## Overall features

- Access to real-time data
- QR codes to access support
- Innovative tools and diagnostics
- Powerful user interfaces
- Flexible communications
- Easy-to-maintain designs
- Full array of support services
- Built-in pump protection functions
- Multiple configurations and options



# Product overview

Altivar Process drive systems are available in different variations to fit your requirements.



**Single drive systems** ..... p. 6

*Most compact design, equipped with a 6-pulse rectifier*

**3-Level low harmonic drive** ..... p. 7

*Zero harmonics and 4-quadrant operation*

**Multidrive systems** ..... p. 8

*DC-bus architecture for efficient multimotor applications*

**Medium voltage drive systems** ..... p. 9

*Efficient and low harmonic drive for high power*

## Altivar Process drive systems are based on a modular architecture

The modular architecture of **Altivar Process** allows use of the same modules for all power ranges

- Unique design for whole range
- Flexible modular architecture
- Full-load tested modules & drives
- Easy & fast maintenance
- Designed for long-life operation



**Altivar Process** Modular architecture from 1 to 6 modules

# Single Drive Systems

Our Drive Systems are enclosure units with a built-in frequency inverter to control the speed of asynchronous or synchronous motors. The modular construction makes it possible to adapt the enclosure unit to your particular requirements.



ATV660, ATV6A0,  
ATV960, ATV9A0

## Compact design

- Less space required in the control room
- Generous connecting area for power cables
- Easy access to all components
- Control panel for numerous options

## The energy-saving drive solution

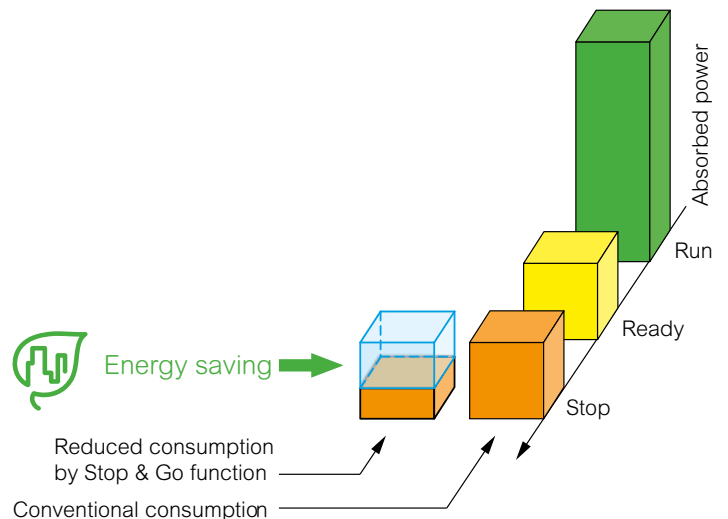
- Up to 60% energy savings without additional costs
- Intelligent control of internal fans, depending on the operation
- Optimal energy efficiency over the entire life cycle
- Logging and graphic presentation of absorbed power

## Up to 20%

less space needed compared to previous range.

## Up to 60%

energy savings at standby using the innovative "Stop & Go" operation.





ATV680, ATV6B0,  
ATV980, ATV9B0

# World's first 3-level low harmonic drive

This new technology reaches a total harmonic distortion (THD(i)) of ~2%, and fulfills the requirements of the IEEE 519 standard for THD(i) <5%, in the event of distorted mains

## Features of the 3-level concept:

### Enhanced motor lifetime

The 3-level AIC (Active Infeed Converter) technology reduces the voltage load at the motor significantly when compared with other low harmonic frequency inverters. The fluctuating adaptation of the DC link voltage helps to extend the motor lifetime.

