

# ATV900 Drive Solutions



## Product at a glance

Altivar Process is the new comprehensive range of variable speed drives from Schneider Electric covering the majority of industrial applications.

- ATV900: drives focused on exceptional motor control and connectivity to maximize process productivity
- Type 1, 12 and 3R enclosures are available in both wall and floor mounting configurations.

# High Performance Drive Solutions

The Process Family of Drives offers maximized application control and optimization

The Altivar Process family offers a wide array of solutions to fit your application needs. From enclosed low harmonic solutions utilizing three level active rectification to general purpose drives, your requirements are met.

## Altivar 600 Solution Attributes

- General Purpose Drive
- Pumping and Fluid Transfer
- Air Compression
- Fluid Movement Designed Internal Functions

## Altivar 900 Solution Attributes

- High Performance Drive
- Designed for moving mass, mechanical movement
- Braking / Regen Functionality
- Hoisting, Artificial Lift Specific Functions

## Current Altivar Process 900 Offer Range



### Altivar 930 Drive Solutions

- HP Range: 1-500HP 480V
- HP Range: 1-100HP 240V
- Type 1 Solutions

➤ FOR MORE INFORMATION:  
See ATV900 eCatalog



### Altivar 960 System Solutions

- HP Range: 1-900HP 480V
- HP Range: 1-60HP 240V
- Type 1, 12, Type 3R Solutions

➤ FOR MORE INFORMATION:  
See ATV960 Brochure 8800BR1601



### Altivar 980 Regenerative Drive Solutions

- HP Range: 150-500HP 480V
- Type 1, 12 Solutions

➤ FOR MORE INFORMATION:  
See ATV980 Handbook NHA37117.00

# Altivar Process

Provides the efficiency you deserve

## Process efficiency

### Motor performance and connectivity

- Excellent motor performance on induction or permanent magnet motors
- Dual port Ethernet offers maximum services such as connection to the control room and process monitoring
- Network service helps ensure operation continuity even in case of connection breakdown

### Complete control of your applications

- Maximize your application performance by using Drive-to-Drive communication: total control of any kind of coupling in master/slave applications
- Total management and flexibility of speed and torque on rigid and elastic coupling

## Real-time intelligence

### Web server and services via Ethernet

- Embedded web server interface based on the Ethernet network gives you process monitoring with your daily working tools
- Local and remote access to energy use and customized dashboards means your energy is visible anywhere, any time, on PC, tablet, or smartphone
- Web server and data logging help reduce downtime through fast troubleshooting and preventive maintenance



- From basic processes to advanced custom solutions
- Wall-mounting drives from 1 HP to 500 HP
- Drive Systems from 150 HP to 900 HP

# Selection Guide

## UL Type 1 variable speed drives for asynchronous and synchronous motors



Market segments		<ul style="list-style-type: none"> <li>• Oil &amp; gas</li> <li>• Mining, minerals &amp; metals</li> <li>• Food &amp; beverage</li> <li>• Water &amp; wastewater</li> </ul>			
Mounting type		Wall-mounting			
Degree of protection		IP 21/UL Type 1	IP 21/UL Type 1 without braking unit		
50...60 Hz line supply <sup>(1)</sup>	Three-phase: 200...240 V (kW/HP)	0.75 ...45/1...60	55...75/75...100		
	Three-phase: 380...480 V (kW/HP)	0.75...90/1...125	55...160/75...250		
Drive	Output frequency	0.1...500 Hz			
	Control type Asynchronous motor	Standard constant torque, optimized torque mode			
	Control type Synchronous motor	PM (Permanent Magnet) motor			
Functions	Advanced functions	<ul style="list-style-type: none"> <li>• Performance on motor control with an overload torque up to 150% Tn in an open or closed loop</li> <li>• Asynchronous, synchronous, switch reluctance: all efficiency classes, brand independent, permanent magnet motors, torque motors, conical sliding rotor, reluctance motor</li> <li>• Integrated EtherNet/IP and Modbus TCP dual port, cybersecurity (Achilles Level 2)</li> <li>• Smart integration in PlantStruxure and Foxboro Evo process automation systems</li> <li>• Optimized energy efficiency, detection of energy consumption drift of the installation</li> <li>• Adaptation to the process by dedicated functions with modular design</li> <li>• Embedded safety functions STO SIL3</li> <li>• Master/slave and load sharing with drive-to-drive capability:                             <ul style="list-style-type: none"> <li>• Torque sharing on rigid coupling</li> <li>• Torque sharing on elastic coupling</li> </ul> </li> <li>• Contextual access to technical documentation through dynamic QR code</li> <li>• Continuous and historical real-time measurements with customizable dashboards</li> <li>• Predictive maintenance (e.g.: temperatures with PT100/1000 probe, fan monitoring, etc.)</li> </ul>			
		Integrated safety function	1: STO (Safe Torque Off) SIL3		
		Number of preset speeds	16		
Number of integrated I/O	Analog inputs	3: Configurable as voltage (0...±10 V) or current (0-20 mA/4-20 mA), including 2 for probes (PTC, PT100, PT1000, or KTY84)			
	Digital inputs	8: Voltage 24 V c (positive or negative logic)			
	Digital output	1: Assignable			
	Analog outputs	2: Configurable as voltage (0...10 V) or current (0-20 mA)			
	Relay outputs	3: 1 with NO/NC contacts and 2 with NO contacts			
	Safety function inputs	2: For safety function STO			
I/O extension modules (optional)	Analog inputs	2 differential analog inputs configurable via software as current (0-20 mA/ 4-20 mA), or for PTC, PT100 or PT1000, 2 or 3-wire			
	Digital inputs	6: Voltage 24 V c (positive or negative logic)			
	Digital outputs	2: Assignable			
Relay output module (optional)	Relay outputs	3: NO contacts			
Communication	Integrated	EtherNet/IP and Modbus/TCP dual port, Modbus serial link			
	Option modules	PROFINET, CANopen RJ45 Daisy Chain, Sub-D, and screw terminals, Profibus DP V1, EtherCAT, and DeviceNet			
Configuration and runtime tools		Graphic display terminal, embedded web server, DTM (Device Type Manager), SoMove software			
Standards and certifications		Open Drives UL508C, Drive Systems UL508A, EN/IEC 61800-3, EN/IEC 61800-3 environment 1 category C2, EN/IEC 61800-3 environment 2 category C3, EN/IEC 61800-5-1, IEC 61000-3-12, IEC 60721-3, IEC 61508, IEC 13849-1, REACH			
References		ATV930*****	ATV930*****C		

