Product data sheet
Characteristics

ATV31H037M2
variable speed drive ATV31 - 0.37kW - 240V 1-phase supply - EMC filter - IP20

Discontinued

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	200...240 V (- 5...5 %)
Supply frequency	50...60 Hz (- 5...5 %)
Network number of phases	Single phase
Motor power kW	0.37 kW 4 kHz
Motor power hp	0.5 hp 4 kHz
Line current	4.4 A 240 V 5.3 A 200 V 1 kA
Apparent power	1 kVA
Prospective line Isc	1 kA
Nominal output current	3.3 A 4 kHz
Maximum transient current	5 A 60 s
Power dissipation in W	41 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	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
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	Automatic whatever the load Adjustable Suppressable
Output voltage	<= power supply voltage
Electrical connection	Terminal 2.5 mm² AWG 14 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/-
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
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	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 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	1.5 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 µs - 8/20 µs 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	N998 C-Tick UL 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

ATV31H037M2 is replaced by:

Variable speed drives ATV312H037M2

variable speed drive ATV312 - 0.37kW - 1kVA - 41 W - 200..240 V - 1-phase supply

Qty 1

Reason for Substitution: End of life | Substitution date: 20 April 2009