

ATV320U11N4C

variable speed drive ATV320 - 1.1kW -
380...500V - 3 phase - compact

Product availability : Stock - Normally stocked in distribution facility



Price* : 449.00 USD



Main

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| 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 control block | Compact |
| Product destination | Asynchronous motors Synchronous motors |
| EMC filter | Class C2 EMC filter integrated |
| IP degree of protection | IP20 conforming to EN/IEC 61800-5-1 |
| Degree of protection | UL type 1 with UL type 1 conformity kit |
| Type of cooling | Fan |
| Phase | 3 phases |
| [Us] rated supply voltage | 380...500 V (- 15...10 %) |
| Supply frequency | 50...60 Hz (- 5...5 %) |
| Motor power kW | 1.1 kW heavy duty |
| Motor power hp | 1.5 hp heavy duty |
| Line current | 4.4 A at 380 V heavy duty 3.4 A at 500 V heavy duty |
| Prospective line Isc | 5 kA |
| Apparent power | 2.9 kVA at 500 V heavy duty |
| Continuous output current | 3 A at 4 kHz heavy duty |
| Maximum transient current | 4.5 A during 60 s heavy duty |
| Asynchronous motor control profile | Voltage/frequency ratio, 2 points Voltage/frequency ratio - Energy Saving, quadratic U/f Flux vector control without sensor, standard Voltage/frequency ratio, 5 points Flux vector control without sensor - Energy Saving |
| Synchronous motor control profile | Vector control without sensor |

Disclaimer: This documentation is not intended as a substitute for and is not to be used for determining suitability or reliability of these products for specific user applications

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| 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 |
| Optional communication modules | 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

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| Variant | Standard version |
| Output voltage | <= power supply voltage |
| Permissible temporary current boost | 1.5 x I _n during 60 s heavy duty |
| Speed range | With asynchronous motor in open-loop mode |
| 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 | Automatic whatever the load Not available in voltage/frequency ratio (2 or 5 points) Adjustable 0...300 % |
| Acceleration and deceleration ramps | U Deceleration ramp automatic stop DC injection Deceleration ramp adaptation CUS Linear Ramp switching S |
| 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 | CANopen Modbus |
| Method of access | Slave CANopen |

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| 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 | 4.13 in (105 mm) |
| Height | 5.59 in (142 mm) 188 mm with EMC plate |
| Depth | 6.22 in (158 mm) |
| Product weight | 2.87 lb(US) (1.3 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 |
| Variable speed drive application selection | Hoisting self erecting Material handling carousel Material handling conveyor Material handling lifting platform Material handling palletizers - medium performance Material handling transfer table Material handling turn table Material working (wood, ceramic, stone, pvc, metal) cutting - medium accuracy Material working (wood, ceramic, stone, pvc, metal) drilling Material working (wood, ceramic, stone, pvc, metal) saw Packaging bagging Packaging feed conveyor low performance Packaging filling bottles - intermittent operation Packaging linear labeling Packaging other application Packaging stretching wrapping Packaging tray take Textile knitting |

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| | Textile printing machines Textile spinning Washing machines car Washing machines other application Hoisting standard crane - travelling or trolley |
| Motor power range | 1.1...2 kW 380...440 V 3 phases 1.1...2 kW 480...500 V 3 phases |
| Motor starter type | Variable speed drive |

Environment

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| Isolation | Between power and control terminals |
| Insulation resistance | > 1 mOhm at 500 V DC for 1 minute to earth |
| Noise level | 51 dB conforming to 86/188/EEC |
| Power dissipation in W | 47 W (fan) at 380 V, 4 kHz |
| Volume of cooling air | 4755.18 Gal/hr(US) (18 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 | 14...122 °F (-10...50 °C) without derating 122...140 °F (50...60 °C) with derating factor |
| 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 |
| Product certifications | NOM 117 UL EAC CSA RCM |
| Marking | CE |

Ordering and shipping details

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| Category | 22152 - ATV312 / ATV32 (.25 - 7.5 HP) |
| Discount Schedule | CP4B |
| GTIN | 00785901624226 |
| Nbr. of units in pkg. | 1 |
| Package weight(Lbs) | 3.7600000000000002 |
| Returnability | Y |
| Country of origin | ID |

Offer Sustainability

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| Sustainable offer status | Green Premium product |
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| RoHS (date code: YYWW) | Compliant - since 1714 - Schneider Electric declaration of conformity Schneider Electric declaration of conformity |
| REACH | Reference not containing SVHC above the threshold Reference not containing SVHC above the threshold |
| Product environmental profile | Available Product Environmental Profile |
| 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 |