

# Variable speed drives

## Altivar 32

### Drives

PF095103



ATV 32H018M2...H075M2  
ATV 32H037N4...HU15N4

PF095104



ATV 32HU11M2...HU22M2  
ATV 32HU22N4...HU40N4

PF095105



ATV 32HU55N4, HU75N4  
EMC plate not mounted

PF095106



ATV 32HD11N4, HD15N4  
EMC plate not mounted

#### Drives (frequency range from 0.1 to 599 Hz)

Motor Power indicated on rating plate		Line supply				Altivar 32				Reference	Weight
		Max. line current (1), (2)	Apparent power	Max. prospective line Isc (3)		Max. continuous output current (In) (4)	Max. transient current for		Power dissipated at maximum output current (In) (4)		
							at U1	at U2			
kW	HP	A	A	kVA	kA	A	A	A	W	kg	
Single-phase supply voltage: 200...240 V 50/60 Hz, with integrated EMC filter (2) (5) (6)											
0.18	1/4	3.4	2.8	0.7	1	1.5	2.3	2.5	25	ATV 32H018M2	2.400
0.37	1/2	6	5	1.2	1	3.3	5	5.5	38	ATV 32H037M2	2.400
0.55	3/4	7.9	6.7	1.6	1	3.7	5.6	6.1	42	ATV 32H055M2	2.400
0.75	1	10.1	8.5	2	1	4.8	7.2	7.9	51	ATV 32H075M2	2.400
1.1	1 1/2	13.6	11.5	2.8	1	6.9	10.4	11.4	64	ATV 32HU11M2	2.900
1.5	2	17.6	14.8	3.6	1	8	12	13.2	81	ATV 32HU15M2	2.900
2.2	3	23.9	20.1	4.8	1	11	16.5	18.2	102	ATV 32HU22M2	2.900

#### Three-phase supply voltage: 380...500 V 50/60 Hz, with integrated EMC filter (2) (5) (6)

0.37	1/2	2.1	1.6	1.4	5	1.5	2.3	2.5	27	ATV 32H037N4	2.500
0.55	3/4	2.8	2.2	1.9	5	1.9	2.9	3.1	31	ATV 32H055N4	2.500
0.75	1	3.6	2.7	2.3	5	2.3	3.5	3.8	37	ATV 32H075N4	2.500
1.1	1 1/2	5	3.8	3.3	5	3	4.5	5	50	ATV 32HU11N4	2.500
1.5	2	6.5	4.9	4.2	5	4.1	6.2	6.8	63	ATV 32HU15N4	2.500
2.2	3	8.7	6.6	5.7	5	5.5	8.3	9	78	ATV 32HU22N4	3.000
3	—	11.1	8.4	7.3	5	7.1	10.7	17.7	100	ATV 32HU30N4	3.000
4	5	13.7	10.5	9.1	5	9.5	14.3	15.7	125	ATV 32HU40N4	3.000
5.5	7 1/2	20.7	14.5	17.9	22	14.3	21.5	23.6	233	ATV 32HU55N4	7.500
7.5	10	26.5	18.7	22.9	22	17	25.5	28	263	ATV 32HU75N4	7.500
11	15	36.6	25.6	31.7	22	27.7	41.6	45.7	403	ATV 32HD11N4	8.700
15	20	47.3	33.3	41	22	33	49.5	54.5	480	ATV 32HD15N4	8.800

#### Dimensions (overall)

Drives	W x H x D	
	EMC plate mounted	EMC plate not mounted
	mm	mm
ATV 32H018M2...H075M2, ATV 32H037N4...HU15N4	45 x 317 x 245	— (6)
ATV 32HU11M2...HU22M2, ATV 32HU22N4...HU40N4	60 x 317 x 245	— (6)
ATV 32HU55N4, HU75N4	150 x 308 x 232	150 x 232 x 232
ATV 32HD11N4, HD15N4	180 x 404 x 232	180 x 330 x 232

(1) Typical value for a 4-pole motor and a maximum switching frequency of 4 kHz, with no line choke for max. prospective line Isc (3).

(2) Nominal supply voltage, min. U1, max. U2: 200 (U1) ... 240 V (U2), 380 (U1) ... 500 V (U2).

(3) If line Isc is greater than the values in the table, add line chokes (see page 18).

(4) These values are given for a nominal switching frequency of 4 kHz, for use in continuous operation.

The switching frequency is adjustable from 2 to 16 kHz. Above 4 kHz, derate the nominal drive current. The nominal motor current should not exceed this value. See the derating curves on our website [www.schneider-electric.com](http://www.schneider-electric.com).

(5) Drives supplied with category C2 integrated EMC filter. This filter can be disconnected.

(6) Connection in compliance with EMC standards:

- ATV 32H●●●M2, ATV 32H037N4...HU40N4 drives are supplied with an EMC plate. This is an integral part of the power terminals; these 2 components cannot be separated.

- ATV 32HU55N4...HD15N4 drives are supplied with an EMC plate, for assembly by the customer.

PF085123



ATV 32HU15N4 with control module mounted at 90°

PF085121



ATV 32H...M2 connected with a Daisy Chain DC bus cordset

## Accessories

### Components for mounting GV2 circuit-breaker directly on ATV 32 drive

Description	For drives	Sold in lots of	Unit reference	Weight kg
<b>Bracket for GV2/ATV 32 direct mounting</b> Mechanical bracket for holding the GV2 circuit-breaker in place when directly mounted on ATV 32 drive. Requires a GV2 AF4 adaptor plate for electrical connection, to be ordered separately.	ATV 32H...M2 ATV 32H037N4...HU40N4	10	VW3 A9 921	0.075
<b>Adaptor plate</b> Provides the electrical link between the GV2 circuit-breaker and ATV 32 drive when GV2/ATV 32 directly mounted. Requires a VW3 A9 921 bracket for direct mounting, to be ordered separately.	ATV 32H...M2 ATV 32H037N4...HU40N4	10	GV2 AF4	0.016

