

Variable speed drives

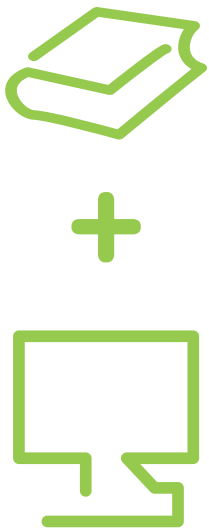
Altivar 71 and Altivar 71 Plus

for three-phase motors from 0.37 to 630 kW

Catalogue

September **2011**





All technical information about products listed in this catalogue are now available on:
www.schneider-electric.com

Browse the “product data sheet” to check out :

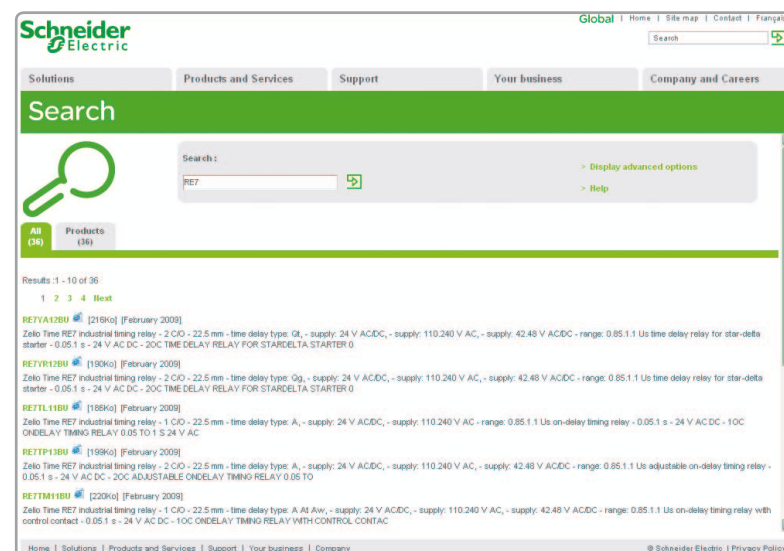
- characteristics,
- dimensions,
- curves, ...
- and also the links to the user guides and the CAD files.

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



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

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



3 The product data sheet displays.

Example : Zelio Time data sheet

Zelio Time-RE 7 / RE 8 / RE 9
Timer relays that are simply ingenious

RE7YA12BU

Zelio Time RE7 industrial timing relay - 2 C/O - 22.5 mm - time delay type: Ot. - supply: 110...240 V AC, - supply: 42...48 V AC/DC - range: 0.85...1.1 Us

range of product	Zelio Time
product or component type	industrial timing relay
discrete output type	relay
width pitch dimension	22.5 mm
contacts type and composition	2 C/O
component name	RE7
contacts material	90/10 silver nickel contacts
time delay type	Ot
time delay range	0.05 ... 300 h
[UR] rated supply voltage	24 V AC/DC 50/60 Hz
	110...240 V AC 50/60 Hz
	42...48 V AC/DC 50/60 Hz
product weight	0.15 kg
voltage range	0.85...1.1 Us
lightening torque	0.6...1.1 N m
CAD overall width	22.5 mm
CAD overall height	78 mm
CAD overall depth	80 mm

Discover this product

- Characteristics
- Functions
- Connection
- Dimensions
- Download & Documents

Other products

- Help me to choose
- Accessories**
- Plug
- Sockets

Example : Zelio Time data sheet

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

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

(1) Heating, Ventilation and Air Conditioning



More technical information on www.schneider-electric.com

**Pumps and fans
(industrial)**



Complex machines



0.37...800

–
0.37...5.5
–
0.75...90
0.75...630
–
2.2...7.5
–
2.2...800

IP 20

Heatsink or water-cooled system

0.1...500 Hz for the entire range
0.1...599 Hz up to 37 kW at 200...240 V ~ and 380...480 V ~
Sensorless flux vector control
Voltage/frequency ratio (2 or 5 points)
Energy saving ratio

Vector control without speed feedback
120% of the nominal motor torque for 60 seconds

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

Modbus and CANopen

Modbus TCP Daisy Chain, Modbus/Uni-Telway, EtherNet/IP, DeviceNet, PROFIBUS DP V0 and V1, INTERBUS, CC-LINK, LonWORKS, METASYS N2, APOGEE FLN, BACnet

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

IP 54 or IP 65 remote graphic display terminal

SoMove

Simple Loader, Multi-Loader

IEC 61800-5-1
IEC 61800-3 (environments 1 and 2, categories C1 to C3), IEC 61000-4-2/4-3/4-4/4-5/4-6/4-11

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

ATV 61

"Altivar 61 variable speed drives"

0.37...630

–
0.37...5.5
–
0.37...75
0.75...500
–
1.5...7.5
–
1.5...630

Heatsink, base plate or water-cooled system

0.1...500 Hz for the entire range
0.1...599 Hz up to 37 kW at 200...240 V ~ and 380...480 V ~
Flux vector control with or without sensor
Voltage/frequency ratio (2 or 5 points)
ENA System

Vector control with or without speed feedback
220% of the nominal motor torque for 2 seconds
170% for 60 seconds

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

Modbus TCP Daisy Chain, Modbus/Uni-Telway, EtherNet/IP, DeviceNet, PROFIBUS DP V0 and V1, INTERBUS, CC-LINK

Interface cards for incremental, resolver, SinCos, SinCos Hiperface®, EnDat® or SSI encoders, I/O extension cards, Controller Inside programmable card


ATV 71

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More technical information on www.schneider-electric.com

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

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



**Pumps and fans
(industrial)**



0.75...90

–
0.75...90
–

IP 54

– Equipped with a Vario switch disconnecter

0.1...599 Hz from 0.75 to 45 kW
0.1...500 Hz from 55...90 kW
Sensorless flux vector control
Voltage/frequency ratio (2 or 5 points)
Energy saving ratio
Vector control without speed feedback
110% of the nominal motor torque for 60 seconds

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

Modbus and CANopen

Modbus TCP Daisy Chain, Modbus/Uni-Telway, EtherNet/IP, DeviceNet, PROFIBUS DP V0 and V1, INTERBUS, CC-LINK, LONWORKS, METASYS N2, APOGEE FLN, BACnet

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

IP 54 or IP 65 remote graphic display terminal

SoMove
Simple Loader, Multi-Loader

IEC 61800-5-1, IEC 61800-3 (environments 1 and 2, categories C1 to C3), IEC 61000-4-2/4-3/4-4/4-5/4-6/4-11
CE, UL, CSA, DNV, C-Tick, NOM, GOST

ATV 61W

ATV 61E5

"Altivar 61 variable speed drives"

Complex machines



0.75...75

–
0.75...75
–

– Equipped with a Vario switch disconnecter

0.1...599 Hz from 0.75 to 37 kW
0.1...500 Hz from 45 to 75 kW
Sensorless flux vector control
Voltage/frequency ratio (2 or 5 points)
ENA System
Vector control with or without speed feedback
220% of the nominal motor torque for 2 seconds
170% for 60 seconds

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

Modbus TCP Daisy Chain, Modbus/Uni-Telway, EtherNet/IP, DeviceNet, PROFIBUS DP V0 and V1, INTERBUS, CC-LINK

Interface cards for incremental, resolver, SinCos, SinCos Hiperface®, EnDat® or SSI encoders, I/O extension cards, Controller Inside programmable card

ATV 71W

ATV 71E5

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More technical information on www.schneider-electric.com

Variable speed drives Altivar 61 Plus and Altivar 71 Plus

Integrated solutions

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



Complex machines
(industrial and infrastructure)



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

ATV 71 Plus



100529



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 the most stringent requirements.

It is suitable for the most 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)
- Speed accuracy assured by use of synchronous motor, irrespective of load
- High bandwidth
- Spooling function
- Connection to common DC bus
- Control of both asynchronous and synchronous motors supported
- High-performance speed loop

Wood-working machines

- Operation up to 1600 Hz
- 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 to 630 kW with five types of power supply:

- 200...240 V single-phase, 0.37 kW to 5.5 kW, IP 20 (**ATV 71H●●●M3**)
- 200...240 V three-phase, 0.37 kW to 75 kW, IP 20 (**ATV 71H●●●M3** and **ATV 71H●●●M3X**)
- 380...480 V three-phase, 0.75 kW to 500 kW, IP 20 (**ATV 71H●●●N4**)
- 500...600 V three-phase, 1.5 kW to 7.5 kW, IP 20 (**ATV 71H●●●S6X**)
- 500...690 V three-phase, 1.5 kW to 630 kW, IP 20 (**ATV 71H●●●Y**)

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 22 and 52). All 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 58), I/O extension cards, an encoder interface or a Controller Inside programmable card (see pages 52 to 57).

External options such as braking resistors, resistance braking units, chokes and filters complete the offer (see page 15).

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 ensure motor stopping and 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.

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 **ATV 71H●●●M3**, **ATV 71●●●N4**, **ATV 71●●●Y** and **ATV 71P●●●N4Z** drives and the recognition of EMC requirements facilitates installation and provides an economical means of ensuring machines receive the CE mark.

ATV 71H●●●M3X and **ATV 71H●●●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 84).

107473



ATV 71W075N4

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 perfectly 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 19):
 - at 380...480 V ~, 0.75 kW to 75 kW (**ATV 71W●●●N4**)
- A drive version with IP 54 degree of protection featuring a Vario switch disconnecter (see page 19):
 - at 380...480 V ~, 0.75 kW to 75 kW (**ATV 71E5●●●N4**)
- A drive version ready-assembled in an IP 54 floor-standing enclosure (see pages 104 and 105). The offer covers motor power ratings from 90 kW to 630 kW (**ATV 71EXS5●●●N4**, **ATV 71EXS5●●●N** and **ATV 71EXS5●●●Y**).
- A drive version ready-assembled in an IP 23 or IP 54 floor-standing enclosure (see pages 106 to 109). The offer covers motor power ratings from 500 kW to 2000 kW (**ATV 71EXA●●●●●**).

The **ATV 71EXS5●●●●●** and **ATV 71EXA●●●●●** products have been designed for easy setup in highly polluted environments and, in particular, to 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 102 and 103).

This straightforward and cost-effective solution, which is available by quoting a single reference, provides you with all the mechanical components you need to create an IP 54 floor-standing enclosure (**VW3 A9 541...VW3 A9 551**). This product has been designed for compatibility with IP 20 Altivar 71 drives, 90 kW to 500 kW at 380...480 V ~ (**ATV 71HD90N4...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 (**ATV 71Q●●●N4** and **ATV 71Q●●●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 perfectly suited to frequent start-up applications. See pages 18 and 21.

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 to 630 kW (**ATV 71EXC●●●●●**). It is available in a standard version or modular version. See pages 110 to 113.

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 to 11 kW (**ATV 71P●●●N4Z**) (see page 18)

As the drive is not equipped with a fan as standard, a DC choke (see page 76) must be added in order to prevent overheating during operation.

PF524488



Kit VW3 A9 544

PF538938

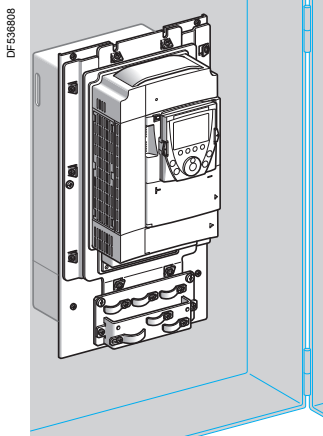


ATV 71EXC2●●●N4

107481



ATV 71PU40N4Z



ATV 71HU75N4 flush-mounted

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 **VW3 A9 2●●**, or IP 21 or IP 31 conformity with kit **VW3 A9 1●●** (see pages 28 and 29).

Flush-mounting in dust and damp proof enclosure

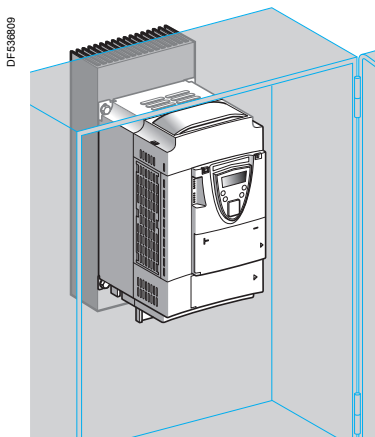
The Altivar 71 drive has been designed to optimize the size of enclosures (floor-standing, wall-mounted, etc.). This type of flush-mounting can be used to reduce the size of enclosure required and to limit the temperature rise inside the enclosure:

- The power section, with IP 54 degree of protection, can be easily mounted outside the enclosure using kit **VW3 A9 5●●** for flush-mounting in a dust and damp proof enclosure (see page 26).

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 **VW3 A9 4●●** appropriate for the drive rating in order to avoid hot spots (see page 25).

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

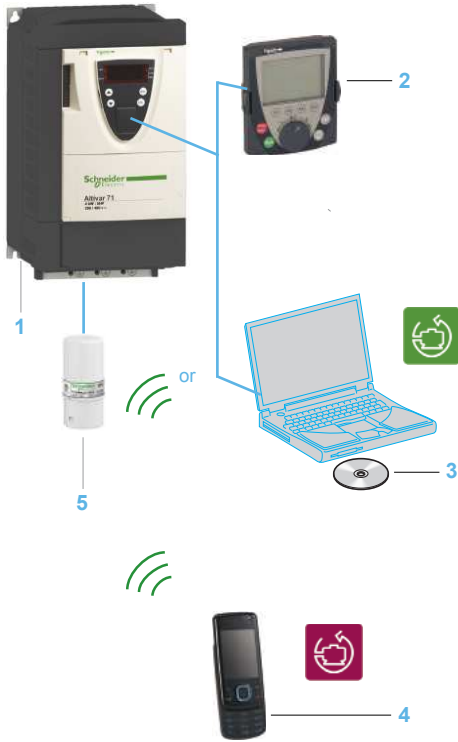


ATV 71PU75N4Z in dust and damp proof enclosure

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 **VW3 A9 80●** for dust and damp proof mounting (see page 27) 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



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 the most 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 most complex functions are easily accessible thanks to advanced functions on the display unit.

Up to 15 kW at 200...240 V ~ and 75 kW 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 all other Schneider Electric drives and starters. See page 160.

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 160.

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 do not need to be powered up. See page 161.

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 ensure that the application is working correctly, maximize motor performance and ensure motor protection.

The architecture, the hierarchical parameter structure and the direct access functions all 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 all 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

5368003

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

5368004

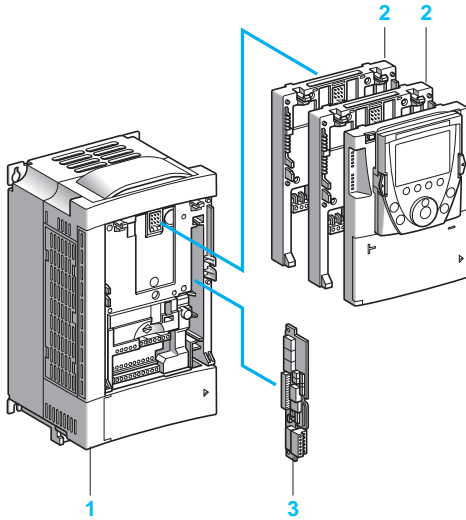
SCF1	Term	+50.00Hz	0.0A
HISTORIQUE DEFAULTS <input type="checkbox"/>			
Court-circuit mot.			
Surintensité			
Déf. Externe LI			
Surtension réseau			
Soustension			
Help			Quick <input type="button" value="v"/>

Built-in function:
Error log

5368005

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 53)
 - Communication cards 2 (Modbus TCP Daisy Chain, Modbus/Uni-Telway, EtherNet/IP, DeviceNet, PROFIBUS DP, etc.) (see page 58)
 - Controller Inside programmable card 2 to adapt the variable speed drive to specific applications (see page 54)
- 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 52)

Other options

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

- Braking units and resistors (standard or hoist-specific) (see pages 64 to 69)
- Network braking units (see pages 70 to 71)
- 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 72 to 75)
- DC chokes, line chokes and passive filters to reduce harmonic currents (see pages 76 to 83)
- Additional EMC input filters to reduce conducted emissions on the line (see pages 84 and 85)
- Motor chokes and sinus filters for long cable runs or to remove the need for shielding (see pages 86 to 91)

Note: Please refer to the compatibility summary tables to determine which options are available for individual drives (see pages 40 to 51).

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.

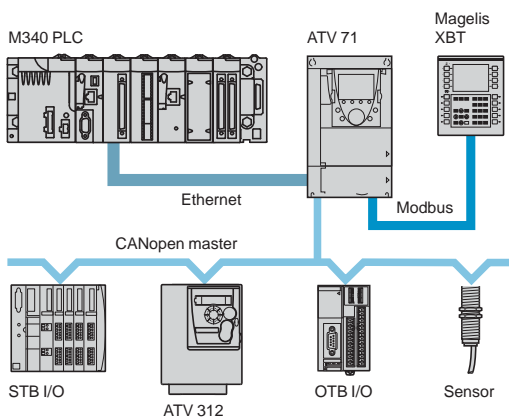
The Altivar 71 drive can be integrated into most networked industrial applications using the communication option cards.

The following protocols are available: Modbus TCP Daisy Chain, Modbus/Uni-Telway, EtherNet/IP, DeviceNet, PROFIBUS DP V0 and V1, INTERBUS and CC-LINK (see pages 58 to 63).

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 54 to 57):

- 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

107472



ATV 71HU22M3Z

101000



ATV 71H037M3

101010



ATV 71HD37M3X

IP 20 drives											
Motor		Line supply				Altivar 71			Reference (3)		Weight
Power indicated on rating plate (1)		Line current (2)		Apparent power	Max. prospective line Isc	Maximum continuous current (1)	Max. transient current for				
		200 V	240 V	240 V		230 V	60 s	2 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	ATV 71H075M3	3.000
0.75	1	12	9.9	2.4	5	4.8	7.2	7.9	ATV 71HU15M3	3.000
1.5	2	18.2	15.7	3.7	5	8	12	13.2	ATV 71HU22M3	4.000
2.2	3	25.9	22.1	5.3	5	11	16.5	18.1	ATV 71HU30M3	4.000
3	–	25.9	22	5.3	5	13.7	20.6	22.6	ATV 71HU40M3 (4)	4.000
4	5	34.9	29.9	7	5	17.5	26.3	28.8	ATV 71HU55M3 (4)	5.500
5.5	7.5	47.3	40.1	9.5	22	27.5	41.3	45.3	ATV 71HU75M3 (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	ATV 71H037M3	3.000
0.75	1	6.1	5.3	2.2	5	4.8	7.2	7.9	ATV 71H075M3	3.000
1.5	2	11.3	9.6	4	5	8	12	13.2	ATV 71HU15M3	3.000
2.2	3	15	12.8	5.3	5	11	16.5	18.1	ATV 71HU22M3	4.000
3	–	19.3	16.4	6.8	5	13.7	20.6	22.6	ATV 71HU30M3	4.000
4	5	25.8	22.9	9.5	5	17.5	26.3	28.8	ATV 71HU40M3	4.000
5.5	7.5	35	30.8	12.8	22	27.5	41.3	45.3	ATV 71HU55M3	5.500
7.5	10	45	39.4	16.4	22	33	49.5	54.5	ATV 71HU75M3	7.000
11	15	53.3	45.8	19	22	54	81	89.1	ATV 71HD11M3X (5)	22.000
15	20	71.7	61.6	25.6	22	66	99	109	ATV 71HD15M3X (5)	22.000
18.5	25	77	69	28.7	22	75	112	124	ATV 71HD18M3X (5)	30.000
22	30	88	80	33.3	22	88	132	145	ATV 71HD22M3X (5)	30.000
30	40	124	110	45.7	22	120	180	198	ATV 71HD30M3X (5)	37.000
37	50	141	127	52.8	22	144	216	238	ATV 71HD37M3X (5)	37.000
45	60	167	147	61.1	22	176	264	290	ATV 71HD45M3X (5)	37.000
55	75	200	173	71.9	35	221	332	365	ATV 71HD55M3X (5) (6)	100.000
75	100	271	232	96.4	35	285	428	470	ATV 71HD75M3X (5) (6)	122.000

Dimensions (overall)	
Drives	W x H x D mm
ATV 71H037M3...HU15M3	130 x 230 x 175
ATV 71HU22M3...HU40M3	155 x 260 x 187
ATV 71HU55M3	175 x 295 x 187
ATV 71HU75M3	210 x 295 x 213
ATV 71HD11M3X, HD15M3X	230 x 400 x 213
ATV 71HD18M3X, HD22M3X	240 x 420 x 236
ATV 71HD30M3X...HD45M3X	320 x 550 x 266
ATV 71HD55M3X	320 x 920 x 377
ATV 71HD75M3X	360 x 1022 x 377

(1) These values are given for a nominal switching frequency of 4 kHz up to ATV 71HD15M3X or 2.5 kHz for ATV 71HD18M3X...HD75M3X drives for use in continuous operation.

The switching frequency is adjustable from 1...16 kHz up to ATV 71HD45M3X and from 1...8 kHz for ATV 71HD55M3X and ATV 71HD75M3X 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).

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

(3) Variants available (see page 22).

(4) A line choke must be used (see page 78).

(5) Drive supplied without EMC filter. EMC filters are available as an option (see page 84).

(6) Drive supplied without EMC mounting plate. It is included in the UL Type 1 or IP 31 conformity kit, which must be ordered separately (see pages 28 and 29).

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

Variable speed drives

Altivar 71

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

IP 20 drives

107464



ATV 71HU22N4

107478



ATV 71HU40N4Z

101016



ATV 71HC28N4

IP 20 drives											
Motor Power indicated on rating plate (1)	Line supply					Altivar 71				Reference (3)	Weight
	Line current (2)	Apparent power	Max. prospective line Isc	Maximum continuous current (1)		Max. transient current for					
				380 V	460 V	60 s	2 s				
kW	HP	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	ATV 71H075N4	3.000
1.5	2	5.8	5.3	3.8	5	4.1	3.4	6.2	6.8	ATV 71HU15N4	3.000
2.2	3	8.2	7.1	5.4	5	5.8	4.8	8.7	9.6	ATV 71HU22N4	3.000
3	–	10.7	9	7	5	7.8	6.2	11.7	12.9	ATV 71HU30N4	4.000
4	5	14.1	11.5	9.3	5	10.5	7.6	15.8	17.3	ATV 71HU40N4	4.000
5.5	7.5	20.3	17	13.4	22	14.3	11	21.5	23.6	ATV 71HU55N4	5.500
7.5	10	27	22.2	17.8	22	17.6	14	26.4	29	ATV 71HU75N4	5.500
11	15	36.6	30	24.1	22	27.7	21	41.6	45.7	ATV 71HD11N4	7.000
15	20	48	39	31.6	22	33	27	49.5	54.5	ATV 71HD15N4	22.000
18.5	25	45.5	37.5	29.9	22	41	34	61.5	67.7	ATV 71HD18N4	22.000
22	30	50	42	32.9	22	48	40	72	79.2	ATV 71HD22N4	30.000
30	40	66	56	43.4	22	66	52	99	109	ATV 71HD30N4	37.000
37	50	84	69	55.3	22	79	65	118.5	130	ATV 71HD37N4	37.000
45	60	104	85	68.5	22	94	77	141	155	ATV 71HD45N4	44.000
55	75	120	101	79	22	116	96	174	191	ATV 71HD55N4	44.000
75	100	167	137	109.9	22	160	124	240	264	ATV 71HD75N4	44.000
90	125	166	134	109.3	35	179	179	269	295	ATV 71HD90N4 (4)	100.000
110	150	202	163	133	35	215	215	323	355	ATV 71HC11N4 (4)	122.000
132	200	239	192	157.3	35	259	259	388	427	ATV 71HC13N4 (4)	116.000
160	250	289	233	190.2	50	314	314	471	518	ATV 71HC16N4 (4)	163.000
200	300	357	286	235	50	387	387	580	638	ATV 71HC20N4 (4)	207.000
220	350	396	320	260.6	50	427	427	640	704	ATV 71HC25N4 (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	ATV 71HC28N4 (4)	207.000
315	500	555	444	365.3	50	616	616	924	1016	ATV 71HC31N4 (4)	320.000
355	–	637	512	419.3	50	671	671	1006	1107	ATV 71HC40N4 (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	ATV 71HC50N4 (4)	435.000

Dimensions (overall)

Drives	W x H x D mm
ATV 71H075N4...HU22N4	130 x 230 x 175
ATV 71HU30N4, HU40N4	155 x 260 x 187
ATV 71HU55N4, HU75N4	175 x 295 x 187
ATV 71HD11N4	210 x 295 x 213
ATV 71HD15N4, HD18N4	230 x 400 x 213
ATV 71 HD22N4	240 x 420 x 236
ATV 71HD30N4, HD37N4	240 x 550 x 266
ATV 71HD45N4...HD75N4	320 x 630 x 290
ATV 71HD90N4	320 x 920 x 377
ATV 71HC11N4	360 x 1022 x 377
ATV 71HC13N4	340 x 1190 x 377
ATV 71HC16N4	440 x 1190 x 377
ATV 71HC20N4...HC28N4	595 x 1190 x 377
ATV 71HC31N4, HC40N4	890 x 1390 x 377
ATV 71HC50N4	1120 x 1390 x 377

(1) These values are given for a nominal switching frequency of 4 kHz up to ATV 71HD30N4 or 2.5 kHz for ATV 71HD37N4...HC50N4 drives for use in continuous operation.

The switching frequency is adjustable from 1...16 kHz up to ATV 71HD75N4 and from 2.5...8 kHz for ATV 71HD90N4...ATV 71HC50N4 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).

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

(3) Variants available (see page 22).

(4) Drive supplied without EMC mounting plate. It is included in the UL Type 1 or IP 31 kit, which must be ordered separately (see pages 28 and 29).

Note: Consult the summary tables of possible drive, option and accessory combinations (see page 42).

Variable speed drives

Altivar 71

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

IP 20 drives

107472



ATV 71PU40N4Z

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)		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	2 s	
kW	HP	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	ATV 71P075N4Z	2.700
1.5	2	5.8	5.3	3.8	5	4.1	3.4	6.2	6.8	ATV 71PU15N4Z	2.700
2.2	3	8.2	7.1	5.4	5	5.8	4.8	8.7	9.6	ATV 71PU22N4Z	2.700
3	–	10.7	9	7	5	7.8	6.2	11.7	12.9	ATV 71PU30N4Z	3.600
4	5	14.1	11.5	9.3	5	10.5	7.6	15.8	17.3	ATV 71PU40N4Z	3.600
5.5	7.5	20.3	17	13.4	22	14.3	11	21.5	23.6	ATV 71PU55N4Z	5.000
7.5	10	27	22.2	17.8	22	17.6	14	26.4	29	ATV 71PU75N4Z	5.000
11	15	36.6	30	24.1	22	27.7	21	41.6	45.7	ATV 71PD11N4Z	7.000

110502



ATV 71QD90N4

Water-cooled IP 20 drives											
Motor		Line supply				Altivar 71				Reference (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	2 s	
kW	HP	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	ATV 71QD90N4	80.000
110	150	202	163	133	35	215	215	323	355	ATV 71QC11N4	80.000
132	200	239	192	157.3	35	259	259	388	427	ATV 71QC13N4	80.000
160	250	289	233	190.2	50	314	314	471	518	ATV 71QC16N4	140.000
200	300	357	286	235	50	387	387	580	638	ATV 71QC20N4	140.000
220	350	396	320	260.6	50	427	427	640	704	ATV 71QC25N4	140.000
250	400	444	357	292.2	50	481	481	721	793		
315	500	555	444	365.3	50	616	616	924	1016	ATV 71QC31N4	300.000
355	–	637	512	419.3	50	671	671	1006	1107	ATV 71QC40N4	300.000
400	600	709	568	466.6	50	759	759	1138	1252		
500	700	876	699	576.6	50	941	941	1411	1552	ATV 71QC50N4	300.000

Dimensions (overall)				
Drives	W x H x D mm		Drives	W x H x D mm
ATV 71P075N4Z, PU22N4Z	130 x 230 x 149		ATV 71QD90N4...QC13N4	330 x 950 x 377
ATV 71PU30N4Z, PU40N4Z	155 x 260 x 161		ATV 71QC16N4...QC25N4	585 x 950 x 377
ATV 71P55N4Z, PU75N4Z	175 x 295 x 161		ATV 71QC31N4...QC50N4	1110 x 1150 x 377
ATV 71PD11N4Z	210 x 295 x 187			

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

- 4 kHz for ATV 71P●●●N4Z

- 2.5 kHz for ATV 71Q●●●N4

The switching frequency is adjustable from:

- 1...16 kHz for ATV 71P●●●N4Z

- 2.5...8 kHz for ATV 71Q●●●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).

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

(3) Variants available (see page 22).

(4) A DC choke must be used (see page 76).

(5) ATV 71P●●●N4Z drives supplied with a plate for EMC mounting and a thermal liner for mounting on the machine frame (see page 27).

Note: Consult the summary tables of possible drive, options and accessory combinations on pages 42 and 46.

Variable speed drives

Altivar 71

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

IP 54 drives



ATV 71W075N4

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
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	ATV 71W075N4	12.000
1.5	2	5.8	5.3	3.8	5	4.1	3.4	6.2	6.8	ATV 71WU15N4	12.000
2.2	3	8.2	7.1	5.4	5	5.8	4.8	8.7	9.6	ATV 71WU22N4	12.000
3	–	10.7	9	7	5	7.8	6.2	11.7	12.9	ATV 71WU30N4	13.000
4	5	14.1	11.5	9.3	5	10.5	7.6	15.8	17.3	ATV 71WU40N4	13.000
5.5	7.5	20.3	17	13.4	22	14.3	11	21.5	23.6	ATV 71WU55N4	16.000
7.5	10	27	22.2	17.8	22	17.6	14	26.4	29	ATV 71WU75N4	16.000
11	15	36.6	30	24.1	22	27.7	21	41.6	45.7	ATV 71WD11N4	21.000
15	20	48	39	31.6	22	33	27	49.5	54.5	ATV 71WD15N4	31.000
18.5	25	45.5	37.5	29.9	22	41	34	61.5	67.7	ATV 71WD18N4	31.000
22	30	50	42	32.9	22	48	40	72	79.2	ATV 71WD22N4	30.500
30	40	66	56	43.4	22	66	52	99	109	ATV 71WD30N4	38.500
37	50	84	69	55.3	22	79	65	118.5	130	ATV 71WD37N4	38.500
45	60	104	85	68.5	22	94	77	141	155	ATV 71WD45N4	61.500
55	75	120	101	79	22	116	96	174	191	ATV 71WD55N4	61.500
75	100	167	137	109.9	22	160	124	240	264	ATV 71WD75N4	61.500



ATV 71E5D11N4

IP 54 drives with Vario and integrated category C2 EMC filter											
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	ATV 71E5075N4	14.400
1.5	2	5.8	5.3	3.8	5	4.1	3.4	6.2	6.8	ATV 71E5U15N4	14.400
2.2	3	8.2	7.1	5.4	5	5.8	4.8	8.7	9.6	ATV 71E5U22N4	14.400
3	–	10.7	9	7	5	7.8	6.2	11.7	12.9	ATV 71E5U30N4	15.400
4	5	14.1	11.5	9.3	5	10.5	7.6	15.8	17.3	ATV 71E5U40N4	15.400
5.5	7.5	20.3	17	13.4	22	14.3	11	21.5	23.6	ATV 71E5U55N4	18.400
7.5	10	27	22.2	17.8	22	17.6	14	26.4	29	ATV 71E5U75N4	18.400
11	15	36.6	30	24.1	22	27.7	21	41.6	45.7	ATV 71E5D11N4	29.700
15	20	48	39	31.6	22	33	27	49.5	54.5	ATV 71E5D15N4	40.400
18.5	25	45.5	37.5	29.9	22	41	34	61.5	67.7	ATV 71E5D18N4	40.400
22	30	50	42	32.9	22	48	40	72	79.2	ATV 71E5D22N4	46.700
30	40	66	56	43.4	22	66	52	99	109	ATV 71E5D30N4	57.800
37	50	84	69	55.3	22	79	65	118.5	130	ATV 71E5D37N4	57.800
45	60	104	85	68.5	22	94	77	141	155	ATV 71E5D45N4	80.400
55	75	120	101	79	22	116	96	174	191	ATV 71E5D55N4	80.400
75	100	167	137	109.9	22	160	124	240	264	ATV 71E5D75N4	80.400

Dimensions (overall)			
Drives	W x H x D mm	Drives	W x H x D mm
ATV 71W075N4...WU22N4	240 x 490 x 272	ATV 71E5075N4...E5U22N4	240 x 490 x 296
ATV 71WU30N4, WU40N4	240 x 490 x 286	ATV 71E5U30N4, E5U40N4	240 x 490 x 310
ATV 71WU55N4, WU75N4	260 x 525 x 286	ATV 71E5U55N4, E5U75N4	260 x 525 x 310
ATV 71WD11N4	295 x 560 x 315	ATV 71E5D11N4	295 x 560 x 339
ATV 71WD15N4, WD18N4	315 x 665 x 315	ATV 71E5D15N4, E5D18N4	315 x 665 x 340
ATV 71WD22N4	285 x 720 x 315	ATV 71E5D22N4	285 x 720 x 335
ATV 71WD30N4, WD37N4	285 x 880 x 343	ATV 71E5D30N4, E5D37N4	285 x 880 x 383
ATV 71WD45N4...WD75N4	362 x 1000 x 364	ATV 71E5D45N4...E5D75N4	362 x 1000 x 404

(1) These values are given for a nominal switching frequency of 4 kHz up to ATV 71WD30N4 or ATV 71E5D30N4, or 2.5 kHz for ATV 71WD37N4...WD75N4 or ATV 71E5D37N4...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).

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

(3) Variants available (see page 22).

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

Note: Consult the summary tables of possible drive, option and accessory combinations (see page 44).

Variable speed drives

Altivar 71

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

IP 20 drives

101014



ATV 71HU22Y

IP 20 drives									
Motor		Line supply				Altivar 71			
Power indicated on rating plate (1)		Line current (2)		Max. prospective line Isc	Maximum continuous current (1) (3)		Reference (4)	Weight	
500 V	575 V	500 V 600 V			500 V 575 V			kg	
kW	HP	A	A	kA	A	A			
Three-phase supply voltage: 500...600 V 50/60 Hz									
1.5	2	5.6	4.9	22	3.2	2.7	ATV 71HU15S6X	7.500	
2.2	3	7.6	6.7	22	4.5	3.9	ATV 71HU22S6X	7.500	
3	–	9.9	10	22	5.8	–	ATV 71HU30S6X	7.500	
4	5	12.5	10.9	22	7.5	6.1	ATV 71HU40S6X	7.500	
5.5	7.5	16.4	14.2	22	10	9	ATV 71HU55S6X	7.500	
7.5	10	21.4	18.4	22	13.5	11	ATV 71HU75S6X	7.500	

107588



ATV 71HD37Y

IP 20 drives											
Motor			Line supply				Altivar 71				
Power indicated on rating plate (1)			Line current (2)		Max. prospective line Isc	Maximum continuous current (1) (3)			Reference (4)	Weight	
500 V	575 V	690 V	500 V 600 V 690 V			500 V 575 V 690 V					
kW	HP	kW	A	A	A	kA	A	A	A	kg	
Three-phase supply voltage: 500...690 V 50/60 Hz											
1.5	2	2.2	3.8	3.2	4	22	3.2	2.7	4	ATV 71HU22Y	30.000
2.2	3	3	5.2	4.4	5.2	22	4.5	3.9	4.5	ATV 71HU30Y	30.000
3	–	4	6.8	–	6.6	22	5.8	–	5.5	ATV 71HU40Y	30.000
4	5	5.5	8.6	7.2	8.6	22	7.5	6.1	7.5	ATV 71HU55Y	30.000
5.5	7.5	7.5	11.2	9.5	11.2	22	10	9	10	ATV 71HU75Y	30.000
7.5	10	11	14.6	12.3	15.5	22	13.5	11	13.5	ATV 71HD11Y	30.000
11	15	15	19.8	16.7	20.2	22	18.5	17	18.5	ATV 71HD15Y	30.000
15	20	18.5	24	21	24	22	24	22	24	ATV 71HD18Y	30.000
18.5	25	22	29	24	27	22	29	27	27	ATV 71HD22Y	30.000
22	30	30	33	28	34	22	35	32	35	ATV 71HD30Y	30.000
30	40	37	48	41	47	22	47	41	43	ATV 71HD37Y	68.000
37	50	45	62	51	55	22	59	52	54	ATV 71HD45Y	68.000
45	60	55	68	57	63	22	68	62	62	ATV 71HD55Y	68.000
55	75	75	84	70.5	88	22	85	77	84	ATV 71HD75Y	68.000
75	100	90	109	92	101	22	110	99	104	ATV 71HD90Y	68.000
90	125	110	128	113	117	28	136	125	125	ATV 71HC11Y (5) (6)	102.000
110	150	132	153	133	137	28	165	144	150	ATV 71HC13Y (5) (6)	102.000
132	–	160	182	–	163	35	200	–	180	ATV 71HC16Y (5) (6)	102.000
160	200	200	227	204	212	35	240	192	220	ATV 71HC20Y (5) (6)	181.000
200	250	250	277	249	256	35	312	242	290	ATV 71HC25Y (5) (6)	181.000
250	350	315	342	311	317	35	390	336	355	ATV 71HC31Y (5) (6)	181.000
315	450	400	439	401	409	35	462	412	420	ATV 71HC40Y (5) (6)	383.000
400	550	500	544	491	498	35	590	528	543	ATV 71HC50Y (5) (6)	383.000
500	700	630	673	613	616	42	740	672	675	ATV 71HC63Y (5) (6)	383.000

107540



ATV 71HC25Y



107532



VW3 A4 372 (line choke mandatory) (5)

Dimensions (overall)

Drives	W x H x D mm
ATV 71HU15S6X...HU75S6X	210 x 295 x 213
ATV 71HU22Y...HD30Y	240 x 420 x 236
ATV 71HD37Y...HD90Y	320 x 630 x 290
ATV 71HC11Y...HC16Y	340 x 1190 x 377
ATV 71HC20Y...HC31Y	595 x 1190 x 377
ATV 71HC40Y...HC63Y	1120 x 1390 x 377

(1) These values are given for a nominal switching frequency of 4 kHz for ATV 71HU●●S6X and for ATV 71 HU22Y...HD30Y or 2.5 kHz for ATV 71HD37Y...HC63Y for use in continuous operation.

