



Main

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| Range of product | Altivar 312 |
| Product or component type | Variable speed drive |
| Product destination | Asynchronous motors |
| Product specific application | Simple machine |
| Assembly style | With heat sink |
| Component name | ATV312 |
| Motor power kW | 15 kW |
| Motor power hp | 20 hp |
| [Us] rated supply voltage | 380...500 V (- 15...10 %) |
| Supply frequency | 50...60 Hz (- 5...5 %) |
| Network number of phases | 3 phases |
| Line current | 48.2 A for 380 V, 22 kA 36.8 A for 500 V |
| EMC filter | Integrated |
| Apparent power | 32 kVA |
| Maximum transient current | 49.5 A for 60 s |
| Power dissipation in W | 492 W at nominal load |
| Speed range | 1...50 |
| Asynchronous motor control profile | Sensorless flux vector control with PWM type motor control signal Factory set : constant torque |
| Electrical connection | L1, L2, L3, U, V, W, PA, PB, PA+, PC/- terminal 25 mm ² AWG 3 AI1, AI2, AI3, AOV, AOC, R1A, R1B, R1C, R2A, R2B, LI1...LI6 terminal 2.5 mm ² AWG 14 |
| Supply | Internal supply for logic inputs at 19...30 V, <= 100 mA for overload and short-circuit protection Internal supply for reference potentiometer (2.2 to 10 kOhm) at 10...10.8 V, <= 10 mA for overload and short-circuit protection |
| Communication port protocol | Modbus CANopen |
| IP degree of protection | IP20 on upper part without cover plate IP21 on connection terminals IP31 on upper part |

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

IP41 on upper part

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| Option card | CANopen daisy chain communication card DeviceNet communication card Fipio communication card Modbus TCP communication card Profibus DP communication card |
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Complementary

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| Supply voltage limits | 323...550 V |
| Network frequency | 47.5...63 Hz |
| Prospective line I _{sc} | 22 kA |
| Continuous output current | 33 A at 4 kHz |
| Output frequency | 0...500 kHz |
| Nominal switching frequency | 4 kHz |
| Switching frequency | 2...16 kHz adjustable |
| Transient overtorque | 170...200 % of nominal motor torque |
| Braking torque | 100 % with braking resistor continuously 150 % without braking resistor 150 % with braking resistor for 60 s |
| Regulation loop | Frequency PI regulator |
| Motor slip compensation | Suppressable Adjustable Automatic whatever the load |
| Output voltage | <= power supply voltage |
| Tightening torque | 4.5 N.m L1, L2, L3, U, V, W, PA, PB, PA+, PC/- 0.6 N.m AI1, AI2, AI3, AOV, AOC, R1A, R1B, R1C, R2A, R2B, LI1...LI6 |
| Insulation | Electrical between power and control |
| Analogue input number | 3 |
| Analogue input type | AI1 configurable voltage 0...10 V, input voltage 30 V max, impedance 30000 Ohm AI2 configurable voltage +/- 10 V, input voltage 30 V max, impedance 30000 Ohm AI3 configurable current 0...20 mA, impedance 250 Ohm |
| Sampling duration | AI1, AI2, AI3 8 ms for analog LI1...LI6 4 ms for discrete |
| Response time | AOV, AOC 8 ms for analog R1A, R1B, R1C, R2A, R2B 8 ms for discrete |
| Linearity error | +/- 0.2 % for output |
| Analogue output number | 1 |
| Analogue output type | AOC configurable current 0...20 mA, impedance 800 Ohm, resolution 8 bits AOV configurable voltage 0...10 V, impedance 470 Ohm, resolution 8 bits |
| Discrete input logic | (LI1...LI4) logic input not wired, < 13 V (state 1) (LI1...LI6) negative logic (source), > 19 V (state 0) (LI1...LI6) positive logic (source), < 5 V (state 0), > 11 V (state 1) |
| Discrete output number | 2 |
| Discrete output type | (R1A, R1B, R1C) configurable relay logic 1 NO + 1 NC, electrical durability 100000 cycles (R2A, R2B) configurable relay logic NC, electrical durability 100000 cycles |
| Minimum switching current | R1-R2 10 mA at 5 V DC |
| Maximum switching current | R1-R2 on inductive load, 2 A at 250 V AC, (cos phi = 0.4, and L/R = 7 ms) R1-R2 on inductive load, 2 A at 30 V DC, (cos phi = 0.4, and L/R = 7 ms) R1-R2 on resistive load, 5 A at 250 V AC, (cos phi = 1, and L/R = 0 ms) R1-R2 on resistive load, 5 A at 30 V DC, (cos phi = 1, and L/R = 0 ms) |
| Discrete input number | 6 |
| Discrete input type | (LI1...LI6) programmable, 24 V 0...100 mA with PLC, impedance 3500 Ohm |
| Acceleration and deceleration ramps | S, U or customized Linear adjustable separately from 0.1 to 999.9 s |
| Braking to standstill | By DC injection |
| Protection type | Input phase breaks drive Line supply overvoltage and undervoltage safety circuits drive Line supply phase loss safety function, for three phases supply drive Motor phase breaks drive Overcurrent between output phases and earth (on power up only) drive Overheating protection drive |


