

## Specifications



Local distributor code:  
400939166

ATV212WU15N4CZH28

ⓘ Discontinued on: 11 Nov 2022

**ⓘ Discontinued**

|                              |                                                          |
|------------------------------|----------------------------------------------------------|
| Device Short Name            | ATV212                                                   |
| Product Destination          | Asynchronous motors                                      |
| Network Number Of Phases     | 3 phases                                                 |
| Motor Power Kw               | 1.5 kW                                                   |
| Motor Power Hp               | 2 hp                                                     |
| Supply Voltage Limits        | 323...528 V                                              |
| Supply Frequency             | 50...60 Hz - 5...5 %                                     |
| Line Current                 | 3.2 A at 380 V<br>2.6 A at 480 V                         |
| Range Of Product             | Altivar 212                                              |
| Product Or Component Type    | Variable speed drive                                     |
| Product Specific Application | Pumps and fans in HVAC                                   |
| Communication Port Protocol  | APOGEE FLN<br>BACnet<br>LonWorks<br>Modbus<br>METASYS N2 |
| [Us] Rated Supply Voltage    | 380...480 V - 15...10 %                                  |
| Emc Filter                   | Class C1 EMC filter integrated                           |

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| Apparent Power               | 2.8 kVA at 380 V                                                                                                                                                                                                                 |
| Continuous Output Current    | 3.7 A at 380 V<br>3.7 A at 460 V                                                                                                                                                                                                 |
| Maximum Transient Current    | 4 A for 60 s                                                                                                                                                                                                                     |
| Speed Drive Output Frequency | 0.5...200 Hz                                                                                                                                                                                                                     |
| Speed Range                  | 1...10                                                                                                                                                                                                                           |
| Speed Accuracy               | +/- 10 % of nominal slip 0.2 Tn to Tn                                                                                                                                                                                            |
| Local Signalling             | 1 LED (red) for DC bus energized                                                                                                                                                                                                 |
| Output Voltage               | <= power supply voltage                                                                                                                                                                                                          |
| Isolation                    | Electrical between power and control                                                                                                                                                                                             |
| Type Of Cable                | Without mounting kit: 1 wire(s) IEC cable at 45 °C, copper 90 °C / XLPE/EPR<br>Without mounting kit: 1 wire(s) IEC cable at 45 °C, copper 70 °C / PVC<br>With UL Type 1 kit: 3 wire(s) UL 508 cable at 40 °C, copper 75 °C / PVC |