### Mounting the control module at 90°

Description	For drives	Reference	Weight kg
<b>Adaptor for mounting the control module at 90°</b> This is used to mount the power module on the side, keeping the control module visible and accessible	ATV 32H...M2 ATV 32H037N4...HU40N4	VW3 A9 920	0.125

### Daisy Chain connection of the DC bus (1)

The DC bus is connected in a Daisy Chain in the following cases:

- Drives powered by the AC supply with parallel connection of the DC bus in order to balance the loads during braking phases between the drives; used in addition to braking resistors (see page 17)
- Drives powered by the DC bus only

Requires the connection accessories listed below:

Description (1)	Use	Length	Sold in lots of	Reference	Weight	
	From	To	m		kg	
<b>Cordset (1)</b> equipped with 2 connectors	ATV 32H...M2 ATV 32H...N4	ATV 32H...M2 ATV 32H...N4	0.1	5	VW3 M7 101 R01	–
<b>Shielded cable</b>	ATV 32H...M2 ATV 32H...N4 ATV 32H...M2 ATV 32H...N4	ATV 32H...M2 ATV 32H...N4 LXM 32...M2 (2) LXM32...N4 (2)	15	1	VW3 M7 102 R150	–
<b>Connection kit for</b> VW3 M7102 R150 cable	–	–	–	10	VW3 M2 207	–

## Documentation

Description	Reference	Weight kg
<b>"Description of the Motion &amp; Drives offer" DVD-ROM</b> Comprises (3): ■ Technical documentation (programming manuals, installation manuals, quick reference guides) ■ Catalogues ■ Brochures	VW3 A8 200	0.100

(1) Setting up several devices on the DC bus requires special precautions, please refer to the installation manual which is available on our website at [www.schneider-electric.com](http://www.schneider-electric.com).

(2) Lexium 32 motion control offer. See page 4 and visit our website [www.schneider-electric.com](http://www.schneider-electric.com).

(3) The contents of this DVD-ROM are also available on our website [www.schneider-electric.com](http://www.schneider-electric.com).

PF095133



Remote display terminal with cover open

PF095131



Remote display terminal with cover closed

PF002255



Remote graphic display terminal

### Remote display terminal

This terminal is used to locate the Human-Machine Interface of the Altivar 32 drive remotely on the door of an enclosure with IP 54 or IP 65 protection.

It is used to:

- Control, adjust and configure the drive remotely
  - Display the drive status and faults remotely
- Its maximum operating temperature is 50°C.

#### Description

- 1 4-digit display
- 2 Navigation ▲, ▼ and selection ENT, ESC keys
- 3 Motor local control keys:
  - RUN: Starts the motor
  - FWD/REV: Reverses the direction of rotation of the motor
  - STOP/RESET: Stops the motor/resets drive faults
- 4 Operating mode selection key MODE
- 5 Cover controlling access to the motor local control keys

#### References

Designation	Degree of protection	Length m	Reference	Weight
				kg
<b>Remote display terminals</b>				
A remote-mounting cordset,	IP 54	–	<b>VW3 A1 006</b>	0.250
VW3 A1 104 R●●, is also required	IP 65	–	<b>VW3 A1 007</b>	0.275
<b>Remote-mounting cordsets</b>	–	1	<b>VW3 A1 104 R10</b>	0.050
equipped with 2 RJ45 connectors		3	<b>VW3 A1 104 R30</b>	0.150

### Remote graphic display terminal

This remote graphic display terminal, common to all Schneider Electric's variable speed drive ranges, provides a user-friendly interface for configuration, debugging and maintenance. In particular, it is possible to transfer and store up to 4 configurations.

For portable use or mounted on an enclosure door, it can also be connected to a number of drives (see page 15).

Its main functions are as follows:

- The graphic screen displays 8 lines of 24 characters of plain text.
- The navigation button provides quick and easy access to the drop-down menus.
- It is supplied with six languages installed (Chinese, English, French, German, Italian and Spanish). The available languages can be modified using the Multi-Loader configuration tool (VW3 A8 121).

Its maximum operating temperature is 60°C, and it features IP 54 protection; this can be increased to IP 65 when mounted on an enclosure door.

#### Description

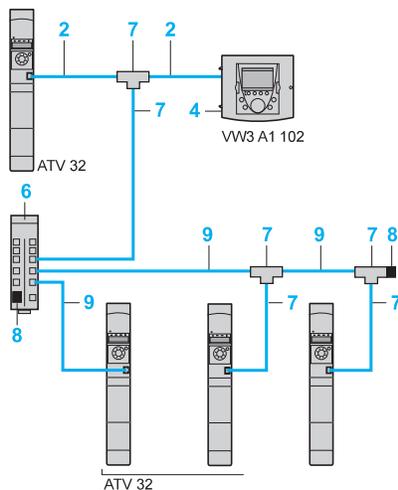
- 6 Graphic display unit:
  - 8 lines of 24 characters, 240 x 160 pixels, large digit display
- 7 Function keys (not operational on the Altivar 32)
- 8 Navigation button:
  - Rotate ±: Goes to the next/previous line, increases/decreases the value
  - Press: Saves the current value (ENT)
  - ESC key: Aborts a value, a parameter or a menu to return to the previous selection
- 9 Motor local control keys:
  - RUN: Starts the motor
  - STOP/RESET: Stops the motor/resets drive faults
  - FWD/REV: Reverses the motor direction of rotation



Portable use of the remote graphic display terminal:  
1 + 2 + 3



Using the remote graphic display terminal on enclosure door:  
1 + 2 + 4 (+ 5, if IP 65)