### Reduced losses

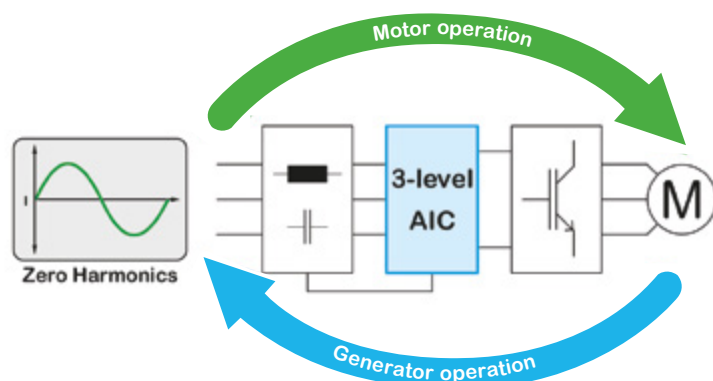
In comparison with the traditional circuit structure of active mains rectifiers, the switching frequency is increased, and the current load is reduced at the same time when using 3-level technology.

### Compact dimensions

A significant advantage of the 3-level technology is the reduced size of the integrated filter. Due to the increased switching frequency and its location inside the forced cooling air channel, the dimensions of the filter can be almost halved.



3-level AFE for long belt conveyor application



# Multidrive systems

MultiDrive Systems are suitable for applications that require a common DC-bus. These are advantageous when the load of several motors leads to the simultaneous operation of both motor and generator.



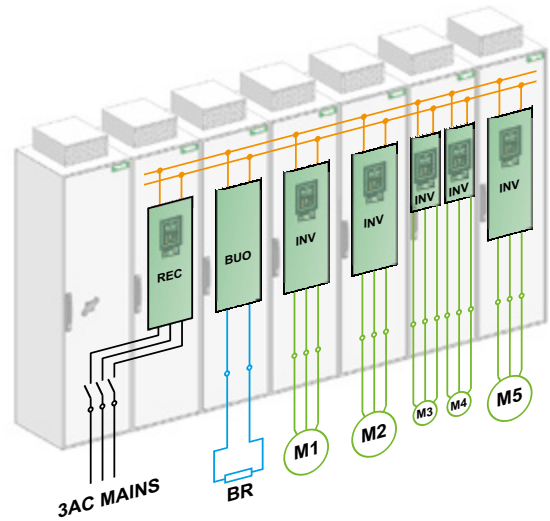
ATV990

## Simple

- Simple, modular common DC-bus architecture
- Good access to all components
- Generous connection area for power cables

## User friendly for all Altivar Process drive systems

- Uniform design
- Uniform features
- Uniform drive software



REC ... Rectifier Unit or Active Front End Unit      BUO ... Braking Unit  
INV ... Drives from 0.75 - 1200 kW

## DC-bus

for efficient multimotor applications.

## 40 years

of experience in drive solutions.

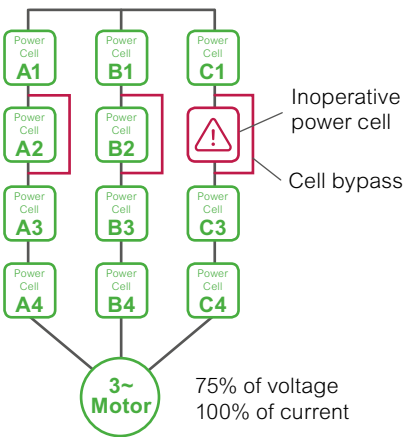




ATV6000

# Medium voltage drive systems

The Altivar Process ATV6000 services-oriented drive completes the Altivar Process line-up with a solution to address your medium voltage operation and maintenance challenges.



Contactless cell bypass

### Reduce downtime and enhance your equipment effectiveness

- ATV6000 drives provide failure-tolerant operation and prevent production stoppages, even in the case of power module failure
- The balanced power cell bypass feature provides uninterrupted operation, even with full power and without reduction of process performance (N+1 design)
- The contactless bypass switch system is not sensitive to dust, delivering high performance in all environmental conditions

### Improve productivity by providing the relevant operating data

- 10" color HMI display for monitoring, diagnostics and setting of relevant data
- QR-code for easy and fast access to documentation and remote technical support
- Webserver access for any device and browser
- Realtime and historical data diagnostics for quick intervention
- Native dual port Ethernet interface and connectivity to all major industrial fieldbuses for automation system integration
- EcoStruxure™ Asset Advisor for predictive maintenance

### Energy efficiency and clean power low harmonic design

- Embedded power measurement and lifetime monitoring on energy usage
- Easy and seamless integration into existing installations
- Mitigate input THDi compliant with IEEE-519 standard
- Eliminate need for harmonic filtering on line side
- Reduce motor losses, vibrations, and torque pulses
- Compatible with all standard motors and brands



Touch panel operation

# Connected products for smarter operations

Drives connectivity integrated at every level of **EcoStruxure**.