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| Electrical Connection     | VIA, VIB, FM, FLA, FLB, FLC, RY, RC, F, R, RES: terminal 2.5 mm <sup>2</sup> / AWG 14<br>L1/R, L2/S, L3/T: terminal 6 mm <sup>2</sup> / AWG 10                                                                                                                                                                                                     |
| Tightening Torque         | 1.3 N.m, 11.5 lb.in (L1/R, L2/S, L3/T)<br>0.6 N.m (VIA, VIB, FM, FLA, FLB, FLC, RY, RC, F, R, RES)                                                                                                                                                                                                                                                 |
| Supply                    | Internal supply for reference potentiometer (1 to 10 kOhm): 10.5 V DC +/- 5 %, <10 A, protection type: overload and short-circuit protection<br>Internal supply: 24 V DC (21...27 V), <200 A, protection type: overload and short-circuit protection                                                                                               |
| Sampling Duration         | 2 ms +/- 0.5 ms F discrete<br>2 ms +/- 0.5 ms R discrete<br>2 ms +/- 0.5 ms RES discrete<br>3.5 ms +/- 0.5 ms VIA analog<br>22 ms +/- 0.5 ms VIB analog                                                                                                                                                                                            |
| Response Time             | FM 2 ms, tolerance +/- 0.5 ms for analog output(s)<br>FLA, FLC 7 ms, tolerance +/- 0.5 ms for discrete output(s)<br>FLB, FLC 7 ms, tolerance +/- 0.5 ms for discrete output(s)<br>RY, RC 7 ms, tolerance +/- 0.5 ms for discrete output(s)                                                                                                         |
| Accuracy                  | +/- 0.6 % (VIA) for a temperature variation 60 °C<br>+/- 0.6 % (VIB) for a temperature variation 60 °C<br>+/- 1 % (FM) for a temperature variation 60 °C                                                                                                                                                                                           |
| Linearity Error           | VIA: +/- 0.15 % of maximum value for input<br>VIB: +/- 0.15 % of maximum value for input<br>FM: +/- 0.2 % for output                                                                                                                                                                                                                               |
| Analogue Output Type      | FM switch-configurable voltage 0...10 V DC, impedance: 7620 Ohm, resolution 10 bits<br>FM switch-configurable current 0...20 mA, impedance: 970 Ohm, resolution 10 bits                                                                                                                                                                            |
| Discrete Output Type      | Configurable relay logic: (FLA, FLC) NO - 100000 cycles<br>Configurable relay logic: (FLB, FLC) NC - 100000 cycles<br>Configurable relay logic: (RY, RC) NO - 100000 cycles                                                                                                                                                                        |
| Minimum Switching Current | 3 mA at 24 V DC for configurable relay logic                                                                                                                                                                                                                                                                                                       |
| Maximum Switching Current | 5 A at 250 V AC on resistive load - cos phi = 1 - L/R = 0 ms (FL, R)<br>5 A at 30 V DC on resistive load - cos phi = 1 - L/R = 0 ms (FL, R)<br>2 A at 250 V AC on inductive load - cos phi = 0.4 - L/R = 7 ms (FL, R)<br>2 A at 30 V DC on inductive load - cos phi = 0.4 - L/R = 7 ms (FL, R)                                                     |
| Discrete Input Type       | F programmable 24 V DC, with level 1 PLC, impedance: 4700 Ohm<br>R programmable 24 V DC, with level 1 PLC, impedance: 4700 Ohm<br>RES programmable 24 V DC, with level 1 PLC, impedance: 4700 Ohm                                                                                                                                                  |
| Discrete Input Logic      | Positive logic (source) (F, R, RES), <= 5 V (state 0), >= 11 V (state 1)<br>Negative logic (sink) (F, R, RES), >= 16 V (state 0), <= 10 V (state 1)                                                                                                                                                                                                |
| Dielectric Strength       | 3535 V DC between earth and power terminals<br>5092 V DC between control and power terminals                                                                                                                                                                                                                                                       |
| Insulation Resistance     | >= 1 mOhm 500 V DC for 1 minute                                                                                                                                                                                                                                                                                                                    |
| Frequency Resolution      | Display unit: 0.1 Hz<br>Analog input: 0.024/50 Hz                                                                                                                                                                                                                                                                                                  |
| Communication Service     | Write single register (06)<br>Time out setting from 0.1 to 100 s<br>Read holding registers (03) 2 words maximum<br>Monitoring inhibitible<br>Write multiple registers (16) 2 words maximum<br>Read device identification (43)                                                                                                                      |
| Option Card               | Communication card for LonWorks                                                                                                                                                                                                                                                                                                                    |
| Discrete Output Number    | 2                                                                                                                                                                                                                                                                                                                                                  |
| Analogue Input Number     | 2                                                                                                                                                                                                                                                                                                                                                  |
| Analogue Input Type       | VIA switch-configurable voltage: 0...10 V DC 24 V max, impedance: 30000 Ohm, resolution 10 bits<br>VIB configurable voltage: 0...10 V DC 24 V max, impedance: 30000 Ohm, resolution 10 bits<br>VIB configurable PTC probe: 0...6 probes, impedance: 1500 Ohm<br>VIA switch-configurable current: 0...20 mA, impedance: 250 Ohm, resolution 10 bits |

