

# Boost your process with ready-to-use Altivar drive systems

Proven solutions for low- and medium-voltage drive applications

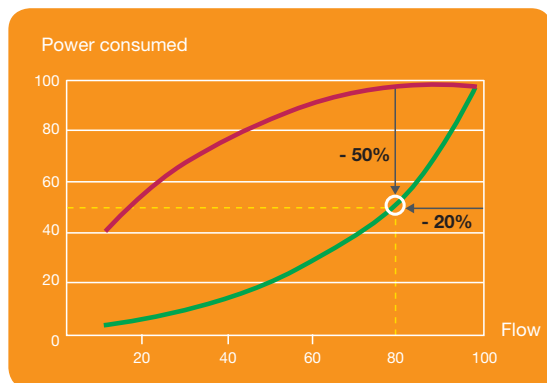
**Schneider**  
Electric

# Get the best performance for your process with Altivar drive systems

Save up to 70% of energy using our compact Altivar™ drive systems with optimized cooling and mastered harmonics, customized to your application.

## Energy efficiency

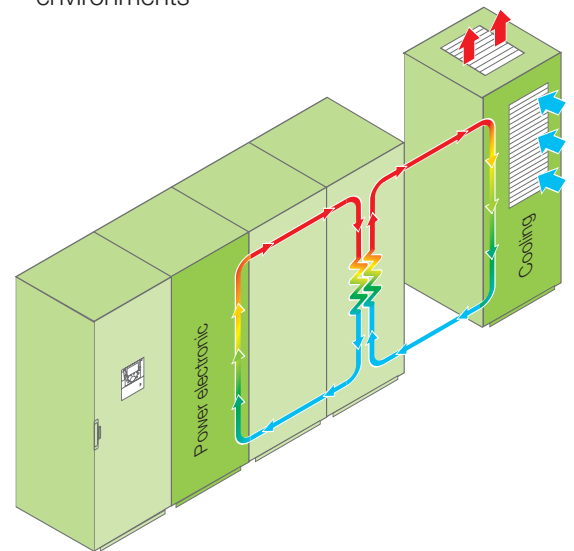
- Up to 30% energy savings for compressors
- Up to 50% energy savings for pumps
- Up to 70% energy savings for fans



- traditional solution with valves
- solution with Altivar variable speed drive

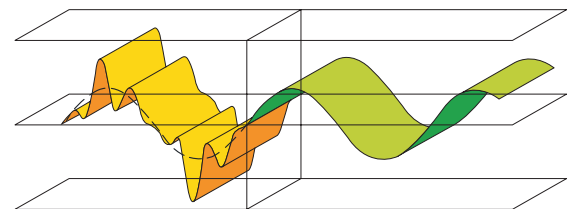
## Intelligent cooling

- Reduced heat losses in electrical rooms
- Best protection for drive systems in process areas
- Totally closed drive systems for harshest environments



## Harmonic mitigation

- All drive systems are equipped with harmonic reduction components
- Optimized multi-pulse solutions for high power drives
- Low harmonic drive systems to meet all harmonic standards



## Tested, validated, and documented systems

- Save planning time with simple modular assembly system
- Individual drive systems meeting your specific requirements
- Certified product quality for highest availability

# Ready-to-use solutions in highly efficient designs

Optimize your low and medium voltage applications with our standardized and customized Altivar drive systems! All our solutions are ready to use and based on the latest technology to achieve simplicity, flexibility, and reliability.

All our solutions are modular for optimum sizing.

## User-friendly operation

- Graphic terminal or PC
- Quick programming, commissioning and maintenance

## Optimized cooling systems

- Tested and proven cooling systems even for the highest protection degree

## Simple configuration

- Pre-configured options based on modular systems

## Quick installation

- Easy access to all terminals

## Wide choice of drive systems

- Complete range of low- and medium-voltage drive solutions

## Easy integration

- Simple to implement in existing control systems
- Compatible with main fieldbuses such as Modbus, CANopen, and Profibus DP

## High availability

- Risk-free maximum machine efficiency

## Customized solutions

- Various solutions for best total drive system efficiency



## Application areas



# Mining, Minerals, and Metals



# Proven solutions for optimized productivity and output

Continuous energy management is the most direct path to a mine that is profitable and performs at its full potential. Altivar drive systems are based on 30 years' of experience and can help you maximize your productivity and quality, and produce more with less.

