

# Variable speed drives

## Altivar 71 and Altivar 71 Plus

for three-phase motors  
from 0.37 kW/0.5 HP to 2000 kW

Catalogue

April 2014



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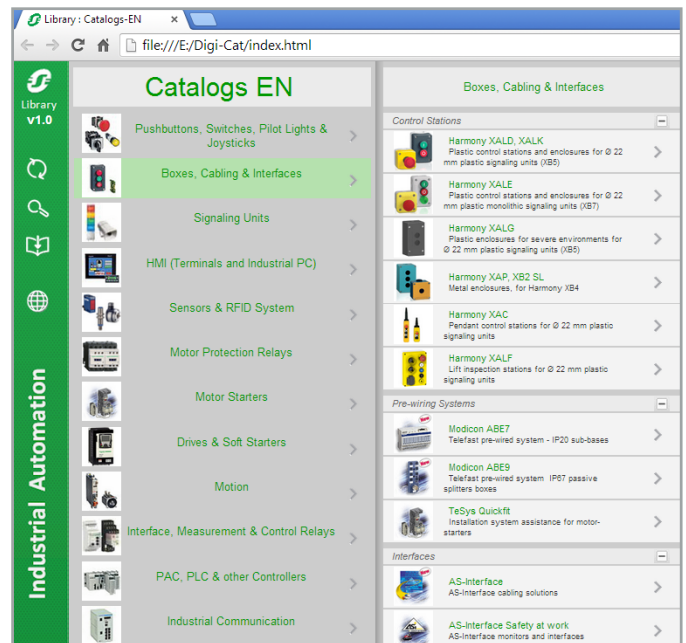
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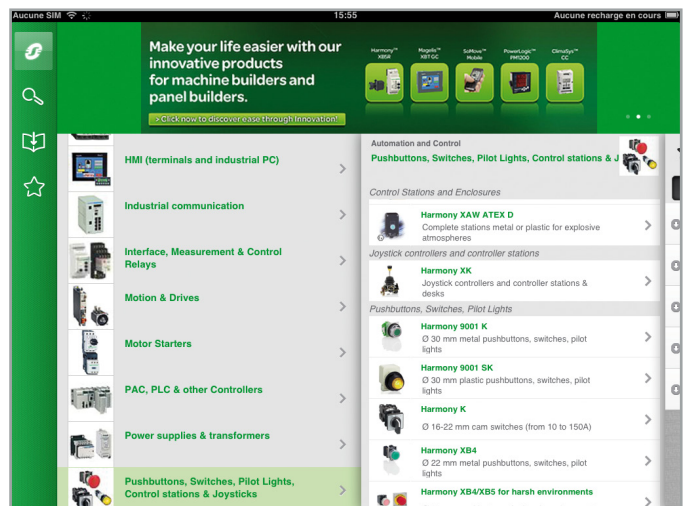
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# IP 20 or IP 21 variable speed drives for asynchronous and synchronous motors

## Type of machine

## Simple machines

## Pumps and fans (building HVAC) (1)



### Power range for 50...60 Hz (kW/HP) line supply

	0.18...4/0.25...5	0.18...15/0.25...20	0.75...75/1...100
Single-phase 100...120 V (kW/HP)	0.18...0.75/0.25...1	–	–
Single-phase 200...240 V (kW/HP)	0.18...2.2/0.25...3	0.18...2.2/0.25...3	–
Three-phase 200...230 V (kW/HP)	–	–	–
Three-phase 200...240 V (kW/HP)	0.18...4/0.25...5	0.18...15/0.25...20	0.75...30/1...40
Three-phase 380...480 V (kW/HP)	–	–	0.75...75/1...100
Three-phase 380...500 V (kW/HP)	–	0.37...7.5/0.5...10	–
Three-phase 500...600 V (kW/HP)	–	–	–
Three-phase 525...600 V (kW/HP)	–	0.75...15/1...20	–
Three-phase 500...690 V (kW/HP)	–	–	–

### Degree of protection

Type of cooling (2)	IP 20	IP 21	
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### Drive

Output frequency	0.1...400 Hz	0.1...500 Hz	0.5...200 Hz
Type of control	Standard (voltage/frequency) Performance (sensorless flux vector control) Pump/fan (Kn <sup>2</sup> 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
Asynchronous motor	–	–	–
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)

–	–	–	–
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### Dialogue tools

IP 54 or IP 65 remote terminal	IP 54 or IP 65 remote terminal	IP 54 or IP 65 remote terminal	IP 54 or IP 65 remote graphic display terminal
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### Configuration tools

SoMove	SoMove	–	PCSoft for ATV 212
Simple Loader, Multi-Loader	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	CE, UL, CSA, DNV, 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	
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### Catalogues

"Altivar 12 variable speed drives"	"Altivar 312 variable speed drives"	"Altivar 212 variable speed drives"	
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(1) Heating, Ventilation and Air Conditioning

## Pumps and fans (industrial)

## Complex machines



### Power range for 50...60 Hz (kW/HP) line supply

	0.37...800/0.5...900	0.37...630/0.5...700
–	–	–
0.37...5.5/0.5...7.5	0.37...5.5/0.5...7.5	–
–	–	–
0.75...90/1...125	0.37...75/0.5...100	–
0.75...630/1...900	0.75...500/1...700	–
–	–	–
2.2...7.5/3...10	1.5...7.5/2...10	–
–	–	–
2.2...800/3...800	1.5...630/2...700	–

### Degree of protection

IP 20	IP 20	IP 20
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### Drive

Heatsink or water-cooled system	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/50 HP at 200...240 V ~ and 380...480 V ~	0.1...500 Hz for the entire range
Sensorless flux vector control	Sensorless flux vector control	0.1...599 Hz up to 37 kW/50 HP at 200...240 V ~ and 380...480 V ~
Voltage/frequency ratio (2 or 5 points)	Voltage/frequency ratio (2 or 5 points)	Flux vector control with or without sensor
Energy saving ratio	Energy saving ratio	Voltage/frequency ratio (2 or 5 points)
–	–	ENA System
Vector control without speed feedback	Vector control without speed feedback	Vector control with or without speed feedback
120% of the nominal motor torque for 60 seconds	120% of the nominal motor torque for 60 seconds	220% of the nominal motor torque for 2 seconds
–	–	170% for 60 seconds

### Functions

> 100	> 150	> 150
8	16	16
2...4	2...4	2...4
6...20	6...20	6...20
1...3	1...3	1...3
0...8	0...8	0...8
2...4	2...4	2...4

### Communication

Modbus and CANopen	Modbus and CANopen	Modbus and CANopen
Modbus TCP Daisy Chain, Modbus/Uni-Telway, EtherNet/IP (RSTP), DeviceNet, PROFIBUS DP V0 and V1, INTERBUS, CC-LINK, LoNWORKS, METASYS N2, APOGEE FLN, BACnet, Profinet, EtherCAT, POWERLINK	Modbus TCP Daisy Chain, Modbus/Uni-Telway, EtherNet/IP (RSTP), DeviceNet, PROFIBUS DP V0 and V1, INTERBUS, CC-LINK, LoNWORKS, METASYS N2, APOGEE FLN, BACnet, Profinet, EtherCAT, POWERLINK	Modbus TCP Daisy Chain, Modbus/Uni-Telway, EtherNet/IP (RSTP), DeviceNet, PROFIBUS DP V0 and V1, INTERBUS, CC-LINK, Profinet, EtherCAT, POWERLINK

### Cards (available as an option)

I/O extension cards, "Controller Inside" programmable card, multi-pump cards, encoder interface cards	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
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### Dialogue tools

IP 54 or IP 65 remote graphic display terminal	IP 54 or IP 65 remote graphic display terminal	IP 54 or IP 65 remote graphic display terminal
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### Configuration tools

SoMove	SoMove	–
Simple Loader, Multi-Loader	Simple Loader, Multi-Loader	–

### Standards and certifications

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	CE, UL, CSA, DNV, C-Tick, NOM, GOST	–

### References

ATV 61	ATV 71	
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### Catalogues

"Altivar 61 variable speed drives"	page 1/14	
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(2) The type of cooling depends on the model. Please consult pages 1/14 to 1/20.



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

Type of machine

Pumps and fans  
(industrial)



<b>Power range for 50...60 Hz (kW/HP) line supply</b>	<b>90...630/125...900</b>	<b>90...800/125...900</b>	<b>630...2400/800...2500</b>
Three-phase 380...415 V (kW)	90...630	90...630	630...1400
Three-phase 480 V (HP)	125...900	125...900	900...2000
Three-phase 500 V (kW)	–	90...630	630...1800
Three-phase 600 V (HP)	–	125...800	800...2500
Three-phase 690 V (kW)	–	110...800	800...2400
<b>Main characteristics</b>	With enhanced protection		With enhanced protection and integrated cooling circuit
<b>Variants</b>	Ready to use	Standard offer Modular with integrated options User-definable on request	
<b>Low Harmonic</b>	–	Yes, only for ATV 61 Plus - LH	
<b>Drive</b>	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	
<b>Communication</b>	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	
<b>Cards</b> (available as an option)	"Controller Inside" programmable card Multi-pump cards		
<b>Degree of protection</b>	IP 54 with separate air flows, <b>ATV61ES5</b>	IP 23 compact version, <b>ATV61EXC2</b> IP 54 compact version, <b>ATV61EXC5</b> IP 54 with separate air flows, <b>ATV61EXS5</b>	With integrated air-cooled circuit: IP 23: <b>ATV61EXA2</b> IP 54: <b>ATV61EXA5</b> With external water-cooled system: IP 55, on request
<b>Type of drive</b>	<b>ATV 61 Plus</b>	<b>ATV 61 Plus / ATV 61 Plus - LH</b>	
<b>Catalogues</b>	"Altivar 61 and Altivar 61 Plus variable speed drives"		

Complex machines  
(industrial and infrastructure)



<b>Power range for 50...60 Hz (kW/HP) line supply</b>	<b>90...500/125...700</b>	<b>90...630/125...700</b>	<b>500...2000/550...2100</b>
Three-phase 380...415 V (kW)	90...500	90...500	500...1300
Three-phase 480 V (HP)	125...700	125...700	550...1800
Three-phase 500 V (kW)	–	90...500	500...1500
Three-phase 600 V (HP)	–	125...700	700...2100
Three-phase 690 V (kW)	–	110...630	630...2000
<b>Main characteristics</b>	With enhanced protection		With enhanced protection and integrated cooling circuit
<b>Variants</b>	Ready to use	Standard offer Modular with integrated options User-definable on request	
<b>Low Harmonic</b>	–	Yes, for power regeneration to the mains supply, only for ATV 71 Plus - LH	
<b>Drive</b>	Output frequency	0.1...500 Hz	
	Type of control	Asynchronous motor Flux vector control with or without sensor Voltage/frequency ratio (2 or 5 points) ENA System	
		Synchronous motor Vector control with or without speed feedback	
	Transient overtorque	220% of the nominal motor torque for 2 seconds 170% of the nominal motor torque for 60 seconds	
<b>Communication</b>	Embedded	Modbus and CANopen	
	As an option	Modbus TCP, Modbus/Uni-Telway, EtherNet/IP, DeviceNet, PROFIBUS DP V0 and V1, InterBus, CC-LINK	
<b>Cards</b> (available as an option)	"Controller Inside" programmable card		
<b>Degree of protection</b>	IP 54 with separate air flows, <b>ATV71ES5</b>	IP 23 compact version, <b>ATV71EXC2</b> IP 54 compact version, <b>ATV71EXC5</b> IP 54 with separate air flows, <b>ATV71EXS5</b>	IP 23, with integrated air-cooled circuit, <b>ATV71EXA2</b> IP 54, with integrated air-cooled circuit, <b>ATV71EXA5</b> IP 55, with external water-cooled system (on request)
<b>Type of drive</b>	<b>ATV 71 Plus</b>	<b>ATV 71 Plus / ATV 71 Plus - LH</b>	
<b>Catalogues</b>	page 2/2		



1000529



Hoisting application

104209



Packaging application

102183



Wood-working machine application

### Applications

With its different types of motor control and numerous integrated functions, the Altivar 71 range of variable speed drives meets stringent requirements.

It is suitable for demanding drive systems:

- Torque and speed accuracy at very low speed, high dynamic performance with Flux Vector Control with or without sensor
- Extended frequency range for high-speed motors
- Parallel connection of motors and special drives using the voltage/frequency ratio
- Static speed accuracy and energy saving for open-loop synchronous motors
- Smooth flexibility for unbalanced machines with the ENA (ENERgy Adaptation) System.

In conjunction with the wide voltage range for a 690 V ~ line supply, the Altivar 71 drive's advanced functions boost performance levels and make machines more versatile so they can be used for a large number of applications.

### Hoisting

- Brake control adapted for translational, hoisting and slewing movements
- Load measurement using weight sensor
- High-speed hoisting
- Brake feedback management
- Limit switch management
- Slack sling

### Handling

- Very quick response times on transmission of a command: 2 ms ( $\pm$  0.5 ms)
- Reference via pulse train or differential analog input
- Control via the principal communication networks
- Position control via limit switches with time optimization at low speed
- Multiple parameter settings via parameter set switching

### Packaging

- Up to 50 Hz of the bandwidth
- Very quick response times on change of reference: 2 ms ( $\pm$  0.5 ms)
- Control via integrated CANopen machine bus
- Position control via limit switches

### Textile machines

- High resolution of the digital speed reference (1/32,000)
- Use of synchronous motor, irrespective of load, helps assure speed accuracy
- High bandwidth
- Spooling function
- Connection to common DC bus
- Control of both asynchronous and synchronous motors supported
- High-performance speed loop

### Wood-working machines

- Fastest possible controlled stop on loss of line supply
- Control via integrated CANopen machine bus
- Protection of motor against overvoltages

### Process machinery

- PID regulator
- High-resolution references
- Speed or torque control
- Connection to the principal communication networks
- Separate control section power supply
- Braking unit via re-injection to the line supply
- Connection to common DC bus



An extensive range with a wide selection of options

### An extensive and versatile offer

The Altivar 71 range of variable speed drives covers a wide range of motor power ratings from 0.37 kW/0.5 HP to 2000 kW with five types of power supply:

- 200...240 V single-phase, 0.37 kW/0.5 HP to 5.5 kW/7.5 HP, IP 20 (ATV71H●●●M3)
- 200...240 V three-phase, 0.37 kW/0.5 HP to 75 kW/100 HP, IP 20 (ATV71H●●●M3 and ATV71H●●●M3X)
- 380...415 V three-phase, 75 kW/100 HP to 500 kW/700 HP, IP 23 or IP 54 (ATV71EXC●●●●N4H)
- 380...415 V three-phase, 90 kW/125 HP to 500 kW/700 HP, IP 23 or IP 54 (ATV71ES5●●●●N4, ATV71EXC●●●●N4 and ATV71EXS5●●●●N4)
- 380...415 V three-phase, 500 kW to 1300 kW, IP 23 or IP 54 (ATV71EXA●●●●N4)
- 380...480 V three-phase, 0.75 kW/1 HP to 500 kW/700 HP, IP 20 (ATV71H●●●N4)
- 500 V three-phase, 90 kW/125 HP to 500 kW/700 HP, IP 23 or IP 54 (ATV71EXC●●●●N and ATV71EXS5●●●●N)
- 500 V three-phase, 500 kW to 1500 kW, IP 23 or IP 54 (ATV71EXA●●●●N)
- 500...600 V three-phase, 1.5 kW/2 HP to 7.5 kW/10 HP, IP 20 (ATV71H●●●S6X)
- 500...690 V three-phase, 1.5 kW/2 HP to 630 kW/700 HP, IP 20 (ATV71H●●●Y)
- 690 V three-phase, 110 kW/125 HP to 630 kW/700 HP, IP 23 or IP 54 (ATV71EXC●●●●Y and ATV71EXS5●●●●Y)
- 690 V three-phase, 630 kW to 2000 kW, IP 23 or IP 54 (ATV71EXA●●●●Y and ATV71EXA●●●●YH)

This range can be used for controlling asynchronous motors in sensor/sensorless flux vector control mode.

At 200...240 V ~ and 380...480 V ~, there is a special version available that can be used for controlling synchronous motors with sinusoidal electromotive force when there is speed feedback. Control of asynchronous motors is still supported (see pages 1/20 and 1/44). The options supported by the Altivar 71 range of variable speed drives are also available with this version when an identical rating is used.

The Altivar 71 drive integrates the Modbus and CANopen protocols as standard, as well as numerous functions. These functions can be extended using communication option cards (see page 1/50), I/O extension cards, an encoder interface or a Controller Inside programmable card (see pages 1/44 to 1/49).

External options such as braking resistors, resistance braking units, chokes and filters complete the offer (see page 1/13).

### Eco-friendly and energy-saving

The Altivar 71 drive has been designed to generate significant energy savings in industrial processes, by offering options that can reduce line interference (DC chokes, line chokes, passive filters, Active Front End (AFE), etc.). It has been designed as an eco-friendly product (using 90 % recyclable materials, compliant with environmental standard ISO 14040). It is RoHS-compliant.

### Compliance with international standards and certifications

The entire range conforms to international standards IEC/EN 61800-5-1, IEC/EN 61800-2, IEC/EN 61800-3, is UL, CSA, DNV, C-Tick, NOM 117 and GOST certified, and has been developed to meet the requirements of directives regarding the protection of the environment (RoHS, WEEE, etc.) as well as those of European Directives (CE mark).

### Functional safety and ATEX applications

The Altivar 71 drive features a Power Removal safety function that is designed to help ensure motor stopping and help prevent accidental restarts. This safety function means that the drive can be installed as part of the safety system for an Electrical/Electronic/Programmable Electronic control system relating to the safety of a machine or industrial process.

It meets the requirements of category 3 of the ISO 1384 machine safety standard, SIL 2 of IEC/EN 61508 and standard IEC/EN 61800-5-2 which covers the functional safety requirements of power drive products.

The Power Removal safety function also enables the Altivar 71 drive to offer protection for motors installed in explosive atmospheres (ATEX certification). Please refer to the ATEX guide which is available on our website [www.schneider-electric.com](http://www.schneider-electric.com).

### An extensive and versatile offer (continued)

#### Electromagnetic compatibility

Reducing current harmonics and observing requirements in respect of electromagnetic compatibility were considered right from the design stage. The incorporation of EMC filters in **ATV71H●●●M3**, **ATV71●●●N4**, **ATV71●●●Y** and **ATV71P●●●N4Z** drives and the recognition of EMC requirements facilitates installation and provides economical means of helping ensuring that machines receive the CE mark.

**ATV71H●●●M3X** and **ATV71H●●●S6X** drives have been designed without an EMC filter. Filters are available as an option and can be installed by the customer to reduce the level of emissions (see page 1/78).

#### Appropriate solutions for each environment

The IP 20 Altivar 71 range of variable speed drives includes numerous different versions. It can therefore offer solutions in a wide variety of fields and in very harsh environments. It is designed to adapt to your needs with ready-to-use or modular solutions.

#### Versions with IP 54 degree of protection for difficult environments

To meet the requirements of applications in difficult environments (dusty, humid, etc.), drives can be supplied on their own or inside a floor-standing enclosure:

- A drive version with IP 54 degree of protection (see page 1/17):
  - at 380...480 V ~, 0.75 kW/1 HP to 75 kW/100 HP (**ATV71W●●●N4**)
- A drive version with IP 54 degree of protection featuring a Vario switch disconnecter (see page 1/17):
  - at 380...480 V ~, 0.75 kW/1 HP to 75 kW/100 HP (**ATV71E5●●●N4**)
- A drive version ready-assembled in an IP 54 floor-standing enclosure (see pages 2/10 and 2/11). The offer covers motor power ratings from 90 kW/125 HP to 630 kW/700 HP (**ATV71EXS5●●●N4**, **ATV71EXS5●●●N** and **ATV71EXS5●●●Y**).
- A drive version ready-assembled in an IP 23 or IP 54 floor-standing enclosure (see pages 2/9 to 2/11). The offer covers motor power ratings from 500 kW to 2000 kW (**ATV71EXA●●●●●**).

The **ATV71EXS5●●●●●** and **ATV71EXA●●●●●** products have been designed for easy setup in highly polluted environments and, in particular, to help ensure optimum enclosure ventilation by keeping the control and power air circuits separate. They include a standard version and a modular version.

- A preassembled kit for creating an IP 54-certified floor-standing enclosure (see pages 2/2 and 2/3).

This straightforward and cost-effective solution, which is available by quoting a single reference, provides you with the mechanical components you need to create an IP 54 floor-standing enclosure (**VW3A9541...VW3A9551**).

This product has been designed for compatibility with IP 20 Altivar 71 drives, 90 kW/125 HP to 500 kW/700 HP at 380...480 V ~ (**ATV71HD90N4...HC50N4**). It includes a standard version and a modular version.

#### Water-cooled versions for environments requiring greater ruggedness

With their internal water-cooled system, Altivar 71Q (**ATV71Q●●●N4** and **ATV71Q●●●Y**) drives represent the optimum solution for applications in which rugged versions are essential. The integrated water-cooled system circuit can dissipate heat at its source and hence offers optimum integration of the whole electrical control system.

85 % of drive thermal losses are evacuated by this system, which also avoids the need to install an expensive air conditioning system.

The Altivar 71Q offer is also well suited to frequent start-up applications. See pages 1/16 and 1/19.

#### Version for industrial environments and infrastructures

The following product is available to facilitate setup in industrial environments and infrastructure contexts (tunnels, treatment plants, etc.):

- A drive version ready-assembled in an IP 23 or IP 54 compact floor-standing enclosure which covers motor power ratings from 90 kW/125 HP to 630 kW/700 HP (**ATV71EXC●●●●●**). It is available in a standard version or modular version. See pages 2/12 to 2/15.

PF107473



ATV71W075N4

PF101013



Kit VW3A9544

PF107557



ATV71EXC2●●●N4

PF107472



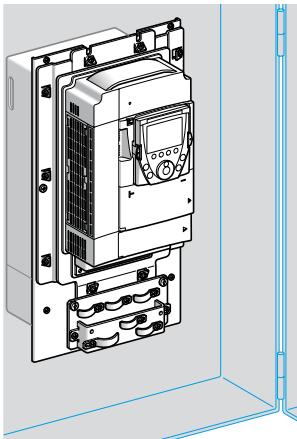
ATV71PU40N4Z

DF120368



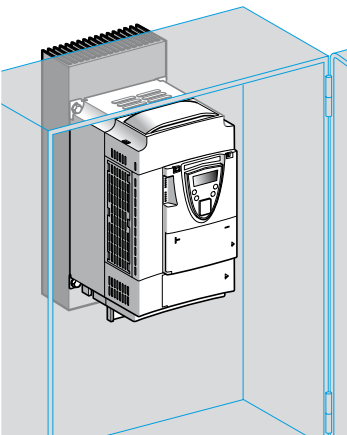
ATV71EXS5

DF536608



ATV71HU75N4 flush-mounted

DF536609



ATV71PU75N4Z in dust and damp proof enclosure

### Appropriate solutions for each environment (continued)

#### Version for environments where no ventilation is permitted

The following product is available to meet the requirements of applications where the necessary degree of protection rules out the possibility of ventilation:

- A drive on base plate version providing IP 20 degree of protection:
  - at 380...480 V ~, 0.75/1 HP to 11 kW/15 HP (ATV71P...N4Z) (see page 1/16)

As the drive is not equipped with a fan as standard, a DC choke (see page 1/68) must be added in order to help prevent overheating during operation.

#### Variant for applications requiring a very low harmonic level

##### Altivar 71 Plus drive with harmonic filtering in "Ready to use" IP 23 or IP 54 floor-standing enclosure

This enclosed product has been designed to offer, in a compact "ready-to-use" version, a range of drives designed to meet the requirements of applications requiring very low harmonic distortion factors (THDI ≤ 5 %).

This enclosed drive solution provides, depending on the model, degree of protection IP 23 (ATV71EXC2...N4H and ATV71EXA2...YH) or IP 54 (ATV71EXC5...N4H and ATV71EXA5...YH).

In addition to a standard version, a modular version is available with a choice of options to suit the requirements of your installation.

The offer covers a range of drives from 75 kW/100 HP to 2000 kW (see pages 2/6 and 2/7).

### Mounting options

The Altivar 71 drive can be mounted in a variety of ways for integration in various devices.

#### Mounting outside enclosure

The standard version of the Altivar 71 (on heatsink) or the base plate version can be mounted directly on a wall without having to be installed inside an enclosure. UL Type 1 conformity can be achieved using kit **VW3A92...**, or IP 21 or IP 31 conformity with kit **VW3A91...** (see pages 1/24 and 1/25).

#### Flush-mounting in dust and damp proof enclosure

The Altivar 71 drive has been designed to optimize the size of enclosures (floor-standing, wall-mounted, etc.).

This type of flush-mounting can be used to reduce the size of enclosure required and to limit the temperature rise inside the enclosure:

- The power section, with IP 54 degree of protection, can be easily mounted outside the enclosure using kit **VW3A95...** for flush-mounting in a dust and damp proof enclosure (see page 1/22).

This type of mounting can lead to ambient temperatures of up to 60°C inside the enclosure without derating.

It may be necessary to use a control card fan kit **VW3A94...** appropriate for the drive rating in order to avoid hot spots (see page 1/21).

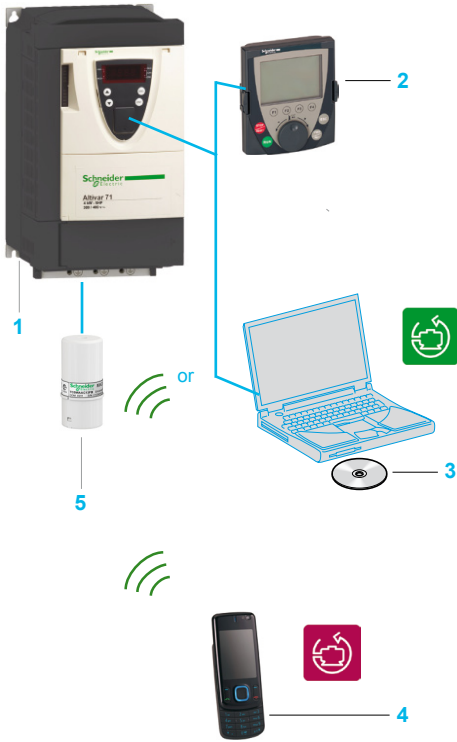
If the installation conditions require it, this version also allows side-by-side mounting (please consult our website [www.schneider-electric.com](http://www.schneider-electric.com)).

#### Mounting in a dust and damp proof enclosure or on machine frame

The Altivar 71 drive on base plate supports two mounting options:

- In a dust and damp proof enclosure using kit **VW3A980...** for dust and damp proof mounting (see page 1/23) which has been designed to dissipate heat via a heatsink mounted outside the enclosure.
- On a machine frame, where the frame's earth allows the heat to be dissipated.

1



### Application-specific dialogue and configuration tools

#### Remote graphic display terminal

The Altivar 71 drive **1**, except for the version on a base plate ATV71P●●●N4Z, is supplied with a remote graphic display terminal **2**. It is extremely user-friendly, offering quick and easy access to the drop-down menus and complex functions, online help screens, six languages installed as standard and others available via flash memory. Four configuration files can be stored. It is customizable for the customer or the machine. It can be mounted remotely on an enclosure door with IP 54 or IP 65 degree of protection on IP 20 drives, or built-in on IP 54 drives. The complex functions are easily accessible thanks to advanced functions on the display unit.

Up to 15 kW/20 HP at 200...240 V ~ and 75 kW/100 HP at 380...480 V ~, the Altivar 71 drive can be ordered without a remote graphic display terminal; it is then only equipped with the integrated terminal.

#### SoMove setup software **3**

SoMove setup software for PC is used to configure, adjust and debug the Altivar 71 drive with the Oscilloscope function and also for maintenance of this drive, as for other Schneider Electric drives and starters. See page 1/30.

#### SoMove Mobile software **4**

SoMove Mobile software is particularly suitable for maintenance operations. It can be used to edit the drive parameters from a mobile phone, save the configurations, import them from a PC or export them to a PC via a Bluetooth wireless connection **5**. See page 1/30.

#### Simple Loader and Multi-Loader programming tools

The Simple Loader tool enables one powered-up drive's configuration to be duplicated on another powered-up drive. The Multi-Loader tool enables a number of configurations from a PC or drive to be copied and duplicated on another drive; the Altivar 71 drives must be powered up. See page 1/31.

#### Quick programming tools

##### Macro-configuration

The Altivar 71 drive offers quick and easy programming using macro-configurations corresponding to different applications or uses: start-stop, handling, hoisting, general use, connection to communication networks, PID regulator, master/slave applications (for synchronous motors with speed feedback). Each of these configurations is still fully modifiable.

##### Simply Start menu

The Simply start menu can be used to help ensure that the application is working correctly, maximize motor performance and help ensure motor protection.

The architecture, the hierarchical parameter structure and the direct access functions serve to make programming quick and easy, even for the more complex functions.

### Built-in maintenance, monitoring and diagnostic functions

The Altivar 71 has numerous built-in maintenance, monitoring and diagnostic functions:

Examples of functions:

- Built-in drive test functions with diagnostic screen on the remote graphic display terminal
- I/O maps
- Communication maps for the different ports
- Oscilloscope function that can be viewed using the SoMove setup software
- Management of the drive installed base via microprocessors with flash memory
- Remote use of these functions by connecting the drive to a modem via the Modbus port
- Identification of the drive's component parts as well as the software versions
- Error logs with display of the value of up to 16 variables on occurrence of a fault
- Display terminal languages loaded in the flash memory
- A message of up to 5 lines of 24 characters can be stored in the drive

5398003

RUN	Term	+50.00Hz	5.4A
1,1 SIMPLY START <input type="checkbox"/>			
Cde 2 fils/3 fils	:	Cde 2 fils	
Macro-configuration	:	Manutention	
Standard fréq. mot	:	50Hz IEC	
Puissance nom. mot	:	2.2kW	
Tension nom. mot	:	400V	
Code	<<	>>	Quick <input type="button" value="v"/>

Quick programming with the Simply Start menu

5398004

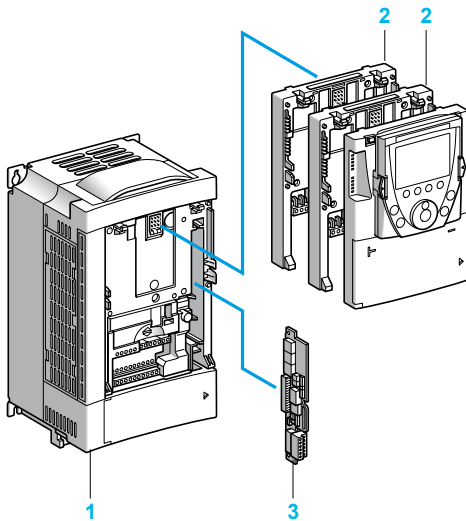
SCF1	Term	+50.00Hz	0.0A
HISTORIQUE DEFAULTS <input type="checkbox"/>			
Court-circuit mot.			
Surintensité			
Déf. Externe LI			
Sur tension réseau			
Soustension			
Help			Quick <input type="button" value="v"/>

Built-in function:  
Error log

5398005

SCF1	Term	+50.00Hz	0.0A
COURT-CIRCUIT MOTEUR <input type="checkbox"/>			
Vérifier les câbles de liaison et l'isolement du moteur.			
Effectuer un test de diagnostic			
			Quick <input type="button" value="v"/>

Built-in function:  
Troubleshooting screen



### A wide range of options

The numerous options designed for the Altivar 71 drive make it highly flexible and extremely easy to adapt to applications.

#### Option cards

The Altivar 71 drive 1 can integrate up to three different option cards simultaneously, including:

- Two of the following cards:
  - I/O extension cards 2 (see page 1/45)
  - Communication cards 2 (Modbus TCP Daisy Chain, Modbus/Uni-Telway, EtherNet/IP, DeviceNet, PROFIBUS DP, Profinet, POWERLINK etc.) (see page 1/50)
  - Controller Inside programmable card 2 to adapt the variable speed drive to specific applications (see page 1/46)
- One of the following encoder interface cards 3: with RS 422-compatible differential outputs; with open collector outputs (NPN); with push-pull outputs; resolver; with SinCos, SinCos Hiperface®, EnDat®, or SSI universal outputs; with RS 422-compatible differential outputs plus encoder emulation (RS 422 ESIM) (see page 1/44)

#### Other options

Numerous other external options can be combined with the Altivar 71:

- Braking units and resistors (standard or hoist-specific) (see pages 1/56 to 1/61)
- Network braking units (see pages 1/62 to 1/63)
- Active Front End (AFE) to use the drive to return energy to the line supply or when the installation requires particularly low harmonic levels; in addition it operates on unstable line supplies (see pages 1/64 to 1/67)
- DC chokes, line chokes and passive filters to reduce harmonic currents (see pages 1/68 to 1/77)
- Additional EMC input filters to reduce conducted emissions on the line (see pages 1/78 and 1/79)
- Motor chokes and sinus filters for long cable runs or to remove the need for shielding (see pages 1/82 to 1/85)

**Note:** Please refer to the compatibility summary tables to determine which options are available for individual drives (see pages 1/32 to 1/43).

### Integration into PLC architectures

The Altivar 71 drive has a built-in combined Modbus or CANopen port for quick, accurate motion control, adjustment, supervision and configuration. A second port is available for connecting a Magelis terminal for machine dialogue.

The Altivar 71 drive can be integrated into many networked industrial applications using the communication option cards.

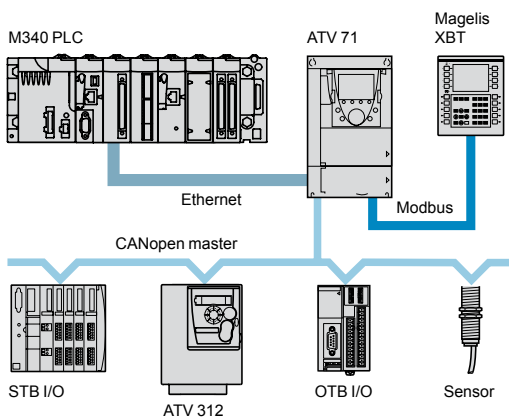
The following protocols are available:

Modbus TCP Daisy Chain, Modbus/Uni-Telway, EtherNet/IP, DeviceNet, Profinet, PROFIBUS DP V0 and V1, INTERBUS, CC-LINK and Ethernet POWERLINK (see pages 1/50 to 1/55).

The option of powering the control section separately enables communication (monitoring, diagnostics) to be maintained even if there is no power supply to the control section.

The Controller Inside programmable card transforms the drive into an automation island. This is used to adapt the drive to specific applications quickly and progressively, by decentralizing the control system functions (pages 1/46 to 1/49):

- The card has its own I/O; it can also manage those of the drive and an I/O extension card.
- It contains onboard application programs developed in IEC/EN 61131-3 languages, which reduce the control system response time.
- Its CANopen master port enables control of other drives and dialogue with I/O modules and sensors.



# Variable speed drives

## Altivar 71

Supply voltage: 200...240 V 50/60 Hz

IP 20 drives

10472  
1



ATV71HU22M3Z

101001



ATV71H037M3

101010



ATV71HD37M3X

IP 20 drives										
Motor		Line supply				Altivar 71				Weight
Power indicated on rating plate (1)		Line current (2)		Apparent power	Max. prospective line Isc	Maximum continuous current (1)	Max. transient current for		Reference (3)	
		200 V	240 V				240 V	60 s		
kW	HP	A	A	kVA	kA	A	A	A	kg	

Single-phase supply voltage: 200...240 V 50/60 Hz										
0.37	0.5	6.9	5.8	1.4	5	3	4.5	4.9	ATV71H075M3	3.000
0.75	1	12	9.9	2.4	5	4.8	7.2	7.9	ATV71HU15M3	3.000
1.5	2	18.2	15.7	3.7	5	8	12	13.2	ATV71HU22M3	4.000
2.2	3	25.9	22.1	5.3	5	11	16.5	18.1	ATV71HU30M3	4.000
3	—	25.9	22	5.3	5	13.7	20.6	22.6	ATV71HU40M3 (4)	4.000
4	5	34.9	29.9	7	5	17.5	26.3	28.8	ATV71HU55M3 (4)	5.500
5.5	7.5	47.3	40.1	9.5	22	27.5	41.3	45.3	ATV71HU75M3 (4)	7.000

Three-phase supply voltage: 200...240 V 50/60 Hz										
0.37	0.5	3.5	3.1	1.3	5	3	4.5	4.9	ATV71H037M3	3.000
0.75	1	6.1	5.3	2.2	5	4.8	7.2	7.9	ATV71H075M3	3.000
1.5	2	11.3	9.6	4	5	8	12	13.2	ATV71HU15M3	3.000
2.2	3	15	12.8	5.3	5	11	16.5	18.1	ATV71HU22M3	4.000
3	—	19.3	16.4	6.8	5	13.7	20.6	22.6	ATV71HU30M3	4.000
4	5	25.8	22.9	9.5	5	17.5	26.3	28.8	ATV71HU40M3	4.000
5.5	7.5	35	30.8	12.8	22	27.5	41.3	45.3	ATV71HU55M3	5.500
7.5	10	45	39.4	16.4	22	33	49.5	54.5	ATV71HU75M3	7.000
11	15	53.3	45.8	19	22	54	81	89.1	ATV71HD11M3X (5)	22.000
15	20	71.7	61.6	25.6	22	66	99	109	ATV71HD15M3X (5)	22.000
18.5	25	77	69	28.7	22	75	112	124	ATV71HD18M3X (5)	30.000
22	30	88	80	33.3	22	88	132	145	ATV71HD22M3X (5)	30.000
30	40	124	110	45.7	22	120	180	198	ATV71HD30M3X (5)	37.000
37	50	141	127	52.8	22	144	216	238	ATV71HD37M3X (5)	37.000
45	60	167	147	61.1	22	176	264	290	ATV71HD45M3X (5)	37.000
55	75	200	173	71.9	35	221	332	365	ATV71HD55M3X (5) (6)	100.000
75	100	271	232	96.4	35	285	428	470	ATV71HD75M3X (5) (6)	122.000

Dimensions (overall)	
Drives	W x H x D mm
ATV71H037M3...HU15M3	130 x 230 x 175
ATV71HU22M3...HU40M3	155 x 260 x 187
ATV71HU55M3	175 x 295 x 187
ATV71HU75M3	210 x 295 x 213
ATV71HD11M3X, HD15M3X	230 x 400 x 213
ATV71HD18M3X, HD22M3X	240 x 420 x 236
ATV71HD30M3X...HD45M3X	320 x 550 x 266
ATV71HD55M3X	320 x 920 x 377
ATV71HD75M3X	360 x 1022 x 377

- (1) These values are given for a nominal switching frequency of 4 kHz up to ATV71HD15M3X or 2.5 kHz for ATV71HD18M3X...HD75M3X drives for use in continuous operation.  
The switching frequency is adjustable from 1...16 kHz up to ATV71HD45M3X and from 1...8 kHz for ATV71HD55M3X and ATV71HD75M3X drives. Above 2.5 or 4 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 (see derating curves on our website [www.schneider-electric.com](http://www.schneider-electric.com)).
- (2) Typical value for the indicated motor power and for the maximum prospective line Isc.
- (3) Variants available (see page 1/20).
- (4) A line choke must be used (see page 1/70).
- (5) Drive supplied without EMC filter. EMC filters are available as an option (see page 1/78).
- (6) Drive supplied without plate for EMC mounting. This is included in the UL Type 1 or IP 31 conformity kit, which must be ordered separately (see pages 1/24 and 1/25).

**Note:** Consult the summary tables of possible drive, option and accessory combinations (see page 1/32).

107464



ATV71HU22N4

107478



ATV71HU40N4Z

101016



ATV71HC28N4

## IP 20 drives

Motor		Line supply				Altivar 71				Reference (3)	Weight
Power indicated on rating plate (1)	HP	Line current(2)		Apparent power	Max. prospective line Isc	Maximum continuous current (1)		Max. transient current for			
		380 V	480 V			380 V	380 V (IEC)	460 V (NEC)	60 s		
kW	HP	A	A	kVA	kA	A	A	A	A	kg	
<b>Three-phase supply voltage: 380...480 V 50/60 Hz</b>											
0.75	1	3.7	3	2.4	5	2.3	2.1	3.5	3.8	ATV71H075N4	3.000
1.5	2	5.8	5.3	3.8	5	4.1	3.4	6.2	6.8	ATV71HU15N4	3.000
2.2	3	8.2	7.1	5.4	5	5.8	4.8	8.7	9.6	ATV71HU22N4	3.000
3	–	10.7	9	7	5	7.8	6.2	11.7	12.9	ATV71HU30N4	4.000
4	5	14.1	11.5	9.3	5	10.5	7.6	15.8	17.3	ATV71HU40N4	4.000
5.5	7.5	20.3	17	13.4	22	14.3	11	21.5	23.6	ATV71HU55N4	5.500
7.5	10	27	22.2	17.8	22	17.6	14	26.4	29	ATV71HU75N4	5.500
11	15	36.6	30	24.1	22	27.7	21	41.6	45.7	ATV71HD11N4	7.000
15	20	48	39	31.6	22	33	27	49.5	54.5	ATV71HD15N4	22.000
18.5	25	45.5	37.5	29.9	22	41	34	61.5	67.7	ATV71HD18N4	22.000
22	30	50	42	32.9	22	48	40	72	79.2	ATV71HD22N4	30.000
30	40	66	56	43.4	22	66	52	99	109	ATV71HD30N4	37.000
37	50	84	69	55.3	22	79	65	118.5	130	ATV71HD37N4	37.000
45	60	104	85	68.5	22	94	77	141	155	ATV71HD45N4	44.000
55	75	120	101	79	22	116	96	174	191	ATV71HD55N4	44.000
75	100	167	137	109.9	22	160	124	240	264	ATV71HD75N4	44.000
90	125	166	134	109.3	35	179	179	269	295	ATV71HD90N4 (4)	100.000
110	150	202	163	133	35	215	215	323	355	ATV71HC11N4 (4)	122.000
132	200	239	192	157.3	35	259	259	388	427	ATV71HC13N4 (4)	116.000
160	250	289	233	190.2	50	314	314	471	518	ATV71HC16N4 (4)	163.000
200	300	357	286	235	50	387	387	580	638	ATV71HC20N4 (4)	207.000
220	350	396	320	260.6	50	427	427	640	704	ATV71HC25N4 (4)	207.000
250	400	444	357	292.2	50	481	481	721	793		
280	450	494	396	325.1	50	550	550	825	907	ATV71HC28N4 (4)	207.000
315	500	555	444	365.3	50	616	616	924	1016	ATV71HC31N4 (4)	320.000
355	–	637	512	419.3	50	671	671	1006	1107	ATV71HC40N4 (4)	330.000
400	600	709	568	466.6	50	759	759	1138	1252		
500	700	876	699	576.6	50	941	941	1411	1552	ATV71HC50N4 (4)	435.000

## Dimensions (overall)

Drives	W x H x D mm
ATV71H075N4...HU22N4	130 x 230 x 175
ATV71HU30N4, HU40N4	155 x 260 x 187
ATV71HU55N4, HU75N4	175 x 295 x 187
ATV71HD11N4	210 x 295 x 213
ATV71HD15N4, HD18N4	230 x 400 x 213
ATV71HD22N4	240 x 420 x 236
ATV71HD30N4, HD37N4	240 x 550 x 266
ATV71HD45N4...HD75N4	320 x 630 x 290
ATV71HD90N4	320 x 920 x 377
ATV71HC11N4	360 x 1022 x 377
ATV71HC13N4	340 x 1190 x 377
ATV71HC16N4	440 x 1190 x 377
ATV71HC20N4...HC28N4	595 x 1190 x 377
ATV71HC31N4, HC40N4	890 x 1390 x 377
ATV71HC50N4	1120 x 1390 x 377

(1) These values are given for a nominal switching frequency of 4 kHz up to ATV71HD30N4 or 2.5 kHz for ATV71HD37N4...HC50N4 drives for use in continuous operation.

The switching frequency is adjustable from 1...16 kHz up to ATV71HD75N4 and from 2.5...8 kHz for ATV71HD90N4...ATV71HC50N4 drives.

Above 2.5 or 4 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 (see derating curves on our website [www.schneider-electric.com](http://www.schneider-electric.com)).

(2) Typical value for the indicated motor power and for the maximum prospective line Isc.

(3) Variants available (see page 1/20).

(4) Drive supplied without plate for EMC mounting. This is included in the UL Type 1 or IP 31 kit, which must be ordered separately (see pages 1/24 and 1/25).

**Note:** Consult the summary tables of possible drive, option and accessory combinations (see page 1/34).



# Variable speed drives

## Altivar 71

Supply voltage: 380...480 V 50/60 Hz

IP 20 drives

1

107472



ATV71PU40N4Z

IP 20 drives on base plate with integrated category C2 EMC filter											
Motor		Line supply				Altivar 71				Reference (3) (4) (5)	Weight
Power indicated on rating plate (1)	kW	HP	Line current (2)		Apparent power	Max. prospective line Isc	Maximum continuous current (1)		Max. transient current for		
			380 V	480 V			380 V	380 V	460 V	60 s	2 s
		A	A	kVA	kA	A	A	A	A	kg	
Three-phase supply voltage: 380...480 V 50/60 Hz											
0.75	1	3.7	3	2.4	5	2.3	2.1	3.5	3.8	ATV71P075N4Z	2.700
1.5	2	5.8	5.3	3.8	5	4.1	3.4	6.2	6.8	ATV71PU15N4Z	2.700
2.2	3	8.2	7.1	5.4	5	5.8	4.8	8.7	9.6	ATV71PU22N4Z	2.700
3	–	10.7	9	7	5	7.8	6.2	11.7	12.9	ATV71PU30N4Z	3.600
4	5	14.1	11.5	9.3	5	10.5	7.6	15.8	17.3	ATV71PU40N4Z	3.600
5.5	7.5	20.3	17	13.4	22	14.3	11	21.5	23.6	ATV71PU55N4Z	5.000
7.5	10	27	22.2	17.8	22	17.6	14	26.4	29	ATV71PU75N4Z	5.000
11	15	36.6	30	24.1	22	27.7	21	41.6	45.7	ATV71PD11N4Z	7.000

110502



ATV71QD90N4

Water-cooled IP 20 drives											
Motor		Line supply				Altivar 71				Reference (4)	Weight
Power indicated on rating plate (1)	kW	HP	Line current (2)		Apparent power	Max. prospective line Isc	Maximum continuous current (1)		Max. transient current for		
			380 V	480 V			380 V	380 V	460 V	60 s	2 s
		A	A	kVA	kA	A	A	A	A	kg	
Three-phase supply voltage: 380...480 V 50/60 Hz											
90	125	166	134	109.3	35	179	179	269	295	ATV71QD90N4	80.000
110	150	202	163	133	35	215	215	323	355	ATV71QC11N4	80.000
132	200	239	192	157.3	35	259	259	388	427	ATV71QC13N4	80.000
160	250	289	233	190.2	50	314	314	471	518	ATV71QC16N4	140.000
200	300	357	286	235	50	387	387	580	638	ATV71QC20N4	140.000
220	350	396	320	260.6	50	427	427	640	704	ATV71QC25N4	140.000
250	400	444	357	292.2	50	481	481	721	793		
315	500	555	444	365.3	50	616	616	924	1016	ATV71QC31N4	300.000
355	–	637	512	419.3	50	671	671	1006	1107	ATV71QC40N4	300.000
400	600	709	568	466.6	50	759	759	1138	1252		
500	700	876	699	576.6	50	941	941	1411	1552	ATV71QC50N4	300.000

Dimensions (overall)					
Drives	W x H x D mm		Drives	W x H x D mm	
ATV71P075N4Z, PU22N4Z	130 x 230 x 149		ATV71QD90N4...QC13N4	330 x 950 x 377	
ATV71PU30N4Z, PU40N4Z	155 x 260 x 161		ATV71QC16N4...QC25N4	585 x 950 x 377	
ATV71PU55N4Z, PU75N4Z	175 x 295 x 161		ATV71QC31N4...QC50N4	1110 x 1150 x 377	
ATV71PD11N4Z	210 x 295 x 187				

(1) These values are given for a nominal switching frequency in continuous operation:

- 4 kHz for ATV71P●●●N4Z
- 2.5 kHz for ATV71Q●●●N4

The switching frequency is adjustable from:

- 1...16 kHz for ATV71P●●●N4Z
- 2.5...8 kHz for ATV71Q●●●N4

Above 4 kHz, the drive will reduce the switching frequency automatically in the event of excessive temperature rise. For continuous operation above the nominal switching frequency, derate the nominal drive current (see derating curves on our website [www.schneider-electric.com](http://www.schneider-electric.com)).

(2) Typical value for the indicated motor power and for the maximum prospective line Isc.

(3) Variants available (see page 1/20).

(4) A DC choke must be used (see page 1/68).

(5) ATV71P●●●N4Z drives supplied with a plate for EMC mounting and a thermal liner for mounting on the machine frame (see page 1/23).