Example of connection via multidrop link

### Remote graphic display terminal (continued)

#### Accessories for mounting the graphic display terminal remotely

Description	Item no.	Length m	Reference	Weight kg
<b>Remote graphic display terminal</b> A remote cable, VW3 A1 104 R●●●, and an RJ45 adaptor, VW3 A1 105, must be provided	1	–	VW3 A1 101	0.180
<b>Remote-mounting cordsets</b> equipped with 2 RJ45 connectors Remote operation of the Altivar 32 and the remote graphic display terminal VW3 A1 101	2	1	VW3 A1 104 R10	0.050
	3	3	VW3 A1 104 R30	0.150
	5	5	VW3 A1 104 R50	0.250
	10	10	VW3 A1 104 R100	0.500
<b>Female/female RJ45 adaptor</b>	3	–	VW3 A1 105	0.010
<b>Remote mounting kit</b> For mounting on enclosure door IP 54 degree of protection	4	–	VW3 A1 102	0.150
<b>Door</b> Used to increase the degree of protection for remote mounting kit VW3 A1 102 to IP 65 To be mounted on remote mounting kit VW3 A1 102	5	–	VW3 A1 103	0.040

#### Additional accessories for multidrop connection

Description	Item no.	Order in lots	Unit reference	Weight kg
<b>Modbus splitter box</b> 10 RJ45 connectors and 1 screw terminal block	6	–	LU9 GC3	0.500
<b>Modbus T-junction boxes</b>	7	–	VW3 A8 306 TF03	–
	7	–	VW3 A8 306 TF10	–
<b>Modbus line terminator</b> For RJ45 connector R = 120 Ω, C = 1 nf	8	2	VW3 A8 306 RC	0.010

Description	Item no.	Length m	Reference	Weight kg
<b>Cordsets for Modbus serial link</b> equipped with 2 RJ45 connectors	9	0.3	VW3 A8 306 R03	0.025
	1	1	VW3 A8 306 R10	0.060
	3	3	VW3 A8 306 R30	0.130

#### Example of connection via multidrop link

All the components described on this page enable a remote graphic display terminal to be connected to several drives via a multidrop link. This multidrop link is connected to the RJ45 port on the Modbus/CANopen communication port. See the example opposite.



Configuration with SoMove Mobile software for mobile phones via Bluetooth®



VW3 A8 121



VW3 A8 120



Configuring an Altivar 32 in its packaging:  
VW3 A8 121 + VW3 A8 126 cordset

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

The SoMove Mobile software “transforms” any compatible mobile phone (1) into a remote graphic display terminal by offering an identical Human-Machine Interface (see page 14). Particularly suitable for on-site or remote maintenance operations, the 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 Bluetooth®.

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

#### References

Description	For drives	Reference	Weight kg
<b>SoMove Mobile software for mobile phones (1)</b> Can be downloaded from our website <a href="http://www.schneider-electric.com">www.schneider-electric.com</a> .	ATV 32H●●●●●	-	-

#### SoMove setup software

SoMove lite setup software for PC is used to prepare drive configuration files.

For presentation, description and references, see page 28.

#### Simple Loader and Multi-Loader configuration tools

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.

The Multi-Loader tool enables a number of configurations from a PC or drive to be copied and loaded onto another drive; the Altivar 32 drives do not need to be powered up.

#### References

Designation	Reference	Weight kg
<b>Simple Loader configuration tool</b> Supplied with a connection cable equipped with 2 RJ45 connectors.	ATV 32H●●●●● VW3 A8 120	-
<b>Multi-Loader configuration tool</b> Supplied with: - 1 cable equipped with 2 RJ45 connectors - 1 cable equipped with one type A USB connector and one mini B USB connector - 1 x SD memory card - 1 x female/female RJ 45 adaptor - 4 AA/LR6 1.5 V batteries - 1 anti-shock protection - 1 carrying handle	ATV 32H●●●●● VW3 A8 121	-
<b>Cordset for Multi-Loader tool</b> For connecting the Multi-Loader tool to the Altivar 32 drive in its packaging. Fitted with a non-locking RJ45 connector with special mechanical catch on the drive end and an RJ45 connector on the Multi-Loader end.	ATV 32H●●●●● in its packaging VW3 A8 126	-

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

### Presentation

The braking resistor enables the Altivar 32 drive to operate while braking to a standstill or during slowdown braking, by dissipating the braking energy. It enables maximum transient braking torque.

Depending on the drive rating, two types of resistor are available:

- Enclosed model (IP 20 casing) designed to comply with the EMC standard and protected by a temperature-controlled switch or thermal overload relay.
- Enclosed model (IP 65 casing) with cordset, for ATV 32H●●●M2 and ATV 32H037N4...HU75N4 drives.

**Note:** To optimize the size of the braking resistor, the DC buses on Altivar 32 drives in the same application can be connected in parallel (see page 13).

### Applications

Machines with high inertia, driving loads and machines with fast cycles.

### References

For drives	Minimum value of the resistor to be connected	Ohmic value	Average power available at 50°C (1)	Length of connection cable	Reference	Weight
	Ω	Ω	W	m		kg
<b>IP 65 braking resistors</b>						
ATV 32H018M2...H075M2	40	100	25	0.75	<b>VW3 A7 608 R07</b>	0.410
ATV 32H037...H075N4	80			3	<b>VW3 A7 608 R30</b>	0.760
ATV 32HU11N4...HU22N4	54					
ATV 32HU11M2, HU15M2	27	72	25	0.75	<b>VW3 A7 605 R07</b>	0.620
				3	<b>VW3 A7 605 R30</b>	0.850
ATV 32HU22M2	25	27	50	0.75	<b>VW3 A7 603 R07</b>	0.930
				3	<b>VW3 A7 603 R30</b>	1.200
ATV 32HU30N4	54	72	50	0.75	<b>VW3 A7 606 R07</b>	0.930
ATV 32HU40N4	36			3	<b>VW3 A7 606 R30</b>	1.200
ATV 32HU55N4, HU75N4	27	27	100	0.75	<b>VW3 A7 604 R07</b>	1.420
				3	<b>VW3 A7 604 R30</b>	1.620
<b>IP 20 braking resistors</b>						
ATV 32H018M2...H075M2	40	100	50	–	<b>VW3 A7 701</b>	2.000
ATV 32HU11M2, HU15M2	27					
ATV 32H037N4...H075N4	80					
ATV 32HU11N4...HU30N4	54					
ATV 32HU40N4	36					
ATV 32HU22M2	25	60	100	–	<b>VW3 A7 702</b>	2.400
ATV 32HU55N4, HU75N4	27					
ATV 32HD11N4, HD15N4	16	28	200	–	<b>VW3 A7 703</b>	3.500