## Optimized plant

### Save time:

- Pre-engineered Altivar drive systems for quick quoting and order process
- Reduced installation and commissioning time

### Save energy:

- Optimized energy efficiency of electric motors and cooling systems
- Energy regeneration for applications with motors operating in generator mode

### Reduce maintenance:

- Smooth motor start-up reduces mechanical stress

## Increased availability and work comfort

- Fully closed enclosures with the highest protection degree for use in harsh environments
- Ambient temperature up to 55°C
- Full load tests / detailed functionality tests
- Low noise level
- Quick start-up and easy commissioning

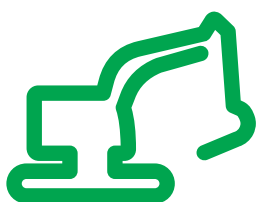
## Customized solutions for your site

Innovative air or water cooling solutions:

- **Internal cooling** – fully encapsulated power electronics through internal cooling circuits
- **External cooling** – significantly reduced air conditioning due to external heat exchanger
- Standardized solutions with step-up transformers allow cable lengths of +1000 m

## Typical applications

- Feeders, conveyors
- Mills, separators
- Stackers, reclaimers
- Crushers, slurry pumps
- Rotary kilns
- Tunnel boring machines (TBM)
- Hoist applications, converter tilt devices



Reduce your energy consumption by up to 30%  
with our Altivar drive systems!

Marine



# On board with marine solutions

Protect your people, property, and the environment with our comprehensive and consistent solutions.

## Marine certificates

- Proven solution with marine-type approval for reliable operation at sea - all our solutions are developed in compliance with European and international standards and regulations of the main worldwide classification companies
- Cabinets can be delivered in separate units for easier handling and installation on board

## Enhanced availability

- Tested and approved shock-resistant design based on standard enclosures
- Sophisticated cooling systems using air and/or water
- Ambient temperature up to 50°C
- Monitors show operating state at a glance
- Alarm and measurement systems to display and log all alarms
- Front maintenance

## Improved efficiency

- Highly-efficient Altivar drive systems in compact marine designs
- Modular drive configuration for optimal operation at diesel generators
- Line choke, multi-pulse or Active Front End (AFE) for reduced harmonics
- Complete medium- and low-voltage solutions to suit your requirements

## Typical applications

- Hoist applications (winches, cranes)
- Propulsion
- Thrusters (azimuth-, tunnel- and jet thrusters)
- Seawater and mud pumps
- HVAC applications



Type-approved by major classification companies such as DNV, BV, CCS & Lloyds Register of Shipping



With our long expertise in marine applications, we know your challenges and can meet any individual requirements and help you achieve energy-saving, green, safe, and reliable ships.

# Water and Wastewater





# Water is the new gold

Only 0.3% of our global water resources can be used as clean drinking water, and the energy to provide it can account for 30 to 50% of the total operating costs. Our integrated system architectures can help you save up to 30% in operating costs.

## Reduced energy consumption

With Altivar drive systems you can save up to 50% energy just by adjusting your pump's rotational speed.

## Low harmonics

In water and wastewater installations, harmonics are mainly generated by variable speed drives, ozone generators, and UV electronic ballasts. Schneider Electric can provide assistance and solutions for harmonic management in compliance with utility regulations:

- Optimized line chokes
- Multi-pulse supply for high power drives
- Active Front End (AFE) for completely low-harmonic drives

## Customized solutions

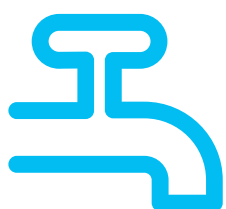
Altivar drive systems are available with embedded controllers for implementation into your own application.

Examples of pre-configured water solutions:

- Water pumping remote stations: Multi-drive solution for booster stations offer seamless control and potential cost savings
- Decanter centrifuges: Easy process control with integrated controller

## Typical applications

- Distribution pumps, chemical pumps
- Decanter centrifuges
- Mixers
- Archimedes' screws
- Compressors
- Osmosis
- Desalination



Efficient and standardized energy management solutions from Schneider Electric help cut your facility's operating expenses.

# Hoisting



# Increase productivity up to 25% in your hoisting applications

Schneider Electric is a leading expert in hoisting and can provide a complete hoisting control system based on Altivar variable speed drives. With their dedicated hoisting functionalities the variable speed drives support the PLC and help you save space and money.



It is easy to integrate our tested and validated Altivar drive systems into your existing machine architecture! And with the embedded, dedicated function blocks you can save up to 50% of design and installation time, all while you improve your machine performance and safety.

