Altivar 212 variable speed drives

for 3-phase asynchronous motors from 0.75 to 75 kW

Catalogue

March 2011

Schneider Electric

All technical information about products listed in this catalogue are now available on:

www.schneider-electric.com

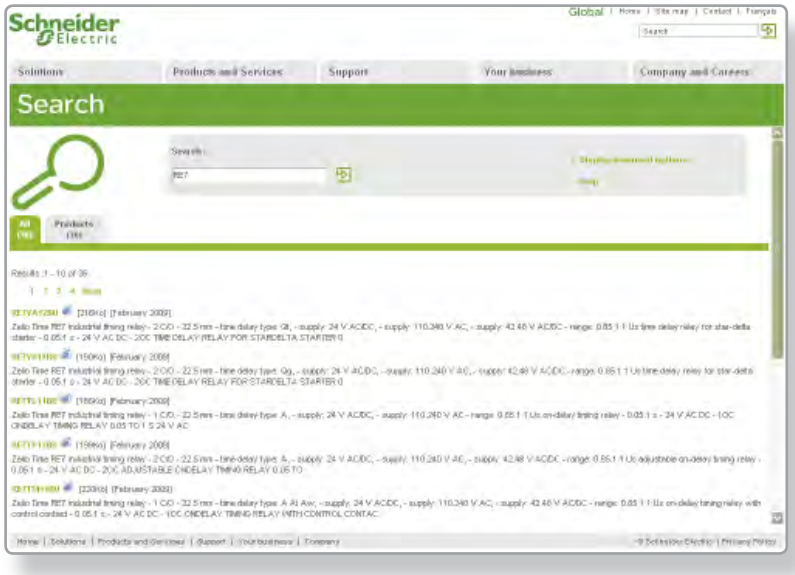
Browse the “product data sheet” to check out :

- characteristics,
- dimensions,
- curves, ...
- and also the links to the user guides and the CAD files.

1 From the home page, type the model number* into the “Search” box.

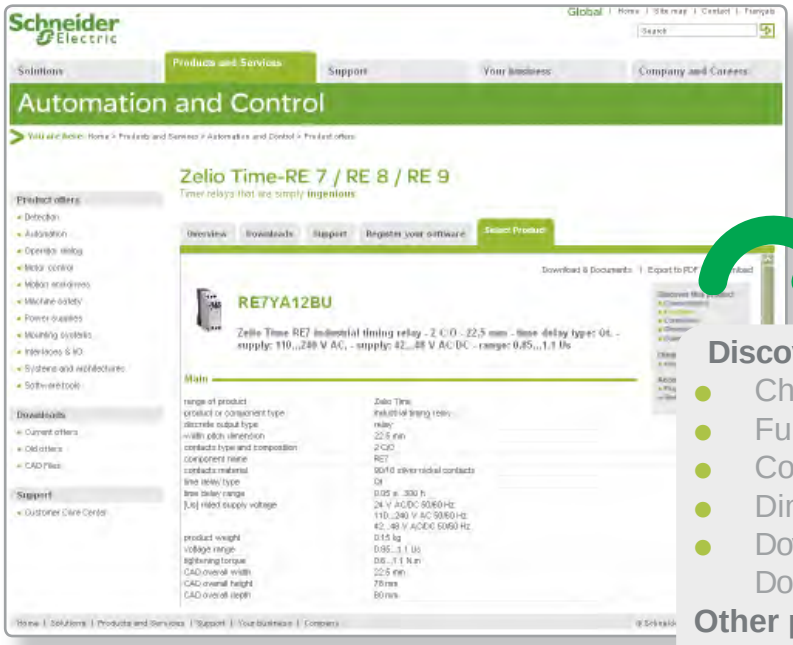
* type the model number without any blank, replace “●” by “*”

2 Under ”All” tab, click the model number that interests you.



3 The product data sheet displays.

Example : Zelio Time data sheet

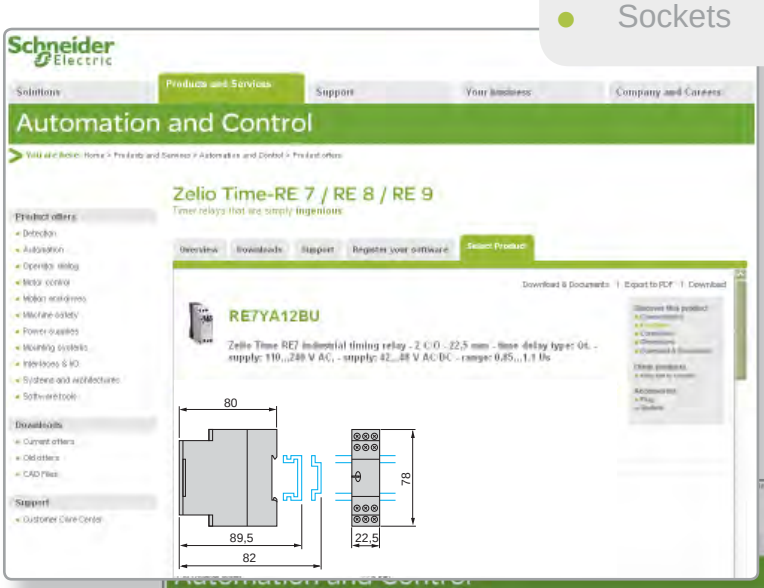


Discover this product
- Characteritics
- Functions
- Connection
- Dimensions
- Download & Documents

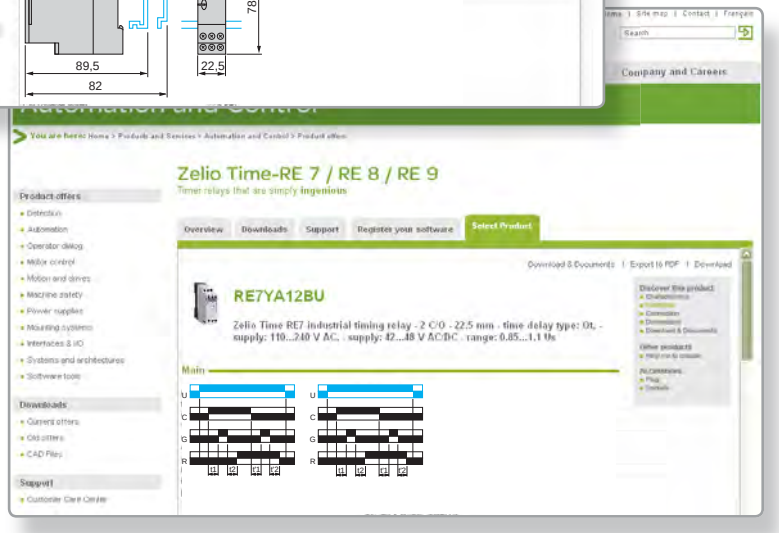
Other products
- Help me to choose

Accessories
- Plug
- Sockets

Example : Zelio Time data sheet



Example : Zelio Time data sheet



☑ You can get this information in one single pdf file.

