



ⓘ Discontinued

ATV31H018M3XAT has not been replaced. Please contact your customer care center for more information.

Main

| | |
|------------------------------------|--|
| Range of product | Altivar |
| Product or component type | Variable speed drive |
| Product specific application | Simple machine Wire guiding |
| Component name | ATV31 |
| Assembly style | With heat sink |
| Variant | With drive order potentiometer |
| EMC filter | Without EMC filter |
| [Us] rated supply voltage | 200...240 V (- 5...5 %) |
| Supply frequency | 50...60 Hz (- 5...5 %) |
| Network number of phases | 3 phases |
| Motor power kW | 0.18 kW 4 kHz |
| Motor power hp | 0.25 hp 4 kHz |
| Line current | 1.9 A 240 V 2.1 A 200 V 1 kA |
| Apparent power | 0.7 kVA |
| Prospective line I _{sc} | 1 kA |
| Nominal output current | 1.5 A 4 kHz |
| Maximum transient current | 2.3 A 60 s |
| Power dissipation in W | 23 W at nominal load |
| Asynchronous motor control profile | Sensorless flux vector control with PWM type motor control signal Factory set : constant torque |
| Analogue input number | 4 |

Complementary

| | |
|-----------------------------|-------------------------------------|
| Product destination | Asynchronous motors |
| Supply voltage limits | 170...264 V |
| Network frequency | 47.5...63 Hz |
| Output frequency | 0.0005...0.5 kHz |
| Nominal switching frequency | 4 kHz |
| Switching frequency | 2...16 kHz adjustable |
| Speed range | 1...50 |
| Transient overtorque | 150...170 % of nominal motor torque |

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

| | |
|-------------------------------------|---|
| Braking torque | 100 % with braking resistor continuously 150 % without braking resistor <= 150 % during 60 s with braking resistor |
| Regulation loop | Frequency PI regulator |
| Motor slip compensation | Suppressable Automatic whatever the load Adjustable |
| Output voltage | <= power supply voltage |
| Electrical connection | Terminal 2.5 mm ² AWG 14 AI1, AI2, AI3, AOV, AOC, R1A, R1B, R1C, R2A, R2B, LI1...LI6 Terminal 2.5 mm ² AWG 14 L1, L2, L3, U, V, W, PA, PB, PA/+, PC/- |
| Tightening torque | 0.6 N.m AI1, AI2, AI3, AOV, AOC, R1A, R1B, R1C, R2A, R2B, LI1...LI6 0.8 N.m L1, L2, L3, U, V, W, PA, PB, PA/+, PC/- |
| Insulation | Electrical between power and control |
| Supply | Internal supply for logic inputs 19...30 V <= 100 mA overload and short-circuit protection Internal supply for reference potentiometer (2.2 to 10 kOhm) 10...10.8 V <= 10 mA overload and short-circuit protection |
| Analogue input type | Configurable current AI3 0...20 mA 250 Ohm Configurable voltage AI1 0...10 V 30 V max 30000 Ohm Configurable voltage AI2 +/- 10 V 30 V max 30000 Ohm Potentiometer reference AIP 8 ms 10 bits +/- 4.3 % +/- 0.2 % |
| Sampling duration | 4 ms LI1...LI6 discrete 8 ms AI1, AI2, AI3 analog |
| Response time | 8 ms analog AOV, AOC 8 ms discrete R1A, R1B, R1C, R2A, R2B |
| Linearity error | +/- 0.2 % output |
| Analogue output number | 2 |
| Analogue output type | Configurable current AOC 0...20 mA 800 Ohm 8 bits Configurable voltage AOV 0...10 V 470 Ohm 8 bits |
| Discrete input logic | Positive logic (source) LI1...LI6, < 5 V (state 0), > 11 V (state 1) Logic input not wired LI1...LI4, < 13 V (state 1) 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 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 7 ms R1-R2 2 A 30 V DC inductive, cos phi = 0.4 7 ms R1-R2 5 A 250 V AC resistive, cos phi = 1 0 ms R1-R2 5 A 30 V DC resistive, cos phi = 1 0 ms R1-R2 |
| Discrete input number | 6 |
| Discrete input type | Programmable LI1...LI6 24 V 0...100 mA PLC 3500 Ohm |
| Acceleration and deceleration ramps | S, U or customized Linear adjustable separately from 0.1 to 999.9 s |
| 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 |
| Display type | 1 LED red drive voltage Four 7-segment display units CANopen bus status |
| Time constant | 5 ms for reference change |
| Frequency resolution | 0.1 Hz display unit 0.1...100 Hz analog input |
| Connector type | 1 RJ45 CANopen via VW3 CANTAP2 adaptor 1 RJ45 Modbus |
| Physical interface | RS485 multidrop serial link CANopen via VW3 CANTAP2 adaptor RS485 multidrop serial link Modbus |
| Transmission frame | RTU CANopen via VW3 CANTAP2 adaptor |

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 |
| Product weight | 1.3 kg |

Environment

| | |
|---------------------------------------|---|
| Dielectric strength | 2040 V DC between earth and power terminals 2880 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 | UL C-Tick N998 CSA |
| IP degree of protection | IP20 on upper part without cover plate IP21 on connection terminals IP31 on upper part IP41 on upper part |
| 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 | -25...70 °C |
| Ambient air temperature for operation | -10...50 °C without derating with protective cover on top of the drive -10...60 °C with derating factor without protective cover on top of the drive |
| Operating altitude | <= 1000 m without derating >= 1000 m with current derating 1 % per 100 m |

Contractual warranty

| | |
|-----------------|-----------|
| Warranty period | 18 months |
|-----------------|-----------|