Soft starters
and variable speed drives
The essential guide

a brand of Schneider Electric

Telemecanique

Motor Control

Accurate and reliable control of motors and electrical circuits

The **Altistart** and **Altivar** ranges offer more *simplicity*, *compactness*, *openness* and *flexibility*:
ready-to-use versions, Power*Suite* software workshop, wide range of communication networks...
... so many product developments and new features to boost your productivity!

Altistart, Altivar

The *simplicity* of a complete offer!

Simple machines

>>> compact

Altistart 01
starters
■ 0.37 to 75 kW

Altivar 11
drives
■ 0.18 to 2.2 kW

Altivar 31
drives
■ 0.18 to 15 kW

Pumping and ventilation machines

>>> tailor-made

Altistart 48
starters
■ 4 to 1,200 kW

Altivar 38
drives
■ 0.75 to 315 kW

Complex, high-power machines

>>> high-performance

Altivar 71
drives
■ 0.37 to 500 kW

The essential guide
A simplified selection guide enabling you to select your starters and drives quickly.

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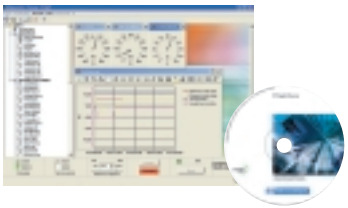
Soft starters and variable speed drives



Power*Suite*:

A single software package is all you need to configure all Altistart and Te*Sys*® model U starters and all Altivar drives.

Customize your settings at the click of a button!
- Simplified parameter entry
- Configuration preparation and printout
- File comparison
- Quick reproduction of settings on all similar applications
- Remote monitoring, etc.

Selection guide

Type of machine			Simple machines		
					
Starters/drives			Soft starters and soft start/soft stop units	Variable speed drives	
			Altistart 01	**Altivar 11**	**Altivar 31**
					
Supply voltage ranges for 50/60 Hz line supply			Single phase 110…480 V Three phase 110…690 V	Single phase 100…120 V Single phase 200…240 V Three phase 200…230 V	Single phase 200…240 V Three phase 200…240 V Three phase 380…500 V Three phase 525…600 V
Motor power			0.37…75 kW	0.18…2.2 kW	0.18…15 kW
Drive	Output frequency		–	0.5…200 Hz	0.5…500 Hz
	Type of control	Asynchronous motor	–	Sensorless flux vector control	
		Synchronous motor	–	–	–
	Transient overtorque		–	150..0.170% of the nominal motor torque	170...200% of the nominal motor torque
Functions					
Number of functions			1	26	50
Number of preset speeds			–	4	16
Number of I/O	Analog inputs		–	1	3
	Logic inputs		3	4	6
	Analog outputs		–	–	1
	Logic outputs		1	1	–
	Relay outputs		1	1	2
Communication	Integrated		–	–	Modbus and CANopen
	Available as an option		Combined with TeSys model U starter-controller	–	DeviceNet, Ethernet TCP/IP, Fipio, Profibus DP
Cards (available as an option)			–	–	–
Standards and certifications			IEC/EN 60947-4/2 C-TICK - CSA - UL CE - CCC	EN 50178, EN 61800-3 EN 55011 - EN 55022 class B and class A gr.1 NOM 117 - C-TICK - CSA UL - N998 - CE	EN 50178, EN 61800-3 EN 55011 - EN 55022: class A, class B with option C-TICK - UL - N998 - CE - CSA

Pumping and ventilation machines

Complex, high-power machines

Soft start/soft stop units

Variable speed drives

	Altistart 48	Altivar 38	Altivar 71
			 
	Three phase 230…415 V Three phase 208…690 V	Three phase 380…460 V	Single phase 200…240 V Three phase 200…240 V Three phase 380…480 V
	4…1200 kW	0.75…315 kW	0.37…500 kW
	–	0.1…500 Hz	0.1…1000 Hz
	TCS (Torque Control System)	Sensorless flux vector control	Flux vector control with or without sensor, voltage/ frequency ratio (2 or 5 points), ENA System
	–	–	Vector control without speed feedback
	–	110% of the nominal motor torque for 60 seconds	200% of the nominal motor torque for 2 seconds, 170% for 60 seconds
	36	44	> 150
	–	8	16
	1 PTC probe	2…3	2…4
	4	4…6	6…20
	1	1…2	1…3
	2	0…1	0…8
	3	2	2…4
	Modbus	Modbus	Modbus and CANopen
	DeviceNet, Ethernet TCP/IP, Fipio, Profibus DP	Ethernet TCP/IP, Modbus/Uni-Telway, Lonworks, METASYS N2, CANopen, AS-Interface, Profibus DP, DeviceNet, Fipio, Modbus Plus, InterBus	Ethernet TCP/IP, Modbus/Uni-Telway, Fipio, Modbus Plus, Profibus DP, DeviceNet, InterBus
	–	Pump switching “Controller Inside” programmable card I/O extension card	Encoder interface card I/O extension card “Controller Inside” programmable card
	IEC/EN 60947-4-2 EMC class A and B DNV - C-TICK - GOST CCIB - NOM - UL - CE CCC - CSA	EN 50178 IEC/EN 61800-3 (environments 1 and 2, C1 to C3) EN 55011 class A EN 55022 class B UL - N998 - CE	IEC/EN 61800-5-1, IEC/EN 61800-3 (environments 1 and 2, C1 to C3) EN 55011, EN 55022, IEC/EN 61000-4-2/4-3/4-4/4-5/4-6/4-11 CE, UL, CSA, DNV, C-Tick, NOM 117, GOST

Dimensions (in mm)		width x height x depth
ATS01	N103FT / N106 FT	22.5 x 100 x 100
	N109FT / N112 FT	45 x 124 x 130
	N206●● / N209●● / N212●●	
	N222●● / N232●●	45 x 154 x 130

Type of starter Motor power						**Soft starters** 0.37 to 11 kW	**Soft start/soft stop units** 0.75 to 15 kW		
Degree of protection						IP 20			
Peak current reduction						No (1 controlled phase)	Yes (2 controlled phases)		
Adjustable starting time						1…5 s	1…10 s		
Adjustable stopping time						No: freewheel stop	Yes: 1... 10 s		
Adjustable starting torque						30…80% of DOL motor starting torque			
Logic inputs						–	3 logic inputs (run, stop and startup boost)		
Logic outputs						–	1 logic output		
Relay outputs						–	1 relay output		
Control supply voltage						110... 240 VAC ± 10%, 24 VDC ± 10%	Built into the starter		
Supply voltage						**Single phase 110…230 V**			
Motor power									
230 V					Nominal current				
kW					(IcL)				
0.37					3 A	**ATS01N103FT**			
0.75					6 A	**ATS01N106FT**			
1.1					9 A	**ATS01N109FT**			
1.5					12 A	**ATS01N112FT**			
2.2					25 A	**ATS01N112FT**			
Supply voltage						**Three phase 110…230 V**	**Three phase 200…240 V**	**Three phase 380…415 V**	**Three phase 440…480 V**
Motor power									
210 V	**230 V**		**400 V**	**460 V**	Nominal current				
HP	kW	HP	kW	HP	(IcL)				
–	0.37-0.55	0.5/–	1.1	0.5-1.5	3 A	**ATS01N103FT**	**–**	**–**	**–**
0.5	0.75-1.1	1-1.5	2.2-3	2-3	6 A	**ATS01N106FT**	**ATS01N206LU**	**ATS01N206QN**	**ATS01N206RT**
1	1.5	2	4	5	9 A	**ATS01N109FT**	**ATS01N209LU**	**ATS01N209QN**	**ATS01N209RT**
1.5	2.2	3	5.5	7.5	12 A	**ATS01N112FT**	**ATS01N212LU**	**ATS01N212QN**	**ATS01N212RT**
–	4-5.5	5-7.5	7.5-11	10-15	22 A	**–**	**ATS01N222LU**	**ATS01N222QN**	**ATS01N222RT**
2-3	3-4-5.5	5-7.5	7.5-9-11	10-15	25A	**ATS01N112FT**	**–**	**–**	–
–	7.5	10	15	20	32 A	**–**	**ATS01N232LU**	**ATS01N232QN**	**ATS01N232RT**

Starters

Dimensions (in mm)		width x height x depth
ATS01	N230●● / N244●●	180 x 146 x 126
	N272●● / N285●●	180 x 254.5 x 126