The switching frequency is adjustable from 2.5...6 kHz for ATV 71HU●●S6X and for ATV 71HU22Y...HD30Y, and 2.5...4.9 kHz for ATV 71HD37Y...ATV 71HC63Y 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).

(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 22).

(5) Line choke mandatory for ATV 71HC11Y...HC63Y drives, unless a special transformer is used (12-pulse). The line choke must be ordered separately (see page 78).

(6) Drive supplied without EMC mounting plate. It is included in the UL Type 1 or IP 31 kit, which must be ordered separately (see pages 28 and 29).

Note: Consult the summary tables of possible drive, option and accessory combinations (see pages 46 and 48).

Variable speed drives

Altivar 71

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

IP 20 drives

110504



ATV 71QC11Y

Water-cooled IP 20 drives											
Motor			Line supply				Altivar 71				
Power indicated on rating plate (1)			Line current (2)			Max. prospective line Isc	Maximum continuous current (1) (3)			Reference	Weight
500 V	575 V	690 V	500 V	600 V	690 V	kA	500 V	575 V	690 V	ATV 71QC11Y	kg
kW	HP	kW	A	A	A		A	A	A		
Three-phase supply voltage: 500...690 V 50/60 Hz											
90	125	110	128	113	117	28	136	125	125	ATV 71QC11Y	80.000
110	150	132	153	133	137	28	165	144	150	ATV 71QC13Y	80.000
132	–	160	182	–	163	35	200	–	180	ATV 71QC16Y	80.000
160	200	200	227	204	212	35	240	192	220	ATV 71QC20Y	140.000
200	250	250	277	249	256	35	312	242	290	ATV 71QC25Y	140.000
250	350	315	342	311	317	35	390	336	355	ATV 71QC31Y	140.000
315	450	400	439	401	409	35	462	412	420	ATV 71QC40Y	300.000
400	550	500	544	491	498	35	590	528	543	ATV 71QC50Y	300.000
500	700	630	673	613	616	42	740	672	675	ATV 71QC63Y	300.000

Dimensions (overall)	
Drives	W x H x D mm
ATV 71QC11Y...QC16Y	330 x 950 x 377
ATV 71QC20Y...QC31Y	585 x 950 x 377
ATV 71QC40Y...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).

(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 48).

Variable speed drive for synchronous motor with speed feedback

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

ATV 71H075N4...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.

Example: ATV 71H075N4 becomes **ATV 71H075N4383**.

See page 52 for the available encoder interface cards.

Variable speed drive with additional power supply

When the total power consumption does not exceed 200 mA, ATV 71W●●●N4 drives can be supplied with an additional 24 V $\overline{-}$ power supply, which allows additional consumption of 250 mA.

In this case, add **A24** at the end of the reference. Example: ATV 71W075N4 becomes **ATV 71W075N4A24**.

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.

ATV 71HD55M3X, HD75M3X, ATV 71HD90N4...HC50N4, ATV 71H●●●Y and ATV 71W●●●N4A24 drives are supplied as standard in a reinforced version.

To order ATV 71H●●●M3 and ATV 71H075N4...HD75N4 variable speed drives in a reinforced version, add **S337** at the end of the reference.

Example: ATV 71H075M3 becomes **ATV 71H075M3S337**.

To order ATV 71HD11M3X...HD45M3X drives in this version, add **337** at the end of the reference.

Example: ATV 71HD11M3X becomes **ATV 71HD11M3X337**.

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

Variable speed drive with integrated terminal

Except for ATV 71P●●●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.

ATV 71H037M3...HD15M3X and ATV 71H075N4...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.

Example: ATV 71H075M3 becomes **ATV 71H075M3Z**.

To order ATV 71H075N4383...HD75N4383 drives without a graphic display terminal, please contact our Customer Care Centre.

Variable speed drive without DC choke

ATV 71HD90N4...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 78), by adding **D** at the end of the reference.

Example: ATV 71HD90N4 becomes **ATV 71HD90N4D**.

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

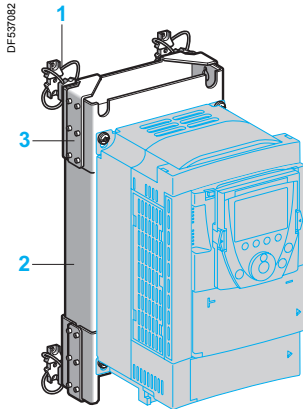
ATV 71W●●●N4 drives are supplied as standard with a European version EMC plate. To order drives with an EMC plate conforming to NEMA type 12 standard, add **U** at the end of the reference. This plate is supplied without a drill hole.

Example: ATV 71W075N4 becomes **ATV 71W075N4U**.

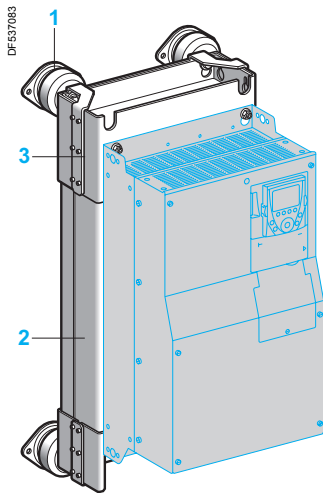
Note:

- ATV 71H037M3...HD45M3X, ATV 71H075N4...HD75N4, ATV 71H●●●S6X and ATV 71HU22Y...HD90Y drives are supplied as standard with a European version EMC plate.

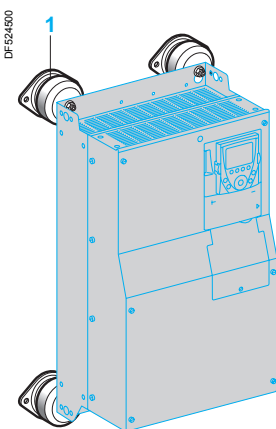
- ATV 71HD55M3X, HD75M3X, ATV 71HD90N4...HC50N4, ATV 71P●●●N4Z and ATV 71HC11Y...HC63Y drives are supplied as standard without a plate for EMC mounting. Depending on the reference, the European version EMC plate is included in the UL Type 1 or IP 31 kit (see pages 28 and 29).



ATV 71HD11M3X drive
mounted on DNV kit VW3 A9 625



ATV 71HD45N4 drive
mounted on DNV kit VW3 A9 628



ATV 71H●●●Y drive
mounted on DNV kit VW3 A9 64●

DNV kit

This kit enables Altivar 71 variable speed drives to satisfy the requirements of the DNV certification body.

For the following variable speed drives:

- ATV 71H●●●M3
- ATV 71HD11M3X...HD45M3X
- ATV 71H075N4...HD75N4

the kit includes:

- Shock-absorbing mounts **1**
- An additional EMC input filter **2**
- EMC filter supports **3**
- Fixing accessories

It is mounted on the back of the variable speed drive on the additional EMC filter supplied with the DNV kit as standard.

References

For drives	Reference	Weight kg
ATV 71H037M3...HU15M3 ATV 71H075N4...HU22N4	VW3 A9 621	5.400
ATV 71HU22M3...HU40M3 ATV 71HU30N4, HU40N4	VW3 A9 622	7.400
ATV 71HU55M3 ATV 71HU55N4, HU75N4	VW3 A9 623	9.800
ATV 71HU75M3 ATV 71HD11N4	VW3 A9 624	11.200
ATV 71HD11M3X, HD15M3X ATV 71HD15N4, HD18N4	VW3 A9 625	16.500
ATV 71HD18M3X, HD22M3X ATV 71HD22N4	VW3 A9 626	20.000
ATV 71HD30N4, HD37N4	VW3 A9 627	22.500
ATV 71HD30M3X...HD45M3X ATV 71HD45N4...HD75N4	VW3 A9 628	53.500

For ATV 71HU22Y...HD30Y variable speed drives, the kit includes:

- Shock-absorbing mounts **1**
- An EMC input filter
- Fixing accessories

The shock-absorbing mounts are mounted on the back of the variable speed drive. The EMC filter is positioned beside the unit.

Reference

For drives	Reference	Weight kg
ATV 71HU22Y...HD30Y	VW3 A9 642	9.000

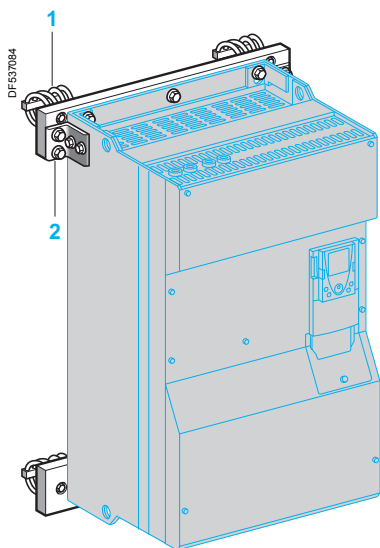
For ATV 71HD37Y...HD90Y variable speed drives, the kit includes:

- Shock-absorbing mounts **1**
- An EMC input filter
- A line choke
- Fixing accessories

The shock-absorbing mounts are mounted on the back of the variable speed drive. The EMC filter is positioned beside the unit. The line choke must be installed upstream of the drive.

Reference

For drives	Reference	Weight kg
ATV 71HD37Y...HD90Y	VW3 A9 643	23.000



ATV 71HC11N4D drive
mounted on DNV kit VW3 A9 631

DNV kit (continued)

For the following variable speed drives:

- ATV 71HD55M3X, HD75M3X
- ATV 71HD90N4D...HC50N4D
- ATV 71HC11Y...HC63Y

the kit includes:

- Shock-absorbing mounts **1**
- The mechanical fittings (rails and brackets) required for mounting **2**
- Fixing accessories

It is mounted on the back of the variable speed drive using the mechanical fittings.

References

For drives	Line choke (1)	EMC filter (2)	Reference	Weight kg
ATV 71HD55M3X (3)	VW3 A4 562	VW3 A4 410	VW3 A9 629	–
ATV 71HD90N4D	VW3 A4 558	VW3 A4 410	VW3 A9 629	–
ATV 71HD75M3XD (3)	VW3 A4 563	VW3 A4 410	VW3 A9 631	–
ATV 71HC11N4D	VW3 A4 559	VW3 A4 410	VW3 A9 631	–
ATV 71HC13N4D	VW3 A4 560	VW3 A4 410	VW3 A9 633	–
ATV 71HC16N4D	VW3 A4 561	VW3 A4 411	VW3 A9 635	–
ATV 71HC20N4D	VW3 A4 569	VW3 A4 411	VW3 A9 637	–
ATV 71HC25N4D, HC28N4D	VW3 A4 564	VW3 A4 411	VW3 A9 638	–
ATV 71HC31N4D	VW3 A4 565	VW3 A4 412	VW3 A9 639	–
ATV 71HC40N4D	2 x VW3 A4 569	VW3 A4 412	VW3 A9 640	–
ATV 71HC50N4D	2 x VW3 A4 564	VW3 A4 413	VW3 A9 641	–
ATV 71HC11Y (4)	VW3 A4 570	–	VW3 A9 644	–
ATV 71HC13Y, HC16Y (4)	VW3 A4 571	–	VW3 A9 645	–
ATV 71HC20Y (4)	VW3 A4 560	–	VW3 A9 646	–
ATV 71HC25Y, HC31Y (4)	VW3 A4 572	–	VW3 A9 647	–
ATV 71HC40Y (4)	2 x VW3 A4 568	–	VW3 A9 648	–
ATV 71HC50Y, HC63Y (4)	2 x VW3 A4 572	–	VW3 A9 649	–

DNV shock-absorbing mounts

These mounts **1** are mounted on ATV 71H075N4...HD37N4 and ATV 71HU22Y...HD90Y drives.

They are supplied with the fixing accessories necessary for fixing the shock-absorbing mounts on the back of the drive.

References

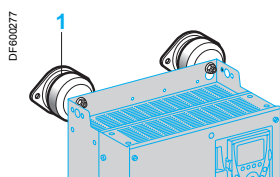
Description	For drives	Reference	Weight kg
DNV shock-absorbing mounts 1 supplied with fixing accessories	ATV 71H075N4...HU75N4	VW3 A9 650	0.215
	ATV 71HD11N4...HD18N4	VW3 A9 651	0.345
	ATV 71HD22N4...HD37N4	VW3 A9 652	0.650
	ATV 71HU22Y...HD30Y	VW3 A9 653	2.700
	ATV 71HD37Y...HD90Y	VW3 A9 654	2.700

(1) A line choke must be used which must be ordered separately (see page 78).

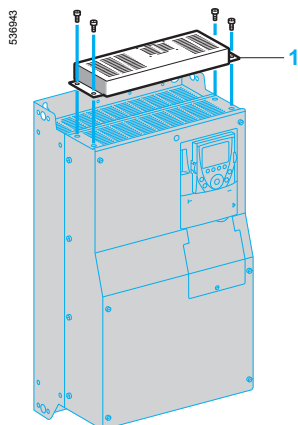
(2) An EMC filter must be used which must be ordered separately (see page 84).

(3) If using the DNV kit, do not mount the DC choke supplied as standard with the drive.

(4) When using a DNV kit, the variable speed drive and the transformer for the fan are mounted separately. Please refer to the dimensions on our website www.schneider-electric.com.



DNV shock-absorbing mounts



Control card fan kit

Control card fan kit (for ATV 71H●●●● drives on heatsink)

This kit is required for ATV 71HD18M3X...HD45M3X, ATV 71HD22N4...HD75N4 and ATV 71HU22Y...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, please refer to the curves on our website 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
- Fixing accessories
- A manual

References

For drives	Reference	Weight kg
ATV 71HD18M3X, HD22M3X ATV 71HD22N4 ATV 71HU22Y...HD30Y	VW3 A9 404	–
ATV 71HD30N4, HD37N4	VW3 A9 405	–
ATV 71HD30M3X...HD45M3X	VW3 A9 406	–
ATV 71HD45N4...HD75N4 ATV 71HD37Y...HD90Y	VW3 A9 407	–

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 extension card.

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

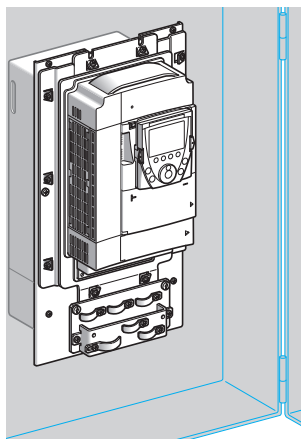
- Max. current: 200 mA
- Response time: 5 ms to change from state 0 to state 1, 20 ms to change from state 1 to state 0
- Logic state 0 for a voltage below 20 V, logic state 1 for a voltage between 70 V and 132 V

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

Reference

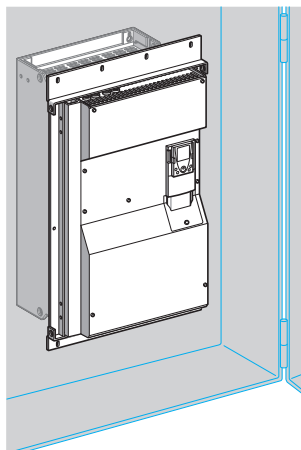
Description	Reference	Weight kg
Adaptor for 115 V ~ logic inputs	VW3 A3 101	–

538946



ATV 71HU75N4 flush-mounted drive

538947



ATV 71HC28N4D flush-mounted drive

Kit for flush-mounting in a dust and damp proof enclosure (for ATV 71H●●●● 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 ATV 71H●●●M3, ATV 71H●●●M3X, ATV 71H075N4...HC28N4, ATV 71HD90N4D...HC28N4D and ATV 71HU22Y...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 ATV 71HD18M3X...HD45M3X, ATV 71HD22N4...HD75N4, ATV 71H●●●S6X and ATV 71HU22Y...HD90Y drives to prevent hot spots (see page 25).

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)
- Fixing accessories
- A manual

References

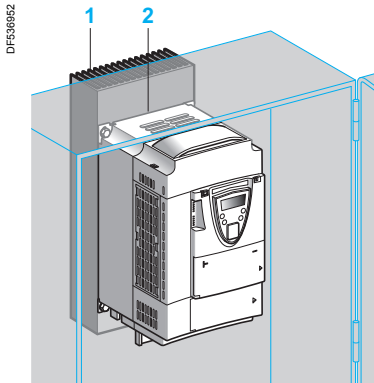
For drives	Reference	Weight kg
ATV 71H037M3...HU15M3 ATV 71H075N4...HU22N4	VW3 A9 501	2.700
ATV 71HU22M3...HU40M3 ATV 71HU30N4, HU40N4	VW3 A9 502	3.100
ATV 71HU55M3 ATV 71HU55N4, HU75N4	VW3 A9 503	3.700
ATV 71HU75M3 ATV 71HD11N4 ATV 71HU15S6X...HU75S6X	VW3 A9 504	4.600
ATV 71HD11M3X, HD15M3X ATV 71HD15N4, HD18N4	VW3 A9 505	4.900
ATV 71HD18M3X, HD22M3X ATV 71HD22N4 ATV 71HU22Y...HD30Y	VW3 A9 506	3.900
ATV 71HD30N4, HD37N4	VW3 A9 507	4.200
ATV 71HD30M3X...HD45M3X	VW3 A9 508	4.900
ATV 71HD45N4...HD75N4 ATV 71HD37Y...HD90Y	VW3 A9 509	5.200
ATV 71HD55M3X (2) ATV 71HD90N4 (2) ATV 71HD90N4D (3)	VW3 A9 510	5.100
ATV 71HD75M3X (2) ATV 71HC11N4 (2) ATV 71HC11N4D (3)	VW3 A9 511	3.600
ATV 71HC13N4 (2) ATV 71HC13N4D (3) ATV 71HC11Y...HC16Y (4)	VW3 A9 512	4.300
ATV 71HC16N4 (2) ATV 71HC16N4D (3)	VW3 A9 513	4.400
ATV 71HC20N4...HC28N4 (2)	Without braking unit VW3 A9 514	4.700
ATV 71HC20N4D...HC28N4D (3) ATV 71HC20Y...HC31Y (4)	With braking unit VW3 A9 515	4.700

(1) Power dissipated in the enclosure for dust and damp proof flush-mounting: please consult our website 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.



ATV 71PU22N4Z drive
in a dust and damp proof enclosure

Kit for mounting in a dust and damp proof enclosure

(for ATV 71P●●●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
ATV 71P075N4Z...PU22N4Z	VW3 A9 801	–
ATV 71PU30N4Z, PU40N4Z	VW3 A9 802	–
ATV 71PU55N4Z, PU75N4Z	VW3 A9 803	–

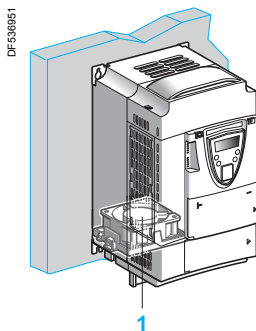
Fan for variable speed drives on base plate

This fan 1 is required for ATV 71P●●●N4Z drives if they are not equipped with a DC choke (see page 76).

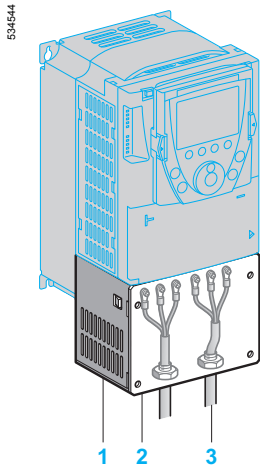
It is mounted on the underside of the drive, thereby enabling installation dimensions to be optimized. It is powered by the drive.

References

For drives	Reference	Weight kg
ATV 71P075N4Z...PU22N4Z	VZ3 V1 203	–
ATV 71PU30N4Z, PU40N4Z	VZ3 V1 209	–
ATV 71PU55N4Z, PU75N4Z	VZ3 V1 204	–
ATV 71PD11N4Z	VZ3 V1 210	–



ATV 71PU22N4Z drive with
VZ3 V1 203 fan



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

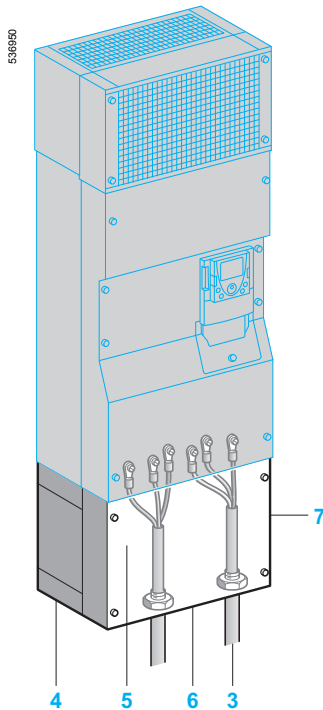
When the drive is mounted directly on a wall outside the enclosure, this kit can be used to ensure UL Type 1 conformity when connecting the cables with a tube. The shielding is connected inside the kit.

For ATV 71H●●●M3, ATV 71HD11M3X...HD45M3X, ATV 71H075N4...HD75N4, ATV 71P●●●N4Z, ATV 71H●●●S6X and ATV 71HU22Y...HD90Y drives, the kit includes:

- All the mechanical fittings **1** including a pre-cut plate **2** for connecting the tubes **3**
- Fixing accessories
- A manual

For ATV 71HD55M3X, HD75M3X, ATV 71HD90N4...HC28N4, ATV 71HD90N4D...HC28N4D and ATV 71HC11Y...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**
- Fixing accessories
- A manual



References

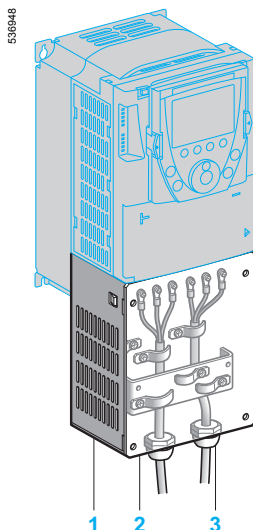
For drives	Reference	Weight kg
ATV 71H037M3...HU15M3 ATV 71H075N4...HU22N4 ATV 71P075N4Z...PU22N4Z	VW3 A9 201	1.300
ATV 71HU22M3...HU40M3 ATV 71HU30N4, HU40N4 ATV 71PU30N4Z, PU40N4Z	VW3 A9 202	1.500
ATV 71HU55M3 ATV 71HU55N4, HU75N4 ATV 71PU55N4Z, PU75N4Z	VW3 A9 203	1.800
ATV 71HU75M3 ATV 71HD11N4 ATV 71HU15S6X...HU75S6X	VW3 A9 204	2.000
ATV 71HD11M3X, HD15M3X ATV 71HD15N4, HD18N4	VW3 A9 205	2.800
ATV 71HD18M3X, HD22M3X ATV 71HD22N4 ATV 71HU22Y...HD30Y	VW3 A9 206	4.000
ATV 71HD30N4, HD37N4	VW3 A9 207	5.000
ATV 71HD30M3X...HD45M3X	VW3 A9 217	7.000
ATV 71HD45N4...HD75N4 ATV 71HD37Y...HD90Y	VW3 A9 208	7.200
ATV 71HD55M3X (1) ATV 71HD90N4 (1) ATV 71HD90N4D (2)	VW3 A9 209	9.400
ATV 71HD75M3X (1) ATV 71HC11N4 (1) ATV 71HC11N4D (2)	VW3 A9 210	11.800
ATV 71HC13N4 (1) ATV 71HC13N4D (2) ATV 71HC11Y...HC16Y (3)	VW3 A9 211	11.600
ATV 71HC16N4 (1) ATV 71HC16N4D (2)	VW3 A9 212	14.600
ATV 71HC20N4...HC28N4 (1) Without braking unit	VW3 A9 213	19.500
ATV 71HC20N4D...HC28N4D (2) With braking unit	VW3 A9 214	19.500
ATV 71HC20Y...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.

UL Type 1 conformity kits



IP 21 conformity kit

IP 21 or IP 31 conformity kit (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.

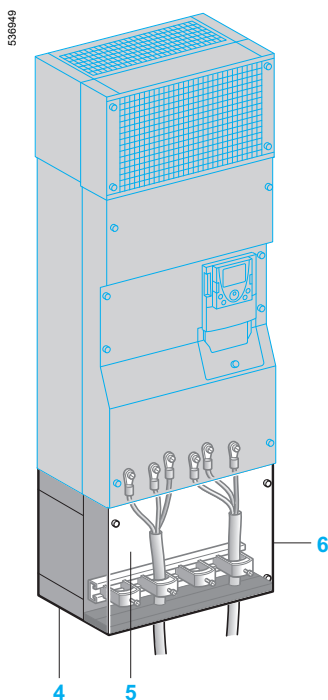
The shielding is connected inside the kit.

For ATV 71H●●●M3, ATV 71HD11M3X...HD45M3X, ATV 71H075N4...HD75N4, ATV 71P●●●N4Z, ATV 71H●●●S6X and ATV 71HU22Y...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**
- Fixing accessories
- A manual

For ATV 71HD55M3X, HD75M3X, ATV 71HD90N4...HC50N4 and ATV 71HC11Y...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**
- Fixing accessories
- A manual



IP 31 conformity kit

References

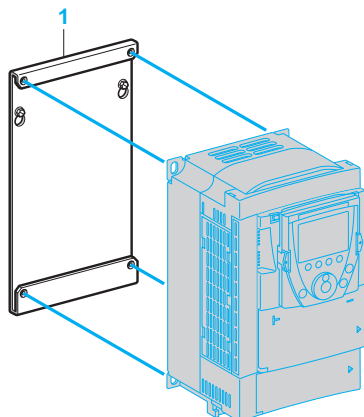
For drives	Degree of protection	Reference	Weight kg	
ATV 71H037M3...HU15M3 ATV 71H075N4...HU22N4 ATV 71P075N4Z...PU22N4Z	IP 21	VW3 A9 101	1.300	
ATV 71HU22M3...HU40M3 ATV 71HU30N4, HU40N4 ATV 71PU30N4Z, PU40N4Z	IP 21	VW3 A9 102	1.500	
ATV 71HU55M3 ATV 71HU55N4, HU75N4 ATV 71PU55N4Z, PU75N4Z	IP 21	VW3 A9 103	1.800	
ATV 71HU75M3 ATV 71HD11N4 ATV 71HU15S6X...HU75S6X	IP 21	VW3 A9 104	2.000	
ATV 71HD11M3X, HD15M3X ATV 71HD15N4, HD18N4	IP 21	VW3 A9 105	2.800	
ATV 71HD18M3X, HD22M3X ATV 71HD22N4 ATV 71HU22Y...HD30Y	IP 21	VW3 A9 106	4.000	
ATV 71HD30N4, HD37N4 ATV 71HD30M3X...HD45M3X	IP 21	VW3 A9 107	5.000	
ATV 71HD45N4...HD75N4 ATV 71HD37Y...HD90Y	IP 21	VW3 A9 108	7.000	
ATV 71HD55M3X (1) ATV 71HD90N4 (1) ATV 71HD90N4D (2)	IP 31	VW3 A9 109	9.400	
ATV 71HD75M3X (1) ATV 71HC11N4 (1) ATV 71HC11N4D (2)	IP 31	VW3 A9 110	11.800	
ATV 71HC13N4 (1) ATV 71HC13N4D (2) ATV 71HC11Y...HC16Y (3)	IP 31	VW3 A9 111	11.600	
ATV 71HC16N4 (1) ATV 71HC16N4D (2)	IP 31	VW3 A9 112	14.600	
ATV 71HC20N4...HC28N4 (1) ATV 71HC20N4D...HC28N4D (2) ATV 71HC20Y...HC31Y (3)	Without braking unit With braking unit	IP 31 IP 31	VW3 A9 113 VW3 A9 114	19.500 19.500
ATV 71HC31N4, HC40N4 (1) ATV 71HC31N4D, HC40N4D (2)	IP 31	VW3 A9 115	25.000	
ATV 71HC50N4 (1) ATV 71HC50N4D (2) ATV 71HC40Y...HC63Y (3)	IP 31	VW3 A9 116	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.

538945



Substitution kit VW3 A9 304

Substitution kit for Altivar 58 or Altivar 58F drives

This kit **1** is used to install an Altivar 71 drive in the 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			
200...240 V single-phase supply voltage					
ATV 58HU09M2	0,37	0,5	ATV 71H075M3	VW3 A9 301	—
ATV 58HU18M2	0,75	1	ATV 71HU15M3	VW3 A9 301	—
ATV 58HU29M2	1,5	2	ATV 71HU22M3	VW3 A9 303	—
ATV 58HU41M2	2,2	3	ATV 71HU30M3	VW3 A9 303	—
ATV 58HU72M2	3	—	ATV 71HU40M3	VW3 A9 304	—
ATV 58HU90M2	4	5	ATV 71HU55M3	VW3 A9 306	—
ATV 58HD12M2	5,5	7,5	ATV 71HU75M3	VW3 A9 307	—

200...240 V three-phase supply voltage

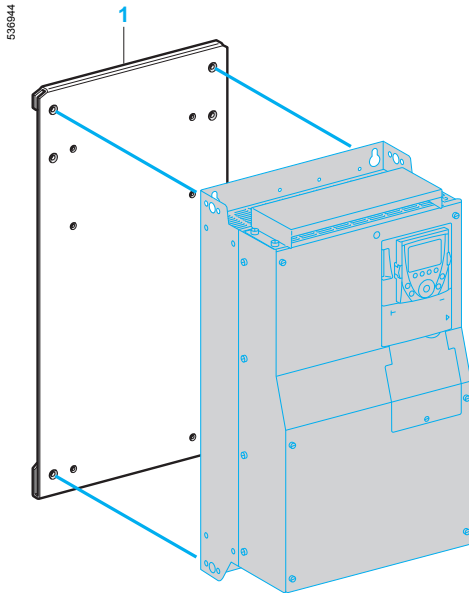
ATV 58HU29M2	1,5	2	ATV 71HU15M3	VW3 A9 302	—
ATV 58HU41M2	2,2	3	ATV 71HU22M3	VW3 A9 303	—
ATV 58HU54M2	3	—	ATV 71HU30M3	VW3 A9 304	—
ATV 58HU72M2	4	5	ATV 71HU40M3	VW3 A9 304	—
ATV 58HU90M2	5,5	7,5	ATV 71HU55M3	VW3 A9 306	—
ATV 58HD12M2	7,5	10	ATV 71HU75M3	VW3 A9 307	—
ATV 58HD16M2X	11	15	ATV 71HD11M3X	VW3 A9 309	—
ATV 58HD23M2X	15	20	ATV 71HD15M3X	VW3 A9 309	—
ATV 58HD28M2X	18,5	25	ATV 71HD18M3X	VW3 A9 312	—
ATV 58HD33M2X	22	30	ATV 71HD22M3X	VW3 A9 312	—
ATV 58HD46M2X	30	40	ATV 71HD30M3X	VW3 A9 314	—

380...480 V three-phase supply voltage

ATV 58HU18N4	0,75	1	ATV 71H075N4	VW3 A9 302	—
ATV 58HU29N4	1,5	2	ATV 71HU15N4	VW3 A9 302	—
ATV 58HU41N4	2,2	3	ATV 71HU22N4	VW3 A9 302	—
ATV 58HU54N4	3	—	ATV 71HU30N4	VW3 A9 304	—
ATV 58HU72N4	4	5	ATV 71HU40N4	VW3 A9 304	—
ATV 58HU90N4	5,5	7,5	ATV 71HU55N4	VW3 A9 305	—
ATV 58HD12N4	7,5	10	ATV 71HU75N4	VW3 A9 306	—
ATV 58HD16N4	11	15	ATV 71HD11N4	VW3 A9 307	—
ATV 58HD23N4	15	20	ATV 71HD15N4	VW3 A9 308	—
ATV 58HD28N4	18,5	25	ATV 71HD18N4	VW3 A9 309	—
ATV 58HD33N4	22	30	ATV 71HD22N4	VW3 A9 310	—
ATV 58HD46N4	30	40	ATV 71HD30N4	VW3 A9 310	—
ATV 58HD54N4	37	50	ATV 71HD37N4	VW3 A9 312	—
ATV 58HD64N4	45	60	ATV 71HD45N4	VW3 A9 312	—
ATV 58HD79N4	55	75	ATV 71HD55N4	VW3 A9 312	—

500 V three-phase supply voltage

ATV 58HU18N4	0,75	1	ATV 71HU22Y	VW3 A9 310	—
ATV 58HU29N4	1,5	2	ATV 71HU22Y	VW3 A9 310	—
ATV 58HU41N4	2,2	3	ATV 71HU30Y	VW3 A9 310	—
ATV 58HU54N4	3	—	ATV 71HU40Y	VW3 A9 310	—
ATV 58HU72N4	4	5	ATV 71HU55Y	VW3 A9 310	—
ATV 58HU90N4	5,5	7,5	ATV 71HU75Y	VW3 A9 310	—
ATV 58HD12N4	7,5	10	ATV 71HD11Y	VW3 A9 310	—
ATV 58HD16N4	11	15	ATV 71HD15Y	VW3 A9 310	—
ATV 58HD23N4	15	20	ATV 71HD18Y	VW3 A9 310	—
ATV 58HD28N4	18,5	25	ATV 71HD22Y	VW3 A9 310	—
ATV 58HD33N4	22	30	ATV 71HD30Y	VW3 A9 310	—
ATV 58HD46N4	30	40	ATV 71HD37Y	VW3 A9 312	—
ATV 58HD54N4	37	50	ATV 71HD45Y	VW3 A9 312	—
ATV 58HD64N4	45	60	ATV 71HD55Y	VW3 A9 312	—
ATV 58HD79N4	55	75	ATV 71HD75Y	VW3 A9 312	—



Substitution kit VW3 A9 312

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			
200...240 V three-phase supply voltage					
ATV 58HD16M2X	15	20	ATV 71HD15M3X	VW3 A9 309	–
ATV 58HD23M2X	18,5	25	ATV 71HD18M3X	VW3 A9 310	–
ATV 58HD28M2X	22	30	ATV 71HD22M3X	VW3 A9 312	–
ATV 58HD33M2X	30	40	ATV 71HD30M3X	VW3 A9 312	–
ATV 58HD46M2X	37	50	ATV 71HD37M3X	VW3 A9 312	–

380...480 V three-phase supply voltage

ATV 58HD28N4	22	30	ATV 71HD22N4	VW3 A9 310	–
ATV 58HD33N4	30	40	ATV 71HD30N4	VW3 A9 310	–
ATV 58HD46N4	37	50	ATV 71HD37N4	VW3 A9 310	–
ATV 58HD54N4	45	60	ATV 71HD45N4	VW3 A9 312	–
ATV 58HD64N4	55	75	ATV 71HD55N4	VW3 A9 312	–
ATV 58HD79N4	75	100	ATV 71HD75N4	VW3 A9 312	–

500 V three-phase supply voltage

ATV 58HD28N4	22	30	ATV 71HD30Y	VW3 A9 310	–
ATV 58HD33N4	30	40	ATV 71HD37Y	VW3 A9 312	–
ATV 58HD46N4	37	50	ATV 71HD45Y	VW3 A9 312	–
ATV 58HD54N4	45	60	ATV 71HD55Y	VW3 A9 312	–
ATV 58HD64N4	55	75	ATV 71HD75Y	VW3 A9 312	–
ATV 58HD79N4	75	100	ATV 71HD90Y	VW3 A9 312	–



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 22). It can be:

It can be:

- Used remotely in conjunction with the appropriate accessories (see below)
- Connected to several drives using multidrop link components (see page 33)

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 direction of rotation of the motor
- 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	VW3 A1 101	0.180

Remote graphic display terminal accessories

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
 - Fixing accessories

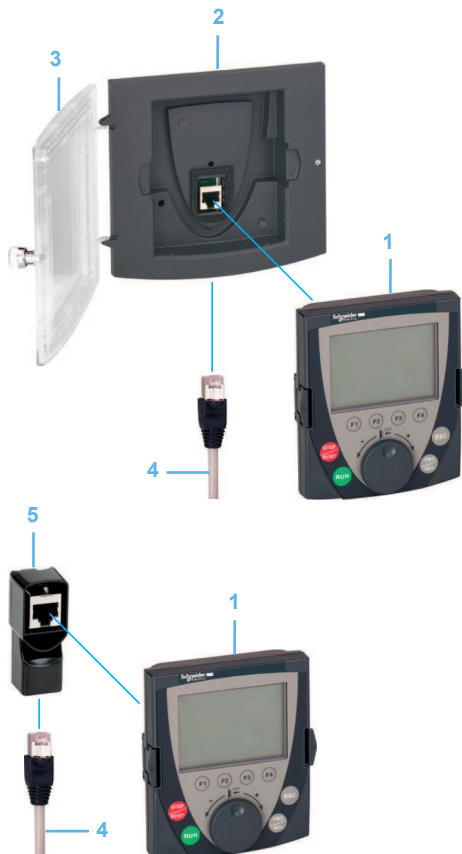
□ All the mechanical fittings

□ Fixing accessories

- 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 VW3 A1 101 to the remote-mounting cordset VW3 A1 104 R●●●



Remote graphic display terminal accessories

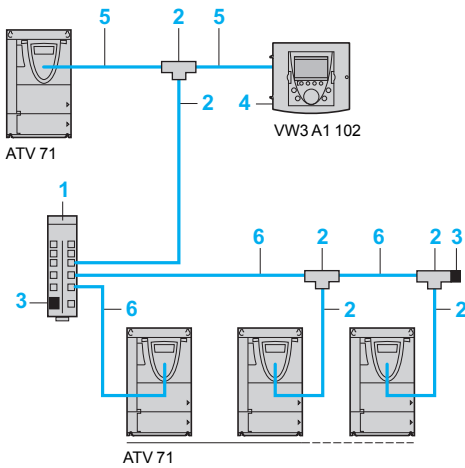
References

Description	Item no.	Length m	Degree of protection	Reference	Weight kg
Remote mounting kit Order with remote-mounting cordset VW3 A1 104 R●●●	2	-	IP 54	VW3 A1 102	0.150
Door for remote mounting kit	3	-	IP 65	VW3 A1 103	0.040
Preassembled remote-mounting cordsets with 2 x RJ45 connectors	4	1	-	VW3 A1 104 R10	0.050
	4	3	-	VW3 A1 104 R30	0.150
	4	5	-	VW3 A1 104 R50	0.250
	4	10	-	VW3 A1 104 R100	0.500
Female/female RJ45 adaptor	5	-	-	VW3 A1 105	0.010

Variable speed drives

Altivar 71

Option: Dialogue



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 lots of	Unit reference	Weight kg
Modbus splitter box 10 RJ45 connectors and 1 screw terminal	1	–	LU9 GC3	0.500
Modbus T-junction boxes With integrated cable (0.3 m)	2	–	VW3 A8 306 TF03	–
With integrated cable (1 m)	2	–	VW3 A8 306 TF10	–
Modbus line terminator For RJ45 connector	3	2	VW3 A8 306 RC	0.010
Remote mounting kit For graphic display terminal VW3 A1 101	4	–	VW3 A1 102	0.150

Cordsets (preassembled with 2 RJ45 connectors)

Used for	Item no.	Length m	Reference	Weight kg
For remote operation of the Altivar 71 and the graphic display terminal VW3 A1 101	5	1	VW3 A1 104 R10	0.050
		3	VW3 A1 104 R30	0.150
		5	VW3 A1 104 R50	0.250
		10	VW3 A1 104 R100	0.500
Modbus serial link	6	0.3	VW3 A8 306 R03	0.025
		1	VW3 A8 306 R10	0.060
		3	VW3 A8 306 R30	0.130



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 (TCSW AAC13FB) via the Bluetooth® wireless link.