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| Analogue Output Number              | 1                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           |
| Physical Interface                  | 2-wire RS 485                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               |
| Connector Type                      | 1 open style<br>1 RJ45                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      |
| Transmission Rate                   | 9600 bps or 19200 bps                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       |
| Transmission Frame                  | RTU                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         |
| Number Of Addresses                 | 1...247                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     |
| Data Format                         | 8 bits, 1 stop, odd even or no configurable parity                                                                                                                                                                                                                                                                                                                                                                                                                                                                          |
| Type Of Polarization                | No impedance                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                |
| Asynchronous Motor Control Profile  | Voltage/frequency ratio, 5 points<br>Flux vector control without sensor, standard<br>Voltage/frequency ratio, 2 points<br>Voltage/frequency ratio, automatic IR compensation (U/f + automatic Uo)<br>Voltage/frequency ratio - Energy Saving, quadratic U/f                                                                                                                                                                                                                                                                 |
| Torque Accuracy                     | +/- 15 %                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    |
| Transient Overtorque                | 120 % of nominal motor torque +/- 10 % for 60 s                                                                                                                                                                                                                                                                                                                                                                                                                                                                             |
| Acceleration And Deceleration Ramps | Automatic based on the load<br>Linear adjustable separately from 0.01 to 3200 s                                                                                                                                                                                                                                                                                                                                                                                                                                             |
| Motor Slip Compensation             | Adjustable<br>Automatic whatever the load<br>Not available in voltage/frequency ratio motor control                                                                                                                                                                                                                                                                                                                                                                                                                         |
| Switching Frequency                 | 6...16 kHz adjustable<br>12...16 kHz with derating factor                                                                                                                                                                                                                                                                                                                                                                                                                                                                   |
| Nominal Switching Frequency         | 12 kHz                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      |
| Braking To Standstill               | By DC injection                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             |
| Network Frequency                   | 47.5...63 Hz                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                |
| Prospective Line Isc                | 5 kA                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        |
| Protection Type                     | Overheating protection: drive<br>Thermal power stage: drive<br>Short-circuit between motor phases: drive<br>Input phase breaks: drive<br>Overcurrent between output phases and earth: drive<br>Overvoltages on the DC bus: drive<br>Break on the control circuit: drive<br>Against exceeding limit speed: drive<br>Line supply overvoltage and undervoltage: drive<br>Line supply undervoltage: drive<br>Against input phase loss: drive<br>Thermal protection: motor<br>Motor phase break: motor<br>With PTC probes: motor |
| Width                               | 215 mm                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      |
| Height                              | 297 mm                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      |
| Depth                               | 192 mm                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      |
| Net Weight                          | 7.5 kg                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      |

## Environment

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|-------------------------|--------------------------------------------------------------------------------------------------------------|
| Pollution Degree        | 2 conforming to IEC 61800-5-1                                                                                |
| Ip Degree Of Protection | IP54 conforming to EN/IEC 61800-5-1<br>IP54 conforming to EN/IEC 60529                                       |
| Vibration Resistance    | 1.5 mm (f= 3...13 Hz) conforming to EN/IEC 60068-2-6<br>1 gn (f= 13...200 Hz) conforming to EN/IEC 60068-2-8 |
| Shock Resistance        | 15 gn for 11 ms conforming to IEC 60068-2-27                                                                 |

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| Environmental Characteristic          | Classes 3C1 conforming to IEC 60721-3-3<br>Classes 3S2 conforming to IEC 60721-3-3                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            |
| Noise Level                           | 48 dB conforming to 86/188/EEC                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                |
| Operating Altitude                    | 1000...3000 m limited to 2000 m for the Corner Grounded distribution network with current derating 1 % per 100 m<br><= 1000 m without derating                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                |
| 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 Operation | -10...40 °C (without derating)<br>40...50 °C (with derating factor)                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           |
| Operating Position                    | Vertical +/- 10 degree                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        |
| Product Certifications                | UL<br>C-Tick<br>NOM 117<br>CSA                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                |
| Marking                               | CE                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            |
| Standards                             | IEC 61800-3 environments 1 category C1<br>EN 55011 group 1 class B<br>EN 61800-3 environments 1 category C1<br>EN 61800-3 environments 2 category C1<br>EN 61800-3 category C1<br>IEC 61800-3<br>IEC 61800-3 environments 1 category C3<br>EN 61800-3 environments 1 category C2<br>IEC 61800-3 environments 2 category C3<br>EN 61800-5-1<br>EN 61800-3 environments 2 category C2<br>EN 61800-3 environments 2 category C3<br>IEC 61800-3 environments 2 category C1<br>EN 61800-3 environments 1 category C3<br>IEC 61800-5-1<br>EN 61800-3<br>IEC 61800-3 category C1<br>IEC 61800-3 environments 2 category C2<br>IEC 61800-3 environments 1 category C2 |
| Assembly Style                        | With heat sink                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                |
| Electromagnetic Compatibility         | 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<br>Electrical fast transient/burst immunity test level 4 conforming to IEC 61000-4-4<br>1.2/50 µs - 8/20 µs surge immunity test level 3 conforming to IEC 61000-4-5<br>Conducted radio-frequency immunity test level 3 conforming to IEC 61000-4-6<br>Voltage dips and interruptions immunity test conforming to IEC 61000-4-11                                                                                                                                                 |
| Regulation Loop                       | Adjustable PI regulator                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       |
| Ambient Air Temperature For Storage   | -25...70 °C                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   |

## Contractual warranty

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| Warranty | 18 months |
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