

# Product data sheet

Specifications



## variable speed drive ATV312 - 0.75kW - 1.8kVA - 60W - 200..240 V- 1-phase supply

ATV312H075M2412

⚠ Discontinued on: Jan 1, 2023

⚠ Discontinued

### Main

|                              |  |
|------------------------------|--|
| Range Of Product             | Altivar 312 Solar                        |
| Product Or Component Type    | Variable speed drive                     |
| Product Destination          | Asynchronous motors                      |
| Product Specific Application | Pumping station with photovoltaic arrays |
| Assembly Style               | With heat sink                           |
| Device Short Name            | ATV312                                   |

### Complementary

|                                  |  |
|----------------------------------|--|
| Motor Power Kw                   | 0.75 kW  |
| Motor Power Hp                   | 1 hp   |
| [Us] Rated Supply Voltage        | 200...240 V - 5...5 %  |
| Supply Voltage Limits            | 170...264 V  |
| Supply Frequency                 | 50...60 Hz - 5...5 %   |
| Network Frequency                | 47.5...63 Hz   |
| Network Number Of Phases         | Single phase   |
| Line Current                     | 7.5 A at 240 V<br>8.9 A at 200 V, I <sub>sc</sub> = 1 kA   |
| Emc Filter                       | Integrated   |
| Apparent Power                   | 1.8 kVA  |
| Prospective Line I <sub>sc</sub> | 1 kA   |
| Continuous Output Current        | 4.8 A at 4 kHz   |
| Maximum Transient Current        | 7.2 A for 60 s   |
| Power Dissipation In W           | 60 W at nominal load   |
| Speed Drive Output Frequency     | 0.5...500 Hz   |
| Nominal Switching Frequency      | 4 kHz  |
| Switching Frequency              | 2...16 kHz adjustable  |
| Speed Range                      | 1...50   |
| Transient Overtorque             | 150...170 % of nominal motor torque  |
| Braking Torque                   | <= 150 % during 60 s with braking resistor<br>100 % with braking resistor continuously<br>150 % without braking resistor |

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

|  |   |
|--|---|
| <b>Asynchronous Motor Control Profile</b>  | Factory set: energy saving mode   |
| <b>Regulation Loop</b>                     | Frequency PI regulator  |
| <b>Motor Slip Compensation</b>             | Adjustable<br>Automatic whatever the load<br>Suppressable   |
| <b>Output Voltage</b>                      | <= power supply voltage   |
| <b>Electrical Connection</b>               | AI1, AI2, AI3, AOV, AOC, R1A, R1B, R1C, R2A, R2B, LI1...LI6 terminal 2.5 mm² AWG 14<br>L1, L2, L3, U, V, W, PA, PB, PA/+, PC/- terminal 2.5 mm² AWG 14  |
| <b>Tightening Torque</b>                   | 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  |
| <b>Insulation</b>                          | Electrical between power and control  |
| <b>Supply</b>                              | Internal supply for logic inputs at 19...30 V, <100 A, protection type: overload and short-circuit protection<br>Internal supply for reference potentiometer (2.2 to 10 kOhm) at 10...10.8 V, <10 A, protection type: overload and short-circuit protection   |
| <b>Analogue Input Number</b>               | 3   |
| <b>Analogue Input Type</b>                 | 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  |
| <b>Sampling Duration</b>                   | AI1, AI2, AI3: 8 ms analog<br>LI1...LI6: 4 ms discrete  |
| <b>Response Time</b>                       | AOV, AOC 8 ms for analog<br>R1A, R1B, R1C, R2A, R2B 8 ms for discrete   |
| <b>Linearity Error</b>                     | +/- 0.2 % for output  |
| <b>Analogue Output Number</b>              | 2   |
| <b>Analogue Output Type</b>                | 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   |
| <b>Discrete Input Logic</b>                | 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)  |
| <b>Discrete Output Number</b>              | 2   |
| <b>Discrete Output Type</b>                | Configurable relay logic: (R1A, R1B, R1C) 1 NO + 1 NC - 100000 cycles<br>Configurable relay logic: (R2A, R2B) NC - 100000 cycles  |
| <b>Minimum Switching Current</b>           | R1-R2 10 mA at 5 V DC   |
| <b>Maximum Switching Current</b>           | 2 A at 250 V AC on inductive load - cos phi = 0.4 - L/R = 7 ms (R1-R2)<br>2 A at 30 V DC on inductive load - cos phi = 0.4 - L/R = 7 ms (R1-R2)<br>5 A at 250 V AC on resistive load - cos phi = 1 - L/R = 0 ms (R1-R2)<br>5 A at 30 V DC on resistive load - cos phi = 1 - L/R = 0 ms (R1-R2)  |
| <b>Discrete Input Number</b>               | 6   |
| <b>Discrete Input Type</b>                 | (LI1...LI6) programmable at 24 V, 0...100 mA for PLC, impedance: 3500 Ohm   |
| <b>Acceleration And Deceleration Ramps</b> | S, U or customized<br>Linear adjustable separately from 0.1 to 999.9 s  |
| <b>Braking To Standstill</b>               | By DC injection   |
| <b>Protection Type</b>                     | 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 |
| <b>Dielectric Strength</b>                 | 2040 V DC between earth and power terminals<br>2880 V AC between control and power terminals  |