SoMove Mobile software and drive configuration files can be downloaded from our website www.schneider-electric.com.

Reference

Description	For drives	Reference	Weight kg
SoMove Mobile software for mobile phones (1)	ATV 71●●●●●●	-	-

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 (TCSW AAC13FB).

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

For presentation, description and references, see page 36.

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



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
Simple Loader configuration tool The tool is supplied with a preassembled cordset with 2 RJ45 connectors.	ATV 71●●●●●●	VW3 A8 120	—

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 do not need to be powered up.

Reference

Description	For drives	Reference	Weight kg
Multi-Loader configuration tool Includes: - 1 preassembled cordset with 2 RJ45 connectors - 1 preassembled cordset with a USB type A connector and a USB Mini-B type connector - 1 x SD memory card - 1 x female/female RJ45 adaptor - 4 AA/LR6 1.5 V batteries - 1 anti-shock protection - 1 carrying handle	ATV 71●●●●●●	VW3 A8 121	—



SoMove start page

Presentation

SoMove is user-friendly setup software for PC designed for configuring the following Schneider Electric motor control devices:

- ATV 12, ATV 312, ATV 31, ATV 32, ATV 61 and ATV 71 drives
- ATS 22 starters
- TeSys U starter-controllers
- TeSys T motor management system
- Lexium 32 servo drives

SoMove software incorporates various functions for the device setup phases, such as:

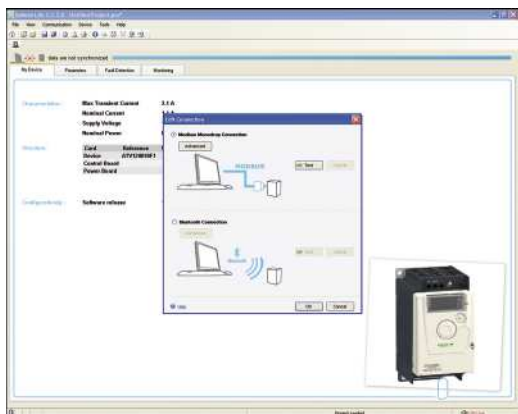
- Configuration preparation
- Start-up
- Maintenance

To facilitate setup and maintenance, SoMove software can use a direct USB/RJ45 cable link or a Bluetooth® wireless link.

SoMove software is also compatible with the Multi-Loader configuration tool and SoMove Mobile software for mobile phones.

These tools can save a significant amount of time when loading, duplicating or editing configurations on a device.

SoMove software and all the DTMs (Device Type Managers) associated with the devices can be downloaded from our website www.schneider-electric.com.



Example of connecting SoMove software to an ATV 12 drive

Functions

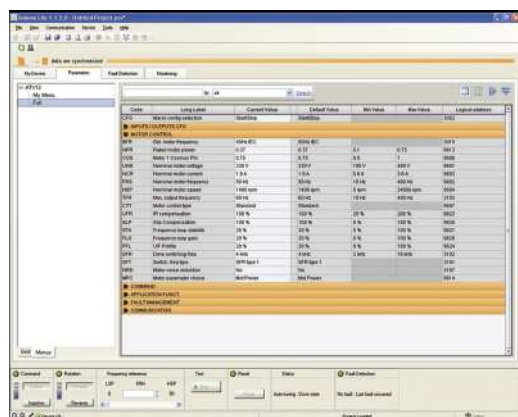
Configuration preparation in disconnected mode

SoMove software has a genuine disconnected mode which provides access to all the device parameters. This mode can be used to generate the device configuration. The configuration can be saved, printed and exported to office automation software.

SoMove software also checks the consistency of the parameters, validating the configurations created in disconnected mode.

A large number of functions are available in disconnected mode, in particular:

- The device configuration software wizard
- The configuration comparison function
- Saving, copying, printing and creating configuration files for export to Multi-Loader, SoMove Mobile or Microsoft Excel® tools, and sending configurations by e-mail



SoMove control panel

Setup

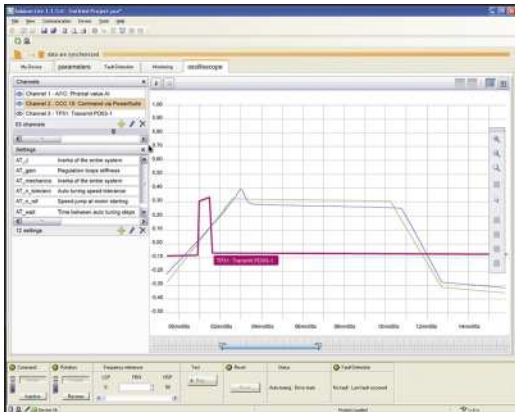
When the PC is connected to the device, SoMove software can be used for:

- Transferring the generated configuration onto the device
- Adjustment and monitoring, which includes such functions as:
 - The oscilloscope
 - Display of communication parameters
- Easy control via the control panel user interface
- Saving the final configuration

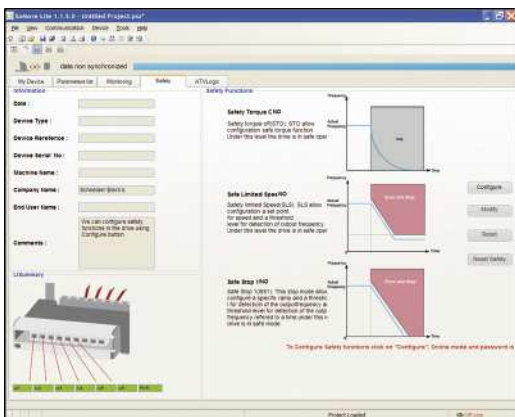
Maintenance

In order to simplify maintenance operations, SoMove software can be used to:

- Compare the configuration of a device currently being used with a configuration saved on the PC
- Transfer a configuration to a device
- Compare oscilloscope curves
- Save oscilloscope curves and faults



SoMove oscilloscope function



SoMove Safety function

Functions (continued)

User interface

SoMove software provides fast, direct access to all information on the device via five tabs:

- **My Device:** Displays all the device information (type, reference, software versions, option cards, etc.)
- **Parameters:** Displays all the device adjustment parameters, shown in a table or in the form of diagrams
- **Faults:** Displays a list of the faults that may be encountered with the device, the fault log and any current faults or alarms
- **Monitoring:** Provides a realtime display of the device status, its I/O and all the monitoring parameters. It is possible to create your own control panel by selecting your parameters and how they are to be represented.
- **Oscilloscope:** Provides a high-speed oscilloscope (for recording traces in the device) or low-speed oscilloscope (for recording traces in the software for devices that do not have an integrated oscilloscope)

SoMove's user interface automatically adapts to the specific configured device by offering additional tabs:

- **Safety:** For configuring the Safety functions on ATV 32 variable speed drives and Lexium 32 servo drives. It can also be used to:
 - Display the I/O
 - Compile and print a report
 - **ATVLogic:** For accessing the ATV 32 drive's programmable function blocks. It can also be used to:
 - Develop a program and transfer it to the drive
 - Display and debug the program already on the drive
 - **Auto-tuning:** For accessing the servo control settings for the three different operating modes of the Lexium 32 servo drive's auto-tuning function:
 - Automatic mode for quick setup, designed for simple applications
 - Semi-automatic mode for quick setup, with the option of optimizing the servo drive/servo motor combination (access to the mechanical and dynamic behaviour parameters)
 - Expert mode for optimizing the adjustment parameters, designed for complex applications

Connections

Modbus serial link

The PC running SoMove software can be connected directly via the RJ45 connector on the device and the USB port on the PC using the USB/RJ45 cable.

See the product references on page 38.

Bluetooth® wireless link

SoMove software can communicate via Bluetooth® wireless link with any Bluetooth® enabled device.

If the device is not Bluetooth® enabled, use the Modbus-Bluetooth® adaptor. This adaptor is connected to the terminal port or the Modbus network port on the device. It has a 20 m range (class 2).

If the PC does not have Bluetooth® technology, use the USB-Bluetooth® adaptor.

See the product references on page 38.



SoMove setup software

TCSW AAC13FB:
Bluetooth® adaptor

References

Description	Reference	Weight kg
SoMove Lite setup software Includes: <ul style="list-style-type: none"> ■ SoMove setup software for PC in English, French, German, Italian, Spanish and Chinese ■ DTMs (Device Type Managers) and technical documentation for variable speed drives, starters and servo motors 	(1)	–
USB/RJ45 cable Used to connect a PC to the device. This cable is 2.5 m long and has a USB connector (PC end) and an RJ45 connector (device end).	TCSM CNAM 3M002P	–
Modbus/Uni-Telway-Bluetooth® adaptor Used to enable any non-Bluetooth® device to communicate via Bluetooth® wireless link (2). Includes: <ul style="list-style-type: none"> ■ 1 Bluetooth® adaptor (range 20 m, class 2) with an RJ45 connector ■ For SoMove: 1 x 0.1 m cordset with 2 x RJ45 connectors ■ For TwidoSuite: 1 x 0.1 m cordset with 1 RJ45 connector and 1 mini DIN connector 	TCSW AAC13FB	0.032
USB-Bluetooth® adaptor for PC Used to enable any non-Bluetooth® PC to communicate via Bluetooth® wireless link (3). It connects to a USB port on the PC. Range 10 m, class 2	VW3 A8 115	0.290

(1) Available on our website www.schneider-electric.com.

(2) Required for the following devices:

- ATV 12, ATV 312, ATV 31, ATV 61 and ATV 71 drives
- ATS 22 starters
- TeSys U starter-controllers
- TeSys T motor management system
- Lexium 32 servo drives

(3) Check the manufacturer's specification.

Compatibility of SoMove software with specific devices

Device	Range	Version of software on the device
Variable speed drive	ATV 12, ATV 312, ATV32	≥ 1.0
	ATV 31	≥ 1.1
	ATV 61, ATV 71	≥ 1.6
Starter	ATS 22	≥ 1.0
Starter-controller	TeSys U	≥ 1.0
Motor management system	TeSys T	≥ 1.0
Servo drive	Lexium 32	≥ 1.0

Environments

SoMove operates in the following PC environments and configurations:

- Microsoft Windows® 7 Professional (1)
- Microsoft Windows® XP Professional SP3
- Microsoft Windows® Vista Business SP2
- Pentium IV (or equivalent), 1 GHz, hard disk with 1 GB available space, 1 GB of RAM (minimum configuration)

(1) Please contact our Customer Care Centre.

Table showing possible combinations of ATV 71H●●●M3 and ATV 71H●●●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
Single-phase supply voltage: 200...240 V 50/60 Hz							
0.37	0.5	ATV 71H075M3	–	–	VW3 A4 401	VW3 A5 101	–
0.75	1	ATV 71HU15M3	–	–	VW3 A4 401	VW3 A5 101	–
1.5	2	ATV 71HU22M3	–	–	VW3 A4 402	VW3 A5 101	–
2.2	3	ATV 71HU30M3	–	–	VW3 A4 402	VW3 A5 102, 103	–
3	–	ATV 71HU40M3	–	VW3 A58 501	VW3 A4 402	VW3 A5 102, 103	–
4	5	ATV 71HU55M3	–	VW3 A58 502	VW3 A4 403	VW3 A5 102, 103	–
5.5	7.5	ATV 71HU75M3	–	VW3 A58 502	VW3 A4 404	VW3 A5 102, 103	–
Three-phase supply voltage: 200...240 V 50/60 Hz							
0.37	0.5	ATV 71H037M3	VW3 A4 501	VW3 A4 551	VW3 A4 401	VW3 A5 101	–
0.75	1	ATV 71H075M3	VW3 A4 503	VW3 A4 551	VW3 A4 401	VW3 A5 101	–
1.5	2	ATV 71HU15M3	VW3 A4 505	VW3 A4 552	VW3 A4 401	VW3 A5 101	–
2.2	3	ATV 71HU22M3	VW3 A4 506	VW3 A4 552	VW3 A4 402	VW3 A5 101	–
3	–	ATV 71HU30M3	VW3 A4 507	VW3 A4 553	VW3 A4 402	VW3 A5 102, 103	–
4	5	ATV 71HU40M3	VW3 A4 508	VW3 A4 554	VW3 A4 402	VW3 A5 102, 103	–
5.5	7.5	ATV 71HU55M3	VW3 A4 508	VW3 A4 554	VW3 A4 403	VW3 A5 102, 103	–
7.5	10	ATV 71HU75M3	VW3 A4 509	VW3 A4 555	VW3 A4 404	VW3 A5 102, 103	–
11	15	ATV 71HD11M3X	VW3 A4 510	VW3 A4 555	VW3 A4 405	VW3 A5 103	–
15	20	ATV 71HD15M3X	VW3 A4 510	VW3 A4 556	VW3 A4 405	VW3 A5 103	–
18.5	25	ATV 71HD18M3X	VW3 A4 511	VW3 A4 557	VW3 A4 406	VW3 A5 103	–
22	30	ATV 71HD22M3X	VW3 A4 511	VW3 A4 557	VW3 A4 406	VW3 A5 103	–
30	40	ATV 71HD30M3X	VW3 A4 512	VW3 A4 557	VW3 A4 408	VW3 A5 104	VW3 A9 612
37	50	ATV 71HD37M3X	VW3 A4 512	VW3 A4 557	VW3 A4 408	VW3 A5 104	VW3 A9 612
45	60	ATV 71HD45M3X	VW3 A4 512	VW3 A4 557	VW3 A4 408	VW3 A5 104	VW3 A9 612
55	75	ATV 71HD55M3X	–	VW3 A4 562	VW3 A4 410	VW3 A5 105	VW3 A9 612
75	100	ATV 71HD75M3X	–	VW3 A4 563	VW3 A4 410	VW3 A5 105	VW3 A9 612
Page		16	77	79	85	88	89

(1) The options available for ATV 71H●●●M3 and H●●●M3X drives are also valid, at the same rating, for ATV 71H●●●M3383 and ATV 71H●●●M3X383 drives.

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	DNV kit
VW3 A5 201	VW3 A7 701	VW3 A7 801	VW3 A9 501	VW3 A9 201	VW3 A9 101	–	–
VW3 A5 201	VW3 A7 702	VW3 A7 802	VW3 A9 501	VW3 A9 201	VW3 A9 101	–	–
VW3 A5 202	VW3 A7 702	VW3 A7 803	VW3 A9 502	VW3 A9 202	VW3 A9 102	–	–
VW3 A5 202	VW3 A7 703	VW3 A7 803	VW3 A9 502	VW3 A9 202	VW3 A9 102	–	–
VW3 A5 203	VW3 A7 703	VW3 A7 803	VW3 A9 502	VW3 A9 202	VW3 A9 102	–	–
VW3 A5 203	VW3 A7 704	VW3 A7 804	VW3 A9 503	VW3 A9 203	VW3 A9 103	–	–
VW3 A5 203	VW3 A7 704	VW3 A7 804	VW3 A9 504	VW3 A9 204	VW3 A9 104	–	–
VW3 A5 201	VW3 A7 701	VW3 A7 801	VW3 A9 501	VW3 A9 201	VW3 A9 101	–	VW3 A9 621
VW3 A5 201	VW3 A7 701	VW3 A7 801	VW3 A9 501	VW3 A9 201	VW3 A9 101	–	VW3 A9 621
VW3 A5 201	VW3 A7 702	VW3 A7 802	VW3 A9 501	VW3 A9 201	VW3 A9 101	–	VW3 A9 621
VW3 A5 202	VW3 A7 702	VW3 A7 803	VW3 A9 502	VW3 A9 202	VW3 A9 102	–	VW3 A9 622
VW3 A5 202	VW3 A7 703	VW3 A7 803	VW3 A9 502	VW3 A9 202	VW3 A9 102	–	VW3 A9 622
VW3 A5 203	VW3 A7 703	VW3 A7 803	VW3 A9 502	VW3 A9 202	VW3 A9 102	–	VW3 A9 622
VW3 A5 203	VW3 A7 704	VW3 A7 804	VW3 A9 503	VW3 A9 203	VW3 A9 103	–	VW3 A9 623
VW3 A5 203	VW3 A7 704	VW3 A7 804	VW3 A9 504	VW3 A9 204	VW3 A9 104	–	VW3 A9 624
VW3 A5 204	VW3 A7 705	VW3 A7 805	VW3 A9 505	VW3 A9 205	VW3 A9 105	–	VW3 A9 625
VW3 A5 204	VW3 A7 706	VW3 A7 805	VW3 A9 505	VW3 A9 205	VW3 A9 105	–	VW3 A9 625
VW3 A5 205	VW3 A7 707	VW3 A7 806	VW3 A9 506	VW3 A9 206	VW3 A9 106	VW3 A9 404	VW3 A9 626
VW3 A5 205	VW3 A7 707	VW3 A7 807	VW3 A9 506	VW3 A9 206	VW3 A9 106	VW3 A9 404	VW3 A9 626
VW3 A5 206	VW3 A7 708	VW3 A7 807	VW3 A9 508	VW3 A9 217	VW3 A9 117	VW3 A9 406	VW3 A9 628
VW3 A5 206	VW3 A7 709	VW3 A7 808	VW3 A9 508	VW3 A9 217	VW3 A9 117	VW3 A9 406	VW3 A9 628
VW3 A5 206	VW3 A7 709	VW3 A7 808	VW3 A9 508	VW3 A9 217	VW3 A9 117	VW3 A9 406	VW3 A9 628
VW3 A5 208	VW3 A7 713	VW3 A7 809	VW3 A9 510	VW3 A9 209	VW3 A9 109	–	VW3 A9 629 (1)
VW3 A5 208	VW3 A7 714	VW3 A7 810	VW3 A9 511	VW3 A9 210	VW3 A9 110	–	VW3 A9 631 (1)
91	65	68	26	28	29	25	23

(1) If using the DNV kit, do not mount the DC choke supplied as standard with the drive.

Table showing possible combinations of ATV 71H●●●N4 drive options

Motor		Drive	Options					IP 20 kit for motor choke
kW	HP		DC choke	Line choke	Passive filter	Additional EMC input filter	Motor choke	
Three-phase supply voltage: 380...480 V 50/60 Hz								
0.75	1	ATV 71H075N4	VW3 A4 501	VW3 A4 551	VW3 A4 6●1	VW3 A4 401	VW3 A5 101, 102, 103	–
1.5	2	ATV 71HU15N4	VW3 A4 502	VW3 A4 551	VW3 A4 6●1	VW3 A4 401	VW3 A5 101, 102, 103	–
2.2	3	ATV 71HU22N4	VW3 A4 503	VW3 A4 552	VW3 A4 6●1	VW3 A4 401	VW3 A5 101, 102, 103	–
3	–	ATV 71HU30N4	VW3 A4 503	VW3 A4 552	VW3 A4 6●1	VW3 A4 402	VW3 A5 101, 102, 103	–
4	5	ATV 71HU40N4	VW3 A4 504	VW3 A4 552	VW3 A4 6●2	VW3 A4 402	VW3 A5 101, 102, 103	–
5.5	7.5	ATV 71HU55N4	VW3 A4 505	VW3 A4 553	VW3 A4 6●2	VW3 A4 403	VW3 A5 102, 103, 104	VW3 A9 612
7.5	10	ATV 71HU75N4	VW3 A4 506	VW3 A4 553	VW3 A4 6●3	VW3 A4 403	VW3 A5 102, 103, 104	VW3 A9 612
11	15	ATV 71HD11N4	VW3 A4 507	VW3 A4 554	VW3 A4 6●3	VW3 A4 404	VW3 A5 102, 103, 104	VW3 A9 612
15	20	ATV 71HD15N4	VW3 A4 508	VW3 A4 554	VW3 A4 6●4	VW3 A4 405	VW3 A5 102, 103, 104	VW3 A9 612
18.5	25	ATV 71HD18N4	VW3 A4 508	VW3 A4 555	VW3 A4 6●5	VW3 A4 405	VW3 A5 102, 103, 104	VW3 A9 612
22	30	ATV 71HD22N4	VW3 A4 510	VW3 A4 555	VW3 A4 6●6	VW3 A4 406	VW3 A5 103, 104	VW3 A9 612
30	40	ATV 71HD30N4	VW3 A4 510	VW3 A4 556	VW3 A4 6●7	VW3 A4 407	VW3 A5 103, 104	VW3 A9 612
37	50	ATV 71HD37N4	VW3 A4 510	VW3 A4 556	VW3 A4 6●7	VW3 A4 407	VW3 A5 103, 104	VW3 A9 612
45	60	ATV 71HD45N4	VW3 A4 511	VW3 A4 556	VW3 A4 6●8	VW3 A4 408	VW3 A5 104	VW3 A9 612
55	75	ATV 71HD55N4	VW3 A4 511	VW3 A4 556	VW3 A4 6●8	VW3 A4 408	VW3 A5 104	VW3 A9 612
75	100	ATV 71HD75N4	VW3 A4 511	VW3 A4 558	VW3 A4 6●9	VW3 A4 408	VW3 A5 104	VW3 A9 612
90	125	ATV 71HD90N4	–	VW3 A4 558	VW3 A4 6●9	VW3 A4 410	VW3 A5 104	VW3 A9 612
110	150	ATV 71HC11N4	–	VW3 A4 559	VW3 A4 6●0	VW3 A4 410	VW3 A5 105	VW3 A9 612
132	200	ATV 71HC13N4	–	VW3 A4 560	VW3 A4 6●1	VW3 A4 410	VW3 A5 105	VW3 A9 612
160	250	ATV 71HC16N4	–	VW3 A4 561	VW3 A4 6●2	VW3 A4 411	VW3 A5 106	VW3 A9 613
200	300	ATV 71HC20N4	–	VW3 A4 569	VW3 A4 6●3	VW3 A4 411	VW3 A5 106	VW3 A9 613
220	350	ATV 71HC25N4	–	VW3 A4 562	VW3 A4 6●3	VW3 A4 411	VW3 A5 106	VW3 A9 613
250	400	ATV 71HC25N4	–	VW3 A4 564	VW3 A4 6●1	VW3 A4 411	VW3 A5 107	VW3 A9 613
280	450	ATV 71HC28N4	–	VW3 A4 564	VW3 A4 6●2	VW3 A4 411	VW3 A5 107	VW3 A9 613
315	500	ATV 71HC31N4	–	VW3 A4 565	VW3 A4 6●2	VW3 A4 412	VW3 A5 107	VW3 A9 613
355	–	ATV 71HC40N4	–	VW3 A4 569	VW3 A4 6●2	VW3 A4 412	VW3 A5 107	VW3 A9 613
400	600	ATV 71HC40N4	–	VW3 A4 569	VW3 A4 6●9	VW3 A4 412	VW3 A5 108	VW3 A9 613
500	700	ATV 71HC50N4	–	VW3 A4 564	VW3 A4 6●2	VW3 A4 413	VW3 A5 108	VW3 A9 613
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Table showing possible combinations of ATV 71Q●●●N4 drive options

Motor		Drive	Options					IP 20 kit for motor choke
kW	HP		DC choke	Line choke	Passive filter	Additional EMC input filter	Motor choke	
Supply voltage: 380...480 V 50/60 Hz								
90	125	ATV 71QD90N4	–	VW3 A4 559	VW3 A4 6●9	VW3 A4 410	VW3 A5 104	VW3 A9 612
110	150	ATV 71QC11N4	–	VW3 A4 560	VW3 A4 6●0	VW3 A4 410	VW3 A5 105	VW3 A9 612
132	200	ATV 71QC13N4	–	VW3 A4 568	VW3 A4 6●1	VW3 A4 410	VW3 A5 105	VW3 A9 612
160	250	ATV 71QC16N4	–	VW3 A4 561	VW3 A4 6●2	VW3 A4 411	VW3 A5 106	VW3 A9 613
200	300	ATV 71QC20N4	–	VW3 A4 569	VW3 A4 6●3	VW3 A4 411	VW3 A5 106	VW3 A9 613
220	350	ATV 71QC25N4	–	VW3 A4 564	VW3 A4 6●3	VW3 A4 411	VW3 A5 106	VW3 A9 613
250	400	ATV 71QC25N4	–	VW3 A4 564	VW3 A4 6●1	VW3 A4 411	VW3 A5 107	VW3 A9 613
315	500	ATV 71QC31N4	–	VW3 A4 561	VW3 A4 6●2	VW3 A4 412	VW3 A5 107	VW3 A9 613
355	–	ATV 71QC40N4	–	VW3 A4 563	VW3 A4 6●2	VW3 A4 412	VW3 A5 107	VW3 A9 613
400	600	ATV 71QC40N4	–	VW3 A4 563	VW3 A4 6●9	VW3 A4 412	VW3 A5 108	VW3 A9 613
500	700	ATV 71QC50N4	–	VW3 A4 573	VW3 A4 6●2	VW3 A4 413	VW3 A5 108	VW3 A9 613
Page		18	–	79	82	85	88	89

Sinus filter	Resistance braking unit	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	DNV kit (1)
–	–	VW3 A7 701	VW3 A7 801	VW3 A9 501	VW3 A9 201	VW3 A9 101	–	VW3 A9 621
VW3 A5 201	–	VW3 A7 701	VW3 A7 801	VW3 A9 501	VW3 A9 201	VW3 A9 101	–	VW3 A9 621
VW3 A5 201	–	VW3 A7 701	VW3 A7 801	VW3 A9 501	VW3 A9 201	VW3 A9 101	–	VW3 A9 621
VW3 A5 201	–	VW3 A7 701	VW3 A7 802	VW3 A9 502	VW3 A9 202	VW3 A9 102	–	VW3 A9 622
VW3 A5 201	–	VW3 A7 701	VW3 A7 802	VW3 A9 502	VW3 A9 202	VW3 A9 102	–	VW3 A9 622
VW3 A5 202	–	VW3 A7 702	VW3 A7 802	VW3 A9 503	VW3 A9 203	VW3 A9 103	–	VW3 A9 623
VW3 A5 203	–	VW3 A7 702	VW3 A7 803	VW3 A9 503	VW3 A9 203	VW3 A9 103	–	VW3 A9 623
VW3 A5 203	–	VW3 A7 703	VW3 A7 803	VW3 A9 504	VW3 A9 204	VW3 A9 104	–	VW3 A9 624
VW3 A5 203	–	VW3 A7 703	VW3 A7 804	VW3 A9 505	VW3 A9 205	VW3 A9 105	–	VW3 A9 625
VW3 A5 204	–	VW3 A7 704	VW3 A7 804	VW3 A9 505	VW3 A9 205	VW3 A9 105	–	VW3 A9 625
VW3 A5 204	–	VW3 A7 704	VW3 A7 804	VW3 A9 506	VW3 A9 206	VW3 A9 106	VW3 A9 404	VW3 A9 626
VW3 A5 204	–	VW3 A7 704	VW3 A7 804	VW3 A9 507	VW3 A9 207	VW3 A9 107	VW3 A9 405	VW3 A9 627
VW3 A5 205	–	VW3 A7 705	VW3 A7 805	VW3 A9 507	VW3 A9 207	VW3 A9 107	VW3 A9 405	VW3 A9 627
VW3 A5 205	–	VW3 A7 707	VW3 A7 805	VW3 A9 509	VW3 A9 208	VW3 A9 108	VW3 A9 407	VW3 A9 628
VW3 A5 206	–	VW3 A7 707	VW3 A7 805	VW3 A9 509	VW3 A9 208	VW3 A9 108	VW3 A9 407	VW3 A9 628
VW3 A5 206	–	VW3 A7 707	VW3 A7 806	VW3 A9 509	VW3 A9 208	VW3 A9 108	VW3 A9 407	VW3 A9 628
VW3 A5 207	–	VW3 A7 710	VW3 A7 811	VW3 A9 510	VW3 A9 209	VW3 A9 109	–	VW3 A9 629
VW3 A5 207	–	VW3 A7 711	VW3 A7 812	VW3 A9 511	VW3 A9 210	VW3 A9 110	–	VW3 A9 631
VW3 A5 208	–	VW3 A7 711	VW3 A7 812	VW3 A9 512	VW3 A9 211	VW3 A9 111	–	VW3 A9 633
VW3 A5 208	–	VW3 A7 712	VW3 A7 813	VW3 A9 513	VW3 A9 212	VW3 A9 112	–	VW3 A9 635
VW3 A5 209	VW3 A7 101	VW3 A7 715	VW3 A7 814	VW3 A9 514, 515	VW3 A9 213, 214	VW3 A9 113, 114	–	VW3 A9 637
VW3 A5 209	VW3 A7 101	VW3 A7 716	VW3 A7 815	VW3 A9 514, 515	VW3 A9 213, 214	VW3 A9 113, 114	–	VW3 A9 638
VW3 A5 210	VW3 A7 101	VW3 A7 716	VW3 A7 815	VW3 A9 514, 515	VW3 A9 213, 214	VW3 A9 113, 114	–	VW3 A9 638
VW3 A5 210	VW3 A7 101	VW3 A7 716	VW3 A7 815	VW3 A9 514, 515	VW3 A9 213, 214	VW3 A9 113, 114	–	VW3 A9 638
VW3 A5 210	VW3 A7 102	VW3 A7 717	VW3 A7 816	–	–	VW3 A9 115	–	VW3 A9 639
VW3 A5 210	VW3 A7 102	VW3 A7 717	VW3 A7 816	–	–	VW3 A9 115	–	VW3 A9 640
VW3 A5 211	VW3 A7 102	VW3 A7 717	VW3 A7 816	–	–	VW3 A9 115	–	VW3 A9 640
VW3 A5 211	VW3 A7 102	VW3 A7 718	VW3 A7 817	–	–	VW3 A9 116	–	VW3 A9 641
91	64	66	69	26	28	29	25	23

Sinus filter	Resistance braking unit	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	DNV kit
VW3 A5 207	–	VW3 A7 710	VW3 A7 811	–	–	–	–	–
VW3 A5 207	–	VW3 A7 711	VW3 A7 812	–	–	–	–	–
VW3 A5 208	–	VW3 A7 711	VW3 A7 812	–	–	–	–	–
VW3 A5 208	VW3 A7 101	VW3 A7 712	VW3 A7 813	–	–	–	–	–
VW3 A5 209	VW3 A7 101	VW3 A7 715	VW3 A7 814	–	–	–	–	–
VW3 A5 209	VW3 A7 101	VW3 A7 716	VW3 A7 815	–	–	–	–	–
VW3 A5 210	VW3 A7 101	VW3 A7 716	VW3 A7 815	–	–	–	–	–
VW3 A5 210	VW3 A7 102	VW3 A7 717	VW3 A7 816	–	–	–	–	–
VW3 A5 210	VW3 A7 102	VW3 A7 717	VW3 A7 816	–	–	–	–	–
VW3 A5 211	VW3 A7 102	VW3 A7 717	VW3 A7 816	–	–	–	–	–
VW3 A5 211	VW3 A7 102	VW3 A7 718	VW3 A7 817	–	–	–	–	–
91	64	66	69	–	–	–	–	–

(1) For DNV kits VW3 A9 629...641, order a drive without a DC choke, by adding a D at the end of the reference.
E.g. ATV 71HD90N4 becomes ATV 71HD90N4D (see page 22).

