Product data sheet
Characteristics

ATV31HD11N4
variable speed drive ATV31 - 11kW - 500V 3-phase supply - EMC filter - IP20

Discontinued

Commercial status

Discontinued on: 31 December 2011

End-of-service on: 31 December 2015

Main

Range of product	Altivar
Product or component type	Variable speed drive
Product specific application	Simple machine
Component name	ATV31
Assembly style	With heat sink
EMC filter	Integrated
[Us] rated supply voltage	380...500 V - 5...5 %
Supply frequency	50...60 Hz - 5...5 %
Network number of phases	3 phases
Motor power kW	11 kW 4 kHz
Motor power hp	15 hp 4 kHz
Line current	28.4 A at 500 V 37.2 A at 380 V, Isc = 1 kA
Apparent power	25 kVA
Prospective line Isc	1 kA
Nominal output current	27.7 A 4 kHz
Maximum transient current	41.6 A for 60 s
Power dissipation in W	397 W at nominal load
Asynchronous motor control profile	Factory set : constant torque Sensorless flux vector control with PWM type motor control signal
Analogue input number	3

Complementary

Product destination	Asynchronous motors
Supply voltage limits	323…550 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	<= 150 % during 60 s with braking resistor 100 % with braking resistor continuously 150 % without braking resistor
Regulation loop	Frequency PI regulator
Motor slip compensation	Suppressable Adjustable Automatic whatever the load
Output voltage	<= power supply voltage
Electrical connection	AI1, AI2, AI3, AOV, AOC, R1A, R1B, R1C, R2A, R2B, LI1...LI6 terminal 2.5 mm² AWG 14 L1, L2, L3, U, V, W, PA, PB, PA/+, PC/- terminal 2.5 mm² AWG 14
Tightening torque	AI1, AI2, AI3, AOV, AOC, R1A, R1B, R1C, R2A, R2B, LI1...LI6: 0.6 N.m 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, protection type: overload and short-circuit protection Internal supply for reference potentiometer (2.2 to 10 kOhm): 10...10.8 V 10 mA, protection type: overload and short-circuit protection
Analogue input type	AI3 configurable current 0...20 mA, impedance: 250 Ohm AI1 configurable voltage 0...10 V, input voltage 30 V max, impedance: 30000 Ohm AI2 configurable voltage +/- 10 V, input voltage 30 V max, impedance: 30000 Ohm
Sampling duration	LI1...LI6: 4 ms discrete AI1, AI2, AI3: 8 ms analog
Response time	AOV, AOC 8 ms for analog 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 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) 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	R1-R2 10 mA at 5 V DC
Maximum switching current	R1-R2: 2 A at 250 V AC inductive load, cos phi = 0.4 and L/R = 7 ms R1-R2: 2 A at 30 V DC inductive load, cos phi = 0.4 and L/R = 7 ms R1-R2: 5 A at 250 V AC resistive load, cos phi = 1 and L/R = 0 ms R1-R2: 5 A at 30 V DC resistive load, cos phi = 1 and L/R = 0 ms
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	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) for drive voltage Four 7-segment display units for CANopen bus status
Time constant	5 ms for reference change
Frequency resolution	Display unit: 0.1 Hz Analog input: 0.1...100 Hz
Connector type	1 RJ45 for CANopen via VW3 CANTAP2 adaptor 1 RJ45 for Modbus
Physical interface	RS485 multidrop serial link for CANopen via VW3 CANTAP2 adaptor RS485 multidrop serial link for Modbus
Transmission frame	RTU for CANopen via VW3 CANTAP2 adaptor

	RTU for Modbus
Transmission rate	10, 20, 50, 125, 250, 500 kbps or 1 Mbps for CANopen via VW3 CANTAP2 adaptor 4800, 9600 or 19200 bps for Modbus
Number of addresses	1…127 for CANopen via VW3 CANTAP2 adaptor 1…247 for Modbus
Number of drive	127 for CANopen via VW3 CANTAP2 adaptor 31 for Modbus
Marking	CE
Operating position	Vertical +/- 10 degree
Outer dimension	390 x 245 x 190 mm 555 x 234 x 268 mm 405 x 234 x 268 mm 330 x 245 x 190 mm
Net weight	11 kg

Environment

Dielectric strength	2410 V DC between earth and power terminals 3400 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 Electrical fast transient/burst immunity test level 4 conforming to IEC 61000-4-4 Electrostatic discharge immunity test level 3 conforming to IEC 61000-4-2 Radiated radio-frequency electromagnetic field immunity test level 3 conforming to IEC 61000-4-3
Standards	EN 50178
Product certifications	C-Tick N998 CSA UL
IP degree of protection	On upper part: IP20 (without cover plate) On connection terminals: IP21 On upper part: IP31 On upper part: IP41
Pollution degree	2
Protective treatment	TC
Vibration resistance	1 gn (f= 13…150 Hz) conforming to EN/IEC 60068-2-6 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 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) -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

Packing Units

Package 1 Weight	10.894 kg
Package 1 Height	2.850 dm
Package 1 width	3.500 dm
Package 1 Length	5.100 dm

Contractual warranty

Warranty	18 months

ATV31HD11N4 is replaced by:

Variable speed drives ATV320D11N4B

variable speed drive, ATV320, 11 kW, 380…500 V, 3 phases, book

Qty 1

Reason for Substitution: End of life | Substitution date: 16 December 2020