## Maximized system performance

- Load management through anti-sway functions
- Fluid movement through smooth slewing functions
- Enhanced stability through trolley synchronization functions
- Torque boost, even at zero speed for safe and reliable brake control
- Longer life time thanks to specialized, smooth hoisting functions
- Common DC-bus structure with Active Front End
- Energy feedback into the power supply system while the motor operates in generator mode

With our Altivar drive systems you can simplify installation and maintenance, all while you maximize your performance.

## Typical applications:

- Industrial cranes for heavy loads
- Harbour cranes
- Overhead travelling and gantry cranes
- Special cranes

# Energy



# Optimize your energy production process with innovative Altivar drive systems

No matter your energy industry – biomass energy, thermal power, waste incineration, district heating etc. – you can boost it with our Altivar speed drives, all while you save energy and protect your motors and equipment.

## Optimized plant performance through proven solutions

- Controlled and optimized processes
- Complete integration into the plant control network processes
- Wide range of fieldbus connections
- Cost-effective solutions
- Reduced environmental impact

## High availability

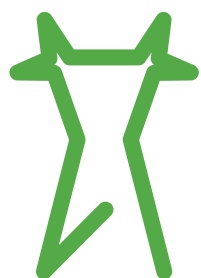
- Tested, proven solutions
- Detailed functionality tests
- Longer motor life and reduced maintenance costs
- Integrated safety functions
- High overload capability

## Versatile and customized solutions

- Configurable drive solutions based on a modular system
- Ready-to-use enclosures in compact designs
- Wide power range
- Low- and medium-voltage applications
- Operation with ATEX motors
- Various protection degrees
- Consistent operation- and control interface
- Full-load tested and approved Altivar drive systems

## Typical applications

- Force draft (FD) and induced draft (ID) fans
- Feed-water pumps
- Cooling water pumps
- Oil and fuel pumps
- Conveyors for material transport
- Compressors
- Crushers, mills



Altivar speed drives provide you with a technology that can help your process become simple, flexible, and reliable!

# Oil & Gas



# Optimize your processes while reducing your CO<sub>2</sub> emission

From deserts to cold plains, today's variable speed drives are being pushed to the limit when installed outdoors. With their proven, high-performance designs the Altivar drive systems are developed to help you face all of your challenges in outdoor applications.

## Highest protection for outside installations

- Suitable for the highest ambient temperatures with additional chiller
- Proven cooling solutions and high protection degrees
- Trouble-free operation at diesel generator supply
- Low harmonic drive systems for weak power supply systems

## Safe operation, also in explosive atmospheres (ATEX)

- Altivar drive systems can be implemented for motor applications in explosive atmospheres
- Specified motor monitoring devices and integrated features for safe motor operation below dangerous temperatures
- Smooth motor acceleration/deceleration to avoid shocks and reduce mechanical wear
- Prevention of common mode bearing currents

## Low-voltage solutions for medium-voltage applications

- Low-voltage drive systems can be used with a step-up transformer as a cost-saving alternative
- Cost advantages compared to MV drives
- Low-voltage standard inverters with proven technologies
- Solutions for installations with very long motor cables

## Typical applications

- Oil-line pumps
- Jack pumps
- Slurry pumps
- Submersible pumps
- Oil-swapping pumps
- Drilling rigs

