Section 26

AC Drives and Soft Starters

Altivar™ 212

Altivar™ 320

Altivar™ 340

Altivar™ 680/980
Low Harmonic

Altivar™ 650

Altivar™ 930

Altistart™ 22
Soft Starters

Altistart™ 48
Soft Starters

Overview of Altivar™ 12 / 312

Type of Motor Control		Simple Machines	
Key Application/Market Segment		• Conveyors • Mixers • Gate control • Machine movement	• Small pumps and fans • Positive displacement pumps • Material handling
Drives		**Altivar 12**	**Altivar 312**
			
Distribution voltage ranges for 50/60 Hz line supply		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
Horsepower ratings for three-phase motors		1/4–1 hp, 115/230 V single-phase input 1/4–3 hp, 208/230 V single-phase input 1/4–5 hp, 208/230 V	1/4–3 hp, 208/230 V single-phase input 1/4–20 hp, 208/230 V 1/2–20 hp, 400/480 V 1–20 hp, 525/600 V
Drives	Output frequency	0.5– 400 Hz	0.5–500 Hz
	Type of Control		
	Asynchronous motor	Sensorless flux vector control Kn2 quadratic ratio for pump and fan	Sensorless flux vector control, volts per hertz, Energy saving ratio
	Synchronous motor	—	—
	Transient overtorque	150% to 170% of nominal motor torque	170% to 200% of the nominal motor torque
Functions Number of Functions		40	50
Number of I/O	Analog inputs	1	3
	Analog outputs	1	1
	Logic inputs	4	6
	Logic/Relay outputs	1 L.O., 1 N.O./1 N.C. relay contacts	2: 1 N.O./1 N.C. + 1 N.O. relay contacts
Communication	Integrated	Modbus™	Modbus™ and CANOpen
	Available as an option	—	• DeviceNet • Profibus DP • CANOpen Daisy Chain • Ethernet TCP/IP (gateway) • FIPIO (gateway)
Other Option Cards		—	—
Enclosure Rating		IP20	IP20, Type 1 with optional kit, Type 12 available with ATV31C
Standards and Certifications		EC/EN 61800-5-1, IEC/EN 61800-3 (Environments 1 and 2, categories C1 and C3) CE, UL, CSA, C-Tick, NOM, GOST	EN 50178, EN 61800-3, EN 55011 - EN 55002: class A, class B with option, C-TICK, UL, N998, CE, CSA

Overview of Altivar™ 320

Type of Motor Control		Complex Machines	
Key Application/Market Segment		• Material handling • Packaging • Textiles • Mechanical actuators • Material working • Hoisting	
Drives		**Altivar 320●●●●●C**	**Altivar 320●●●●●B**
			
Distribution voltage ranges for 50/60 Hz line supply		Single-phase 200–240 V Three-phase 200–240 V Three-phase 380–500 V Three-phase 525–600 V	Single-phase 200–240 V Three-phase 380–500 V
Horsepower ratings for three-phase motors		1/4–3 hp, 200/240 V single-phase input 1/4–20 hp, 200/240 V three-phase input 1/2–5 hp, 380/500 V three-phase input 1–20 hp, 525/600 V three-phase input	1/4–3 hp, 200/240 V single-phase input 1/2–20 hp, 380/500 V three-phase input
Drives	Output frequency	0.1–599 Hz	
	Type of Control		
	Asynchronous motor	U/F ratio (2 points, 5 points, energy saving, quadratic), Flux vector control without sensor (Standard and Energy saving)	
	Synchronous motor	Vector control without sensor	
	Transient overtorque	Up to 200% Tn in an open loop	
Functions Number of Functions		>150 + ATVLogic	
Number of I/O	Analog inputs	3: 1 Bipolar differential ±10 V, 1 with Voltage ±10 V, and 1 with current (0–20 mA)	
	Analog outputs	1: Configurable as voltage (0–10 V) or current (0–20 mA)	
	Logic inputs	6: 4 configurable (positive or negative logic), 1 with PTC probe input, 1 x 20 kHz pulse input	
	Logic/Relay outputs	Logic output—1: Configurable as voltage or current Relay outputs—2: 1 with NO/NC contacts and 1 with NC contact	
Communication	Integrated	Single port compatible with CANopen and Modbus serial line	
	Available as an option	Ethernet IP; Modbus TCP; CANopen RJ45 Daisy Chain, Sub-D, and screw terminals; PROFINET; Profibus DP V1; EtherCAT; DeviceNet; POWERLINK	
Other Option Cards		—	
Enclosure Rating		IP20	IP20
Standards and Certifications		IEC 61800-5-1; IEC 61800-3 (environments 1 and 2, category C2); UL61800–5–1; EN 954–1 category 3; ISO/EN 13849–1/-2 category 3 (PLe); IEC 61508 (parts 1 & 2) SIL 2; EN 50495E; IEC 60721–3–3, classes 3C3 and 3S2; CSA C22.2 No. 274; CE, UL, CSA, RCM, EAC, ATEX	

Overview of Altivar™ 340

Type of Motor Control		Complex Machines		
Key Application/Market Segment		• Material handling • Packaging • Textiles • Mechanical actuators • Material working • Hoisting		
Drives		**Altivar 340●●●●●●**	**Altivar 340●●●N4E**	
				
Distribution voltage ranges for 50/60 Hz line supply		Three-phase 380–480 V		
Horsepower ratings for three-phase motors		1–30 hp	1–30 hp	40–100 hp
Drives	Output frequency	0.1–599 Hz		
	Type of Control			
	Asynchronous motor	Voltage vector control without sensor, Current vector control with sensor, U/F 5 points, Energy saving mode		
	Synchronous motor	Open-loop synchronous motor control (with and without stall monitoring), closed-loop synchronous motor control, synchronous reluctance motor control		
	Transient overtorque	Up to 200% Tn in an open loop		Up to 180% Tn in open or closed loop control
Functions Number of Functions		>150		>150
Number of I/O	Analog inputs	2: 1 configurable (voltage/current/thermal probe) and 1 with bipolar differential ±10 Vdc		3: Configurable as voltage (0–±10 Vdc) or current (0–20 mA / 4–20 mA), including 2 for probes (PTC, PT100, PT1000, or KTY84)
	Analog outputs	1: Configurable as voltage (0–10 Vdc) or current (x–20 mA)		2: Configurable as voltage (0–10 Vdc) or current (x–20 mA)
	Logic inputs	5 + 2: 5 configurable (positive or negative logic) and 2 which can be configured as digital input or output		8: Configurable (positive or negative logic)
	Logic/Relay outputs	Logic outputs—2: Assignable Relay outputs—2: 1 with NO/NC contacts and 1 with NC contacts		Logic outputs—1: Assignable Relay outputs—3: 1 with NO/NC and 2 with NO contacts
Communication	Integrated	2 ports for Modbus serial line	Dual port for Ethernet IP/Modbus TCP, 2 ports for Modbus serial line	
	Available as an option	• CANopen RJ45 Daisy Chain • Sub-D and screw terminals • PROFINET • Profibus DP V1 • EtherCAT • DeviceNet		
Other Option Cards		—		
Enclosure Rating		IP20	IP20	IP20
Standards and Certifications		UL61800-5-1, EN/IEC 61800-3, Environment 1 category C2, EN/IEC 61800-3, Environment 2 category C3, EN/IEC 61800-5-1, IEC 60721-3-3, classes 3C3 and 3S3, IEC 61508, IEC 13849-1, Green Premium, Reach/RoHS, CSA C22.2 No. 274 Ce, UL, CSA, TUV, Green Premium, RoHS, EU, China		

Overview of Altivar™ 71 and Altivar™ Process 900

Type of Motor Control		Complex, High-power Machines		
Key Application/Market Segment		• Material handling • High performance movement and regulation • Lifts, cranes, hoists • Extruders, shredders • Presses		• Material handling • Artificial lift • High performance movement and regulation • Lifts, cranes, hoists • Extruders, shredders • Presses • Positive displacement pumps
Drives		**Altivar 71**		**Altivar Process 900** *New!*
				
Distribution voltage ranges for 50/60 Hz line supply		Single-phase 230–240 V Three-phase 200–240 V Three-phase 380–480 V Three-phase 500–690 V		Three-phase 200–240 V Three-phase 380–480 V Three-phase 500–600 V Three-phase 500–690 V
Horsepower ratings for three-phase motors		1–30 hp, 208/230 V single-phase input 1/2–100 hp, 200/230 V 1–1800 hp, 400/480 V 2–2100 hp, 575/690 V		1–100 hp, 208/230 V 1–500 hp, 400/480 V 1–100 hp, 400/480 V (ATV950) 3–100 hp, 500/600 V 3–125 hp, 500/690 V
Drives	Output frequency	0.5–599 Hz up to 50 hp 0.5–500 Hz from 50 hp to 700 hp		0.5–599 Hz
	Type of Control			
	Asynchronous motor	Sensorless flux vector control (with or without sensor), volts per hertz ratio (2 or 5 points), ENA system, synchronous motor vector control with or without speed feedback		Voltage vector control, currrent vector control closed loop, 5-segment V/F profile, energy saving, synchronous reluctance motor
	Synchronous motor	Vector control with or without speed feedback		Open loop synchronous motor, closed-loop synchronous motor, open-loop synchronous motor variable torque
	Transient overtorque	220% of the nominal motor torque for 2 seconds 170% for 60 seconds		Normal duty: 120% overcurrent for 60 s. Heavy duty: 150% overcurrent for 60 s.
Functions Number of Functions		> 150		45+
Number of I/O	Analog inputs	2–4		3–5
	Analog outputs	—		2
	Logic inputs	6–20		8–14
	Logic/Relay outputs	2–4		3–6
	Safety function inputs	—		2
Communication	Integrated	Modbus™ and CANopen		Modbus™ and Ethernet IP /Modbus TCP dual port
	Available as an option	-Profibus DP [V1] - DeviceNet - Modbus TCP/IP - EtherNet/IP and Modbus/TCP Dual port	- Interbus S - Modbus/Uni-Telway - Modbus Plus	- CANopen: Daisy Chain RJ45, Sub-D and screw terminals - ProfiNet - Profibus DP V1 - DeviceNet - EtherCAT
Other Option Cards		Encoder interface cards, I/O extension cards, IMC programmable card		I/O extension cards, Encoder input cards, Resolver input cards
Enclosure Rating		IP20, Type 1 with optional kit		Type 1, Type 12 (ATV950 only)
Standards and Certifications		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, ABS		UL 508C, UL File E116875, CSA, TUV, REACH, UL50, 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

Overview of Altivar™ 212 / 61 and Altivar™ Process 600

Type of Motor Control		Centrifugal Pumps and Fans		Pumps and Fans
Key Application/Market Segment		• Pumps • Fans	• Pumps • Fans	• Pumps • Fans • General purpose applications in: – Water & Wastewater – Oil & Gas – Mineral, Mining & Metals – Food & Beverage
Drives		**Altivar 212**	**Altivar 61**	**Altivar Process 600** *New!*
				
Distribution voltage ranges for 50/60 Hz line supply		Three-phase 200–240 V Three-phase 380– 480 V	Three-phase 500–690 V	Three-phase 200–240 V Three-phase 380–480 V Three-phase 500–600 V Three-phase 500–690 V
Horsepower ratings for three-phase motors		1–40 hp, 208/230 V 1–100 hp, 400/480 V	2– 900 hp, 575/690 V	1–100 hp, 208/230 V 1–500 hp, 400/480 V 1–100 hp, 400/480 V (ATV650) 3–100 hp, 500/600 V 3–125 hp, 500/690 V
Drives	Output frequency	0–200 Hz	0.5–500 Hz from 50–900 hp	0.1–500 Hz
	Type of Control			
	Asynchro-nous motor	Volts per hertz or sensorless flux vector control	Volts per hertz ratio (2 or 5 points) or sensorless flux vector control, energy-saving ratio	Voltage/frequency: quadratic, 2 point or 5 points, or optimized for energy savings
	Synchronous motor	Permanent magnet motor control without speed feedback	Vector control without speed feedback	Vector control for permanent magnet motors
	Transient overtorque	Transient overload: 110% of the nominal drive current for 60 seconds	170% of the nominal motor torque for 2 seconds 110% for 60 seconds	Normal Duty: 110% of the nominal motor torque for 60 s. Heavy Duty: 150% of the nominal motor torque for 60 s.
Functions Number of Functions		50	> 100	>30 pump dedicated functions, additional for fan and material handling applications
Number of I/O	Analog inputs	2	2–4	3–5
	Analog outputs	1	—	2
	Logic inputs	3	6–20	6–12
	Logic/Relay outputs	2: 1 N.O./1 N.C. and 1 N.O. relay contacts	2–4	3–6
	Safety function inputs	—	—	2
Communi-cation	Integrated	Modbus™, Apogee P1, BACnet, Metasys® N2	Modbus™ and CANopen	Modbus/Ethernet TCP and Modbus Serial Link
	Available as an option	- LonWorks	• Apogee FLN (P1) • BACnet • Modbus/Uni-Telway • LonWorks • EtherNet/IP and Modbus/TCP Dual Port • Modbus Plus • Interbus S • DeviceNet • Profibus DP [V1] • Metasys N2	• EtherNet/IP and Modbus/TCP Dual Port • EtherNet/IP and Modbus/TCP Dual Port with MultiVFD • BACnet MS/TP • CANopen: Daisy Chain RJ45, Sub-D, and Screw Terminals • ProfiNet • Profibus DP V1 • DeviceNet
Other Option Cards		—	I/O extension cards, IMC programmable card, Multi-pump cards	I/O extension cards
Enclosure Rating		IP20, Type 1 with optional kit, Type 12 @460 Vac	IP20, Type 1 with optional kit, Type 12 @460 Vac	Type 1, Type 12 (ATV650 only)
Standards and Certifications		EN 50178, IEC/EN 61800-3, EN 55011, 55022: class A, class B with option, CE, UL, C-TICK, N998, UL 1995 Plenum-rated AHRI Certified	IEC/EN 61800-5-1, IEC/EN 61800-3 (environments 1 and 2, C1 to C3), EN 55011, EN 55022, UL 1995 Plenum-rated, IEC/EN 61000-4-2/4-3/4-4/4-5/4-6/4-11, CE, UL, CSA, DNV, C-TICK, NOM 117, GOST, ABS	UL 508C, UL File E116875, CSA, TUV, REACH, UL50, 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

Overview of Altistart™ 01 / 22 / 48

Type of Motor Control		Simple Machines	Normal-duty Machines	Heavy-duty Machines
Key Application/Market Segment		• Conveyors • Mixers • Gate control • Machine movement • Small pumps and fans • Positive displacement pumps	• Pumps • Fans • Turbines • Compressors • Conveyors • Conveyor belts • Lifting screws • Escalators	• Pumps • Fans • Punch presses • Band saws • Crushers • Centrifuges • Conveyors (high inertia loads)
Soft Starters		**Altistart 01**	**Altistart 22**	**Altistart 48**
				