Type of starter Motor power							Soft start/soft stop units 15 to 75 kW	
Degree of protection							IP 20 on front panel	
Peak current reduction							Yes	
Adjustable starting and stopping times							1... 25 s	
Adjustable starting torque							30.... 80% of DOL motor starting torque	
Logic inputs							2 logic inputs (run and stop)	
Relay outputs							1 relay output	
Control supply voltage							110 VDC ± 10%	Built into the starter
Supply voltage							**Three phase 230…690 V**	**Three phase 400 V**
Motor power								
230 V		**400 V**		**460 V**	**690 V**	Nominal current		
kW	HP	kW	HP	HP	kW	(IcL)		
7.5	10	15	15	20	30	32 A	**ATS01N230LY**	–
11	15	22	25	30	37	44 A	**ATS01N244LY**	**ATS01N244Q**
18.5	25	37	40	50	55	72 A	**ATS01N272LY**	**ATS01N272Q**
22	30	45	50	60	75	85 A	**ATS01N285LY**	**ATS01N285Q**

Starters with TeSys model U

Dimensions (in mm)		width x height x depth
ATSU01	N206LT / N209LT / N212LT	45 x 124 x 130
	N222LT / N232LT	45 x 154 x 130

Type of starter Motor power					Soft start/soft stop units 0.75 to 15 kW			
Degree of protection					IP 20			
Peak current reduction					Yes			
Adjustable starting and stopping times					1…10 s			
Adjustable starting torque					30.... 80% of DOL motor starting torque			
Logic inputs					3 logic inputs (start, stop and startup boost)			
Logic outputs					1 logic output			
Relay outputs					1 relay output			
Control supply voltage					Built into the starter			
References					**Soft start/soft stop units**	**TeSys model U starter-controller**		**Power connector**
						Power base	Control unit (1)	between ATSU and TeSys model U
Supply voltage					**Three phase 200…480 V**			
Motor power								
230 V		**400 V**	**460 V**	Nominal				
kW	HP	kW	HP	current (IcL)				
0.75	1	1.5	2	6 A	**ATSU01N206LT**	**LUB12**	**LUC●05BL**	**VW3G4104**
1.1	1.5	2.2	3	6 A	**ATSU01N206LT**	**LUB12**	**LUC●12BL**	
1.5	2	3	–	9 A	**ATSU01N209LT**	**LUB12**	**LUC●12BL**	**VW3G4104**
–		4	5	9 A	**ATSU01N209LT**	**LUB12**	**LUC●12BL**	
2.2	3	–	–	12	**ATSU01N212LT**	**LUB12**	**LUC●12BL**	**VW3G4104**
3	–	5.5	7.5	12 A	**ATSU01N212LT**	**LUB32**	**LUC●18BL**	
4	5	7.5	10	22 A	**ATSU01N222LT**	**LUB32**	**LUC●18BL**	**VW3G4104**
5.5	7.5	11	15	22 A	**ATSU01N222LT**	**LUB32**	**LUC●32BL**	
7.5	10	15	20	32 A	**ATSU01N232LT**	**LUB32**	**LUC●32BL**	**VW3G4104**

(1) To compose your reference, replace ● in the reference with: "**A**" for a standard control unit, "**M**" for a multifunction unit and "**B**" for an advanced unit.

Altistart 48
4 to 1200 kW

Pumping and ventilation machines
Soft start/soft stop units

Dimensions (in mm)			width x height x depth
ATS48	D17Q to D47Q	**Size A:**	160 x 275 x 190
	D62Q to C11Q	**Size B:**	190 x 290 x 235
	C14Q to C17Q	**Size C:**	200 x 340 x 265
	C21Q to C32Q	**Size D:**	320 x 380 x 265
	C41Q to C66Q	**Size E:**	400 x 670 x 300
	C79Q to M12Q	**Size F:**	770 x 890 x 315

Supply voltage			**Three phase 230…415 V** (1)			
Type of application			Standard		Severe (2)	
Starter control supply voltage			**220…415 V**			
Protection		Degree of protection	IP 20: ATS48D17● to ATS48C11● starters IP 00: ATS48C14● to ATS48M12● starters			
		Motor thermal protection	Class 10		Class 20	
EMC		Class A	On all starters			
		Class B	On all starters up to 170 A			
Starting mode			Torque control (patented TCS: Torque Control System)			
I/O		Analog inputs	1 PTC probe			
		Logic inputs	4 logic inputs, 2 of which are configurable			
		Logic outputs	2 configurable logic outputs			
		Analog outputs	1 analog output			
		Relay outputs	3 relay outputs, 2 of which are configurable			
Dialogue			Integrated or remote display terminal, or PowerSuite software workshop (3)			
Communication (4)		Integrated	Modbus			
		Available as an option	DeviceNet, Ethernet TCP/IP, Fipio, Profibus DP			
Motor power						
230 V kW	**400 V** kW	Nominal current (IcL)				
3	5.5	12 A	–		**ATS48D17Q**	Size A
4	7.5	17 A	**ATS48D17Q**	Size A	**ATS48D22Q**	Size A
5.5	11	22 A	**ATS48D22Q**	Size A	**ATS48D32Q**	Size A
7.5	15	32 A	**ATS48D32Q**	Size A	**ATS48D38Q**	Size A
9	18.5	38 A	**ATS48D38Q**	Size A	**ATS48D47Q**	Size A
11	22	47 A	**ATS48D47Q**	Size A	**ATS48D62Q**	Size B
15	30	62 A	**ATS48D62Q**	Size B	**ATS48D75Q**	Size B
18.5	37	75 A	**ATS48D75Q**	Size B	**ATS48D88Q**	Size B
22	45	88 A	**ATS48D88Q**	Size B	**ATS48C11Q**	Size B
30	55	110 A	**ATS48C11Q**	Size B	**ATS48C14Q**	Size C
37	75	140 A	**ATS48C14Q**	Size C	**ATS48C17Q**	Size C
45	90	170 A	**ATS48C17Q**	Size C	**ATS48C21Q**	Size D
55	110	210 A	**ATS48C21Q**	Size D	**ATS48C25Q**	Size D
75	132	250 A	**ATS48C25Q**	Size D	**ATS48C32Q**	Size D
90	160	320 A	**ATS48C32Q**	Size D	**ATS48C41Q**	Size E
110	220	410 A	**ATS48C41Q**	Size E	**ATS48C48Q**	Size E
132	250	480 A	**ATS48C48Q**	Size E	**ATS48C59Q**	Size E
160	315	590 A	**ATS48C59Q**	Size E	**ATS48C66Q**	Size E
–	355	660 A	**ATS48C66Q**	Size E	**ATS48C79Q**	Size F
220	400	790 A	**ATS48C79Q**	Size F	**ATS48M10Q**	Size F
250	500	1000 A	**ATS48M10Q**	Size F	**ATS48M12Q**	Size F
355	630	1200 A	**ATS48M12Q**	Size F	–	

(1) Possible to connect the starter in the motor delta connection

(2) Starting time greater than 30 seconds (fans, high inertia machines and compressors)

(3) (4) PowerSuite software and communication protocols, see page 5/68

Accessory

Accessory	**Remote display terminal**
Reference	**VW3G48101**

Other versions: **Please consult your Schneider Electric sales office.**

Soft start/soft stop units

Dimensions (in mm)			width x height x depth
ATS48	D17Y to D47Y	**Size A:**	160 x 275 x 190
	D62Y to C11Y	**Size B:**	190 x 290 x 235
	C14Y to C17Y	**Size C:**	200 x 340 x 265
	C21Y to C32Y	**Size D:**	320 x 380 x 265
	C41Y to C66Y	**Size E:**	400 x 670 x 300
	C79Y to M12Y	**Size F:**	770 x 890 x 315

