



Product availability: Stock - Normally stocked in distribution facility

Main

Range of product	Altivar Machine ATV320
Product or component type	Variable speed drive
Product specific application	Complex machines
Device short name	ATV320
Format of the drive	Enclosed
Product destination	Synchronous motors Asynchronous motors
EMC filter	Class C2 EMC filter integrated
IP degree of protection	IP66 conforming to EN/IEC 61800-5-1
Type of cooling	Fanless
Phase	3 phases
[Us] rated supply voltage	380...500 V (- 15...10 %)
Supply frequency	50...60 Hz (- 5...5 %)
Motor power kW	2.2 kW heavy duty
Motor power hp	3 hp heavy duty
Line current	8.7 A at 380 V heavy duty 6.6 A at 500 V heavy duty
Prospective line I _{sc}	5 kA
Apparent power	5.7 kVA at 500 V heavy duty
Continuous output current	5.5 A at 4 kHz heavy duty
Maximum transient current	8.3 A during 60 s heavy duty
Asynchronous motor control profile	Voltage/Frequency ratio, 5 points Voltage/Frequency ratio, 2 points Flux vector control without sensor, standard Flux vector control without sensor - Energy Saving Voltage/Frequency ratio - Energy Saving, quadratic U/f
Synchronous motor control profile	Vector control without sensor
Speed drive output frequency	0.1...599 Hz
Nominal switching frequency	4 kHz
Switching frequency	4...16 kHz with current derating 2...16 kHz adjustable

Safety function	STO (safe torque off) SIL 3 SS1 (safe stop 1) SMS (safe maximum speed) SLS (safe limited speed) GDL (guard door locking)
Communication port protocol	CANopen Modbus
Option card	Communication module: CANopen daisy chain RJ45 Communication module: CANopen SUB-D 9 Communication module: CANopen open style terminal block Communication module: EtherCAT RJ45 Communication module: DeviceNet Communication module: Ethernet/IP Communication module: Profibus DP V1 Communication module: Profinet Communication module: Ethernet Powerlink

Complementary

Variant	Standard version
Output voltage	<= power supply voltage
Permissible temporary current boost	1.5 x I _n during 60 s heavy duty
Speed accuracy	+/- 10 % of nominal slip 0.2 T _n to T _n
Torque accuracy	+/- 15 %
Transient overtorque	170...200 % of nominal motor torque
Braking torque	<= 170 % with braking resistor during 60 s
Regulation loop	Adjustable PID regulator
Motor slip compensation	Adjustable 0...300 % Not available in voltage/frequency ratio (2 or 5 points) Automatic whatever the load
Acceleration and deceleration ramps	CUS U S Deceleration ramp automatic stop DC injection Deceleration ramp adaptation Linear Ramp switching
Braking to standstill	By DC injection
Protection type	Drive: thermal protection Drive: overcurrent between output phases and earth Drive: input phase breaks Drive: overheating protection Drive: short-circuit between motor phases
Frequency resolution	Display unit: 0.1 Hz Analog input: 0.012/50 Hz
Electrical connection	Control, screw terminal: 0.5...1.5 mm ² AWG 20...AWG 16 Motor/Braking resistor, screw terminal: 2.5...6 mm ² AWG 14...AWG 10 Power supply, screw terminal: 2.5...6 mm ² AWG 14...AWG 10
Connector type	1 RJ45 Modbus/CANopen on control terminal
Physical interface	2-wire RS 485 Modbus
Transmission frame	RTU Modbus
Transmission rate	4.8, 9.6, 19.2, 38.4 kbit/s Modbus 50 kbps, 125 kbps, 250 kbps, 500 kbps, 1 Mbps CANopen
Data format	8 bits, configurable odd, even or no parity Modbus
Type of polarization	No impedance Modbus
Number of addresses	1...247 Modbus 1...127 CANopen
Method of access	Slave CANopen
Supply	Internal supply for reference potentiometer (1 to 10 kOhm): 10.5 V DC (+/- 5 %) current <= 10 mA (overload and short-circuit protection)
Local signalling	1 LED green CANopen run 1 LED red CANopen error 1 LED red drive fault

