# Product datasheet

Specifications



Discontinued

## enclosed variable speed drive ATV31 - 1.1kW - 240V - IP55

ATV31CU11M2

Discontinued on: 18 Mar 2024

**EAN Code: 3389110587579**

## Main

| | |
|---|---|
| **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** | 200...240 V - 15...10 % |
| **power supply frequency** | 50...60 Hz - 5...5 % |
| **Network number of phases** | Single phase |
| **Motor power kW** | 1.1 kW |
| **Motor power hp** | 1.5 hp |
| **Line current** | 10.2 A 240 V 1 kA<br>12.1 A 200 V 1 kA |
| **Apparent power** | 2.4 kVA |
| **maximum prospective line Isc** | 1 kA |
| **Nominal output current** | 6.9 A 4 kHz |
| **Maximum transient current** | 10.4 A for 60 s |
| **Power dissipation in W** | 74 W at nominal load |
| **Speed range** | 1…50 |
| **Transient overtorque** | 150…170 % of nominal motor torque |
| **Asynchronous motor control profile** | Factory set : constant torque<br>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** | 170…264 V |
| **power supply frequency limits** | 47.5…63 Hz |
| **Speed drive output frequency** | 0.5…500 Hz |
| **Nominal switching frequency** | 4 kHz |

Rates duty January 2016

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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|---|---|
| **Switching frequency** | 2...16 kHz adjustable |
| **Braking torque** | <= 150 % during 60 s with braking resistor<br>100 % with braking resistor continuously<br>50 % without braking resistor |
| **Regulation loop** | Frequency PI regulator |
| **Motor slip compensation** | Automatic whatever the load<br>Adjustable<br>Suppressable |
| **Output voltage** | <= power supply voltage |
| **Electrical connection** | AI1, AI2, AI3, AOV, AOC, R1A, R1B, R1C, R2A, R2B, LI1...LI6 terminal 2.5 mm² 14 AWG<br>L1, L2, L3, U, V, W, PA, PB, PA/+, PC/- terminal 2.5 mm² 14 AWG |
| **Tightening torque** | AI1, AI2, AI3, AOV, AOC, R1A, R1B, R1C, R2A, R2B, LI1...LI6: 0.6 N.m<br>L1, L2, L3, U, V, W, PA, PB, PA/+, PC/-: 0.8 N.m |
| **Insulation** | Electrical between power and control |
| **Supply** | Internal supply for logic inputs 19…30 V, <100 mA overload protection<br>Internal supply for logic inputs 19…30 V, <100 mA short-circuit protection<br>Internal supply for reference potentiometer 10…10.8 V, <10 mA overload protection<br>Internal supply for reference potentiometer 10…10.8 V, <10 mA short-circuit protection |
| **Analogue input type** | AI3 configurable current 0...20 mA, impedance: 250 Ohm<br>AI1 configurable voltage 0...10 V, input voltage 30 V max, impedance: 30000 Ohm<br>AI2 configurable voltage +/- 10 V, input voltage 30 V max, impedance: 30000 Ohm |
| **input sampling time** | LI1...LI6: 4 ms discrete<br>AI1, AI2, AI3: 8 ms analog |
| **output response time** | AOV, AOC 8 ms for analog<br>R1A, R1B, R1C, R2A, R2B 8 ms for discrete |
| **Linearity error** | +/- 0.2 % for output |
| **Analogue output number** | 2 |
| **Analogue output type** | AOC configurable current: 0...20 mA, impedance: 800 Ohm, resolution: 8 bits<br>AOV configurable voltage: 0...10 V, impedance: 470 Ohm, resolution: 8 bits |
| **Discrete input logic** | Positive logic (source) (LI1...LI6), < 5 V (state 0), > 11 V (state 1)<br>Logic input not wired (LI1...LI4), < 13 V (state 1)<br>Negative logic (source) (LI1...LI6), > 19 V (state 0) |
| **Discrete output number** | 2 |
| **Discrete output type** | Configurable relay logic: (R1A, R1B, R1C) 1 NO + 1 NC - 100000 cycles<br>Configurable relay logic: (R2A, R2B) NC - 100000 cycles |
| **Minimum switching current** | 10 mA 5 V DC R1-R2 |
| **Maximum switching current** | 2 A at 250 V AC on inductive load - cos phi = 0.4 - L/R = 7 ms (R1-R2)<br>2 A at 30 V DC on inductive load - cos phi = 0.4 - L/R = 7 ms (R1-R2)<br>5 A at 250 V AC on resistive load - cos phi = 1 - L/R = 0 ms (R1-R2)<br>5 A at 30 V DC on resistive load - cos phi = 1 - L/R = 0 ms (R1-R2) |
| **Discrete input number** | 6 |
| **Discrete input type** | (LI1...LI6) programmable at 24 V, 0…100 mA for PLC, impedance: 3500 Ohm |
| **Acceleration and deceleration ramps** | Linear adjustable separately from 0.1 to 999.9 s<br>S, U or customized |
| **Braking to standstill** | By DC injection |
| **Protection type** | Input phase breaks: drive<br>Line supply overvoltage and undervoltage safety circuits: drive<br>Line supply phase loss safety function, for three phases supply: drive<br>Motor phase breaks: drive<br>Overcurrent between output phases and earth (on power up only): drive<br>Overheating protection: drive<br>Short-circuit between motor phases: drive<br>Thermal protection: motor |