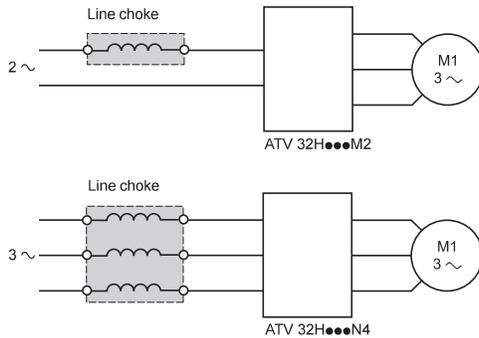


VW3 A7 608 R●●



VW3 A7 701

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



### Presentation

Line chokes provide improved protection against overvoltages on the line supply and 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 inductance values are defined for a voltage drop between 3% and 5% of the nominal line voltage. Values higher than this will cause loss of torque.

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

- Line supply with significant disturbance from other equipment (interference, overvoltages)
- Line supply with voltage imbalance between phases > 1.8% of nominal voltage
- Drive supplied by a line with very low impedance (in the vicinity of a power transformer 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

The prospective short-circuit current at the point of connection of the drive must not exceed the maximum value indicated in the reference tables (see page 12). The use of chokes allows connection to the following line supplies:

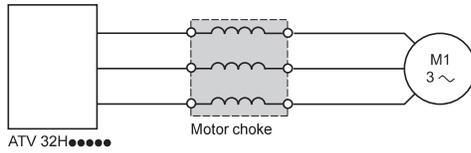
- Max. Isc 22 kA for 200/240 V
- Max. Isc 65 kA for 380/500 V

### References

Drive Reference	Line current without choke		Line current with choke		Choke Reference	Weight kg
	U min. (1)	U max. (1)	U min. (1)	U max. (1)		
	A	A	A	A		
<b>Single-phase supply voltage: 200...240 V 50/60 Hz</b>						
ATV 32H018M2	3.0	2.5	2.1	1.8	VZ1 L004M010	0.630
ATV 32H037M2	5.3	4.4	3.9	3.3		
ATV 32H055M2	6.8	5.8	5.2	4.3	VZ1 L007UM50	0.880
ATV 32H075M2	8.9	7.5	7.0	5.9		
ATV 32HU11M2	12.1	10.2	10.2	8.6	VZ1 L018UM20	1.990
ATV 32HU15M2	15.8	13.3	13.4	11.4		
ATV 32HU22M2	21.9	18.4	19.2	16.1		
<b>Three-phase supply voltage: 380...500 V 50/60 Hz</b>						
ATV 32H037N4	2.2	1.7	1.1	0.9	VW3 A4 551	1.500
ATV 32H055N4	2.8	2.2	1.4	1.2		
ATV 32H075N4	3.6	2.7	1.8	1.5		
ATV 32HU11N4	4.9	3.7	2.6	2		
ATV 32HU15N4	6.4	4.8	3.4	2.6		
ATV 32HU22N4	8.9	6.7	5	4.1	VW3 A4 552	3.000
ATV 32HU30N4	10.9	8.3	6.5	5.2		
ATV 32HU40N4	13.9	10.6	8.5	6.6		
ATV 32HU55N4	21.9	16.5	11.7	9.3	VW3 A4 553	3.500
ATV 32HU75N4	27.7	21	15.4	12.1		
ATV 32HD11N4	37.2	28.4	22.5	18.1	VW3 A4 554	6.000
ATV 32HD15N4	48.2	36.8	29.6	23.3		

(1) Nominal supply voltage:

For drives	Nominal voltage	
	U min.	U max.
ATV 32H...M2	200	240
ATV 32H...N4	380	500



### Presentation

Motor chokes can be inserted between the Altivar 32 drive and the motor to:

- Limit the  $dv/dt$  at the motor terminals (500 to 1500 V/ $\mu$ s), for cables longer than 50 m
- Filter interference caused by opening of a contactor placed between the filter and the motor
- Reduce the motor earth leakage current
- Minimizing the current wave, thus reducing motor noise

### References (1)

For drives	Losses	Cable length (2)		Nominal current	Reference	Weight
		Shielded cable	Unshielded cable			
	W	m	m	A		kg
<b>Single-phase supply voltage: 200...240 V 50/60 Hz</b>						
ATV 32HU22M2	75	≤ 100	≤ 200	16	<b>VW3 A4 553</b>	3.500
<b>Three-phase supply voltage: 380...500 V 50/60 Hz</b>						
ATV 32HU22N4... HU40N4	65	≤ 100	≤ 200	10	<b>VW3 A4 552</b>	3.000
ATV 32HU55N4	75	≤ 100	≤ 200	16	<b>VW3 A4 553</b>	3.500
ATV 32HU75N4, HD11N4	90	≤ 100	≤ 200	30	<b>VW3 A4 554</b>	6.000
ATV 32HD15N4	80	≤ 100	≤ 200	60	<b>VW3 A4 555</b>	11.000

(1) For ATV 32H018M2...HU15M2 and ATV 32H037N4...HU15N4 drives, please consult our Customer Care Centre.

(2) For an application with several motors connected in parallel, the cable length must take account of all the tap links. If a cable longer than that recommended is used, the filters may overheat.

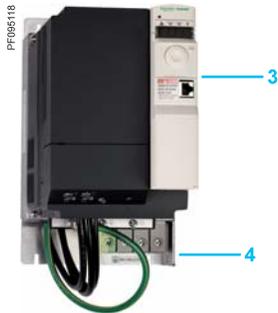
# Variable speed drives

## Altivar 32

Integrated EMC filters and additional EMC input filters



VW3 A4 422 + ATV 32HU11N4



VW3 A4 424 + ATV 32HU55N4

### Presentation

#### Integrated filters

The Altivar 32 drive has integrated radio interference input filters to comply with the EMC (Electromagnetic Compatibility) standard for variable speed electrical power drive products IEC 61800-3 category C2 and the European EMC Directive.