Table showing possible combinations of ATV 71W●●●N4 drive options

Motor		Drive	Options			
kW	HP		DC choke	Line choke	Passive filter	Additional EMC filter
Three-phase supply voltage: 380...480 V 50/60 Hz						
0.75	1	ATV 71W075N4	VW3 A4 501	VW3 A4 551	VW3 A4 6●1	VW3 A4 401
1.5	2	ATV 71WU15N4	VW3 A4 502	VW3 A4 551	VW3 A4 6●1	VW3 A4 401
2.2	3	ATV 71WU22N4	VW3 A4 503	VW3 A4 552	VW3 A4 6●1	VW3 A4 401
3	–	ATV 71WU30N4	VW3 A4 503	VW3 A4 552	VW3 A4 6●1	VW3 A4 402
4	5	ATV 71WU40N4	VW3 A4 504	VW3 A4 552	VW3 A4 6●2	VW3 A4 402
5.5	7.5	ATV 71WU55N4	VW3 A4 505	VW3 A4 553	VW3 A4 6●2	VW3 A4 403
7.5	10	ATV 71WU75N4	VW3 A4 506	VW3 A4 553	VW3 A4 6●3	VW3 A4 403
11	15	ATV 71WD11N4	VW3 A4 507	VW3 A4 554	VW3 A4 6●3	VW3 A4 404
15	20	ATV 71WD15N4	VW3 A4 508	VW3 A4 554	VW3 A4 6●4	VW3 A4 405
18.5	25	ATV 71WD18N4	VW3 A4 508	VW3 A4 555	VW3 A4 6●5	VW3 A4 405
22	30	ATV 71WD22N4	VW3 A4 510	VW3 A4 555	VW3 A4 6●6	VW3 A4 406
30	40	ATV 71WD30N4	VW3 A4 510	VW3 A4 556	VW3 A4 6●7	VW3 A4 407
37	50	ATV 71WD37N4	VW3 A4 510	VW3 A4 556	VW3 A4 6●7	VW3 A4 407
45	60	ATV 71WD45N4	VW3 A4 511	VW3 A4 556	VW3 A4 6●8	VW3 A4 408
55	75	ATV 71WD55N4	VW3 A4 511	VW3 A4 556	VW3 A4 6●8	VW3 A4 408
75	100	ATV 71WD75N4	VW3 A4 511	VW3 A4 558	VW3 A4 6●9	VW3 A4 408
Page		19	77	79	82	85

Motor choke	IP 20 kit for motor choke	Sinus filter	Braking resistor	Hoist resistor
VW3 A5 101, 102, 103	–	–	VW3 A7 701	VW3 A7 801
VW3 A5 101, 102, 103	–	VW3 A5 201	VW3 A7 701	VW3 A7 801
VW3 A5 101, 102, 103	–	VW3 A5 201	VW3 A7 701	VW3 A7 801
VW3 A5 101, 102, 103	–	VW3 A5 201	VW3 A7 701	VW3 A7 802
VW3 A5 101, 102, 103	–	VW3 A5 201	VW3 A7 701	VW3 A7 802
VW3 A5 102, 103, 104	VW3 A9 612	VW3 A5 202	VW3 A7 702	VW3 A7 802
VW3 A5 102, 103, 104	VW3 A9 612	VW3 A5 203	VW3 A7 702	VW3 A7 803
VW3 A5 102, 103, 104	VW3 A9 612	VW3 A5 203	VW3 A7 703	VW3 A7 803
VW3 A5 102, 103, 104	VW3 A9 612	VW3 A5 203	VW3 A7 703	VW3 A7 804
VW3 A5 102, 103, 104	VW3 A9 612	VW3 A5 204	VW3 A7 704	VW3 A7 804
VW3 A5 103, 104	VW3 A9 612	VW3 A5 204	VW3 A7 704	VW3 A7 804
VW3 A5 103, 104	VW3 A9 612	VW3 A5 204	VW3 A7 704	VW3 A7 804
VW3 A5 103, 104	VW3 A9 612	VW3 A5 205	VW3 A7 705	VW3 A7 805
VW3 A5 104	VW3 A9 612	VW3 A5 205	VW3 A7 707	VW3 A7 805
VW3 A5 104	VW3 A9 612	VW3 A5 206	VW3 A7 707	VW3 A7 805
VW3 A5 104	VW3 A9 612	VW3 A5 206	VW3 A7 707	VW3 A7 806
88	89	91	66	69

Table showing possible combinations of ATV 71P●●●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	
Three-phase supply voltage: 380...480 V 50/60 Hz								
0.75	1	ATV 71P075N4Z	VW3 A4 501	VW3 A4 551	VW3 A4 6●1	VW3 A4 401	VW3 A5 101, 102, 103	–
1.5	2	ATV 71PU15N4Z	VW3 A4 502	VW3 A4 551	VW3 A4 6●1	VW3 A4 401	VW3 A5 101, 102, 103	–
2.2	3	ATV 71PU22N4Z	VW3 A4 503	VW3 A4 552	VW3 A4 6●1	VW3 A4 401	VW3 A5 101, 102, 103	–
3	–	ATV 71PU30N4Z	VW3 A4 503	VW3 A4 552	VW3 A4 6●1	VW3 A4 402	VW3 A5 101, 102, 103	–
4	5	ATV 71PU40N4Z	VW3 A4 504	VW3 A4 552	VW3 A4 6●2	VW3 A4 402	VW3 A5 101, 102, 103	–
5.5	7.5	ATV 71PU55N4Z	VW3 A4 505	VW3 A4 553	VW3 A4 6●2	VW3 A4 403	VW3 A5 102, 103, 104	VW3 A9 612
7.5	10	ATV 71PU75N4Z	VW3 A4 506	VW3 A4 553	VW3 A4 6●3	VW3 A4 403	VW3 A5 102, 103, 104	VW3 A9 612
11	15	ATV 71PD11N4Z	VW3 A4 507	VW3 A4 554	VW3 A4 6●3	VW3 A4 404	VW3 A5 102, 103, 104	VW3 A9 612
Page		18	77	79	82	85	88	89

Table showing possible combinations of ATV 71H●●●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	
500 V	575 V							
Three-phase supply voltage: 500...600 V 50/60 Hz								
1.5	2.0	ATV71HU15S6X	–	VW3 A4 551	–	–	VW3 A4 102, 103, 104	–
2.2	3.0	ATV71HU22S6X	–	VW3 A4 551	–	–	VW3 A4 102, 103, 104	–
3.0	–	ATV71HU30S6X	–	VW3 A4 552	–	–	VW3 A4 102, 103, 104	–
4.0	5.0	ATV71HU40S6X	–	VW3 A4 552	–	–	VW3 A4 102, 103, 104	–
5.5	7.5	ATV71HU55S6X	–	VW3 A4 552	–	–	VW3 A4 102, 103, 104	–
7.5	10.0	ATV71HU75S6X	–	VW3 A4 553	–	–	VW3 A4 102, 103, 104	–
Page		20	–	80	–	–	89	–

Sinus filter	Braking resistor	Hoist resistor	Kit for mounting in a dust and damp proof enclosure	Fan	UL Type 1 conformity kit (outside enclosure)	IP 21 or IP 31 conformity kit (outside enclosure)
VW3 A5 201	VW3 A7 701	VW3 A7 801	VW3 A9 801	VZ3 V1 203	VW3 A9 201	VW3 A9 101
VW3 A5 201	VW3 A7 701	VW3 A7 801	VW3 A9 801	VZ3 V1 203	VW3 A9 201	VW3 A9 101
VW3 A5 201	VW3 A7 701	VW3 A7 801	VW3 A9 801	VZ3 V1 203	VW3 A9 201	VW3 A9 101
VW3 A5 201	VW3 A7 701	VW3 A7 802	VW3 A9 802	VZ3 V1 209	VW3 A9 202	VW3 A9 102
VW3 A5 201	VW3 A7 701	VW3 A7 802	VW3 A9 802	VZ3 V1 209	VW3 A9 202	VW3 A9 102
VW3 A5 202	VW3 A7 702	VW3 A7 802	VW3 A9 803	VZ3 V1 204	VW3 A9 203	VW3 A9 103
VW3 A5 203	VW3 A7 702	VW3 A7 803	VW3 A9 803	VZ3 V1 204	VW3 A9 203	VW3 A9 103
VW3 A5 203	VW3 A7 703	VW3 A7 803	–	VZ3 V1 210	VW3 A9 204	VW3 A9 104
91	66	69	27	27	28	29

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)
–	VW3 A7 702	VW3 A7 801	VW3 A9 504	–	VW3 A9 204	VW3 A9 104
–	VW3 A7 702	VW3 A7 802	VW3 A9 504	–	VW3 A9 204	VW3 A9 104
–	VW3 A7 702	VW3 A7 802	VW3 A9 504	–	VW3 A9 204	VW3 A9 104
–	VW3 A7 702	VW3 A7 802	VW3 A9 504	–	VW3 A9 204	VW3 A9 104
–	VW3 A7 702	VW3 A7 802	VW3 A9 504	–	VW3 A9 204	VW3 A9 104
–	VW3 A7 702	VW3 A7 802	VW3 A9 504	–	VW3 A9 204	VW3 A9 104
–	67	69	26	–	28	29

Table showing possible combinations of ATV 71H●●●Y drive options

Motor			Drive	Options					
				Line choke	Motor choke	IP 20 kit for motor choke	Resistance braking unit	Braking resistor	Hoist resistor
500 V	575 V	690 V							
kW	HP	kW							
Three-phase supply voltage: 500...690 V 50/60 Hz									
1.5	2	2.2	ATV 71HU22Y	VW3 A4 551	VW3 A5 101, 102, 103	–	–	VW3 A7 701	VW3 A7 801
2.2	3	3	ATV 71HU30Y	VW3 A4 551	VW3 A5 101, 102, 103	–	–	VW3 A7 701	VW3 A7 802
3	–	4	ATV 71HU40Y	VW3 A4 551	VW3 A5 101, 102, 103	–	–	VW3 A7 701	VW3 A7 802
4	5	5.5	ATV 71HU55Y	VW3 A4 552	VW3 A5 101, 102, 103	–	–	VW3 A7 701	VW3 A7 802
5.5	7.5	7.5	ATV 71HU75Y	VW3 A4 552	VW3 A5 101, 102, 103	–	–	VW3 A7 702	VW3 A7 803
7.5	10	11	ATV 71HD11Y	VW3 A4 553	VW3 A5 102, 103, 104	VW3 A9 612	–	VW3 A7 702	VW3 A7 803
11	15	15	ATV 71HD15Y	VW3 A4 553	VW3 A5 102, 103, 104	VW3 A9 612	–	VW3 A7 703	VW3 A7 804
15	20	18.5	ATV 71HD18Y	VW3 A4 554	VW3 A5 102, 103, 104	VW3 A9 612	–	VW3 A7 703	VW3 A7 804
18.5	25	22	ATV 71HD22Y	VW3 A4 554	VW3 A5 102, 103, 104	VW3 A9 612	–	VW3 A7 704	VW3 A7 804
22	30	30	ATV 71HD30Y	VW3 A4 555	VW3 A5 102, 103, 104	VW3 A9 612	–	VW3 A7 704	VW3 A7 804
30	40	37	ATV 71HD37Y	VW3 A4 555	VW3 A5 103, 104	VW3 A9 612	–	VW3 A7 704	VW3 A7 805
37	50	45	ATV 71HD45Y	VW3 A4 555	VW3 A5 103, 104	VW3 A9 612	–	VW3 A7 705	VW3 A7 805
45	60	55	ATV 71HD55Y	VW3 A4 556	VW3 A5 103, 104	VW3 A9 612	–	VW3 A7 705	VW3 A7 805
55	75	75	ATV 71HD75Y	VW3 A4 556	VW3 A5 104	VW3 A9 612	–	VW3 A7 707	VW3 A7 818
75	100	90	ATV 71HD90Y	VW3 A4 556	VW3 A5 104	VW3 A9 612	–	VW3 A7 707	VW3 A7 818
90	125	110	ATV 71HC11Y	VW3 A4 570	VW3 A5 104	VW3 A9 612	–	VW3 A7 806	VW3 A7 806
110	150	132	ATV 71HC13Y	VW3 A4 571	VW3 A5 104	VW3 A9 612	–	VW3 A7 806	VW3 A7 805
132	–	160	ATV 71HC16Y	VW3 A4 571	VW3 A5 105	VW3 A9 612	–	VW3 A7 805	VW3 A7 805
160	200	200	ATV 71HC20Y	VW3 A4 560	VW3 A5 105	VW3 A9 612	VW3 A7 103	VW3 A7 805	VW3 A7 806
200	250	250	ATV 71HC25Y	VW3 A4 572	VW3 A5 106	VW3 A9 613	VW3 A7 103	VW3 A7 806	VW3 A7 716
250	350	315	ATV 71HC31Y	VW3 A4 572	VW3 A5 106	VW3 A9 613	VW3 A7 103	VW3 A7 716	VW3 A7 814
315	450	400	ATV 71HC40Y	VW3 A4 568	VW3 A5 107	VW3 A9 613	VW3 A7 104	VW3 A7 814	VW3 A7 717
400	550	500	ATV 71HC50Y	VW3 A4 572	VW3 A5 107	VW3 A9 613	VW3 A7 104	VW3 A7 717	VW3 A7 718
500	700	630	ATV 71HC63Y	VW3 A4 572	VW3 A5 108	VW3 A9 613	VW3 A7 104	VW3 A7 718	VW3 A7 816
Page			20	80	89	89	64	67	69

Table showing possible combinations of ATV 71Q●●●Y drive options

90	125	10	ATV 71QC11Y	VW3 A4 570	VW3 A5 104	VW3 A9 612	–	VW3 A7 806	VW3 A7 806
110	150	132	ATV 71QC13Y	VW3 A4 571	VW3 A5 104	VW3 A9 612	–	VW3 A7 806	VW3 A7 805
132	–	160	ATV 71QC16Y	VW3 A4 571	VW3 A5 105	VW3 A9 612	–	VW3 A7 805	VW3 A7 805
160	200	200	ATV 71QC20Y	VW3 A4 560	VW3 A5 105	VW3 A9 612	VW3 A7 103	VW3 A7 805	VW3 A7 806
200	250	250	ATV 71QC25Y	VW3 A4 572	VW3 A5 106	VW3 A9 613	VW3 A7 103	VW3 A7 806	VW3 A7 716
250	350	315	ATV 71QC31Y	VW3 A4 572	VW3 A5 106	VW3 A9 613	VW3 A7 103	VW3 A7 716	VW3 A7 814
315	450	400	ATV 71QC40Y	VW3 A4 568	VW3 A5 107	VW3 A9 613	VW3 A7 104	VW3 A7 814	VW3 A7 717
400	550	500	ATV 71QC50Y	VW3 A4 572	VW3 A5 107	VW3 A9 613	VW3 A7 104	VW3 A7 717	VW3 A7 718
500	700	630	ATV 71QC63Y	VW3 A4 572	VW3 A5 108	VW3 A9 613	VW3 A7 104	VW3 A7 718	VW3 A7 816
Page			21	80	89	89	64	67	69

Flush-mounting kit (in 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	DNV kit
VW3 A9 506	VW3 A9 206	VW3 A9 106	VW3 A9 404	VW3 A9 642
VW3 A9 506	VW3 A9 206	VW3 A9 106	VW3 A9 404	VW3 A9 642
VW3 A9 506	VW3 A9 206	VW3 A9 106	VW3 A9 404	VW3 A9 642
VW3 A9 506	VW3 A9 206	VW3 A9 106	VW3 A9 404	VW3 A9 642
VW3 A9 506	VW3 A9 206	VW3 A9 106	VW3 A9 404	VW3 A9 642
VW3 A9 506	VW3 A9 206	VW3 A9 106	VW3 A9 404	VW3 A9 642
VW3 A9 506	VW3 A9 206	VW3 A9 106	VW3 A9 404	VW3 A9 642
VW3 A9 506	VW3 A9 206	VW3 A9 106	VW3 A9 404	VW3 A9 642
VW3 A9 506	VW3 A9 206	VW3 A9 106	VW3 A9 404	VW3 A9 642
VW3 A9 506	VW3 A9 206	VW3 A9 106	VW3 A9 404	VW3 A9 642
VW3 A9 509	VW3 A9 208	VW3 A9 108	VW3 A9 407	VW3 A9 643
VW3 A9 509	VW3 A9 208	VW3 A9 108	VW3 A9 407	VW3 A9 643
VW3 A9 509	VW3 A9 208	VW3 A9 108	VW3 A9 407	VW3 A9 643
VW3 A9 509	VW3 A9 208	VW3 A9 108	VW3 A9 407	VW3 A9 643
VW3 A9 509	VW3 A9 208	VW3 A9 108	VW3 A9 407	VW3 A9 643
VW3 A9 512	VW3 A9 211	VW3 A9 111	–	VW3 A9 644
VW3 A9 512	VW3 A9 211	VW3 A9 111	–	VW3 A9 645
VW3 A9 512	VW3 A9 211	VW3 A9 111	–	VW3 A9 645
VW3 A9 514, 515	VW3 A9 213, 214	VW3 A9 113, 114	–	VW3 A9 646
VW3 A9 514, 515	VW3 A9 213, 214	VW3 A9 113, 114	–	VW3 A9 647
VW3 A9 514, 515	VW3 A9 213, 214	VW3 A9 113, 114	–	VW3 A9 647
–	–	VW3 A9 116	–	VW3 A9 648
–	–	VW3 A9 116	–	VW3 A9 649
–	–	VW3 A9 116	–	VW3 A9 649
26	28	29	25	23

–	–	–	–	–
–	–	–	–	–
–	–	–	–	–
–	–	–	–	–
–	–	–	–	–
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–	–	–	–	–
–	–	–	–	–
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–	–	–	–	–
–	–	–	–	–

List of options common to Altivar 71 drives

Description	Reference	Page
Logic input adaptor		
Adapter for 115 V ~ logic inputs	VW3 A3 101	25
HMI terminal		
Remote graphic display terminal	VW3 A1 101	32
Encoder interface cards (1)		
With RS 422 compatible differential outputs	VW3 A3 401, 402	52
With open collector outputs	VW3 A3 403, 404	52
With push-pull outputs	VW3 A3 405...407	52
With RS 422 compatible differential outputs with encoder emulation	VW3 A3 411	52
I/O expansion cards (1)		
Logic	VW3 A3 201	53
Extended	VW3 A3 202	53
Programmable card (1)		
Controller Inside programmable card	VW3 A3 501	57

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

Description	Reference	Page
Encoder interface cards		
Resolver	VW3 A3 408	52
Universal with SinCos, SinCos Hiperface®, EnDat® or SSI	VW3 A3 409	52

List of communication cards (1)

Description	Reference	Page
Modbus TCP Daisy chain	VW3 A3 310D	62
EtherNet/IP	VW3 A3 316	62
DeviceNet	VW3 A3 309	62
INTERBUS	VW3 A3 304	62
CC-LINK	VW3 A3 317	62
Modbus/Uni-Telway	VW3 A3 303	62
PROFIBUS DP V0	VW3 A3 307	63
PROFIBUS DP V1	VW3 A3 307S371	63
EtherCAT	VW3 A3 326	63

(1) For card compatibility table, see opposite.

Card compatibility table (1)					
Type of card	Encoder interface	Logic I/O	Extended I/O	Controller Inside programmable	Communication
	VW3 A3 4●●	VW3 A3 201	VW3 A3 202	VW3 A3 501	VW3 A3 3●●
Encoder interface VW3 A3 4●●					
Logic I/O VW3 A3 201					
Extended I/O VW3 A3 202					
Controller Inside programmable VW3 A3 501					
Communication VW3 A3 3●●					

Combination possible

Combination not possible

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

Presentation

PFF121623



Encoder interface card VW3 A3 401

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 VW3 A3 401 to VW3 A3 407 and VW3 A3 411.

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 51.

The interface encoder card is inserted in a dedicated slot.

It is protected against short circuits and overloads.

References

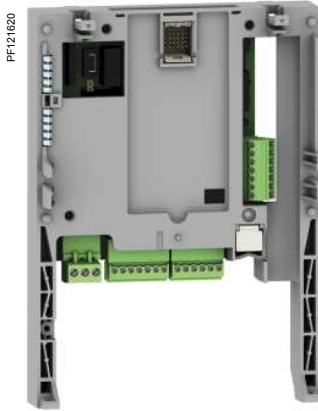
Description	Used with encoder (2)	Voltage	Maximum current	Maximum cable length	Maximum operating frequency	Reference	Weight
		V	mA	m	kHz		kg
Encoder interface card with RS422 compatible differential outputs	XCC 1●●●●●●X	5	200	50	300	VW3 A3 401	0.200
	XCC 1●●●●●●R						
	XCC 1●●●●●●RN						
Encoder interface cards with open collector outputs	XCC 1●●●●●●X	15	175	100	300	VW3 A3 402 (3)	0.200
	–	12	175	500	300	VW3 A3 403	0.200
	–	15	175	500	300	VW3 A3 404	0.200
Encoder interface cards with push-pull outputs	XCC 1●●●●●●Y	12	175	500	300	VW3 A3 405	0.200
	XCC 1●●●●●●K	15	175	500	300	VW3 A3 406	0.200
	XCC 1●●●●●●KN	24	100	500	300	VW3 A3 407	0.200
Resolver encoder interface card	–	1.25...5.6	50	200	4, 8 or 12	VW3 A3 408 (1)	0.100
Universal encoder interface card with SinCos, SinCos Hiperface®, EnDat® or SSI output	–	5, 8 or 12	200	50	500	VW3 A3 409 (1)	0.200
Encoder interface cards with RS 422 compatible differential outputs with encoder emulation	–	5	200	50	300	VW3 A3 411	0.200
	–	15	200	100			

(1) Card requires an ATV 71 H●●●N4383 drive (see page 22).

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

(3) The VW3 A3 402 card ensures compatibility between Altivar 68F drive applications and Altivar 71 drive applications.

Presentation



Extended I/O card VW3 A3 202

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 51.

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	–	VW3 A3 201	0.300 kg
Extended I/O card	4	2	1	2	2	1	1	VW3 A3 202	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.

Variable speed drives

Altivar 71

Option: Controller Inside programmable card

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 51.

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 Ω
- 6 x 24 V $\overline{\text{DC}}$ open collector positive logic (Source) outputs
- 2 x 0...20 mA current analog outputs, impedance 500 Ω
- 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.

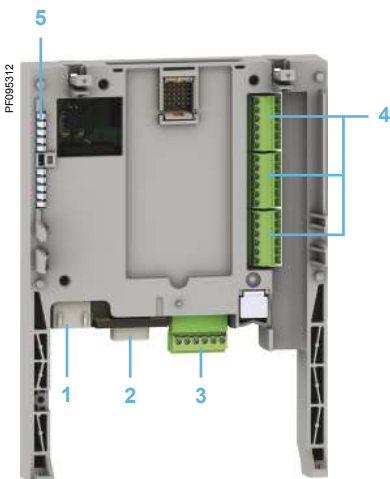
ATV 71W...N4A24 drives incorporate a 24 V $\overline{\text{DC}}$ power supply, allowing additional consumption of 250 mA.

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

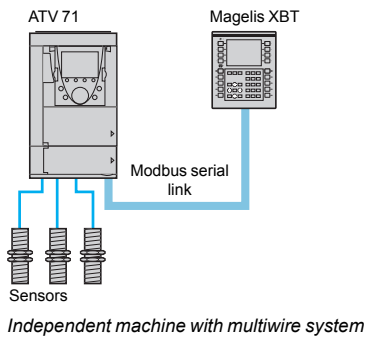
- 1 RJ45 connector for connecting the PS1131 software workshop via an RS 485 serial link.
Connection to the PC is via a cable and RS 232/RS 485 converter included in the PC serial port connection kit, VW3 A8 106.
- 2 9-way male SUB-D connector for connection to the CANopen machine bus
- 3 Connector with 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

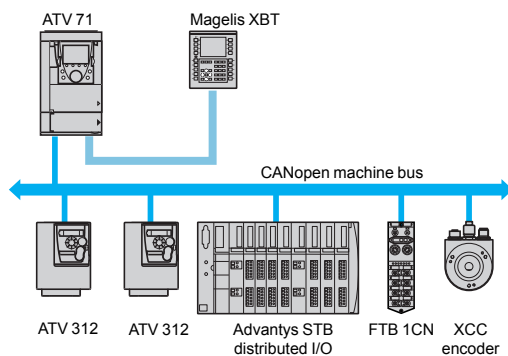


Dialogue

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

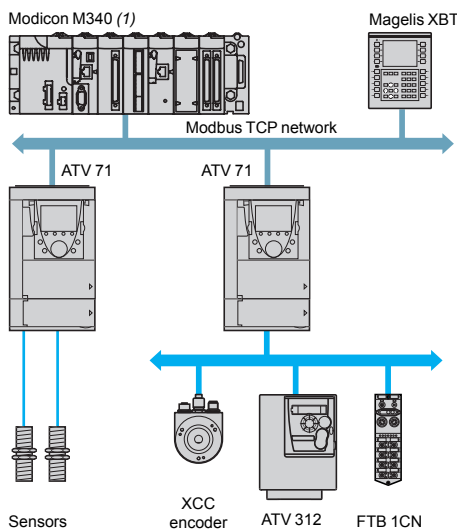
Any industrial HMI terminal which supports the Modbus protocol can be used to display and modify the Controller Inside programmable card parameters.



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.

Independent machine with CANopen bus



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

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.

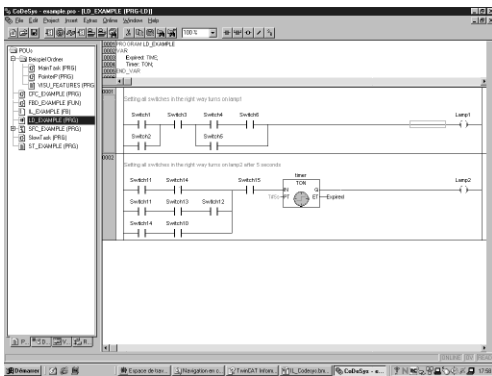
The software workshop also offers users the option of creating their own function blocks and thus creating a user library.

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.

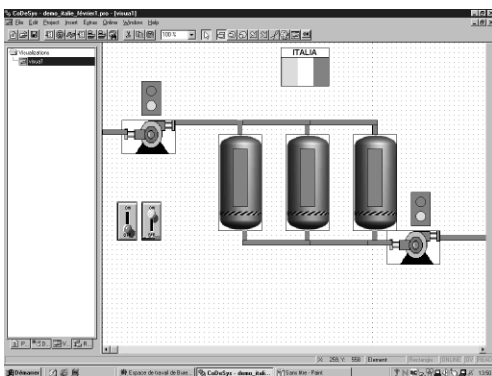
Debugging tools

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

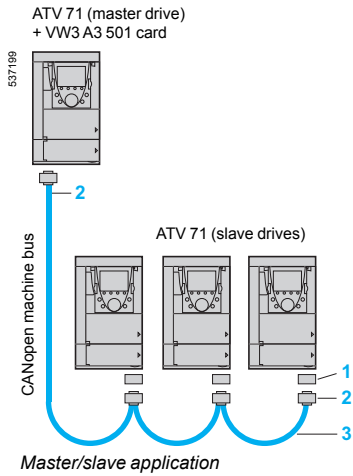
- Program execution for debugging (step-by-step execution, execution of a single cycle, etc.)
- Realtime animation of the program with automatic display of the variables
- Animation tables editor with the option to save tables
- Oscilloscope (monitoring up to 20 variables)
- Application runtime screens 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	VW3 A3 501	0.320

Connection accessories

Description	Item no.	Length m	Weight kg
CANopen adaptor 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	–	VW3 CAN A71
CANopen connector 9-way female SUB-D with line terminator (can be disabled)	2	–	TSX CAN KCDF 180T

Cables

CANopen cables Standard cable, C€ marking. Low smoke zero halogen. Flame retardant (IEC 60332-1).	3	50	TSX CAN CA 50	4.930
		100	TSX CAN CA 100	8.800
		300	TSX CAN CA 300	24.560
CANopen cables UL certified, C€ marking. Flame retardant (IEC 60332-2).	3	50	TSX CAN CB 50	3.580
		100	TSX CAN CB 100	7.840
		300	TSX CAN CB 300	21.870
CANopen cables Cable for harsh environments (1) or mobile installations, C€ marking. Low smoke zero halogen. Flame retardant (IEC 60332-1).	3	50	TSX CAN CD 30	3.510
		100	TSX CAN CD 100	7.770
		300	TSX CAN CD 300	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	VW3 A8 106	0.350

(1) Harsh environments:

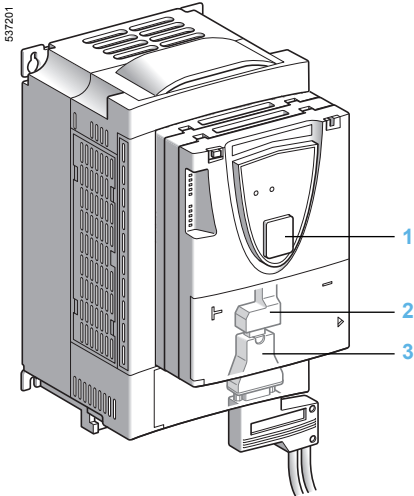
- Resistance to hydrocarbons, industrial oils, detergents, solder splashes
- Relative humidity up to 100%
- Saline atmosphere
- Significant temperature variations
- Operating temperature between - 10°C and + 70°C

(2) The product reference is provided as part of the Controller Inside programmable card training course. Please consult our Customer Care Centre.

Variable speed drives

Altivar 71

Communication buses and networks



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.

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

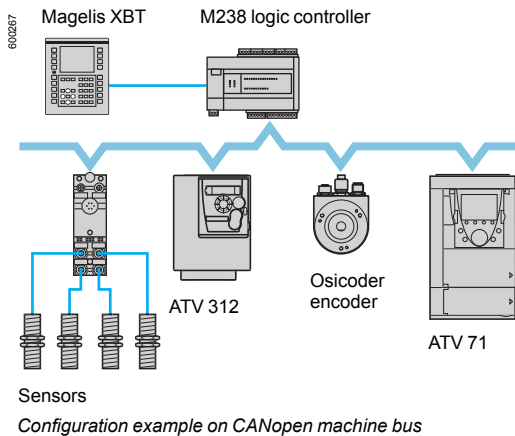
The option of powering the control part separately enables communication to be maintained (monitoring, diagnostics) even if there is no power supply to the power part.

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

Communication module

Altivar 71 drives can also connect to the Fipio bus using the communication module which is available as an option (see page 63).



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:

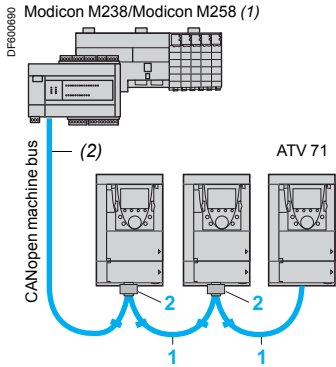
- According to the CiA 402 profile
- According to the I/O profile, where control is as simple and adaptable as control via the I/O terminals

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

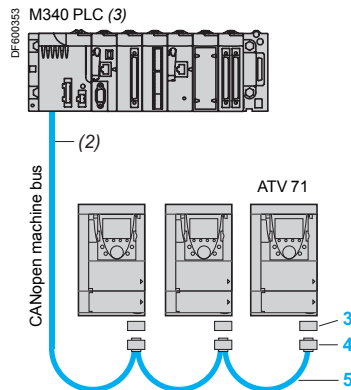
Communication is monitored according to the specific criteria for each protocol. However, regardless of the protocol, it is possible to configure how the drive responds to a communication fault:

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

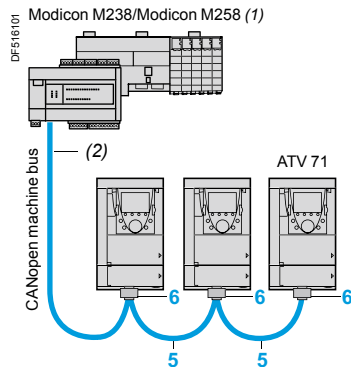
A command from the CANopen machine bus is processed with the same priority as one of the drive terminal inputs. This results in excellent response times on the network port via the CANopen adaptor.



Optimized solution for daisy chain connection to the CANopen machine bus



Example of CANopen diagram with SUB-D connector



Example of CANopen diagram with daisy chain tap

CANopen machine bus

Description	Item no.	Length m	Reference	Weight kg
Connection via RJ45 connector (optimized solution for daisy chain connection to the CANopen machine bus)				
CANopen cordsets equipped with 2 RJ45 connectors	1	0.3	VW3 CAN CARR03	0.050
		1	VW3 CAN CARR1	0.500
Daisy chain tap 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	2	0.3	TCS CTN023F13M03	–

Connection via SUB-D connector

CANopen adaptor for mounting on the RJ45 port on the drive control terminals. The adaptor provides a 9-way male SUB-D connector conforming to the CANopen standard (CIA DRP 303-1).	3	–	VW3 CAN A71	–
CANopen connector (4) 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.	4	–	VW3 CAN KCDF 180T	–
CANopen cables (1) (2) Standard cable, C€ marking Low smoke zero halogen Flame retardant (IEC 60332-1)	5	50	TSX CAN CA 50	4.930
		100	TSX CAN CA 100	8.800
		300	TSX CAN CA 300	24.560
CANopen cables (1) (2) UL certified, C€ marking Flame retardant (IEC 60332-2)	5	50	TSX CAN CB 50	3.580
		100	TSX CAN CB 100	7.840
		300	TSX CAN CB 300	21.870
CANopen cables (1) (2) Cable for harsh environments (5) or mobile installations, C€ marking Low smoke zero halogen Flame retardant (IEC 60332-1)	5	50	TSX CAN CD 50	3.510
		100	TSX CAN CD 100	7.770
		300	TSX CAN CD 300	21.700

Connection via terminals

Daisy chain tap 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	6	0.6	TSC CTN026M16M	–
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(1) Please refer to the "Modicon M238 Logic Controller" and "M258 Logic Controller" catalogues.

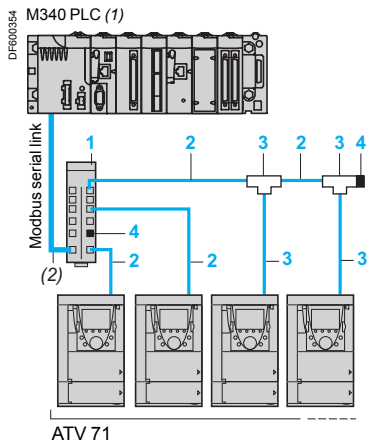
(2) Cable dependent on the type of controller or PLC.

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

(4) For ATV 71H●●M3, ATV 71HD11M3X, HD15M3X, ATV 71H075N4...HD18N4, ATV 71H075N4383...HD18N4383 and ATV 71HU22Y...HC63Y drives, this connector can be replaced by the TSX CAN KCDF 180T 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
Modbus splitter box 10 RJ45 connectors and 1 screw terminal	1	–	LU9 GC3	0.500
Cables for Modbus serial link equipped with 2 RJ45 connectors	2	0.3	VW3 A8 306 R03	0.025
		1	VW3 A8 306 R10	0.060
		3	VW3 A8 306 R30	0.130
Modbus T-junction boxes (with integrated cable)	3	0.3	VW3 A8 306 TF03	0.190
		1	VW3 A8 306 TF10	0.210
Line terminators for RJ45 connector (3) R = 120 Ω C = 1 nF R = 150 Ω	4	–	VW3 A8 306 RC	0.010
		–	VW3 A8 306 R	0.010
		–		

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

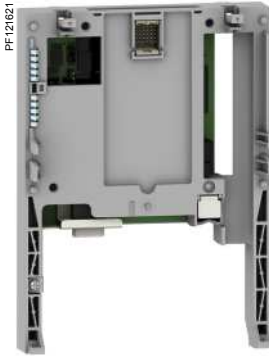
(2) Cable dependent on the type of controller or PLC.

(3) Order in lots of 2.

Variable speed drives

Altivar 71

Communication buses and networks



Communication card

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

Description	Length m	Reference	Weight kg	
Communication cards				
Modbus TCP Daisy Chain	Equipped with 2 RJ45 connectors Modbus TCP 10/100 Mbps class C20	–	VW3 A3 310D	0.300
EtherNet/IP	Equipped with 2 RJ45 connectors	–	VW3 A3 316	0.300
ConneXium Modbus TCP (VW3 A3 310D) or EtherNet/IP (VW3 A3 316) cordsets				
Straight shielded	Equipped with 2 RJ45 connectors	2	490 NTW 000 02	–
twisted pair cordsets	To be connected on a hub or on a switch	5	490 NTW 000 05	–
		12	490 NTW 000 12	–
		40	490 NTW 000 40	–
		80	490 NTW 000 80	–

DeviceNet bus (1) (2)

Description	Reference	Weight kg	
Communication card			
DeviceNet	Equipped with a 5-way removable screw terminal block	VW3 A3 309	0.300

INTERBUS bus (1) (2)

Description	Reference	Weight kg	
Communication card			
INTERBUS	Equipped with one 9-way male SUB-D connector and one 9-way female SUB-D connector To be connected using cordset 170 MCI ●●●00 (3)	VW3 A3 304	0.300

CC-LINK bus (1) (2)

Description	Reference	Weight kg	
Communication card			
CC-LINK	Equipped with a 5-way removable screw terminal block	VW3 A3 317	0,300

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

Description	Length m	Reference	Weight kg	
Communication card				
Modbus/Uni-Telway	Equipped with a 9-way female SUB-D connector	–	VW3 A3 303	0.300
Connection accessories for Modbus/Uni-Telway card (VW3 A3 303)				
Subscriber socket	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	–	TSX SCA 62	0.570
Cordset for TSX SCA 62 subscriber socket	Equipped with two 9-way and 15-way male SUB-D connectors	3	VW3 A8 306 2	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 40 to 51.

(2) User manuals can be downloaded from our website 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.

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

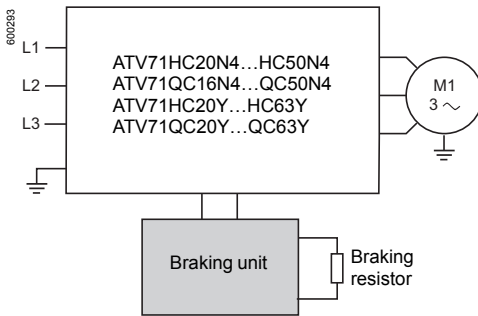
PROFIBUS DP V0/V1 (1) (2)				
Description		Length m	Reference	Weight kg
Communication cards				
PROFIBUS DP V0	Equipped with a 9-way female SUB-D connector	–	VW3 A3 307	0.300
PROFIBUS DP V1	Equipped with a 9-way female SUB-D connector	–	VW3 A3 307S371	0.300
Connection accessories for PROFIBUS DP V0 (VW3 A3 307) or V1 (VW3 A3 307S371) card				
Connectors:	For middle of line	–	490 NAD 911 04	–
9-way male SUB-D (3)	For end of line	–	490 NAD 911 03	–
Cable		100	TSX PBS CA100	–
for connector 490 NAD 911 ●● (3)		400	TSX PBS CA400	–
EtherCAT bus (1) (2)				
Description			Reference	Weight kg
Communication card				
EtherCAT	Equipped with 2 RJ45 connectors		VW3 A3 326	0.300
Other communication buses				
Description		Length m	Reference	Weight kg
Communication module				
Fipio/Modbus gateway	for connection to the Fipio bus	–	LUF P1	0.240
Cordset for LUF P gateway				
Cordset	Equipped with 2 RJ 45 connectors	0.3	VW3 A8 306 R03	0.025
for LUF P1 gateway		1	VW3 A8 306 R10	0.060
		3	VW3 A8 306 R30	0.130

(1) The Altivar 71 drive can only take one communication card. See the summary tables of possible drive, option and accessory combinations on pages 40 to 51.

(2) User manuals can be downloaded from our website 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.

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

Presentation



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

ATV 71H●●●M3, ATV 71H●●●M3X, ATV 71H075N4...HC16N4, ATV 71W●●●N4, ATV 71P●●●N4Z, ATV 71H●●●S6X and ATV 71HU22Y...HC16Y drives have a built-in dynamic brake transistor.

A braking unit is required for ATV 71HC20N4...HC50N4, ATV 71QC16N4...QC50N4, ATV 71HC20Y...HC63Y and ATV 71QC20Y...QC63Y drives which is controlled by the drive.