The new generation of dedicated HVAC drives

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Altivar 212

Orientated towards performance, intelligence and building protection

Dedicated HVAC* variable speed drive for pumps, fans and compressors.
For 0.75 to 75kW - 1 to 100 hp motors.

Focused on Building Management Systems (BMS)

- Easy integration to building supervision network using embedded protocols.
- Instant detection of system failure: belt breakage, pump running dry, phase failure, etc.
- Preventive maintenance for reducing costs: fault alert, operating time, etc.
- Energy consumption monitoring.

Focused on user-friendliness

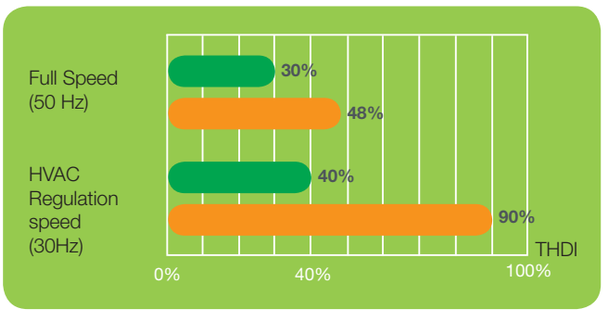
- Easy set-up, commissioning and diagnostics tools: remote graphic terminal (6 languages as standard), Multi-Loader, PC Software, Bluetooth capability and SoMove Mobile software.
- Compact size for better integration.

Focused on cost savings

- Reduced investment costs (embedded functionalities).
- Quick return on investment (energy saving).

Focused on protection & efficiency

- Continuity of service.
- Functions designed for buildings: fire mode, damper monitoring, mechanical protection, etc.
- Integrated EMC filter.
- Antiharmonic technology (THDI ≈ 30%).



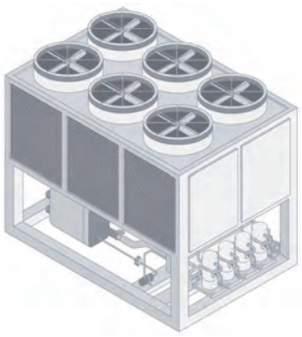
Altivar 212 antiharmonic technology
Drives with integrated DC choke

HVAC: Heating, Ventilation, Air Conditioning.

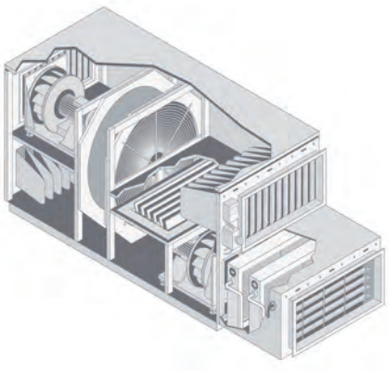
A single product...

Ventilation

Air cooling unit

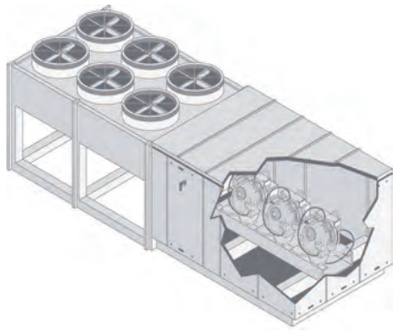


Air Handling Unit

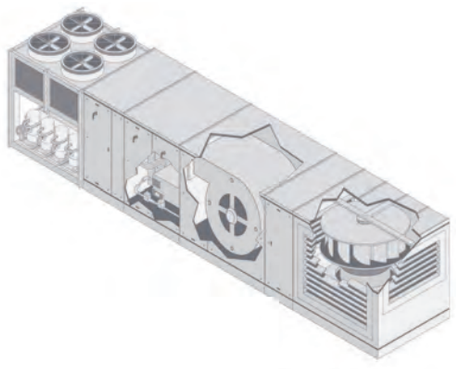


Heating and air conditioning

Condensation unit



Roof Top Unit: ventilation block



Comfort
- Reduce noise pollution (air flow, motor, etc.).

Security
- Detection of belt breakage.
- Smoke extraction: forced operation with fault inhibition.

Simplicity
- Automatic restart.
- Damper management.
- Preset speeds for a simple automatic control sequence.

Performance
- Optimise control when processing fluids.
- Use of PID regulator (temperature, flow rate, pressure, etc.).

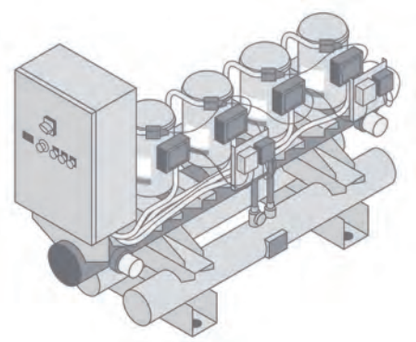
Cost savings
- Flow rates adjustment for better energy management.
- Energy saving mode.

Robustness
- Suppression of mechanical resonance.

Building management system
- Connection to building supervision network.

... for all your ventilation, air conditioning and pumping applications.

Pumping



Security
- Detection of underload/overload, pump running dry.
- Multi-motor configuration.

Cost savings
- Limitation of operating time at low speed.
- Sleep/Wake up function.
- Pressure surge suppression for prolonging the life of the installation.

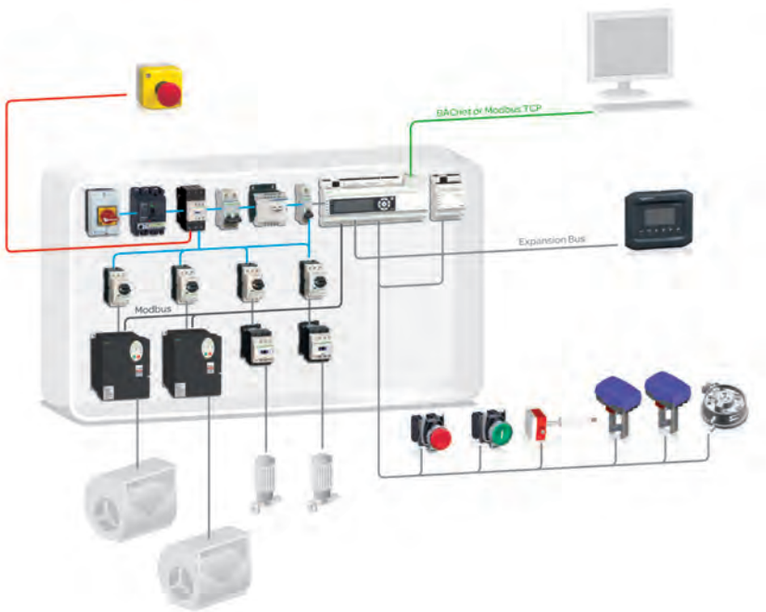
Simplicity
- Reference calibration and limitation.
- Preset speeds.
- Automatic compensation of the flow rate to precisely follow the system curve.