EcoStruxure is Schneider Electric's open, interoperable, IoT-enabled system architecture and platform. At the heart of EcoStruxure for industrial customers, Altivar Process delivers innovative value throughout each tailored architecture.

## Apps, Analytics & Services

Altivar Process gathers data that can be put into context with EcoStruxure apps, analytics, and services such as asset management and operations management. In doing so it is possible to secure an efficient operation of the plant process and plant installation.

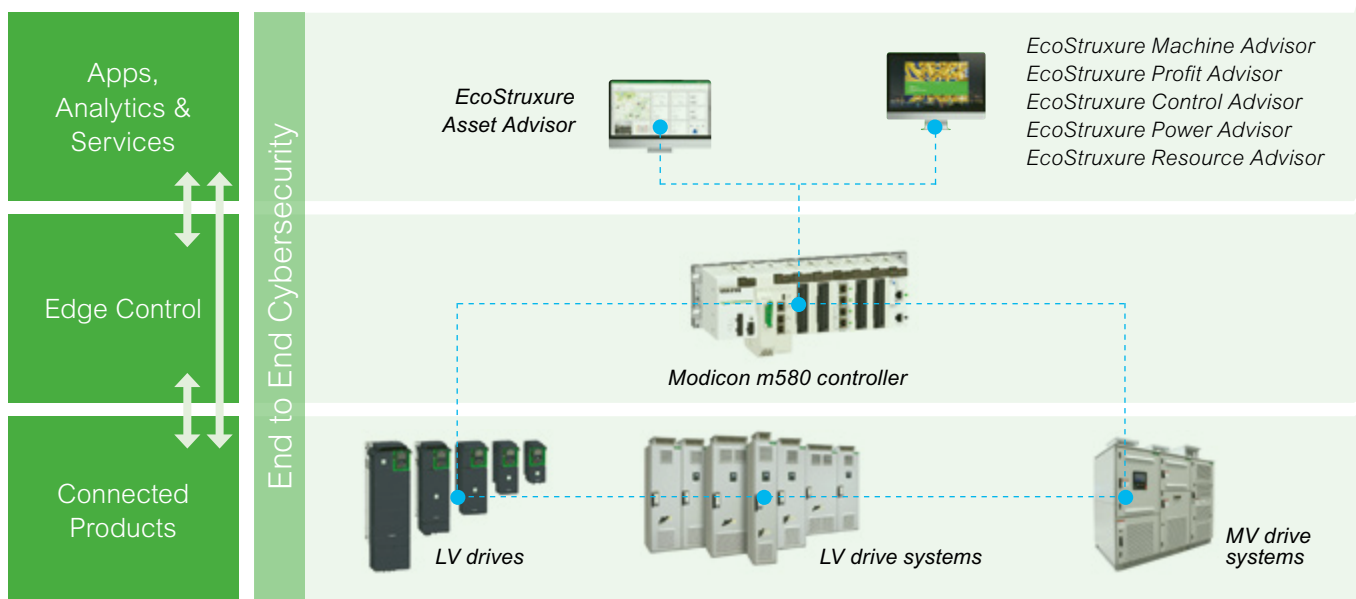
## Edge Control

With embedded Ethernet and available libraries, Altivar Process easily integrates into process automation systems like EcoStruxure Hybrid DCS and EcoStruxure Foxboro.

## Connected Products

Altivar Process acts as a native sensor to gather information on the process that is used to improve plant performance. It also enhances energy usage with power monitoring and maintains drive performance with predictive maintenance capabilities and asset protection.

