

ATV312HU40M3B

variable speed drive ATV312 - 4kW - 8.4kVA -
180 W - 200..240 V - 3-phase supply



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	4 kW
Motor power hp	5 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	21.1 A for 240 V 24.2 A for 200 V, 5 kA
EMC filter	Without EMC filter
Apparent power	8.4 kVA
Maximum transient current	26.3 A for 60 s
Power dissipation in W	180 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	Terminal L1, L2, L3, U, V, W, PA, PB, PA/+, PC/- terminal 5 mm ² AWG 10
Supply	Internal supply for reference potentiometer (2.2 to 10 kOhm) at 10...10.8 V, <= 10 mA for overload and short-circuit protection Internal supply for logic inputs at 19...30 V, <= 100 mA for overload and short-circuit protection
Communication port protocol	CANopen Modbus
IP degree of protection	IP41 on upper part IP31 on upper part IP21 on connection terminals IP20 on upper part without cover plate
Option card	Profibus DP communication card Modbus TCP communication card Fipio communication card DeviceNet communication card CANopen daisy chain communication card

Complementary

Supply voltage limits	170...264 V
Network frequency limits	47.5...63 Hz
Prospective line Isc	5 kA
Continuous output current	17.5 A at 4 kHz
Speed drive output frequency	0...500 Hz
Nominal switching frequency	4 kHz
Switching frequency	2...16 kHz adjustable

Transient overtorque	170...200 % of nominal motor torque
Braking torque	30 % without braking resistor 100 % with braking resistor continuously 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	Thermal protection motor Short-circuit between motor phases drive Overheating protection drive Overcurrent between output phases and earth (on power up only) drive Motor phase breaks drive Line supply phase loss safety function, for three phases supply drive Line supply overvoltage and undervoltage safety circuits drive Input phase breaks drive
Insulation resistance	>= 500 mOhm at 500 V DC for 1 minute
Local signalling	Four 7-segment display units for CANopen bus status 1 LED red for drive voltage
Time constant	5 ms for reference change
Frequency resolution	Display unit 0.1 Hz Analog input 0.1...100 Hz
Type of connector	1 RJ45 Modbus/CANopen
Physical interface	RS485 multidrop serial link
Transmission frame	RTU
Transmission rate	4800, 9600 or 19200 bps Modbus 10, 20, 50, 125, 250, 500 kbps or 1 Mbps CANopen
Number of addresses	1...247 Modbus 1...127 CANopen
Number of drive	31 Modbus 127 CANopen
Marking	CE
Operating position	Vertical +/- 10 degree
Outer dimension	184 x 140 x 150 mm
Height	184 mm
Width	142 mm
Depth	152 mm
Product weight	2.9 kg

Environment

Dielectric strength	2880 V AC between control and power terminals 2040 V DC between earth and power terminals
Electromagnetic compatibility	Radiated radio-frequency electromagnetic field immunity test conforming to IEC 61000-4-3 level 3 Electrostatic discharge immunity test conforming to IEC 61000-4-2 level 3 Electrical fast transient/burst immunity test conforming to IEC 61000-4-4 level 4 1.2/50 µs - 8/20 µs 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 dripping water conforming to IEC 60068-2-3 5...95 % without condensation conforming to IEC 60068-2-3
Ambient air temperature for storage	-25...70 °C
Ambient air temperature for operation	-10...60 °C with derating factor without protective cover on top of the drive -10...50 °C without derating with protective cover on top of the drive
Operating altitude	1000...3000 m with current derating 1 % per 100 m <= 1000 m without derating