Supply voltage Type of application												**Three phase 208…690 V** (1) Standard		Severe (2)	
Starter control supply voltage												**110…230 V**			
Characteristics												Identical to 230…415 V starters			
Motor power											Nominal				
208 V	**230 V**	**460 V**	**575 V**	**230 V**	**400 V**	**440 V**	**500 V**	**525 V**	**660 V**	**690 V**	current				
HP				kW							(IcL)				
2	3	7.5	10	3	5.5	5.5	7.5	7.5	9	11	12 A	–		**ATS48D17Y**	Size A
3	5	10	15	4	7.5	7.5	9	9	11	15	17 A	**ATS48D17Y**	Size A	**ATS48D22Y**	Size A
5	7.5	15	20	5.5	11	11	11	11	15	18.5	22 A	**ATS48D22Y**	Size A	**ATS48D32Y**	Size A
7.5	10	20	25	7.5	15	15	18.5	18.5	22	22	32 A	**ATS48D32Y**	Size A	**ATS48D38Y**	Size A
10	–	25	30	9	18.5	18.5	22	22	30	30	38 A	**ATS48D38Y**	Size A	**ATS48D47Y**	Size A
–	15	30	40	11	22	22	30	30	37	37	47 A	**ATS48D47Y**	Size A	**ATS48D62Y**	Size B
15	20	40	50	15	30	30	37	37	45	45	62 A	**ATS48D62Y**	Size B	**ATS48D75Y**	Size B
20	25	50	60	18.5	37	37	45	45	55	55	75 A	**ATS48D75Y**	Size B	**ATS48D88Y**	Size B
25	30	60	75	22	45	45	55	55	75	75	88 A	**ATS48D88Y**	Size B	**ATS48C11Y**	Size B
30	40	75	100	30	55	55	75	75	90	90	110 A	**ATS48C11Y**	Size B	**ATS48C14Y**	Size C
40	50	100	125	37	75	75	90	90	110	110	140 A	**ATS48C14Y**	Size C	**ATS48C17Y**	Size C
50	60	125	150	45	90	90	110	110	132	160	170 A	**ATS48C17Y**	Size C	**ATS48C21Y**	Size D
60	75	150	200	55	110	110	132	132	160	200	210 A	**ATS48C21Y**	Size D	**ATS48C25Y**	Size D
75	100	200	250	75	132	132	160	160	220	250	250 A	**ATS48C25Y**	Size D	**ATS48C32Y**	Size D
100	125	250	300	90	160	160	220	220	250	315	320 A	**ATS48C32Y**	Size D	**ATS48C41Y**	Size E
125	150	300	350	110	220	220	250	250	355	400	410 A	**ATS48C41Y**	Size E	**ATS48C48Y**	Size E
150	–	350	400	132	250	250	315	315	400	500	480 A	**ATS48C48Y**	Size E	**ATS48C59Y**	Size E
–	200	400	500	160	315	355	400	400	560	560	590 A	**ATS48C59Y**	Size E	**ATS48C66Y**	Size E
200	250	500	600	–	355	400	–	–	630	630	660 A	**ATS48C66Y**	Size E	**ATS48C79Y**	Size F
250	300	600	800	220	400	500	500	500	710	710	790 A	**ATS48C79Y**	Size F	**ATS48M10Y**	Size F
350	350	800	1000	250	500	630	630	630	900	900	1000 A	**ATS48M10Y**	Size F	**ATS48M12Y**	Size F
400	455	1000	1200	355	630	710	800	800	–	–	1200 A	**ATS48M12Y**	Size F	**–**	

(1) Starter connection in the motor delta connection: add "**S316**" at the end of the reference

Line chokes

Degree of protection			**IP 20**	**IP 00**	
References	Starter	ATS48	D17●	D75● to C14●	C41● to C48●
	Choke		**VZ1L015UM17T**	**VZ1L150U170T**	**VZ1L530U045T**
	Starter	ATS48	D22●	C17● to C25●	C59● to M10●
	Choke		**VZ1L030U800T**	**VZ1L0250U100T**	**VZ1LM10U024T**
	Starter	ATS48	D32● and D38●	AC32●	M12●
	Choke		**VZ1L040U600T**	**VZ1L325U075T**	**VZ1LM14U016T**
	Starter	ATS48	D47● and D62●		
	Choke		**VZ1L070U350T**		

Altivar 11
0.18 to 2.2 kW

Simple machines
Drives on heatsinks



Dimensions (in mm)	width x height x depth (1)
Size 1: 72 x 142 x 101 / **Size 2**: 72 x 142 x 125	
Size 3: 72 x 142 x 138 / **Size 4**: 117 x 142 x 156	

Range			**Europe**	**America**	**Asia**
Output frequency			0.5...200 Hz		
Type of control			Sensorless flux vector control		
Speed range			1 to 20		
Degree of protection			IP 20		
I/O	Analog inputs		1 configurable analog input		
	Logic inputs		4 assignable logic inputs		
	Outputs		1 PWM open collector output or assignable as logic output		
	Relay outputs		1 protected relay logic output		
Dialogue			Integrated display terminal or PowerSuite software workshop (2)		
EMC			Integrated class B filter	External filter available as an option	External filter available as an option
Local controls (3) **/ Negative logic**			No	No	Yes
Standard NEC 208 V 1999			No	Yes	No
Supply voltage			**Single phase 100…120 V**		
Motor power	kW/HP	0.18/0.25	–	**ATV11HU05F1U** Size 1	**ATV11HU05F1A** Size 1
		0.37/0.5	–	**ATV11HU09F1U** Size 2	**ATV11HU09F1A** Size 2
		0.75/1	–	**ATV11HU18F1U** Size 4	**ATV11HU18F1A** Size 4
Supply voltage			**Single phase 200…240 V**		
Motor power	kW/HP	0.18/0.25	**ATV11HU05M2E** Size 1	**ATV11HU05M2U** Size 1	**ATV11HU05M2A** Size 1
		0.37/0.5	**ATV11HU09M2E** Size 2	**ATV11HU09M2U** Size 2	**ATV11HU09M2A** Size 2
		0.55	**ATV11HU12M2E** Size 3	–	–
		0.75/1	**ATV11HU18M2E** Size 3	**ATV11HU18M2U** Size 3	**ATV11HU18M2A** Size 3
		1.5/2	**ATV11HU29M2E** Size 4	**ATV11HU29M2U** Size 4	**ATV11HU29M2A** Size 4
		2.2/3	**ATV11HU41M2E** Size 4	**ATV11HU41M2U** Size 4	**ATV11HU41M2A** Size 4
Supply voltage			**Three phase 200…230 V**		
Motor power	kW/HP	0.18/0.25	–	**ATV11HU05M3U** Size 1	**ATV11HU05M3A** Size 1
		0.37/0.5	–	**ATV11HU09M3U** Size 2	**ATV11HU09M3A** Size 2
		0.75/1	–	**ATV11HU18M3U** Size 3	**ATV11HU18M3A** Size 3
		1.5/2	–	**ATV11HU29M3U** Size 4	**ATV11HU29M3A** Size 4
		2.2/3	–	**ATV11HU41M3U** Size 4	**ATV11HU41M3A** Size 4

(1) Asia range: Add 7 mm to depth (height of the potentiometer)

(2) PowerSuite software, see page 5/68

(3) Local controls: Run/Stop keys and potentiometer

Drives on base plates



Dimensions (in mm)	width x height x depth (1)
1 size: 72 x 142 x 101	

Range			**Europe**	**America**	**Asia**
Supply voltage			**Single phase 100…120 V**		
Motor power	kW/HP	0.37/0.5	–	**ATV11PU09F1U**	**ATV11PU09F1A**
Supply voltage			**Single phase 200…240 V**		
Motor power	kW/HP	0.37/0.5	**ATV11PU09M2E**	**ATV11PU09M2U**	**ATV11PU09M2A**
		0.55	**ATV11PU12M2E**	–	–
		0.75/1	**ATV11PU18M2E**	**ATV11PU18M2U**	**ATV11PU18M2A**
Supply voltage			**Three phase 200…230 V**		
Motor power	kW/HP	0.37/0.5	–	**ATV11PU09M3U**	**ATV11PU09M3A**
		0.75/1	–	**ATV11PU18M3U**	**ATV11PU18M3A**

(1) Asia range: Add 7 mm to depth (height of the potentiometer)

Additional EMC input filters

Supply voltage			Single phase 100…120 V		200…240 V	Three phase 200…230 V
Europe range	Drive	ATV11	–		HU05M2E to HU41M2E	–
	References	**Filters**	–		**Integrated**	–
America range	Drive	ATV11	HU05F1U, HU09F1U		HU05M2U to HU18M2U	HU05M3U to HU18M3U
	References	**Filters**	**VW3A11401**		**VW3A11401**	**VW3A11403**
	Drive	ATV11	HU18F1U		HU29M2U - HU41M2U	HU29M3U to HU41M3U
	References	**Filters**	**VW3A11402**		**VW3A11402**	**VW3A11404**
Asia range	Drive	ATV11	HU05F1A - HU09F1A		HU05M2A to HU18M2A	HU05M3A to HU18M3A
	References	**Filters**	**VW3A11401**		**VW3A11401**	**VW3A11403**
	Drive	ATV11	HU18F1A - HU18F1A		HU29M2A - HU41M2A	HU29M3A to HU41M3A
	References	**Filters**	**VW3A11402**		**VW3A11402**	**VW3A11404**

Accessories

Accessory			Mounting plates for Omega rail		Substitution plate	Speed reference potentiometer	EMC grounding plate
Description			Width 35 mm		For replacing ATV08	2.2 kΩ	
References	Drive	ATV11	HU05●●●	HU18F1●	HU05M2●	All ATV11 models	All ATV11 models
			HU09●●●	HU29●●●	●HU09M2●●		
			HU12M2●	HU41●●●	●U12M2E		
			HU18●●	–	●U18M2●		
	Accessories		**VW3A11851**	**VW3A11852**	**VW3A11811**	**SZ1RV1202**	**VW3A11831**

Braking resistors and modules...other accessories: Please consult www.Telemecanique.com.

