



## Main

Range of product	Altivar 312
Product or component type	Variable speed drive
Product destination	Asynchronous motors
Product specific application	Simple machine
Assembly style	With heat sink
Component name	ATV312
Motor power kW	2.2 kW
Motor power hp	3 hp
[Us] rated supply voltage	200...240 V (- 15...10 %)
Supply frequency	50...60 Hz (- 5...5 %)
Network number of phases	3 phases
Line current	14.9 A for 200 V, 5 kA 13 A for 240 V
EMC filter	Without EMC filter
Apparent power	5.2 kVA
Maximum transient current	16.5 A for 60 s
Power dissipation in W	114 W at nominal load
Speed range	1...50
Asynchronous motor control profile	Factory set : constant torque Sensorless flux vector control with PWM type motor control signal
Electrical connection	L1, L2, L3, U, V, W, PA, PB, PA/+, PC/- terminal 5 mm <sup>2</sup> AWG 10 Terminal
Supply	Internal supply for logic inputs at 19...30 V, <= 100 mA for overload and short-circuit protection Internal supply for reference potentiometer (2.2 to 10 kOhm) at 10...10.8 V, <= 10 mA for overload and short-circuit protection
Communication port protocol	CANopen Modbus
IP degree of protection	IP20 on upper part without cover plate IP21 on connection terminals IP31 on upper part IP41 on upper part
Option card	CANopen daisy chain communication card DeviceNet communication card Fipio communication card Modbus TCP communication card

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

## Complementary

Supply voltage limits	170...264 V
Network frequency	47.5...63 Hz
Prospective line I <sub>sc</sub>	5 kA
Continuous output current	11 A at 4 kHz
Output frequency	0...500 kHz
Nominal switching frequency	4 kHz
Switching frequency	2...16 kHz adjustable
Transient overtorque	170...200 % of nominal motor torque
Braking torque	100 % with braking resistor continuously 150 % without braking resistor 150 % with braking resistor for 60 s
Regulation loop	Frequency PI regulator
Motor slip compensation	Adjustable Automatic whatever the load Suppressable
Output voltage	<= power supply voltage
Tightening torque	1.2 N.m L1, L2, L3, U, V, W, PA, PB, PA/+, PC/-
Insulation	Electrical between power and control
Acceleration and deceleration ramps	Linear adjustable separately from 0.1 to 999.9 s S, U or customized
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 at 500 V DC for 1 minute
Local signalling	1 LED red for drive voltage Four 7-segment display units for CANopen bus status
Time constant	5 ms for reference change
Frequency resolution	Analog input 0.1...100 Hz Display unit 0.1 Hz
Connector type	1 RJ45 Modbus/CANopen
Physical interface	RS485 multidrop serial link
Transmission frame	RTU
Transmission rate	10, 20, 50, 125, 250, 500 kbps or 1 Mbps CANopen 4800, 9600 or 19200 bps Modbus
Number of addresses	1...247 Modbus 1...127 CANopen
Number of drive	127 CANopen 31 Modbus
Marking	CE
Operating position	Vertical +/- 10 degree
Outer dimension	143 x 105 x 130 mm
Height	143 mm
Width	107 mm
Depth	152 mm
Product weight	1.7 kg

## Environment

Dielectric strength	2040 V DC between earth and power terminals 2880 V AC between control and power terminals
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Electromagnetic compatibility	Electrical fast transient/burst immunity test conforming to IEC 61000-4-4 level 4 Electrostatic discharge immunity test conforming to IEC 61000-4-2 level 3 Radiated radio-frequency electromagnetic field immunity test conforming to IEC 61000-4-3 level 3 1.2/50 $\mu$ s - 8/20 $\mu$ s surge immunity test conforming to IEC 61000-4-5 level 3
Standards	IEC 61800-3 IEC 61800-5-1
Product certifications	CSA C-Tick DNV GOST NOM UL
Pollution degree	2
Protective treatment	TC
Vibration resistance	1.5 mm (f = 3...13 Hz) conforming to EN/IEC 60068-2-6 1 gn (f = 13...150 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...3000 m with current derating 1 % per 100 m