

ATV31CD15N4

enclosed variable speed drive ATV31 - 15kW - 500V - IP55



Main

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| Range of Product | Altivar 31 |
| Product or Component Type | Variable speed drive |
| Product destination | Asynchronous motors |
| Product Specific Application | Simple machine |
| Assembly style | Enclosed |
| Component name | ATV31 |
| EMC filter | Integrated |
| Power supply voltage | 380...500 V - 15...10 % |
| Power supply frequency | 50...60 Hz - 5...5 % |
| Phase | 3 phase |
| Motor power kW | 15 kW |
| Maximum Horse Power Rating | 20 hp |
| Line current | 36.8 A 500 V 1 kA 48.2 A 380 V 1 kA |
| Apparent power | 32 kVA |
| Maximum prospective line Isc | 22 kA |
| Nominal output current | 33 A 4 kHz |
| Maximum transient current | 49.5 A 60 s |
| Power dissipation in W | 492 W at nominal load |
| Speed range | 1...50 |
| Transient overtorque | 150...170 % of nominal motor torque |
| Asynchronous motor control profile | Factory set : constant torque Sensorless flux vector control with PWM type motor control signal |
| Analogue input number | 3 |
| IP degree of protection | IP55 |

Complementary

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| Power supply voltage limit | 323...550 V |
| Power supply frequency limits | 47.5...63 Hz |
| Speed drive output frequency | 0.5...500 Hz |
| Nominal switching frequency | 4 kHz |
| Switching frequency | 2...16 kHz adjustable |
| Braking torque | <= 150 % 60 s with braking resistor 100 % with braking resistor continuously 30 % without braking resistor |
| Regulation loop | Frequency PI regulator |
| Motor slip compensation | Adjustable Suppressable Automatic whatever the load |
| Output voltage | <= power supply voltage |
| Electrical connection | AI1, AI2, AI3, AOV, AOC, R1A, R1B, R1C, R2A, R2B, LI1...LI6 terminal 0.00 in ² (2.5 mm ²) AWG 14 L1, L2, L3, U, V, W, PA, PB, PA+, PC/- terminal 0.00 in ² (2.5 mm ²) AWG 14 |
| Tightening torque | AI1, AI2, AI3, AOV, AOC, R1A, R1B, R1C, R2A, R2B, LI1...LI6 5.31 lbf.in (0.6 N.m) L1, L2, L3, U, V, W, PA, PB, PA+, PC/- 7.08 lbf.in (0.8 N.m) |