(1) In "Normal duty" power values are given for applications requiring a slight overload (up to 120%).  
For power values in "Heavy duty" applications requiring a significant overload (up to 150%).

# Web server

## Product overview

The Web server can be accessed:

- For a drive not connected to an Ethernet network
  - Via an Ethernet cable or the Schneider Electric WiFi dongle (the drive then appears as a network device)
- For a drive connected to an Ethernet network
  - From any point on the network by entering the drive IP address

The Web server is used for:

- Commissioning the drive (setting configuration parameters and enabling the main functions)
- Monitoring energy and process data, as well as drive and motor data
- Diagnostics (drive status, file transfer, detected error and warning logs)

## Description

The Web server is structured around 5 tabs.

**“My dashboard” tab:**

- Configurable using a wide choice of widgets; groups all the information and dashboards selected by the user on one page

**“Display” tab:**

- Monitors energy indicators, efficiency, and performance
- Displays process data
- Monitors drive parameters and status
- Shows the I/O state and assignment

**“Diagnostics” tab:**

- Drive status
- Time and date-stamped warning and detected error logs
- Network diagnostics
- Access to drive self-tests

**“Drive” tab:**

- Access to the main drive adjustment parameters with screens help

**“Setup” tab:**

- Network configuration
- Access management
- Transferring and retrieving drive configurations
- Exporting data acquisition files and logs
- Customizing pages (colors, logos, etc.)

**Other characteristics:**

- Ease of connection via the RJ45 port or WiFi connection
- Password-protected authentication (modifiable password; access rights can be configured by administrator)
- No downloads or installation necessary
- Web server can be disabled
- Works in a similar way on PCs, iPhones, iPads, Android systems, and the following major web browsers:
  - Internet Explorer® (version 8 or higher)
  - Google Chrome® (version 11 or higher)
  - Mozilla Firefox® (version 4 or higher)
  - Safari® (version 5.1.7 or higher)



Login screen



Customizable widgets



Drive adjustment parameters



Energy dashboard

# Application Functions

## Introduction

The following tables show the combinations of functions and applications in order to guide your selection. The functions in these tables relate to the following applications:

### Mining, Mineral and Metal (MMM):

- Long belt conveyor
- Long-distance heavy conveying
- Crusher
- Grinding mills
- Vibro feeders

### Hoisting:

- Special cranes (Gantry cranes - Grab cranes)
- Ship loaders

### Food & Beverage:

- Mixers
- Centrifuges machines
- Hot rotary dryers

### Oil & Gas:

- PCP (Progressive Cavity Pump)
- ESP (Electrically Submersible Pump)
- Rod pump

Each application has its own special features, and the combinations listed here are not mandatory or exhaustive. Some functions are designed specifically for a given application. In this case, the application is identified by a tab in the margin on the relevant programming pages.

