# Product data sheet

Specifications



Discontinued - Service only

## variable speed drive, ATV312, 5 HP, 9.2 kVA, 150 W, 380 to 500 V 3 phase supply

ATV312HU40N4

Discontinued on: Feb 17, 2021

End-of-service on: Jan 1, 2026

**Product availability: Non-Stock - Not normally stocked in distribution facility**

## Main

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|---|---|
| **Product destination** | Asynchronous motors |
| **Component name** | ATV312 |
| **Motor power kW** | 4 kW |
| **Maximum Horse Power Rating** | 5 hp |
| **Supply frequency** | 50...60 Hz - 5...5 % |
| **Phase** | 3 phase |
| **Line current** | 13.9 A 380 V, Isc = 5 kA<br>10.6 A 500 V |
| **Apparent power** | 9.2 kVA |
| **Maximum transient current** | 14.3 A 60 s |
| **Power dissipation in W** | 150 W at nominal load |
| **Speed range** | 1…50 |
| **Electrical connection** | AI1, AI2, AI3, AOV, AOC, R1A, R1B, R1C, R2A, R2B, LI1...LI6 terminal 0.004 in² (2.5 mm²) 14 AWG<br>L1, L2, L3, U, V, W, PA, PB, PA/+, PC/- terminal 0.008 in² (5 mm²) 10 AWG |
| **Supply** | Internal supply for logic inputs 19...30 V 100 mA overload and short-circuit protection<br>Internal supply for reference potentiometer (2.2 to 10 kOhm) 10...10.8 V 10 mA 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 CANopen daisy chain<br>Communication card DeviceNet<br>Communication card Fipio<br>Communication card Modbus TCP<br>Communication card 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** | 380...500 V - 15...10 % |
| **EMC filter** | Integrated |

Price is “List Price” and may be subject to a trade discount – check with your local distributor or retailer for actual price.

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

## Complementary

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|---|---|
| **Supply voltage limits** | 323…550 V |
| **Continuous output current** | 9.5 A 4 kHz |
| **Output frequency** | 0…500 Hz |
| **Switching frequency** | 2...16 kHz adjustable |
| **Braking torque** | 150 % 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 5.3 lbf.in (0.6 N.m)<br>L1, L2, L3, U, V, W, PA, PB, PA/+, PC/- 10.6 lbf.in (1.2 N.m) |
| **Insulation** | Electrical between power and control |
| **Analogue input type** | AI1 configurable voltage 0...10 V 30 V max 30000 Ohm<br>AI2 configurable voltage +/- 10 V 30 V max 30000 Ohm<br>AI3 configurable current 0...20 mA 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 type** | AOC configurable current 0...20 mA 800 Ohm 8 bits<br>AOV configurable voltage 0...10 V 470 Ohm 8 bits |
| **Discrete input logic** | Logic input not wired LI1...LI4), < 13 V<br>Negative logic (source) LI1...LI6), > 19 V<br>Positive logic (source) LI1...LI6), < 5 V, > 11 V |
| **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 5 V DC |
| **Maximum switching current** | R1-R2 2 A 250 V AC inductive, cos phi = 0.4 7 ms<br>R1-R2 2 A 30 V DC inductive, cos phi = 0.4 7 ms<br>R1-R2 5 A 250 V AC resistive, cos phi = 1 0 ms<br>R1-R2 5 A 30 V DC resistive, cos phi = 1 0 ms |
| **Discrete input type** | LI1...LI6) programmable 24 V, 0…100 mA PLC 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 Modbus/CANopen |
| **Transmission Rate** | 10, 20, 50, 125, 250, 500 kbps or 1 Mbps CANopen<br>4800, 9600 or 19200 bps Modbus |
| **Number of addresses** | 1…127 CANopen<br>1…247 Modbus |
| **Number of drive** | 127 CANopen<br>31 Modbus |
| **Outer dimension** | 215 x 185 x 158 mm<br>184 x 140 x 150 mm<br>402 x 239 x 192 mm |
| **Discrete input number** | 6 |
| **Discrete output number** | 2 |

| | |
|---|---|
| **Analogue input number** | 3 |
| **Analogue output number** | 1 |
| **Physical interface** | RS485 multidrop serial link |
| **Transmission frame** | RTU |
| **Asynchronous motor control profile** | Sensorless flux vector control with PWM type motor control signal<br>Factory set : constant torque |
| **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** | Suppressable<br>Automatic whatever the load<br>Adjustable |
| **Nominal switching frequency** | 4 kHz |
| **Braking to standstill** | By DC injection |
| **Network Frequency** | 47.5...63 Hz |
| **Prospective line Isc** | 5 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** | 5.6 in (142 mm) |
| **Height** | 7.2 in (184 mm) |
| **Depth** | 6.0 in (152 mm) |
| **Product Weight** | 6.8 lb(US) (3.1 kg) |

# Environment

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|---|---|
| **Dielectric strength** | 2410 V DC between earth and power terminals<br>3400 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 11 ms EN/IEC 60068-2-27 |
| **Relative humidity** | 5…95 % without condensation IEC 60068-2-3<br>5…95 % without dripping water IEC 60068-2-3 |
| **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 |
| **Operating position** | Vertical +/- 10 degree |
| **Product Certifications** | CSA<br>C-tick<br>DNV<br>NOM<br>GOST<br>UL |
| **Marking** | CE |
| **Standards** | IEC 61800-3<br>IEC 61800-5-1 |
| **Assembly style** | With heat sink |

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|---|---|
| **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 |
| **Regulation loop** | Frequency PI regulator |
| **Pollution degree** | 2 |
| **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) |
| **Ambient Air Temperature for Storage** | -13…158 °F (-25…70 °C) |

## Ordering and shipping details

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|---|---|
| **Category** | US1CP4B22152 |
| **Discount Schedule** | CP4B |
| **GTIN** | 3606480077654 |
| **Returnability** | No |

## Packing Units

| | |
|---|---|
| **Unit Type of Package 1** | PCE |
| **Nbr. of units in pkg.** | 1 |
| **Package 1 Height** | 8.185 in (20.791 cm) |
| **Package 1 Width** | 8.55 in (21.71 cm) |
| **Package 1 Length** | 8.594 in (21.828 cm) |
| **Package weight(Lbs)** | 6.947 lb(US) (3.151 kg) |
| **Unit Type of Package 2** | S06 |
| **Number of Units in Package 2** | 12 |
| **Package 2 Height** | 28.9 in (73.5 cm) |
| **Package 2 Width** | 23.6 in (60.0 cm) |
| **Package 2 Length** | 31.5 in (80.0 cm) |
| **Package 2 Weight** | 103.6 lb(US) (47.0 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 |
| 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 |

### Use Longer

#### Lifetime extension

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|---|---|
| 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. |

Image of product / Alternate images

**Alternative**