The integrated EMC filters comply with standard 61800-3 for a maximum motor cable length of 10 metres with ATV 32●●●M2 variable speed drives and 5 metres with ATV 32●●●N4 variable speed drives.

#### Additional EMC input filters

The additional EMC input filters enable the drives to meet more stringent requirements; they are designed to reduce conducted emissions on the line supply below the limits of standard IEC 61800-3 category C1 or C2 (see page 21).

### Mounting

Depending on the model, the additional EMC filters can be mounted beside or underneath the drive.

They act as a support for the drives and are attached to them via tapped holes.

#### Mounting the filter on the side of the drive:

- 1 ATV 32H●●●M2, ATV 32H037N4...HU40N4 drives
- 2 Additional EMC input filters

#### Mounting the filter underneath the drive:

- 3 ATV 32HU55N4...HD15N4 drives
- 4 Additional EMC input filters

### Use according to the type of line supply

Additional EMC filters can only be used on TN (neutral connection) and TT (neutral to earth) type systems.

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

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

The radio interference input filters integrated in Altivar 32 drives can easily be disconnected by means of a selector switch without removing the drive.

PF085115



VW3 A4 422

PF085117



VW3 A4 424

### Additional EMC input filters

For drives		Additional EMC input filter					Reference	Weight
Reference	Maximum length of shielded cable (1) (2)	In (3)	Losses (4)	Mounting the filter/ ATV 32				
IEC 61800-3 (5)								
		Category C2	Category C1					
	m	m	A	W			kg	
<b>Single-phase supply voltage: 200...240 V 50/60 Hz</b>								
ATV 32H018M2 ATV 32H037M2 ATV 32H055M2 ATV 32H075M2	50	20	10.1	3.7	On the side	<b>VW3 A4 420</b>	0.600	
ATV 32HU11M2 ATV 32HU15M2	50	20	17.6	6.9	On the side	<b>VW3 A4 421</b>	0.775	
ATV 32HU22M2	50	20	23.9	7.5	On the side	<b>VW3 A4 426</b>	1.130	
<b>Three-phase supply voltage: 380...500 V 50/60 Hz</b>								
ATV 32H037N4 ATV 32H055N4 ATV 32H075N4 ATV 32HU11N4 ATV 32HU15N4 ATV 32HU22N4 ATV 32HU30N4 ATV 32HU40N4	50	20	15	9.9	On the side	<b>VW3 A4 422</b>	0.900	
ATV 32HU55N4 ATV 32HU75N4	100	10	47	19.3	Underneath	<b>VW3 A4 424</b>	3.150	
ATV 32HD11N4 ATV 32HD15N4	100	10	49	27.4	Underneath	<b>VW3 A4 425</b>	4.750	

(1) The filter selection tables give the maximum lengths for shielded cables connecting motors to drives. These maximum lengths 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 the cable lengths that should be taken into account.

(2) These values are given for a nominal switching frequency of 4 kHz.

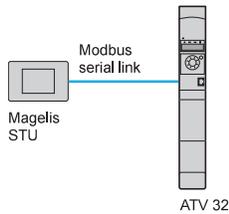
(3) In: nominal filter current.

(4) Via heat dissipation, at the nominal filter current (In).

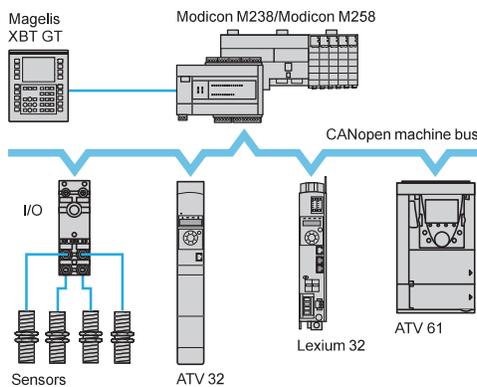
(5) Standard IEC 61800-3 : EMC immunity and conducted and radiated EMC emissions:

- category C1: public power supply (residential)

- category C2: industrial power supply



Example of configuration on Modbus serial link



Example of configuration on CANopen machine bus



Example of installing a communication card 3 (view of underside)

### Presentation

The Altivar 32 drive is designed to meet the configuration requirements found in the main industrial communication installations. It includes the Modbus and CANopen communication protocols as standard. These can be accessed directly via the RJ45 communication port located on the front. The Altivar 32 drive can also be connected to other industrial communication buses and networks by using one of the communication cards available as an option. Communication cards are supplied in "cassette" format for ease of mounting/removal.

#### Modbus serial link (1)

The Modbus serial link is used for connecting dialogue and configuration tools:

- Magelis HMI terminal, etc.
- Remote display terminal, remote graphic display terminal, etc.
- SoMove setup software, Simple Loader and Multi-loader configuration tools, etc.

#### CANopen machine bus (1) (2) (3)

The CANopen machine bus is used for integration into control system architectures, especially when combined with Modicon M238 and M258 logic controllers, Lexium 32 motion controllers, etc.

#### Optimized solutions for connection to the CANopen machine bus

To simplify setting up the Altivar 32 drive, three dedicated CANopen communication cards (2) are available depending on the connection and connector types:

- CANopen Daisy chain card with 2 RJ45 connectors offering an optimized solution for daisy chain connection to the CANopen machine bus (see page 24)
- CANopen card for connection to the bus via 9-way SUB-D connector (see page 24)
- CANopen card for connection to the bus via terminals (see page 25)

Using one of the CANopen communication cards also reduces the installation dimensions compared to using VW3 CAN TAP 2 and VW3 CAN TDM4 junction boxes.