## Combinations of Functions and Applications

Application functions							
Function	Metals Minerals & Mining		Oil & Gas			Food & Beverage	Process
	Conveyor	Hoisting	Sucker Rod Pump	PCP control	ESP control	High inertia	
ENA system			X				
Brake sequence	X	X					
Boost for conical motors	X	X					
Limit switch management	X						
Torque regulation	X						X
Positioning / Autostop on distance	X						
Positioning value for PLC	X	X					
Load sharing	X	X				X	X
Master/Slave management	X	X				X	X
Master/Slave on rigid coupling	X	X				X	
Master/Slave on elastic coupling	X	X					
Backspin sequence for PCP pumps				X	X		
Backspin control for PCP pumps				X	X		
Braking balance		X				X	X
DC Bus charge option						X	X

Application functions							
Function	Metals Minerals & Mining		Oil & Gas			Food & Beverage	Process
	Conveyor	Hoisting	Sucker Rod Pump	PCP control	ESP control	High inertia	
High-speed hoisting		X					
Commutation high speed		X					
External error	X	X	X	X	X	X	
Catch on the fly	X		X	X	X	X	
Motor Overspeed		X		X	X		X
Torque limitation	X						
Encoder check	X	X					X
Reverse disable			X	X	X	X	X
Thermal monitoring of the braking resistor	X	X				X	
Under load detection	X			X	X		
Fast stop	X	X				X	
Dynamic load detection	X						
Mechanical resonance rejection		X				X	X
Stall monitoring	X					X	X
Load slipping monitoring		X					
Rope slack and anti rope slack detection		X					
Motor switching	X	X					
Configuration switching	X	X					
Parameter switching	X						
Current threshold function	X	X	X	X	X	X	X
Torque threshold reached	X	X				X	X
Frequency threshold reached	X	X	X	X	X	X	X
Thermal state reached	X	X	X	X	X	X	X
Automatic fault reset	X						
High speed reached		X		X	X		
Surge voltage on motor				X	X		
Parameter customization	X		X	X	X		X
Pulse input configuration	X	X				X	
Dual rating			X				X



# Drive selection guide 200...240 V

Three-phase supply voltage: 200...240 V 50/60 Hz



ATV930D11M3



ATV930D15M3



ATV930D30M3

IP 21/UL Type 1 drives - Wall mounting <sup>(1)</sup>										
Motor			Line supply <sup>(7)</sup>			Altivar Process				
Power indicated on rating plate <sup>(2)</sup>			Line current <sup>(3)</sup>		Apparent power	Maximum continuous current <sup>(2)</sup>	Maximum transient current for 60 s	Reference <sup>(1)</sup>	Frame Size	Weight
ND:	Normal duty <sup>(4)</sup>		200 V	240 V						
HD:	Heavy duty <sup>(5)</sup>		A	A	kVA	A	A			kg/lb
Three-phase supply voltage: 200...240 V 50/60 Hz										
ND	0.75	1	3	2.6	1.1	4.6	5.5	ATV930U07M3	1	4/9
HD	0.37	0.5	1.7	1.5	0.6	3.3	5			
ND	1.5	2	5.9	5	2.1	8	9.6	ATV930U15M3	1	4/9
HD	0.75	1	3.3	3	1.2	4.6	6.9			
ND	2.2	3	8.4	7.2	3	11.2	13.4	ATV930U22M3	1	5/10
HD	1.5	2	6	5.3	2.2	8	12			
ND	3	4	11.5	9.9	4.1	13.7	16.4	ATV930U30M3	1	5/10
HD	2.2	3	8.7	7.6	3.2	11.2	16.8			
ND	4	5	15.1	12.9	5.4	18.7	22.4	ATV930U40M3	1	5/10
HD	3	4	11.7	10.2	4.2	13.7	20.6			
ND	5.5	7.5	20.2	17.1	7.1	25.4	30.5	ATV930U55M3	2	8/17
HD	4	5	15.1	13	5.4	18.7	28.1			
ND	7.5	10	27.1	22.6	9.4	32.7	39.2	ATV930U75M3	3	14/30
HD	5.5	7.5	20.1	16.9	7	25.4	38.1			
ND	11	15	39.3	32.9	13.7	46.8	56.2	ATV930D11M3	3	14/30
HD	7.5	10	27.2	23.1	9.6	32.7	49.1			
ND	15	20	52.6	45.5	18.9	63.4	76.1	ATV930D15M3	4	27/60
HD	11	15	40.1	34.3	14.3	46.8	70.2			
ND	18.5	25	66.7	54.5	22.7	78.4	94.1	ATV930D18M3	4	27/60
HD	15	20	53.1	44.9	18.7	63.4	95.1			
ND	22	30	76.0	64.3	26.7	92.6	111.1	ATV930D22M3	4	27/60
HD	18.5	25	64.8	54.5	22.7	78.4	117.6			
ND	30	40	104.7	88.6	36.8	123	147.6	ATV930D30M3	5	58/127
HD	22	30	78.3	67.1	27.9	92.6	138.9			
ND	37	50	128.0	107.8	44.8	149	178.8	ATV930D37M3	5	58/127
HD	30	40	104.7	88.6	36.8	123	184.5			