Distribution voltage ranges for 50/60 Hz line supply		Single-phase 110–480 V Three-phase 110– 690 V	Three-phase 208– 600 Vac	Three-phase 230– 415 V Three-phase 208–690 V
Horsepower ratings for three-phase motors		1/4–2 hp 115/230 V 1/2–30 hp, 208/230 V 1/2–60 hp, 400/480 V 30–75 hp, 575/600 V	3–500 hp	3–1200 hp
Drives	Output frequency	Equals input frequency	—	Equals input frequency
	Type of Control:	Reduced voltage start	Controlled starting and stopping, via voltage and torque	Reduced voltage start Reduced voltage start and torque control stop
	Asynchronous motor			
	Synchronous motor	—	—	—
	Typical starts per hour rating	—	6	10
Functions Number of Functions		1	29	36
Number of I/O	Analog inputs	—	1 PTC probe	1 PTC probe
	Logic inputs	3	3	4
	Relay outputs	1	2 (N.O./N.C)	1
Communication	Integrated	—	Embedded Modbus	Modbus
	Available as an option	Combined with TeSys™ U-Line self-protected starter	—	• DeviceNet • Ethernet TCP/IP • Fipio • Profibus DP V1
Other Option Cards		—	—	—
Enclosure Rating		IP20	IP00, IP20	IP20
Standards and Certifications		EC/EN 60947-4/2, C-Tick, CSA, UL, CE, CCC	UL, CSA, CE, GOST, C-TICK, CCC, and RoHS directive	EC/EN 60947-4/2, EMC class A and B, DNV, C-Tick, GOST, CCIB, NOM, UL, CE, CCC, CSA

Overview of S-Flex™ and Altistart™ Enclosed 22 / Enclosed 48

Type of Motor Control	Adjustable Speed Drives Commercial HVAC & Retrofits	Soft Starters Commercial	North America Enclosed Soft Starters
Key Application/Market Segment	• Pumps • Fans • Scroll Compressors	• Pumps • Fans • Conveyors • Centrifuges	• Agitators • Mixers • Grinders • Crushers
Packaged Products	**S-Flex (Altivar™ 212)**	**Altistart Enclosed 22**	**Altistart Enclosed 48**
			 Integrated controls protected within enclosures, optimized with disconnect means, circuit breakers, push buttons, selector switches, control logic, communication and miscellaneous options designed to meet application requirements.
Distribution voltage ranges for 50/60 Hz line supply	208 Vac, 240 Vac, 480 Vac	208 Vac, 230 Vac, 460 Vac, 575 Vac	208 Vac, 240 Vac, 480 Vac, 600 Vac
Horsepower ratings for three-phase motors	**Variable torque** 1–40 hp, 200/230 V 1–100 hp, 460 V	**Type 1 and Type 12:** 3–150 hp, 208 V 5–200 hp, 230 V 10–400 hp, 460 V 15–500 hp, 575 V **Type 3R or 50°C Rated:** 3–125 hp, 208 V 5–150 hp, 230 V 10–400 hp, 460 V 15–500 hp, 575 V	**Type 1, Type 12, and Type 3R:** 3–200 hp, 208 V 5–250 hp, 230 V 10–500 hp, 480 V 15–600 hp, 575 V
Configurable options	**Configurable products:** Drive with isolation/bypass Non-bypass Drive input disconnect switch Line contactor Communication options	Basic shunt tip Full featured shunt trip non-reversing isolation Reversion isolation Integral Full Voltage Bypass	**Customizable products:** Non-reversing Reversing Shunt Trip Extensive options
Enclosure ratings	Type 1 general purpose Type 12 industrial use (Dust-Tight/Drip-Tight) Type 3R outdoor use	Type 1 general purpose Type 12 industrial use (Dust-Tight/Drip-Tight) Type 3R outdoor use	Type 1 general purpose Type 12 dust/drip proof Type 3R outdoor service entrance
Communication	• Modbus RJ45 (included as standard) • BACnet (embedded) • LonWorks (option card) • Metasys N2 (embedded) • APOGEE FLN (P1) (embedded)	• Modbus (embedded)	• Modbus (native) • Modbus Plus • Ethernet TCP/IP (gateway) • DeviceNet (gateway)
Standards and Certifications	UL 508C, Seismic qualification ICC ES AC156 acceptance test protocol	Service Entrance Rating, UL Listed per UL 508 under category NKJH, Conforms to applicable NEMA ICS, NFPA, and IEC standards, Manufactured under ISO9001 standards, Factory modification E10 provides Canadian cUL certification per C22.2, No.14, Seismic qualification	UL 508, cUL/CSA, Seismic qualification ICC ES AC156 acceptance test protocaol, ABS

Overview of Altivar™ 680/980 Process, 660/960 Process, and Altivar™ 1260

	North America Drive Systems		
Key Applications and Market Segment	• Water Waste Water • Regenerative Applications • Oil and Gas • Mining, Minerals, and Metals • Food and Beverage	• Water Waste Water • Regenerative Applications • Oil and Gas • Mining, Minerals, and Metals • Food and Beverage	Pumps, fans, and compressors for: • Water Waste Water • Oil and Gas • Mining, Minerals, and Metals
	Altivar 680/980 Process Drives *New!*	**Altivar 660/960 Process Drives**	**Altivar 1260 Medium Voltage Drive**
			
Brief Description	The world's first three-level low harmonic drive, Altivar 680/980 drive solutions are designed for pumping or mechanical movement applications where harmonic mitigation and overall size is a priority. The ATV680/980 has embedded, industry-leading harmonic mitigation technology, which results in THDi levels of 2.3%. With its small footprint and capability to be customized, the ATV680/980 is a very flexible low harmonic solution. The ATV680/980 is a more efficient, more compact, and higher performing active rectification drive than any of our competitors by the integration of a common mode suppressing filter, and unique active filter resonance control. The ATV680 is capable of 120% regeneration, while the ATV980 is capable of 180% of nameplate current.	The Altivar 660 Process System provides a wide range of fully tested and ready to connect drive solution. Starting from a compact pre engineered system to a fully engineered complex solution.	The Altivar 1260 combines the latest vector control strategies with the control of 3-level inverters using proven semiconductor technologies commanded via fiber optic cables. Engineered from the inside-out to reduce harmful grid harmonics and put less stress on motor bearings and insulation.
Special Features	Industry Leading Harmonic Mitigation: 2.3% THDi Common Mode Voltage Suppression Reduction of Bearing Currents Generator Supply Capability	Compact design to save space Dynamic QR Codes 50° C option available Pump curves embedded Multiple options available Process control embedded Embedded web server	Low component count 24/36 pulse rectifier (AFE option available) with 3-level NPC inverter using medium voltage IGBTs. Standard output sine wave filter delivers a motor friendly waveform, which allows long cable lengths and use with standard duty motors. Close-coupled or separately-located rectifier transformer Easy to navigate local human machine interface (HMI) plus a web application for remote monitoring and control Front access with easy to maintain slide out power modules Integrated UPS for control backup Powerful central processor (CPU) with imbedded programmable controller (PLC) Modular and scalable architecture
Enclosure Ratings	UL Type 12	UL Type 1, UL Type 12, UL Type 3R	NEMA Type 1 (IP21)
Power Range	125–900 hp, Normal Duty (ND)	208/340 V, 460 V Type 1: 1–60 hp; 1–900 hp, ND Type 12: 1–60 hp; 1–900 hp, ND Type 3R: 1–60 hp; 1–125 hp, ND	Top forced air cooling **Frame 1:** up to 2,400 hp **Frame 2:** 2,500–4,800 hp **Frame 3:** 4,900–6,500 hp
Distribution voltage ranges for 50/60 Hz line supply	480 Vac	208/240 Vac, 480 Vac	4,160 Vac, 3 phase, 60 Hz (drive input) **NOTE:** Primary side of rectifier transformer can accommodate other voltages
Standards / Certifications	UL/cUL Listed per UL508A, IEEE519 Compliant (harmonic filter required), Conforms to applicable NEMA ICS, NFPA, and IEC standards, Service entrance available, Manufactured under ISO 9001 standards.	UL/cUL Listed per UL508A, IEEE519 Compliant, Conforms to applicable NEMA ICS, NFPA, and IEC standards, Service entrance available, Manufactured under ISO 9001 standards.	UL/cUL listed per UL347, IEEE 519 Compliant (24 pulse DFE), Conforms to applicable ANSI/IEEE and IEC standards, Manufactured under ISO 9001 standards.

Contact your local Schneider Electric Field Office for further information

Altivar Outdoor 630/930

Overview of Altivar™ Outdoor 630/930

Key Application/Market Segment	• Oil and Gas • Rod Pump Controls, PCP Controls • ESP Controls, HPS Controls • Irrigation
Brief Description	The Altivar Outdoor 630/930 is a UL Type 3R rated drive designed for pumping solutions in outdoor environments, especially oil and gas.
Special Features	- Door-on-door - 50 °C rated - Optional cold weather option - Wide array of options available - Quick lead time
Enslosure Ratings	Nema Type 3R Outdoor
Power Range	20–250 hp, Heavy Duty
Distribution Voltage Ranges for 50/60 Hz Line Supply	480 Vac
Standards / Certifications	- UL Listed per UL 508A - Conforms to applicable NEMA ICS,NFPA, & IEC standards - Service entrance rated - Manufactured under ISO 9001 standards
Contact your local Schneider Electric Field Office for further information	

ATV212HU15N4

ATV212W075N4

ATV212HU30M3X

ATV212HD37N4

Altivar™ 212 Drives

The AHRI (Air-Conditioning, Heating, & Refrigeration Institute) certified Altivar 212 drive is for use with three-phase asynchronous and permanent magnet motors for variable torque pump, fan, and scroll compressor applications. Select the Altivar 212 drive using the motor nameplate voltage, the full load ampere rating and the table below. The Altivar 212 drive includes 3 logic inputs, 2 analog inputs, 1 analog output, and 2 relay outputs (with 1 NO and 1 NO/NC contacts). The Altivar 212 drive includes an integrated 4 digit, 7 segment LED display with a 7 button keypad and includes an RJ45 Modbus port plus a four-screw terminal block for BACnet, Modbus, Metasys N2 and Apogee P1 communication protocols. LonWorks™ is available in an option card.

Table 26.1: Altivar 212 Selection

AC Input Line Voltage	Three-Phase Motor Power *[1]*		Continuous Output Current	Enclosure Rating		
				IP 20*[2]* Open Style Product	Type 1 Conduit Kit Purchase ATV212 and Conduit Kit for Type 1 Installation	Type 12 / IP54*[3]*
	HP	kW	A *[1]*	Catalog Number	Catalog Number	Catalog Number
200/240 Vac -15%, +10% Three-Phase	1	0.75	4.6	ATV212H075M3X	VW3A31814	—
	2	1.5	7.5	ATV212HU15M3X	VW3A31814	—
	3	2.2	10.6	ATV212HU22M3X	VW3A31814	—
	4	3	13.7	ATV212HU30M3X	VW3A31815	—
	5	4	18.7	ATV212HU40M3X	VW3A31815	—
	7.5	5.5	24.2	ATV212HU55M3X	VW3A31816	—
	10	7.5	32	ATV212HU75M3X	VW3A31816	—
	15	11	46.2	ATV212HD11M3X	VW3A31817	—
	20	15	61	ATV212HD15M3X	VW3A31817	—
	25	18.5	74.8	ATV212HD18M3X	VW3A31817	—
	30	22	88	ATV212HD22M3X	VW3A9206	—
	40	30	117	ATV212HD30M3X	VW3A9208	—
380/480 Vac -15%, +10% Three-Phase	1	0.75	2.2	ATV212H075N4	VW3A31814	ATV212W075N4
	2	1.5	3.7	ATV212HU15N4	VW3A31814	ATV212WU15N4
	3	2.2	5.1	ATV212HU22N4	VW3A31814	ATV212WU22N4
	4	3	7.2	ATV212HU30N4	VW3A31815	ATV212WU30N4
	5	4	9.1	ATV212HU40N4	VW3A31815	ATV212WU40N4
	7.5	5.5	12	ATV212HU55N4	VW3A31815	ATV212WU55N4
	10	7.5	16	ATV212HU75N4	VW3A31816	ATV212WU75N4
	15	11	22.5	ATV212HD11N4	VW3A31816	ATV212WD11N4
	20	15	30.5	ATV212HD15N4	VW3A31817	ATV212WD15N4
	25	18.5	37	ATV212HD18N4	VW3A31817	ATV212WD18N4
	30	22	43.5	ATV212HD22N4S	VW3A31817	—
	30	22	43.5	ATV212HD22N4	VW3A9206	ATV212WD22N4
	40	30	58.5	ATV212HD30N4	VW3A9206	ATV212WD30N4
	50	37	79	ATV212HD37N4	VW3A9207	ATV212WD37N4
	60	45	94	ATV212HD45N4	VW3A9207	ATV212WD45N4
	75	55	116	ATV212HD55N4	VW3A9208	ATV212WD55N4
	100	75	160	ATV212HD75N4	VW3A9208	ATV212WD75N4

UL File E116875, CSA 2278406, Plenum rated per UL 508C for UL 1995 installations. NOM, CE

[1] These horsepower, wattage and continuous ampere ratings apply to the default switching frequency and maximum 40 °C ambient. Refer to the installation manual for derating curves as a function of switching frequency, ambient temperature, and mounting conditions.
[2] IP20 Altivar 212 drives can be installed as UL Type 1 with an optional conduit box by following the instructions in the Installation Manual.
[3] For ATV212W... drives with Class B EMC filter, add the letter “C” to the end of the standard catalog number.