**Note:** Consult the summary tables of possible drive, options and accessory combinations on pages 1/34 and 1/38.

107473



ATV71W075N4

## IP 54 drives with integrated category C2 EMC filter

Motor		Line supply				Altivar 71				Reference (3) (4)	Weight
Power indicated on rating plate (1)		Line current (2)		Apparent power	Max. prospective line Isc	Maximum continuous current (1)		Max. transient current for			
		380 V	480 V			380 V	380 V (IEC)	460 V (NEC)	60 s		
kW	HP	A	A	kVA	kA	A	A	A	A	kg	
<b>Three-phase supply voltage: 380...480 V 50/60 Hz</b>											
0.75	1	3.7	3	2.4	5	2.3	2.1	3.5	3.8	ATV71W075N4	12.000
1.5	2	5.8	5.3	3.8	5	4.1	3.4	6.2	6.8	ATV71WU15N4	12.000
2.2	3	8.2	7.1	5.4	5	5.8	4.8	8.7	9.6	ATV71WU22N4	12.000
3	–	10.7	9	7	5	7.8	6.2	11.7	12.9	ATV71WU30N4	13.000
4	5	14.1	11.5	9.3	5	10.5	7.6	15.8	17.3	ATV71WU40N4	13.000
5.5	7.5	20.3	17	13.4	22	14.3	11	21.5	23.6	ATV71WU55N4	16.000
7.5	10	27	22.2	17.8	22	17.6	14	26.4	29	ATV71WU75N4	16.000
11	15	36.6	30	24.1	22	27.7	21	41.6	45.7	ATV71WD11N4	21.000
15	20	48	39	31.6	22	33	27	49.5	54.5	ATV71WD15N4	31.000
18.5	25	45.5	37.5	29.9	22	41	34	61.5	67.7	ATV71WD18N4	31.000
22	30	50	42	32.9	22	48	40	72	79.2	ATV71WD22N4	30.500
30	40	66	56	43.4	22	66	52	99	109	ATV71WD30N4	38.500
37	50	84	69	55.3	22	79	65	118.5	130	ATV71WD37N4	38.500
45	60	104	85	68.5	22	94	77	141	155	ATV71WD45N4	61.500
55	75	120	101	79	22	116	96	174	191	ATV71WD55N4	61.500
75	100	167	137	109.9	22	160	124	240	264	ATV71WD75N4	61.500

107641



ATV71E5D11N4

## IP 54 drives with Vario and integrated category C2 EMC filter

<b>Three-phase supply voltage: 380...480 V 50/60 Hz</b>											
0.75	1	3.7	3	2.4	5	2.3	2.1	3.5	3.8	ATV71E5075N4	14.400
1.5	2	5.8	5.3	3.8	5	4.1	3.4	6.2	6.8	ATV71E5U15N4	14.400
2.2	3	8.2	7.1	5.4	5	5.8	4.8	8.7	9.6	ATV71E5U22N4	14.400
3	–	10.7	9	7	5	7.8	6.2	11.7	12.9	ATV71E5U30N4	15.400
4	5	14.1	11.5	9.3	5	10.5	7.6	15.8	17.3	ATV71E5U40N4	15.400
5.5	7.5	20.3	17	13.4	22	14.3	11	21.5	23.6	ATV71E5U55N4	18.400
7.5	10	27	22.2	17.8	22	17.6	14	26.4	29	ATV71E5U75N4	18.400
11	15	36.6	30	24.1	22	27.7	21	41.6	45.7	ATV71E5D11N4	29.700
15	20	48	39	31.6	22	33	27	49.5	54.5	ATV71E5D15N4	40.400
18.5	25	45.5	37.5	29.9	22	41	34	61.5	67.7	ATV71E5D18N4	40.400
22	30	50	42	32.9	22	48	40	72	79.2	ATV71E5D22N4	46.700
30	40	66	56	43.4	22	66	52	99	109	ATV71E5D30N4	57.800
37	50	84	69	55.3	22	79	65	118.5	130	ATV71E5D37N4	57.800
45	60	104	85	68.5	22	94	77	141	155	ATV71E5D45N4	80.400
55	75	120	101	79	22	116	96	174	191	ATV71E5D55N4	80.400
75	100	167	137	109.9	22	160	124	240	264	ATV71E5D75N4	80.400

## Dimensions (overall)

Drives	W x H x D mm	Drives	W x H x D mm
ATV71W075N4...WU22N4	240 x 490 x 272	ATV71E5075N4...E5U22N4	240 x 490 x 296
ATV71WU30N4, WU40N4	240 x 490 x 286	ATV71E5U30N4, E5U40N4	240 x 490 x 310
ATV71WU55N4, WU75N4	260 x 525 x 286	ATV71E5U55N4, E5U75N4	260 x 525 x 310
ATV71WD11N4	295 x 560 x 315	ATV71E5D11N4	295 x 560 x 339
ATV71WD15N4, WD18N4	315 x 665 x 315	ATV71E5D15N4, E5D18N4	315 x 665 x 340
ATV71WD22N4	285 x 720 x 315	ATV71E5D22N4	285 x 720 x 335
ATV71WD30N4, WD37N4	285 x 880 x 343	ATV71E5D30N4, E5D37N4	285 x 880 x 383
ATV71WD45N4...WD75N4	362 x 1000 x 364	ATV71E5D45N4...E5D75N4	362 x 1000 x 404

(1) These values are given for a nominal switching frequency of 4 kHz up to ATV71WD30N4 or ATV71E5D30N4, or 2.5 kHz for ATV71WD37N4...WD75N4 or ATV71E5D37N4...E5D75N4 used in continuous operation.

The switching frequency is adjustable from 1...16 kHz for all ratings.

Above 2.5 or 4 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 (see derating curves on our website [www.schneider-electric.com](http://www.schneider-electric.com)).

(2) Typical value for the indicated motor power and for the maximum prospective line Isc.

(3) Variants available (see page 1/20).

(4) Drives supplied with a plate for EMC mounting.

**Note:** Consult the summary tables of possible drive, option and accessory combinations (see page 1/36).

# Variable speed drives

## Altivar 71

Supply voltage: 500...690 V 50/60 Hz

IP 20 drives

101014  
1



ATV71HU22Y

IP 20 drives									
Motor		Line supply				Altivar 71		Reference (4)	Weight
Power indicated on rating plate (1)		Line current (2)		Max. prospective line Isc	Maximum continuous current (1) (3)				
500 V	575 V	500 V 600 V			kA	500 V 575 V		kg	
kW	HP	A	A	A		A			
<b>Three-phase supply voltage: 500...600 V 50/60 Hz</b>									
1.5	2	5.6	4.9	22	3.2	2.7	ATV71HU15S6X	7.500	
2.2	3	7.6	6.7	22	4.5	3.9	ATV71HU22S6X	7.500	
3	-	9.9	10	22	5.8	-	ATV71HU30S6X	7.500	
4	5	12.5	10.9	22	7.5	6.1	ATV71HU40S6X	7.500	
5.5	7.5	16.4	14.2	22	10	9	ATV71HU55S6X	7.500	
7.5	10	21.4	18.4	22	13.5	11	ATV71HU75S6X	7.500	

107538



ATV71HD37Y

IP 20 drives											
Motor			Line supply				Altivar 71		Reference (4)	Weight	
Power indicated on rating plate (1)			Line current (2)		Max. prospective line Isc	Maximum continuous current (1) (3)					
500 V	575 V	690 V	500 V 600 V 690 V			kA	500 V 575 V 690 V		kg		
kW	HP	kW	A	A	A		A	A			
<b>Three-phase supply voltage: 500...690 V 50/60 Hz</b>											
1.5	2	2.2	3.8	3.2	4	22	3.2	2.7	4	ATV71HU22Y	30.000
2.2	3	3	5.2	4.4	5.2	22	4.5	3.9	4.5	ATV71HU30Y	30.000
3	-	4	6.8	-	6.6	22	5.8	-	5.5	ATV71HU40Y	30.000
4	5	5.5	8.6	7.2	8.6	22	7.5	6.1	7.5	ATV71HU55Y	30.000
5.5	7.5	7.5	11.2	9.5	11.2	22	10	9	10	ATV71HU75Y	30.000
7.5	10	11	14.6	12.3	15.5	22	13.5	11	13.5	ATV71HD11Y	30.000
11	15	15	19.8	16.7	20.2	22	18.5	17	18.5	ATV71HD15Y	30.000
15	20	18.5	24	21	24	22	24	22	24	ATV71HD18Y	30.000
18.5	25	22	29	24	27	22	29	27	27	ATV71HD22Y	30.000
22	30	30	33	28	34	22	35	32	35	ATV71HD30Y	30.000
30	40	37	48	41	47	22	47	41	43	ATV71HD37Y	68.000
37	50	45	62	51	55	22	59	52	54	ATV71HD45Y	68.000
45	60	55	68	57	63	22	68	62	62	ATV71HD55Y	68.000
55	75	75	84	70.5	88	22	85	77	84	ATV71HD75Y	68.000
75	100	90	109	92	101	22	110	99	104	ATV71HD90Y	68.000
90	125	110	128	113	117	28	136	125	125	ATV71HC11Y (5) (6)	102.000
110	150	132	153	133	137	28	165	144	150	ATV71HC13Y (5) (6)	102.000
132	-	160	182	-	163	35	200	-	180	ATV71HC16Y (5) (6)	102.000
160	200	200	227	204	212	35	240	192	220	ATV71HC20Y (5) (6)	181.000
200	250	250	277	249	256	35	312	242	290	ATV71HC25Y (5) (6)	181.000
250	350	315	342	311	317	35	390	336	355	ATV71HC31Y (5) (6)	181.000
315	450	400	439	401	409	35	462	412	420	ATV71HC40Y (5) (6)	383.000
400	550	500	544	491	498	35	590	528	543	ATV71HC50Y (5) (6)	383.000
500	700	630	673	613	616	42	740	672	675	ATV71HC63Y (5) (6)	383.000

107540



ATV71HC25Y

+

107532



VW3A4372 (line choke mandatory) (5)

Dimensions (overall)		W x H x D mm
Drives		
ATV71HU15S6X...HU75S6X		210 x 295 x 213
ATV71HU22Y...HD30Y		240 x 420 x 236
ATV71HD37Y...HD90Y		320 x 630 x 290
ATV71HC11Y...HC16Y		340 x 1190 x 377
ATV71HC20Y...HC31Y		595 x 1190 x 377
ATV71HC40Y...HC63Y		1120 x 1390 x 377

- (1) These values are given for a nominal switching frequency of 4 kHz for ATV71HU●●S6X and for ATV71HU22Y...HD30Y or 2.5 kHz for ATV71HD37Y...HC63Y drives for use in continuous operation. The switching frequency is adjustable from 2.5...6 kHz for ATV71HU●●S6X and for ATV71HU22Y...HD30Y, and from 2.5...4.9 kHz for ATV71HD37Y...ATV71HC63Y drives. Above 2.5 kHz or 4 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 (see derating curves on our website [www.schneider-electric.com](http://www.schneider-electric.com)).
- (2) Typical value for the indicated motor power and for the maximum prospective line Isc.
- (3) The maximum transient current for:
  - 60 seconds is equal to 150% of the maximum continuous current
  - 2 seconds is equal to 165% of the maximum continuous current
- (4) Variants available (see page 1/20).
- (5) Line choke mandatory for ATV71HC11Y...HC63Y drives, unless a special transformer is used (12-pulse). The line choke must be ordered separately (see page 1/70).
- (6) Drive supplied without plate for EMC mounting. This is included in the UL Type 1 or IP 31 kit, which must be ordered separately (see pages 1/24 and 1/25).

Note: Consult the summary tables of possible drive, option and accessory combinations (see pages 1/38 and 1/40).

## Variable speed drives

## Altivar 71

Supply voltage: 500...690 V 50/60 Hz

IP 20 drives

110504



ATV71QC11Y

## Water-cooled IP 20 drives

Motor			Line supply				Altivar 71			Reference	Weight
Power indicated on rating plate (1)			Line current (2)		Max. prospective line Isc	Maximum continuous current (1) (3)					
500 V	575 V	690 V	500 V	600 V		690 V	500 V	575 V	690 V	kg	
kW	HP	kW	A	A	A	kA	A	A	A		
<b>Three-phase supply voltage: 500...690 V 50/60 Hz</b>											
90	125	110	128	113	117	28	136	125	125	ATV71QC11Y	80.000
110	150	132	153	133	137	28	165	144	150	ATV71QC13Y	80.000
132	–	160	182	–	163	35	200	–	180	ATV71QC16Y	80.000
160	200	200	227	204	212	35	240	192	220	ATV71QC20Y	140.000
200	250	250	277	249	256	35	312	242	290	ATV71QC25Y	140.000
250	350	315	342	311	317	35	390	336	355	ATV71QC31Y	140.000
315	450	400	439	401	409	35	462	412	420	ATV71QC40Y	300.000
400	550	500	544	491	498	35	590	528	543	ATV71QC50Y	300.000
500	700	630	673	613	616	42	740	672	675	ATV71QC63Y	300.000

## Dimensions (overall)

Drives	W x H x D mm
ATV71QC11Y...QC16Y	330 x 950 x 377
ATV71QC20Y...QC31Y	585 x 950 x 377
ATV71QC40Y...QC63Y	1110 x 1150 x 377

(1) These values are given for a nominal switching frequency of 2.5 kHz, for use in continuous operation.

The switching frequency is adjustable from 2.5...4.9 kHz.

Above 2.5 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 (see derating curves on our website [www.schneider-electric.com](http://www.schneider-electric.com)).

(2) Typical value for the indicated motor power and for the maximum prospective line Isc.

(3) The maximum transient current for:

- 60 seconds is equal to 150% of the maximum continuous current

- 2 seconds is equal to 165% of the maximum continuous current

**Note:** Consult the summary tables of possible drive, option and accessory combinations (see page 1/40).

#### Variable speed drive for synchronous motor with speed feedback

The drives are supplied as standard for asynchronous motors with or without sensor feedback.

ATV71H075N4...HD75N4 drives can control not only those motors included in the standard offer, but also synchronous motors with speed feedback, by adding **383** at the end of the reference.

For example, ATV71H075N4 becomes **ATV71H075N4383**.

See page 1/44 for the available encoder interface cards.

#### Variable speed drive with additional power supply

When the power consumption of the option cards exceeds 200 mA, ATV71W...N4 drives can be supplied with an additional 24 V --- power supply, which allows additional consumption of 250 mA.

In this case, add **A24** at the end of the reference. For example, ATV71W075N4 becomes **ATV71W075N4A24**.

#### Variable speed drive in a reinforced version

This variant enables variable speed drives to operate in difficult ambient pollution conditions and complies with standard IEC60721-3-3 class 3C2.

ATV71HD55M3X, HD75M3X, ATV71HD90N4...HC50N4, ATV71H...Y and ATV71W...N4A24 drives are supplied as standard in a reinforced version.

To order ATV71H...M3 and ATV71H075N4...HD75N4 variable speed drives in a reinforced version, add **S337** at the end of the reference.

For example, ATV71H075M3 becomes **ATV71H075M3S337**.

To order ATV61HD11M3X...HD45M3X drives in this version, add **337** at the end of the reference.

For example, ATV71HD11M3X becomes **ATV71HD11M3X337**.

In the reinforced version, the variable speed drive is always supplied with a remote graphic display terminal.

#### Variable speed drive with integrated terminal

Except for ATV71P...N4Z drives on base plates supplied with a integrated display terminal, all drives come with a remote graphic display terminal and an integrated terminal as standard.

ATV71H037M3...HD15M3X and ATV71H075N4...HD75N4 drives can be ordered without a remote graphic display terminal. They will then have the integrated terminal only. In this case, add **Z** at the end of the reference.

For example, ATV71H075M3 becomes **ATV71H075M3Z**.

To order ATV71H075N4383...HD75N4383 drives without a graphic display terminal, please contact our Customer Care Centre.

#### Variable speed drive without DC choke

ATV71HD90N4...HC50N4 drives are supplied as standard with a DC choke which must be used when connecting drives to the three-phase supply.

They can be ordered without a DC choke for connections to the DC bus or when using a line choke (see page 1/70), by adding **D** at the end of the reference.

For example, ATV71HD90N4 becomes **ATV71HD90N4D**.

#### Variable speed drive with EMC plate conforming to NEMA type 12 standard

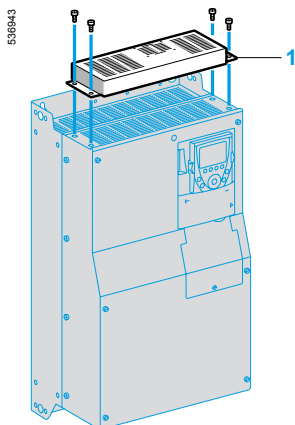
ATV71W...N4 drives are supplied as standard with a European version EMC plate. To order drives with an EMC plate conforming to NEMA type 12 standard, add **U** at the end of the reference. This plate is supplied without a drill hole.

For example, ATV71W075N4 becomes **ATV71W075N4U**.

**Note:**

- ATV71H037M3...HD45M3X, ATV71H075N4...HD75N4, ATV71H...S6X and ATV71HU22Y...HD90Y drives are supplied as standard with a European version plate for EMC mounting.

- ATV71HD55M3X, HD75M3X, ATV71HD90N4...HC50N4, ATV71P...N4Z and ATV71HC11Y...HC63Y drives are supplied as standard without a plate for EMC mounting. Depending on the reference, the European version EMC plate is included in the UL Type 1 or IP 31 kit (see pages 1/24 and 1/25).



Control card fan kit

#### Control card fan kit (for ATV71H●●●●● drives on heatsink)

This kit is required for ATV71HD18M3X...HD45M3X, ATV71HD22N4...HD75N4 and ATV71HU22Y...HD90Y drives in order that they can operate at ambient temperatures between 50°C and 60°C, for example if they are mounted in an IP 54 enclosure. The circulation of air around the electronic cards prevents the formation of hot spots.

To ascertain the derating to be applied to the drive nominal current, consult the curves on our website [www.schneider-electric.com](http://www.schneider-electric.com).

The kit 1 is mounted on the upper part of the drive. It is powered by the drive and includes:

- A fan subassembly
- Mounting hardware
- A manual

#### References

For drives	Reference	Weight kg
ATV71HD18M3X, HD22M3X ATV71HD22N4 ATV71HU22Y...HD30Y	VW3A9404	—
ATV71HD30N4, HD37N4	VW3A9405	—
ATV71HD30M3X...HD45M3X	VW3A9406	—
ATV71HD45N4...HD75N4 ATV71HD37Y...HD90Y	VW3A9407	—

#### Adaptor for 115 V ~ logic inputs

This adaptor is used to connect 115 V ~ logic signals to the logic inputs on the drive or an I/O expansion card.

7 logic inputs with capacitive impedance at 60 Hz of 0.22 µF are available for connecting the logic signals:

- Maximum current: 200 mA
- Response time: 5 ms to change from state 0 to state 1, 20 ms to change from state 1 to state 0
- Logic state 0 for a voltage below 20 V, logic state 1 for a voltage between 70 V and 132 V

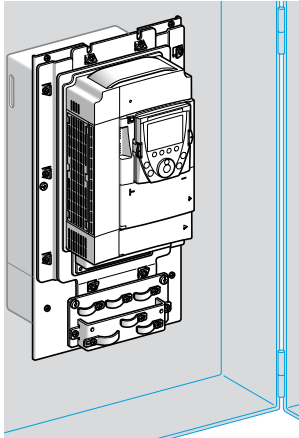
The power supply must be provided by a 115 V external power supply (min. 70 V, max. 132 V).

#### Reference

Description	Reference	Weight kg
Adaptor for 115 V ~ logic inputs	VW3A3101	—

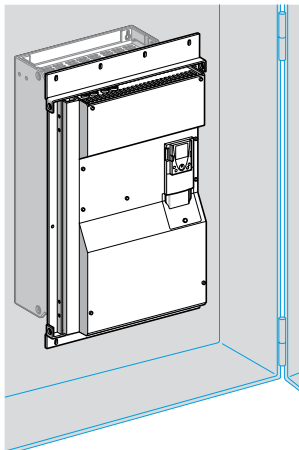
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538946



ATV71HU75N4 flush-mounted drive

538947



ATV71HC28N4D flush-mounted drive

### Kit for flush-mounting in a dust and damp proof enclosure (for ATV71H●●●● drives on heatsink)

This kit can be used to mount the power section of the drive outside the enclosure (IP 54 degree of protection), which reduces the power dissipated into the enclosure (1).

It is available for ATV71H●●●M3, ATV71H●●●M3X, ATV71H075N4...HC28N4, ATV71HD90N4D...HC28N4D and ATV71HU22Y...HC31Y drives.

With this type of mounting, the maximum internal temperature in the enclosure can then reach 60°C without it being necessary to derate the drive current. Between 50°C and 60°C, a control card fan kit must be used for ATV71HD18M3X...HD45M3X, ATV71HD22N4...HD75N4, ATV71H●●●S6X and ATV71HU22Y...HD90Y drives to prevent hot spots (see page 1/21).

The back of the enclosure must be drilled and cut out for this type of mounting.

The kit includes:

- A metal frame of the right size for the drive rating
- Corner pieces
- Seals
- A fan support (this can be used to move the fans so that they can be accessed from the front of the enclosure)
- Mounting hardware
- A manual

#### References

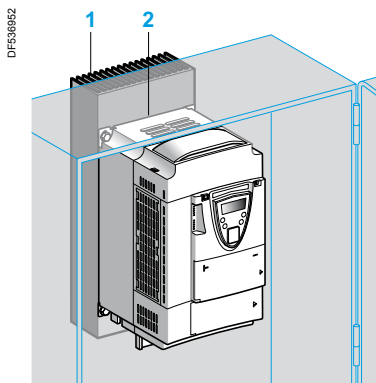
For drives	Reference	Weight kg
ATV71H037M3...HU15M3 ATV71H075N4...HU22N4	<b>VW3A9501</b>	2.700
ATV71HU22M3...HU40M3 ATV71HU30N4, HU40N4	<b>VW3A9502</b>	3.100
ATV71HU55M3 ATV71HU55N4, HU75N4	<b>VW3A9503</b>	3.700
ATV71HU75M3 ATV71HD11N4 ATV71HU15S6X...HU75S6X	<b>VW3A9504</b>	4.600
ATV71HD11M3X, HD15M3X ATV71HD15N4, HD18N4	<b>VW3A9505</b>	4.900
ATV71HD18M3X, HD22M3X ATV71HD22N4 ATV71HU22Y...HD30Y	<b>VW3A9506</b>	3.900
ATV71HD30N4, HD37N4	<b>VW3A9507</b>	4.200
ATV71HD30M3X...HD45M3X	<b>VW3A9508</b>	4.900
ATV71HD45N4...HD75N4 ATV71HD37Y...HD90Y	<b>VW3A9509</b>	5.200
ATV71HD55M3X (2) ATV71HD90N4 (2) ATV71HD90N4D (3)	<b>VW3A9510</b>	5.100
ATV71HD75M3X (2) ATV71HC11N4 (2) ATV71HC11N4D (3)	<b>VW3A9511</b>	3.600
ATV71HC13N4 (2) ATV71HC13N4D (3) ATV71HC11Y...HC16Y (4)	<b>VW3A9512</b>	4.300
ATV71HC16N4 (2) ATV71HC16N4D (3)	<b>VW3A9513</b>	4.400
ATV71HC20N4...HC28N4 (2)	Without braking unit <b>VW3A9514</b>	4.700
ATV71HC20N4D...HC28N4D (3) ATV71HC20Y...HC31Y (4)	With braking unit <b>VW3A9515</b>	4.700

(1) Power dissipated in the enclosure for dust and damp proof flush-mounting: please consult our website [www.schneider-electric.com](http://www.schneider-electric.com).

(2) Drives supplied as standard with a DC choke. In this case, cut out and drill the enclosure for the choke.

(3) Drives supplied without DC choke.

(4) Drives supplied as standard with a transformer for the fan. In this case, cut out and drill the enclosure for the transformer.



ATV71PU22N4Z drive in dust and damp proof enclosure

### Kit for mounting in a dust and damp proof enclosure

(for ATV71P●●●N4Z drives on base plate)

This kit can be used to mount a drive “on a base plate” inside a dust and damp proof enclosure (IP 54 degree of protection). Heat is dissipated via a heatsink mounted outside the enclosure.

This type of mounting simply requires that a hole be drilled in the enclosure at the same level as the drive fixing holes used to mount the heatsink.

The kit includes:

- A heatsink **1**
- A thermal liner **2**
- Sealing joints
- A manual

### Enclosure characteristics

The steel used for the floor-standing or wall-mounted enclosure which is to house the drive must meet the following requirements:

- Thickness 1.5 to 3 mm
- Steel: stainless or paint-finished smooth steel
- Heat-treated epoxy paintwork (lacquer finish not permitted), max. depth 70 µm, fine or medium texture

### References

For drives	Reference	Weight kg
ATV71P075N4Z...PU22N4Z	VW3A9801	–
ATV71PU30N4Z, PU40N4Z	VW3A9802	–
ATV71PU55N4Z, PU75N4Z	VW3A9803	–

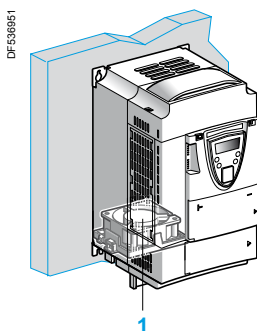
### Fan for variable speed drives on base plate

This fan **1** is required for ATV71P●●●N4Z drives if they are not equipped with a DC choke (see page 1/68).

It is mounted on the underside of the drive, thereby enabling installation dimensions to be optimized. It is powered by the drive.

### References

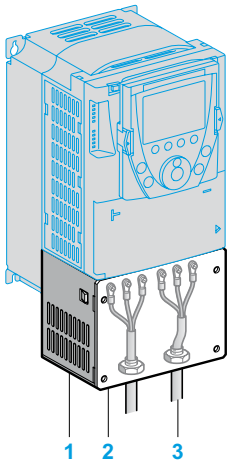
For drives	Reference	Weight kg
ATV71P075N4Z...PU22N4Z	VZ3V1203	–
ATV71PU30N4Z, PU40N4Z	VZ3V1209	–
ATV71PU55N4Z, PU75N4Z	VZ3V1204	–
ATV71PD11N4Z	VZ3V1210	–



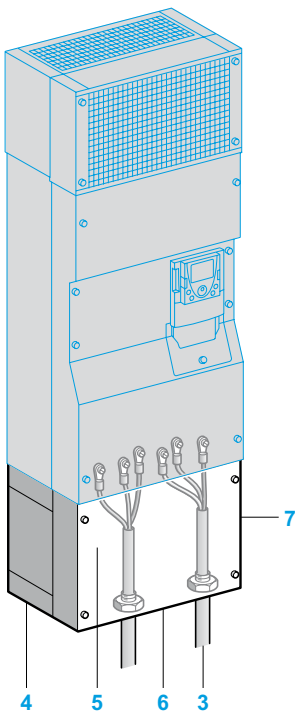
ATV71PU22N4Z drive with VZ3V1203 fan



1



538649



UL Type 1 conformity kits

#### UL Type 1 conformity kit (for mounting outside the enclosure)

When the drive is mounted directly on a wall outside the enclosure, this kit can be used to ensure UL Type 1 conformity when connecting the cables with a tube. The shielding is connected inside the kit.

For ATV71H●●●M3, ATV71HD11M3X...HD45M3X, ATV71H075N4...HD75N4, ATV71P●●●N4Z, ATV71H●●●S6X and ATV71HU22Y...HD90Y drives, the kit includes:

- All the mechanical fittings 1 including a pre-cut plate 2 for connecting the tubes 3
- Mounting hardware
- A manual

For ATV71HD55M3X, HD75M3X, ATV71HD90N4...HC28N4, ATV71HD90N4D...HC28N4D and ATV71HC11Y...HC31Y drives, the kit includes:

- An IP 54 casing 4 used to maintain the IP 54 degree of protection for the power section
- An EMC plate 5
- A UL Type 1 cover 7
- A pre-drilled plate 6 for connecting the tubes 3
- Mounting hardware
- A manual

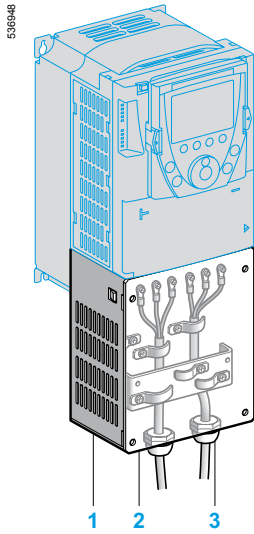
#### References

For drives	Reference	Weight kg
ATV71H037M3...HU15M3 ATV71H075N4...HU22N4 ATV71P075N4Z...PU22N4Z	VW3A9201	1.300
ATV71HU22M3...HU40M3 ATV71HU30N4, HU40N4 ATV71PU30N4Z, PU40N4Z	VW3A9202	1.500
ATV71HU55M3 ATV71HU55N4, HU75N4 ATV71PU55N4Z, PU75N4Z	VW3A9203	1.800
ATV71HU75M3 ATV71HD11N4 ATV71HU15S6X...HU75S6X	VW3A9204	2.000
ATV71HD11M3X, HD15M3X ATV71HD15N4, HD18N4	VW3A9205	2.800
ATV71HD18M3X, HD22M3X ATV71HD22N4 ATV71HU22Y...HD30Y	VW3A9206	4.000
ATV71HD30N4, HD37N4	VW3A9207	5.000
ATV71HD30M3X...HD45M3X	VW3A9217	7.000
ATV71HD45N4...HD75N4 ATV71HD37Y...HD90Y	VW3A9208	7.200
ATV71HD55M3X (1) ATV71HD90N4 (1) ATV71HD90N4D (2)	VW3A9209	9.400
ATV71HD75M3X (1) ATV71HC11N4 (1) ATV71HC11N4D (2)	VW3A9210	11.800
ATV71HC13N4 (1) ATV71HC13N4D (2) ATV71HC11Y...HC16Y (3)	VW3A9211	11.600
ATV71HC16N4 (1) ATV71HC16N4D (2)	VW3A9212	14.600
ATV71HC20N4...HC28N4 (1) Without braking unit	VW3A9213	19.500
ATV71HC20N4D...HC28N4D (2) With braking unit	VW3A9214	19.500
ATV71HC20Y...HC31Y (3)		

(1) Drives supplied as standard with a DC choke.

(2) Drives supplied without DC choke.

(3) Drives supplied as standard with a transformer for the fan.



IP 21 conformity kit

#### IP 21 or IP 31 conformity kit (for mounting outside the enclosure)

When the drive is mounted directly on a wall outside the enclosure, this kit can be used to ensure IP 21 or IP 31 degree of protection when connecting the cables with a cable gland.

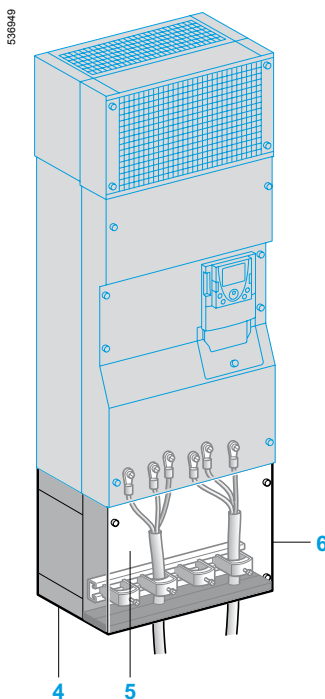
The shielding is connected inside the kit.

For ATV71H●●●M3, ATV71HD11M3X...HD45M3X, ATV71H075N4...HD75N4, ATV71P●●●N4Z, ATV71H●●●S6X and ATV71HU22Y...HD90Y drives, the kit conforms to IP 21 degree of protection and includes:

- All the mechanical fittings **1** including a drilled plate **2** for attaching the cable glands **3**
- Mounting hardware
- A manual

For ATV71HD55M3X, HD75M3X, ATV71HD90N4...HC50N4 and ATV71HC11Y...HC63Y drives, the kit conforms to IP 31 degree of protection and includes:

- An IP 54 casing **4** used to maintain the IP 54 degree of protection for the power section
- An EMC plate with cable clamps **5**
- An IP 31 cover **6**
- Mounting hardware
- A manual



IP 31 conformity kit

#### References

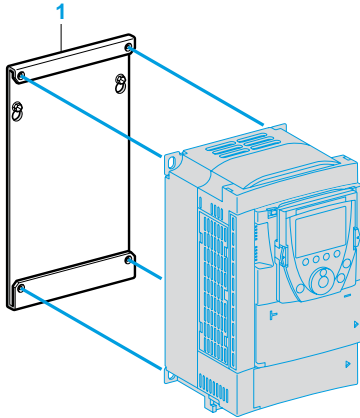
For drives	Degree of protection	Reference	Weight kg
ATV71H037M3...HU15M3 ATV71H075N4...HU22N4 ATV71P075N4Z...PU22N4Z	IP 21	<b>VW3A9101</b>	1.300
ATV71HU22M3...HU40M3 ATV71HU30N4, HU40N4 ATV71PU30N4Z, PU40N4Z	IP 21	<b>VW3A9102</b>	1.500
ATV71HU55M3 ATV71HU55N4, HU75N4 ATV71PU55N4Z, PU75N4Z	IP 21	<b>VW3A9103</b>	1.800
ATV71HU75M3 ATV71HD11N4 ATV71HU15S6X...HU75S6X	IP 21	<b>VW3A9104</b>	2.000
ATV71HD11M3X, HD15M3X ATV71HD15N4, HD18N4	IP 21	<b>VW3A9105</b>	2.800
ATV71HD18M3X, HD22M3X ATV71HD22N4 ATV71HU22Y...HD30Y	IP 21	<b>VW3A9106</b>	4.000
ATV71HD30N4, HD37N4 ATV71HD30M3X...HD45M3X	IP 21	<b>VW3A9107</b>	5.000
ATV71HD45N4...HD75N4 ATV71HD37Y...HD90Y	IP 21	<b>VW3A9108</b>	7.000
ATV71HD55M3X (1) ATV71HD90N4 (1) ATV71HD90N4D (2)	IP 31	<b>VW3A9109</b>	9.400
ATV71HD75M3X (1) ATV71HC11N4 (1) ATV71HC11N4D (2)	IP 31	<b>VW3A9110</b>	11.800
ATV71HC13N4 (1) ATV71HC13N4D (2) ATV71HC11Y...HC16Y (3)	IP 31	<b>VW3A9111</b>	11.600
ATV71HC16N4 (1) ATV71HC16N4D (2)	IP 31	<b>VW3A9112</b>	14.600
ATV71HC20N4...HC28N4 (1) ATV71HC20N4D...HC28N4D (2) ATV71HC20Y...HC31Y (3)	Without braking unit IP 31 With braking unit IP 31	<b>VW3A9113</b> <b>VW3A9114</b>	19.500 19.500
ATV71HC31N4, HC40N4 (1) ATV71HC31N4D, HC40N4D (2)	IP 31	<b>VW3A9115</b>	25.000
ATV71HC50N4 (1) ATV71HC50N4D (2) ATV71HC40Y...HC63Y (3)	IP 31	<b>VW3A9116</b>	35.000

(1) Drives supplied as standard with a DC choke.

(2) Drives supplied without DC choke.

(3) Drives supplied as standard with a transformer for the fan.

1



Substitution kit VW3A9304

### Substitution kit for Altivar 58 or Altivar 58F drives

This kit **1** is used to install an Altivar 71 drive in place of an Altivar 58 or Altivar 58F drive using the same fixing holes. It includes the mechanical adaptors required for mounting.

#### High torque application (170% Tn)

Old drive	Motor Power		Replaced by	Reference	Weight
	kW	HP			
<b>200...240 V single-phase supply voltage</b>					
ATV58HU09M2	0.37	0.5	ATV71H075M3	VW3A9301	—
ATV58HU18M2	0.75	1	ATV71HU15M3	VW3A9301	—
ATV58HU29M2	1.5	2	ATV71HU22M3	VW3A9303	—
ATV58HU41M2	2.2	3	ATV71HU30M3	VW3A9303	—
ATV58HU72M2	3	—	ATV71HU40M3	VW3A9304	—
ATV58HU90M2	4	5	ATV71HU55M3	VW3A9306	—
ATV58HD12M2	5.5	7.5	ATV71HU75M3	VW3A9307	—

#### 200...240 V three-phase supply voltage

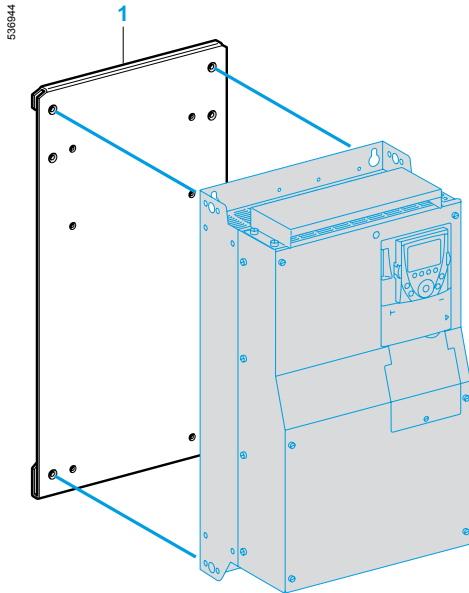
ATV58HU29M2	1.5	2	ATV71HU15M3	VW3A9302	—
ATV58HU41M2	2.2	3	ATV71HU22M3	VW3A9303	—
ATV58HU54M2	3	—	ATV71HU30M3	VW3A9304	—
ATV58HU72M2	4	5	ATV71HU40M3	VW3A9304	—
ATV58HU90M2	5.5	7.5	ATV71HU55M3	VW3A9306	—
ATV58HD12M2	7.5	10	ATV71HU75M3	VW3A9307	—
ATV58HD16M2X	11	15	ATV71HD11M3X	VW3A9309	—
ATV58HD23M2X	15	20	ATV71HD15M3X	VW3A9309	—
ATV58HD28M2X	18.5	25	ATV71HD18M3X	VW3A9312	—
ATV58HD33M2X	22	30	ATV71HD22M3X	VW3A9312	—
ATV58HD46M2X	30	40	ATV71HD30M3X	VW3A9314	—

#### 380...480 V three-phase supply voltage

ATV58HU18N4	0.75	1	ATV71H075N4	VW3A9302	—
ATV58HU29N4	1.5	2	ATV71HU15N4	VW3A9302	—
ATV58HU41N4	2.2	3	ATV71HU22N4	VW3A9302	—
ATV58HU54N4	3	—	ATV71HU30N4	VW3A9304	—
ATV58HU72N4	4	5	ATV71HU40N4	VW3A9304	—
ATV58HU90N4	5.5	7.5	ATV71HU55N4	VW3A9305	—
ATV58HD12N4	7.5	10	ATV71HU75N4	VW3A9306	—
ATV58HD16N4	11	15	ATV71HD11N4	VW3A9307	—
ATV58HD23N4	15	20	ATV71HD15N4	VW3A9308	—
ATV58HD28N4	18.5	25	ATV71HD18N4	VW3A9309	—
ATV58HD33N4	22	30	ATV71HD22N4	VW3A9310	—
ATV58HD46N4	30	40	ATV71HD30N4	VW3A9310	—
ATV58HD54N4	37	50	ATV71HD37N4	VW3A9312	—
ATV58HD64N4	45	60	ATV71HD45N4	VW3A9312	—
ATV58HD79N4	55	75	ATV71HD55N4	VW3A9312	—

#### 500 V three-phase supply voltage

ATV58HU18N4	0.75	1	ATV71HU22Y	VW3A9310	—
ATV58HU29N4	1.5	2	ATV71HU22Y	VW3A9310	—
ATV58HU41N4	2.2	3	ATV71HU30Y	VW3A9310	—
ATV58HU54N4	3	—	ATV71HU40Y	VW3A9310	—
ATV58HU72N4	4	5	ATV71HU55Y	VW3A9310	—
ATV58HU90N4	5.5	7.5	ATV71HU75Y	VW3A9310	—
ATV58HD12N4	7.5	10	ATV71HD11Y	VW3A9310	—
ATV58HD16N4	11	15	ATV71HD15Y	VW3A9310	—
ATV58HD23N4	15	20	ATV71HD18Y	VW3A9310	—
ATV58HD28N4	18.5	25	ATV71HD22Y	VW3A9310	—
ATV58HD33N4	22	30	ATV71HD30Y	VW3A9310	—
ATV58HD46N4	30	40	ATV71HD37Y	VW3A9312	—
ATV58HD54N4	37	50	ATV71HD45Y	VW3A9312	—
ATV58HD64N4	45	60	ATV71HD55Y	VW3A9312	—
ATV58HD79N4	55	75	ATV71HD75Y	VW3A9312	—



Substitution kit VW3A9312

### Substitution kit for Altivar 58 or Altivar 58F drives (continued)

#### Standard torque application (120% Tn)

Old drive	Motor Power		Replaced by	Reference	Weight kg
	kW	HP			
<b>200...240 V three-phase supply voltage</b>					
ATV58HD16M2X	15	20	ATV71HD15M3X	<b>VW3A9309</b>	—
ATV58HD23M2X	18.5	25	ATV71HD18M3X	<b>VW3A9310</b>	—
ATV58HD28M2X	22	30	ATV71HD22M3X	<b>VW3A9312</b>	—
ATV58HD33M2X	30	40	ATV71HD30M3X	<b>VW3A9312</b>	—
ATV58HD46M2X	37	50	ATV71HD37M3X	<b>VW3A9312</b>	—
<b>380...480 V three-phase supply voltage</b>					
ATV58HD28N4	22	30	ATV71HD22N4	<b>VW3A9310</b>	—
ATV58HD33N4	30	40	ATV71HD30N4	<b>VW3A9310</b>	—
ATV58HD46N4	37	50	ATV71HD37N4	<b>VW3A9310</b>	—
ATV58HD54N4	45	60	ATV71HD45N4	<b>VW3A9312</b>	—
ATV58HD64N4	55	75	ATV71HD55N4	<b>VW3A9312</b>	—
ATV58HD79N4	75	100	ATV71HD75N4	<b>VW3A9312</b>	—
<b>500 V three-phase supply voltage</b>					
ATV58HD28N4	22	30	ATV71HD30Y	<b>VW3A9310</b>	—
ATV58HD33N4	30	40	ATV71HD37Y	<b>VW3A9312</b>	—
ATV58HD46N4	37	50	ATV71HD45Y	<b>VW3A9312</b>	—
ATV58HD54N4	45	60	ATV71HD55Y	<b>VW3A9312</b>	—
ATV58HD64N4	55	75	ATV71HD75Y	<b>VW3A9312</b>	—
ATV58HD79N4	75	100	ATV71HD90Y	<b>VW3A9312</b>	—

1



Remote graphic display terminal

### Remote graphic display terminal

(this display terminal can be supplied with the drive or ordered separately)

This display terminal is attached to the front of the drive. It includes the integrated terminal for drives ordered without a graphic display terminal (see page 1/20). It can be:

- Used remotely in conjunction with the appropriate accessories (see below)
- Connected to several drives using multidrop link components (see page 1/29)

It is used to:

- Control, adjust and configure the drive
  - Display the current values (motor, input/output values, etc.)
  - Save and download configurations; 4 configuration files can be saved
- The maximum operating temperature of the terminal is 60°C and it has IP 54 protection.

### Description

- 1 Graphic display unit:
  - 8 lines, 240 x 160 pixels
  - large digit display that can be read from 5 m away
  - bar chart display
- 2 Assignable function keys F1, F2, F3, F4:
  - dialogue functions: direct access, help screens, navigation
  - application functions: Local/Remote, preset speed
- 3 STOP/RESET key: local control of motor stopping/fault clearing
- 4 RUN key: local control of motor operation
- 5 Navigation button:
  - Press: saves the current value (ENT)
  - Turn ±: increases or decreases the value, or goes to the next or previous line
- 6 FWD/REV key: reverses the motor direction of rotation
- 7 ESC key: aborts a value, a parameter, or a menu to return to the previous selection

Note: Keys 3, 4 and 6 can be used to control the drive directly.

### Reference

Description	Item no.	Reference	Weight kg
Remote graphic display terminal	1	VW3A1101	0.180

### Remote mounting accessories for the graphic display terminal

The following accessories are available:

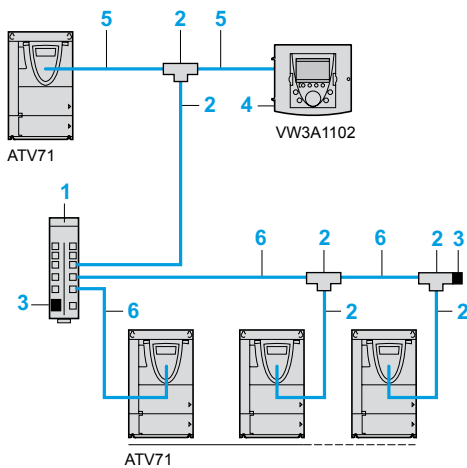
- A remote mounting kit 2 for mounting on an enclosure door with IP 54 degree of protection, including:
  - All the mechanical fittings
  - Mounting hardware
- A transparent door 3 which attaches to the remote mounting mechanism to achieve IP 65 degree of protection
- A preassembled cordset 4 with two RJ45 connectors for connecting the graphic display terminal to the Altivar 71 drive (1, 3, 5 or 10 metres long)
- A female/female RJ45 adaptor 5 for connecting the graphic display terminal VW3A1101 to the remote-mounting cordset VW3A1104R●●●

### References

Description	Item no.	Length m	Degree of protection	Reference	Weight kg
Remote mounting kit Order with remote-mounting cordset VW3A1104R●●●	2	-	IP 54	VW3A1102	0.150
Door for remote mounting kit	3	-	IP 65	VW3A1103	0.040
Preassembled remote-mounting cordsets with 2 RJ45 connectors	4	1	-	VW3A1104R10	0.050
	4	3	-	VW3A1104R30	0.150
	4	5	-	VW3A1104R50	0.250
	4	10	-	VW3A1104R100	0.500
Female/female RJ45 adaptor	5	-	-	VW3A1105	0.010



Remote mounting accessories for the graphic display terminal



Example of connection via multidrop link

### Multidrop connection accessories

These accessories enable a graphic display terminal to be connected to several drives via a multidrop link. This multidrop link is connected to the Modbus terminal port on the front of the drive.

#### Connection accessories

Description	Item no.	Order in multiples of	Unit reference	Weight kg
<b>Modbus splitter box</b> 10 RJ45 connectors and 1 screw terminal block	1	–	LU9GC3	0.500
<b>Modbus T-junction boxes</b> With integrated cable (0.3 m)	2	–	VW3A8306TF03	–
With integrated cable (1 m)	2	–	VW3A8306TF10	–
<b>Modbus line terminator</b> For RJ45 connector	3	2	VW3A8306RC	0.010
<b>Remote mounting kit</b> For graphic display terminal VW3A1101	4	–	VW3A1102	0.150

#### Cordsets (preassembled with 2 RJ45 connectors)

Used for	Item no.	Length m	Reference	Weight kg
<b>Remote operation of the Altivar 71 and the graphic display terminal VW3A1101</b>	5	1	VW3A1104R10	0.050
		3	VW3A1104R30	0.150
		5	VW3A1104R50	0.250
		10	VW3A1104R100	0.500
	<b>Modbus serial link</b>	6	0.3	VW3A8306R03
		1	VW3A8306R10	0.060
		3	VW3A8306R30	0.130

1



Configuration with SoMove Mobile software for mobile phones via Bluetooth®



SoMove setup software with Modbus-Bluetooth® adaptor for PC

### SoMove Mobile software for mobile phones (1)

SoMove Mobile software converts any compatible mobile phone (1) into a remote graphic display terminal, offering an identical Human-Machine Interface.

Particularly suitable for on-site or remote maintenance operations, SoMove Mobile software can be used to print out and save configurations, import them from a PC and export them to a PC or a drive equipped with the Modbus-Bluetooth® adaptor (TCSWAC13FB) via the Bluetooth® wireless link.

SoMove Mobile software and drive configuration files can be downloaded from our website [www.schneider-electric.com](http://www.schneider-electric.com).

#### Reference

Description	For drives	Reference	Weight kg
SoMove Mobile software for mobile phones (1)	ATV71●●●●●●	-	-

### SoMove setup software

#### Presentation

SoMove setup software for PC is used to configure, adjust and debug using the Oscilloscope function, as well as for maintenance, like all Schneider Electric drives and starters.

The software can use a direct USB/RJ45 cable link or communicate via a Bluetooth® wireless link with the drive equipped with the Modbus-Bluetooth® adaptor (TCSWAC13FB).

It is compatible with Altivar 71 drives from software version 1.6 upwards.

(1) SoMove Mobile software requires a mobile phone with minimum features; please consult our website [www.schneider-electric.com](http://www.schneider-electric.com).

PF101007



Configuration with the Multi-Loader tool connected to the Altivar 71 drive

### Simple Loader configuration tool

The Simple Loader tool enables one powered-up drive's configuration to be duplicated on another powered-up drive. It is connected to the drive's RJ45 communication port.