Altivar 31
0.18 to 15 kW

Simple machines
Drives on heatsinks

Dimensions (in mm)	width x height x depth
Size 1: 72 x 145 x 120	/ **Size 2**: 72 x 145 x 130
Size 3: 72 x 145 x 140	/ **Size 4**: 72 x 145 x 145
Size 5: 105 x 143 x 130	/ **Size 6**: 105 x 143 x 150
Size 7: 140 x 184 x 150	/ **Size 8**: 180 x 232 x 170
Size 9: 245 x 330 x 190	



Supply voltage			**Single phase 200…240 V**		**Three phase 200…240 V**		**Three phase 380…500 V**	
Output frequency			0.5…500 Hz					
Type of control			Sensorless flux vector control					
Speed range			1 to 50					
Degree of protection			IP 31 and IP 41 on upper part and IP 21 on connection terminals					
I/O	Analog inputs		3 configurable analog inputs					
	Logic inputs		6 programmable logic inputs					
	Analog outputs		1 current analog output (assignable as logic output) and 1 voltage analog output					
	Relay outputs		2 relay logic outputs					
Dialogue			Integrated display terminal with or without local controls (1) or PowerSuite software workshop (see page 5/68)					
Communication	Integrated		Modbus and CANopen					
(see page 5/68)	Available as an option		DeviceNet, Ethernet TCP/IP, Fipio, Profibus DP					
EMC	Class A		Integrated class A filter		External filter available as an option		Integrated class A filter	
	Class B		External filter available as an option					
Motor power	kW/HP	0.18/0.25	**ATV31H018M2**	Size 3	**ATV31H018M3X**	Size 1	–	
		0.37/0.5	**ATV31H037M2**	Size 3	**ATV31H037M3X**	Size 1	**ATV31H037N4**	Size 5
		0.55/0.75	**ATV31H055M2**	Size 4	**ATV31H055M3X**	Size 2	**ATV31H055N4**	Size 5
		0.75/1	**ATV31H075M2**	Size 4	**ATV31H075M3X**	Size 2	**ATV31H075N4**	Size 6
		1.1/1.5	**ATV31HU11M2**	Size 6	**ATV31HU11M3X**	Size 5	**ATV31HU11N4**	Size 6
		1.5/2	**ATV31HU15M2**	Size 6	**ATV31HU15M3X**	Size 5	**ATV31HU15N4**	Size 6
		2.2/3	**ATV31HU22M2**	Size 7	**ATV31HU22M3X**	Size 6	**ATV31HU22N4**	Size 7
		3/–	–		**ATV31HU30M3X**	Size 7	**ATV31HU30N4**	Size 7
		4/5	–		**ATV31HU40M3X**	Size 7	**ATV31HU40N4**	Size 7
		5.5/7.5	–		**ATV31HU55M3X**	Size 8	**ATV31HU55N4**	Size 8
		7.5/10	–		**ATV31HU75M3X**	Size 8	**ATV31HU75N4**	Size 8
		11/15	–		**ATV31HD11M3X**	Size 9	**ATV31HD11N4**	Size 9
		15/20	–		**ATV31HD15M3X**	Size 9	**ATV31HD15N4**	Size 9

(1) For drive with local controls (Run/Stop keys and potentiometer) add an "**A**" at the end of the reference.

To order a drive intended for spooling applications, add a "**T**" at the end of the reference.

Enclosed drives

Dimensions (in mm)	width x height x depth
Size 1: 210 x 240 x 163 / **Size 2**: 215 x 297 x 192	
Size 3: 230 x 340 x 208 / **Size 4**: 320 x 512 x 276	
Size 5: 440 x 625 x 276	


Supply voltage			**Single phase 200…240 V**		**Three phase 380…500 V**	
Degree of protection			IP 55			
Description			Enclosure equipped with an ATV31 drive with external heatsink. Removable covers for adding 1 switch-disconnector or 1 circuit-breaker, 3 buttons and/or LEDs, 1 potentiometer			
Motor power	kW/HP	0.18/0.25	**ATV31C018M2**	Size 1	–	
		0.37/0.5	**ATV31C037M2**	Size 1	**ATV31C037N4**	Size 2
		0.55/0.75	**ATV31C055M2**	Size 1	**ATV31C055N4**	Size 2
		0.75/1	**ATV31C075M2**	Size 1	**ATV31C075N4**	Size 2
		1.1/1.5	**ATV31CU11M2**	Size 2	**ATV31CU11N4**	Size 2
		1.5/2	**ATV31CU15M2**	Size 2	**ATV31CU15N4**	Size 2
		2.2/3	**ATV31CU22M2**	Size 3	**ATV31CU22N4**	Size 3
		3/–	–		**ATV31CU30N4**	Size 3
		4/5	–		**ATV31CU40N4**	Size 3
		5.5/7.5	–		**ATV31CU55N4** (5)	Size 4
		7.5/10	–		**ATV31CU75N4** (5)	Size 4
		11/15	–		**ATV31CD11N4** (5)	Size 5
		15/20	–		**ATV31CD15N4** (5)	Size 5

Drive kit (Altivar 31 drive on metal support plate with EMC filter): Please consult your Schneider Electric sales office. (5) Drive in metal enclosure without cover.

Other versions: **Please consult your Schneider Electric sales office.**

Additional EMC input filters

Supply voltage			Single phase 200…240 V		Three phase 200…240 V	380…500 V	
Maximum length of shielded cable (1)		Class A	5 m	50 m	5 m	5 m	50 m
		Class B	–	20 m	–	–	20 m
References	Drive	ATV31	H018M2 to H075M2		H018M3X to H075M3X	H037N4 to HU15N4	
	Filter		**Integrated**	**VW3A31401**	**VW3A31402**	**Integrated**	**VW3A31404**
	Drive	ATV31	HU11M2 to HU15M2		HU11M3X to HU22M3X	HU22N4 to HU40N4	
	Filter		**Integrated**	**VW3A31403**	**VW3A31404**	**Integrated**	**VW3A31406**
	Drive	ATV31	HU22M2		HU30M3X - HU40M3X	HU55N4 - HU75 N4	
	Filter		**Integrated**	**VW3A31405**	**VW3A31406**	**Integrated**	**VW3A31407**
	Drive	ATV31	–		HU55M3X - HU75M3X	HD11N4 - HD15N4	
	Filter				**VW3A31407**	**Integrated**	**VW3A31409**
	Drive	ATV31	–		HD11M3X - HD15M3X	–	
	Filter				**VW3A31408**		

(1) Maximum lengths for shielded cables connecting motors to drives for a switching frequency of 2 to 16 kHz

Line chokes

Supply voltage			Single phase 200…240 V	Three phase 200…240 V	380…500 V
References	Drive	ATV31	H018M2 to H037M2	H018M3X to H075M3X	H037N4 to HU15N4
	Choke		**VZ1 L004M010**	**VW3A4551**	**VW3A4551**
	Drive	ATV31	H055M2 to H075M2	HU11M3X and HU15M3X	HU22N4 to HU40N4
	Choke		**VZ1 L007UM50**	**VW3A4552**	**VW3A4552**
	Drive	ATV31	HU11M2 to HU22M2	HU22M3X and HU30M3X	HU55N4 and HU75N4
	Choke		**VZ1 L018UM20**	**VW3A4553**	**VW3A4553**
	Drive	ATV31	–	HU40M3X to HU75M3X	HD11N4 and HD15N4
	Choke			**VW3A4554**	**VW3A4554**
	Drive	ATV31	–	HD11M3X and HD15M3X	–
	Choke			**VW3A4555**	

Braking resistors... accessories: Please consult your Schneider Electric sales office.

Altivar 38
0.75 to 315 kW

Pumping and ventilation machines
Drives on heatsinks and enclosed drives

Dimensions (in mm)	width x height x depth
Size 2: 150 x 230 x 184	/ **Size 3** : 175 x 286 x 184
Size 4: 230 x 325 x 210	/ **Size 5** : 230 x 415 x 210
Size 6: 240 x 550 x 283	/ **Size 7** : 350 x 650 x 304
Size 8: 370 x 630 x 360	/ **Size 9** : 480 x 680 x 400
Size 10: 660 x 950 x 440	/ **Size 11** : 500 x 700 x 300.5
Size 12: 460 x 850 x 365.5	/ **Size 13** : 570 x 1050 x 405.5