For drives

- ATV 71HC20N4, HC28N4 and ATV 71QC16N4...QC25N4, the braking units is mounted directly on the left-hand side of the drive
- ATV 71HC40N4, HC50N4, ATV 71QC40N4, QC50N4, ATV 71HC20Y...HC63Y and ATV 71QC20Y...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		Loss	Cable (drive - braking unit)		Cable (braking unit - resistors)		Percentage of conduction time	Reference	Weight
	Permanent	Maximum	At continuous power	Cross-section	Maximum length	Cross-section	Maximum length			
	kW	kW	W	mm ²	m	mm ²	m			
Supply voltage: 380...480 V 50/60 Hz										
ATV 71HC20N4, HC28N4 ATV 71QC16N4... QC25N4	200	420	550	–	–	2 x 95	50	5% at 420 kW 15% at 320 kW 50% at 250 kW	VW3 A7 101	30.000
ATV 71HC31N4... HC50N4 ATV 71QC31N4... QC50N4	400	750	1050	2 x 150	1	2 x 150	50	5% at 750 kW 15% at 550 kW 50% at 440 kW	VW3 A7 102	80.000
Supply voltage: 500...690 V 50/60 Hz										
ATV 71HC20Y... HC31Y ATV 71QC20Y... QC31Y	300	450	650	2 x 150	1	2 x 150	50	5% at 450 kW 15% at 400 kW 50% at 350 kW	VW3 A7 103	80.000
ATV 71HC40Y... HC63Y ATV 71QC40Y... QC63Y	400	900	1150	2 x 150	1	2 x 150	50	5% at 900 kW 15% at 600 kW 50% at 500 kW	VW3 A7 104	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 VW3 A7 101 braking unit
- 0.7 ohm for the VW3 A7 102 braking unit
- 2 ohms for the VW3 A7 103 braking unit
- 1 ohm for the VW3 A7 104 braking unit

Presentation



VW3 A7 701

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:

- One with IP 20 casing and thermal protection provided by temperature-controlled switch or by the drive (VW3 A7 701...709)
- One with IP 23 casing and thermal protection provided by thermal overload relay (VW3 A7 71● 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
Supply voltage: 200...240 V 50/60 Hz					
ATV 71H037M3, H075M3	IP 20	100	0.05	VW3 A7 701	1.900
ATV 71HU15M3, HU22M3	IP 20	60	0.1	VW3 A7 702	2.400
ATV 71HU30M3, HU40M3	IP 20	28	0.2	VW3 A7 703	3.500
ATV 71HU55M3, HU75M3	IP 20	15	1	VW3 A7 704	11.000
ATV 71HD11M3X	IP 20	10	1	VW3 A7 705	11.000
ATV 71HD15M3X	IP 20	8	1	VW3 A7 706	11.000
ATV 71HD18M3X, HD22M3X	IP 20	5	1.3	VW3 A7 707	11.000
ATV 71HD30M3X	IP 20	4	1	VW3 A7 708	11.000
ATV 71HD37M3X, HD45M3X	IP 20	2.5	1	VW3 A7 709	11.000
ATV 71HD55M3X, HD75M3X	IP 23	1.8	15.3	VW3 A7 713	50.000

(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 VW3 A7 701...709:

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

For VW3 A7 713:

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



VW3 A7 701

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
Supply voltage: 380...480 V 50/60 Hz					
ATV 71H075N4...HU40N4 ATV 71W075N4, WU40N4 ATV 71P075N4Z...PU55N4Z	IP 20	100	0.05	VW3 A7 701	1.900
ATV 71HU55N4, HU75N4 ATV 71WU55N4, WU75N4 ATV 71PU55N4Z, PU75N4Z	IP 20	60	0.1	VW3 A7 702	2.400
ATV 71HD11N4, HD15N4 ATV 71WD11N4, WD15N4 ATV 71PD11N4Z	IP 20	28	0.2	VW3 A7 703	3.500
ATV 71HD18N4...HD30N4 ATV 71WD18N4...WD30N4	IP 20	15	1	VW3 A7 704	11.000
ATV 71HD37N4 ATV 71WD37N4	IP 20	10	1	VW3 A7 705	11.000
ATV 71HD45N4...HD75N4 ATV 71WD45N4...WD75N4	IP 20	5	1.3	VW3 A7 707	11.00
ATV 71HD90N4 ATV 71QD90N4	IP 23	2.75	25	VW3 A7 710	80.000
ATV 71HC11N4, HC13N4 ATV 71QC11N4, QC13N4	IP 23	2.1	37	VW3 A7 711	86.000
ATV 71HC16N4 ATV 71QC16N4	IP 23	2.1	44	VW3 A7 712	104.000
ATV 71HC20N4 ATV 71QC20N4	IP 23	1.05	56	VW3 A7 715	136.000
ATV 71HC25N4, HC28N4 ATV 71QC25N4	IP 23	1.05	75	VW3 A7 716	172.000
ATV 71HC31N4, HC40N4 ATV 71QC31N4, QC40N4	IP 23	0.7	112	VW3 A7 717	266.000
ATV 71HC50N4 ATV 71QC50N4	IP 23	0.7	150	VW3 A7 718	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 VW3 A7 701...705 and VW3 A7 707:

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

For VW3 A7 710...712 and 715...718:

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



VW3 A7 701

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
Supply voltage: 500...600 V 50/60 Hz						
ATV 71HU15S6X...HU75S6X	IP 20	60	0.1	1	VW3 A7 702	2.400
Supply voltage: 500...690 V 50/60 Hz						
ATV 71HU22Y...HU55Y	IP 20	100	0.05	1	VW3 A7 701	1.900
ATV 71HU75Y, HD11Y	IP 20	60	0.1	1	VW3 A7 702	2.400
ATV 71HD15Y, HD18Y	IP 20	28	0.2	1	VW3 A7 703	3.500
ATV 71HD22Y...HD37Y	IP 20	15	1	1	VW3 A7 704	11.000
ATV 71HD45Y, HD55Y	IP 20	10	1	1	VW3 A7 705	11.000
ATV 71HD75Y, HD90Y	IP 20	5	1.3	1	VW3 A7 707	11.000
ATV 71HC11Y, HC13Y ATV 71QC11Y, QC13Y	IP 23	4.2	62	1	VW3 A7 806	126.000
ATV 71HC16Y, HC20Y ATV 71QC16Y, QC20Y	IP 23	8.1	44	2	VW3 A7 805(2)	92.000
ATV 71HC25Y ATV 71QC25Y	IP 23	4.2	62	2	VW3 A7 806 (2)	126.000
ATV 71HC31Y ATV 71QC31Y	IP 23	1.05	75	2	VW3 A7 716 (3)	172.000
ATV 71HC40Y ATV 71QC40Y	IP 23	1.05	112	2	VW3 A7 814 (3)	280.000
ATV 71HC50Y ATV 71QC50Y	IP 23	0.7	112	2	VW3 A7 717 (3)	266.000
ATV 71HC63Y ATV 71QC63Y	IP 23	0.7	150	2	VW3 A7 718 (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 VW3 A7 701...705 and 707:

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

For VW3 A7 716...718:

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

For VW3 A7 805 and 806:

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

For VW3 A7 814:

- 10 s braking with a 2 T_n braking torque for a 240 s cycle
- 110 s braking with a 1.25 T_n 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).

(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).

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 ATV 71HC20N4...HC50N4, ATV 71QC16N4...QC50N4, ATV 71HC20Y...HC63Y and ATV 71QC20Y...QC63Y drives, a braking unit must be used (see page 64).

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
Supply voltage: 200...240 V 50/60 Hz					
ATV 71H037M3, H075M3	100	1.6	1	VW3 A7 801	6.000
ATV 71HU15M3	60	5.6	1	VW3 A7 802	21.000
ATV 71HU22M3...HU40M3	24.5	9.8	1	VW3 A7 803	28.000
ATV 71HU55M3, HU75M3	14	22.4	1	VW3 A7 804	54.000
ATV 71HD11M3X, HD15M3X	8.1	44	1	VW3 A7 805	92.000
ATV 71HD18M3X	4.2	62	1	VW3 A7 806	126.000
ATV 71HD22M3X, HD30M3X	3.5	19.5	1	VW3 A7 807	51.000
ATV 71HD37M3X, HD45M3X	1.85	27.4	1	VW3 A7 808	94.000
ATV 71HD55M3X	1.8	30.6	1	VW3 A7 809	103.000
ATV 71HD75M3X	1.4	44	1	VW3 A7 810	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 VW3 A7 801...808:

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

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

For VW3 A7 809 and VW3 A7 810:

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

- 110 s braking with 1.25 Tn 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
Supply voltage: 380...480 V 50/60 Hz					
ATV 71H075N4...HU22N4 ATV 71W075N4...WU22N4 ATV 71P075N4Z...PU22N4Z	100	1.6	1	VW3 A7 801	6.000
ATV 71HU30N4...HU55N4 ATV 71WU30N4...WU55N4 ATV 71PU30N4Z...PU55N4Z	60	5.6	1	VW3 A7 802	21.000
ATV 71HU75N4, HD11N4 ATV 71WU75N4, WD11N4 ATV 71PD11N4Z	24.5	9.8	1	VW3 A7 803	28.000
ATV 71HD15N4...HD30N4 ATV 71WD15N4...WD30N4	14	22.4	1	VW3 A7 804	54.000
ATV 71HD37N4...HD55N4 ATV 71W37N4...WD55N4	8.1	44	1	VW3 A7 805	92.000
ATV 71HD75N4 ATV 71WD75N4	4.2	62	1	VW3 A7 806	126.000
ATV 71HD90N4 ATV 71QD90N4	2.75	56	1	VW3 A7 811	130.000
ATV 71HC11N4, HC13N4 ATV 71QC11N4, QC13N4	2.1	75	1	VW3 A7 812	181.000
ATV 71HC16N4 ATV 71QC16N4	2.1	112	1	VW3 A7 813	250.000
ATV 71HC20N4 ATV 71QC20N4	1.05	112	1	VW3 A7 814	280.000
ATV 71HC25N4, HC28N4 ATV 71QC25N4	1.05	150	1	VW3 A7 815	362.000
ATV 71HC31N4, HC40N4 ATV 71QC31N4, QC40N4	0.7	225	1	VW3 A7 816	543.000
ATV 71HC50N4 ATV 71QC50N4	0.7	330	1	VW3 A7 817	642.000
Supply voltage: 500...600 V 50/60 Hz					
ATV 71HU15S6X	100	1.4	1	VW3 A7 801	6.000
ATV 71HU22S6X ... HU75S6X	60	4.8	1	VW3 A7 802	21.000
Supply voltage: 500...690 V 50/60 Hz					
ATV 71HU22Y	100	1.6	1	VW3 A7 801	6.000
ATV 71HU30Y...HU55Y	60	5.6	1	VW3 A7 802	21.000
ATV 71HU75Y, HD11Y	24.5	9.8	1	VW3 A7 803	28.000
ATV 71HD15Y...HD30Y	14	22.4	1	VW3 A7 804	54.000
ATV 71HD37Y...HD55Y	8.1	44	1	VW3 A7 805	92.000
ATV 71HD75Y, HD90Y	5	70	1	VW3 A7 818	159.000
ATV 71HC11Y ATV 71QC11Y	4.2	62	1	VW3 A7 806	126.000
ATV 71HC13Y, HC16Y ATV 71QC13Y, QC16Y	8.1	44	2	VW3 A7 805 (2)	92.000
ATV 71HC20Y ATV 71QC20Y	4.2	62	2	VW3 A7 806 (2)	126.000
ATV 71HC25Y ATV 71QC25Y	1.05	75	2	VW3 A7 716 (3)	172.000
ATV 71HC31Y ATV 71QC31Y	1.05	112	2	VW3 A7 814 (3)	280.000
ATV 71HC40Y ATV 71QC40Y	0.7	112	2	VW3 A7 717 (3)	266.000
ATV 71HC50Y ATV 71QC50Y	0.7	150	2	VW3 A7 718 (3)	350.000
ATV 71HC63Y ATV 71QC63Y	0.7	225	2	VW3 A7 816 (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 VW3 A7 716...718:

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

For VW3 A7 801...808 and VW3 A7 818:

- 100 s braking with 1 T_n braking torque for a 200 s cycle

- 20 s braking with 1.6 T_n braking torque for a 200 s cycle

For VW3 A7 809...817:

- 10 s braking with 2 T_n braking torque for a 240 s cycle

- 110 s braking with 1.25 T_n braking torque for a 240 s cycle

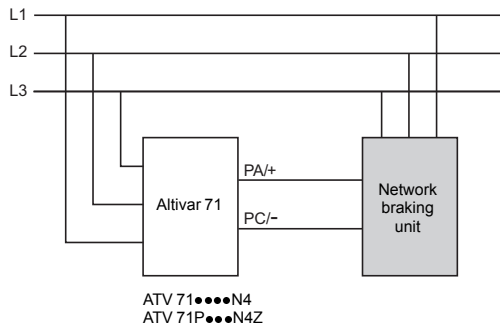
(2) The two braking resistors must be connected in parallel. The dimensions of all the components must be taken into account as well as the required space of 300 mm to be left between each resistor (see our website www.schneider-electric.com).

(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).

Variable speed drives

Altivar 71

Option: network braking units



Presentation

Network braking units can be used to restore 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 ideal for use in applications where high braking dynamics are required.

It is also very well suited to use on unstable power supplies.

It is available for **ATV 71...N4** and **ATV 71P...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.

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 72).

Applications

Braking on a driving load:

- Vertical movements
- Escalators
- ...

Variable speed drives

Altivar 71

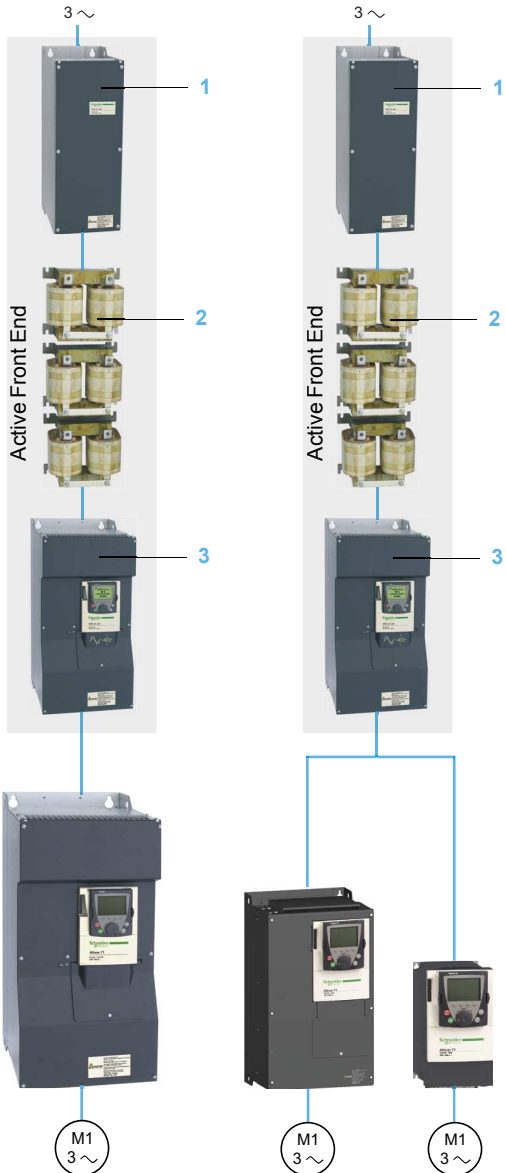
Option: network braking units

References							
Line voltage: 400 V ~							
Maximum current I _{rms}		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	VW3 A7 201	20.000
20	24	13	13	30	690	VW3 A7 202	25.000
32	38	11	22	50	690	VW3 A7 203	26.000
48	58	21.5	33	80	690	VW3 A7 204	30.000
65	78	26	45	100	690	VW3 A7 205	32.000
102	123	40	70	160	660	VW3 A7 206	43.000
130	157	50	90	200	660	VW3 A7 207	48.000
195	236	60	135	315	660	VW3 A7 208	52.000
231	279	86	160	350	660	VW3 A7 209	90.000
289	350	120	200	400	1000	VW3 A7 210	100.000
360	433	135	250	500	1000	VW3 A7 211	115.000
500	600	200	345	630	1000	VW3 A7 212	125.000

Variable speed drives

Altivar 71

Option: Active Front End



Active Front End
+
ATV 71HD90N4D

Active Front End
+
ATV 71HD22N4 + ATV 71HU22N4

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

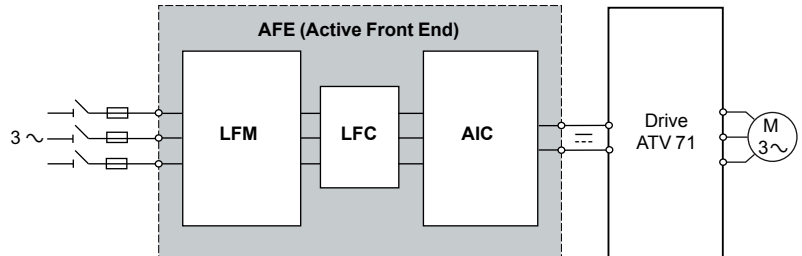
The Active Front End consists of a set of three modules installed upstream of the drive between the line supply and the motor.

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				
Three-phase supply voltage: 380...440 V 50/60 Hz								
ATV 71H075N4... HD90N4D	0.75...90	177	185	120	AIC	1	VW3 A7 250	60.000
					LFC	1	VW3 A7 265	54.000
					LFM	1	VW3 A7 260	60.000
ATV 71HC11N4D	110	212	220	143	AIC	1	VW3 A7 251	74.000
					LFC	1	VW3 A7 266	69.000
					LFM	1	VW3 A7 261	80.000
ATV 71HC13N4D	132	255	265	172	AIC	1	VW3 A7 252	80.000
					LFC	1	VW3 A7 266	69.000
					LFM	1	VW3 A7 261	80.000
ATV 71HC16N4D	160	348	366	238	AIC	1	VW3 A7 253	110.000
					LFC	1	VW3 A7 267	132.000
					LFM	1	VW3 A7 262	125.000
ATV 71HC20N4D	200	395	412	268	AIC	1	VW3 A7 254	140.000
					LFC	1	VW3 A7 267	132.000
					LFM	1	VW3 A7 262	125.000
ATV 71HC25N4D	250	495	517	336	AIC	1	VW3 A7 255	140.000
					LFC	1	VW3 A7 267	132.000
					LFM	1	VW3 A7 262	125.000
ATV 71HC28N4D	280	558	581	378	AIC	1	VW3 A7 256	215.000
					LFC	2	VW3 A7 267	132.000
					LFM	2	VW3 A7 262	125.000
ATV 71HC31N4D	315	628	654	425	AIC	1	VW3 A7 256	215.000
					LFC	2	VW3 A7 267	132.000
					LFM	2	VW3 A7 262	125.000
ATV 71HC40N4D	400	780	815	530	AIC	1	VW3 A7 257	225.000
					LFC	2	VW3 A7 267	132.000
					LFM	2	VW3 A7 262	125.000
ATV 71HC50N4D	500	980	1023	665	AIC	1	VW3 A7 258	300.000
					LFC	2	VW3 A7 267	132.000
					LFM	2	VW3 A7 262	125.000
Dimensions (overall)								
Active infeed converter (AIC)							W x H x D mm	
VW3 A7 250							310 x 680 x 377	
VW3 A7 251							350 x 782 x 377	
VW3 A7 252							330 x 950 x 377	
VW3 A7 253							430 x 950 x 377	
VW3 A7 254							585 x 950 x 377	
VW3 A7 255							585 x 950 x 377	
VW3 A7 256							880 x 1150 x 377	
VW3 A7 257							880 x 1150 x 377	
VW3 A7 258							1110 x 1150 x 377	
Line choke (LFC)							W x H x D mm	
VW3 A7 265							835 x 210 x 185	
VW3 A7 266							835 x 295 x 195	
VW3 A7 267							970 x 360 x 255	
Line filter (LFM)							W x H x D mm	
VW3 A7 260							240 x 680 x 379	
VW3 A7 261							290 x 730 x 379	
VW3 A7 262							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.

(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				
Three-phase supply voltage: 480 V 50/60 Hz								
ATV 71H075N4... HD90N4D	1...125	160	163	120	AIC	1	VW3 A7 250	60.000
					LFC	1	VW3 A7 265	54.000
					LFM	1	VW3 A7 260	60.000
ATV 71HC11N4D	150	200	203	143	AIC	1	VW3 A7 251	74.000
					LFC	1	VW3 A7 266	69.000
					LFM	1	VW3 A7 261	80.000
ATV 71HC13N4D	200	200	203	172	AIC	1	VW3 A7 252	80.000
					LFC	1	VW3 A7 266	69.000
					LFM	1	VW3 A7 261	80.000
ATV 71HC16N4D	250	348	366	238	AIC	1	VW3 A7 283	110.000
					LFC	1	VW3 A7 267	132.000
					LFM	1	VW3 A7 262	125.000
ATV 71HC20N4D	300	395	412	268	AIC	1	VW3 A7 254	140.000
					LFC	1	VW3 A7 267	132.000
					LFM	1	VW3 A7 262	125.000
ATV 71HC25N4D	400	495	517	336	AIC	1	VW3 A7 255	140.000
					LFC	1	VW3 A7 267	132.000
					LFM	1	VW3 A7 262	125.000
ATV 71HC28N4D	450	558	581	378	AIC	1	VW3 A7 286	215.000
					LFC	2	VW3 A7 267	132.000
					LFM	2	VW3 A7 262	125.000
ATV 71HC31N4D	500	628	654	425	AIC	1	VW3 A7 286	215.000
					LFC	2	VW3 A7 267	132.000
					LFM	2	VW3 A7 262	125.000
ATV 71HC40N4D	600	780	815	530	AIC	1	VW3 A7 287	225.000
					LFC	2	VW3 A7 267	132.000
					LFM	2	VW3 A7 262	125.000
ATV 71HC50N4D	700	980	1023	665	AIC	1	VW3 A7 258	300.000
					LFC	2	VW3 A7 267	132.000
					LFM	2	VW3 A7 262	125.000

Dimensions (overall)	
Active infeed converter (AIC)	W x H x D mm
VW3 A7 250	310 x 680 x 377
VW3 A7 251	350 x 782 x 377
VW3 A7 252	330 x 950 x 377
VW3 A7 283	585 x 950 x 377
VW3 A7 254	585 x 950 x 377
VW3 A7 255	585 x 950 x 377
VW3 A7 286	1110 x 1150 x 377
VW3 A7 287	1110 x 1150 x 377
VW3 A7 258	1110 x 1150 x 377
Line choke (LFC)	W x H x D mm
VW3 A7 265	835 x 210 x 185
VW3 A7 266	835 x 295 x 195
VW3 A7 267	970 x 360 x 255
Line filter (LFM)	W x H x D mm
VW3 A7 260	240 x 680 x 379
VW3 A7 261	290 x 730 x 379
VW3 A7 262	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.

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

References (continued)										
For drives	Motor Power indicated on rating plate kW	Line supply Maximum nominal line current 500 V...690 V A	DC bus			Active Front End (1) (2)	Quantity per drive	Reference	Weight kg	
			Maximum current A	Continuous power						
				500 V kW	600 V kW					690 V kW
Three-phase supply voltage: 500...690 V 50/60 Hz										
ATV 71HC11Y	110	120	130	102	123	142	AIC	1	VW3 A7 270	110.000
							LFC	1	VW3 A7 268	99.000
							LFM	1	VW3 A7 263	80.000
ATV 71HC13Y	132	150	156	127	153	172	AIC	1	VW3 A7 271	110.000
							LFC	1	VW3 A7 268	99.000
							LFM	1	VW3 A7 263	80.000
ATV 71HC16Y	160	185	195	157	188	215	AIC	1	VW3 A7 272	110.000
							LFC	1	VW3 A7 268	99.000
							LFM	1	VW3 A7 263	80.000
ATV 71HC20Y	200	228	244	193	230	268	AIC	1	VW3 A7 273	190.000
							LFC	1	VW3 A7 269	210.000
							LFM	1	VW3 A7 264	125.000
ATV 71HC25Y	250	285	305	242	290	335	AIC	1	VW3 A7 274	190.000
							LFC	1	VW3 A7 269	210.000
							LFM	1	VW3 A7 264	125.000
ATV 71HC31Y	315	360	386	305	365	424	AIC	1	VW3 A7 275	190.000
							LFC	1	VW3 A7 269	210.000
							LFM	1	VW3 A7 264	125.000
ATV 71HC40Y	400	450	481	382	460	528	AIC	1	VW3 A7 276	400.000
							LFC	2	VW3 A7 269	210.000
							LFM	2	VW3 A7 264	125.000
ATV 71HC50Y	500	563	604	478	575	663	AIC	1	VW3 A7 277	400.000
							LFC	2	VW3 A7 269	210.000
							LFM	2	VW3 A7 264	125.000
ATV 71HC63Y	630	715	765	607	730	842	AIC	1	VW3 A7 278	400.000
							LFC	2	VW3 A7 269	210.000
							LFM	2	VW3 A7 264	125.000

Dimensions (overall)

Active infeed converter (AIC)	W x H x D mm
VW3 A7 270	330 x 1190 x 377
VW3 A7 271	330 x 1190 x 377
VW3 A7 272	330 x 1190 x 377
VW3 A7 273	585 x 1190 x 377
VW3 A7 274	585 x 1190 x 377
VW3 A7 275	585 x 1190 x 377
VW3 A7 276	1110 x 1390 x 377
VW3 A7 277	1110 x 1390 x 377
VW3 A7 278	1110 x 1390 x 377
Line choke (LFC)	W x H x D mm
VW3 A7 268	835 x 295 x 210
VW3 A7 269	985 x 540 x 250
Line filter (LFM)	W x H x D mm
VW3 A7 263	290 x 730 x 370
VW3 A7 264	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.

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

Variable speed drives

Altivar 71: reduction of current harmonics

Option: DC chokes

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

- DC chokes (1) (see page 77)
- Line chokes (1) (see page 78)
- 16% and 10% passive filters (1) (see page 81)
- Use of passive filters with a DC choke (see page 81)

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 ≥ 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 ≥ 120 . The DC choke is connected to the drive power terminals.

The DC choke is supplied as standard with ATV 71HD55M3X, HD75M3X and ATV 71HD90N4...HC50N4 drives.

It is compulsory for ATV 71P...N4Z drives if they do not have a fan (see page 27).

It provides IP 20 degree of protection.

Applications

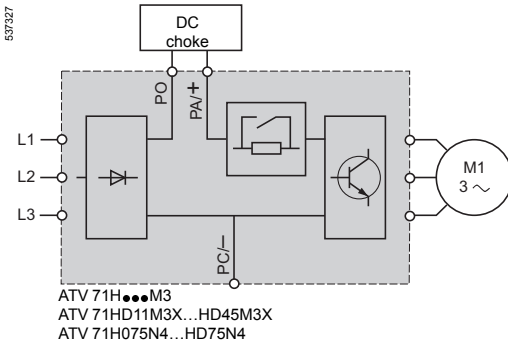
Reduction of current harmonics.

Reduction of the THDI to 5% or 10% when used with passive filters (see pages 82 and 83).

Maintaining the motor torque in relation to the line inductance.

(1) For ATV 71H...S6X and ATV 71HU22Y...HD90Y drives, only line chokes are recommended.

They are mandatory for ATV 71QD90N4...QC50N4, ATV 71HC11Y...HC63Y and ATV 71QC11Y...QC63Y drives (see page 78).



References (1)						
For drives	Inductance value	Nominal current	Loss	THDI (2)	Reference	Weight
	mH	A	W			kg
Three-phase supply voltage: 200...240 V 50/60 Hz						
ATV 71H037M3	18	22.5	7.7	36.3	VW3 A4 501	0.650
ATV 71H075M3	6.8	8	22.5	41.27	VW3 A4 503	1.700
ATV 71HU15M3	3.2	14.3	32	42.4	VW3 A4 505	2.200
ATV 71HU22M3	2.2	19.2	33	43.33	VW3 A4 506	2.500
ATV 71HU30M3	1.6	27.4	43	43.22	VW3 A4 507	3.000
ATV 71HU40M3	1.2	44	61	43.91	VW3 A4 508	4.300
ATV 71 HU55M3	1.2	44	61	38		
ATV 71HU75M3	0.7	36	30.5	43.96	VW3 A4 509	2.500
ATV 71HD11M3X	0.52	84.5	77	38.14	VW3 A4 510	6.400
ATV 71HD15M3X	0.52	84.5	77	35.34		
ATV 71HD18M3X	0.22	171.2	86	32.31	VW3 A4 511	17.850
ATV 71HD22M3X	0.22	171.2	86	36.62		
ATV 71HD30M3X	0.09	195	73	43.51	VW3 A4 512	10.000
ATV 71 HD37M3X	0.09	195	73	39.24		
ATV 71HD45M3X	0.09	195	73	35.7		
Three-phase supply voltage: 380...480 V 50/60 Hz						
ATV 71H075N4 ATV 71W075N4 ATV 71P075N4Z	18	2.25	7.7	44.95	VW3 A4 501	0.650
ATV 71HU15N4 ATV 71WU15N4 ATV 71PU15N4Z	10	4.3	11	45.48	VW3 A4 502	1.000
ATV 71HU22N4 ATV 71WU22N4 ATV 71PU22N4Z	6.8	8	22.5	45	VW3 A4 503	1.700
ATV 71HU30N4 ATV 71WU30N4 ATV 71PU30N4Z	6.8	8	22.5	40.08		
ATV 71HU40N4 ATV 71WU40N4 ATV 71PU40N4Z	3.9	10.7	27	44.72	VW3 A4 504	1.650
ATV 71HU55N4 ATV 71WU55N4 ATV 71PU55N4Z	3.2	14.3	32	45.19	VW3 A4 505	2.200
ATV 71HU75N4 ATV 71WU75N4 ATV 71PU75N4Z	2.2	19.2	33	42.25	VW3 A4 506	2.500
ATV 71HD11N4 ATV 71WD11N4 ATV 71PD11N4Z	1.6	27.4	43	43.1	VW3 A4 507	3.000
ATV 71HD15N4 ATV 71WD15N4	1.2	44	57.5	43.06	VW3 A4 508	4.300
ATV 71HD18N4 ATV 71WD18	1.2	44	57.5	35.23		
ATV 71HD22N4 ATV 71WD22N4	0.52	84.5	98.3	40.4	VW3 A4 510	6.400
ATV 71HD30N4 ATV 71WD30N4	0.52	84.5	98.3	36.99		
ATV 71HD37N4 ATV 71WD37N4	0.52	84.5	98.3	35.13		
ATV 71HD45N4 ATV 71WD45N4	0.22	171.2	128	45.59	VW3 A4 511	17.850
ATV 71HD55N4 ATV 71WD55N4	0.22	171.2	128	39.29		
ATV 71HD75N4 ATV 71WD75N4	0.22	171.2	128	36.2		

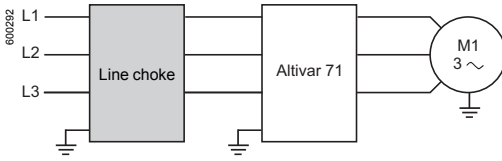
(1) The DC choke is supplied as standard with ATV 71HD55M3X, HD75M3X and ATV 71HD90N4...HC50N4 drives.

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

Variable speed drives

Altivar 71: reduction of current harmonics

Option: line chokes



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 ATV 71HU40M3...HU75M3 drives powered by a 200...240 V 50/60 Hz single-phase supply voltage
- For ATV 71QD90N4...QC50N4, ATV 71HC11Y...HC63Y and ATV 71QC11Y...QC63Y drives

Their use is recommended with ATV 71H●●●S6X and ATV 71HU22Y...HD90Y drives.

They can also be used instead of a DC choke with ATV 71H●●●M3 drives powered by a 200...240 V 50/60 Hz three-phase supply and ATV 71H●●●M3X, ATV 71●●●●N4 and ATV 71P●●●●N4Z drives.

Note: ATV 71HD90N4...HC50N4, 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 22).

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



VW3 A4 572

References									
For drives	Line supply	Line choke		Nominal current	Saturation current	Loss	Quantity required per drive	Reference	Weight
	I _{sc}	Inductance value	A						
	kA	mH	A	A	W				kg
Single-phase supply voltage: 200...240 V 50/60 Hz									
ATV 71HU40M3 (1)	5	2	25	–	45	1	VW3 A58501		3.500
ATV 71HU55M3 (1)	5	1	45	–	50	1	VW3 A58502		3.500
ATV 71HU75M3 (1)	22	1	45	–	50	1	VW3 A58502		3.500
Three-phase supply voltage: 200...240 V 50/60 Hz									
ATV 71H037M3, H075M3	5	10	4	–	45	1	VW3 A4 551		1.500
ATV 71HU15M3, HU22M3	5	4	10	–	65	1	VW3 A4 552		3.000
ATV 71HU30M3	5	2	16	–	75	1	VW3 A4 553		3.500
ATV 71HU40M3	5	1	30	–	90	1	VW3 A4 554		6.000
ATV 71HU55M3	22	1	30	–	90	1	VW3 A4 554		6.000
ATV 71HU75M3, HD11M3X	22	0.5	60	–	94	1	VW3 A4 555		11.000
ATV 71HD15M3X	22	0.3	100	–	260	1	VW3 A4 556		16.000
ATV 71HD18M3X...HD45M3X	22	0.15	230	–	400	1	VW3 A4 557		45.000
ATV 71HD55M3X	35	0.049	429	855	278	1	VW3 A4 562		50.000
ATV 71HD75M3X	35	0.038	509	1025	280	1	VW3 A4 563		59.000
Three-phase supply voltage: 380...480 V 50/60 Hz									
ATV 71H075N4, HU15N4 ATV 71W075N4, WU15N4 ATV 71P075N4Z, PU15N4Z	5	10	4	–	45	1	VW3 A4 551		1.500
ATV 71HU22N4...HU40N4 ATV 71WU22N4...WU40N4 ATV 71PU22N4Z...PU40N4Z	5	4	10	–	65	1	VW3 A4 552		3.000
ATV 71HU55N4, HU75N4 ATV 71WU55N4, WU75N4 ATV 71PU55N4Z, PU75N4Z	22	2	16	–	75	1	VW3 A4 553		3.500
ATV 71HD11N4, HD15N4 ATV 71WD11N4, WD15N4 ATV 71PD11N4Z	22	1	30	–	90	1	VW3 A4 554		6.000
ATV 71HD18N4, HD22N4 ATV 71WD18N4, WD22N4	22	0.5	60	–	94	1	VW3 A4 555		11.000
ATV 71HD30N4...HD55N4 ATV 71WD30N4...WD55N4	22	0.3	100	–	260	1	VW3 A4 556		16.000
ATV 71HD75N4 ATV 71WD75N4	22	0.155	184	370	220	1	VW3 A4 558		31.000
ATV 71HD90N4	35	0.155	184	370	220	1	VW3 A4 558		31.000
ATV 71HC11N4	35	0.12	222	445	278	1	VW3 A4 559		35.000
ATV 71HC13N4	35	0.098	264	530	245	1	VW3 A4 560		43.000
ATV 71HC16N4	50	0.066	344	685	258	1	VW3 A4 561		47.000
ATV 71HC20N4	50	0.060	450	850	335	1	VW3 A4 569		70.000
ATV 71HC25N4, HC28N4	50	0.038	613	1150	307	1	VW3 A4 564		73.000
ATV 71HC31N4	50	0.032	720	1352	428	1	VW3 A4 565		82.000
ATV 71HC40N4	50	0.060	450	850	335	2	VW3 A4 569		70.000
ATV 71HC50N4	50	0.038	613	1150	307	2	VW3 A4 564		73.000

(1) Use of a line choke is recommended.

Variable speed drives

Altivar 71: reduction of current harmonics

Option: line chokes

References (continued)								
For drives	Line supply	Line choke			Loss	Quantity required per drive	Reference	Weight
	Isc	Inductance value	Nominal current	Saturation current				
	kA	mH	A	A	W			kg
Three-phase supply voltage: 380...480 V 50/60 Hz (continued)								
ATV 71QD90N4 (1)	35	0.12	222	445	278	1	VW3 A4 559	35.000
ATV 71QC11N4 (1)	35	0.098	264	530	245	1	VW3 A4 560	43.000
ATV 71QC13N4 (1)	35	0.085	300	570	315	1	VW3 A4 568	46.000
ATV 71QC16N4 (1)	50	0.066	344	685	258	1	VW3 A4 561	47.000
ATV 71QC20N4 (1)	50	0.06	450	850	335	1	VW3 A4 569	70.000
ATV 71QC25N4 (1)	50	0.038	613	1150	307	1	VW3 A4 564	73.000
ATV 71QC31N4 (1)	50	0.066	344	685	258	2	VW3 A4 561	47.000
ATV 71QC40N4 (1)	50	0.038	513	1025	320	2	VW3 A4 563	55.000
ATV 71QC50N4 (1)	50	0.026	590	1180	320	2	VW3 A4 573	60.000
Three-phase supply voltage: 500...600 V 50/60 Hz								
ATV 71HU15S6X...HU22S6X	22	10	4	–	45	1	VW3 A4 551	1.500
ATV 71HU30S6X...HU55S6X	22	4	10	–	65	1	VW3 A4 552	3.000
ATV 71HU75S6X	22	2	16	–	75	1	VW3 A4 553	3.500
Three-phase supply voltage: 500...690 V 50/60 Hz								
ATV 71HU22Y...HU40Y (2)	22	10	4	–	45	1	VW3 A4 551	1.500
ATV 71HD11Y, HD15Y (2)	22	2	16	–	75	1	VW3 A4 553	3.500
ATV 71HD18Y, HD22Y (2)	22	1	30	–	90	1	VW3 A4 554	6.000
ATV 71HD30Y...HD45Y (2)	22	0.5	60	–	94	1	VW3 A4 555	11.000
ATV 71HD55Y...HD90Y (2)	22	0.3	100	–	260	1	VW3 A4 556	16.000
ATV 71HC11Y (1) ATV 71QC11Y (1)	28	0.22	152	320	220	1	VW3 A4 570	28.000
ATV 71HC13Y (1) ATV 71QC13Y (1)	28	0.23	220	405	330	1	VW3 A4 571	79.000
ATV 71HC16Y (1) ATV 71QC16Y (1)	35	0.23	220	405	330	1	VW3 A4 571	79.000
ATV 71HC20Y (1) ATV 71QC20Y (1)	35	0.098	264	530	245	1	VW3 A4 560	35.000
ATV 71HC25Y, HC31Y (1) ATV 71QC25Y, QC31Y (1)	35	0.1	428	770	495	1	VW3 A4 572	90.000
ATV 71HC40Y (1) ATV 71QC40Y (1)	35	0.085	300	474	315	2	VW3 A4 568	46.000
ATV 71HC50Y (1) ATV 71QC50Y (1)	35	0.1	428	770	495	2	VW3 A4 572	90.000
ATV 71HC63Y (1) ATV 71QC63Y (1)	42	0.1	428	770	495	2	VW3 A4 572	90.000

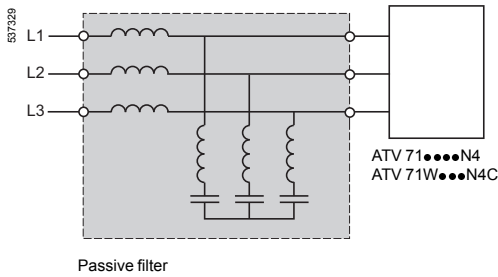
(1) Use of a line choke is mandatory.