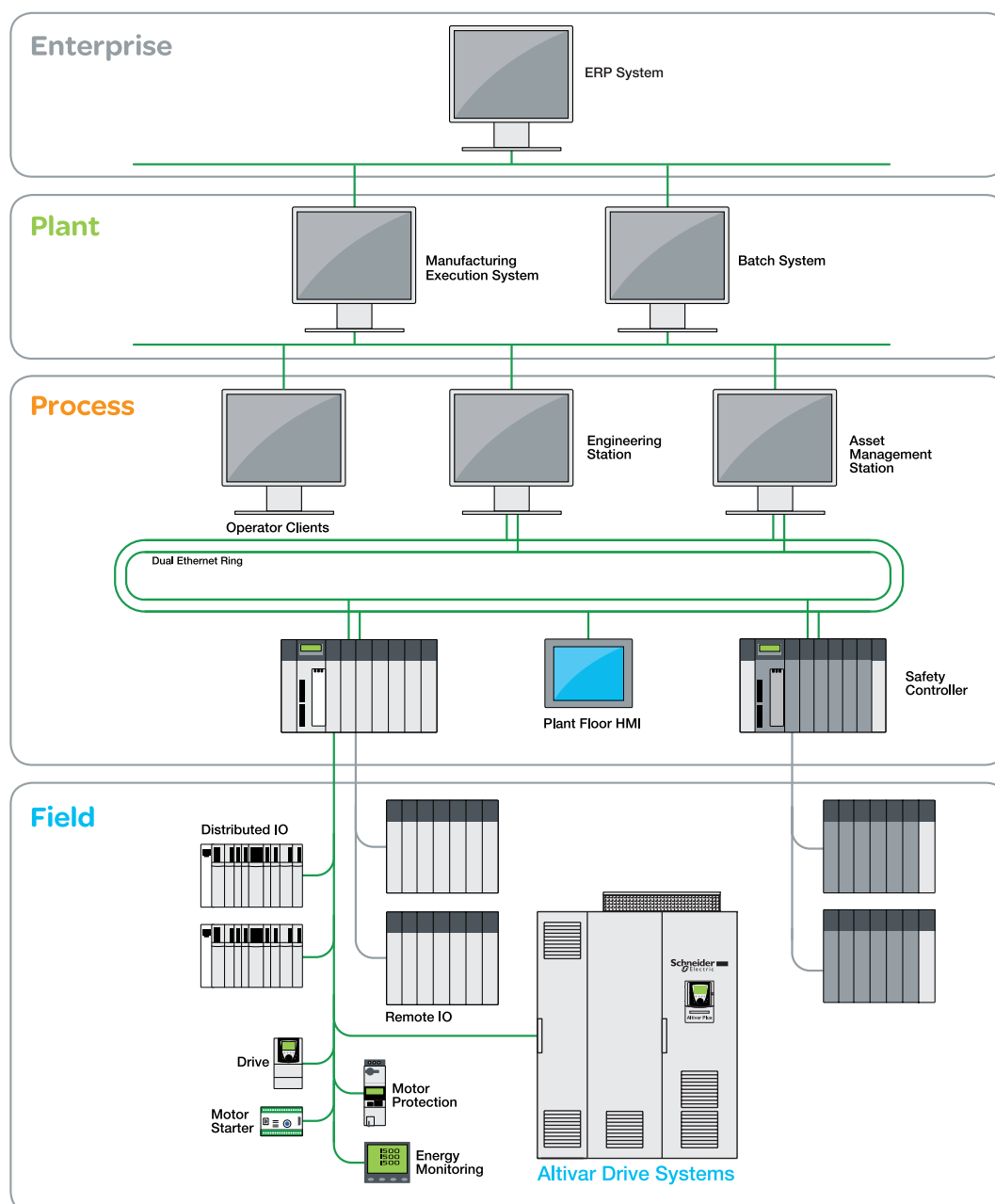


Altivar drive systems help you save energy and lower your CO<sub>2</sub> emission!

# An architecture for process and energy management

Schneider Electric's PlantStruxure™ solutions enable industrial and infrastructure companies to meet their automation needs and, at the same time, manage their energy usage. PlantStruxure solutions integrate both hardware and software components throughout the plant, offering a flexible, scalable and collaborative architecture. It delivers a complete process management system that enable companies to optimize their energy usage and drive maximum efficiency within their operation, while also improving productivity.

Altivar drive systems are an integrated PlantStruxure component that can easily be implemented in your existing process and help you reduce energy costs, protect your motors and equipment, and reduce your maintenance costs, all while you increase competitiveness. Our SoMachine™ software enables easy programming of the variable speed drive and ensures communication between individual application components.





# Together, we are strong!

Our industry experts help you get the maximum return from your investments and optimize the value of your installations throughout the life cycle.

Whether you need a brief telephone consultancy, an on-site analysis, or the development of an entire system solution – our experts are at your disposal.

## Audits and consultancy services

- From the selection of inverters and accessories to the development of entire system solutions
- On-site analysis
- Line supply consultancy (compensation, filtering, harmonics etc.)
- Shaft line study (torsional analysis etc.)