Width	9.84 in (250 mm)
Height	13.39 in (340 mm)
Depth	9.25 in (235 mm)
Product weight	16.98 lb(US) (7.7 kg)
Analogue input number	3
Analogue input type	Voltage (AI1): 0...10 V DC, impedance 30000 Ohm, resolution 10 bits Bipolar differential voltage (AI2): +/- 10 V DC, impedance 30000 Ohm, resolution 10 bits Current (AI3): 0...20 mA (or 4-20 mA, x-20 mA, 20-x mA or other patterns by configuration), impedance 250 Ohm, resolution 10 bits
Discrete input number	7
Discrete input type	Programmable (sink/source) (DI1...DI4): 24...30 V DC: level 1 PLC Programmable as pulse input 20 kpps (DI5): 24...30 V DC: level 1 PLC Switch-configurable PTC probe (DI6): 24...30 V DC Safe torque off (STO): 24...30 V DC, impedance 1500 Ohm
Discrete input logic	Negative logic (sink): : DI1...DI6, > 19 V (state 0) < 13 V (state 1) Positive logic (source): : DI1...DI6, < 5 V (state 0) > 11 V (state 1)
Analogue output number	1
Analogue output type	Software-configurable current (AQ1): 0...20 mA, impedance 800 Ohm, resolution 10 bits Software-configurable voltage (AQ1): 0...10 V, impedance 470 Ohm, resolution 10 bits
Sampling duration	Analog input (AI1, AI2, AI3): 2 ms Analog output (AQ1): 2 ms
Accuracy	Analog input AI1, AI2, AI3: +/- 0.2 % for a temperature of -10...60 °C Analog input AI1, AI2, AI3: +/- 0.5 % for a temperature of 25 °C Analog output AQ1: +/- 1 % for a temperature of 25 °C Analog output AQ1: +/- 2 % for a temperature of -10...60 °C
Linearity error	Analog input (AI1, AI2, AI3): +/- 0.2...0.5 % of maximum value Analog output (AQ1): +/- 0.3 %
Discrete output number	3
Discrete output type	Configurable relay logic NO/NC (R1A, R1B, R1C): electrical durability 100000 cycles Configurable relay logic NO (R2A, R2B): electrical durability 100000 cycles Logic (LO)
Refresh time	Logic input (DI1...DI6): 8 ms (+/- 0.7 ms) Relay output (R1A, R1B, R1C): 2 ms Relay output (R2A, R2C): 2 ms
Minimum switching current	Relay output (R1, R2): 5 mA at 24 V DC
Maximum switching current	Relay output (R1) on resistive load (cos phi = 1: 3 A at 250 V AC Relay output (R1) on resistive load (cos phi = 1: 4 A at 30 V DC Relay output (R1, R2) on inductive load (cos phi = 0.4: 2 A at 250 V AC Relay output (R1, R2) on inductive load (cos phi = 0.4: 2 A at 30 V DC Relay output (R2) on resistive load (cos phi = 1: 5 A at 250 V AC Relay output (R2) on resistive load (cos phi = 1: 5 A at 30 V DC
Specific application	Machinery

Environment

Isolation	Between power and control terminals
Insulation resistance	> 1 mOhm at 500 V DC for 1 minute to earth
Noise level	52 dB conforming to 86/188/EEC
Power dissipation in W	76 W (fanless) at 380 V, 4 kHz
Volume of cooling air	9959.46 Gal/hr(US) (37.7 m3/h)
Operating position	Vertical +/- 10 degree
Electromagnetic compatibility	Conducted radio-frequency immunity test conforming to IEC 61000-4-6 level 3 Electrical fast transient/burst immunity test conforming to IEC 61000-4-4 level 4 Electrostatic discharge immunity test conforming to IEC 61000-4-2 level 3 Radiated radio-frequency electromagnetic field immunity test conforming to IEC 61000-4-3 level 3 Voltage dips and interruptions immunity test conforming to IEC 61000-4-11 1.2/50 µs - 8/20 µs surge immunity test conforming to IEC 61000-4-5 level 3
Pollution degree	2 conforming to EN/IEC 61800-5-1
Vibration resistance	1.5 mm peak to peak (f = 2...13 Hz) conforming to EN/IEC 60068-2-6 1 gn (f = 13...200 Hz) conforming to EN/IEC 60068-2-6

Shock resistance	15 gn during 11 ms conforming to EN/IEC 60068-2-27
Relative humidity	5...95 % without condensation conforming to IEC 60068-2-3 5...95 % without dripping water conforming to IEC 60068-2-3
Ambient air temperature for operation	40...60 °C with derating factor 14...104 °F (-10...40 °C) without derating
Ambient air temperature for storage	-13...158 °F (-25...70 °C)
Operating altitude	<= 3280.84 ft (1000 m) without derating 3280.84...9842.52 ft (1000...3000 m) with current derating 1 % per 100 m
Environmental characteristic	Chemical pollution resistance class 3C3 EN/IEC 60721-3-3 Dust pollution resistance class 3S2 EN/IEC 60721-3-3
Standards	EN/IEC 61800-3 EN/IEC 61800-3 environment 1 category C2 EN/IEC 61800-5-1 IEC 60721-3 IEC 61508 IEC 13849-1 UL 61800-5-1
Product certifications	CSA UL C-Tick GOST NOM REACH
Marking	CE

Ordering and shipping details

Category	22152 - ATV312 / ATV32 (.25 - 7.5 HP)
Discount Schedule	CP4B
GTIN	00785901186137
Nbr. of units in pkg.	1
Package weight(Lbs)	21.390000000000001
Returnability	Y

Offer Sustainability

Sustainable offer status	Green Premium product
RoHS (date code: YYWW)	Compliant - since 1650 - Schneider Electric declaration of conformity Schneider-Electric declaration of conformity
REACH	Reference not containing SVHC above the threshold
Product environmental profile	Available
Product end of life instructions	Available
California proposition 65	WARNING: This product can expose you to chemicals including: Lead and lead compounds, which is known to the State of California to cause cancer and birth defects or other reproductive harm. For more information go to www.P65Warnings.ca.gov
- - - - - Substance 1	Lead and lead compounds, which is known to the State of California to cause cancer and birth defects or other reproductive harm.
- - - - - More information	For more information go to www.p65warnings.ca.gov

Product Life Status : **Commercialised**