**EcoStruxure**  
Innovation At Every Level



# EcoStruxure Asset Advisor

Altivar Process equipped with EcoStruxure Asset Advisor transforms data into insight to help run your operations more safely and efficiently with more availability, and increased profits.



## Continuous health monitoring

The operator gets a complete health monitoring view of its assets and conditions of usage (drive, transformer, MCB, motor, ...)

## Risk evaluation

The operator knows in real-time where and what risk levels are on the installation based on continuous predictive analytics.

## Risk mitigation

The operator receives notification of the necessary maintenance task required at the right time to secure the asset and production at minimal cost, mitigating the risks of downtime.



## Simple integration into process architectures

- Easy integration thanks to standardized FDT/DTM and ODVA technology
- Full compatibility with Process Expert System architectures and Modicon™ M580 controllers
- Supported by predefined Unity™ Pro libraries available on [www.se.com](http://www.se.com)
- Easy access via PC, tablet, or smartphone

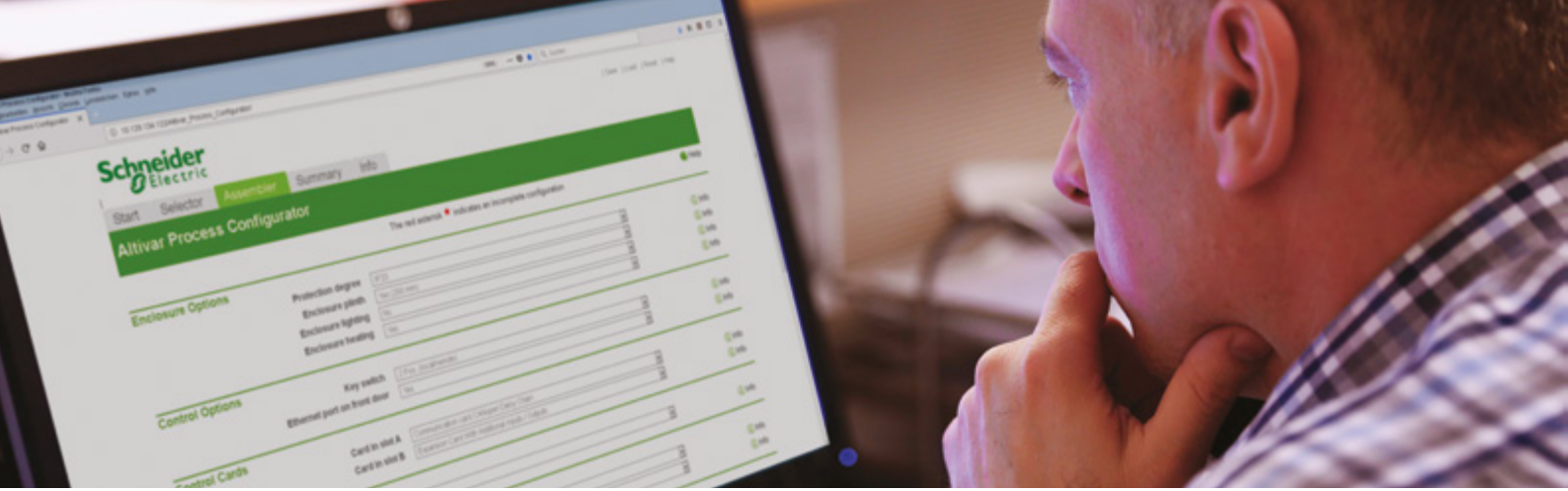


## Drive as a sensor

Altivar Process is more than just a drive. Thanks to its embedded services, it can deliver accurate data for asset and energy management — without the need for additional sensors.

## Simple connection

- Smart connected drives with increased user friendliness
- Dual-Ethernet and modbus onboard
- Various fieldbus modules available



# From a configurable standard design...

**Configured drive systems (CTO)** can be quickly customized to fit your requirements via our **Altivar Process Configurator Tool**. Thanks to pre-defined CTO options, the CTO variant allows a significant reduction of the delivery time for individually adapted drives, ready to connect.