> THDI ≈ 30%
> as standard

More user-friendliness and integration

The Altivar 212 provides maximum ease of use and security for system integrators and end-users. Set-up, operation and maintenance are simplified with its user-friendliness and enhanced communication.

More dialogue using the communication tools.



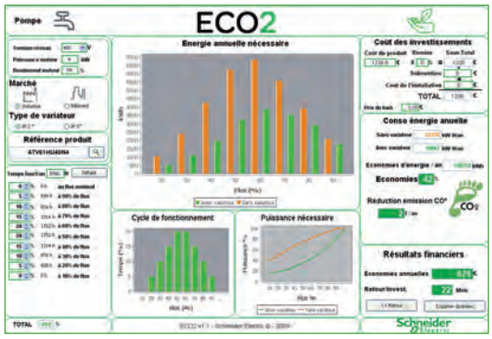
The Altivar 212 easily integrates in your automation architectures with Modbus, BacNet, APOGEE FLN P1 and MetaSys N2 as standard and Lonworks available as option.

The dual port enables a dialogue tool and a communication network to be connected at the same time.

Plug & Play

Save up to 70% on your energy bill!

Whatever the fluid (air, water), the Altivar 212 makes your buildings more comfortable, easier to manage and, at the same time, saves energy.

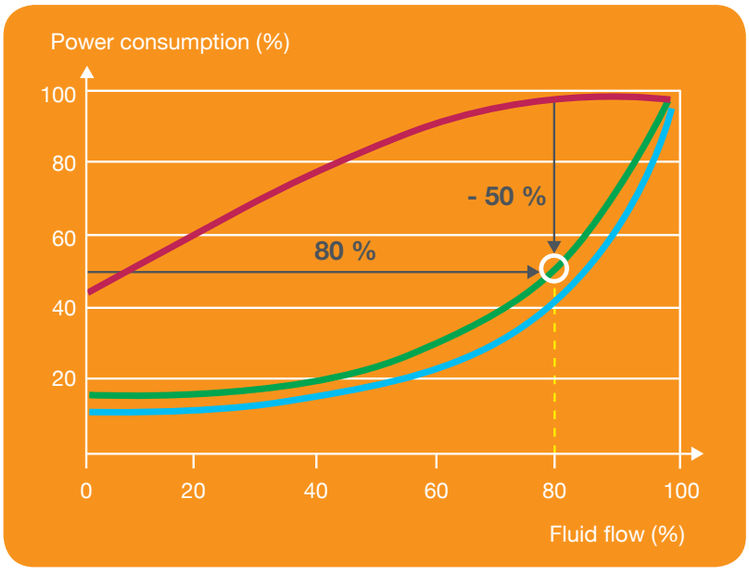


Calculate your potential energy savings

Eco2 is a software utility designed to calculate the energy savings attainable by using a variable speed drive selected from the Altivar range.
In a few clicks, Eco2 enables you to establish:

- The selection of the appropriate Altivar drive in relation to the application data.
- A comparison of the energy consumption with or without a drive.
- The calculation of possible savings from a financial and electrical viewpoint, as well as the contribution to reduced CO_2 emissions.
- The calculation of the return on investment time.

At 80% flow rate, the energy consumption drops 50%.
Using the Altivar 212, energy consumption is reduced on average by 30% when using the control mode dedicated to pumps and fans.



Traditional control system

Altivar 212 energy savings quadratic torque ratio

Altivar 212 standard torque ratio

Illustrative curves only (not contractual)

30% average reduction in energy consumption by using the control mode dedicated to pumps and fans.

IP 20 or IP 21 variable speed drives for asynchronous and synchronous motors

Type of machine			**Simple machines**		**Pumps and fans** (building (HVAC)) *(1)*
					
Power range for 50…60 Hz (kW) line supply			**0.18…4**	**0.18…15**	**0.75…75**
	Single-phase 100…120 V (kW)		0.18…0.75	–	–
	Single-phase 200…240 V (kW)		0.18…2.2	0.18…2.2	–
	Three-phase 200…230 V (kW)		–	–	–
	Three-phase 200…240 V (kW)		0.18…4	0.18…15	0.75…30
	Three-phase 380…480 V (kW)		–	–	0.75…75
	Three-phase 380…500 V (kW)		–	0.37…15	–
	Three-phase 500…600 V (kW)		–	–	–
	Three-phase 525…600 V (kW)		–	0.75…15	–
	Three-phase 500…690 V (kW)		–	–	–
Degree of protection			IP 20	IP 21	
Type of cooling			Heatsink		
Drive	Output frequency		0.1…400 Hz	0.1…500 Hz	0.5…200 Hz
	Type of control	Asynchronous motor	Standard (voltage/frequency) Performance (sensorless flux vector control) Pump/fan (Kn^2 quadratic ratio)	Standard (voltage/frequency) Performance (sensorless flux vector control) Energy saving ratio	Sensorless flux vector control Voltage/frequency ratio (2 points) Energy saving ratio
		Synchronous motor	–		
	Transient overtorque		150…170% of the nominal motor torque	170…200% of the nominal motor torque	120% of the nominal motor torque
Functions					
Number of functions			40	50	50
Number of preset speeds			8	16	7
Number of I/O	Analog inputs		1	3	2
	Logic inputs		4	6	3
	Analog outputs		1	1	1
	Logic outputs		1	–	–
	Relay outputs		1	2	2
Communication	Integrated		Modbus	Modbus and CANopen	Modbus, METASYS N2, APOGEE FLN, BACnet
	Available as an option		–	CANopen Daisy Chain, DeviceNet, PROFIBUS DP, Modbus TCP, Fipio	LonWorks
Cards (available as an option)			–		
Dialogue tools			IP 54 or IP 65 remote terminal	IP 54 or IP 65 remote terminal IP 54 remote graphic display terminal	IP 54 or IP 65 remote graphic display terminal
Configuration tools	Setup software		SoMove		PCSoft for ATV 212
	Configuration tools		Simple Loader, Multi-Loader		Multi-Loader
Standards and certifications			IEC 61800-5-1 IEC 61800-3 (environments 1 and 2, categories C1 to C3, cat. C1 with option for ATV 212) CE, UL, CSA, C-Tick, NOM, GOST		EN 55011: Group 1, class A and class B with option card. CE, UL, CSA, C-Tick, NOM
References			**ATV 12**	**ATV 312**	**ATV 212**
Catalogues			"Altivar 12 variable speed drives"	"Altivar 312 variable speed drives"	"Altivar 212 variable speed drives"