(2) Use of a line choke is recommended.

Variable speed drives

Altivar 71: reduction of current harmonics

Option: passive filters



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 still further and the harmonic distortion reduced to less than 10% or 5% if the filter is used with a DC choke (see pages 82 and 83).

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 or refer to the Programming Manual).

The passive filters provide IP 20 protection.

ATV 71H...Y, ATV 71Q...Y and ATV 71H...S6X drives are not compatible with the use of passive filters. It is recommended or mandatory, depending on the rating, to use a line choke (see page 78).

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: passive filters

Passive filters: 400 V 50 Hz three-phase power supply							
Motor rating		For drives	Line supply	Filter	Quantity required per drive	Reference	Weight
kW	HP		Line current	In (2)			
THDI 16% (1)			A	A			kg
0.75	1	ATV 71H075N4 ATV 71W075N4 ATV 71P075N4Z	2.5	6	1	VW3 A4 601	15.000
1.5	2	ATV 71HU15N4 ATV 71WU15N4 ATV 71PU15N4Z	3.6	6	1	VW3 A4 601	15.000
2.2	3	ATV 71HU22N4 ATV 71WU22N4 ATV 71PU22N4Z	5	6	1	VW3 A4 601	15.000
3	–	ATV 71HU30N4 ATV 71WU30N4 ATV 71PU30N4Z	6	6	1	VW3 A4 601	15.000
4	5	ATV 71HU40N4 ATV 71WU40N4 ATV 71PU40N4Z	7.8	10	1	VW3 A4 602	19.000
5.5	7.5	ATV 71HU55N4 ATV 71WU55N4 ATV 71PU55N4Z	10	10	1	VW3 A4 602	19.000
7.5	10	ATV 71HU75N4 ATV 71WU75N4 ATV 71PU75N4Z	14	19	1	VW3 A4 603	21.000
11	15	ATV 71HD11N4 ATV 71WD11N4 ATV 71PD11N4Z	19	19	1	VW3 A4 603	21.000
15	20	ATV 71HD15N4 ATV 71WD15N4	26	26	1	VW3 A4 604	22.000
18.5	25	ATV 71HD18N4 ATV 71WD18N4	32	35	1	VW3 A4 605	34.000
22	30	ATV 71HD22N4 ATV 71WD22N4	38	43	1	VW3 A4 606	38.000
30	40	ATV 71HD30N4 ATV 71WD30N4	52	72	1	VW3 A4 607	56.000
37	50	ATV 71HD37N4 ATV 71WD37N4	63	72	1	VW3 A4 607	56.000
45	60	ATV 71HD45N4 ATV 71WD45N4	77	101	1	VW3 A4 608	69.000
55	75	ATV 71HD55N4 ATV 71WD55N4	91	101	1	VW3 A4 608	69.000
75	100	ATV 71HD75N4 ATV 71WD75N4	126	144	1	VW3 A4 609	97.000
THDI 10%							
90	125	ATV 71HD90N4 ATV 71QC90N4	149	144	1	VW3 A4 609	97.000
110	150	ATV 71HC11N4 ATV 71QC11N4	182	180	1	VW3 A4 610	103.000
132	200	ATV 71HC13N4 ATV 71QC13N4	218	216	1	VW3 A4 611	112.000
160	250	ATV 71HC16N4 ATV 71QC16N4	287	289	1	VW3 A4 612	135.000
200	300	ATV 71HC20N4 ATV 71QC20N4	353.5	370	1	VW3 A4 613	155.000
220	350	ATV 71HC25N4 ATV 71QC25N4	364	370	1	VW3 A4 613	155.000
250	400	ATV 71HC25N4 ATV 71QC25N4	415	216	2	VW3 A4 611	112.000
280	450	ATV 71HC28N4	485	289	2	VW3 A4 612	135.000
315	500	ATV 71HC31N4 ATV 71QC31N4	543	289	2	VW3 A4 612	135.000
355	–	ATV 71HC40N4 ATV 71QC40N4	588	289	2	VW3 A4 612	135.000
400	600	ATV 71HC40N4 ATV 71QC40N4	664	325	2	VW3 A4 619	155.000
500	700	ATV 71HC50N4 ATV 71QC50N4	840	289	3	VW3 A4 612	135.000

(1) By adding a DC choke (see page 76) to ATV 71●075N4...●D75N4 and ATV 71P●●●N4Z drives, a total current harmonic distortion (THD) ≤ 10% is obtained.

This DC choke is supplied as standard with ATV 71HD90N4...HC50N4 drives.

These reduced current harmonics are achieved for the nominal filter current only as long as the total voltage harmonic distortion (THDU) is < 2% and the short-circuit ratio (RSCE) is > 66.

(2) In: Nominal filter current.

Variable speed drives

Altivar 71: reduction of current harmonics

Option: passive filters

Passive filters: 400 V 50 Hz three-phase power supply							
Motor rating		For drives	Line supply Line current	Filter In (2)	Quantity required per drive	Reference	Weight
kW	HP		A	A			kg
THDI 10% (1)							
0.75	1	ATV 71H075N4 ATV 71W075N4 ATV 71P075N4Z	2.5	6	1	VW3 A4 621	21.000
1.5	2	ATV 71HU15N4 ATV 71WU15N4 ATV 71PU15N4Z	3.6	6	1	VW3 A4 621	21.000
2.2	3	ATV 71HU22N4 ATV 71WU22N4 ATV 71PU22N4Z	5	6	1	VW3 A4 621	21.000
3	–	ATV 71HU30N4 ATV 71WU30N4 ATV 71PU30N4Z	6	6	1	VW3 A4 621	21.000
4	5	ATV 71HU40N4 ATV 71WU40N4 ATV 71PU40N4Z	7.8	10	1	VW3 A4 622	27.000
5.5	7.5	ATV 71HU55N4 ATV 71WU55N4 ATV 71PU55N4Z	10	10	1	VW3 A4 622	27.000
7.5	10	ATV 71HU75N4 ATV 71WU75N4 ATV 71PU75N4Z	14	19	1	VW3 A4 623	28.000
11	15	ATV 71HD11N4 ATV 71WD11N4 ATV 71PD11N4Z	19	19	1	VW3 A4 623	28.000
15	20	ATV 71HD15N4 ATV 71WD15N4	26	26	1	VW3 A4 624	40.000
18.5	25	ATV 71HD18N4 ATV 71WD18N4	32	35	1	VW3 A4 625	49.000
22	30	ATV 71HD22N4 ATV 71WD22N4	38	43	1	VW3 A4 626	52.000
30	40	ATV 71HD30N4 ATV 71WD30N4	52	72	1	VW3 A4 627	88.000
37	50	ATV 71HD37N4 ATV 71WD37N4	63	72	1	VW3 A4 627	88.000
45	60	ATV 71HD45N4 ATV 71WD45N4	77	101	1	VW3 A4 628	150.000
55	75	ATV 71HD55N4 ATV 71WD55N4	91	101	1	VW3 A4 628	150.000
75	100	ATV 71HD75N4 ATV 71WD75N4	126	144	1	VW3 A4 629	167.000
THDI 5%							
90	125	ATV 71HD90N4 ATV 71QC90N4	149	144	1	VW3 A4 629	167.000
110	150	ATV 71HC11N4 ATV 71QC11N4	182	180	1	VW3 A4 630	178.000
132	200	ATV 71HC13N4 ATV 71QC13N4	218	216	1	VW3 A4 631	224.000
160	250	ATV 71HC16N4 ATV 71QC16N4	287	289	1	VW3 A4 632	271.000
200	300	ATV 71HC20N4 ATV 71QC20N4	353.5	370	1	VW3 A4 633	320.000
220	350	ATV 71HC25N4 ATV 71QC25N4	364	370	1	VW3 A4 633	320.000
250	400	ATV 71HC25N4 ATV 71QC25N4	415	216	2	VW3 A4 631	224.000
280	450	ATV 71HC28N4	485	289	2	VW3 A4 632	271.000
315	500	ATV 71HC31N4 ATV 71QC31N4	543	289	2	VW3 A4 632	271.000
355	–	ATV 71HC40N4 ATV 71QC40N4	588	289	2	VW3 A4 632	271.000
400	600	ATV 71HC40N4 ATV 71QC40N4	664	325	2	VW3 A4 639	284.000
500	700	ATV 71HC50N4 ATV 71QC50N4	840	289	3	VW3 A4 632	271.000

(1) By adding a DC choke (see page 76) to **ATV 71●075N4...●D75N4** and **ATV 71P●●●N4Z** drives, a total current harmonic distortion (THD) $\leq 5\%$ is obtained.

This DC choke is supplied as standard with **ATV 71HD90N4...HC50N4** drives.

These reduced current harmonics are achieved for the nominal filter current only as long as the total voltage harmonic distortion (THDU) is $< 2\%$ and the short-circuit ratio (RSCE) is > 66 .

(2) In: Nominal filter current.

Variable speed drives

Altivar 71: EMC filters

Integrated filters and optional additional filters

Integrated EMC filters

Altivar 71 drives (excluding the ATV 71H●●●M3X) have built-in radio interference filters to comply with the EMC standard for adjustable speed electrical power drive systems IEC/EN 61800-3, edition 2, category C2 or C3 in environment 1 or 2 and the European Electromagnetic Compatibility Directive.

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
ATV 71H037M3...HU22M3	10	5	–	–
ATV 71HU30M3...HU75M3	–	–	10	5
ATV 71H075N4...HU40N4 ATV 71W075N4...WU40N4 ATV 71P075N4Z...PU40N4Z	10	5	–	–
ATV 71HU55N4...HD15N4 ATV 71WU55N4...WD15N4 ATV 71PU55N4Z...PD11N4Z	–	–	10	5
ATV 71HD18N4...HC50N4 ATV 71WD18N4...WD75N4	–	–	50	25
ATV 71HU22Y...HD90Y	–	–	25	25
ATV 71HC11Y...HC63Y	–	–	50	25

Switching frequency

Drives	Switching frequency	
	LF (low frequency)	HF (high frequency)
	kHz	kHz
ATV 71H●●●M3 ATV 71H075N4...HD30N4 ATV 71W075N4...WD30N4 ATV 71P075N4Z...PD11N4Z	4	4.1...16
ATV 71HD37N4...HD75N4 ATV 71WD37N4...WD75N4	2...2.5	2.6...12
ATV 71HD90N4...HC50N4	2...4	4.1...8
ATV 71HU22Y...HD30Y	2.5...4	4.1...6
ATV 71HD37Y...HD63Y	2.5	2.6...4.9

Additional EMC input filters

Applications

When used with ATV 71H●●●M3, ATV 71H●●●M3X, ATV 71●●●●N4 and ATV 71P●●●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 ATV 71H●●●M3, ATV 71HD11M3X...HD45M3X, ATV 71H075N4...HD75N4 and ATV 71P075N4Z...PD11N4Z drives, additional EMC filters can be mounted beside or under the drive. They act as a support for the drives and are attached to them via tapped holes.

For ATV 71HD55M3X, HD75M3X, ATV 71HD90N4...HC50N4 and ATV 71QD90N4...QC50N4 drives, additional EMC filters can only be mounted beside the drive.

Use according to the line supply type

Use of these additional filters is only possible on TN (connected to neutral) and TT (neutral to earth) type networks.

Standard IEC/EN 61800-3, appendix D2.1, states that on IT networks (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 network depends on the type of impedance between neutral and earth, and therefore cannot be predicted.

In the case of a machine which needs to be installed on an IT network, the solution would be to insert an isolation transformer and place the machine locally on a TN or TT network.

(1) If motors are connected in parallel, it is the sum of all cable lengths that should be taken into account.

Variable speed drives

Altivar 71: EMC filters

Option: additional input filters

Additional EMC input filters (for ATV 71H●●●M3, H●●●M3 and ATV 71●●●●N4 drives)									
Drives	Maximum length of shielded cable (1)				In (2)	If (3)	Loss (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	
Three-phase supply voltage: 200...240 V 50/60 Hz									
ATV 71H037M3...HU15M3	100	50	50	20	12	4	10	VW3 A4 401	2.200
ATV 71HU22M3...HU40M3	100	50	50	20	26	4.4	18	VW3 A4 402	4.000
ATV 71HU55M3	100	50	50	20	35	3	24	VW3 A4 403	5.800
ATV 71HU75M3	100	50	50	20	46	10	19	VW3 A4 404	7.000
ATV 71HD11M3X, HD15M3X	100	50	50	25	72	33	34	VW3 A4 405	12.000
ATV 71HD18M3X, HD22M3X	100	50	50	25	90	33	34	VW3 A4 406	15.000
ATV 71HD30M3X...HD45M3X	100	50	50	25	180	80	58	VW3 A4 408	40.000
ATV 71HD55M3X, HD75M3X	100	50	50	25	273	285	60	VW3 A4 410	25.000
Three-phase supply voltage: 380...480 V 50/60 Hz									
ATV 71H075N4...HU22N4	100	50	50	20	12	7	5	VW3 A4 401	2.200
ATV 71W075N4...WU22N4									
ATV 71P075N4Z...PU22N4Z									
ATV 71HU30N4, HU40N4	100	50	50	20	26	8	6	VW3 A4 402	4.000
ATV 71WU30N4, WU40N4									
ATV 71PU30N4Z, PU40N4Z									
ATV 71HU55N4, HU75N4	100	50	50	20	35	7	14	VW3 A4 403	5.800
ATV 71WU55N4, WU75N4									
ATV 71PU55N4Z, PU75N4Z									
ATV 71HD11N4	100	50	50	20	46	14	13	VW3 A4 404	7.000
ATV 71WD11N4									
ATV 71PD11N4Z									
ATV 71HD15N4 (5), HD18N4	300	200	100	100	72	60	14	VW3 A4 405	12.000
ATV 71WD15N4 (5), WD18N4									
ATV 71HD22N4	300	200	100	100	90	60	11	VW3 A4 406	15.000
ATV 71WD22N4									
ATV 71HD30N4, HD37N4	300	200	100	100	92	60	30	VW3 A4 407	17.000
ATV 71WD30N4, WD37N4									
ATV 71HD45N4...HD75N4	300	200	100	100	180	140	58	VW3 A4 408	40.000
ATV 71WD45N4...WD75N4									
ATV 71HD90N4...HC13N4	300	150	50	25	273	500	60	VW3 A4 410	22.000
ATV 71QD90N4...QC13N4									
ATV 71HC16N4...HC28N4	300	150	50	25	546	500	125	VW3 A4 411	25.000
ATV 71QC16N4...QC25N4									
ATV 71HC31...HC40N4	300	150	50	25	728	500	210	VW3 A4 412	25.000
ATV 71QC31N4...QC40N4									
ATV 71HC50N4	300	150	50	25	1456	200	380	VW3 A4 413	34.000
ATV 71QC50N4									
For drives	Switching frequency								
	LF (low frequency)				HF (high frequency)				
	kHz				kHz				
ATV 71H●●●M3	4				4.1...16				
ATV 71H075N4...HD11N4									
ATV 71W075N4...WD11N4									
ATV 71P075N4Z...PD11N4Z									
ATV 71HD11M3X, HD15M3X	3.5...4				4.1...12				
ATV 71HD15N4...HD30N4									
ATV 71WD15N4...WD30N4									
ATV 71HD18M3X...HD45M3X	2...2.5				2.6...12				
ATV 71HD37N4...HD75N4									
ATV 71WD37N4...WD75N4									
ATV 71HD55M3X, HD75M3X	2...4				4.1...8				
ATV 71HD90N4...HC50N4	2...4				4.1...8				
ATV 71QD90N4...QC50N4									

(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 sum of all cable lengths 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 **VW3 A4 409** with a leakage current I_f (3) of 14 mA which enables a maximum motor cable length of 100 m.

Variable speed drives

Altivar 71: output filters

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
ATV 71H●●●M3 ATV 71HD11M3X, HD55M3X ATV 71H075N4...HD75N4 ATV 71W075N4...WD75N4 ATV 71WD075N4C...WD75N4C ATV 71P075N4Z...PD75N4Z	50	100
ATV 71HD75M3X...HD90M3X ATV 71HD90N4...HC50N4 ATV 71QD90N4...QC50N4	80	100
ATV 71WD37N4...WD75N4C ATV 71WD37N4C...WD75N4C	50	100
ATV 71H●●●S6X	10	10
ATV 71HU22Y...HD30Y	10	10
ATV 71HD37Y...HD90Y	10	10
ATV 71HC11Y...HC63Y ATV 71QC11Y...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 87)
- Sinus filters that are particularly effective for long cable runs or to reduce electromagnetic motor noise (see page 90)

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 to:

- 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 88 and 89.

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, 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	With motor choke (1)
			m	m
For ATV 71H075N4...HU40N4, ATV 71W075N4...WU40N4 and ATV 71P075N4...PU40N4 drives				
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
For ATV 71H●●M3, H●●M3X, ATV 71HU55N4...HD75N4 and ATV 71WU55N4...WD75N4 drives				
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
For ATV 71HD90N4...HC50N4 and ATV 71QD90N4...QC50N4 drives				
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 90).

Variable speed drives

Altivar 71: output filters

Option: motor chokes

PF121624



VW3 A5 101

Motor chokes									
For drives	Maximum motor cable length (1)			Loss	Nominal current	Order in lots of	Unit reference	Weight	
	Maximum switching frequency	Shielded	Unshielded						
	kHz	m	m	W	A	kg			
Three-phase supply voltage: 200...240 V 50/60 Hz									
ATV 71H075M3...HU22M3	4	150	300	150	12	–	VW3 A5 101	5.500	
ATV 71HU30M3...HU75M3	4	200	260	250	48	–	VW3 A5 102	8.000	
		300	300	350	90	–	VW3 A5 103	10.000	
ATV 71HD11M3X, HD15M3X	4	150	300	350	90	–	VW3 A5 103	10.000	
ATV 71HD18M3X, HD22M3X	2.5	150	300	350	90	–	VW3 A5 103	10.000	
ATV 71HD30M3X...HD45M3X	2.5	150	300	430	215	3	VW3 A5 104	15.500	
ATV 71HD55M3X, HD75M3X	2.5	150	300	475	314	3	VW3 A5 105	32.000	
Three-phase supply voltage: 380...480 V 50/60 Hz									
ATV 71H075N4...HU40N4	4	75	90	150	12	–	VW3 A5 101	5.500	
ATV 71W075N4...WU40N4			85	95	250	48	–	VW3 A5 102	8.000
ATV 71P075N4Z...PU40N4Z			160	200	350	90	–	VW3 A5 103	10.000
ATV 71HU55N4...HD18N4	4	85	95	250	48	–	VW3 A5 102	8.000	
ATV 71WU55N4...WD18N4			160	200	350	90	–	VW3 A5 103	10.000
ATV 71PU55N4Z...PD11N4Z					200	300	430	215	3
ATV 71HD22N4, HD30N4	4	140	170	350	90	–	VW3 A5 103	10.000	
ATV 71WD22N4, WD30N4			150	300	430	215	3	VW3 A5 104	15.500
ATV 71HD37N4	2.5	97	166	350	90	–	VW3 A5 103	10.000	
ATV 71WD37N4			200	300	430	215	3	VW3 A5 104	15.500
ATV 71HD45N4...HD75N4	2.5	150	300	430	215	3	VW3 A5 104	15.500	
ATV 71WD45N4...WD75N4			2.5	200	300	430	215	3	VW3 A5 104
ATV 71HD90N4	2.5	200			300	430	215	3	VW3 A5 104
ATV 71QD90N4			2.5	150	250	475	314	3	VW3 A5 105
ATV 71HC11N4, HC13N4	2.5	250			300	530	481	3	VW3 A5 106
ATV 71QC11N4, QC13N4			2.5	250	300	530	481	3	VW3 A5 106
ATV 71HC16N4, HC20N4	2.5	250			300	530	481	3	VW3 A5 106
ATV 71QC16N4, QC20N4			2.5	250	300	530	481	3	VW3 A5 106
ATV 71HC25N4 Motor P 220 kW	2.5	200			250	598	759	3	VW3 A5 107
ATV 71QC25N4 Motor P 250 kW			2.5	200	250	598	759	3	VW3 A5 107
ATV 71HC28N4, HC31N4	2.5	200			250	598	759	3	VW3 A5 107
ATV 71QC31N4			2.5	200	250	598	759	3	VW3 A5 107
ATV 71HC40N4 Motor P 355 kW	2.5	250			300	682	1188	3	VW3 A5 108
ATV 71QC40N4 Motor P 400 kW			2.5	250	300	682	1188	3	VW3 A5 108
ATV 71HC50N4	2.5	250			300	682	1188	3	VW3 A5 108
ATV 71QC50N4									

(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)			Loss W	Nominal current A	Order in lots of	Unit reference	Weight kg
	Maximum switching frequency kHz	Shielded m	Unshielded m					
Three-phase supply voltage: 500...600 V 50/60 Hz (2)								
ATV 71HU15S6X... HU75S6X	2.5	50	100	250	48	–	VW3 A5 102	8.000
		75	150	350	90	–	VW3 A5 103	10.000
		150	250	430	215	3	VW3 A5 104	15.500
		250	400	860	215	3	2 x VW3 A5 104	31.000
Three-phase supply voltage: 500...690 V 50/60 Hz (3)								
ATV 71HU22Y...HU75Y	4	36	44	150	12	–	VW3 A5 101	5.500
		41	46	250	48	–	VW3 A5 102	8.000
		77	97	350	90	–	VW3 A5 103	10.000
ATV 71HD11Y...HD30Y	4	41	46	250	48	–	VW3 A5 102	8.000
		77	97	350	90	–	VW3 A5 103	10.000
		97	145	430	215	3	VW3 A5 104	15.500
ATV 71HD37Y...HD55Y	2.5	68	82	350	90	3	VW3 A5 103	10.000
		73	145	430	215	3	VW3 A5 104	15.500
ATV 71HD75Y... HD90Y	2.5	73	145	430	215	3	VW3 A5 104	15.500
ATV 71HC11Y, HC13Y ATV 71QC11Y, QC13Y	2.5	50	250	475	314	3	VW3 A5 104	15.500
ATV 71HC16Y, HC20Y ATV 71QC16Y, QC20Y	2.5	50	250	475	314	3	VW3 A5 105	32.000
ATV 71HC25Y, HC31Y ATV 71QC25Y, QC31Y	2.5	50	250	530	481	3	VW3 A5 106	58.000
ATV 71HC40Y, HC50Y ATV 71QC40Y, QC50Y	2.5	50	250	598	759	3	VW3 A5 107	93.000
ATV 71HC63Y ATV 71QC63Y	2.5	50	250	682	1188	3	VW3 A5 108	120.000
IP 20 protection kits								
Description	For motor chokes			Reference	Weight kg			
Mechanical kit including an IP 20 cover and cable clamps	VW3 A5 104, 105			VW3 A9 612	–			
	VW3 A5 106...108			VW3 A9 613	–			

(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.

Variable speed drives

Altivar 71: output filters

Option: sinus filters

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 ATV 71H075M3...HD45M3X, ATV 71●075N4...●D75N4 and ATV 71P●●●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 ATV 71HD55M3X, HD75M3X, ATV 71HD90N4...HC50N4 and ATV 71QD90N4...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 ATV 71H075M3...HD45M3X, ATV 71●H075N4... ●D75N4 and ATV 71P●●●N4Z drives, 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 ATV 71HD55M3X, HD75M3X, ATV 71HD90N4...HC50N4 and ATV 71QD90N4...QC50N4 drives, applications requiring:

- An intermediate transformer between the drive and the motor
- A reduction in electromagnetic motor noise

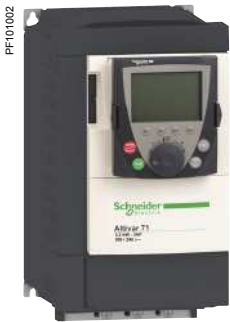
Variable speed drives

Altivar 71: output filters

Option: sinus filters

References					
For drives	Nominal current	Loss at 100 Hz	Reference	Weight	
	A	W		kg	
Three-phase supply voltage: 200...240 V 50/60 Hz					
ATV 71H075M3, HU15M3 (1)	11	50	VW3 A5 201	8.000	
ATV 71HU22M3, HU30M3	16	70	VW3 A5 202	11.000	
ATV 71HU40M3... HU75M3	33	120	VW3 A5 203	22.000	
ATV 71HD11M3X, HD15M3X	66	180	VW3 A5 204	45.000	
ATV 71HD18M3X, HD22M3X	95	250	VW3 A5 205	60.000	
ATV 71HD30M3X... HD45M3X	180	400	VW3 A5 206	120.000	
ATV 71HD55M3X, HD75M3X	300	1360	VW3 A5 208	165.000	
Three-phase supply voltage: 380...480 V 50/60 Hz					
ATV 71H075N4...HU40N4 (1) ATV 71W075N4...WU40N4 ATV 71P075N4Z...PU40N4Z	11	50	VW3 A5 201	8.000	
ATV 71HU55N4 ATV 71WU55N4 ATV 71PU55N4Z	16	70	VW3 A5 202	11.000	
ATV 71HU75N4...HD15N4 ATV 71WU75N4...WD15N4 ATV 71PU75N4Z, PD11N4Z	33	120	VW3 A5 203	22.000	
ATV 71HD18N4... HD30N4 ATV 71WD18N4...WD30N4	66	180	VW3 A5 204	45.000	
ATV 71HD37N4, HD45N4 ATV 71WD37N4, WD45N4	95	250	VW3 A5 205	60.000	
ATV 71HD55N4, HD75N4 ATV 71WD55N4, WD75N4	180	400	VW3 A5 206	120.000	
ATV 71HD90N4, HC11N4 ATV 71QD90N4, QC11N4	200	945	VW3 A5 207	130.000	
ATV 71HC13N4, HC16N4 ATV 71QC13N4, QC16N4	300	1360	VW3 A5 208	165.000	
ATV 71HC20N4 ATV 71QC20N4	400	1900	VW3 A5 209	190.000	
ATV 71HC25N4 ATV 71QC25N4	Motor P 220 kW	400	1900	VW3 A5 209	190.000
	Motor P 250 kW	600	2370	VW3 A5 210	260.000
ATV 71HC28N4, HC31N4 ATV 71QC31N4	600	2370	VW3 A5 210	260.000	
ATV 71HC40N4 ATV 71QC40N4	Motor P 355 kW	600	2370	VW3 A5 210	260.000
	Motor P 400 kW	1200	5150	VW3 A5 211	600.000
ATV 71HC50N4 ATV 71QC50N4	1200	5150	VW3 A5 211	600.000	

(1) For ATV 71H075M3, ATV 71HU15M3 and ATV 71HU15N4 drives, a lower category of motor is recommended for use with a sinus filter.



GV2 L20
+
LC1 D25●●
+
ATV 71HU22M3

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				
Supply voltage 200...240 V 50/60 Hz single phase - Type 2 coordination					
0.37	0.5	ATV 71H075M3	GV2 L10	6.3	LC1 D18●●
0.75	1	ATV 71HU15M3	GV2 L14	10	LC1 D18●●
1.5	2	ATV 71HU22M3	GV2 L20	18	LC1 D25●●
2.2	3	ATV 71HU30M3	GV2 L22	25	LC1 D25●●
3	–	ATV 71HU40M3 (5)	GV2 L22	25	LC1 D25●●
4	5	ATV 71HU55M3 (5)	GV3 L40	40	LC1 D40●●
5.5	7.5	ATV 71HU75M3 (5)	GV3 L50	50	LC1 D50●●
Supply voltage 200...240 V 50/60 Hz single phase - Type 1 coordination					
0.37	0.5	ATV 71H075M3	GV2 L14	10	LC1 D09●●
0.75	1	ATV 71HU15M3	GV2 L16	14	LC1 D09●●
1.5	2	ATV 71HU22M3	GV2 L20	18	LC1 D09●●
2.2	3	ATV 71HU30M3	GV2 L32	25	LC1 D18●●
3	–	ATV 71HU40M3 (5)	GV2 L32	25	LC1 D18●●
4	5	ATV 71HU55M3 (5)	GV3 L40	40	LC1 D32●●
5.5	7.5	ATV 71HU75M3 (5)	GV3 L50	50	LC1 D38●●

(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
GV2 L	50
GV3 L	100

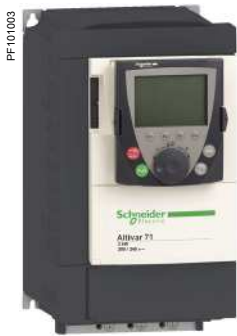
(3) Composition of contactors:
LC1 D●●: 3 poles + 1 N/O auxiliary contact and 1 N/C auxiliary contact.

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

	Volts ~	24	48	110	220	230	240
LC1 D	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 78.



GV2 L22
+
LC1 D25●●
+
ATV 71HU30M3

Motor starters for IP 20 drives						
Motor Power (1)	Drive Reference	Drive	Circuit-breaker Reference (2)	Rating A	I _{rm} A	Line contactor Reference (3) (4)
kW	HP					
Three-phase supply voltage 200...240 V 50/60 Hz - Type 2 coordination						
0.37	0.5	ATV 71H037M3	GV2 L08	4	–	LC1 D09●●
0.75	1	ATV 71H075M3	GV2 L10	10	–	LC1 D09●●
1.5	2	ATV 71HU15M3	GV2 L16	10	–	LC1 D18●●
2.2	3	ATV 71HU22M3	GV2 L20	14	–	LC1 D18●●
3	–	ATV 71HU30M3	GV2 L22	18	–	LC1 D25●●
4	5	ATV 71HU40M3	GV2 L32	25	–	LC1 D25●●
5.5	7.5	ATV 71HU55M3	GV3 L40	40	–	LC1 D40A●●
7.5	10	ATV 71HU75M3	GV3 L50	50	–	LC1 D50A●●
11	15	ATV 71HD11M3X	GV3 L65	65	–	LC1 D65A●●
15	20	ATV 71HD15M3X	NS80HMA80	80	480	LC1 D80●●
18.5	25	ATV 71HD18M3X	NS80HMA80	100	600	LC1 D80●●
22	30	ATV 71HD22M3X	NSX100●MA100	100	600	LC1 D95●●
30	40	ATV 71HD30M3X	NSX160●MA150	150	1350	LC1 D150●●
37	50	ATV 71HD37M3X	NSX160●MA150	150	1350	LC1 D150●●
45	60	ATV 71HD45M3X	NSX250●MA220	220	1980	LC1 D185●●
55	75	ATV 71HD55M3X	NSX250●MA220	220	1980	LC1 F225●●
75	100	ATV 71HD75M3X	NSX400● Micrologic 1.3M	320	1920	LC1 F265●●
Three-phase supply voltage 200...240 V 50/60 Hz - Type 1 coordination						
0.37	0.5	ATV 71H037M3	GV2 L08	4	–	LC1 D09●●
0.75	1	ATV 71H075M3	GV2 L10	10	–	LC1 D09●●
1.5	2	ATV 71HU15M3	GV2 L16	10	–	LC1 D09●●
2.2	3	ATV 71HU22M3	GV2 L20	14	–	LC1 D09●●
3	–	ATV 71HU30M3	GV2 L22	18	–	LC1 D18●●
4	5	ATV 71HU40M3	GV2 L32	25	–	LC1 D18●●
5.5	7.5	ATV 71HU55M3	GV3 L40	40	–	LC1 D25●●
7.5	10	ATV 71HU75M3	GV3 L50	50	–	LC1 D32●●
11	15	ATV 71HD11M3X	GV3 L65	65	–	LC1 D40A●●
15	20	ATV 71HD15M3X	NS80HMA80	80	480	LC1 D50A●●
18.5	25	ATV 71HD18M3X	NS80HMA80	100	600	LC1 D50A●●
22	30	ATV 71HD22M3X	NSX100●MA100	100	600	LC1 D80●●
30	40	ATV 71HD30M3X	NSX160●MA150	150	1350	LC1 D95●●
37	50	ATV 71HD37M3X	NSX160●MA150	150	1350	LC1 D115●●
45	60	ATV 71HD45M3X	NSX250●MA220	220	1980	LC1 D115●●
55	75	ATV 71HD55M3X	NSX250●MA220	220	1980	LC1 D115●●
75	100	ATV 71HD75M3X	NSX400● Micrologic 1.3M	320	1920	LC1 F185●●

(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 _{cu} (kA) for 240 V	Icu (kA) for 240 V					
		B	F	N	H	S	L
GV2 L08, GV2 L10	130	–	–	–	–	–	–
GV2 L16...L32, GV3 L40...L65	50	–	–	–	–	–	–
NS80HMA	100	–	–	–	–	–	–
NSX100●MA...250●MA	–	40	85	90	100	120	150
NSX400●	–	–	40	85	100	120	150

(3) Composition of contactors:

LC1 D●●: 3 poles + 1 N/O auxiliary contact and 1 N/C auxiliary contact.

LC1 F●●●: 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
LC1 D	50 Hz	B5	E5	F5	M5	P5	U5
	60 Hz	B6	E6	F6	M6	–	U6
	50/60 Hz	B7	E7	F7	M7	P7	U7
LC1 185	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
LC1 F225	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
LC1 F265	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.



NSX160●MA150
+
LC1 D115●●
+
ATV 71HD45N4

Motor starters for IP 20 drives						
Motor Power (1)	Drive Reference	Drive	Circuit-breaker Reference (2)	Rating A	I _{rm} A	Line contactor Reference (3) (4)
kW	HP					
Three-phase supply voltage 380...415 V 50/60 Hz - Type 2 coordination						
0.75	1	ATV 71H075N4	GV2 L08	4	–	LC1 D09●●
1.5	2	ATV 71HU15N4	GV2 L10	6.3	–	LC1 D09●●
2.2	3	ATV 71HU22N4	GV2 L14	10	–	LC1 D25●●
3	–	ATV 71HU30N4	GV2 L16	14	–	LC1 D25●●
4	5	ATV 71HU40N4	GV2 L16	14	–	LC1 D25●●
5.5	7.5	ATV 71HU55N4	GV2 L22	25	–	LC1 D25●●
7.5	10	ATV 71HU75N4	GV3 L32	32	–	LC1 D40A●●
11	15	ATV 71HD11N4	GV3 L40	40	–	LC1 D50A●●
15	20	ATV 71HD15N4	GV3 L50	50	–	LC1 D65A●●
18.5	25	ATV 71HD18N4	GV3 L50	50	–	LC1 D65A●●
22	30	ATV 71HD22N4	GV3 L65	65	–	LC1 D65A●●
30	40	ATV 71HD30N4	NS80HMA80	80	480	LC1 D80●●
37	50	ATV 71HD37N4	NSX100●MA100	100	800	LC1 D95●●
45	60	ATV 71HD45N4	NSX160●MA150	150	1350	LC1 D115●●
55	75	ATV 71HD55N4	NSX160●MA150	150	1350	LC1 D150●●
75	100	ATV 71HD75N4	NSX250●MA220	220	1980	LC1 F185●●
90	125	ATV 71HD90N4	NSX250●MA220	220	1980	LC1 F185●●
110	150	ATV 71HC11N4	NSX250●MA220	220	1980	LC1 F225●●
132	200	ATV 71HC13N4	NSX400● Micrologic 1.3M	320	1920	LC1 F265●●
160	250	ATV 71HC16N4	NSX400● Micrologic 1.3M	320	1920	LC1 F330●●
200	300	ATV 71HC20N4	NSX630● Micrologic 1.3M	320	1920	LC1 F400●●
220	350	ATV 71HC25N4	NSX630● Micrologic 1.3M	500	3000	LC1 F400●●
250	400	ATV 71HC25N4	NSX630● Micrologic 1.3M	500	3000	LC1 F500●●
280	450	ATV 71HC28N4	NSX630● Micrologic 1.3M	500	3000	LC1 F500●●
315	500	ATV 71HC31N4	NS800L Micrologic 2 or 5	500	3000	LC1 F630●●
355	–	ATV 71HC40N4	NS800L Micrologic 2 or 5	800	1600	LC1 F630●●
400	600	ATV 71HC40N4	NS800L Micrologic 2 or 5	800	1600	LC1 F800●●
500	700	ATV 71HC50N4	NS1000L Micrologic 2 or 5	1000	2000	LC1 BL●●

(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	Icu (kA) for 400 V	Icu (kA) for 400 V					
		B	F	N	H	S	L
GV2 L08...L14	130	–	–	–	–	–	–
GV2 L16, GV2 L22, GV3 L32...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:

LC1 D●●: 3 poles + 1 N/O auxiliary contact and 1 N/C auxiliary contact.