## The available CTO options are:

- Increased protection degree IP54
- Enclosure plinth
- Option for cabling from top/bottom
- Braking unit
- Enclosure lighting, heating
- Front display module (FDM)
- "Local/remote" key switch
- Ethernet port, indicator lights, emergency stop button on front door
- Digital and analog I/O modules
- Fieldbus modules
- Motor/bearing temperature monitoring
- dv/dt filters for long motor cables
- Motor heating
- Circuit breaker
- Automated mains disconnection



Configure your drive system with the  
**Altivar Process Configurator Tool**  
[altivar-process-configurator.schneider-electric.com](http://altivar-process-configurator.schneider-electric.com)



*Outdoor design*



*Multipulse design*



*Multidrive ATV990*

## ...to individual drive solutions

Our experts help you to find the best and most effective **drive systems (ETO)** solution for your application. Starting from the integration of small drives up to individual enclosure design for harsh environments.

### Enclosure modifications

- Different enclosure types
- Drives with reduced enclosure dimensions
- E-house integration
- Special colors
- Customer branded solutions
- Design for marine, automotive, special applications

### Cooling adaptations

- Separate air flow
- Connection to cooling channels
- Liquid cooled drives
- Outdoor installations for harsh environments
- Different protection degrees

### Electrical adaptations

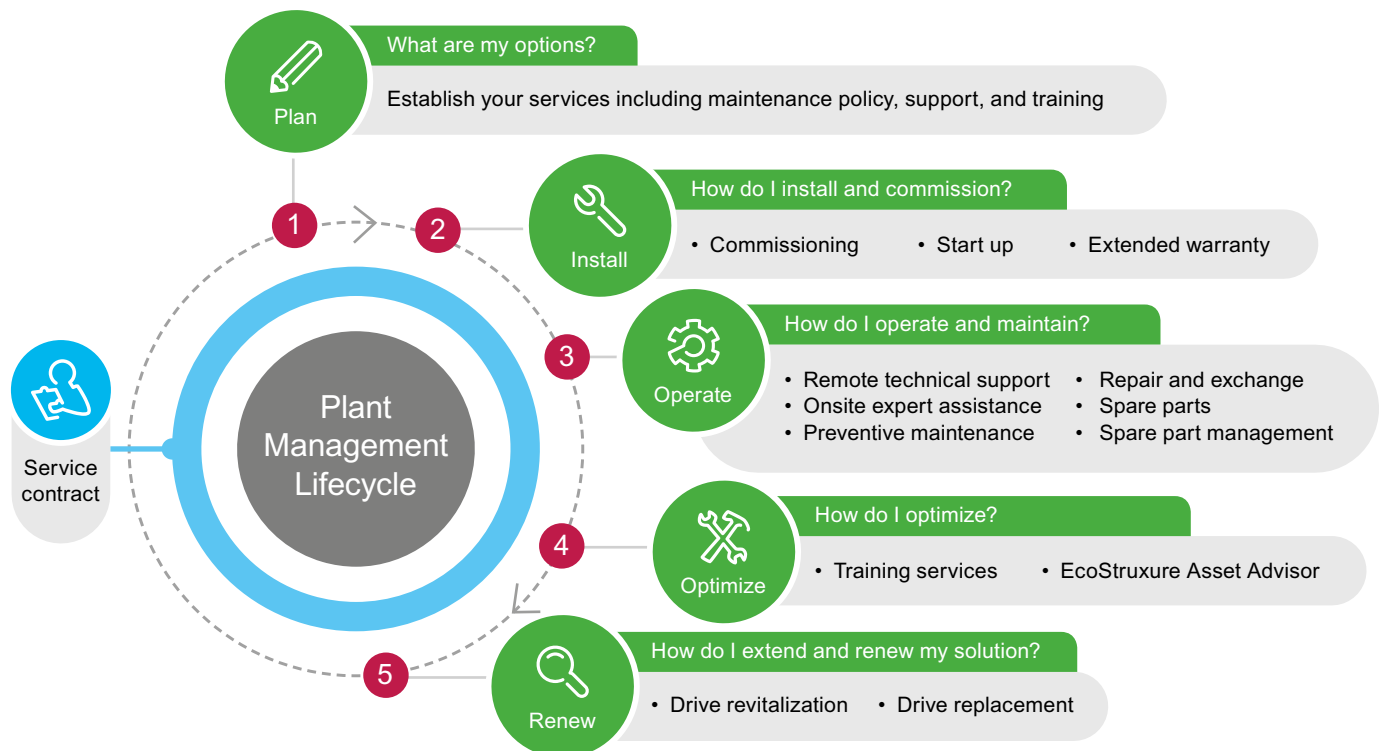
- AC or DC Multidrive
- Bypass solutions
- Multipulse or Active Front End (AFE)
- Various motor protection solutions
- Adaption to individual mains conditions
- Braking and regenerative solutions