(1) Heating, Ventilation and Air Conditioning

Pumps and fans (industrial)	Complex machines
	  
0.37…800	**0.37…630**
–	–
0.37…5.5	0.37…5.5
–	–
0.75…90	0.37…75
0.75…630	0.75…500
–	–
2.2…7.5	1.5…7.5
–	–
2.2…800	1.5…630
IP 20	
Heatsink or water-cooled system	Heatsink, base plate or water-cooled system
0.1…500 Hz for the entire range 0.1…599 Hz up to 37 kW at 200…240 V ∿ and 380…480 V ∿	0.1…500 Hz for the entire range 0.1…599 Hz up to 37 kW at 200…240 V ∿ and 380…480 V ∿
Sensorless flux vector control Voltage/frequency ratio (2 or 5 points) Energy saving ratio	Flux vector control with or without sensor Voltage/frequency ratio (2 or 5 points) ENA System
Vector control without speed feedback	Vector control with or without speed feedback
120% of the nominal motor torque for 60 seconds	220% of the nominal motor torque for 2 seconds 170% for 60 seconds
> 100	> 150
8	16
2…4	2…4
6…20	6…20
1…3	1…3
0…8	0…8
2…4	2…4
Modbus and CANopen	
Modbus TCP Daisy Chain, Modbus/Uni-Telway, EtherNet/IP, DeviceNet, PROFIBUS DP V0 and V1, INTERBUS, CC-Link, LONWORKS, METASYS N2, APOGEE FLN, BACnet	Modbus TCP Daisy Chain, Modbus/Uni-Telway, EtherNet/IP, DeviceNet, PROFIBUS DP V0 and V1, INTERBUS, CC-Link
I/O extension cards, “Controller Inside” programmable card, multi-pump cards, encoder interface cards	Interface cards for incremental, resolver, SinCos, SinCos Hiperface®, EnDat® or SSI encoders, I/O extension cards, Controller Inside programmable card
IP 54 or IP 65 remote graphic display terminal	
SoMove	
Simple Loader, Multi-Loader	
IEC 61800-5-1 IEC 61800-3 (environments 1 and 2, categories C1 to C3), IEC 61000-4-2/4-3/4-4/4-5/4-6/4-11 CE, UL, CSA, DNV, C-Tick, NOM, GOST	
ATV 61	**ATV 71**
“Altivar 61 variable speed drives”	“Altivar 71 variable speed drives”

IP 54 or IP 55 variable speed drives for asynchronous and synchronous motors

Type of machine			Simple machines	Pumps and fans (building (HVAC)) *(1)*
				
Power range for 50…60 Hz (kW) line supply			**0.18…15**	**0.75…75**
	Single-phase 200…240 V (kW)		0.18…2.2	–
	Three-phase 380…480 V (kW)		–	0.75…75
	Three-phase 380…500 V (kW)		0.37…15	–
Degree of protection			IP 55	IP 55
Variants			Enclosure user-definable up to 4 kW: Vario switch disconnector, LEDs, selector switch, potentiometer	–
Drive	Output frequency		0.1…500 Hz	0.1…200 Hz
	Type of control	Asynchronous motor	Sensorless flux vector control Voltage/frequency ratio	Sensorless flux vector control Voltage/frequency ratio (2 points) Energy saving ratio
		Synchronous motor	–	–
	Transient overtorque		170…200% of the nominal motor torque	120% of the nominal motor torque for 60 seconds
Functions				
Number of functions			50	50
Number of preset speeds			16	7
Number of I/O	Analog inputs		3	2
	Logic inputs		6	3
	Analog outputs		1	1
	Logic outputs		–	–
	Relay outputs		2	2
Communication	Integrated		Modbus and CANopen	Modbus, METASYS N2, APOGEE FLN, BACnet
	Available as an option		Modbus TCP, Fipio, PROFIBUS DP, DeviceNet	LonWorks
Cards (available as an option)			–	–
Dialogue tools			IP 65 remote terminal	IP 54 or IP 65 remote graphic display terminal
Configuration tools	Setup software		SoMove	PCSoft for ATV 212 drive
	Configuration tool		Simple Loader	Multi-Loader
Standards and certifications			IEC 61800-5-1, IEC 61800-3 (environments 1 and 2, categories C1 to C3) CE, UL, CSA, C-Tick, GOST	
References			**ATV 31C**	**ATV 212W**
Catalogues			"Altivar 31C variable speed drives"	"Altivar 212 variable speed drives"

(1) Heating, Ventilation and Air Conditioning

Pumps and fans (industrial)		Complex machines	
			
0.75…90		**0.75…75**	
–			
0.75…90		0.75…75	
–			
IP 54			
–	Equipped with a Vario switch disconnector	–	Equipped with a Vario switch disconnector
0.1…599 Hz from 0.75 to 45 kW 0.1…500 Hz from **55…90 kW**		0.1…599 Hz from 0.75 to 37 kW 0.1…500 Hz from 45 to 75 kW	
Sensorless flux vector control Voltage/frequency ratio (2 or 5 points) Energy saving ratio		Sensorless flux vector control Voltage/frequency ratio (2 or 5 points) ENA System	
Vector control without speed feedback		Vector control with or without speed feedback	
110% of the nominal motor torque for 60 seconds		220% of the nominal motor torque for 2 seconds 170% for 60 seconds	
>100		>150	
8		16	
2…4		2…4	
6…20		6…20	
1…3		1…3	
0…8		0…8	
2…4		2…4	
Modbus and CANopen			
Modbus TCP Daisy Chain, Modbus/Uni-Telway, EtherNet/IP, DeviceNet, PROFIBUS DP V0 and V1, InterBus, CC-Link, LonWorks, METASYS N2, APOGEE FLN, BACnet		Modbus TCP Daisy Chain, Modbus/Uni-Telway, EtherNet/IP, DeviceNet, PROFIBUS DP V0 and V1, InterBus, CC-Link	
I/O extension cards, “Controller Inside” programmable card, multi-pump cards, encoder interface cards		Interface cards for incremental, resolver, SinCos, SinCos Hiperface®, EnDat® or SSI encoders, I/O extension cards, Controller Inside programmable card	
IP 54 or IP 65 remote graphic display terminal			
SoMove			
Simple Loader, Multi-Loader			
IEC 61800-5-1, IEC 61800-3 (environments 1 and 2, categories C1 to C3), IEC 61000-4-2/4-3/4-4/4-5/4-6/4-11 CE, UL, CSA, DNV, C-Tick, NOM, GOST			
ATV 61W	**ATV 61E5**	**ATV 71W**	**ATV 71E5**
“Altivar 61 variable speed drives”		“Altivar 71 variable speed drives”	

Variable speed drives
Altivar 61 Plus and Altivar 71 Plus
Integrated solutions

Type of machine			**Pumps and fans** (industrial)		
					