Type of drive Supply voltage			**Drives on heatsinks** Three phase 380…460 V		**Ready-assembled "Energy" enclosures** Three phase 380…460 V	
Description			Altivar 38 on heatsink		Ready-assembled enclosure equipped with an Altivar 38 drive, a line choke, an EMC filter, a Vario switch-disconnector, a potentiometer, a switch for selecting the direction of operation and an operator terminal.	
Output frequency			0.1...500 Hz			
Type of flux vector control			Sensorless flux vector control			
Speed range			1 to 10			
Degree of protection			IP 21 and IP 41 on the upper part for drives up to 75 kW. IP 00 on lower part and IP 20 on other sides for drives above 75 kW.		IP 55	
I/O	Analog inputs		1 voltage analog input and 1 current analog input			
	Logic inputs		4 assignable logic inputs			
	Analog outputs		1 assignable analog output			
	Logic outputs		2 relay logic outputs			
Dialogue			Integrated or remote display terminal, or PowerSuite software workshop (1)			
Communication (2)	Integrated		Modbus (3)			
	Available as an option		Ethernet TCP/IP, Modbus/Uni-Telway, Lonworks, METASYS N2, CANopen, AS-Interface, Profibus DP, DeviceNet, Fipio, Modbus Plus, InterBus			
EMC	Class A		Integrated class A filter up to 75 kW		Integrated class A filter	
	Class B		External filter available as an option			
Motor power	kW/HP	0.75/1	**ATV38HU18N4**	Size 2	–	
		1.5/2	**ATV38HU29N4**	Size 2	–	
		2.2/3	**ATV38HU41N4**	Size 2	–	
		3/–	**ATV38HU54N4**	Size 3	**ATV38ED05N4**	Size 11
		4/5	**ATV38HU72N4**	Size 3	**ATV38ED07N4**	Size 11
		5.5/7.5	**ATV38HU90N4**	Size 3	**ATV38ED09N4**	Size 11
		7.5/10	**ATV38HD12N4**	Size 4	**ATV38ED12N4**	Size 11
		11/15	**ATV38HD16N4**	Size 4	**ATV38ED16N4**	Size 11
		15/20	**ATV38HD23N4**	Size 5	**ATV38ED23N4**	Size 11
		18.5/25	**ATV38HD25N4** (4)	Size 6	**ATV38ED25N4**	Size 12
		22/30	**ATV38HD28N4** (4)	Size 6	**ATV38ED28N4**	Size 12
		30/40	**ATV38HD33N4** (4)	Size 6	**ATV38ED33N4**	Size 12
		37/50	**ATV38HD46N4** (4)	Size 6	**ATV38ED46N4**	Size 12
		45/60	**ATV38HD54N4** (4)	Size 7	**ATV38ED54N4**	Size 13
		55/75	**ATV38HD64N4** (4)	Size 7	**ATV38ED64N4**	Size 13
		75/100	**ATV38HD79N4** (4)	Size 7	**ATV38ED79N4**	Size 13
		90/125	**ATV38HC10N4X**	Size 8	–	
		110/150	**ATV38HC13N4X**	Size 9	–	
		132/200	**ATV38HC15N4X**	Size 9	–	
		160/250	**ATV38HC19N4X**	Size 9	–	
		200/300	**ATV38HC23N4X**	Size 10	–	
		220/350	**ATV38HC25N4X**	Size 10	–	
		250/400	**ATV38HC28N4X**	Size 10	–	
		280/450	**ATV38HC31N4X**	Size 10	–	
		315/500	**ATV38HC33N4X**	Size 10	–	

(1) (2) PowerSuite software and communication protocols, see page 5/68

(3) For simultaneous use with the operator terminal, choose the Modbus communication card, see page 5/71

(4) Without EMC filter, add an "**X**" at the end of the reference

Additional EMC input filters

Supply voltage			Three phase 380…460 V	
Maximum length of shielded cable (1)		Class A	50 m	200 m
		Class B	20 m	100 m
References (2)	Drive	ATV38	HU18N4, HU29N4, HU41N4	
	Filter		**VW3A58402**	–
	Drive	ATV38	HU54N4, HU72N4, HU90N4	
	Filter		**VW3A58403**	–
	Drive	ATV38	HD12N4, HD16N4	
	Filter		**VW3A58404**	–
	Drive	ATV38	HD23N4	
	Filter		**VW3A58405**	–
	Drive	ATV38	HD25N4X, HD28N4X	HD25N4, HD28N4
	Filter		**VW3A58406**	**VW3A58406**
	Drive	ATV38	HD33N4X, HD46N4X	HD33N4, HD46N4
	Filter		**VW3A58407**	**VW3A58407**
	Drive	ATV38	HD54N4, HD64N4, HD79N4	HD54N4, HD64N4, HD79N4
	Filter		**VW3A58408**	**VW3A58408**

(1) Maximum lengths for shielded cables connecting motors to drives for a switching frequency of 0.5 to 12 kHz

(2) Above 75 kW, please consult www.Telemecanique.com

Line chokes

Supply voltage Motor power			Three phase 380…460 V 0.75 to 75 kW	90 to 315 kW (1)	
References	Drive	ATV38	HU18N4, HU29N4	HC10N4X	HC13N4X
	Choke		**VW3A4551**	**VW3A68501**	**VW3A68502**
	Drive	ATV38	HU41N4, HU54N4, HU72N4	HC15N4X	HC19N4X
	Choke		**VW3A4552**	**VW3A68503**	**VW3A68504**
	Drive	ATV38	HU90N4, HD12N4	HC23N4X	
	Choke		**VW3A4553**	**VW3A68505**	
	Drive	ATV38	HD16N4, HD23N4	HC25N4X, HC28N4X	
	Choke		**VW3A4554**	**VW3A68506**	
	Drive	ATV38	HD25N4● to HD79N4●	HC31N4X, HC33N4X	
	Choke		**Integrated**	**VW3A68507**	

(1) The addition of a line choke is highly recommended

I/O extension and specific cards

Type of card (1)	I/O extension	Pump switching
Description	2 logic inputs 24 VDC 1 open collector logic output 24 VDC 1 analog output 0/20 mA 1 bipolar analog input ± 10 V	Control of an entire pumping or compression station
Reference	**VW3A58201**	**VW3A58210**

(1) "Controller Inside" **programmable card**: Please consult your Schneider Electric sales office.

Altivar 71

0.37 to 500 kW

Complex, high-power machines

Drives on heatsinks

Dimensions (in mm)	width x height x depth		
Size 2	: 130 x 230 x 175	/ **Size 3**	: 155 x 260 x 187
Size 4	: 175 x 295 x 187	/ **Size 5A**	: 210 x 295 x 213
Size 5B	: 230 x 400 x 213	/ **Size 6**	: 240 x 420 x 236
Size 7A	: 240 x 550 x 266	/ **Size 7B**	: 320 x 550 x 266
Size 8	: 320 x 630 x 290	/ **Size 9**	: 320 x 920 x 377
Size 10	: 360 x 1022 x 377	/ **Size 11**	: 340 x 1190 x 377
Size 12	: 440 x 1190 x 377	/ **Size 13**	: 595 x 1190 x 377
Size 14	: 890 x 1390 x 377	/ **Size 15**	: 1120 x 1390 x 377

Type of drive Supply voltage			**Single phase** 200…240 V (6)	**Three phase** 200…240 V (6)	**Three phase** 380…480 V
Drive	Output frequency		0…1000 Hz		
	Type of control	Asynchronous motor	Flux vector control with or without sensor, voltage/frequency ratio (2 or 5 points), ENA System		
		Synchronous motor	Vector control without speed feedback		
	Transient overtorque		220% of nominal motor torque for 2 seconds, 170% for 60 seconds		
Speed range			1…1000 in closed loop mode with encoder feedback, 1…100 in open loop mode		
Degree of protection			IP 21 for unprotected drives and IP 41 on the upper part		
Functions	Number of functions		> 150		
	Number of preset speeds		16		
	Number of I/O	Analog inputs	2…4		
		Logic inputs	6…20		
		Analog outputs	1…3		
		Logic outputs	0…8		
		Relay outputs	2…4		
		Safety input	1		
Dialogue			Remote graphic display terminal or PowerSuite software workshop (1)		
Communication (2)	Integrated		Modbus and CANopen		
	Available as an option		Ethernet TCP/IP, Modbus/Uni-Telway, Fipio, Modbus Plus, Profibus DP, DeviceNet, InterBus		
Cards (available as an option)			Encoder interface cards, I/O extension cards, “Controller Inside” programmable card		
Reduction of current harmonics			Integrated DC choke (3)		
EMC	Class A		Integrated filter		
	Class B		External filter available as an option		

