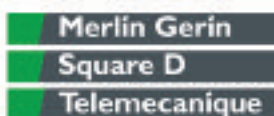


Variable speed drives  
**Altivar 21 / Altivar 61**  
The perfect balance  
between control  
*and energy savings*



Pumping and ventilation solutions  
for buildings, industry and infrastructure



# From energy savings *that need to be made...*

## **Expenditure on power, the main contributor to climate change**

The World Energy Council predicts that worldwide consumption will be between 11.3 and 17.2 Mtoe (million tons oil equivalent) by 2020 as against 9 Mtoe in 1990, with an average growth in GDP worldwide of 3.3% per annum.

Since the signing of the Kyoto protocol in 1997 in Japan, 159 industrialized countries have committed to an average reduction of 5.2% in emissions from 2008-2012 in order to bring them back below 1990 levels. This has an impact on all manufacturers, who have already taken steps in the right direction.

It is vital to adapt technologies and behavior to create optimized production systems, in order to consume less energy and contribute effectively to tackling the problem head-on.



# ...to energy savings that are achievable *with speed control*

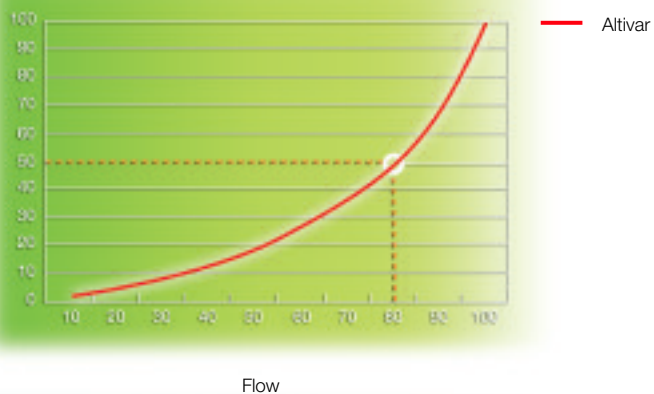
## Solutions do exist to reverse the trend

Beside renewable or alternative energies, there are now numerous solutions to encourage more economical use of energy. Speed control would appear to be just such an opportunity for all players in the construction, industrial or infrastructure sectors.

It is in applications such as pumping, ventilation and compression that speed control can generate huge savings in energy consumption. These applications are found in industry as well as the construction and infrastructure sectors (tunnels, car parks, hospitals, shopping malls, offices). When centrifugal pumps, fans or rotary compressors are fitted with variable speed drives, savings in electricity costs of between 15 and over 50% are achieved, depending on the installation.

The return on investment is very quick, usually between 9 and 24 months!

Power consumption



*At 80% flow, power consumption drops by 50% with the variable speed drive.*

## Significant savings courtesy of the variable speed drive

In a conventional pumping and ventilation installation, the electric motor is directly supplied by the line supply and runs at its rated speed. With a drive placed between the circuit-breaker and the motor, there is no need for a limiter and flow variation is achieved directly by electronic speed control.





# For pumps and fans in commercial and residential buildings : *the Altivar 21 HVAC solution*

*A low-cost compact solution, Altivar 21 optimizes control when processing fluids (temperature, flow, pressure, etc..). Altivar 21 variable speed drives control three-phase asynchronous motors between 0.75 and 75 kW. This range is particularly suited to heating, ventilation and air conditioning applications, where the drives can generate major savings.*



## **A robust and reliable product**

Altivar 21 is particularly robust and is able to operate in all environments:

- IP20 and IP54 protection indices ensure continuous operation, even in harsh environments up to 50°C.

## **Essential functions**

for protection of installations:

- detection of under/overloads, loss of pump priming,
- detection of broken drive belt,
- limitation of low speed running time,
- sleep/wake-up function,
- reference calibration and limitation,
- switching of two motors,
- smoke extraction system (fault inhibit),
- preset speeds, etc.