VW3A1101


VW3A1101
VW3A1102
VW3A1103
VW3A1104R10


VW3A8121


LonWorks Option Card
VW3A21212

Altivar™ 212 Accessories

Table 26.2: Altivar 212 Options and Accessories

	Description	For Use on Drives	Catalog Number
User Interface Options			
Remote LCD Display Keypad	8 line, 24 characters per line, plain text, 8 keys, rotary wheel, 60 °C IP54 rated	Altivar 212, 312, 32, 61, and 71	VW3A1101 *[4]*
Remote LCD Keypad Mounting Accessories	IP54 rated kit for remote mounting LCD keypad on enclosure door. Clear plastic door for use with VW3A1102 for IP65 rating and tamper resistant. Female / Female right angle RJ45 adaptor, to connect cable and keypad. *[5]*	VW3A1101	VW3A1102 *[4]*
		VW3A1102	VW3A1103 *[4]*
		VW3A1101	VW3A1105 *[4]*
	Remote LCD Keypad Mounting Cables — Equipped with two RJ45 connectors 1 meter length	VW3A1101	VW3A1104R10 *[6]*
	3 meter length	VW3A1101	VW3A1104R30 *[6]*
	5 meter length	VW3A1101	VW3A1104R50 *[6]*
	10 meter length	VW3A1101	VW3A1104R100 *[6]*
Multi-loader	Use to copy configurations between like drives, PC Soft, or SoMove PC Software	Altivar 12, 212, 312 32, 61, 71, and Altistart 22	VW3A8121
Potentiometer	Operator, mounting collar, 2.5 kilohm, ½ watt potentiometer	Altivar 212	ATVPOT25K
Software			
Altivar and Altistart Programming Cable	For use with the iPad Configuration App. 30–pin Mobile to RS-485 Converter Cable	Altivar 12, 312, 212, and SFLEX, Altistart 22, 48	VW3A8151R20U
SoMove	This software enables the user to configure, set, debug and organize maintenance task for the complete Altivar product line and the Altistart 22 and Altistart 48 soft starters. It can also be used to customize the integrated display terminal menus. It can be used with a direct connection or a Bluetooth® wireless connection. Free download www.schneider-electric.us		
USB/RS485 cable: equipped with USB connector and RJ45 connector		Altivar and Altistart	TCSMCNAM3M002P *[6]*
Communication Option			
LonWorks Communication Card Option	Provides a four-screw terminal block for connecton to LonWorks network. Install in place of standard control board that comes mounted in the Altivar 212 drive. The I/O count is reduced to 3LI, 1 AI and 1 NO/NC relay	Altivar 212	VW3A21212
Mounting Kit			
DIN Rail Mounting Kit	For installation on 35 mm wide DIN rail	Altivar 212H075M3X–U22M3X Altivar 212H075N4–U22N4	VW3A31852

[4] IP20 Altivar 212 drives can be installed as UL Type 1 with an optional conduit box by following the instructions in the installation manual.
[5] Not required if using VW3A1102.
[6] For ATV212W... drives with Class B EMC filter, add the letter “C” to the end of the standard catalog number.

Altivar 12 Drive

Altivar™ 12 Drives

Big function in a small footprint. The Altivar 12 variable frequency drive combines flexibility, reliability, and the most advanced sensorless flux vector technology into very small space. This drive features an integrated communications port, user-friendly navigation wheel on the faceplate, and an optional multi-loader that streamlines set-up by making programming quick and easy. All of this comes with the versatility to handle applications from simple to complex, across industries, and harsh environments.

Table 26.3: Altivar 12 Selection

Voltage, +10%, -15%, 50/60 Hz		Motor Power		Nominal Current Rating A (Note 1)	Catalog Number (Note 2)
Input	Output	kW	hp		
11 V Single Phase	230 V Three Phase	0.18	0.25	1.4	ATV12H018F1
		0.37	0.5	2.4	ATV12H037F1
		0.37	0.5	2.4	ATV12P037F1
		0.75	1	4.2	ATV12H075F1
230 V Single Phase	230 V Three Phase	0.18	0.25	1.4	ATV12H018M2
		0.37	0.5	2.4	ATV12H037M2
		0.37	0.5	2.4	ATV12P037M2
		0.55	0.75	3.5	ATV12H055M2
		0.55	0.75	3.5	ATV12P055M2
		0.75	1	4.2	ATV12H075M2
		0.75	1	4.2	ATV12P075M2
		1.5	2	7.5	ATV12HU15M2
		2.2	3	10	ATV12HU22M2
230 V Three Phase	230 V Three Phase	0.18	0.25	1.4	ATV12H018M3
		0.37	0.5	2.4	ATV12H037M3
		0.37	0.5	2.4	ATV12P037M3
		0.75	1	4.2	ATV12H075M3
		0.75	1	4.2	ATV12P075M3
		1.5	2	7.5	ATV12HU15M3
		1.5	2	7.5	ATV12PU15M3
		2.2	3	10	ATV12HU22M3
		2.2	3	10	ATV12PU22M3
		3	-	12.2	ATV12HU30M3
		3	-	12.2	ATV12PU30M3
		3.7	5	16.7	ATV12HU40M3
		3.7	5	16.7	ATV12PU40M3

Altivar™ 12 Accessories

Table 26.4: Altivar 12 Options and Accessories

Description	Part Number	For Use on Drives
Remote Keypad Display for ATV12 (IP54)	VW3A1006	All
Remote Keypad Display for ATV12 (IP65)	VW3A1007	All
Cable for remote mounting: 1 meter	VW3A1104R10	All
Cable for remote mounting: 3 meters	VW3A1104R30	All
Cable for remote mounting: 5 meters	VW3A1104R50	All
Cable for remote mounting: 10 meters	VW3A1104R100	All
EMC Conformity Kit	VW3A9523	ATV12H018F1, H037F1 ATV12H018M2–H075M2 ATV12H018M3–H075M3 ATV12P037F1 ATV12P037M2–P075M2 ATV12P037M3–P075M3
EMC Conformity Kit	VW3A9524	ATV12H075F1 ATV12HU15M2, HU22M2 ATV12HU15M3, HU22M3 ATV12PU15M3, PU22M3
EMC Conformity Kit	VW3A9525	ATV12HU30M3 ATV12HU40M3
EMC Filters for C1, C2, C3	VW3A4416	ATV12H018F1,H037F1 ATV12H018M2–H075M2 ATV12P037F1 ATV12P037M2–P075M2
EMC Filters for C1, C2, C3	VW3A4417	ATV12H075F1 ATV12HU15M2,HU22M2
EMC Filters for C1, C2, C3	VW3A4418	ATV12H018M3–H075M3 ATV12P037M3–P075M3
EMC Filters for C1, C2, C3	VW3A4419	ATV12HU15M3, HU22M3 ATV12PU15M3, PU22M3
15/24 voltage converter	VW3A9317	All
Mounting Plate for 35 mm DIN rail	VW3A9804	ATV12H018F1, H037F1 ATV12H018M2–H075M2 ATV12H018M3–H075M3
Mounting Plate for 35 mm DIN rail	VW3A9805	ATV12H075F1 ATV12HU15M2, HU22M2 ATV12HU15M3, HU22M3

Table 26.5: Altivar 12 Configuration Tools

Description	Part Number	For Use on Drives
Simple Loader: to transfer configuration between like drives. For use with the Altivar product line.	VW3A8120	ATV12, ATV312, ATV61, and ATV71
Multi-loader: to transfer a configuation from a drive or from SoMove via an SD card, and transferring to another drive or to a PC	VW3A8121	ATV12, ATV312, ATV61, and ATV71
Cable: for connection between the MultiLoader and an ATV12 that is in its packaging	VW3A8126	All
USB to RJ45 adaptor: for use in connecting to a PC with a USB port	TCSMCNAM3M002P	Compatible device families: Advantys™ OTB, Altistart™ soft starters, Altivar series including HMI, Altivar controller

Altivar™ 312 Drives

The Altivar 312 mid-featured AC drive is designed to make industrial and commercial machines more energy efficient while simplifying its integration into a single control system architecture.

With the highest overtorque and the only drive with a remote graphic keypad in its class, the Altivar 312 mini-drive is ideally suited to the needs of material handling, packaging, food and beverage, and other OEM machines. It also comes standard with integrated communications port for Modbus and CANopen networks, optional cards available for CANopen Daisy Chain, DeviceNet, and Profibus DP, and gateways can be used for Modbus TCP/IP and FIPIO.

Table 26.6: Altivar 312 Selection

Input Line Voltage	Three-Phase Motor Power *[7]*		Open Drives *[8]*	
	HP	kW	Continuous Output Current A	Catalog Number
208/230 Vac Single-Phase	0.25	0.18	1.5	ATV312H018M2
	0.5	0.37	3.3	ATV312H037M2
	0.75	0.55	3.7	ATV312H055M2
	1	0.75	4.6	ATV312H075M2
	1.5	1.1	6.9	ATV312HU11M2
	2	1.5	8	ATV312HU15M2
	3	2.2	11	ATV312HU22M2
208/230 Vac Three-Phase	0.25	0.18	1.5	ATV312H018M3
	0.5	0.37	3.3	ATV312H037M3
	0.75	0.55	3.7	ATV312H055M3
	1	0.75	4.8	ATV312H075M3
	1.5	1.1	6.9	ATV312HU11M3
	2	1.5	8	ATV312HU15M3
	3	2.2	11	ATV312HU22M3
	4	3	13.7	ATV312HU30M3
	5	—	17.5	ATV312HU40M3
	7.5	5.5	27.5	ATV312HU55M3
	10	7.5	33	ATV312HU75M3
	15	11	54	ATV312HD11M3
	20	15	66	ATV312HD15M3
400/480 Vac Three-Phase	0.5	0.37	1.5	ATV312H037N4
	0.75	0.55	1.9	ATV312H055N4
	1	0.75	2.3	ATV312H075N4
	1.5	1.1	3	ATV312HU11N4
	2	1.5	4.1	ATV312HU15N4
	3	2.2	5.5	ATV312HU22N4
	4	3	7.1	ATV312HU30N4
	5	—	9.5	ATV312HU40N4
	7.5	5.5	14.3	ATV312HU55N4
	10	7.5	17	ATV312HU75N4
	15	11	27.7	ATV312HD11N4
	20	15	33	ATV312HD15N4
575/600 Vac Three-Phase *[9]*	1	0.75	1.7	ATV312H075S6
	2	1.5	2.7	ATV312HU15S6
	3	2.2	3.9	ATV312HU22S6
	5	3.7/4.0	6.1	ATV312HU40S6
	7.5	5.5	9	ATV312HU55S6
	10	7.5	11	ATV312HU75S6
	15	11	17	ATV312HD11S6
	20	15	22	ATV312HD15S6

[7] These horsepower, wattage, and continuous ampere ratings apply to 4 kHz switching frequency and maximum 50 °C ambient. Refer to the installation manual for derating curves as a function of switching frequency, ambient temperature, and mounting conditions.
[8] Open type Altivar 312 Drives can be installed as UL Type 1 with optional conduit box when following instructions in the installation manual.
[9] A minimum 3% line reactor is required on all 575 V drive installations.

Altivar™ 312 Options and Accessories

Table 26.7: Altivar 312 Options and Accessories

	Description	For Use on Drives	Catalog Number
Software			
SoMove™	This software enables the user to configure, set, debug and organize maintenance task for the complete Altivar product line and the Altistart 22 and Altistart 48 soft starters. It can also be used to customize the integrated display terminal menus. It can be used with a direct connection or a Bluetooth® wireless connection. Free download www.schneider-electric.us		
User Interface Kits			
USB to RJ45 Adaptor Kit	For use in connecting to a PC with a USB port	Advantys™ OTB, Altistart™ soft starters, Altivar series including HMI, Altivar controller	TCSMCNAM3M002P
Remote Keypad Options and Accessories	Remote Keypad Display (IP54)	ATV312, ATV12	VW3A1006
	Remote Keypad Display (IP65)	ATV312, ATV12	VW3A1007
	Remote Keypad Display and Mounting Kit	ATV312	VW3A31101
	Remote Keypad Display	ATV312, ATV61, ATV71	VW3A1101 *[10]*
Cable for remote mounting LCD graphic keypad. RJ-45 connector on each end.	1 meter	Any ATV61, Any ATV71	VW3A1104R10
	3 meters	Any ATV61, Any ATV71	VW3A1104R30
	5 meters	Any ATV61, Any ATV71	VW3A1104R50
	10 meters	Any ATV61, Any ATV71	VW3A1104R100
Communication Options	Profibus	ATV312	VW3A31207
	CANopen Daisy Chain	ATV312	VW3A31208
	DeviceNet	ATV312	VW3A31209

NOTE: Refer to Catalog MKTED211041EN-US for communication cables.

Table 26.8: Altivar 312 Configuration Tools

Description	Part Number	For Use on Drives
Altivar and Altistart Programming Cable: For use with the iPad Configuration App. 30-Pin Mobile to RS-485 Converter Cable	VW3A8151R20U	Altivar 12, 312, 212, S-FLEX, Altistart 22, 48
Simple Loader: to transfer configuration between like drives. For use with the Altivar product line.	VW3A8120	ATV12, ATV312, ATV32, ATV61, and ATV71
Multi-loader: to copy a configuration from a drive or from SoMove via an SD card, and transferring to another drive or to a PC	VW3A8121	ATV12, ATV312, ATV212, ATV32, ATV61, ATV71, and ATS22

Table 26.9: Altivar 312 Options—Field Installed Kits

Description			For Use on Drives	Catalog Number
DIN Rail Mount Kit	DIN Rail Mounting Plate for 35 mm wide DIN rail		ATV312H018M2, ATV312H037M2, ATV312H055M2, ATV312H075M2, ATV312H018M3, ATV312H037M3, ATV312H055M3, ATV312H075M3	VW3A9804
			ATV312HU11M2, ATV312HU15M2, ATV312HU11M3, ATV312HU15M3, ATV312HU22M3, ATV312H037N4, ATV312H055N4, ATV312H075N4, ATV312HU11N4, ATV312HU15N4, ATV312H075S6, ATV312HU15S6	VW3A9805
Conduit Entrance Kit	Multiple knockout sizes Installation of conduit entrance kit and retention of vent cover on top of drive controller provides the ATV31 with UL Type 1 rating.		ATV312H018M2, ATV312H037M2, ATV312H055M2, ATV312H075M2	VW3A31812
			ATV312H018M3, ATV312H037M3, ATV312H055M3, ATV312H075M3	VW3A31811
			ATV312HU11M3, ATV312HU15M3	VW3A31813
			ATV312HU11M2, ATV312HU15M2, ATV312HU22M3, ATV312H037N4, ATV312H055N4, ATV312H075N4, ATV312HU11N4, ATV312HU15N4, ATV312H075S6, ATV312HU15S6	VW3A31814
			ATV312HU22M2, ATV312HU30M3, ATV312HU40M3, ATV312HU22N4, ATV312HU30N4, ATV312HU40N4, ATV312HU22S6, ATV312HU40S6	VW3A31815
			ATV312HU55M3, ATV312HU75M3, ATV312HU55N4, ATV312HU75N4, ATV312HU55S6, ATV312HU75S6	VW3A31816
			ATV312HD11M3, ATV312HD15M3, ATV312HD11N4, ATV312HD15N4, ATV312HD11S6, ATV312HD15S6	VW3A31817
Line Reactors	230/460 V		See Price Guide 8800PL9701.	
	575 V	Open Style	ATV312H075S6	RL00202
			ATV312HU15S6	RL00403
			ATV312HU22S6	
			ATV312HU40S6	RL00803
			ATV312HU55S6	RL00802
			ATV312HU75S6	RL01202
			ATV312HD11S6	RL01802
			ATV312HD15S6	RL02502
		Enclosed (Type 1)	ATV312H075S6	RL00212
			ATV312HU15S6	RL00413
			ATV312HU22S6	
			ATV312HU40S6	RL00813
			ATV312HU55S6	RL00812
			ATV312HU75S6	RL01212
			ATV312HD11S6	RL01812
			ATV312HD15S6	RL02512
Fan Kit	Installation of the fan kit enables the drive to operate in higher ambient temperatures. The fan mounts on the drive. Consult the product catalog for more information.		ATV61/71HD18M3X–HD22M3X, ATV61/71HD22N4	VW3A9404
			ATV61/71HD30N4–HD37N4	VW3A9405
			ATV61/71HD30M3X–HD45M3X	VW3A9406
			ATV61/71HD45N4–HD75N4	VW3A9407

[10] Refer to 26-14 for remote mounting kit and IP65 option for this keypad.