#### Reference

Description	For drives	Reference	Weight kg
<b>Simple Loader configuration tool</b> Supplied with a preassembled cordset with 2 RJ45 connectors	ATV71●●●●●●	VW3A8120	—

### Multi-Loader configuration tool

The Multi-Loader tool enables a number of configurations from a PC or drive to be copied and duplicated on another drive; the Altivar 71 drives must be powered up.

#### Reference

Description	For drives	Reference	Weight kg
<b>Multi-Loader configuration tool</b> Supplied with: - 1 preassembled cordset with 2 RJ45 connectors - 1 preassembled cordset with a USB type A connector and a USB Mini-B type connector - 1 SD memory card - 1 female/female RJ45 adaptor - 4 AA/LR6 1.5 V batteries - 1 anti-shock protection - 1 carrying handle	ATV71●●●●●●	VW3A8121	—



1

**Table showing possible combinations of ATV71H●●●M3 and ATV71H●●●M3X drive options (1)**

Motor		Drive	Options				
kW	HP		DC choke	Line choke	Additional EMC input filter	Motor choke	IP 20 kit for motor choke
<b>Single-phase supply voltage: 200...240 V 50/60 Hz</b>							
0.37	0.5	ATV71H075M3	–	–	VW3A4401	VW3A5101	–
0.75	1	ATV71HU15M3	–	–	VW3A4401	VW3A5101	–
1.5	2	ATV71HU22M3	–	–	VW3A4402	VW3A5101	–
2.2	3	ATV71HU30M3	–	–	VW3A4402	VW3A5102, 103	–
3	–	ATV71HU40M3	–	VW3A58501	VW3A4402	VW3A5102, 103	–
4	5	ATV71HU55M3	–	VW3A58502	VW3A4403	VW3A5102, 103	–
5.5	7.5	ATV71HU75M3	–	VW3A58502	VW3A4404	VW3A5102, 103	–
<b>Three-phase supply voltage: 200...240 V 50/60 Hz</b>							
0.37	0.5	ATV71H037M3	VW3A4501	VW3A4551	VW3A4401	VW3A5101	–
0.75	1	ATV71H075M3	VW3A4503	VW3A4551	VW3A4401	VW3A5101	–
1.5	2	ATV71HU15M3	VW3A4505	VW3A4552	VW3A4401	VW3A5101	–
2.2	3	ATV71HU22M3	VW3A4506	VW3A4552	VW3A4402	VW3A5101	–
3	–	ATV71HU30M3	VW3A4507	VW3A4553	VW3A4402	VW3A5102, 103	–
4	5	ATV71HU40M3	VW3A4508	VW3A4554	VW3A4402	VW3A5102, 103	–
5.5	7.5	ATV71HU55M3	VW3A4508	VW3A4554	VW3A4403	VW3A5102, 103	–
7.5	10	ATV71HU75M3	VW3A4509	VW3A4555	VW3A4404	VW3A5102, 103	–
11	15	ATV71HD11M3X	VW3A4510	VW3A4555	VW3A4405	VW3A5103	–
15	20	ATV71HD15M3X	VW3A4510	VW3A4556	VW3A4405	VW3A5103	–
18.5	25	ATV71HD18M3X	VW3A4511	VW3A4557	VW3A4406	VW3A5103	–
22	30	ATV71HD22M3X	VW3A4511	VW3A4557	VW3A4406	VW3A5103	–
30	40	ATV71HD30M3X	VW3A4512	VW3A4557	VW3A4408	VW3A5104	VW3A9612
37	50	ATV71HD37M3X	VW3A4512	VW3A4557	VW3A4408	VW3A5104	VW3A9612
45	60	ATV71HD45M3X	VW3A4512	VW3A4557	VW3A4408	VW3A5104	VW3A9612
55	75	ATV71HD55M3X	–	VW3A4562	VW3A4410	VW3A5105	VW3A9612
75	100	ATV71HD75M3X	–	VW3A4563	VW3A4410	VW3A5105	VW3A9612
<b>Page</b>		1/14	1/69	1/71	1/79	1/82	1/83

(1) The options available for ATV71H●●●M3 and H●●●M3X drives are also valid, at the same rating, for ATV71H●●●M3383 and ATV71H●●●M3X383 drives.

**Note:** The quantity of certain required options varies according to the drive used. For more information, refer to pages 1/59 to 1/77.

Sinus filter	Braking resistor	Hoist resistor	Flush-mounting kit (inside dust and damp proof enclosure)	UL Type 1 conformity kit (outside enclosure)	IP 21 or IP 31 conformity kit (outside enclosure)	Control card fan kit
VW3A5201	VW3A7701	VW3A7801	VW3A9501	VW3A9201	VW3A9101	–
VW3A5201	VW3A7702	VW3A7802	VW3A9501	VW3A9201	VW3A9101	–
VW3A5202	VW3A7702	VW3A7803	VW3A9502	VW3A9202	VW3A9102	–
VW3A5202	VW3A7703	VW3A7803	VW3A9502	VW3A9202	VW3A9102	–
VW3A5203	VW3A7703	VW3A7803	VW3A9502	VW3A9202	VW3A9102	–
VW3A5203	VW3A7704	VW3A7804	VW3A9503	VW3A9203	VW3A9103	–
VW3A5203	VW3A7704	VW3A7804	VW3A9504	VW3A9204	VW3A9104	–
VW3A5201	VW3A7701	VW3A7801	VW3A9501	VW3A9201	VW3A9101	–
VW3A5201	VW3A7701	VW3A7801	VW3A9501	VW3A9201	VW3A9101	–
VW3A5201	VW3A7702	VW3A7802	VW3A9501	VW3A9201	VW3A9101	–
VW3A5202	VW3A7702	VW3A7803	VW3A9502	VW3A9202	VW3A9102	–
VW3A5202	VW3A7703	VW3A7803	VW3A9502	VW3A9202	VW3A9102	–
VW3A5203	VW3A7703	VW3A7803	VW3A9502	VW3A9202	VW3A9102	–
VW3A5203	VW3A7704	VW3A7804	VW3A9503	VW3A9203	VW3A9103	–
VW3A5203	VW3A7704	VW3A7804	VW3A9504	VW3A9204	VW3A9104	–
VW3A5204	VW3A7705	VW3A7805	VW3A9505	VW3A9205	VW3A9105	–
VW3A5204	VW3A7706	VW3A7805	VW3A9505	VW3A9205	VW3A9105	–
VW3A5205	VW3A7707	VW3A7806	VW3A9506	VW3A9206	VW3A9106	VW3A9404
VW3A5205	VW3A7707	VW3A7807	VW3A9506	VW3A9206	VW3A9106	VW3A9404
VW3A5206	VW3A7708	VW3A7807	VW3A9508	VW3A9217	VW3A9117	VW3A9406
VW3A5206	VW3A7709	VW3A7808	VW3A9508	VW3A9217	VW3A9117	VW3A9406
VW3A5206	VW3A7709	VW3A7808	VW3A9508	VW3A9217	VW3A9117	VW3A9406
VW3A5208	VW3A7713	VW3A7809	VW3A9510	VW3A9209	VW3A9109	–
VW3A5208	VW3A7714	VW3A7810	VW3A9511	VW3A9210	VW3A9110	–
1/85	1/57	1/60	1/22	1/24	1/25	1/21

1

**Table showing possible combinations of ATV71H●●●N4 drive options**

Motor kW HP	Drive	Options									
		DC choke	Line choke	50 Hz passive filters			60 Hz passive filters			Additional EMC input filter	
				THDI 16%	THDI 10%	THDI 5%	THDI 16%	THDI 10%	THDI 5%		
<b>Three-phase supply voltage: 380...480 V 50/60 Hz</b>											
0.75 1	ATV71H075N4	VW3A4501	VW3A4551	VW3A46101	VW3A46120	–	–	VW3A46139	VW3A46158	–	VW3A4401
1.5 2	ATV71HU15N4	VW3A4502	VW3A4551	VW3A46101	VW3A46120	–	–	VW3A46139	VW3A46158	–	VW3A4401
2.2 3	ATV71HU22N4	VW3A4503	VW3A4552	VW3A46101	VW3A46120	–	–	VW3A46139	VW3A46158	–	VW3A4401
3 –	ATV71HU30N4	VW3A4503	VW3A4552	VW3A46101	VW3A46120	–	–	VW3A46139	VW3A46158	–	VW3A4402
4 5	ATV71HU40N4	VW3A4504	VW3A4552	VW3A46102	VW3A46121	–	–	VW3A46140	VW3A46159	–	VW3A4402
5.5 7.5	ATV71HU55N4	VW3A4505	VW3A4553	VW3A46102	VW3A46121	–	–	VW3A46140	VW3A46159	–	VW3A4403
7.5 10	ATV71HU75N4	VW3A4506	VW3A4553	VW3A46103	VW3A46122	–	–	VW3A46141	VW3A46160	–	VW3A4403
11 15	ATV71HD11N4	VW3A4507	VW3A4554	VW3A46104	VW3A46123	–	–	VW3A46142	VW3A46161	–	VW3A4404
15 20	ATV71HD15N4	VW3A4508	VW3A4554	VW3A46105	VW3A46124	–	–	VW3A46143	VW3A46162	–	VW3A4405
18.5 25	ATV71HD18N4	VW3A4508	VW3A4555	VW3A46106	VW3A46125	–	–	VW3A46144	VW3A46163	–	VW3A4405
22 30	ATV71HD22N4	VW3A4510	VW3A4555	VW3A46107	VW3A46126	–	–	VW3A46145	VW3A46164	–	VW3A4406
30 40	ATV71HD30N4	VW3A4510	VW3A4556	VW3A46108	VW3A46127	–	–	VW3A46146	VW3A46165	–	VW3A4407
37 50	ATV71HD37N4	VW3A4510	VW3A4556	VW3A46109	VW3A46128	–	–	VW3A46147	VW3A46166	–	VW3A4407
45 60	ATV71HD45N4	VW3A4511	VW3A4556	VW3A46110	VW3A46129	–	–	VW3A46148	VW3A46167	–	VW3A4408
55 75	ATV71HD55N4	VW3A4511	VW3A4556	VW3A46111	VW3A46130	–	–	VW3A46149	VW3A46168	–	VW3A4408
75 100	ATV71HD75N4	VW3A4511	VW3A4558	VW3A46112	VW3A46131	–	–	VW3A46150	VW3A46169	–	VW3A4408
90 125	ATV71HD90N4	–	VW3A4558 (1)	–	VW3A46112	VW3A46131	–	VW3A46151	VW3A46170	VW3A4410	
110 150	ATV71HC11N4	–	VW3A4559 (1)	–	VW3A46113	VW3A46132	–	VW3A46152	VW3A46171	VW3A4410	
132 200	ATV71HC13N4	–	VW3A4560 (1)	–	VW3A46114	VW3A46133	–	VW3A46153	VW3A46172	VW3A4410	
160 250	ATV71HC16N4	–	VW3A4561 (1)	–	VW3A46116	VW3A46135	–	VW3A46153	VW3A46172	VW3A4411	
200 300	ATV71HC20N4	–	VW3A4569 (1)	–	VW3A46118	VW3A46137	–	VW3A46155	VW3A46174	VW3A4411	
220 350	ATV71HC25N4	–	VW3A4562 (1)	–	VW3A46118	VW3A46137	–	VW3A46155	VW3A46174	VW3A4411	
250 400	ATV71HC25N4	–	VW3A4564 (1)	–	VW3A46119	VW3A46138	–	VW3A46157	VW3A46176	VW3A4411	
280 450	ATV71HC28N4	–	VW3A4564 (1)	–	VW3A46115	VW3A46134	–	VW3A46157	VW3A46176	VW3A4411	
315 500	ATV71HC31N4	–	VW3A4565 (1)	–	VW3A46116	VW3A46135	–	VW3A46153	VW3A46172	VW3A4412	
355 –	ATV71HC40N4	–	VW3A4569 (1)	–	VW3A46116	VW3A46135	–	VW3A46154	VW3A46173	VW3A4412	
400 600	ATV71HC40N4	–	VW3A4569 (1)	–	VW3A46117	VW3A46136	–	VW3A46154	VW3A46173	VW3A4412	
500 700	ATV71HC50N4	–	VW3A4564 (1)	–	VW3A46119	VW3A46138	–	VW3A46156	VW3A46175	VW3A4413	
<b>Page</b>	1/15	1/69	1/71	1/74	1/74	1/75	1/76	1/76	1/77	1/79	

**Table showing possible combinations of ATV71Q●●●N4 drive options**

Motor kW HP	Drive	Options								
		DC choke	Line choke	50 Hz passive filters			60 Hz passive filters			Additional EMC input filter
				THDI 16%	THDI 10%	THDI 5%	THDI 16%	THDI 10%	THDI 5%	
<b>Supply voltage: 380...480 V 50/60 Hz</b>										
90 125	ATV71QD90N4	–	VW3A4559 (1)	–	VW3A46112	VW3A46131	–	VW3A46151	VW3A46170	VW3A4410
110 150	ATV71QC11N4	–	VW3A4560 (1)	–	VW3A46113	VW3A46132	–	VW3A46152	VW3A46171	VW3A4410
132 200	ATV71QC13N4	–	VW3A4568 (1)	–	VW3A46114	VW3A46133	–	VW3A46153	VW3A46172	VW3A4410
160 250	ATV71QC16N4	–	VW3A4561 (1)	–	VW3A46116	VW3A46135	–	VW3A46153	VW3A46172	VW3A4411
200 300	ATV71QC20N4	–	VW3A4569 (1)	–	VW3A46118	VW3A46137	–	VW3A46155	VW3A46174	VW3A4411
220 350	ATV71QC25N4	–	VW3A4564 (1)	–	VW3A46118	VW3A46137	–	VW3A46155	VW3A46174	VW3A4411
250 400	ATV71QC25N4	–	VW3A4564 (1)	–	VW3A46119	VW3A46138	–	VW3A46157	VW3A46176	VW3A4411
315 500	ATV71QC31N4	–	VW3A4561 (1)	–	VW3A46116	VW3A46135	–	VW3A46153	VW3A46172	VW3A4412
355 –	ATV71QC40N4	–	VW3A4563 (1)	–	VW3A46116	VW3A46135	–	VW3A46154	VW3A46173	VW3A4412
400 600	ATV71QC40N4	–	VW3A4563 (1)	–	VW3A46117	VW3A46136	–	VW3A46154	VW3A46173	VW3A4412
500 700	ATV71QC50N4	–	VW3A4573 (1)	–	VW3A46119	VW3A46138	–	VW3A46156	VW3A46175	VW3A4413
<b>Page</b>	1/16	–	1/71	–	1/74	1/75	–	1/76	1/77	1/79

(1) For drives with a power rating of 90 kW or more without an integrated DC choke, a line choke must be used. This is the case for ATV71HD90N4 to ATV71HC50N4 drives (see page 1/20) and for ATV71QD90N4 to ATV61QC●●●N4 drives.  
 ATV71HD90N4 to ATV71HC50N4 drives are variants without an integrated DC choke of ATV71HD90N4 to ATV71HC50N4 drives.

**Note:** The quantity of certain required options varies according to the drive used. For more information, refer to pages 1/59 to 1/77.

Motor choke	IP 20 kit for motor choke	Sinus filter	Resistance braking unit	Braking resistor	Hoist resistor	Flush-mounting kit (3)	UL Type 1 conformity kit (4)	IP 21 or IP 31 conformity kit (4)	Control card fan kit
VW3A5101, 102, 103	–	–	–	VW3A7701	VW3A7801	VW3A9501	VW3A9201	VW3A9101	–
VW3A5101, 102, 103	–	VW3A5201	–	VW3A7701	VW3A7801	VW3A9501	VW3A9201	VW3A9101	–
VW3A5101, 102, 103	–	VW3A5201	–	VW3A7701	VW3A7801	VW3A9501	VW3A9201	VW3A9101	–
VW3A5101, 102, 103	–	VW3A5201	–	VW3A7701	VW3A7802	VW3A9502	VW3A9202	VW3A9102	–
VW3A5101, 102, 103	–	VW3A5201	–	VW3A7701	VW3A7802	VW3A9502	VW3A9202	VW3A9102	–
VW3A5102, 103, 104	VW3A9612	VW3A5202	–	VW3A7702	VW3A7802	VW3A9503	VW3A9203	VW3A9103	–
VW3A5102, 103, 104	VW3A9612	VW3A5203	–	VW3A7702	VW3A7803	VW3A9503	VW3A9203	VW3A9103	–
VW3A5102, 103, 104	VW3A9612	VW3A5203	–	VW3A7703	VW3A7803	VW3A9504	VW3A9204	VW3A9104	–
VW3A5102, 103, 104	VW3A9612	VW3A5203	–	VW3A7703	VW3A7804	VW3A9505	VW3A9205	VW3A9105	–
VW3A5102, 103, 104	VW3A9612	VW3A5204	–	VW3A7704	VW3A7804	VW3A9505	VW3A9205	VW3A9105	–
VW3A5103, 104	VW3A9612	VW3A5204	–	VW3A7704	VW3A7804	VW3A9506	VW3A9206	VW3A9106	VW3A9404
VW3A5103, 104	VW3A9612	VW3A5204	–	VW3A7704	VW3A7804	VW3A9507	VW3A9207	VW3A9107	VW3A9405
VW3A5103, 104	VW3A9612	VW3A5205	–	VW3A7705	VW3A7805	VW3A9507	VW3A9207	VW3A9107	VW3A9405
VW3A5104	VW3A9612	VW3A5205	–	VW3A7707	VW3A7805	VW3A9509	VW3A9208	VW3A9108	VW3A9407
VW3A5104	VW3A9612	VW3A5206	–	VW3A7707	VW3A7805	VW3A9509	VW3A9208	VW3A9108	VW3A9407
VW3A5104	VW3A9612	VW3A5206	–	VW3A7707	VW3A7806	VW3A9509	VW3A9208	VW3A9108	VW3A9407
VW3A5104	VW3A9612	VW3A5207	–	VW3A7710	VW3A7811	VW3A9510	VW3A9209	VW3A9109	–
VW3A5105	VW3A9612	VW3A5207	–	VW3A7711	VW3A7812	VW3A9511	VW3A9210	VW3A9110	–
VW3A5105	VW3A9612	VW3A5208	–	VW3A7711	VW3A7812	VW3A9512	VW3A9211	VW3A9111	–
VW3A5106	VW3A9613	VW3A5208	–	VW3A7712	VW3A7813	VW3A9513	VW3A9212	VW3A9112	–
VW3A5106	VW3A9613	VW3A5209	VW3A7101	VW3A7715	VW3A7814	VW3A9514, 515	VW3A9213, 214	VW3A9113, 114	–
VW3A5106	VW3A9613	VW3A5209	VW3A7101	VW3A7716	VW3A7815	VW3A9514, 515	VW3A9213, 214	VW3A9113, 114	–
VW3A5107	VW3A9613	VW3A5210	VW3A7101	VW3A7716	VW3A7815	VW3A9514, 515	VW3A9213, 214	VW3A9113, 114	–
VW3A5107	VW3A9613	VW3A5210	VW3A7101	VW3A7716	VW3A7815	VW3A9514, 515	VW3A9213, 214	VW3A9113, 114	–
VW3A5107	VW3A9613	VW3A5210	VW3A7102	VW3A7717	VW3A7816	–	–	VW3A9115	–
VW3A5107	VW3A9613	VW3A5210	VW3A7102	VW3A7717	VW3A7816	–	–	VW3A9115	–
VW3A5108	VW3A9613	VW3A5211	VW3A7102	VW3A7717	VW3A7816	–	–	VW3A9115	–
VW3A5108	VW3A9613	VW3A5211	VW3A7102	VW3A7718	VW3A7817	–	–	VW3A9116	–
1/82	1/83	1/85	1/56	1/58	1/61	1/22	1/24	1/25	1/21

Motor choke	IP 20 kit for motor choke	Sinus filter	Resistance braking unit	Braking resistor	Hoist resistor	Flush-mounting kit (4)	UL Type 1 conformity kit (5)	IP 21 or IP 31 conformity kit (5)	Control card fan kit
VW3A5104	VW3A9612	VW3A5207	–	VW3A7710	VW3A7811	–	–	–	–
VW3A5105	VW3A9612	VW3A5207	–	VW3A7711	VW3A7812	–	–	–	–
VW3A5105	VW3A9612	VW3A5208	–	VW3A7711	VW3A7812	–	–	–	–
VW3A5106	VW3A9613	VW3A5208	VW3A7101	VW3A7712	VW3A7813	–	–	–	–
VW3A5106	VW3A9613	VW3A5209	VW3A7101	VW3A7715	VW3A7814	–	–	–	–
VW3A5106	VW3A9613	VW3A5209	VW3A7101	VW3A7716	VW3A7815	–	–	–	–
VW3A5107	VW3A9613	VW3A5210	VW3A7101	VW3A7716	VW3A7815	–	–	–	–
VW3A5107	VW3A9613	VW3A5210	VW3A7102	VW3A7717	VW3A7816	–	–	–	–
VW3A5107	VW3A9613	VW3A5210	VW3A7102	VW3A7717	VW3A7816	–	–	–	–
VW3A5108	VW3A9613	VW3A5211	VW3A7102	VW3A7717	VW3A7816	–	–	–	–
VW3A5108	VW3A9613	VW3A5211	VW3A7102	VW3A7718	VW3A7817	–	–	–	–
1/82	1/83	1/85	1/56	1/58	1/61	–	–	–	–

(3) Inside dust and damp proof enclosure.

(4) Outside enclosure.

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**Table showing possible combinations of ATV71W●●●N4 drive options**

Motor		Drive	Options						Additional EMC filter	
			DC choke	Line choke	50 Hz passive filters		60 Hz passive filters			
kW	HP					THDI 16%	THDI 10%	THDI 16%	THDI 10%	
			<b>Three-phase supply voltage: 380...480 V 50/60 Hz</b>							
0.75	1	ATV71W075N4	VW3A4501	VW3A4551	VW3A46101	VW3A46120	VW3A46139	VW3A46158	VW3A4401	
1.5	2	ATV71WU15N4	VW3A4502	VW3A4551	VW3A46101	VW3A46120	VW3A46139	VW3A46158	VW3A4401	
2.2	3	ATV71WU22N4	VW3A4503	VW3A4552	VW3A46101	VW3A46120	VW3A46139	VW3A46158	VW3A4401	
3	-	ATV71WU30N4	VW3A4503	VW3A4552	VW3A46101	VW3A46120	VW3A46139	VW3A46158	VW3A4402	
4	5	ATV71WU40N4	VW3A4504	VW3A4552	VW3A46102	VW3A46121	VW3A46140	VW3A46159	VW3A4402	
5.5	7.5	ATV71WU55N4	VW3A4505	VW3A4553	VW3A46102	VW3A46121	VW3A46140	VW3A46159	VW3A4403	
7.5	10	ATV71WU75N4	VW3A4506	VW3A4553	VW3A46103	VW3A46122	VW3A46141	VW3A46160	VW3A4403	
11	15	ATV71WD11N4	VW3A4507	VW3A4554	VW3A46104	VW3A46123	VW3A46142	VW3A46161	VW3A4404	
15	20	ATV71WD15N4	VW3A4508	VW3A4554	VW3A46105	VW3A46124	VW3A46143	VW3A46162	VW3A4405	
18.5	25	ATV71WD18N4	VW3A4508	VW3A4555	VW3A46106	VW3A46125	VW3A46144	VW3A46163	VW3A4405	
22	30	ATV71WD22N4	VW3A4510	VW3A4555	VW3A46107	VW3A46126	VW3A46145	VW3A46164	VW3A4406	
30	40	ATV71WD30N4	VW3A4510	VW3A4556	VW3A46108	VW3A46127	VW3A46146	VW3A46165	VW3A4407	
37	50	ATV71WD37N4	VW3A4510	VW3A4556	VW3A46109	VW3A46128	VW3A46147	VW3A46166	VW3A4407	
45	60	ATV71WD45N4	VW3A4511	VW3A4556	VW3A46110	VW3A46129	VW3A46148	VW3A46167	VW3A4408	
55	75	ATV71WD55N4	VW3A4511	VW3A4556	VW3A46111	VW3A46130	VW3A46149	VW3A46168	VW3A4408	
75	100	ATV71WD75N4	VW3A4511	VW3A4558	VW3A46112	VW3A46131	VW3A46150	VW3A46169	VW3A4408	
<b>Page</b>		1/17	1/69	1/71	1/74	1/75	1/76	1/77	1/79	

**Note:** The quantity of certain required options varies according to the drive used. For more information, refer to pages 1/59 to 1/77.

Motor choke	IP 20 kit for motor choke	Sinus filter	Braking resistor	Hoist resistor
VW3A5101, 102, 103	–	–	VW3A7701	VW3A7801
VW3A5101, 102, 103	–	VW3A5201	VW3A7701	VW3A7801
VW3A5101, 102, 103	–	VW3A5201	VW3A7701	VW3A7801
VW3A5101, 102, 103	–	VW3A5201	VW3A7701	VW3A7802
VW3A5101, 102, 103	–	VW3A5201	VW3A7701	VW3A7802
VW3A5102, 103, 104	VW3A9612	VW3A5202	VW3A7702	VW3A7802
VW3A5102, 103, 104	VW3A9612	VW3A5203	VW3A7702	VW3A7803
VW3A5102, 103, 104	VW3A9612	VW3A5203	VW3A7703	VW3A7803
VW3A5102, 103, 104	VW3A9612	VW3A5203	VW3A7703	VW3A7804
VW3A5102, 103, 104	VW3A9612	VW3A5204	VW3A7704	VW3A7804
VW3A5103, 104	VW3A9612	VW3A5204	VW3A7704	VW3A7804
VW3A5103, 104	VW3A9612	VW3A5204	VW3A7704	VW3A7804
VW3A5103, 104	VW3A9612	VW3A5205	VW3A7705	VW3A7805
VW3A5104	VW3A9612	VW3A5205	VW3A7707	VW3A7805
VW3A5104	VW3A9612	VW3A5206	VW3A7707	VW3A7805
VW3A5104	VW3A9612	VW3A5206	VW3A7707	VW3A7806
1/82	1/83	1/85	1/58	1/61

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**Table showing possible combinations of ATV71P●●●N4Z drive options**

Motor		Drive	Options					IP 20 kit for motor choke
kW	HP		DC choke	Line choke	Passive filter	Additional EMC filter	Motor choke	
<b>Three-phase supply voltage: 380...480 V 50/60 Hz</b>								
0.75	1	ATV71P075N4Z	VW3A4501	VW3A4551	VW3A46●1	VW3A4401	VW3A5101, 102, 103	–
1.5	2	ATV71PU15N4Z	VW3A4502	VW3A4551	VW3A46●1	VW3A4401	VW3A5101, 102, 103	–
2.2	3	ATV71PU22N4Z	VW3A4503	VW3A4552	VW3A46●1	VW3A4401	VW3A5101, 102, 103	–
3	–	ATV71PU30N4Z	VW3A4503	VW3A4552	VW3A46●1	VW3A4402	VW3A5101, 102, 103	–
4	5	ATV71PU40N4Z	VW3A4504	VW3A4552	VW3A46●2	VW3A4402	VW3A5101, 102, 103	–
5.5	7.5	ATV71PU55N4Z	VW3A4505	VW3A4553	VW3A46●2	VW3A4403	VW3A5102, 103, 104	VW3A9612
7.5	10	ATV71PU75N4Z	VW3A4506	VW3A4553	VW3A46●3	VW3A4403	VW3A5102, 103, 104	VW3A9612
11	15	ATV71PD11N4Z	VW3A4507	VW3A4554	VW3A46●3	VW3A4404	VW3A5102, 103, 104	VW3A9612
<b>Page</b>		1/16	1/69	1/71	1/74	1/79	1/82	1/83

**Table showing possible combinations of ATV71H●●●SX6 drive options**

Motor		Drive	Options					IP 20 kit for motor choke
kW	HP		DC choke	Line choke	Passive filter	Additional EMC filter	Motor choke	
<b>500 V 575 V</b>								
<b>Three-phase supply voltage: 500...600 V 50/60 Hz</b>								
1.5	2.0	ATV71HU15S6X	–	VW3A4551	–	–	–	–
2.2	3.0	ATV71HU22S6X	–	VW3A4551	–	–	–	–
3.0	–	ATV71HU30S6X	–	VW3A4552	–	–	–	–
4.0	5.0	ATV71HU40S6X	–	VW3A4552	–	–	–	–
5.5	7.5	ATV71HU55S6X	–	VW3A4552	–	–	–	–
7.5	10.0	ATV71HU75S6X	–	VW3A4553	–	–	–	–
<b>Page</b>		1/18	–	1/72	–	–	–	–

**Note:** The quantity of certain required options varies according to the drive used. For more information, refer to pages 1/59 to 1/77.

Sinus filter	Braking resistor	Hoist resistor	Kit for mounting in a dust and damp proof enclosure	Fan	UL Type 1 conformity kit (outside enclosure)	Kit for IP 21 or IP 31 conformity kit (outside enclosure)
VW3A5201	VW3A7701	VW3A7801	VW3A9801	VZ3V1203	VW3A9201	VW3A9101
VW3A5201	VW3A7701	VW3A7801	VW3A9801	VZ3V1203	VW3A9201	VW3A9101
VW3A5201	VW3A7701	VW3A7801	VW3A9801	VZ3V1203	VW3A9201	VW3A9101
VW3A5201	VW3A7701	VW3A7802	VW3A9802	VZ3V1209	VW3A9202	VW3A9102
VW3A5201	VW3A7701	VW3A7802	VW3A9802	VZ3V1209	VW3A9202	VW3A9102
VW3A5202	VW3A7702	VW3A7802	VW3A9803	VZ3V1204	VW3A9203	VW3A9103
VW3A5203	VW3A7702	VW3A7803	VW3A9803	VZ3V1204	VW3A9203	VW3A9103
VW3A5203	VW3A7703	VW3A7803	–	VZ3V1210	VW3A9204	VW3A9104
1/85	1/58	1/61	1/23	1/23	1/24	1/25

Sinus filter	Braking resistor	Hoist resistor	Flush-mounting kit (inside dust and damp proof enclosure)	Fan	UL Type 1 conformity kit (outside enclosure)	IP 21 or IP 31 conformity kit (outside enclosure)
–	VW3A7702	VW3A7801	VW3A9504	–	VW3A9204	VW3A9104
–	VW3A7702	VW3A7802	VW3A9504	–	VW3A9204	VW3A9104
–	VW3A7702	VW3A7802	VW3A9504	–	VW3A9204	VW3A9104
–	VW3A7702	VW3A7802	VW3A9504	–	VW3A9204	VW3A9104
–	VW3A7702	VW3A7802	VW3A9504	–	VW3A9204	VW3A9104
–	VW3A7702	VW3A7802	VW3A9504	–	VW3A9204	VW3A9104
–	1/59	1/61	1/22	–	1/24	1/25



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**Table showing possible combinations of ATV71H●●●Y drive options**

Motor			Drive	Options						
500 V	575 V	690 V		Line choke	Motor choke	IP 20 kit for motor choke	Resistance braking unit	Braking resistor	Hoist resistor	Sinus filter
kW	HP	kW								
<b>Three-phase supply voltage: 500...690 V 50/60 Hz</b>										
1.5	2	2.2	ATV71HU22Y	VW3A4551	VW3A5101, 102, 103	–	–	VW3A7701	VW3A7801	–
2.2	3	3	ATV71HU30Y	VW3A4551	VW3A5101, 102, 103	–	–	VW3A7701	VW3A7802	–
3	–	4	ATV71HU40Y	VW3A4552	VW3A5101, 102, 103	–	–	VW3A7701	VW3A7802	–
4	5	5.5	ATV71HU55Y	VW3A4552	VW3A5101, 102, 103	–	–	VW3A7701	VW3A7802	–
5.5	7.5	7.5	ATV71HU75Y	VW3A4552	VW3A5101, 102, 103	–	–	VW3A7702	VW3A7803	–
7.5	10	11	ATV71HD11Y	VW3A4553	VW3A5102, 103, 104	VW3A9612	–	VW3A7702	VW3A7803	–
11	15	15	ATV71HD15Y	VW3A4553	VW3A5102, 103, 104	VW3A9612	–	VW3A7703	VW3A7804	–
15	20	18.5	ATV71HD18Y	VW3A4554	VW3A5102, 103, 104	VW3A9612	–	VW3A7703	VW3A7804	–
18.5	25	22	ATV71HD22Y	VW3A4554	VW3A5102, 103, 104	VW3A9612	–	VW3A7704	VW3A7804	–
22	30	30	ATV71HD30Y	VW3A4555	VW3A5102, 103, 104	VW3A9612	–	VW3A7704	VW3A7804	–
30	40	37	ATV71HD37Y	VW3A4555	VW3A5103, 104	VW3A9612	–	VW3A7704	VW3A7805	–
37	50	45	ATV71HD45Y	VW3A4555	VW3A5103, 104	VW3A9612	–	VW3A7705	VW3A7805	–
45	60	55	ATV71HD55Y	VW3A4556	VW3A5103, 104	VW3A9612	–	VW3A7705	VW3A7805	–
55	75	75	ATV71HD75Y	VW3A4556	VW3A5104	VW3A9612	–	VW3A7707	VW3A7818	–
75	100	90	ATV71HD90Y	VW3A4556	VW3A5104	VW3A9612	–	VW3A7707	VW3A7818	–
90	125	110	ATV71HC11Y	VW3A4570	VW3A5104	VW3A9612	–	VW3A7806	VW3A7806	VW3A5212
110	150	132	ATV71HC13Y	VW3A4571	VW3A5104	VW3A9612	–	VW3A7806	VW3A7805	VW3A5212
132	–	160	ATV71HC16Y	VW3A4571	VW3A5105	VW3A9612	–	VW3A7805	VW3A7805	VW3A5212
160	200	200	ATV71HC20Y	VW3A4560	VW3A5105	VW3A9612	VW3A7103	VW3A7805	VW3A7806	VW3A5213
200	250	250	ATV71HC25Y	VW3A4572	VW3A5106	VW3A9613	VW3A7103	VW3A7806	VW3A7716	VW3A5213
250	350	315	ATV71HC31Y	VW3A4572	VW3A5106	VW3A9613	VW3A7103	VW3A7716	VW3A7814	VW3A5213
315	450	400	ATV71HC40Y	VW3A4568	VW3A5107	VW3A9613	VW3A7104	VW3A7814	VW3A7717	VW3A5214
400	550	500	ATV71HC50Y	VW3A4572	VW3A5107	VW3A9613	VW3A7104	VW3A7717	VW3A7718	VW3A5214
500	700	630	ATV71HC63Y	VW3A4572	VW3A5108	VW3A9613	VW3A7104	VW3A7718	VW3A7816	VW3A5214
<b>Page</b>			1/18	1/72	1/83	1/83	1/56	1/59	1/61	1/85

**Table showing possible combinations of ATV71Q●●●Y drive options**

90	125	10	ATV71QC11Y	VW3A4570	VW3A5104	VW3A9612	–	VW3A7806	VW3A7806	–
110	150	132	ATV71QC13Y	VW3A4571	VW3A5104	VW3A9612	–	VW3A7806	VW3A7805	–
132	–	160	ATV71QC16Y	VW3A4571	VW3A5105	VW3A9612	–	VW3A7805	VW3A7805	–
160	200	200	ATV71QC20Y	VW3A4560	VW3A5105	VW3A9612	VW3A7103	VW3A7805	VW3A7806	–
200	250	250	ATV71QC25Y	VW3A4572	VW3A5106	VW3A9613	VW3A7103	VW3A7806	VW3A7716	–
250	350	315	ATV71QC31Y	VW3A4572	VW3A5106	VW3A9613	VW3A7103	VW3A7716	VW3A7814	–
315	450	400	ATV71QC40Y	VW3A4568	VW3A5107	VW3A9613	VW3A7104	VW3A7814	VW3A7717	–
400	550	500	ATV71QC50Y	VW3A4572	VW3A5107	VW3A9613	VW3A7104	VW3A7717	VW3A7718	–
500	700	630	ATV71QC63Y	VW3A4572	VW3A5108	VW3A9613	VW3A7104	VW3A7718	VW3A7816	–
<b>Pages</b>			1/19	1/72	1/83	1/83	1/56	1/59	1/61	–

**Note:** The quantity of certain required options varies according to the drive used. For more information, refer to pages 1/59 to 1/77.



**List of options common to Altivar 71 drives**

Description	Reference	Page
<b>Logic input adaptor</b>		
Adaptor for 115 V ~ logic inputs	VW3A3101	1/21
<b>HMI terminal</b>		
Remote graphic display terminal	VW3A1101	1/28
<b>Encoder interface cards (1)</b>		
With RS 422 compatible differential outputs	VW3A3401, 402	1/44
With open collector outputs	VW3A3403, 404	1/44
With push-pull outputs	VW3A3405...407	1/44
With RS 422 compatible differential outputs with encoder emulation	VW3A3411	1/44
<b>I/O expansion cards (1)</b>		
Logic	VW3A3201	1/45
Extended	VW3A3202	1/45
<b>Programmable card (1)</b>		
Controller Inside programmable card	VW3A3501	1/49

**List of options specific to Altivar 71H●●●M3383, M3X383 and N4383 drives**

Description	Reference	Page
<b>Encoder interface cards</b>		
Resolver	VW3A3408	1/44
Universal with SinCos, SinCos Hiperface®, EnDat® or SSI output	VW3A3409	1/44

**List of communication cards (1)**

Description	Reference	Page
Modbus TCP Daisy chain	VW3A3310D	1/54
EtherNet/IP	VW3A3316	1/54
EtherNet/IP (RSTP)	VW3A3320	1/54
DeviceNet	VW3A3309	1/54
INTERBUS	VW3A3304	1/54
CC-LINK	VW3A3317	1/54
Modbus/Uni-Telway	VW3A3303	1/54
PROFIBUS DP V0	VW3A3307	1/55
PROFIBUS DP V1	VW3A3307S371	1/55
EtherCAT	VW3A3326	1/55
Profinet	VW3A3327	1/55
Ethernet POWERLINK	VW3A3321	1/55

(1) For card compatibility table, see opposite.

**Card compatibility table (1)**

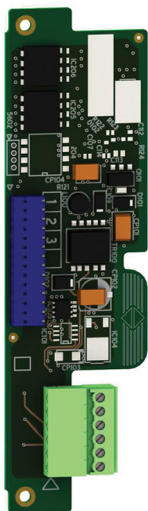
Type of card	Encoder interface VW3A34●●	Logic I/O VW3A3201	Extended I/O VW3A3202	Programmable Controller inside VW3A3501	Communication VW3A33●●
Encoder interface VW3A34●●					
Logic I/O VW3A3201					
Extended I/O VW3A3202					
Programmable Controller inside VW3A3501					
Communication VW3A33●●					

Combination possible

Combination not possible

(1) Maximum combination involving two types of card is 2.

## Presentation



Encoder interface card VW3A3401

Encoder interface cards are used for Flux Vector Control operation with sensor (FVC mode) for asynchronous motors, or for Vector Control operation with speed feedback (FSY mode) for synchronous motors.

They improve drive performance irrespective of the motor load state:

- Zero speed torque
- Accurate speed regulation
- Torque accuracy
- Shorter response times on a torque surge
- Improved dynamic performance in transient state

For asynchronous motors, in the other control modes (voltage vector control, voltage/frequency ratio), encoder interface cards improve static speed accuracy.

Depending on the model, encoder interface cards can also be used for machine safety, irrespective of the control type:

- Overspeed detection
- Load slipping detection

They can also transmit a reference provided by the encoder input to the Altivar 71.

This use is specific to synchronizing the speed of several drives. These two functions are available for encoder interface cards VW3A3401 to VW3A3407 and VW3A3411.

Six types of card are available depending on the encoder technology (incremental or absolute):

- RS 422 compatible differential outputs
- Open collector outputs (NPN)
- Push-pull outputs
- Resolver (1)
- SinCos, SinCos Hiperface®, EnDat® or SSI output (1)
- RS 422 compatible differential outputs with encoder emulation (RS 422 ESIM)

The RS 422 ESIM (Encoder SIMulation) encoder interface card is used to indicate the position and speed of the motor to a motion controller via the RS 422 interface ESIM output.

It is also used to establish a master/slave relationship between two Altivar 71 drives.

The Altivar 71 variable speed drive can only take one encoder interface card. Please refer to the compatibility table on page 1/43.

The interface encoder card is inserted in a dedicated slot.

It is protected against short circuits and overloads.

## References

Description	Used with encoder (2)	Voltage	Maximum current	Maximum cable length	Maximum operating frequency	Reference	Weight
		V	mA	m	kHz		
Encoder interface card with RS422 compatible differential outputs	XCC1●●●●●●X XCC1●●●●●●R XCC1●●●●●●RN	5	200	50	300	VW3A3401	0.200
	XCC1●●●●●●X	15	175	100	300	VW3A3402 (3)	0.200
Encoder interface cards with open collector outputs	–	12	175	500	300	VW3A3403	0.200
	–	15	175	500	300	VW3A3404	0.200
Encoder interface cards with push-pull outputs	XCC1●●●●●●Y XCC1●●●●●●K XCC1●●●●●●KN	12	175	500	300	VW3A3405	0.200
	XCC1●●●●●●Y XCC1●●●●●●K XCC1●●●●●●KN	15	175	500	300	VW3A3406	0.200
–	XCC1●●●●●●Y XCC1●●●●●●K XCC1●●●●●●KN	24	100	500	300	VW3A3407	0.200
Resolver encoder interface card	–	1.25...5.6	50	200	4, 8 or 12	VW3A3408 (1)	0.100
Universal encoder interface card with SinCos, SinCos Hiperface®, EnDat® or SSI output	–	5, 8 or 12	200	50	500	VW3A3409 (1)	0.200
Encoder interface cards with RS 422 compatible differential outputs with encoder emulation	–	5	200	50	300	VW3A3411	0.200
	–	15	200	100			

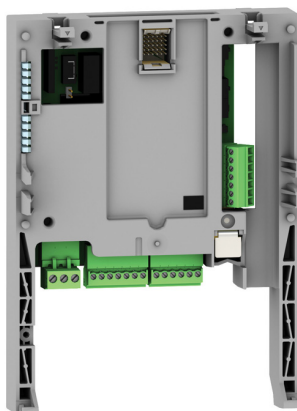
(1) Card requires an ATV71H●●●N4383 drive (see page 1/20).

(2) To determine the complete encoder reference, please refer to the "Detection for automation solutions - OsiSense" catalogue or our website [www.schneider-electric.com](http://www.schneider-electric.com).

(3) The VW3A3402 card ensures compatibility between Altivar 68F drive applications and Altivar 71 drive applications.

### Presentation

PF121820



Extended I/O card VW3A3202

Altivar 71 variable speed drives can be adapted for more complex or extensive applications by installing I/O extension cards.

Two models are available:

- Card with logic I/O featuring:
  - 1 relay logic output ("C/O" contact)
  - 4 x 24 V  $\overline{\text{---}}$  positive logic (Source) or negative logic (Sink) inputs
  - 2 x 24 V  $\overline{\text{---}}$  open collector positive logic (Source) or negative logic (Sink) outputs
  - 1 input for 6 PTC probes (1)
- Card with extended I/O featuring:
  - 1 differential current analog input 0...20 mA
  - 1 software-configurable voltage analog input (0...10 V  $\overline{\text{---}}$ ) or current (0...20 mA)
  - 2 software-configurable voltage analog outputs ( $\pm$  10 V, 0...10 V  $\overline{\text{---}}$ ) or current (0...20 mA)
  - 1 relay logic output
  - 4 x 24 V  $\overline{\text{---}}$  positive logic (Source) or negative logic (Sink) inputs
  - 2 x 24 V  $\overline{\text{---}}$  open collector positive logic (Source) or negative logic (Sink) outputs
  - 1 input for 6 PTC probes (1)
  - 1 frequency control input

The Altivar 71 variable speed drive can only take one I/O extension card with the same reference.

Please refer to the card compatibility table on page 1/43.

### References

Description	Type of I/O							Reference	Weight
	Logic input	Logic output	Relay logic output	Analog input	Analog output	Input for PTC probes (1)	Frequency control input		
Logic I/O card	4	2	1	–	–	1	–	VW3A3201	0.300 kg
Extended I/O card	4	2	1	2	2	1	1	VW3A3202	0.300

(1) This PTC probe input must never be used to protect an ATEX motor in applications in explosive atmospheres. Please refer to the ATEX guide which is available on our website [www.schneider-electric.com](http://www.schneider-electric.com).

#### Presentation

The Controller Inside programmable card is used to adapt the variable speed drive to specific applications by integrating control system functions.

Various predefined configurable applications are sold by Schneider Electric and its partners.

The PS 1131 software workshop is used for programming and debugging new applications, quickly and in an open-ended manner in accordance with standard IEC 61131-3.

It is not possible to transfer the program from the card to the PC, therefore know-how is protected.

A single Controller Inside programmable card can be installed in the Altivar 71 drive. It can be combined with another option card (I/O extension or communication). Please refer to the card compatibility table on page 1/43.

The Controller Inside programmable card features:

- 10 x 24 V  $\overline{\text{DC}}$  logic inputs, 2 of which can be used for 2 counters or 4 of which can be used for 1 incremental encoder and/or 3 counters
- 2 x 0...20 mA current analog inputs, impedance 500  $\Omega$
- 6 x 24 V  $\overline{\text{DC}}$  open collector positive logic (Source) outputs
- 2 x 0...20 mA current analog outputs, impedance 500  $\Omega$
- A master port for the CANopen machine bus, for controlling other drives and communication with I/O modules and sensors
- A PC port for programming with the PS 1131 software workshop

If the power consumption does not exceed 200 mA, the Controller Inside programmable card can be powered by the Altivar 71 drive. Otherwise, an external 24 V  $\overline{\text{DC}}$  power supply must be used.

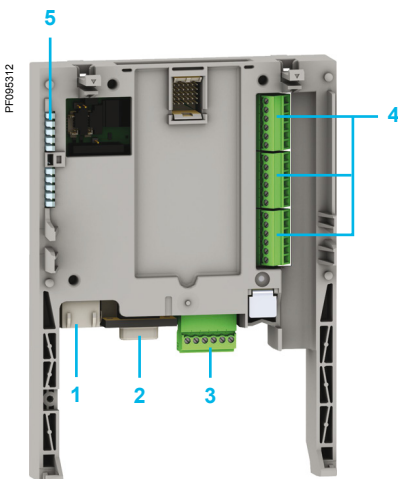
ATV71W●●●N4A24 drives incorporate a 24 V  $\overline{\text{DC}}$  power supply, allowing additional consumption of 250 mA.

The Controller Inside programmable card can also use:

- The drive I/O
- The I/O extension card I/O
- The encoder interface card points counter
- The drive parameters (speed, current, torque,  $\epsilon\tau\chi$ .)

#### Description

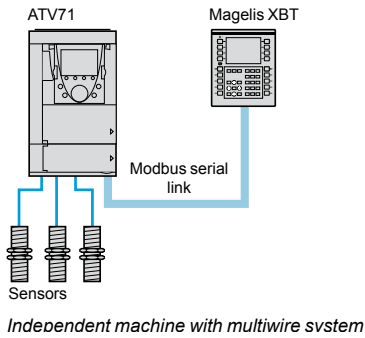
- 1 RJ45 connector for connecting the PS1131 software workshop via an RS 485 serial link.  
Connection to the PC is via a cable and RS 232/RS 485 converter included in the PC serial port connection kit, VW3A8106.
- 2 9-way male SUB-D connector for connection to the CANopen machine bus
- 3 Connector with removable screw terminals, 6 contacts at intervals of 3.81 for the 24 V  $\overline{\text{DC}}$  power supply and 4 logic inputs
- 4 3 connectors with removable screw terminals, 6 contacts at intervals of 3.81 for 6 logic inputs, 6 logic outputs, 2 analog inputs, 2 analog outputs and 2 commons
- 5 5 LEDs:
  - 1 to indicate the presence of the 24 V  $\overline{\text{DC}}$  power supply
  - 1 to indicate a program execution fault
  - 2 to indicate the CANopen bus communication status
  - 1 controlled by the application program



# Variable speed drives

## Altivar 71

Option: Controller Inside programmable card

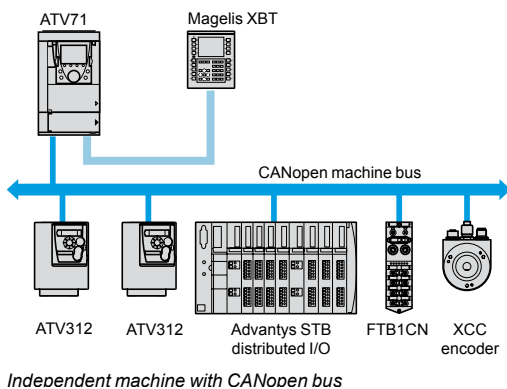


### Dialogue

Human-machine dialogue with the application programmed in the Controller Inside programmable card is possible using:

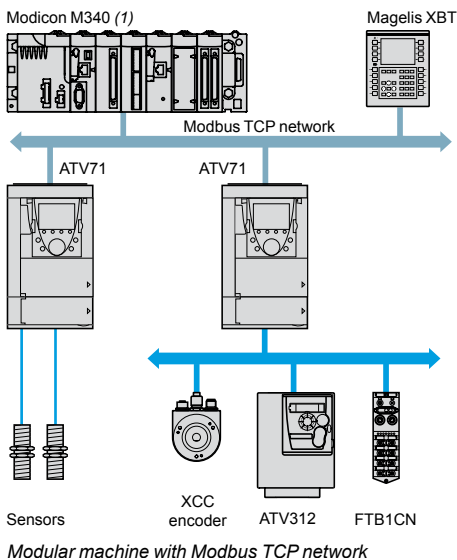
- The Altivar 71 graphic display terminal: The graphic terminal has a menu dedicated to the Controller Inside programmable card. This menu can be customized by the program depending on the application.
- A Magelis industrial HMI terminal, connected to:
  - The drive's Modbus port
  - The Modbus TCP network, if the drive is equipped with a Modbus TCP communication card

Any industrial HMI terminal which supports the Modbus protocol can be used to display and modify the Controller Inside programmable card parameters.