LC1 F●●●, LC1 B: 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
LC1 D	50 Hz	B5	E5	F5	M5	P5	U5
	60 Hz	B6	E6	F6	M6	–	U6
	50/60 Hz	B7	E7	F7	M7	P7	U7
LC1 F185	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
LC1 F225	40...400 Hz (LX1 coil)	B7	E7	F7	M7	P7	U7
LC1 F265, F330	40...400 Hz (LX1 coil)	B7	E7	F7	M7	P7	U7
LC1 F400...F630	40...400 Hz (LX1 coil)	–	E7	F7	M7	P7	U7
LC1 F800	40...400 Hz (LX1 coil)	–	–	FE7	P7	P7	P7
LC1 BL	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.



NSX160●MA150
+
LC1 D115●●
+
ATV 71HD45N4

Motor starters for IP 20 drives						
Motor Power (1)	Drive Reference	Circuit-breaker Reference (2)	Rating A	I _{rm} A	Line contactor Reference (3) (4)	
kW	HP					
Three-phase supply voltage 380...415 V 50/60 Hz - Type 1 coordination						
0.75	1	ATV 71H075N4	GV2 L08	4	–	LC1 D09●●
1.5	2	ATV 71HU15N4	GV2 L10	6.3	–	LC1 D09●●
2.2	3	ATV 71HU22N4	GV2 L14	10	–	LC1 D09●●
3	–	ATV 71HU30N4	GV2 L16	14	–	LC1 D09●●
4	5	ATV 71HU40N4	GV2 L16	14	–	LC1 D18●●
5.5	7.5	ATV 71HU55N4	GV2 L22	25	–	LC1 D25●●
7.5	10	ATV 71HU75N4	GV3 L32	32	–	LC1 D40A●●
11	15	ATV 71HD11N4	GV3 L40	40	–	LC1 D40A●●
15	20	ATV 71HD15N4	GV3 L50	50	–	LC1 D50A●●
18.5	25	ATV 71HD18N4	GV3 L50	50	–	LC1 D50A●●
22	30	ATV 71HD22N4	GV3 L65	65	–	LC1 D65A●●
30	40	ATV 71HD30N4	NS80HMA80	80	480	LC1 D65A●●
37	50	ATV 71HD37N4	NSX100●MA100	100	800	LC1 D95●●
45	60	ATV 71HD45N4	NSX160●MA150	150	1350	LC1 D115●●
55	75	ATV 71HD55N4	NSX160●MA150	150	1350	LC1 D115●●
75	100	ATV 71HD75N4	NSX250●MA220	220	1980	LC1 F185●●
90	125	ATV 71HD90N4	NSX250●MA220	220	1980	LC1 F185●●
110	150	ATV 71HC11N4	NSX250●MA220	220	1980	LC1 F225●●
132	200	ATV 71HC13N4	NSX400● Micrologic 1.3M	320	1920	LC1 F265●●
160	250	ATV 71HC16N4	NSX400● Micrologic 1.3M	320	1920	LC1 F330●●
200	300	ATV 71HC20N4	NSX630● Micrologic 1.3M	320	1920	LC1 F400●●
220	350	ATV 71HC25N4	NSX630● Micrologic 1.3M	500	3000	LC1 F400●●
250	400	ATV 71HC25N4	NSX630● Micrologic 1.3M	500	3000	LC1 F500●●
280	450	ATV 71HC28N4	NSX630● Micrologic 1.3M	500	3000	LC1 F500●●
315	500	ATV 71HC31N4	NS800L Micrologic 2 or 5 (LR OFF)	500	3000	LC1 F630●●
355	–	ATV 71HC40N4	NS800L Micrologic 2 or 5 (LR OFF)	800	1600	LC1 F630●●
400	600	ATV 71HC40N4	NS800L Micrologic 2 or 5 (LR OFF)	800	1600	LC1 F630●●
500	700	ATV 71HC50N4	NS1000L Micrologic 2 or 5 (LR OFF)	1000	2000	LC1 F630●●

(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 _{cu} (kA) for 400 V	Icu (kA) for 400 V					
		B	F	N	H	S	L
GV2 L08...L14	130	–	–	–	–	–	–
GV2 L16, GV2 L22, GV3 L32...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:

LC1 D●●: 3 poles + 1 N/O auxiliary contact and 1 N/C auxiliary contact.

LC1 F●●●: 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
LC1 D	50 Hz	B5	E5	F5	M5	P5	U5
	60 Hz	B6	E6	F6	M6	–	U6
	50/60 Hz	B7	E7	F7	M7	P7	U7
LC1 F185	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
LC1 F225	40...400 Hz (LX1 coil)	B7	E7	F7	M7	P7	U7
LC1 F265, F330	40...400 Hz (LX1 coil)	B7	E7	F7	M7	P7	U7
LC1 F400...F630	40...400 Hz (LX1 coil)	–	E7	F7	M7	P7	U7
LC1 F800	40...400 Hz (LX1 coil)	–	–	FE7	P7	P7	P7
LC1 BL	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.



NSX160●MA150
+
LC1 D115●●
+
ATV 71HD55N4

Motor starters for IP 20 drives						
Motor Power (1)	Drive Reference	Drive	Circuit-breaker Reference (2)	Rating A	I _{rm} A	Line contactor Reference (3) (4)
kW	HP					
Three-phase supply voltage 440...480 V 50/60 Hz - Type 2 coordination						
0.75	1	ATV 71H075N4	GV2 L08	4	–	LC1 D25●●
1.5	2	ATV 71HU15N4	GV2 L10	6.3	–	LC1 D25●●
2.2	3	ATV 71HU22N4	GV2 L14	10	–	LC1 D25●●
3	–	ATV 71HU30N4	GV2 L14	10	–	LC1 D25●●
4	5	ATV 71HU40N4	GV2 L16	14	–	LC1 D25●●
5.5	7.5	ATV 71HU55N4	GV2 L20	25	–	LC1 D25●●
7.5	10	ATV 71HU75N4	GV3 L25	32	–	LC1 D32●●
11	15	ATV 71HD11N4	GV3 L32	40	–	LC1 D40A●●
15	20	ATV 71HD15N4	GV3 L50	50	–	LC1 D50A●●
18.5	25	ATV 71HD18N4	GV3 L50	50	–	LC1 D50A●●
22	30	ATV 71HD22N4	GV3 L50	50	–	LC1 D65A●●
30	40	ATV 71HD30N4	GV3 L65	65	–	LC1 D65A●●
37	50	ATV 71HD37N4	NS80HMA80	100	600	LC1 D80●●
45	60	ATV 71HD45N4	NSX100●MA100	100	600	LC1 D115●●
55	75	ATV 71HD55N4	NSX160●MA150	150	1350	LC1 D115●●
75	100	ATV 71HD75N4	NSX250●MA220	150	1350	LC1 D185●●
90	125	ATV 71HD90N4	NSX250●MA220	150	1350	LC1 D185●●
110	150	ATV 71HC11N4	NSX250●MA220	220	1980	LC1 F185●●
132	200	ATV 71HC13N4	NSX250●MA220	220	1980	LC1 F265●●
160	250	ATV 71HC16N4	NSX400● Micrologic 1.3M	320	1920	LC1 F265●●
200	300	ATV 71HC20N4	NSX630● Micrologic 1.3M	320	1920	LC1 F400●●
220	350	ATV 71HC25N4	NSX630● Micrologic 1.3M	320	1920	LC1 F400●●
250	400	ATV 71HC25N4	NSX630● Micrologic 1.3M	500	3000	LC1 F500●●
280	450	ATV 71HC28N4	NSX630● Micrologic 1.3M	500	3000	LC1 F500●●
315	500	ATV 71HC31N4	NS800L Micrologic 2 or 5	500	3000	LC1 F630●●
355	–	ATV 71HC40N4	NS800L Micrologic 2 or 5	500	3000	LC1 F630●●
400	600	ATV 71HC40N4	NS800L Micrologic 2 or 5	800	1600	LC1 F780●●
500	700	ATV 71HC50N4	NS1000L Micrologic 2 or 5	1000	2000	LC1 F780●●

(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 _{cu} (kA) for 440 V	I _{cu} (kA) for 440 V					
		B	F	N	H	S	L
GV2 L08, GV2 L10	130	–	–	–	–	–	–
GV2 L14...L20	20	–	–	–	–	–	–
GV3 L25...L65	50	–	–	–	–	–	–
NS80HMA	65	–	–	–	–	–	–
NSX100●MA... 250●MA	–	20	35	50	65	90	130
NSX400●, NSX630●	–	–	30	42	65	90	130
NS800L, NS1000L	–	–	–	–	–	–	130

(3) Composition of contactors:

LC1 D●●: 3 poles + 1 N/O auxiliary contact and 1 N/C auxiliary contact.

LC1 F●●●: 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
LC1 D	50 Hz	B5	E5	F5	M5	P5	U5
	60 Hz	B6	E6	F6	M6	–	U6
	50/60 Hz	B7	E7	F7	M7	P7	U7
LC1 F185	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
LC1 F265	40...400 Hz (LX1 coil)	B7	E7	F7	M7	P7	U7
LC1 F400...F630	40...400 Hz (LX1 coil)	–	E7	F7	M7	P7	U7
LC1 F780	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.



NSX160●MA150
+
LC1 D115●●
+
ATV 71HD55N4

Motor starters for IP 20 drives

Motor		Drive	Circuit-breaker		Line contactor	
Power (1)	Reference	Reference (2)	Rating	I _{rm}	Reference (3) (4)	
kW	HP		A	A		
Three-phase supply voltage 440...480 V 50/60 Hz - Type 1 coordination						
0.75	1	ATV 71H075N4	GV2 L08	4	–	LC1 D09●●
1.5	2	ATV 71HU15N4	GV2 L10	6.3	–	LC1 D09●●
2.2	3	ATV 71HU22N4	GV2 L14	10	–	LC1 D09●●
3	–	ATV 71HU30N4	GV2 L14	10	–	LC1 D09●●
4	5	ATV 71HU40N4	GV2 L16	14	–	LC1 D09●●
5.5	7.5	ATV 71HU55N4	GV2 L20	25	–	LC1 D09●●
7.5	10	ATV 71HU75N4	GV3 L25	32	–	LC1 D25●●
11	15	ATV 71HD11N4	GV3 L32	40	–	LC1 D32●●
15	20	ATV 71HD15N4	GV3 L50	50	–	LC1 D40A●●
18.5	25	ATV 71HD18N4	GV3 L50	50	–	LC1 D40A●●
22	30	ATV 71HD22N4	GV3 L50	50	–	LC1 D50A●●
30	40	ATV 71HD30N4	GV3 L65	65	–	LC1 D65A●●
37	50	ATV 71HD37N4	NS80HMA80	100	600	LC1 D80●●
45	60	ATV 71HD45N4	NSX100●MA100	100	600	LC1 D95●●
55	75	ATV 71HD55N4	NSX160●MA150	150	1350	LC1 D115●●
75	100	ATV 71HD75N4	NSX250●MA220	150	1350	LC1 D115●●
90	125	ATV 71HD90N4	NSX250●MA220	150	1350	LC1 D150●●
110	150	ATV 71HC11N4	NSX250●MA220	220	1980	LC1 F150●●
132	200	ATV 71HC13N4	NSX250●MA220	220	1980	LC1 F225●●
160	250	ATV 71HC16N4	NSX400● Micrologic 1.3M	320	1920	LC1 F225●●
200	300	ATV 71HC20N4	NSX630● Micrologic 1.3M	320	1920	LC1 F330●●
220	350	ATV 71HC25N4	NSX630● Micrologic 1.3M	320	1920	LC1 F330●●
250	400	ATV 71HC25N4	NSX630● Micrologic 1.3M	500	3000	LC1 F400●●
280	450	ATV 71HC28N4	NSX630● Micrologic 1.3M	500	3000	LC1 F500●●
315	500	ATV 71HC31N4	NS800L Micrologic 2 or 5	500	3000	LC1 F500●●
355	–	ATV 71HC40N4	NS800L Micrologic 2 or 5	500	3000	LC1 F630●●
400	600	ATV 71HC40N4	NS800L Micrologic 2 or 5	800	1600	LC1 F630●●
500	700	ATV 71HC50N4	NS1000L Micrologic 2 or 5	1000	2000	LC1 F630●●

(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 _{cu} (kA) for 440 V						
	B	F	N	H	S	L	
GV2 L08, GV2 L10	130	–	–	–	–	–	
GV2 L14...L20	20	–	–	–	–	–	
GV3 L32...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:

LC1 D●●: 3 poles + 1 N/O auxiliary contact and 1 N/C auxiliary contact.

LC1 F●●●: 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
LC1 D	50 Hz	B5	E5	F5	M5	P5	U5
	60 Hz	B6	E6	F6	M6	–	U6
	50/60 Hz	B7	E7	F7	M7	P7	U7
LC1 F185	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
LC1 F265	40...400 Hz (LX1 coil)	B7	E7	F7	M7	P7	U7
LC1 F400...F630	40...400 Hz (LX1 coil)	–	E7	F7	M7	P7	U7
LC1 F780	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.



NSX160●MA150
+
LC1 D115●●
+
ATV 71WD55N4

Motor starters for IP 54 drives

Motor Power (1)	Drive Reference	Drive	Circuit-breaker Reference (2)	Rating A	I _{rm} A	Line contactor Reference (3) (4)
Three-phase supply voltage 380...415 V 50/60 Hz - Type 2 coordination						
0.75	1	ATV 71W075N4	GV2 L08	4	–	LC1 D18●●
1.5	2	ATV 71WU15N4	GV2 L10	6.3	–	LC1 D18●●
2.2	3	ATV 71WU22N4	GV2 L14	10	–	LC1 D18●●
3	–	ATV 71WU30N4	GV2 L16	14	–	LC1 D18●●
4	5	ATV 71WU40N4	GV2 L16	14	–	LC1 D18●●
5.5	7.5	ATV 71WU55N4	GV2 L22	25	–	LC1 D25●●
7.5	10	ATV 71WU75N4	GV3 L32	32	–	LC1 D40●●
11	15	ATV 71WD11N4	GV3 L40	40	–	LC1 D40●●
15	20	ATV 71WD15N4	GV3 L50	50	–	LC1 D50●●
18.5	25	ATV 71WD18N4	GV3 L50	50	–	LC1 D50●●
22	30	ATV 71WD22N4	GV3 L65	65	–	LC1 D65●●
30	40	ATV 71WD30N4	NS80HMA80	80	480	LC1 D65●●
37	50	ATV 71WD37N4	NSX100●MA100	100	800	LC1 D80●●
45	60	ATV 71WD45N4	NSX160●MA150	150	1350	LC1 D115●●
55	75	ATV 71WD55N4	NSX160●MA150	150	1350	LC1 D115●●
75	100	ATV 71WD75N4	NSX250●MA150	150	1350	LC1 D150●●

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

0.75	1	ATV 71W075N4	GV2 L08	4	–	LC1 D18●●
1.5	2	ATV 71WU15N4	GV2 L10	6.3	–	LC1 D18●●
2.2	3	ATV 71WU22N4	GV2 L14	10	–	LC1 D18●●
3	–	ATV 71WU30N4	GV2 L14	10	–	LC1 D18●●
4	5	ATV 71WU40N4	GV2 L16	14	–	LC1 D18●●
5.5	7.5	ATV 71WU55N4	GV2 L22	25	–	LC1 D25●●
7.5	10	ATV 71WU75N4	GV3 L32	32	–	LC1 D40●●
11	15	ATV 71WD11N4	GV3 L40	40	–	LC1 D40●●
15	20	ATV 71WD15N4	GV3 L50	50	–	LC1 D50●●
18.5	25	ATV 71WD18N4	GV3 L50	50	–	LC1 D50●●
22	30	ATV 71WD22N4	GV3 L65	65	–	LC1 D65●●
30	40	ATV 71WD30N4	NSX100●MA100	100	600	LC1 D65●●
37	50	ATV 71WD37N4	NSX100●MA100	100	600	LC1 D80●●
45	60	ATV 71WD45N4	NSX160●MA100	100	600	LC1 D115●●
55	75	ATV 71WD55N4	NSX160●MA150	150	1350	LC1 D115●●
75	100	ATV 71WD75N4	NSX160●MA150	150	1350	LC1 D115●●

(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 _{cu} (kA) for 400 V	I _{cu} (kA) for 400 V					
		B	F	N	H	S	L
GV2 L08...L14, GV3 L32	100	–	–	–	–	–	–
GV2 L16, L22, GV3 L40...L65	50	–	–	–	–	–	–
NS80HMA	70	–	–	–	–	–	–
NSX100●MA...250●MA	–	25	36	50	70	100	150
Circuit-breaker	I _{cu} (kA) for 440 V	I _{cu} (kA) for 440 V					
		B	F	N	H	S	L
GV2 L08, GV2 L10, GV3 L32	100	–	–	–	–	–	–
GV2 L14...L22	20	–	–	–	–	–	–
GV3 L40...L65	50	–	–	–	–	–	–
NSX100●MA, NSX160●MA	–	20	35	50	65	90	130

(3) Composition of contactors:
LC1 D●●: 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:

LC1 D	Volts ~						
	24	48	110	220	230	240	
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.



GV2 L16
+
LC1 D18●●
+
ATV 71PU40N4Z

Motor starters for IP 20 drives on base plate

Motor Power (1)		Drive Reference	Circuit-breaker Reference (2)		Line contactor Reference (3) (4)	
kW	HP		Reference (2)	Rating A	I _{rm} A	
Three-phase supply voltage 380...415 V 50/60 Hz - Type 2 coordination						
0.75	1	ATV 71P075N4Z	GV2 L08	4	–	LC1 D18●●
1.5	2	ATV 71PU15N4Z	GV2 L10	6.3	–	LC1 D18●●
2.2	3	ATV 71PU22N4Z	GV2 L14	10	–	LC1 D18●●
3	–	ATV 71PU30N4Z	GV2 L16	14	–	LC1 D18●●
4	5	ATV 71PU40N4Z	GV2 L16	14	–	LC1 D18●●
5.5	7.5	ATV 71PU55N4Z	GV2 L22	25	–	LC1 D25●●
7.5	10	ATV 71PU75N4Z	GV3 L32	32	–	LC1 D40●●

Three-phase supply voltage 440...480 V 50/60 Hz - Type 2 coordination						
0.75	1	ATV 71P075N4Z	GV2 L08	4	–	LC1 D18●●
1.5	2	ATV 71PU15N4Z	GV2 L10	6.3	–	LC1 D18●●
2.2	3	ATV 71PU22N4Z	GV2 L14	10	–	LC1 D18●●
3	–	ATV 71PU30N4Z	GV2 L14	10	–	LC1 D18●●
4	5	ATV 71PU40N4Z	GV2 L16	14	–	LC1 D18●●
5.5	7.5	ATV 71PU55N4Z	GV2 L22	25	–	LC1 D25●●
7.5	10	ATV 71PU75N4Z	GV3 L32	32	–	LC1 D40●●

(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 _{cu} (kA) for 400 V
GV2 L08...L14, GV3 L32	100
GV2 L16, GV2 L22	50

(3) Composition of contactors:
LC1 D●●: 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
LC1 D	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.



GV2 L16
+
LC1 D25●●
+
ATV 71HU75Y

Motor starters for IP 20 drives

Motor Power (1) kW	Drive Reference	Circuit-breaker		Line contactor	
		Reference (2)	Rating A	I _{rm} A	Reference (3) (4)
Three-phase supply voltage 690 V 50/60 Hz - Type 2 coordination					
2.2	ATV 71HU22Y	GV2 L10	6.3	78	LC1 D25●●
3	ATV 71HU30Y	GV2 L10	6.3	78	LC1 D25●●
4	ATV 71HU40Y	GV2 L14	10	138	LC1 D25●●
5.5	ATV 71HU55Y	GV2 L14	10	138	LC1 D25●●
7.5	ATV 71HU75Y	GV2 L16	14	170	LC1 D25●●
11	ATV 71HD11Y	GV2 L20	18	223	LC1 D40●●
15	ATV 71HD15Y	GV2 L22	25	327	LC1 D40●●
18.5	ATV 71HD18Y	GV3 L25	25	350	LC1 D40●●
22	ATV 71HD22Y	GV3 L32	32	448	LC1 D65●●
30	ATV 71HD30Y	GV3 L40	40	560	LC1 D80●●
37	ATV 71HD37Y	GV3 L50	50	700	LC1 D80●●
45	ATV 71HD45Y	GV3 L65	65	910	LC1 D115●●
55	ATV 71HD55Y	NS100LMA100	100	1100	LC1 D115●●
75	ATV 71HD75Y	NS100LMA100	100	1100	LC1 D115●●
90	ATV 71HD90Y	NS400LMA320	320	2880	LC1 F265●●
110	ATV 71HC11Y	NS400LMA320	320	2880	LC1 F265●●
132	ATV 71HC13Y	NS400LMA320	320	2880	LC1 F265●●
160	ATV 71HC16Y	NS400LMA320	320	2880	LC1 F265●●
200	ATV 71HC20Y	NS400LMA320	320	2880	LC1 F330●●
200	ATV 71HC25Y	NS630bLB 5 LR OFF	630	5670	LC1 F630●●
250	ATV 71HC31Y	NS630bLB 5 LR OFF	630	5670	LC1 F630●●
315	ATV 71HC40Y	NS630bLB 5 LR OFF	630	5670	LC1 F630●●
400	ATV 71HC50Y	NS630bLB 5 LR OFF	630	5670	LC1 F630●●
500	ATV 71HC63Y	NS800LB 5 LR OFF	800	7200	LC1 F780●●

(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 _{cu} (kA) for 690 V
GV2 L10...L22, GV3 L25, GV3 L32	4
GV3 L40...L65	5
NS●●●L, NS●●●bLB, NS800LB	75

(3) Composition of contactors:

LC1 D●●: 3 poles + 1 N/O auxiliary contact and 1 N/C auxiliary contact.

LC1 F●●: 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
LC1 D	50 Hz	B5	E5	F5	M5	P5	U5
	60 Hz	B6	E6	F6	M6	–	U6
	50/60 Hz	B7	E7	F7	M7	P7	U7
LC1 F265, F330	40...400 Hz (LX1 coil)	B7	E7	F7	M7	P7	U7
LC1 F630	40...400 Hz (LX1 coil)	–	E7	F7	M7	P7	U7
LC1 F780	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.



NSX630LMA500
+
LC1 F400
+
ATV 71HC25Y

Motor starters for IP 20 drives

Motor	Drive	Circuit-breaker			Line contactor
Power (1)	Reference	Reference (2)	Rating	I _{rm}	Reference (3) (4)
kW			A	A	
Three-phase supply voltage 690 V 50/60 Hz - Type 1 coordination					
250	ATV 71HC25Y	NSX630LMA500	500	–	LC1 F400●●
315	ATV 71HC31Y	NSX630LMA500	500	–	LC1 F500●●
400	ATV 71HC40Y	NSX630LMA500	500	–	LC1 F630●●
500	ATV 71HC50Y	NS630bLB Micrologic 5	630	–	LC1 BL33●●
630	ATV 71HC63Y	NS800LB Micrologic 5	800	–	LC1 BL34●●

(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 _{cu} (kA) for 690 V
NSX630LMA	35
NS630bLB, NS800LB	75

(3) Composition of contactors:
 LC1 F●●●, LC1 BL: 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
LC1 F	40...400 Hz (LX1 coil)	–	E7	F7	M7	P7	U7
LC1 BL	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.

Variable speed drives

Altivar 71

Pre-equipped IP 54 floor-standing enclosure kit



IP 54 floor-standing enclosure kit

Presentation

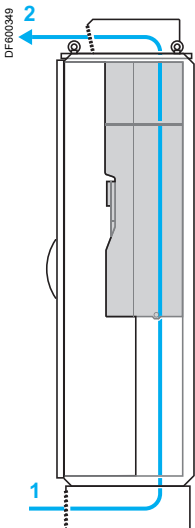
The pre-equipped kit solution is used to create an IP 54 certified floor-standing enclosure for 90 kW to 500 kW, IP 20 Altivar 71 variable speed drives for a 380...480 V three-phase power supply.

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:

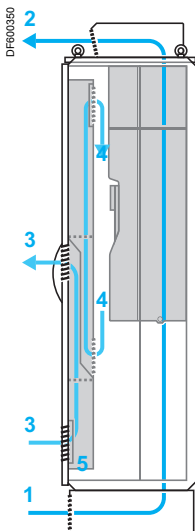
■ **VW3 A9 541 and VW3 A9 542** enclosure kits with a single air circuit for the power section:

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

■ **VW3 A9 543...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 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 **VW3 A9 55●** 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 **VW3 A9 541** or **VW3 A9 542**) **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	ATV 71HD90N4 (1)	600 x 2362 x 642	VW3 A9 541	220.000
	ATV 71HC11N4 (1)	600 x 2362 x 642	VW3 A9 542	220.000
	ATV 71HC13N4 (1)	600 x 2362 x 642	VW3 A9 543	252.000
	ATV 71HC16N4 (1)	600 x 2362 x 642	VW3 A9 544	252.000
	ATV 71HC20N4 (1) without braking unit ATV 71HC25N4 (1) without braking unit ATV 71HC28N4 (1) without braking unit	800 x 2362 x 642	VW3 A9 545	300.000
	ATV 71HC20N4 (1) with braking unit VW3 A7 101 (2) ATV 71HC25N4 (1) with braking unit VW3 A7 101 (2) ATV 71HC28N4 (1) with braking unit VW3 A7 101 (2)	800 x 2362 x 642	VW3 A9 546	300.000
	ATV 71HC31N4 (1) without braking unit ATV 71HC40N4 (1) without braking unit	1000 x 2362 x 642	VW3 A9 547	360.000
	ATV 71HC50N4 (1) without braking unit	1200 x 2362 x 642	VW3 A9 548	470.000
	VW3 A7 102 braking unit	600 x 2362 x 642	VW3 A9 549 (3)	252.000
	600 mm additional empty enclosure kit	Options and accessories (4)	600 x 2209 x 642	VW3 A9 550
800 mm additional empty enclosure kit	Options and accessories (4)	800 x 2209 x 642	VW3 A9 551	210.000

(1) Drive to be ordered separately (see page 17).

(2) Braking unit for ATV 71HC31N4...HC50N4 drives to be ordered separately (see page 64).

(3) Enclosure kit VW3 A9 549 is designed to take braking unit VW3 A7 102 for ATV 71HC31N4...HC50N4 high-power drives; it is mounted on the left of enclosure kit VW3 A9 547 or VW3 A9 548. The braking unit must be ordered separately (see page 64).

(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



“Ready to use” IP 54 floor-standing enclosure

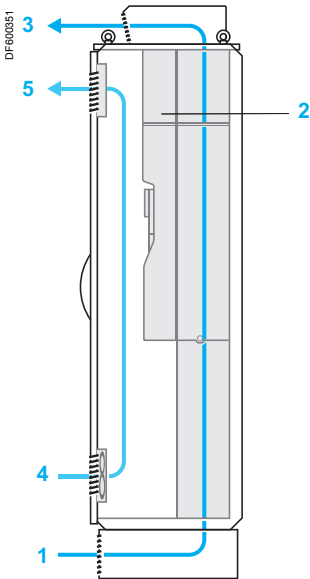
Presentation

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.



Cooling system with two separate air circuits

Cooling system

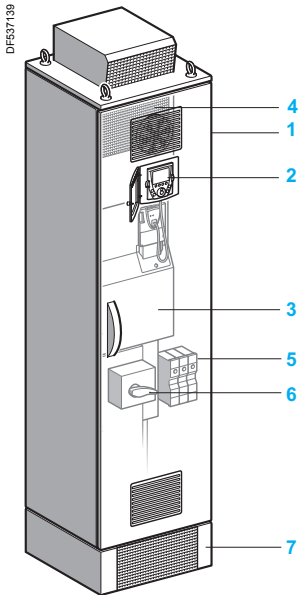
The cooling system used ensures optimum ventilation of the equipment, even in difficult and dusty environments.

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 ATV 71HD90N4...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	Line supply	With drive	Dimensions	Reference	Weight
	Max. prospective line Isc (1)				
	kA		W x H x D		kg
Three-phase supply voltage 380...415 V 50/60 Hz					
IP 54	50	ATV 71HD90N4	600 x 2362 x 642	ATV 71ES5D90N4	300.000
		ATV 71HC11N4	600 x 2362 x 642	ATV 71ES5C11N4	300.000
		ATV 71HC13N4	600 x 2362 x 642	ATV 71ES5C13N4	320.000
		ATV 71HC16N4	600 x 2362 x 642	ATV 71ES5C16N4	330.000
		ATV 71HC20N4	800 x 2362 x 642	ATV 71ES5C20N4	440.000
		ATV 71HC25N4	800 x 2362 x 642	ATV 71ES5C25N4	440.000
		ATV 71HC28N4	800 x 2362 x 642	ATV 71ES5C28N4	440.000
		ATV 71HC31N4	1400 x 2362 x 642	ATV 71ES5C31N4	700.000
		ATV 71HC40N4	1400 x 2362 x 642	ATV 71ES5C40N4	720.000
		ATV 71HC50N4	1600 x 2362 x 642	ATV 71ES5C50N4	850.000

(1) These values are given for use with upstream fuses (see the characteristics on our website www.schneider-electric.com).

Variable speed drives

Altivar 71 Plus

IP 23 or IP 54 enclosure with separate air flows

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 ensuring optimum ventilation.

The enclosures are supplied ready to connect.

The offer comprises two versions:

■ The **ATV 71EXS5●●●●●** 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 (**ATV 71EXS5●●●●N4**)
- 500 V three-phase, 90 kW to 500 kW (**ATV 71EXS5●●●●N**)
- 690 V three-phase, 110 kW to 630 kW (**ATV 71EXS5●●●●Y**)

Optimum enclosure ventilation is ensured by two separate cooling circuits for the control section and the power section.

■ The **ATV 71EXA●●●●●** 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 (**ATV 71EXA●●●●●N4**)
- 500 V three-phase, 500 kW to 1500 kW (**ATV 71EXA●●●●●N**)
- 690 V three-phase, 600 kW to 2000 kW (**ATV 71EXA●●●●●Y**)

Enclosure ventilation is also ensured by two separate cooling circuits, one for the control section and one for the power section.

In addition, an air circuit is integrated in the power enclosure to 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:

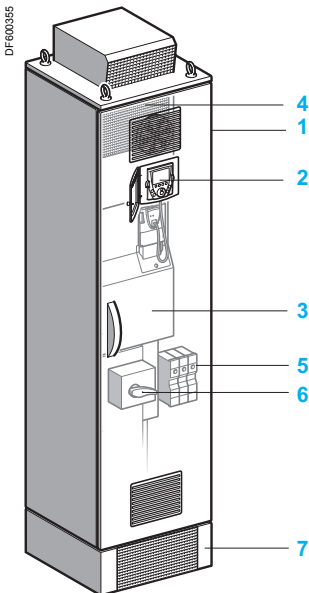
- A standard offer
- A modular offer, in which a wide selection of options can be incorporated depending on the drive rating

Standard ATV 71EXS5●●●●● offer

This consists of:

- A wired, ready-assembled Sarel "Spacial SF" enclosure **1**
- An ATV 71HD90N4...HC50N4 or ATV 71HC11Y...HC63Y drive on heatsink **3**
- An IP 65 remote mounting kit for graphic display terminal **2**
- A DC choke **4** (ATV 71EXS5●●●●N4) or a line choke in an additional enclosure (ATV 71EXS5●●●●N and ATV 71EXS5●●●●Y)
- Motor terminals **5**
- A switch and fast-acting fuses **6**
- A plinth **7**

See pages 108 and 109.



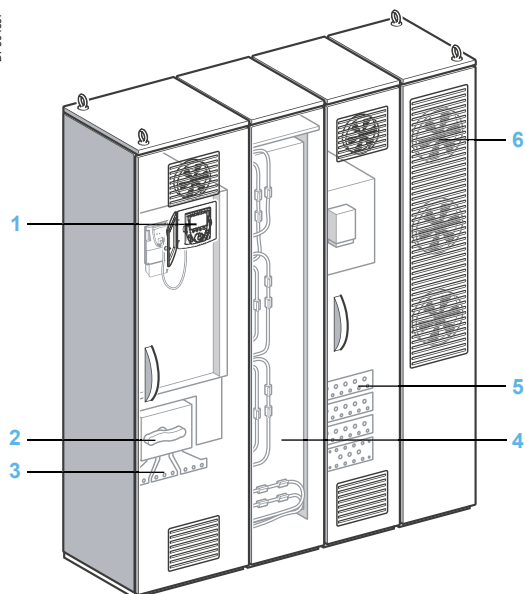
Standard ATV 71EXS5●●●●● offer

Variable speed drives

Altivar 71 Plus

IP 23 or IP 54 enclosure with separate air flows

DF504387



Standard ATV 71EXA offer

Standard ATV 71EXA offer

The ATV 71EXA offer is supplied in wired, ready-assembled Sarel "Spacial SF" enclosures.

Configuration example for a standard ATV 71EXA 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 108 and 109.

Modular offer

This consists of:

- The ATV 71EXS5 or ATV 71EXA standard separate air flow offer
- One or more options (see pages 114 to 123)

As well as these specific options, all 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 42, 43 and 48 to 51).

For any configuration other than those shown on pages 114 to 123, 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 114 and 115. For all 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 116 to 123. For all other options, please contact our Customer Care Centre.

Variable speed drives

Altivar 71 Plus

IP 23 or IP 54 enclosure with separate air flows



ATV 71EXS5●●●●●●

IP 23 or IP 54 enclosure with separate air flows

Degree of protection	Line supply	With drive	Dimensions	Reference (1)	Weight
	Max. prospective line Isc (2)				
	kA		W x H x D		kg
Three-phase supply voltage 380...415 V 50/60 Hz					
IP 54	50	ATV 71HD90N4	600 x 2362 x 642	ATV 71EXS5D90N4	310.000
		ATV 71HC11N4	600 x 2362 x 642	ATV 71EXS5C11N4	310.000
		ATV 71HC13N4	600 x 2362 x 642	ATV 71EXS5C13N4	335.000
		ATV 71HC16N4	600 x 2362 x 642	ATV 71EXS5C16N4	345.000
		ATV 71HC20N4	800 x 2362 x 642	ATV 71EXS5C20N4	400.000
		ATV 71HC25N4	800 x 2362 x 642	ATV 71EXS5C25N4	480.000
		ATV 71HC28N4	800 x 2362 x 642	ATV 71EXS5C28N4	480.000
		ATV 71HC31N4	1400 x 2362 x 642	ATV 71EXS5C31N4	745.000
		ATV 71HC40N4	1400 x 2362 x 642	ATV 71EXS5C40N4	765.000
		ATV 71HC50N4	1600 x 2362 x 642	ATV 71EXS5C50N4	900.000
IP 23 or IP 54	100	ATV 71EC50N4 (3)	1800 x 2009 x 642	ATV 71EXA●C50N4	950.000
		ATV 71EC63N4 (3)	1800 x 2009 x 642	ATV 71EXA●C63N4	950.000
		ATV 71EC71N4 (3)	3400 x 2009 x 642	ATV 71EXA●C71N4	1925.000
		ATV 71EC90N4 (3)	3400 x 2009 x 642	ATV 71EXA●C90N4	1925.000
		ATV 71EM11N4 (3)	3400 x 2009 x 642	ATV 71EXA●M11N4	1925.000
		ATV 71EM13N4 (3)	3400 x 2009 x 642	ATV 71EXA●M13N4	1925.000

Three-phase supply voltage 500 V 50/60 Hz

IP 54	50	ATV 71HC11Y	1000 x 2362 x 642	ATV 71EXS5D90N	435.000
		ATV 71HC13Y	1000 x 2362 x 642	ATV 71EXS5C11N	435.000
		ATV 71HC16Y	1000 x 2362 x 642	ATV 71EXS5C13N	485.000
		ATV 71HC20Y	1200 x 2362 x 642	ATV 71EXS5C16N	570.000
		ATV 71HC25Y	1200 x 2362 x 642	ATV 71EXS5C20N	620.000
		ATV 71HC31Y	1200 x 2362 x 642	ATV 71EXS5C25N	620.000
		ATV 71HC40Y	1600 x 2362 x 642	ATV 71EXS5C31N	620.000
		ATV 71HC50Y	1600 x 2362 x 642	ATV 71EXS5C40N	1000,000
		ATV 71HC63Y	1600 x 2362 x 642	ATV 71EXS5C50N	1000.000
IP 23 or IP 54	100	ATV 71EC63Y (3)	1800 x 2009 x 642	ATV 71EXA●C50N	950.000
		ATV 71EC80Y (3)	1800 x 2009 x 642	ATV 71EXA●C63N	950.000
		ATV 71EM10Y (3)	1800 x 2009 x 642	ATV 71EXA●C80N	950.000
		ATV 71EM12Y (3)	3400 x 2009 x 642	ATV 71EXA●C90N	1925.000
		ATV 71EM15Y (3)	3400 x 2009 x 642	ATV 71EXA●M11N	1925.000
		ATV 71EM18Y (3)	3400 x 2009 x 642	ATV 71EXA●M13N	1925.000
		ATV 71EM20Y (3)	3400 x 2009 x 642	ATV 71EXA●M13N	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: ATV 71EXA●C63N4 becomes ATV 71EXA2C63N4.