ATV320HU15M2


ATV320U04M2C

Altivar™ 320 Machine

The new benchmark in machine performance. Altivar 320, part of the new Altivar™ Machine range, is a powerful combination of safety, reliability, and simplicity which makes it a versatile choice that reduces costs both during installation and throughout the machine's life cycle. Altivar 320 has a number of out-of-the-box features for building more effective machines.

Table 26.10: Altivar 320 Selection

Input Line Voltage*[11]*	HP	kW	Continuous Output Current	Catalog Number	Catalog Number
			A	Compact	Book
208/230 Vac Single-Phase	0.25	0.18	1.5	ATV320U02M2C	ATV320U02M2B
	0.5	0.37	3.3	ATV320U04M2C	ATV320U04M2B
	0.75	0.55	3.7	ATV320U06M2C	ATV320U06M2B
	1	0.75	4.6	ATV320U07M2C	ATV320U07M2B
	1.5	1.1	6.9	ATV320U11M2C	ATV320U11M2B
	2	1.5	8	ATV320U15M2C	ATV320U15M2B
	3	2.2	11	ATV320U22M2C	ATV320U22M2B
208/230 Vac Three-Phase	0.25	0.18	1.5	ATV320U02M3C	—
	0.5	0.37	3.3	ATV320U04M3C	—
	0.75	0.55	3.7	ATV320U06M3C	—
	1	0.75	4.8	ATV320U07M3C	—
	1.5	1.1	6.9	ATV320U11M3C	—
	2	1.5	8	ATV320U15M3C	—
	3	2.2	11	ATV320U22M3C	—
	4	3	13.7	ATV320U30M3C	—
	5	—	17.5	ATV320U40M3C	—
	7.5	5.5	27.5	ATV320U55M3C	—
	10	7.5	33	ATV320U75M3C	—
	15	11	54	ATV320D11M3C	—
	20	15	66	ATV320D15M3C	—
400/480 Vac Three-Phase	0.5	0.37	1.5	ATV320U04N4C	ATV320U04N4B
	0.75	0.55	1.9	ATV320U06N4C	ATV320U06N4B
	1	0.75	2.3	ATV320U07N4C	ATV320U07N4B
	1.5	1.1	3	ATV320U11N4C	ATV320U11N4B
	2	1.5	4.1	ATV320U15N4C	ATV320U15N4B
	3	2.2	5.5	ATV320U22N4C	ATV320U22N4B
	4	3	7.1	ATV320U30N4C	ATV320U30N4B
	5	—	9.5	ATV320U40N4C	ATV320U40N4B
	7.5	5.5	14.3	—	ATV320U55N4B
	10	7.5	17	—	ATV320U75N4B
	15	11	27.7	—	ATV320D11N4B
	20	15	33	—	ATV320D15N4B
575/600 Vac Three-Phase	1	0.75	1.7	ATV320U07S6C	—
	2	1.5	2.7	ATV320U15S6C	—
	3	2.2	3.9	ATV320U22S6C	—
	5	3.7/4.0	6.1	ATV320U40S6C	—
	7.5	5.5	9	ATV320U55S6C	—
	10	7.5	11	ATV320U75S6C	—
	15	11	17	ATV320D11S6C	—
	20	15	22	ATV320D15S6C	—

[11] Reference the ATV320 Getting Started Annex SCCR NVE21777 for SCCR ratings, branch circuit protection, and additional single phase ratings.

Altivar™ 320 Accessories

Table 26.11: Altivar 320 Accessories

Catalog Number	Description
VW3A1006	Remote display terminal, IP54
VW3A1007	Remote display terminal, IP65
VW3A1104R10	Remote-mounting cord set, 1 m (3.28 ft)
VW3A1104R30	Remote-mounting cord set, 3 m (9.84 ft)
VW3A1104R50	Remote-mounting cord set, 5 m (16.4 ft)
VW3A1104R100	Remote-mounting cord set, 10 m (32.81 ft)
VW3A1101	Remote graphic display terminal
VW3A1105	Female/female RJ45 adapter for use with VW3A1101
VW3A1102	Remote mounting kit for use with VW3A1101
VW3A1103	Door for use with VW3A1102
VW3A1111	Advanced graphic display
VW3A1112	Remote mounting kit for use with VW3A1111
VW3A8120	Simple Loader configuration tool
VW3A8121	Multi-Loader configuration tool
VW3A8126	Cord set for Multi-Loader tool
TCSWAAC13FB	Universal Bluetooth Interface
VW3A3600	Communication module adapter for ATV320 Compact
VW3A3608	CANopen daisy chain communication module, two RJ45 ports
VW3A3618	CANopen daisy chain communication module, 9–pin male SUB-D connector
VW3A3628	CANopen daisy chain communication module, removable 5–position screw connector
VW3CANCARR03	CANopen cable with 2 RJ45 connectors, 0.3 m
VW3CANCARR1	CANopen cable with 2 RJ45 connectors, 1 m
TCSCAR013M120	CANopen end-of-line terminator with RJ45 connector
VW3CANTAP2	IP20 CANopen junction boxes
VW3A3616	Modbus TCP and EtherNet/IP network module
VW3A3607	PROFIBUS DP V1 communication module
VW3A3609	DeviceNet communication module
VW3A3601	EtherCAT communication module
VW3A3619	Ethernet POWERLINK communication module
VW3A3627	ProfiNet communication module
VW3A3620	Speed monitoring module
VW3A9804	DIN Rail Mounting Kit for use with ATV320U02M•C–ATV320U07M•C
VW3A9805	DIN Rail Mounting Kit for use with ATV320U11M•C–ATV320U22M•C, ATV320U04N4C–ATV320U15N4C, ATV320U07S6C, ATV320U15S6C
VW3A95811	UL Type 1 conformity kit for use with ATV320U02M•C–ATV320U07M•C
VW3A95812	UL Type 1 conformity kit for use with ATV320U11M2C–ATV320U22M2C, ATV320U04N4C–ATV320U15N4C, ATV320U07S6C, ATV320U15S6C
VW3A95813	UL Type 1 conformity kit for use with ATV320U11M3C–ATV320U22M3C
VW3A95814	UL Type 1 conformity kit for use with ATV320U22N4C–ATV320U40N4C, ATV320U22S6C, ATV320U40S6C
VW3A95815	UL Type 1 conformity kit for use with ATV320U30M3C–ATV320U40M3C
VW3A95816	UL Type 1 conformity kit for use with ATV320U55M3C–ATV320U75M3C, ATV320U55S6C, ATV320U75S6C
VW3A95817	UL Type 1 conformity kit for use with ATV320U55N4B, ATV320U75N4B
VW3A95818	UL Type 1 conformity kit for use with ATV320D11M3C–ATV320D15M3C, ATV320D11S6C, ATV320D15S6C
VW3A95819	UL Type 1 conformity kit for use with ATV320D11N4B, ATV320D15N4B
VW3A9920	Adapter for mounting the control module at 90° for use with ATV320•••M2B, ATV320U04N4B–ATV320U40N4B
VW3A9921	Bracket for GV2/ATV320B direct mounting for use with ATV320•••M2B, ATV320U04N4B–ATV320U40N4B
GV2AF5	Adapter plate when using GV2 with ATV320 for use with ATV320•••M2B, ATV320U04N4B–ATV320U40N4B
VW3M7101R01	Daisy chain DC bus cord with two connectors for use with ATV320•••M2B, ATV320U04N4B–ATV320U40N4B
VW3M7102R150	Daisy chain DC bus cord with one connector and flying leads at one end; Shielded cable for use with ATV320•••N4B
VW3M2207	Daisy chain DC bus cord with two connectors Connection kit for VW3M7102R150 Cable for use with ATV320•••N4B

Altivar 340 Machine Drives

Altivar™ 340 Machine

Stay on top of the Smart Machine Era! Altivar Machine ATV340 is engineered for high performance application requirements by maximizing the machine performance thanks to real time variable speed drive operation, more connectivity, flexibility, and scalable safety. The ATV340 is available from 1 to 100 hp with the ability to control any kind of motor in open and closed loop.

Table 26.12: Altivar 340 Selection

Drive	Normal Duty			Heavy Duty			Catalog Number
	hp	kW	Continuous Output Current	hp	kW	Continuous Output Current	
			A			A	
400/480 Vac Three-Phase Modular Drive	1.5	1.1	2.6	1	0.75	2.1	ATV340U07N4
	3	2.2	4.8	2	1.5	3.4	ATV340U15N4
	3	3	6.8	3	2.2	4.8	ATV340U22N4
	5	4	7.6	3	3	6.2	ATV340U30N4
	7.5	5.5	11	5	4	7.6	ATV340U40N4
	10	7.5	14	7.5	5.5	11	ATV340U55N4
	15	11	21	10	7.5	14	ATV340U75N4
	20	15	27	15	11	21	ATV340D11N4
	25	18.5	34	20	15	27	ATV340D15N4
	30	22	40	25	18.5	34	ATV340D18N4
	40	30	52	30	22	40	ATV340D22N4
400/480 Vac Three-Phase Ethernet Drive	1.5	1.1	2.6	1	0.75	2.1	ATV340U07N4E
	3	2.2	4.8	2	1.5	3.4	ATV340U15N4E
	3	3	6.8	3	2.2	4.8	ATV340U22N4E
	5	4	7.6	3	3	6.2	ATV340U30N4E
	7.5	5.5	11	5	4	7.6	ATV340U40N4E
	10	7.5	14	7.5	5.5	11	ATV340U55N4E
	15	11	21	10	7.5	14	ATV340U75N4E
	20	15	27	15	11	21	ATV340D11N4E
	25	18.5	34	20	15	27	ATV340D15N4E
	30	22	40	25	18.5	34	ATV340D18N4E
	40	30	52	30	22	40	ATV340D22N4E
	50	37	74.5	40	30	61.5	ATV340D30N4E
	60	45	88	50	37	74.5	ATV340D37N4E
	75	55	106	60	45	88	ATV340D45N4E
	100	75	145	75	55	106	ATV340D55N4E
	125	90	173	100	75	145	ATV340D75N4E

Altivar™ 340 Accessories

Table 26.13: Altivar 340 Accessories

Catalog Number	Description
VW3A1111	Advanced graphic display
VW3A1112	Remote mounting kit for use with VW3A1111
VW3A1113	Plain text display terminal
VW3A8120	Simple Loader configuration tool
VW3A8121	Multi-Loader configuration tool
VW3A8126	Cord set for Multi-Loader tool
VW3A3608	CANopen daisy chain communication module, two RJ45 ports
VW3A3618	CANopen daisy chain communication module, 9–pin male SUB-D connector
VW3A3628	CANopen daisy chain communication module, removable 5–position screw connector
VW3CANCARR03	CANopen cable with 2 RJ45 connectors, 0.3 m
VW3CANCARR1	CANopen cable with 2 RJ45 connectors, 1 m
TCSCAR013M120	CANopen end-of-line terminator with RJ45 connector
VW3CANTAP2	IP20 CANopen junction boxes
VW3A3607	PROFIBUS DP V1 communication module
VW3A3609	DeviceNet communication module
VW3A3601	EtherCAT communication module
VW3A3619	Ethernet POWERLINK communication module
VW3A3627	ProfiNet communication module
VW3A3620	Speed monitoring module
VW3M7101R01	Daisy chain DC bus cord with two connectors for use with ATV320•••M2B, ATV320U04N4B–ATV320U40N4B
VW3M7102R150	Daisy chain DC bus cord with one connector and flying leads at one end; Shielded cable for use with ATV320•••N4B
VW3M2207	Daisy chain DC bus cord with two connectors Connection kit for VW3M7102R150 Cable for use with ATV320•••N4B

Altivar 61 Drive

Altivar™ 61 Three-Phase

Table 26.14: Altivar 61 Selection

Input Line Voltage	Variable Torque			Catalog Number with LCD Keypad (Stocked)
	Three-Phase Motor Power		Continuous Output Current	
	HP	kW	A	
				
500/600 Vac Three Phase	3	2.2	3.9	ATV61HU22S6X *[12] [13]*
	4	3	5.8	ATV61HU30S6X *[12] [13]*
	5	4	6.1	ATV61HU40S6X *[12] [13]*
	7.5	5.5	9	ATV61HU55S6X *[12] [13]*
	10	7.5	11	ATV61HU75S6X *[12] [13]*
575/690 Vac Three Phase	15	15	17	ATV61HD15Y *[12]*
	20	18.5	22	ATV61HD18Y *[12]*
	25	22	27	ATV61HD22Y *[12]*
	30	30	32	ATV61HD30Y *[12]*
	40	37	41	ATV61HD37Y *[12]*
	50	45	52	ATV61HD45Y *[12]*
	60	55	62	ATV61HD55Y *[12]*
	75	75	77	ATV61HD75Y *[12]*
	100	90	99	ATV61HD90Y *[12]*
	125	110	125	ATV61HC11Y *[12] [14]*
	150	132	150	ATV61HC13Y *[12] [14]*
	—	160	180	ATV61HC16Y *[12] [14]*
	200	200	220	ATV61HC20Y *[12] [14]*
	250	250	290	ATV61HC25Y *[12] [14] [15]*
	350	315	355	ATV61HC31Y *[12] [14] [15]*
	450	400	420	ATV61HC40Y *[12] [14] [15]*
	550	500	543	ATV61HC50Y *[12] [14] [15]*
	700	630	675	ATV61HC63Y *[12] [14] [15]*
	800	800	840	ATV61HC80Y *[12] [14] [15]*

[12] Conformal coating is standard.
[13] Product does not contain EMC filter.
[14] An AC 5% line reactor is mandatory.
[15] These products do not contain a dynamic braking transistor. A separate transistor must be added for applications requiring dynamic braking.