IP 21/UL Type 1 drives without braking unit - Wall mounting <sup>(1)</sup>										
Motor			Line supply <sup>(7)</sup>			Altivar Process				
Power indicated on rating plate <sup>(2)</sup>			Line current <sup>(3)</sup>		Apparent power	Maximum continuous current <sup>(2)</sup>	Maximum transient current for 60 s	Reference <sup>(1)</sup>	Frame Size	Weight
ND:	Normal duty <sup>(4)</sup>		200 V	240 V						
HD:	Heavy duty <sup>(5)</sup>		A	A	kVA	A	A			kg/lb
Three-phase supply voltage: 200...240 V 50/60 Hz										
ND	30	40	104.7	88.6	36.8	123	147.6	ATV930D30M3C	5	57/125
HD	22	30	78.3	67.1	27.9	92.6	138.9			
ND	37	50	128.0	107.6	44.8	149	178.8	ATV930D37M3C	5	57/125
HD	30	40	104.7	88.6	36.8	123	184.5			
ND	45	60	155.1	130.4	54.2	175	211.2	ATV930D45M3C	5	57/125
HD	37	50	128.5	108.5	45.1	149	223.5			
ND	55	75	189	161	61.1	211	253.2	ATV930D55M3C	6	82/181
HD	45	60	156	134	50	176	264			
ND	75	100	256	215	83.7	282	338.4	ATV930D75M3C	6	82/181
HD	55	75	189	161	61.1	211	316.5			

(1) Altivar Process ATV930...M3 drives have been designed without an EMC filter. An additional filter can be added to help meet more stringent requirements and reduce electromagnetic emissions.

(2) These values are given for a nominal switching frequency of 4 kHz up to ATV930D22M3 or 2.5 kHz for ATV930D30M3...D45M3 and ATV930D30M3C...D75M3C, for use in continuous operation. The switching frequency is adjustable. Above 2.5 or 4 kHz (depending on the rating), the drive will automatically reduce the switching frequency in the event of an excessive temperature rise. For continuous operation above the nominal switching frequency, derate the nominal drive current (see derating curves on our website [www.schneider-electric.com](http://www.schneider-electric.com)).

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

(4) Values given for applications requiring a slight overload (up to 120%).

(5) Values given for applications requiring a significant overload (up to 150%).

(7) For Short Circuit Current Rating (SCCR) information, see document number NHA61583, Annex to the Getting Started with Altivar Process ATV930.

Note: Consult the summary tables of possible drive, option, and accessory combinations as outlined in the Process Manual.



# Drive selection guide 380...480 V, 380...440 V



PF-151205

ATV930C11N4C

Three-phase supply voltage: 380...480 V, 380...440 V 50/60 Hz

UL Type 1 drives with category C3 integrated EMC filter without braking unit - Wall mounting										
Motor			Line supply <sup>(6)</sup>			Altivar Process				
Power indicated on rating plate <sup>(1)</sup>			Line current <sup>(2)</sup>		Apparent power	Maximum continuous current <sup>(1)</sup>	Maximum transient current for 60 s	Reference	Frame Size	Weight
ND:	Normal duty <sup>(3)</sup>		380 V	480 V	380 V					
HD:	Heavy duty <sup>(4)</sup>									
	kW	HP	A	A	kVA	A	A			kg/lb
Three-phase supply voltage: 380...480 V 50/60 Hz <sup>(3)</sup>										
ND	55	75	97.2	84.2	70.0	106	127.2	ATV930D55N4C	5	57/125
HD	45	60	81.4	71.8	59.7	88	132			
ND	75	100	131.3	112.7	93.7	145	174.0	ATV930D75N4C	5	58/128
HD	55	75	98.9	86.9	72.2	106	159			
ND	90	125	156.2	135.8	112.9	173	207.6	ATV930D90N4C	5	59/129
HD	75	100	134.3	118.1	98.2	145	217.5			
ND	110	150	201	165	121.8	211	253	ATV930C11N4C	6	82/181
HD	90	125	170	143	102.6	173	259.5			
ND	132	200	237	213	161.4	250	300	ATV930C13N4C	6	82/181
HD	110	150	201	165	121.8	211	270			
ND	160	250	284	262	201.3	302	362	ATV930C16N4C	6	82/181
HD	132	200	237	213	161.4	250	360			
ND	220	350	397	324	247	427	512	ATV930C22N4C <sup>(5)</sup>	7A	172/319
HD	160	250	296	246	187	302	453			
ND	250	400	451	366	279	481	577	ATV930C25N4C <sup>(5)</sup>	7A	203/448
HD	200	300	365	301	229	387	581			
ND	315	500	569	461	351	616	739	ATV930C31N4C <sup>(5)</sup>	7B	203/448
HD	250	400	457	375	286	481	722			

(1) These values are given for a nominal switching frequency of 2.5 kHz for use in continuous operation. The switching frequency is adjustable for all ratings. Above 2.5 kHz, the drive will automatically reduce the switching frequency in the event of an excessive temperature rise. For continuous operation above the nominal switching frequency, derate the nominal drive current (see derating curves on our website [www.schneider-electric.com](http://www.schneider-electric.com)).