Power range for 50…60 Hz (kW) line supply			**90…630**	**90…800**	**630…2400**
	Three-phase 380…415 V		90...630	90...630	630...1400
	Three-phase 500 V		–	90...630	630...1800
	Three-phase 690 V		–	110...800	800...2400
Main characteristics			With enhanced protection		With enhanced protection and integrated cooling circuit
Variants			Ready to use	Standard offer Modular with integrated options User-definable on request	
Drive	Output frequency		0.1...500 Hz		
	Type of control	Asynchronous motor	Sensorless flux vector control Voltage/frequency ratio 2 or 5 points Energy saving ratio		
		Synchronous motor	Flux vector control without speed feedback		
	Transient overtorque		120% of the nominal motor torque for 60 seconds		
Communication	Embedded		Modbus and CANopen		
	As an option		Modbus TCP, Modbus/Uni-Telway, EtherNet/IP, DeviceNet, PROFIBUS DP V0 and V1, InterBus, CC-Link LonWorks, METASYS N2, APOGEE FLN, BACnet		
Cards (available as an option)			"Controller Inside" programmable card Multi-pump cards		
Degree of protection			IP 54 with separate air flows, **ATV 61ES5**	IP 23 compact version, **ATV 61EXC2** IP 54 compact version, **ATV 61EXC5** IP 54 with separate air flows, **ATV 61EXS5**	With integrated air-cooled circuit: IP 23: **ATV 61EXA2** IP 54: **ATV 61EXA5** With external water-cooled system: IP 55, on request
References			**ATV 61 Plus**		
Catalogues			"Altivar 61 variable speed drives"		

Complex machines
(industrial and infrastructure)

90…500	**90…630**	**500…2000**
90…500	90…500	500…1300
–	90…500	500…1500
–	110…630	630…2000
With enhanced protection		With enhanced protection and integrated cooling circuit
Ready to use	Standard offer Modular with integrated options User-definable on request	
0.1…500 Hz		
Flux vector control with or without sensor Voltage/frequency ratio (2 or 5 points) ENA System		
Vector control with or without speed feedback		
220% of the nominal motor torque for 2 seconds 170% of the nominal motor torque for 60 seconds		
Modbus and CANopen		
Modbus TCP, Modbus/Uni-Telway, EtherNet/IP, DeviceNet, PROFIBUS DP V0 and V1, InterBus, CC-Link		
“Controller Inside” programmable card		
IP 54 with separate air flows, **ATV 71ES5**	IP 23 compact version, **ATV 71EXC2** IP 54 compact version, **ATV 71EXC5** IP 54 with separate air flows, **ATV 71EXS5**	IP 23, with integrated air-cooled circuit, **ATV 71EXA2** IP 54, with integrated air-cooled circuit, **ATV 71EXA5** IP 55, with external water-cooled system (on request)

ATV 71 Plus

"Altivar 71 variable speed drives"

Variable speed drives
Altivar 212

PF105302

Ventilation application

L_000060

Air conditioning application

PF62882

Pumping application

Presentation

The Altivar 212 drive is a frequency inverter for 0.75 kW to 75 kW three-phase asynchronous motors.

It has been designed for the most common fluid management applications (HVAC “Heating, Ventilation and Air Conditioning”) in buildings the service sector:
- Ventilation
- Heating and air conditioning
- Pumping

Its design is based on eco-energy with a reduction in energy consumption of up to 70% compared to a conventional control system.
It is eco-friendly and complies with directives such as RoHS, WEEE, etc.relating to environmental protection.

The Altivar 212 is operational from the moment the power is turned on; it can be used to achieve your building's maximum energy efficiency (see the “Energy gain” curve on the previous pages).

Optimisation of building management

The Altivar 212 drive has been designed to considerably improve building management by:
- Simplifying circuits by removing flow control valves and dampers,
- Offering flexibility and ease of adjustment for installations, thanks to its compatibility with building management system connectivity
- Reducing noise pollution (noise caused by air flow and motor)

Its various standard versions make it possible to reduce installation costs by integrating EMC filters, categories C1 to C3 depending on the model, which has the following advantages:
- More compact size
- Simplified wiring, thus reduced cost

The Altivar 212 offer helps to reduce equipment costs while optimizing its performance.

Compliance with international standards and certifications

The Altivar 212 offer has been designed to conform to the strictest international standards and in accordance with recommendations relating to electrical industrial control devices, including the Low Voltage Directive and IEC/EN 61800-5-1.

It takes into account observing requirements in respect of electromagnetic compatibility and conforms to international standard IEC/EN 61800-3 (immunity and conducted and radiated EMC emissions).

The entire range has obtained CE marking according to the European Low Voltage (2006/95/EC) and EMC (2004/108/EC) Directives.

The range is UL, CSA, C-Tick and NOM certified.

Flexible communication adapted to building management

The Altivar 212 drive can easily be adapted to all building management systems thanks to its numerous functions and communication protocols integrated as standard: Modbus, METASYS N2®, APOGEE FLN P1® and BACnet®.

With protocols offered as standard and the LonWorks® communication card offered as an option, the Altivar 212 drive is optimized for the building market (HVAC).

Quick and easy dialogue to make your installations easier to use

Numerous dialogue and configuration tools are also included in the Altivar 212 offer, making running installations quick, easy and cost-effective (see page 15).

ATV 212HD22N4

ATV 212H075M3X

ATV 212W075N4,
ATV 212W075N4C

An offer dedicated to HVAC (Heating, Ventilation and Air Conditioning)

The Altivar 212 range of variable speed drives extends across a range of motor power ratings from 0.75 kW to 75 kW with the following types of power supply:
- 200…240 V three-phase, 0.75 kW to 30 kW, IP 21 (**ATV 212H●●●M3X**)
- 380…480 V three-phase, 0.75 kW to 75 kW, IP 21 (**ATV 212H●●●N4**)
- 380…480 V three-phase, 0.75 kW to 75 kW, UL Type 12/IP 55

(**ATV 212W●●●N4** and **ATV 212W●●●N4C**)

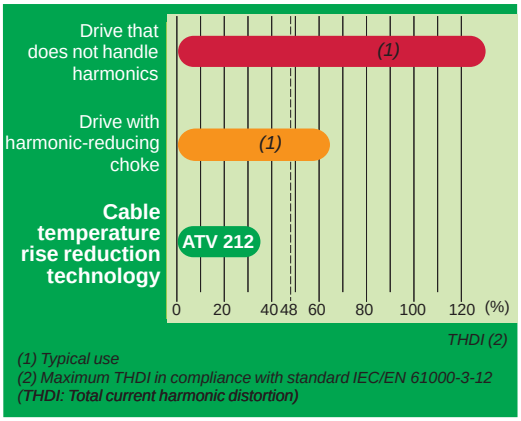
Altivar 212 drives are compact IP 21 or UL Type 12/IP 55 products which meet electromagnetic compatibility requirements and reduce current harmonics, causing minimal temperature rise in the cables.

Compliance with electromagnetic compatibility (EMC) requirements for the protection of equipment

The built-in EMC filters in **ATV 212●●●●N4** and **ATV 212W●●●N4C** drives and compliance with EMC requirements simplify installation and provide a very economical means of ensuring devices meet the criteria to receive the CE mark.

The EMC filters can be used to meet the requirements of the IEC/EN 61800-3, category C2 or C3 for **ATV 212●●●●N4,** category C1 for **ATV 212W●●●N4C**.

ATV 212H●●●M3X drives have been designed without an EMC filter. Filters are available as an option and can be installed by the user to reduce emission levels (see pages 22 and 23).