### Master CANopen communication

The master CANopen port on the Controller Inside programmable card can be used to extend the I/O capacity and to control other CANopen slave devices.



### Communication with a PLC

An Altivar 71 drive equipped with a Controller Inside programmable card integrates easily into complex architectures.

Regardless of which bus, network or serial link is being used (Modbus TCP, Modbus/Uni-Telway, PROFIBUS DP, INTERBUS, etc.), the PLC can communicate with the Controller Inside programmable card and the drive.

The periodic variables can still be configured as required.

### Clock

A clock backed up by a lithium battery makes it possible to keep a log of events. When the Controller Inside programmable card is installed in the drive, drive faults are automatically time and date-stamped without any special programming.

(1) Please refer to the "Modicon M340 Automation Platform" catalogue.



# Variable speed drives

## Altivar 71

Option: Controller Inside programmable card

1

### PS 1131 software workshop

The PS 1131 software workshop conforms to international standard IEC/EN 61131-3 and includes all the functions for programming and setting up the Controller Inside programmable card. It includes the CANopen configurator.

It is designed for Microsoft Windows® 98, Microsoft Windows® NT 4.0, Microsoft Windows® Millennium, Microsoft Windows® 2000 Professional and Microsoft Windows® XP operating systems.

It benefits from the user-friendly interface associated with these operating systems:

- Pop-up menus
- Function blocks
- Online help

The PS 1131 software workshop is available in both English and German.

The **programming and debugging tools** can be accessed via the application browser. This provides the user with an overview of the program and quick access to all the application components:

- Program editor
- Function blocks editor
- Variables editor
- Animation tables editor
- Runtime screens editor

### Modular structured programming

The PS 1131 software workshop is used to structure an application into function modules consisting of sections (program code), animation tables and runtime screens.

Each program section has a name and is programmed in one of six available languages:

- Ladder Diagram (LD)
- Structured Text (ST)
- Grafset (SFC)
- Instruction List (IL)
- Function Block Diagram (FBD)
- Continuous Flow Chart (CFC)

To protect know-how or prevent any accidental modification, each section can be write-protected or read/write-protected.

### Function blocks

The PS 1131 software workshop features pre-programmed function blocks which make up the standard library.

Exchanges with the drive are performed by a function block available in the standard library.

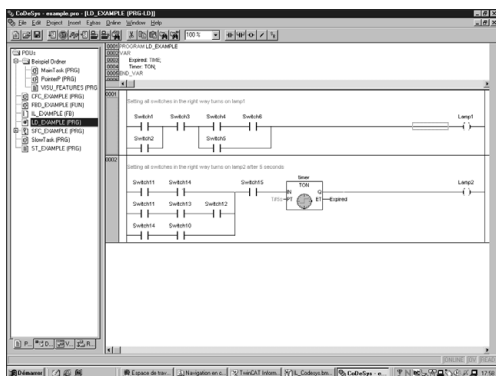
The software workshop also offers users the option of creating their own function blocks and thus creating a user library.

The user library is also a means of protecting the know-how contained in the algorithms, as it is possible to lock access to the user function blocks program.

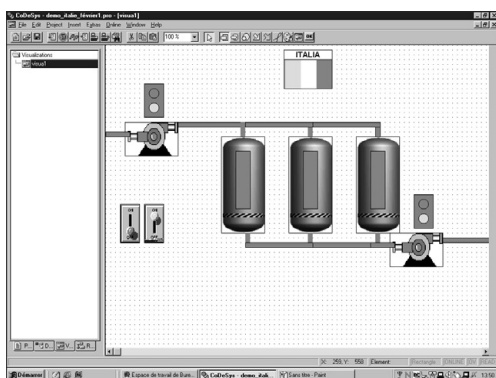
### Debugging tools

The PS 1131 software workshop offers a complete set of tools for debugging the application:

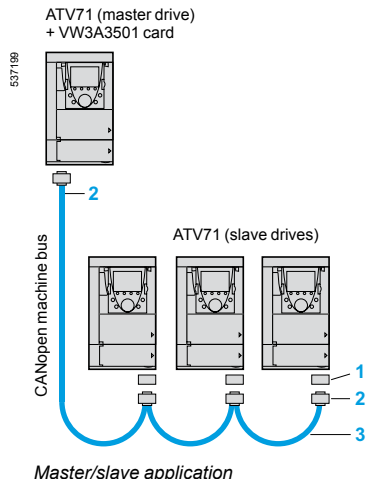
- Program execution for debugging (step-by-step execution, execution of a single cycle, etc.)
- Realtime animation of the program with automatic display of the variables
- Animation tables editor with the option to save tables
- Oscilloscope (monitoring up to 20 variables)
- Application runtime screens editor (graphic objects, messages, screen backgrounds, etc.)
- Simulation function for testing the program without using the drive



Example of Ladder Diagram language programming



Example of runtime screen



### References

Card			
Description	Reference	Weight	kg
Controller Inside programmable card equipped with one 9-way male SUB-D connector	VW3A3501	0.320	

### Connection accessories

Description	Item no.	Length m	Weight	kg
<b>CANopen adaptor</b> for mounting on the RJ45 socket in the drive control terminals. The adaptor includes a 9-way male SUB-D connector conforming to the CANopen standard (CIA DRP 303-1).	1	–	VW3CANA71	–
<b>CANopen connector</b> 9-way female SUB-D with line terminator (can be disabled)	2	–	TSXCANKCDF180T	–

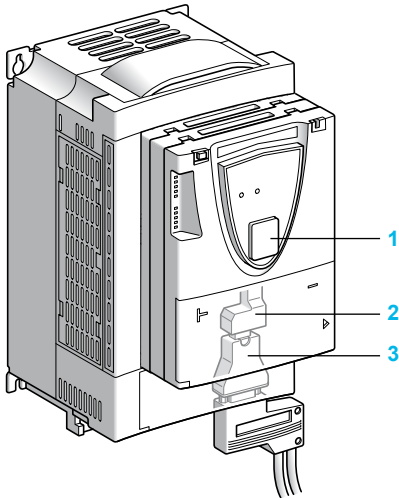
### Cables

<b>CANopen cables</b> Standard cable, CE marking. Low smoke zero halogen. Flame retardant (IEC 60332-1).	3	50	TSXCANCA50	4.930
		100	TSXCANCA100	8.800
		300	TSXCANCA300	24.560
<b>CANopen cables</b> UL certified, CE marking. Flame retardant (IEC 60332-2).	3	50	TSXCANCB50	3.580
		100	TSXCANCB100	7.840
		300	TSXCANCB300	21.870
<b>CANopen cables</b> Cable for harsh environments (1) or mobile installations, CE marking. Low smoke zero halogen. Flame retardant (IEC 60332-1).	3	50	TSXCANCD50	3.510
		100	TSXCANCD100	7.770
		300	TSXCANCD300	21.700

### PS 1131 software workshop

Description	Reference	Weight	kg
PS 1131 software workshop supplied on CD-ROM	(2)	–	
PC serial port connection kit including various accessories such as: ■ 1 x 3 m cable with two RJ45 connectors ■ 1 RS 232/RS 485 converter with one 9-way female SUB-D connector and one RJ45 connector	VW3A8106	0.350	

(1) Harsh environments:  
 - Resistance to hydrocarbons, industrial oils, detergents, solder splashes  
 - Relative humidity up to 100%  
 - Saline atmosphere  
 - Significant temperature variations  
 - Operating temperature between - 10°C and + 70°C  
 (2) The product reference is provided as part of the Controller Inside programmable card training course. Please consult our Customer Care Centre.



Integrated communication for Modbus and CANopen protocols

### Presentation

The Altivar 71 drive has been designed to meet all the configuration requirements encountered within the context of industrial communication installations.

### Integrated communication protocols

It includes Modbus and CANopen communication protocols as standard.

Two integrated communication ports enable direct access to the Modbus protocol:

- One RJ45 Modbus terminal port **1**, located on the drive front panel, which is used to connect a Human Machine Interface or one of the following configuration tools:
  - Remote graphic display terminal
  - Magelis industrial HMI terminal
  - SoMove setup software
  - Simple Loader and Multi-Loader configuration tools
- One RJ45 Modbus network port **2**, located on the drive's control terminals which is assigned to control and signalling by a PLC or by another type of controller. It can also be used to connect a terminal or the SoMove setup software.

The CANopen protocol can be accessed from the Modbus network port **2** via the daisy chain tap or the CANopen adaptor **3**. In this case, the terminal port **1** must be used to access the Modbus protocol.

The characteristics of the communication ports for Modbus and CANopen protocols are available on our website [www.schneider-electric.com](http://www.schneider-electric.com).

### Optional communication cards

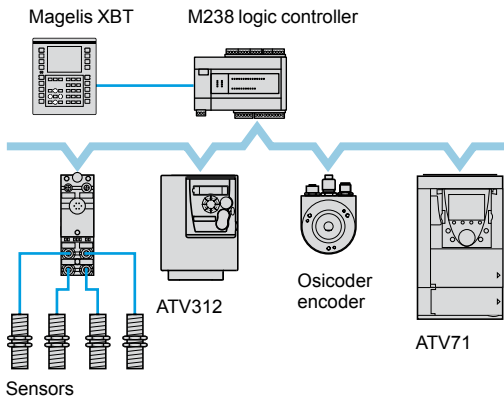
The Altivar 71 drive can also be connected to the following industrial communication buses and networks by adding one of the communication option cards:

- Modbus TCP Daisy Chain
- Modbus/Uni-Telway (this card provides access to additional functions, which complement those of the integrated ports (Modbus ASCII and 4-wire RS 485))
- EtherNet/IP
- DeviceNet
- PROFIBUS DP V0 and V1
- INTERBUS
- CC-LINK
- EtherCAT
- Profinet
- Ethernet POWERLINK

The option of powering the control part separately enables communication to be maintained (monitoring, diagnostics) even if there is no power supply to the power part.

The main communication functions of Altivar 58 and Altivar 58F drives are compatible with the Altivar 71:

- Connection
- Communication services
- Drive behaviour (profile)
- Control and monitoring parameters
- Standard adjustment parameters



Configuration example on CANopen machine bus

#### Functions

All drive functions can be accessed via the network:

- Configuration
- Adjustment
- Control
- Monitoring

The Altivar 71 drive's advanced functions provide excellent interfacing flexibility. They enable the different control sources (I/O, communication networks, communication cards and HMI terminal) to be assigned to control functions that satisfy the requirements of numerous, extremely complex applications. Network configuration is simplified through the provision of configuration software (configurator for SyCon® networks, etc.).

For the integrated Modbus and CANopen ports and the communication cards for industrial applications, the Altivar 71 drive can be controlled:

- According to the CiA 402 profile
- According to the I/O profile, where control is as simple and adaptable as control via the I/O terminals

The DeviceNet card also supports CIP AC Drive and Allen-Bradley drive profiles; PROFIBUS DP V0 and V1 cards also support the PROFIdrive profile.

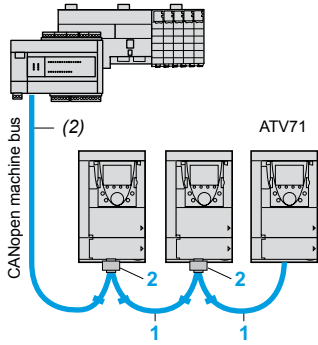
Communication is monitored according to the specific criteria for each protocol. However, regardless of the protocol, it is possible to configure how the drive responds to a communication fault:

- Freewheel stop, stop on ramp, fast stop or braked stop
- Maintain the last command received
- Fallback position at a predefined speed
- Ignore the fault

A command from the CANopen machine bus is processed with the same priority as one of the drive terminal inputs. This results in excellent response times on the network port via the CANopen adaptor.

1

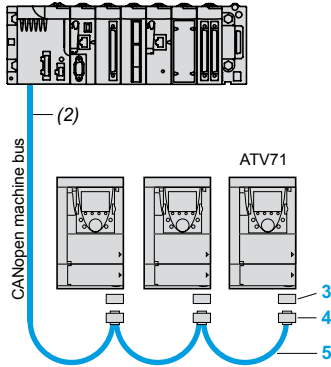
Modicon M238/Modicon M258 (1)



Optimized solution for daisy chain connection to the CANopen machine bus

DF600353

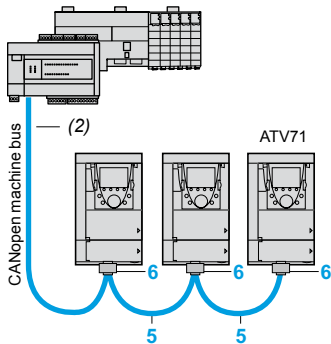
M340 PLC (3)



Example of CANopen diagram with SUB-D connector

DF516101

Modicon M238/Modicon M258 (1)



Example of CANopen diagram with daisy chain tap

### CANopen machine bus

Description	Item no.	Length m	Reference	Weight kg
<b>Connection via RJ45 connector</b> (optimized solution for daisy chain connection to the CANopen machine bus)				
<b>CANopen cordsets</b>	<b>1</b>	0.3	<b>VW3CANCARR03</b>	0.050
equipped with 2 RJ45 connectors		1	<b>VW3CANCARR1</b>	0.500

<b>Daisy chain tap</b>	<b>2</b>	0.3	<b>TCSCTN023F13M03</b>	–
equipped with:				
■ 2 RJ45 connectors for connecting the CANopen bus in a daisy chain				
■ 1 cordset equipped with an RJ45 connector for connecting the drive				

### Connection via SUB-D connector

<b>CANopen adaptor</b> for mounting on the RJ45 port on the drive control terminals.	<b>3</b>	–	<b>VW3CANA71</b>	–
The adaptor provides a 9-way male SUB-D connector conforming to the CANopen standard (CIA DRP 303-1).				

<b>CANopen connector</b> (4)	<b>4</b>	–	<b>VW3CANKCDF180T</b>	–
9-way female SUB-D with line terminator (can be disabled).				
180° cable outlet for 2 CANopen cables.				
CAN-H, CAN-L, CAN-GND connection.				

<b>CANopen cables</b> (1) (2)	<b>5</b>	50	<b>TSXCANCA50</b>	4.930
Standard cable, CE marking				
Low smoke zero halogen		100	<b>TSXCANCA100</b>	8.800
Flame retardant (IEC 60332-1)		300	<b>TSXCANCA300</b>	24.560

<b>CANopen cables</b> (1) (2)	<b>5</b>	50	<b>TSXCANCB50</b>	3.580
UL certified, CE marking				
Flame retardant (IEC 60332-2)		100	<b>TSXCANCB100</b>	7.840
		300	<b>TSXCANCB300</b>	21.870

<b>CANopen cables</b> (1) (2)	<b>5</b>	50	<b>TSXCANCD50</b>	3.510
Cable for harsh environments (5)				
or mobile installations, CE marking		100	<b>TSXCANCD100</b>	7.770
Low smoke zero halogen		300	<b>TSXCANCD300</b>	21.700
Flame retardant (IEC 60332-1)				

### Connection via terminals

<b>Daisy chain tap</b>	<b>6</b>	0.6	<b>TCSCTN026M16M</b>	–
equipped with:				
■ 2 spring terminal blocks for connecting the CANopen bus in a daisy chain				
■ 1 cordset equipped with an RJ45 connector for connecting the drive				

(1) Please refer to the "Modicon M238 Logic Controller" and "M258 Logic Controller" catalogues.

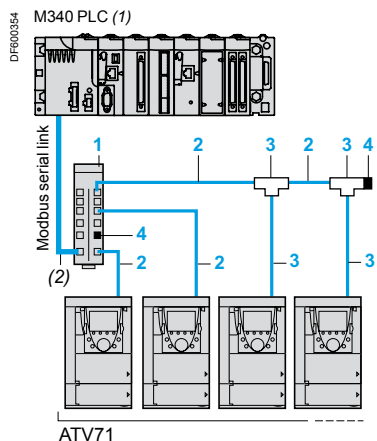
(2) Cable dependent on the type of controller or PLC.

(3) Please refer to the "Modicon M340 Automation Platform" catalogue.

(4) For ATV71H●●●M3, ATV71HD11M3X, HD15M3X, ATV71H075N4...HD18N4, ATV71H075N4383...HD18N4383 and ATV71HU22Y...HC63Y drives, this connector can be replaced by the TSXCANKCDF180T connector.

(5) Harsh environments:

- Resistance to hydrocarbons, industrial oils, detergents, solder splashes
- Relative humidity up to 100%
- Saline atmosphere
- Significant temperature variations
- Operating temperature between - 10°C and + 70°C.



Example of Modbus diagram with connection via splitter box and RJ45 connectors

### Modbus serial link

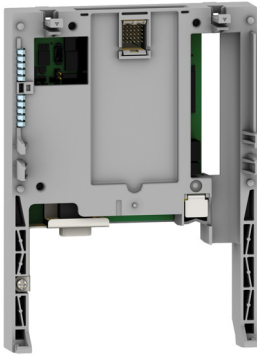
#### Connection accessories

Description	Item no.	Length m	Unit reference	Weight kg
<b>Modbus splitter box</b> 10 RJ45 connectors and 1 screw terminal	<b>1</b>	–	<b>LU9GC3</b>	0.500
<b>Cables for Modbus serial link</b> equipped with 2 RJ45 connectors	<b>2</b>	0.3	<b>VW3A8306R03</b>	0.025
		1	<b>VW3A8306R10</b>	0.060
		3	<b>VW3A8306R30</b>	0.130
<b>Modbus T-junction boxes</b> (with integrated cable)	<b>3</b>	0.3	<b>VW3A8306TF03</b>	0.190
		1	<b>VW3A8306TF10</b>	0.210
<b>Line terminators</b> R = 120 Ω for RJ45 connector (3) C = 1 nF	<b>4</b>	–	<b>VW3A8306RC</b>	0.010
		–	<b>VW3A8306R</b>	0.010
		–		

(1) Please refer to the "Modicon M340 Automation Platform" catalogue.

(2) Cable dependent on the type of controller or PLC.

(3) Order in lots of 2.



Communication card

#### Modbus TCP Daisy Chain and EtherNet/IP network (1) (2)

Description	Length m	Reference	Weight kg	
<b>Communication cards</b>				
<b>Modbus TCP Daisy Chain</b>	Equipped with 2 RJ45 connectors Modbus TCP 10/100 Mbps class C20	–	<b>VW3A3310D</b>	0.300
<b>EtherNet/IP</b>	Equipped with 2 RJ45 connectors	–	<b>VW3A3316</b>	0.300
<b>EtherNet/IP (RSTP)</b>	Equipped with 2 RJ45 connectors	–	<b>VW3A3320 (3)</b>	0.300
<b>ConneXium Modbus TCP (VW3A3310D) or EtherNet/IP (VW3A3316 and VW3A3320) cordsets</b>				
<b>Straight shielded</b>	Equipped with 2 RJ45 connectors	2	<b>490NTW00002</b>	–
<b>twisted pair cordsets</b>	To be connected on a hub or on a switch	5	<b>490NTW00005</b>	–
		12	<b>490NTW00012</b>	–
		40	<b>490NTW00040</b>	–
		80	<b>490NTW00080</b>	–

#### DeviceNet bus (1) (2)

Description	Reference	Weight kg	
<b>Communication card</b>			
<b>DeviceNet</b>	Equipped with a 5-way removable screw terminal block	<b>VW3A3309</b>	0.300

#### INTERBUS bus (1) (2)

Description	Reference	Weight kg	
<b>Communication card</b>			
<b>INTERBUS</b>	Equipped with one 9-way male SUB-D connector and one 9-way female SUB-D connector To be connected using cordset 170MC1●●●00 (4)	<b>VW3A3304</b>	0.300

#### CC-LINK bus (1) (2)

Description	Reference	Weight kg	
<b>Communication card</b>			
<b>CC-LINK</b>	Equipped with a 5-way removable screw terminal block	<b>VW3A3317</b>	0,300

#### Modbus/Uni-Telway network (1) (2)

Description	Length m	Reference	Weight kg	
<b>Communication card</b>				
<b>Modbus/Uni-Telway</b>	Equipped with a 9-way female SUB-D connector	–	<b>VW3A3303</b>	0.300
<b>Connection accessories for Modbus/Uni-Telway card (VW3A3303)</b>				
<b>Subscriber socket</b>	Equipped with two 15-way female SUB-D connectors and two screw terminal blocks. For 2-channel junction box, trunk cable extension and line terminator	–	<b>TSXSCA62</b>	0.570
<b>Cordset for TSXSCA62 subscriber socket</b>	Equipped with two 9-way and 15-way male SUB-D connectors	3	<b>VW3A83062</b>	0.150

(1) The Altivar 71 drive can only take one communication card. See the summary tables of possible drive, option and accessory combinations on pages 1/32 to 1/43.

(2) User manuals can be downloaded from our website [www.schneider-electric.com](http://www.schneider-electric.com). For the PROFIBUS DP, DeviceNet and LonWorks cards, the description files in gsd, eds or xif format can also be downloaded from our website [www.schneider-electric.com](http://www.schneider-electric.com).

(3) For a v5.7ie70#6 and above software version.

(4) Please refer to the "Automation Platform Modicon Premium and Unity - PL7 Software" catalogue.

<b>PROFIBUS DP V0/V1 (1) (2)</b>				
Description		Length m	Reference	Weight kg
<b>Communication cards</b>				
<b>PROFIBUS DP V0</b>	Equipped with a 9-way female SUB-D connector	–	<b>VW3A3307</b>	0.300
<b>PROFIBUS DP V1</b>	Equipped with a 9-way female SUB-D connector	–	<b>VW3A3307S371</b>	0.300
<b>Connection accessories for PROFIBUS DP V0 (VW3A3307) or V1 (VW3A3307S371) card</b>				
<b>Connectors:</b>	For middle of line	–	<b>490NAD91104</b>	–
9-way male SUB-D (3)	For end of line	–	<b>490NAD91103</b>	–
<b>Cable</b>		100	<b>TSXPBSCA100</b>	–
for connector 490NAD911●● (3)		400	<b>TSXPBSCA400</b>	–

<b>EtherCAT bus (1) (2)</b>				
Description		Length m	Reference	Weight kg
<b>Communication card</b>				
<b>EtherCAT</b>	Equipped with 2 RJ45 connectors	–	<b>VW3A3326 (4)</b>	0.270

<b>Profinet bus</b>				
Description		Length m	Reference	Weight kg
<b>Communication card</b>				
<b>Profinet</b>	Equipped with 2 RJ45 connectors	–	<b>VW3A3327 (4)</b>	0.290

<b>Ethernet POWERLINK</b>				
Description		Length m	Reference	Weight kg
<b>Communication card</b>				
<b>POWERLINK</b>	Equipped with 2 RJ45 connectors	–	<b>VW3A3321</b>	0.350

(1) The Altivar 71 drive can only take one communication card. See the summary tables of possible drive, option and accessory combinations on pages 1/32 to 1/43.

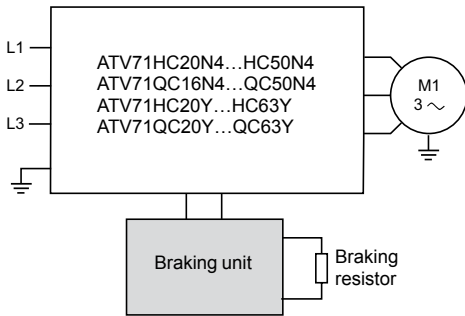
(2) User manuals can be downloaded from our website [www.schneider-electric.com](http://www.schneider-electric.com). For the PROFIBUS DP, DeviceNet and LonWorks cards, the description files in gsd, eds or xif format can also be downloaded from our website [www.schneider-electric.com](http://www.schneider-electric.com).

(3) Please refer to the "Automation Platform Modicon Premium and Unity - PL7 Software" catalogue.

(4) For a v5.7ie70#6 and above software version.



#### Presentation



Resistance braking allows Altivar 71 drives to operate while braking to a standstill or during “generator” operation, by dissipating the energy in the braking resistor.

ATV71H●●●M3, ATV71H●●●M3X, ATV71H075N4...HC16N4, ATV71W●●●N4, ATV71P●●●N4Z, ATV71H●●●S6X and ATV71HU22Y...HC16Y drives have a built-in dynamic brake transistor.

For ATV71HC20N4...HC50N4, ATV71QC16N4...QC50N4, ATV71HC20Y...HC63Y and ATV71QC20Y...QC63Y drives, a braking unit must be used. This is controlled by the drive.

For the following drives:

- ATV71HC20N4, HC28N4 and ATV71QC16N4...QC25N4, the braking unit is mounted directly on the left-hand side of the drive
- ATV71HC40N4, HC50N4, ATV71QC40N4, QC50N4, ATV71HC20Y...HC63Y and ATV71QC20Y...QC63Y, the braking unit is an external module

Braking units provide IP 20 protection. Thermal protection is provided by an integrated temperature probe.

#### Applications

High-inertia machines, machines with slow and fast cycles, high-power machines performing vertical movements.

#### References

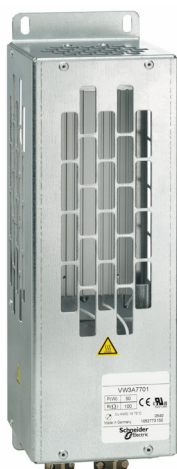
For drives	Power		Losses	Cable (drive-braking unit)		Cable (braking unit-resistors)		Percentage of conduction time	Reference	Weight
	Conti-nuous	Maximum	At continuous power	Cross-section	Maximum length	Cross-section	Maximum length			
	kW	kW	W	mm <sup>2</sup>	m	mm <sup>2</sup>	m			
<b>Supply voltage: 380...480 V 50/60 Hz</b>										
ATV71HC20N4, HC28N4 ATV71QC16N4... QC25N4	200	420	550	–	–	2 x 95	50	5% at 420 kW 15% at 320 kW 50% at 250 kW	<b>VW3A7101</b>	30.000
ATV71HC31N4... HC50N4 ATV71QC31N4... QC50N4	400	750	1050	2 x 150	1	2 x 150	50	5% at 750 kW 15% at 550 kW 50% at 440 kW	<b>VW3A7102</b>	80.000
<b>Supply voltage: 500...690 V 50/60 Hz</b>										
ATV71HC20Y... HC31Y ATV71QC20Y... QC31Y	300	450	650	2 x 150	1	2 x 150	50	5% at 450 kW 15% at 400 kW 50% at 350 kW	<b>VW3A7103</b>	80.000
ATV71HC40Y... HC63Y ATV71QC40Y... QC63Y	400	900	1150	2 x 150	1	2 x 150	50	5% at 900 kW 15% at 600 kW 50% at 500 kW	<b>VW3A7104</b>	80.000

**Note:** To increase the braking power, several braking resistors can be mounted in parallel on the same braking unit. In this case, do not forget to take the minimum resistance value to be associated with the braking unit into account, that is:

- 1.05 ohm for the VW3A7101 braking unit
- 0.7 ohm for the VW3A7102 braking unit
- 2 ohms for the VW3A7103 braking unit
- 1 ohm for the VW3A7104 braking unit

### Presentation

PF108659



VW3A7701

Braking resistors allow Altivar 71 drives to operate while braking to a standstill, by dissipating the braking energy. They enable maximum transient braking torque.

Braking resistors are designed to be mounted on the outside of the enclosure, but should not inhibit natural cooling. Air inlets and outlets must not be obstructed in any way. The air must be free of dust, corrosive gas and condensation.

Two resistor models are available, depending on the drive rating:

- With IP 20 casing and thermal protection provided by temperature-controlled switch or by the drive (VW3A7701...709)
- With IP 23 casing and thermal protection provided by thermal overload relay (VW3A771● and 8●●)

The internal circuits of Altivar 71 drives rated 160 kW or less have a built-in dynamic brake transistor.

### Applications

Inertia machines, machines with cycles

### References

For drives	Degree of protection of the resistor	Ohmic value at 20°C	Average power available at 50°C (1)	Reference	Weight
		Ω	kW		kg
<b>Supply voltage: 200...240 V 50/60 Hz</b>					
ATV71H037M3, H075M3	IP 20	100	0.05	<b>VW3A7701</b>	1.900
ATV71HU15M3, HU22M3	IP 20	60	0.1	<b>VW3A7702</b>	2.400
ATV71HU30M3, HU40M3	IP 20	28	0.2	<b>VW3A7703</b>	3.500
ATV71HU55M3, HU75M3	IP 20	15	1	<b>VW3A7704</b>	11.000
ATV71HD11M3X	IP 20	10	1	<b>VW3A7705</b>	11.000
ATV71HD15M3X	IP 20	8	1	<b>VW3A7706</b>	11.000
ATV71HD18M3X, HD22M3X	IP 20	5	1.3	<b>VW3A7707</b>	11.000
ATV71HD30M3X	IP 20	4	1	<b>VW3A7708</b>	11.000
ATV71HD37M3X, HD45M3X	IP 20	2.5	1	<b>VW3A7709</b>	11.000
ATV71HD55M3X, HD75M3X	IP 23	1.8	15.3	<b>VW3A7713</b>	50.000
ATV71HD75M3X	IP 23	1.4	20.9	<b>VW3A7714</b>	63.000

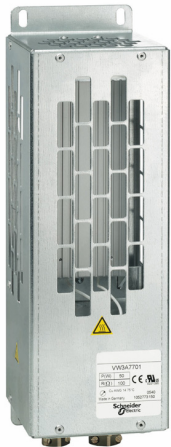
(1) Load factor for resistors: the value of the average power that can be dissipated at 50°C from the resistor into the casing is determined for a load factor during braking that corresponds to the majority of normal applications:

For VW3A7701...709:

- 2 s braking with a 0.6 T<sub>n</sub> braking torque for a 40 s cycle
- 0.8 s braking with a 1.5 T<sub>n</sub> braking torque for a 40 s cycle

For VW3A7713:

- 10 s braking with a 2 T<sub>n</sub> braking torque for a 30 s cycle



VW3A7701

## References (continued)

For drives	Degree of protection of the resistor	Ohmic value at 20°C	Average power available at 50°C (1)	Reference	Weight
		Ω	kW		kg
<b>Supply voltage: 380...480 V 50/60 Hz</b>					
ATV71H075N4...HU40N4 ATV71W075N4, WU40N4 ATV71P075N4Z...PU55N4Z	IP 20	100	0.05	<b>VW3A7701</b>	1.900
ATV71HU55N4, HU75N4 ATV71WU55N4, WU75N4 ATV71PU55N4Z, PU75N4Z	IP 20	60	0.1	<b>VW3A7702</b>	2.400
ATV71HD11N4, HD15N4 ATV71WD11N4, WD15N4 ATV71PD11N4Z	IP 20	28	0.2	<b>VW3A7703</b>	3.500
ATV71HD18N4...HD30N4 ATV71WD18N4...WD30N4	IP 20	15	1	<b>VW3A7704</b>	11.000
ATV71HD37N4 ATV71WD37N4	IP 20	10	1	<b>VW3A7705</b>	11.000
ATV71HD45N4...HD75N4 ATV71WD45N4...WD75N4	IP 20	5	1.3	<b>VW3A7707</b>	11.000
ATV71HD90N4 ATV71QD90N4	IP 23	2.75	25	<b>VW3A7710</b>	80.000
ATV71HC11N4, HC13N4 ATV71QC11N4, QC13N4	IP 23	2.1	37	<b>VW3A7711</b>	86.000
ATV71HC16N4 ATV71QC16N4	IP 23	2.1	44	<b>VW3A7712</b>	104.000
ATV71HC20N4 ATV71QC20N4	IP 23	1.05	56	<b>VW3A7715</b>	136.000
ATV71HC25N4, HC28N4 ATV71QC25N4	IP 23	1.05	75	<b>VW3A7716</b>	172.000
ATV71HC31N4, HC40N4 ATV71QC31N4, QC40N4	IP 23	0.7	112	<b>VW3A7717</b>	266.000
ATV71HC50N4 ATV71QC50N4	IP 23	0.7	150	<b>VW3A7718</b>	350.000

(1) Load factor for resistors: the value of the average power that can be dissipated at 50°C from the resistor into the casing is determined for a load factor during braking that corresponds to the majority of normal applications:

For VW3A7701...705 and VW3A7707:

- 2 s braking with a 0.6 T<sub>n</sub> braking torque for a 40 s cycle
- 0.8 s braking with a 1.5 T<sub>n</sub> braking torque for a 40 s cycle

For VW3A7710...712 and 715...718:

- 10 s braking with a 2 T<sub>n</sub> braking torque for a 30 s cycle

PF106669



VW3A7701

References (continued)						
For drives	Degree of protection of the resistor	Ohmic value at 20°C	Average power available at 50°C (1)	Quantity required per drive	Reference	Weight
		Ω	kW			kg
<b>Supply voltage: 500...600 V 50/60 Hz</b>						
ATV71HU15S6X...HU75S6X	IP 20	60	0.1	1	VW3A7702	2.400
<b>Supply voltage: 500...690 V 50/60 Hz</b>						
ATV71HU22Y...HU55Y	IP 20	100	0.05	1	VW3A7701	1.900
ATV71HU75Y, HD11Y	IP 20	60	0.1	1	VW3A7702	2.400
ATV71HD15Y, HD18Y	IP 20	28	0.2	1	VW3A7703	3.500
ATV71HD22Y...HD37Y	IP 20	15	1	1	VW3A7704	11.000
ATV71HD45Y, HD55Y	IP 20	10	1	1	VW3A7705	11.000
ATV71HD75Y, HD90Y	IP 20	5	1.3	1	VW3A7707	11.000
ATV71HC11Y, HC13Y ATV71QC11Y, QC13Y	IP 23	4.2	62	1	VW3A7806	126.000
ATV71HC16Y, HC20Y ATV71QC16Y, QC20Y	IP 23	8.1	44	2	VW3A7805 (2)	92.000
ATV71HC25Y ATV71QC25Y	IP 23	4.2	62	2	VW3A7806 (2)	126.000
ATV71HC31Y ATV71QC31Y	IP 23	1.05	75	2	VW3A7716 (3)	172.000
ATV71HC40Y ATV71QC40Y	IP 23	1.05	112	2	VW3A7814 (3)	280.000
ATV71HC50Y ATV71QC50Y	IP 23	0.7	112	2	VW3A7717 (3)	266.000
ATV71HC63Y ATV71QC63Y	IP 23	0.7	150	2	VW3A7718 (3)	350.000

(1) Load factor for resistors: the value of the average power that can be dissipated at 50°C from the resistor into the casing is determined for a load factor during braking that corresponds to the majority of normal applications.

For VW3A7701...705 and 707:

- 2 s braking with a 0.6 Tn braking torque for a 40 s cycle
- 0.8 s braking with a 1.5 Tn braking torque for a 40 s cycle

For VW3A7716...718:

- 10 s braking with a 2 Tn braking torque for a 30 s cycle

For VW3A7805 and 806:

- 100 s braking with a 1 Tn braking torque for a 200 s cycle
- 20 s braking with a 1.6 Tn braking torque for a 200 s cycle

For VW3A7814:

- 10 s braking with a 2 Tn braking torque for a 240 s cycle
- 110 s braking with a 1.25 Tn braking torque for a 240 s cycle

(2) The two braking resistors must be connected in parallel. The dimensions of all the components must be taken into account as well as the required space of 300 mm to be left between each resistor (see our website [www.schneider-electric.com](http://www.schneider-electric.com)).

(3) The two braking resistors must be connected in series. The dimensions of all the components must be taken into account as well as the required space of 300 mm to be left between each resistor (see our website [www.schneider-electric.com](http://www.schneider-electric.com)).

#### Presentation

Hoist resistors are braking resistors which allow Altivar 71 drives to operate while braking to a standstill or during slowdown braking, by dissipating the braking energy. They enable maximum transient braking torque.

The resistors are designed to be mounted on the outside of the enclosure, but should not inhibit natural cooling. Air inlets and outlets must not be obstructed in any way. The air must be free of dust, corrosive gas and condensation.

The internal circuits of Altivar 71 drives rated 160 kW or less have a built-in dynamic brake transistor

The resistors have IP 23 degree of protection (except for VW3 A7 801, which provide IP 23 protection when mounted horizontally and IP 20 in all other cases). Thermal protection is provided by a thermal overload relay.

**Note:** For ATV71HC20N4...HC50N4, ATV71QC16N4...QC50N4, ATV71HC20Y...HC63Y and ATV71QC20Y...QC63Y drives, a braking unit must be used (see page 1/56).

#### Applications

Machines performing vertical movements, machines with fast cycles, high-inertia machines.

#### References

For drives	Ohmic value at 20°C	Average power available at 50°C (1)	Quantity required per drive	Reference	Weight
	Ω	kW			kg
<b>Supply voltage: 200...240 V 50/60 Hz</b>					
ATV71H037M3, H075M3	100	1.6	1	<b>VW3A7801</b>	6.000
ATV71HU15M3	60	5.6	1	<b>VW3A7802</b>	21.000
ATV71HU22M3...HU40M3	24.5	9.8	1	<b>VW3A7803</b>	28.000
ATV71HU55M3, HU75M3	14	22.4	1	<b>VW3A7804</b>	54.000
ATV71HD11M3X, HD15M3X	8.1	44	1	<b>VW3A7805</b>	92.000
ATV71HD18M3X	4.2	62	1	<b>VW3A7806</b>	126.000
ATV71HD22M3X, HD30M3X	3.5	19.5	1	<b>VW3A7807</b>	51.000
ATV71HD37M3X, HD45M3X	1.85	27.4	1	<b>VW3A7808</b>	94.000
ATV71HD55M3X	1.8	30.6	1	<b>VW3A7809</b>	103.000
ATV71HD75M3X	1.4	44	1	<b>VW3A7810</b>	119.000

(1) Operating factor for hoist resistors: the value of the average power that can be dissipated at 50°C from the resistor is determined by a load factor during braking.

For VW3A7801...808:

- 100 s braking with 1 T<sub>n</sub> braking torque for a 200 s cycle

- 20 s braking with 1.6 T<sub>n</sub> braking torque for a 200 s cycle

For VW3A7809 and VW3A7810:

- 10 s braking with 2 T<sub>n</sub> braking torque for a 240 s cycle

- 110 s braking with 1.25 T<sub>n</sub> braking torque for a 240 s cycle

References (continued)					
For drives	Ohmic value at 20°C	Average power available at 50°C (1)	Quantity required per drive	Reference	Weight
	Ω	kW			kg
<b>Supply voltage: 380...480 V 50/60 Hz</b>					
ATV71H075N4...HU22N4 ATV71W075N4...WU22N4 ATV71P075N4Z...PU22N4Z	100	1.6	1	VW3A7801	6.000
ATV71HU30N4...HU55N4 ATV71WU30N4...WU55N4 ATV71PU30N4Z...PU55N4Z	60	5.6	1	VW3A7802	21.000
ATV71HU75N4, HD11N4 ATV71WU75N4, WD11N4 ATV71PD11N4Z	24.5	9.8	1	VW3A7803	28.000
ATV71HD15N4...HD30N4 ATV71WD15N4...WD30N4	14	22.4	1	VW3A7804	54.000
ATV71HD37N4...HD55N4 ATV71W37N4...WD55N4	8.1	44	1	VW3A7805	92.000
ATV71HD75N4 ATV71WD75N4	4.2	62	1	VW3A7806	126.000
ATV71HD90N4 ATV71QD90N4	2.75	56	1	VW3A7811	130.000
ATV71HC11N4, HC13N4 ATV71QC11N4, QC13N4	2.1	75	1	VW3A7812	181.000
ATV71HC16N4 ATV71QC16N4	2.1	112	1	VW3A7813	250.000
ATV71HC20N4 ATV71QC20N4	1.05	112	1	VW3A7814	280.000
ATV71HC25N4, HC28N4 ATV71QC25N4	1.05	150	1	VW3A7815	362.000
ATV71HC31N4, HC40N4 ATV71QC31N4, QC40N4	0.7	225	1	VW3A7816	543.000
ATV71HC50N4 ATV71QC50N4	0.7	330	1	VW3A7817	642.000
<b>Supply voltage: 500...600 V 50/60 Hz</b>					
ATV71HU15S6X	100	1.4	1	VW3A7801	6.000
ATV71HU22S6X...HU75S6X	60	4.8	1	VW3A7802	21.000
<b>Supply voltage: 500...690 V 50/60 Hz</b>					
ATV71HU22Y	100	1.6	1	VW3A7801	6.000
ATV71HU30Y...HU55Y	60	5.6	1	VW3A7802	21.000
ATV71HU75Y, HD11Y	24.5	9.8	1	VW3A7803	28.000
ATV71HD15Y...HD30Y	14	22.4	1	VW3A7804	54.000
ATV71HD37Y...HD55Y	8.1	44	1	VW3A7805	92.000
ATV71HD75Y, HD90Y	5	70	1	VW3A7818	159.000
ATV71HC11Y ATV71QC11Y	4.2	62	1	VW3A7806	126.000
ATV71HC13Y, HC16Y ATV71QC13Y, QC16Y	8.1	44	2	VW3A7805 (2)	92.000
ATV71HC20Y ATV71QC20Y	4.2	62	2	VW3A7806 (2)	126.000
ATV71HC25Y ATV71QC25Y	1.05	75	2	VW3A7716 (3)	172.000
ATV71HC31Y ATV71QC31Y	1.05	112	2	VW3A7814 (3)	280.000
ATV71HC40Y ATV71QC40Y	0.7	112	2	VW3A7717 (3)	266.000
ATV71HC50Y ATV71QC50Y	0.7	150	2	VW3A7718 (3)	350.000
ATV71HC63Y ATV71QC63Y	0.7	225	2	VW3A7816 (3)	543.000

(1) Operating factor for hoist resistors: the value of the average power that can be dissipated at 50°C from the resistor is determined by a load factor during braking.

For VW3A7716...718:

- 10 s braking with 2 T<sub>n</sub> braking torque for a 30 s cycle

For VW3A7801...808 and VW3A7818:

- 100 s braking with 1 T<sub>n</sub> braking torque for a 200 s cycle

- 20 s braking with 1.6 T<sub>n</sub> braking torque for a 200 s cycle

For VW3A7809...817:

- 10 s braking with 2 T<sub>n</sub> braking torque for a 240 s cycle

- 110 s braking with 1.25 T<sub>n</sub> braking torque for a 240 s cycle

(2) The two braking resistors must be connected in parallel. The dimensions of all the components must be taken into account as well as the required space of 300 mm to be left between each resistor (see our website [www.schneider-electric.com](http://www.schneider-electric.com)).

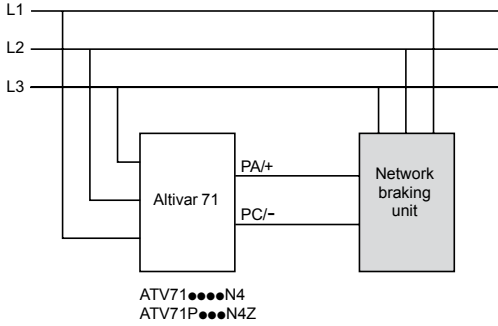
(3) The two braking resistors must be connected in series. The dimensions of all the components must be taken into account as well as the required space of 300 mm to be left between each resistor (see our website [www.schneider-electric.com](http://www.schneider-electric.com)).

# Variable speed drives

## Altivar 71

Option: network braking units

1



### Presentation

Network braking units can be used to return the following to the line supply:

- The energy from the motor
- The energy from the motors controlled by several drives connected on the same DC bus

One of the many advantages of a network braking unit is that it allows a very quick, yet smooth transition between starting and stopping. It is therefore ideal for use in applications where strong braking dynamics are required. It is also very well suited to use on unstable line supplies.

It is available for **ATV71...N4** and **ATV71P...N4Z** drives.

Depending on the braking time required, a specific idle time is necessary between two consecutive braking operations: see the characteristics curves on our website [www.schneider-electric.com](http://www.schneider-electric.com).

Network braking units provide IP 20 protection.

**Note:** For applications requiring a very low total current harmonic distortion (THDI) (< 4%), use the Active Front End (see page 1/64).

### Applications

Braking on a driving load:

- Vertical movements
- Escalators
- Etc.

## Variable speed drives

Altivar 71

Option: network braking units

References							
Line voltage: 400 V ~							
Maximum current I <sub>rms</sub>		Continuous braking power	Continuous braking power	Fast-acting semi-conductor fuses		Reference	Weight
~	≡			~	~		
A	A	kW	kW	A	V		kg
11	13	7	7	20	660	VW3A7201	20.000
20	24	13	13	30	690	VW3A7202	25.000
32	38	11	22	50	690	VW3A7203	26.000
48	58	21.5	33	80	690	VW3A7204	30.000
65	78	26	45	100	690	VW3A7205	32.000
102	123	40	70	160	660	VW3A7206	43.000
130	157	50	90	200	660	VW3A7207	48.000
195	236	60	135	315	660	VW3A7208	52.000
231	279	86	160	350	660	VW3A7209	90.000
289	350	120	200	400	1000	VW3A7210	100.000
360	433	135	250	500	1000	VW3A7211	115.000
500	600	200	345	630	1000	VW3A7212	125.000

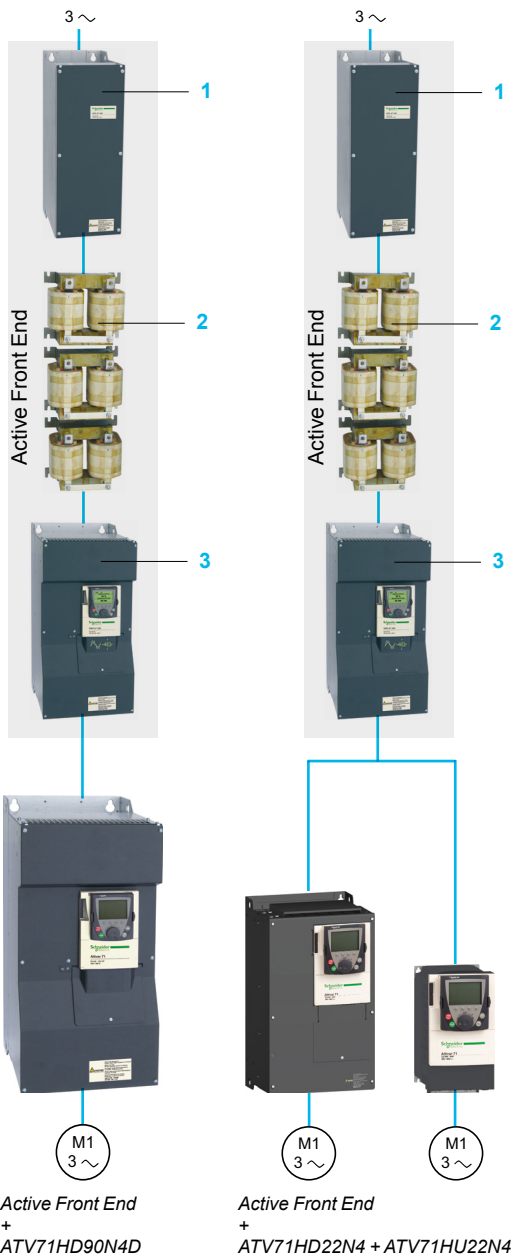


# Variable speed drives

## Altivar 71

### Option: Active Front End

1



### Presentation

The Active Front End allows Altivar 71 drives to return energy to the line supply. With 4-quadrant operation, the Active Front End is ideal for applications that allow a generator mode.

It is available for a range of drives between 0.75 kW and 630 kW with three types of 50/60 Hz power supply:

- 380...440 V three-phase
- 480 V three-phase
- 500...690 V three-phase

It has been developed to comply with European directives and to obtain CE marking.

Apart from the possibility of significantly reducing the level of harmonics, this technology offers several benefits:

- Increased application dynamics
- Operation on unstable line supplies
- Amplification of the input voltage
- Power factor ( $\cos \phi$ ) of 1

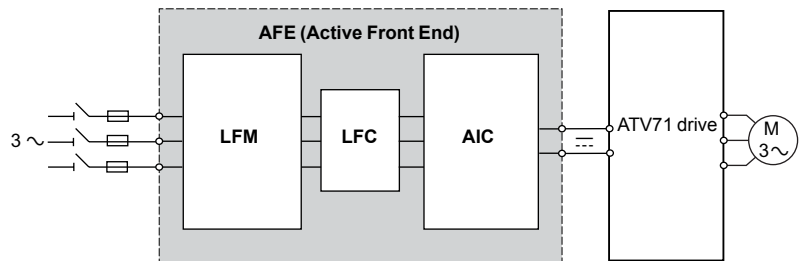
The Active Front End consists of a set of three modules installed upstream of the drive between the line supply and the motor.

