



ATV11HU41M3U

variable speed drive ATV11 - 2.2kW - 230V 3-phase supply - IP20



Main

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| Range of product | Altivar |
| Product or component type | Variable speed drive |
| Product specific application | Simple machine |
| Component name | ATV11 |
| Application market | USA market |
| Assembly style | With heat sink |
| EMC filter | Without EMC filter |
| Built-in fan | With |
| Network number of phases | 3 phases |
| [Us] rated supply voltage | 200...230 V - 15...10 % |
| Supply frequency | 50...60 Hz - 5...5 % |
| Motor power kW | 2.2 kW |
| Motor power hp | 3 hp |
| Line current | 15.2 A at 208 V, I _{sc} = 1 kA |
| Nominal output current | 10.6 A 230 V motor 4 kHz |
| Maximum transient current | 15 A for 60 s |
| Power dissipation in W | 94 W at nominal load |
| Switching frequency | 2...16 kHz adjustable 4...16 kHz with derating factor |
| Braking torque | 150 % of nominal motor torque with braking resistor at high inertia 20 % of nominal motor torque without braking resistor at no load 80 % of nominal motor torque with braking resistor at no load |
| Asynchronous motor control profile | Sensorless flux vector control with PWM type motor control signal |
| Electrical connection | Terminal, clamping capacity: 1.5 mm ² , AWG 14 (AI1, RA-RC, LI1...LI4, DO) Terminal, clamping capacity: 1.5 mm ² , AWG 14 (L1, L2, L3, U, V, W, PA, PC) |
| Supply | Internal supply for logic inputs: 15 V (+/- 15 %) 100 mA, protection type: overload and short-circuit protection Internal supply for reference potentiometer (2.2 to 10 kOhm): 5...5.25 VDC 10 mA, protection type: overload and short-circuit protection |
| Analogue input type | Configurable current AI1 4...20 mA 250 Ohm without adding resistor Configurable voltage AI1 0...5 V 40000 Ohm only with internal supply Configurable current AI1 0...20 mA 250 Ohm Configurable voltage AI1 0...10 V 40000 Ohm |
| Sampling duration | AI1: 20 ms analog LI1...LI4: 20 ms discrete |
| Response time | 20 ms DO |
| Linearity error | DO: +/- 1 % for output AI: +/- 5 % for input |

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| Discrete input type | Assignable LI1 forward 5000 Ohm 15 V 24 V Assignable LI2 reverse 5000 Ohm 15 V 24 V Assignable LI3/LI4 4 preset speeds 5000 Ohm 15 V 24 V |
| Discrete input logic | Positive logic (source) (LI1...LI4), < 5 V (state 0), > 11 V (state 1) |
| Discrete output type | Assignable as external voltage DO 30 V max, 30 mA Assignable as open collector logic output DO 100 Ohm, 50 mA max Factory set as PWM open collector output DO at 2 kHz 10 mA max Protected relay logic RA-RC 1 NO Assignable as internal voltage DO |
| Minimum switching current | RA-RC 10 mA at 24 V DC |
| Maximum switching current | 2 A 250 V AC inductive $\cos \phi = 0.4$ 7 ms RA-RC 2 A 30 V DC inductive $\cos \phi = 0.4$ 7 ms RA-RC 5 A 250 V AC resistive $\cos \phi = 1$ 0 ms RA-RC 5 A 30 V DC resistive $\cos \phi = 1$ 0 ms RA-RC |
| Protection type | Line supply overvoltage: drive Line supply undervoltage: drive Overcurrent between output phases and earth: drive Overheating protection: drive Short-circuit between motor phases: drive Thermal protection: motor |
| Frequency resolution | Display unit: 0.1 Hz Analog input: converter A/D, 10 bits |
| Electromagnetic compatibility | 1.2/50 μs - 8/20 μs surge immunity test level 3 conforming to EN/IEC 61000-4-5 Electrical fast transient/burst immunity test level 4 conforming to EN/IEC 61000-4-4 Electrostatic discharge immunity test level 3 conforming to EN/IEC 61000-4-2 Radiated radio-frequency electromagnetic field immunity test level 3 conforming to EN/IEC 61000-4-3 |
| Maximum motor cable length | 20 M with additional EMC filter from 2 to 16 kHz conforming to EN 55011 class A group 1 5 m with additional EMC filter from 2 to 16 kHz conforming to EN 55011 class B |
| Vibration resistance | 1 gn ($f = 13 \dots 200$ Hz) conforming to EN/IEC 60068-2-6 1.5 mm peak to peak ($f = 3 \dots 13$ 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...93 % without condensation conforming to IEC 60068-2-3 5...93 % without dripping water conforming to IEC 60068-2-3 |
| Ambient air temperature for operation | -10...40 °C without 40...50 °C by removing the protective cover from the top of the drive 50...60 °C by removing the protective cover from the top of the drive with current derating of 2.2 % per °C |
| Operating altitude | ≤ 1000 m without > 1000 m with current derating 1 % per 100 m |

Complementary

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| Product destination | Asynchronous motors |
| Supply voltage limits | 170...253 V |
| Network frequency limits | 47.5...63 Hz |
| Speed drive output frequency | 0...200 Hz |
| Nominal switching frequency | 4 kHz |
| Speed range | 1...20 |
| Transient overtorque | 150...170 % of nominal motor torque |
| Regulation loop | Possible correction for machines with high resistive torque/inertia/fast cycles Factory-set with the speed loop stability and gain Adjustable frequency |
| Motor slip compensation | Adjustable Preset in factory |

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| Prospective line I _{sc} | 1 kA |
| Output voltage | ≤ 2 x power supply voltage |
| Insulation | Electrical between power and control |
| Analogue input number | 1 |
| Discrete input number | 4 |
| Discrete output number | 2 |
| Acceleration and deceleration ramps | Linear from 0 to 99.9 s |
| Braking to standstill | By DC injection |
| Insulation resistance | ≥ 500 mOhm |
| Marking | CE |
| Operating position | Vertical +/- 10 degree |
| CAD overall width | 117 mm |
| CAD overall height | 142 mm |
| CAD overall depth | 156 mm |
| Outer dimension | 142 x 72 x 101 mm |
| Net weight | 0.9 kg |

Environment

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| Standards | EN 50178 |
| Product certifications | N998 CSA UL C-Tick |
| IP degree of protection | IP20 |
| Ambient air temperature for storage | -25...65 °C |

Contractual warranty

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| Warranty | 18 months |
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