An innovative technology for managing current harmonics: cable temperature rise reduction technology

Innovative technology for managing harmonics

Thanks to its cable temperature rise reduction technology, the Altivar 212 drive offers immediate, disturbance-free operation. This technology avoids having to resort to additional options such as a line choke or DC choke to deal with current harmonics.
This makes it possible to obtain a THDI *(1)* of less than 35%, a much lower value than the 48% level of THDI imposed by standard IEC/EN 61000-3-12.

With the Altivar 212 range, you avoid the cost of adding a line choke or DC choke, you reduce the time spent on wiring, you optimize the enclosure size and you reduce the losses.
This technology can also triple the service life of the DC capacitors.

Better management of motor disturbance

The Altivar 212 offers optional motor chokes which can increase the maximum cable lengths between the drive and the motor and limit disturbance at the motor terminals.

Special features

Description	Performance
Degree of protection conforming to IEC/EN 61800-5-1 & IEC/EN 60529	**ATV 212H●●●M3X** and **ATV 212H●●●N4** drives: IP 21 & IP 41 on upper part IP 20 without blanking plate on upper part of cover UL Type 1 with the VW3 A31 81● or VW3 A9 20● kit, see page 18
	ATV 212W●●●N4 and **ATV 212W●●●N4C** drives: UL Type 12/IP 55
Ambient air temperature around the device	**ATV 212H●●●M3X** and **ATV 212H●●●N4** drives: - 10…+ 50°C without derating, + 60°C with derating *(2)*
	ATV 212W●●●N4 and **ATV 212W●●●N4C** drives: - 10…+ 40°C without derating, + 50°C with derating *(2)*
Environmental conditions	Conforming to IEC 60721-3-3 classes 3C1 and 3S2
Analog inputs	■ 1 switch-configurable current or voltage analog input which is configurable as a logic input ■ 1 voltage analog input, configurable as an analog input or as a PTC probe input
Analog output	1 switch-configurable current or voltage output
Logic inputs	■ Three 24 V ⎓ programmable logic inputs, compatible with level 1 PLC, IEC/EN 61131-2 standard ■ 1 positive logic input (Source) ■ 1 negative logic input (Sink)
Configurable relay logic outputs	■ 1 output, one “N/C” contact and one “N/O” contact with common point ■ 1 output, one “N/O” contact

(1) THDI: Total current harmonic distortion

(2) View the derating curves on our website: www.schneider-electric.com.

PF108761

Example of an application requiring the use of dedicated building functions

Integrated functions for simplified use of buildings

Due to its numerous integrated functions, the Altivar 212 drive gets building applications up and running immediately, while ensuring the reliability of equipment with its protection functions.

Dedicated functions for ventilation applications

- Noise reduction due to the switching frequency, which is adjustable up to 16 kHz during operation
- Automatic catching of a spinning load with speed detection
- Adaptation of current limiting according to speed
- Reference calibration and limitation
- Continuity of service is assured by means of the forced operation function with configurable fault inhibition, direction of operation and references.

Protection functions

- Smoke extraction system (forced operation with fault inhibition)
- Damper control with motor stopping if the ventilation shutters are closed
- Machine protection via skip frequency function (resonance suppression).

Dedicated functions for pumping applications

- Sleep/wake-up

Protection functions

- Protection against overloads and overcurrents in continuous operation (pump jamming)
- Machine mechanical protection with control of operating direction
- Protection of the installation by means of underload and overload detection

Universal functions designed specifically for building applications

- Energy saving ratio
- Auto-tuning
- Integrated PID regulator with preset references and automatic/manual (“Auto/Man.”) mode
- Automatic ramp adaptation, ramp switching, ramp profile
- Switching between sets of motor rating data (Multimotor)
- Switching of command channels (references and run command) using the LOC/REM key
- Preset speeds
- Monitoring, measurement of energy consumption
- Electricity and service hours meter

Protection functions

- Motor and drive thermal protection, via a built-in PTC thermistor probe
- Protection via management of multiple faults and configurable alarms

Drives: page 16 | Options: page 19 | Communication: page 24 | Motor starters: page 26

PF100621

Side-by-side mounting of Altivar 212 drives

Easy and inexpensive to mount, appropriate to each application

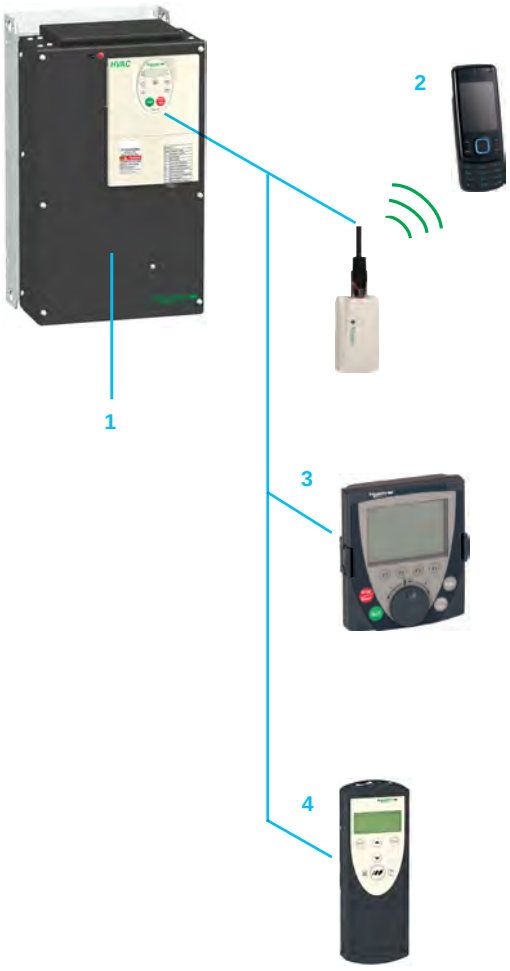
The compact nature of the Altivar 212 range simplifies installation and reduces costs by optimizing the size of enclosures (whether floor-standing or wall-mounted).

Altivar 212 drives can be mounted in a variety of ways to adapt to the needs of an installation. They can be mounted side by side, and can also be wall-mounted in compliance with UL Type 1 requirements using kits **VW3 A31 81●** and **VW3 A9 20●** (see page 18).
They are designed to operate in an enclosure at an ambient temperature of + 40°C or + 50°C depending on the model, without derating, or from + 50°C or + 60°C depending on the model, with derating.

Please refer to the mounting recommendations on our website: www.schneider-electric.com.

Numerous dialogue and configuration tools

The Altivar 212 range offers a wide range of dialogue and configuration tools that make it quick, easy and cost-effective to run installations.



Example of dialogue and configuration tools associated with the Altivar 212 range

Drive Navigator 3

The Altivar 212 drive 1 has a remote graphic display terminal (Drive Navigator), common to all Schneider Electric's variable speed drive ranges.
This terminal is very user-friendly when performing startup and maintenance operations thanks to its full-text screen, online help screens and text in the user's language (6 factory-installed languages available).

It can be remotely mounted on an enclosure door with IP 54 or IP 65 degree of protection. See page 19.