It is made up of the following elements:

- A **line filter module (LFM) 1**, used at the input, incorporating:
  - A charging circuit
  - A line contactor
  - An EMC filter
- A **line filter choke (LFC) 2**, consisting of three single-phase chokes, connected between the line filter module (LFM) and the active infeed converter (AIC)
- An **active infeed converter (AIC) 3**

The Active Front End powers the Altivar 71 drive via the common DC bus, while enabling it to return energy to the line supply. It is also used to:

- Limit the total current distortion factor (THDI) to less than 4%
- Supply direct current to several drives of different power ratings, operating in parallel, if required by the installation



The Active Front End offers IP 00 protection. The ambient air temperature during operation must be between - 10°C and + 45°C (without derating, + 60°C with derating).

It is imperative that the protection of the Active Front End on the line supply side is supplemented by fuses for semi-conductors (to protect against short-circuits or a system failure).

The DC bus output only requires fuse protection if Active Front End modules are used in parallel.

### Applications

Applications with energy return on driving load:

- Cranes, hoists, platform trucks (long travel), etc.
- Downhill conveyors, winches, escalators, etc.

Test benches and drives with high dynamics

Applications requiring a very low harmonic level

Applications with high inertia and strong dynamics

References								
For drives	Motor	Line supply	DC bus		Active Front End (1) (2)	Quantity per drive	Reference	Weight  kg
	Power indicated on rating plate	Nominal line current 400 V	Maximum current	Continuous power 400 V				
	kW	A	A	kW				
<b>Three-phase supply voltage: 380...440 V 50/60 Hz</b>								
ATV71H075N4... HD90N4D	0.75...90	177	185	120	AIC	1	VW3A7250	60.000
					LFC	1	VW3A7265	54.000
					LFM	1	VW3A7260	60.000
ATV71HC11N4D	110	212	220	143	AIC	1	VW3A7251	74.000
					LFC	1	VW3A7266	69.000
					LFM	1	VW3A7261	80.000
ATV71HC13N4D	132	255	265	172	AIC	1	VW3A7252	80.000
					LFC	1	VW3A7266	69.000
					LFM	1	VW3A7261	80.000
ATV71HC16N4D	160	348	366	238	AIC	1	VW3A7253	110.000
					LFC	1	VW3A7267	132.000
					LFM	1	VW3A7262	125.000
ATV71HC20N4D	200	395	412	268	AIC	1	VW3A7254	140.000
					LFC	1	VW3A7267	132.000
					LFM	1	VW3A7262	125.000
ATV71HC25N4D	250	495	517	336	AIC	1	VW3A7255	140.000
					LFC	1	VW3A7267	132.000
					LFM	1	VW3A7262	125.000
ATV71HC28N4D	280	558	581	378	AIC	1	VW3A7256	215.000
					LFC	2	VW3A7267	132.000
					LFM	2	VW3A7262	125.000
ATV71HC31N4D	315	628	654	425	AIC	1	VW3A7256	215.000
					LFC	2	VW3A7267	132.000
					LFM	2	VW3A7262	125.000
ATV71HC40N4D	400	780	815	530	AIC	1	VW3A7257	225.000
					LFC	2	VW3A7267	132.000
					LFM	2	VW3A7262	125.000
ATV71HC50N4D	500	980	1023	665	AIC	1	VW3A7258	300.000
					LFC	2	VW3A7267	132.000
					LFM	2	VW3A7262	125.000

**Dimensions (overall)**

Active infeed converter (AIC)	W x H x D mm
VW3A7250	310 x 680 x 377
VW3A7251	350 x 782 x 377
VW3A7252	330 x 950 x 377
VW3A7253	430 x 950 x 377
VW3A7254	585 x 950 x 377
VW3A7255	585 x 950 x 377
VW3A7256	880 x 1150 x 377
VW3A7257	880 x 1150 x 377
VW3A7258	1110 x 1150 x 377
Line filter choke (LFC)	W x H x D mm
VW3A7265	835 x 210 x 185
VW3A7266	835 x 295 x 195
VW3A7267	970 x 360 x 255
Line filter module (LFM)	W x H x D mm
VW3A7260	240 x 680 x 379
VW3A7261	290 x 730 x 379
VW3A7262	290 x 1100 x 379

(1) For more information about the Active Front End, please refer to the programming manual or visit our website [www.schneider-electric.com](http://www.schneider-electric.com).

(2) AIC = active infeed converter; LFC = line filter choke; LFM = line filter module.

## References (continued)

For drives	Motor	Line supply	DC bus		Active Front End (1) (2)	Quantity per drive	Reference	Weight  kg
	Power indicated on rating plate	Nominal line current 480 V	Maximum current	Continuous power 480 V				
	HP	A	A	kW				
<b>Three-phase supply voltage: 480 V 50/60 Hz</b>								
ATV71H075N4... HD90N4D	1...125	160	163	120	AIC	1	VW3A7250	60.000
					LFC	1	VW3A7265	54.000
					LFM	1	VW3A7260	60.000
ATV71HC11N4D	150	200	203	143	AIC	1	VW3A7251	74.000
					LFC	1	VW3A7266	69.000
					LFM	1	VW3A7261	80.000
ATV71HC13N4D	200	200	203	172	AIC	1	VW3A7252	80.000
					LFC	1	VW3A7266	69.000
					LFM	1	VW3A7261	80.000
ATV71HC16N4D	250	348	366	238	AIC	1	VW3A7283	110.000
					LFC	1	VW3A7267	132.000
					LFM	1	VW3A7262	125.000
ATV71HC20N4D	300	395	412	268	AIC	1	VW3A7254	140.000
					LFC	1	VW3A7267	132.000
					LFM	1	VW3A7262	125.000
ATV71HC25N4D	400	495	517	336	AIC	1	VW3A7255	140.000
					LFC	1	VW3A7267	132.000
					LFM	1	VW3A7262	125.000
ATV71HC28N4D	450	558	581	378	AIC	1	VW3A7286	215.000
					LFC	2	VW3A7267	132.000
					LFM	2	VW3A7262	125.000
ATV71HC31N4D	500	628	654	425	AIC	1	VW3A7286	215.000
					LFC	2	VW3A7267	132.000
					LFM	2	VW3A7262	125.000
ATV71HC40N4D	600	780	815	530	AIC	1	VW3A7287	225.000
					LFC	2	VW3A7267	132.000
					LFM	2	VW3A7262	125.000
ATV71HC50N4D	700	980	1023	665	AIC	1	VW3A7258	300.000
					LFC	2	VW3A7267	132.000
					LFM	2	VW3A7262	125.000

## Dimensions (overall)

## Active infeed converter (AIC)

	W x H x D mm
VW3A7250	310 x 680 x 377
VW3A7251	350 x 782 x 377
VW3A7252	330 x 950 x 377
VW3A7283	585 x 950 x 377
VW3A7254	585 x 950 x 377
VW3A7255	585 x 950 x 377
VW3A7286	1110 x 1150 x 377
VW3A7287	1110 x 1150 x 377
VW3A7258	1110 x 1150 x 377

## Line filter choke (LFC)

	W x H x D mm
VW3A7265	835 x 210 x 185
VW3A7266	835 x 295 x 195
VW3A7267	970 x 360 x 255

## Line filter module (LFM)

	W x H x D mm
VW3A7260	240 x 680 x 379
VW3A7261	290 x 730 x 379
VW3A7262	290 x 1100 x 379

(1) For more information about the Active Front End, please refer to the programming manual or visit our website [www.schneider-electric.com](http://www.schneider-electric.com).

(2) AIC = active infeed converter; LFC = line filter choke; LFM = line filter module.

References (continued)										
For drives	Motor	Line supply	DC bus			Active Front End (1) (2)	Quantity per drive	Reference	Weight	
	Power indicated on rating plate	Maximum nominal line current 500 V...690 V	Maximum current	Continuous power						
				500 V	600 V					690 V
kW	A	A	kW	kW	kW				kg	
<b>Three-phase supply voltage: 500...690 V 50/60 Hz</b>										
ATV71HC11Y (3)	110	120	130	102	123	142	AIC	1	VW3A7270	110.000
							LFC	1	VW3A7268	99.000
							LFM	1	VW3A7263	80.000
ATV71HC13Y (3)	132	150	156	127	153	172	AIC	1	VW3A7271	110.000
							LFC	1	VW3A7268	99.000
							LFM	1	VW3A7263	80.000
ATV71HC16Y (3)	160	185	195	157	188	215	AIC	1	VW3A7272	110.000
							LFC	1	VW3A7268	99.000
							LFM	1	VW3A7263	80.000
ATV71HC20Y (3)	200	228	244	193	230	268	AIC	1	VW3A7273	190.000
							LFC	1	VW3A7269	210.000
							LFM	1	VW3A7264	125.000
ATV71HC25Y (3)	250	285	305	242	290	335	AIC	1	VW3A7274	190.000
							LFC	1	VW3A7269	210.000
							LFM	1	VW3A7264	125.000
ATV71HC31Y (3)	315	360	386	305	365	424	AIC	1	VW3A7275	190.000
							LFC	1	VW3A7269	210.000
							LFM	1	VW3A7264	125.000
ATV71HC40Y (4)	400	450	481	382	460	528	AIC	1	VW3A7276	400.000
							LFC	2	VW3A7269	210.000
							LFM	2	VW3A7264	125.000
ATV71HC50Y (4)	500	563	604	478	575	663	AIC	1	VW3A7277	400.000
							LFC	2	VW3A7269	210.000
							LFM	2	VW3A7264	125.000
ATV71HC63Y (4)	630	715	765	607	730	842	AIC	1	VW3A7278	400.000
							LFC	2	VW3A7269	210.000
							LFM	2	VW3A7264	125.000

**Dimensions (overall)**

Active infeed converter (AIC)	W x H x D mm
VW3A7270	330 x 1190 x 377
VW3A7271	330 x 1190 x 377
VW3A7272	330 x 1190 x 377
VW3A7273	585 x 1190 x 377
VW3A7274	585 x 1190 x 377
VW3A7275	585 x 1190 x 377
VW3A7276	1110 x 1390 x 377
VW3A7277	1110 x 1390 x 377
VW3A7278	1110 x 1390 x 377
Line filter choke (LFC)	W x H x D mm
VW3A7268	835 x 295 x 210
VW3A7269	985 x 540 x 250
Line filter module (LFM)	W x H x D mm
VW3A7263	290 x 730 x 370
VW3A7264	290 x 1100 x 390

(1) For more information about the Active Front End, please refer to the programming manual or visit our website [www.schneider-electric.com](http://www.schneider-electric.com).

(2) AIC = active infeed converter; LFC = line filter choke; LFM = line filter module.

(3) Requires a 6 V fan wiring option, reference VW3A7280. For more information, please visit our website [www.schneider-electric.com](http://www.schneider-electric.com).

(4) Requires two 6 V fan wiring options, reference VW3A7280. For more information, please visit our website [www.schneider-electric.com](http://www.schneider-electric.com).

1

Depending on the line supply, the main solutions for reducing current harmonics are as follows:

- DC chokes (1) (see page 1/69)
- Line chokes (1) (see page 1/70)
- 16% and 10% passive filters (1) (see page 1/73)
- Use of passive filters with a DC choke (see page 1/73)

These four solutions can be used on the same installation (1).

It is always easier and less expensive to deal with current harmonics at installation level as a whole rather than at the level of each individual device, particularly when using passive filters and active compensators.

### Presentation

DC chokes are used to reduce current harmonics in order to comply with standard IEC 61000-3-12 for drives in which the line current is more than 16 A and less than 75 A.

Using a DC choke with the drive complies with standard IEC 61000-3-12 provided that the  $RSCE \geq 120$  at the point of connection to the public power supply.

It is the responsibility of the installer or the user to ensure that the device is connected correctly to a connection point with an  $RSCE \geq 120$ . The DC choke is connected to the drive power terminals.

The DC choke is supplied as standard with ATV71HD55M3X, HD75M3X and ATV71HD90N4...HC50N4 drives.

It is compulsory for ATV71P...N4Z drives if they do not have a fan (see page 1/25).

It provides IP 20 degree of protection.

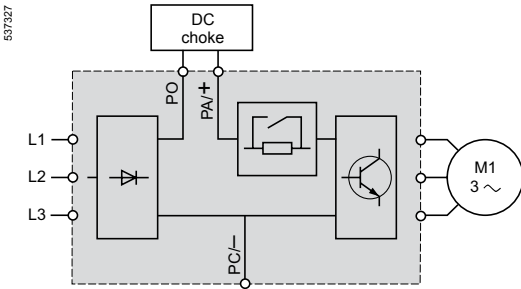
### Applications

Reduction of current harmonics.

Reduction of the THDI to 5% or 10% when used with passive filters (see pages 1/74 to 1/77).

Maintaining the motor torque in relation to the line inductance.

(1) For ATV71H...S6X and ATV71HU22Y...HD90Y drives, only line chokes are recommended. They are mandatory for ATV71QD90N4...QC50N4, ATV71HC11Y...HC63Y and ATV71QC11Y...QC63Y drives (see page 1/70).



ATV71H...M3  
ATV71HD11M3X...HD45M3X  
ATV71H075N4...HD75N4

References (1)						
For drives	Inductance value	Nominal current	Losses	THDI (2)	Reference	Weight
	mH	A	W			kg
<b>Three-phase supply voltage: 200...240 V 50/60 Hz</b>						
ATV71H037M3	18	22.5	7.7	36.3	VW3A4501	0.650
ATV71H075M3	6.8	8	22.5	41.27	VW3A4503	1.700
ATV71HU15M3	3.2	14.3	32	42.4	VW3A4505	2.200
ATV71HU22M3	2.2	19.2	33	43.33	VW3A4506	2.500
ATV71HU30M3	1.6	27.4	43	43.22	VW3A4507	3.000
ATV71HU40M3	1.2	44	61	43.91	VW3A4508	4.300
ATV71HU55M3	1.2	44	61	38		
ATV71HU75M3	0.7	36	30.5	43.96	VW3A4509	2.500
ATV71HD11M3X	0.52	84.5	77	38.14	VW3A4510	6.400
ATV71HD15M3X	0.52	84.5	77	35.34		
ATV71HD18M3X	0.22	171.2	86	32.31	VW3A4511	17.850
ATV71HD22M3X	0.22	171.2	86	36.62		
ATV71HD30M3X	0.09	195	73	43.51	VW3A4512	10.000
ATV71 HD37M3X	0.09	195	73	39.24		
ATV71HD45M3X	0.09	195	73	35.7		
<b>Three-phase supply voltage: 380...480 V 50/60 Hz</b>						
ATV71H075N4 ATV71W075N4 ATV71P075N4Z	18	2.25	7.7	44.95	VW3A4501	0.650
ATV71HU15N4 ATV71WU15N4 ATV71PU15N4Z	10	4.3	11	45.48	VW3A4502	1.000
ATV71HU22N4 ATV71WU22N4 ATV71PU22N4Z	6.8	8	22.5	45	VW3A4503	1.700
ATV71HU30N4 ATV71WU30N4 ATV71PU30N4Z	6.8	8	22.5	40.08		
ATV71HU40N4 ATV71WU40N4 ATV71PU40N4Z	3.9	10.7	27	44.72	VW3A4504	1.650
ATV71HU55N4 ATV71WU55N4 ATV71PU55N4Z	3.2	14.3	32	45.19	VW3A4505	2.200
ATV71HU75N4 ATV71WU75N4 ATV71PU75N4Z	2.2	19.2	33	42.25	VW3A4506	2.500
ATV71HD11N4 ATV71WD11N4 ATV71PD11N4Z	1.6	27.4	43	43.1	VW3A4507	3.000
ATV71HD15N4 ATV71WD15N4	1.2	44	57.5	43.06	VW3A4508	4.300
ATV71HD18N4 ATV71WD18	1.2	44	57.5	35.23		
ATV71HD22N4 ATV71WD22N4	0.52	84.5	98.3	40.4	VW3A4510	6.400
ATV71HD30N4 ATV71WD30N4	0.52	84.5	98.3	36.99		
ATV71HD37N4 ATV71WD37N4	0.52	84.5	98.3	35.13		
ATV71HD45N4 ATV71WD45N4	0.22	171.2	128	45.59	VW3A4511	17.850
ATV71HD55N4 ATV71WD55N4	0.22	171.2	128	39.29		
ATV71HD75N4 ATV71WD75N4	0.22	171.2	128	36.2		

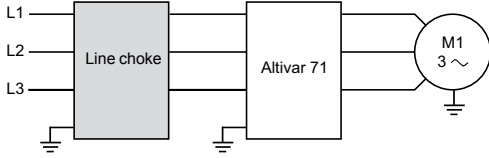
(1) The DC choke is supplied as standard with ATV71HD55M3X, HD75M3X and ATV71HD90N4...HC50N4 drives.

(2) Total current harmonic distortion in accordance with IEC 61000-3-12.

# Variable speed drives

## Altivar 71: reduction of current harmonics Option: line chokes

1



### Presentation

Line chokes are used to provide improved protection against overvoltages on the line supply and to reduce harmonic distortion of the current produced by the drive.

The recommended chokes limit the line current. They have been developed in line with standard IEC 61800-5-1 (VDE 0160 level 1 high-energy overvoltages on the line supply).

The choke values are defined for a phase-to-phase voltage drop of between 3% and 5% of the nominal supply voltage. Values higher than this will cause loss of torque.

Line chokes are mandatory for:

- ATV71HU40M3...HU75M3 drives powered by a 200...240 V 50/60 Hz single-phase supply voltage
- ATV71HD90N4D...HC50N4D and ATV71QD90N4...QC●●N4 drives powered by a 380...480 V 50/60 Hz three-phase supply voltage
- ATV71QD90N4...QC50N4, ATV71HC11Y...HC63Y and ATV71QC11Y...QC63Y drives

Their use is recommended for ATV71H●●●S6X and ATV71HU22Y...HD90Y drives.

They can also be used with:

- ATV71H●●●M3 drives powered by a 200...240 V 50/60 Hz three-phase voltage, ATV71H●●●M3X, ATV71●●●●N4 and ATV71P●●●●N4Z drives
- ATV71●●●Y drives in order to reach a total current distortion factor complying with standard IEC 61000-3-12

**Note:** ATV71HD90N4...HC50N4 drives, supplied as standard with a DC choke, can be ordered without a choke by adding the letter D at the end of the reference (see page 1/20).

Chokes must be installed upstream of the drive.

### Applications

The use of line chokes is recommended in particular under the following circumstances:

- Close connection of several drives in parallel
- Line supply with significant disturbance from other equipment (interference, overvoltages)
- Line supply with voltage imbalance between phases that is more than 1.8% of the nominal voltage
- Drive supplied by a line with very low impedance (in the vicinity of power transformers 10 times more powerful than the drive rating)
- Installation of a large number of frequency inverters on the same line
- Reduction of overloads on the  $\cos \varphi$  correction capacitors, if the installation includes a power factor correction unit

PF107532



VW3A4572

References								
For drives	Line supply	Line choke	Nominal current	Saturation current	Losses	Quantity required per drive	Reference	Weight
	I <sub>sc</sub>	Inductance value						
	kA	mH	A	A	W			kg
<b>Single-phase supply voltage: 200...240 V 50/60 Hz</b>								
ATV71HU40M3 (1)	5	2	25	–	45	1	VW3A58501	3.500
ATV71HU55M3 (1)	5	1	45	–	50	1	VW3A58502	3.500
ATV71HU75M3 (1)	22	1	45	–	50	1	VW3A58502	3.500
<b>Three-phase supply voltage: 200...240 V 50/60 Hz</b>								
ATV71H037M3, H075M3	5	10	4	–	45	1	VW3A4551	1.500
ATV71HU15M3, HU22M3	5	4	10	–	65	1	VW3A4552	3.000
ATV71HU30M3	5	2	17	–	75	1	VW3A4553	3.500
ATV71HU40M3	5	1	31	–	90	1	VW3A4554	6.000
ATV71HU55M3	22	1	31	–	90	1	VW3A4554	6.000
ATV71HU75M3, HD11M3X	22	0.5	60	–	94	1	VW3A4555	11.000
ATV71HD15M3X	22	0.3	107	–	260	1	VW3A4556	16.000
ATV71HD18M3X...HD45M3X	22	0.15	230	–	400	1	VW3A4557	45.000
ATV71HD55M3X	35	0.049	429	855	278	1	VW3A4562	50.000
ATV71HD75M3X	35	0.038	509	1025	280	1	VW3A4563	59.000
<b>Three-phase supply voltage: 380...480 V 50/60 Hz</b>								
ATV71H075N4, HU15N4 ATV71W075N4, WU15N4 ATV71P075N4Z, PU15N4Z	5	10	4	–	45	1	VW3A4551	1.500
ATV71HU22N4...HU40N4 ATV71WU22N4...WU40N4 ATV71PU22N4Z...PU40N4Z	5	4	10	–	65	1	VW3A4552	3.000
ATV71HU55N4, HU75N4 ATV71WU55N4, WU75N4 ATV71PU55N4Z, PU75N4Z	22	2	17	–	75	1	VW3A4553	3.500
ATV71HD11N4, HD15N4 ATV71WD11N4, WD15N4 ATV71PD11N4Z	22	1	31	–	90	1	VW3A4554	6.000
ATV71HD18N4, HD22N4 ATV71WD18N4, WD22N4	22	0.5	60	–	94	1	VW3A4555	11.000
ATV71HD30N4...HD55N4 ATV71WD30N4...WD55N4	22	0.3	107	–	260	1	VW3A4556	16.000
ATV71HD75N4 ATV71WD75N4	22	0.155	184	370	220	1	VW3A4558	31.000
ATV71HD90N4D, HC11N4D (2)	35	0.12	222	346	278	1	VW3A4559	35.000
ATV71HC13N4D (2)	35	0.098	264	530	245	1	VW3A4560	43.000
ATV71HC16N4D (2)	50	0.066	344	685	258	1	VW3A4561	47.000
ATV71HC20N4D (2)	50	0.060	450	850	335	1	VW3A4569	70.000
ATV71HC25N4D, HC28N4D (2)	50	0.038	613	1150	307	1	VW3A4564	73.000
ATV71HC31N4D (2)	50	0.032	720	1352	428	1	VW3A4565	82.000
ATV71HC40N4D (2)	50	0.060	450	850	335	2	VW3A4569	70.000
ATV71HC50N4D (2)	50	0.038	613	1150	307	2	VW3A4564	73.000

(1) Use of a line choke is recommended.

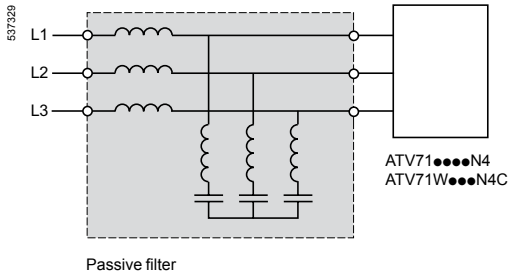
(2) Use of a line choke is mandatory (see table of combinations on page 1/34).



References (continued)									
For drives	Line supply I <sub>sc</sub>	Line choke		Nominal current	Saturation current	Losses	Quantity required per drive	Reference	Weight
		Inductance value							
	kA	mH	A	A	W				kg
<b>Three-phase supply voltage: 380...480 V 50/60 Hz (continued)</b>									
ATV71QD90N4 (1)	35	0.12	222	346	278	1	VW3A4559	35.000	
ATV71QC11N4 (1)	35	0.098	264	530	245	1	VW3A4560	43.000	
ATV71QC13N4 (1)	35	0.085	300	570	315	1	VW3A4568	46.000	
ATV71QC16N4 (1)	50	0.066	344	685	258	1	VW3A4561	47.000	
ATV71QC20N4 (1)	50	0.06	450	850	335	1	VW3A4569	70.000	
ATV71QC25N4 (1)	50	0.038	613	1150	307	1	VW3A4564	73.000	
ATV71QC31N4 (1)	50	0.066	344	685	258	2	VW3A4561	47.000	
ATV71QC40N4 (1)	50	0.038	513	1025	320	2	VW3A4563	55.000	
ATV71QC50N4 (1)	50	0.026	590	1180	320	2	VW3A4573	60.000	
<b>Three-phase supply voltage: 500...600 V 50/60 Hz</b>									
ATV71HU15S6X...HU22S6X	22	10	4	–	45	1	VW3A4551	1.500	
ATV71HU30S6X...HU55S6X	22	4	10	–	65	1	VW3A4552	3.000	
ATV71HU75S6X	22	2	17	–	75	1	VW3A4553	3.500	
<b>Three-phase supply voltage: 500...690 V 50/60 Hz</b>									
ATV71HU22Y...HU30Y (2)	22	10	4	–	45	1	VW3A4551	1.500	
ATV71HU40Y ATV71HD55Y, HD75Y (2)	22	4	10	–	65	2	VW3A4552	3.000	
ATV71HD11Y, HD15Y (2)	22	2	17	–	75	1	VW3A4553	3.500	
ATV71HD18Y, HD22Y (2)	22	1	31	–	90	1	VW3A4554	6.000	
ATV71HD30Y...HD45Y (2)	22	0.5	60	–	94	1	VW3A4555	11.000	
ATV71HD55Y...HD90Y (2)	22	0.3	107	–	260	1	VW3A4556	16.000	
ATV71HC11Y (1) ATV71QC11Y (1)	28	0.22	152	320	220	1	VW3A4570	28.000	
ATV71HC13Y (1) ATV71QC13Y (1)	28	0.23	220	405	330	1	VW3A4571	79.000	
ATV71HC16Y (1) ATV71QC16Y (1)	35	0.23	220	405	330	1	VW3A4571	79.000	
ATV71HC20Y (1) ATV71QC20Y (1)	35	0.098	264	530	245	1	VW3A4560	35.000	
ATV71HC25Y, HC31Y (1) ATV71QC25Y, QC31Y (1)	35	0.1	428	770	495	1	VW3A4572	90.000	
ATV71HC40Y (1) ATV71QC40Y (1)	35	0.085	300	474	315	2	VW3A4568	46.000	
ATV71HC50Y (1) ATV71QC50Y (1)	35	0.1	428	770	495	2	VW3A4572	90.000	
ATV71HC63Y (1) ATV71QC63Y (1)	42	0.1	428	770	495	2	VW3A4572	90.000	

(1) Use of a line choke is mandatory (see table of combinations on page 1/34).

(2) Use of a line choke is recommended.



### Presentation

Passive filters are used to reduce current harmonics with total harmonic distortion factors of less than 16% or 10%.

These performance levels can be improved and the harmonic distortion reduced to less than 10% or 5% if a DC choke is used with a 16% or 10% passive filter. See pages 1/68 and 1/69.

Passive filters are used to reduce current harmonics with total harmonic distortion factors (THDI) of less than 16%, 10% or 5%.

For some ratings, 2 passive filters can be used on the same drive.

The reactive power increases at no load or low load. To eliminate this reactive power, the filter capacitors can be disconnected via the drive (see the diagrams on our website [www.schneider-electric.com](http://www.schneider-electric.com) or refer to the Programming Manual).

The passive filters provide IP 20 protection.

The associations are given for ATV71...N4 and ATV71W...N4C drives. For ATV71H...Y, ATV71Q...Y and ATV71H...S6X drives, please contact our Customer Care Centre.

### Applications

Reduction of current harmonics in order to use drives in the first environment (restricted distribution, for domestic use, sale conditional on the competence of the user and the distributor in terms of reduction of current harmonics).

## Variable speed drives

Altivar 71: reduction of current harmonics

Option: 50 Hz passive filters

1



VW3A46106

Passive filters: 400 V 50 Hz three-phase power supply								
Motor rating		For ATV71 drives	Line supply	Filter		Quantity required per drive	Reference	Weight
kW	HP		Line current	Nominal current				
				Input	Output			
kg								
<b>THDI 16% with ATV71H075N4...HD75N4, W075N4...WD75N4 and P075N4Z...PD11N4Z drives (1)</b>								
0.75	1	H075N4, W075N4 P075N4Z	2.5	6	6.2	1	VW3A46101	10.000
1.5	2	HU15N4, WU15N4 PU15N4Z	3.6	6	6.2	1	VW3A46101	10.000
2.2	3	HU22N4, WU22N4 PU22N4Z	5	6	6.2	1	VW3A46101	10.000
3	–	HU30N4, WU30N4 PU30N4Z	6	6	6.2	1	VW3A46101	10.000
4	5	HU40N4, WU40N4 PU40N4Z	7.8	10	10.4	1	VW3A46102	13.500
5.5	7.5	HU55N4, WU55N4 PU55N4Z	10	10	10.4	1	VW3A46102	13.500
7.5	10	HU75N4, WU75N4 PU75N4Z	14	14	14.5	1	VW3A46103	16.300
11	15	HD11N4, WD11N4 PD11N4Z	19	22	23.0	1	VW3A46104	22.000
15	20	HD15N4, WD15N4	26	29	30.0	1	VW3A46105	25.000
18.5	25	HD18N4, WD18N4	32	35	36.5	1	VW3A46106	37.000
22	30	HD22N4, WD22N4	38	43	44.5	1	VW3A46107	39.000
30	40	HD30N4, WD30N4	52	58	60.0	1	VW3A46108	44.000
37	50	HD37N4, WD37N4	63	72	75.0	1	VW3A46109	56.000
45	60	HD45N4, WD45N4	77	86	89.5	1	VW3A46110	62.000
55	75	HD55N4, WD55N4	91	101	105.0	1	VW3A46111	74.000
75	100	HD75N4, WD75N4	126	144	150.0	1	VW3A46112	85.000
<b>THDI 10% with ATV71HD90N4...HC50N4 and ATV71QD90N4...QC50N4 drives</b>								
90	125	HD90N4, QD90N4	149	144	150	1	VW3A46112	85.000
110	150	HC11N4, QC11N4	182	180	187	1	VW3A46113	102.000
132	200	HC13N4, QC13N4	218	217	225	1	VW3A46114	119.000
160	250	HC16N4, QC16N4	287	304	316	1	VW3A46116	142.000
200	300	HC20N4, QC20N4	353.5	380	395	1	VW3A46118	185.000
220	350	HC25N4, QC25N4	364	380	395	1	VW3A46118	185.000
250	400	HC25N4, QC25N4	415	433	450	1	VW3A46119	203.000
280	450	HC28N4	485	252	262	2	VW3A46115	119.000
315	500	HC31N4, QC31N4	543	304	316	2	VW3A46116	136.000
355	–	HC40N4, QC40N4	588	304	316	2	VW3A46116	136.000
400	600	HC40N4, QC40N4	664	325	338	2	VW3A46117	142.000
500	700	HC50N4, QC50N4	840	433	450	2	VW3A46119	203.000

(1) By adding a DC choke (see page 1/68) to ATV71●075N4...●D75N4 and ATV71P●●●N4Z drives, a total current harmonic distortion (THDI) ≤ 5% is obtained.

This DC choke is supplied as standard with ATV71HD90N4...HC50N4/QC50N4 drives. These reduced current harmonics are achieved as long as the total voltage harmonic distortion (THDU) is < 2%, the short-circuit ratio (RSCE) is > 66%, and only for the nominal current of the passive filter.

## Variable speed drives

Altivar 71: reduction of current harmonics

Option: 50 Hz passive filters

Passive filters: 400 V 50 Hz three-phase power supply (continued)								
Motor rating		For ATV71 drives	Line supply	Filter		Quantity required per drive	Reference	Weight
kW	HP		Line current	Nominal current				
				Input	Output			
			A				kg	
<b>THDI 10% with ATV71H075N4...HD75N4, W075N4...WD75N4 and P075N4Z...PD11N4Z drives (1)</b>								
0.75	1	H075N4, W075N4 P075N4Z	2.5	6	6.2	1	VW3A46120	18.000
1.5	2	HU15N4, WU15N4 PU15N4Z	3.6	6	6.2	1	VW3A46120	18.000
2.2	3	HU22N4, WU22N4 PU22N4Z	5	6	6.2	1	VW3A46120	18.000
3	–	HU30N4, WU30N4 PU30N4Z	6	6	6.2	1	VW3A46120	18.000
4	5	HU40N4, WU40N4 PU40N4Z	7.8	10	10.4	1	VW3A46121	18.000
5.5	7.5	HU55N4, WU55N4 PU55N4Z	10	10	10.4	1	VW3A46121	18.000
7.5	10	HU75N4, WU75N4 PU75N4Z	14	14	14.5	1	VW3A46122	20.000
11	15	HD11N4, WD11N4 PD11N4Z	19	22	23	1	VW3A46123	30.000
15	20	HD15N4, WD15N4	26	29	30	1	VW3A46124	34.000
18.5	25	HD18N4, WD18N4	32	35	36.5	1	VW3A46125	52.000
22	30	HD22N4, WD22N4	38	43	44.5	1	VW3A46126	75.000
30	40	HD30N4, WD30N4	52	58	60	1	VW3A46127	82.000
37	50	HD37N4, WD37N4	63	72	75	1	VW3A46128	96.000
45	60	HD45N4, WD45N4	77	86	89.5	1	VW3A46129	104.000
55	75	HD55N4, WD55N4	91	101	105	1	VW3A46130	130.000
75	100	HD75N4, WD75N4	126	144	150	1	VW3A46131	126.000
<b>THDI 5% with ATV71HD90N4...HC50N4 and ATV71QD90N4...QC50N4 drives</b>								
90	125	HD90N4, QD90N4	149	144	150	1	VW3A46131	126.000
110	150	HC11N4, QC11N4	182	180	187	1	VW3A46132	135.000
132	200	HC13N4, QC13N4	218	217	225	1	VW3A46133	171.000
160	250	HC16N4, QC16N4	287	304	316	1	VW3A46135	221.000
200	300	HC20N4, QC20N4	353.5	380	395	1	VW3A46137	265.000
220	350	HC25N4, QC25N4	364	380	395	1	VW3A46137	265.000
250	400	HC25N4, QC25N4	415	433	450	1	VW3A46138	272.000
280	450	HC28N4	485	252	262	2	VW3A46134	206.000
315	500	HC31N4, QC31N4	543	304	316	2	VW3A46135	221.000
355	–	HC40N4, QC40N4	588	304	316	2	VW3A46135	221.000
400	600	HC40N4, QC40N4	664	325	338	2	VW3A46136	230.000
500	700	HC50N4, QC50N4	840	433	450	2	VW3A46138	272.000

(1) By adding a DC choke (see page 1/68) to ATV71●075N4...●D75N4 and ATV71P●●●N4Z drives, a total current harmonic distortion (THDI) ≤ 5% is obtained.

This DC choke is supplied as standard with ATV71HD90N4...HC50N4 drives. These reduced current harmonics are achieved as long as the total voltage harmonic distortion (THDU) is < 2%, the short-circuit ratio (RSCE) is > 66%, and only for the nominal current of the passive filter.

## Variable speed drives

Altivar 71: reduction of current harmonics

Option: 60 Hz passive filters

1

Passive filters: 400 V 60 Hz three-phase power supply								
Motor rating		For ATV71 drives	Line supply	Filter		Quantity required per drive	Reference	Weight
kW	HP		Line current	Nominal current				
				Input	Output			
			A	A				kg
<b>THDI 16% with ATV71H075N4...HD75N4, W075N4...WD75N4 and P075N4Z...PD11N4Z drives (1)</b>								
0.75	1	H075N4, W075N4 P075N4Z	2.5	6	6.2	1	VW3A46139	10.000
1.5	2	HU15N4, WU15N4 PU15N4Z	3	6	6.2	1	VW3A46139	10.000
2.2	3	HU22N4, WU22N4 PU22N4Z	5	6	6.2	1	VW3A46139	10.000
3	–	HU30N4, WU30N4 PU30N4Z	6	6	6.2	1	VW3A46139	10.000
4	5	HU40N4, WU40N4 PU40N4Z	7	10	10.4	1	VW3A46140	13.500
5.5	7.5	HU55N4, WU55N4 PU55N4Z	10	10	10.4	1	VW3A46140	13.500
7.5	10	HU75N4, WU75N4 PU75N4Z	13	14	14.5	1	VW3A46141	16.300
11	15	HD11N4, WD11N4 PD11N4Z	19	19	19.5	1	VW3A46142	22.000
15	20	HD15N4, WD15N4	24	25	26	1	VW3A46143	23.000
18.5	25	HD18N4, WD18N4	32	31	32	1	VW3A46144	33.000
22	30	HD22N4, WD22N4	35	36	37.5	1	VW3A46145	37.000
30	40	HD30N4, WD30N4	44	48	50	1	VW3A46146	38.000
37	50	HD37N4, WD37N4	58.7	60	62.5	1	VW3A46147	43.000
45	60	HD45N4, WD45N4	68	73	76	1	VW3A46148	55.000
55	75	HD55N4, WD55N4	82.6	95	99	1	VW3A46149	62.000
75	100	HD75N4, WD75N4	108	118	122.5	1	VW3A46150	74.000
<b>THDI 10% with ATV71HD90N4...HC50N4 and ATV71QD90N4...QC50N4 drives</b>								
90	125	HD90N4, QD90N4	134	154	160	1	VW3A46151	85.000
110	150	HC11N4, QC11N4	163	183	190	1	VW3A46152	102.000
132	200	HC13N4, QC13N4	192	231	240	1	VW3A46153	117.000
160	250	HC16N4, QC16N4	235	231	240	1	VW3A46153	117.000
200	300	HC20N4, QC20N4	300	355	369	1	VW3A46155	162.000
220	350	HC25N4, QC25N4	330	355	369	1	VW3A46155	162.000
250	400	HC25N4, QC25N4	400	436	450	1	VW3A46157	205.000
280	450	HC28N4	440	436	450	1	VW3A46157	205.000
315	500	HC31N4, QC31N4	470	231	240	2	VW3A46153	117.000
355	–	HC40N4, QC40N4	530	291	316	2	VW3A46154	142.000
400	600	HC40N4, QC40N4	590	291	316	2	VW3A46154	142.000
500	700	HC50N4, QC50N4	730	380	395	2	VW3A46156	172.000

(1) By adding a DC choke (see page 1/68) to ATV71●075N4...●D75N4 and ATV71P●●●N4Z drives, a total current harmonic distortion (THDI) ≤ 10% is obtained.

This DC choke is supplied as standard with ATV71HD90N4...HC50N4 drives. These reduced current harmonics are achieved as long as the total voltage harmonic distortion (THDU) is < 2%, the short-circuit ratio (RSCE) is > 66%, and only for the nominal current of the passive filter.

## Variable speed drives

Altivar 71: reduction of current harmonics

Option: 60 Hz passive filters

Passive filters: 400 V 60 Hz three-phase power supply (continued)								
Motor rating		For ATV71 drives	Line supply	Filter		Quantity required per drive	Reference	Weight
kW	HP		Line current	Nominal current				
			A	Input	Output			
kg								
<b>THDI 10% with ATV71H075N4...HD75N4, W075N4...WD75N4 and P075N4Z...PD11N4Z drives (3)</b>								
0.75	1	H075N4, W075N4 P075N4Z	2.5	6	6.2	1	VW3A46158	18.000
1.5	2	HU15N4, WU15N4 PU15N4Z	3	6	6.2	1	VW3A46158	18.000
2.2	3	HU22N4, WU22N4 PU22N4Z	4.2	6	6.2	1	VW3A46158	18.000
3	–	HU30N4, WU30N4 PU30N4Z	6	6	6.2	1	VW3A46158	18.000
4	5	HU40N4, WU40N4 PU40N4Z	7	10	10.4	1	VW3A46159	18.000
5.5	7.5	HU55N4, WU55N4 PU55N4Z	10	10	10.4	1	VW3A46159	18.000
7.5	10	HU75N4, WU75N4 PU75N4Z	13	14	14.5	1	VW3A46160	20.000
11	15	HD11N4, WD11N4 PD11N4Z	19	19	19.5	1	VW3A46161	30.000
15	20	HD15N4, WD15N4	24	25	26	1	VW3A46162	34.000
18.5	25	HD18N4, WD18N4	32	31	32	1	VW3A46163	52.000
22	30	HD22N4, WD22N4	35	36	37.5	1	VW3A46164	53.000
30	40	HD30N4, WD30N4	44	48	50	1	VW3A46165	57.000
37	50	HD37N4, WD37N4	58.7	60	62.5	1	VW3A46166	75.000
45	60	HD45N4, WD45N4	68	73	76	1	VW3A46167	97.000
55	75	HD55N4, WD55N4	82.6	95	99	1	VW3A46168	104.000
75	100	HD75N4, WD75N4	108	118	122.5	1	VW3A46169	106.000
<b>THDI 5% with ATV71HD90N4...HC50N4 and ATV71QD90N4...QC50N4 drives</b>								
90	125	HD90N4, QD90N4	134	154	160	1	VW3A46170	126.000
110	150	HC11N4, QC11N4	163	183	190	1	VW3A46171	135.000
132	200	HC13N4, QC13N4	192	231	240	1	VW3A46172	170.000
160	250	HC16N4, QC16N4	235	231	240	1	VW3A46172	170.000
200	300	HC20N4, QC20N4	300	355	369	1	VW3A46174	229.000
220	350	HC25N4, QC25N4	330	355	369	1	VW3A46174	229.000
250	400	HC25N4, QC25N4	400	436	450	1	VW3A46176	270.000
280	450	HC28N4	440	436	450	1	VW3A46176	270.000
315	500	HC31N4, QC31N4	470	231	240	2	VW3A46172	170.000
355	–	HC40N4, QC40N4	530	291	316	2	VW3A46173	206.000
400	600	HC40N4, QC40N4	590	291	316	2	VW3A46173	206.000
500	700	HC50N4, QC50N4	730	380	395	2	VW3A46175	265.000

(1) By adding a DC choke (see page 1/68) to ATV71●075N4...●D75N4 and ATV71P●●●N4Z drives, a total current harmonic distortion (THDI) ≤ 5% is obtained.  
This DC choke is supplied as standard with ATV71HD90N4...HC50N4 drives. These reduced current harmonics are achieved as long as the total voltage harmonic distortion (THDU) is < 2%, the short-circuit ratio (RSCE) is > 66%, and only for the nominal current of the passive filter.

# Variable speed drives

## Altivar 71: EMC filters

### Integrated filters and optional additional filters

1

#### Integrated EMC filters

Altivar 71 drives, except for the ATV71H●●●M3X, have built-in radio interference filters to meet the EMC standard for variable speed electrical power drive “products” IEC/EN 60800-3, edition 2, category C2 or C3 in environment 1 or 2 and to comply with the European Electromagnetic Compatibility Directive (EMC).

Drives	Maximum length of shielded cable (1) according to			
	EN 55011 class A Gr1		EN 55011 class A Gr2	
	IEC/EN 61800-3 category C2		IEC/EN 61800-3 category C3	
	LF	HF	LF	HF
	m	m	m	m
ATV71H037M3...HU22M3	10	5	–	–
ATV71HU30M3...HU75M3	–	–	10	5
ATV71H075N4...HU40N4 ATV71W075N4...WU40N4 ATV71P075N4Z...PU40N4Z	10	5	–	–
ATV71HU55N4...HD15N4 ATV71WU55N4...WD15N4 ATV71PU55N4Z...PD11N4Z	–	–	10	5
ATV71HD18N4...HC50N4 ATV71WD18N4...WD75N4	–	–	50	25
ATV71HU22Y...HD90Y	–	–	25	25
ATV71HC11Y...HC63Y	–	–	50	25

#### Switching frequency

Drives	Switching frequency	
	LF (low frequency)	HF (high frequency)
	kHz	kHz
ATV71H●●●M3 ATV71H075N4...HD30N4 ATV71W075N4...WD30N4 ATV71P075N4Z...PD11N4Z	4	4.1...16
ATV71HD37N4...HD75N4 ATV71WD37N4...WD75N4	2...2.5	2.6...12
ATV71HD90N4...HC50N4	2...4	4.1...8
ATV71HU22Y...HD30Y	2.5...4	4.1...6
ATV71HD37Y...HC63Y	2.5	2.6...4.9

#### Additional EMC input filters

##### Applications

When used with ATV71H●●●M3, ATV71H●●●M3X, ATV71●●●●N4 and ATV71P●●●N4Z drives, additional EMC input filters can be used to meet more stringent requirements and are designed to reduce conducted emissions on the line supply below the limits of standards EN 55011 group 1, class A or B and IEC/EN 61800-3 category C2 or C3.

For ATV71H●●●M3, ATV71HD11M3X...HD45M3X, ATV71H075N4...HD75N4 and ATV71P075N4Z...PD11N4Z drives, the additional EMC filters can be mounted beside or under the device. They act as a support for the drives and are attached to them via tapped holes.

For ATV71HD55M3X, HD75M3X, ATV71HD90N4...HC50N4 and ATV71QD90N4...QC50N4 drives, the additional EMC filters can only be mounted beside the drive.

##### Use according to the type of line supply

These additional filters can only be used on TN (neutral connection) and TT (earthed neutral) type systems.

Standard IEC/EN 61800-3, appendix D2.1, states that on IT systems (isolated or impedance earthed neutral), filters can cause permanent insulation monitors to operate in a random manner.

In addition, the effectiveness of additional filters on this type of system depends on the type of impedance between neutral and earth, and therefore cannot be predicted.

If a machine has to be installed on an IT system, one solution is to insert an isolation transformer and connect the machine locally on a TN or TT system.

(1) If motors are connected in parallel, it is the total cable length that should be taken into account.

Additional EMC input filters (for ATV71H●●●M3, H●●●M3 and ATV71●●●●N4 drives)									
Drives	Maximum length of shielded cable (1)				In (2)	If (3)	Losses (4)	Reference	Weight
	EN 55011 class A Gr1		EN 55011 class B Gr1						
	IEC/EN 61800-3 category C2		IEC/EN 61800-3 category C1						
	LF	HF	LF	HF	A	mA	W	kg	
m	m	m	m						
<b>Three-phase supply voltage: 200...240 V 50/60 Hz</b>									
ATV71H037M3...HU15M3	100	50	50	20	12	4	10	VW3A4401	2.200
ATV71HU22M3...HU40M3	100	50	50	20	26	4.4	18	VW3A4402	4.000
ATV71HU55M3	100	50	50	20	35	3	24	VW3A4403	5.800
ATV71HU75M3	100	50	50	20	46	10	19	VW3A4404	7.000
ATV71HD11M3X, HD15M3X	100	50	50	25	72	33	34	VW3A4405	12.000
ATV71HD18M3X, HD22M3X	100	50	50	25	90	33	34	VW3A4406	15.000
ATV71HD30M3X...HD45M3X	100	50	50	25	180	80	58	VW3A4408	40.000
ATV71HD55M3X, HD75M3X	100	50	50	25	273	285	60	VW3A4410	25.000
<b>Three-phase supply voltage: 380...480 V 50/60 Hz</b>									
ATV71H075N4...HU22N4	100	50	50	20	12	7	5	VW3A4401	2.200
ATV71W075N4...WU22N4									
ATV71P075N4Z...PU22N4Z									
ATV71HU30N4, HU40N4	100	50	50	20	26	8	6	VW3A4402	4.000
ATV71WU30N4, WU40N4									
ATV71PU30N4Z, PU40N4Z									
ATV71HU55N4, HU75N4	100	50	50	20	35	7	14	VW3A4403	5.800
ATV71WU55N4, WU75N4									
ATV71PU55N4Z, PU75N4Z									
ATV71HD11N4	100	50	50	20	46	14	13	VW3A4404	7.000
ATV71WD11N4									
ATV71PD11N4Z									
ATV71HD15N4 (5), HD18N4	300	200	100	100	72	60	14	VW3A4405	12.000
ATV71WD15N4 (5), WD18N4									
ATV71HD22N4	300	200	100	100	90	60	11	VW3A4406	15.000
ATV71WD22N4									
ATV71HD30N4, HD37N4	300	200	100	100	92	60	30	VW3A4407	17.000
ATV71WD30N4, WD37N4									
ATV71HD45N4...HD75N4	300	200	100	100	180	140	58	VW3A4408	40.000
ATV71WD45N4...WD75N4									
ATV71HD90N4...HC13N4	300	150	50	25	273	500	60	VW3A4410	22.000
ATV71QD90N4...QC13N4									
ATV71HC16N4...HC28N4	300	150	50	25	546	500	125	VW3A4411	25.000
ATV71QC16N4...QC25N4									
ATV71HC31...HC40N4	300	150	50	25	728	500	210	VW3A4412	25.000
ATV71QC31N4...QC40N4									
ATV71HC50N4	300	150	50	25	1456	200	380	VW3A4413	34.000
ATV71QC50N4									

For drives	Switching frequency	
	LF (low frequency)	HF (high frequency)
	kHz	kHz
ATV71H●●●M3 ATV71H075N4...HD11N4 ATV71W075N4...WD11N4 ATV71P075N4Z...PD11N4Z	4	4.1...16
ATV71HD11M3X, HD15M3X ATV71HD15N4...HD30N4 ATV71WD15N4...WD30N4	3.5...4	4.1...12
ATV71HD18M3X...HD45M3X ATV71HD37N4...HD75N4 ATV71WD37N4...WD75N4	2...2.5	2.6...12
ATV71HD55M3X, HD75M3X	2...4	4.1...8
ATV71HD90N4...HC50N4 ATV71QD90N4...QC50N4	2...4	4.1...8

(1) These limits are given as examples only as they vary depending on the stray capacitance of the motors and the cables used.  
If motors are connected in parallel, it is the total cable length that should be taken into account.