To inquire **your individual drive solution** contact your local Schneider Electric drives expert



# Drive services – Getting more out of your equipment

Variable speed drives are an important part of your operation, with downtime having a significant impact on your business. Protect your investment with comprehensive drive services. Our range of services is designed to help you get more out of your drives – and your operation.



## Install

- Commissioning and Start-up services ensure operation reliability
- Extended Warranty helps to control your maintenance costs

## Operate

- On-site Expert Assistance is available for emergency support
- Preventive Maintenance minimizes unplanned downtime and extends drive life
- Repair and Exchange service is available on-site or at our repair centers
- Spare Part Management ensures availability of critical components

## Optimize

- Training service enhances the skills and competence of your team
- EcoStruxure Asset Advisor enables predictive maintenance with advanced algorithms supported by Schneider Electric experts

## Renew

- Drive replacement efficiently upgrades to the latest technology
- Revitalization extends the productive life of older drives

## Service contract – Efficiency and cost control for your maintenance

Extend asset life, reduce costs, and increase availability with service contracts. The “Advantage Service Plan”, or a fully tailorable service agreement, can satisfy your specific needs and offer priority access to Schneider Electric support.

# Overview



	Compact drive systems	Low harmonic drive systems	High performance drive systems	Regenerative drive systems
Ranges	ATV660, ATV6A0	ATV680, ATV6B0	ATV960, ATV9A0	ATV980, ATV9B0
Power	90(0.75) ... 1200 kW	90 ... 1200 kW	90(0.75) ... 1200 kW	90 ... 1200 kW
Voltage	3AC 400 ... 690 V	3AC 400 ... 690 V	3AC 400 ... 690 V	3AC 400 ... 690 V
Protection	IP23 or IP54, UL Type 1 or 12	IP23 or IP54, UL Type 1 or 12	IP23 or IP54, UL Type 1 or 12	IP23 or IP54, UL Type 1 or 12
Certification	CE, EAC, RCM, ATEX, UL	CE, EAC, RCM, ATEX, UL	CE, EAC, RCM, ATEX, UL	CE, EAC, RCM, ATEX, UL
Harmonic Mitigation	32 ... 48 % THD(i)	~2 % THD(i) with 3-level technology	32 ... 48 % THD(i)	~2 % THD(i) with 3-level technology
Motor Control	Open loop	Open loop	Open loop/Closed loop	Open loop/Closed loop
Braking Unit	—	—	Compatible	Compatible
Energy Feedback	—	—	—	4-quadrant operation



	Multidrive systems
Range	ATV990
Power	90(0.75) ... 1000 kW
Voltage	3AC 400 V
Protection	IP23 or IP54
Certification	CE, EAC, RCM, ATEX
Design	Based on common DC-bus
Supply Units	Rectifier Unit or Active Front End Unit
Inverter Units	Drives from 0.75 ... 1200 kW
Braking Unit	Compatible



	Medium voltage drive systems
Range	ATV6000
Power	200 ... 20.000 kW
Voltage	3AC 2.4 ... 13.8 kV
Line-side Transformer	Included
Protection	IP31, IP41 or IP42
Certification	CE, EAC, CSA, UL
Design	Multi-level technology
Harmonic Mitigation	<3 % THD(i)
Motor Control	Open loop/Closed loop

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To learn more, visit:  
[se.com/drives](http://se.com/drives)

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