MANUFACTURER DOCUMENT PACKAGE

# Manufacturer's Manual

Reference package for procurement and maintenance review

SCHNEIDER ELECTRIC

## ATV11HU41M3A

**ALTIVAR 11 2.2 KW VARIABLE SPEED DRIVE**

Used with the applicable Altivar 11 configuration.

REFERENCE PACKAGE

OFFICIAL DOCUMENT

Selected official manufacturer pages follow this cover.

Source: Official manufacturer documentation applicable to ATV11HU41M3A

# Product data sheet

Specifications



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

ATV11HU41M3A

Discontinued on: Dec 31, 2010

End-of-service on: Dec 31, 2012

Discontinued

## 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** | Asia |
| **Assembly style** | With heat sink |
| **EMC filter** | Without EMC filter |
| **Built-in fan** | With |
| **Phase** | 3 phase |
| **[Us] rated supply voltage** | 200...230 V - 15...10 % |
| **Supply frequency** | 50...60 Hz - 5...5 % |
| **Motor power kW** | 2.2 kW |
| **Line current** | 15.2 A 200 V, Isc = 1 kA |
| **Nominal output current** | 1.4 A 230 V motor 4 kHz |
| **Maximum transient current** | 15 A 60 s |
| **Power dissipation in W** | 94 W at nominal load |
| **Switching frequency** | 2...16 kHz adjustable<br>4...16 kHz with derating factor |
| **Braking torque** | 150 % of nominal motor torque with braking resistor at high inertia<br>20 % of nominal motor torque without braking resistor at no load<br>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 1.5 mm², 14 AWG AI1, RA-RC, LI1...LI4, DO)<br>Terminal 1.5 mm², 14 AWG L1, L2, L3, U, V, W, PA, PC) |
| **Supply** | Internal supply for logic inputs 15 V +/- 15 %) 100 mA overload and short-circuit protection<br>Internal supply for reference potentiometer (2.2 to 10 kOhm) 5...5.25 VDC 10 mA overload and short-circuit protection |
| **Analogue input type** | Configurable current AI1 4...20 mA 250 Ohm without adding resistor<br>Configurable voltage AI1 0...5 V 40000 Ohm only with internal supply<br>Configurable current AI1 0...20 mA 250 Ohm<br>Configurable voltage AI1 0...10 V 40000 Ohm |
| **Sampling duration** | AI1 20 ms analog<br>LI1...LI4 20 ms discrete |
| **Response time** | 20 ms DO |

Price is “List Price” and may be subject to a trade discount – check with your local distributor or retailer for actual price.

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

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| **Linearity error** | DO +/- 1 % output<br>AI +/- 5 % input |
| **Discrete input type** | Assignable LI1 forward 5000 Ohm 15 V 24 V<br>Assignable LI2 reverse 5000 Ohm 15 V 24 V<br>Assignable LI3/LI4 4 preset speeds 5000 Ohm 15 V 24 V |
| **Discrete input logic** | Positive logic (source) LI1...LI4), < 5 V, > 11 V<br>Logic input not wired LI1...LI4), < 5 V<br>Negative logic (source) LI1...LI4), > 11 V |
| **Discrete output type** | Assignable as external voltage DO 30 V max, 30 mA<br>Assignable as open collector logic output DO 100 Ohm, 50 mA max<br>Factory set as PWM open collector output DO at 2 kHz 10 mA max<br>Protected relay logic RA-RC 1 NO<br>Assignable as internal voltage DO |
| **Minimum switching current** | RA-RC 10 mA 24 V DC |
| **Maximum switching current** | 2 A 250 V AC inductive cos phi = 0.4 7 ms RA-RC<br>2 A 30 V DC inductive cos phi = 0.4 7 ms RA-RC<br>5 A 250 V AC resistive cos phi = 1 RA-RC<br>5 A 30 V DC resistive cos phi = 1 RA-RC |
| **Protection type** | Line supply overvoltage drive<br>Line supply undervoltage drive<br>Overcurrent between output phases and earth drive<br>Overheating protection drive<br>Short-circuit between motor phases drive<br>Thermal protection motor |
| **Frequency resolution** | Display unit 0.1 Hz<br>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<br>Electrical fast transient/burst immunity test level 4 conforming to EN/IEC 61000-4-4<br>Electrostatic discharge immunity test level 3 conforming to EN/IEC 61000-4-2<br>Radiated radio-frequency electromagnetic field immunity test level 3 conforming to EN/IEC 61000-4-3 |
| **Maximum motor cable length** | 65.6 ft (20 m) with additional EMC filter from 2 to 16 kHz EN 55011 class A group 1<br>16.4 ft (5 m) with additional EMC filter from 2 to 16 kHz EN 55011 class B |
| **Vibration resistance** | 1 gn (f= 13…200 Hz) conforming to EN/IEC 60068-2-6<br>1.5 mm peak to peak (f= 3…13 Hz) conforming to EN/IEC 60068-2-6 |
| **Shock resistance** | 15 gn 11 ms EN/IEC 60068-2-27 |
| **Relative humidity** | 5…93 % without condensation IEC 60068-2-3<br>5…93 % without dripping water IEC 60068-2-3 |
| **Ambient air temperature for operation** | 14…104 °F (-10…40 °C) without derating<br>104…122 °F (40…50 °C) by removing the protective cover from the top of the drive<br>122…140 °F (50…60 °C) by removing the protective cover from the top of the drive with current derating of 2.2 % per °C |
| **Operating altitude** | <= 3280.84 ft (1000 m) without derating<br>> 3280.84 ft (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** | Factory-set with the speed loop stability and gain<br>Adjustable frequency<br>Possible correction for machines with high resistive torque/inertia/fast cycles |

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| **Motor slip compensation** | Preset in factory<br>Adjustable |
| **Prospective line Isc** | 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** | 4.6 in (117 mm) |
| **CAD overall height** | 5.6 in (142 mm) |
| **CAD overall depth** | 6.4 in (163 mm) |
| **Net Weight** | 4.0 lb(US) (1.8 kg) |

## Environment

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|---|---|
| **Standards** | EN 50178 |
| **Product Certifications** | N998<br>C-tick<br>UL<br>CSA |
| **IP Degree of Protection** | IP20 |
| **Ambient Air Temperature for Storage** | -13…149 °F (-25…65 °C) |

## Ordering and shipping details

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|---|---|
| **Category** | 22042-ATV12 DRIVE AND ACCESSORIES |
| **Discount Schedule** | CP4B |
| **GTIN** | 00785901444855 |
| **Returnability** | No |
| **Country of origin** | ID |

## Contractual warranty

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| **Warranty (in months)** | 18 |