PCSoft software workshop

The PCSoft software workshop integrates configuration, setup and maintenance functions. It connects directly to the Modbus port on the drive. See page 18.

SoMove Mobile software 2

SoMove Mobile software is a mobile phone application. It can be used to edit the Altivar 212 drive parameters from a mobile phone, save configurations, import them from a PC and export them to a PC.
It can be used with the door closed thanks to the Bluetooth® interface.
See page 20.

Multi-Loader configuration tool 4

The Multi-Loader tool enables configurations to be copied from a PC or a drive and duplicated on another drive. The Altivar 212 drives must be powered-up.
See page 20.

Quick menu tool

The Altivar 212 drive offers a quick setup function in the form of its Quick menu, which includes the 10 key installation parameters (acceleration, deceleration, motor parameters, etc.).

A documented offer

The Altivar 212 range is also presented on a DVD-ROM which includes all the Schneider Electric documentation on variable speed drives and soft start/soft stop units.

The DVD-ROM includes the technical documentation (programming manuals, installation manuals, quick reference guides), brochures and catalogues.
See page 20.

Variable speed drives
Altivar 212
IP 21 drives

PF100600

ATV 212H075M3X
EMC plate not mounted

PF100609

ATV 212HD15N4
EMC plate not mounted

PF100605

ATV 212HD55N4
EMC plate not mounted

IP 21 drives (frequency range from 0.5 to 200 Hz)

Motor		Line supply				Altivar 212					
Power indicated on rating plate		Line current *(1)*		Apparent power	Maximum prospective line Isc	Max. continuous output current (In) *(2)*	Maximum transient current for 60 s	Dissipated power at maximum output current	THDI *(3)*	Reference	Weight
		200 V	240 V	240 V		230 V		240 V			
kW	*HP*	A	A	kVA	kA	A	A	W	%		kg
Three-phase supply voltage: 200…240 V 50/60 Hz, without EMC filter *(4)*											
0.75	*1*	3.3	2.7	1.1	5	4.6	5.1	63	31.3	**ATV 212H075M3X**	1.800
1.5	*2*	6.1	5.1	2.1	5	7.5	8.3	101	31.6	**ATV 212HU15M3X**	1.800
2.2	*3*	8.7	7.3	3	5	10.6	11.7	120	30.7	**ATV 212HU22M3X**	1.800
3	–	–	10	4.2	5	13.7	15.1	146	32.4	**ATV 212HU30M3X**	3.050
4	*5*	14.6	13	5.4	5	18.7	19.3	193	31.1	**ATV 212HU40M3X**	3.050
5.5	*7.5*	20.8	17.3	7.2	22	24.2	26.6	249	30.7	**ATV 212HU55M3X**	6.100
7.5	*10*	27.9	23.3	9.7	22	32	35.2	346	30.8	**ATV 212HU75M3X**	6.100
11	*15*	42.1	34.4	14.3	22	46.2	50.8	459	35.5	**ATV 212HD11M3X**	11.550
15	*20*	56.1	45.5	18.9	22	61	67.1	629	33.3	**ATV 212HD15M3X**	11.550
18.5	*25*	67.3	55.8	23.2	22	74.8	82.3	698	32	**ATV 212HD18M3X**	11.550
22	*30*	80.4	66.4	27.6	22	88	96.8	763	35	**ATV 212HD22M3X**	27.400
30	*40*	113.3	89.5	37.2	22	117	128.7	1085	32.1	**ATV 212HD30M3X**	38.650

Motor		Line supply				Altivar 212					
Power indicated on rating plate		Max. line current *(1)*		Apparent power	Maximum prospective line Isc	Max. continuous output current (In) *(2)*	Maximum transient current for 60 s	Dissipated power at maximum output current	THDI *(3)*	Reference	Weight
		380 V	480 V	380 V		*(5)*		380 V			
kW	*HP*	A	A	kVA	kA	A	A	W	%		kg
Three-phase supply voltage: 380…480 V 50/60 Hz, with integrated category C2 or C3 EMC filter *(4)*											
0.75	*1*	1.7	1.4	1.1	5	2.2	2.4	55	32.8	**ATV 212H075N4**	2.000
1.5	*2*	3.2	2.5	2.1	5	3.7	4	78	30.9	**ATV 212HU15N4**	2.000
2.2	*3*	4.6	3.6	3	5	5.1	5.6	103	30.5	**ATV 212HU22N4**	2.000
3	–	6.2	4.9	4.1	5	7.2	7.9	137	31.2	**ATV 212HU30N4**	3.350
4	*5*	8.1	6.4	5.3	5	9.1	10	176	30.6	**ATV 212HU40N4**	3.350
5.5	*7.5*	10.9	8.6	7.2	22	12	13.2	215	30.5	**ATV 212HU55N4**	3.350
7.5	*10*	14.7	11.7	9.7	22	16	17.6	291	30.9	**ATV 212HU75N4**	6.450
11	*15*	21.1	16.8	13.9	22	22.5	24.8	430	30.4	**ATV 212HD11N4**	6.450
15	*20*	28.5	22.8	18.7	22	30.5	33.6	625	30.9	**ATV 212HD15N4**	11.650
18.5	*25*	34.8	27.8	22.9	22	37	40.7	603	30.5	**ATV 212HD18N4**	11.650
22	*30*	41.1	32.6	27.3	22	43.5	47.9	723	31.9	**ATV 212HD22N4S** ▲	11.650
22	*30*	41.6	33.1	27.3	22	43.5	47.9	626	30.7	**ATV 212HD22N4**	26.400
30	*40*	56.7	44.7	37.3	22	58.5	64.4	847	30	**ATV 212HD30N4**	26.400
37	*50*	68.9	54.4	45.3	22	79	86.9	976	30.3	**ATV 212HD37N4**	38.100
45	*60*	83.8	65.9	55.2	22	94	103.4	1253	30.2	**ATV 212HD45N4**	38.100
55	*75*	102.7	89	67.6	22	116	127.6	1455	32.7	**ATV 212HD55N4**	55.400
75	*100*	141.8	111.3	93.3	22	160	176	1945	31.1	**ATV 212HD75N4**	55.400

Dimensions (overall)

Drives *(5)*		W x H x D	
		EMC plate mounted	EMC plate not mounted
ATV 212H●●●M3X	**ATV 212H●●●N4**	mm	mm
ATV 212075M3X…U22M3X	ATV 212075N4…U22N4	107 x 192 x 150	107 x 143 x 150
ATV 212U30M3X, U40M3X	ATV 212U30N4…U55N4	142 x 232 x 150	142 x 184 x 150
ATV 212U55M3X, U75M3X	ATV 212U75N4, D11N4	180 x 307 x 170	180 x 232 x 170
ATV 212D11M3X…D18M3X	ATV 212D15N4…D22N4S	245 x 405 x 190	245 x 330 x 190
ATV 212D22M3X	ATV 212D22N4, D30N4	240 x 542 x 214	240 x 420 x 214
–	ATV 212D37N4, D45N4	240 x 663 x 244	240 x 550 x 244
ATV 212D30M3X	ATV 212D55N4, D75N4	320 x 723 x 290	320 x 605 x 290