Altivar™ 71 Single-Phase

In an application where it is necessary to use a 240 V single-phase input for a 3-phase motor, the drive must be derated; therefore, the power listed on the drive nameplate will be higher than the power rating on the motor nameplate.

For more information on wire and line reactor sizing, refer to Altivar 61 and 71 Supplementary Ratings (30072-451-38).

Table 26.15: Altivar 71 Selection

Input Line Voltage	With A 3% Line Reactor			Without A 3% Line Reactor			Catalog Number with LCD Keypad *[16]*	Catalog Number for ATV71 and Type 1 conduit entry kit shipped as one line item. Field installation required (packaged as kit at warehouse).	Catalog Number with LED Keypad (Non-stocked)
	Motor Power		Continuous Output Current	Motor Power		Continuous Output Current			
	HP	kW	A	HP	kW	A			
									
208/ 240 Vac Single Phase	—	—	—	0.5	0.37	3	ATV71H075M3 *[17]*	ATV71H075M3T1	ATV71H075M3Z *[17]*
	—	—	—	1	0.75	4.8	ATV71HU15M3 *[17]*	ATV71HU15M3T1	ATV71HU15M3Z *[17]*
	—	—	—	2	1.5	8	ATV71HU22M3 *[17]*	ATV71HU22M3T1	ATV71HU22M3Z *[17]*
	—	—	—	3	2.2	11	ATV71HU30M3 *[17]*	ATV71HU30M3T1	ATV71HU30M3Z *[17]*
	—	3	13.7	—	—	—	ATV71HU40M3 *[17]*	ATV71HU40M3T1	ATV71HU40M3Z *[17]*
	5	4	17.5	—	—	—	ATV71HU55M3 *[17]*	ATV71HU55M3T1	ATV71HU55M3Z *[17]*
	7.5	5.5	27.5	5	4	17.5	ATV71HU75M3 *[17]*	ATV71HU75M3T1	ATV71HU75M3Z *[17]*
	10	7.5	33	7.5	5.5	27.5	ATV71HD15M3X *[17] [18]*	ATV71HD15M3XT1 *[18]*	ATV71HD15M3XZ *[17]*
	—	—	—	10	7.5	33	ATV71HD18M3X *[17] [18]*	ATV71HD18M3XT1 *[18]*	—
	15	11	54	—	—	—	ATV71HD22M3X *[17] [18]*	ATV71HD22M3XT1 *[18]*	—
	20	15	66	15	11	54	ATV71HD30M3X *[17] [18]*	ATV71HD30M3XT1 *[18]*	—
	25	18	75	20	15	66	ATV71HD37M3X *[17] [18]*	ATV71HD37M3XT1 *[18]*	—
	30	22	88	25	18	75	ATV71HD45M3X *[17] [18]*	ATV71HD45M3XT1 *[18]*	—

[16] These products can be ordered with LonWorks® or BACnet communication option card shipped as one line item. Field installation required. Add “LW” to the end of the part number to receive a LonWorks option card. Add “BN” to the end of the partnumber to receive a BACnet option card.

[17] Option to have product treated for increased protection for dusty and corrosive environments. This product is not stocked. On 0.5 hp to 5 hp at 230 Vac single phase, add “S337” to the end of the catalog number. On 7.5 hp to 25 hp at 230 Vac single phase, add “337” to the end of the catalog number. With this option, exposed copper is tinned, circuit boards are conformal coated in critical areas and plastics are treated to better withstand the corrosive nature of certain oils.

[18] Product does not contain an EMC filter.

Altivar™ 71 Three-Phase


ATV71HC28N4


ATV71HC31Y


LCD Keypad


LED Keypad

Table 26.16: Altivar 71 Selection

Input Line Voltage	Constant Torque			*[19]*	Catalog Number ATV71 drive and Type 1 conduit entry kit	Catalog Number with LED Keypad (Non-stocked)
	Three-Phase Motor Power		Continuous Output Current			
	HP	kW	A			
						
208/240 Vac Three Phase	0.5	0.37	3	ATV71H037M3 *[20]*	ATV71H037M3T1	ATV71H037M3Z
	1	0.75	4.8	ATV71H075M3 *[20]*	ATV71H075M3T1	ATV71H075M3Z
	2	1.5	8	ATV71HU15M3 *[20]*	ATV71HU15M3T1	ATV71HU15M3Z
	3	2.2	11	ATV71HU22M3 *[20]*	ATV71HU22M3T1	ATV71HU22M3Z
	4	3	13.7	ATV71HU30M3 *[20]*	ATV71HU30M3T1	ATV71HU30M3Z
	5	4	17.5	ATV71HU40M3 *[20]*	ATV71HU40M3T1	ATV71HU40M3Z
	7.5	5.5	27.5	ATV71HU55M3 *[20]*	ATV71HU55M3T1	ATV71HU55M3Z
	10	7.5	33	ATV71HU75M3 *[20]*	ATV71HU75M3T1	ATV71HU75M3Z
	15	11	54	ATV71HD11M3X *[20][21]*	ATV71HD11M3XT1 *[21]*	ATV71HD11M3XZ *[21]*
	20	15	66	ATV71HD15M3X *[20][21]*	ATV71HD15M3XT1 *[21]*	ATV71HD15M3XZ *[21]*
	25	18	75	ATV71HD18M3X *[20][21]*	ATV71HD18M3XT1 *[21]*	—
	30	22	88	ATV71HD22M3X *[20][21]*	ATV71HD22M3XT1 *[21]*	—
	40	30	120	ATV71HD30M3X *[20][21]*	ATV71HD30M3XT1 *[21]*	—
	50	37	144	ATV71HD37M3X *[20][21]*	ATV71HD37M3XT1 *[21]*	—
	60	45	176	ATV71HD45M3X *[20][21]*	ATV71HD45M3XT1 *[21]*	—
	75	55	221	ATV71HD55M3X *[21][22][23]*	ATV71HD55M3XT1 *[21]*	—
	100	75	285	ATV71HD75M3X *[21][22][23]*	ATV71HD75M3XT1 *[21]*	—

[19] Also possible for use with a synchronous motor. Add “383” to the end of the catalog number.

[20] Option to have product treated for increased protection for dusty and corrosive environments. This product is not stocked. On 0.5 hp to 10 hp at 230 Vac 3 phase and up to 100 hp at 460 V, add “S337” to the end of the catalog number. On 15 hp to 60 hp at 230 Vac 3 phase, add “337” to the end of the catalog number. With this option, exposed copper is tinned, circuit boards are conformal coated in critical areas and plastics are treated to better withstand the corrosive nature of certain oils. This option is standard on 55 kW/75 hp @ 230 Vac 3 phase and higher & 90 kW/125 hp @ 460 Vac and higher .

[21] Product does not contain an EMC filter.

[22] Product ships with a DC choke that must be field mounted. A 5% line reactor may be purchased and installed in place of the DC choke. Add “D” to the end of the catalog number to receive just the AC drive.

[23] Conformal coating is standard.

Table 26.17: Altivar 71 Selection

Input Line Voltage	Constant Torque			Catalog Number with LCD Keypad (Stocked)	Catalog Number for ATV71 drive and Type 1 conduit entry kit shipped as one line item. Field installation required (packaged as kit at warehouse).	Catalog Number with LED Keypad (Non-stocked)
	Three-Phase Motor Power		Continuous Output Current			
	HP	kW	A			
400/480 Vac Three Phase	1	0.75	2.3	ATV71H075N4 *[24] [25]*	ATV71H075N4T1	ATV71H075N4Z
	2	1.5	4.1	ATV71HU15N4 *[24] [25]*	ATV71HU15N4T1	ATV71HU15N4Z
	3	2.2	5.8	ATV71HU22N4 *[24] [25]*	ATV71HU22N4T1	ATV71HU22N4Z
	4	3	7.8	ATV71HU30N4 *[24] [25]*	ATV71HU30N4T1	ATV71HU30N4Z
	5	4	10.5	ATV71HU40N4 *[24] [25]*	ATV71HU40N4T1	ATV71HU40N4Z
	7.5	5.5	14.3	ATV71HU55N4 *[24] [25]*	ATV71HU55N4T1	ATV71HU55N4Z
	10	7.5	17.6	ATV71HU75N4 *[24] [25]*	ATV71HU75N4T1	ATV71HU75N4Z
	15	11	27.7	ATV71HD11N4 *[24] [25]*	ATV71HD11N4T1	ATV71HD11N4Z
	20	15	33	ATV71HD15N4 *[24] [25]*	ATV71HD15N4T1	ATV71HD15N4Z
	25	18	41	ATV71HD18N4 *[24] [25]*	ATV71HD18N4T1	ATV71HD18N4Z
	30	22	48	ATV71HD22N4 *[24] [25]*	ATV71HD22N4T1	ATV71HD22N4Z
	40	30	66	ATV71HD30N4 *[24] [25]*	ATV71HD30N4T1	ATV71HD30N4Z
	50	37	79	ATV71HD37N4 *[24] [25]*	ATV71HD37N4T1	ATV71HD37N4Z
	60	45	94	ATV71HD45N4 *[24] [25]*	ATV71HD45N4T1	ATV71HD45N4Z
	75	55	116	ATV71HD55N4 *[24] [25]*	ATV71HD55N4T1	ATV71HD55N4Z
	100	75	160	ATV71HD75N4 *[24] [25]*	ATV71HD71N4T1	ATV71HD75N4Z
	125	90	179	ATV71HD90N4 *[26] [25]*	ATV71HD90N4T1	—
	150	110	215	ATV71HC11N4 *[26] [25]*	—	—
	200	130	259	ATV71HC13N4 *[26] [25]*	—	—
	250	160	314	ATV71HC16N4 *[26] [25]*	—	—
	300	200	387	ATV71HC20N4 *[26] [25] [27]*	—	—
	400	250	481	ATV71HC25N4 *[26] [25] [27]*	—	—
	450	280	550	ATV71HC28N4 *[26] [25] [27]*	—	—
	500	310	616	ATV71HC31N4 *[26] [25] [27]*	—	—
	600	400	759	ATV71HC40N4 *[26] [25] [27]*	—	—
	700	500	941	ATV71HC50N4 *[26] [25] [27]*	—	—
500/600 Vac Three Phase	2	1.5	2.7	ATV71HU15S6X *[28]*	—	—
	3	2.2	3.9	ATV71HU22S6X *[28]*	—	—
	4	3	5.8	ATV71HU30S6X *[28]*	—	—
	5	4	6.1	ATV71HU40S6X *[28]*	—	—
	7.5	5.5	9	ATV71HU55S6X *[28]*	—	—
	10	7.5	11	ATV71HU75S6X *[28]*	—	—
575/690 Vac Three Phase	15	15	17	ATV71HD15Y *[28]*	—	—
	20	18.5	22	ATV71HD18Y *[28]*	—	—
	25	22	27	ATV71HD22Y *[28]*	—	—
	30	30	32	ATV71HD30Y *[28]*	—	—
	40	37	41	ATV71HD37Y *[28]*	—	—
	50	45	52	ATV71HD45Y *[28]*	—	—
	60	55	62	ATV71HD55Y *[28]*	—	—
	75	75	77	ATV71HD75Y *[28]*	—	—
	100	90	99	ATV71HD90Y *[28]*	—	—
	125	110	125	ATV71HC11Y *[28] [29]*	—	—
	150	132	150	ATV71HC13Y *[28] [29]*	—	—
	175	160	180	ATV71HC16Y *[28] [29]*	—	—
	200	200	220	ATV71HC20Y *[28] [29] [27]*	—	—
	250	250	290	ATV71HC25Y *[28] [29] [27]*	—	—
	350	315	355	ATV71HC31Y *[28] [29] [27]*	—	—
	450	400	420	ATV71HC40Y *[28] [29] [27]*	—	—
	550	500	543	ATV71HC50Y *[28][29] [27]*	—	—
	700	630	675	ATV71HC63Y *[28] [29] [27]*	—	—

[24] Option to have product treated for increased protection for dusty and corrosive environments. This product is not stocked. Up to 100 hp at 460 V, add “S337” to the end of the catalog number. With this option, exposed copper is tinned, circuit boards are conformal coated in critical areas and plastics are treated to better withstand the corrosive nature of certain oils. This option is standard on 90 kW/125 hp @ 460 Vac and higher.

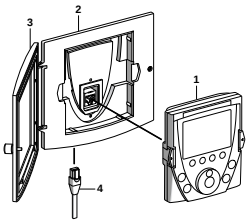
[25] Also possible for use with a synchronous motor. Add “383” to the end of the catalog number and multiply the listed price by 1.2 to obtain new price.

[26] Product ships with a DC choke that must be field mounted. A 5% line reactor may be purchased and installed in place of the DC choke. Add “D” to the end of the catalog number to receive just the AC drive.

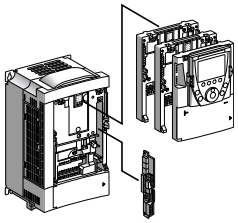
[27] These products do not contain a dynamic braking transistor. A separate transistor must be added for applications requiring dynamic braking.

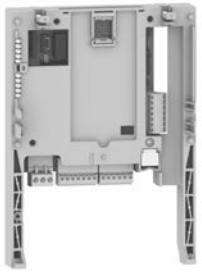
[28] Conformal coating is standard.

[29] An AC 5% line reactor is mandatory.