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

(3) Values given for applications requiring a slight overload (up to 120%).

(4) Values given for applications requiring a significant overload (up to 150%).  
 (5) Product supplied as IP 00 for mounting in an enclosure. For IP 21/UL Type 1 wall mounting, a conformity kit should be ordered separately.

(6) For Short Circuit Current Rating (SCCR) information, see document number NHA6158301, Annex to the Getting Started with Altivar Process ATV930.

Note: Consult the summary tables of possible drive, option, and accessory combinations

# Drive selection guide 380...480 V

Three-phase supply voltage: 380...480 V 50/60 Hz

IP 21/UL Type 1 drives with category C2 or C3 integrated EMC filter - Wall mounting <sup>(1)</sup>

Motor		Line supply <sup>(6)</sup>				Altivar Process				
Power indicated on rating plate <sup>(2)</sup>		Line current <sup>(3)</sup>		Apparent power	Maximum continuous current <sup>(2)</sup>	Maximum transient current for 60 s	Reference	Frame Size	Weight	
ND:	Normal duty <sup>(4)</sup>	380 V	480 V							380 V
HD:	Heavy duty <sup>(5)</sup>									
	kW	HP	A	A	kVA	A	A		kg/lb	
Three-phase supply voltage: 380...480 V 50/60 Hz <sup>(4)</sup>										
ND	0.75	1	1.5	1.3	1.1	2.2	2.6	ATV930U07N4	1	5/10
HD	0.37	0.5	0.9	0.8	0.7	1.5	2.3			
ND	1.5	2	3	2.6	2.2	4	4.8	ATV930U15N4	1	5/10
HD	0.75	1	1.7	1.5	1.2	2.2	3.3			
ND	2.2	3	4.3	3.8	3.2	5.6	6.7	ATV930U22N4	1	5/10
HD	1.5	2	3.1	2.9	2.4	4	6			
ND	3	4	5.8	5.1	4.2	7.2	8.6	ATV930U30N4	1	5/10
HD	2.2	3	4.5	4	3.3	5.6	8.4			
ND	4	5	7.6	6.7	5.6	9.3	11.2	ATV930U40N4	1	5/10
HD	3	4	6	5.4	4.5	7.2	10.8			
ND	5.5	7.5	10.4	9.1	7.6	12.7	15.2	ATV930U55N4	1	5/10
HD	4	5	8	7.2	6.0	9.3	14			
ND	7.5	10	13.8	11.9	9.9	16.5	19.8	ATV930U75N4	2	8/17
HD	5.5	7.5	10.5	9.2	7.6	12.7	19.1			
ND	11	15	19.8	17	14.1	23.5	28.2	ATV930D11N4	2	8/17
HD	7.5	10	14.1	12.5	10.4	16.5	24.8			
ND	15	20	27	23.3	19.4	31.7	38	ATV930D15N4	3	14/30
HD	11	15	20.6	18.1	15.0	23.5	35.3			
ND	18.5	25	33.4	28.9	24	39.2	47	ATV930D18N4	3	14/31
HD	15	20	27.7	24.4	20.3	31.7	47.6			
ND	22	30	39.6	34.4	28.6	46.3	55.6	ATV930D22N4	3	14/32
HD	18.5	25	34.1	29.9	24.9	39.2	58.8			
ND	30	40	53.3	45.9	38.2	61.5	73.8	ATV930D30N4	4	28/62
HD	22	30	40.5	35.8	29.8	46.3	69.5			
ND	37	50	66.2	57.3	47.6	74.5	89.4	ATV930D37N4	4	28/62
HD	30	40	54.8	48.3	40.2	61.5	92.3			
ND	45	60	79.8	69.1	57.4	88	105.6	ATV930D45N4	4	29/63
HD	37	50	67.1	59.0	49.1	74.5	111.8			
ND	55	75	97.2	84.2	70	106	127.2	ATV930D55N4	5	58/127
HD	45	60	81.4	71.8	59.7	88	132			
ND	75	100	131.3	112.7	93.7	145	174	ATV930D75N4	5	59/126
HD	55	75	98.9	86.9	72.2	106	159			
ND	90	125	156.2	135.8	112.9	173	207.6	ATV930D90N4	5	60/131
HD	75	100	134.3	118.1	98.2	145	217.5			
ND	220	350	397	324	247	427	512	ATV930C22N4 <sup>(6)</sup>	7A	172/380
HD	160	250	296	246	187	302	453			

(1) Category C2 EMC filter for ATV930U07N4...D45N4. Category C3 EMC filter above ATV930D45N4.