(1) Typical value for the indicated motor power and for the maximum prospective line Isc.
(2) These values are given for a nominal switching frequency of 12 kHz up to ATV 212HD15M3X and up to ATV 212HD15N4 or 8 kHz for ATV 21HD18M3X…HD30M3X and ATV 212HD18N4…HD75N4, for use in continuous operation. The switching frequency can be set between 6 and 16 kHz for all ratings. Above 8 kHz or 12 kHz, depending on the rating, the drive will reduce the switching frequency automatically in the event of an excessive temperature rise. For continuous operation above the nominal switching frequency, derate the nominal drive current. The nominal motor current must not exceed this derating value. See the derating curves on our website www.schneider-electric.com.
(3) Total current harmonic distortion in accordance with IEC/EN 61000-3-12.
(4) Drives are supplied with an EMC plate, for customer assembly.
(5) Value given at 380 V (IEC)/460 V (NEC).

▲ Marketed 2nd half 2011

Variable speed drives
Altivar 212
UL Type 12/IP 55 drives

PF100613

ATV 212W075N4

PF100617

ATV 212WD22N4, ATV 212WD22N4C

UL Type 12/IP 55 drives (frequency range from 0.5 to 200 Hz)

Motor		Line supply				Altivar 212				
Power indicated on rating plate		Line current (1)		Apparent power	Maximum prospective line Isc	Max. continuous output current (In) (2)	Maximum transient current for 60 s	THDI (3)	Reference	Weight
		380 V	480 V	380 V		380/460 V (IEC/NEC)				
kW	HP	A	A	kVA	kA	A	A	%		kg
Three-phase supply voltage: 380…480 V 50/60 Hz, with integrated category C2 or C3 EMC filter										
0.75	1	1.7	1.4	1.1	5	2.2	2.4	32.8	**ATV 212W075N4**	7.000
1.5	2	3.2	2.5	2.1	5	3.7	4	30.9	**ATV 212WU15N4**	7.000
2.2	3	4.6	3.6	3	5	5.1	5.6	30.5	**ATV 212WU22N4**	7.000
3	–	6.2	4.9	4.1	5	7.2	7.9	31.2	**ATV 212WU30N4**	9.650
4	5	8.1	6.4	5.3	5	9.1	10	30.6	**ATV 212WU40N4**	9.650
5.5	7.5	10.9	8.6	7.2	22	12	13.2	30.5	**ATV 212WU55N4**	9.650
7.5	10	14.7	11.7	9.7	22	16	17.6	30.9	**ATV 212WU75N4**	10.950
11	15	21.2	16.9	14	22	22.5	24.8	30.9	**ATV 212WD11N4**	30.300
15	20	28.4	22.6	18.7	22	30.5	33.6	30.4	**ATV 212WD15N4**	30.300
18.5	25	34.9	27.8	23	22	37	40.7	30.5	**ATV 212WD18N4**	37.400
22	30	41.6	33.1	27.3	22	43.5	47.9	30.7	**ATV 212WD22N4**	49.500
30	40	56.7	44.7	37.3	22	58.5	64.4	30	**ATV 212WD30N4**	49.500
37	50	68.9	54.4	45.3	22	79	86.9	30.3	**ATV 212WD37N4**	57.400
45	60	83.8	65.9	55.2	22	94	103.4	30.2	**ATV 212WD45N4**	57.400
55	75	102.7	89	67.6	22	116	127.6	32.7	**ATV 212WD55N4**	61.900
75	100	141.8	111.3	93.3	22	160	176	31.1	**ATV 212WD75N4**	61.900
Three-phase supply voltage: 380…480 V 50/60 Hz, with integrated category C1 filter										
0.75	1	1.7	1.4	1.1	5	2.2	2.4	32.8	**ATV 212W075N4C**	7.500
1.5	2	3.2	2.6	2.1	5	3.7	4	30.9	**ATV 212WU15N4C**	7.500
2.2	3	4.6	3.7	3	5	5.1	5.6	30.5	**ATV 212WU22N4C**	7.500
3	–	6.2	5	4.1	5	7.2	7.9	31.2	**ATV 212WU30N4C**	10.550
4	5	8.2	6.5	5.4	5	9.1	10	30.6	**ATV 212WU40N4C**	10.550
5.5	7.5	11	8.7	7.2	22	12	13.2	30.5	**ATV 212WU55N4C**	10.550
7.5	10	14.7	11.7	9.7	22	16	17.6	30.9	**ATV 212WU75N4C**	11.850
11	15	21.1	16.7	13.9	22	22.5	24.8	30.9	**ATV 212WD11N4C**	36.500
15	20	28.4	22.8	18.7	22	30.5	33.6	30.4	**ATV 212WD15N4C**	36.500
18.5	25	34.5	27.6	22.7	22	37	40.7	30.5	**ATV 212WD18N4C**	45.000
22	30	41.1	33.1	27.1	22	43.5	47.9	30.7	**ATV 212WD22N4C**	58.500
30	40	58.2	44.4	38.3	22	58.5	64.4	30	**ATV 212WD30N4C**	58.500
37	50	68.9	54.4	45.3	22	79	86.9	30.3	**ATV 212WD37N4C**	77.400
45	60	83.8	65.9	55.2	22	94	103.4	30.2	**ATV 212WD45N4C**	77.400
55	75	102.7	89	67.6	22	116	127.6	32.7	**ATV 212WD55N4C**	88.400
75	100	141.8	111.3	93.3	22	160	176	31.1	**ATV 212WD75N4C**	88.400

Dimensions (overall)

Drives	W x H x D
ATV 212W	**mm**
075N4 (C)…U22N4 (C)	215 x 297 x 192
U30N4 (C)…U75N4 (C)	230 x 340 x 208
D11N4 (C), D15N4 (C)	290 x 560 x 315
D18N4 (C)	310 x 665 x 315
D22N4 (C), D30N4 (C)	284 x 720 x 315
D37N4 (C), D45N4 (C)	284 x 880 x 343
D55N4 (C), D75N4 (C)	362 x 1000 x 364

(1) Typical value for the indicated motor power and for the maximum prospective line Isc.
(2) These values are given for a nominal switching frequency of 12 kHz up to ATV 212WD15N4 and up to ATV 212WD15N4C or 8 kHz for ATV 212WD18N4…WD75N4 and ATV 212WD18N4C…WD75N4C, for use in continuous operation.
The switching frequency can be set between 6 and 16 kHz for all ratings. Above 8 kHz or 12 kHz, depending on the rating, the drive will reduce the switching frequency automatically in the event of an excessive temperature rise. For continuous operation above the nominal switching frequency, derate the nominal drive current. The nominal motor current must not exceed this derating value. See the derating curves on our website www.schneider-electric.com.
(3) Total current harmonic distortion in accordance with IEC/EN 61000-3-12.

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