#### Communication cards for industrial applications (3)

The following communication cards are available:

- Modbus TCP and EtherNet/IP
- PROFIBUS DP V1
- DeviceNet
- EtherCAT

### Description

The Altivar 32 drive has been designed to simplify connections to communication buses and networks with:

- 1 Integrated RJ45 communication port for Modbus/CANopen on the front
- 2 Slot for the communication card
- 3 Communication card

(1) The Modbus serial link always uses the RJ45 communication port located on the front. If simultaneous use of the Modbus serial link and the CANopen machine bus is required, a CANopen communication card is needed.

(2) When one of the CANopen communication cards is inserted in the Altivar 32 drive, CANopen communication via the RJ45 communication port on the front is disabled.

(3) The Altivar 32 drive can only take one communication card.

#### Functions

All the Altivar 32 drive functions can be accessed via the communication buses and networks:

- Control
- Monitoring
- Adjustment
- Configuration

The speed reference and command may come from different sources:

- Logic input or analog I/O terminals
- Communication bus or network
- Remote display terminals

The Altivar 32 drive's advanced functions can be used to manage switching of these drive control sources according to the application requirements.

The communication periodic I/O data assignment can be selected using the network configuration software.

The Altivar 32 drive can be controlled:

- According to the CiA 402 native profile
- According to the I/O profile

Communication is monitored according to criteria specific to each protocol.

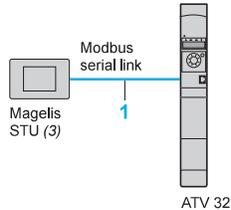
Regardless of protocol type, the reaction of the drive to a communication fault can be configured as follows:

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

#### Modbus serial link (1)

##### Connection accessories for remote Human-Machine Interface (2)

Description	Item no.	Length m	Reference	Weight kg
Cordsets for Modbus serial link equipped with 2 RJ45 connectors	1	0,3	VW3 A8 306 R03	0.025
		1	VW3 A8 306 R10	0.060
		3	VW3 A8 306 R30	0.130



Example of connection of an Altivar 32 drive and a Magelis STU HMI terminal via the Modbus serial link

(1) The Modbus serial link always uses the RJ45 communication port located on the front. If simultaneous use of the Modbus serial link and the CANopen machine bus is required, a CANopen communication card is needed.

(2) See page 14 for connection of a remote display terminal or remote graphic display terminal.

(3) Requires a 24 V  $\overline{\text{---}}$  power supply. Please refer to the "Human/Machine interfaces" catalogue.

# Variable speed drives

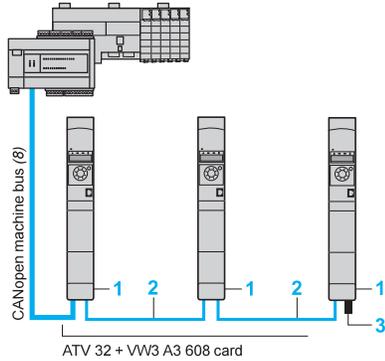
## Altivar 32

### Communication buses and networks



VW3 A3 608

Modicon M238/Modicon M258 (7)

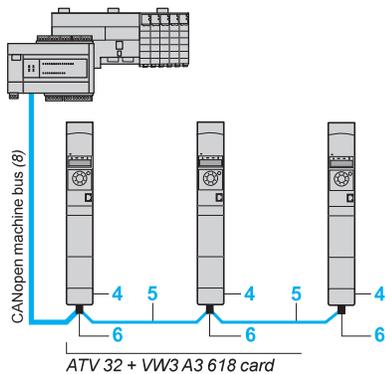


Optimized solution for daisy chain connection to the CANopen machine bus



VW3 A3 618

Modicon M238/Modicon M258 (7)



Example of connection to the CANopen machine bus via SUB-D connector

#### CANopen machine bus (1)

Description	Item no.	Length m	Unit reference	Weight kg
<b>Connection with VW3 A3 608 CANopen Daisy chain card</b> (optimized solution for daisy chain connection to the CANopen machine bus)				
<b>CANopen Daisy chain communication card (2) (3)</b> Ports: 2 RJ45 connectors	1	–	VW3 A3 608	–

<b>CANopen cordsets</b> equipped with 2 RJ45 connectors	2	0.3	VW3 CAN CARR03	0.050
		1	VW3 CAN CARR1	0.500

<b>CANopen line terminator</b> for RJ45 connector (4)	3	–	TCS CAR013M120	–
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#### Connection via SUB-D connector with VW A3 618 CANopen card

<b>CANopen communication card (2) (3)</b> Port: 1 x 9-way male SUB-D connector	4	–	VW3 A3 618	–
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<b>CANopen cable</b> 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

<b>CANopen cable</b> Standard cable, UL certification, 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

<b>CANopen cable</b> 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

<b>CANopen IP 20 straight connector</b> female SUB-D 9-way with line terminator which can be deactivated	6	–	TSX CAN KCDF 180T	0.049
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<b>IP 20 CANopen right angle connector (6)</b> 9-way female SUB-D with line terminator which can be deactivated	6	–	TSX CAN KCDF 90T	0.046
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(1) The Modbus serial link always uses the RJ45 communication port located on the front. If simultaneous use of the Modbus serial link and the CANopen machine bus is required, a CANopen communication card is needed.

(2) The Altivar 32 drive can only take one communication card.

(3) When one of the CANopen communication cards is inserted in the Altivar 32 drive, CANopen communication via the RJ45 communication port on the front is disabled.

(4) Sold in lots of 2.

(5) Standard environment:

- No particular environmental constraints
- Operating temperature between + 5°C and + 60°C
- Fixed installation

Harsh environment:

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

(6) Incompatible with side-by-side mounting.

(7) Please refer to the "Modicon M238 logic controller" and "Modicon M258 logic controller" catalogues.