(2) These values are given for an adjustable nominal switching frequency of 4 kHz for ATV930U07N4...ATV930D45N4 or 2.5 kHz for ATV930D55N4...D90N4, for use in continuous operation. Above 2.5 or 4 kHz (depending on the rating), the drive will automatically reduce the switching frequency in the event of an excessive temperature rise. For continuous operation above the nominal switching frequency, derate the nominal drive current (see derating curves on our website [www.schneider-electric.com](http://www.schneider-electric.com)).

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

(4) Values given for applications requiring a slight overload (up to 120%).

(5) Values given for applications requiring a significant overload (up to 150%).

(6) Product supplied as IP 00 for mounting in an enclosure. For IP 21/UL Type 1 wall mounting, a conformity kit should be ordered separately (see page 608529).

Note: Consult the summary tables of possible drive, option, and accessory combinations as outlined in the Process Manual Global Change.

### Dimensions

Frame Size	W x H x D (inches)
1	5.67 x 13.78 x 8.11
2	6.73 x 16.10 x 9.29
3	8.31 x 21.49 x 9.25
4	8.90 x 26.50 x 10.79
5	11.42 x 36.30 x 12.81
6	12.60 x 33.54 x 15.47
6 (with conduit box)	12.60 x 45.55 x 15.47
7A	17.32 x 46.85 x 14.84
7B	23.54 x 46.85 x 14.84



ATV930D15N4



ATV930D30N4



ATV930D55N4

# Accessory selection guide

Table showing possible combinations of options for ATV930\*\*\*M3, ATV930\*\*\*N4 and ATV950\*\*\*N4 drives

Motor		Drive	Accessories	
kW	HP		Flange-mounting kit	Kit for IP 21 / UL Type 1 conformity
Three-phase supply voltage: 200...240 V 50/60 Hz - IP 21/UL Type 1				
0.75	1	ATV930U07M3	NSYPTDS1	–
1.5	2	ATV930U15M3	NSYPTDS1	–
2.2	3	ATV930U22M3	NSYPTDS1	–
3	4	ATV930U30M3	NSYPTDS1	–
4	5	ATV930U40M3	NSYPTDS1	–
5.5	7.5	ATV930U55M3	NSYPTDS2	–
7.5	10	ATV930U75M3	NSYPTDS3	–
11	15	ATV930D11M3	NSYPTDS3	–
15	20	ATV930D15M3	NSYPTDS4	–
18.5	25	ATV930D18M3	NSYPTDS4	–
22	30	ATV930D22M3	NSYPTDS4	–
30	40	ATV930D30M3	NSYPTDS5	–
37	50	ATV930D37M3	NSYPTDS5	–
45	60	ATV930D45M3	NSYPTDS5	–

Three-phase supply voltage: 200...240 V 50/60 Hz - IP 21/UL Type 1 without braking unit				
45	60	ATV930D30M3C	NSYPTDS5	–
45	60	ATV930D37M3C	NSYPTDS5	–
45	60	ATV930D45M3C	NSYPTDS5	–
55	75	ATV930D55M3C	–	VW3A9704
75	100	ATV930D75M3C	–	VW3A9704

Three-phase supply voltage: 380...480 V 50/60 Hz - IP 21/UL Type 1				
0.75	1	ATV930U07N4	NSYPTDS1	–
1.5	2	ATV930U15N4	NSYPTDS1	–
2.2	3	ATV930U22N4	NSYPTDS1	–
3	4	ATV930U30N4	NSYPTDS1	–
4	5	ATV930U40N4	NSYPTDS1	–
5.5	7.5	ATV930U55N4	NSYPTDS1	–
7.5	10	ATV930U75N4	NSYPTDS2	–
11	15	ATV930D11N4	NSYPTDS2	–
15	20	ATV930D15N4	NSYPTDS3	–
18.5	25	ATV930D18N4	NSYPTDS3	–
22	30	ATV930D22N4	NSYPTDS3	–
30	40	ATV930D30N4	NSYPTDS4	–
37	50	ATV930D37N4	NSYPTDS4	–
45	60	ATV930D45N4	NSYPTDS4	–
55	75	ATV930D55N4	NSYPTDS5	–
75	100	ATV930D75N4	NSYPTDS5	–
90	125	ATV930D90N4	NSYPTDS5	–

Three-phase supply voltage: 380...480 V 50/60 Hz - IP 21/UL Type 1 without braking unit				
55	75	ATV930D55N4C	NSYPTDS5	–
75	100	ATV930D75N4C	NSYPTDS5	–
90	125	ATV930D90N4C	NSYPTDS5	–
110	150	ATV930C11N4C	–	VW3A9704
132	200	ATV930C13N4C	–	VW3A9704
160	250	ATV930C16N4C	–	VW3A9704

(1) When used with ATV950U07N4/N4E...D90N4/N4E drives, the filter must be mounted in a separate enclosure to maintain IP 55 protection for the installation.