(2) Nominal filter current.

(3) Maximum earth leakage current at 230 V and at 400 V 50 Hz on a TT system.

(4) Via heat dissipation.

(5) It is possible to use a special filter **VW3A4409** with a leakage current  $I_f$  (3) of 14 mA which allows a maximum motor cable length of 100 m.



Altivar 71 drives have been designed to operate (without the need for additional optional equipment) with the following maximum motor cable lengths:

For drives	Maximum motor cable length (1)	
	Shielded	Unshielded
	m	m
ATV71H●●●M3 ATV71HD11M3X, HD55M3X ATV71H075N4...HD75N4 ATV71W075N4...WD75N4 ATV71WD075N4C...WD75N4C ATV71P075N4Z...PD75N4Z	50	100
ATV71HD75M3X...HD90M3X ATV71HD90N4...HC50N4 ATV71QD90N4...QC50N4	80	100
ATV71WD37N4...WD75N4C ATV71WD37N4C...WD75N4C	50	100
ATV71H●●●S6X	10	10
ATV71HU22Y...HD30Y	10	10
ATV71HD37Y...HD90Y	10	10
ATV71HC11Y...HC63Y ATV71QC11Y...QC63Y	15	30

(1) These values are given for a maximum switching frequency of 2.5 or 4 kHz depending on the rating.

Altivar 71 drives include as standard a software function used to limit overvoltages at the motor terminals. For more information, please refer to the Programming Manual (SUL function).

Depending on the cable lengths or the type of application, it may be necessary to use output filters:

- Motor chokes used to limit the dv/dt (see page 1/81)
- Sinus filters that are particularly effective for long cable runs or to reduce electromagnetic motor noise (see page 1/84)

#### Motor choke

Motor chokes allow operation with motor cables which are longer than the standard lengths and/or limit the dv/dt at the motor terminals:

- 500 V/μs for 200...400 V and 380...480 V three-phase line supplies
- 1000 V/μs for 500...690 V three-phase line supplies

They are also used to:

- Limit overvoltages at the motor terminals
- Filter interference caused by opening of a contactor placed between the filter and the motor
- Reduce the motor earth leakage current

Choke performance is ensured by not exceeding the cable lengths given on pages 1/82 and 1/83.

For an application with several motors connected in parallel, the cable length must include all cabling. If a cable longer than that recommended is used, the motor chokes may overheat.

#### Maximum motor cable lengths according to the application

Depending on the type of application, variable speed drives can either be used on their own or with the addition of various options.

The table below gives several examples of maximum permissible motor cable lengths according to application type:

Application type	Supply voltage		Maximum unshielded motor cable length	
	V ~	V ☰	Without motor choke m	With motor choke (1) m
<b>For ATV71H075N4...HU40N4, ATV71W075N4...WU40N4 and ATV71P075N4...PU40N4 drives</b>				
Drive only	400...480	560...680	100	200
With braking resistor (braking cycle = 5%)	400...480	785	100	200
With braking resistor (braking cycle ≥ 50%) For hoisting application	400...480	785	20	200
With Active Front End (AFE)	400	650	100	200
	480	770	20	200
<b>For ATV71H...M3, H...M3X, ATV71HU55N4...HD75N4 and ATV71WU55N4...WD75N4 drives</b>				
Drive only	400...480	560...680	100	300
With braking resistor (braking cycle = 5%)	400...480	785	100	300
With braking resistor (braking cycle ≥ 50%) For hoisting application	400...480	785	20	300
With Active Front End (AFE)	400	650	100	300
	480	770	20	300
<b>For ATV71HD90N4...HC50N4 and ATV71QD90N4...QC50N4 drives</b>				
Drive only	400...480	560...680	100	300
With braking resistor (braking cycle = 5%)	400...480	785	100	300
With braking resistor (braking cycle ≥ 50%) For hoisting application	400...480	785	30	300
With Active Front End (AFE)	400	650	100	300
	480	770	30	300

(1) A sinus filter is required for use with longer cables (see page 1/84).



VW3A5101

Motor chokes								
For drives	Maximum motor cable length (1)			Losses W	Nominal current A	Order in multiples of	Unit reference	Weight kg
	Maximum switching frequency kHz	Shielded	Unshielded					
		m	m					
<b>Three-phase supply voltage: 200...240 V 50/60 Hz</b>								
ATV71H075M3...HU22M3	4	150	300	150	12	–	VW3A5101	5.500
ATV71HU30M3...HU75M3	4	200	260	250	48	–	VW3A5102	8.000
		300	300	350	90	–	VW3A5103	10.000
ATV71HD11M3X, HD15M3X	4	150	300	350	90	–	VW3A5103	10.000
ATV71HD18M3X, HD22M3X	2.5	150	300	350	90	–	VW3A5103	10.000
ATV71HD30M3X...HD45M3X	2.5	150	300	430	215	3	VW3A5104	15.500
ATV71HD55M3X, HD75M3X	2.5	150	300	475	314	3	VW3A5105	32.000
<b>Three-phase supply voltage: 380...480 V 50/60 Hz</b>								
ATV71H075N4...HU40N4	4	75	90	150	12	–	VW3A5101	5.500
ATV71W075N4...WU40N4		85	95	250	48	–	VW3A5102	8.000
ATV71P075N4Z...PU40N4Z			160	200	350	90	–	VW3A5103
ATV71HU55N4...HD18N4	4	85	95	250	48	–	VW3A5102	8.000
ATV71WU55N4...WD18N4		160	200	350	90	–	VW3A5103	10.000
ATV71PU55N4Z...PD11N4Z			200	300	430	215	3	VW3A5104
ATV71HD22N4, HD30N4	4	140	170	350	90	–	VW3A5103	10.000
ATV71WD22N4, WD30N4		150	300	430	215	3	VW3A5104	15.500
ATV71HD37N4	2.5	97	166	350	90	–	VW3A5103	10.000
ATV71WD37N4		200	300	430	215	3	VW3A5104	15.500
ATV71HD45N4...HD75N4	2.5	150	300	430	215	3	VW3A5104	15.500
ATV71WD45N4...WD75N4	2.5	200	300	430	215	3	VW3A5104	15.500
ATV71HD90N4	2.5	200	300	430	215	3	VW3A5104	15.500
ATV71QD90N4								
ATV71HC11N4, HC13N4	2.5	150	250	475	314	3	VW3A5105	32.000
ATV71QC11N4, QC13N4								
ATV71HC16N4, HC20N4	2.5	250	300	530	481	3	VW3A5106	58.000
ATV71QC16N4, QC20N4								
Motor P 220 kW								
Motor P 250 kW	2.5	200	250	598	759	3	VW3A5107	93.000
ATV71HC28N4, HC31N4	2.5	200	250	598	759	3	VW3A5107	93.000
ATV71QC31N4								
ATV71HC40N4	2.5	250	300	682	1188	3	VW3A5108	120.000
ATV71QC40N4								
Motor P 355 kW	2.5	250	300	682	1188	3	VW3A5108	120.000
Motor P 400 kW	2.5	250	300	682	1188	3	VW3A5108	120.000
ATV71HC50N4	2.5	250	300	682	1188	3	VW3A5108	120.000
ATV71QC50N4								

(1) Cable length depends on the drive/motor choke combination. For an application with several motors connected in parallel, the cable length must include all cabling.

Recommended cable types:

- Shielded cables: "GORSE" cable, type GUOSTV-LS/LH; "PROTOFLEX" cable, type EMV2YSL CY
- Unshielded cables: "GORSE" cable, type H07 RN-F4GXX; "BELDEN" cable, type 2950X

Motor chokes (continued)								
For drives	Maximum motor cable length (1)			Losses	Nominal current	Order in multiples of	Unit reference	Weight
	Maximum switching frequency	Shielded	Unshielded					
	kHz	m	m	W	A			kg
<b>Three-phase supply voltage: 500...600 V 50/60 Hz (2)</b>								
ATV71HU15S6X... HU75S6X	2.5	50	100	250	48	–	VW3A5102	8.000
		75	150	350	90	–	VW3A5103	10.000
		150	250	430	215	3	VW3A5104	15.500
		250	400	860	215	3	2 x VW3A5104	31.000
<b>Three-phase supply voltage: 500...690 V 50/60 Hz (3)</b>								
ATV71HU22Y...HU75Y	4	45	70	150	12	–	VW3A5101	5.500
		45	70	250	48	–	VW3A5102	8.000
		65	100	350	90	–	VW3A5103	10.000
ATV71HD11Y...HD30Y	4	45	70	250	48	–	VW3A5102	8.000
		65	100	350	90	–	VW3A5103	10.000
		100	150	430	215	3	VW3A5104	15.500
ATV71HD37Y...HD55Y	2.5	65	100	350	90	3	VW3A5103	10.000
		100	150	430	215	3	VW3A5104	15.500
ATV71HD75Y...HD90Y	2.5	100	150	430	215	3	VW3A5104	15.500
ATV71HC11Y, HC13Y ATV71QC11Y, QC13Y	2.5	100	150	475	314	3	VW3A5104	15.500
ATV71HC16Y, HC20Y ATV71QC16Y, QC20Y	2.5	150	250	475	314	3	VW3A5105	32.000
ATV71HC25Y, HC31Y ATV71QC25Y, QC31Y	2.5	150	250	530	481	3	VW3A5106	58.000
ATV71HC40Y, HC50Y ATV71QC40Y, QC50Y	2.5	150	250	598	759	3	VW3A5107	93.000
ATV71HC63Y ATV71QC63Y	2.5	150	250	682	1188	3	VW3A5108	120.000

**IP 20 protection kits**

Description	For motor chokes	Reference	Weight kg
Mechanical kit including an IP 20 cover and cable clips	VW3A5104, 105	VW3A9612	–
	VW3A5106...108	VW3A9613	–

(1) Cable length depends on the drive/motor choke combination. For an application with several motors connected in parallel, the cable length must include all cabling.

Recommended cable types:

■ Shielded cables: "GORSE" cable, type GUOSTV-LS/LH; "PROTOFLEX" cable, type EMV2YSL CY

■ Unshielded cables: "GORSE" cable, type H07 RN-F4GXX; "BELDEN" cable, type 2950X

(2) Maximum length given for a 600 V 60 Hz three-phase supply voltage.

(3) Maximum length given for a 690 V 50 Hz three-phase supply voltage.

## Presentation

Sinus filters allow Altivar 71 drives to operate with long motor cables (300 m to 1000 m) and ensure significant motor noise reduction.

For ATV71H075M3...HD45M3X, ATV71●075N4...●D75N4, ATV71HC11Y...HC63Y and ATV71P●●●N4Z drives, they also allow the use of unshielded cables while still complying with the standards relating to radiated EMC emissions (EN 55011 class A Gr1 and IEC/EN 61800-3 category C2).

For ATV71HD55M3X, HD75M3X, ATV71HD90N4...HC50N4 and ATV71QD90N4...QC50N4 drives, the sinus filter only operates with a voltage/frequency drive ratio.

**Note:** Please refer to the Programming Manual when setting up the sinus filter.

## Applications

- For ATV71H075M3...HD45M3X, ATV71●H075N4...●D75N4, ATV71HC11Y...HC63Y and ATV71P●●●N4Z, applications requiring:
  - Long cable runs
  - Mechanical restrictions preventing the use of shielded cables
  - An intermediate transformer between the drive and the motor
  - A reduction in motor noise
  - Motors connected in parallel
- For ATV71HD55M3X, HD75M3X, ATV71HD90N4...HC50N4 and ATV71QD90N4...QC50N4 drives, applications requiring:
  - An intermediate transformer between the drive and the motor
  - A reduction in electromagnetic motor noise

References				
For drives	Nominal current	Losses at 100 Hz	Reference	Weight
	A	W		
<b>Three-phase supply voltage: 200...240 V 50/60 Hz</b>				
ATV71H075M3, HU15M3 (1)	11	50	VW3A5201	8.000
ATV71HU22M3, HU30M3	16	70	VW3A5202	11.000
ATV71HU40M3... HU75M3	33	120	VW3A5203	22.000
ATV71HD11M3X, HD15M3X	66	180	VW3A5204	45.000
ATV71HD18M3X, HD22M3X	95	250	VW3A5205	60.000
ATV71HD30M3X... HD45M3X	180	400	VW3A5206	120.000
ATV71HD55M3X, HD75M3X	300	1360	VW3A5208	165.000
<b>Three-phase supply voltage: 380...480 V 50/60 Hz</b>				
ATV71H075N4...HU40N4 (1) ATV71W075N4...WU40N4 ATV71P075N4Z...PU40N4Z	11	50	VW3A5201	8.000
ATV71HU55N4 ATV71WU55N4 ATV71PU55N4Z	16	70	VW3A5202	11.000
ATV71HU75N4...HD15N4 ATV71WU75N4...WD15N4 ATV71PU75N4Z, PD11N4Z	33	120	VW3A5203	22.000
ATV71HD18N4... HD30N4 ATV71WD18N4...WD30N4	66	180	VW3A5204	45.000
ATV71HD37N4, HD45N4 ATV71WD37N4, WD45N4	95	250	VW3A5205	60.000
ATV71HD55N4, HD75N4 ATV71WD55N4, WD75N4	180	400	VW3A5206	120.000
ATV71HD90N4, HC11N4 ATV71QD90N4, QC11N4	200	945	VW3A5207	130.000
ATV71HC13N4, HC16N4 ATV71QC13N4, QC16N4	300	1360	VW3A5208	165.000
ATV71HC20N4 ATV71QC20N4	400	1900	VW3A5209	190.000
ATV71HC25N4 ATV71QC25N4	Motor P 220 kW	400	VW3A5209	190.000
	Motor P 250 kW	600	VW3A5210	260.000
ATV71HC28N4, HC31N4 ATV71QC31N4	600	2370	VW3A5210	260.000
ATV71HC40N4 ATV71QC40N4	Motor P 355 kW	600	VW3A5210	260.000
	Motor P 400 kW	1200	VW3A5211	600.000
ATV71HC50N4 ATV71QC50N4	1200	5150	VW3A5211	600.000
ATV71HC11Y...HC16Y	240	1500	VW3A5212	210.000
ATV71HC20Y...HC31Y	460	2800	VW3A5213	300.000
ATV71HC40Y...HC63Y	900	4810	VW3A5214	400.000

(1) For ATV71H075M3, ATV71HU15M3 and ATV71HU15N4 drives, it is advisable to use a lower power motor with a sinus filter.

1

DF526151



DF526153



PF101002



GV2L20  
+  
LC1D25●●  
+  
ATV71HU22M3

### Applications

Circuit-breaker/contactor/drive combinations can be used to ensure continuous service of the installation with optimum safety.

The type of circuit-breaker/contactor coordination selected can reduce maintenance costs in the event of a motor short-circuit by minimizing the time required to make the necessary repairs and the cost of replacement equipment. The suggested combinations provide type 1 or type 2 coordination depending on the drive rating.

**Type 2 coordination:** A motor short-circuit will not damage the device or affect its settings. The motor starter must be able to operate once the electrical fault has been removed. The electrical isolation provided by the circuit-breaker will not be affected by the short-circuit. Welding of the contactor contacts is permissible if they can be separated easily.

**Type 1 coordination:** The electrical isolation provided by the circuit-breaker will not be affected by the incident and no other elements apart from the contactor are damaged as a result of the motor short-circuit.

The drive controls the motor, provides protection against short-circuits between the drive and the motor and protects the motor cable against overloads. The overload protection is provided by the drive's motor thermal protection. If this protection is removed, external thermal protection must be provided.

Before restarting the installation, the cause of the trip must be removed.

### Motor starters for IP 20 drives

Motor Power (1)	Drive Reference	Circuit-breaker		Line contactor	
		Reference (2)	Rating A	Reference (3) (4)	
kW	HP				
<b>Supply voltage 200...240 V 50/60 Hz single phase - Type 2 coordination</b>					
0.37	0.5	ATV71H075M3	GV2L10	6.3	LC1D18●●
0.75	1	ATV71HU15M3	GV2L14	10	LC1D18●●
1.5	2	ATV71HU22M3	GV2L20	18	LC1D25●●
2.2	3	ATV71HU30M3	GV2L22	25	LC1D25●●
3	–	ATV71HU40M3 (5)	GV2L22	25	LC1D25●●
4	5	ATV71HU55M3 (5)	GV3L40	40	LC1D40●●
5.5	7.5	ATV71HU75M3 (5)	GV3L50	50	LC1D50●●
<b>Supply voltage 200...240 V 50/60 Hz single phase - Type 1 coordination</b>					
0.37	0.5	ATV71H075M3	GV2L14	10	LC1D09●●
0.75	1	ATV71HU15M3	GV2L16	14	LC1D09●●
1.5	2	ATV71HU22M3	GV2L20	18	LC1D09●●
2.2	3	ATV71HU30M3	GV2L32	25	LC1D18●●
3	–	ATV71HU40M3 (5)	GV2L32	25	LC1D18●●
4	5	ATV71HU55M3 (5)	GV3L40	40	LC1D32●●
5.5	7.5	ATV71HU75M3 (5)	GV3L50	50	LC1D38●●

(1) Standard power ratings for 230 V 50/60 Hz 4-pole motors.  
The values expressed in HP conform to the NEC (National Electrical Code).

(2) Breaking capacity of circuit-breakers according to standard IEC 60947-2:

Circuit-breaker	Icu (kA) for 240 V
GV2L	50
GV3L	100

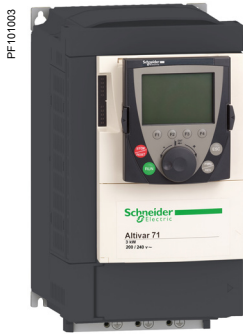
(3) Composition of contactors:  
LC1D●●: 3 poles + 1 N/O auxiliary contact and 1 N/C auxiliary contact.

(4) Replace ●● with the control circuit voltage reference given in the table below:

	Volts ~	24	48	110	220	230	240
LC1D	50 Hz	B5	E5	F5	M5	P5	U5
	60 Hz	B6	E6	F6	M6	–	U6
	50/60 Hz	B7	E7	F7	M7	P7	U7

For other voltages available between 24 V and 660 V, or a DC control circuit, please contact our Customer Care Centre.

(5) A line choke must be added, see page 1/70.



GV2L22  
+  
LC1D25●●  
+  
ATV71HU30M3

### Motor starters for IP 20 drives

Motor Power (1)	Drive Reference	Circuit-breaker		Line contactor		
		Reference (2)	Rating	I <sub>rm</sub>	Reference (3) (4)	
kW	HP		A	A		
<b>Three-phase supply voltage 200...240 V 50/60 Hz - Type 2 coordination</b>						
0.37	0.5	ATV71H037M3	GV2L08	4	–	LC1D09●●
0.75	1	ATV71H075M3	GV2L10	10	–	LC1D09●●
1.5	2	ATV71HU15M3	GV2L16	10	–	LC1D18●●
2.2	3	ATV71HU22M3	GV2L20	14	–	LC1D18●●
3	–	ATV71HU30M3	GV2L22	18	–	LC1D25●●
4	5	ATV71HU40M3	GV2L32	25	–	LC1D25●●
5.5	7.5	ATV71HU55M3	GV3L40	40	–	LC1D40A●●
7.5	10	ATV71HU75M3	GV3L50	50	–	LC1D50A●●
11	15	ATV71HD11M3X	GV3L65	65	–	LC1D65A●●
15	20	ATV71HD15M3X	NS80HMA80	80	480	LC1D80●●
18.5	25	ATV71HD18M3X	NS80HMA80	100	600	LC1D80●●
22	30	ATV71HD22M3X	NSX100●MA100	100	600	LC1D95●●
30	40	ATV71HD30M3X	NSX160●MA150	150	1350	LC1D150●●
37	50	ATV71HD37M3X	NSX160●MA150	150	1350	LC1D150●●
45	60	ATV71HD45M3X	NSX250●MA220	220	1980	LC1D185●●
55	75	ATV71HD55M3X	NSX250●MA220	220	1980	LC1F225●●
75	100	ATV71HD75M3X	NSX400● Micrologic 1.3M	320	1920	LC1F265●●
<b>Three-phase supply voltage 200...240 V 50/60 Hz - Type 1 coordination</b>						
0.37	0.5	ATV71H037M3	GV2L08	4	–	LC1D09●●
0.75	1	ATV71H075M3	GV2L10	10	–	LC1D09●●
1.5	2	ATV71HU15M3	GV2L16	10	–	LC1D09●●
2.2	3	ATV71HU22M3	GV2L20	14	–	LC1D09●●
3	–	ATV71HU30M3	GV2L22	18	–	LC1D18●●
4	5	ATV71HU40M3	GV2L32	25	–	LC1D18●●
5.5	7.5	ATV71HU55M3	GV3L40	40	–	LC1D25●●
7.5	10	ATV71HU75M3	GV3L50	50	–	LC1D32●●
11	15	ATV71HD11M3X	GV3L65	65	–	LC1D40A●●
15	20	ATV71HD15M3X	NS80HMA80	80	480	LC1D50A●●
18.5	25	ATV71HD18M3X	NS80HMA80	100	600	LC1D50A●●
22	30	ATV71HD22M3X	NSX100●MA100	100	600	LC1D80●●
30	40	ATV71HD30M3X	NSX160●MA150	150	1350	LC1D95●●
37	50	ATV71HD37M3X	NSX160●MA150	150	1350	LC1D115●●
45	60	ATV71HD45M3X	NSX250●MA220	220	1980	LC1D115●●
55	75	ATV71HD55M3X	NSX250●MA220	220	1980	LC1D115●●
75	100	ATV71HD75M3X	NSX400● Micrologic 1.3M	320	1920	LC1F185●●

(1) Standard power ratings for 230 V 50/60 Hz 4-pole motors.

The values expressed in HP conform to the NEC (National Electrical Code).

(2) NS80HMA, NSX●●●: Products sold under the Merlin Gerin brand. For references to be completed, replace the dot with the letter corresponding to the circuit-breaker breaking performance (B, F, N, H, S, L).

Breaking capacity of circuit-breakers according to standard IEC 60947-2:

Circuit-breaker	I <sub>cu</sub> (kA) for 240 V						
	B	F	N	H	S	L	
GV2L08, GV2L10	130	–	–	–	–	–	
GV2L16...L32, GV3L40...L65	50	–	–	–	–	–	
NS80HMA	100	–	–	–	–	–	
NSX100●MA...250●MA	–	40	85	90	100	120	
NSX400●	–	–	40	85	100	120	

(3) Composition of contactors:

LC1D●●: 3 poles + 1 N/O auxiliary contact and 1 N/C auxiliary contact.

LC1F●●●: 3 poles. To add auxiliary contacts or other accessories, please refer to the "Motor-starter solutions - Control and protection components" catalogue.

(4) Replace ●● with the control circuit voltage reference given in the table below:

	Volts ~	24	48	110	220	230	240
LC1D	50 Hz	B5	E5	F5	M5	P5	U5
	60 Hz	B6	E6	F6	M6	–	U6
	50/60 Hz	B7	E7	F7	M7	P7	U7
LC1185	50 Hz (LX1 coil)	B5	E5	F5	M5	P5	U5
	60 Hz (LX1 coil)	–	E6	F6	M6	–	U6
	40...400 Hz (LX9 coil)	–	E7	F7	M7	P7	U7
LC1F225	50 Hz (LX1 coil)	B5	E5	F5	M5	P5	U5
	60 Hz (LX1 coil)	–	E6	F6	M6	–	U6
	40...400 Hz (LX9 coil)	–	E7	F7	M7	P7	U7
LC1F265	40...400 Hz (LX1 coil)	B7	E7	F7	M7	P7	U7

For other voltages available between 24 V and 660 V, or a DC control circuit, please contact our Customer Care Centre.



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PF036516



DF526158



PF1074765E



NSX160●MA150  
+  
LC1D115●●  
+  
ATV71HD45N4

Motor starters for IP 20 drives						
Motor Power (1)	Drive Reference	Drive	Circuit-breaker Reference (2)	Rating A	I <sub>rm</sub> A	Line contactor Reference (3) (4)
kW	HP					
<b>Three-phase supply voltage 380...415 V 50/60 Hz - Type 2 coordination</b>						
0.75	1	ATV71H075N4	GV2L08	4	–	LC1D09●●
1.5	2	ATV71HU15N4	GV2L10	6.3	–	LC1D09●●
2.2	3	ATV71HU22N4	GV2L14	10	–	LC1D25●●
3	–	ATV71HU30N4	GV2L16	14	–	LC1D25●●
4	5	ATV71HU40N4	GV2L16	14	–	LC1D25●●
5.5	7.5	ATV71HU55N4	GV2L22	25	–	LC1D25●●
7.5	10	ATV71HU75N4	GV3L32	32	–	LC1D40A●●
11	15	ATV71HD11N4	GV3L40	40	–	LC1D50A●●
15	20	ATV71HD15N4	GV3L50	50	–	LC1D65A●●
18.5	25	ATV71HD18N4	GV3L50	50	–	LC1D65A●●
22	30	ATV71HD22N4	GV3L65	65	–	LC1D65A●●
30	40	ATV71HD30N4	NS80HMA80	80	480	LC1D80●●
37	50	ATV71HD37N4	NSX100●MA100	100	800	LC1D95●●
45	60	ATV71HD45N4	NSX160●MA150	150	1350	LC1D115●●
55	75	ATV71HD55N4	NSX160●MA150	150	1350	LC1D150●●
75	100	ATV71HD75N4	NSX250●MA220	220	1980	LC1F185●●
90	125	ATV71HD90N4	NSX250●MA220	220	1980	LC1F185●●
110	150	ATV71HC11N4	NSX250●MA220	220	1980	LC1F225●●
132	200	ATV71HC13N4	NSX400● Micrologic 1.3M	320	1920	LC1F265●●
160	250	ATV71HC16N4	NSX400● Micrologic 1.3M	320	1920	LC1F330●●
200	300	ATV71HC20N4	NSX630● Micrologic 1.3M	320	1920	LC1F400●●
220	350	ATV71HC25N4	NSX630● Micrologic 1.3M	500	3000	LC1F400●●
250	400	ATV71HC25N4	NSX630● Micrologic 1.3M	500	3000	LC1F500●●
280	450	ATV71HC28N4	NSX630● Micrologic 1.3M	500	3000	LC1F500●●
315	500	ATV71HC31N4	NS800L Micrologic 2 or 5	500	3000	LC1F630●●
355	–	ATV71HC40N4	NS800L Micrologic 2 or 5	800	1600	LC1F630●●
400	600	ATV71HC40N4	NS800L Micrologic 2 or 5	800	1600	LC1F800●●
500	700	ATV71HC50N4	NS1000L Micrologic 2 or 5	1000	2000	LC1BL●●

(1) Standard power ratings for 4-pole motors 50/60 Hz 400 V.  
The values expressed in HP comply with the NEC (National Electrical Code).  
(2) NS80HMA, NSX●●●, NS800L, NS1000L: Products sold under the Merlin Gerin brand.  
For references to be completed, replace the dot with the letter corresponding to the circuit-breaker breaking performance (B, F, N, H, S, L).  
Breaking capacity of circuit-breakers according to standard IEC 60947-2:

Circuit-breaker	I <sub>cu</sub> (kA) for 400 V	I <sub>cu</sub> (kA) for 400 V					
		B	F	N	H	S	L
GV2L08...L14	130	–	–	–	–	–	–
GV2L16, GV2L22, GV3L32...L65	50	–	–	–	–	–	–
NS80HMA	70	–	–	–	–	–	–
NSX100●MA...250●MA	–	25	36	50	70	100	150
NSX400●, NSX630●	–	–	36	50	70	100	150
NS800L, NS1000L	–	–	–	–	–	–	150

(3) Composition of contactors:  
LC1D●●: 3 poles + 1 N/O auxiliary contact and 1 N/C auxiliary contact.  
LC1F●●●, LC1B: 3 poles. To add auxiliary contacts or other accessories, please refer to the "Motor-starter solutions - Control and protection components" catalogue.

(4) Replace ●● with the control circuit voltage reference given in the table below:

	Volts ~	24	48	110	220	230	240
LC1D	50 Hz	B5	E5	F5	M5	P5	U5
	60 Hz	B6	E6	F6	M6	–	U6
	50/60 Hz	B7	E7	F7	M7	P7	U7
LC1F185	50 Hz (LX1 coil)	B5	E5	F5	M5	P5	U5
	60 Hz (LX1 coil)	–	E6	F6	M6	–	U6
	40...400 Hz (LX9 coil)	–	E7	F7	M7	P7	U7
LC1F225	40...400 Hz (LX1 coil)	B7	E7	F7	M7	P7	U7
LC1F265, F330	40...400 Hz (LX1 coil)	B7	E7	F7	M7	P7	U7
LC1F400...F630	40...400 Hz (LX1 coil)	–	E7	F7	M7	P7	U7
LC1F800	40...400 Hz (LX1 coil)	–	–	FE7	P7	P7	P7
LC1BL	50...400 Hz (WB1 coil)	–	–	F	M	P	U

For other voltages available between 24 V and 660 V, or a DC control circuit, please contact our Customer Care Centre.

PF09516



DF526159



PF1074785E



NSX160●MA150  
+  
LC1D115●●  
+  
ATV71HD45N4

Motor starters for IP 20 drives						
Motor Power (1)	Drive Reference	Drive	Circuit-breaker Reference (2)	Rating	I <sub>rm</sub>	Line contactor Reference (3) (4)
kW	HP			A	A	
<b>Three-phase supply voltage 380...415 V 50/60 Hz - Type 1 coordination</b>						
0.75	1	ATV71H075N4	GV2L08	4	–	LC1D09●●
1.5	2	ATV71HU15N4	GV2L10	6.3	–	LC1D09●●
2.2	3	ATV71HU22N4	GV2L14	10	–	LC1D09●●
3	–	ATV71HU30N4	GV2L16	14	–	LC1D09●●
4	5	ATV71HU40N4	GV2L16	14	–	LC1D18●●
5.5	7.5	ATV71HU55N4	GV2L22	25	–	LC1D25●●
7.5	10	ATV71HU75N4	GV3L32	32	–	LC1D40A●●
11	15	ATV71HD11N4	GV3L40	40	–	LC1D40A●●
15	20	ATV71HD15N4	GV3L50	50	–	LC1D50A●●
18.5	25	ATV71HD18N4	GV3L50	50	–	LC1D50A●●
22	30	ATV71HD22N4	GV3L65	65	–	LC1D65A●●
30	40	ATV71HD30N4	NS80HMA80	80	480	LC1D65A●●
37	50	ATV71HD37N4	NSX100●MA100	100	800	LC1D95●●
45	60	ATV71HD45N4	NSX160●MA150	150	1350	LC1D115●●
55	75	ATV71HD55N4	NSX160●MA150	150	1350	LC1D115●●
75	100	ATV71HD75N4	NSX250●MA220	220	1980	LC1F185●●
90	125	ATV71HD90N4	NSX250●MA220	220	1980	LC1F185●●
110	150	ATV71HC11N4	NSX250●MA220	220	1980	LC1F225●●
132	200	ATV71HC13N4	NSX400● Micrologic 1.3M	320	1920	LC1F265●●
160	250	ATV71HC16N4	NSX400● Micrologic 1.3M	320	1920	LC1F330●●
200	300	ATV71HC20N4	NSX630● Micrologic 1.3M	320	1920	LC1F400●●
220	350	ATV71HC25N4	NSX630● Micrologic 1.3M	500	3000	LC1F400●●
250	400	ATV71HC25N4	NSX630● Micrologic 1.3M	500	3000	LC1F500●●
280	450	ATV71HC28N4	NSX630● Micrologic 1.3M	500	3000	LC1F500●●
315	500	ATV71HC31N4	NS800L Micrologic 2 or 5 (LR OFF)	500	3000	LC1F630●●
355	–	ATV71HC40N4	NS800L Micrologic 2 or 5 (LR OFF)	800	1600	LC1F630●●
400	600	ATV71HC40N4	NS800L Micrologic 2 or 5 (LR OFF)	800	1600	LC1F630●●
500	700	ATV71HC50N4	NS1000L Micrologic 2 or 5 (LR OFF)	1000	2000	LC1F630●●

(1) Standard power ratings for 4-pole motors 50/60 Hz 400 V.

The values expressed in HP comply with the NEC (National Electrical Code).

(2) NS80HMA, NSX●●●, NS800L, NS1000L: Products sold under the Merlin Gerin brand.

For references to be completed, replace the dot with the letter corresponding to the circuit-breaker breaking performance (B, F, N, H, S, L).

Breaking capacity of circuit-breakers according to standard IEC 60947-2:

Circuit-breaker	I <sub>cu</sub> (kA) for 400 V	I <sub>cu</sub> (kA) for 400 V					
		B	F	N	H	S	L
GV2L08...L14	130	–	–	–	–	–	–
GV2L16, GV2L22, GV3L32...L65	50	–	–	–	–	–	–
NS80HMA	70	–	–	–	–	–	–
NSX100●MA...250●MA	–	25	36	50	70	100	150
NSX400●, NSX630●	–	–	36	50	70	100	150
NS800L, NS1000L	–	–	–	–	–	–	150

(3) Composition of contactors:

LC1D●●: 3 poles + 1 N/O auxiliary contact and 1 N/C auxiliary contact.

LC1F●●●: 3 poles. To add auxiliary contacts or other accessories, please refer to the "Motor-starter solutions - Control and protection components" catalogue.

(4) Replace ●● with the control circuit voltage reference given in the table below:

	Volts ~	24	48	110	220	230	240
LC1D	50 Hz	B5	E5	F5	M5	P5	U5
	60 Hz	B6	E6	F6	M6	–	U6
	50/60 Hz	B7	E7	F7	M7	P7	U7
LC1F185	50 Hz (LX1 coil)	B5	E5	F5	M5	P5	U5
	60 Hz (LX1 coil)	–	E6	F6	M6	–	U6
	40...400 Hz (LX9 coil)	–	E7	F7	M7	P7	U7
LC1F225	40...400 Hz (LX1 coil)	B7	E7	F7	M7	P7	U7
LC1F265,F330	40...400 Hz (LX1 coil)	B7	E7	F7	M7	P7	U7
LC1F400...F630	40...400 Hz (LX1 coil)	–	E7	F7	M7	P7	U7
LC1F800	40...400 Hz (LX1 coil)	–	–	FE7	P7	P7	P7
LC1BL	50...400 Hz (WB1 coil)	–	–	F	M	P	U

For other voltages available between 24 V and 660 V, or a DC control circuit, please contact our Customer Care Centre.

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PF036516



DF028168



PF1074765E



NSX160●MA150  
+  
LC1D115●●  
+  
ATV71HD55N4

Motor starters for IP 20 drives

Motor Power (1)	Drive Reference	Drive	Circuit-breaker Reference (2)	Rating A	I <sub>rm</sub> A	Line contactor Reference (3) (4)
<b>Three-phase supply voltage 440...480 V 50/60 Hz - Type 2 coordination</b>						
0.75	1	ATV71H075N4	GV2L08	4	–	LC1D25●●
1.5	2	ATV71HU15N4	GV2L10	6.3	–	LC1D25●●
2.2	3	ATV71HU22N4	GV2L14	10	–	LC1D25●●
3	–	ATV71HU30N4	GV2L14	10	–	LC1D25●●
4	5	ATV71HU40N4	GV2L16	14	–	LC1D25●●
5.5	7.5	ATV71HU55N4	GV2L20	25	–	LC1D25●●
7.5	10	ATV71HU75N4	GV3L25	32	–	LC1D32●●
11	15	ATV71HD11N4	GV3L32	40	–	LC1D40A●●
15	20	ATV71HD15N4	GV3L50	50	–	LC1D50A●●
18.5	25	ATV71HD18N4	GV3L50	50	–	LC1D50A●●
22	30	ATV71HD22N4	GV3L50	50	–	LC1D65A●●
30	40	ATV71HD30N4	GV3L65	65	–	LC1D65A●●
37	50	ATV71HD37N4	NS80HMA80	100	600	LC1D80●●
45	60	ATV71HD45N4	NSX100●MA100	100	600	LC1D115●●
55	75	ATV71HD55N4	NSX160●MA150	150	1350	LC1D115●●
75	100	ATV71HD75N4	NSX250●MA220	220	1980	LC1D185●●
90	125	ATV71HD90N4	NSX250●MA220	220	1980	LC1D185●●
110	150	ATV71HC11N4	NSX250●MA220	220	1980	LC1F185●●
132	200	ATV71HC13N4	NSX250●MA220	220	1980	LC1F265●●
160	250	ATV71HC16N4	NSX400● Micrologic 1.3M	320	1920	LC1F265●●
200	300	ATV71HC20N4	NSX630● Micrologic 1.3M	320	1920	LC1F400●●
220	350	ATV71HC25N4	NSX630● Micrologic 1.3M	320	1920	LC1F400●●
250	400	ATV71HC25N4	NSX630● Micrologic 1.3M	500	3000	LC1F500●●
280	450	ATV71HC28N4	NSX630● Micrologic 1.3M	500	3000	LC1F500●●
315	500	ATV71HC31N4	NS800L Micrologic 2 or 5	500	3000	LC1F630●●
355	–	ATV71HC40N4	NS800L Micrologic 2 or 5	500	3000	LC1F630●●
400	600	ATV71HC40N4	NS800L Micrologic 2 or 5	800	1600	LC1F780●●
500	700	ATV71HC50N4	NS1000L Micrologic 2 or 5	1000	2000	LC1F780●●

(1) Standard power ratings for 400 V 50/60 Hz 4-pole motors.

The values expressed in HP conform to the NEC (National Electrical Code).

(2) NS80HMA, NSX●●●, NS800L, NS1000L: Products sold under the Merlin Gerin brand.

For references to be completed, replace the dot with the letter corresponding to the circuit-breaker breaking performance (B, F, N, H, S, L).

Breaking capacity of circuit-breakers according to standard IEC 60947-2:

Circuit-breaker	I <sub>cu</sub> (kA) for 440 V						
	B	F	N	H	S	L	
GV2L08, GV2L10	130	–	–	–	–	–	
GV2L14...L20	20	–	–	–	–	–	
GV3L25...L65	50	–	–	–	–	–	
NS80HMA	65	–	–	–	–	–	
NSX100●MA...250●MA	–	20	35	50	65	130	
NSX400●, NSX630●	–	–	30	42	65	130	
NS800L, NS1000L	–	–	–	–	–	130	

(3) Composition of contactors:

LC1D●●: 3 poles + 1 N/O auxiliary contact and 1 N/C auxiliary contact.

LC1F●●●: 3 poles. To add auxiliary contacts or other accessories, please refer to the "Motor-starter solutions - Control and protection components" catalogue.

(4) Replace ●● with the control circuit voltage reference given in the table below:

	Volts ~	24	48	110	220	230	240
LC1D	50 Hz	B5	E5	F5	M5	P5	U5
	60 Hz	B6	E6	F6	M6	–	U6
	50/60 Hz	B7	E7	F7	M7	P7	U7
LC1F185	50 Hz (LX1 coil)	B5	E5	F5	M5	P5	U5
	60 Hz (LX1 coil)	–	E6	F6	M6	–	U6
	40...400 Hz (LX9 coil)	–	E7	F7	M7	P7	U7
LC1F265	40...400 Hz (LX1 coil)	B7	E7	F7	M7	P7	U7
LC1F400...F630	40...400 Hz (LX1 coil)	–	E7	F7	M7	P7	U7
LC1F780	40...400 Hz (LX1 coil)	–	–	FE7	P7	P7	P7

For other voltages available between 24 V and 660 V, or a DC control circuit, please contact our Customer Care Centre.

PF095916



DF528158



PF107476SE



NSX160●MA150  
+  
LC1D115●●  
+  
ATV71HD55N4

Motor starters for IP 20 drives						
Motor Power (1)	Drive Reference	Drive	Circuit-breaker Reference (2)	Rating A	I <sub>rm</sub> A	Line contactor Reference (3) (4)
kW	HP					
<b>Three-phase supply voltage 440...480 V 50/60 Hz - Type 1 coordination</b>						
0.75	1	ATV71H075N4	GV2L08	4	–	LC1D09●●
1.5	2	ATV71HU15N4	GV2L10	6.3	–	LC1D09●●
2.2	3	ATV71HU22N4	GV2L14	10	–	LC1D09●●
3	–	ATV71HU30N4	GV2L14	10	–	LC1D09●●
4	5	ATV71HU40N4	GV2L16	14	–	LC1D09●●
5.5	7.5	ATV71HU55N4	GV2L20	25	–	LC1D09●●
7.5	10	ATV71HU75N4	GV3L25	32	–	LC1D25●●
11	15	ATV71HD11N4	GV3L32	40	–	LC1D32●●
15	20	ATV71HD15N4	GV3L50	50	–	LC1D40A●●
18.5	25	ATV71HD18N4	GV3L50	50	–	LC1D40A●●
22	30	ATV71HD22N4	GV3L50	50	–	LC1D50A●●
30	40	ATV71HD30N4	GV3L65	65	–	LC1D65A●●
37	50	ATV71HD37N4	NS80HMA80	100	600	LC1D80●●
45	60	ATV71HD45N4	NSX100●MA100	100	600	LC1D95●●
55	75	ATV71HD55N4	NSX160●MA150	150	1350	LC1D115●●
75	100	ATV71HD75N4	NSX250●MA220	220	1980	LC1D115●●
90	125	ATV71HD90N4	NSX250●MA220	220	1980	LC1D150●●
110	150	ATV71HC11N4	NSX250●MA220	220	1980	LC1F150●●
132	200	ATV71HC13N4	NSX250●MA220	220	1980	LC1F225●●
160	250	ATV71HC16N4	NSX400● Micrologic 1.3M	320	1920	LC1F225●●
200	300	ATV71HC20N4	NSX630● Micrologic 1.3M	320	1920	LC1F330●●
220	350	ATV71HC25N4	NSX630● Micrologic 1.3M	320	1920	LC1F330●●
250	400	ATV71HC25N4	NSX630● Micrologic 1.3M	500	3000	LC1F400●●
280	450	ATV71HC28N4	NSX630● Micrologic 1.3M	500	3000	LC1F500●●
315	500	ATV71HC31N4	NS800L Micrologic 2 or 5	500	3000	LC1F500●●
355	–	ATV71HC40N4	NS800L Micrologic 2 or 5	500	3000	LC1F630●●
400	600	ATV71HC40N4	NS800L Micrologic 2 or 5	800	1600	LC1F630●●
500	700	ATV71HC50N4	NS1000L Micrologic 2 or 5	1000	2000	LC1F630●●

(1) Standard power ratings for 400 V 50/60 Hz 4-pole motors.

The values expressed in HP conform to the NEC (National Electrical Code).

(2) NS80HMA, NSX●●●, NS800L, NS1000L: Products sold under the Merlin Gerin brand.

For references to be completed, replace the dot with the letter corresponding to the circuit-breaker breaking performance (B, F, N, H, S, L).

Breaking capacity of circuit-breakers according to standard IEC 60947-2:

Circuit-breaker	I <sub>cu</sub> (kA) for 440 V						
	B	F	N	H	S	L	
GV2L08, GV2L10	130	–	–	–	–	–	
GV2L14...L20	20	–	–	–	–	–	
GV3L32...L65	50	–	–	–	–	–	
NS80HMA	65	–	–	–	–	–	
NSX100●MA... 250●MA	–	20	35	50	65	90	
NSX400●, NSX630●	–	–	30	42	65	90	
NS800L, NS1000L	–	–	–	–	–	130	

(3) Composition of contactors:

LC1D●●: 3 poles + 1 N/O auxiliary contact and 1 N/C auxiliary contact.

LC1F●●●: 3 poles. To add auxiliary contacts or other accessories, please refer to the "Motor-starter solutions - Control and protection components" catalogue.

(4) Replace ●● with the control circuit voltage reference given in the table below:

	Volts ~	24	48	110	220	230	240
LC1D	50 Hz	B5	E5	F5	M5	P5	U5
	60 Hz	B6	E6	F6	M6	–	U6
LC1F185	50/60 Hz	B7	E7	F7	M7	P7	U7
	50 Hz (LX1 coil)	B5	E5	F5	M5	P5	U5
	60 Hz (LX1 coil)	–	E6	F6	M6	–	U6
LC1F265	40...400 Hz (LX9 coil)	–	E7	F7	M7	P7	U7
	40...400 Hz (LX1 coil)	B7	E7	F7	M7	P7	U7
LC1F400...F630	40...400 Hz (LX1 coil)	–	E7	F7	M7	P7	U7
LC1F780	40...400 Hz (LX1 coil)	–	–	FE7	P7	P7	P7

For other voltages available between 24 V and 660 V, or a DC control circuit, please contact our Customer Care Centre.

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PF058516



DFE26158



DFE107482



NSX160●MA150  
+  
LC1D115●●  
+  
ATV71WD55N4

**Motor starters for IP 54 drives**

Motor Power (1) kW	Drive HP	Drive Reference	Circuit-breaker			Line contactor
			Reference (2)	Rating A	I <sub>rm</sub> A	Reference (3) (4)
<b>Three-phase supply voltage 380...415 V 50/60 Hz - Type 2 coordination</b>						
0.75	1	ATV71W075N4	GV2L08	4	–	LC1D18●●
1.5	2	ATV71WU15N4	GV2L10	6.3	–	LC1D18●●
2.2	3	ATV71WU22N4	GV2L14	10	–	LC1D18●●
3	–	ATV71WU30N4	GV2L16	14	–	LC1D18●●
4	5	ATV71WU40N4	GV2L16	14	–	LC1D18●●
5.5	7.5	ATV71WU55N4	GV2L22	25	–	LC1D25●●
7.5	10	ATV71WU75N4	GV3L32	32	–	LC1D40●●
11	15	ATV71WD11N4	GV3L40	40	–	LC1D40●●
15	20	ATV71WD15N4	GV3L50	50	–	LC1D50●●
18.5	25	ATV71WD18N4	GV3L50	50	–	LC1D50●●
22	30	ATV71WD22N4	GV3L65	65	–	LC1D65●●
30	40	ATV71WD30N4	NS80HMA80	80	480	LC1D65●●
37	50	ATV71WD37N4	NSX100●MA100	100	800	LC1D80●●
45	60	ATV71WD45N4	NSX160●MA150	150	1350	LC1D115●●
55	75	ATV71WD55N4	NSX160●MA150	150	1350	LC1D115●●
75	100	ATV71WD75N4	NSX250●MA150	150	1350	LC1D150●●

**Three-phase supply voltage 440...480 V 50/60 Hz - Type 2 coordination**

0.75	1	ATV71W075N4	GV2L08	4	–	LC1D18●●
1.5	2	ATV71WU15N4	GV2L10	6.3	–	LC1D18●●
2.2	3	ATV71WU22N4	GV2L14	10	–	LC1D18●●
3	–	ATV71WU30N4	GV2L14	10	–	LC1D18●●
4	5	ATV71WU40N4	GV2L16	14	–	LC1D18●●
5.5	7.5	ATV71WU55N4	GV2L22	25	–	LC1D25●●
7.5	10	ATV71WU75N4	GV3L32	32	–	LC1D40●●
11	15	ATV71WD11N4	GV3L40	40	–	LC1D40●●
15	20	ATV71WD15N4	GV3L50	50	–	LC1D50●●
18.5	25	ATV71WD18N4	GV3L50	50	–	LC1D50●●
22	30	ATV71WD22N4	GV3L65	65	–	LC1D65●●
30	40	ATV71WD30N4	NSX100●MA100	100	600	LC1D65●●
37	50	ATV71WD37N4	NSX100●MA100	100	600	LC1D80●●
45	60	ATV71WD45N4	NSX160●MA100	100	600	LC1D115●●
55	75	ATV71WD55N4	NSX160●MA150	150	1350	LC1D115●●
75	100	ATV71WD75N4	NSX160●MA150	150	1350	LC1D115●●

(1) Standard power ratings for 400 V 50/60 Hz 4-pole motors.  
The values expressed in HP conform to the NEC (National Electrical Code).  
(2) NS80HMA, NSX●●●: Products sold under the Merlin Gerin brand.  
For references to be completed, replace the dot with the letter corresponding to the circuit-breaker breaking performance (N, H, L).  
Breaking capacity of circuit-breakers according to standard IEC 60947-2:

Circuit-breaker	I <sub>cu</sub> (kA) for 400 V	I <sub>cu</sub> (kA) for 400 V					
		B	F	N	H	S	L
GV2L08...L14, GV3L32	100	–	–	–	–	–	–
GV2L16, L22, GV3L40...L65	50	–	–	–	–	–	–
NS80HMA	70	–	–	–	–	–	–
NSX100●MA...250●MA	–	25	36	50	70	100	150
Circuit-breaker	I <sub>cu</sub> (kA) for 440 V	I <sub>cu</sub> (kA) for 440 V					
		B	F	N	H	S	L
GV2L08, GV2L10, GV3L32	100	–	–	–	–	–	–
GV2L14...L22	20	–	–	–	–	–	–
GV3L40...L65	50	–	–	–	–	–	–
NSX100●MA, NSX160●MA	–	20	35	50	65	90	130

(3) Composition of contactors:  
LC1D●●: 3 poles + 1 N/O auxiliary contact and 1 N/C auxiliary contact.  
(4) Replace ●● with the control circuit voltage reference given in the table below:

LC1D	Volts ~	24	48	110	220	230	240
		50 Hz	B5	E5	F5	M5	P5
60 Hz		B6	E6	F6	M6	–	U6
50/60 Hz		B7	E7	F7	M7	P7	U7

For other voltages available between 24 V and 660 V, or a DC control circuit, please contact our Customer Care Centre.