## Bespoke project management

- Measurement and analysis of your site
- Target definition
- Identification of opportunities to save energy reduce costs
- Calculation of return on investment
- Real-time network simulations

## Factory tests at maximum power

All Altivar drive systems have passed a full-load test and several inspection steps prior to delivery

## Commissioning and on-site services

Our specialists, who come from various industrial sectors, use their extensive product and application knowledge to commission your systems

## Customized training

Our experienced specialists offer trainings and courses for our customers at our premises or on your site

## Quick and flexible services

We maintain a stock of spare parts and offer repair services for our customers all over the world. Spare parts and replacement units are usually shipped on the day of order

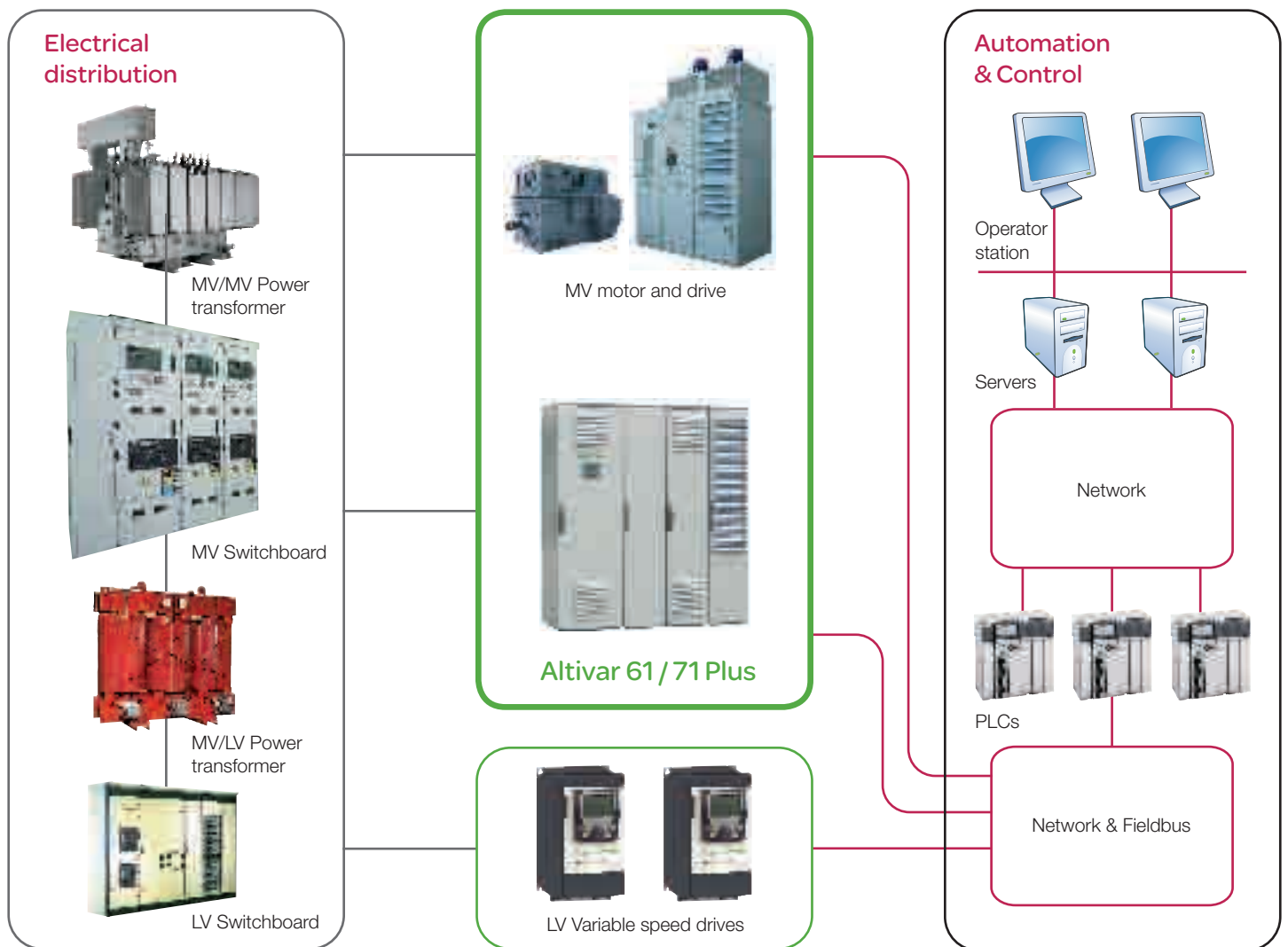


Efficient and standardized energy management solutions from Schneider Electric help cut your facility's operating expenses.

# Make your life easier with complete drive solutions

Schneider Electric, world leader in electrical distribution and control systems, presents a range of products, solutions and services for:

- Transforming and routing energy
- Automating machines and processes
- Safety solutions for machines and plants
- Controlling of drives etc.



## Products of high quality, safety, and performance

All our products have been tested according to strict standards to ensure complete customer satisfaction, and they all meet international quality and safety standards.

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

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