## **Altivar 21, perfect integration in building management system architectures**

- Power range 0.75 kW to 75 kW, three-phase, 220 and 400V
- Integration in building management systems with the main communication buses (LonWorks, BACnet, METASYS N2, APOGEE FLN)
- "Harmonic less" technology: THDI < 30%
- IP20 and IP54 products with EMC class A or class B filters
- Control loop provided by integrated PID regulator
- Installation made easier by local or remote control
- Significantly reduces noise pollution (noise caused by air flow, motor, etc.)



## **Altivar 21, open communication**

- Accepts all commercially-available communication protocols (LonWorks, BACnet, METASYS N2, APOGEE FLN)
- Modbus protocol integrated as standard

## **Simplified parameter setting**

- Simple to configure
- Immediate setup due to the "Plug & Drive" concept
- Autotuning, no parameter setting required for current applications.
- User-friendly 7-segment graphic display terminal
- Dedicated software for the climate engineer

## **Altivar 21 drives conform to international standards:**

**IEC/EN61800-5-1, IEC/EN61800-32, IEC/EN61800-3, UL/CSA, C-Tick, Gost, etc. Designed to be eco-friendly, they comply with directives regarding the protection of the environment (RoHS, WEEE, etc.).**

# For infrastructure and industry :

## *Altivar 61 Pumping and ventilation solutions*

*With Altivar 61, Schneider Electric has produced a solution that is ideal for fluid processing installations. The latest addition to the variable speed drive offer, the Altivar 61 is dedicated to centrifugal pumps, fans and rotary compressors. Easy to set up, equipped with numerous functions, the Altivar 61 range integrates all the requirements of climate engineers and hydraulic engineers (process control, protection, communication, local/remote operation).*



### **Altivar 61, a complete reliable solution for your applications**

The Altivar 61 range goes up to 2,4 MW\* and is suitable for all high-power applications. Indeed, the more the power required, the greater the savings.

Its performance derives from tried-and-tested elements:

- PID control
- Management of a bank of pumps
- 130% overtorque
- Recognized robust design: integrated EMC filters - reinforced version 3C2 for polluted environments (gas, liquids), IP20/54
- Simplicity of use: graphic display terminal, online autotuning
- Industry-specific and building-specific communication (BACnet, N2, Profibus, ...)

### **Altivar 61, simplicity and user-friendliness all down the line**

- Complete range of uniform products for variable torque applications (IP20 and IP54)
- Multifunction product with a wide variety of built-in functions
- User-friendliness with its graphic display terminal and multilingual interface
- Installation made easy with the "Simply Start" menu
- Adaptability thanks to customization of parameters and display screens
- Integration in control system solutions with integrated Modbus and CANopen
- Flexibility with numerous option cards: I/O, programmable card
- Multi-pump cards for managing a set of pumps for water distribution

### **From energy savings to protection of the environment**

Apart from energy savings, the Altivar 61 variable speed drive has other features that contribute to saving the environment: reduction in noise pollution (noise caused by air flow, water hammer), selective waste processing (Product Environmental Plan/PEP), banning of hazardous substances. Altivar 61 is a product developed using eco-friendly principles.



\* 1,2 and 2.4 MW in 2008

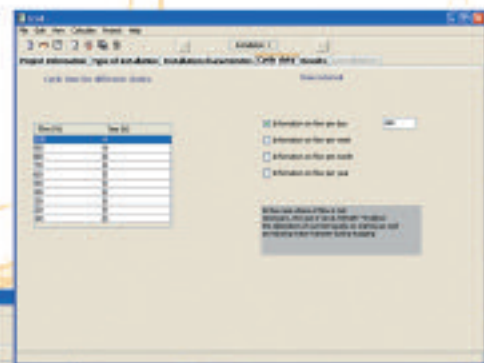
# Eco 8, *practical intelligence*

*Simulate the possible savings on your variable torque applications free of charge. Choose the Altivar best suited to your installations. Calculate the savings you could make. Estimate how long it will take to get a return on your investment.*