LCD Keypad Mounting Kits


Option Card Assembly


I/O Option Card


Communication Option Card


Incremental Encoder Interface Option Card

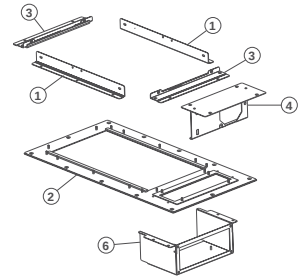
Altivar™ 61 / 71 Options

Table 26.18: Altivar 61/71 Options—Field Installed

Description			For Use on Drives	Catalog No.
Operator Interface	LCD graphic keypad: IP54 rating		any ATV61 any ATV71	VW3A1101
	Remote mounting kit: includes bezel and mounting hardware			VW3A1102
	Door for use with remote mount kit for IP65 rating			VW3A1103
	Cable for remote mounting LCD graphic keypad RJ-45 connector on each end	1 meter		VW3A1104R10
		3 meters		VW3A1104R30
		5 meters		VW3A1104R50
		10 meters		VW3A1104R100
	RJ-45 female—female adaptor to connect LCD keypad and cable. Not required if using VW3A1102.			VW3A1105
	Operator, mounting collar, 2.5 kilohm, ½ watt potentiometer		Altivar 61	ATVPOT25K
SoMove™ Software	This software enables the user to configure, set, debug and organize maintenance task for the complete Altivar product line and the Altistart 22 and Altistart 48 soft starters. It can also be used to customize the integrated display terminal menus. It can be used with a direct connection or a Bluetooth® wireless connection. Free download www.schneider-electric.us			
	USB/RS485 cord set (equipped with RJ45 socket)		Altivar AC drives Altistart™ 48 TeSys™ U-line	TCSMCNAM3M002P
For Wireless Connection	Modbus™ to Bluetooth® Gateway and RS-485 converter		any ATV61 any ATV71	VW3A8114
I/O Adaptor	115 Vac logic input adaptor adapts 7 logic inputs for use with user supplied 115 Vac signals		any ATV61 any ATV71	VW3A3101
I/O Extension Option Cards	Basic I/O option card—4 logic inputs, 2 logic outputs, 1 Form C relay output, an input for PTC motor probes, a 24 Vdc output, and a 10 Vdc output		any ATV61 any ATV71	VW3A3201
	Extended I/O option card—contains all the I/O on the Basic I/O option card plus 2 analog inputs, 2 analog outputs, 1 pulse input			VW3A3202
CANopen Adapter	This adaptor connects to the RJ-45 port and provides a 9–pin male SUB–D connector conforming to the CANopen standard (CIA DRP 303–1)		any ATV61 any ATV71	VW3CANA71
CANopen Connector	9-pin female SUB–D with line terminator (can be disabled). 180º cable outlet CAN–H, CAN–L, CAN–GND connection		any ATV61 any ATV71	VW3CANKCDF180T
Incremental Encoder Interface Option Cards	with RS-422 outputs, 5 Vdc		any ATV71	VW3A3401
	with RS-422 outputs, 15 Vdc			VW3A3402
	with open collector outputs, 12 Vdc			VW3A3403
	with open collector outputs, 15 Vdc			VW3A3404
	with push–pull outputs, 12 Vdc			VW3A3405
	with push–pull outputs, 15 Vdc			VW3A3406
	with push–pull outputs, 24 Vdc			VW3A3407
	Resolver			VW3A3408 *[30]*
	Universal with SinCos, SinCos Hiperface®, SinCos EnDat® or SSI output			VW3A3409 *[30]*
	Incremental with RS422 outputs and encoder emulation			VW3A3411 *[30]*
Communication Option Cards	Modbus / Uni-Telway™ card		any ATV61 any ATV71	VW3A3303
	Ethernet IP/Modbus TCP-IP daisy chain card			VW3A3320
	Interbus® S card			VW3A3304
	Profibus DP card			VW3A3307
	PROFINET card			VW3A3327
	Powerlink card			VW3A3321
	EtherCAT card			VW3A3326
	Profibus DPv1 card			VW3A3307S371
	DeviceNet™ card			VW3A3309
	LonWorks® card		any ATV61	VW3A3312
	Metasys® N2 card			VW3A3313
	Apogee® FLN P1 card			VW3A3314
	BACnet card			VW3A3315
IMC Option Card	ATV IMC drive controller card *[31]*		—	VW3A3521
Controller Inside Option Card	Programmable option card, conforms with IEC61131–3 programming standard.		any ATV61 any ATV71	VW3A3501 *[32]*
Water Solutions Control Card	This option card contains a variety of pre-programmed functions and features to manage multi–pump installations.		any ATV61 any ATV71	VW3A3503 *[32]*
Simple Loader	Using RJ45 port connections, the configurations of a drive can be downloaded then uploaded to compatible drive.		ATV31, ATV61, and ATV71	VW3A8120

[30] For use with the ATV71H...383 drive ONLY.
[31] SoMachine is required to use this product.
[32] The drive cannot support the VW3A3503 water solutions card and the VW3A3501 controller inside option card simultaneously.

Table 26.19: Options—Field Installed (continued)

Description		For Use on Drives	Catalog No.
Flange Kit   VW3A9506	Kit includes: a metal frame, seals, mounting hardware, and a bracket to mount the fan kit so the fan can be accessed from the front of the drive template. Kit used to mount the heatsink of the drive outside of an enclosure.	ATV61/71H037M3...HU15M3 ATV61/71H075N4...HU22N4	VW3A9501
		ATV61/71HU22M3...HU40M3 ATV61/71HU30N4...HU40N4	VW3A9502
		ATV61/71HU55M3 ATV61/71HU55N4, HU75N4	VW3A9503
		ATV61/71HU75M3 ATV61/71HD11N4	VW3A9504
		ATV61/71HD11M3X..HD15M3X ATV61/71HD15N4, HD18N4	VW3A9505
		ATV61/71HD18M3X..HD22M3X ATV61/71HD22N4, ATV61/71HU30Y...HD30Y	VW3A9506
		ATV61/71HD30N4, HD37N4	VW3A9507
		ATV61/71HD30M3X..HD45M3X	VW3A9508
		ATV61/71HD45N4...HD75N4, ATV61/71HD37Y...HD90Y	VW3A9509
		ATV61HD55M3X...HD75M3X ATV61HD90N4...HC11N4 ATV71HD55M3X, ATV71HD90N4	VW3A9510
		ATV61HD90M3X, ATV61HC13N4 ATV71HD75M3X, ATV71HC11N4	VW3A9511
		ATV61HC16N4, ATV61HC20Y, ATV61/71HC11Y...HC16Y, ATV71HC13N4	VW3A9512
		ATV61HC22N4, ATV71HC16N4	VW3A9513
		ATV61HC25N4…HC31N4 ATV61HC40Y ATV61/71HC25Y, HC31Y ATV71HC20N4...HC28N4 ATV71HC20Y	VW3A9514
		ATV61HC25N4…HC31N4 with VW3A7101 braking transistor ATV61HC40Y ATV61/71HC25Y, HC31Y ATV71HC20N4...HC28N4 with VW3A7101 braking transistor ATV71HC20Y	VW3A9515
Type 1 Conduit Kit	Kit includes: a metal box with conduit knockouts. The kit provides conduit landing when wall mounting the drive.	ATV61/71H037M3...HU15M3 ATV61/71H075N4...HU22N4	VW3A9201
		ATV61/71HU22M3...HU40M3 ATV61/71HU30N4...HU40N4	VW3A9202
		ATV61/71HU55M3 ATV61/71HU55N4, HU75N4	VW3A9203
		ATV61/71HU75M3 ATV61/71HD11N4	VW3A9204
		ATV61/71HD11M3X..HD15M3X ATV61/71HD15N4, HD18N4	VW3A9205
		ATV61/71HD18M3X..HD22M3X ATV61/71HD22N4 ATV61/71HU30Y...HD30Y	VW3A9206
		ATV61/71HD30N4, HD37N4	VW3A9207
		ATV61/71HD30M3X..HD45M3X	VW3A9217
		ATV61/71HD45N4..HD75N4 ATV61/71HD37Y...HD90Y	VW3A9208
		ATV61HD55M3X...HD75M3X ATV61HD90N4...HC11N4 ATV71HD55M3X, ATV71HD90N4, ATV61HC11N4	VW3A9209
		ATV61HD90M3X, ATV61HC13N4 ATV71HD75M3X, ATV71HC11N4	VW3A9210
		ATV61HC16N4, ATV71HC13N4 ATV61/71HC11Y...HC16Y ATV61HC20Y	VW3A9211
		ATV61HC22N4, ATV71HC16N4	VW3A9212
		ATV61HC25N4...ATV61HC31N4 ATV71HC20N4...HC28N4 ATV71HC20Y ATV61/71HC25Y, HC31Y ATV61HC40Y	VW3A9213
		ATV61HC25N4...HC31N4 with VW3A7101 braking transistor ATV71HC20N4...HC28N4 with VW3A7101 braking transistor ATV71HC20Y ATV61/71HC25Y, HC31Y ATV61HC40Y	VW3A9214
Profibus Option Card Cover	Type 1 cover for Profibus Option Card	230 V Drive controllers: ATV61H•••• *[33]* / ATV71H•••• — 480 V Drive controllers: ATV61H•••• / ATV71H••••	
		075M3 / 037M3 — 075N4 / 075N4	VW3A9201PF
		U15M3 / 075M3 — U15N4 / U15N4	
		— / U15M3 — U22N4 / U22N4	
		U22M3 / U22M3 — U30N4 / U30N4	VW3A9292PF
		U30M3 / U30M3 — U40N4 / U40N4	
		U40M3 / U40M3 — — / —	
		U55M3 / U55M3 — U55N4 / U55N4	VW3A9203PF
		— / — — U75N4 / U75N4	
		U75M3 / U75M3 — D11N4 / D11N4	VW3A9204PF
		D11M3X / D11M3X — D15N4 / D15N4	VW3A9205PF
		D15M3X / D15M3X — D18N4 / D18N4	

[33] The symbol "•" indicates the part of the number that varies with controller size or rating.

Altivar Process 630

New!

Altivar™ Process 630/650

Table 26.20: Altivar Process 630/650 Selection

Input Line Voltage	Normal Duty [34]			Heavy Duty [35]			Catalog Number
	Three-phase Motor Power [36]		Continuous Output Current [37]	Three-phase Motor Power [36]		Continuous Output Current [37]	
	HP	kW	A	HP	kW	A	
208/240 Vac Three Phase	1	0.75	4.6	0.5	0.37	3.3	ATV630U07M3
	2	1.5	8	1	0.75	4.6	ATV630U15M3
	3	2.2	11.2	2	1.5	8	ATV630U22M3
	4	3.0	13.7	3	2.2	11.2	ATV630U30M3
	5	4.0	18.7	4	3	13.7	ATV630U40M3
	7.5	5.5	25.4	5	4	18.7	ATV630U55M3
	10	7.5	32.7	7.5	5.5	25.4	ATV630U75M3
	15	11	46.8	10	7.5	32.7	ATV630D11M3
	20	15	63.4	15	11	46.8	ATV630D15M3
	25	18.5	78.4	20	15	63.4	ATV630D18M3
	30	22	92.6	25	18.5	78.4	ATV630D22M3
	40	30	123	30	22	92.6	ATV630D30M3
	50	37	149	40	30	123	ATV630D37M3
	60	45	176	50	37	149	ATV630D45M3
	75	55	211	60	45	176	ATV630D55M3
	100	75	282	75	55	211	ATV630D75M3
400/480 Vac Three Phase	1	0.75	2.2	0.5	0.37	1.5	ATV630U07N4 ATV650U07N4U
	2	1.5	4	1	0.75	2.2	ATV630U15N4 ATV650U15N4U
	3	2.2	5.6	2	1.5	4	ATV630U22N4 ATV650U22N4U
	4	3	7.2	3	2.2	5.6	ATV630U30N4 ATV650U30N4U
	5	4	9.3	4	3	7.2	ATV630U40N4 ATV650U40N4U
	7.5	5.5	12.7	5	4	9.3	ATV630U55N4 ATV650U55N4U
	10	7.5	16.5	7.5	5.5	12.7	ATV630U75N4 ATV650U75N4U
	15	11	23.5	10	7.5	16.5	ATV630D11N4 ATV650D11N4U
	20	15	31.7	15	11	23.5	ATV630D15N4 ATV650D15N4U
	25	18.5	39.2	20	15	31.7	ATV630D18N4 ATV650D18N4U
	30	22	46.3	25	18.5	39.2	ATV630D22N4 ATV650D22N4U
	40	30	61.5	30	22	46.3	ATV630D30N4 ATV650D30N4U
	50	37	74.5	40	30	61.5	ATV630D37N4 ATV650D45N4U
	60	45	88	50	37	74.5	ATV630D45N4 ATV650D55N4U
	75	55	106	60	45	88	ATV630D55N4 ATV650D55N4U
	100	75	145	75	55	106	ATV630D75N4 ATV650D75N4U
	125	90	173	100	75	145	ATV630D90N4 ATV650D90N4U
	150	110	211	125	90	173	ATV630C11N4
	200	130	250	150	110	180	ATV630C13N4
	250	160	302	200	132	240	ATV630C16N4
	350	220	324	250	160	246	ATV630C22N4
	400	250	366	300	220	301	ATV630C25N4
	450	310	461	400	250	375	ATV630C31N4
690 Vac Three Phase	3	2.2	3.1	2	1.5	2.4	ATV630U22Y6
	—	3	4.2	3	2.2	3.1	ATV630U30Y6
	5	4	5.4	—	3	4.2	ATV630U40Y6
	7.5	5.5	7.2	5	4	5.4	ATV630U55Y6
	10	7.5	9.5	7.5	5.5	7.2	ATV630U75Y6
	15	11	13.5	10	7.5	9.5	ATV630D11Y6
	20	15	18	15	11	13.5	ATV630D15Y6
	25	18	24	20	15	18	ATV630D18Y6
	30	22	29	25	18	24	ATV630D22Y6
	40	30	34	30	22	29	ATV630D30Y6
	50	37	45	40	30	34	ATV630D37Y6
	60	45	55	50	37	45	ATV630D45Y6
	75	55	66	60	45	55	ATV630D55Y6
	100	75	83	75	55	66	ATV630D75Y6
	125	90	108	100	75	83	ATV630D90Y6

[34] Normal duty applications requiring an overload up to 110% for 60 seconds. Typical for variable torque loads.
[35] Heavy duty applications requiring an overload up to 150% for 60 seconds. Typical for constant torque loads.
[36] These values are given for a nominal switching frequency of 4 kHz up to ATV630D45N4, or 2.5 kHz for ATV630D55N4...D90N4 for use in continuous operation. The switching frequency is adjustable from 1...16 kHz for all ratings. Above 2.5 or 4 kHz (depending on the rating), the drive will 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 the derating curves on our website www.schneider- electric.com).
[37] Typical value for the indicated motor power and for the maximum prospective line Isc.