DF228131



DF228153



GV2L16  
+  
LC1D18●●  
+  
ATV71PU40N4Z

**Motor starters for IP 20 drives on base plate**

Motor Power (1)		Drive Reference	Circuit-breaker Reference (2)	Rating A	I <sub>rm</sub> A	Line contactor Reference (3) (4)
<b>Three-phase supply voltage 380...415 V 50/60 Hz - Type 2 coordination</b>						
0.75	1	ATV71P075N4Z	GV2L08	4	–	LC1D18●●
1.5	2	ATV71PU15N4Z	GV2L10	6.3	–	LC1D18●●
2.2	3	ATV71PU22N4Z	GV2L14	10	–	LC1D18●●
3	–	ATV71PU30N4Z	GV2L16	14	–	LC1D18●●
4	5	ATV71PU40N4Z	GV2L16	14	–	LC1D18●●
5.5	7.5	ATV71PU55N4Z	GV2L22	25	–	LC1D25●●
7.5	10	ATV71PU75N4Z	GV3L32	32	–	LC1D40●●
<b>Three-phase supply voltage 440...480 V 50/60 Hz - Type 2 coordination</b>						
0.75	1	ATV71P075N4Z	GV2L08	4	–	LC1D18●●
1.5	2	ATV71PU15N4Z	GV2L10	6.3	–	LC1D18●●
2.2	3	ATV71PU22N4Z	GV2L14	10	–	LC1D18●●
3	–	ATV71PU30N4Z	GV2L14	10	–	LC1D18●●
4	5	ATV71PU40N4Z	GV2L16	14	–	LC1D18●●
5.5	7.5	ATV71PU55N4Z	GV2L22	25	–	LC1D25●●
7.5	10	ATV71PU75N4Z	GV3L32	32	–	LC1D40●●

(1) Standard power ratings for 4-pole motors 50/60 Hz 400 V.  
The values expressed in HP comply with the NEC (National Electrical Code).  
(2) Breaking capacity of circuit-breakers according to standard IEC 60947-2:

Circuit-breaker	I <sub>cu</sub> (kA) for 400 V
GV2L08...L14, GV3L32	100
GV2L16, GV2L22	50

(3) Composition of contactors:  
LC1D●●: 3 poles + 1 N/O auxiliary contact and 1 N/C auxiliary contact.  
(4) Replace ●● with the control circuit voltage reference given in the table below:

	Volts ~	24	48	110	220	230	240
LC1D	50 Hz	B5	E5	F5	M5	P5	U5
	60 Hz	B6	E6	F6	M6	–	U6
	50/60 Hz	B7	E7	F7	M7	P7	U7

For other voltages available between 24 V and 660 V, or a DC control circuit, please contact our Customer Care Centre.



1

DF528181



DF528153



101014



GV2L16  
+  
LC1D25●●  
+  
ATV71HU75Y

Motor starters for IP 20 drives

Motor Power (1) kW	Drive Reference	Circuit-breaker		Line contactor		
		Reference (2)	Rating A	I <sub>rm</sub> A	Reference (3) (4)	
<b>Three-phase supply voltage 690 V 50/60 Hz - Type 2 coordination</b>						
2.2	ATV71HU22Y	GV2L10	6.3	78	LC1D25●●	
3	ATV71HU30Y	GV2L10	6.3	78	LC1D25●●	
4	ATV71HU40Y	GV2L14	10	138	LC1D25●●	
5.5	ATV71HU55Y	GV2L14	10	138	LC1D25●●	
7.5	ATV71HU75Y	GV2L16	14	170	LC1D25●●	
11	ATV71HD11Y	GV2L20	18	223	LC1D40●●	
15	ATV71HD15Y	GV2L22	25	327	LC1D40●●	
18.5	ATV71HD18Y	GV3L25	25	350	LC1D40●●	
22	ATV71HD22Y	GV3L32	32	448	LC1D65●●	
30	ATV71HD30Y	GV3L40	40	560	LC1D80●●	
37	ATV71HD37Y	GV3L50	50	700	LC1D80●●	
45	ATV71HD45Y	GV3L65	65	910	LC1D115●●	
55	ATV71HD55Y	NS100LMA100	100	1100	LC1D115●●	
75	ATV71HD75Y	NS100LMA100	100	1100	LC1D115●●	
90	ATV71HD90Y	NS400LMA320	320	2880	LC1F265●●	
110	ATV71HC11Y	NS400LMA320	320	2880	LC1F265●●	
132	ATV71HC13Y	NS400LMA320	320	2880	LC1F265●●	
160	ATV71HC16Y	NS400LMA320	320	2880	LC1F265●●	
200	ATV71HC20Y	NS400LMA320	320	2880	LC1F330●●	
200	ATV71HC25Y	NS630bLB 5 LR OFF	630	5670	LC1F630●●	
250	ATV71HC31Y	NS630bLB 5 LR OFF	630	5670	LC1F630●●	
315	ATV71HC40Y	NS630bLB 5 LR OFF	630	5670	LC1F630●●	
400	ATV71HC50Y	NS630bLB 5 LR OFF	630	5670	LC1F630●●	
500	ATV71HC63Y	NS800LB 5 LR OFF	800	7200	LC1F780●●	

(1) Standard power ratings for 690 V 50 Hz 4-pole motors.

(2) NS●●●: Products sold under the Merlin Gerin brand.

Breaking capacity of circuit-breakers according to standard IEC 60947-2:

Circuit-breaker	I <sub>cu</sub> (kA) for 690 V
GV2L10...L22, GV3L25, GV3L32	4
GV3L40...L65	5
NS●●●L, NS●●●bLB, NS800LB	75

(3) Composition of contactors:

LC1D●●: 3 poles + 1 N/O auxiliary contact and 1 N/C auxiliary contact.

LC1F●●●: 3 poles. To add auxiliary contacts or other accessories, please refer to the "Motor-starter solutions - Control and protection components" catalogue.

(4) Replace ●● with the control circuit voltage reference given in the table below:

	Volts ~	24	48	110	220	230	240
LC1D	50 Hz	B5	E5	F5	M5	P5	U5
	60 Hz	B6	E6	F6	M6	-	U6
	50/60 Hz	B7	E7	F7	M7	P7	U7
LC1F265, F330	40...400 Hz (LX1 coil)	B7	E7	F7	M7	P7	U7
LC1F630	40...400 Hz (LX1 coil)	-	E7	F7	M7	P7	U7
LC1F780	40...400 Hz (LX1 coil)	-	-	F7	M7	P7	U7

For other voltages available between 24 V and 660 V, or a DC control circuit, please contact our Customer Care Centre.

PF103273



Motor starters for IP 20 drives					
Motor Power (1) kW	Drive Reference	Circuit-breaker		Line contactor	
		Reference (2)	Rating A	I <sub>rm</sub> A	Reference (3) (4)
Three-phase supply voltage 690 V 50/60 Hz - Type 1 coordination					
250	ATV71HC25Y	NSX630LMA500	500	–	LC1F400●●
315	ATV71HC31Y	NSX630LMA500	500	–	LC1F500●●
400	ATV71HC40Y	NSX630LMA500	500	–	LC1F630●●
500	ATV71HC50Y	NS630bLB Micrologic 5	630	–	LC1BL33●●
630	ATV71HC63Y	NS800LB Micrologic 5	800	–	LC1BL34●●

- (1) Standard power ratings for 690 V 50 Hz 4-pole motors.  
 (2) NSX630LMA, NS●●●: Products sold under the Merlin Gerin brand.  
 Breaking capacity of circuit-breakers according to standard IEC 60947-2:

Circuit-breaker	I <sub>cu</sub> (kA) for 690 V
NSX630LMA	35
NS630bLB, NS800LB	75

- (3) Composition of contactors:  
 LC1F●●●, LC1BL: 3 poles. To add auxiliary contacts or other accessories, please refer to the "Motor-starter solutions - Control and protection components" catalogue.

- (4) Replace ●● with the control circuit voltage reference given in the table below:

	Volts ~	24	48	110	220	230	240
LC1F	40...400 Hz (LX1 coil)	–	E7	F7	M7	P7	U7
LC1BL	50...400 Hz (WB1 coil)	–	–	F	M	P	U

For other voltages available between 24 V and 660 V, or a DC control circuit, please contact our Customer Care Centre.

PF526089



PF1075865E



NSX630LMA500  
+  
LC1F400  
+  
ATV71HC25Y





## 2 - Altivar 71 Plus variable speed drives

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- **Altivar 71 Plus variable speed drives** ..... page 2/2
- Pre-equipped IP 54 floor-standing enclosure kit ..... page 2/2
- "Ready to use" IP 54 floor-standing enclosure ..... page 2/4
- "Ready to use" IP 23 or IP 54 floor-standing enclosure with  
harmonic filtering ..... page 2/6
- IP 23 or IP 54 enclosure with separate air flows ..... page 2/8
- IP 23 or IP 54 enclosure compact version ..... page 2/12
- Options ..... page 2/16
- **Product reference index**..... page 3/0



# Variable speed drives

## Altivar 71

### Pre-equipped IP 54 floor-standing enclosure kit

2



IP 54 floor-standing enclosure kit

#### Presentation

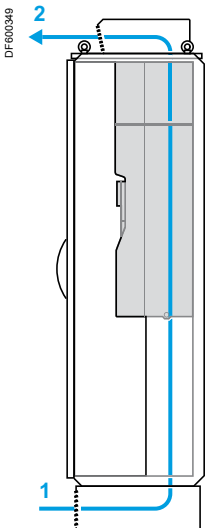
The pre-equipped kit solution is used to create an IP 54 certified floor-standing enclosure for 90 kW to 500 kW, IP 20 Altivar 71 variable speed drives for a 380...480 V three-phase power supply.

This kit has been designed to:

- Reduce setup time through:
  - Simplified assembly
  - Optimized thermal and mechanical dimensioning

The cooling systems used enable the equipment to be installed in difficult and dusty environments.

The temperature must not exceed + 45°C outside the enclosure or +50°C inside the enclosure; the temperature is monitored by a thermostat which can shut down the equipment if these limits are exceeded.



Cooling system with a single air circuit

#### Cooling systems

There are two types of cooling, depending on the model:

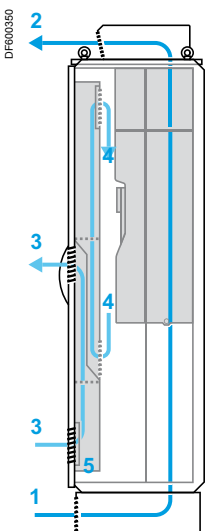
■ **VW3A9541 and VW3A9542** enclosure kits with a single air circuit for the power section:

- Air inlet via the plinth **1**
- Air outlet on the enclosure roof **2**

■ **VW3A9543...548** enclosure kits with three separate air circuits:

- One for the power section:
  - Air inlet via the plinth **1**
  - Air outlet on the enclosure roof **2**
- Two for the control section with cooling system using an air/air exchanger:
  - External air circuit **3** for cooling the heat exchanger **5**
  - Internal air circuit **4** cooled by the heat exchanger **5**

This system makes it possible to isolate the air circulating in the power section from the control section, thereby helping ensuring better protection against the entry of contaminants (in hostile and dusty environments).



Cooling system with three separate air circuits

#### Options

There are two additional 600 and 800 mm empty enclosure kits **VW3A955●** for adding accessories or options.

The additional empty enclosure kit must be installed on the left side of the pre-equipped IP 54 enclosure kit. In this case, the left-hand panel of the pre-equipped IP 54 enclosure kit is mounted on the left side of the additional empty enclosure kit which is supplied without side panels.

#### Description



The kit includes:

- Air/air heat exchanger (except for enclosure kits **VW3A9541** or **VW3A9542**) **1**
- IP 65 graphic display terminal remote mounting kit **2**
- Handle with a pushbutton-operated opening mechanism **3**
- Document holder **4**
- Plinth **5**
- Lower air duct **6**
- EMC plate **7**
- Drive support **8**
- Roof extension **9**
- Upper air duct
- 24 V  $\bar{\text{---}}$  600 mA supplementary power supply
- Fixing accessories, seals
- Technical documentation containing parts lists, electrical diagrams and mechanical assembly drawings

#### References

Description	For use with	Dimensions	Reference	Weight
		W x H x D		
Pre-equipped IP 54 floor-standing enclosure kit	ATV71HD90N4 (1)	600 x 2362 x 642	<b>VW3A9541</b>	220.000
	ATV71HC11N4 (1)	600 x 2362 x 642	<b>VW3A9542</b>	220.000
	ATV71HC13N4 (1)	600 x 2362 x 642	<b>VW3A9543</b>	252.000
	ATV71HC16N4 (1)	600 x 2362 x 642	<b>VW3A9544</b>	252.000
	ATV71HC20N4 (1) without braking unit ATV71HC25N4 (1) without braking unit ATV71HC28N4 (1) without braking unit	800 x 2362 x 642	<b>VW3A9545</b>	300.000
	ATV71HC20N4 (1) with braking unit VW3A7101 (2) ATV71HC25N4 (1) with braking unit VW3A7101 (2) ATV71HC28N4 (1) with braking unit VW3A7101 (2)	800 x 2362 x 642	<b>VW3A9546</b>	300.000
	ATV71HC31N4 (1) without braking unit ATV71HC40N4 (1) without braking unit	1000 x 2362 x 642	<b>VW3A9547</b>	360.000
	ATV71HC50N4 (1) without braking unit	1200 x 2362 x 642	<b>VW3A9548</b>	470.000
	VW3A7102 braking unit	600 x 2362 x 642	<b>VW3A9549</b> (3)	252.000
	<b>600 mm additional empty enclosure kit</b>	Options and accessories (4)	600 x 2209 x 642	<b>VW3A9550</b>
<b>800 mm additional empty enclosure kit</b>	Options and accessories (4)	800 x 2209 x 642	<b>VW3A9551</b>	210.000

(1) Drive to be ordered separately (see page 1/15).

(2) Braking unit for ATV71HC31N4...HC50N4 drives to be ordered separately (see page 1/56).

(3) Enclosure kit VW3A9549 is designed to take braking unit VW3A7102 for ATV71HC31N4...HC50N4 high-power drives; it is mounted on the left of enclosure kit VW3A9547 or VW3A9548. The braking unit must be ordered separately (see page 1/56).

(4) For any additional information, please contact our Customer Care Centre.

# Variable speed drives

## Altivar 71 Plus

“Ready to use” IP 54 floor-standing enclosure

2

PF069305



“Ready to use” IP 54 floor-standing enclosure

### Presentation

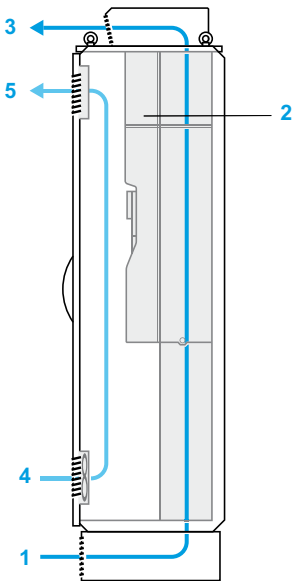
Altivar 71 variable speed drives can also be supplied in a “ready to use” IP 54 certified floor-standing enclosure, which makes it possible to achieve an IP 54 degree of protection for Altivar 71 IP 20 drives.

This range has been designed to offer a simple and economical “ready to use” solution which keeps setup time to a minimum. The enclosures are supplied ready-assembled and ready to connect, making wiring fast and easy.

This standard version enables the equipment to be made available very quickly.

It covers motor power ratings from 90 kW to 500 kW for a 380...415 V three-phase supply.

DF60351



Cooling system with two separate air circuits

### Cooling system

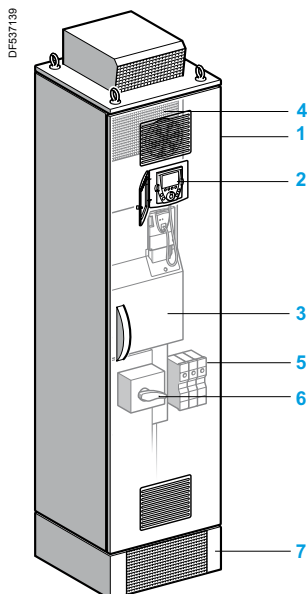
The cooling system used helps to ensure optimum ventilation of the equipment, even in difficult and dusty environments.

Cooling is provided by two separate air circuits:

- One for the power section:
  - Air entry via an intake grille on the plinth **1**
  - Air outlet via a metal cover with protection against water splashes on the enclosure roof **3**
- One for the control section:
  - Air entry via an intake grille with fan (fitted with a filter) on the enclosure door **4**
  - Air outlet through a filter **5**

The incoming air temperature must be 0...+ 40°C.

The temperature is monitored by a thermostat which can shut down the equipment.



### Description

The offer comprises:

- A wired, ready-assembled Sarel “Spacial SF” enclosure **1**
- An ATV71HD90N4...HC50N4 drive on heatsink **3**
- An IP 65 remote mounting kit for graphic display terminal **2**
- A DC choke **4**
- Motor terminals **5**
- A magnetic circuit-breaker **6**
- A plinth **7**

### References

Degree of protection	Motor Power indicated on rating plate (1)	With drive	Dimensions	Reference	Weight
	kW		W x H x D		kg
<b>Three-phase supply voltage 380...415 V 50/60 Hz (2)</b>					
IP 54	90	ATV71HD90N4	600 x 2362 x 642	<b>ATV71ES5D90N4</b>	300.000
	110	ATV71HC11N4	600 x 2362 x 642	<b>ATV71ES5C11N4</b>	300.000
	132	ATV71HC13N4	600 x 2362 x 642	<b>ATV71ES5C13N4</b>	320.000
	160	ATV71HC16N4	600 x 2362 x 642	<b>ATV71ES5C16N4</b>	330.000
	200	ATV71HC20N4	800 x 2362 x 642	<b>ATV71ES5C20N4</b>	440.000
	220	ATV71HC25N4	800 x 2362 x 642	<b>ATV71ES5C25N4</b>	440.000
	250				
	280	ATV71HC28N4	800 x 2362 x 642	<b>ATV71ES5C28N4</b>	440.000
	315	ATV71HC31N4	1400 x 2362 x 642	<b>ATV71ES5C31N4</b>	700.000
	355	ATV71HC40N4	1400 x 2362 x 642	<b>ATV71ES5C40N4</b>	720.000
	400				
	500	ATV71HC50N4	1600 x 2362 x 642	<b>ATV71ES5C50N4</b>	850.000

(1) These values are given for a nominal switching frequency from 2.5...8 kHz for ATV71HD90N4...ATV71HC50N4 drives. Above 2.5 or 4 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 (see derating curves on our website [www.schneider-electric.com](http://www.schneider-electric.com)).

(2) The maximum prospective line  $I_{sc}$  is of 50 kA. These values are given for use with upstream fuses (see the characteristics on our website [www.schneider-electric.com](http://www.schneider-electric.com)).

# Variable speed drives

## Altivar 71 Plus - LH

“Ready to use” IP 23 or IP 54 floor-standing enclosure with harmonic filtering and 4-quadrant operation

2



“Ready to use” IP 23 or IP 54 floor-standing enclosure with harmonic filtering and 4-quadrant operation

### Presentation

The Altivar 71 Plus - LH (Low Harmonic) offer has been designed with harmonic filtering to suit applications requiring a very low harmonic level (THDI ≤ 5%) and it also provides 4-quadrant operation.

They comply with the conditions imposed by standard IEEE 519 - 1992.

Altivar 71 Plus - LH drives are supplied in an IP 23 or IP 54 certified floor-standing enclosure, which makes it possible to achieve an IP 23 or IP 54 degree of protection for IP 20 Altivar 71 drives.

The enclosures are supplied ready-assembled and ready to connect, thus offering a simple and economical “ready to use” solution which keeps setup time to a minimum. Wiring is fast and easy, the setup parameters are factory-set. Thanks to the “ready to use” solution the standard offer is available very quickly.

The standard offer is supplemented by a wide selection of options depending on the drive rating (see pages 2/18 to 2/25).

The offer covers motor power ratings from 75 kW to 500 kW for a 380...415 V Hz, 50/60 Hz three-phase supply voltage and from 630 kW to 2000 kW for a 690 V, 50/60 Hz three-phase supply voltage.

The incoming air temperature must be between 0 and + 40°C.

The internal temperature is monitored by a thermostat which can shut down the equipment.

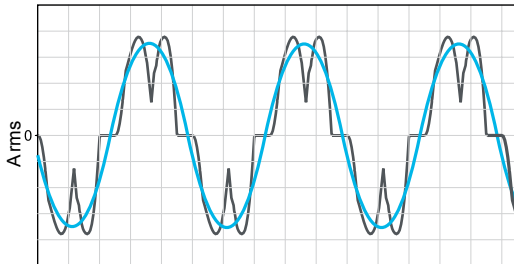
### Harmonic filtering

The harmonic filtering system is used to keep the harmonic level to less than 5%. Its design optimizes motor efficiency and reduces energy consumption by significantly decreasing harmonic distortions.

It also offers the following advantages:

- Maximum motor power maintained in the event of a weak line supply by boosted DC voltage
- Power factor (cos Phi ~ 1) independent of load or of return energy
- Reduction in drive electromagnetic emissions in accordance with standard IEC/EN 61800-3 category C3 due to the integrated filter
- Configurable energy recovery onto the line supply, for example for an installation with diesel generator
- Line supply short-circuits tolerated up to 100 kA

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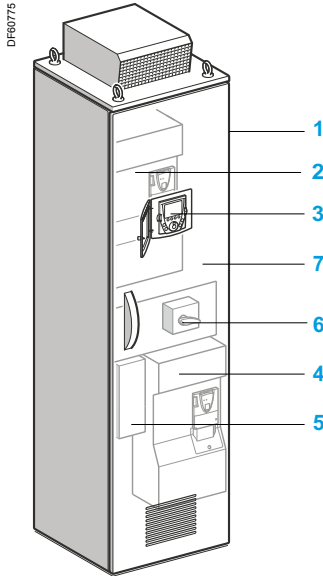


— Harmonic level without harmonic filtering (THDI ~ 48%)  
 — Harmonic level with harmonic filtering (THDI ≤ 5%)

# Variable speed drives

## Altivar 71 Plus - LH

“Ready to use” IP 23 or IP 54 floor-standing enclosure with harmonic filtering and 4-quadrant operation



### Description

The offer comprises:

- A wired, ready-assembled Sarel “Spacial SF” enclosure **1**
- A built-in drive based on ATV71 technology **2**
- An IP 65 remote mounting kit for graphic display terminal **3**
- An active infeed converter **4**
- Filter components including EMC filter **5**
- A switch, fast-acting fuses and motor terminals **6**
- A slot for optional motor choke **7**

### References

Degree of protection	Motor Power indicated on rating plate (1)	With drive	Dimensions	Reference	Weight	
	kW		W x H x D		kg	
<b>Three-phase supply voltage 380...415 V 50/60 Hz (2)</b>						
<b>IP 23</b>	75	ATV71HD75N4	600 x 2157 x 642	<b>ATV71EXC2D75N4H</b>	465.000	
	90	ATV71HD90N4	600 x 2157 x 642	<b>ATV71EXC2D90N4H</b>	480.000	
	110	ATV71HC11N4	800 x 2157 x 642	<b>ATV71EXC2C11N4H</b>	605.000	
	132	ATV71HC13N4	800 x 2157 x 642	<b>ATV71EXC2C13N4H</b>	610.000	
	160	ATV71HC16N4	1200 x 2157 x 642	<b>ATV71EXC2C16N4H</b>	820.000	
	200	ATV71HC20N4	1600 x 2157 x 642	<b>ATV71EXC2C20N4H</b>	980.000	
	220	ATV71HC25N4	1600 x 2157 x 642	<b>ATV71EXC2C25N4H</b>	980.000	
	250					
	315	ATV71HC31N4	2000 x 2157 x 642	<b>ATV71EXC2C31N4H</b>	1455.000	
	355	ATV71HC40N4	2000 x 2157 x 642	<b>ATV71EXC2C40N4H</b>	1465.000	
	400					
	500	ATV71HC50N4	2400 x 2157 x 642	<b>ATV71EXC2C50N4H</b>	1755.000	
	<b>IP 54</b>	75	ATV71HD75N4	600 x 2237 x 642	<b>ATV71EXC5D75N4H</b>	465.000
90		ATV71HD90N4	600 x 2237 x 642	<b>ATV71EXC5D90N4H</b>	480.000	
110		ATV71HC11N4	800 x 2237 x 642	<b>ATV71EXC5C11N4H</b>	600.000	
132		ATV71HC13N4	800 x 2237 x 642	<b>ATV71EXC5C13N4H</b>	605.000	
160		ATV71HC16N4	1200 x 2237 x 642	<b>ATV71EXC5C16N4H</b>	810.000	
200		ATV71HC20N4	1600 x 2237 x 642	<b>ATV71EXC5C20N4H</b>	995.000	
220		ATV71HC25N4	1600 x 2237 x 642	<b>ATV71EXC5C25N4H</b>	995.000	
250						
315		ATV71HC31N4	2000 x 2237 x 642	<b>ATV71EXC5C31N4H</b>	1470.000	
355		ATV71HC40N4	2000 x 2237 x 642	<b>ATV71EXC5C40N4H</b>	1480.000	
400						
500		ATV71HC50N4	2400 x 2237 x 642	<b>ATV71EXC5C50N4H</b>	1770.000	
<b>Three-phase supply voltage 690 V 50/60 Hz (2)</b>						
<b>IP 23</b>	630	ATV71EC63Y (3)	3800 x 2237 x 642	<b>ATV71EXA2C63YH</b>	2940.000	
	800	ATV71EC80Y (3)	3800 x 2237 x 642	<b>ATV71EXA2C80YH</b>	2940.000	
	1000	ATV71EM10Y (3)	3800 x 2237 x 642	<b>ATV71EXA2M10YH</b>	2940.000	
	1200	ATV71EM12Y (3)	7400 x 2237 x 642	<b>ATV71EXA2M12YH</b>	6060.000	
	1500	ATV71EM15Y (3)	7400 x 2237 x 642	<b>ATV71EXA2M15YH</b>	6060.000	
	1800	ATV71EM18Y (3)	7400 x 2237 x 642	<b>ATV71EXA2M18YH</b>	6060.000	
	2000	ATV71EM20Y (3)	7400 x 2237 x 642	<b>ATV71EXA2M20YH</b>	6060.000	
<b>IP 54</b>	630	ATV71EC63Y (3)	3800 x 2237 x 642	<b>ATV71EXA5C63YH</b>	2940.000	
	800	ATV71EC80Y (3)	3800 x 2237 x 642	<b>ATV71EXA5C80YH</b>	2940.000	
	1000	ATV71EM10Y (3)	3800 x 2237 x 642	<b>ATV71EXA5M10YH</b>	2940.000	
	1200	ATV71EM12Y (3)	7400 x 2237 x 642	<b>ATV71EXA5M12YH</b>	6060.000	
	1500	ATV71EM15Y (3)	7400 x 2237 x 642	<b>ATV71EXA5M15YH</b>	6060.000	
	1800	ATV71EM18Y (3)	7400 x 2237 x 642	<b>ATV71EXA5M18YH</b>	6060.000	
	2000	ATV71EM20Y (3)	7400 x 2237 x 642	<b>ATV71EXA5M20YH</b>	6060.000	

(1) These values are given for a nominal switching frequency of 2.5 kHz for ATV71HD75N4...HC50N4 drives for use in continuous operation. The switching frequency is adjustable from 1...16 kHz up to ATV71HD75N4 and from 2.5...8 kHz for ATV71HD90N4...ATV71HC50N4 drives. Above 2.5 or 4 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 (see derating curves on our website [www.schneider-electric.com](http://www.schneider-electric.com)).

(2) The maximum prospective I<sub>sc</sub> if of 100 kA. These values are given for use with a circuit-breaker, which is available as an option, or fuses placed upstream (see the characteristics on our website [www.schneider-electric.com](http://www.schneider-electric.com)).

(3) Reference of the drive mounted in the enclosure; this reference cannot be ordered on its own.



# Variable speed drives

## Altivar 71 Plus

IP 23 or IP 54 enclosure with separate air flows

2

### Presentation

The Altivar 71 Plus offer with separate air flows has been designed to meet requirements for harsh and highly polluted environments.

Altivar 71 variable speed drives are supplied ready-assembled in an IP 23 or IP 54 floor-standing enclosure to facilitate their installation and setup, while helping ensure optimum ventilation.

The enclosures are supplied ready to connect.

The offer comprises two versions:

■ The **ATV71EXS5●●●●●** version consists of a single enclosure providing IP 54 protection.

It covers motor power ratings from 500 kW to 2000 kW with three types of power supply:

- 380...415 V three-phase, 90 kW to 500 kW (**ATV71EXS5●●●●N4**)
- 500 V three-phase, 90 kW to 500 kW (**ATV71EXS5●●●●N**)
- 690 V three-phase, 110 kW to 630 kW (**ATV71EXS5●●●●Y**)

Two separate cooling circuits for the control section and the power section help ensure optimum enclosure ventilation.

■ The **ATV71EXA●●●●●** version consists of a set of 4 or more enclosures providing IP 23 or IP 54 protection, depending on the model.

It covers motor power ratings from 500 kW to 2000 kW with three types of power supply:

- 380...415 V three-phase, 500 kW to 1300 kW (**ATV71EXA●●●●N4**)
- 500 V three-phase, 500 kW to 1500 kW (**ATV71EXA●●●●N**)
- 690 V three-phase, 600 kW to 2000 kW (**ATV71EXA●●●●Y**)

Two separate cooling circuits also help ensure enclosure ventilation, one for the control section and one for the power section.

In addition, a water circuit integrated in the power enclosure helps ensure excellent ventilation.

The incoming air temperature must be between 0°C and +40°C (-10°C and +40°C with enclosure heater) and may reach +50°C with derating (class 3K3 according to IEC/EN 60721-3-3).

The internal temperature is monitored by a thermostat which can shut down the equipment.

The entire range includes the choice of:

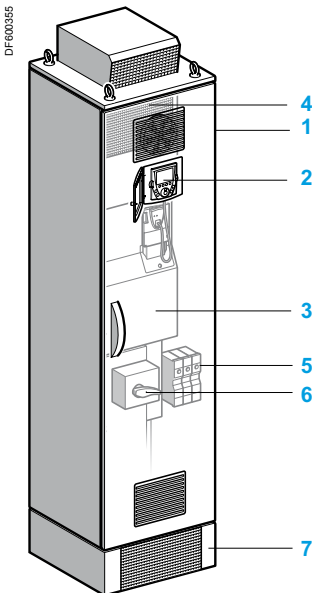
- A standard offer
- A modular offer, in which a wide selection of options can be incorporated depending on the drive rating

### Standard ATV71EXS5●●●●● offer

This consists of:

- A wired, ready-assembled Sarel "Spacial SF" enclosure **1**
- An ATV71HD90N4...HC50N4 or ATV71HC11Y...HC63Y drive on heatsink **3**
- An IP 65 remote mounting kit for graphic display terminal **2**
- A DC choke **4** (ATV71EXS5●●●●N4) or a line choke in an additional enclosure (ATV71EXS5●●●●N and ATV71EXS5●●●●Y)
- Motor terminals **5**
- A switch and fast-acting fuses **6**
- A plinth **7**

See pages 2/10 and 2/11.



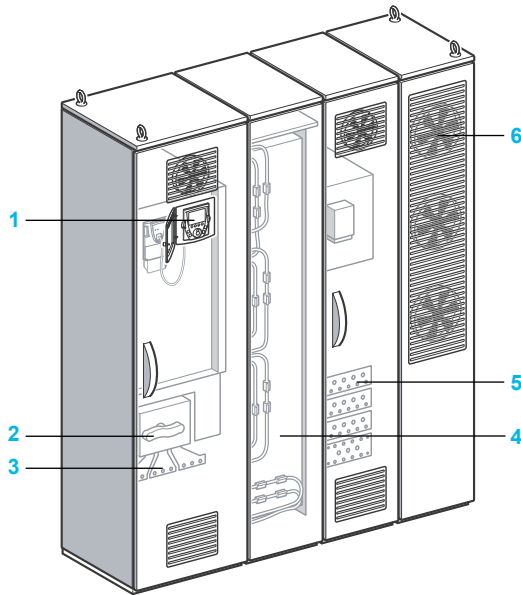
Standard ATV71EXS5●●●●● offer

# Variable speed drives

## Altivar 71 Plus

IP 23 or IP 54 enclosure with separate air flows

DF504387



Standard ATV71EXA offer

### Standard ATV 71EXA offer

The ATV71EXA offer is supplied in wired, ready-assembled Sarel "Spacial SF" enclosures.

Configuration example for a standard ATV71EXA offer:

- An enclosure for the power supply with an IP 65 remote mounting kit for graphic display terminal 1, a switch 2, terminals 3 and fast-acting fuses
- An enclosure for the power section cooled by an integrated air circuit 4
- An enclosure with motor connection terminals 5
- An enclosure for the power section cooling circuit with heat exchanger and fans 6

See pages 2/8 and 2/9.

### Modular offer

This consists of:

- The ATV71EXS5 or ATV71EXA standard separate air flow offer
- One or more options (see pages 2/16 to 2/25)

As well as these specific options, the options available for Altivar 71 drives can be used, at the same rating, with the enclosed drives offer (see the summary tables of possible drive, option and accessory combinations on pages 1/34, 1/35 and 1/38 to 1/43).

For any configuration other than those shown on pages 2/16 to 2/25, please contact our Customer Care Centre.

### Common options

These options can be integrated, whatever the enclosure model, without any need for modifications to the enclosure:

- Adapter for 115 V ~ logic inputs
- Encoder interface cards
- I/O expansion cards
- Controller Inside programmable card
- Modbus TCP Daisy Chain, EtherNet/IP, DeviceNet, INTERBUS, CC-Link, Modbus/Uni-Telway, PROFIBUS DP V0 or V1, EtherCAT communication cards
- "Preventa type AC" or "Preventa type ATE" fault relay
- PTC relays, PT100 relays
- Motor heater
- Additional 24 V power supply
- Enclosure lighting
- Emergency stop button
- Key switch (Local/Remote)
- Power supply circuit for external fan

See pages 2/16 and 2/17. For other options, please contact our Customer Care Centre.

### Options dependent on the drive rating

These options depend on the drive rating. Some may lead to modification of the size of the enclosure:

- Braking unit
- Isolating handle for switch
- Circuit-breaker
- Line contactor
- Control transformer
- Ammeter
- Enclosure heater
- Motor choke
- Sinus filter
- Air conditioning

See pages 2/18 to 2/25. For other options, please contact our Customer Care Centre.

# Variable speed drives

## Altivar 71 Plus

IP 23 or IP 54 enclosure with separate air flows

PF069505



ATV71EXS5●●●●●

2

### IP 23 or IP 54 enclosure with separate air flows

Degree of protection	Motor Power indicated on rating plate (2)	With drive	Dimensions	Reference (1)	Weight
kW		W x H x D		kg	
<b>Three-phase supply voltage 380...415 V 50/60 Hz</b>					
IP 54 (4)	90	ATV71HD90N4	600 x 2362 x 642	ATV71EXS5D90N4	310.000
	110	ATV71HC11N4	600 x 2362 x 642	ATV71EXS5C11N4	310.000
	132	ATV71HC13N4	600 x 2362 x 642	ATV71EXS5C13N4	335.000
	160	ATV71HC16N4	600 x 2362 x 642	ATV71EXS5C16N4	345.000
	200	ATV71HC20N4	800 x 2362 x 642	ATV71EXS5C20N4	400.000
	220	ATV71HC25N4	800 x 2362 x 642	ATV71EXS5C25N4	480.000
	250				
	280	ATV71HC28N4	800 x 2362 x 642	ATV71EXS5C28N4	480.000
	315	ATV71HC31N4	1400 x 2362 x 642	ATV71EXS5C31N4	745.000
	355	ATV71HC40N4	1400 x 2362 x 642	ATV71EXS5C40N4	765.000
400					
500	ATV71HC50N4	1600 x 2362 x 642	ATV71EXS5C50N4	900.000	
IP 23 or IP 54 (5)	630	ATV71EC50N4 (3)	1800 x 2009 x 642	ATV71EXA●C50N4	950.000
	630	ATV71EC63N4 (3)	1800 x 2009 x 642	ATV71EXA●C63N4	950.000
	710	ATV71EC71N4 (3)	3400 x 2009 x 642	ATV71EXA●C71N4	1925.000
	900	ATV71EC90N4 (3)	3400 x 2009 x 642	ATV71EXA●C90N4	1925.000
	1100	ATV71EM11N4 (3)	3400 x 2009 x 642	ATV71EXA●M11N4	1925.000
	1300	ATV71EM13N4 (3)	3400 x 2009 x 642	ATV71EXA●M13N4	1925.000

### Three-phase supply voltage 500 V 50/60 Hz

IP 54 (4)	90	ATV71HC11Y	1000 x 2362 x 642	ATV71EXS5D90N	435.000
	110	ATV71HC13Y	1000 x 2362 x 642	ATV71EXS5C11N	435.000
	132	ATV71HC16Y	1000 x 2362 x 642	ATV71EXS5C13N	485.000
	160	ATV71HC20Y	1200 x 2362 x 642	ATV71EXS5C16N	570.000
	200	ATV71HC25Y	1200 x 2362 x 642	ATV71EXS5C20N	620.000
	250	ATV71HC31Y	1200 x 2362 x 642	ATV71EXS5C25N	620.000
	315	ATV71HC40Y	1600 x 2362 x 642	ATV71EXS5C31N	620.000
	400	ATV71HC50Y	1600 x 2362 x 642	ATV71EXS5C40N	1000.000
	500	ATV71HC63Y	1600 x 2362 x 642	ATV71EXS5C50N	1000.000
	IP 23 or IP 54 (5)	500	ATV71EC63Y (3)	1800 x 2009 x 642	ATV71EXA●C50N
630		ATV71EC80Y (3)	1800 x 2009 x 642	ATV71EXA●C63N	950.000
800		ATV71EM10Y (3)	1800 x 2009 x 642	ATV71EXA●C80N	950.000
900		ATV71EM12Y (3)	3400 x 2009 x 642	ATV71EXA●C90N	1925.000
1100		ATV71EM15Y (3)	3400 x 2009 x 642	ATV71EXA●M11N	1925.000
1300		ATV71EM18Y (3)	3400 x 2009 x 642	ATV71EXA●M13N	1925.000
1500		ATV71EM20Y (3)	3400 x 2009 x 642	ATV71EXA●M15N	1925.000

(1) To obtain the complete enclosure reference, replace the ● with a 2 for IP 23 protection or a 5 for IP 54 protection.

Example for IP 23 protection: ATV71EXA●C63N4 becomes **ATV71EXA2C63N4**.

(2) These values are given for a nominal switching frequency of 2.5 kHz for ATV71HD90N4...HC50N4 and ATV71HC11Y...HC63Y drives for use in continuous operation. The switching frequency is adjustable from 2.5...8 kHz for ATV71HD90N4...ATV71HC50N4 drives and from 2.5...4.9 kHz for ATV71HC11Y...ATV71HC63Y drives.

Above 2.5 or 4 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 (see derating curves on our website [www.schneider-electric.com](http://www.schneider-electric.com)).

(3) Reference of the drive mounted in the enclosure; this reference cannot be ordered on its own. (4) The maximum prospective line Isc is of 50 kA. These values are given for use with upstream fuses (see the characteristics on our website [www.schneider-electric.com](http://www.schneider-electric.com)).

(5) The maximum prospective line Isc is of 100 kA. These values are given for use with upstream fuses (see the characteristics on our website [www.schneider-electric.com](http://www.schneider-electric.com)).

## Variable speed drives

## Altivar 71 Plus

IP 23 or IP 54 enclosure with separate air flows

PF063306



ATV71EXA●●●●●

## IP 23 or IP 54 enclosure with separate air flows (continued)

Three-phase supply voltage 690 V 50/60 Hz

Degree of protection	Motor Power indicated on rating plate (2)	With drive	Dimensions W x H x D	Reference (1)	Weight kg
IP 54 (4)	110	ATV71HC11Y	1000 x 2362 x 642	ATV71EXS5C11Y	435.000
	132	ATV71HC13Y	1000 x 2362 x 642	ATV71EXS5C13Y	485.000
	160	ATV71HC16Y	1000 x 2362 x 642	ATV71EXS5C16Y	485.000
	200	ATV71HC20Y	1200 x 2362 x 642	ATV71EXS5C20Y	570.000
	250	ATV71HC25Y	1200 x 2362 x 642	ATV71EXS5C25Y	620.000
	315	ATV71HC31Y	1200 x 2362 x 642	ATV71EXS5C31Y	620.000
	400	ATV71HC40Y	1200 x 2362 x 642	ATV71EXS5C40Y	910.000
	500	ATV71HC50Y	1600 x 2362 x 642	ATV71EXS5C50Y	1000.000
IP 54 or IP 23 (5)	630	ATV71HC63Y	1600 x 2362 x 642	ATV71EXS5C63Y	1000.000
	630	ATV71EC63Y (3)	1800 x 2009 x 642	ATV71EXA●C63Y	950.000
	800	ATV71EC80Y (3)	1800 x 2009 x 642	ATV71EXA●C80Y	950.000
	1000	ATV71EM10Y (3)	1800 x 2009 x 642	ATV71EXA●M10Y	950.000
	1200	ATV71EM12Y (3)	3400 x 2009 x 642	ATV71EXA●M12Y	1925.000
	1500	ATV71EM15Y (3)	3400 x 2009 x 642	ATV71EXA●M15Y	1925.000
	1800	ATV71EM18Y (3)	3400 x 2009 x 642	ATV71EXA●M18Y	1925.000
	2000	ATV71EM20Y (3)	3400 x 2009 x 642	ATV71EXA●M20Y	1925.000

(1) To obtain the complete enclosure reference, replace the ● with a 2 for IP 23 protection or a 5 for IP 54 protection.

Example for IP 23 protection: ATV71EXA●C63N4 becomes **ATV71EXA2C63N4**.

(2) These values are given for a nominal switching frequency of 2.5 kHz for ATV 71HC11Y...HC63Y drives for use in continuous operation.

The switching frequency is adjustable from 2.5...4.9 kHz for ATV71HC11Y...ATV71HC63Y drives.

Above 2.5 or 4 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 (see derating curves on our website [www.schneider-electric.com](http://www.schneider-electric.com)).

(3) Reference of the drive mounted in the enclosure; this reference cannot be ordered on its own.

(4) The maximum prospective line  $I_{sc}$  is of 50 kA. These values are given for use with upstream fuses (see the characteristics on our website [www.schneider-electric.com](http://www.schneider-electric.com)).

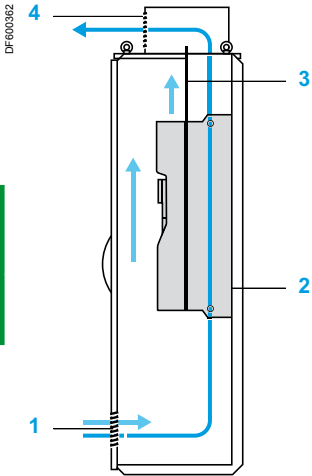
(5) The maximum prospective line  $I_{sc}$  is of 100 kA. These values are given for use with upstream fuses (see the characteristics on our website [www.schneider-electric.com](http://www.schneider-electric.com)).

# Variable speed drives

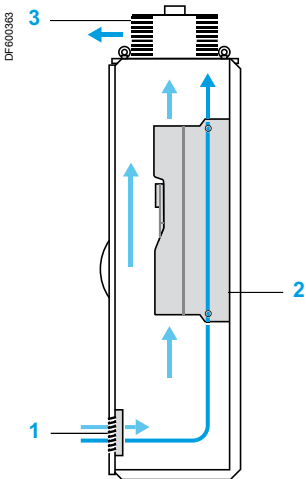
## Altivar 71 Plus

IP 23 or IP 54 floor-standing enclosure compact version

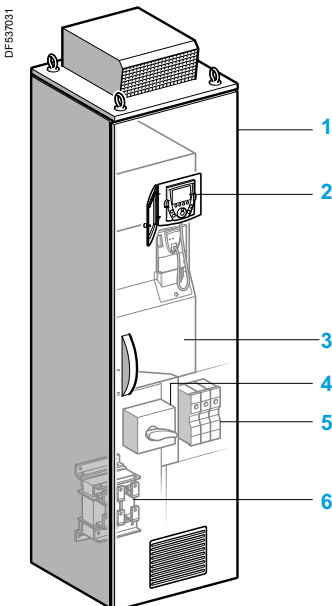
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IP 23 cooling circuit



IP 54 cooling circuit



Standard ATV71EXC offer

### Presentation

The ATV71EXC offer consists of a compact enclosure providing IP 23 or IP 54 protection for industrial environments and infrastructures.

Altivar 71 variable speed drives are supplied ready-assembled in an IP 23 or IP 54 enclosure to facilitate installation and setup and, in particular, to help ensure optimum ventilation.

The enclosure is supplied ready to connect.

One common air circuit provides enclosure ventilation, cooling the power section and the control section. A fan integrated in the drive provides ventilation for the power section.

#### IP 23 air circuit:

- Air intake 1 is via a grille on the lower part of the enclosure door.
- Air outlet 4 is via a metal cover with protection against water splashes on the enclosure roof.
- A separating plate 3 helps preventing internal turbulence.

#### IP 54 air circuit:

- The grille 1 on the lower part of the door is fitted with a protective filter.
- The air outlet 3 on the enclosure roof is fitted with a fan with filter.

The incoming air temperature must be between 0°C and 40°C (-10°C and 40°C with enclosure heater) and may reach +50°C with derating (class 3K3 according to IEC/EN 60721-3-3).

The internal temperature is monitored by a thermostat which can shut down the equipment.

The ATV71EXC offer covers motor power ratings from 90 kW to 630 kW with three types of power supply:

- 380...415 V three-phase, 90 kW to 500 kW (ATV71EXC...N4)
- 500 V three-phase, 90 kW to 500 kW (ATV71EXC...N)
- 690 V three-phase, 110 kW to 630 kW (ATV71EXC...Y)

It includes the choice of:

- A standard compact offer
- A modular offer, in which a wide selection of options can be incorporated depending on the drive rating.

### Standard compact offer

This consists of:

- A wired, ready-assembled Sarel "Spacial SF" enclosure 1
- An ATV71HD90N4D...HC50N4D or ATV71HC11Y...HC63Y drive on heatsink 3
- An IP 65 remote mounting kit for graphic display terminal 2
- A switch and fast-acting fuses 4
- Motor terminals 5
- A line choke 6

See pages 2/14 and 2/15.

**Modular offer**

This consists of:

- The standard compact offer
- One or more options (see pages 2/16 to 2/25)

As well as these specific options, the options available for Altivar 71 drives can be used, at the same rating, with the enclosed drives offer (see the summary tables of possible drive, option and accessory combinations on pages 1/34, 1/35 and 1/40 to 1/43).

For any configuration other than those shown on pages 2/16 to 2/25, please contact our Customer Care Centre.

**Common options**

These options can be integrated, whatever the enclosure model, without any need for modifications to the enclosure:

- Adapter for 115 V ~ logic inputs
- Encoder interface cards
- I/O expansion cards
- Controller Inside programmable card
- Modbus TCP Daisy chain, EtherNet/IP, DeviceNet, INTERBUS, CC-Link, Modbus/Uni-Telway, PROFIBUS DP V0 or V1, EtherCAT communication cards
- "Preventa type AC" or "Preventa type ATE" fault relay
- PTC relays, PT100 relays
- Motor heater
- Additional 24 V --- power supply
- Emergency stop button
- Enclosure lighting
- Key switch (Local/Remote)
- Power supply circuit for external fan

See pages 2/16 and 2/17. For other options, please contact our Customer Care Centre.

**Options dependent on the drive rating**

These options depend on the drive rating. Some may lead to modification of the size of the enclosure:

- Braking unit
- Isolating handle for switch
- Circuit-breaker
- Line contactor
- Control transformer
- Ammeter
- Enclosure heater
- Motor choke
- Sinus filter
- Plinth

See pages 2/18 to 2/25. For other options, please contact our Customer Care Centre.