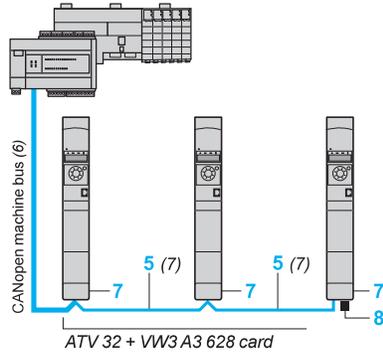
(8) Cable dependent on the type of controller or PLC; please refer to the corresponding catalogue.

PF066128



VW3 A3 628

Modicon M238/Modicon M258 (5)



Example of connection to the CANopen machine bus via screw terminals

#### CANopen machine bus (continued) (1)

Description	Item no.	Length m	Unit reference	Weight kg
<b>Connection via terminals with VW3 A3 628 CANopen card</b>				
CANopen communication card (2) (3) Port: 1 5-way screw terminal block	7	–	VW3 A3 628	–

CANopen line terminator for screw terminal connector (4)	8	–	TCS CAR01NM120	–
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#### Other connection accessories and cordsets

<b>IP 20 CANopen cordsets</b> equipped with two 9-way female SUB-D connectors. Standard cable, C€ marking Low smoke zero halogen Flame retardant (IEC 60332-1)	–	0.3	<b>TSX CAN CADD 03</b>	0.091
	1		<b>TSX CAN CADD 1</b>	0.143
	3		<b>TSX CAN CADD 3</b>	0.295
	5		<b>TSX CAN CADD 5</b>	0.440

<b>IP 20 CANopen cordsets</b> equipped with two 9-way female SUB-D connectors. Standard cable, UL certification, C€ marking Flame retardant (IEC 60332-2)	–	0.3	<b>TSX CAN CBDD 03</b>	0.086
	1		<b>TSX CAN CBDD 1</b>	0.131
	3		<b>TSX CAN CBDD 3</b>	0.268
	5		<b>TSX CAN CBDD 5</b>	0.400

<b>IP 20 CANopen junction boxes</b> equipped with: ■ 4 x 9-way male SUB-D connectors + screw terminal block for trunk cable tap link ■ Line terminator	–	–	<b>TSX CAN TDM4</b>	0.196
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<b>IP 20 CANopen junction boxes</b> equipped with: ■ 2 screw terminal blocks for trunk cable tap link ■ 2 RJ45 connectors for connecting drives ■ 1 RJ45 connector for connecting a PC	–	–	<b>VW3 CAN TAP2</b>	0.480
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(1) The Modbus serial link always uses the RJ45 communication port located on the front. If simultaneous use of the Modbus serial link and the CANopen machine bus is required, a CANopen communication card is needed.

(2) The Altivar 32 drive can only take one communication card.

(3) When one of the CANopen communication cards is inserted in the Altivar 32 drive, CANopen communication via the RJ45 communication port on the front is disabled.

(4) Sold in lots of 2.

(5) Please refer to the "Modicon M238 logic controller" and "Modicon M258 logic controller" catalogues.

(6) Cable dependent on the type of controller or PLC; please refer to the corresponding catalogue.

(7) See page 24 for item "5".

# Variable speed drives

## Altivar 32

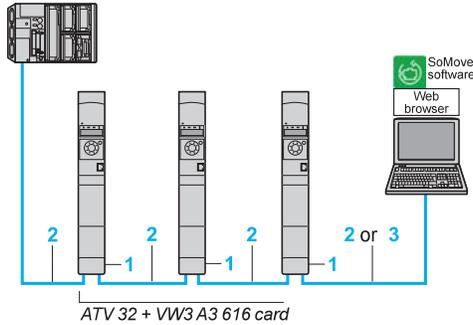
### Communication buses and networks

PF095126



VW3 A3 616

Modicon M340 (4)



Example of connection on an EtherNet/IP network

#### Modbus TCP network and EtherNet/IP network (1)

Description	Item no.	Length m (3)	Reference	Weight kg
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#### Communication card

<b>Modbus TCP and EtherNet/IP network card</b>	<b>1</b>	–	<b>VW3 A3 616</b>	0.300
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For connection to the Modbus TCP network or EtherNet/IP network

- Ports: 2 RJ45 connectors
- 10/100 Mbps, half duplex and full duplex
  - Embedded Web server

Requires cordsets  
490 NTW 000 ●●/●●U or  
490 NTC 000 ●●/●●U

#### ConneXium cordsets (2) (3)

<b>Straight shielded twisted pair cordsets</b> equipped with 2 RJ45 connectors Conforming to EIA/TIA-568 category 5 and IEC 11801/EN 50173-1, class D standards	<b>2</b>	2	<b>490 NTW 000 02</b>	–
		5	<b>490 NTW 000 05</b>	–
		12	<b>490 NTW 000 12</b>	–

<b>Crossed shielded twisted pair cordsets</b> equipped with 2 RJ45 connectors Conforming to EIA/TIA-568 category 5 and IEC 11801/EN 50173-1, class D standards	<b>3</b>	5	<b>490 NTC 000 05</b>	–
		15	<b>490 NTC 000 15</b>	–

<b>Straight shielded twisted pair cables</b> equipped with 2 RJ45 connectors Conforming to UL and CSA 22.1 standards	<b>2</b>	2	<b>490 NTW 000 02U</b>	–
		5	<b>490 NTW 000 05U</b>	–
		12	<b>490 NTW 000 12U</b>	–

<b>Crossed shielded twisted pair cordsets</b> equipped with 2 RJ45 connectors Conforming to UL and CSA 22.1 standards	<b>3</b>	5	<b>490 NTC 000 05U</b>	–
		15	<b>490 NTC 000 15U</b>	–

(1) The Altivar 32 drive can only take one communication card.

(2) For other ConneXium connection accessories, please refer to our website [www.schneider-electric.com](http://www.schneider-electric.com).

(3) Also available in 40 and 80 metre lengths (2).

(4) Please refer to the "M340 Automation platform" catalogue.

