Product data sheet
Characteristics

ATV312HU55N4
Variable speed drive, ATV312, 5.5kW, 7.5hp, 323..550V, 3 phase supply, 14.3A, CANopen, Modbus



Commercial status
End of Commercialisation :

⚠ End of Commercialisation

Main

Product destination	Asynchronous motors
Component name	ATV312
Motor power kW	5.5 KW
Motor power hp	7.5 Hp
Supply frequency	50...60 Hz - 5...5 %
Network number of phases	3 phases
Line current	21.9 A at 380 V, Isc = 22 kA 16.5 A at 500 V
Apparent power	15 KVA
Maximum transient current	21.5 A for 60 s
Power dissipation in W	232 W at nominal load
Speed range	1…50
Electrical connection	AI1, AI2, AI3, AOV, AOC, R1A, R1B, R1C, R2A, R2B, LI1...LI6 terminal 2.5 mm² 14 AWG L1, L2, L3, U, V, W, PA, PB, PA/+, PC/- terminal 16 mm² 6 AWG
Supply	Internal supply for logic inputs: 19...30 V 100 mA, protection type: overload and short-circuit pro Internal supply for reference potentiometer (2.2 to 10 kOhm): 10...10.8 V 10 mA, protection typ
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	Communication card for CANopen daisy chain Communication card for DeviceNet Communication card for Fipio Communication card for Modbus TCP Communication card for Profibus DP
Range of product	Altivar 312
Product or component type	Variable speed drive
Product specific application	Simple machine
Communication port protocol	Modbus CANopen
[Us] rated supply voltage	380...500 V - 15...10 %
EMC filter	Integrated

Complementary

Supply voltage limits	323…550 V
Continuous output current	14.3 A at 4 kHz
Output frequency	0…500 Hz
Switching frequency	2...16 kHz adjustable
Braking torque	150 % during 60 s with braking resistor 100 % with braking resistor continuously 150 % without braking resistor
Output voltage	<= power supply voltage
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/-: 2.5 N.m
Insulation	Electrical between power and control
Analogue input type	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 AI3 configurable current 0...20 mA, impedance: 250 Ohm
Sampling duration	AI1, AI2, AI3: 8 ms analog LI1...LI6: 4 ms discrete
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 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	Logic input not wired (LI1...LI4), < 13 V (state 1) Negative logic (source) (LI1...LI6), > 19 V (state 0) Positive logic (source) (LI1...LI6), < 5 V (state 0), > 11 V (state 1)
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 type	(LI1...LI6) programmable at 24 V, 0…100 mA for PLC, impedance: 3500 Ohm
Insulation resistance	>= 500 mOhm 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 for Modbus/CANopen
Transmission rate	10, 20, 50, 125, 250, 500 kbps or 1 Mbps for CANopen 4800, 9600 or 19200 bps for Modbus
Number of addresses	1…127 for CANopen 1…247 for Modbus
Number of drive	127 for CANopen 31 for Modbus
Outer dimension	442 x 239 x 192 mm 300 x 210 x 170 mm 232 x 180 x 170 mm 402 x 239 x 192 mm
Discrete input number	6
Discrete output number	2
Analogue input number	3
Analogue output number	1
Physical interface	RS485 multidrop serial link
Transmission frame	RTU
Asynchronous motor control profile	Factory set : constant torque Sensorless flux vector control with PWM type motor control signal
Transient overtorque	170…200 % of nominal motor torque
Acceleration and deceleration ramps	Linear adjustable separately from 0.1 to 999.9 s S, U or customized

Motor slip compensation	Automatic whatever the load Adjustable Suppressable
Nominal switching frequency	4 kHz
Braking to standstill	By DC injection
Network frequency	47.5...63 Hz
Prospective line Isc	22 KA
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
Width	180 Mm
Height	232 Mm
Depth	172 Mm
Net weight	6.5 Kg

Environment

Dielectric strength	2410 V DC between earth and power terminals 3400 V AC between control and power terminals
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
Operating altitude	<= 1000 m without derating 1000...3000 m with current derating 1 % per 100 m
Operating position	Vertical +/- 10 degree
Product certifications	GOST[RETURN]DNV[RETURN]NOM[RETURN]UL[RETURN]CSA[RETURN]C-Tick
Marking	CE
Standards	IEC 61800-5-1 IEC 61800-3
Assembly style	With heat sink
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-
Regulation loop	Frequency PI regulator
Pollution degree	2
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)
Ambient air temperature for storage	-25…70 °C

Packing Units

Unit Type of Package 1	PCE
Number of Units in Package 1	1
Package 1 Height	22.476 Cm
Package 1 Width	26.31 Cm
Package 1 Length	29.892 Cm
Package 1 Weight	6.02 Kg
Unit Type of Package 2	S04
Number of Units in Package 2	2
Package 2 Height	30 Cm
Package 2 Width	40 Cm
Package 2 Length	60 Cm
Package 2 Weight	13.171 Kg
Unit Type of Package 3	PAL

Number of Units in Package 3	18
Package 3 Height	77 Cm
Package 3 Width	60 Cm
Package 3 Length	80 Cm
Package 3 Weight	115.2 Kg

Offer Sustainability

Mercury free	Yes
Sustainable packaging	No
EU RoHS Directive	Compliant
California proposition 65	WARNING: This product can expose you to chemicals including: Lead and lead compounds, which
WEEE Label	The product must be disposed on European Union markets following specific waste collection and

Contractual warranty

Warranty (in months)	18

Product Life Status : Post commercialisation

ATV312HU55N4 may be replaced by any of the following products:



ATV320U55N4C

variable speed drive, Altivar Machine ATV320, 5.5kW, 380 to 500V, 3 phases, compact

Qty 1

Substitution date: |



ATV320U55N4B

variable speed drive, Altivar Machine ATV320, 5.5kW, 380 to 500V, 3 phases, book

Qty 1

Substitution date: |