# Product datasheet

Specifications



Discontinued

## variable speed drive ATV312 - 0.37kW - 1kVA - 41 W - 200..240 V - 1-phase supply

ATV312H037M2

Discontinued on: 28 Jun 2019

End-of-service on: 24 Jun 2025

## Main

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|---|---|
| **Product destination** | Asynchronous motors |
| **Component name** | ATV312 |
| **Motor power kW** | 0.37 kW |
| **Motor power hp** | 0.5 hp |
| **Supply frequency** | 50...60 Hz - 5...5 % |
| **Network number of phases** | Single phase |
| **Line current** | 5.3 A at 200 V, Isc = 1 kA<br>4.4 A at 240 V |
| **Apparent power** | 1 kVA |
| **Maximum transient current** | 5 A for 60 s |
| **Power dissipation in W** | 41 W at nominal load |
| **Speed range** | 1…50 |
| **Electrical connection** | AI1, AI2, AI3, AOV, AOC, R1A, R1B, R1C, R2A, R2B, LI1...LI6 terminal 2.5 mm² 14 AWG<br>L1, L2, L3, U, V, W, PA, PB, PA/+, PC/- terminal 2.5 mm² 14 AWG |
| **Supply** | Internal supply for logic inputs: 19...30 V 100 mA, protection type: overload and short-circuit protection<br>Internal supply for reference potentiometer (2.2 to 10 kOhm): 10...10.8 V 10 mA, protection type: overload and short-circuit protection |
| **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** | Communication card for CANopen daisy chain<br>Communication card for DeviceNet<br>Communication card for Fipio<br>Communication card for Modbus TCP<br>Communication card for Profibus DP |
| **Range of product** | Altivar 312 |
| **Product or component type** | Variable speed drive |
| **Product specific application** | Simple machine |
| **Communication port protocol** | Modbus<br>CANopen |
| **[Us] rated supply voltage** | 200...240 V - 15...10 % |
| **EMC filter** | Integrated |

## Complementary

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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| **Supply voltage limits** | 170…264 V |
| **Continuous output current** | 3.3 A at 4 kHz |
| **Output frequency** | 0…500 Hz |
| **Switching frequency** | 2...16 kHz adjustable |
| **Braking torque** | 150 % during 60 s with braking resistor<br>100 % with braking resistor continuously<br>150 % without braking resistor |
| **output voltage** | <= power supply voltage |
| **Tightening torque** | AI1, AI2, AI3, AOV, AOC, R1A, R1B, R1C, R2A, R2B, LI1...LI6: 0.6 N.m<br>L1, L2, L3, U, V, W, PA, PB, PA/+, PC/-: 0.8 N.m |
| **Insulation** | Electrical between power and control |
| **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 for analog<br>R1A, R1B, R1C, R2A, R2B 8 ms for discrete |
| **Linearity error** | +/- 0.2 % for output |
| **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** | Logic input not wired (LI1...LI4), < 13 V (state 1)<br>Negative logic (source) (LI1...LI6), > 19 V (state 0)<br>Positive logic (source) (LI1...LI6), < 5 V (state 0), > 11 V (state 1) |
| **Discrete output type** | Configurable relay logic: (R1A, R1B, R1C) 1 NO + 1 NC - 100000 cycles<br>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<br>R1-R2: 2 A at 30 V DC inductive load, cos phi = 0.4 and L/R = 7 ms<br>R1-R2: 5 A at 250 V AC resistive load, cos phi = 1 and L/R = 0 ms<br>R1-R2: 5 A at 30 V DC resistive load, cos phi = 1 and L/R = 0 ms |
| **Discrete input type** | (LI1...LI6) programmable at 24 V, 0…100 mA for PLC, impedance: 3500 Ohm |
| **Insulation resistance** | >= 500 mOhm 500 V DC for 1 minute |
| **Local signalling** | 1 LED (red) for drive voltage<br>Four 7-segment display units for 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 for Modbus/CANopen |
| **Transmission rate** | 10, 20, 50, 125, 250, 500 kbps or 1 Mbps for CANopen<br>4800, 9600 or 19200 bps for Modbus |
| **Number of addresses** | 1…127 for CANopen<br>1…247 for Modbus |
| **Number of drive** | 127 for CANopen<br>31 for Modbus |
| **Discrete input number** | 6 |
| **Discrete output number** | 2 |
| **Analogue input number** | 3 |
| **Analogue output number** | 1 |
| **Physical interface** | RS485 multidrop serial link |

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| **Transmission frame** | RTU |
| **Asynchronous motor control profile** | Factory set : constant torque<br>Sensorless flux vector control with PWM type motor control signal |
| **Transient overtorque** | 170…200 % of nominal motor torque |
| **Acceleration and deceleration ramps** | S, U or customized<br>Linear adjustable separately from 0.1 to 999.9 s |
| **Motor slip compensation** | Automatic whatever the load<br>Suppressable<br>Adjustable |
| **Nominal switching frequency** | 4 kHz |
| **Braking to standstill** | By DC injection |
| **Network frequency** | 47.5...63 Hz |
| **Prospective line Isc** | 1 kA |
| **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 |
| **Width** | 72 mm |
| **Height** | 145 mm |
| **Depth** | 132 mm |
| **Product weight** | 1.5 kg |

## Environment

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| **Dielectric strength** | 2040 V DC between earth and power terminals<br>2880 V AC between control and power terminals |
| **Protective treatment** | TC |
| **Vibration resistance** | 1 gn (f= 13…150 Hz) conforming to EN/IEC 60068-2-6<br>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<br>5…95 % without dripping water conforming to IEC 60068-2-3 |
| **Operating altitude** | <= 1000 m without derating<br>1000...2000 m with current derating 1 % per 100 m |
| **Operating position** | Vertical +/- 10 degree |
| **Product certifications** | UL<br>C-Tick<br>NOM<br>CSA<br>DNV<br>GOST |
| **Marking** | CE |
| **Standards** | IEC 61800-5-1<br>IEC 61800-3 |
| **Assembly style** | With heat sink |
| **Electromagnetic compatibility** | 1.2/50 µs - 8/20 µs surge immunity test level 3 conforming to IEC 61000-4-5<br>Electrical fast transient/burst immunity test level 4 conforming to IEC 61000-4-4<br>Electrostatic discharge immunity test level 3 conforming to IEC 61000-4-2<br>Radiated radio-frequency electromagnetic field immunity test level 3 conforming to IEC 61000-4-3 |

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| **Regulation loop** | Frequency PI regulator |
| **Pollution degree** | 2 |
| **Ambient air temperature for operation** | -10…50 °C without derating (with protective cover on top of the drive)<br>-10…60 °C with derating factor (without protective cover on top of the drive) |
| **Ambient air temperature for storage** | -25…70 °C |

## Packing Units

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| **Unit Type of Package 1** | PCE |
| **Number of Units in Package 1** | 1 |
| **Package 1 Height** | 13.109 cm |
| **Package 1 Width** | 17.256 cm |
| **Package 1 Length** | 18.316 cm |
| **Package 1 Weight** | 1.38 kg |
| **Unit Type of Package 2** | S06 |
| **Number of Units in Package 2** | 48 |
| **Package 2 Height** | 73.5 cm |
| **Package 2 Width** | 60 cm |
| **Package 2 Length** | 80 cm |
| **Package 2 Weight** | 76 kg |

## Contractual warranty

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|---|---|
| **Warranty (in months)** | 18 |

## 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 | Compliant |

### Use Longer

#### Lifetime extension

| | |
|---|---|
| Repair | No |

### Use Again

#### Repack and remanufacture

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