Altivar Process 930

Altivar™ Process 930/950

Table 26.21: Altivar Process 930/950 Selection

Input Line Voltage	Normal Duty *[38]*			Heavy Duty *[39]*			Catalog Number
	Three-phase Motor Power *[40]*		Continuous Output Current *[41]*	Three-phase Motor Power *[40]*		Continuous Output Current *[41]*	
	HP	kW	A	HP	kW	A	
208/240 Vac Three Phase	1	0.75	4.6	0.5	0.37	3.3	ATV930U07M3
	2	1.5	8	1	0.75	4.6	ATV930U15M3
	3	2.2	11.2	2	1.5	8	ATV930U22M3
	4	3.0	13.7	3	2.2	11.2	ATV930U30M3
	5	4.0	18.7	4	3	13.7	ATV930U40M3
	7.5	5.5	25.4	5	4	18.7	ATV930U55M3
	10	7.5	32.7	7.5	5.5	25.4	ATV930U75M3
	15	11	46.8	10	7.5	32.7	ATV930D11M3
	20	15	63.4	15	11	46.8	ATV930D15M3
	25	18.5	78.4	20	15	63.4	ATV930D18M3
	30	22	92.6	25	18.5	78.4	ATV930D22M3
	40	30	123	30	22	92.6	ATV930D30M3
	50	37	149	40	30	123	ATV930D37M3
	60	45	176	50	37	149	ATV930D45M3
	75	55	211	60	45	176	ATV930D55M3
	100	75	282	75	55	211	ATV930D75M3
400/480 Vac Three Phase	1	0.75	2.2	0.5	0.37	1.5	ATV930U07N4 ATV950U07N4U
	2	1.5	4	1	0.75	2.2	ATV930U15N4 ATV950U15N4U
	3	2.2	5.6	2	1.5	4	ATV930U22N4 ATV950U22N4U
	4	3	7.2	3	2.2	5.6	ATV930U30N4 ATV950U30N4U
	5	4	9.3	4	3	7.2	ATV930U40N4 ATV950U40N4U
	7.5	5.5	12.7	5	4	9.3	ATV930U55N4 ATV950U55N4U
	10	7.5	16.5	7.5	5.5	12.7	ATV930U75N4 ATV950U75N4U
	15	11	23.5	10	7.5	16.5	ATV930D11N4 ATV950D11N4U
	20	15	31.7	15	11	23.5	ATV930D15N4 ATV950D15N4U
	25	18.5	39.2	20	15	31.7	ATV930D18N4 ATV950D18N4U
	30	22	46.3	25	18.5	39.2	ATV930D22N4 ATV950D22N4U
	40	30	61.5	30	22	46.3	ATV930D30N4 ATV950D30N4U
	50	37	74.5	40	30	61.5	ATV930D37N4 ATV950D45N4U
	60	45	88	50	37	74.5	ATV930D45N4 ATV950D55N4U
	75	55	106	60	45	88	ATV930D55N4 ATV950D55N4U
	100	75	145	75	55	106	ATV930D75N4 ATV950D75N4U
	125	90	173	100	75	145	ATV930D90N4 ATV950D90N4U
	150	110	211	125	90	173	ATV930C11N4C
	200	130	250	150	110	180	ATV930C13N4C
	250	160	302	200	132	240	ATV930C16N4C
	250	160	302	200	132	240	ATV930C16N4
	350	220	324	250	160	246	ATV930C22N4
	400	250	366	300	220	301	ATV930C25N4C
	450	310	461	400	250	375	ATV930C31N4C
690 Vac Three Phase	3	2.2	3.1	2	1.5	2.4	ATV930U22Y6
	—	3	4.2	3	2.2	3.1	ATV930U30Y6
	5	4	5.4	—	3	4.2	ATV930U40Y6
	7.5	5.5	7.2	5	4	5.4	ATV930U55Y6
	10	7.5	9.5	7.5	5.5	7.2	ATV930U75Y6
	15	11	13.5	10	7.5	9.5	ATV930D11Y6
	20	15	18	15	11	13.5	ATV930D15Y6
	25	18	24	20	15	18	ATV930D18Y6
	30	22	29	25	18	24	ATV930D22Y6
	40	30	34	30	22	29	ATV930D30Y6
	50	37	45	40	30	34	ATV930D37Y6
	60	45	55	50	37	45	ATV930D45Y6
	75	55	66	60	45	55	ATV930D55Y6
	100	75	83	75	55	66	ATV930D75Y6
	125	90	108	100	75	83	ATV930D90Y6

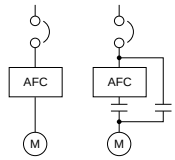
[38] Normal duty applications requiring an overload up to 120% for 60 seconds. Typical for variable torque loads.
[39] Heavy duty applications requiring an overload up to 150% for 60 seconds. Typical for constant torque loads.
[40] These values are given for a nominal switching frequency of 4 kHz up to ATV930D45N4, or 2.5 kHz for ATV930D55N4...D90N4 for use in continuous operation. The switching frequency is adjustable from 1...16 kHz for all ratings. Above 2.5 or 4 kHz (depending on the rating), the drive will 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 the derating curves on our website www.schneider- electric.com).
[41] Typical value for the indicated motor power and for the maximum prospective line Isc.

Altivar™ 600/900 Accessories

Table 26.22: Accessories for Altivar Process 600/900

Description			Catalog Number
Operator Interface	Graphic keypad		VW3A1111
	Door Mounting kit for graphic keypad, Type 12		VW3A1112
	Remote mounting kit RJ45 connector, IP65		VW3A1115
	Cable for remote mounting LCD graphic keypad	1 meter	VW3A1104R10
		3 meters	VW3A1104R30
		5 meters	VW3A1104R50
		10 meters	VW3A1104R100
Wireless Connection	Wifer Wi-Fi Module		TCSEGWB13FA0
I/O Extension Option Cards	Digital and Analog I/O extension module		VW3A3203
	Output Relays extension module		VW3A3204
Communication Option Cards	Ethernet/IP Modbus TCP dual port		VW3A3720
	PROFINET		VW3A3627
	PROFIBUS DPv1 option card		VW3A3607
	DeviceNet option card		VW3A3609
	CANopen	2x RJ45 Daisy Chain	VW3A3608
		SUB-D	VW3A3618
		Screw terminal	VW3A3628
	BACnet MS/TP (ATV600)		VW3A3725
	Ethernet IP / Modbus TCP dual port with MultiVFD (ATV600)		VW3A3721
	EtherCAT (ATV900)		VW3A3601
Encoder Interface Modules	Digital Encoder Interface Module		VW3A3420
	Analog Encoder Interface Module		VW3A3422
	Resolver Encoder Interface Module		VW3A3423
	HTL Encoder Interface Module		VW3A3424
External Heat Sink Mounting Kit	Frame 1		NSYPTDS1
	Frame 2		NSYPTDS2
	Frame 3		NSYPTDS3
	Frame 4		NSYPTDS4
	Frame 5		NSYPTDS5
	Wall Mount kit		NSYAEFPFPTD
Replacement Cooling Fan Kit	Frame 1		VX5VPS1001
	Frame 2		VX5VPS2001
	Frame 3		VX5VPS3001
	Frame 4		VX5VPS4001
	Frame 5		VX5VPS5001
	Frame 6		VX5VPS6001
	Frame A		VX5VP0A001
	Frame B/C		VX5VP0BC001
Common Mode Noise Filters	Frame 1		VW3A5501
	Frame 2		VW3A5502
	Frame 3		VW3A5503
	Frame 4		VW3A5504
	Frame 5		VW3A5505
	Frame 6		VW3A5506

S-Flex 212 Enclosed
Drive Controller Type 1, 12, 3R
Rated +14 to +104 °F
(-10 to +40 °C)



S-Flex™ Variable Torque AC Drive—208 V, 230 V, and 460 V Ratings

The AHRI certified S-Flex enclosed drive features the Altivar 212 drive and provides 100 KAIC rating for commercial pump, fan, and scroll compressor applications.

The S-Flex is an economical package that includes a circuit breaker disconnect and option bypass contactors, drive input disconnect switch or line contactor.

The S-Flex is rated as a UL Type 1, 12, and 3R enclosure an ideal for use in residential high rise and mixed-use buildings, commercial office buildings, schools and campus environments.

All S-Flex 212 Enclosed Drives are supplied with:

- Altivar™ 212 power converter
- Square D™ circuit breaker disconnect (Power Fuses for 460 V version only)
- Coordinated short circuit rating for 100,000 A
- Adjustable Frequency Controller-Off-Bypass selector switch
- Local/Remote configurable on controller
- Power On red LED
- Bypass Run green LED
- Fire/Freezestat interlock for Adjustable Frequency Drive and Bypass mode
- Form C Adjustable Frequency Controller fault auxiliary contact
- Modbus RJ-45 communication port
- Smoke Purge Function
- Bypass Run Auxiliary Contact
- Drive Run Auxiliary Contact
- Full Voltage Bypass Power Circuit with overload relay
- 120 Vac fused control power transformer

Table 26.23: Output Amperes

HP	208 V	230 V	460 V
1	4.8	4.2	2.1
2	7.8	6.8	3.4
3	11	9.6	4.8
5	17.5	15.2	7.6
7.5	25.3	22	11
10	32.2	28	14
15	48.3	42	21
20	62.1	54	27
25	78.2	68	34
30	92	80	40
40	120	104	52
50	—	—	65
60	—	—	77
75	—	—	96
100	—	—	124

Table 26.24: S-Flex 212 Type 1 Enclosed Drive Controller Selection

Input Line Voltage	HP	kW	Output Current A	Catalog Number
208 Vac Three-phase	1	0.75	4.8	SFD212CG2YB07D07
	2	1.5	7.8	SFD212DG2YB07D07
	3	2.2	11	SFD212EG2YB07D07
	5	4	17.5	SFD212FG2YB07D07
	7.5	5.5	25.3	SFD212GG2YB07D07
	10	7.5	32.2	SFD212HG2YB07D07
	15	11	48.3	SFD212JG2YB07D07
	20	15	62.1	SFD212KG2YB07D07
	25	18.5	78.2	SFD212LG2YB07D07
	30	22	92	SFD212MG2YB07D07
	40	30	120	SFD212NG2YB07D07
460 Vac Three-phase	1	0.75	2.1	SFD212CG4YB07D07
	2	1.5	3.4	SFD212DG4YB07D07
	3	2.2	4.8	SFD212EG4YB07D07
	5	4	7.6	SFD212FG4YB07D07
	7.5	5.5	11	SFD212GG4YB07D07
	10	7.5	14	SFD212HG4YB07D07
	15	11	21	SFD212JG4YB07D07
	20	15	27	SFD212KG4YB07D07
	25	18.5	34	SFD212LG4YB07D07
	30	22	40	SFD212MG4YB07D07
	40	30	52	SFD212NG4YB07D07
	50	37	65	SFD212PG4YB07D07
	60	45	77	SFD212QG4YB07D07
	75	55	96	SFD212RG4YB07D07
	100	75	124	SFD212SG4YB07D07

Table 26.25: Additional S-Flex Configurations Available Using Product Selector
Example:SFD212CG3YA06X07 (bold text in selection table below)

TYPE (01)	HP (02)	Enclosure (03)	Voltage (04)	Power Circuit (05)	Communication Options (06)	Misc Options (07)
SFD212	**C = 1 hp** D = 2 hp E = 3 hp F = 5 hp G = 7.5 hp H = 10 hp J = 20 hp K= 20 hp L = 30 hp N = 40 hp P = 50 hp (460 V only) Q = 60 hp (460 V only) R = 75 hp (460 V only) S = 100 hp (460 V only)	**G = UL Type 1 General Purpose** **A = UL Type 12K Industrial Use, Dust-Tight/Drip-Tight** **H = UL Type 3R Outdoor Use**	2 = 208 Vac **3 = 230 Vac** 4 = 460 Vac	W = Without Bypass **Y = Full Voltage Bypass**	**A06 = BACnet Setup** B06 = LonWorks® Card C06 = Metasys® N2 Setup D06 = Apogee™ P1 Setup N06 = Modbus *[1]*	A07 = Drive Input Disconnect *[2]* B07 = Line Contactor *[2]* S07 = Seismic Certification D07 = Full Text Keypad K07 = cUL Marking (Canada) T07 = 50 °C Ambient Operation *[3]* **X07 = AC Line Reactor**

Table 26.26: S-Flex Accessories

Description	Catalog Number
Software	
SoMove™ — This software enables the user to configure, set, debug and organize maintenance task for the complete Altivar product line and the Altistart 22 and Altistart 48 soft starters. It can also be used to customize the integrated display terminal menus. It can be used with a direct connection or a Bluetooth® wireless connection. Free download www.schneider-electric.us	
User Interface Kits	
USB to RJ45 Adaptor Kit (For use in connecting to a PC with a USB port)	TCSMCNAM3M002P
EZ-M Mounting Channel, 72 in. length	EZM72MC
Altivar and Altistart Programming cable for iPad 30–Pin mobile to RS-485 Converter, 2 meters	VW3A8151R20U

NOTE: See the Instruction Bulletin for set up instructions.

[1] Default selection. For Modbus control, see the Instruction manual.
[2] Options A07 Drive Input disconnect and B07 line contactor are available only when a full voltage bypass option Y is selected. Options A07 and B07 are mutually exclusive.
[3] For UL Type 12 and 3R only.

Altistart™ 22 Soft Starters

The Altistart 22 is designed for commercial and normal duty industrial applications, it uses both voltage and torque control to provide a soft start and soft stop for there-phase asynchronous motors between 17 A and 590 A. The conformal-coated, printed circuit boards provide enhanced resistance to harsh environments, increasing the service life of installations and lowering maintenance costs.

Select the Altistart 22 soft starter using the nameplate full-load ampere rating of the motor and the table below. The horsepower ratings are for reference only.