(2) These values are given for use with upstream fuses (see the characteristics on our website 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



ATV 71EXA●●●●●

IP 23 or IP 54 enclosure with separate air flows (continued)

Three-phase supply voltage 690 V 50/60 Hz

Degree of protection	Line supply	With drive	Dimensions	Reference (1)	Weight
	Max. prospective line Isc (2)				
	kA		W x H x D		kg
IP 54	50	ATV 71HC11Y	1000 x 2362 x 642	ATV 71EXS5C11Y	435.000
		ATV 71HC13Y	1000 x 2362 x 642	ATV 71EXS5C13Y	485.000
		ATV 71HC16Y	1000 x 2362 x 642	ATV 71EXS5C16Y	485.000
		ATV 71HC20Y	1200 x 2362 x 642	ATV 71EXS5C20Y	570.000
		ATV 71HC25Y	1200 x 2362 x 642	ATV 71EXS5C25Y	620.000
		ATV 71HC31Y	1200 x 2362 x 642	ATV 71EXS5C31Y	620.000
		ATV 71HC40Y	1200 x 2362 x 642	ATV 71EXS5C40Y	910.000
		ATV 71HC50Y	1600 x 2362 x 642	ATV 71EXS5C50Y	1000.000
ATV 71HC63Y	1600 x 2362 x 642	ATV 71EXS5C63Y	1000.000		
IP 54 or IP 23	100	ATV 71EC63Y (3)	1800 x 2009 x 642	ATV 71EXA●C63Y	950.000
		ATV 71EC80Y (3)	1800 x 2009 x 642	ATV 71EXA●C80Y	950.000
		ATV 71EM10Y (3)	1800 x 2009 x 642	ATV 71EXA●M10Y	950.000
		ATV 71EM12Y (3)	3400 x 2009 x 642	ATV 71EXA●M12Y	1925.000
		ATV 71EM15Y (3)	3400 x 2009 x 642	ATV 71EXA●M15Y	1925.000
		ATV 71EM18Y (3)	3400 x 2009 x 642	ATV 71EXA●M18Y	1925.000
ATV 71EM20Y (3)	3400 x 2009 x 642	ATV 71EXA●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: ATV 71EXA●C63N4 becomes **ATV 71EXA2C63N4**.

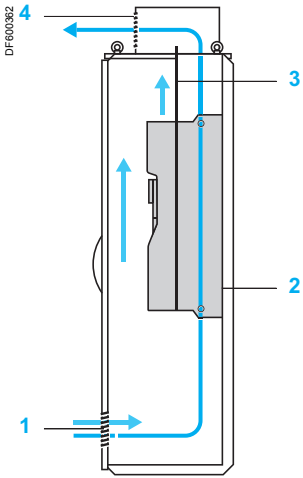
(2) These values are given for use with upstream fuses (see the characteristics on our website www.schneider-electric.com).

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

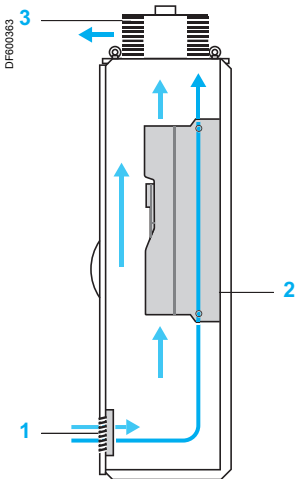
Variable speed drives

Altivar 71 Plus

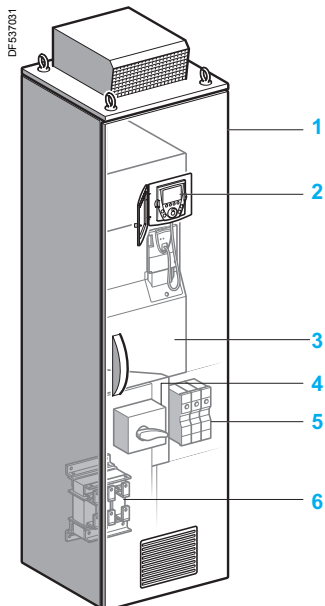
IP 23 or IP 54 floor-standing enclosure compact version



IP 23 cooling circuit



IP 54 cooling circuit



Standard ATV 71EXC offer

Presentation

The ATV 71EXC 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 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 2 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 prevents 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 ATV 71EXC 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 (ATV 71EXC...N4)
- 500 V three-phase, 90 kW to 500 kW (ATV 71EXC...N)
- 690 V three-phase, 110 kW to 630 kW (ATV 71EXC...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 ATV 71HD90N4D...HC50N4D or ATV 71HC11Y...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 112 and 113.

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Altivar 71 Plus

IP 23 or IP 54 floor-standing enclosure compact version

Modular offer

This consists of:

- The standard compact offer
- One or more options (see pages 114 to 121)

As well as these specific options, all 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 42, 43 and 48 to 51).

For any configuration other than those shown on pages 114 to 123, 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 114 and 115. For all 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 116 to 123. For all other options, please contact our Customer Care Centre.

Variable speed drives

Altivar 71 Plus

IP 23 or IP 54 floor-standing enclosure compact version



ATV 71EXC2●●●●●

IP 23 or IP 54 floor-standing enclosure compact version

Degree of protection	Line supply	With drive	Dimensions	Reference	Weight
	Max. prospective line I _{sc} (1)				
	kA		W x H x D		kg
Three-phase supply voltage 380...415 V 50/60 Hz					
IP 23	100	ATV 71HD90N4D	600 x 2162 x 642	ATV 71EXC2D90N4	315.000
		ATV 71HC11N4D	600 x 2162 x 642	ATV 71EXC2C11N4	315.000
		ATV 71HC13N4D	600 x 2162 x 642	ATV 71EXC2C13N4	335.000
		ATV 71HC16N4D	600 x 2162 x 642	ATV 71EXC2C16N4	350.000
		ATV 71HC20N4D	800 x 2162 x 642	ATV 71EXC2C20N4	385.000
		ATV 71HC25N4D	800 x 2162 x 642	ATV 71EXC2C25N4	485.000
		ATV 71HC28N4D	800 x 2162 x 642	ATV 71EXC2C28N4	485.000
		ATV 71HC31N4D	1200 x 2162 x 642	ATV 71EXC2C31N4	640.000
		ATV 71HC40N4D	1200 x 2162 x 642	ATV 71EXC2C40N4	680.000
		ATV 71HC50N4D	1200 x 2162 x 642	ATV 71EXC2C50N4	805.000
IP 54	100	ATV 71HD90N4D	600 x 2262 x 642	ATV 71EXC5D90N4	325.000
		ATV 71HC11N4D	600 x 2262 x 642	ATV 71EXC5C11N4	325.000
		ATV 71HC13N4D	600 x 2262 x 642	ATV 71EXC5C13N4	345.000
		ATV 71HC16N4D	600 x 2262 x 642	ATV 71EXC5C16N4	360.000
		ATV 71HC20N4D	800 x 2262 x 642	ATV 71EXC5C20N4	390.000
		ATV 71HC25N4D	800 x 2262 x 642	ATV 71EXC5C25N4	485.000
		ATV 71HC28N4D	800 x 2262 x 642	ATV 71EXC5C28N4	485.000
		ATV 71HC31N4D	1200 x 2262 x 642	ATV 71EXC5C31N4	660.000
		ATV 71HC40N4D	1200 x 2262 x 642	ATV 71EXC5C40N4	700.000
		ATV 71HC50N4D	1200 x 2262 x 642	ATV 71EXC5C50N4	835.000
Three-phase supply voltage 500 V 50/60 Hz					
IP 23	100	ATV 71HC11Y	600 x 2162 x 642	ATV 71EXC2D90N	365.000
		ATV 71HC13Y	600 x 2162 x 642	ATV 71EXC2C11N	415.000
		ATV 71HC16Y	600 x 2162 x 642	ATV 71EXC2C13N	415.000
		ATV 71HC20Y	800 x 2162 x 642	ATV 71EXC2C16N	500.000
		ATV 71HC25Y	800 x 2162 x 642	ATV 71EXC2C20N	550.000
		ATV 71HC31Y	800 x 2162 x 642	ATV 71EXC2C25N	550.000
		ATV 71HC40Y	1200 x 2162 x 642	ATV 71EXC2C31N	825.000
		ATV 71HC50Y	1200 x 2162 x 642	ATV 71EXC2C40N	915.000
		ATV 71HC63Y	1200 x 2162 x 642	ATV 71EXC2C50N	915.000
IP 54	100	ATV 71HC11Y	600 x 2262 x 642	ATV 71EXC5D90N	360.000
		ATV 71HC13Y	600 x 2262 x 642	ATV 71EXC5C11N	410.000
		ATV 71HC16Y	600 x 2262 x 642	ATV 71EXC5C13N	410.000
		ATV 71HC20Y	800 x 2262 x 642	ATV 71EXC5C16N	500.000
		ATV 71HC25Y	800 x 2262 x 642	ATV 71EXC5C20N	550.000
		ATV 71HC31Y	800 x 2262 x 642	ATV 71EXC5C25N	550.000
		ATV 71HC40Y	1200 x 2262 x 642	ATV 71EXC5C31N	855.000
		ATV 71HC50Y	1200 x 2262 x 642	ATV 71EXC5C40N	945.000
		ATV 71HC63Y	1200 x 2262 x 642	ATV 71EXC5C50N	945.000

(1) These values are given for use with upstream fuses (see the characteristics on our website 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	Line supply	With drive	Dimensions	Reference	Weight
	Max. prospective line Isc (1)				
	kA		W x H x D		kg
Three-phase supply voltage 690 V 50/60 Hz					
IP 23	100	ATV 71HC11Y	600 x 2162 x 642	ATV 71EXC2C11Y	365.000
		ATV 71HC13Y	600 x 2162 x 642	ATV 71EXC2C13Y	415.000
		ATV 71HC16Y	600 x 2162 x 642	ATV 71EXC2C16Y	415.000
		ATV 71HC20Y	800 x 2162 x 642	ATV 71EXC2C20Y	500.000
		ATV 71HC25Y	800 x 2162 x 642	ATV 71EXC2C25Y	550.000
		ATV 71HC31Y	800 x 2162 x 642	ATV 71EXC2C31Y	550.000
		ATV 71HC40Y	1200 x 2162 x 642	ATV 71EXC2C40Y	825.000
		ATV 71HC50Y	1200 x 2162 x 642	ATV 71EXC2C50Y	915.000
		ATV 71HC63Y	1200 x 2162 x 642	ATV 71EXC2C63Y	915.000
IP 54	100	ATV 71HC11Y	600 x 2262 x 642	ATV 71EXC5C11Y	360.000
		ATV 71HC13Y	600 x 2262 x 642	ATV 71EXC5C13Y	410.000
		ATV 71HC16Y	600 x 2262 x 642	ATV 71EXC5C16Y	410.000
		ATV 71HC20Y	800 x 2262 x 642	ATV 71EXC5C20Y	500.000
		ATV 71HC25Y	800 x 2262 x 642	ATV 71EXC5C25Y	550.000
		ATV 71HC31Y	800 x 2262 x 642	ATV 71EXC5C31Y	550.000
		ATV 71HC40Y	1200 x 2262 x 642	ATV 71EXC5C40Y	855.000
		ATV 71HC50Y	1200 x 2262 x 642	ATV 71EXC5C50Y	945.000
		ATV 71HC63Y	1200 x 2262 x 642	ATV 71EXC5C63Y	945.000

(1) These values are given for use with upstream fuses (see the characteristics on our website 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	VW3 A3E 101 (2)	0.200
Encoder interface card with RS 422, 5 V compatible differential outputs	VW3 A3E 401 (3)	0.200
Encoder interface card with RS 422, 15 V compatible differential outputs	VW3 A3E 402 (3)	0.200
Encoder interface card with 12 V open collector outputs	VW3 A3E 403 (3)	0.200
Encoder interface card with 15 V open collector outputs	VW3 A3E 404 (3)	0.200
Encoder interface card with 12 V push-pull outputs	VW3 A3E 405 (3)	0.200
Encoder interface card with 15 V push-pull outputs	VW3 A3E 406 (3)	0.200
Encoder interface card with 24 V push-pull outputs	VW3 A3E 407 (3)	0.200
Resolver encoder interface card 1.25...5.6 V	VW3 A3E 408 (3)	0.200
Universal encoder interface card with SinCos, SinCos Hiperface®, EnDat® or SSI 5, 8 or 12 V output	VW3 A3E 409 (3)	0.200
Encoder interface card with RS 422 compatible differential outputs with encoder emulation (RS 422 ESIM)	VW3 A3E 411 (3)	0.200
Logic I/O expansion card	VW3 A3E 201 (4)	0.320
Extended I/O expansion card	VW3 A3E 202 (4)	0.300
Controller Inside programmable card	VW3 A3E 501 (5) (6)	0.300
Modbus TCP Daisy Chain communication card	VW3 A3E 310D (7)	0.300
EtherNet/IP communication card	VW3 A3E 316 (7)	0.300
DeviceNet communication card	VW3 A3E 309 (7)	0.300
INTERBUS communication card	VW3 A3E 304 (7)	0.300
CC-Link communication card	VW3 A3E 317 (7)	0.320
Modbus/Uni-Telway communication card	VW3 A3E 303 (7)	0.300
PROFIBUS DP V0 communication card	VW3 A3E 307 (7)	0.300
PROFIBUS DP V1 communication card	VW3 A3E 307S371 (7)	0.300
EtherCAT communication card	VW3 A3E 326	0.300

(1) For any other configuration, please contact our Customer Care Centre.

(2) The characteristics of the VW3 A3E 101 adaptor are identical to those of the VW3 A3 101 adaptor (see page 25 or consult our website www.schneider-electric.com).

(3) The characteristics of the VW3 A3E 401 and 409...411 encoder interface cards are identical to those of the VW3 A3 401...409 and 411 encoder interface cards (see page 52 or consult our website www.schneider-electric.com).

(4) The characteristics of the VW3 A3E 201 and VW3 A3E 202 I/O expansion cards are identical to those of the VW3 A3 201 and VW3 A3 202 expansion cards (see page 53 or consult our website www.schneider-electric.com).

(5) The characteristics of the VW3 A3E 501 Controller Inside programmable card are identical to those of the VW3 A3 501 Controller Inside programmable card (see pages 54 to 57 or consult our website 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 VW3 AE 1401, should be ordered separately (see page 115).

(7) The characteristics of the VW3 A3E 303...326 communication cards are identical to those of the VW3 A3 303...326 communication cards (see page 58 to 63 or consult our website 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	VW3 AE 1201	0.700
Remote option card terminals X13 (2) for I/O expansion cards VW3 A3E 201 and 202	VW3 AE 1202	0.900
External 230 V ~ supply terminals	VW3 AE 1301	0.100
Additional 24 V $\overline{\text{---}}$ power supply, nominal current 2 A (3)	VW3 AE 1401	2.200
External 24 V $\overline{\text{---}}$ supply terminals	VW3 AE 1402	0.100
Emergency stop button	VW3 AE 1501	0.100
“Preventa type AC” fault relay	VW3 AE 1502	0.100
“Preventa type ATE” fault relay	VW3 AE 1503	0.100
Enclosure lighting	VW3 AE 1601	1.500
Key switch (Local/Remote)	VW3 AE 1801	0.200
Additional electrical input isolation	VW3 AE 1901	0.100
Additional electrical output isolation	VW3 AE 1902	0.100
PTC relay	VW3 AE 2001	0.100
PTC relay with PTB (ATEX) certification (4)	VW3 AE 2002	0.100
PT100 relay for motor winding	VW3 AE 2003	0.300
PT100 relay for motor bearings	VW3 AE 2004	0.300
PT100 relay for line supply transformer	VW3 AE 2005	0.300
Motor heater 200 W, 230 V	VW3 AE 2101	0.200
Power supply circuit with protection for 1000 W external fan	VW3 AE 2102	0.200
Relay for logic output	VW3 AE 2201	0.100
Voltmeter 380...415 V three-phase supply voltage	VW3 AE 2301	0.400
Voltmeter 500 V three-phase supply voltage	VW3 AE 2302	0.400
Voltmeter 690 V three-phase supply voltage	VW3 AE 2303	0.400
Insulation monitoring device on an IT system	VW3 AE 2601	5.000
Selector for IT system	VW3 AE 2701	–

(1) For any other configuration, please contact our Customer Care Centre.

(2) The X13 terminals, reference VW3 AE 1202, include the X12 terminals, reference VW3 AE 1201.

(3) Essential if the total power consumption of the option cards exceeds 200 mA.

(4) ATEX: Please refer to the ATEX guide which is available on our website 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	VW3 A7E 101 (3)	31.000
	EXC●C31N4...C50N4	VW3 AE 1003 (2)	190.000
	EXS5C31N4...C50N4	VW3 A7E 102 (3)	205.000
Isolating handle for switch	EXC●D90N4, C11N4 EXS5D90N4, C11N4	VW3 AE 0103	1.000
	EXC●C13N4...C28N4 EXS5C13N4...C28N4	VW3 AE 0104	2.000
	EXC●C31N4...C50N4 EXS5C31N4...C50N4	VW3 AE 0105	2.000
	EXA●C50N4...M13N4		
Circuit-breaker (4)	EXC●D90N4, C11N4 EXS5D90N4, C11N4	VW3 AE 0106	–
	EXC●C13N4...C20N4 EXS5C13N4...C20N4	VW3 AE 0107	1.400
	EXC●C25N4...C31N4 EXS5C25N4...C31N4	VW3 AE 0109	1.400
	EXC●C40N4 EXS5C40N4	VW3 AE 0111	9.400
	EXC●C50N4 EXS5C50N4	VW3 AE 0112	9.400
	EXA●C50N4		
	EXA●C63N4	VW3 AE 0113	–
	EXA●C71N4	VW3 AE 0174	–
	EXA●C90N4	VW3 AE 0166	–
	EXA●M11N4	VW3 AE 0167	–
	EXA●M13N4	VW3 AE 0168	–
Door handle for circuit-breaker	EXC●D90N4, C11N4 EXS5D90N4, C11N4	VW3 AE 0114	1.000
	EXC●C13N4...C31N4 EXS5C13N4...C31N4	VW3 AE 0115	2.000
	EXC●C40N4, C50N4 EXS5C40N4, C50N4	VW3 AE 0116	2.000
	EXA●C50N4, M13N4		
Line contactor	EXC●D90N4, C11N4 EXS5D90N4, C11N4	VW3 AE 0206	7.000
	EXC●C13N4, C16N4 EXS5C13N4	VW3 AE 0218	10.000
	EXS5C16N4	VW3 AE 0215	7.000
	EXC●C20N4	VW3 AE 0209	12.000
	EXS5C20N4...C28N4	VW3 AE 0216	10.000
	EXC●C25N4...C31N4 EXS5C31N4	VW3 AE 0210	14.000
	EXC●C40N4 EXS5C40N4	VW3 AE 0212	24.000
	EXC●C50N4 EXS5C50N4	VW3 AE 0213	28.000
	EXA●C50N4, C63N4 (5)	VW3 AE 0227	42.000
	EXA●C71N4...M13N4	VW3 AE 0224	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.(3) The characteristics of the VW3 A7E 101 and VW3 A7E 102 braking units are identical to those of the VW3 A7 101 and VW3 A7 102 braking units (see page 64 or consult our website 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 **VW3 AE 0225** (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	VW3 AE 2415	–	
	EXA●C63N4	VW3 AE 2416	–	
	EXA●C71N4	VW3 AE 2417	–	
	EXA●C90N4	VW3 AE 2418	–	
	EXA●M11N4	VW3 AE 2419	–	
	EXA●M13N4	VW3 AE 2420	–	
Line choke	EXA●C50N4...C63N4	VW3 AE 2501	132.000	
	EXA●C71N4	VW3 AE 2502 (2)	202.000	
	EXA●C90N4...M13N4	VW3 AE 2503 (2)	264.000	
500 VA ~ control transformer, 230 V ~ output	EXC●D90N4...C28N4 EXS5D90N4...C28N4	VW3 AE 0302	8.000	
800 VA ~ control transformer, 230 V ~ output	EXC●C31N4...C50N4 EXS5C31N4...C50N4	VW3 AE 0303	11.000	
Ammeter	EXC●D90N4...C13N4 EXS5D90N4...C13N4	VW3 AE 0406	0.200	
	EXC●C16N4, C20N4 EXS5C16N4, C20N4	VW3 AE 0426	0.200	
	EXC●C25N4...C31N4 EXS5C25N4...C31N4	VW3 AE 0409	0.200	
	EXC●C40N4 EXS5C40N4	VW3 AE 0427	0.200	
	EXC●C50N4 EXS5C50N4	VW3 AE 0411	0.200	
	EXA●C50N4	VW3 AE 0411 (3) VW3 AE 0421 (4)	0.200	
	EXA●C63N4, C71N4	VW3 AE 0413 (3) VW3 AE 0421 (4)	0.200	
	EXA●C90N4	VW3 AE 0414 (3) VW3 AE 0429 (4)	0.200	
	EXA●M11N4	VW3 AE 0415 (3) VW3 AE 0423 (4)	0.200	
	EXA●M13N4	VW3 AE 0416 (3) VW3 AE 0424 (4)	0.200	
	Enclosure heater	EXC●D90N4...C28N4 EXS5D90N4...C28N4	VW3 AE 0501	0.500
		EXC●C31N4...C50N4 EXS5C31N4...C50N4	VW3 AE 0502	1.000
		EXA●C50N4, C63N4		
EXA●C71N4...M13N4		VW3 AE 0503	1.500	

(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.

(3) For 6-pulse mounting.

(4) For 12-pulse mounting.

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	VW3 AE 0603	17.000
	EXS5D90N4	VW3 AE 0615	37.000
	EXC●C11N4, C13N4	VW3 AE 0604	35.000
	EXS5C11N4, C13N4	VW3 AE 0617	55.000
	EXC●C16N4, C20N4	VW3 AE 0605	64.000
	EXS5C16N4	VW3 AE 0619 (2)	157.000
	EXS5C20N4	VW3 AE 0620	160.000
	EXC●C25N4, C28N4	VW3 AE 0606	102.000
	EXS5C25N4, C28N4	VW3 AE 0621 (2)	192.000
	EXC2C31N4	VW3 AE 0607 (2)	192.000
	EXC5C31N4	VW3 AE 0622 (2)	197.000
	EXS5C31N4	VW3 AE 0622 (2)	197.000
	EXC2C40N4	VW3 AE 0609 (2)	228.000
	EXC5C40N4	VW3 AE 0613 (2)	228.000
	EXS5C40N4	VW3 AE 0624 (2)	228.000
	EXC2C50N4	VW3 AE 0610 (2)	234.000
	EXC5C50N4	VW3 AE 0614 (2)	234.000
	EXS5C50N4	VW3 AE 0625 (2)	234.000
	EXA●C50N4, C63N4	VW3 AE 0635	132.000
	EXA●C71N4...M13N4	VW3 AE 0636	264.000
Sinus filter (2) (3)	EXC2D90N4	VW3 AE 0641	318.000
	EXC5D90N4	VW3 AE 0653	348.000
	EXS5D90N4	VW3 AE 0665	318.000
	EXC2C11N4	VW3 AE 0642	318.000
	EXC5C11N4	VW3 AE 0654	325.000
	EXS5C11N4	VW3 AE 0666	325.000
	EXC2C13N4	VW3 AE 0644	365.000
	EXC5C13N4	VW3 AE 0656	365.000
	EXS5C13N4	VW3 AE 0668	365.000
	EXC2C16N4	VW3 AE 0645	373.000
	EXC5C16N4	VW3 AE 0657	373.000
	EXS5C16N4	VW3 AE 0669	373.000
	EXC2C20N4	VW3 AE 0647	384.000
	EXC5C20N4	VW3 AE 0659	394.000
	EXS5C20N4	VW3 AE 0671	394.000
	EXC2C25N4, C28N4	VW3 AE 0648	434.000
	EXC5C25N4, C28N4	VW3 AE 0660	434.000
	EXS5C25N4, C28N4	VW3 AE 0672	434.000
	EXC2C31N4	VW3 AE 0649	445.000
	EXC5C31N4	VW3 AE 0661	445.000
	EXS5C31N4	VW3 AE 0673	445.000
	EXC2C40N4	VW3 AE 0651	870.000
	EXC5C40N4	VW3 AE 0663	900.000
	EXS5C40N4	VW3 AE 0675	900.000
	EXC2C50N4	VW3 AE 0652	900.000
	EXC5C50N4	VW3 AE 0664	930.000
	EXS5C50N4	VW3 AE 0676	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.

(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	VW3 AE 0801	11.000	
		EXC●C20N4...C28N4	VW3 AE 0802	13.000	
		EXC●C31N4, C40N4	VW3 AE 0803	15.000	
		EXC●C50N4	VW3 AE 0804	17.000	
		EXA●C63N4, C71N4	VW3 AE 0820 (2)	38.000	
		EXA●C90N4...M14N4	VW3 AE 0822	69.000	
	With motor choke	EXC●D90N4...C16N4	VW3 AE 0801	11.000	
		EXC●C20N4...C28N4	VW3 AE 0802	13.000	
		EXC●C31N4, C40N4	VW3 AE 0805	24.000	
		EXC●C50N4	VW3 AE 0806	26.000	
		EXA●C50N4...C63N4	VW3 AE 0820 (2)	38.000	
		EXA●C71N4...M13N4	VW3 AE 0822	69.000	
	With line choke	EXA●C50N4...C63N4	VW3 AE 0820 (2)	38.000	
		EXA●C71N4...M13N4	VW3 AE 0824	78.000	
	Plinth for braking unit		EXC●C31N4...C50N4	VW3 AE 0810	9.000
	Plinth for sinus filter		EXC●D90N4...C31N4	VW3 AE 0816	11.000
			EXC●C40N4, C50N4	VW3 AE 0817	13.000

(1) For any other configuration, please contact our Customer Care Centre.

(2) If a line contactor and choke are used, order reference VW3 AE 821 (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	VW3 AE 1004 (2)	190.000
	EXS5C16N...C25N	EXS●C20Y...C31Y	VW3 A7E 103 (2) (3)	205.000
	EXC●C31N...C50N	EXC●C40Y...C63Y	VW3 AE 1005 (2)	190.000
	EXS5C31N...C50N	EXS5C40Y...C63Y	VW3 A7E 104 (2) (3)	205.000
Isolating handle for switch	EXC●D90N...C13N	EXC●C11Y...C16Y	VW3 AE 0103	1.000
	EXS5D90N...C13N	EXS5C11Y...C16Y		
	EXC●C16N...C25N	EXC●C20Y...C31Y	VW3 AE 0104	2.000
	EXS5C16N...C25N	EXS5C20Y...C31Y		
	EXC●C31N...C50N	EXC●C40Y...C63Y	VW3 AE 0105	2.000
	EXS5C31N...C50N	EXS5C40Y...C63Y		
Circuit-breaker (4)	EXA●C50N...M15N	EXA●C63Y...M20Y		
	EXC●D90N	–	VW3 AE 0141	–
	EXS5D90N			
	EXC●C11N	–	VW3 AE 0142	–
	EXS5C11N			
	–	EXC●C11Y, C13Y	VW3 AE 0143	4.000
	EXC●C13N	–	VW3 AE 0144	–
	EXS5C13N			
	–	EXC●C16Y	VW3 AE 0145	4.000
	EXC●C16N, C20N	EXC●C20Y	VW3 AE 0146	1.400
	EXS5C16N, C20N			
	EXC●C25N	EXC●C25Y...C31Y	VW3 AE 0147	1.400
	EXS5C25N			
	EXC●C31N, C40N	EXC●C40Y...C63Y	VW3 AE 0150	–
	EXS5C31N, C40N			
	EXC●C50N	–	VW3 AE 0151	–
	EXS5C50N			
EXA●C50N	EXA●C63Y	VW3 AE 0151	–	
EXA●C63N	EXA●C80Y	VW3 AE 0169	–	
EXA●C80N	EXA●M10Y	VW3 AE 0170	–	
EXA●C90N	EXA●M12Y	VW3 AE 0175	–	
EXA●M11N	EXA●M15Y	VW3 AE 0171	–	
EXA●M13N	EXA●M18Y	VW3 AE 0172	–	
EXA●M15N	EXA●M20Y	VW3 AE 0173	–	

(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.(3) The characteristics of the VW3 A7E 103 and VW3 A7E 104 braking units are identical to those of the VW3 A7 103 and VW3 A7 104 braking units (see page 64 or consult our website 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 VW3 AE 0225 (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	–	VW3 AE 0114	1.000
	EXS5D90N...C13N	–	–	–
	EXC●C16N...C25N	EXC●C11Y...C31Y	VW3 AE 0115	2,000
	EXS5C16N...C25N	EXS5C11Y...C31Y	–	–
	EXC●C31N...C50N	EXC●C40Y...C63Y	VW3 AE 0116	2,000
	EXS5C31N...C50N	EXS5C40Y...C63Y	–	–
	EXA●C50N...C80N	EXA●C63Y...M10Y	VW3 AE 0116	2,000
Line contactor	EXA●C90N...M15N	EXA●M12Y...M20Y	–	–
	EXC●D90N	–	VW3 AE 0205	4.000
	EXS5D90N	–	–	–
	EXC●C11N	–	VW3 AE 0206	7.000
	EXS5C11N	–	–	–
	EXC●C13N, C16N	EXC●C11Y...C16Y	VW3 AE 0218	10.000
	EXS5C13N, C16N	EXS5C11Y...C16Y	–	–
	–	EXC●C20Y	VW3 AE 0208	11.000
	–	EXS5C20Y	–	–
	EXC●C20N	EXC●C25Y	VW3 AE 0209	12.000
	EXS5C20N	EXS5C25Y	–	–
	EXC●C25N	EXC●C31Y	VW3 AE 0210	14.000
	EXS5C25N	EXS5C31Y	–	–
	–	EXC●C40Y	VW3 AE 0219	22.000
	–	EXS5C40Y	–	–
	EXC●C31N	EXC●C50Y	VW3 AE 0221	20.000
	EXS5C31N	EXS5C50Y	–	–
EXC●C40N	EXC●C63Y	VW3 AE 0212	24.000	
EXS5C40N	EXS5C63Y	–	–	
EXC●C50N	EXA●C63Y...M10Y	VW3 AE 0213	28.000	
EXS5C50N	–	–	–	
EXA●C50N...C80N	EXA●M12Y...M20Y	VW3 AE 0227 (2)	42.000	
EXA●C90N...M15N	EXC●C50Y	VW3 AE 0226	84.000	
Switch for 12-pulse input	EXS5C50Y	EXS5C50Y	–	–
	EXA●C50N	EXA●C63Y	VW3 AE 2414	–
	EXA●C63N	EXA●C80Y	VW3 AE 2415	–
	EXA●C80N	EXA●M10Y	VW3 AE 2416	–
	EXA●C90N	EXA●M12Y	VW3 AE 2417	–
	EXA●M11N	EXA●M15Y	VW3 AE 2418	–
	EXA●M13N	EXA●M18Y	VW3 AE 2419	–
EXA●M15N	EXA●M20Y	VW3 AE 2420	–	

(1) For any other configuration, please contact our Customer Care Centre.

(2) If a line contactor and choke are used, order reference VW3 AE 0225 (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	VW3 AE 2504	154.000
	EXA●C63N	EXA●C80Y	VW3 AE 2505	121.000
	EXA●C80N	EXA●M10Y	VW3 AE 2506	136.000
	EXA●C90N	EXA●M12Y	VW3 AE 2507	308.000
	EXA●M11N, M13N	EXA●M15Y, M18Y	VW3 AE 2508	242.000
	EXA●M15N	EXA●M20Y	VW3 AE 2509	273.000
Ammeter	EXC●D90N	EXC●C11Y	VW3 AE 0404	0.200
	EXS5D90N	EXS5C11Y		
	EXC●C11N...C16N	EXC●C13Y...C25Y	VW3 AE 0406	0.200
	EXS5C11N...C16N	EXS5C13Y...C25Y		
	EXC●C20N, C25N	EXC●C31Y, C40Y	VW3 AE 0426	0.200
	EXS5C20N, C25N	EXS5C31Y, C40Y		
	EXC●C31N...C40N	EXC●C50Y, C63Y	VW3 AE 0409	0.200
	EXS5C31N...C40N	EXS5C50Y, C63Y		
	–	EXA●C63Y	VW3 AE 0409 (2) VW3 AE 0428 (3)	0.200
	EXC●C50N	–	VW3 AE 0427	0.200
	EXS5C50N	–		
	–	EXA●C80Y	VW3 AE 0427 (2) VW3 AE 0421 (3)	0.200
	EXA●C50N	–	VW3 AE 0427 (2) VW3 AE 0428 (3)	0.200
	EXA●C63N	EXA●M10Y	VW3 AE 0411 (2) VW3 AE 0421 (3)	0.200
	EXA●C80N, C90N	EXA●M12Y	VW3 AE 0413 (2) VW3 AE 0421 (3)	0.200
	EXA●M11N	EXA●M15Y	VW3 AE 0414 (2) VW3 AE 0429 (3)	0.200
	EXA●M13N	EXA●M18Y, M20Y	VW3 AE 0415 (2) VW3 AE 0423 (3)	0.200
EXA●M15N	–	VW3 AE 0416 (2) VW3 AE 0424 (3)	0.200	

(1) For any other configuration, please contact our Customer Care Centre.

(2) For 6-pulse mounting.

(3) For 12-pulse mounting.

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	EXC●D90N...C25N	EXC●C11Y...C31Y	VW3 AE 0501	0.500		
	EXS5D90N...C25N	EXS5C11Y...C31Y				
	EXC●C31N...C50N	EXC●C40Y...C63Y	VW3 AE 0502	1.000		
	EXS5C31N...C50N	EXS5C40Y...C63Y				
	EXA●C50N...C80N	EXA●C63Y...M10Y	VW3 AE 0503	1.500		
	EXA●C90N...M15N	EXA●M12Y...M20Y				
Motor choke	EXC●D90N, C11N	EXC●C11Y, C13Y	VW3 AE 0603	17.000		
	EXS5D90N, C11N	EXS5C11Y, C13Y				
	EXC●C13N, C16N	EXC●C16Y, C20Y	VW3 AE 0604	35.000		
	EXS5C13N, C16N	EXS5C16Y, C20Y				
	EXC●C20N, C25N	EXC●C25Y, C31Y	VW3 AE 0605	64.000		
	EXS5C20N, C25N	EXS5C25Y, C31Y				
	EXC2C31N, C40N	EXC2C40Y, C50Y	VW3 AE 0626 (2)	192.000		
	EXC5C31N, C40N	EXC5C40Y, C50Y	VW3 AE 0628 (2)	192.000		
	EXS5C31N, C40N	EXS5C40Y, C50Y	VW3 AE 0630 (2)	197.000		
	EXC2C50N	EXC2C63Y	VW3 AE 0627 (2)	234.000		
	EXC5C50N	EXC5C63Y	VW3 AE 0629 (2)	234.000		
	EXS5C50N	EXS5C63Y	VW3 AE 0631 (2)	234.000		
	EXA●C50N...C80N	EXA●C63Y...M10Y	VW3 AE 0635	132.000		
	EXA●C90N...M15N	EXA●M12Y...M20Y	VW3 AE 0636	264.000		
	200 mm plinth	Without option	EXC●D90N...C13N	EXC●C11Y...C16Y	VW3 AE 0801	11.000
			EXC●C16N...C25N	EXC●C20Y...C31Y	VW3 AE 0802	13.000
EXC●C31N...C50N			EXC●C40Y...C63Y	VW3 AE 0804	17.000	
EXA●C50N...C80N			EXA●C63Y...M10Y	VW3 AE 0820 (3)	38.000	
EXA●C90N...M15N			EXA●M12Y...M20Y	VW3 AE 0822	69.000	
With motor choke		EXC●D90N...C16N	EXC●C11Y...C20Y	VW3 AE 0801	11.000	
		EXC●C20N...C31N	EXC●C25Y...C45Y	VW3 AE 0802	13.000	
		EXC●C31N...C50N	EXC●C40Y...C63Y	VW3 AE 0806	26.000	
		EXA●C50N...C80N	EXA●C63Y...M10Y	VW3 AE 0820 (3)	38.000	
		EXA●C90N...M15N	EXA●M12Y...M20Y	VW3 AE 0822	69.000	
With line choke		EXA●C50N...C80N	EXA●C63Y...M10Y	VW3 AE 0820 (3)	38.000	
		EXA●C90N...M15N	EXA●M12Y...M20Y	VW3 AE 0824	78.000	
Plinth for braking unit		EXC●C16N...C50N	EXC●C20Y...C63Y	VW3 AE 0810	9.000	

(1) For any other configuration, please contact our Customer Care Centre.

(2) These options may lead to modification of the size of the enclosure. Please refer to the dimensions on our website www.schneider-electric.com.

(3) If a line contactor and choke are used, order reference VW3 AE 0821 (40.000 kg).

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