# Possible options

EMC filters	IP 21 kit for EMC filter	dv/dt filters	IP 21 kit for dv/dt filter
VW3A4701	VW3A47901	VW3A5301	VW3A53902
VW3A4701	VW3A47901	VW3A5302	VW3A53902
VW3A4702	VW3A47902	VW3A5302	VW3A53902
VW3A4702	VW3A47902	VW3A5302	VW3A53902
VW3A4703	VW3A47903	VW3A5303	VW3A53902
VW3A4703	VW3A47903	VW3A5304	VW3A53903
VW3A4703	VW3A47903	VW3A5304	VW3A53903
VW3A4704	VW3A47904	VW3A5304	VW3A53903
VW3A4705	VW3A47905	VW3A5305	VW3A53905
VW3A4706	VW3A47906	VW3A5305	VW3A53905
VW3A4706	VW3A47906	VW3A5305	VW3A53905
VW3A4707	VW3A47907	VW3A5306	–
VW3A4707	VW3A47907	VW3A5306	–
VW3A4708	VW3A47908	VW3A5306	–
VW3A4707	VW3A47907	VW3A5306	–
VW3A4707	VW3A47907	VW3A5306	–
VW3A4708	VW3A47908	VW3A5306	–
VW3A4709	–	VW3A5307	–
VW3A4710	–	VW3A5307	–
VW3A4701	VW3A47901	VW3A5301	VW3A53902
VW3A4701	VW3A47901	VW3A5301	VW3A53902
VW3A4701	VW3A47901	VW3A5301	VW3A53902
VW3A4702	VW3A47902	VW3A5302	VW3A53902
VW3A4702	VW3A47902	VW3A5302	VW3A53902
VW3A4702	VW3A47902	VW3A5302	VW3A53902
VW3A4703	VW3A47903	VW3A5303	VW3A53902
VW3A4703	VW3A47903	VW3A5303	VW3A53902
VW3A4703	VW3A47903	VW3A5304	VW3A53903
VW3A4704	VW3A47904	VW3A5304	VW3A53903
VW3A4704	VW3A47904	VW3A5304	VW3A53903
VW3A4705	VW3A47905	VW3A5305	VW3A53905
VW3A4706	VW3A47906	VW3A5305	VW3A53905
VW3A4706	VW3A47906	VW3A5305	VW3A53905
VW3A4707	VW3A47907	VW3A5306	–
VW3A4708	VW3A47908	VW3A5306	–
VW3A4708	VW3A47908	VW3A5306	–
VW3A4707	VW3A47907	VW3A5306	–
VW3A4708	VW3A47908	VW3A5306	–
VW3A4709	–	VW3A5307	–
VW3A4709	–	VW3A5307	–
VW3A4710	–	VW3A5307	–

(2) In "Normal Duty", apply a derating of Pn-1 to the drive nominal power with a minimum switching frequency of 4 kHz. For example: an ATV630D75M3 drive with sinus filter can be used on a 55 kW motor.

(3) Maximum length of unshielded cable: 300 m. For other lengths or for shielded cables.

# Possible options (cont'd)

## I/O extension modules

Description	Reference
Module with digital and analog I/O	VW3A3203
Module with relay outputs	VW3A3204

## Encoder interface modules

Description	Reference
Digital interface encoder module	VW3A3420
Analog interface encoder module	VW3A3422
Resolver interface module	VW3A3423
HTL ecoder interface module	VW3A3424

## List of fieldbus modules (1)

Description	Reference
CANopen Daisy chain	VW3A3608
CANopen SUB-D	VW3A3618
CANopen screw terminal block	VW3A3628
PROFINET	VW3A3627
PROFIBUS DP V1	VW3A3607
DeviceNet	VW3A3609
EtherCat	VW3A3601

## Module compatibility table

Module type	Digital and analog I/O VW3A3203 (2)	Relay outputs VW3A3204 (2)	Fieldbuses VW3A36•• (3)	Encoder interface modules VW3A3420, VW3A3422, VW3A3423, VW3A3424
Digital and analog I/O VW3A3203				
Relay outputs VW3A3204 Fieldbuses				
Fieldbuses VW3A36••				
Encoder interface modules VW3A3420, VW3A3422, VW3A3423, VW3A3424				

■ Valid combination   ■ Invalid combination

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

# Option: Encoder interface modules

## Overview

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

Improved drive performance during demanding motor load states:

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

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

Depending on the model, encoder interface modules can also be used for monitoring, irrespective of the control type:

- Overspeed detection
- Load slipping detection

They can also transmit a reference value provided by the encoder input to the Altivar variable speed drive. This specific feature is used to synchronize the speed of several drives. The encoder options have a thermal sensor input to monitor one standard temperature sensor.