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|---|---|
| **Insulation resistance** | >= 500 mOhm 500 V DC for 1 minute |
| **Local signalling** | 1 LED (red) for drive voltage<br>Four 7-segment display units for CANopen bus status |
| **Time constant** | 5 ms for reference change |
| **Frequency resolution** | Display unit: 0.1 Hz<br>Analog input: 0.1...100 Hz |
| **Communication port protocol** | CANopen<br>Modbus |
| **Connector type** | 1 RJ45 for CANopen via VW3 CANTAP2 adaptor<br>1 RJ45 for Modbus |
| **Physical interface** | RS485 multidrop serial link for Modbus |
| **Transmission frame** | RTU for Modbus |
| **Transmission rate** | 10, 20, 50, 125, 250, 500 kbps or 1 Mbps for CANopen via VW3 CANTAP2 adaptor<br>4800, 9600 or 19200 bps for Modbus |
| **Number of addresses** | 1…127 for CANopen via VW3 CANTAP2 adaptor<br>1…247 for Modbus |
| **Number of drive** | 127 for CANopen via VW3 CANTAP2 adaptor<br>31 for Modbus |
| **Marking** | CE |
| **Operating position** | Vertical +/- 10 degree |
| **Net weight** | 8.8 kg |

## Environment

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|---|---|
| **Dielectric strength** | 2040 V DC between earth and power terminals<br>2880 V AC between control and power terminals |
| **Electromagnetic compatibility** | 1.2/50 µs - 8/20 µs surge immunity test level 3 conforming to IEC 61000-4-5<br>Electrical fast transient/burst immunity test level 4 conforming to IEC 61000-4-4<br>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 |
| **Standards** | EN 50178 |
| **Product certifications** | CSA<br>N998<br>C-Tick<br>UL |
| **Pollution degree** | 2 |
| **Protective treatment** | TC |
| **Vibration resistance** | 1 gn (f= 13…150 Hz) conforming to EN/IEC 60068-2-6<br>1.5 mm (f= 3…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…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 storage** | -25…70 °C |
| **Ambient air temperature for operation** | -10…50 °C without derating (with protective cover on top of the drive)<br>-10…60 °C with derating factor (without protective cover on top of the drive) |
| **Operating altitude** | <= 1000 m without derating<br>>= 1000 m with current derating 1 % per 100 m |

## Packing Units

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|---|---|
| **Unit Type of Package 1** | PCE |

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|---|---|
| **Number of Units in Package 1** | 1 |
| **Package 1 Height** | 28 cm |
| **Package 1 Width** | 25.5 cm |
| **Package 1 Length** | 36 cm |
| **Package 1 Weight** | 6.968 kg |

## Contractual warranty

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

## Environmental Data

Schneider Electric aims to achieve Net Zero status by 2050 through supply chain partnerships, lower impact materials, and circularity via our ongoing “Use Better, Use Longer, Use Again” campaign to extend product lifetimes and recyclability.

Environmental Data explained >

How we assess product sustainability >

### Use Better

#### Materials and Substances

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|---|---|
| EU RoHS Directive | Compliant |

### Use Again

#### Repack and remanufacture

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|---|---|
| WEEE Label | The product must be disposed on European Union markets following specific waste collection and never end up in rubbish bins |