# Variable speed drives

## Altivar 71 Plus

IP 23 or IP 54 floor-standing enclosure compact version

PF065307



ATV71EXC2●●●●●●

2

### IP 23 or IP 54 floor-standing enclosure compact version

Degree of protection	Motor Power indicated on rating plate (1)	With drive	Dimensions	Reference	Weight
			W x H x D		kg

#### Three-phase supply voltage 380...415 V 50/60 Hz (2)

IP 23	Motor Power (kW)	With drive	Dimensions (W x H x D)	Reference	Weight (kg)
	90	ATV71HD90N4D	600 x 2162 x 642	ATV71EXC2D90N4	315.000
	110	ATV71HC11N4D	600 x 2162 x 642	ATV71EXC2C11N4	315.000
	132	ATV71HC13N4D	600 x 2162 x 642	ATV71EXC2C13N4	335.000
	160	ATV71HC16N4D	600 x 2162 x 642	ATV71EXC2C16N4	350.000
	200	ATV71HC20N4D	800 x 2162 x 642	ATV71EXC2C20N4	385.000
	220	ATV71HC25N4D	800 x 2162 x 642	ATV71EXC2C25N4	485.000
	250				
	280	ATV71HC28N4D	800 x 2162 x 642	ATV71EXC2C28N4	485.000
	315	ATV71HC31N4D	1200 x 2162 x 642	ATV71EXC2C31N4	640.000
	355	ATV71HC40N4D	1200 x 2162 x 642	ATV71EXC2C40N4	680.000
	400				
	500	ATV71HC50N4D	1200 x 2162 x 642	ATV71EXC2C50N4	805.000

IP 54	Motor Power (kW)	With drive	Dimensions (W x H x D)	Reference	Weight (kg)
	90	ATV71HD90N4D	600 x 2262 x 642	ATV71EXC5D90N4	325.000
	110	ATV71HC11N4D	600 x 2262 x 642	ATV71EXC5C11N4	325.000
	132	ATV71HC13N4D	600 x 2262 x 642	ATV71EXC5C13N4	345.000
	160	ATV71HC16N4D	600 x 2262 x 642	ATV71EXC5C16N4	360.000
	200	ATV71HC20N4D	800 x 2262 x 642	ATV71EXC5C20N4	390.000
	220	ATV71HC25N4D	800 x 2262 x 642	ATV71EXC5C25N4	485.000
	250				
	280	ATV71HC28N4D	800 x 2262 x 642	ATV71EXC5C28N4	485.000
	315	ATV71HC31N4D	1200 x 2262 x 642	ATV71EXC5C31N4	660.000
	355	ATV71HC40N4D	1200 x 2262 x 642	ATV71EXC5C40N4	700.000
	400				
	500	ATV71HC50N4D	1200 x 2262 x 642	ATV71EXC5C50N4	835.000

#### Three-phase supply voltage 500 V 50/60 Hz (2)

IP 23	Motor Power (kW)	With drive	Dimensions (W x H x D)	Reference	Weight (kg)
	90	ATV71HC11Y	600 x 2162 x 642	ATV71EXC2D90N	365.000
	110	ATV71HC13Y	600 x 2162 x 642	ATV71EXC2C11N	415.000
	132	ATV71HC16Y	600 x 2162 x 642	ATV71EXC2C13N	415.000
	160	ATV71HC20Y	800 x 2162 x 642	ATV71EXC2C16N	500.000
	200	ATV71HC25Y	800 x 2162 x 642	ATV71EXC2C20N	550.000
	250	ATV71HC31Y	800 x 2162 x 642	ATV71EXC2C25N	550.000
	315	ATV71HC40Y	1200 x 2162 x 642	ATV71EXC2C31N	825.000
	400	ATV71HC50Y	1200 x 2162 x 642	ATV71EXC2C40N	915.000
	500	ATV71HC63Y	1200 x 2162 x 642	ATV71EXC2C50N	915.000

IP 54	Motor Power (kW)	With drive	Dimensions (W x H x D)	Reference	Weight (kg)
	90	ATV71HC11Y	600 x 2262 x 642	ATV71EXC5D90N	360.000
	110	ATV71HC13Y	600 x 2262 x 642	ATV71EXC5C11N	410.000
	132	ATV71HC16Y	600 x 2262 x 642	ATV71EXC5C13N	410.000
	160	ATV71HC20Y	800 x 2262 x 642	ATV71EXC5C16N	500.000
	200	ATV71HC25Y	800 x 2262 x 642	ATV71EXC5C20N	550.000
	250	ATV71HC31Y	800 x 2262 x 642	ATV71EXC5C25N	550.000
	315	ATV71HC40Y	1200 x 2262 x 642	ATV71EXC5C31N	855.000
	400	ATV71HC50Y	1200 x 2262 x 642	ATV71EXC5C40N	945.000
	500	ATV71HC63Y	1200 x 2262 x 642	ATV71EXC5C50N	945.000

(1) These values are given for a nominal switching frequency of 2.5 kHz for ATV71HD90N4D... HC50N4D and ATV71HC11Y...HC63Y drives for use in continuous operation.

The switching frequency is adjustable from 2.5...8 kHz for ATV71HD90N4D...ATV71HC50N4D drives and from 2.5...4.9 kHz for ATV71HC11Y...ATV71HC63Y drives.

Above 2.5 or 4 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 (see derating curves on our website [www.schneider-electric.com](http://www.schneider-electric.com)).

(2) The maximum prospective line I<sub>sc</sub> if of 100 kA. These values are given for use with upstream fuses (see the characteristics on our website [www.schneider-electric.com](http://www.schneider-electric.com)).

## Variable speed drives

## Altivar 71 Plus

## IP 23 or IP 54 floor-standing enclosure compact version

IP 23 or IP 54 floor-standing enclosure compact version (cont'd)					
Degree of protection	Motor Power indicated on rating plate (1)	With drive	Dimensions	Reference	Weight
	kW		W x H x D		kg
<b>Three-phase supply voltage 690 V 50/60 Hz (2)</b>					
IP 23	110	ATV71HC11Y	600 x 2162 x 642	ATV71EXC2C11Y	365.000
	132	ATV71HC13Y	600 x 2162 x 642	ATV71EXC2C13Y	415.000
	160	ATV71HC16Y	600 x 2162 x 642	ATV71EXC2C16Y	415.000
	200	ATV71HC20Y	800 x 2162 x 642	ATV71EXC2C20Y	500.000
	250	ATV71HC25Y	800 x 2162 x 642	ATV71EXC2C25Y	550.000
	315	ATV71HC31Y	800 x 2162 x 642	ATV71EXC2C31Y	550.000
	400	ATV71HC40Y	1200 x 2162 x 642	ATV71EXC2C40Y	825.000
	500	ATV71HC50Y	1200 x 2162 x 642	ATV71EXC2C50Y	915.000
	630	ATV71HC63Y	1200 x 2162 x 642	ATV71EXC2C63Y	915.000
IP 54	110	ATV71HC11Y	600 x 2262 x 642	ATV71EXC5C11Y	360.000
	132	ATV71HC13Y	600 x 2262 x 642	ATV71EXC5C13Y	410.000
	160	ATV71HC16Y	600 x 2262 x 642	ATV71EXC5C16Y	410.000
	200	ATV71HC20Y	800 x 2262 x 642	ATV71EXC5C20Y	500.000
	250	ATV71HC25Y	800 x 2262 x 642	ATV71EXC5C25Y	550.000
	315	ATV71HC31Y	800 x 2262 x 642	ATV71EXC5C31Y	550.000
	400	ATV71HC40Y	1200 x 2262 x 642	ATV71EXC5C40Y	855.000
	500	ATV71HC50Y	1200 x 2262 x 642	ATV71EXC5C50Y	945.000
	630	ATV71HC63Y	1200 x 2262 x 642	ATV71EXC5C63Y	945.000

(1) These values are given for a nominal switching frequency of 2.5 kHz for ATV71HC11Y...HC63Y drives for use in continuous operation.

The switching frequency is adjustable from 2.5...4.9 kHz for ATV71HC11Y...ATV71HC63Y drives.

Above 2.5 or 4 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 (see derating curves on our website [www.schneider-electric.com](http://www.schneider-electric.com)).

(2) The maximum prospective line  $I_{sc}$  is of 100 kA. These values are given for use with upstream fuses (see the characteristics on our website [www.schneider-electric.com](http://www.schneider-electric.com)).



## Variable speed drives

## Altivar 71 Plus

Floor-standing enclosure with separate air flows or compact version

## Common options

Common options without modification of the enclosure (1)		
Description	Reference	Weight kg
Adaptor for 115 V ~ logic inputs	VW3A3E101 (2)	0.200
Encoder interface card with RS 422, 5 V compatible differential outputs	VW3A3E401 (3)	0.200
Encoder interface card with RS 422, 15 V compatible differential outputs	VW3A3E402 (3)	0.200
Encoder interface card with 12 V open collector outputs	VW3A3E403 (3)	0.200
Encoder interface card with 15 V open collector outputs	VW3A3E404 (3)	0.200
Encoder interface card with 12 V push-pull outputs	VW3A3E405 (3)	0.200
Encoder interface card with 15 V push-pull outputs	VW3A3E406 (3)	0.200
Encoder interface card with 24 V push-pull outputs	VW3A3E407 (3)	0.200
Resolver encoder interface card 1.25...5.6 V	VW3A3E408 (3)	0.200
Universal encoder interface card with SinCos, SinCos Hiperface®, EnDat® or SSI 5, 8 or 12 V output	VW3A3E409 (3)	0.200
Encoder interface card with RS 422 compatible differential outputs with encoder emulation (RS 422 ESIM)	VW3A3E411 (3)	0.200
Logic I/O expansion card	VW3A3E201 (4)	0.320
Extended I/O expansion card	VW3A3E202 (4)	0.300
Controller Inside programmable card	VW3A3E501 (5) (6)	0.300
Modbus TCP Daisy Chain communication card	VW3A3E310D (7)	0.300
EtherNet/IP communication card	VW3A3E316 (7)	0.300
DeviceNet communication card	VW3A3E309 (7)	0.300
INTERBUS communication card	VW3A3E304 (7)	0.300
CC-Link communication card	VW3A3E317 (7)	0.320
Modbus Plus communication card	VW3A3E302 (7)	0.300
Modbus/Uni-Telway communication card	VW3A3E303 (7)	0.300
PROFIBUS DP V0 communication card	VW3A3E307 (7)	0.300
PROFIBUS DP V1 communication card	VW3A3E307S371 (7)	0.300

(1) For any other configuration, please contact our Customer Care Centre.

(2) The characteristics of the VW3A3E101 adaptor are identical to those of the VW3A3101 adaptor (see page 1/23 or consult our website [www.schneider-electric.com](http://www.schneider-electric.com)).

(3) The characteristics of the VW3A3E401 and 409...411 encoder interface cards are identical to those of the VW3A3401...409 and 411 encoder interface cards (see page 1/44 or consult our website [www.schneider-electric.com](http://www.schneider-electric.com)).

(4) The characteristics of the VW3A3E201 and VW3A3E202 I/O expansion cards are identical to those of the VW3A3201 and VW3A3202 expansion cards (see page 1/45 or consult our website [www.schneider-electric.com](http://www.schneider-electric.com)).

(5) The characteristics of the VW3A3E501 Controller Inside programmable card are identical to those of the VW3A3501 Controller Inside programmable card (see pages 1/46 to 1/49 or consult our website [www.schneider-electric.com](http://www.schneider-electric.com)).

(6) If the total power consumption does not exceed 200 mA, this card can be powered by the drive. For a power consumption in excess of 200 mA, the additional 24 V --- power supply option, reference VW3AE1401, should be ordered separately (see page 2/17).

(7) The characteristics of the VW3A3E302...326 communication cards are identical to those of the VW3A3302...326 communication cards (see page 1/50 to 1/55 or consult our website [www.schneider-electric.com](http://www.schneider-electric.com)).

## Variable speed drives

## Altivar 71 Plus

Floor-standing enclosure with separate air flows or compact version

Common options

Common options without modification of the enclosure (continued) (1)		
Description	Reference	Weight kg
Remote control terminals X12	VW3AE1201	0.700
Remote option card terminals X13 (2) for I/O expansion cards VW3A3E201 and 202	VW3AE1202	0.900
External 230 V ~ supply terminals	VW3AE1301	0.100
Additional 24 V = power supply, nominal current 2 A (3) (4)	VW3AE1401	2.200
External 24 V = supply terminals	VW3AE1402	0.100
Emergency stop button	VW3AE1501	0.100
“Preventa type AC” fault relay (5)	VW3AE1502	0.100
“Preventa type ATE” fault relay (5)	VW3AE1503	0.100
Enclosure lighting (4)	VW3AE1601	1.500
Key switch (Local/Remote)	VW3AE1801	0.200
Additional electrical input isolation (5)	VW3AE1901	0.100
Additional electrical output isolation (5)	VW3AE1902	0.100
PTC relay (4)	VW3AE2001	0.100
PTC relay with PTB (ATEX) certification (4) (6)	VW3AE2002	0.100
PT100 relay (5) for motor winding	VW3AE2003	0.300
PT100 relay (5) for motor bearings	VW3AE2004	0.300
PT100 relay (5) for line supply transformer	VW3AE2005	0.300
Motor heater 200 W, 230 V (4)	VW3AE2101	0.200
Power supply circuit with protection (4) for 1000 W external fan	VW3AE2102	0.200
Relay for logic output (5)	VW3AE2201	0.100
Voltmeter 380...415 V three-phase supply voltage	VW3AE2301	0.400
Voltmeter 500 V three-phase supply voltage	VW3AE2302	0.400
Voltmeter 690 V three-phase supply voltage	VW3AE2303	0.400
Fan interruption (4)	VW3AE2901	0.100
Modified colors for Australia	VW3AE3001	0.100
Insulation monitoring device on an IT system	VW3AE2601	5.000
Selector for IT system	VW3AE2701	–

(1) For any other configuration, please contact our Customer Care Centre.

(2) The X13 terminals, reference VW3AE1202, include the X12 terminals, reference VW3AE1201.

(3) Essential if the total power consumption of the option cards exceeds 200 mA.

(4) This option requires a 230 V ~ supply, reference VW3AE1301.

(5) This option requires a 24 V = buffer voltage, reference VW3AE1401.

(6) ATEX: Please refer to the ATEX guide which is available on our website [www.schneider-electric.com](http://www.schneider-electric.com).

## Variable speed drives

## Altivar 71 Plus

Floor-standing enclosure with separate air flows or compact version

Options dependent on the drive rating

## Options dependent on the drive rating (1)

Three-phase supply voltage 380...415 V 50/60 Hz

Description	For ATV 71 enclosure	Reference	Weight kg	
Resistance braking unit	EXC●C20N4...C28N4 EXS5C20N4...C28N4	VW3A7E101 (3)	31.000	
	EXC●C31N4...C50N4	VW3AE1003 (2)	190.000	
	EXS5C31N4...C50N4	VW3A7E102 (3)	205.000	
Isolating handle for switch	EXC●D90N4, C11N4 EXS5D90N4, C11N4 EXC●D75N4H...C90N4H	VW3AE0103	1.000	
	EXC●C13N4...C28N4 EXS5C13N4...C28N4 EXC●C11N4H...C25N4H	VW3AE0104	2.000	
	EXC●C31N4...C50N4 EXS5C31N4...C50N4 EXA●C50N4...M13N4 EXC●C31N4H...C50N4H	VW3AE0105	2.000	
	Circuit-breaker (4)	EXC●D90N4, C11N4 EXS5D90N4, C11N4 EXC●D75N4H, D90N4H	VW3AE0142	–
		EXC●C13N4...C16N4 EXS5C13N4...C16N4 EXC●C11N4H, C13N4H	VW3AE0146	1.400
		EXC●C20N4 EXS5C20N4 EXC●C16N4H, C20N4H	VW3AE0147	1.400
		EXC●C25N4...C28N4 EXS5C25N4...C28N4 EXC●C25N4H	VW3AE0148	1.400
EXC●C31N4...C40N4 EXS5C31N4...C40N4 EXC●C31N4H...C40N4H		VW3AE0151	9.400	
EXC●C50N4, C50N4H EXS5C50N4 EXA●C50N4		VW3AE0169	9.400	
EXA●C63N4		VW3AE0170	–	
EXA●C71N4		VW3AE0175	–	
EXA●C90N4		VW3AE0171	–	
EXA●M11N4		VW3AE0172	–	
EXA●M13N4		VW3AE0173	–	
Door handle for circuit-breaker		EXC●D90N4, C11N4 EXS5D90N4, C11N4 EXC●D75N4H, C13N4H	VW3AE0114	1.000
		EXC●C13N4...C25N4 EXS5C13N4...C25N4 EXC●C11N4H...C25N4H	VW3AE0115	2.000
		EXC●C31N4, C50N4 EXS5C31N4, C50N4 EXS5C31N4H, C50N4H EXA●C50N4, C63N4	VW3AE0116	2.000
	Line contactor (5)	EXC●D90N4, C11N4 EXS5D90N4, C11N4	VW3AE0206	7.000
		EXC●C13N4, C16N4 EXS5C13N4	VW3AE0218	10.000
EXS5C16N4		VW3AE0215	7.000	
EXC●C20N4		VW3AE0209	12.000	
EXS5C20N4...C28N4		VW3AE0216	10.000	
EXC●C25N4...C31N4 EXS5C31N4		VW3AE0210	14.000	
EXC●C40N4 EXS5C40N4		VW3AE0212	24.000	
EXC●C50N4 EXS5C50N4		VW3AE0213	28.000	
EXA●C50N4, C63N4 (6)		VW3AE0227	42.000	
EXA●C71N4...M13N4		VW3AE0224	84.000	

(1) For any other configuration, please contact our Customer Care Centre.

(2) This option depends on the drive rating and may lead to modification of the size of the enclosure. Please refer to the dimensions on our website [www.schneider-electric.com](http://www.schneider-electric.com).(3) The characteristics of the VW3A7E101 and VW3A7E102 braking units are identical to those of the VW3A7101 and VW3A7102 braking units (see page 1/56 or consult our website [www.schneider-electric.com](http://www.schneider-electric.com)).

(4) The circuit-breaker replaces the switch in the standard offer.

(5) This option requires a 230 V ~ supply, reference VW3AE1301.

(6) If a line contactor and choke are used, order reference VW3AE0225 (50.000 kg) (see note 2).

## Variable speed drives

## Altivar 71 Plus

Floor-standing enclosure with separate air flows or compact version

Options dependent on the drive rating

## Options dependent on the drive rating (continued) (1)

## Three-phase supply voltage 380...415 V 50/60 Hz (continued)

Description	For ATV 71 enclosure	Reference	Weight kg
Switch for 12-pulse input	EXA●C50N4	VW3AE2415	–
	EXA●C63N4	VW3AE2416	–
	EXA●C71N4	VW3AE2417	–
	EXA●C90N4	VW3AE2418	–
	EXA●M11N4	VW3AE2419	–
	EXA●M13N4	VW3AE2420	–
Line choke	EXA●C50N4...C63N4	VW3AE2501	132.000
	EXA●C71N4	VW3AE2502 (2)	202.000
	EXA●C90N4...M13N4	VW3AE2503 (2)	264.000
500 VA ~ control transformer, 230 V ~ output	EXC●D90N4...C28N4	VW3AE0302	8.000
	EXS5D90N4...C28N4		
800 VA ~ control transformer, 230 V ~ output	EXC●C31N4...C50N4	VW3AE0303	11.000
	EXS5C31N4...C50N4		
Ammeter	EXC●D75N4H	VW3AE0404	0.200
	EXC●D90N4...C13N4	VW3AE0406	0.200
	EXS5D90N4...C13N4		
	EXC●D90N4H...C13N4H		
	EXC●C16N4, C20N4	VW3AE0426	0.200
	EXS5C16N4, C20N4		
	EXC●C16N4H...C25N4H		
	EXC●C25N4...C31N4	VW3AE0409	0.200
	EXS5C25N4...C31N4		
	EXC●C31N4H, C40N4H		
	EXC●C40N4	VW3AE0427	0.200
	EXS5C40N4		
	EXC●C50N4H		
	EXC●C50N4	VW3AE0411	0.200
	EXS5C50N4		
	EXA●C50N4	VW3AE0411 (3)	0.200
	VW3AE0421 (4)		
EXA●C63N4, C71N4	VW3AE0413 (3)	0.200	
	VW3AE0421 (4)		
EXA●C90N4	VW3AE0414 (3)	0.200	
	VW3AE0429 (4)		
EXA●M11N4	VW3AE0415 (3)	0.200	
	VW3AE0423 (4)		
EXA●M13N4	VW3AE0416 (3)	0.200	
	VW3AE0424 (4)		
Enclosure heater (5)	EXC●D90N4...C28N4	VW3AE0501	0.500
	EXS5D90N4...C28N4		
	EXC●D75N4H...C25N4H		
	EXC●C31N4...C50N4	VW3AE0502	1.000
	EXS5C31N4...C50N4		
EXA●C50N4, C63N4	VW3AE0503	1.500	
EXC●C31N4H...C50N4H			
EXA●C71N4...M13N4			

(1) For any other configuration, please contact our Customer Care Centre.

(2) These options depend on the drive rating and may lead to modification of the size of the enclosure. Please refer to the dimensions on our website [www.schneider-electric.com](http://www.schneider-electric.com).

(3) For 6-pulse mounting.

(4) For 12-pulse mounting.

(5) This option requires a 230 V ~ supply, reference VW3AE1301.

## Variable speed drives

## Altivar 71 Plus

Floor-standing enclosure with separate air flows or compact version

Options dependent on the drive rating

## Options dependent on the drive rating (continued) (1)

Three-phase supply voltage 380...415 V 50/60 Hz (continued)

Description	For ATV 71 enclosure	Reference	Weight kg
Motor choke	EXC●D90N4	VW3AE0603	17.000
	EXC●D75N4H, D90N4H		
	EXS5D90N4	VW3AE0615	37.000
	EXC●C11N4, C13N4	VW3AE0604	35.000
	EXC●C11N4H, C13N4H	VW3AE0604	35.000
	EXS5C11N4, C13N4	VW3AE0617	55.000
	EXC●C16N4, C20N4	VW3AE0605	64.000
	EXC●C16N4H, C20N4H		
	EXS5C16N4	VW3AE0619 (2)	157.000
	EXS5C20N4	VW3AE0620	160.000
	EXC●C25N4, C28N4	VW3AE0606	102.000
	EXC●C25N4H		
	EXS5C25N4, C28N4	VW3AE0621 (2)	192.000
	EXC2C31N4	VW3AE0607 (2)	192.000
	EXC●C31N4H		
	EXC5C31N4	VW3AE0622 (2)	197.000
	EXS5C31N4	VW3AE0622 (2)	197.000
	EXC2C40N4	VW3AE0609 (2)	228.000
	EXC●C40N4H		
	EXC5C40N4	VW3AE0613 (2)	228.000
	EXS5C40N4	VW3AE0624 (2)	228.000
	EXC2C50N4	VW3AE0610 (2)	234.000
	EXC●C50N4H		
EXC5C50N4	VW3AE0614 (2)	234.000	
EXS5C50N4	VW3AE0625 (2)	234.000	
EXA●C50N4, C63N4	VW3AE0635	132.000	
EXA●C71N4...M13N4	VW3AE0636	264.000	
Sinus filter (2) (3)	EXC2D90N4	VW3AE0641	318.000
	EXC5D90N4	VW3AE0653	348.000
	EXS5D90N4	VW3AE0665	318.000
	EXC2C11N4	VW3AE0642	318.000
	EXC5C11N4	VW3AE0654	325.000
	EXS5C11N4	VW3AE0666	325.000
	EXC2C13N4	VW3AE0644	365.000
	EXC5C13N4	VW3AE0656	365.000
	EXS5C13N4	VW3AE0668	365.000
	EXC2C16N4	VW3AE0645	373.000
	EXC5C16N4	VW3AE0657	373.000
	EXS5C16N4	VW3AE0669	373.000
	EXC2C20N4	VW3AE0647	384.000
	EXC5C20N4	VW3AE0659	394.000
	EXS5C20N4	VW3AE0671	394.000
	EXC2C25N4, C28N4	VW3AE0648	434.000
	EXC5C25N4, C28N4	VW3AE0660	434.000
	EXS5C25N4, C28N4	VW3AE0672	434.000
	EXC2C31N4	VW3AE0649	445.000
	EXC5C31N4	VW3AE0661	445.000
	EXS5C31N4	VW3AE0673	445.000
	EXC2C40N4	VW3AE0651	870.000
	EXC5C40N4	VW3AE0663	900.000
	EXS5C40N4	VW3AE0675	900.000
	EXC2C50N4	VW3AE0652	900.000
	EXC5C50N4	VW3AE0664	930.000
	EXS5C50N4	VW3AE0676	930.000

(1) For any other configuration, please contact our Customer Care Centre.

(2) These options depend on the drive rating and may lead to modification of the size of the enclosure. Please refer to the dimensions on our website [www.schneider-electric.com](http://www.schneider-electric.com).

(3) The sinus filter option is not compatible with the motor choke option.

## Variable speed drives

## Altivar 71 Plus

Floor-standing enclosure with separate air flows or compact version

Options dependent on the drive rating

Options dependent on the drive rating (continued) (1)					
Three-phase supply voltage 380...415 V 50/60 Hz (continued)					
Description		For ATV 71 enclosure	Reference	Weight kg	
200 mm plinth	Without motor choke	EXC●D90N4...C16N4	VW3AE0801	11.000	
		EXC●D75N4H, D90N4H			
		EXC●C20N4...C28N4	VW3AE0802	13.000	
		EXC●C11N4H, C13N4H			
		EXC●C16N4H	VW3AE0827	22.000	
		EXC●C20N4H, C25N4H	VW3AE0828	26.000	
		EXC●C31N4, C40N4	VW3AE0803	15.000	
		EXC●C31N4H, C40N4H	VW3AE0829	30.000	
		EXC●C50N4	VW3AE0804	17.000	
		EXC●C50N4H	VW3AE0830	34.000	
		EXA●C63N4, C71N4	VW3AE0820 (2)	38.000	
		EXA●C90N4...M14N4	VW3AE0822	69.000	
		With motor choke	EXC●D90N4...C16N4	VW3AE0801	11.000
			EXC●C75N4H, C90N4H		
			EXC●C20N4...C28N4	VW3AE0802	13.000
	EXC●C11N4H, C13N4H				
	EXC●C16N4H		VW3AE0827	22.000	
	EXC●C20N4H, C25N4H		VW3AE0828	26.000	
	EXC●C31N4, C40N4		VW3AE0805	24.000	
	EXC●C31N4H, C40N4H		VW3AE0831	39.000	
	EXC●C50N4		VW3AE0806	26.000	
	EXA●C50N4...C63N4		VW3AE0820 (2)	38.000	
	EXC●C50N4H		VW3AE0832	43.000	
	EXA●C71N4...M13N4		VW3AE0822	69.000	
	With line choke	EXA●C50N4...C63N4	VW3AE0820 (2)	38.000	
		EXA●C71N4...M13N4	VW3AE0824	78.000	
	Plinth for braking unit		EXC●C31N4...C50N4	VW3AE0810	9.000
Plinth for sinus filter		EXC●D90N4...C31N4	VW3AE0816	11.000	
		EXC●C40N4, C50N4	VW3AE0817	13.000	

(1) For any other configuration, please contact our Customer Care Centre.

(2) If a line contactor and choke are used, order reference VW3AE0821 (40.000 kg).

## Variable speed drives

## Altivar 71 Plus

Floor-standing enclosure with separate air flows or compact version

Options dependent on the drive rating

## Options dependent on the drive rating (continued) (1)

Three-phase supply voltage 500 V and 690 V 50/60 Hz

Description	For ATV 71 enclosure		Reference	Weight kg
	500 V	690 V		
Resistance braking unit	EXC●C16N...C25N	EXC●C20Y...C31Y	VW3AE1004 (2)	190.000
	EXS5C16N...C25N	EXS●C20Y...C31Y	VW3A7E103 (2) (3)	205.000
	EXC●C31N...C50N	EXC●C40Y...C63Y	VW3AE1005 (2)	190.000
	EXS5C31N...C50N	EXS5C40Y...C63Y	VW3A7E104 (2) (3)	205.000
Isolating handle for switch	EXC●D90N...C13N	EXC●C11Y...C16Y	VW3AE0103	1.000
	EXS5D90N...C13N	EXS5C11Y...C16Y		
	EXC●C16N...C25N	EXC●C20Y...C31Y	VW3AE0104	2.000
	EXS5C16N...C25N	EXS5C20Y...C31Y		
	EXC●C31N...C50N	EXC●C40Y...C63Y	VW3AE0105	2.000
	EXS5C31N...C50N	EXS5C40Y...C63Y		
Circuit-breaker (4)	EXA●C50N...M15N	EXA●C63Y...M20Y EXA●C63YH...M20YH		
	EXC●D90N	–	VW3AE0141	–
	EXS5D90N	–		–
	EXC●C11N	–	VW3AE0142	–
	EXS5C11N	–		–
	–	EXC●C11Y...C16Y	VW3AE0143	4.000
	EXC●C13N	–	VW3AE0144	–
	EXS5C13N	–		–
	EXC●C16N, C20N	EXC●C20Y	VW3AE0146	1.400
	EXS5C16N, C20N	–		–
	EXC●C25N	EXC●C25Y...C31Y	VW3AE0147	1.400
	EXS5C25N	–		–
	EXC●C31N, C40N	EXC●C40Y...C50Y	VW3AE0150	–
	EXS5C31N, C40N	–		–
	EXC●C50N	EXC●C63Y	VW3AE0151	–
	EXS5C50N	–		–
	EXA●C50N	EXA●C63Y EXA●C63YH	VW3AE0151	–
	EXA●C63N	EXA●C80Y EXA●C80YH	VW3AE0169	–
	EXA●C80N	EXA●M10Y EXA●M10YH	VW3AE0170	–
	EXA●C90N	EXA●M12Y EXA●M12YH	VW3AE0175	–
EXA●M11N	EXA●M15Y EXA●M15YH	VW3AE0171	–	
EXA●M13N	EXA●M18Y EXA●M18YH	VW3AE0172	–	
EXA●M15N	EXA●M20Y EXA●M20YH	VW3AE0173	–	

(1) For any other configuration, please contact our Customer Care Centre.

(2) These options depend on the drive rating and may lead to modification of the size of the enclosure. Please refer to the dimensions on our website [www.schneider-electric.com](http://www.schneider-electric.com).(3) The characteristics of the VW3A7E103 and VW3A7E104 braking units are identical to those of the VW3A7103 and VW3A7104 braking units (see page 1/56 or consult our website [www.schneider-electric.com](http://www.schneider-electric.com)).

(4) The circuit-breaker replaces the switch in the standard offer.

(5) If a line contactor and choke are used, order reference VW3AE0225 (50.000 kg) (see note 2).

## Variable speed drives

## Altivar 71 Plus

Floor-standing enclosure with separate air flows or compact version

Options dependent on the drive rating

## Options dependent on the drive rating (continued) (1)

Three-phase supply voltage 500 V and 690 V 50/60 Hz					
Description	For ATV 71 enclosure		Reference	Weight kg	
	500 V	690 V			
Door handle for circuit-breaker	EXC●D90N...C13N EXS5D90N...C13N	–	VW3AE0114	1.000	
	EXC●C16N...C25N EXS5C16N...C25N	EXC●C11Y...C31Y EXS5C11Y...C31Y	VW3AE0115	2.000	
	EXC●C31N...C50N EXS5C31N...C50N	EXC●C40Y...C63Y EXS5C40Y...C63Y	VW3AE0116	2.000	
	EXA●C50N...C80N	EXA●C63Y...M10Y EXA●C63YH...M10YH	VW3AE0116	2.000	
	EXA●C90N...M15N	EXA●M12Y...M20Y	–	–	
	EXC●D90N EXS5D90N	–	VW3AE0205	4.000	
	EXC●C11N EXS5C11N	–	VW3AE0206	7.000	
Line contactor (2)	EXC●C13N, C16N EXS5C13N, C16N	EXC●C11Y...C16Y EXS5C11Y...C16Y	VW3AE0218	10.000	
	–	EXC●C20Y EXS5C20Y	VW3AE0208	11.000	
	EXC●C20N EXS5C20N	EXC●C25Y EXS5C25Y	VW3AE0209	12.000	
	EXC●C25N EXS5C25N	EXC●C31Y EXS5C31Y	VW3AE0210	14.000	
	–	EXC●C40Y EXS5C40Y	VW3AE0219	22.000	
	EXC●C31N EXS5C31N	–	VW3AE0221	20.000	
	EXC●C40N EXS5C40N	EXC●C50Y EXS5C50Y	VW3AE0212	24.000	
	EXC●C50N EXS5C50N	EXC●C63Y EXS5C63Y	VW3AE0213	28.000	
	EXA●C50N...C80N	EXA●C63Y...M10Y	VW3AE0227 (3)	42.000	
	EXA●C90N...M15N	EXA●M12Y...M20Y	VW3AE0226	84.000	
	Switch for 12-pulse input	EXA●C50N	EXA●C63Y	VW3AE2414	–
		EXA●C63N	EXA●C80Y	VW3AE2415	–
		EXA●C80N	EXA●M10Y	VW3AE2416	–
EXA●C90N		EXA●M12Y	VW3AE2417	–	
EXA●M11N		EXA●M15Y	VW3AE2418	–	
EXA●M13N		EXA●M18Y	VW3AE2419	–	
EXA●M15N		EXA●M20Y	VW3AE2420	–	

(1) For any other configuration, please contact our Customer Care Centre.

(2) This option requires a 230 V ~ supply, reference VW3AE1301.

(3) If a line contactor and choke are used, order reference VW3AE0225 (50.000 kg).



## Variable speed drives

## Altivar 71 Plus

Floor-standing enclosure with separate air flows or compact version

Options dependent on the drive rating

## Options dependent on the drive rating (continued) (1)

Three-phase supply voltage 500 V and 690 V 50/60 Hz (continued)

Description	For ATV 71 enclosure		Reference	Weight kg
	500 V	690 V		
Line choke	EXA●C50N	EXA●C63Y	VW3AE2504	154.000
	EXA●C63N	EXA●C80Y	VW3AE2505	121.000
	EXA●C80N	EXA●M10Y	VW3AE2506	136.000
	EXA●C90N	EXA●M12Y	VW3AE2507	308.000
	EXA●M11N, M13N	EXA●M15Y, M18Y	VW3AE2508	242.000
	EXA●M15N	EXA●M20Y	VW3AE2509	273.000
Ammeter	EXC●D90N	EXC●C11Y	VW3AE0404	0.200
	EXS5D90N	EXS5C11Y		
	EXC●C11N...C16N	EXC●C13Y...C25Y	VW3AE0406	0.200
	EXS5C11N...C16N	EXS5C13Y...C25Y		
	EXC●C20N, C25N	EXC●C31Y, C40Y	VW3AE0426	0.200
	EXS5C20N, C25N	EXS5C31Y, C40Y		
	EXC●C31N...C40N	EXC●C50Y, C63Y	VW3AE0409	0.200
	EXS5C31N...C40N	EXS5C50Y, C63Y EXA●C63YH		
	–	EXA●C63Y	VW3AE0409 (2) VW3AE0428 (3)	0.200
	EXC●C50N	–	VW3AE0427	0.200
	EXS5C50N			
	–	EXA●C80Y EXA●C80YH	VW3AE0427 (2) VW3AE0421 (3)	0.200
	EXA●C50N	–	VW3AE0427 (2) VW3AE0428 (3)	0.200
	EXA●C63N	EXA●M10Y EXA●M10YH	VW3AE0411 (2) VW3AE0421 (3)	0.200
	EXA●C80N, C90N	EXA●M12Y EXA●M12YH	VW3AE0413 (2) VW3AE0421 (3)	0.200
	EXA●M11N	EXA●M15Y EXA●M15YH, C18YH	VW3AE0414 (2) VW3AE0429 (3)	0.200
	EXA●M13N	EXA●M18Y, M20Y EXA●M20YH	VW3AE0415 (2) VW3AE0423 (3)	0.200
	EXA●M15N	–	VW3AE0416 (2) VW3AE0424 (3)	0.200

(1) For any other configuration, please contact our Customer Care Centre.

(2) For 6-pulse mounting.

(3) For 12-pulse mounting (not available for ATV71EXA●●●●YH).

## Variable speed drives

## Altivar 71 Plus

Floor-standing enclosure with separate air flows or compact version

Options dependent on the drive rating

Options dependent on the drive rating (continued) (1)					
Three-phase supply voltage 500 V and 690 V 50/60 Hz (continued)					
Description	For ATV 71 enclosure		Reference	Weight kg	
	500 V	690 V			
Enclosure heater (2)	EXC●D90N...C25N	EXC●C11Y...C31Y	VW3AE0501	0.500	
	EXS5D90N...C25N	EXS5C11Y...C31Y			
	EXC●C31N...C50N	EXC●C40Y...C63Y	VW3AE0502	1.000	
	EXS5C31N...C50N	EXS5C40Y...C63Y			
	EXA●C50N...C80N	EXA●C63Y...M10Y	VW3AE0503	1.500	
EXA●C90N...M15N	EXA●M12Y...M20Y				
	EXA●C63YH...M10YH				
		EXA●M12YH...M20YH	VW3AE0504	2.000	
Motor choke	EXC●D90N, C11N	EXC●C11Y, C13Y	VW3AE0603	17.000	
	EXS5D90N, C11N	EXS5C11Y, C13Y			
	EXC●C13N, C16N	EXC●C16Y, C20Y	VW3AE0604	35.000	
	EXS5C13N, C16N	EXS5C16Y, C20Y			
	EXC●C20N, C25N	EXC●C25Y, C31Y	VW3AE0605	64.000	
	EXS5C20N, C25N	EXS5C25Y, C31Y			
	EXC2C31N, C40N	EXC2C40Y, C50Y	VW3AE0626 (3)	192.000	
	EXC5C31N, C40N	EXC5C40Y, C50Y	VW3AE0628 (3)	192.000	
	EXS5C31N, C40N	EXS5C40Y, C50Y	VW3AE0630 (3)	197.000	
	EXC2C50N	EXC2C63Y	VW3AE0627 (3)	234.000	
	EXC5C50N	EXC5C63Y	VW3AE0629 (3)	234.000	
	EXS5C50N	EXS5C63Y	VW3AE0631 (3)	234.000	
	EXA●C50N...C80N	EXA●C63Y...M10Y	VW3AE0635	132.000	
		EXA●C63YH...M10YH			
	EXA●C90N...M15N	EXA●M12Y...M20Y	VW3AE0636	264.000	
	EXA●M12YH...M20YH				
200 mm plinth	Without option	EXC●D90N...C13N	EXC●C11Y...C16Y	VW3AE0801	11.000
		EXC●C16N...C25N	EXC●C20Y...C31Y	VW3AE0802	13.000
		EXC●C31N...C50N	EXC●C40Y...C63Y	VW3AE0804	17.000
		EXA●C50N...C80N	EXA●C63Y...M10Y	VW3AE0820 (4)	38.000
		EXA●C90N...M15N	EXA●M12Y...M20Y	VW3AE0822	69.000
	With motor choke	EXC●D90N...C13N	EXC●C11Y...C16Y	VW3AE0801	11.000
		EXC●C16N...C25N	EXC●C20Y...C31Y	VW3AE0802	13.000
		EXC●C31N...C50N	EXC●C40Y...C63Y	VW3AE0806	26.000
		EXA●C50N...C80N	EXA●C63Y...M10Y	VW3AE0820 (4)	38.000
		EXA●C90N...M15N	EXA●M12Y...M20Y	VW3AE0822	69.000
	With line choke	EXA●C50N...C80N	EXA●C63Y...M10Y	VW3AE0820 (4)	38.000
		EXA●C90N...M15N	EXA●M12Y...M20Y	VW3AE0824	78.000
Plinth for braking unit	EXC●C16N...C50N	EXC●C20Y...C63Y	VW3AE0810	9.000	

(1) For any other configuration, please contact our Customer Care Centre.

(2) This option requires a 230 V ~ supply, reference VW3AE1301.

(3) These options may lead to modification of the size of the enclosure. Please refer to the dimensions on our website [www.schneider-electric.com](http://www.schneider-electric.com).

(4) If a line contactor and choke are used, order reference VW3AE0821 (40.000 kg).

**4**

490NAD91103	1/55
490NAD91104	1/55
490NTW00002	1/54
490NTW00005	1/54
490NTW00012	1/54
490NTW00040	1/54
490NTW00080	1/54

**A**

ATV71E5D11N4	1/17
ATV71E5D15N4	1/17
ATV71E5D18N4	1/17
ATV71E5D22N4	1/17
ATV71E5D30N4	1/17
ATV71E5D37N4	1/17
ATV71E5D45N4	1/17
ATV71E5D55N4	1/17
ATV71E5D75N4	1/17
ATV71E5U15N4	1/17
ATV71E5U22N4	1/17
ATV71E5U30N4	1/17
ATV71E5U40N4	1/17
ATV71E5U55N4	1/17
ATV71E5U75N4	1/17
ATV71E5075N4	1/17
ATV71ES5C11N4	2/5
ATV71ES5C13N4	2/5
ATV71ES5C16N4	2/5
ATV71ES5C20N4	2/5
ATV71ES5C25N4	2/5
ATV71ES5C28N4	2/5
ATV71ES5C31N4	2/5
ATV71ES5C40N4	2/5
ATV71ES5C50N4	2/5
ATV71ES5D90N4	2/5
ATV71EXA2C63YH	2/7
ATV71EXA2C80YH	2/7
ATV71EXA2M10YH	2/7
ATV71EXA2M12YH	2/7
ATV71EXA2M15YH	2/7
ATV71EXA2M18YH	2/7
ATV71EXA2M20YH	2/7
ATV71EXA5C63YH	2/7
ATV71EXA5C80YH	2/7
ATV71EXA5M10YH	2/7
ATV71EXA5M12YH	2/7
ATV71EXA5M15YH	2/7
ATV71EXA5M18YH	2/7
ATV71EXA5M20YH	2/7
ATV71EXA●C50N	2/10
ATV71EXA●C50N4	2/10
ATV71EXA●C63N	2/10
ATV71EXA●C63N4	2/10
ATV71EXA●C63Y	2/11
ATV71EXA●C71N4	2/10
ATV71EXA●C80N	2/10
ATV71EXA●C80Y	2/11
ATV71EXA●C90N	2/10
ATV71EXA●C90N4	2/10
ATV71EXA●M10Y	2/11
ATV71EXA●M11N	2/10
ATV71EXA●M11N4	2/10
ATV71EXA●M12Y	2/11

ATV71EXA●M13N	2/10
ATV71EXA●M13N4	2/10
ATV71EXA●M15N	2/10
ATV71EXA●M15Y	2/11
ATV71EXA●M18Y	2/11
ATV71EXA●M20Y	2/11
ATV71EXC2C11N	2/14
ATV71EXC2C11N4	2/14
ATV71EXC2C11N4H	2/7
ATV71EXC2C11Y	2/15
ATV71EXC2C13N	2/14
ATV71EXC2C13N4	2/14
ATV71EXC2C13N4H	2/7
ATV71EXC2C13Y	2/15
ATV71EXC2C16N	2/14
ATV71EXC2C16N4	2/14
ATV71EXC2C16N4H	2/7
ATV71EXC2C16Y	2/15
ATV71EXC2C20N	2/14
ATV71EXC2C20N4	2/14
ATV71EXC2C20N4H	2/7
ATV71EXC2C20Y	2/15
ATV71EXC2C25N	2/14
ATV71EXC2C25N4	2/14
ATV71EXC2C25N4H	2/7
ATV71EXC2C25Y	2/15
ATV71EXC2C28N4	2/14
ATV71EXC2C31N	2/14
ATV71EXC2C31N4	2/14
ATV71EXC2C31N4H	2/7
ATV71EXC2C31Y	2/15
ATV71EXC2C40N	2/14
ATV71EXC2C40N4	2/14
ATV71EXC2C40N4H	2/7
ATV71EXC2C40Y	2/15
ATV71EXC2C50N	2/14
ATV71EXC2C50N4	2/14
ATV71EXC2C50N4H	2/7
ATV71EXC2C50Y	2/15
ATV71EXC2D75N4H	2/7
ATV71EXC2D90N	2/14
ATV71EXC2D90N4	2/14
ATV71EXC2D90N4H	2/7
ATV71EXC5C11N	2/14
ATV71EXC5C11N4	2/14
ATV71EXC5C11Y	2/15
ATV71EXC5C13N	2/14
ATV71EXC5C13N4	2/14
ATV71EXC5C13N4H	2/7
ATV71EXC5C13Y	2/15
ATV71EXC5C16N	2/14
ATV71EXC5C16N4	2/14
ATV71EXC5C16N4H	2/7
ATV71EXC5C16Y	2/15
ATV71EXC5C20N	2/14
ATV71EXC5C20N4	2/14
ATV71EXC5C20N4H	2/7
ATV71EXC5C20Y	2/15
ATV71EXC5C25N	2/14
ATV71EXC5C25N4	2/14
ATV71EXC5C25N4H	2/7
ATV71EXC5C25Y	2/15
ATV71EXC5C28N4	2/14

ATV71EXC5C31N	2/14
ATV71EXC5C31N4	2/14
ATV71EXC5C31N4H	2/7
ATV71EXC5C31Y	2/15
ATV71EXC5C40N	2/14
ATV71EXC5C40N4	2/14
ATV71EXC5C40N4H	2/7
ATV71EXC5C40Y	2/15
ATV71EXC5C50N	2/14
ATV71EXC5C50N4	2/14
ATV71EXC5C50N4H	2/7
ATV71EXC5C50Y	2/15
ATV71EXC5C63Y	2/15
ATV71EXC5D75N4H	2/7
ATV71EXC5D90N	2/14
ATV71EXC5D90N4	2/14
ATV71EXC5D90N4H	2/7
ATV71EXS5C11N	2/10
ATV71EXS5C11N4	2/10
ATV71EXS5C11Y	2/11
ATV71EXS5C13N	2/10
ATV71EXS5C13N4	2/10
ATV71EXS5C13Y	2/11
ATV71EXS5C16N	2/10
ATV71EXS5C16N4	2/10
ATV71EXS5C16Y	2/11
ATV71EXS5C20N	2/10
ATV71EXS5C20N4	2/10
ATV71EXS5C20Y	2/11
ATV71EXS5C25N	2/10
ATV71EXS5C25N4	2/10
ATV71EXS5C25Y	2/11
ATV71EXS5C28N4	2/10
ATV71EXS5C31N	2/10
ATV71EXS5C31N4	2/10
ATV71EXS5C31Y	2/11
ATV71EXS5C40N	2/10
ATV71EXS5C40N4	2/10
ATV71EXS5C40Y	2/11
ATV71EXS5C50N	2/10
ATV71EXS5C50N4	2/10
ATV71EXS5C50Y	2/11
ATV71EXS5C63Y	2/11
ATV71EXS5D90N	2/10
ATV71EXS5D90N4	2/10
ATV71H037M3	1/14
ATV71H075M3	1/14
ATV71H075N4	1/15
ATV71HC11N4	1/15
ATV71HC11Y	1/18
ATV71HC13N4	1/15
ATV71HC13Y	1/18
ATV71HC16N4	1/15
ATV71HC16Y	1/18
ATV71HC20N4	1/15
ATV71HC20Y	1/18
ATV71HC25N4	1/15
ATV71HC25Y	1/18
ATV71HC28N4	1/15
ATV71HC31N4	1/15
ATV71HC31Y	1/18
ATV71HC40N4	1/15
ATV71HC40Y	1/18
ATV71HC50N4	1/15

ATV71HC50Y	1/18
ATV71HC63Y	1/18
ATV71HD11M3X	1/14
ATV71HD11N4	1/15
ATV71HD11Y	1/18
ATV71HD15M3X	1/14
ATV71HD15N4	1/15
ATV71HD15Y	1/18
ATV71HD18M3X	1/14
ATV71HD18N4	1/15
ATV71HD18Y	1/18
ATV71HD22M3X	1/14
ATV71HD22N4	1/15
ATV71HD22Y	1/18
ATV71HD30M3X	1/14
ATV71HD30N4	1/15
ATV71HD30Y	1/18
ATV71HD37M3X	1/14
ATV71HD37N4	1/15
ATV71HD37Y	1/18
ATV71HD45M3X	1/14
ATV71HD45N4	1/15
ATV71HD45Y	1/18
ATV71HD55M3X	1/14
ATV71HD55N4	1/15
ATV71HD55Y	1/18
ATV71HD75M3X	1/14
ATV71HD75N4	1/15
ATV71HD75Y	1/18
ATV71HD90N4	1/15
ATV71HD90Y	1/18
ATV71HU15M3	1/14
ATV71HU15N4	1/15
ATV71HU15S6X	1/18
ATV71HU22M3	1/14
ATV71HU22N4	1/15
ATV71HU22S6X	1/18
ATV71HU22Y	1/18
ATV71HU30M3	1/14
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Design: Schneider Electric  
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Printed by:

DIA2ED2140407EN

April 2014

