

Product datasheet

Specifications



Variable speed drive, ATV312, 7.5kW, 10hp, 323..550V, 3 phase supply, 17A, CANopen, Modbus

ATV312HU75N4

⚠ Discontinued on: 07-Apr-2022

⚠ End-of-service on: 30-Jun-2022

⚠ Discontinued - Service only

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 | 7.5 kW |
| Motor power hp | 10 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 | 27.7 A at 380 V, I _{sc} = 22 kA 21 A at 500 V |
| EMC filter | Integrated |
| Apparent power | 18 kVA |
| Maximum transient current | 25.5 A for 60 s |
| Power dissipation in W | 269 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 | AI1, AI2, AI3, AOV, AOC, R1A, R1B, R1C, R2A, R2B, LI1...LI6 terminal 2.5 mm ² AWG 14 L1, L2, L3, U, V, W, PA, PB, PA+, PC/- terminal 16 mm ² AWG 6 |
| Supply | Internal supply for logic inputs: 19...30 V 100 mA, protection type: overload and short-circuit protection Internal supply for reference potentiometer (2.2 to 10 kOhm): 10...10.8 V 10 mA, protection type: overload and short-circuit protection |
| Communication port protocol | CANopen Modbus |
| IP degree of protection | IP20 on upper part without cover plate IP21 on connection terminals IP31 on upper part IP41 on upper part |

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

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| Supply voltage limits | 323...550 V |
| Prospective line Isc | 22 kA |
| Continuous output current | 17 A at 4 kHz |
| Output frequency | 0...500 Hz |
| Nominal switching frequency | 4 kHz |
| Switching frequency | 2...16 kHz adjustable |
| Transient overtorque | 170...200 % of nominal motor torque |
| Braking torque | 150 % during 60 s with braking resistor 100 % with braking resistor continuously 150 % without braking resistor |
| Regulation loop | Frequency PI regulator |
| Motor slip compensation | Automatic whatever the load Suppressable Adjustable |
| Output voltage | <= power supply voltage |
| Tightening torque | AI1, AI2, AI3, AOV, AOC, R1A, R1B, R1C, R2A, R2B, LI1...LI6: 0.6 N.m L1, L2, L3, U, V, W, PA, PB, PA+, PC/-: 2.5 N.m |
| 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 analog LI1...LI6: 4 ms 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 | Logic input not wired (LI1...LI4), < 13 V (state 1) Negative logic (source) (LI1...LI6), > 19 V (state 0) Positive logic (source) (LI1...LI6), < 5 V (state 0), > 11 V (state 1) |
| Discrete output number | 2 |
| Discrete output type | Configurable relay logic: (R1A, R1B, R1C) 1 NO + 1 NC - 100000 cycles Configurable relay logic: (R2A, R2B) NC - 100000 cycles |
| Minimum switching current | R1-R2 10 mA at 5 V DC |
| Maximum switching current | R1-R2: 2 A at 250 V AC inductive load, cos phi = 0.4 and L/R = 7 ms R1-R2: 2 A at 30 V DC inductive load, cos phi = 0.4 and L/R = 7 ms R1-R2: 5 A at 250 V AC resistive load, cos phi = 1 and L/R = 0 ms R1-R2: 5 A at 30 V DC resistive load, cos phi = 1 and L/R = 0 ms |
| Discrete input number | 6 |
| Discrete input type | (LI1...LI6) programmable at 24 V, 0...100 mA for PLC, impedance: 3500 Ohm |

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| 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 |
| Insulation resistance | >= 500 mOhm 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 for Modbus/CANopen |
| Physical interface | RS485 multidrop serial link |
| Transmission frame | RTU |
| Transmission rate | 10, 20, 50, 125, 250, 500 kbps or 1 Mbps for CANopen 4800, 9600 or 19200 bps for Modbus |
| Number of addresses | 1...127 for CANopen 1...247 for Modbus |
| Number of drive | 127 for CANopen 31 for Modbus |
| Marking | CE |
| Operating position | Vertical +/- 10 degree |
| Outer dimension | 232 x 180 x 170 mm 405 x 234 x 268 mm 300 x 210 x 170 mm |
| Height | 232 mm |
| Width | 180 mm |
| Depth | 172 mm |
| Net weight | 6.5 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 | 1.2/50 μ s - 8/20 μ s surge immunity test level 3 conforming to IEC 61000-4-5 Electrical fast transient/burst immunity test level 4 conforming to IEC 61000-4-4 Electrostatic discharge immunity test level 3 conforming to IEC 61000-4-2 Radiated radio-frequency electromagnetic field immunity test level 3 conforming to IEC 61000-4-3 |
| Standards | IEC 61800-3 IEC 61800-5-1 |
| Product certifications | CSA DNV NOM GOST C-Tick UL |
| pollution degree | 2 |
| Protective treatment | TC |

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| Vibration resistance | 1 gn (f= 13...150 Hz) conforming to EN/IEC 60068-2-6 1.5 mm (f= 3...13 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 |

Packing Units

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| Unit Type of Package 1 | PCE |
| Number of Units in Package 1 | 1 |
| Package 1 Height | 22.788 cm |
| Package 1 Width | 23.237 cm |
| Package 1 Length | 29.832 cm |
| Package 1 Weight | 6.1 kg |
| Unit Type of Package 2 | S04 |
| Number of Units in Package 2 | 2 |
| Package 2 Height | 30 cm |
| Package 2 Width | 40 cm |
| Package 2 Length | 60 cm |
| Package 2 Weight | 13.37 kg |
| Unit Type of Package 3 | PAL |
| Number of Units in Package 3 | 18 |
| Package 3 Height | 77 cm |
| Package 3 Width | 60 cm |
| Package 3 Length | 80 cm |
| Package 3 Weight | 117 kg |

Contractual warranty

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| Warranty | 18 months |
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Environmental Data

Schneider Electric aims to achieve Net Zero status by 2050 through supply chain partnerships, lower impact materials, and circularity via our ongoing "Use Better, Use Longer, Use Again" campaign to extend product lifetimes and recyclability.

[Environmental Data explained >](#)

[How we assess product sustainability >](#)

Use Better

Materials and Substances


[EU RoHS Directive](#)

Pro-active compliance (Product out of EU RoHS legal scope)

Use Again

Repack and remanufacture

WEEE

 The product must be disposed on European Union markets following specific waste collection and never end up in rubbish bins