Table 26.27: Altistart 22 Selection *[1]*

208 V	230 V	400 kW	460 V	575 V	Rated A	Softstart Reference *[2] or [3]*	Dimensions (inches)			Frame Size
							W	H	D	
3	5	5.5	10	15	17	ATS22D17S6,S6U	5.1	9.8	6.6	A
7.5	10	11	20	25	32	ATS22D32S6,S6U	5.1	9.8	6.6	A
— *[4]*	15	18.5	30	40	47	ATS22D47S6,S6U	5.1	9.8	6.6	A
15	20	22	40	50	63	ATS22D62S6,S6U	5.7	10.9	8.1	B
20	25	30	50	60	75	ATS22D75S6,S6U	5.7	10.9	8.1	B
25	30	37	60	75	88	ATS22D88S6,S6U	5.7	10.9	8.1	B
30	40	45	75	100	110	ATS22C11S6,S6U	5.9	13	9	C
40	50	55	100	125	140	ATS22C14S6,S6U	5.9	13	9	C
50	60	75	125	150	170	ATS22C17S6,S6U	5.9	13	9	C
60	75	90	150	200	210	ATS22C21S6,S6U	8.1	15.6	11.8	D
75	100	110	200	250	250	ATS22C25S6,S6U	8.1	15.6	11.8	D
100	125	132	250	300	320	ATS22C32S6,S6U	8.1	15.6	11.8	D
125	150	160	300	350	410	ATS22C41S6,S6U	8.1	15.6	11.8	D
150	—	220	350	400	480	ATS22C48S6,S6U	11.9	16.8	13.4	E
—	200	250	400	500	590	ATS22C59S6,S6U	11.9	16.8	13.4	E

Table 26.28: Maximum Number of Starts/Stops per Hour

Catalog Number	Number of starts/Stops per Hour
ATS22D17S6U–D88S6U	6 (up to 10 with optional fan)
ATS22C11S6U–C17S6U	4 (up to 10 with optional fan)
ATS22C21S6U–C59S6U	4 (comes with fan)

Altistart™ 22 Options: Fans and Accessories

Table 26.29: Altistart 22 Accessories Selection

Description		Length	Catalog Number
Software			
SoMove™	This software enables the user to configure, set, debug and organize maintenance task for the complete Altivar product line and the Altistart 22 and Altistart 48 soft starters. It can also be used to customize the integrated display terminal menus. It can be used with a direct connection or a Bluetooth® wireless connection. Free download www.schneider-electric.us		
User Interface Kits			
Cable	USB/RS485 cord set (equipped with RJ45 socket)		TCSMCNAM3M002P
Remote Keypadad	IP54/NEMA® 12 keypad		VW3G22101
	IP65 keypad		VW3G22102 *[5]*
Remote Keypad Cords Equipped with 2 RJ45 Connectors	3 FT length		VW3A1104R10
	9 FT length		VW3A1104R30
Modbus Serial Link Connection via splitter box and RJ45 connectors	Modbus™ splitter box (with 10 RJ45 Connectors)		LU9GC3
	Cordsets for Modbus serial link (with 2 RJ45 connectors	.3 m	VW3A8306R03
		1 m	VW3A8306R10
		3 m	VW3A8306R30
	Modbus T-junction boxes (with integrated cables)	.3 m	VW3A8306TF03
		1 m	VW3A8306TF10
	RJ45 Line Terminators (Sold in lots of 2)		VW3A8306RC
Altivar and Altistart Programming Cable	30-Pin mobile to RS-485 converter	2 m	VW3A8151R20U

Table 26.30: Altistart 22 Fans Selection

Power Supply Voltage For Control	For Use On Altistart	Catalog Number
The ATS22C21S6,S6U..C59S6,S6U units come with an integrated fan. The ATS22D17S6,S6U..C17S6,S6U units are ventilated by means of natural ventilation. For more demanding applications, such as those with a greater number of starts, the Altistart 22 range offers fans as an option. The fans are powered by the Altistart 22 unit and attach to the back of the device. The fan's noise level is less than 60 dBA.		
220 V	ATS22D17–D47S6	VW3G22400
	ATS22D62–D88S6	VW3G22401
	ATS22C11–C17S6	VW3G22402
110 V	ATS22D17–D47S6U	VW3G22U400
	ATS22D62–D88S6U	VW3G22U401
	ATS22C11–C17S6U	VW3G22U402

[1] Motor full load amperate (FLA) must not exceed the ampere ratings of the soft starter.
[2] S6 = 208–600 line voltage, 220 V control voltage
[3] S6U = 208–600 line voltage, 110 V control voltage
[4] Value not indicated when there is no corresponding standardized motor.
[5] A remote keypad cord set is required.

Altistart™ 48 Soft Starters

The Altistart 48 soft starter combines ease of selection with simple installation and high motor control performance. With its exclusive motor Torque Control System, the Altistart 48 helps eliminate uncontrolled motor acceleration and deceleration, a problem inherent with standard voltage—ramp soft starters. The Altistart 48 includes features to help with motor and machine protection and is available for motors ranging from 208 to 575 volts. In addition to a built–in display and programming terminal, a remote keypad option and programming software is available to ease integration and commissioning. The Altistart 48 has a built–in Modbus™ port and is offered with serial communication gateways to such popular networks as Ethernet and DeviceNet™.

Open Style Soft Starters 50–60 Hz, Three-Phase, 690 V Maximum

The Altistart 48 soft starter must be selected using the table below, based on nameplate full load ampere rating of the motor. The horsepower ratings shown in table are for reference only.

Table 26.31: Altistart 48 Selection *[6]*

Standard Duty (Low Inertia Loads) *[7]* Maximum Horsepower					Altistart Soft Starters	
208 V	230 V	400 V (kW)	460 V	575 V	Rated A	Catalog Number
3	5	5.5	10	15	17	ATS48D17Y
5	7.5	7.5	15	20	22	ATS48D22Y
7.5	10	11	20	25	32	ATS48D32Y
10	—	15	25	30	38	ATS48D38Y
—	15	18.5	30	40	47	ATS48D47Y
15	20	22	40	50	62	ATS48D62Y
20	25	30	50	60	75	ATS48D75Y
25	30	37	60	75	88	ATS48D88Y
30	40	45	75	100	110	ATS48C11Y
40	50	55	100	125	140	ATS48C14Y
50	60	75	125	150	170	ATS48C17Y
60	75	90	150	200	210	ATS48C21Y
75	100	110	200	250	250	ATS48C25Y
100	125	132	250	300	320	ATS48C32Y
125	150	160	300	350	410	ATS48C41Y
150	—	220	350	400	480	ATS48C48Y
—	200	250	400	500	590	ATS48C59Y
200	250	315	500	600	660	ATS48C66Y
250	300	355	600	800	790	ATS48C79Y
350	350	400	800	1000	1000	ATS48M10Y
400	450	500	1000	1200	1200	ATS48M12Y

Table 26.32: Altistart 48 Options

Description		Catalog Number
Software		
SoMove™	This software enables the user to configure, set, debug and organize maintenance task for the complete Altivar product line and the Altistart 22 and Altistart 48 soft starters. It can also be used to customize the integrated display terminal menus. It can be used with a direct connection or a Bluetooth® wireless connection. Free download www.schneider-electric.us	
User Interface Kits		
Remote Keypad Display Mounting Kit, including: Keypad with 3–character 7–segment display IP65 cover and seal, mounting screws, and 3 meter cable to connect keypad display to Altistart 48		VW3G48101
Cover for power terminals—Set of 6 for ATS48C14Y and ATS48C17Y		LA9F702
Cover for power terminals—Set of 6 for ATS48C21Y, ATS48C25Y, and ATS48C32Y		LA9F703
Modbus Ethernet Gateway		TSXETG100
DeviceNet Gateway		LUFP9
Profibus DP Gateway		LUFP7
FIPIO™ Gateway		LUFP1
1/3 meter connection cable (RJ–45 to RJ–45)		VW3A8306R03
1 meter connection cable (RJ–45 to RJ–45)		VW3A8306R10
3 meter connection cable (RJ–45 to RJ–45)		VW3A8306R30
1/3 meter splitter cable (For RJ—45 daisy chain connection)		VW3A8306TF03
1 meter splitter cable (For RJ–45 daisy chain connection)		VW3A8306TF10
RJ45 terminator (2 per package)		VW3A8306RC
Modbus hub (Eight RJ–45 ports)		LU9GC3
USB to RJ45 Adaptor Kit For use in connecting to a PC with a USB port		TCSMCNAM3M002P
Size M10 Bolt Kit		W808780210111
Size M12 Bolt Kit		W808780220111
Altivar and Altistart Programming Cable. For use with the iPad Configuration App. 30-Pin Mobile to RS-485 Converter Cable		VW3A8151R20U

[6] Motor full load amperage (FLA) must not exceed the ampere rating of the soft starter.
[7] Low Inertia—Connected motor load inertia equal or less than 10 times motor rotor inertia.
High Inertia—Connected motor load inertia greater than 10 times motor rotor inertia.

Enclosed Altistart™ 22 Motor Controllers

Enclosed Altistart 22 (ATS22) solid-state combination motor controllers are a pre-engineered, integrated solution for reduced voltage starting and soft stopping of standard three-phase asynchronous induction (squirrel cage) motors. The Enclosed 22 controllers consist of a disconnect means and an ATS22 softstarter in a stand-alone enclosure. Enclosed 22 controllers integrate the ATS22 softstart technology into a combination package for application requirements up to 400 hp at 460 V.

- 3–150 hp, 208 V
- 5–200 hp, 230 V
- 10–400 hp, 460 V
- 15–500 hp, 575V

Table 26.33: Enclosed Altistart 22 Catalog Number Description

Field	Digit	Characteristic	Description
—	—	Controller Class	8638 = Fused Disconnect *[1]* 8639 = Circuit Breaker Disconnect
01	1–3	Controller Style	22F = Altistart 22 with Class J Fuse Clips and Molded Case Switch *[1]* 22T = Altistart 22 with PowerPact Motor Circuit Protector 22U = Altistart 22 with PowerPact Thermal-Magnetic Circuit Breaker
02	4	Horsepower	A = 3 hp B = 5 hp C = 7.5 hp D = 10 hp E = 15 hp F = 20 hp G = 25 hp H = 30 hp J = 40 hp K = 50 hp L = 60 hp M = 75 hp N = 100 hp P = 125 hp Q = 150 hp R=200 hp S= 250 hp T= 300 hp U=350 hp W= 400 hp X= 500 hp
03	5	Enclosure Type	G = UL Type 1 General Purpose A = UL Type 12K Industrial Use, Dust-Tight/Drip-Tight H = UL Type 3R Outdoor Use
04	6	Voltage	2 = 208 Vac 3 = 230 Vac 4 = 460 Vac 5 = 575 Vac
05	7	Power Circuit	B = Basic Shunt Trip S = Full-Featured Shunt Trip N = Non-Reversing Isolation R = Reversing Isolation Y = Integral Full-Voltage Bypass
06	8–10	Control Options *[2] [3]*	A06 = Start-Stop Push Buttons B06 = Forward-Off-Reverse C06 = Hand-Off-Auto (HOA) Selector Switch D06 = Stop-Run Selector Switch E06 = Hand-Auto Selector Switch/Start-Stop Push Buttons
07	11–13	Pilot Device Options *[2] [3]*	A07 = Run Light (Red), Off Light (Green) B07 = Push-to-Test Run Light (Red), Push-to-Test Off Light (Green) C07 = Run Light (Red), Off Light (Green), Tripped Light/Reset (Yellow) D07 = PTT Run Light (Red), PTT Off Light (Green), Tripped Light/Reset (Yellow)
08	14–16	Metering Options	B08 = Elapsed Run Time Meter *[3]*
09	17–19	Miscellaneous Options	A10 = Floor Mounting Kit *[4]* B10 = Additional 150 VA *[5]* C10 = Power-Up On Delay Relay*[6]* D10 = Emergency Stop Push Button *[5]* E10 = cUL Label *[7]* F10 = Auxiliary Run Mode Contacts G10 = Auxiliary FB Bypass Contacts *[8]* H10 = Auxiliary Auto Mode Contacts *[9]* J10 = Auxiliary Trip Indication Contacts L10 = ID Engraved Nameplate *[5]* M10 = 10 Spare Terminal Blocks *[5]* P10 = Permanent Wire Markers *[5]* R10 = MOV-Surge Arrestor *[5]* U10 = Omit Door-Mounted Keypad Display *[10]* X10 = 50 °C Operation Y10 = Seismic qualification label Z10 = Service Entrance Rating *[7] [11]* 910 = American Recovery and Reinvestment Act (ARRA) Option

Table 26.34: Enclosed Altistart 22 Catalog Number Example: 863922UCG4BA06A07

Field							
—	1	2	3	4	5	6	7
8639	22U	C	G	4	B	A06	A07
Controller Class	PowerPact™ Thermal- Magnetic Circuit Breaker	7.5 hp	Type 1 General Purpose	460 Vac	Basic Shunt Trip	Start-Stop Push Button	Run Light (Red), Off Light (Green

[1] This option is not selectable with power circuit option B05.
[2] Select only one option.
[3] To omit, do not include a selection in the catalog number.
[4] This option is available only for enclosure size D.
[5] This option is not selectable with power circuit option B05
[6] This option is not selectable with power circuit option B05. This option is valid only with the following control options: C06, D06, or E06.
[7] Options E10 and Z10 cannot be used together.
[8] This option is not selectable with power circuit option B05. The contacts are available only when power circuit option Y05 is selected.
[9] The contacts are not available when power circuit option R05 is selected. This option is valid only with the following control options: C06, D06, or E06.
[10] If you select option U10, you must separately order the remote keypad (VW3G22101) and cable (VW3A1104R30) to commission the softstarter. Refer to the *ATS22 User Manual*, BBV51330, for serial communication programming and control capabilities.
[11] Options E10 and Z10 cannot be ordered together.

Enclosed Altistart 22 Control Options (pick one)

Mod A06	Start/Stop push buttons
	Provides black start and red stop push buttons (3-wire control scheme).
Mod B06	Forward-Off-Reverse selector switch
	Provides three-position selector switch to select between forward, off and reverse. Uses 2-wire control.
Mod C06	Hand-Off-Auto selector switch
	Provides a three-position selector switch, 2-wire control scheme.
Mod D06	Stop-Run selector switch
	Provides a two-position selector switch.
Mod E06	Hand-Auto selector switch and Start/Stop push buttons
	Provides a two-position selector switch and start/stop push buttons (3-wire control).

Enclosed Altistart 22 Pilot Light Cluster Options (pick one)

Mod A07	Pilot light cluster #1
	Consists of red “RUN” and green “OFF” pilot lights. Provides standard red “RUN (ON)” and green “OFF” pilot lights for status annunciation.
Mod B07	Pilot light cluster #2
	Consists of red “RUN” (push-to-test) and green “OFF” (push-to-test) pilot lights. Provides push-to-test type red “RUN (ON)” and standard green “OFF” pilot lights for status annunciation.
Mod C07	Pilot light cluster #3
	Consists of red “RUN”, green “OFF” and yellow “FAULT” pilot lights. Provides standard red “RUN (ON)” green “OFF” and yellow “FAULT” pilot lights for status annunciation.
Mod D07	Pilot light cluster #4
	Consists of red “RUN (ON)” (push-to-test), green “OFF” (push-to-test) and yellow “FAULT” (push-to-reset) pilot lights. Provides push-to-test type red “RUN (ON)” standard green “OFF”, and push-to-reset type yellow “FAULT” for status annunciation.

Enclosed Altistart 22 Meter Display Options (pick one)

Mod BO8	Elapsed time meter
	Provides a seven-digit analog, non-resettable elapsed run time meter. Not available on Type 3R Enclosures

Enclosed Altistart 22 Miscellaneous Options (multiple compatible options may be selected

Mod A10	Floor mounting kit
	Only available for size D enclosures.
Rules: Available for power options S05, N05, R05, Y05.	
Mod B10	150 VA additional control power capacity
	Provides 150 VA additional control VA capacity for customer use.

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Standard Documentation

Each adjustable frequency drive or soft starter shipped includes one set of instruction bulletins. Each set of instruction bulletins includes installation, start–up, troubleshooting and wiring diagram information. Separate Approval and/or Record Drawings are not included.

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All factory orders for enclosed drives and soft starters come with factory supplied user drawings and are identified by a factory order number. The factory supplied drawing set typically includes:

- Enclosure outline drawing
- Power elementary drawing
- Control elementary drawing
- Interconnection drawing

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Product Literature

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