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| Insulation | Electrical between power and control |
| Supply | Internal supply for logic inputs 19...30 V, <100 mA overload protection Internal supply for logic inputs 19...30 V, <100 mA short-circuit protection Internal supply for reference potentiometer 10...10.8 V, <10 mA overload protection Internal supply for reference potentiometer 10...10.8 V, <10 mA short-circuit protection |
| Analogue input type | AI3 configurable current 0...20 mA 250 Ohm AI1 configurable voltage 0...10 V 30 V max 30000 Ohm AI2 configurable voltage +/- 10 V 30 V max 30000 Ohm |
| Input sampling time | LI1...LI6 4 ms discrete AI1, AI2, AI3 8 ms analog |
| Output response time | AOV, AOC 8 ms analog R1A, R1B, R1C, R2A, R2B 8 ms discrete |
| Linearity error | +/- 0.2 % output |
| Analogue output number | 2 |
| Analogue output type | AOC configurable current 0...20 mA 800 Ohm 8 bits AOV configurable voltage 0...10 V 470 Ohm 8 bits |
| Discrete input logic | Positive logic (source) LI1...LI6, < 5 V, > 11 V Logic input not wired LI1...LI4, < 13 V Negative logic (source) LI1...LI6, > 19 V |
| Discrete output number | 2 |
| Discrete output type | Configurable relay logic R1A, R1B, R1C) 1 NO + 1 NC - 100000 cycles Configurable relay logic R2A, R2B) NC - 100000 cycles |
| Minimum switching current | 10 mA 5 V DC R1-R2 |
| Maximum switching current | 2 A 250 V AC inductive - cos phi = 0.4 - L/R = 7 ms R1-R2) 2 A 30 V DC inductive - cos phi = 0.4 - L/R = 7 ms R1-R2) 5 A 250 V AC resistive - cos phi = 1 - L/R = 0 ms R1-R2) 5 A 30 V DC resistive - cos phi = 1 - L/R = 0 ms R1-R2) |
| Discrete input number | 6 |
| Discrete input type | LI1...LI6) programmable 24 V, 0...100 mA PLC 3500 Ohm |
| Acceleration and deceleration ramps | Linear adjustable separately from 0.1 to 999.9 s S, U or customized |
| Braking to standstill | By DC injection |
| Protection type | Input phase breaks drive Line supply overvoltage and undervoltage safety circuits drive Line supply phase loss safety function, for three phases supply drive Motor phase breaks drive Overcurrent between output phases and earth (on power up only) drive Overheating protection drive Short-circuit between motor phases drive Thermal protection motor |
| Insulation resistance | >= 500 mOhm 500 V DC for 1 minute |
| Local signalling | For drive voltage 1 LED (red) For CANopen bus status four 7-segment display units |
| Time constant | 5 ms for reference change |
| Frequency resolution | Display unit 0.1 Hz Analog input 0.1...100 Hz |
| Communication port protocol | Modbus CANopen |
| Connector type | 1 RJ45 CANopen via VW3 CANTAP2 adaptor 1 RJ45 Modbus |
| Physical interface | RS485 multidrop serial link Modbus |
| Transmission frame | RTU Modbus |
| Transmission Rate | 10, 20, 50, 125, 250, 500 kbps or 1 Mbps CANopen via VW3 CANTAP2 adaptor 4800, 9600 or 19200 bps Modbus |
| Number of addresses | 1...127 CANopen via VW3 CANTAP2 adaptor 1...247 Modbus |
| Number of drive | 127 CANopen via VW3 CANTAP2 adaptor 31 Modbus |
| Marking | CE |
| Operating position | Vertical +/- 10 degree |
| Net Weight | 71.65 lb(US) (32.5 kg) |

Environment

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| Dielectric strength | 2410 V DC between earth and power terminals 3400 V AC between control and power terminals |
| Electromagnetic compatibility | 1.2/50 μ s - 8/20 μ s surge immunity test level 3 IEC 61000-4-5 Electrical fast transient/burst immunity test level 4 IEC 61000-4-4 Electrostatic discharge immunity test level 3 IEC 61000-4-2 Radiated radio-frequency electromagnetic field immunity test level 3 IEC 61000-4-3 |
| Standards | EN 50178 |
| Product Certifications | C-tick |
| Pollution degree | 2 |
| Protective treatment | TC |
| Vibration resistance | 1 gn 13...150 Hz)EN/IEC 60068-2-6 1.5 mm 3...13 Hz)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 5...95 % without dripping water IEC 60068-2-3 |
| Ambient Air Temperature for Storage | -13...158 °F (-25...70 °C) |
| Ambient air temperature for operation | 14...122 °F (-10...50 °C) without derating with protective cover on top of the drive) 14...140 °F (-10...60 °C) with derating factor without protective cover on top of the drive) |
| Operating altitude | >= 3280.84 ft (1000 m) with current derating 1 % per 100 m |

Ordering and shipping details

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| Category | 22153-ATV320/ATV312/ATV32 (10 THRU 30HP) |
| Discount Schedule | CP4B |
| GTIN | 3389119200431 |
| Returnability | No |
| Country of origin | FR |

Packing Units

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| Unit Type of Package 1 | PCE |
| Number of Units in Package 1 | 1 |
| Package 1 Height | 16.34 in (41.5 cm) |
| Package 1 Width | 23.23 in (59 cm) |
| Package 1 Length | 28.74 in (73 cm) |
| Package 1 Weight | 63.93 lb(US) (29 kg) |

Offer Sustainability

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| 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 |
| EU RoHS Directive | Pro-active compliance (Product out of EU RoHS legal scope) EU RoHS Declaration |
| Mercury free | Yes |
| China RoHS Regulation | China RoHS Declaration |
| RoHS exemption information | Yes |
| WEEE | The product must be disposed on European Union markets following specific waste collection and never end up in rubbish bins. |

Contractual warranty

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| Warranty | 18 months |
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