PF065130



VW3 A3 607

#### PROFIBUS DP V1 bus (1)

Description	References	Weight kg
<b>PROFIBUS DP V1 communication card</b> Port: One 9-way female SUB-D connector Conforming to PROFIBUS DP V1 Profiles supported: ■ CiA 402 drive ■ Profidrive Offers several message handling modes based on DP V1	VW3 A3 607	0.140

PF065140



VW3 A3 609

#### DeviceNet bus (1)

Description	References	Weight kg
<b>DeviceNet communication card</b> Port: 1 removable 5-way screw connector Profiles supported: ■ CIP AC DRIVE ■ CiA 402 drive	VW3 A3 609	—

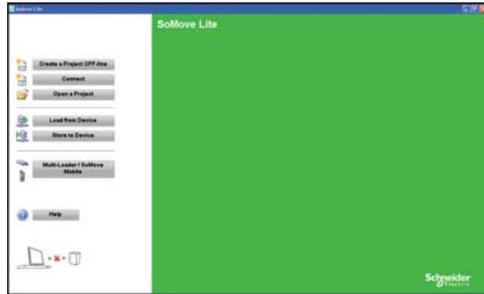
PF102292



#### EtherCAT bus (1)

Description	References	Weight kg
<b>EtherCAT communication card</b> Port: 2 RJ45 connectors	VW3 A3 601	—

(1) The Altivar 32 drive can only take one communication card.



SoMove start page

## Presentation

SoMove is user-friendly setup software for PCs, for setting up the following Schneider Electric motor control devices:

- ATV 12, ATV 312, ATV 31, ATV 32, ATV 61 and ATV 71 variable speed 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:

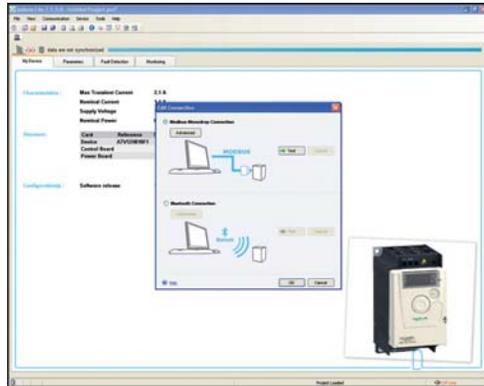
- Configuration preparation
- Start-up
- Maintenance

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](http://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® and sending configurations by e-mail.

### Setup

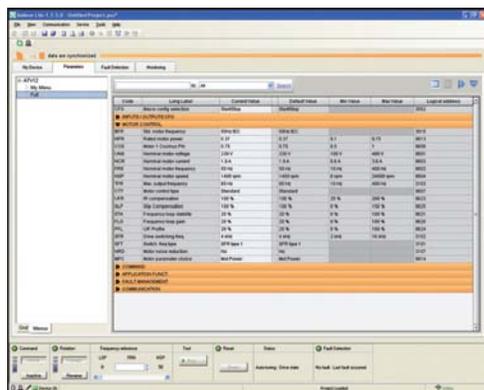
When the PC is connected to the device, SoMove software can be used for:

- Transferring the configuration that has been generated onto the device
- Adjustment and monitoring. This includes such functions as:
  - The oscilloscope
  - Displaying communication parameters
- Easy control via the control panel user interface
- Saving the final configuration

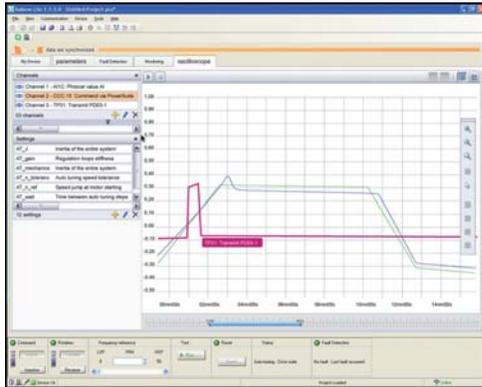
### Maintenance

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

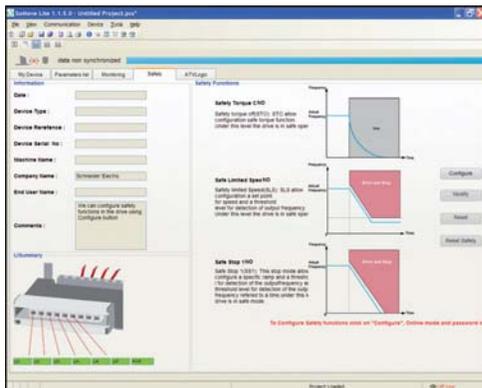
- Compare the configuration of a device currently being used with a configuration saved on the PC
- Transfer a configuration to a device
- Compare oscilloscope curves
- Save oscilloscope curves and faults



SoMove control panel



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 information on the device (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 (recording traces in the device) or low-speed oscilloscope (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 30.

### 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 10 m range (class 2).

If the PC is not Bluetooth® enabled, use the USB-Bluetooth® adaptor.

See the product references on page 30.



SoMove setup software

PF090632

VW3 A8 114:  
Bluetooth® adaptor

## References

Description	Reference	Weight kg
<b>SoMove lite setup software</b> Comprising: <ul style="list-style-type: none"> <li>■ SoMove setup software for PC in English, French, German, Italian, Spanish and Chinese</li> <li>■ DTMs (Device Type Managers) and technical documentation for variable speed drives, starters and servo motors</li> </ul>	(1)	–
<b>USB/RJ45 cable</b> 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	–
<b>Modbus-Bluetooth® adaptor</b> Used to enable any non-Bluetooth® device to communicate via Bluetooth® wireless link (2).  Comprising: <ul style="list-style-type: none"> <li>■ 1 Bluetooth® adaptor (range 10 m, class 2) with an RJ45 connector</li> <li>■ For SoMove: 1 x 0.1 m cable with 2 x RJ45 connectors</li> <li>■ For TwidoSuite: 1 x 0.1 m cable with 1 RJ45 connector and 1 mini DIN connector</li> </ul>	VW3 A8 114	0.155
<b>USB-Bluetooth® adaptor for PC</b> 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.