Motor power	kW/HP	0.37/0.5	**ATV71H075M3**	S2	**ATV71H037M3**	S2	–	–
		0.75/1	**ATV71HU15M3**	S2	**ATV71H075M3**	S2	**ATV71H075N4** (6)	S2
		1.5/2	**ATV71HU22M3**	S3	**ATV71HU15M3**	S2	**ATV71HU15N4** (6)	S2
		2.2/3	**ATV71HU30M3**	S3	**ATV71HU22M3**	S3	**ATV71HU22N4** (6)	S2
		3/–	**ATV71HU40M3** (4)	S3	**ATV71HU30M3**	S3	**ATV71HU30N4** (6)	S3
		4/5	**ATV71HU55M3** (4)	S4	**ATV71HU40M3**	S3	**ATV71HU40N4** (6)	S3
		5.5/7.5	**ATV71HU75M3** (4)	S5A	**ATV71HU55M3**	S4	**ATV71HU55N4** (6)	S4
		7.5/10	–		**ATV71HU75M3**	S5A	**ATV71HU75N4** (6)	S4
		11/15	–		**ATV71HD11M3X** (5)	S5B	**ATV71HD11N4** (6)	S5A
		15/20	–		**ATV71HD15M3X** (5)	S5B	**ATV71HD15N4** (6)	S5B
		18.5/25	–		**ATV71HD18M3X** (5)	S6	**ATV71HD18N4** (6)	S5B
		22/30	–		**ATV71HD22M3X** (5)	S6	**ATV71HD22N4** (6)	S6
		30/40	–		**ATV71HD30M3X** (5)	S7B	**ATV71HD30N4** (6)	S7A
		37/50	–		**ASV71HD37M3X** (5)	S7B	**ATV71HD37N4** (6)	S7A
		45/60	–		**ASV71HD45M3X** (5)	S7B	**ATV71HD45N4** (6)	S8
		55/75	–		**ATV71HD55M3X** (5)	S9	**ATV71HD55N4** (6)	S8
		75/100	–		**ATV71HD75M3X** (5)	S10	**ATV71HD75N4** (6)	S8
		90/125	–		–		**ATV71HD90N4**	S9
		110/150	–		–		**ATV71HC11N4**	S10
		132/200	–		–		**ATV71HC13N4**	S11
		160/250	–		–		**ATV71HC16N4**	S12
		200/300	–		–		**ATV71HC20N4**	S13
		220/350	–		–		**ATV71HC25N4**	S13
		280/450	–		–		**ATV71HC28N4**	S13
		315/500	–		–		**ATV71HC31N4**	S14
		355/–	–		–		**ATV71HC40N4**	S14
		500/700	–		–		**ATV71HC50N4**	S15

(1) (2) PowerSuite software and communication protocols, see page 5/68

(3) For any additional requirements, optional chokes and passive filters, see page 5/64

(4) Must be used with a line choke, see page 5/65

(5) Drive supplied without EMC filter

(6) To order a reinforced version of the drive for specific environmental conditions, conforming to IEC 60721-3-3 class 3c2, add **S337** at the end of the reference.
Example: ATV71H075N4**S337**

I/O extension and specific cards

Type of card	I/O extension	
	Logic	Extended
Description	1 relay logic output (“C/O” contact) 4 x 24 VDC positive or negative logic input 2 x 24 VDC open collector positive or negative logic outputs 1 input for PTC probes	1 differential current analog input 0…20 mA 1 software-configurable voltage (0…10 VDC) or current (0…20 mA) analog input 2 software-configurable voltage (±10V, 0…10 VDC) or current (0…20 mA) analog inputs 1 relay logic output (“C/O” contact) 4 x 24 VDC positive or negative logic inputs 2 x 24 VDC open collector positive or negative logic outputs 1 input for PTC probes 1 frequency control input
Reference	**VW3A3201**	**VW3A3202**

Encoder interface cards

Type of card		Encoder interface with		
		Differential outputs (RS422)	Open collector outputs (NPN)	Push-pull outputs
Operating frequency		300 kHz		
References	5 V	**VW3A3401**	–	–
	12 V	–	**VW3A3403**	**VW3A3405**
	15 V	**VW3A3402**	**VW3A3404**	**VW3A3406**
	24 V	–	–	**VW3A3407**

“Controller Inside” programmable card

Type of card	Programmable “Controller Inside”
Description	10 logic inputs, 2 of which can be used for 2 counters or 4 of which can be used for 2 incremental encoders 2 analog inputs 6 logic outputs 2 analog outputs A master port for the CANopen bus A PC port for programming with the PS 1131 software workshop
Reference	**VW3A3501**

Complex, high-power machines
Dialogue accessories

Accessory	Remote graphic display terminal	Remote mounting kit (1)
Description	This display terminal is attached to the front of the drive. It includes the integrated 7-segment display terminal for drives supplied without a graphic display terminal.	A remote mounting kit for mounting on an enclosure door with IP 54 degree of protection. It includes: ■ All the mechanical fittings ■ Fixing accessories
References	**VW3A1101**	**VW3A1102**

(1) Use a VW3A1104R●● remote-mounting connection cable, to be ordered separately (please consult the “Soft starters and variable speed drives” catalogue)

Reduction of current harmonics
Optional DC chokes (1)

DC chokes are used to reduce current harmonics in order to comply with standard 61000-3-2 for drives in which the line current is more than 16 A and less than 75 A.

Type of drive Supply voltage	Three phase 200…240 V 50/60 Hz	 380…480 V 50/60 Hz
ATV71H037M3 / ATV71H075N4	**VW3A4501**	**VW3A4501**
ATV71HU15N4	–	**VW3A4502**
ATV71H075M3 / ATV71HU22N4, HU30N4	**VW3A4503**	**VW3A4503**
ATV71HU40N4	–	**VW3A4504**
ATV71HU15M3 / ATV71HU55N4	**VW3A4505**	**VW3A4505**
ATV71HU22M3 / ATV71HU75N4	**VW3A4506**	**VW3A4506**
ATV71HU30M3 / ATV71HD11N4	**VW3A4507**	**VW3A4507**
ATV71HU40M3, HU55M3 / ATV71HD15N4, HD18N4	**VW3A4508**	**VW3A4508**
ATV71HU75M3	**VW3A4509**	–
ATV71HD11M3X, HD15M3X / ATV71HD22N4…HD37N4	**VW3A4510**	**VW3A4510**
ATV71HD18M3X, HD22M3X / ATV71HD45N4…HD75N4	**VW3A4511**	**VW3A4511**
ATV71HD30M3X… HD45M3X	**VW3A4512**	–

(1) For ATV 71HD55M3X, HD75M3X and ATV 71HD90N4… HC50N4 drives, the choke is supplied as standard with the drive.

Reduction of current harmonics
AC line chokes

A line choke can be used to provide improved protection against overvoltages on the line supply and to reduce harmonic distortion of the current produced by the drive.

Type of drive Supply voltage	Three phase 200…240 V 50/60 Hz	 380…480 V 50/60 Hz
ATV71H037M3...H075M3 / ATV71H075N4, HU15N4	VW3A4551	VW3A4551
ATV71HU15M3...HU22M3 / ATV71HU22N4…HU40N4	VW3A4552	VW3A4552
ATV71HU30M3 / ATV71HU55N4, HU75N4	VW3A4553	VW3A4553
ATV71HU40M3 / ATV71HD11N4, HD15N4	VW3A4554	VW3A4554
ATV71HU75M3, HD11M3X / ATV71HD18N4, HD22N4	VW3A4555	VW3A4555
ATV71HD15M3X / ATV71HD30N4…HD55N4	VW3A4556	VW3A4556
ATV71HD18M3X…HD45M3X / ATV71HD75N4	VW3A4557	VW3A4557
ATV71HD90N4	–	VW3A4558
ATV71HC11N4	–	VW3A4559
ATV71HC13N4	–	VW3A4560
ATV71HC16N4	–	VW3A4561
ATV71HD55M3X / ATV71HC20N4	VW3A4562	VW3A4562
ATV71HD75M3X	VW3A4563	–
ATV71HC25N4 Motor P 220 kW	–	VW3A4562
ATV71HC25N4 Motor P 250 kW	–	VW3A4563
ATV71HC28N4 / ATV71HC31N4	–	VW3A4564
ATV71HC40N4 Motor P 355 kW	–	VW3A4565
ATV71HC40N4 Motor P 400 kW	–	VW3A4566
ATV71HC50N4	–	VW3A4567

Passive filters

A passive filter is used to reduce current harmonics with total harmonic distortion factors of less than 16% or 10%. These factors may be less than 10% or 5% if used with a DC choke.