|                               |   |
|-------------------------------|---|
| 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  |
| Communication Port Protocol   | CANopen<br>Modbus   |
| 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<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  |
| 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 |
| Standards                     | IEC 61800-5-1   |
| Marking                       | CE  |
| Height                        | 145 mm  |
| Width                         | 72 mm   |
| Depth                         | 142 mm  |
| Net Weight                    | 1.5 kg  |
| 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   |

## Environment

|                                       |   |
|---------------------------------------|---|
| Ip Degree Of Protection               | IP20 without cover plate  |
| Pollution Degree                      | 2   |
| 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                                    |
| 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)<br>-10...60 °C with derating factor (without protective cover on top of the drive) |
| Operating Altitude                    | <= 1000 m without derating<br>>= 1000 m with current derating 1 % per 100 m   |
| Operating Position                    | Vertical +/- 10 degree  |

## Packing Units

|                              |           |
|------------------------------|-----------|
| Unit Type Of Package 1       | PCE       |
| Number Of Units In Package 1 | 1         |
| Package 1 Height             | 14.000 cm |
| Package 1 Width              | 17.500 cm |
| Package 1 Length             | 18.000 cm |
| Package 1 Weight             | 1.530 kg  |
| Unit Type Of Package 2       | S03       |
| Number Of Units In Package 2 | 4         |
| Package 2 Height             | 30.000 cm |
| Package 2 Width              | 30.000 cm |
| Package 2 Length             | 40.000 cm |
| Package 2 Weight             | 6.561 kg  |

## Contractual warranty

|          |           |
|----------|-----------|
| Warranty | 18 months |
|----------|-----------|

# Sustainability



**Green Premium™ label** is Schneider Electric’s commitment to delivering products with best-in-class environmental performance. Green Premium promises compliance with the latest regulations, transparency on environmental impacts, as well as circular and low-CO<sub>2</sub> products.

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## Well-being performance

|  |   |
|--|---|
|  Mercury Free               |   |
|  Rohs Exemption Information | <a href="#">Yes</a>   |
| Reach Regulation   | <a href="#">REACH Declaration</a>   |
| Eu Rohs Directive  | Pro-active compliance (Product out of EU RoHS legal scope)  |
| China Rohs Regulation  | <a href="#">China RoHS declaration</a>  |
| Weee   | The product must be disposed on European Union markets following specific waste collection and never end up in rubbish bins   |
| 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 <a href="#">www.P65Warnings.ca.gov</a> |