Short-circuit between motor phases drive
Thermal protection motor



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| Insulation resistance | >= 500 mOhm at 500 V DC for 1 minute |
| Local signalling | 1 LED red for drive voltage Four 7-segment display units for CANopen bus status |
| Time constant | 5 ms for reference change |
| Frequency resolution | Analog input 0.1...100 Hz Display unit 0.1 Hz |
| Connector type | 1 RJ45 Modbus/CANopen |
| Physical interface | RS485 multidrop serial link |
| Transmission frame | RTU |
| Transmission rate | 10, 20, 50, 125, 250, 500 kbps or 1 Mbps CANopen 4800, 9600 or 19200 bps Modbus |
| Number of addresses | 1...247 Modbus 1...127 CANopen |
| Number of drive | 127 CANopen 31 Modbus |
| Marking | CE |
| Operating position | Vertical +/- 10 degree |
| Outer dimension | 330 x 245 x 190 mm 390 x 245 x 190 mm 595 x 234 x 268 mm |
| Height | 329.5 mm |
| Width | 245 mm |
| Depth | 192 mm |
| Product weight | 11 kg |

Environment

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| Dielectric strength | 2410 V DC between earth and power terminals 3400 V AC between control and power terminals |
| Electromagnetic compatibility | 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 1.2/50 µs - 8/20 µs surge immunity test conforming to IEC 61000-4-5 level 3 |
| Standards | IEC 61800-5-1 IEC 61800-3 |
| Product certifications | C-Tick DNV UL CSA GOST NOM |
| Pollution degree | 2 |
| Protective treatment | TC |
| Vibration resistance | 1.5 mm (f = 3...13 Hz) conforming to EN/IEC 60068-2-6 1 gn (f = 13...150 Hz) conforming to EN/IEC 60068-2-6 |
| Shock resistance | 15 gn for 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 storage | -25...70 °C |
| Ambient air temperature for operation | -10...50 °C without derating with protective cover on top of the drive -10...60 °C with derating factor without protective cover on top of the drive |
| Operating altitude | <= 1000 m without derating 1000...3000 m with current derating 1 % per 100 m |

Offer Sustainability

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| Sustainable offer status | Green Premium product |
| RoHS (date code: YYWW) | Compliant - since 0913 - Schneider Electric declaration of conformity  Schneider Electric declaration of conformity |

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| REACH | Reference not containing SVHC above the threshold Reference not containing SVHC above the threshold |
| Product environmental profile | Available  Product environmental |
| Product end of life instructions | Available  Product environmental |

Contractual warranty

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| Warranty period | 18 months |
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