Developed by Schneider Electric, ECO8 software is aimed at two major market types: industry/infrastructure, and commercial/residential buildings. For each of these sectors, simply enter your parameters, the motor characteristics, the operating cycle and the price per kWh and select the type of pumping or ventilation application. Each simulation is based on the motor technical characteristics for a precise operating cycle. Depending on these characteristics, Eco8 recommends the most suitable Altivar product for you. Finally, using these same data, the software compares the energy consumption with and without a drive (differentiation between active and reactive energy) and calculates the annual financial savings and the time to get a return on your investment.\*



**Eco8 can be downloaded from the Web free of charge on [www.telemecanique.com](http://www.telemecanique.com) or [www.schneider-electric.com](http://www.schneider-electric.com)**



\* Generally noted results - noncontractual



# A panoply of solutions

## Altivar 21 : HVAC solution

IP20 solution - Line supply: three-phase from 220 to 480 V

Motor		Drive	
kW	HP	References*	Dimensions W x H x D (mm)
0,75	1	ATV21H075..	107 x 143 x 150
1,5	2	ATV21HU15..	107 x 143 x 150
2,2	3	ATV21HU22..	107 x 143 x 150
3	-	ATV21HU30..	142 x 184 x 150
4	5	ATV21HU40..	142 x 184 x 150
5,5	7,5	ATV21HU55..	142 x 184 x 150
7,5	10	ATV21HU75..	180 x 232 x 170
11	15	ATV21HD11..	180 x 232 x 170
15	20	ATV21HD15..	245 x 329,5 x 190
18,5	25	ATV21HD18..	245 x 329,5 x 190
22	30	ATV21HD22..	240 x 420 x 210
30	40	ATV21HD30..	240 x 420 x 210
37	50	ATV21HD37..	240 x 550 x 244
45	60	ATV21HD45..	240 x 550 x 244
55	75	ATV21HD55..	320 x 630 x 290
75	100	ATV21HD75..	320 x 630 x 290

\* At the end of the reference, add  
 - M3 for 220 V  
 - N4 for 480 V

*Altivar 21 and Altivar 61 drives are available in IP23 and IP54 versions which can be adapted to your installations.*

*For more detailed information, refer to the Schneider Electric catalog or ask your regional sales office for advice.*



## Altivar 61 : Pumping and ventilation solutions for infrastructure and industry

IP20 solution - Line supply: three-phase from 220 to 690 V

Motor		Drive	
kW	HP	References*	Dimensions W x H x D (mm)
0,75	1	ATV61H075..	130 x 230 x 175
1,5	2	ATV61HU15..	130 x 230 x 175
2,2	3	ATV61HU22..	130 x 230 x 175
3	-	ATV61HU30..	155 x 260 x 187
4	5	ATV61HU40..	155 x 260 x 187
5,5	7,5	ATV61HU55..	175 x 295 x 187
7,5	10	ATV61HU75..	175 x 295 x 187
11	15	ATV61HD11..	210 x 295 x 213
15	20	ATV61HD15..	230 x 400 x 213
18,5	25	ATV61HD18..	230 x 400 x 213
22	30	ATV61HD22..	240 x 420 x 236
30	40	ATV61HD30..	240 x 550 x 266
37	50	ATV61HD37..	240 x 550 x 266
45	60	ATV61HD45..	320 x 630 x 290
55	75	ATV61HD55..	320 x 630 x 290
75	100	ATV61HD75..	320 x 630 x 290
90	125	ATV61HD90..	320 x 920 x 377
110	150	ATV61HC11..	320 x 920 x 377
132	200	ATV61HC13..	360 x 1022 x 377
160	250	ATV61HC16..	340 x 1190 x 377
220	350	ATV61HC22..	440 x 1190 x 377
250	400	ATV61HC25..	595 x 1190 x 377
315	500	ATV61HC31..	595 x 1190 x 377
400	600	ATV61HC40..	890 x 1390 x 377
500	700	ATV61HC50..	890 x 1390 x 377
630	900	ATV61HC63..	1120 x 1390 x 377
800	700	ATV61HC80..	1120 x 1390 x 377

\* At the end of the reference, add  
 - M3 for 220 V  
 - N4 for 480 V  
 - Y for 690 V



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