# Product data sheet
## Characteristics

# ATV212WU15N4C
variable speed drive, Altivar 212, 1.5kW, 2hp, 480V, 3 phases, with EMC class C1, IP55



## Main

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|---|---|
| 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 | LonWorks<br>APOGEE FLN<br>Modbus<br>BACnet<br>METASYS N2 |
| [Us] rated supply voltage | 380...480 V - 15...10 % |
| EMC filter | Class C1 EMC filter integrated |
| IP degree of protection | IP55 |

## Complementary

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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 |
| Electrical connection | VIA, VIB, FM, FLA, FLB, FLC, RY, RC, F, R, RES: terminal 2.5 mm² / 14 AWG<br>L1/R, L2/S, L3/T: terminal 6 mm² / 10 AWG |
| 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) |

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| Supply | Internal supply for reference potentiometer (1 to 10 kOhm): 10.5 V DC +/- 5 %, <10 A, protection ty<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 | Read holding registers (03) 2 words maximum<br>Monitoring inhibitable<br>Write multiple registers (16) 2 words maximum<br>Write single register (06)<br>Read device identification (43)<br>Time out setting from 0.1 to 100 s |
| Option card | Communication card for LonWorks |
| Specific application | HVAC |
| 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 |
| Analogue output number | 1 |
| Physical interface | 2-wire RS 485 |
| Connector type | 1 RJ45<br>1 open style |
| 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 - Energy Saving, quadratic U/f<br>Voltage/Frequency ratio, automatic IR compensation (U/f + automatic Uo)<br>Voltage/Frequency ratio, 2 points<br>Voltage/Frequency ratio, 5 points<br>Flux vector control without sensor, standard |
| Torque accuracy | +/- 15 % |
| Transient overtorque | 120 % of nominal motor torque +/- 10 % for 60 s |

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| Acceleration and deceleration ramps | Automatic based on the load<br>Linear adjustable separately from 0.01 to 3200 s |
| Motor slip compensation | Automatic whatever the load<br>Adjustable<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 | IP55 conforming to IEC 61800-5-1<br>IP55 conforming to IEC 60529 |
| Vibration resistance | 1.5 mm (f= 3…13 Hz) conforming to 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 |
| 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 dera<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 | C-Tick[RETURN]NOM 117[RETURN]CSA[RETURN]UL |
| Marking | CE |
| Standards | IEC 61800-3<br>IEC 61800-3 environments 1 category C2<br>IEC 61800-3 environments 1 category C2<br>IEC 61800-3 environments 2 category C2<br>IEC 61800-3 environments 2 category C1<br>IEC 61800-3 environments 1 category C3<br>IEC 61800-3 environments 1 category C1<br>IEC 61800-5-1<br>EN 61800-3 category C1<br>IEC 61800-3 environments 1 category C1<br>IEC 61800-3<br>EN 55011 group 1 class B<br>IEC 61800-3 environments 2 category C1<br>IEC 61800-5-1<br>IEC 61800-3 category C1<br>IEC 61800-3 environments 2 category C3<br>IEC 61800-3 environments 2 category C2<br>IEC 61800-3 environments 1 category C3<br>IEC 61800-3 environments 2 category C3 |

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|---|---|
| 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 |

## Packing Units

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|---|---|
| Unit Type of Package 1 | PCE |
| Number of Units in Package 1 | 1 |
| Package 1 Height | 28.000 Cm |
| Package 1 Width | 25.000 Cm |
| Package 1 Length | 37.000 Cm |
| Package 1 Weight | 7.219 Kg |
| Unit Type of Package 2 | S06 |
| Number of Units in Package 2 | 5 |
| Package 2 Height | 75.000 Cm |
| Package 2 Width | 60.000 Cm |
| Package 2 Length | 80.000 Cm |
| Package 2 Weight | 49.095 Kg |

## Offer Sustainability

| | |
|---|---|
| Mercury free | Yes |
| Sustainable packaging | No |
| Environmental Disclosure | Product Environmental Profile |
| Packaging made with recycled cardboard | No |
| Packaging without single use plastic | Yes |
| SCIP Number | 5d78175f-8bd2-4c65-b180-195251c63b62 |
| REACh Regulation | Reference contains Substances of Very High Concern above the threshold |
| EU RoHS Directive | Compliant By Exemption |
| California proposition 65 | WARNING: This product can expose you to chemicals including: Lead and lead compounds, which |
| Product contributes to saved and avoided emissions | Yes |
| End of life manual availability | End Of Life Information |
| Take-back | No |
| WEEE Label | The product must be disposed on European Union markets following specific waste collection and |

## Contractual warranty

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

**Product Life Status :** End of commerc. announced

## ATV212WU15N4C is replaced by the following product range:



363587046

Variable speed drives up to 250kW (400HP) for reliable performance of HVAC machines, sustainable efficiency of comm

Substitution date: |