# *Product datasheet*
## *Characteristics*

# ATV312H075S6



## 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 | 0.75 kW |
| Motor power hp | 1 hp |
| [Us] rated supply voltage | 525...600 V (- 15...10 %) |
| Supply frequency | 50...60 Hz (- 5...5 %) |
| Phase | 3 phases |
| Line current | 2.4 Afor 600 V<br>2.8 Afor 525 V, 5 kA |
| EMC filter | Without EMC filter |
| Apparent power | 2.5 kVA |
| Maximum transient current | 2.6 Afor 60 s |
| Power dissipation in W | 36 W at nominal load |
| Speed range | 1...50 |
| Asynchronous motor control profile | Factory set : constant torque<br>Sensorless flux vector control with PWM type motor control signal |
| Electrical connection | Al1, Al2, Al3, AOV, AOC, R1A, R1B, R1C, R2A, R2B, LI1...LI6 terminal 0 in² (2.5 mm²) AWG 14<br>L1, L2, L3, U, V, W, PA, PB, PA/+, PC/- terminal 0.01 in² (5 mm²) AWG 10 |
| Supply | Internal supply for logic inputsat 19...30 V, <= 100 mAfor overload and short-circuit protection<br>Internal supply for reference potentiometer (2.2 to 10 kOhm)at 10...10.8 V, <= 10 mAfor overload and short-circuit protection |
| Communication port protocol | CANopen<br>Modbus |
| IP degree of protection | IP20 on upper part without cover plate<br>IP21 on connection terminals<br>IP31 on upper part<br>IP41 on upper part |
| Option card | CANopen daisy chain communication card<br>DeviceNet communication card<br>Fipio communication card<br>Modbus TCP communication card<br>Profibus DP communication card |

## Complementary

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| Supply voltage limits | 446.25...660 V |
| Network frequency | 47.5...63 Hz |
| Prospective line Isc | 5 kA |
| Continuous output current | 1.7 Aat 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 |

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| | 150 % without braking resistor<br>150 % with braking resistor for 60 s |
| Regulation loop | Frequency PI regulator |
| Motor slip compensation | Adjustable<br>Automatic whatever the load<br>Suppressable |
| Output voltage | <= power supply voltage |
| Tightening torque | 5.31 lbf.in (0.6 N.m) AI1, AI2, AI3, AOV, AOC, R1A, R1B, R1C, R2A, R2B, LI1...LI6<br>10.62 lbf.in (1.2 N.m) L1, L2, L3, U, V, W, PA, PB, PA/+, PC/- |
| 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<br>AI2 configurable voltage +/- 10 V, input voltage 30 V max, impedance 30000 Ohm<br>AI3 configurable current 0...20 mA, impedance 250 Ohm |
| Sampling duration | AI1, AI2, AI3 8 ms analog<br>LI1...LI6 4 ms discrete |
| Response time | AOV, AOC 8 ms analog<br>R1A, R1B, R1C, R2A, R2B 8 ms discrete |
| Linearity error | +/- 0.2 % output |
| Analogue output number | 1 |
| Analogue output type | AOC configurable current 0...20 mA, impedance 800 Ohm, resolution 8 bits<br>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)<br>(LI1...LI6) negative logic (source), > 19 V (state 0)<br>(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<br>(R2A, R2B) configurable relay logic NC, electrical durability 100000 cycles |
| Minimum switching current | R1-R2 10 mAat 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)<br>R1-R2 on inductive load, 2 A at 30 V DC, (cos phi = 0.4, and L/R = 7 ms)<br>R1-R2 on resistive load, 5 A at 250 V AC, (cos phi = 1, and L/R = 0 ms)<br>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 | Linear adjustable separately from 0.1 to 999.9 s<br>S, U or customized |
| Braking to standstill | By DC injection |
| Protection type | Input phase breaks drive<br>Line supply overvoltage and undervoltage safety circuits drive<br>Line supply phase loss safety function, for three phases supply drive<br>Motor phase breaks drive<br>Overcurrent between output phases and earth (on power up only) drive<br>Overheating protection drive<br>Short-circuit between motor phases drive<br>Thermal protection motor |
| Insulation resistance | >= 500 mOhmat 500 V DC for 1 minute |
| Local signalling | 1 LED red drive voltage<br>Four 7-segment display units CANopen bus status |
| Time constant | 5 ms for reference change |
| Frequency resolution | Analog input 0.1...100 Hz<br>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<br>4800, 9600 or 19200 bps Modbus |
| Number of addresses | 1...247 Modbus<br>1...127 CANopen |
| Number of drive | 127 CANopen<br>31 Modbus |
| Marking | CE |
| Operating position | Vertical +/- 10 degree |

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| Height | 5.63 in (143 mm) |
| Width | 4.21 in (107 mm) |
| Depth | 5.98 in (152 mm) |
| Product weight | 3.75 lb(US) (1.7 kg) |

## Environment

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| dielectric strength | 2550 V DC between earth and power terminals<br>3600 V AC between control and power terminals |
| electromagnetic compatibility | Electrical fast transient/burst immunity test conforming to IEC 61000-4-4 level 4<br>Electrostatic discharge immunity test conforming to IEC 61000-4-2 level 3<br>Radiated radio-frequency electromagnetic field immunity test conforming to IEC 61000-4-3 level 3<br>1.2/50 µs - 8/20 µs surge immunity test conforming to IEC 61000-4-5 level 3 |
| standards | IEC 61800-3<br>IEC 61800-5-1 |
| product certifications | CSA<br>C-Tick<br>DNV<br>GOST<br>NOM<br>UL |
| pollution degree | 2 |
| protective treatment | TC |
| vibration resistance | 1.5 mm (f = 3...13 Hz) conforming to EN/IEC 60068-2-6<br>1 gn (f = 13...150 Hz) conforming to EN/IEC 60068-2-6 |
| shock resistance | 15 gn 11 ms conforming to EN/IEC 60068-2-27 |
| relative humidity | 5...95 % without condensation conforming to IEC 60068-2-3<br>5...95 % without dripping water conforming to IEC 60068-2-3 |
| ambient air temperature for storage | -13...158 °F (-25...70 °C) |
| ambient air temperature for operation | 14...122 °F (-10...50 °C) without derating with protective cover on top of the drive<br>14...140 °F (-10...60 °C) with derating factor without protective cover on top of the drive |
| operating altitude | <= 3280.84 ft (1000 m) without derating<br>3280.84...9842.52 ft (1000...3000 m) with current derating 1 % per 100 m |

## Offer Sustainability

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| Green Premium product | Green Premium product |
| Compliant - since 0926 - Schneider Electric declaration of conformity | Compliant - since 0926 - Schneider Electric declaration of conformity |
| Reference not containing SVHC above the threshold | Reference not containing SVHC above the threshold |
| Available | Available |
| Available | Available |

## Contractual warranty

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| Warranty period | 18 months |