4 modules are available depending on the encoder technology:

- Resolver encoder
- Encoder with digital output
- Encoder with analog output
- HTL Encoder Interface

The Altivar variable speed drive can only be equipped with one of the encoder interface modules. The interface encoder module is inserted in a dedicated slot. It is protected against encoder supply short circuits and overloads.

## References

Description	Technology type	Used with encoder <sup>(1)</sup>	Power supply	Maximum current	Maximum cable length	Maximum operating frequency	Supported thermal sensors	Reference	Weight
			V	mA	m/ft	kHz			
Resolver interface module	Resolver	–	–	50	100/328	3...12	PTC (digital/linear), PT100, PT1000, Klixon	VW3A3423	0.150/0.331
Digital interface encoder module 5/12 V	A/B/I	XCC1.....R XCC1.....X	5, 12 or 24	250, 100	100/328	1,000	PTC (digital/linear), PT100, PT1000, Klixon	VW3A3420	0.150/0.331
	SSI	XCC2.....S• XCC3.....S•	5, 12 or 24	250, 100	50/164 <sup>(2)</sup>	1,000 <sup>(2)</sup>			
	EnDat® 2.2		5, 12 or 24	250, 100	50/164 <sup>(2)</sup>	1,000 <sup>(2)</sup>			
Analog interface encoder module	1 Vpp		5, 12 or 24	250, 100	100/328	100	PTC (digital/linear), PT100, PT1000, Klixon	VW3A3422	0.150/0.331
	SinCos Hiperface®		5, 12 or 24	250, 100	100/328	100			
HTL encoder interface module	HTL	–	12, 15 or 24	200, 175, 100	500/1640	300	PTC (digital/linear), PT100, PT1000, Klixon	VW3A3424	0.150/0.331



VW3A3423 resolver encoder interface module



VW3A3420 digital interface encoder module 5/12 V



VW3A3422 analog interface encoder module



VW3A3424 HTL encoder interface module

## Connection accessories <sup>(3)</sup>

Description	Composition	Length m/ft	Reference	Weight kg/lb
Connectors				
Connector 9-way male SUB-D for resolver interface module	–	–	AEOCON011	–
Cordset				
Cordset equipped with 1 x 15-way high density male SUB-D connector for digital or analog encoder modules	–	1/3.28	VW3M4701	–
Connecting cable				
Cable for creating cordsets for encoder interface modules	5 x (2 x 0.25 mm <sup>2</sup> /AWG 24) + 1 x (2 x 0.5 mm <sup>2</sup> /AWG 20)	100/328	VW3M8221R1000	21.000/46.297

(1) To determine the complete reference, please refer to the "Detection for the automation solution - OsiSense" catalog or our website [www.schneider-electric.com](http://www.schneider-electric.com).  
 (2) With propagation delay compensation on EnDat® up to 100 m/328 ft and higher maximum frequencies possible, SSI 300 kHz up to 100m/328ft possible.  
 (3) See the complete list of connection accessories on our website [www.schneider-electric.com](http://www.schneider-electric.com).

# Option: I/O extension modules



## Feature overview

By installing I/O extension modules Altivar Process drives can be adapted to meet the needs of applications that manage additional sensors or specific sensors.

2 extension modules are available:

- Module with digital and analog I/O
- Module with relay outputs

These modules are inserted in slots A and B on Altivar Process drives:

- 1 Slot A for I/O extension or fieldbus modules
- 2 Slot B for I/O extension modules

## Module with digital and analog I/O

- 2 differential analog inputs configurable via software as current (0-20 mA/4-20 mA), or for PTC, PT100, or PT1000, 2 or 3-wire
  - 14-bit resolution
- 6 x 24 V  $\overline{\text{MC}}$  positive or negative digital inputs
  - Sampling: 1 ms max
- 2 assignable digital outputs
- 2 removable spring terminal blocks

## Module with relay outputs

- 3 relay outputs with NO contacts
- 1 fixed screw terminal block



VW3A3203



VW3A3204

Description	I/O type				Reference	Weight kg/lb
	Digital inputs	Digital outputs	Analog inputs	Relay outputs		
Module with digital and analog I/O	6	2	2 <sup>(1)</sup>	–	VW3A3203	–
Module with relay outputs	–	–	–	3 <sup>(2)</sup>	VW3A3204	–

(1) Differential analog inputs configurable via software as current (0-20 mA/4-20 mA), or for PTC, PT100, or PT1000, 2 or 3-wire. When configured as PTC probe inputs, they must never be used to protect an ATEX motor in applications in explosive atmospheres. Please refer to the ATEX guide on our website [www.schneider-electric.com](http://www.schneider-electric.com).

(2) NO contacts.

Note: Digital and analog I/O modules and relay output modules can go in either slot A or slot B on Altivar Process drives. However, the drives cannot take 2 modules of the same type (e.g., 2 digital and analog I/O modules or 2 relay output modules).





For additional information,  
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