Type of drive	Three phase 400 V 50/60 Hz		Three phase 460 V 50/60 Hz	
	THDI 16% (1)	THDI 10% (2)	THDI 16% (1)	THDI 10% (2)
ATV71H075N4 / ATV71HU15N4 / ATV71HU22N4	VW3A4601	VW3A4621	VW3A4 641	VW3A4 661
ATV71HU30N4	VW3A4602	VW3A4622	VW3A4 641	VW3A4 661
ATV71HU40N4	VW3A4602	VW3A4622	VW3A4 642	VW3A4 662
ATV71HU55N4	VW3A4603	VW3A4623	VW3A4 642	VW3A4 662
ATV71HU75N4	VW3A4603	VW3A4623	VW3A4 643	VW3A4 663
ATV71HD11N4	VW3A4604	VW3A4624	VW3A4 643	VW3A4 663
ATV71HD15N4	VW3A4605	VW3A4625	VW3A4 644	VW3A4 664
ATV71HD18N4 / ATV71HD22N4	VW3A4606	VW3A4626	VW3A4 645	VW3A4 665
ATV71HD30N4	VW3A4607	VW3A4627	VW3A4 646	VW3A4 666
ATV71HD37N4	VW3A4607	VW3A4627	VW3A4 647	VW3A4 667
ATV71HD45N4	VW3A4608	VW3A4628	VW3A4 647	VW3A4 668
ATV71HD55N4	VW3A4608	VW3A4628	VW3A4 648	VW3A4 668
ATV71 HD75N4	VW3A4609	VW3A4629	VW3A4 648	VW3A4 668
ATV71HD90N4	VW3A4609	VW3A4629	VW3A4 649	VW3A4 669
ATV71HC11N4	VW3A4610	VW3A4630	VW3A4 649	VW3A4 669
ATV71HC13N4	VW3A4611	VW3A4631	VW3A4 650	VW3A4 670
ATV71HC16N4	VW3A4612	VW3A4632	VW3A4 650	VW3A4 670
ATV71HC20N4 / ATV71HC25N4	VW3A4613	VW3A4633	VW3A4 651	VW3A4 671
ATV71HC25N4	VW3A4614	VW3A4634	VW3A4 652	VW3A4 672
ATV71HC28N4 / ATV71HC31N4 / ATV71HC40N4	VW3A4615	VW3A4635	VW3A4 653	VW3A4 673
ATV71HC40N4	VW3A4616	VW3A4636	VW3A4 654	VW3A4 674
ATV71HC50N4	VW3A4617	VW3A4637	VW3A4 655	VW3A4 675

(1) By adding a DC choke, we get: THD ≤ 10%

(2) By adding a DC choke, we get: THD ≤ 15%

These reduced current harmonics are obtained on condition that the THDu is < 20% and the RSCE > 66%.

Output filter options

Motor chokes

Above a certain motor cable length, it is advisable to insert a motor choke between the drive and the motor. This maximum length depends on the drive rating and the type of motor cable.

Type of drive		Max. motor cable length		Three phase	
		Shielded	Unshielded	200…240 V 50/60 Hz	380…480 V 50/60 Hz
ATV71H037M3…HU22M3		150	300	**VW3A5101**	–
ATV71HU30M3…HU75M3		200	260	**VW3A5102**	–
		300	300	**VW3A5103**	–
ATV71HD11M3X…HD22M3X		150	300	**VW3A5103**	–
ATV71HD30M3X… HD45M3X		150	300	**VW3A5 04**	–
ATV71HD55M3X, HD75M3X		150	300	**VW3A5105**	–
ATV71H075N4…HU40N4		75	90	–	**VW3A5101**
		85	95	–	**VW3A5102**
		160	200	–	**VW3A5103**
ATV71HU55N4…HD18N4		85	95	–	**VW3A5102**
		160	200	–	**VW3A5103**
		200	300	–	**VW3A5104**
ATV71HD22N4…HD30N4		140	170	–	**VW3A5103**
		150	300	–	**VW3A5104** (1)
ATV71HD37N4		97	166	–	**VW3A5103**
		200	300	–	**VW3A5104** (1)
ATV71HD45N4…HD75N4		150	300	–	**VW3A5104** (1)
ATV71HD90N4		200	300	–	**VW3A5104** (1)
ATV71HC11N4, HC13N4		150	250	–	**VW3A5105** (1)
ATV71HC16N4…HC20N4		250	300	–	**VW3A5106** (1)
ATV71HC25N4	Motor P 220 kW	250	300	–	**VW3A5106** (1)
	Motor P 250 kW	200	250	–	**VW3A5107** (1)
ATV71HC28N4, HC31N4		200	250	–	**VW3A5107** (1)
ATV71HC40N4	Motor P 355 kW	200	250	–	**VW3A5107** (1)
	Motor P 400 kW	250	300	–	**VW3A5108** (1)
ATV71HC50N4		250	300	–	**VW3A5108** (1)

(1) 3 single-phase chokes are included with the drive.

Sinus filters

Sinus filters allow Altivar 71 drives to operate with longer motor cables (up to 1000 m).

Type of drive	Three phase	
Supply voltage	200…240 V 50/60 Hz	380…480 V 50/60 Hz
ATV71H037M3...HU15M3 (1)	**VW3A5201**	–
ATV71HU22M3, HU30M3	**VW3A5202**	–
ATV71HU40M3... HU75M3	**VW3A5203**	–
ATV71HD11M3X, HD15M3X	**VW3A5204**	–
ATV71HD18M3X, HD22M3X	**VW3A5205**	–
ATV71HD30M3X... HD45M3X	**VW3A5206**	–
ATV71HD55M3X, HD75M3X	**VW3A5208**	–
ATV71H075N4...HU40N4 (1)	–	**VW3A5201**
ATV71HU55N4	–	**VW3A5202**
ATV71HU75N4...HD15N4	–	**VW3A5203**
ATV71HD18N4... HD30N4	–	**VW3A5204**
ATV71HD37N4, HD45N4	–	**VW3A5205**
ATV71HD55N4, HD75N4	–	**VW3A5206**
ATV71 HD90N4, HC11N4	–	**VW3A5207**
ATV71 HC13N4, HC16N4	–	**VW3A5208**
ATV71 HC20N4	–	**VW3A5209**
ATV71 HC25N4 Motor P 220 kW	–	**VW3A5209**
Motor P 250 kW	–	**VW3A5210**
ATV71 HC28N4, HC31N4	–	**VW3A5210**
ATV71 HC40N4 Motor P 355 kW	–	**VW3A5210**
Motor P 400 kW	–	**VW3A5211**
ATV71 HC50N4	–	**VW3A5211**

(1) For ATV71H037M3…HU15M3 and ATV71H075N4…HU22N4 drives, it is advisable to use a lower category of motor with a sinus filter.

Resistance braking units (integrated in ATV71 drives up to 160 kW)

ATV 71H●●●M3, ATV 71H●●●M3X and ATV71H075N4…HC16N4 drives have a built-in dynamic brake transistor.
The braking resistor enables the Altivar 71 drive to operate while braking to a standstill or during slowdown braking, by dissipating the braking energy.

Supply voltage	Three phase 380…480 V	
Type of drive	ATV71HC20N4…HC28N4	ATV71HC31N4…HC50N4
Continuous power/Max (kw)	200/420	400/750
Reference	VW3A7101	VW3A7102

Braking resistors

Drives		Braking resistor 40 s cycle	Braking resistor 200 s cycle
Supply voltage: 200…240 V 50/60 Hz			
References	ATV71H037M3, H075M3	VW3A7701	VW3A7801
	ATV71HU15M3, HU22M3	VW3A7702	VW3A7802
	ATV71HU30M3, HU40M3	VW3A7703	VW3A7803
	ATV71HU55M3, HU75M3	VW3A7704	VW3A7804
	ATV71HD11M3X	VW3A7705	VW3A7805
	ATV71HD15M3X	VW3A7706	VW3A7806
	ATV71HD18M3X, HD22M3X	VW3A7707	VW3A7807
	ATV71HD30M3X	VW3A7708	VW3A7808
	ATV71HD37M3X, HD45M3X	VW3A7709	VW3A7809
	ATV71HD55M3X	VW3A7713	VW3A7810
	ATV71HD75M3X	VW3A7714	–
Supply voltage: 380…480 V 50/60 Hz			
	ATV71H075N4…HU40N4	VW3A7701	VW3A7801
	ATV71HU55N4, HU75N4	VW3A7702	VW3A7802
	ATV71HD11N4, HD15N4	VW3A7703	VW3A7803
	ATV71HD18N4…HD30N	VW3A7704	VW3A7804
	ATV71HD37N4	VW3A7705	VW3A7805
	ATV71HD45N4…HD75N4	VW3A7707	VW3A7806
	ATV71HD90N4	VW3A7710	VW3A7811
	ATV71HC11N4, HC13N4	VW3A7711	VW3A7812
	ATV71HC16N4	VW3A7712	VW3A7813
	ATV71HC20N4	VW3A7715	VW3A7814
	ATV71HC25N4, HC28N4	VW3A7716	VW3A7815
	ATV71HC31N4, HC40N4	VW3A7717	VW3A7816
	ATV71HC50N4	VW3A7701	VW3A7817

The network braking unit 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

Network braking units

Line voltage		400 VAC	460 VAC
Continuous braking power (kW)	7	VW3A7 201	–
	13	VW3A7 202	–
	11	VW3A7 203	–
	–	–	VW3A7 231
	21.5	VW3A7 204	VW3A7 232
	26	VW3A7 205	VW3A7 233
	32	VW3A7 206	VW3A7 234
	38	VW3A7 207 / VW3A7 208	VW3A7 235 / VW3A7 236 / VW3A7 237 / VW3A7 238
	86	VW3A7 209	VW3A7 239
	120	VW3A7 210	VW3A7 240
	135	VW3A7 211	–
	200	VW3A7 212	–
	240	–	VW3A7 241

Dialogue and communication

PowerSuite software workshop

Multilingual configuration software		For PC	For Pocket PC
Configuration of drives and starters		**Altistart 48, Altivar** and **TeSys model U**	
Environment		Microsoft Windows ®	
Languages		English - French - German - Italian - Spanish	
References	PowerSuite CD-ROM (1)	**VW3A8104**	
	PowerSuite update CD-ROM	**VW3A8105**	
	Connection kit for serial port	**VW3A8106**	**VW3A8111**

(1) Contents: Software, technical documentation and the ABC configurator program

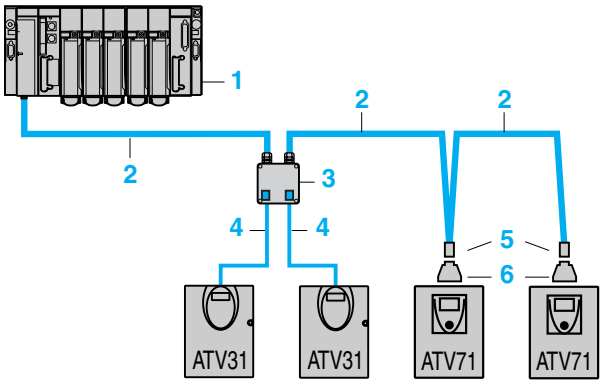
Accessories

Multilingual configuration software	Bluetooth® adaptor	
Description	Modbus - Bluetooth®	USB - Bluetooth® for PC
References	**VW3A8114** (1)	**VW3A8115**

(1) Can also be used to communicate between a Twido PLC and the TwidoSoft software workshop

CANopen communication bus: connection accessories

Drives		Altivar 31		Altivar 71		
Tap junction		**VW3CANTAP2**		–		
Cables	Description	2 RJ45 connectors				
	Cable length	0.3 m	1 m	50 m	100 m	300 m
References	CANopen	**VW3CANCARR03**	**VW3CANCARR1**	–	–	–
	CANopen LSZH	–	–	**TSXCANCA50**	**TSXCANCA100**	**TSXCANCA300**
	CANopen UL/IEC332-2	–	–	**TSXCANCB50**	**TSXCANCB100**	**TSXCANCB300**
	LSZH HD flexible CANopen	–	–	**TSXCANCD50**	**TSXCANCD100**	**TSXCANCD300**



1 PLC
2 CANopen trunk cable TSXCANC●●
3 CANopen tap junction VW3CANTAP2
4 CANopen drop cable VW3CANCARR●●
5 CANopen connector VW3CANKCDF180T
6 CANopen adaptor VW3CANA71

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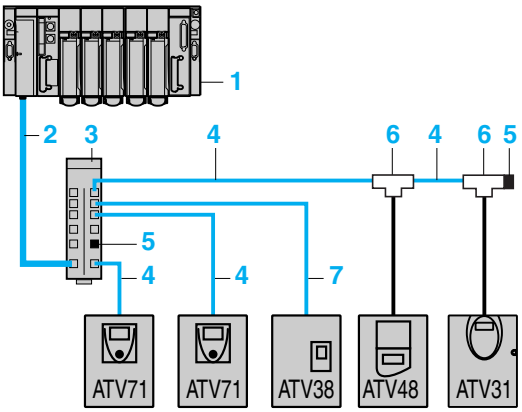
Other versions: **Please consult your Schneider Electric sales office.**

Modbus communication bus: connection accessories

Starters/drives			Altistart 48	Altivar 31	Altivar 71	Altivar 38
Splitter box	Description		10 RJ45 connectors and 1 screw terminal block			
	Reference		**LU9GC3**			
Line terminators	For RJ 45 connector		R = 120 Ω, C = 1 nF			
	Reference		**VW3A8306RC**			
	For screw terminals		R = 120 Ω, C = 1 nF			
	Reference		**VW3A8306DRC**			
T-junction boxes	With integrated cable	0.3 m	**VW3A8306TF03**			
		1 m	**VW3A8306TF10**			
Cables	Description		2 RJ45 connectors			1 SUB-D9 connector and 1 RJ 45 connector
	References	0.3 m	**VW3A8306R03**			–
		1 m	**VW3A8306R10**			**VW3A58306R10**
		3 m	**VW3A8306R30**			**VW3A58306R30**
RS 485 double shielded twisted pair cables	Description		1 RJ45 connector and one stripped end			
	Reference	3 m	**VW3A8306D30**			
	Description		Supplied without connector			
	References	100 m	**TSXCSA100**			
		200 m	**TSXCSA200**			
		500 m	**TSXCSA500**			



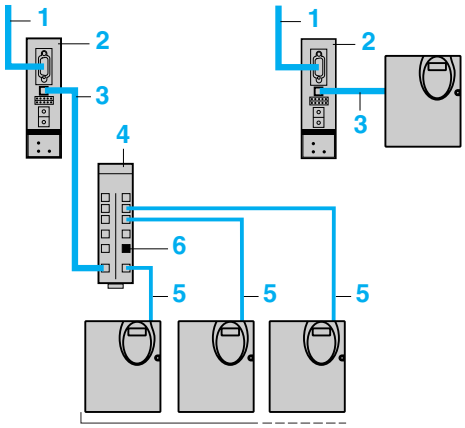
Connection via splitter boxes and RJ 45 connectors

1 PLC
2 Modbus cable depending on the type of PLC
3 Modbus splitter box LU9GC3
4 Modbus drop cables VW3A8306R●●
5 Line terminators VW3A8306RC
6 Modbus T-junction boxes VW3A8306TF●● (with cable)
7 Modbus drop cable VW3A58306R●●

Dialogue and communication

Communication modules

Starters/drives			Altistart 48/Altivar 31
Ethernet/Modbus	**References**	**Bridge**	**174CEV30020**
		Cable	VW3A8306D30
DeviceNet/Modbus	**References**	**Gateway**	**LUFP9**
		0.3 m cable	VW3A8306R03
		1 m cable	VW3A8306R10
		3 m cable	VW3A8306R30
Fipio/Modbus	**References**	**Gateway**	**LUFP1**
		0.3 m cable	VW3A8306R03
		1 m cable	VW3A8306R10
		3 m cable	VW3A8306R30
Profibus DP/Modbus	Parameter setting		Standard configurator
	References	**Gateway**	**LA9P307**
		1 m cable	VW3P07306R10
	Parameter setting		ABC configurator program
	References	**Gateway**	**LUFP7**
		0.3 m cable	VW3A8306R03
		1 m cable	VW3A8306R10
		3 m cable	VW3A8306R30



1 To network
2 Communication modules
3 PLC cables VW3A8 306 R●●,
VW3 P07 306 R10
4 Modbus splitter box LU9 GC3
5 Modbus drop cables VW3A8 306 R●●
6 Line terminator VW3A8 306 RC

Other versions: **Please consult your Schneider Electric sales office.**

Communication cards and modules

Drives		Altivar 38	Altivar 71
AS-Interface	Max. no. of drives controlled	31	–
	Transmission speed	166 Kbps	
	Reference	**VW3A58305**	
CANopen	Max. no. of drives controlled	63	Integrated in ATV71 drive
	Transmission speed	125/250/500/1000 Kbps	
	Reference	**VW3A58308**	
DeviceNet	Max. no. of drives controlled	63	63
	Transmission speed	125/250/500 Kbps	125/250/500 Kbps
	Reference	**VW3A58309**	**VW3A3309**
Ethernet	Max. no. of drives controlled	–	–
	Transmission speed	10/100 Mbps	10/100 Mbps
	Reference	**VW3A58310**	**VW3A3310**
Fipio	Max. no. of drives controlled	62	62
	Transmission speed	1 Mbps	1 Mbps
	Reference	**VW3A58311 or VW3A58301**	**VW3A3311**
InterBus	Max. no. of drives controlled	64	64
	Transmission speed	1 Mbps	1 Mbps
	Reference	**VW3A58304E**	**VW3A3304**
METASYS N2	Max. no. of drives controlled	255	–
	Transmission speed	–	
	Reference	**VW3A58354U**	
Modbus	Max. no. of drives controlled	27	31
	Transmission speed	9600...19200 Kbps	4800...9600 - 19 200 - 38 400 bps
	Reference	**Integrated in drive**	**Integrated in drive**
Modbus Plus	Max. no. of drives controlled	64	64
	Transmission speed	1 Mbps	1 Mbps
	Reference	**VW3A58302**	**VW3A3302**
Profibus DP	Max. no. of drives controlled	126	126
	Transmission speed	9600 bps...12 Mbps	9600 bps...12 Mbps
	Reference	**VW3A58307**	**VW3A3307**
Modbus/Uni-Telway	Max. no. of drives controlled	Uni-Telway: 27 Modbus: 31	Uni-Telway: 27 Modbus: 31
	Transmission speed	4800...19200 Kbps	4800...19200 Kbps
	Reference	**VW3A58303**	**VW3A3303**

For connection accessories, please consult the “Soft starters and variable speed drives” catalogue.

Notes

Notes

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